**RZ/PCA APPLICATION ACCEPTED**: July 29, 2011
**RZ APPLICATION AMENDED**: June 20, 2012
**FDP 023 APPLICATION ACCEPTED**: January 11, 2012
**FDP 023 APPLICATION AMENDED**: June 20, 2012
**FDP 023-02 APPLICATION ACCEPTED**: March 29, 2012
**FDP 023-02 APPLICATION AMENDED**: May 15, 2012
**FDP 023-03 APPLICATION ACCEPTED**: March 29, 2012
**PLANNING COMMISSION**: October 17, 2012
**BOARD OF SUPERVISORS**: October 30, 2012

# County of Fairfax, Virginia

**October 11, 2012**

## STAFF REPORT ADDENDUM

## PCA 88-D-005-07 and RZ/FDP 2011-PR-023
## FDP 2011-PR-023-02
## FDP 2011-PR-023-03

## PROVIDENCE DISTRICT

| | |
|---|---|
| **APPLICANT**: | Cityline Partners LLC and AMT – The Association for Manufacturing Technology |
| **PRESENT ZONING**: | C-3, SC, HC |
| **REQUESTED ZONING**: | PTC, SC, HC |
| **PARCEL(S)**: | *PCA 88-D-005-07:* 29-2 ((15)) B2; 29-4 ((7)) A4; 29-4 ((7)) C1; 29-4 ((7)) C2; 29-4 ((7)) 1; 29-4 ((7)) 1A1; 29-4 ((7)) 1A2; 29-4 ((7)) 2; 29-4 ((7)) 3; 29-4 ((7)) 5A; 29-4 ((7)) 6; 29-4 ((7)) 7A1; 29-4 ((7)) 7B; 29-4 ((7)) 8; 29-4 ((7)) 9; 29-4 ((7)) 10; 29-4 ((7)) 11A<br><br>*RZ 2011-PR-023:* 29-4 ((7)) 1; 29-4 ((7)) 2; 29-4 ((7)) 3; 29-4 ((7)) 5A; 29-4 ((7)) 9; 29-4 ((7)) 10<br><br>*FDP 2011-PR-023:* 29-4 ((7)) 10 |

**Matthew Ladd**

**Department of Planning and Zoning**
Zoning Evaluation Division
12055 Government Center Parkway, Suite 801
Fairfax, Virginia 22035-5509
Phone 703-324-1290 FAX 703-324-3924
www.fairfaxcounty.gov/dpz/

| | |
|---|---|
| | *FDP 2011-PR-023-02:* 29-4 ((7)) 5A |
| | *FDP 2011-PR-023-03:* 29-4 ((7)) 1 and 29-4 ((7)) 2 pt. |
| **ACREAGE**: | *PCA 88-D-005-07:* 85.93 acres<br>*RZ 2011-PR-023*: 19.4 acres<br>*FDP 2011-PR-023:* 5.47 acres<br>*FDP 2011-PR-023-02*: 1.84 acres<br>*FDP 2011-PR-023-03:* 3.14 acres |
| **FAR/DENSITY**: | 3.05 over entire RZ site |
| **PLAN MAP**: | Transit Station Mixed Use |
| **PCA PROPOSAL**: | Remove the subject property and an off-site parcel from the West*Park rezoning application RZ 88-D-005. |
| **RZ PROPOSAL**: | Rezone 19.4 acres to PTC District to permit the development of a mixed use development consisting of eight new buildings totaling 2.6 million square feet of office, residential, retail and hotel uses. |
| **FDP 023 PROPOSAL**: | Seeks FDP approval of two residential buildings on Block A with up to 8,000 square feet of retail/service uses. |
| **FDP 023-02 PROPOSAL**: | Seeks FDP approval for a 200,000 square foot office building on Block F including 2,156 square feet of supporting ground floor retail/service uses. |
| **FDP 023-03 PROPOSAL**: | Seeks FDP approval of one residential building on Block E with 430 to 480 dwelling units. |

**STAFF RECOMMENDATIONS**:

Staff recommends approval of PCA 88-D-005-07, subject to the execution of proffers consistent with those found in Appendix 1A of the staff report.

Staff also recommends approval of RZ 2011-PR-023, subject to execution of proffers consistent with those found in Attachment 1 of the staff report addendum (as may be amended to address outstanding issues).

Staff recommends approval of FDP 2011-PR-023, subject to the Board's approval of RZ 2011-PR-023.

Staff recommends approval of FDP 2011-PR-023-02, subject to the Board's approval of RZ 2011-PR-023.

Staff recommends approval of FDP 2011-PR-023-03, subject to the Board's approval of RZ 2011-PR-023.

Staff further recommends approval of the following waivers and/or modifications for these applications:

- Modification of Sect, 2-506, Par. 2 of the Zoning Ordinance in order to permit the proposed roof/roof screen feature element in Block F as depicted on the CDP/FDP;

- Waiver of Sect. 16-403 of the Zoning Ordinance in order to permit a public improvement plan for frontage improvements along Westpark and Westbranch Drive to be filed without the need for an FDP;

- Waiver of Sect. 6-505, Par. 7 of the Zoning Ordinance in order to permit outdoor displays and seating associated with a permitted use without the need for an FDP;

- Modification of Sect. 10-104, Par. 3E and G of the Zoning Ordinance to permit the maximum fence height associated with outdoor recreation/sports courts on Block to be between 7 and 14 feet height as depicted on the CDP;

- Modification of Sect. 11-102, Par. 12 of the Zoning Ordinance and Section 7-0800 of the Public Facilities Manual (PFM) to permit tandem and valet spaces to be counted toward the required parking only in those instances contained in the proffers;

- Modification of Sect. 11-201 and 11-203 of the Zoning Ordinance to permit the minimum required loading spaces to be two spaces per building as depicted on the CDP;

- Modification of Sect. 11-202, Par. 4 of the Zoning Ordinance to permit the loading space in Building A-2 as shown on the CDP;

- Modification of Sect. 13-202, Par. 8 of the Zoning Ordinance to permit the depicted trellises and/or vegetated arbors as shown on the CDP in lieu of the required interior parking lot landscaping;

- Modification of Sect. 13-202, Par. 8 of the Zoning Ordinance to permit the existing parking lot landscaping as depicted on the CDP and described in the proffers to serve as the interior parking lot landscaping on an interim basis;

- Modification of Sect. 13-202, Par. 8 of the Zoning Ordinance to permit the landscaping within the amenity courtyard of Block E in lieu of the interior parking lot landscaping requirement;

- Modification of Sect. 13-203, Par. 5 of the Zoning Ordinance to permit the landscaping depicted on the above-grade parking structures and within the interim surface parking lots as shown on the CDP and described in the proffers;

- Modification of Sect. 17-201, Par. 2 and 4 of the Zoning Ordinance to permit the interim road improvements along the Block F frontage as shown on the CDP;

- Waiver of Sect. 17-201, Par. 3B of the Zoning Ordinance to permit only those areas of interparcel access shown on the CDP/FDPs and described in the proffers to be provided;

- Waiver of Sect. 17-201 Par. 3B, 4, 12, 13, and 14 of the Zoning Ordinance to permit the proposed Jones Branch Drive frontage improvements along Tax Map Parcel 29-2 ((15)) B2 as depicted on Exhibit A of the proffers;

- Modification of Sect. 7-0800.2 of the PFM to allow up to 1.5 feet of structural columns to project into the required parking stall area for no more than 10% of the total parking spaces provided;

- Modification of the tree preservation target in favor of that shown on the plans and as proffered; and

- Waiver to allow the use of underground stormwater management and best management practices in a residential development, subject to Waiver #6377-WPFM-004-1.

It should be noted that it is not the intent of staff to recommend that the Board, in adopting any conditions proffered by the owner, relieve the applicant/owner from compliance with the provisions of any applicable ordinances, regulations, or adopted standards.

It should be further noted that the content of this report reflects the analysis and recommendations of staff; it does not reflect the position of the Board of Supervisors.

The approval of this rezoning does not interfere with, abrogate or annul any easement, covenants, or other agreements between parties, as they may apply to the property subject to this application.

For information, contact the Zoning Evaluation Division, Department of Planning and Zoning, 12055 Government Center Parkway, Suite 801, Fairfax, Virginia 22035-5505, (703) 324-1290.

*X:\DPZ\Tysons-Core\CASES\West Park (Arbor Row) RZ 2011-PR-023\Staff Report\Cover Sheet.doc*

Americans with Disabilities Act (ADA): Reasonable accommodation is available upon 48 hours advance notice. For additional information on ADA call (703) 324-1334 or TTY 711 (Virginia Relay Center).

## BACKGROUND

As described in the staff report which was published on September 13, 2012, the applicant, Cityline Partners LLC, requests to rezone the property at Tax Map 29-4 ((7)) 1, 2, 3, 5A, 9, and 10 from the C-3 to the PTC zoning district.

The 19.4 acre site is currently developed with a five office buildings and associated surface parking lots, all of which would be razed as the site is redeveloped. The rezoning application proposes a mixed-use, transit-oriented development within 1/2 mile of the future Tysons Corner Metro station. The proposed development includes approximately 2.6 million square feet (SF) of new development including 1.1 million SF of office space, 1.2 million SF of new residential development (between 880 and 1,174 units), 162,000 SF of hotel space, and 58,656 SF of ground floor retail and service uses for an overall floor area ratio (FAR) of 3.05.

During the September 27, 2012, Planning Commission hearing, several outstanding issues and concerns were presented. In response to these issues, the applicant submitted a revised Conceptual Development Plan (CDP) and revisions to each of the three Final Development Plans (FDPs) on October 5, 2012. The applicant also submitted a revised draft proffer statement for RZ 2011-PR-023 on October 10, 2012. This addendum describes the plans and proffers that have been submitted since the publication of the staff report and describes the extent to which these revisions address the remaining issues.

## ANALYSIS

### Proffer Changes

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*Adjustments to Gross Floor Area*

Proffer 10 describes the parameters under which gross floor area (GFA) may be shifted between Blocks B, C, and D. This proffer has been revised to indicate that the GFA for each building in these blocks will be established with the approval of a site plan based on when the site plan is accepted for review by the County. This revision addresses staff's concerns about the process through which GFA can be adjusted.

*Uses in Live-Work Units*

The applicant has revised Proffer 14 to exclude certain uses from the non-residential portion of the live-work units which could be built on the ground floor of residential buildings in the event that these spaces cannot be leased to retail tenants. This proffer has also been revised to define a live-work unit as *"a combination of a private dwelling unit with retail or other non-residential use with the dwelling unit occupied by the proprietor, storekeeper or employee and his/her family of the non-residential use."*

*Green Buildings*

The applicant has added a commitment in Proffers 28 and 29 to achieve LEED Silver for Block D, which is the site of a proposed hotel. To ensure that this commitment is satisfied, the applicant is proffering to either demonstrate that Block D will attain a sufficient number of

credits to achieve LEED Gold Certification or to post an escrow of $2.00 per square foot. Staff finds that these proffers are consistent with the applicant's green building commitments for the other proposed non-residential buildings and with the Comprehensive Plan recommendations for non-residential buildings in Tysons

*Streetscape Maintenance and Public Access*

The staff report raised an issue with the applicant's proffer regarding the maintenance of public streetscape areas (Proffer 46). However, after further deliberation, staff feels that this proffer does in fact meet the intent of the Comprehensive Plan.

Proffer 48 has been revised to state that public access easements on privately owned streetscape areas will only be recorded on the sidewalk zone and landscape amenity panel, as recommended in the staff report.

*Athletic Fields and Stream Improvements*

The applicant has made significant revisions to Proffers 50 and 51 which resolve some, but not all, of the outstanding issues mentioned in the staff report related to the athletic fields and stream improvements on Tax Map 29-4 ((7)) B2 (Parcel B2). The timing of the completion of these improvements on Parcel B2 has been changed from December 31, 2014, to June 30, 2015, which staff believes is a more realistic timeframe for design, permitting, and construction. The applicant has committed to work with the Park Authority Trails coordinator to reduce the slope of the proposed stream valley trail connection. The applicant has also revised the stream improvements proffer: to clarify that off-site work may be done if necessary easements and indemnification agreements are provided by adjacent property owners; to state that required maintenance of Pond D will be performed in conjunction with stream improvements; and to state how the applicant will proceed if the stream improvements are projected to exceed the $500,000 cap.

Despite these changes, staff still has concerns with the stream improvement proffers. First, the applicant proposes to construct stream bank stabilization improvements *"as determined in consultation with DPWES, the Park Authority, and the U.S. Army Corps of Engineers."* Because Parcel B2 will ultimately be dedicated to the County and because the Army Corps of Engineers will issue the permits to complete the work, staff believes that those three parties should have final approval of the proposed improvements. Second, the draft proffers state that *"[t]he Stream Restoration Improvements shall not include any work related to the existing structures on Parcel A4 or any soils or erosion surrounding such structures."* Staff is concerned that this sentence could prevent the applicant from restoring a section of the stream that is impacting an off-site parking structure. This sentence should be clarified to allow stream improvements but not to commit the applicant to perform any geotechnical work related to off-site structures. Third, staff is concerned with a provision that would allow the applicant to provide the balance of unspent funds to the County in lieu of constructing the stream improvements.

Staff's final concern is related to Proffers 50 and 51. Both these proffers continue to include provisions stating that the County cannot withhold certain site plan and building permit approvals if the athletic fields and stream improvements. Staff does not support these provisions as currently written. As stated in the staff report, staff believes that these proffer provisions would make it very difficult for the County to enforce the proffers in the event that the improvements are not built.

Staff will continue to work with the applicant to resolve the outstanding issues related to athletic fields and stream improvements.

*Trail Connections*

Proffers 55 and 58 have been revised to clarify that the applicant may bear some administrative costs for the provision of off-site easements for connections to trails located on adjacent properties and that the applicant will provide the County with documentation of efforts to obtain such easements if requested.

*Westpark Drive Public Improvement Plan*

Proffer 61 has been revised to state that the applicant *"shall use good faith commercially reasonable efforts"* to construct the interim streetscape improvements and utility relocations shown on the CDP. While this commitment is stronger than in the previous draft of the proffers, staff continues to encourage the applicant to affirmatively commit to completing these improvements in conjunction with construction of the first new building on the subject site. Should no public improvement plan be implemented, the applicant should commit to install the proposed streetscape improvements in front of any interim parking lots.

*Tysons Transportation Funding*

Consistent with the Planning Commission (PC) recommendations to the Board of Supervisors (BOS) on funding transportation improvements in Tysons, the applicant has removed a clause from Proffer 74 that stated that Table 7 contributions would be provided only if the Board establishes a service district. With the deletion of this clause, staff believes that the applicant's commitments to transportation funding are consistent with the PC recommendations and the Comprehensive Plan goals to phase development to transportation improvements and funding.

*Transportation Demand Management (TDM)*

The applicant has refined Proffer 78 to address issues raised in the staff report. A sentence stating that contributions to the TDM incentive fund could be used for multimodal facilities has been deleted. A provision that the use of TDM penalty funds must be approved by the applicant's TDM Program Manager has also been removed.

*Parking*

Proffer 89 now commits the applicant to unbundle parking spaces from all for-sale and leased residential units, consistent with the Comprehensive Plan recommendations.

*Affordable Housing*

As recommended in the staff report, Proffer 93 has been revised to clarify that non-residential contributions toward affordable housing will be provided prior to the issuance of the initial Non-RUP for each non-residential building.

*Stormwater Management*

The applicant has revised Proffer 94 to affirmatively commit to achieve the LEED stormwater management design credits and to retain or reuse the first inch of rainfall to the extent practicable. The applicant has added language to this proffer stating that any combination of low impact development (LID) measures may be used to achieve the goal of retaining or reusing the first inch of rainfall, subject to review and approval of the Department of Public Works and Environmental Services (DPWES). Staff finds that these revisions, combined with the plan changes discussed below, are in harmony with the Comprehensive Plan.

*Noise Impacts*

Proffer 95 has been revised to specify that noise studies will be submitted to the Chief of the Environment and Development Review Branch (EDRB) of the Department of Planning and Zoning (DPZ) and to DPWES. The EDRB Chief will determine whether such studies ensure compliance with County policy.

*Tree Canopy*

As recommended in the staff report, the applicant has revised Proffer 103 to commit to post a bond equal to 50% of the value of trees greater than 12 inches in diameter that are located within 25 feet of the limits of disturbance for Building A1.

Plan Changes (CDP/FDPs)

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As noted earlier in this addendum, the applicant has submitted a revised CDP entitled *Arbor Row* and three revised FDPs, including: *Arbor Row – Block A; The Association of Manufacturing Technology, Arbor Row – Block F;* and *Arbor Row – Block E.* All four of these plans are revised through October 5, 2012.

*Modifications and Waivers*

The applicant has revised the list of requested modifications and waivers to include only those modifications and waivers that are supported by staff.

*Stormwater Management*

The applicant has removed notes from the Block A and Block E FDP stating that amount of rainfall to be retained or reused on site would be subject to change at final design. A new note has been added to the CDP and all three FDPs stating that the applicant will work with the County to retain the first inch of rainfall to the extent practicable. The note also states that the applicant may use any combination of LID measures to meet the first inch goal, subject to DPWES approval at the time of site plan. Staff finds that this note brings the applications into conformance with the Comprehensive Plan and that the proposed FDP conditions related to stormwater management that were included in the staff report are no longer necessary.

*Tree Canopy and Preservation Calculations*

The applicant has revised the tree canopy and tree preservation calculations on the CDP and FDPs as recommended in the staff report.

*Block A Fire Access*

The Fire Vehicular Access Exhibit on the Block A FDP has been revised to include a note stating that any buildings that are not of Construction Type 1 or 2 shall use non-combustible exterior materials. With the addition of this note, staff finds that the proposed FDP condition for Block A is no longer necessary.

*Block E Park*

The applicant has redesigned the Block E Park to address staff's concerns. Specifically, the walkway and a potential bioretention area have been relocated to allow for a larger contiguous lawn area.

*Block F Interim Westpark Drive Improvements*

The applicant has redesigned the proposed interim median of Westpark Drive east of Block F as recommended in the staff report. This interim design would only be constructed in the event that the communication cabinet associated with the I-495 Express Lanes is not removed by the Express Lanes project prior to redevelopment of Block F.

Modifications and Waivers

---

After the staff report was published, the applicant provided additional details and clarification for some of the requested modifications and waivers. Based on this new information, which has been provided in the plans and proffers, staff recommends approval of the following modifications and waivers in addition to those listed in the staff report.

- Modification to Allow Tandem and Valet Parking Spaces

The applicant seeks a modification of Par. 12 of Sect. 11-102 of the Zoning Ordinance to permit the use of tandem and valet spaces pursuant to the parking plan filed with the rezoning application. The applicant notes that tandem and valet spaces are commonly found in urban areas and provide for increased garage capacity and efficiency. Within the revised proffers, the applicant has now committed that *"tandem parking spaces may be used for residential units with two cars and in office and hotel buildings where spaces are assigned by building management."* With that commitment, staff can support the requested modification.

Staff recommends that the BOS modify Par. 12 of Sect. 11-102 of the Zoning Ordinance and Section 7-0800 of the Public Facilities Manual (PFM) to permit tandem and valet spaces to be counted toward the required parking only in those instances contained in the proffers.

- Modification of Location of Loading Space

The applicant seeks a modification of Par. 4 of Sect. 11-202 of the Zoning Ordinance which requires that no loading space or berth be located within 40 feet of the nearest point of intersection of the edges of the travelway or the curbs of any two streets. Specifically, a proposed loading area at the back of Building A-2 is located within 40 feet of the private street's intersection with Westbranch Drive. Staff has reviewed the location of this loading space and can support the requested modification.

Staff recommends that the BOS modify Par. 4 of Sect. 11-202 of the Zoning Ordinance to permit the loading space in Building A-2 as shown on the CDP.

- Modification of Frontage Improvements

The applicant seeks a modification of Par. 2 and 4 of Sect. 17-201 of the Zoning Ordinance which require the construction of trails and street improvements indicated on the Comprehensive Plan. This request is specifically for the interim street improvements proposed adjacent to Block F which would be constructed only if the Express Lanes communications cabinet is not removed prior to the redevelopment of Block F. The applicant is committing to construct the ultimate improvements after the communications cabinet has been removed. The applicant has also revised the design of these interim street improvements to be consistent with staff's recommendations. Staff supports the requested modification.

Staff recommends that the BOS modify Par. 2 and 4 of Sect. 17-201 of the Zoning Ordinance to permit the interim road improvements along the Block F frontage as shown on the CDP and discussed in the proffers.

- Modification of Parking Geometric Standards

The applicant seeks a modification of Sect. 7-0800.2 of the PFM, which sets the minimum dimensions for parking spaces. Specifically, the applicant is requesting that the stall width be reduced by up to 1.5 feet to allow for the projection of structural columns for up to 10% of the parking spaces provided. With these limits on the extent of the projection and number of spaces that may be impacted, staff supports the requested modification.

Staff recommends that the BOS modify Sect. 7-0800.2 of the PFM to allow up to 1.5 feet of structural columns to project into the required parking stall area for no more than 10% of the total parking spaces provided.

- Modification of Tree Preservation Target

The applicant seeks a modification of the tree preservation target set forth in Sect. 12-0508. This request is based on allowable deviations listed in Sect. 12-0508.3 due to the density permitted by the Zoning Ordinance and due to the expected impacts based on construction methods. Staff notes that the applicant has revised the tree canopy coverage calculations to include an area of tree preservation in the RPA located on Block A. Staff supports the requested modification.

Staff recommends that the BOS modify the tree preservation target in Sect. 12-0508 of the PFM in favor of that shown on the plans and as proffered.

- Other Requested Waivers and Modifications

Staff believes that the remaining requested modifications and waivers listed on the CDP are unnecessary because the proposed plans meet the applicable Zoning Ordinance and PFM standards. The deviations from the PFM stormwater management design standards listed on the CDP should be evaluated at the time of site plan.

## CONCLUSION

Staff continues to recommend approval of this application. However, staff remains deeply concerned about the specific commitments to off-site stream improvements and the ability to withhold certain plan approvals and building permits if the stream improvements and athletic fields are not provided in the time frame specified in the proffers.

Staff will continue to work with the applicant to address these issues and is hopeful that resolution can be achieved prior to Planning Commission action on these applications.

## RECOMMENDATION

Staff recommends approval of PCA 88-D-005-07, subject to the execution of proffers consistent with those found in Appendix 1A of the staff report.

Staff also recommends approval of RZ 2011-PR-023, subject to execution of proffers consistent with those found in Attachment 1 of the staff report addendum (as may be amended to address outstanding issues).

Staff recommends approval of FDP 2011-PR-023, subject to the Board's approval of RZ 2011-PR-023.

Staff recommends approval of FDP 2011-PR-023-02, subject to the Board's approval of RZ 2011-PR-023.

Staff recommends approval of FDP 2011-PR-023-03, subject to the Board's approval of RZ 2011-PR-023.

Staff further recommends approval of the following waivers and/or modifications for these applications:

- Modification of Sect, 2-506, Par. 2 of the Zoning Ordinance in order to permit the proposed roof/roof screen feature element in Block F as depicted on the CDP/FDP;

- Waiver of Sect. 16-403 of the Zoning Ordinance in order to permit a public improvement plan for frontage improvements along Westpark and Westbranch Drive to be filed without the need for an FDP;

- Waiver of Sect. 6-505, Par. 7 of the Zoning Ordinance in order to permit outdoor displays and seating associated with a permitted use without the need for an FDP;

- Modification of Sect. 10-104, Par. 3E and G of the Zoning Ordinance to permit the maximum fence height associated with outdoor recreation/sports courts on Block to be between 7 and 14 feet height as depicted on the CDP;

- Modification of Sect. 11-102, Par. 12 of the Zoning Ordinance and Section 7-0800 of the Public Facilities Manual (PFM) to permit tandem and valet spaces to be counted toward the required parking only in those instances contained in the proffers;

- Modification of Sect. 11-201 and 11-203 of the Zoning Ordinance to permit the minimum required loading spaces to be two spaces per building as depicted on the CDP;

- Modification of Sect. 11-202, Par. 4 of the Zoning Ordinance to permit the loading space in Building A-2 as shown on the CDP;

- Modification of Sect. 13-202, Par. 8 of the Zoning Ordinance to permit the depicted trellises and/or vegetated arbors as shown on the CDP in lieu of the required interior parking lot landscaping;

- Modification of Sect. 13-202, Par. 8 of the Zoning Ordinance to permit the existing parking lot landscaping as depicted on the CDP and described in the proffers to serve as the interior parking lot landscaping on an interim basis;

- Modification of Sect. 13-202, Par. 8 of the Zoning Ordinance to permit the landscaping within the amenity courtyard of Block E in lieu of the interior parking lot landscaping requirement;

- Modification of Sect. 13-203, Par. 5 of the Zoning Ordinance to permit the landscaping depicted on the above-grade parking structures and within the interim surface parking lots as shown on the CDP and described in the proffers;

- Modification of Sect. 17-201, Par. 2 and 4 of the Zoning Ordinance to permit the interim road improvements along the Block F frontage as shown on the CDP;

- Waiver of Sect. 17-201, Par. 3B of the Zoning Ordinance to permit only those areas of interparcel access shown on the CDP/FDPs and described in the proffers to be provided;

- Waiver of Sect. 17-201 Par. 3B, 4, 12, 13, and 14 of the Zoning Ordinance to permit the proposed Jones Branch Drive frontage improvements along Tax Map Parcel 29-2 ((15)) B2 as depicted on Exhibit A of the proffers;

- Modification of Sect. 7-0800.2 of the PFM to allow up to 1.5 feet of structural columns to project into the required parking stall area for no more than 10% of the total parking spaces provided;

- Modification of the tree preservation target in favor of that shown on the plans and as proffered; and

- Waiver to allow the use of underground stormwater management and best management practices in a residential development, subject to Waiver #6377-WPFM-004-1.

It should be noted that it is not the intent of staff to recommend that the Board, in adopting any conditions proffered by the owner, relieve the applicant/owner from compliance with the provisions of any applicable ordinances, regulations, or adopted standards.

It should be further noted that the content of this report reflects the analysis and recommendations of staff; it does not reflect the position of the Board of Supervisors.

ATTACHMENTS:

1. Revised Proffers dated October 10, 2012
2. Revised CDP and three FDPs dated October 5, 2012

ATTACHMENT 1

# *RZ 2011-PR-023*

# *ARBOR ROW*

# *PROFFER STATEMENT*

***September 14, 2011***
***February 24, 2012***
***May 25, 2012***
***July 23, 2012***
***August 31, 2012***
***September 10, 2012***
***October 10, 2012***

Cityline
PARTNERS

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## EXHIBITS

Exhibit A: Playing Fields and Public Facilities Exhibit
Exhibit B: Cover Sheet and Table of Contents of TDM Plan, dated August 31, 2012

**ARBOR ROW**
**RZ 2011-PR-023**

**PROFFER STATEMENT**
**September 14, 2011**
**February 24, 2012**
**May 25, 2012**
**July 23, 2012**
**August 31, 2012**
**September 10, 2012**
**October 10, 2012**

Rezoning Application RZ 2011-PR-023 (the "Rezoning") has been filed by and on behalf of (i) CITYLINE PARTNERS LLC, as applicant, (ii) FRANKLIN 7903 WESTPARK LLC, GRAYSON 7913 WESTPARK LLC, CAMPBELL-SCOTT WESTPARK LLC, ESSEX 7929 WESTPARK LLC and FREDERICK 8003 WESTPARK LLC, as owners of land identified as Fairfax County Tax Map Parcels 29-4-((7))-1, -2, -3, -9 and -10 (collectively the "Cityline Property"), (iii) AMT-THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY, as owner of land identified as Fairfax County Tax Map Parcel 29-4-((7))-5A (the "AMT Property"), and (iv) the BOARD OF SUPERVISORS OF FAIRFAX COUNTY, VIRGINIA (the "Board"), as owner of an approximately 3,428 square foot portion of the Westbranch Drive right-of-way proposed for future abandonment and/or vacation. Such right-of-way, together with the Cityline Property and the AMT Property, are referred to collectively as the "Subject Property." The Rezoning seeks to rezone the Subject Property from the C-3 (proffered), SC and HC Districts to the PTC-Planned Tysons Corner Urban ("PTC"), SC and HC Districts.

Pursuant to Sect. 15.2-2303(A) of the Code of Virginia (1950), as amended, and Sect. 18-204 of the Zoning Ordinance of Fairfax County (1978), as amended, the applicant and the property owners on behalf of themselves and their respective successors and/or assigns (referred to hereafter, both collectively and, where appropriate, individually as the "Applicant"), hereby proffer that redevelopment of the Subject Property shall be in accordance with the following conditions (the "Proffers") if, and only if, the Rezoning, as proposed by the Applicant, is granted by the Board. If the Rezoning is granted by the Board, these Proffers shall replace and supersede any and all existing proffered conditions applicable to the Subject Property. In the event the Rezoning is denied by the Board, these Proffers shall immediately be null and void and the previous proffered conditions shall remain in full force and effect.

## GENERAL

1. Substantial Conformance. Subject to the Proffers and the provisions of Sect. 6-500, Sect. 16-400 and Sect. 18-204 of the Zoning Ordinance of Fairfax County, as amended (the "Zoning Ordinance"), the Subject Property shall be developed in substantial conformance with the proffered elements of the Arbor Row Conceptual Development Plan ("CDP") dated April 26, 2011, as revised through October 5, 2012, and prepared by Bowman Consulting Group, Ltd.,

WDG Architecture, PLLC, Shalom Baranes Associates, P.C., KGD Architecture and Parker Rodriguez, Inc., and as further modified by these Proffers.

2. Redevelopment of Blocks A through F. The Subject Property is divided into six (6) separate redevelopment "Blocks," which are identified on the CDP as Blocks A through F. Development of each Block may proceed in any order, provided that each such Block provides the phasing conditions depicted for such Block on the CDP and that all Proffers that apply to such Block are addressed with the redevelopment of that Block. Where a Proffer establishes an obligation that applies to redevelopment of a specific Block, reference to the "Applicant" in such Proffer shall mean the party undertaking the redevelopment of such Block.

3. Proffered CDP Elements. The proffered elements of the CDP are limited to the grid of streets, the general location of the points of access to each Block of the proposed redevelopment, the general location of the buildings, mix of uses, the build-to lines, the overall maximum gross floor area ("GFA") for the Subject Property, the minimum and maximum building heights, the minimum amount and general location of publicly-accessible urban park land as may be applicable for each Block and the general quality and character of the streetscape along the public and private streets within and abutting the Subject Property and as otherwise specified in these Proffers. Other elements of the CDP may be adjusted or modified with future Final Development Plan ("FDP") approvals in accordance with Sect. 16-402 of the Zoning Ordinance.

4. Minor Modifications to the CDP. In addition to adjustment of GFA among and within uses and buildings in certain Blocks as provided for below, minor modifications to the CDP may be permitted as determined by the Zoning Administrator, including the flexibility to modify the layout shown on the CDP for each respective Block, without requiring approval of an amended CDP, provided such modifications are in substantial conformance with the CDP and these Proffers and do not affect the proffered elements of the CDP as specified in these Proffers. Building envelopes and the number of units, rooms, floors and square footage within and among the buildings may be adjusted as set forth on the CDP and in these Proffers, as long as (i) the build-to lines shown on the CDP are maintained; (ii) the minimum and maximum number of residential units and the minimum and maximum building heights comply with those indicated on the CDP and in these Proffers; and (iii) the redevelopment otherwise is in substantial conformance with the CDP and these Proffers.

5. Severability and Future PCA/CDPA/FDP/FDPA/SE/SP Applications. Any one or more of the individual Blocks A through F as shown on the CDP may be the subject of a separate Proffered Condition Amendment ("PCA"), Conceptual Development Plan Amendment ("CDPA"), Final Development Plan ("FDP"), Final Development Plan Amendment ("FDPA"), Special Exception ("SE"), Special Permit ("SP"), variance and/or other similar land use applications, without joinder and/or consent of the owners of any of the other Blocks, provided such application will not change or cause or require a change to the general layout, physical improvements and/or access for another Block. In addition, pursuant to Par. 6 of Sect. 18-204 of the Zoning Ordinance, any portion of any Block may be the subject of a separate PCA, CDPA, FDP, FDPA, SE, SP, variance and/or other similar land use applications, without joinder and/or

consent of the owners of the other portions of such Block or of any other Block, provided that such application does not materially or adversely affect the general layout, minimum and maximum building height, physical improvements and/or access for other portions of such Block or any other Block. All existing land use approvals that are applicable to the portion of the Subject Property not included in such PCA, CDPA, FDP, FDPA, SE, SP, variance and/or other similar land use applications shall otherwise remain in full force and effect as to such portion of the Subject Property.

6. Final Development Plans. FDP and FDPA approvals may be requested from the Planning Commission in accordance with Sect. 16-402 of the Zoning Ordinance with respect to each respective Block, or portion thereof, without obtaining the consent and/or joinder of the owners of any of the other Blocks. FDPs approved for individual Blocks or building sites on the Subject Property shall establish the maximum GFA for each Block or building shown on the FDP, within the limits established by these Proffers and the CDP, including adjustments between buildings as set forth in these Proffers and on the CDP. The specific GFA for each building shall be established at the time of final site plan approval for such building; however, adjustments between buildings on Blocks A through E may be permitted as set forth in these Proffers and on the CDP.

7. Final Development Plan Information. The following Final Development Plans have been filed concurrently with this Rezoning Application: FDP 2011-PR-023 for Block A, FDP 2011-PR-023-3 for Block E and FDP 2011-PR-023-2 for Block F. For all other FDP and FDPA Applications for all or any portion of the Subject Property not filed concurrently with this Rezoning Application, the following tabulations and information shall be provided:

A. A tabulation indicating the redevelopment status of the entire Subject Property. The tabulation shall include a listing of all existing and proposed buildings, along with the GFA and uses approved on the CDP and all approved FDPs and any approved site plans. The tabulation shall identify the reassignment of any GFA within Blocks A through E (as compared with what was originally shown on the applicable CDP), exclusive of Block F, and shall be updated with each subsequent FDP, FDPA and site plan approved for the Subject Property.

B. A tabulation indicating the tree canopy calculations of the entire Subject Property, which shall be updated with each subsequent FDP, FDPA and site plan approved for the Subject Property.

C. The following information to supplement the requirements of the Zoning Ordinance: (i) a copy of the previous TDM Annual Report to determine progress toward attaining TDM goals and any planned modifications to the TDM Program; (ii) location of existing and proposed utilities to serve the area subject to such FDP, FDPA or site plan; (iii) vehicular sight distance lines at all intersections adjacent to the area subject to such FDP, FDPA or site plan based on existing posted/design speeds as well as future

design speeds, as established in the approved "Transportation Design Standards for the Tysons Corner Urban Center," dated September 13, 2011 (the "Transportation Design Standards"), as may be amended by the Board, except as waived or modified by the Virginia Department of Transportation ("VDOT") and/or FDCOT; and (iv) a comparison of the trip generation based on the Institute of Traffic Engineers, 8th Edition, Trip Generation rates and/or equations (the "ITE Trip Generation"), associated with the FDP or FDPA for the subject Block compared to those uses reflected for that Block in the Transportation Impact Analysis prepared by Wells & Associates, dated May 23, 2011, as revised December 2, 2011 ("TIA").

D. Adjustments to GFA within and between certain Blocks as provided in Proffer 10 and Proffer 12, respectively.

E. List of proposed uses as set forth in Proffer 13 and identified on the CDP and demonstration of how such uses meet the applicable "Use Limitations" of the PTC District.

F. Architectural elements and build-to lines as provided in Proffer 18 and Proffer 19.

G. Graphic depiction of, and any adjustments to, the activated streetscape elements as provided in Proffer 20.

H. Proposed parking garage façade treatments as provided in Proffer 21.

I. Building heights for Blocks B, C and D as provided in Proffer 22.

J. Detailed landscape plans as provided in Proffer 35 with alternative planting width details, as may be necessary as provided in Proffer 36.

K. Refinement of, and adjustments to, streetscape elements as provided in Proffer 38.

L. Provision of a preliminary utility plan overlaid over the landscape plan, including the location of any utility vaults and maintenance points to stormwater management facilities as provided in Proffer 40.

M. Submission of a "Streetscape Furnishing and Materials Plan" as provided in Proffer 42.

N. Identification of specific proposed phased improvements in accordance with those generally set forth on the phasing-related exhibits provided on Sheets C8.1 through C8.4 of the CDP (collectively, the "Phasing Sheets").

O. For on-site parks and active recreation facilities, depiction of special amenity features committed by Block as provided in Proffer 55.

P. Bicycle parking and storage and bicycle lane dimensions as provided in Proffer 82 and Proffer 83, respectively.

Q. Refinement of the number of parking spaces as provided in Proffer 84.

R. Identification of specific stormwater management facilities as provided in Proffer 94.

8. Fire Marshal. The Applicant has coordinated the layouts depicted on the CDP and the concurrent FDPs filed for Blocks A, E and F with the Fire Marshal. Further changes to the CDP and FDPs shall be permitted in response to the review of site plans by the Fire Marshal, including adjustments to the streetscape and perimeter building areas as necessary to allow for required emergency vehicle access, provided such modifications are made in consultation with the Fairfax County Department of Planning and Zoning ("DPZ"), and the Fairfax County Department of Transportation ("FCDOT") and the Office of Community Revitalization ("OCR") and are in substantial conformance with the intent of the CDP, FDPs and these Proffers.

## PERMITTED USES AND INTENSITY/DENSITY

9. Maximum Gross Floor Area ("GFA"). The maximum GFA permitted on the Subject Property is 2,575,685 square feet, inclusive of density bonuses, in a mix of land uses across Blocks A through F. Of this 2,575,685 square feet of GFA, 200,000 square feet of GFA shall be allocated to and reserved for Block F and the remaining 2,375,685 square feet shall be allocated and reserved for Blocks A through E, as shown on the CDP. The maximum GFA for office use on the Subject Property shall be 1,108,429, which includes the maximum 200,000 GFA for office use on Block F.

10. Adjustments to GFA in Blocks B, C and D. GFA may be adjusted among and within uses and buildings in Blocks B, C and D up to a maximum GFA equivalent of two floor plates, as listed on the CDP and depicted conceptually on the CDP, without requiring a PCA, CDPA or FDPA provided the maximum heights for each building are not exceeded, the minimum heights for these Blocks are maintained, the overall urban form and building types depicted on the CDP are maintained, and such adjustments are consistent with these Proffers. With respect to Blocks B, C and D, if the GFA approved with the FDP for a building is less than the maximum shown on the CDP for such building, or if the GFA approved with the site plan for such building is less than the maximum shown on the FDP, the excess GFA may be utilized in another building or buildings within Blocks B, C and D notwithstanding the notes on the CDP, provided the maximum heights for each building are not exceeded, the minimum heights and minimum total GFA for these Blocks, as described in the notes on the CDP, are maintained, the overall urban form and building types depicted on the CDP are maintained, such adjustments are consistent with these Proffers, and a tabulation identifying the GFA assigned to Block B, Block C and Block D is provided with each site plan for each Block. The GFA available for Blocks B,

C and D shall be established upon filing and approval of a site plan, based on when the site plan is filed and accepted for review by the County.

11. Residential Dwelling Units in Blocks A and E. Block A shall contain a minimum of 450 residential dwelling units and a maximum of 694 residential dwelling units. In the event that retail/service uses in Block A are converted to Live-Work Units, as described in Proffer 14, this maximum shall increase to 704 residential dwelling units. Block E shall contain a minimum of 430 residential dwelling units and a maximum of 480 residential dwelling units.

12. Adjustments to GFA within Block A. GFA may be shifted between the two residential buildings located within Block A provided the maximum height shown for each building is not exceeded, the overall urban form and building type as shown on the CDP and the approved FDP for Block A are maintained, and such adjustments are consistent with these Proffers. Within Block A, if at the time of site plan, the GFA approved for one residential building is less than the GFA shown on the approved FDP, the excess GFA may be utilized in the other residential building within Block A, provided the maximum heights for each building are not exceeded, the minimum heights and minimum total GFA for each building is maintained, the overall urban form and building types depicted on the CDP are maintained, and such adjustments are consistent with these Proffers.

13. Uses. The primary uses on the Subject Property shall be office, hotel and residential as identified on the CDP, with ancillary retail, services and other uses, including uses listed in the CDP notes and may include accessory uses and/or accessory service uses as defined in the Zoning Ordinance. "Retail/Services" as identified in the redevelopment tabulations on the CDP may include any non-residential use permitted by-right, by SE or by SP in the PTC District, exclusive of office, as limited by Sect. 6-505 "Use Limitations," including accessory uses and/or accessory service uses. Such retail/service uses may be provided generally within the ground floor (i.e., street level) of the proposed buildings; however such uses may also be provided within upper floors if shown on an FDP. The type, extent and location of all "Retail/Services" and other permitted uses shall be provided with the submission of the FDP for each Block.

14. Live-Work Units. The Applicant shall use good faith, commercially reasonable efforts to lease the spaces designated for non-residential uses in residential buildings. The occupancy of such areas with such a non-residential use shall not be a condition to issuance of Residential Use Permits ("RUPs") and/or Non-Residential Use Permits ("Non-RUPs") for other uses in any of the buildings on their respective Blocks or elsewhere on the Subject Property.

In the event that the Applicant is unsuccessful in leasing, at market rates and on market terms for non-residential tenants comparable to tenants in similar residential buildings and acceptable to the owner of the building, any of the non-residential GFA for the respective Blocks after a period of at least thirty-six (36) months after issuance of the first RUP for the building in which such non-residential GFA would be located, then such Applicant shall demonstrate its good faith, commercially reasonable marketing efforts to the Zoning Administrator who shall confirm that good faith, commercially reasonable efforts have been made. If the Zoning Administrator confirms that good faith, commercially reasonable efforts have been made,

thereafter such Applicant may utilize such spaces that have not been successfully leased as described above, for Live-Work Units, with such units counting as residential use as noted on the CDP. The retail or other non-residential component of such units may include any of the non-residential uses permitted in accordance with the notes on the CDP, except that the following non-residential uses shall not be permitted: tattoo parlors, pay day lenders, check cashing services, and adult-themed businesses that are obscene or indecent in nature. All Live-Work Units on the Subject Property shall be subject to all per residential dwelling unit contributions set forth in these Proffers, including transportation, workforce housing and school contributions, which contributions shall be paid prior to issuance of the applicable RUP and/or Non-RUP for the first user of each Live-Work Unit. A Live-Work Unit shall be defined as a combination of a private dwelling unit with retail or other non-residential use, with the dwelling unit occupied by the proprietor, storekeeper or employee and his/her family, of the non-residential use. These Live Work-Units shall be permitted without requiring approval of a PCA or CDPA; however, FDPA approval will be required prior to issuance of a RUP and/or Non-RUP for such Live-Work Units.

15. SE/SP Uses. Uses allowed by SE or SP in the PTC District may be authorized through the approval of a separate SE or SP application without the need for a PCA, CDPA, FDP, or FDPA, provided the use is in substantial conformance with the approved CDP and these Proffers.

16. Intensity/Density Reservation. All intensity/density attributable to land areas dedicated and/or conveyed at no cost to the Board or any other public entity pursuant to these Proffers (including, without limitation, the dedications referenced below) shall be subject to the provisions of Par. 4 of Sect. 2-308 of the Zoning Ordinance and is hereby reserved to the residue of the parcel of land from which it came.

17. Existing and Interim Structures and Uses. Existing structures and parking areas on Blocks A through F, as shown on the CDP, may be demolished or remain in use until such time as those portions of the Subject Property are redeveloped in accordance with this Rezoning, or as otherwise stated in these Proffers. Existing structures may not be modified or enlarged; however, minor structure additions may be approved by the Zoning Administrator pursuant to the provisions of Par. 4 of Sect. 16-403 of the Zoning Ordinance. Interior modifications to all existing structures shall be permitted. Any use that is permitted in the "C-3 Office District," including uses subject to SE and SP approval, shall be permitted on the Subject Property as an interim use subject to the Use Limitations in Sect. 4-304 of the Zoning Ordinance, including privately owned and operated commercial off-street parking and commuter parking, which shall be permitted upon notification to FCDOT and without PCA/CDPA/FDP/FDPA approval, as an interim use on the existing parking areas in Blocks A, B, C and/or D, at the sole discretion of the Applicant as to each respective Block and remain privately owned and operated at rates determined by the Applicant.

## ARCHITECTURAL DESIGN

18. Proffered Architectural Quality and Elements. Buildings shall create a sense of identity and place at a human scale through the use of unifying elements such as materials, textures, color, window treatments, detailing, lighting and landscaping. Buildings shall be designed of high-quality architecture and building materials that are typically used on the exterior of Class A office, residential and hotel buildings of a similar quality as conceptually depicted on the CDP, with architectural details provided at the time of FDP approval for the respective Blocks. No exterior insulation and finish systems (EIFS) shall be used, unless specifically approved by Fairfax County (the "County") with an FDP for an individual building or Block. Each FDP shall, for the Block on which that FDP is filed, specify the building materials, architecture, and specific features designed to activate streetscapes, as further described below. Architectural plans, elevations, illustrations, materials and heights may be revised subsequent to CDP and FDP approval as a result of final architectural and engineering design, provided the quality of design remains in substantial conformance with that shown on the CDP and subsequent FDPs and set forth in these Proffers, as determined by the Fairfax County Department of Public Works and Environmental Services ("DPWES") in consultation with DPZ or OCR without the need for administrative approval.

19. Build-To Lines. Build-to-lines ("BTL") have been depicted on the CDP to create an urban, pedestrian-oriented environment where buildings are located close to the adjacent street and pedestrian/streetscape areas are located between the buildings and the streets. In general, building façades are intended to be configured where possible to provide a continuous street wall along this line, but modifications to either side of the BTL shall be permitted provided they are in general conformance with the CDP and are shown on an approved FDP. Awnings, building signage and other architectural canopies attached to the building frontage that project out from the BTLs shall provide adequate clearance for pedestrian movement and shall not conflict with street tree locations. At the time of FDP approval, possible locations along the street level for outdoor dining adjacent to cafes and restaurants shall be identified, as applicable, and appropriate building zones for such uses shall be identified, as applicable.

20. Activated Streetscape. Buildings A-1, A-2, B, C-1, C-2, D, E and F, but not the parking garages associated with such buildings, shall generally be designed and constructed with ground floors having a minimum floor to floor height of 12 feet along Westpark Drive and Westbranch Drive to accommodate potential non-residential uses designed to activate the streetscape. In addition, a hierarchy of activated streetscapes shall be provided as delineated and described conceptually on the "Pedestrian Hierarchy Plan" presented on the CDP. The specific activation elements to be utilized for each building shall be included on the FDP for each Block.

A. Primary Pedestrian Corridors. "Primary Pedestrian Corridors" are intended to have the highest levels of pedestrian activity and interaction and typically have the widest streetscape and most animated building façades. Primary Pedestrian Corridors shall generally incorporate the

following elements, which can be adjusted at the time of FDP approval for each respective Block:

i. Where the ground floors of buildings (not including the associated parking garages which are addressed below) incorporate non-residential uses, functioning entry doors into such uses shall be provided with a maximum separation of 75 feet, unless a greater separation is needed to accommodate larger tenant spaces, topographical features or as may be approved by the Zoning Administrator. A minimum of fifty percent (50%) of the area of the street front ground floor façades of such buildings shall be constructed with glazed windows and doors or other transparent, translucent materials.

ii. Parking garages and loading/trash/service areas along the ground floor façades shall incorporate screening composed of architectural and/or landscaping treatments designed to mitigate views into the structures from street level, or the general façade detailing of the building above such areas may be continued to the ground plane.

iii. Except for Block F, access to parking garages and loading/trash/service areas shall not be provided directly from Westpark Drive but may be provided from internal private streets that connect to Westpark Drive.

iv. Loading/trash/service areas shall be screened, to the extent reasonably practicable, from public view through the use of roll down doors, recessed entryways and/or similar treatments.

B. Secondary Pedestrian Corridors. "Secondary Pedestrian Corridors" typically have significant pedestrian volumes and generally are used for pedestrian movement as opposed to pedestrian interaction. Some retail activity may occur in these corridors, but generally it will be neighborhood-serving. Residential and civic uses should have their entrances facing Secondary Pedestrian Corridors which generally have wide streetscapes and significant building façade animation in proximity to such entrances. Secondary Pedestrian Corridors generally shall incorporate the following elements, which can be adjusted at the time of FDP approval for each respective Block:

i. Where the ground floors of buildings (not including the associated parking garages which are addressed below) incorporate non-residential uses, functioning entry doors into such uses shall be provided with a maximum separation of 75 feet, unless a greater separation is needed to accommodate larger tenant spaces,

topographical features or as may be approved by the Zoning Administrator. A minimum of thirty-five percent (35%) of the area of the street front ground floor façades of such buildings shall be constructed with glazed windows and doors or other transparent, translucent materials.

ii. In portions of residential buildings (not including the associated parking garages which are addressed below) that do not incorporate non-residential uses on part or all of the ground floors, the building design of the primary façades shall incorporate, to the degree feasible, leasing offices, lobbies, recreational and amenity spaces on the ground floor with a minimum of thirty-five percent (35%) of the ground floor façade constructed with glazed windows and/or doors or other transparent, translucent materials, and/or incorporate entries into individual dwelling units from the street level. Residential units that have direct access to the streetscape from an individual unit shall use design features to provide interior privacy (such as having a ground floor elevation that is above the sidewalk grade or through the use of landscape buffers), except conditions where Live-Work Units may be permitted as provided in Proffer 14, combining work areas open to the public with residential areas.

iii. Parking garages and loading/trash/service areas along the ground floor façades shall have screening composed of architectural and/or landscaping treatments designed to restrict views into the parking garages from street level or the general façade detailing of the building above may be continued to the ground plane.

iv. If access to parking garages and loading/trash/service areas are provided along secondary pedestrian corridors then loading/trash/service areas shall be screened from public view through the use of roll down doors, recessed entryways and/or similar treatment.

C. Tertiary Pedestrian Corridors. "Tertiary Pedestrian Corridors" are intended to accommodate modest pedestrian activity-making connections to less intense areas or through alleys. Tertiary Pedestrian Corridors shall incorporate the following elements, which can be adjusted at the time of FDP approval for each Block:

i. Where the ground floors of buildings (not including the associated parking garages which are addressed below) incorporate non-residential uses, a minimum of twenty percent (20%) of the area of the ground floor façades of such buildings shall be constructed

with glazed windows and doors or other transparent, translucent materials.

ii. In residential buildings (not including the associated parking garages which are addressed below) that do not incorporate non-residential uses on part or all of the ground floors, efforts shall be made to incorporate recreational and amenity spaces on the ground floor with appropriate transparency and/or incorporate entries into individual dwelling units from the street level. Residential units that have direct access to the streetscape from an individual unit shall utilize design features to provide interior privacy (such as having a ground floor elevation that is above the sidewalk grade or through the use of landscape buffers).

iii. Parking garages and loading/trash/service areas along the ground floor façades shall have screening composed of architectural and/or landscaping treatments designed to restrict views into the parking garages from street level, or the general façade detailing of the building above may be continued to the ground plane.

iv. Access to parking garages and loading/trash/service areas may be provided along tertiary pedestrian corridors and from the adjacent private alleys. Loading/trash/service areas shall be screened from public view through the use of roll down doors, recessed entryways and/or similar treatment.

21. Parking Structure Façade Treatments. Parking garage façade design features shall be depicted on the FDPs for each Block and shall be designed to provide a pleasant and attractive experience along the streetscape in accordance with the following:

A. At and above the street level, screening composed of architectural systems and/or landscaping designed to minimize views into the garage parking spaces from street level shall be applied.

B. Where garage space is located beneath a tower element, in some instances, the general façade detailing of the tower above may be continued down to the top of the retail level storefront.

C. Retail signage and/or architectural elements may be extended above the street level to provide a variety of storefront experiences, as may be permitted by the Zoning Ordinance and/or a future Comprehensive Sign Plan.

D. Areas of above-grade parking decks may be wrapped by active uses at the ground floor to screen the garage areas from street view.

E. Areas of above-grade garages located between towers shall also be treated architecturally and/or with landscaping.

F. For purposes of this Proffer, materials to treat parking garage façades may include, but not be limited to: metal framing systems with inserted panels of wire mesh, metal, glass, natural vegetation or other materials; precast concrete or masonry elements; vegetative screening systems; glass stair towers and elevators, or other systems approved at the time of FDP.

22. Minimum and Maximum Building Heights. Building heights shall not exceed the maximum heights identified on the CDP for each Block as measured from the average grade. Final building and podium heights shall be determined at the time of site plan approval, and may be less than the maximum height shown on the CDP, provided that the buildings retain a compatible urban form to that shown on the CDP and that the average roofline of the primary building or buildings on each Block are not less than minimum heights shown in the CDP tabulations. For residential buildings, maximum building heights shall include penthouses and all rooftop structures. For non-residential buildings, structures that are excluded from the maximum height regulations as set forth in Sect. 2-506 of the Zoning Ordinance may be constructed to a height not to exceed thirty (30) feet above the roof level of the top floor of the building; all building penthouses and rooftop structures shall be integrated into the architecture of the building, and the height and extent of any rooftop penthouse shall be provided on the FDP for each respective Block and/or buildings.

23. Rooftop Telecommunications Equipment and Mechanical Units. Telecommunications equipment, mechanical units and all appurtenant facilities may be placed on the rooftop of any building. Any such facilities must comply with the applicable requirements of the Zoning Ordinance and be screened and/or set back sufficiently from the perimeter of the roof and penthouse such that they are generally not visible from the surrounding streets at street level when viewed from the property line of the Subject Property. Screening measures may, without limitation (i) include screening with architectural features and/or landscaping compatible with the building façade architecture, (ii) include the facilities as part of the architecture of the buildings, (iii) utilize compatible colors, or (iv) employ telecommunication screening material and flush-mounted antennas. Telecommunications equipment also may be architecturally integrated onto the façades of the building where necessary to ensure on-street and/or open space coverage. Rooftop amenities such as amenity terraces, landscaping or recreation courts may also be used to screen rooftop telecommunications equipment and mechanical units.

24. Trellises and Arbors. As shown conceptually on the CDP, the main trellis structures may be located along Westpark Drive and may consist of, but shall not be limited to, materials such as steel or aluminum, concrete or similar materials/systems. The height of the main trellis structures shall range from approximately 12 to 22 feet and generally be compatible with the height of the retail podium. As determined by the Applicant, additional trellis-type structures may be located throughout the Subject Property as architectural features. Arbor structures which incorporate natural vegetation as a shading device may be located on the top decks of parking garages in Blocks B, C, D and F (in lieu of interior parking lot landscaping if

approved by the Board) and, as determined by the Applicant, may be located elsewhere on the Subject Property as architectural design features and/or shading devices. Such arbors shall consist of, but shall not be limited to, materials such as steel or aluminum, wood, concrete or other similar materials/systems.

## GREEN BUILDING AND SUSTAINABLE ENERGY PRACTICES

25. LEED Equivalents and Conflicts. All references in these Proffers to the U.S. Green Building Council ("USGBC") shall also and equally apply to such other green building certifying entities selected by the Applicant as to each respective Block in connection with redevelopment of the buildings on each Block, provided such alternative certifying entity is acceptable to the County. All references in these Proffers to a Leadership in Energy and Environmental Design ("LEED") rating system shall also and equally apply to such other LEED or similar rating system determined to be applicable by the USGBC or such alternative certifying entity. In the event a LEED or LEED equivalent requirement (i.e. prerequisite) precludes compliance with other applicable building code or other legal requirements, as determined by DPWES, construction of the buildings on each respective Block may, at the option of the party constructing such building, comply with such other applicable building code or other legal requirement, and in such case, shall not be required to comply with the conflicting LEED or LEED equivalent requirement.

26. Block F Office Green Building Practices. With Block F, the Applicant shall include a LEED accredited professional ("LEED-AP") as a member of the design team for Block F. The LEED-AP shall work with the design team for Block F to incorporate design elements under the USGBC's LEED Core and Shell ("LEED-CS") rating system into the office building to be constructed on Block F. At the time of site plan submission for Block F, the Applicant shall provide documentation to the Environmental and Development Review Branch ("EDRB") of DPZ, demonstrating compliance with the commitment to engage such a professional. The Applicant has registered the office building to be constructed on Block F with the USGBC under the 2009 version of the LEED-CS rating system. In the event the USGBC establishes a newer version of the LEED-CS rating system, the Applicant shall have the option to: 1) proceed under the 2009 version of the LEED-CS rating system, so long as the USGBC continues to administer such version, or 2) proceed under the newer version of the LEED-CS rating system. The Applicant will include, as part of the site plan submission and building plan submission for the office building to be constructed on Block F, a list of specific credits within the applicable LEED-CS rating system that it anticipates attaining for the office building on Block F. The LEED-AP, who is also a professional engineer or licensed architect, will provide statements at both the time of site plan review and the time of building plan review confirming that the items on the list will meet at least the minimum number of credits necessary to attain LEED Silver certification for the office building to be constructed on Block F. In addition, prior to site plan approval for Block F, the Applicant will designate the Chief of the EDRB as a team member in the USGBC's LEED online system with respect to the office building on Block F. This team member will have privileges to review the project status and monitor the progress of all documents submitted by the project team, but will not be assigned responsibility for any LEED

credits and will not be provided with the authority to modify any documentation or paperwork. Prior to building plan approval for the office building to be constructed on Block F, the Applicant shall provide documentation to EDRB demonstrating that the office building on Block F has applied for LEED Gold pre-certification under the applicable LEED-CS program. Prior to release of the bond for the office building on Block F, the Applicant shall provide documentation to the EDRB demonstrating the status of attainment of LEED certification or a higher level of certification from the USGBC for the office building on Block F. If the Applicant is unable to provide the precertification documentation prior to building plan approval, but does anticipate receiving the documentation prior to the attainment of LEED certification, it may, prior to the issuance of the building permit, post an escrow identical to the one described in Proffer 27 below. This escrow will be released upon the Applicant's submission of documentation from the USGBC to the EDRB demonstrating that the office building on Block F is anticipated to attain a sufficient number of credits to attain LEED Gold certification.

27. Block F Alternative Green Building Escrow. As an alternative to the actions outlined in Proffer 26 above, or if the USGBC's pre-certification documentation indicates that the office building to be constructed on Block F is not anticipated to attain LEED Gold certification, the Applicant shall execute a separate agreement and post a "Green Building Escrow" in the form of cash or a letter of credit from a financial institution acceptable to DPWES as defined in the Fairfax County Public Facilities Manual ("PFM") or a surety bond from a financial institution licensed to do business in Virginia in the amount of $2.00 per gross square foot of GFA for the office building to be constructed on Block F. The Green Building Escrow will be in addition to, and separate from, other bond requirements and will be released upon demonstration of the attainment of LEED Silver certification, or a higher level of certification, by the USGBC under the applicable version of the LEED-CS rating system. The provision to the EDRB of documentation from the USGBC that the office building on Block F has attained LEED Silver certification will be sufficient to satisfy this commitment. The Green Building Escrow shall be released in accordance with the following: 1) if the Applicant provides to the EDRB, within three years of the issuance of the first tenant Non-RUP for the office building on Block F, documentation demonstrating that LEED Silver certification for the office building on Block F has been attained, the entirety of the Green Building Escrow shall be released to the Applicant who posted the Green Building Escrow, 2) if the Applicant provides to the EDRB, within three years of the issuance of the first tenant Non-RUP for the office building on Block F, documentation demonstrating that LEED Silver certification for such office building has not been attained but that such office building has been determined by the USGBC to fall within three points of attainment of LEED Silver certification, 50% of the Green Building Escrow shall be released to the Applicant who posted the Green Building Escrow; the other 50% shall be released to Fairfax County and will be posted to a fund within the County budget supporting the implementation of County environmental initiatives, and 3) if the Applicant fails to provide to the EDRB, within three years of the issuance of the first tenant Non-RUP for the office building on Block F, documentation demonstrating the attainment of LEED Silver certification or demonstrating that the office building on Block F is within three points of LEED Silver certification, the entirety of the Green Building Escrow shall be released to Fairfax County and will be posted to a fund within the County budget supporting the implementation of County

environmental initiatives. If the Applicant provides evidence that such LEED-CS certification has been delayed through no fault of its own or of its contractors or subcontractors, the time frame may be extended as determined appropriate by the Zoning Administrator, and no release of escrowed funds shall be made to the Applicant or to the County during this extended time frame.

28. Blocks B, C and D Green Building Practices. A LEED-AP professional shall be included as a member of the design team for Blocks B, C and D, respectively. The LEED-AP shall work with the design teams for Blocks B, C and D to incorporate appropriate LEED design elements for each building, under a version of the LEED rating system available at the time of registration, into the office and hotel buildings to be constructed on Blocks B, C and D. At the time of site plan submission, documentation shall be provided to the EDRB demonstrating compliance with the commitment to engage such a professional. In addition, prior to site plan approval for their respective Blocks, the Chief of the EDRB shall be designated as a team member in the USGBC's LEED online system for each proposed office and hotel building. This team member will have privileges to review the project status and monitor the progress of all documents submitted by the project team, but will not be assigned responsibility for any LEED credits and will not be provided with the authority to modify any documentation or paperwork.

As part of the building plan submission for each office and hotel building to be constructed on their respective Blocks, a list of specific credits within a version of the LEED rating system available at the time of registration (or such other rating system as may be applicable under Proffer 25) that is anticipated to be attained for such office and hotel building shall be included. The LEED-AP who is a professional engineer or licensed architect will provide certification statements at the time of site plan review and building plan review, confirming that the items on the list will meet at least the minimum number of credits necessary to attain LEED Silver certification for the subject office and hotel building. Each building on their respective Blocks may be pursued separately, and certification pursuant to this Proffer or the alternative provided below may be pursued on a building-by-building basis.

Prior to final building plan approval, documentation shall be submitted to the EDRB for their respective Blocks demonstrating that the subject office or hotel building has applied for at least LEED Gold pre-certification under LEED-CS or the building is anticipated to attain a sufficient number of design-related credits that, along with the anticipated construction-related credits, will be sufficient to attain LEED Gold certification under LEED-New Construction ("LEED-NC"). Prior to release of the bond for the subject office or hotel building, documentation shall be provided to the EDRB for their respective Blocks demonstrating the status of attainment of LEED Gold or a higher level of certification from the USGBC for the office or hotel buildings on their respective Blocks. If either the pre-certification or design phase review documentation cannot be provided prior to building plan approval, but it is anticipated that the documentation will be received prior to the attainment of LEED certification, then prior to the issuance of the building permit, an escrow identical to the one described in Proffer 29 below may be posted. This escrow will be released upon the submission of documentation to the EDRB from the USGBC demonstrating that the office or hotel building is anticipated to either

attain a sufficient number of credits to attain LEED Gold pre-certification or the building is anticipated to attain a sufficient number of design-related credits that, along with the anticipated construction-related credits, will be sufficient to attain LEED Gold certification under LEED-NC.

29. Blocks B, C and D Alternative Green Building Escrow. As an alternative to the actions outlined in Proffer 28 above, or if the USGBC's pre-certification or design phase review indicates that the office or hotel building to be constructed on Blocks B, C and D is not anticipated to attain LEED Gold certification, then, a separate agreement shall be executed for that office or hotel building, a "Green Building Escrow" in the form of cash or a letter of credit from a financial institution acceptable to DPWES as defined in the PFM or a surety bond from a financial institution licensed to do business in Virginia, in the amount of $2.00 per gross square foot of GFA shall be posted for that office or hotel building. This Green Building Escrow will be in addition to, and separate from, other bond or escrow requirements for the subject building and shall be released upon demonstration of attainment of certification by the USGBC under any available version at the time of such Applicant's registration in a LEED rating system. The provision to the EDRB of documentation from the USGBC that each office or hotel building has attained LEED Silver or higher certification will be sufficient to satisfy this commitment. The Green Building Escrow shall be released in accordance with the following: 1) if the Applicant provides to the EDRB, within three years of the issuance of the first tenant Non-RUP for each office or hotel building, documentation demonstrating that LEED Silver certification for such building has been attained, the entirety of the Green Building Escrow shall be released to the Applicant who posted the Green Building Escrow, 2) if the Applicant provides to the EDRB, within three years of the issuance of the first tenant Non-RUP for such building, documentation demonstrating that LEED Silver certification for such building has not been attained but that such building has been determined by the USGBC to fall within three points of attainment of LEED Silver certification, 50% of the Green Building Escrow shall be released to the Applicant who posted the Green Building Escrow; the other 50% shall be released to Fairfax County and will be posted to a fund within the County budget supporting the implementation of County environmental initiatives, and 3) if the Applicant fails to provide to the EDRB, within three years of the issuance of the first tenant Non-RUP for such building, documentation demonstrating the attainment of LEED Silver certification or demonstrating that such building is within three points of LEED Silver certification, the entirety of the Green Building Escrow shall be released to Fairfax County and will be posted to a fund within the County budget supporting the implementation of County environmental initiatives. If evidence is provided that such LEED Silver or higher certification has been delayed through no fault of the Applicant, the time frame may be extended as determined appropriate by the Zoning Administrator, and no release of escrowed funds shall be made to the Applicant or to the County during this extended time frame.

30. Blocks A and E Residential Green Building Practices. A LEED-AP professional shall be included as a member of the design team for Blocks A and E, respectively. The LEED-AP shall work with the design team to incorporate design elements under a version of the LEED-NC rating system available at the time of such Applicant's registration into the residential buildings to be constructed on Blocks A and E. At the time of site plan submission,

documentation shall be provided to the EDRB demonstrating compliance with the commitment to engage such a professional. In addition, prior to site plan approval for these respective Blocks, the Chief of the EDRB shall be designated as a team member in the USGBC's LEED online system with respect to such building. This team member will have privileges to review the project status and monitor the progress of all LEED-related documents submitted to the Green Building Certification Institute by the project team, but will not be assigned responsibility for any LEED credits and will not be provided with the authority to modify any documentation or paperwork.

As part of site plan and building plan submission for each residential building to be constructed on their respective Blocks, a list of specific credits within a version of the LEED-NC rating system available at the time of registration (or such other rating system as may be applicable pursuant to Proffer 25), which is anticipated to be attained for such residential building shall be provided. Except as otherwise provided below as an alternative, the LEED-AP, who is a professional engineer or licensed architect, will provide certification statements at the time of site plan review and building plan review, confirming that the items on the list will meet at least the minimum number of credits necessary to attain LEED-NC certification for the subject residential building. Each building on the respective Blocks may be registered separately and certification may be pursued pursuant to this Proffer or the alternative provided below on a building-by-building basis.

Prior to the building plan approval, a separate agreement shall be executed for each building, and a "Green Building Escrow," in the form of cash or a letter of credit from a financial institution acceptable to DPWES as defined in the PFM or a surety bond from a financial institution licensed to do business in Virginia shall be posted in the amount of $2.00 per square foot of GFA for the building. This Green Building Escrow will be in addition to, and separate from, other bond or escrow requirements and shall be released upon demonstration of attainment of LEED-NC certification, by the USGBC under the project's registered version of the LEED-NC rating system or other LEED rating system determined by the USGBC to be applicable to each building. The provision to the EDRB of documentation from the USGBC that each residential building has attained LEED-NC certification shall be sufficient to satisfy this commitment. At the time LEED-NC certification is demonstrated to the Environmental Review Branch, the escrowed funds shall be released and returned to the Applicant who posted such Green Building Escrow, as applicable.

If the Environmental Review Branch receives, within three (3) years of issuance of the final RUP for the subject residential building, documentation demonstrating that LEED-NC certification for such building has not been attained but that such building has been determined by the USGBC to fall within three (3) points of attainment of LEED-NC certification, 50% of the Green Building Escrow shall be released and returned to the Applicant who posted such Green Building Escrow, as applicable, and the other 50% shall be released to the County and will be posted to a fund within the County budget supporting implementation of County environmental initiatives.

If, within three (3) years of issuance of the final RUP for such building, documentation fails to be provided to the EDRB demonstrating the attainment of LEED-NC certification or demonstrating that the building has fallen short of LEED-NC certification by more than three (3) points, the entirety of the Green Building Escrow for that building shall be released to the County and will be posted to a fund within the County budget supporting the implementation of County environmental initiatives.

If documentation fails to be provided from the USGBC demonstrating, to the satisfaction of the Environmental Review Branch, that USGBC completion of the review of the LEED-NC certification application has been delayed through no fault of the Applicant, the proffered time frame may be extended as determined appropriate by the Zoning Administrator, and no release of escrowed funds shall be made during the extension.

31. Blocks A and E Residential Green Building Alternative. As an alternative to the actions outlined in Proffer 30 above, a certification level higher than LEED certification may be pursued, in which case a LEED-AP will provide certification statements at the time of site plan and building plan review confirming that the items on the list of specific credits will meet at least the minimum number of credits necessary to attain LEED-NC Silver certification.

Prior to building plan approval for the building to be constructed, documentation shall be submitted to the EDRB regarding the USGBC's preliminary review of design-oriented credits in the LEED program. This documentation will demonstrate that the building is anticipated to attain a sufficient number of design-related credits that, along with the anticipated construction-related credits, will be sufficient to attain LEED-NC Silver certification. Under this alternative, a "Green Building Escrow" shall not be required unless the above referenced documentation that the building is anticipated to attain LEED-NC Silver certification fails to be provided.

32. Additional Sustainable Energy Practices. The minimum energy performance criteria may be satisfied by the residential and office buildings through meeting their respective LEED requirements, but LEED requirements may be satisfied on a Block with any mix of credits. To further promote efficient, renewable and sustainable energy practices, the following shall be provided by the Applicant for each of the buildings located within a Block:

A. Electric Vehicle Charging Infrastructure. In each Block, a minimum of one (1) recharging station that serves two (2) parking spaces for electric cars and conduit to facilitate additional future recharging stations shall be provided.

B. Shared Energy. For any Site Plan that includes more than one building, provide an assessment of the potential, within the area subject to the Site Plan, of shared energy systems, including but not limited to combined heat and power ("CHP") (co-generation), micro-CHP, distributed energy resources, and district heating and/or cooling, and, if a shared energy

strategy will not be pursued, provide a narrative discussion regarding the reason(s) for this outcome.

C. Energy and Water Data. To the extent there are master electric, gas and water meters for entire buildings, upon request by the County, aggregated non-proprietary energy and water consumption data, as practicable, shall be provided to the County for the buildings within each respective Block as may be applicable.

**URBAN SITE DESIGN AND LANDSCAPING**

33. Site Design. The Subject Property shall be developed in substantial conformance with the concepts presented on the "Block Illustrative Plans," "Typical Street Sections," and "Illustrative Streetscape Elements" of the CDP, which present concepts regarding streetscapes, urban parks, urban plazas, terraces, lawns, courtyards and private amenity areas for the Subject Property. At the time of FDP approval for any portion of the Subject Property, these concepts may be modified and additional details provided, so long as they are in conformance with the CDP and with the understanding that such modifications shall be reviewed against the Tysons Urban Design Guidelines. Site design may be further modified during site plan review for each respective Block to allow for final engineering and design considerations, including, but not limited to, final utility locations, low impact development ("LID") facilities, sight distance requirements and other applicable design requirements, provided that such modifications are in substantial conformance with the FDP.

34. Landscaping. The CDP includes conceptual "Illustrative Landscape Plans" consisting of overall plans and concepts for each Block. Actual types, quantities and species of vegetation shall be determined pursuant to more detailed landscape plans submitted at the time of the first and all subsequent FDPs and site plans for each respective Block. Landscaping may be modified during site plan review for each respective Block to allow for final engineering and design considerations, including, but not limited to, final utility locations, LID facilities, sight distance requirements and other applicable requirements, provided that such modifications are in substantial conformance with the FDP.

35. Detailed Landscape Plans. As part of the site plan submission for each building on the Subject Property, a detailed landscape plan shall be submitted for the corresponding Block to the Urban Forest Management Division (the "UFMD") of DPWES for review and approval. The planting and landscaping materials shown on each detailed landscaping plan shall be in substantial conformance with those shown on the approved FDP, and shall include, among other things, irrigation information, design details for tree wells and other similar planting areas on structures and along streets, the composition of planting materials, methods for providing suspended pavement over tree root zones to prevent soil compaction, and methods for ensuring the viability of plantings on structures. Arbors (i.e., trellises) may be provided in lieu of interior parking lot landscaping requirements, subject to Board approval of a modification of relevant Zoning Ordinance and PFM requirements.

36. Alternative Planting Width Details. Street tree species and planting sites are depicted on the CDP but remain subject to such revisions as may be approved by the UFMD at the time of FDP and site plan approval. Where minimum planting widths of eight (8) feet cannot be provided, alternative measures either as identified in the "Tysons Urban Design Guidelines" (endorsed by the Board on January 25, 2012) (the "Tysons Urban Design Guidelines") or as approved by the UFMD, shall be used to satisfy the following specifications for all planting sites:

A. A minimum of 4 feet open surface width and 16 square feet open surface area for Category III and Category IV trees (as defined in Table 12.19 of the PFM), with the tree located in the center of such open area.

B. A minimum rooting area of 8 feet wide (may be achieved with techniques to provide un-compacted soil below hardscape areas within the Pedestrian Realm) (as defined in these Proffers), with no barrier to root growth within four feet of the base of the tree.

C. Soil volume for Category III and Category IV trees (as defined in Table 12.19 of the PFM) shall be 700 cubic feet per tree for single trees, but may be reduced to a minimum of 400 cubic feet where paving above root zones is necessary to accommodate pedestrian traffic or where utility locations preclude greater soil volume. For two trees planted in a contiguous planting area, a total soil volume of at least 600 cubic feet per tree shall be provided. For three or more trees planted in a contiguous area, the soil volume shall equal at least 500 cubic feet per tree. A contiguous area shall be any area that provides root access and soil conditions favorable for root growth throughout the entire area. Minimum soil volumes of 700 cubic feet will be achieved in areas of lower pedestrian volume and where pavement is not required over tree rooting zones.

D. Soil specifications in planting sites shall be provided in the planting notes to be included in all site plans filed subsequent to the approval of this Rezoning.

E. Tree zones shall be installed with a fully automatic drip irrigation system.

F. Tree grates shall only be required if necessary to maintain a certain sidewalk dimension.

37. Publicly-Accessible Park and Open Space Areas. Provision of publicly-accessible park and open space areas shall be in substantial conformance with the concepts, locations and minimum acreages depicted on the CDP and as further defined in these Proffers and may be adjusted at the time of FDP and site plan approval to allow for final engineering and design considerations.

## STREETSCAPES

38. Streetscape Elements. Streetscaping shall be installed throughout the Subject Property in substantial conformance with the "Block Illustrative Plans" and "Typical Street Sections" on the CDP, with more refined streetscape plans provided for each Block at the time of FDP. Except as shown conceptually on the CDP with respect to certain private access or service-type streets, streetscape elements shall generally include: a landscape amenity panel located immediately behind the face of curb; a pedestrian sidewalk adjacent to the landscape amenity panel; and a building zone between the pedestrian sidewalk and the face of the building designed to allow access to the building and/or additional landscaping adjacent to residential uses, or storefront browsing, outdoor display, outdoor dining, and similar uses adjacent to Retail/Service uses. Outdoor display and outdoor dining areas shall not be permitted within pedestrian sidewalk areas. Streetscaping elements may be adjusted at the time of FDP and during site plan review, and individual Blocks may have slight variations, provided the quality of the streetscape is consistent with that shown on the CDP. Tree planting sites are set forth conceptually on the CDP and may be revised at the time of FDP or site plan approval, subject to UFMD approval.

39. Non-Invasive Plant Materials. Invasive species, as defined in the PFM, shall not be used within the streetscape and landscaped open space areas.

40. Utility Locations. To the extent feasible and in accordance with the Transportation Design Standards, proposed future utilities, including, but not limited to water, sanitary sewer, storm sewer, electricity, gas and cable television lines, may be relocated or installed within the street network, or placed in locations that minimize conflicts with the landscaped open space areas and streetscape elements shown on the CDP and/or FDPs submitted subsequent to approval of this Rezoning. If there is no other cost-effective option as determined by each Applicant for its respective Block, in consultation with DPZ, utilities may be placed within open space or streetscape areas provided that the long-term health of trees and other plantings is ensured by the provision of sufficient soil volume as shown on the CDP and subsequent FDPs, as determined by the UFMD and as set forth above. A preliminary utility plan shall be overlaid on the landscape plan included with each FDP or FDPA filed subsequent to approval of this Rezoning and shall include the location of any utility vaults and maintenance points to stormwater management facilities. Adjustments to the type and location of plantings may be made to avoid conflicts with utilities or for other site engineering considerations. Maintenance access points to stormwater management facilities and utility vaults beneath the streetscape shall be located outside the clear pedestrian walkway zone of the streetscape, where feasible. If the Dominion Virginia Power vaults must be located in the walkway zone, they shall be designed as a lift out panel with the same paving materials as the walkway (subject to the Americans with Disabilities Act ("ADA") requirements), be flush with the walkway, and meet ADA accessibility requirements.

41. Sight Distance and Utility Considerations. If VDOT determines at the time of site plan approval that street tree locations conflict with either the sight distance requirements set

forth in the Transportation Design Standards or with utility requirements, and good faith efforts have been made to gain necessary approval of such conflicting trees by making minor adjustments to their locations or by removing their lower branches but VDOT, the County or the applicable utility company does not approve such street tree locations, then such tree(s) may be deleted and replaced at an alternative location on the subject Block, so long as the alternative location is coordinated with the UFMD.

42. Streetscape Furnishings and Materials and Lighting. High quality and unified streetscape materials shall be provided within the public realm for each Block in substantial conformance with the CDP and may include, but not be limited to, decorative concrete, unit pavers, seat walls, tree space edging, lighting, traffic signal poles, benches, trash receptacles and other hardscape elements. A "Streetscape Furnishing and Materials Plan" in substantial conformance with that shown on the CDP shall be submitted in conjunction with all FDPs submitted subsequent to approval of this Rezoning. These plans shall include general product information and approximate locations of furnishings and materials to be located in the streetscape between the building face and the curb, and in other public realm open spaces. Although minor variations may occur within Blocks, materials, furnishings, and lighting along public streets shall generally be compatible in Blocks A through F and consistent with any streetscape design approved by the Tysons Partnership, but shall not be subject to approval by the Tysons Partnership. All streetscape lighting shall be energy efficient and generally consistent with the Tysons Urban Design Guidelines. On-site, outdoor and parking garage lighting shall not exceed the limitations in the Outdoor Lighting Standards of Sect. 14-900 of the Zoning Ordinance, as may be amended. The same or similar street lights shall be used consistently throughout the development along public streets and be selected from those listed in the Tysons Urban Design Guidelines, or other lights as may be approved by OCR. All parking lot and building-mounted security lighting shall utilize full cut off fixtures. Recessed lighting shall be directionally shielded to mitigate the impact on adjacent properties.

43. Parking Structure Lighting. The Applicant shall utilize full cut-off, low-intensity or recessed lighting directionally shielded to mitigate the impact on adjacent residences for any lighting along the perimeter of an above-ground parking garage not constructed of solid walls. Such lighting shall comply with the requirements of Article 14 of the Zoning Ordinance.

44. Construction Lighting. During construction, the Applicant shall attempt to reduce glare from OSHA, VOSHA, VUSBA and local ordinance required superstructure lighting to the extent possible without violating aforementioned laws, regulations or policies.

45. Signage and Wayfinding. Signage for the Subject Property shall be provided in accordance with the requirements of Article 12 of the Zoning Ordinance or a Comprehensive Sign Plan ("CSP") may be sought for one or more Blocks of Arbor Row. The placement of traffic control signage on public streets shall be coordinated with, and subject to, VDOT review and approval. Wayfinding signage and elements shall be coordinated with the Tysons Partnership to facilitate a consistent wayfinding and signage system throughout the applicable planning district, but shall not be subject to approval by the Tysons Partnership. Wayfinding

signage shall provide direction to locations of prominent attractions, parks, cultural arts destinations, and other public amenities.

46. Maintenance of the Pedestrian Realm. Elements to be maintained within the pedestrian realm include all publicly-owned areas and all privately-owned spaces (with or without public access easements) that are between the curb and the building façade (the "Pedestrian Realm"). The Administrative Group (the "AG," as defined in Proffer 77) shall be responsible on behalf of the Applicant for obtaining all required VDOT permits related to the Pedestrian Realm, for maintaining the Pedestrian Realm in good repair and in compliance with the ADA, and for replacing in kind, as needed, all Pedestrian Realm elements located within or abutting public street right-of-way. For any publicly-owned portions of the Pedestrian Realm, the AG shall enter into the appropriate agreement, in a form approved by the Office of the County Attorney, with the County (or other applicable public entity) to permit the AG to perform such maintenance. Neither the Applicant nor the AG shall be required to repair or restore any elements of the Pedestrian Realm within publicly-owned areas that are damaged by public employees, contractors, or permittees that are not acting under the direct authority of the Applicant or the AG. An alternative maintenance agreement, such as a Business Improvement District, may be entered into upon written agreement of both the County and the Applicant and/or AG without the requirement for a PCA. Maintenance commitments within the Pedestrian Realm shall include but are not limited to:

A. All plantings including trees, shrubs, perennials, and annuals;

B. All associated irrigation elements;

C. All hard surfaces, including but not limited to paving and retaining walls;

D. All streetscape furnishings including benches and bike racks;

E. All lighting fixtures;

F. All special drainage features, such as LID facilities;

G. Snow removal, including from on-street parking spaces on private access drives;

H. Trash recycling and litter removal;

I. Leaf removal;

J. Any sign posts, traffic signal poles, pedestrian signal poles, mast arms, signal heads and control boxes that are not VDOT standard devices; and

K. All urban park amenities in the development including horticultural care, maintenance of all water features, irrigation, lighting, furnishings, paving, recreation courts and features, and art.

As determined at the time of FDP approval, where the final streetscape design cannot be fully implemented during certain phases of development, the Applicant shall provide interim streetscape improvements as described in these Proffers.

47. Ownership of the Pedestrian Realm. Portions of the Pedestrian Realm will be dedicated in fee simple to the County of Fairfax (or equivalent government body or agency), as shown on the CDP, subject to the following conditions:

A. The County and/or VDOT shall permit all stormwater and other facilities to be constructed and maintained as shown on the CDP, subject to the Applicant accepting maintenance responsibilities for such facilities;

B. The County and/or VDOT shall permit the Applicant to use security-related features, including, but not limited to, bollards, that are constructed within streetscape areas and shown on an approved FDP;

C. The Applicant through the AG shall continue to maintain the Pedestrian Realm facilities as described in these Proffers; and

D. Dedication of any portions of the Pedestrian Realm intended to be publicly-owned shall occur concurrently with dedication of the adjacent roadway.

48. Public Access for the Pedestrian Realm. For areas within the Pedestrian Realm that are privately owned, the Applicant shall dedicate public access easements, in a form approved by the Office of the County Attorney. In areas where a portion of the Pedestrian Realm is within the public right-of-way, a public access easement shall be placed across the privately-owned area identified as the building zone. In areas where the Pedestrian Realm is entirely under private ownership, the public access easement shall be for the areas of the landscape amenity panel and the sidewalk zone.

49. Phased Conditions and Standards. Redevelopment of the individual Blocks may result in various phased conditions associated with the Subject Property. As part of the FDP review for each Block, specific phased conditions shall be identified, generally as set forth in these Proffers and on the Phasing Sheets for the subject Block and the area immediately abutting it and shall ensure such conditions provide safe and reasonable pedestrian connections and vehicular access/circulation. Phased conditions shall comply with the following general standards:

A. Application of a temporary screening system (which may be removable) to the façades of above grade garages in Blocks B, C and D that will be interior when later phases are complete, but that are exposed at phase lines for more than a one-year period. This screening system shall be applied to all levels above grade and shall be composed of an architecturally designed system that may reflect basic architectural lines of the permanent

façades and/or vegetation or other techniques, and shall partially obscure the garage view from outside the garage until the next phase is constructed. As may be appropriate, the specific temporary screening system to be utilized for each building shall be determined at the time of FDP approval and depicted on the FDP. Other alternate temporary garage screening and the use of banners and/or temporary art works as a part of the screening system may be approved at the time of FDP approval;

B. Grading and seeding of areas on the Subject Property where existing improvements are removed to accommodate a portion of the development shown for the subject Block, not used for construction staging and not scheduled to commence construction within 12 months; and

C. Provision of attractive temporary construction fencing, which may include public art, signage or way-finding elements. Signage shall comply with Article 12 of the Zoning Ordinance or alternatively in accordance with an approved Comprehensive Sign Plan.

**OFF-SITE PUBLIC FACILITIES AND ATHLETIC FIELDS**

50. Public Facilities and Athletic Fields Contributions. To address the Comprehensive Plan's recommendations regarding the provision of public facilities and athletic fields in Tysons Corner, the following shall be provided:

A. Dedication of Off-Site Parcel. The approximately eight (8) acres of land identified as Fairfax County Tax Map Parcel 29-2-((15))-B2 (the "Park/School/Athletic Fields Parcel") shall be dedicated, in fee simple, to the Board for public park, athletic fields, public elementary school and/or similar or related public uses. This dedication shall occur within one hundred twenty (120) days after completion of construction of the improvements described in subparagraphs B., C. and D. below, as evidenced by the release of the bonds posted with approval of the Athletic Field Site Plan described in Proffer 51.

B. Athletic Fields. Prior to June 30, 2015 as described in Proffer 51, or such later date as may be determined by the Zoning Administrator pursuant to Proffer 108, the following two athletic fields and related support facilities (collectively, the "Athletic Fields Improvements") shall be constructed on the Park/School/Athletic Fields Parcel generally as shown on the plan entitled "Playing Fields and Public Facilities Exhibit," dated September 10, 2012 and attached to these Proffers as **Exhibit A**:

i. Installation of one synthetic turf, multi-purpose athletic field of approximately 390 feet by 220 feet ("Field One"), which includes fifteen (15) feet wide overruns, two player benches (no bleachers),

field striping, two goals, and field lighting (which shall qualify for a minimum of one (1) athletic field credit). Field construction and lighting shall be consistent with Fairfax County Park Authority ("FCPA") standards at the time of construction. Field design and location shall be determined in coordination with the FCPA Synthetic Turf Fields Manager.

ii. Installation of one synthetic turf, multi-purpose athletic field of approximately 180 feet by 255 feet ("Field Two"), which includes fifteen (15) feet wide overruns and two player benches (no bleachers), field striping, two goals, and field lighting (which shall qualify for a minimum of one-half (½) athletic field credit). Field construction and lighting shall be consistent with FCPA standards at the time of construction. Field design and location shall be determined in coordination with the FCPA Synthetic Turf Fields Manager. It is anticipated that Field Two may be removed in the future by the County and/or the Fairfax County School Board (the "School Board") at such time as this portion of the Park/School/Athletic Fields Parcel may be needed for school purposes.

iii. The installation and construction of Field One and Field Two will qualify for a minimum total of one and one-half (1½) athletic field credits as defined in the Tysons Urban Center Plan. One-half (½) athletic field credit shall meet the approximate one-half (½) athletic field requirement anticipated for this Rezoning. The remaining one (1) athletic field credit shall be available to the Applicant to meet the partial anticipated athletic field credit requirement for the property included in pending rezoning applications RZ 2011-PR-010 and RZ 2011-PR-011. The support facilities identified on **Exhibit A**, which include the picnic shelter and seating facilities, a paved parking area for approximately 46 cars, and an internal trail system, shall be installed with construction of the athletic fields. An eight (8) foot wide concrete trail, with associated street tree landscaping, also shall be installed along the Jones Branch Drive frontage of the Park/School/Athletic Fields Parcel with construction of the athletic fields. These frontage improvements shall not include any road widening, on-street parking, streetscape or other road frontage improvements along Jones Branch Drive. The improvements to the Park/School/Athletic Fields Parcel as shown on **Exhibit A** shall be located so as not to preclude the future construction by others of (i) road widening, on-street parking and streetscape improvements along public streets, including Jones Branch Drive, and (ii) a future

grid street within the thirty-five (35) foot wide right-of-way identified on **Exhibit A** as "AREA FOR POTENTIAL FUTURE ROAD EXTENSION." Subject to approval of the appropriate waivers, the Applicant shall have no obligation, in connection with the site plans for the Athletic Fields Improvements, the Stream Trail Improvements (as defined below) and the Stream Restoration Improvements (as defined below) or otherwise, to design and/or construct, or contribute funds toward construction, of such public street frontage improvements or such future grid street.

C. Construction of Stream Valley Trail. Prior to June 30, 2015 as described in Proffer 51 below, or such later date as may be determined by the Zoning Administrator pursuant to Proffer 108, an asphalt trail, approximately eight (8) feet in width, with a bridge where the trail crosses the stream (collectively, the "Stream Trail Improvements"), shall be constructed through the stream valley corridor on the Park/School/Athletic Fields Parcel from Westpark Drive northward to connect to the portion of the Park/School/Athletic Fields Parcel on which the athletic fields are located, generally as shown on **Exhibit A**. The location of this trail shall be coordinated with the Park Authority Trails Coordinator. The Applicant shall work with the Park Authority Trails Coordinator to design the location of this trail connection to reduce the slope to the extent practicable while meeting the applicable standards of the PFM and mitigating unnecessary impacts on the scenic quality of this trail connection.

D. Outfall and Stream Bank Restoration. Prior to June 30, 2015, as described in Proffer 51 below, the Applicant shall construct, at a total cost not to exceed $500,000, the following: (a) improvements to the storm drain outfall from the culvert under Westpark Drive, such as plunge pools extending approximately 125 linear feet downstream from the outfall, including stream channel treatment along the existing public sanitary sewer main that crosses the main stream channel, but not to include any alteration nor treatment of the sanitary sewer main pipe itself, and (b) such other stream bank stabilization improvements on the Park/School/Athletic Fields Parcel and, subject to provision of necessary off-site easements and appropriate indemnification by others without payment of consideration by the Applicant for such easements and indemnification, on immediately abutting property, as determined in consultation with DPWES, the Park Authority and the U.S. Army Corps of Engineers (collectively, the "Stream Restoration Improvements"). In addition to the Stream Restoration Improvements, the Applicant shall, subject to issuance of necessary permits and if a notice of violation has been issued and the violation has not already been addressed, dredge Pond D located on

Fairfax County Tax Map Parcel 29-4-((7))-B to the original design depth and limits of construction pursuant to SD-1213-1 and -2, based on a bathymetric study conducted before and immediately after such dredging (the "Pond D Dredging"). In such event, the Pond D Dredging shall be done in conjunction with the improvements to the storm drain outfall described in subparagraph (a) above. The Pond D Dredging shall not include any improvements to the existing dam, riser, inlets or other structural elements, except for repairs to address damage, if any, that may be caused by the Pond D Dredging, nor any further improvements upstream. The Stream Restoration Improvements shall not include any work related to the existing structures on Parcel A4 or any soils or erosion surrounding such structures. If the improvements described in subparagraph (b) as determined in consultation with DPWES, the Park Authority and the U.S. Army Corps of Engineers, are projected, based on two qualified bids at the time of 75% plan design, to exceed the $500,000 limitation, then the Applicant will work with DPWES, the Park Authority and the U.S. Army Corps of Engineers to adjust the design and/or nature of the improvements so the total cost of the improvements will not exceed the $500,000 limitation. If no agreement can be reached on the design and/or nature of the improvements described in subparagraph (b) in sufficient time to complete such improvements by the deadline provided herein, and/or if necessary easements and agreements cannot be obtained for off-site work, then the Applicant shall pay the balance of the $500,000 less the documented amount spent on the improvements to the storm drain outfall described in subparagraph (a) above, in lieu of the Applicant constructing the improvements described in subparagraph (b) above. The Applicant shall provide to the County reasonable documentation, such as invoices and receipts, to document the actual amount of funds spent on the Stream Restoration Improvements. If any of the Stream Restoration Improvements are provided as part of the public improvements plan described in Proffer 62.A., the cost of such improvements shall count toward the $500,000 limit on the commitments in this paragraph. Construction of all or any portion of the Stream Restoration Improvements shall not be a condition to the site plan approval for Block A, Block E or Block F, unless all or a portion of the Stream Restoration Improvements are required for the subject Block to meet the minimum adequate outfall requirements of the PFM. If all or any portion of the Stream Restoration Improvements are required for Block A, Block E or Block F to meet the minimum adequate outfall requirements of the PFM, such portion of the Stream Restoration Improvements may be a condition of site plan approval for such Block in accordance with the PFM requirements and the estimated value of such portion of the Stream Restoration Improvements, based on the engineer's estimate as approved by DPWES, shall not be counted toward the $500,000 limit on the commitments in this paragraph.

E. Contribution to Costs of Potential Future Park/School/Athletic Fields Parcel Improvements. A total contribution of $600,000 shall be made to the Board solely for the purposes of designing the elementary school facilities on the Park/School/Athletic Fields Parcel, maintaining, repairing and replacing the athletic fields and/or trails constructed on the Park/School/Athletic Fields Parcel and/or for stream improvements or restoration activities. The amount of this contribution shall escalate as provided in Proffer 111. Such contribution shall be made in three (3) equal payments to the County of $200,000 each, to be made prior to issuance of the building permit for each of the three buildings to be constructed on Block B and Block C.

51. Construction of the Athletic Fields and Related Facilities. Not later than one hundred-twenty (120) days after the approval of this Rezoning, the Applicant shall submit to the County one or more site plans for the Athletic Fields Improvements, the Stream Trail Improvements and the Stream Restoration Improvements. The Applicant reserves the right to (i) submit a separate site plan for Stream Trail Improvements and the Stream Restoration Improvements or to identify that work as a separate phase from the Athletic Fields Improvements, and (ii) subdivide the Park/School/Athletic Fields Parcel in order to dedicate the portion on which the athletic fields and related facilities are located and obtain bond release for that portion while work continues on the remainder of the Park/School/Athletic Fields Parcel to complete the Stream Trail Improvements and the Stream Restoration Improvements. The Applicant shall diligently pursue site plan approval for all the proffered improvements to the Park/School/Athletic Fields Parcel. Upon approval of the site plans, the Applicant shall diligently pursue construction of all improvements and complete construction by June 30, 2015, or such later date as may be determined by the Zoning Administrator pursuant to Proffer 108. No approvals, including without limitation, site plan, demolition permit, grading permit, building permit, foundation permit, sheeting/shoring permits, RUPs and/or Non-RUPs, shall be withheld for Block A, Block E and/or Block F after the June 30, 2015 deadline if construction of the Athletic Fields Improvements, the Stream Trail Improvements and/or the Stream Restoration Improvements has not been completed as long as the Applicant has (i) escrowed with the County funds that, based on a budget approved by DPWES, will be sufficient to complete construction of such improvements, when combined with any bonds posted with any approved site plans for such improvements, if any, and (ii) delivered a deed for the dedication of the Park/School/Athletic Fields Parcel to the County, in escrow, to be released from escrow and recorded upon completion of construction of the Athletic Fields Improvements, the Stream Trail Improvements and the Stream Restoration Improvements and release of the bonds posted for the sites plans for such improvements. Irrespective of the foregoing, approvals as set forth above may be withheld for Blocks B, C and D if such improvements have not been completed prior to the deadline.

52. Contingencies for Early Removal of Field Two. In the event Field Two (i) is not constructed because the School Board notifies the Applicant prior to the date the Applicant has posted the bonds for the Athletic Field Site Plan that it intends to proceed with development of

such area for a new school, or (ii) is constructed, but is removed on a date that is less than ten (10) years from the date construction of Field Two is completed (the "Field Two Completion Date") because the School Board proceeds with construction of a new school, then the Applicant shall escrow, pursuant to a Future Construction Agreement for the approved Athletic Field Site Plan, an amount equal to $5.50 per square foot of playing surface for Field One to be used exclusively for the removal and replacement of the original artificial playing surface installed on Field One. The total value of the escrow amount is estimated to be $450,000.00. The Future Construction Escrow can be in the form of a letter of credit or surety bond consistent with the applicable provisions of the PFM. If either a letter of credit or a surety bond is provided, DPWES shall notify the Applicant at least six (6) months prior to the need for payment of the cost to resurface the playing area on Field One, and the Applicant shall replace the letter of credit or surety bond, as applicable, with a cash escrow to be used by the County to pay to resurface Field One.

53. Public Schools Cash Contribution. In addition to the off-site dedication of the Park/School/Athletic Fields Parcel, prior to the issuance of the first RUP for each building in Block A and the first RUP for the building in Block E, the amount of $9,378.00 per student for students projected to be generated by this redevelopment shall be contributed to the Board for transfer to Fairfax County Public Schools ("FCPS") to be utilized for capital improvements and capacity enhancements at the schools that students generated by these residential buildings will attend. This contribution shall be based on student yield ratios of 0.047, 0.013 and 0.027 per unit for elementary, middle and high school, respectively. Such contribution shall be made at the time of issuance of the first RUP for each residential building.

54. Adjustments to Schools Cash Contribution. If, prior to site plan approval for the respective residential buildings, the County should increase the accepted ratio of students per subject multi-family unit or the amount of the contribution per student, the amount of the contribution shall be increased for that building to reflect the current ratio and/or contribution. If the County should decrease the ratio or contribution amount, the amount of the contribution shall be decreased to reflect the current ratio and/or contribution.

## ON-SITE PARKS AND ACTIVE RECREATION FACILITIES

55. Publicly-Accessible Parks by Block. Parks, plazas, terraces, trails and open space shown on the CDP, while retained in private ownership, shall be subject to public access easements which shall reserve to each Applicant, as applicable, the right, as to its respective Block, to reasonably restrict access for limited times for special events, security, maintenance and repairs and/or safety purposes. Each Applicant may establish reasonable rules and regulations for the public areas on its respective Block provided, however, that such public areas generally are open on a daily basis from dawn until dusk (10:00 p.m. if lighted). At the time of site plan submission for the first building in Block C, the Applicant shall enter into discussions with FCPA regarding opportunities for public programming within the large Urban Park within Block C. Any such agreement between the Applicant and FCPA shall be memorialized in a "Memorandum of Understanding." Special amenity features generally described below shall be

depicted on the FDP for Block C, and shall be designed to enhance and complement land uses and may include both hardscape and softscape elements generally as depicted on the CDP. Parks and other publicly-accessible recreation areas shall be provided on each respective Block as generally shown on the Phasing Sheets and Urban Parks Plan on the CDP at the time of issuance of the first RUP or Non-RUP for new construction on that Block and as further described below, with more specific details provided on the FDP for each Block:

A. Block A. As shown conceptually on the CDP, a minimum of two (2) publicly-accessible "Pocket Parks" (one "B" type and one "C" type as defined on the CDP) shall be provided within Block A prior to issuance of the first RUP for the second building within Block A. These two pocket parks shall offer passive recreation opportunities. Pocket Park C is "Resource Protection Area" and, as such, shall remain in undisturbed open space with no improvements as set forth on the CDP and in these Proffers. Pocket Park B located along the southern property boundary will be designed to enhance the adjacent open space and trail areas and provide connectivity and seating as appropriate, subject to availability of appropriate off-site easements without payment by the Applicant of monetary consideration for the conveyance of such easements. The Applicant shall make diligent efforts to obtain such off-site easements to enable such trail connection and, if requested, shall provide documentation demonstrating same. However, in the event the necessary off-site easements cannot be acquired, then the cost to construct the portion of such trail from the Subject Property boundary to the existing or planned location of the off-site trail shall be escrowed with the County by the Applicant for the Block adjacent to such trail connection, and upon payment of such escrow the obligation to construct this trail connection shall be satisfied.

B. Block C. As shown conceptually on the CDP, an approximately 2.96-acre, publicly accessible Civic Plaza/Common Green ("Urban Park"), including sport courts, terraces and grand staircase areas shall be provided within Block C prior to issuance of the first Non-RUP for the last of the two buildings in Block C. Design of the Urban Park shall be depicted at the time of FDP for Block C, but at a minimum shall include a large lawn, shade structure, walkways, seating areas, terraces, sculpture or other public art and active recreation. An elevator shall be provided and other design features as determined by the Applicant shall be located in or around the associated urban plaza, subject to final engineering. In addition, one tennis court, one basketball court and a children's playground shall be provided prior to issuance of the first Non-RUP for the second building in Block C, on the top level of the garage for use by the public, as shown conceptually on the CDP. These facilities shall be privately owned and maintained, but they shall be available for public use

and subject to a public access easement, which shall reserve to the Applicant the right to restrict access as described in this Proffer 55. Two trail connections to the existing off-site asphalt trail shall be provided within Block C prior to issuance of the first Non-RUP for Block C, subject to appropriate off-site easements being provided by others to the Applicant without payment by the Applicant of monetary consideration for the conveyance of such easements. The Applicant shall make diligent efforts to obtain such off-site easements to enable such trail connection and, if requested, shall provide documentation demonstrating same. However, in the event the necessary off-site easements cannot be acquired, then the cost to construct the portion of such trail from the Subject Property boundary to the existing off-site asphalt trail shall be escrowed with the County by the Applicant for the Block adjacent to such trail connection, and upon payment of such escrow the obligation to construct this trail connection shall be satisfied.

C. Block E. As shown conceptually on the CDP, one publicly-accessible "Pocket Park" ("A" type) that is a minimum of one-half acre in size shall be provided prior to issuance of the first RUP or Non-RUP for Block E. This pocket park shall provide important connectivity between Blocks D and F and shall be designed to create an intimate passive park that includes seating, special plantings, plaza area, lawn space and special paving areas activating the space and linking it to the adjacent residential use. One trail connection to the existing off-site asphalt trail, including ramps and stairways depicted on the CDP, shall be provided within Block E prior to issuance of the first RUP or Non-RUP for Block E, subject to appropriate off-site easements being provided by others to the Applicant without payment by the Applicant of monetary consideration for the conveyance of such easements. The Applicant shall make diligent efforts to obtain such off-site easements to enable such trail connection and, if requested, shall provide documentation demonstrating same. However, in the event the necessary off-site easements cannot be acquired, then the cost to construct the portion of such trail from the Subject Property boundary to the existing off-site asphalt trail shall be escrowed with the County by the Applicant for the Block adjacent to such trail connection, and upon payment of such escrow the obligation to construct this trail connection shall be satisfied.

D. Block F. As shown conceptually on the CDP, publicly-accessible "Pocket Parks" totaling a minimum of 10,000 square feet shall be provided prior to the first Non-RUP for Block F. The smaller pocket park along Westpark Drive on the east side of the proposed office building may be designed as a hardscape plaza and include a combination of special hardscape paving, benches, shade trees and/or seating areas. The larger pocket park on the

western side of the office building shall be designed to facilitate pedestrian connectivity to the publicly-accessible park space and trail connections to the west and may include, but shall not be limited to, such design elements as special paving, benches, potential outdoor retail seating, shade trees and/or an architectural feature.

56. Urban Parks Tabulations. The publicly-accessible open space tabulations set forth on the CDP shall be achieved when redevelopment of the entire Subject Property is complete, in accordance with Par. 2 of Sect. 16-403 of the Zoning Ordinance.

57. Private Active Recreation Facilities. Pursuant to Par. 2 of Sect. 6-508 and of Sect. 16-404 of the Zoning Ordinance, at the time of site plan approval, a minimum of $1,700.00 per market-rate and workforce residential dwelling unit shall be provided for each residential building within Block A and Block E toward construction of developed on-site recreation facilities (privately and publicly-accessible) for each respective building. The balance of any funds not expended for the applicable residential building, if any as determined by DPWES, shall be contributed or may be escrowed, prior to issuance of the RUP for the final unit in such building, for provision of future on-site recreation facilities (private and publicly accessible) within Block C, and, if no such facilities are identified, then such residual funds shall be contributed to the FCPA for the provision of recreation facilities within Tysons Corner. The specific facilities and amenities noted below (which are separate from and in addition to the required provision of publicly accessible park space) shall be provided within each residential Block and may be shared between two or more residential buildings for the use and enjoyment of the residents of those buildings, as determined at the time of FDP approval. Private recreation facilities shall include, but not be limited to:

A. Private exterior courtyard areas, which may be located on the top deck of the parking garages and/or residential buildings or in open areas and may include pool facilities, informal seating areas, landscaping, hardscape areas and/or passive recreation areas; and

B. An interior fitness center furnished with exercise equipment that may include, but is not limited to, stationary bikes, treadmills, weight machines and free weights, but not necessarily staffed.

## PEDESTRIAN CIRCULATION

58. Pedestrian Connectivity. Pedestrian connectivity shall be provided throughout the Subject Property generally consistent with the concepts shown on the "Pedestrian Circulation Plan" through the use of elements such as wayfinding signage, terraces, sidewalks, trails and lawn areas. As depicted on the CDP, certain connections to open space, trails and/or sidewalks located off-site on the adjacent Tysons II property to the south (Tax Map Parcel 29-4-((10))-30), Parcel B2 to the north (Tax Map Parcel 29-2-((15))-B2) and the Avalon Crescent apartments to the west (Tax Map Parcel 29-4-((7))-B) shall be provided at the time of issuance of the first RUP

or Non-RUP for the Block adjacent to such connection, subject to appropriate off-site easements being provided by others to the Applicant without payment by the Applicant of monetary consideration for the conveyance of such easements. The Applicant shall make diligent efforts to obtain necessary off-site easements and, if requested, shall provide documentation demonstrating same. In the event the necessary off-site easements cannot be acquired, then the cost to construct the portion of such trail from the Subject Property boundary to the existing or planned location of the off-site trail shall be escrowed with the County, and upon payment of such escrow the obligation to construct this trail connection shall be satisfied. If approved by VDOT, a pedestrian crosswalk and trail connection across to off-site Fairfax County Tax Map Parcel 29-4-((7))-1A2 shall be provided which connects Arbor Row to the stream valley trail on the Parks/School/Athletic Fields Parcel, as referenced above.

## TRANSPORTATION

59. Definition of Construct. The term "construct" as used with respect to the road improvements referenced in these Proffers shall mean such road improvement is open for use by the traveling public whether or not such improvement has been accepted by VDOT for maintenance.

60. VDOT Acceptance and Dedication. The Applicant shall diligently pursue acceptance by VDOT of all public street and related improvements to be maintained by VDOT, as more specifically described in these Proffers. All right-of-way proposed to be accepted by VDOT into the state system for maintenance shall be dedicated to the Board in fee simple.

61. Grid of Streets. With redevelopment of each Block, the frontage improvements along the existing public streets abutting such Block and the portions located on such Block of the proposed grid of streets, generally depicted on the CDP and the Phasing Sheets, shall be constructed and open for use by the public. The Applicant shall use good faith commercially reasonable efforts to construct such frontage improvements along Westpark Drive and Westbranch Drive pursuant to an approved public improvement plan ("PI Plan") for all such improvements. In such an event, all of those improvements (other than roadway frontage) shown on the CDP will be constructed in accordance with those sheets. The functional classification of the roadways comprising the grid of streets on the Subject Property is summarized below:

| Street | Classification |
|---|---|
| Westpark Drive | Avenue (Public) |
| Westbranch Drive | Collector Street (Public) |
| Jones Branch Drive Extended | Local Street (Private; see Proffer 62.C.) |
| Private Access Roads or Streets | Service Streets (Private) |

62. On-Site Road Improvements. All on-site public road improvements, on-site Private Streets and on-site Private Access Roads together with appropriate/required pavement transitions shall be constructed with the redevelopment of the individual Blocks as reflected on the Phasing Sheets, subject to VDOT approval, and prior to issuance of the first initial RUP or Non-RUP for the first new building to be constructed on the applicable Block. Such on-site road improvements shall generally consist of the following:

A. Westpark Drive Frontage Improvements. Westpark Drive shall be constructed as generally reflected on the "Roadway Striping and Marking Plans," the "Road Cross Sections," and the Phasing Sheets in the CDP. The extent, final design and timing of these ultimate improvements shall be provided in conjunction with the redevelopment of each individual Block and determined at the time of site plan approval for that Block, unless constructed as a single public improvement project as described in Proffer 61. At a minimum, however, the frontage improvements for each respective Block shall be constructed prior to issuance of the first initial RUP or Non-RUP for the first new building to be constructed on that Block, except along the Block F frontage as qualified below.

With regard to Block F, the ultimate improvements of Westpark Drive, as described more fully above, shall be constructed along the Westpark Drive frontage of Block F prior to issuance of the first initial non-RUP for the new building on Block F. However, if the utility equipment associated with the I-495 Express Lane improvements that is currently installed in the Block F frontage (and scheduled for removal by VDOT by September 30, 2012) is not relocated prior to approval of the first site plan for the new building on Block F, then (i) the section of Westpark Drive along the Block F frontage will be constructed in an interim configuration as depicted on CDP Sheet C8.1; (ii) funds shall be escrowed with DPWES for the costs to construct the ultimate improvements of Westpark Drive along the frontage of Block F as described above and reflected on the CDP (exclusive of utility relocations related to the I-495 Express Lane improvements); and (iii) right-of-way and ancillary and reasonable

easements along the Block F frontage necessary for the construction by others of the ultimate section of Westpark Drive along the Block F frontage shall also be provided.

i. Entrances to Westpark Drive. If Block E redevelops prior to Block F, the existing entrance from Westpark Drive to the northwest corner of Block F shall be retained until the construction of the redevelopment of Block F is completed, notwithstanding VDOT's approval of a new entrance from Westpark Drive to Block E, if VDOT permits the two entrances to be open and in operation simultaneously. In the event VDOT refuses to allow the two entrances to remain open at the same time, the existing entrance on Block F in the vicinity of the common property line between Block E and F shall be closed and the new permanent entrance from Westpark Drive to Block E will be constructed as shown on the Phasing Sheets. If Block F redevelops prior to Block E, the ultimate condition of the entrance from Westpark Drive into Block E shall be constructed, as shown on the CDP.

B. Westbranch Drive Frontage Improvements. At the time of site plan approval for the first new building on Block A or Block B, whichever occurs first, or in conjunction with the PI Plan described in Proffer 61, the improvements to Westbranch Drive along the Block A frontage and the Block B frontage, respectively, will be constructed, as approved by VDOT and in general accordance with the, the "Roadway Striping and Marking Plans," the "Road Cross Sections," and consistent with the Phasing Sheets. The final design and extent of the improvements to Westbranch Drive as generally described and referenced above shall be determined at the time of the first site plan approval for Block A or Block B, whichever occurs first.

C. Jones Branch Drive Extended. An extension of Jones Branch Drive ("Jones Branch Drive Extended") from Westpark Drive south as shown on the CDP and in general accordance with the "Roadway Striping and Marking Plans," the "Road Cross Sections" and consistent with the Phasing Sheets shall be constructed with the redevelopment of Block D or Block E, whichever occurs first, unless previously constructed by others. Jones Branch Drive Extended will be designed and constructed in accordance with current public street standards applicable to a "local street," but it will be privately maintained until such time as the adjacent property to the south redevelops, such section of Jones Branch Drive Extended connects to a public street to the south, and VDOT accepts such section of Jones Branch Drive Extended into the State system for maintenance. The right-of-way area for Jones Branch Drive Extended as

shown on the CDP shall be reserved for future dedication for public street purposes if and when VDOT is prepared to accept such section of Jones Branch Drive Extended into the State system for maintenance as described in the preceding sentence. The final design of Jones Branch Drive Extended as generally described and referenced above shall be determined at the time of the first site plan approval for either Block D or Block E, whichever occurs first.

D. Private Streets and Access Roads. With the redevelopment of each Block, the private streets and access roads as shown on the CDP and on the Phasing Sheets, shall be constructed (unless already constructed by others) and open for use by the public and a public access easement in a form acceptable to the County Attorney shall be granted.

63. Off-Site Transportation Improvements. Coincident with the submission of the first site plan for a new building on either Block B or Block C, the Applicant shall submit to VDOT and DPWES, a plan for a 275-foot extension of the southbound left turn bay on International Drive at Westpark Drive within existing rights-of-way and subject to VDOT approval and permitting. This off-site improvement shall be constructed prior to the issuance of the first initial Non-RUP for the second building to be constructed on either of Block B or Block C. Because Arbor Row generates only 23% of the southbound left-turn traffic (as set forth in the TIA), at least 77% of the construction costs associated with this improvement shall be credited against the Applicant's contribution to the Tysons Area Road Fund as evidenced by construction invoices.

64. VDOT Approval. All public street improvements proposed herein shall be subject to VDOT approval, and shall be in general conformance with the Transportation Design Standards, as amended, subject to any permitted modifications and/or waivers that may be granted.

65. Westpark Drive/Westbranch Drive Traffic Signal. A warrant study for the installation of a new traffic signal at the Westpark Drive/Westbranch Drive intersection shall be submitted in accordance with the Phasing Sheets and within twelve (12) months after the issuance of the first initial RUP or Non-RUP for the first new building constructed on Block A, Block B or Block C. If a signal is deemed warranted by VDOT at that time after having reviewed the warrant study and approved for installation, then such traffic signal, including pedestrian enhancements as may be required by VDOT, shall be designed, equipped and installed by the Applicant.

In the event the signal proposed for the Westpark Drive/Westbranch Drive intersection is deemed not warranted within twelve (12) months after the issuance of the first Non-RUP or RUP for the first building in Block A, Block B, or Block C, then the Applicant shall submit a second warrant study within twelve (12) months after the issuance of the first initial RUP or Non-RUP for the fifth ($5^{th}$) building on the Subject Property. If warranted by VDOT at that time after

having reviewed the warrant study, the Applicant shall design, equip and install such signal including pedestrian enhancements as required by VDOT.

In the event the signal proposed for Westpark Drive/Westbranch Drive is not deemed warranted after the 5th building, then the Applicant shall conduct a third and final warrant study within twelve (12) months after the first initial RUP or Non-RUP for the last new building on the Subject Property. If warranted by VDOT at that time after having reviewed the warrant study, the Applicant shall design, equip and install such signal including pedestrian enhancements as may be required by VDOT. If not warranted with the last building on the Subject Property then the Applicant's obligation to construct or in any manner pay for such signal is deemed null and void and this Proffer of no further effect.

66. Jones Branch Drive/Westbranch Drive Traffic Signal. A warrant study for installation of a new traffic signal at the Jones Branch Drive/Westbranch Drive intersection shall be submitted within twelve (12) months after the issuance of the first RUP or Non-RUP for the fifth new building constructed on the Subject Property. If a signal is deemed warranted by VDOT and approved for installation at this intersection, then such traffic signal, including pedestrian enhancements as may be required by VDOT, shall be designed, equipped and installed by the Applicant for such fifth new building.

In the event that the signal proposed for the Jones Branch Drive/Westbranch Drive intersection is deemed not warranted within twelve (12) months after the issuance of the first Non-RUP or RUP for the fifth new building constructed on the Subject Property, then the Applicant shall conduct a second warrant study within twelve (12) months after the first initial RUP or Non-RUP for the last building on the Subject Property. If warranted by VDOT at that time after having reviewed the warrant study, the Applicant shall design, equip and install such signal including pedestrian enhancements as required by VDOT. If not warranted with the last building on the Subject Property, then the Applicant's obligation to construct or in any manner pay for such signal is deemed null and void and this Proffer of no further effect.

67. Traffic Signal Modifications. Concurrent with the submission of the first site plan for Block D or Block E, a signal modification plan for the Jones Branch Drive Extended intersection with Westpark Drive shall be submitted to VDOT and such signal modifications, including pedestrian enhancements, as may be required by VDOT and in accordance with the Phasing Sheets, shall be completed prior to opening Jones Branch Drive Extended to traffic.

68. Potential Future Right-Of-Way Vacation Areas. In the event any public street right-of-way that abuts the Subject Property is vacated and/or abandoned subsequent to approval of this Rezoning, such right-of-way area will become zoned to the PTC District pursuant to Sect. 2-203 of the Zoning Ordinance and such right-of-way area may be used, without requiring a PCA, CDPA or FDPA, for utilities and to accommodate sidewalks and streetscape elements consistent with the street sections shown on the CDP and/or with the Tysons Urban Design Guidelines.

69. Pedestrian Enhancements. Any and all crosswalks shown on the CDP and FDPs crossing public streets are conceptual only and subject to VDOT review and approval at site plan.

70. Supplemental Traffic Analyses. At the time of site plan submission for each Block subsequent to approval of this Rezoning, supplemental operational traffic analyses of the points of access to the subject Block shall be provided if required by VDOT. For purposes of this Proffer, such analyses shall only be required if the Block generates more than an additional 100 peak hour directional trips (either inbound or outbound). Such supplemental operational analyses also shall be limited to an assessment of those driveways and/or turn lanes serving the particular Block.

71. Notification Letter. At the time of filing of the first site plan for each of Block A through F, a notification letter shall be sent to the Director of FCDOT. The purpose of this letter is to facilitate coordination with DPWES to ensure site plans are consistent with the Transportation Design Standards.

72. Tysons Road Fund Contributions. At the time of issuance of the first RUP or Non-RUP for each new building on the Subject Property, a contribution shall be made to the Tysons Road Fund in the amount of $6.44 per square foot of non-residential GFA or $1,000 per residential unit for which the RUP or Non-RUP is requested. Credits shall be allowed against such contributions for the costs of the qualifying off-site intersection improvements provided pursuant to these Proffers. These payments may be made earlier than required pursuant to this Paragraph.

73. Board-Initiated Service District for Table 7 Improvements. The Applicant will support the creation of a Tysons-wide service district by the Board, on its own initiative, for the sole purpose of providing funds to Fairfax County for the private sector's share of the costs of the Table 7 transportation improvements to serve the Tysons Corner Urban Center.

74. Additional Tysons Road Fund Contributions for Table 7 Improvements. The Applicant shall contribute to the Tysons Road Fund the sum of $5.63 per square foot for all new non-residential GFA on each respective Block, and $1,000.00 for each residential unit constructed on the Subject Property. The contribution associated with each building shall be paid in a lump sum, based on the actual gross floor area of non-residential space and/or the actual number of residential units in the building, with payment to occur prior to the issuance of the first RUP or Non-RUP for each building. This contribution shall not apply to any public-use facilities constructed on the Subject Property. These payments may be made earlier than required pursuant to this paragraph.

75. Congestion Management Plan.

A. The Applicant shall prepare and implement a construction congestion management plan during construction of each Block or Sub-Block, as appropriate, through its development/construction manager and the TPM

(as defined in Proffer 78.F.(i)), so as to provide safe and efficient pedestrian and vehicle circulation at all times on the Subject Property and on the public roadways adjoining the Subject Property (each a "Congestion Management Plan").

B. Each Congestion Management Plan shall identify anticipated construction entrances, construction staging areas, construction vehicle routes and procedures for coordination with FCDOT and/or VDOT concerning construction material deliveries, lane closures, and/or other construction related activities to minimize disturbance on the surrounding road network.

C. Each Congestion Management Plan shall also require the Applicant to coordinate its construction activities throughout construction with VDOT and FCDOT.

D. Such Congestion Management Plans shall be prepared by a qualified professional and submitted in connection with the VDOT permit for construction on the subject Block or Sub-Block. In addition, the TPM shall coordinate any adjustments to the TDM Plan (as defined in Proffer 78) as necessary to address each Congestion Management Plan.

**TRANSPORTATION DEMAND MANAGEMENT ("TDM")**

76. Tysons Transportation Management Association. The Applicant shall contribute to Fairfax County funds for the establishment of a future transportation management association (the "TMA"), which may be established for the Tysons Corner Urban Center and to which all other Tysons property owners will also contribute.

A. The Applicant shall make a one-time contribution to the County for the establishment of this future TMA based on a participation rate of $0.10 per gross square foot of new office uses and $0.05 per gross square foot of new residential uses to be constructed on the Subject Property.

B. Twenty-five (25) percent of the total contribution to the TMA shall be paid upon site plan approval of the first new building to be constructed on the Subject Property. The remaining seventy-five percent (75%) of the total contribution shall be paid in three (3) equal installments prior to the issuance of the first RUP or Non-RUP for the first three (3) new buildings, but in any event no later than ten (10) years from the date of rezoning approval.

C. If subsequent to the approval of this Rezoning, a Tysons Corner Urban Center-wide TMA is approved by FCDOT and established for the purpose of administering TDM programs in the Tysons Corner Urban Center, then

the Applicant may, in its sole discretion, join or otherwise become associated with such entity and transfer some or all functions of this TDM Program to the new entity, whereupon this Proffer in whole or in part shall be void and of no further force or effect. Further, if determined by FCDOT that a proactive, private TDM program is no longer necessary, the TDM structure in this Proffer may be rendered null and void in whole or in part without the need for a PCA.

D. If the TMA has not been established within three (3) years after the approval of this Rezoning, this Proffer shall be null and void with no further effect on the Subject Property. Further, any funds contributed to the TMA would then be returned to the Applicant that paid such funds.

77. TDM Administrative Group. The Applicant shall establish a TDM Administrative Group (the "AG") to fund, implement and administer the transportation demand management program (the "TDM Program") for the Subject Property as described more fully below. The AG shall include, at a minimum, one representative for each of Blocks A through F. Prior to approval of the first site plan for new development on the Subject Property, written evidence shall be provided to FCDOT that the AG has been established.

78. Transportation Demand Management Plan. The proffered elements of the TDM Program as set forth below are more fully described in the Arbor Row Transportation Demand Management Plan prepared by M.J. Wells + Associates, Inc. dated February 22, 2012, as revised through August 31, 2012 (the "TDM Plan"). A copy of the cover sheet and table of contents of the TDM Plan is attached hereto as **Exhibit B**. It is the intent of this Proffer that the TDM Plan will adapt over time to respond to the changing transportation related circumstances of the Subject Property, the surrounding community and the region, as well as to technological and/or other improvements, all with the objective of meeting the trip reduction goals as set forth in these Proffers. Accordingly, modifications, revisions, and supplements to the TDM Plan as coordinated with FCDOT can be made without the need for a PCA provided that the TDM Plan continues to reflect the proffered elements of the TDM Program as set forth below.

A. Definitions. For purposes of this Proffer, "Stabilization" shall be deemed to occur one (1) year following issuance of the last initial RUP or Non-RUP for the final new building to be constructed on the Subject Property. "Pre-stabilization" shall be deemed to occur any time prior to Stabilization.

B. Trip Reduction Objective. The objective of this TDM Program shall be to reduce the vehicle trips generated by residents and office tenants of the Subject Property (i.e., not including trips from hotel and retail uses), during weekday peak hours associated with the adjacent streets as more fully described in the TDM Plan, by meeting the percentage vehicle trip reductions established by the Comprehensive Plan as set forth below. These trip reduction percentages shall be multiplied by the total number of

residential and office vehicle trips that would be expected to be generated by the uses developed on the Subject Property as determined by the application of the ITE Trip Generation rates and/or equations, and the number of trips determined by the product of such equation shall be referred to herein as the "Maximum Trips After Reduction." For purposes of this calculation, the maximum number of dwelling units or the total gross square footage of office uses proposed to be constructed in each building on the Subject Property as determined at the time of site plan approval for each new building shall be applied to the calculation described in the preceding sentence. The target reductions shall be as follows:

| Development Levels | Percentage Vehicle Trip Reduction |
|---|---|
| Up to 65 million sq.ft. of GFA | 30% |
| 65 million sq.ft. of GFA | 35% |
| 84 million sq.ft. of GFA | 40% |
| 90 million sq.ft. of GFA | 43% |
| 96 million sq.ft. of GFA | 45% |
| 105 million sq.ft. of GFA | 48% |
| 113 million sq.ft. of GFA | 50% |

The trip reduction goals outlined above are predicated on the achievement of specific development levels within the Tysons Corner Urban Center as anticipated in the Comprehensive Plan. Prior to undertaking trip measurements, the AG in coordination with the County shall provide a summary of the then existing development levels in Tysons Corner (based on RUPs and Non-RUPS issued) in order to determine the appropriate vehicle trip reduction goal.

If through an amendment to the Comprehensive Plan, the Board should subsequently adopt a goal for trip reductions that is lower than that committed to in this Proffer, then the provisions of this Proffer shall be adjusted accordingly without requiring a PCA.

C. TDM Program Components – Arbor Row-Wide. The TDM Program shall include, but not necessarily be limited to, the following Arbor Row-wide components, each of which are more fully described in the TDM Plan:

(i) Arbor Row-wide TDM Program Management.

(ii) TDM Program Branding.

(iii) Transportation Program Web Site.

(iv) Promotion of Real Time Transit Information.

(v) Arbor Row Transportation Access Guide.

(vi) Live/work/play marketing to new tenants.

(vii) Pedestrian/bicycle facilities.

(viii) Monitoring/reporting.

(ix) Sustainable annual funding.

(x) Parking Management.

D. TDM Program Components – Residential. The TDM Program shall include, but not necessarily be limited to the following residential components, each of which is more fully described in the TDM Plan.

(i) Residential Transportation Coordinators.

(ii) Try Transit Campaign for new residents.

E. TDM Program Components – Office. The TDM Program shall include, but not necessarily be limited to the following office components, each of which is more fully described in the TDM Plan.

(i) Office Transportation Coordinators.

(ii) Coordinated Outreach and Marketing Activities with TDM Providers.

(iii) Try Transit Campaign for new employees.

F. Process of Implementation. The TDM Program shall be implemented as follows, provided that modifications, revisions, and supplements to the implementation process as set forth herein as coordinated with FCDOT can be made without requiring a PCA.

(i) TDM Program Manager. If not previously appointed, the AG shall appoint and continuously employ, or cause to be employed, a TDM Program Manager ("TPM") for Arbor Row. If not previously appointed, the TPM shall be appointed by the AG no later than sixty (60) days after the issuance of the first building permit for the first new building to be constructed on the Subject Property. The TPM duties may be part of other duties associated with the appointee. The AG shall notify FCDOT and the District

Supervisor in writing within 10 days of the appointment of the TPM. Thereafter the AG shall do the same within ten (10) days of any change in such appointment.

(ii) Annual Report and Budget. The TPM shall prepare and submit to FCDOT an initial TDM Work Plan ("TDMWP") and Annual Budget no later than 180 days after issuance of the first building permit for the first new building on the Subject Property. Every calendar year thereafter but no later than March 15th, the TPM shall submit an Annual Report, which may revise the Annual Budget in order to incorporate any new construction on the Subject Property. The Annual Report shall include, at a minimum:

a. Details as to the components of the TDM program that will be put into action that year;

b. Any revisions to the budget needed to implement the program for the coming calendar year;

c. A summary of the then existing development levels in the Tysons Corner Urban Center as well as within Arbor Row;

d. A determination of the applicable Maximum Trips After Reduction for the Subject Property;

e. Provision of the specific details associated with the monitoring and reporting requirements of the TDM program in accordance with the TDM plan; and

f. Submission of the results of any Person Surveys and Vehicular Traffic Counts conducted on the Subject Property.

The Annual Report and Budget shall be reviewed by FCDOT. If FCDOT has not responded with any comments within sixty (60) days after submission, then the Annual Report and Budget shall be deemed approved and the program elements shall be implemented. If FCDOT responds with comments on the Annual Report and Budget, then the TPM will meet with FCDOT staff within fifteen (15) days of receipt of the County's comments. Thereafter, but in any event, no later than thirty (30) days after the meeting, the TPM shall submit such revisions to the program and/or budget as discussed and agreed to with FCDOT and begin implementation of the approved program and fund the approved TDM Budget. Thereafter, the TPM, in conjunction with each Annual Report

summarizing the results of the TDM Program to be submitted no later than March 15th (the "Annual Report"), shall update the Annual Report and TDM Budget for each succeeding calendar year, modify or enhance program elements and establish a budget to cover the costs of implementation of the program for such year. The expected annual amounts of the TDM Budget are further described in Section 7.0 of the TDM Plan.

(iii) TDM Account. If not previously established, the AG, through the TPM, shall establish a separate interest bearing account with a bank or other financial institution qualified to do business in Virginia (the "TDM Account") within 30 days after approval of the TDM Budget. All interest earned on the principal shall remain in the TDM Account and shall be used by the TPM for TDM purposes. The TDM Account shall be funded by the AG, through the TPM. The documents that establish the AG shall provide that the TDM Account shall not be eliminated as a line item in the governing budget and that funds in the TDM Account shall not be utilized for purposes other than to fund TDM strategies/programs and/or specific infrastructure needs as may be approved in consultation with FCDOT.

Funding of the TDM Account shall be in accordance with the budget for the TDM Program elements to be implemented in any given year. In no event shall the TDM Budget exceed $122,500 (this amount shall be adjusted annually from the date of rezoning approval for the Subject Property (the "Base Year")) and shall be adjusted on each anniversary thereafter of the Base Year in accordance with Proffer 111. The TPM shall provide written documentation to FCDOT demonstrating the establishment of the TDM Account within ten (10) days of its establishment. The TDM Account shall be replenished annually thereafter following the establishment of each year's TDM Budget. The TDM Account shall be managed by the TPM.

(iv) TDM Remedy Fund. At the same time the TPM creates and funds the TDM Account, the TPM shall establish a separate interest bearing account (referred to as the "TDM Remedy Fund") with a bank or other financial institution qualified to do business in Virginia. Funding of the TDM Remedy Fund shall be made one time on a building by building basis at the rate of $0.40 per gross square foot of new office uses and $0.30 per gross square foot of new residential uses on the Subject Property. Funding shall be provided by the building owners prior to the issuance of the first

initial RUP or Non-RUP for each applicable new building. This amount shall be adjusted annually from the date of rezoning approval of the Subject Property (the "Base Year") and shall be adjusted on each anniversary thereafter of the Base Year as permitted by VA. Code Ann. Section 15.2-2303.3. Funds from the TDM Remedy Fund shall be drawn upon only for purposes of immediate need for TDM funding and may be drawn on prior to any TDM Budget adjustments as may be required.

(v) TDM Incentive Fund. The "TDM Incentive Fund" is an account into which the building owners, through the TPM, shall deposit contributions to fund a multimodal incentive program for initial purchasers/lessees within Arbor Row. Such contributions shall be made one time on a building by building basis at the rate of $0.02 per gross square foot of new office or residential uses to be constructed on the Subject Property and provided prior to the issuance of the first RUP or Non-RUP for each individual building.

(vi) TDM Penalty Fund. The "TDM Penalty Fund" is an account into which the AG shall, through the TPM, shall deposit penalty payments as may be required to be paid pursuant to this Proffer for non-attainment of trip reduction goals. The County may withdraw funds from the TDM Penalty Fund for the implementation of additional TDM Program elements/incentives and/or congestion management, first for Arbor Row, then for other TDM-related improvements or programs within Tysons Corner. To secure the AG's obligations to make payments into the TDM Penalty Fund, the AG shall provide the County with a letter of credit or a cash escrow as further described below.

Prior to the issuance of the first RUP or Non-RUP for each new building on the Subject Property, the AG shall:

a. Establish the TDM Penalty Fund, if not previously established by the TPM, and/or

b. Deliver to the County a clean, irrevocable letter of credit issued by a banking institution approved by the County or escrow cash in an interest-bearing account with an escrow agent acceptable to DPWES to secure the AG's obligations to make payments into the TDM Penalty Fund (the "Letter(s) of Credit or Cash Escrow(s)"). The Letter(s) of Credit or Cash Escrow(s) shall be issued in an amount equal to $0.10 for each square foot of new office GFA or $0.05 for each square foot of new residential GFA shown

on the approved site plan for each new building on the Subject Property. Until the Letter(s) of Credit or Cash Escrow(s) has been posted, the figures in the preceding sentence shall be adjusted annually from the first day of the calendar month following the date on which the first RUP or Non-RUP, as the case may be, for the first new building on the Subject Property has been issued in accordance with Proffer 111, using the date of rezoning approval as the base year. Once the Letter(s) of Credit or Cash Escrow(s) has been posted, there shall be no further adjustments or increases in the amount thereof. The Letter(s) of Credit or Cash Escrow(s) shall name the County as the beneficiary and shall permit partial draws or a full draw. The foregoing stated amount(s) of the Letter(s) of Credit or Cash Escrow(s) shall be reduced by the sum of any and all previous draws under the Letter(s) of Credit or Cash Escrow(s) and payments by the AG (or the TPM) into the TDM Penalty Fund as provided below.

(vii) Monitoring. The AG shall verify that the proffered trip reduction goals are being met through the completion of Person Surveys, Vehicular Traffic Counts of residential and/or office uses and/or other such methods as may be reviewed and approved by FCDOT. The results of such Person Surveys and Vehicular Traffic Counts shall be provided to FCDOT as part of the annual reporting process. Person Surveys and Vehicular Traffic Counts shall be conducted for the Subject Property beginning one year following issuance of the final initial RUP or Non-RUP for the first new building to be constructed on the Subject Property. Person Surveys shall be conducted every three (3) years and Vehicular Traffic Counts shall be collected annually until the results of three consecutive annual traffic counts conducted upon Stabilization show that the applicable trip reduction goals for the Subject Property have been met. At such time and notwithstanding Paragraph H below, Person Surveys and Vehicular Traffic Counts shall thereafter be provided every five (5) years. Notwithstanding the aforementioned, at any time prior to or after Stabilization, FCDOT may suspend such Vehicle Traffic Counts and/or Person Surveys if conditions warrant such.

G. Remedies and Penalties.

(i) Pre-Stabilization. If the Maximum Trips After Reduction for the Subject Property is exceeded as evidenced by the Vehicular Traffic Counts outlined above, then the TPM shall meet and coordinate with FCDOT to address, develop and implement such remedial measures as may be identified in the TDM Plan and annual TDMWP.

a. Such remedial measures shall be funded by the Remedy Fund, as may be necessary, and based on the expenditure program that follows:

| Maximum Trips Exceeded | Remedy Expenditure |
|---|---|
| Up to 1% | No Remedy needed |
| 1.1% to 3% | 1% of Remedy fund |
| 3.1% to 6% | 2% of Remedy Fund |
| 6.1% to 10% | 4% of Remedy Fund |
| Over 10% | 8% of Remedy Fund |

b. If the results of the Vehicular Traffic Counts conducted during Pre-Stabilization show that the trip reduction goals have been met site-wide for three (3) consecutive years in accordance with the goals outlined on the table below, then a portion of the Remedy Fund as outlined in the same table below shall be released back to the building owner(s) through the AG. The amount released will be relative to the amount contributed by those buildings constructed and occupied at the time of Vehicular Traffic Counts. Any funds remaining in the Remedy Fund after such release will be carried over to the next consecutive three (3) year period.

| Up to 65,000,000 Square Feet of GFA in Tysons | |
|---|---|
| **Meet or Exceed Trip Goal for 3 Years By:** | **Cumulative % Remedy Fund Returned** |
| **Meet Goal** | **30%** |
| 5% - 10% | 50% |
| 10.1% - 15% | 65% |
| 15.1% - 18% | 80% |
| 18.1 - 20% | 90% |
| **Reach Final Goal** | **100%** |

| 65-84,000,000 Square Feet of GFA in Tysons | |
|---|---|
| **Meet or Exceed Trip Goal for 3 Years By:** | **Cumulative % Remedy Fund Returned** |
| **Meet Goal** | **50%** |
| 5% - 10% | 65% |
| 10.1% - 13% | 80% |
| 13.1% - 15% | 90% |
| **Reach Final Goal** | **100%** |

| 84-90,000,000 Square Feet of GFA in Tysons | |
|---|---|
| **Meet or Exceed Trip Goal for 3 Years By:** | **Cumulative % Remedy Fund Returned** |
| **Meet Goal** | **65%** |
| 5% - 8% | 80% |
| 8.1% - 10% | 90% |
| **Reach Final Goal** | **100%** |

| 90-96,000,000 Square Feet of GFA in Tysons | |
|---|---|
| **Meet or Exceed Trip Goal for 3 Years By:** | **Cumulative % Remedy Fund Returned** |
| **Meet Goal** | **80%** |
| 5% - 8% | 90% |
| **Reach Final Goal** | **100%** |

| 96-113,000,000 Square Feet of GFA in Tysons | |
|---|---|
| **Meet or Exceed Trip Goal for 3 Years By:** | **Cumulative % Remedy Fund Returned** |
| **Meet Goal** | **90%** |
| **5%** | **100%** |

| 113,000,000+ Square Feet of GFA in Tysons | |
|---|---|
| **Meet or Exceed Trip Goal for 3 Years By:** | **Cumulative % Remedy Fund Returned** |
| **Meet Goal** | **100%** |

c. The Applicant, through the TPM, is not required to replenish the TDM Remedy Fund at any time. Any cash left in the Remedy Fund will be released to the AG for final distribution to the owners once three consecutive annual Vehicular Traffic Counts conducted after Stabilization show that the trip reduction goals have been met.

(ii) Following Stabilization.

a. *Remedies*. If the TDM Program monitoring, as evidenced by the Vehicular Traffic Counts outlined above, reveals that the Maximum Trips After Reduction for the Subject Property is exceeded, then the TPM shall meet and coordinate with FCDOT to address, develop and implement such remedial measures as may be identified in the TDM Plan and Annual Report and funded by the Remedy Fund (if available) as may be necessary, commensurate with the

extent of deviation from the Maximum Trips After Reduction goal as set forth in accordance with the expenditure schedule outlined above.

b. If the results of the Vehicular Traffic Counts conducted upon Stabilization show that the trip reduction goals have been met site-wide for three (3) consecutive years in accordance with the table above, then any remaining Remedy Funds shall be released back to the building owner(s) through the AG.

c. *Penalties.* If despite the implementation of remedial efforts, the applicable Maximum Trips After Reduction (based on the existing and approved development levels in the Tysons Corner Urban Center as described in Proffer 78.B.) are still exceeded after three (3) consecutive years, then, in addition to addressing further remedial measures as set forth in this Proffer, the TPM shall be assessed a penalty according to the following:

| **Exceeded Trip Goals** | **Penalty** |
|---|---|
| Less than 1% | No Penalty Due |
| 3.1% to 6% | 10% of Penalty Fund |
| 6.1% to 10% | 15% of Penalty Fund |
| Over 10% | 20% of Penalty Fund |

(iii) The AG through the TPM shall make the payments required by this Proffer into the TDM Penalty Fund upon written demand by the County, and the County shall be authorized to withdraw the amounts on deposit in the TDM Penalty Fund. If the AG fails to make the required penalty payment to the TDM Penalty Fund within thirty (30) days after written demand, the County shall have the ability to withdraw the penalty amount directly from the Letter(s) of Credit or Cash Escrow(s).

(iv) The maximum amount of penalties associated with the Subject Property, and the maximum amount the AG shall ever be required to pay pursuant to the penalty provisions of this Proffer, including prior to and after Stabilization, shall not in the aggregate exceed the amount of the Letter(s) of Credit or Cash Escrow(s) determined and computed pursuant to the provisions of the above Proffer. There is no requirement to replenish the TDM Penalty Fund at any time. The Letter(s) of Credit and/or any cash left in the Cash Escrow(s) (either Penalty and/or Remedy Funds) shall be released

to the AG once three (3) consecutive counts conducted upon Stabilization show that the Maximum Trips After Reduction have not been exceeded.

H. Additional Trip Counts. If an Annual Report indicates that a change has occurred that is significant enough to reasonably call into question whether the applicable vehicle trip reduction goals are continuing to be met, then FCDOT may require the TPM to conduct additional Vehicular Traffic Counts (pursuant to the methodology set forth in the TDM Plan) within 90 days to determine whether in fact such objectives are being met. If any such Vehicular Traffic Counts demonstrate that the applicable vehicle trip reduction goals are not being met, then the TPM shall meet with FCDOT to review the TDM strategies in place and to develop modifications to the TDM Plan to address the surplus of trips.

I. Review of Trip Reduction Goals. At any time and concurrent with remedial actions and/or the payment of penalties as outlined in Proffer 78.G., the AG may request that FCDOT review the vehicle trip reduction goals established for the Subject Property and set a revised lower goal for the Subject Property consistent with the results of such surveys and vehicular traffic counts provided for by this Proffer. In the event a revised lower goal is established for the Subject Property, the Maximum Trips After Reduction shall be revised accordingly for the subsequent review period without the need for a PCA.

J. Continuing Implementation. The AG through the TPM shall bear sole responsibility for continuing implementation of the TDM Program and compliance with this Proffer. The AG through the TPM shall continue to administer the TDM Program in the ordinary course in accordance with this Proffer including submission of Annual Reports.

K. Notice to Owners. All owners of the Subject Property shall be advised of the TDM Program set forth in this Proffer. The then current owner shall advise all successor owners and/or developers of their funding obligations pursuant to the requirements of this Proffer prior to purchase, and the requirements of the TDM Program, including the annual contribution to the TDM Program (as provided herein), shall be included in all initial and subsequent purchase documents.

L. Enforcement. If the TPM fails to timely submit a report to FCDOT as required by this Proffer, the TPM will have sixty (60) days within which to cure such violation. If after such sixty (60) day period the TPM has not submitted the delinquent report, then the AG shall be subject to a penalty of $100 per day not to exceed $36,500 for any one incident. Such penalty shall be payable to Fairfax County to be used for multimodal, transit,

transportation, or congestion management improvements within the vicinity of the Subject Property, or with the TPM's approval, for other TDM-related improvements or programs within Tysons Corner.

79. Transportation Demand Management for Retail/Hotel Uses. As provided in the above Proffer, certain components of the TDM Plan are applicable to and will benefit the proposed Retail/Hotel Uses on the Subject Property. Therefore, the Applicant will provide an additional TDM program tailored to specifically serve the Retail/Hotel Uses (the "Retail/Hotel TDM Program"). In no event will penalties be assessed against any Retail/Hotel Uses, which may be established on the Subject Property.

A. Goals of the Retail/Hotel TDM Program. Because tenants of the retail stores and hotels and their employees work hours that are atypical of the standard work day, these tenants and their employees do not necessarily travel to and from the Subject Property during peak hours. Given this, the Retail/Hotel TDM Program shall encourage retail tenants, hotel guests and the retail/hotel employees to utilize transit, carpools, walking, biking and other non-Single Occupancy Vehicle ("non-SOV") modes of transportation to travel to and from the Subject Property rather than focusing on the specific trip reductions during the weekday AM or PM peak hours.

B. Components of the Retail/Hotel TDM Program. The Retail/Hotel TDM Program shall include, at a minimum, the components applicable to the Subject Property that are described in this Proffer and the additional components provided below. These additional components may be subsequently amended by mutual agreement between the Applicant and FCDOT. All amendments to the components of the Retail/Hotel TDM Program contained in this Proffer shall be approved by FCDOT and will not require a PCA. The Retail/Hotel TDM Program components are further described in the TDM Plan.

C. Employee/Tenant Meetings. The TPM shall hold, at a minimum, an annual TDM meeting with the Retail store tenants and Hotel Managers, and their respective employees, to review the available transit options, changes in transit service and other relevant transit-related topics. Based on these meetings, the TPM shall work with Fairfax County to consider changes to the relevant services, such as changes to bus schedules, if such changes would provide better service to the Subject Property tenants and their employees.

D. Regional TDM Programs. The TPM shall make information available to retail store tenants, hotel guests and the retail/hotel employees about regional TDM programs that promote alternative commuting options.

This shall include information on vanpools, carpools, guaranteed ride home and other programs offered by organizations in the Washington, D.C. Metropolitan Area.

E. Retail/Hotel TDM Program Participation Outreach. The TPM shall endeavor in good faith to encourage participation by Retail store tenants and hotel management in the Retail/Hotel TDM Program, including the encouragement of a financial participation by such tenants through their direct offering of transit benefit programs and transit incentives to their employees. Actions taken by the TPM and property management in furtherance of this objective may include dissemination of information to, and solicitation of participation from, the tenant's in-store management and executives or officers at their headquarters offices, at appropriate intervals. The TPM shall include a report to the County with respect to the activities described in the TDM Proffer as part of the Annual Report to be filed with the County. This report shall include detailed accounts of the outreach efforts and the feedback and response from the tenants.

80. Existing or Interim Arbor Row Office Uses. Certain components of the TDM Plan are applicable to and would benefit not only the existing office or interim uses on the Subject Property but potential interim uses as well. The TPM shall make available information on those components to any existing occupied office and/or interim uses which remain or are established on Blocks A through F or any established interim uses. Such uses shall not, however, be subject to monitoring nor will penalties be assessed against those existing office or interim uses. Beginning with the first September following the issuance of a building permit for any new building on Blocks A through F, the subsequent Annual Report shall be expanded to include those new office or residential uses.

81. Intelligent Transportation Systems. To optimize safe and efficient travel in Tysons Corner, the Applicant shall incorporate and maintain a system that provides pertinent traffic and transit information that allows users to make informed travel decisions. This information shall be provided at initial occupancy of each building. The delivery of this information shall be made convenient for building occupants and visitors, such as via computer, cell phone, monitors, or similar technology. Such devices shall provide, but not be limited to, information on the following:

A. Traffic conditions, road hazards, construction work zones, and road detours.

B. Arrival times and delays on Metrorail, Tysons Circulator, and area bus routes.

C. Real time parking conditions and guidance to current on-site parking vacancies, if available.

D. Bus stops pre-wired for real-time arrivals/departures information, if available.

The Applicant shall work with FCDOT and/or the Tysons Partnership to identify sources and facilitate electronic transmittal of data. Furthermore, the Applicant shall participate in efforts to implement any future dynamic traffic management program for the Tysons area.

## BICYCLE FACILITIES

82. Bicycle Parking and Storage. Bicycle racks, bike lockers, and/or bike storage areas shall be provided on each Block, with the specific amounts and locations determined at the time of FDP and finalized with site plan approval in consultation with the FCDOT Bicycle Coordinator. Bicycle racks located outside of buildings and parking garages shall be inverted U-style racks or other design approved by FCDOT. The total number of bike parking/storage spaces provided for all Blocks shall be generally consistent with the Fairfax County Policy and Guidelines for Bicycle Parking for each building or group of buildings, as determined at the time of FDP approval. Signage shall be posted on the exterior side of buildings closest to entrances to bike parking/storage space to indicate bike parking/storage.

83. Bicycle Lanes. In combination with the street and streetscape improvements identified in these Proffers, pavement and striping for on-street bicycle lanes along the Westpark Drive frontage of each respective Block and a temporary bicycle lane along the corresponding westbound frontage of Westpark Drive across from such Block, shall be provided as depicted on the CDP with the final dimension determined at the time of FDP approval. In addition, on Westbranch Drive a dedicated bicycle lane shall be provided between Westpark Drive and Tysons Boulevard in the southbound (uphill) direction only. The timing and installation of bicycle lane striping shall be subject to VDOT approval.

## PARKING

84. Parking Requirements. Parking on the Subject Property shall be provided in accordance with the parking requirements for the PTC District set forth in Sect. 6-509 and Article 11 of the Zoning Ordinance, and as shown on the CDP. Tandem and valet parking shall be permitted and, subject to Board approval, shall count toward parking requirements. Tandem parking spaces may be used for residential units with two cars and in office and hotel buildings where spaces are assigned by building management. The exact number of parking spaces to be provided for each Block shall be refined with approval of the FDP and determined at the time of site plan approval based on the specific uses of each Block. If changes in the mix of uses or unit types result in parking greater than that anticipated on the CDP, the additional parking spaces shall be accommodated within the proposed parking garages, so long as the maximum height and footprints of the parking garages do not increase from that shown on the CDP. Parking at revised ratios may be provided, as may be permitted by a future amendment to the Zoning Ordinance. Optional use of revised ratios shall not require a PCA, CDPA or FDPA, provided

there is no increase in the size or height of above-grade parking garages beyond minor adjustments to what is shown on the CDP.

85. On-Street Parking Spaces on Private Streets. On-street parking may be provided on the private streets to meet the parking requirements of the Zoning Ordinance, so long as such spaces are striped and meet the dimension requirements of the PFM, subject to receiving approval of any necessary waivers and/or modifications, if any. Parking on private streets may be restricted through appropriate signage or such other means as determined appropriate by the Applicant as to their respective Blocks, and on-street parking spaces along any private streets and future public streets prior to dedication, that otherwise are not required to satisfy the parking requirements may be used as temporary or short term parking, car-sharing parking and/or similar uses.

86. On-Street Parking Spaces on Public Streets. On-street parking spaces along the public street frontages associated with each respective Block may be constructed as generally shown on the CDP and as may be adjusted at the time of FDP approval. If requested by the County and/or VDOT, signs shall be installed that restrict the use of those public on-street parking spaces. Public on-street parking spaces would be in addition to the total number of required parking spaces to be provided for each Block. Notwithstanding the notes on the CDP, the designation and/or restriction of on-street parking spaces, including the location of handicapped spaces along Westpark Drive and Westbranch Drive, shall be determined in consultation with VDOT and FCDOT at the time of site plan approval for each respective Block.

87. Parking Restrictions. Based on tenant requirements, vehicular access and travel between the parking garages on Blocks B and C may be restricted by the Applicant, so long as Block C can maintain access through the Block B garage to Westbranch Drive. The Block D parking garage will not be connected with adjacent parking garages on other Blocks but will connect to the building on Block D. Block A may have separate parking garages for Sub-Blocks A-1 and A-2 that are not connected. All Blocks may provide gated/restricted parking within the parking garages on the respective Blocks. If gates are provided in any of the Block A through Block F parking garages, then such gates should be located to provide sufficient stacking capacity within the parking garage to prevent vehicles from stacking onto public roads.

88. Temporary Trees on Interim Surface Parking Lots. Existing surface parking lots may be used for interim parking prior to replacement with parking garages or buildings and, in the event that such parking areas are not being used for construction parking or staging or remain undeveloped (except for parking) for more than eighteen (18) months, then temporary street trees shall be planted in existing grass areas along the perimeter of such lots at a minimum size of 2.0 inches in caliper approximately every 50 feet, to the extent feasible as determined by UFMD based on existing conditions and utility easements. This interim street tree planting shall not be required to meet the minimum planting width/area standard for permanent street trees, subject to Board approval. No interior parking lot landscaping shall be required nor provided for these interim surface lots, subject to the Board's approval of a waiver.

89. Unbundled Parking for Residential Uses. All for-sale residential units must be offered exclusive of parking (i.e., at a separate cost). All leases for residential units shall be offered exclusive of parking.

90. Paid Parking for Non-Residential Uses. The Applicant may charge for parking on their respective Blocks, on a per-space basis, at rates that the Applicant deems to be market-competitive. At its sole option, the Applicant may elect to charge for parking within some or all of the parking decks associated with commercial Blocks and on portions of the street network that are privately owned.

## AFFORDABLE/WORKFORCE HOUSING

91. Affordable Dwelling Units. If required by the provisions of Part 8 of Article 2 of the Zoning Ordinance, Affordable Dwelling Units ("ADUs") shall be provided for Block A and/or Block E, as applicable, pursuant to such provisions unless modified by the ADU Advisory Board.

92. Workforce Dwelling Units. For-sale and/or rental housing units shall be provided within residential buildings in accordance with the Board's Tysons Corner Urban Center Workforce Dwelling Unit Administrative Policy Guidelines dated June 22, 2010. Workforce Dwelling Units ("WDUs") shall be provided such that the total number of ADUs, if any, plus the total number of WDUs results in twenty percent (20%) of the total residential units constructed on Block A and Block E, respectively. The 20% applies to the total number of dwelling units to be constructed on the subject site, respectively; however, any units created with workforce housing bonus floor area shall be excluded from the 20% WDU calculation (e.g., if 500 total units are to be constructed, 84 WDUs/ADUs would be required, based on the calculation of 500/1.20 = 417 base units x .20 = 84 WDUs/ADUs). If ADUs are provided in any residential building, both the ADUs and the ADU bonus units shall be deducted from the total number of dwelling units on which the WDU calculation is based.

A. The WDUs generated by each residential building shall be provided within such building; however, the WDUs may be consolidated into one or more buildings on a Block, and thereby increase the number of WDUs in one or more buildings beyond twenty percent (20%) with a corresponding decrease in the number of WDUs in the other buildings. The WDUs in each building, if any, shall have a bedroom mix roughly proportional to that provided in the market rate units in such building. Additionally, in the event that parking spaces are offered to be made available for lease to individual market rate dwelling units, at least one (1) parking space shall be made available for lease by each ADU and/or WDU in the subject Block.

B. Notwithstanding the foregoing, should the Board's policies related to WDUs in Tysons Corner be amended, the Applicant reserves the right, in

their sole discretion as to their respective Blocks, to opt into the new policies, in part or in whole, without the need for a PCA or CDPA and, if an Applicant so opts into any such new policies, the provisions of this Proffer which relate to the new policies of the Board which the Applicant has elected to opt into shall no longer be effective. Furthermore, the Applicant reserves the right as to their respective Blocks to enter into a separate binding written agreement with the appropriate County agency as to the terms and conditions of the administration of the WDUs. Such an agreement shall be on terms mutually acceptable to the Applicant and the County and may occur any time after the approval of this Rezoning. Neither the Board nor the County shall be obligated to execute such an agreement. If such an agreement is executed by all applicable parties, then the WDUs shall be administered solely in accordance with such agreement and the provisions of this Proffer as it applies to WDUs shall become null and void. Such an agreement and any modifications thereto, or an appropriate memorandum thereof, shall be recorded in the land records of the County.

93. Office and Hotel Contributions toward Affordable/Workforce Housing in Tysons Corner. One of the following two options may be chosen by the Applicant for non-residential uses' contributions toward the provision of affordable and/or workforce housing within Tysons Corner. This contribution shall be made to the Board, be deposited in a specific fund to be used solely for this purpose within Tysons Corner and shall be payable prior to the issuance of the initial Non-RUP for each new non-residential building on each respective Block, excluding retail/services uses and public uses. The contributions shall consist of either (i) a one-time contribution of $3.00 for each square foot of office or hotel GFA, excluding retail/services uses and public uses, or (ii) an annual contribution of $0.25 for each square foot of non-residential GFA, excluding retail/services uses and public uses and continuing for a total of sixteen (16) years.

## STORMWATER MANAGEMENT

94. Stormwater Management. Stormwater management (SWM) measures for the Subject Property shall be designed with the goal of protecting the downstream receiving waters in the Tysons Corner area from further degradation while providing sufficient controls to proportionately improve the condition of such receiving waters. Stormwater detention and Best Management Practices (BMPs) shall be provided in an appropriate system, including but not limited to, underground detention vaults, LID facilities, infiltration trenches, and existing off-site stormwater management facilities as generally set forth on the CDP (collectively, the "SWM Facilities"). The specific SWM Facilities shall be identified at the time of FDP approval and subsequent site plan approval, as may be approved by DPWES. Each FDP shall include the possible locations and preliminary design of the SWM Facilities, including the access points to underground vaults. For the purposes of this Proffer, references to "current LEED requirements" shall be defined as the version of LEED under which each building is anticipated to attain

certification. At the time of each FDP submission, calculations shall be provided showing the proposed volume reductions for the subject Block, and the Applicant shall work cooperatively with DPWES and DPZ to ensure that the target reuse volume identified on the FDP is captured and the first inch of rainfall for the subject Block is retained or reused to the maximum extent practicable. This requirement may be met on an individual Block basis or based upon the total area of the Subject Property.

A. The SWM Facilities shall be designed to accommodate not just the pre-developed (existing) peak release rates for the subject Block, but also strive to preserve and/or improve the pre-developed (existing) runoff volumes as contemplated within current LEED requirements, depending on the existing impervious condition. Stormwater management plans for each Block shall achieve at a minimum the stormwater management design credits for LEED (provided such LEED stormwater credit does not include a mandatory drawdown requirement that conflicts with other aspects of this Proffer) and retain on-site and/or seek to reuse the first inch of rainfall to the extent practicable during final design of each building in such Block, per the calculations provided on the CDP. While it is anticipated that compliance with the Comprehensive Plan goal of retaining and/or reusing the first one-one-inch will be determined by the retention credits for the stormwater control measures provided on the CDP and the FDPs, the Applicant reserves the right to utilize any combination of LID (existing and future) measures to meet this goal, subject to the review and approval of DPWES at the time of site plan.

B. Site plans for each Block shall make use of certain LID techniques that will aid in runoff volume reduction and/or promote stormwater reuse throughout the Subject Property. LID techniques may include, but not be limited to, green roofs, tree box filters, pervious hardscapes/streetscapes, bioretention, vegetated swales, infiltration, and stormwater reuse for landscape irrigation and air conditioning unit cooling, as determined by the Applicant for their respective Blocks, in their sole discretion.

C. At the time of each site plan submission, calculations shall be provided showing the proposed volume reductions for the subject Block, and the Applicant shall work cooperatively with DPWES and DPZ to ensure that the target reuse volume identified on the FDP is captured to the maximum extent practicable. This requirement may be met on an individual Block basis or based upon the total area of the Subject Property.

## INTERIOR NOISE ATTENUATION FOR RESIDENTIAL AND HOTEL USES

95. Residential and Hotel Interior Noise Level. The Applicant shall reduce the interior DNL to no more 45 dBA for residential and hotel buildings on the Subject Property. At the time of building plan application for the full shell building permit for each residential or hotel building, the Applicant shall submit to the Chief of the Environment and Development Review Branch of DPZ (the "E&D Chief"), for approval, and to DPWES, for information only, an acoustical study prepared by a qualified acoustical consultant (the "Indoor Noise Study") addressing indoor noise levels, including proposed noise attenuation measures and proposed materials to ensure compliance with the interior DNL limit of 45 dBA. The Applicant shall not obtain full-shell building permits until the E&D Chief has approved the applicable Indoor Noise Study, provided that a failure by the E&D Chief to review and respond to the Applicant within 60 days of receipt of the Indoor Noise Study shall be deemed approval of such study.

## EQC, RPA AND TREE PRESERVATION WITHIN SUB-BLOCK A-1

96. Environmental Quality Corridor ("EQC") Boundary. The EQC boundary shall be delineated and appropriately labeled on the site plan and is inclusive within the Resource Protection Area boundary referenced below.

97. Resource Protection Area ("RPA") Boundary. Within Sub-Block A-1, the limits of clearing and grading shown along the RPA boundary shall be strictly observed and enforced. With each and every site plan submission that includes Sub-Block A-1, the Phase 1 and 2 Erosion and Sediment ("E&S") control plans and associated narrative shall require the installation of tree protection fencing with signage and super silt fence along the limits of clearing and grading that abut the RPA boundary. The only authorized encroachments into the RPA are those depicted on this plan and set forth in these 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 DPWES. The Applicant shall be responsible for the means and methods to ensure that building construction does not encroach into the RPA. Any unauthorized encroachment into, or disturbance of, the RPA is considered a violation of the CBPO and is subject to the penalties in Article 9 (violations and penalties) of such Ordinance.

98. Tree Preservation. A tree preservation plan and narrative for Sub-Block A-1 shall be submitted as part of the first and all subsequent site plan submissions for Sub-Block A-1. Such tree preservation plan and narrative shall be prepared by a Certified Arborist or a Registered Consulting Arborist, and shall be subject to the review and approval of the UFMD. Such tree preservation plan shall include a tree inventory that identifies the location, species, critical root zone, size, crown spread and condition analysis percentage rating for all individual trees that are located within 25 feet of either side of the limits of clearing and grading, and have trunks 12 inches in diameter and greater (measured at 4½ -feet from the base of the trunk or as otherwise allowed in the latest edition of the Guide for Plant Appraisal published by the International Society of Arboriculture), whether on-site or off-site or living or dead. Such tree preservation plan shall provide for the preservation of those areas shown for tree preservation,

those areas outside of the limits of clearing and grading shown on the CDP and those additional areas in which trees can be preserved as a result of final engineering. Such tree preservation plan and narrative shall include all items specified in PFM Sect. 12-0507 and Sect. 12-0509. Specific tree preservation activities that will maximize the survivability of any tree identified to be preserved, such as: crown pruning, root pruning, mulching, fertilization, and others as necessary, shall be included in the plan.

99. Tree Preservation Walk-Through. In connection with redevelopment of Sub-Block A-1 pursuant to the previous paragraph, the services of a certified arborist or Registered Consulting Arborist shall be retained and the limits of clearing and grading shall be marked with a continuous line of flagging prior to a pre-construction walk-through meeting. During the tree preservation pre-construction walk-through meeting, the certified arborist or landscape architect shall walk the limits of clearing and grading with a UFMD representative to determine where adjustments to the clearing limits can be made to increase the area of tree preservation without adversely impacting the buildings and related improvements and/or to increase the survivability of trees at the edge of the limits of clearing and grading, and such adjustment shall be implemented. Trees that are identified as dead or dying may be removed as part of the clearing operation. Any tree that is so designated shall be removed using a chain saw, and such removal shall be accomplished in a manner that avoids damage to surrounding trees and associated understory vegetation. If a stump must be removed, this shall be done using a stump-grinding machine in a manner causing as little disturbance as possible to adjacent trees and associated understory vegetation and soil conditions.

100. Limits of Clearing and Grading. Construction on Sub-Block A-1 shall conform with the limits of clearing and grading as shown on the CDP, subject to allowances provided in these Proffers and for the installation of utilities, public improvements (i.e. roads, streetscapes, entrances, sidewalks, degraded soil and slope conditions) and/or trails as determined necessary by the Director of DPWES, as described herein. If it is determined necessary to install utilities and/or trails in areas beyond the limits of clearing and grading for Sub-Block A-1 as shown on the CDP, such utilities and/or trails shall be located in the least disruptive manner necessary as determined by the UFMD. A replanting plan shall be developed and implemented, subject to approval by the UFMD, for any areas on Sub-Block A-1 beyond the limits of clearing and grading that must be disturbed for such trails, utilities, roads or similar uses, if any such areas are identified at the time of site plan.

101. Tree Protection Fencing. All trees shown to be preserved on the tree preservation plan for Sub-Block A-1 shall be protected by tree protection fencing. Tree protection fencing in the form of four (4) foot high, fourteen (14) gauge welded wire attached to six (6) foot steel posts driven eighteen (18) inches into the ground and placed no further than ten (10) feet apart or, super silt fence to the extent that required trenching for super silt fence does not sever or wound compression roots which can lead to structural failure and/or uprooting of trees, shall be erected at the limits of clearing and grading as shown on the demolition, and phase I & II erosion and sediment control sheets, as may be modified by the "Root Pruning" Proffer below. Tree protection fencing shall be installed after the tree preservation walk-through meeting but prior to

any clearing and grading activities, including the demolition of any existing structures. The installation of all tree protection fencing shall be performed under the supervision of a certified arborist, and accomplished in a manner that does not harm existing vegetation that is to be preserved. Three (3) days prior to the commencement of any clearing, grading or demolition activities, but subsequent to the installation of the tree protection devices, the UFMD shall be notified and given the opportunity to inspect the site to ensure that all tree protection devices have been correctly installed. If it is determined that the fencing has not been installed correctly, no grading or construction activities shall occur until the fencing is installed correctly, as determined by the UFMD.

102. Root Pruning. Root pruning, as needed to comply with the tree preservation requirements applicable to Sub-Block A-1, shall be performed. All treatments shall be clearly identified, labeled, and detailed on the erosion and sediment control sheets of the site plan submission for Sub-Block A-1. The details for these treatments shall be reviewed and approved by the UFMD, accomplished in a manner that protects affected and adjacent vegetation to be preserved, and may include, but not be limited to the following:

A. Root pruning shall be done with a trencher or vibratory plow to a depth of 18 inches.

B. Root pruning shall take place prior to any clearing and grading, or demolition of structures.

C. Root pruning shall be conducted under the supervision of a certified arborist.

D. A UFMD representative shall be informed when all root pruning and tree protection fence installation is completed.

103. Tree Appraisal. For Sub-Block A-1 only, the Applicant shall retain a professional arborist with experience in plant appraisal, to determine the replacement value of all trees 12 inches in diameter or greater located within twenty-five (25) feet of the outer limits of disturbance that are shown to be saved on the Tree Preservation Plan. These trees and their value shall be identified on the Tree Preservation Plan at the time of the first submission of the respective site plan(s). The replacement value shall take into consideration the age, size and condition of these trees and shall be determined by the so-called "Trunk Formula Method" contained in the latest edition of the Guide for Plan Appraisal published by the International Society of Arboriculture, subject to review and approval by UFMD.

At the time of the respective site plan approvals, the Applicant shall post a cash bond, a letter of credit payable to the County of Fairfax or a surety bond from a financial institution licensed to do business in Virginia, to ensure preservation and/or replacement of the trees for which a tree value has been determined in accordance with the paragraph above (the "Bonded Trees") that die or are dying due to unauthorized construction activities. The letter of credit, cash deposit or surety bond shall be equal to 50% of the replacement value of the Bonded Trees.

At any time prior to final bond release for the improvements on the Application Property constructed adjacent to the respective tree save areas, should any Bonded Trees die, be removed, or are determined to be dying by UFMD due to unauthorized construction activities, the Applicant shall replace such trees at its expense. The replacement trees shall be a minimum three (3) inch caliper in size, and equivalent species and/or canopy cover as approved by UFMD. In addition to this replacement obligation, the Applicant shall also make a payment equal to the value of any Bonded Tree that is dead or dying or improperly removed due to unauthorized construction activity. This payment shall be determined based on the Trunk Formula Method and paid to a fund established by the County for furtherance of tree preservation objectives. Upon release of the bond for the improvements on the Application Property constructed adjacent to the respective tree save areas, any amount remaining in the tree bonds required by this Proffer shall be returned/released to the Applicant.

104. Demolition of Existing Structures. Any demolition of existing structures and related improvements for Sub-Block A-1 in areas outside of the limits of clearing and grading shown on the CDP for Sub-Block A-1 shall be done by hand without heavy equipment to the extent practicable and conducted in a manner that does not impact individual trees and/or groups of trees that are to be preserved as reviewed and approved by the UFMD.

105. Site Monitoring. During any clearing or tree/vegetation/structure removal within the tree preservation area in Sub-Block A-1, a representative of the Applicant shall be present to monitor the process and ensure that the activities are conducted in accordance with these Proffers and as approved by the UFMD. The services of a certified arborist or Registered Consulting Arborist shall be retained to monitor all construction and demolition work and tree preservation efforts in order to ensure conformance with these Proffers and the UFMD approvals. The monitoring schedule shall be described in the tree preservation plan, and reviewed and approved by the UFMD.

## MISCELLANEOUS

106. Bird-Friendly Design. At the time of site plan submission for each respective Block, the Applicant for that site plan shall study whether bird-friendly design strategies may be employed to reduce bird injury and death due to in-flight collisions with building and/or building elements. The strategies to be studied should make the building visible to birds in flight and reduce reflections that distract or confuse birds through the use of appropriate glazing treatments or architectural elements, such as using color, texture, opacity, patterns, louvers, screens, interior window treatments, or ultraviolet materials that are visible to birds. In addition, the Applicant shall study whether interior lighting should be reduced and direct lighting which is visible from the exterior should be eliminated to reduce a building's attractiveness to birds flying at night. The Applicant shall describe the results of the studies of such bird-friendly design strategies, and to what extent any of the strategies will be implemented, in a narrative that is provided at the time of building permit issuance. To the extent strategies are identified, but not implemented, the narrative shall describe the reasons for the exclusion of such strategies.

107. Tree Preservation and Planting Fund Contribution. To promote enhancement of the Fairfax County Tree Canopy through growth of trees on private and public land, the Applicant shall make a one-time, total contribution payable at the time of the first site plan approval in the amount of $.002 (two tenths of a cent) per square foot of the maximum proposed GFA as stated in Proffer 9 to the Fairfax County Tree Preservation and Planting Fund ("TPPF"). This donation to the TPPF shall supply tree saplings, volunteer support, and information to landowners with which they can enhance tree canopy on their property. Additionally, this donation shall enable educational activities in FCPS, should they choose to participate.

108. Delay. Notwithstanding the foregoing, upon demonstration that, despite diligent efforts or due to factors beyond an Applicant's control, proffered improvements such as, but not limited to, the required transportation, publicly-accessible park areas and athletic fields, trail connections, off-site easements, have been delayed (due to, but not limited to, an inability to secure necessary permission for utility relocations and/or VDOT approval for traffic signals, necessary easements and site plan approval) beyond the timeframes specified, the Zoning Administrator may agree to a later date for completion of such improvements.

109. Tysons Partnership. The Applicant, and their respective successors and assigns, shall become members of the Tysons Partnership or its residential equivalent no later than issuance of the first RUP or Non-RUP for their Block.

110. Metrorail Tax District Buyout for Certain Residential Uses. At least sixty (60) days prior to recording any condominium documents that would change the use of one or more buildings on Block A or Block E from a multi-unit residential real property that is primarily leased or rented to residential tenants or other occupants by an owner who is engaged in such a business which is taxable for purposes of the now existing Phase I Dulles Rail Transportation Improvement District (the "Phase I District"), to a use that is not subject to the Phase I District tax, the Applicant shall provide a written notice to the Director of the Real Estate Division of the Fairfax County Department of Tax Administration advising that the Applicant intends to record such condominium documents for that portion of Block A or Block E, as the case may be. Prior to recording such condominium documents, the Applicant shall pay to the County a sum equal to the then-present value of Phase I District taxes based on the use of that portion of Block A or Block E, as the case may be, prior to becoming subject to the condominium that will be lost as a result of recording such condominium documents, in accordance with a formula approved by the Board.

111. Escalation in Contribution Amounts. All monetary contributions specified in these Proffers shall escalate or de-escalate, as applicable, on a yearly basis from the base month of January 2013 and change effective each January 1 thereafter, as permitted by § 15.2-2303.3 of the Code of Virginia, as amended.

112. Condemnation. To the extent off-site right-of-way and/or easements are required to construct any of the improvements described in these Proffers, and the Applicant responsible for such construction has not been able to acquire such right-of-way or easements after documented, reasonable efforts to do so, the obligation of such Applicant to construct such

improvements for which right-of-way is not available shall be contingent upon the Board acquiring such right-of-way and/or easements through its powers of eminent domain after being requested to do so by such Applicant, in writing. In the event the County elects not to use its power of condemnation to acquire those off-site rights-of-way and/or easements necessary for construction of any of the improvements described in these Proffers, then that Applicant shall escrow the costs of those improvements with the County for future implementation by FCDOT, VDOT and/or others. No Applicant shall be prevented from obtaining any land use approval (including, without limitation, PCA, CDPA, FDP, FDPA, site plan, subdivision, grading permit, building permit, and Non-RUP and RUP permits) for the Subject Property, nor from commencing construction on the Subject Property, during the pendency of any eminent domain proceedings initiated pursuant to this Proffer, nor any deferral of the County's exercise of eminent domain pursuant to this Proffer, provided that all other prerequisites for obtaining such approvals and commencing such construction provided in these Proffers have been met.

113. Successors and Assigns. These Proffers will bind and inure to the benefit of the Applicant and their successors and assigns. Each reference to "Applicant" in these Proffers shall include within its meaning and shall be binding upon the successors in interest and/or the owners from time to time of any portion of the Subject Property during the period of their ownership. Once portions of the Subject Property are sold or otherwise transferred, the associated proffers become the obligation of the purchaser or other transferee and shall no longer be binding on the seller or other transferor.

114. Counterparts. These Proffers may be executed in one or more counterparts, each of which when so executed and delivered shall be deemed an original, and all of which taken together shall constitute but one and the same instrument.

**[SIGNATURES ON FOLLOWING PAGES]**

**APPLICANT:**

CITYLINE PARTNERS LLC
*Applicant and Agent for Title Owners*

By:_____
Name:_____
Title:_____

**CITYLINE OWNERS:**

FRANKLIN 7903 WESTPARK LLC
*Title Owner of Parcel 29-4-((7))-1*

By:_____
Name:_____
Title:_____

GRAYSON 7913 WESTPARK LLC
*Title Owner of Parcel 29-4-((7))-2*

By:_____
Name:_____
Title:_____

CAMPBELL-SCOTT WESTPARK LLC
*Title Owner of Parcel 29-4-((7))-3*

By:_____
Name:_____
Title:_____

ESSEX 7929 WESTPARK LLC
*Title Owner of Parcel 29-4-((7))-9*

By:_____
Name:_____
Title:_____

FREDERICK 8003 WESTPARK LLC
*Title Owner of Parcel 29-4-((7))-10*

By:_____
Name:_____
Title:_____

**COUNTY:**

FAIRFAX COUNTY BOARD OF
SUPERVISORS, a body politic
*Title Owner of Westbranch Drive Right-of-Way*

By:_____
Name: Edward L. Long, Jr.
Title: County Executive

**AMT:**

AMT-THE ASSOCIATION FOR
MANUFACTURING TECHNOLOGY
*Title Owner of Parcel 29-4-((7))-5A*

By:_____
Name:_____
Title:_____

**CONTRACT PURCHASER:**

HOME PROPERTIES TYSONS LLC
*Contract Purchaser of Parcel 29-4-((7))-10*

BY: Home Properties, L.P., its sole member

BY: Home Properties, Inc., its general partner

By:_____
Name:_____
Title:_____

**CONTRACT PURCHASER:**

HANOVER R.S.LIMITED PARTNERSHIP
*Contract Purchaser of Parcels 29-4-((7))-1 and 29-4-((7))-2 (part)*

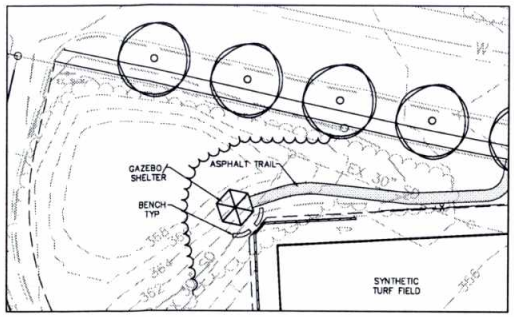
BY: THC Capital G.P. LLC, its sole general partner

By:_____
Name:_____
Title:_____

## PUBLIC FACILITIES and ATHLETIC FIELDS CONTRIBUTION ELEMENTS

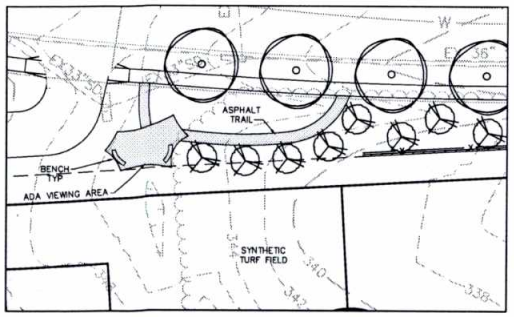
HANOVER PARCEL

1. FULL SIZE SYNTHETIC TURF ATHLETIC FIELD (390'x220' INCLUDING OVERRUN) WITH LIGHTS
2. ONE HALF SIZE SYNTHETIC TURF ATHLETIC FIELD (180'x255' INCLUDING OVERRUN) WITH LIGHTS
3. STREETSCAPE/LANDSCAPE IMPROVEMENTS ALONG JONES BRANCH DRIVE FRONTAGE
4. PICNIC/SHELTER OVERLOOK
5. PARK SETTING IMPROVEMENTS
6. STORM DRAIN OUTFALL IMPROVEMENTS
7. OTHER ON-SITE STREAM CHANNEL IMPROVEMENTS TO BE IDENTIFIED AND AGREED TO IN CONSULTATION WITH PARK AUTHORITY AND DPWES
8. 6 FT STREAM VALLEY TRAIL WITH ONE STREAM CROSSING STRUCTURE
9. CASH CONTRIBUTION ($600,000) TOWARDS FUTURE SCHOOL DESIGN AND/OR ATHLETIC FIELD MAINTENANCE AND/OR STREAM VALLEY IMPROVEMENTS
10. FLEXIBILITY IN FUTURE USE OF HANOVER SITE
11. DELIVERY OF 1-1/2 LIGHTED SYNTHETIC TURF ATHLETIC FIELDS BY DECEMBER 31, 2014




PICNIC SHELTER OVERLOOK

SCALE: 1"=30'

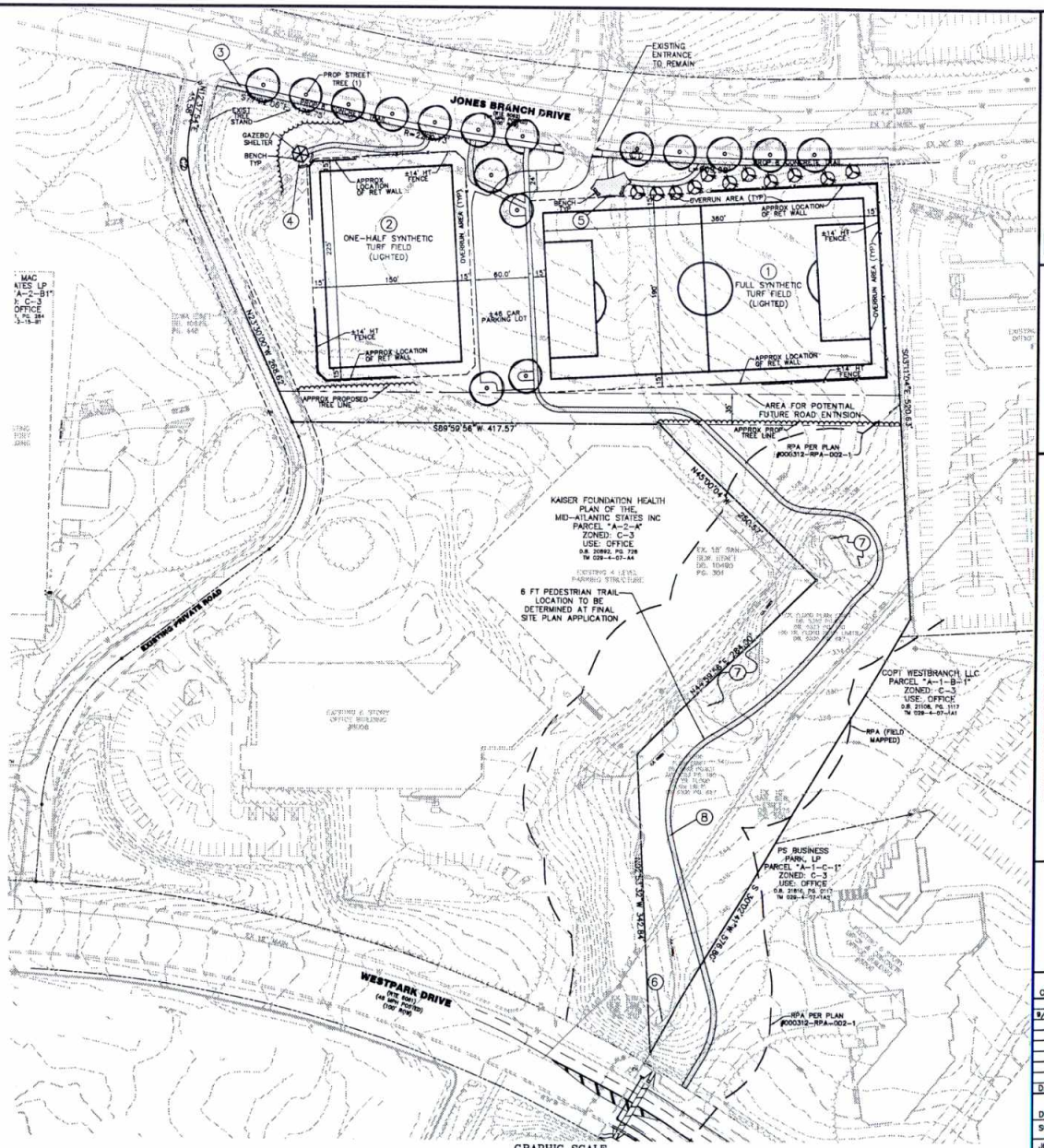



PARK SETTING IMPROVEMENTS

SCALE: 1"=30'

NOTE

QUANTITY AND LOCATION OF PROPOSED STREET TREES IS SUBJECT TO CHANGE WITH VERIFICATION AND LOCATION OF EXISTING BELOW GROUND UTILITIES




CURVE TABLE

| CURVE | RADIUS | LENGTH | CHORD BEARING | CHORD | DELTA | TANGENT |
|---|---|---|---|---|---|---|
| C1 | 2209.73' | 609.88' | N 85°18'35" W | 608.05' | 15°48'58" | 306.94' |
| C2 | 158.32' | 95.58' | N 05°26'03" W | 94.95' | 36°07'54" | 50.99' |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Chantilly, Virginia 20151
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www.bowmanconsulting.com
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Cityline PARTNERS
A SUBSIDIARY OF DLJ Real Estate Capital Partners


PLAYING FIELDS AND PUBLIC FACILITIES EXHIBIT

ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

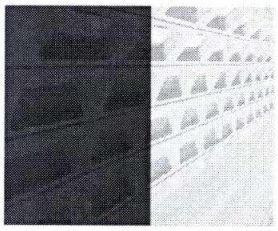
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| COUNTY PROJECT NUMBER | |
|---|---|
| PLAN STATUS | |
| 9/10/12 | COUNTY COMMENTS |
| DATE | DESCRIPTION |
| MT DESIGN | KF DRAWN / MT CHKD |
| SCALE | H: 1"=60' V: |
| JOB No. | |
| DATE : June, 2012 | |
| FILE No. | |
| SHEET | 1 of 1 |

Cad file name : P17403 - West Group Properties\7403-07-001 (PLN) - Tyson West Park\Planning\Rezoning\Hanover Parcel Dedication\Exhibit 6\7403-07-001 (hanover) Dedication exhibit 6 rev 9.10.12.dwg

P:\7403 - West Group Properties\7403-07-001 (PLN) - Tyson West Park\Planning\Rezoning\Hanover Parcel Dedication\Exhibit 6\7403-07-001 (hanover) Dedication exhibit 6 rev 9.10.12.dwg, 9/10/2012 9:31:12 AM, kf

WELLS + ASSOCIATES
Transportation, Traffic and Parking Consultants



# Arbor Row TDM Plan

**August 2012**

WELLS + ASSOCIATES

# Arbor Row TDM Plan

*Prepared by:*

Robin Antonucci
Courtney Menjivar
Justin Schor
Kevin Fellin

August 2012

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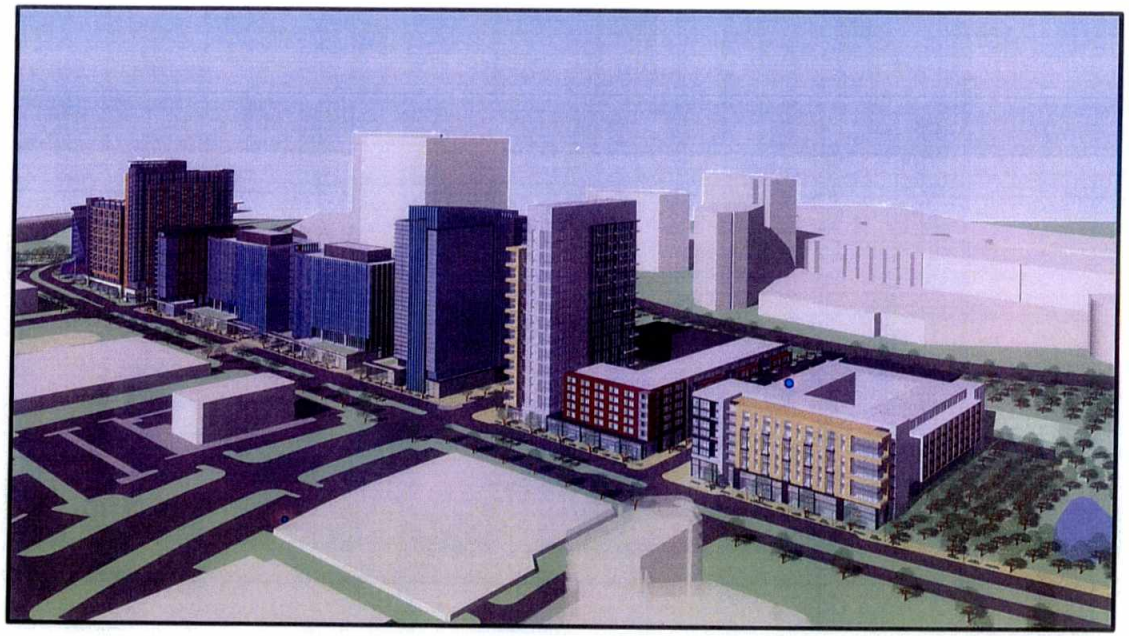
# ARBOR ROW

PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

## CONCEPTUAL DEVELOPMENT PLAN

RZ/CDP 2011-PR-023

RECEIVED
Department of Planning & Zoning
OCT 05 2012
Zoning Evaluation Division



APPLICANT:
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ATTORNEY:
Hunton & Williams LLP
1751 PINNACLE DRIVE
SUITE 1700
McLEAN, VIRGINIA 22102
T 703.714.7400

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OCTOBER 5, 2012
AUGUST 29, 2012
JULY 23, 2012
MAY 25, 2012
APRIL 20, 2012
FEBRUARY 24, 2012
DECEMBER 7, 2011
JULY 22, 2011
APRIL 28, 2011



ATTACHMENT 2

## NOTES:

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

| TAX MAP # | OWNER | DEED BOOK / PAGE | APPROXIMATE ACREAGE |
|---|---|---|---|
| 029-4-((7))-0001 | Franklin 7903 Westpark LLC | 21145/0045 | 2.00 AC |
| 029-4-((7))-0002 | Grayson 7913 Westpark LLC | 21145/0060 | 2.01 AC |
| 029-4-((7))-0003 | Campbell-Scott Westpark LLC | 21145/0030 | 3.68 AC |
| 029-4-((7))-0009 | Essex 7929 Westpark LLC | 21145/0040 | 4.40 AC |
| 029-4-((7))-0010 | Frederick 8003 Westpark LLC | 21145/0050 | 5.39 AC |
| 029-4-((7))-0005A | AMT- The Association For Manufacturing Technology | 3286/490 | 1.84 AC |
| 029-4 (Westbranch Drive ROW) | Board of Supervisors Fairfax County Virginia | | 0.08 AC |

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, INCLUDING APPROXIMATELY 3,428 SF OF R.O.W. PROPOSED TO BE VACATED/ABANDONED ON WESTBRANCH DRIVE.

3. THE SUBJECT PROPERTY LIES WITHIN SUBAREA TWO (SOUTH WEST PARK) OF THE NORTH SUBDISTRICT OF THE TYSONS CENTRAL 123 DISTRICT OF THE TYSONS CORNER URBAN CENTER PLAN. THE PROPOSED DEVELOPMENT IS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE COMPREHENSIVE PLAN AS DESCRIBED IN THE APPLICANT'S STATEMENT OF JUSTIFICATION.

4. THE SUBJECT PROPERTY IS CURRENTLY ZONED C-3 (OFFICE) SUBJECT TO PROFFERS, WITH PORTIONS OF HC (HIGHWAY CORRIDOR) AND SC (SIGN CONTROL). PROPOSED ZONING CATEGORY IS PTC, WITH HC AND SC OVERLAY, SUBJECT TO PROFFERS.

5. THE TOPOGRAPHY SHOWN ON THE CDP IS AT A CONTOUR INTERVAL OF TWO (2) FEET BASED ON AN AERIAL SURVEY COMPLETED BY VIKA ENGINEERING IN 2002 AND SUPPLEMENTED WITH FIELD RUN SURVEY PREPARED BY BOWMAN CONSULTING AND WALTER L. PHILLIPS IN 2011.

6. THE BOUNDARY INFORMATION SHOWN ON THE CDP IS BASED ON RECORDED PLATS AND DEEDS FROM THE 1970S AND MAY BE ADJUSTED BASED ON INFORMATION FROM RECENT FIELD SURVEYS AT THE TIME OF SITE PLAN.

7. THERE ARE EXISTING OFFICE BUILDINGS OF APPROXIMATELY 277,431 S.F. (WITHOUT CELLAR, PER CONCURRENT PCA CHART) AND ASSOCIATED SURFACE PARKING LOTS ON THE SUBJECT PROPERTY.

8. THE COUNTY TRAILS MAP IDENTIFIES AN ON ROAD BIKE TRAIL WITHIN WESTPARK DRIVE ALONG A PORTION OF THE FRONTAGE OF PARCELS 1, 2 AND 5A. TRAILS AND BICYCLE LANES SHALL BE PROVIDED AS SHOWN ON THE CDP AND IN ACCORDANCE WITH THE PROFFERS.

9. THE PROPERTY IS LOCATED IN THE BLUE PLAINS/SCOTT'S RUN E-1 SANITARY SEWER DISTRICT WATERSHED, AND THE SCOTT'S RUN STORM DRAINAGE WATERSHED.

10. THERE IS A PORTION OF FLOODPLAIN AND RESOURCE PROTECTION AREA (RPA) LOCATED ON LOT 10 OF THE SUBJECT PROPERTY. RPA LIMIT IS BASED ON APPROVED PLAN #000312-RPA-002-1, AS SET FORTH IN THE PROFFERS. IMPROVEMENTS PROPOSED WITHIN THIS RPA WILL BE PROCESSED FOR APPROVAL THROUGH DPW&ES UNDER SEPARATE APPLICATION.

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, UTILITY COMPANY, COUNTY,VDOT, OR OTHERS AS MAY BE APPROPRIATE FOR THE PROPOSED DEVELOPMENT. EXISTING UTILITIES SHOWN HEREON WERE OBTAINED FROM FIELD OBSERVATION, SURVEY, AVAILABLE RECORDS, AND COUNTY RECORD GIS INFORMATION.

16. TO THE BEST OF OUR KNOWLEDGE THE PROPOSED DEVELOPMENT CONFORMS TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS, WITH THE EXCEPTIONS LISTED HEREIN.

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/BMP SURFACE PONDS AND ON-SITE UNDERGROUND FACILITY AS CONCEPTUALLY SHOWN ON THE CDP. APPLICANT RESERVES THE RIGHT TO PROVIDE TEMPORARY STORM WATER MANAGEMENT AND BMP FACILITIES (I.E. PONDS, INFILTRATION SYSTEMS, UNDERGROUND VAULTS ETC) IF THE DEVELOPMENT IS TO OCCUR IN PHASES. SEE "SWM DEVIATION NARRATIVE" ON THIS SHEET.

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. FINAL SELECTION MAY VARY AT THE TIME OF FINAL DEVELOPMENT PLAN AND SITE PLAN, BUT WILL BE CONSISTENT WITH THE QUALITY OF THE DESIGN REPRESENTED HEREIN. ADDITIONAL SITE AMENITIES AND FEATURES SUCH AS PLANTERS, GAZEBOS, BENCHES, OTHER SEATING AREAS, WALKWAYS, TRELLISES, WATER FOUNTAINS OR SPECIAL FEATURES, PUBLIC ART, SIGNS, WALLS, LIGHTS, UTILITY AND MAINTENANCE STRUCTURES AND SIMILAR FEATURES NOT REPRESENTED HEREIN MAY BE PROVIDED AS LONG AS THE RESULTANT DEVELOPMENT IS IN SUBSTANTIAL CONFORMANCE WITH THE QUALITY REPRESENTED ON THE GRAPHICS.

19. THE DEVELOPMENT SCHEDULE FOR THIS PROJECT IS DEPENDENT ON MARKET CONDITIONS AND THE SECURING OF ALL REQUIRED APPROVALS AND PERMITS. A CONCEPTUAL PHASING SEQUENCE HAS BEEN DESCRIBED WITHIN THE CDP.

20. TO THE BEST OF OUR KNOWLEDGE THE PROPOSED DEVELOPMENT IS IN ACCORDANCE WITH THE DEVELOPMENT CRITERIA OF THE COMPREHENSIVE PLAN, PARTICULARLY THROUGH APPROPRIATE SITE DESIGN, SIGNIFICANT LANDSCAPING, PROVISION OF SITE AMENITIES AND THE DESIGN OF AN APPROPRIATE STREETSCAPE THAT COMPLIMENTS THE EXISTING COMMUNITY.

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 AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 116.4, 302.4, AND 355; ANY HAZARDOUS WASTE AS SET FORTH IN COMMONWEALTH OF VIRGINIA/DEPARTMENT OF WASTE MANAGEMENT VR 672-10-1 - VIRGINIA HAZARDOUS WASTE MANAGEMENT REGULATIONS; AND/OR ANY PETROLEUM PRODUCTS AS DEFINED IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 280.

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 AS DESCRIBED IN SECTION 16-102. OF THE ZONING ORDINANCE.

23. a. PARKING WILL BE PROVIDED IN A COMBINATION OF ABOVE AND BELOW GRADE PARKING STRUCTURES AND SURFACE SPACES AND IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 6-509 OF THE ZONING ORDINANCE. THE APPLICANT AND/OR BLOCK OWNERS RESERVE THE RIGHT TO PROVIDE MORE OR LESS THAN THE NUMBER OF PARKING SPACES PRESENTED HEREON PROVIDED THAT THE AMOUNT OF PARKING SPACES WILL BE SUFFICIENT TO COMPLY WITH ARTICLE 6-509 AND ARTICLE 11, PART 1 OF THE ZONING ORDINANCE.

    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. THE EXACT LOCATION, SHAPE AND SIZE OF THE PROPOSED BUILDING(S) AND PARKING STRUCTURE(S) SHOWN ON THE GRAPHIC ARE SUBJECT TO ADJUSTMENT AND REFINEMENT WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN SO LONG AS THEY REMAIN IN SUBSTANTIAL CONFORMANCE WITH THE REPRESENTATIONS ON THE APPROVED CDP.

25. DEDICATION OF A PORTION OF THE APPLICATION AREA IS PROPOSED FOR THE WIDENING OF WEST PARK DRIVE AND WEST BRANCH DRIVE, REFER TO CDP. APPLICANT RESERVES THE RIGHT TO UTILIZE AREA OF DEDICATION IN THE CALCULATION OF PROPOSED DENSITY AND F.A.R. PER ARTICLE 2-308-4 OF THE ZONING ORDINANCE. FINAL AREAS OF DEDICATION/VACATION OF RIGHT OF WAYS IS SUBJECT TO CHANGE WITH FINAL SITE PLANS.

## 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 THRU THE ADJACENT PROPERTY TO THE SOUTH (LERNER PROPERTY) FOR CONNECTION TO TYSONS BOULEVARD. AT SUCH TIME, THIS APPLICATION'S PORTION OF JONES BRANCH DRIVE WILL BE DEDICATED TO VDOT, REFER TO PROFFERS FOR ADDITIONAL INFORMATION.

27. PROPOSED SIGNAGE WILL BE PROVIDED IN ACCORDANCE WITH THE ZONING ORDINANCE OR WITHIN ONE OR MORE COMPREHENSIVE SIGN PLANS, AS MAY BE APPROVED BY THE PLANNING COMMISSION.

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, CONSTRUCTION STAGING OR THE LIKE, IN AREAS RESERVED FOR FUTURE DEVELOPMENT, SEE PROFFERS.

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, WILL BE DETERMINED WITH FINAL DEVELOPMENT PLAN (FDP) AND FINAL SITE PLAN APPLICATIONS, SEE PROFFERS.

31. THE SUBJECT PROPERTY MAY BE SUBDIVIDED IN THE FUTURE FOR THE PURPOSE OF SALE, PHASING, JOINT VENTURE. ANY PROPOSED SUBDIVISION SHOWN ON THE CDP MAY BE MODIFIED ADMINISTRATIVELY BY THE DIRECTOR OF DPW&ES WITHOUT REQUIRING MODIFICATION OF THE CDP OR PRELIMINARY PLAT.

32. PROPOSED ROADWAY IMPROVEMENTS (ENTRANCES, CURBING, MEDIAN ETC) MAY REQUIRE EXCEPTION/DEVIATION FROM VDOT "ACCESS MANAGEMENT DESIGN STANDARDS" AND P.F.M., (AS MAY BE DETERMINED AT FINAL DEVELOPMENT PLAN/FINAL SITE PLAN), IN ORDER TO CONFORM WITH THE TRANSPORTATION DESIGN STANDARDS FOR TYSONS CORNER URBAN CENTER DATED SEPTEMBER 13, 2011 AS AMENDED. APPROVAL OF SUCH EXCEPTION/CHANGES SHALL NOT REQUIRE AMENDMENT TO THE CDP/FDP.

33. PRIVATE ACCESS ROADS SHOWN ON THE CDP SHALL NOT BE CONSIDERED 'STREETS', AND, AS SHOWN, MAY DEVIATE FROM THE TYSONS TRANSPORTATION DESIGN STANDARDS AND STREETSCAPE RECOMMENDATIONS IN THE COMPREHENSIVE PLAN.

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 TABULATIONS, THE FOLLOWING ADDITIONAL USES SHALL BE PERMITTED WITHIN ARBOR ROW WITHOUT REQUIRING AN AMENDMENT TO THE CDP AND LISTED ON INDIVIDUAL FDPs, INCLUDING BUT NOT LIMITED TO: ACCESSORY USES, ATMs, BUSINESS SERVICE and SUPPLY SERVICE ESTABLISHMENTS, QUICK SERVICE FOOD STORES, FAST FOOD RESTAURANTS, HEALTH CLUBS and similar COMMERCIAL RECREATIONAL USES, COMMUNITY USES, EATING ESTABLISHMENTS, FINANCIAL INSTITUTIONS, GARMENT CLEANING ESTABLISHMENTS, OFFICES, PERSONAL SERVICE ESTABLISHMENTS, PUBLIC and QUASI PUBLIC USES (INCLUDING A CONFERENCE CENTER OPERATED BY A NON-PROFIT ORGANIZATION, AS PERMITTED UNDER THE COUNTY ZONING ORDINANCE), RETAIL SALES ESTABLISHMENTS AND SIMILAR USES.

    DRIVE-IN FINANCIAL INSTITUTIONS AND CHILD CARE CENTERS SHALL BE PERMITTED, SUBJECT TO APPROVAL AS SHOWN ON AN FDP OR SE.

    PURSUANT TO PARAGRAPH 20 OF SECTION 10-102 OF THE ZONING ORDINANCE, "LIVE-WORK UNITS" SHALL BE DEEMED A PERMITTED "ACCESSORY USE"

35. SATISFACTION OF THE MINIMUM PUBLICLY-ACCESSIBLE PARK REQUIREMENTS 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.

36. CDP APPROVAL IS BEING REQUESTED FOR TWO ALTERNATIVE HOTEL LAYOUTS AND BUILDING HEIGHTS FOR BLOCK 'D' AS SHOWN ON SHEET A-3.4 AND A-4.0. FINAL FOOTPRINT AND HEIGHT SHALL BE DETERMINED BY THE APPLICANT AT THE TIME OF FDP APPLICATION.

37. FINAL LOCATION AND DESIGN OF PROPOSED CROSSWALKS IS SUBJECT TO CHANGE WITH VDOT APPROVAL OF FINAL SITE PLAN.

38. ONE ELECTRIC CHARGING STATION SERVING TWO SPACES SHALL BE PROVIDED WITHIN EACH BLOCK AS FURTHER DESCRIBED IN THE PROFFERS.

## 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' for the redevelopment of land in the Tysons Corner Urban Center, the following deviations from the strict adherence to the Public Facilities Manual (PFM) will be necessary in order to implement such objectives:

- Deviation of PFM Section 6-1304.4.I to allow utilization of infiltration rates less than 0.52 in / hr for design of infiltration systems utilized to meet the Comprehensive Plan requirement for retention of the first 1" of runoff onsite.
- Deviation of PFM Section 6-1306.3 to allow for any detention facility located within a building or garage structure to be governed by building code requirements for access and maintenance.
- Deviation of PFM Section 6-1307.2C to allow for installation of Bio-retention facilities that utilize infiltration to be constructed on in-situ fill material, provided field tests show adequate infiltration rates exist for in-situ material.
- Deviation of PFM Section 6-1307.2E to set the minimum horizontal setbacks from building foundations be reduced to zero (0) feet in order to facilitate installation of bio-retention systems in an urban environment set forth in the Tyson's Corner Design Guidelines.
- Deviation of PFM Section 6-1307.2F to allow installation of bio-retention facilities in the vicinity of loading docks, vehicle maintenance areas or outdoor storage areas to accommodate the urban environment set forth in the Tyson's Corner Design Guidelines.
- Deviation of PFM Section 6-1307.2G to allow for the maximum drainage areas to bio-retention filters utilized for retention of the first 1" of runoff be eliminated in order to accommodate rooftop runoff piped to proposed structures.
- Deviation of PFM Section 6-1309.2C to allow installation of tree box filters in the vicinity of loading docks, vehicle maintenance areas or outdoor storage areas to accommodate the urban environment set forth in the Tyson's Corner Design Guidelines.

## 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 6-505.7 REQUIRING THE DESIGNATION OF SPECIFIC OUTDOOR DINING AREAS ON THE CDP/FDP. RATHER, OUTDOOR DINING MAY BE PROVIDED IN ANY AREA WHERE THE USE INCLUDES DINING ACTIVITY AND WILL BE INDICATED AT THE TIME OF FINAL SITE PLAN.

ZONING ORDINANCE ARTICLE 10 – ACCESSORY USES, ACCESSORY SERVICE USES, AND HOME OCCUPATIONS
- AS ALLOWED WITHIN ZONING ORDINANCE SECTION 10-104.3.E AND G APPLICANT REQUESTS A MODIFICATION 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 AS INDICATED ON THE CDP.

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, FOR RESIDENTIAL AND OFFICE USES. SUCH STACKED SPACES IN ACCORDANCE WITH SECTION 11-101(1) AND 6-509(1) MAY COUNT TOWARD REQUIRED PARKING SPECIFIED IN THE ZONING ORDINANCE, AND SHALL BE PROVIDED IN ACCORDANCE WITH THE PARKING PLAN SUBMITTED WITH THIS APPLICATION.
- 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 IS REQUESTED IN FAVOR OF THOSE WHICH ARE SHOWN ON THE CDP.
- MODIFICATION OF SECTION 11-202(4) REQUIRING MINIMUM DISTANCE OF FORTY FEET (40') OF A LOADING SPACE IN PROXIMITY TO TRAVEL WAYS OR STREETS, AS PERTAINS TO BLOCK A, TO THAT AS DEMONSTRATED ON THE CDP.

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, AS ALLOWED PER SECTION 13-202, PARA 6, TO THAT SHOWN ON THE CDP AND DESCRIBED BELOW :
    a. FOR INTERIM SURFACE PARKING LOTS: INTERIOR LANDSCAPING WILL BE DEMONSTRATED ON SUBSEQUENT FDP APPLICATIONS AND WILL UTILIZE EXISTING VEGETATION WITHIN PARKING LOTS, TO THE EXTENT POSSIBLE.
    b. FOR PROPOSED ABOVE GRADE PARKING STRUCTURES: INTERIOR LANDSCAPING MAY INCLUDE INNOVATIVE PLANTING DESIGN AND TECHNIQUES, INCLUDING BUT NOT LIMITED TO, OVERHEAD VEGETATIVE ARBORS.
    c. WITHIN BLOCK 'E'- WAIVER OF THE INTERIOR PARKING LOT LANDSCAPE REQUIREMENTS FOR THE EXPOSED PARTIAL UPPER LEVEL, AS THE ELEVATION OF THE DECK IS APPROXIMATELY TEN (10') FEET BELOW THE SURROUNDING COURTYARD AND IS SCREENED FROM VIEW OF ADJACENT PROPERTIES BY ARCHITECTURAL ELEMENTS.
- MODIFICATION OF PERIPHERAL LANDSCAPE REQUIREMENTS SECTION 13-203-5, FOR ABOVE GRADE PARKING STRUCTURES AND INTERIM SURFACE LOTS AS ALLOWED BY SECTION 13-203, PARA 3, TO THAT SHOWN ON THE CDP AND DESCRIBED BELOW:
    a. FOR INTERIM SURFACE PARKING LOTS: PERIPHERAL LANDSCAPING WILL BE DEMONSTRATED ON SUBSEQUENT FDP APPLICATIONS AND WILL UTILIZE EXISTING VEGETATION WITHIN PARKING LOTS, TO THE EXTENT POSSIBLE.
    b. FOR PROPOSED ABOVE GRADE PARKING STRUCTURES: PERIPHERAL LANDSCAPING WILL BE PROVIDED USING TREES WITHIN URBAN STREETSCAPES (PER TYSONS URBAN DESIGN GUIDELINES) WHERE GARAGES ARE ADJACENT TO STREET FRONTAGE AND BY EXISTING TOPOGRAPHIC FEATURES OR OTHER URBAN DESIGN ELEMENTS WHERE GARAGES ARE ADJACENT TO NON STREET FRONTAGE.

ZONING ORDINANCE ARTICLE 16 – DEVELOPMENT PLANS
- WAIVER OF ZONING ORDINANCE SECTION 16-403 REQUIRING THE SUBMISSION OF A FINAL DEVELOPMENT PLAN APPLICATION ASSOCIATED WITH THE PUBLIC ROADWAY AND INFRASTRUCTURE PHASING EXHIBIT SHOWN WITHIN THE CDP.

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-(1) REQUIRING STREETSCAPE IMPROVEMENTS WITHIN THE R.P.A ALONG WESTPARK DRIVE NEAR THE WESTERN PORTION OF BLOCK A, AND IN RETURN, PROVISION OF CONCRETE SIDEWALK AS SHOWN ON THE CDP.
- MODIFICATION OF SECTION 17-201-(2) AND (4) TO PROVIDE INTERIM ROAD AND TRAIL CONDITIONS ALONG THE WESTPARK DRIVE FRONTAGE OF BLOCK 'F' (AS SHOWN ON THE CDP), AS A RESULT OF THE CONSTRUCTION OF THE I-495 EXPRESS LANE IMPROVEMENTS AND IN ORDER TO TRANSITION THE ULTIMATE IMPROVEMENTS.

    WITH REGARD TO HANOVER PARCEL (T.M. #29-2-((15))-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 6-0303.8, TO ALLOW STORM WATER MANAGEMENT FACILITIES (SWM AND BMP) TO BE PROVIDED WITHIN UNDERGROUND SYSTEMS WITHIN THE RESIDENTIAL BLOCKS OF THE PROPOSED DEVELOPMENT.
- MODIFICATION OF PFM SECTION 7-0800 TO ALLOW TANDEM/VALET PARKING SPACES, CONTROLLED BY BUILDING MANAGEMENT, AND THAT SUCH SPACES SHALL COUNT TOWARD REQUIRED PARKING.
- MODIFICATION OF SECTION 7-0802.2 (PARKING GEOMETRIC STANDARDS), TO ALLOW FOR UP TO 1.5 FEET OF PROJECTION OF STRUCTURAL COLUMNS INTO THE REQUIRED PARKING STALL AREA. THE PARKING STALLS AFFECTED BY SUCH STRUCTURAL COLUMNS SHALL COUNT TOWARD THE NUMBER OF REQUIRED PARKING SPACES FOR UP TO 10% OF THE TOTAL SPACES PROVIDED.
- MODIFICATION OF SECTION 12-0508 TREE PRESERVATION TARGET, AS ALLOWED BY DEVIATIONS DESCRIBED IN SECTION 12-0508.3A(1) THROUGH SECTION 12-0508.3A(3) AND AS DESCRIBED IN REQUEST LETTER ATTACHED ON SHEET C-2.2
- MODIFICATION OF SECTION 12-0511-4 FOR REQUIRED TEN PERCENT TREE CANOPY COVERAGE ON INDIVIDUAL LOTS/LAND BAYS, TO ALLOW FOR CANOPY TO BE CALCULATED ON THE OVERALL ARBOR ROW DEVELOPMENT AREA, AS DEMONSTRATED ON THE CDP HEREIN.


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GENERAL NOTES AND WAIVERS

# 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 |
| 04/20/12 | REVISE PROP NOTES |
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE H:

JOB No.

DATE : APRIL 26, 2011

FILE No. 7403-07-001

SHEET C2.0

## TABLE 1- CDP - SITE TABULATIONS:

| Block/ Building | Allowable Building Height (Tier 2) | Proposed Building Height(1)(3) (Min-Max) | Maximum Proposed Penthouse Height (1)(2) | Proposed Stories /Floors (1) | Use (3) | Proposed GFA by Use (4) | Proposed Maximum Building GFA (4)(12) | Dwelling Units (5)(12) | Hotel Rooms (5) | Required Parking 1/4 - 1/2 mile (Per Unit or 1000 GFA) Min | Max | Total Required Parking (6) Min | Max | Parking Provided (6) | Proposed Parking Ratio Per Use | Block Land Area (SF) (4) | Maximum Proposed GFA (4) | Maximum FAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Block A | | | | | | | | | | | | | | | | | | |
| A1 | 175'-225' | 75'-120' | N/A | 5 (11) | Residential | 279,405 | 279,405 | 450 - 694 | | 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 | 457,395 | 465,395 | | | | | | | | | | | |
| | | | | | Retail/Services | 8,000 (12) | | | | 0 | 6 | 0 | 18 | 45 | (7) | | | |
| Block B | | | | | | | | | | | | | | | | | | |
| B | 175'-225' | 175'-225' | 30' | 13-17 | Retail/Services | 8,500 | 302,785 | | | 0 | 6 | 0 | 21 | 50 | (7) | 389,863 (8) | 1,114,085 | |
| | | | | | Office | 364,285 | | | | 0 | 2.2 | 0 | 801 | 680 | 1.87/ 000 GFA | | | |
| Block C | | | | | | | | | | | | | | | | | | |
| C1 | 175'-225' | 100-180' | 30' | 8-13 | Retail/Services | 12,500 | 275,650 | | | 0 | 6 | 0 | 45 | Office: | 1.87/ 000 GFA | | | |
| | | | | | Office | 263,150 | | | | 0 | 2.2 | 0 | 579 | 941 | | | | |
| C2 | 175'-225' | 100-180' | 30' | 8-13 | Retail/Services | 12,500 | 275,650 | | | 0 | 6 | 0 | 45 | Retail: | (7) | | | |
| | | | | | Office | 263,150 | | | | 0 | 2.2 | 0 | 579 | 149 | | | | |
| Block D | | | | | | | | | | | | | | | | | | |
| D | 175'-225' | 108'-200' | 22' | 9-17 | Hotel | 162,000 | 170,000 | | 250 | 0 | 1.05 | 0 | 263 | 184 | .74/room | | | |
| | | | | | Retail/Services | 8,000 | | | | 0 | 6 | 0 | 18 | 47 | (7) | | | |
| Block E | | | | | | | | | | | | | | | | | | |
| E | 175-225' | 270-300' | N/A | 20 & 27 | Residential | 508,800 | 516,800 | 430 - 680 | | 1.1 | 1.7 | 473 - 528 | 731 - 816 | 710 | 1.54/ D.U. | 136,788 (8) | 516,800 (9) | |
| | | | | | Retail/Services | 7,800 (12) | | | | 0 | 6 | 0 | 12 | 12 | (7) | | | |
| Block F | | | | | | | | | | | | | | | | | | |
| F | 175'-225' | 135-175' | 30' | 10 | Office | 197,844 | 200,000 | | | 0 | 2.2 | 0 | 435 | 435 | 2.2/1,000 GFA | 80,001 (8) | 200,000 | |
| | | | | | Retail/Services | 2,156 | | | | 0 | 6 | 0 | 0 | 0 | (7) | | | |
| TOTAL | | | | | | | 2,575,685 | 880 - 1174 | 250 | | | | | 4160 | | 844,813 (10) | 2,575,685(9) | 3.05 |

(1) 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)

(2) 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.

(3) 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.

(4) 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.

(5) Number of dwelling units/bedroom types/hotel rooms may be changed and will be determined at the time of FDP and final site plan.

(6) 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.

(7) Per Section 5-509.8.(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.

(8) 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.

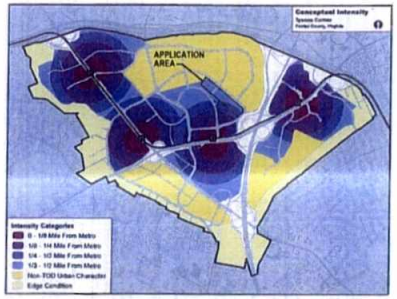
(9) Density includes 200,778 GFA for Superlative contribution for public facilities from Hanover Parcel (Tax # 29-2-((15))-B2) as recommended by the Tysons Urban Center Comprehensive Plan. See Residential Density Tabulation Table 6.

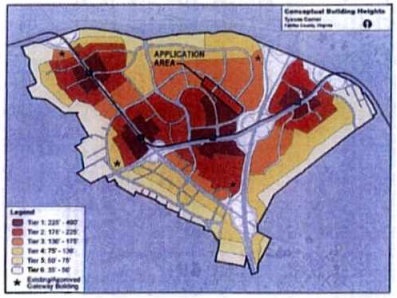
(10) Includes square footage of future potential right of way vacation/abandonment of Westbranch Drive. See Right of Way Density Allocation Tabulation Table 4.

(11) Up to six (6) stories including possible mezzanine.

(12) 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.

(13) Proposed minimum GFA shall be fifty percent (50%) of proposed maximum GFA, in accordance with the proffers.




## INTENSITY AREAS-DEVELOPMENT RADIUS ZONE EXHIBIT :

## 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) | 14,612 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<br>Bldg E: 143,280 GFA (1)<br>Bldg F: 143,583 GFA | Bldg A1/A2: 696,670 GFA (1)<br>Bldg B: 392,785 GFA<br>Bldg C1/C2: 551,300 GFA<br>Bldg D: 136,000 GFA<br>Bldg E: 373,520 GFA (1)<br>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' (Tax # 29-2-((15))-B-2) as recommended by the Tysons Urban Center Comprehensive Plan -See Residential Density Tabulations 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 3- WESTPARK OFFICE ALLOCATION TABULATION:

| Tax Map | New Land Bay | Site | Built Office GFA (1) | | Built/Proffered 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 | 175,540 | | 181,590 |
| 0294 07 0006 | A-3 | Amherst | 111,430 | | 111,430 |
| 0294 07 0007A1 | A-3 | Culpeper | 74,548 | | 74,548 |
| 0294 07 0007B | A-3 | Brunswick | 72,662 | | 72,662 |
| 0294 07 0008 | A-3 | Dickenson | 53,082 | | 53,082 |
| 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 | Huntington | 157,800 | | 157,800 |
| 0294 07 0005A | B | AMT | 32,000 | | 197,844 |
| 0292 15 B1 | D-2 | WestMac Phase 4 | 385,263 | (2) | 385,263 |
| 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 | 110,833 | | 910,585 |
| 0294 07 0010 | G | Frederick | 74,548 | | 0 |
| TOTAL | | | 2,155,343 | | 2,996,147 |

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 # 9030-SP-002-6 and PCA 88-D-005-7 associated with this application

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

| Existing Site Area | 843,385 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. | +/-0.08 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 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 WFDU 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)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SITE TABULATIONS
# 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 |
| 05/30/12 | REVISE PROP. TABS |
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | N/ |
| 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-005-07). 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,

Tom Biesiadny
Director

cc: Dan Rathbone, FCDOT
Jeff Hermann FCDOT
Fred Selden, DPZ
Jim Zook, DPZ
Matt Ladd, DPZ

Fairfax County Department of Transportation
4050 Legato Road, Suite 400
Fairfax, VA 22033-2895
Phone: (703) 877-5600 TTY: 711
Fax: (703) 877-5723
www.fairfaxcounty.gov/fcdot

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 & 0294-07-0003A. 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 mature 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 12-0403.3B, 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,

Gregg Ebert - Applicant Representative
ISA, ISA Certified Arborist, MA-4616A
Bowman Consulting Group

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

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 03/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/28/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

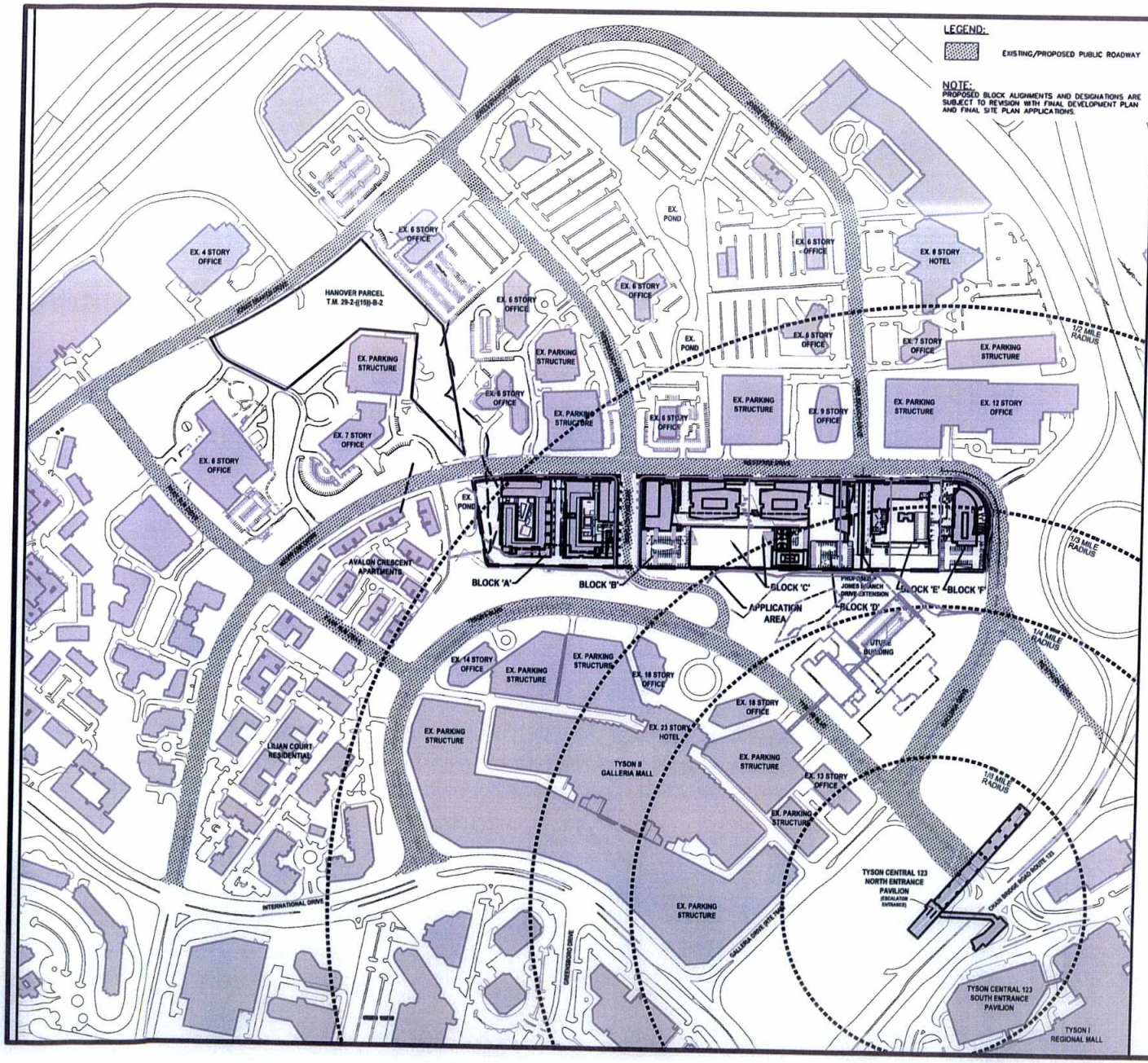
SCALE : N

JOB No.

DATE : APRIL 26, 2011

FILE No. 7403-07-001

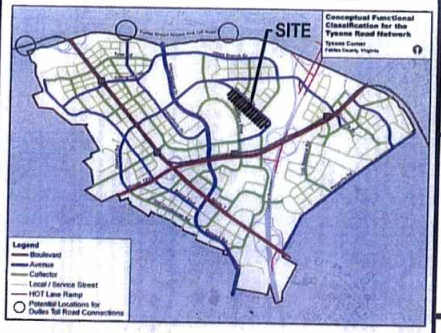
SHEET C2.2




## VICINITY MAP

SCALE: 1" = 2000' - 0"

## TYSONS ROAD NETWORK

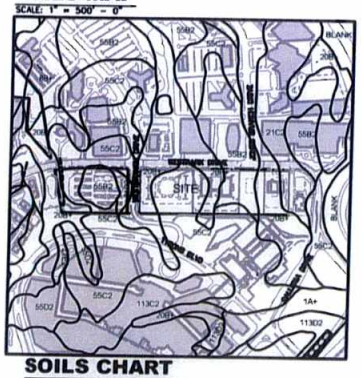



Note: The Tysons Road Network is subject to change pending results from more detailed analyses of the connections to the Dulles Toll Road and the Grid of

MAP 7

## SOILS MAP

SCALE: 1" = 500' - 0"




## SOILS CHART

FAIRFAX COUNTY SOILS DATA 2008

| SOIL NUMBER | SOIL SERIES | PROBLEM CLASS | DRAINAGE | SEPTIC FIELDS | EROSION POTENTIAL |
|---|---|---|---|---|---|
| 20B+ | MEADOWVILLE | B | MARGINAL | POOR | MODERATE |
| 21C2 | MANOR | C | GOOD | GOOD | HIGH |
| 21D2 | MANOR | C | GOOD | GOOD | HIGH |
| 55B2 | GLENELG | C | GOOD | GOOD | HIGH |
| 55C2 | GLENELG | C | GOOD | GOOD | HIGH |

GRAPHIC SCALE

( IN FEET )
1 inch = 200 ft.

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CONTEXT PLAN AND VICINITY MAP

# ARBOR ROW

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

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/28/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

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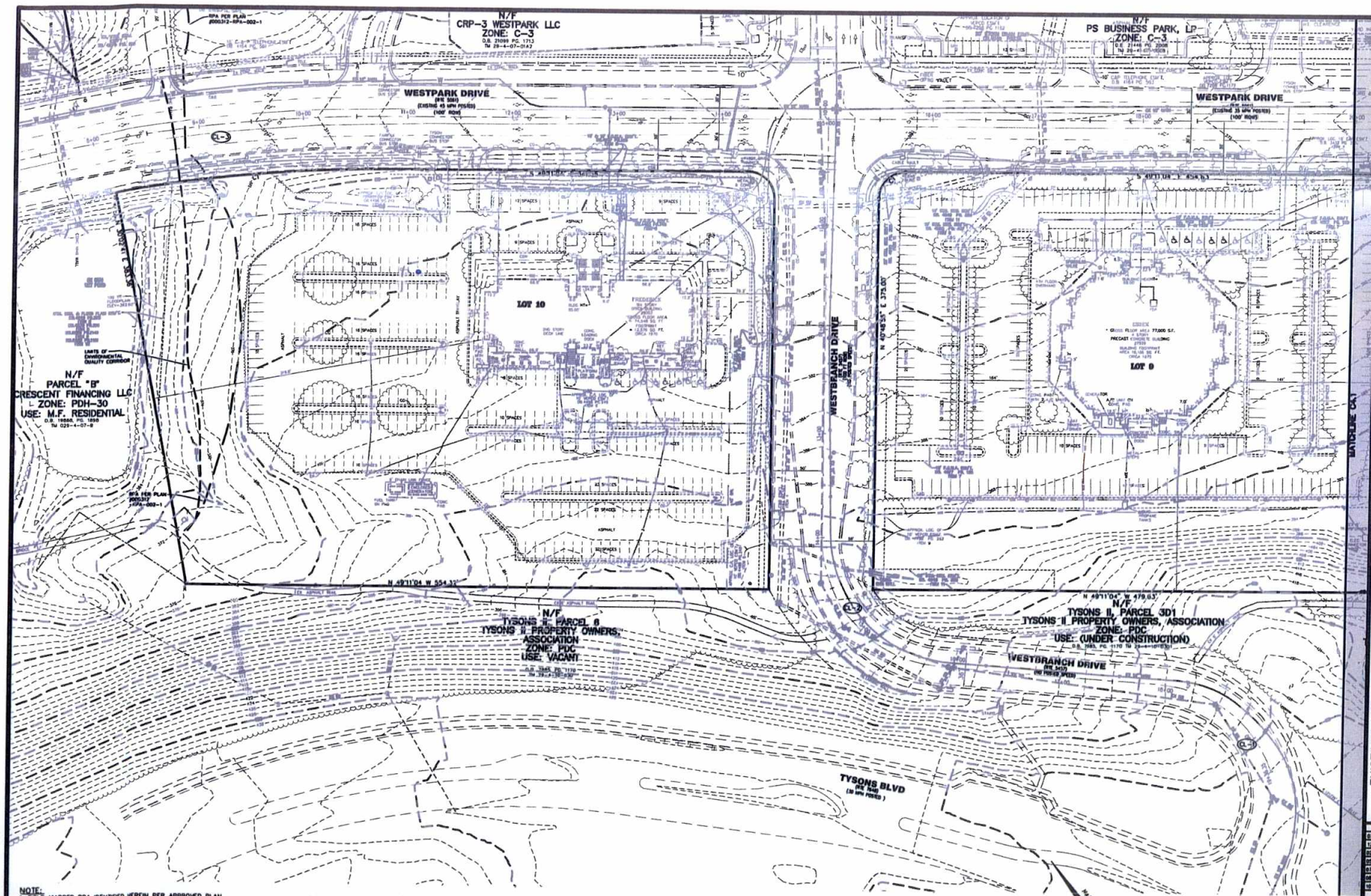
JOB No.
DATE : APRIL 26, 2011
FILE No. 7403-07-001
SHEET C3.0




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**

| | | 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 | 1448.31' | 351.01' | S 54°21'17" E | 350.03' | 13°53'25" | 176.38' |
| 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°48'55" E | 35.36' | 90°00'00" | 25.00' |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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 COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/23/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/29/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |

| DATE | DESCRIPTION |
|---|---|

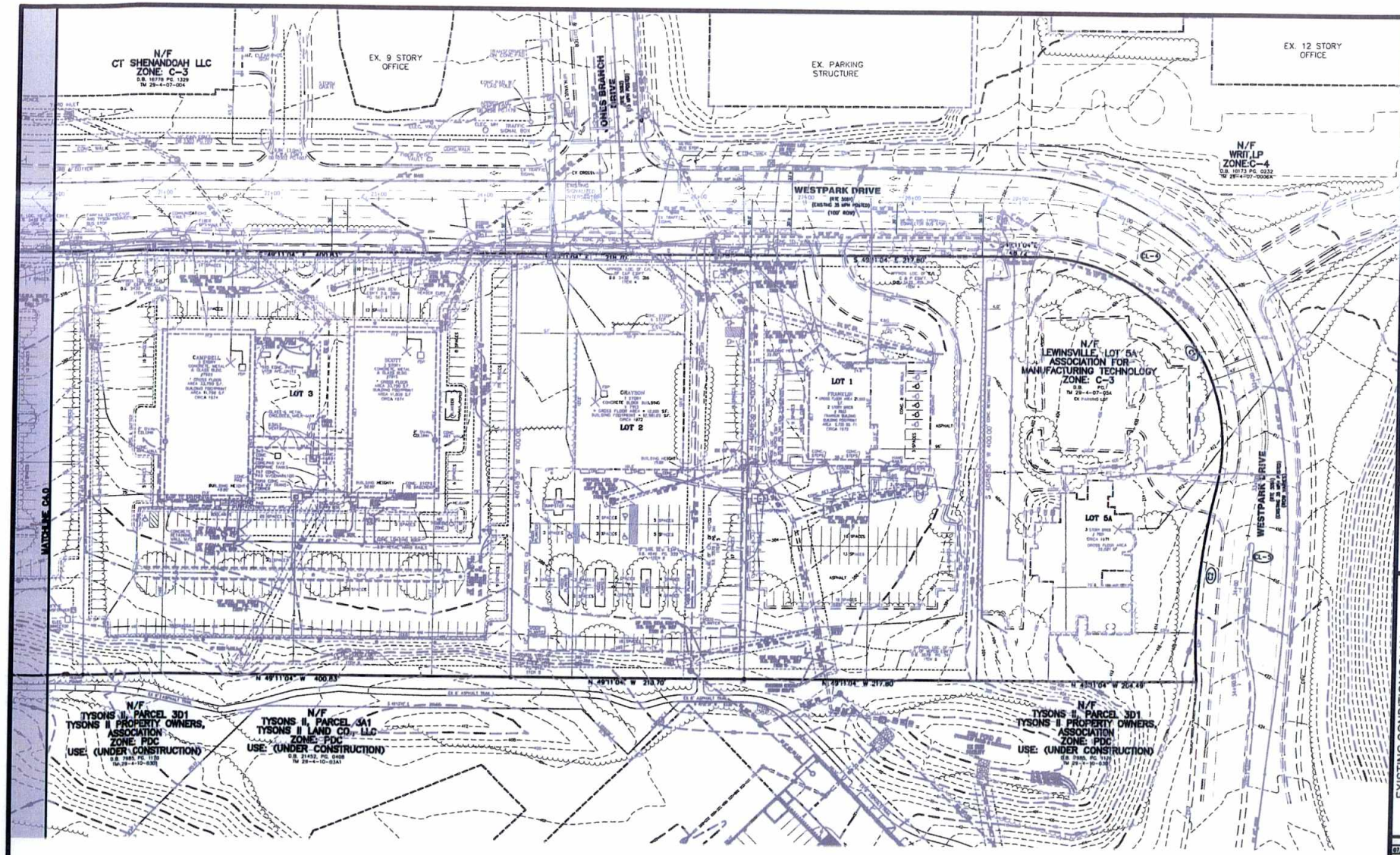
SCALE 1" = 40'

JOB No.

DATE : APRIL 26, 2011

FILE No. 7403-07-001

SHEET C4.0




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**

| | | 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 | 175.00' | 318.49' | S 67°36'26" W | 276.15' | 103°41'00" | 223.00' |
| C2 | 360.00' | 183.12' | S 49°33'15" W | 181.00' | 17°49'01" | 92.87' |

GRAPHIC SCALE
( IN FEET )
1 inch = 40 ft.

NAD 83

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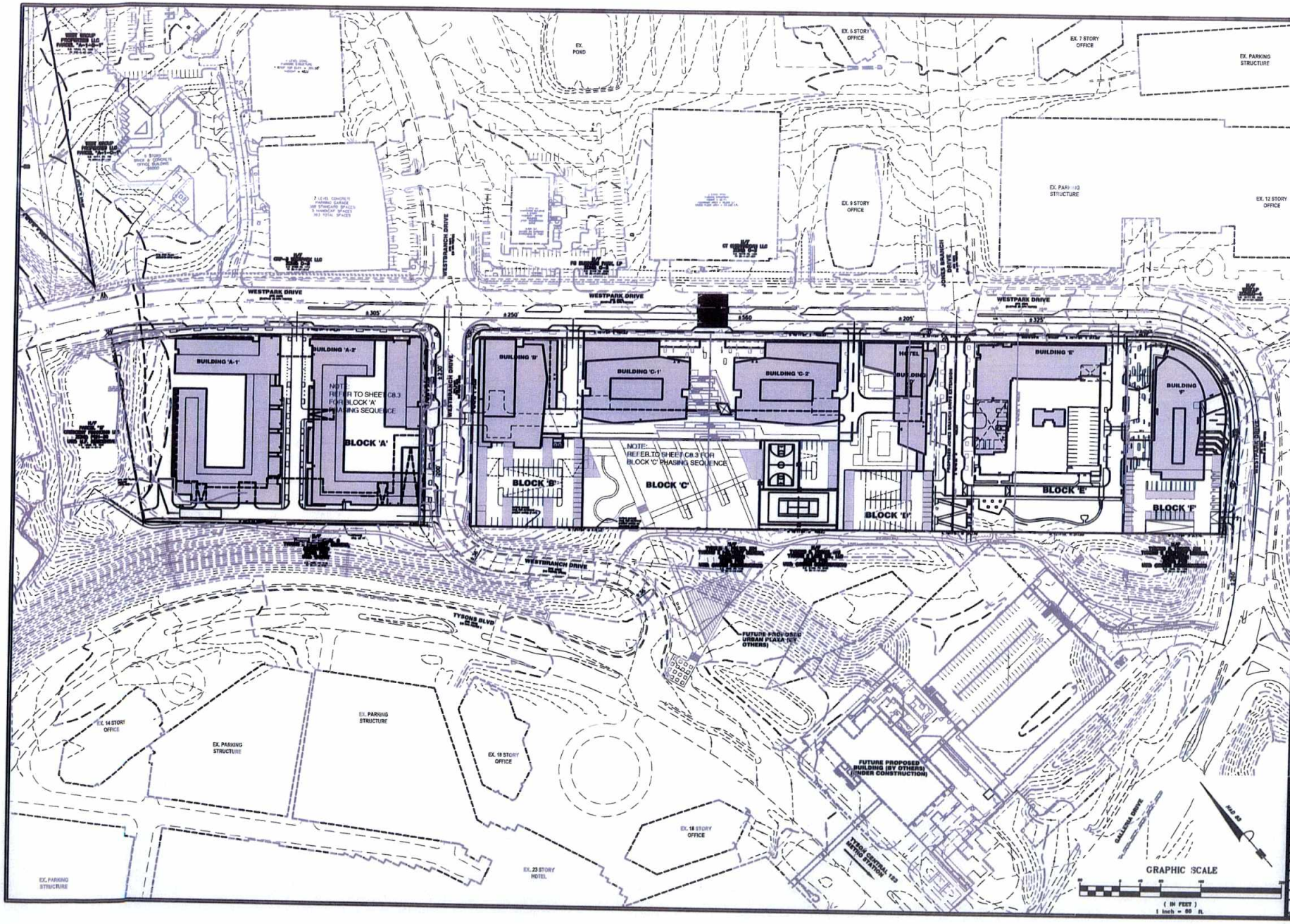
# EXISTING CONDITIONS PLAN (SHEET 2 OF 2)
# ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/23/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 09/29/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

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

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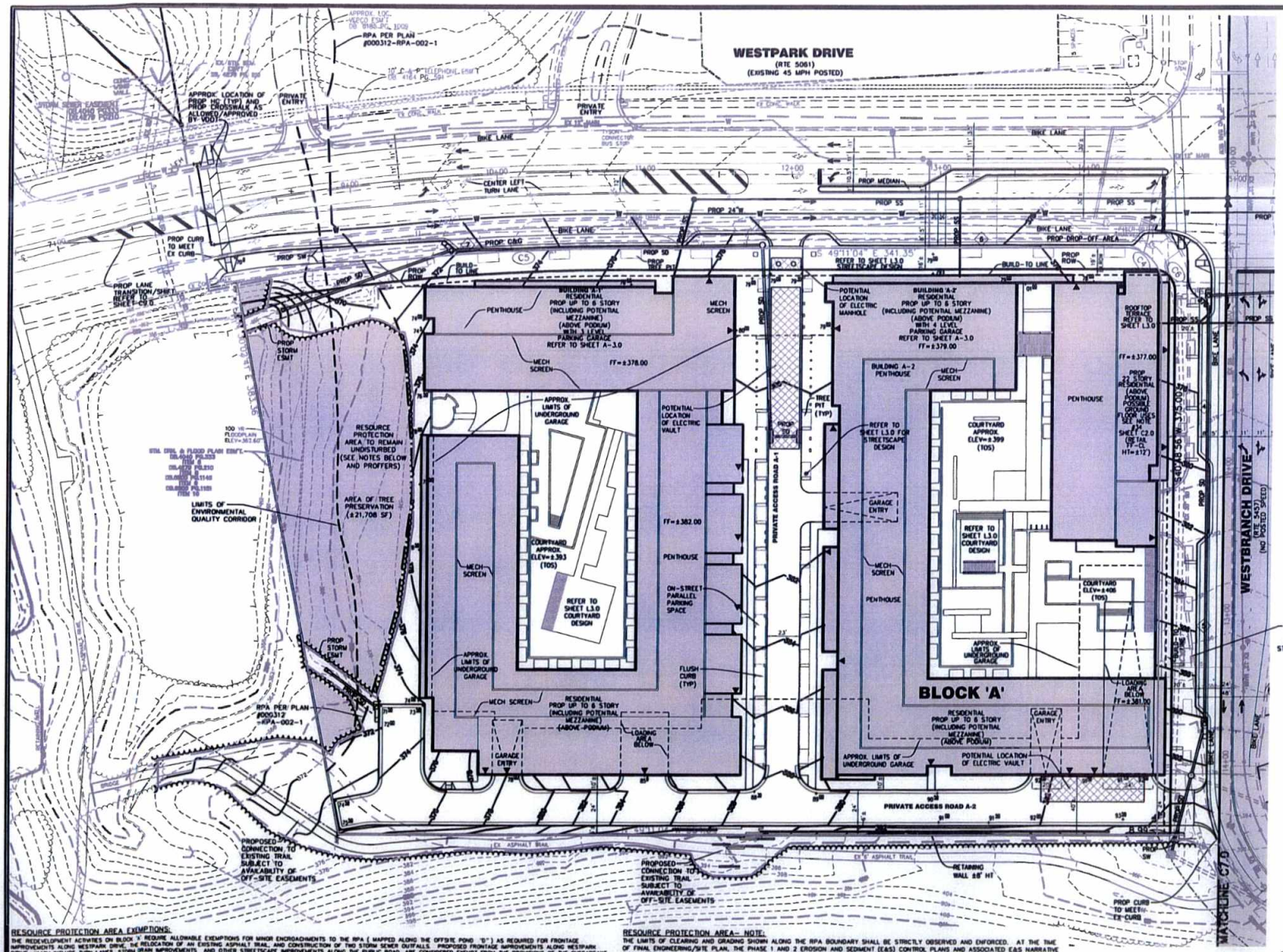
# OVERALL CONCEPTUAL DEVELOPMENT PLAN
# ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 01/23/11 | PER COUNTY COMMENT |
| 03/07/11 | PER COUNTY COMMENT |
| 03/24/11 | PER COUNTY COMMENT |
| 04/26/12 | REVISE APP AREA |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/28/12 | PER COUNTY COMMENT |
| 10/08/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

SCALE 1" = 60'
JOB No.
DATE : APRIL 26, 2011
FILE No. 7403-07-001
SHEET C5.0




NOTES:

1. REFER TO SHEET C9.0 AND C9.3 FOR PROPOSED ROAD DESIGN, STRIPING AND MARKING PLAN
2. PROPOSED CONTOURS, ELEVATION SAND 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.
5. 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

GRAPHIC SCALE

( IN FEET )
1 inch = 30 ft.

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 PUBLIC ROAD, ARE CONSIDERED EXEMPT FROM 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 (8) OF THAT SUBSECTION, INCLUDING APPROVAL OF A WRITTEN REQUEST FOR THE EXEMPTION BY THE DIRECTOR OF DPWES. THE TWO STORM SEWER OUTFALLS THAT 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 CPBO 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 ABUT 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 DPWES. 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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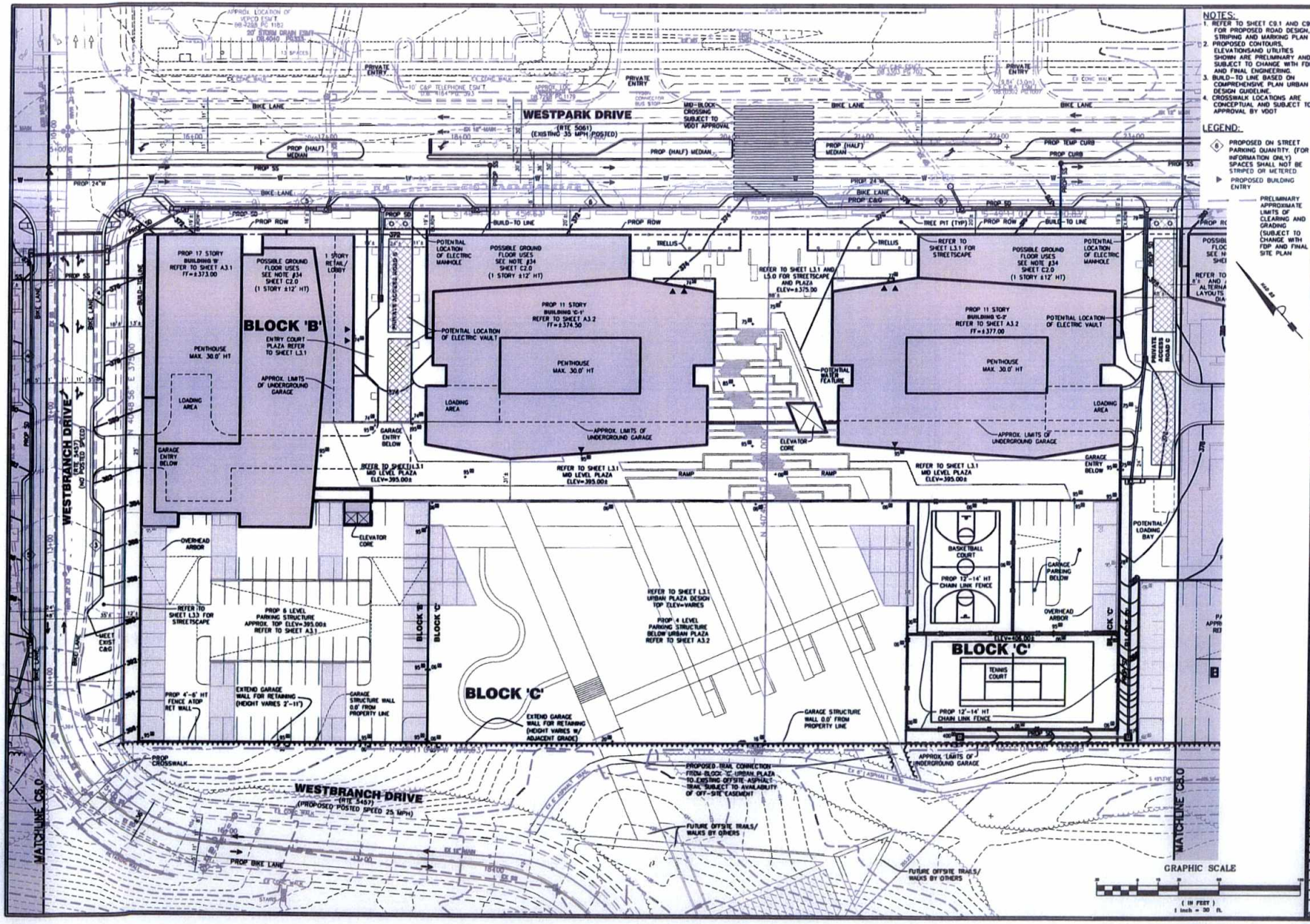
# CONCEPTUAL DEVELOPMENT PLAN
## BLOCK 'A'
# ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/30/12 | PER COUNTY COMMENT |
| 08/29/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

SCALE 1" = 30'
JOB No.
DATE : APRIL 26, 2011
FILE No. 7403-07-001
SHEET C6.0




NOTES:

1. REFER TO SHEET C9.1 AND C9.3 FOR PROPOSED ROAD DESIGN, STRIPING AND MARKING PLAN
2. PROPOSED CONTOURS, ELEVATIONSAND 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:

- 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

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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 |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
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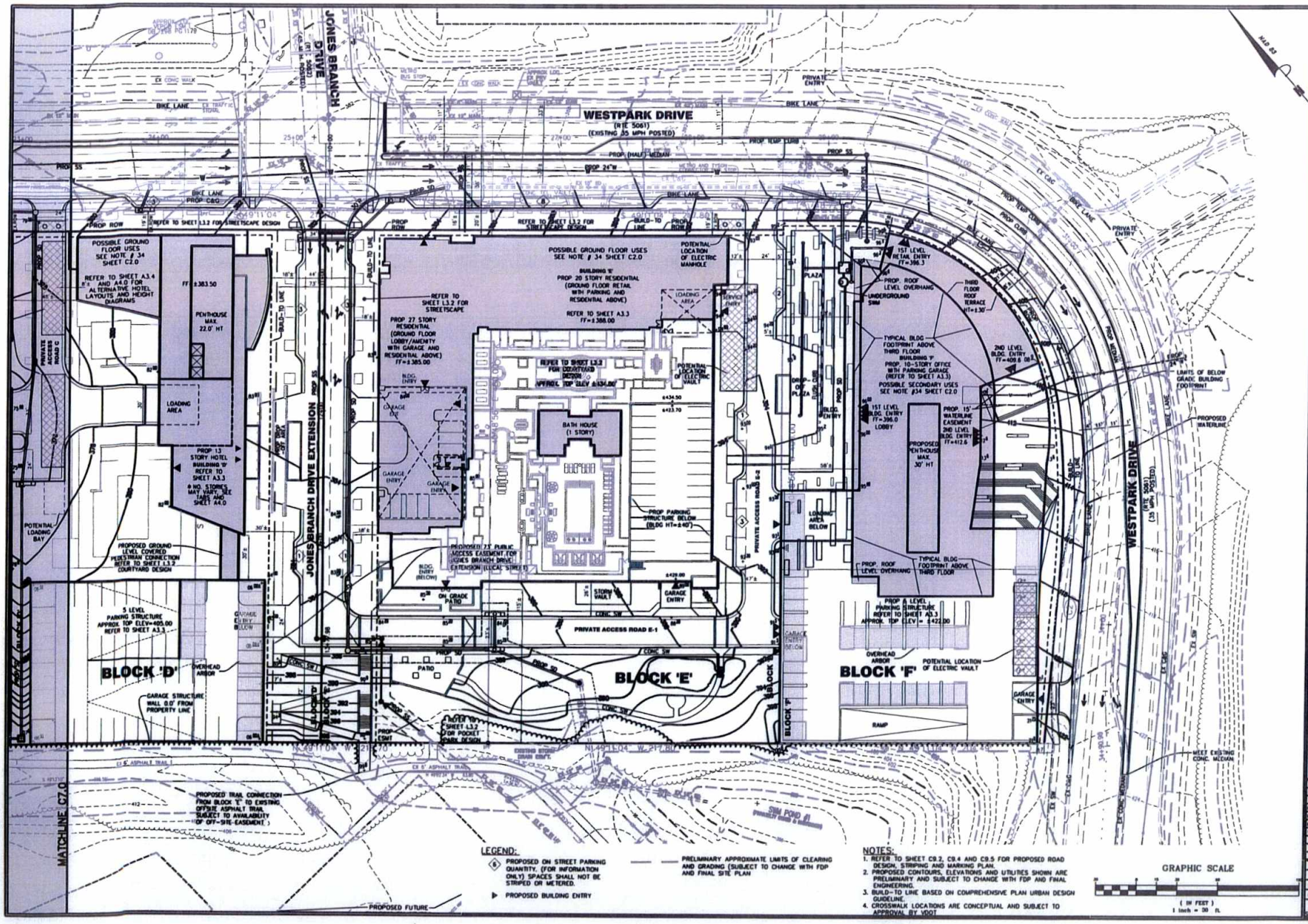
| JOB No. | |
| DATE : | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | C7.0 |




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

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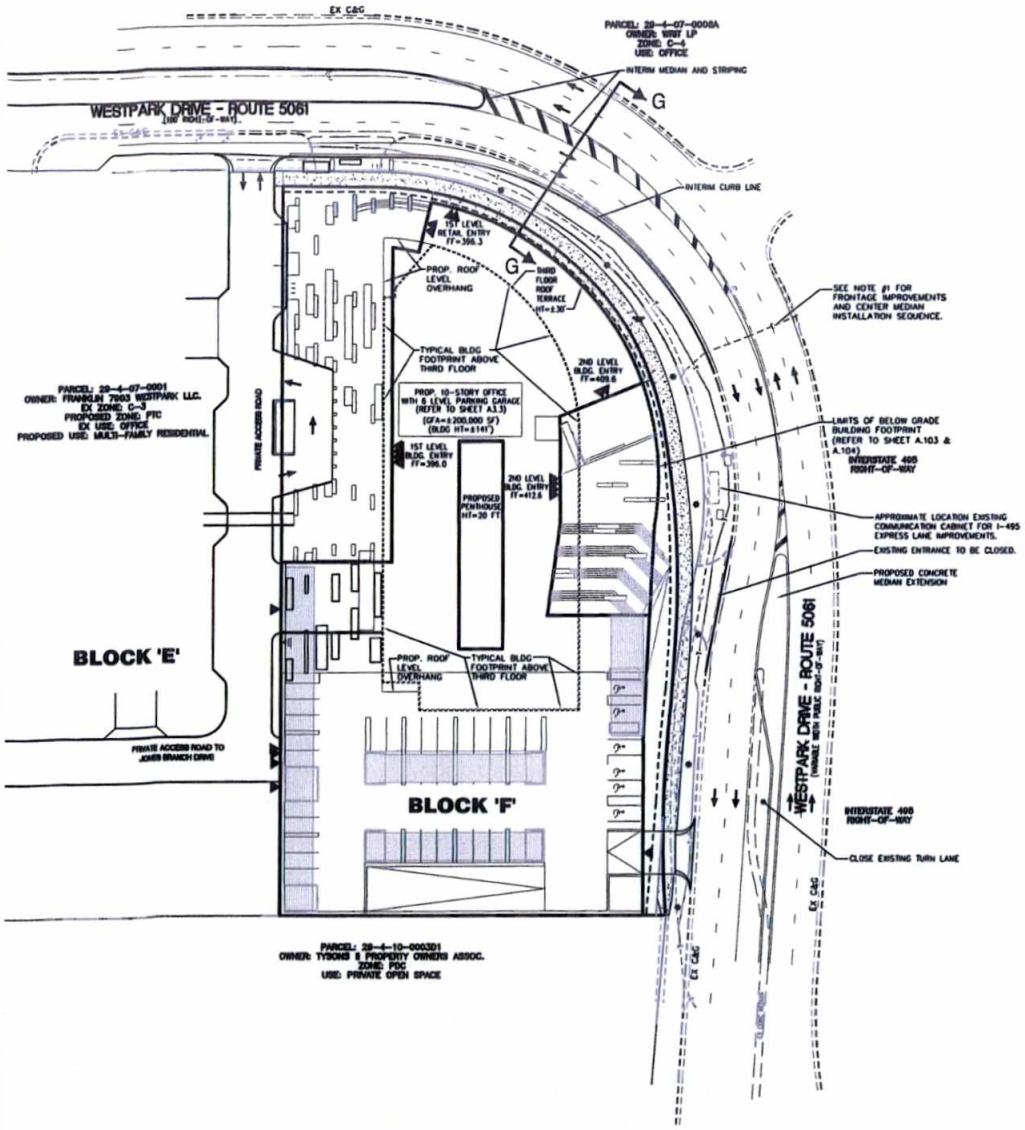
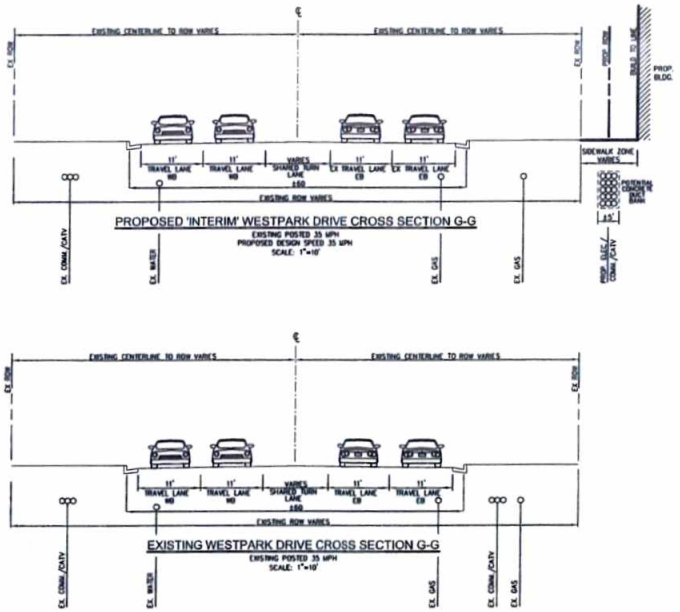
CONCEPTUAL DEVELOPMENT PLAN
BLOCKS 'D', 'E' & 'F'
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |

| DATE | DESCRIPTION |
|---|---|
| SCALE | NTS-30' |
| JOB No. | |
| DATE | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | C8.0 |




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

GRAPHIC SCALE

( IN FEET )
1 inch = 30 ft.

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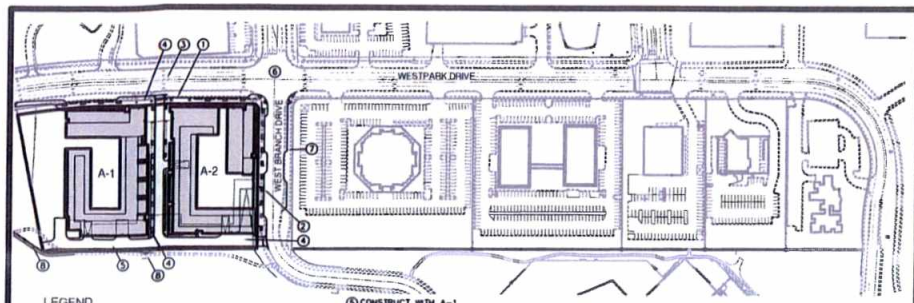
BLOCK 'F' INTERIM FRONTAGE IMPROVEMENTS
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 02/23/11 | PER COUNTY COMMENT |
| 03/07/11 | PER COUNTY COMMENT |
| 03/21/11 | PER COUNTY COMMENT |
| 05/23/11 | PER COUNTY COMMENT |
| 07/23/11 | PER COUNTY COMMENT |
| 08/26/11 | PER COUNTY COMMENT |
| 10/05/11 | PER COUNTY COMMENT |

| DATE | DESCRIPTION |
|---|---|

SCALE : H: 1"=30'
JOB No.
DATE : APRIL 26, 2011
FILE No. 7403-07-001
SHEET C8.1

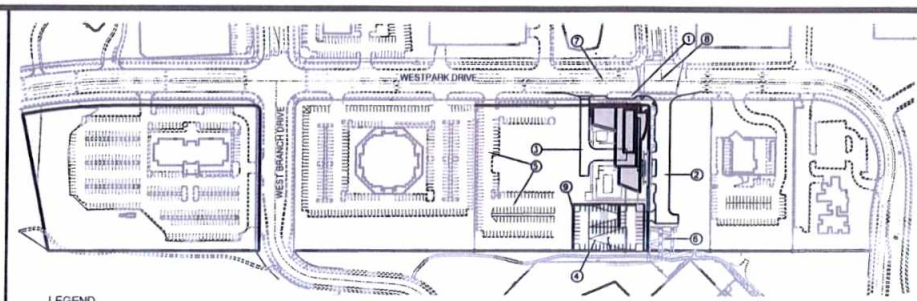



LEGEND

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.

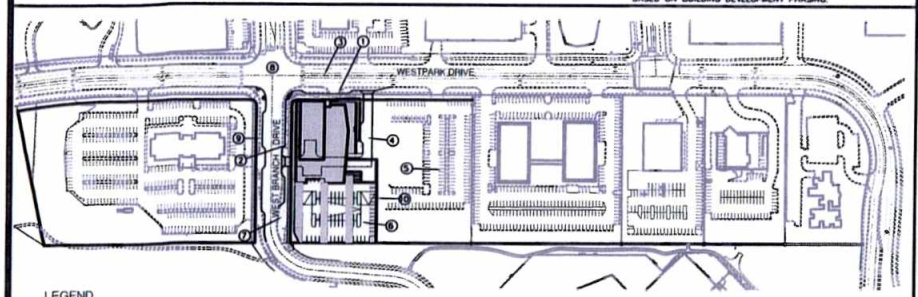
BLOCK A




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.

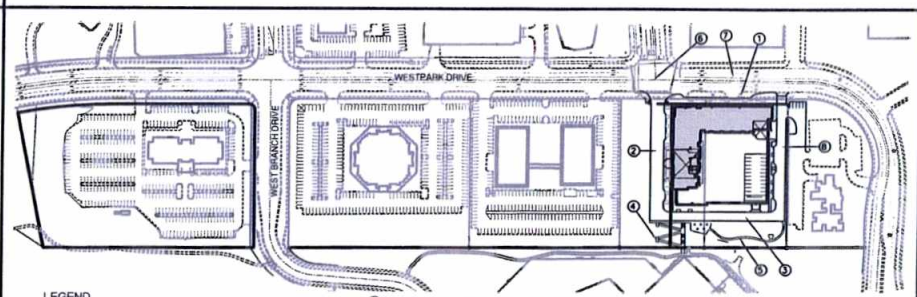
BLOCK D




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 B

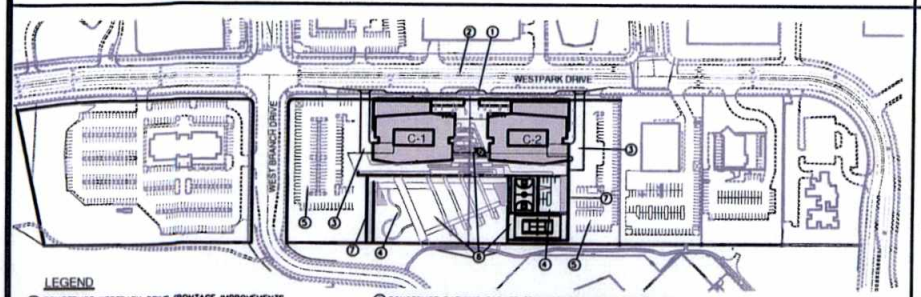



LEGEND

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 OPENSPACE/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 E



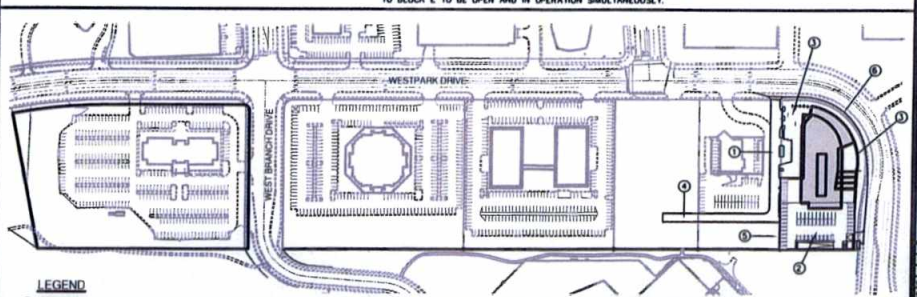

LEGEND

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 C




LEGEND

1. CONSTRUCT PRIVATE DRIVE CONNECTION TO WESTPARK DR. (NOT INCLUDING WESTERN STREETSCAPE).
2. CONSTRUCT PARKING GARAGE.
3. CONSTRUCT OPENSPACE 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.

BLOCK F

## 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, BIKE LANE ETC.
3. SEE PROFFERS FOR ADDITIONAL PHASING INFORMATION.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e-mail: info@vdgarch.com

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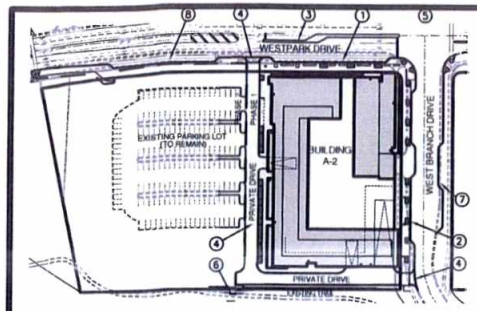
# OVERALL DEVELOPMENT PHASING EXHIBIT
# ARBOR ROW

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

| PLAN STATUS | |
|---|---|
| 07/23/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 03/23/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/29/12 | PER COUNTY COMMENT |
| 10/09/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

SCALE: 1"=100'
JOB No.
DATE: APRIL 26, 2011
FILE No. 7403-07-001
SHEET C8.2

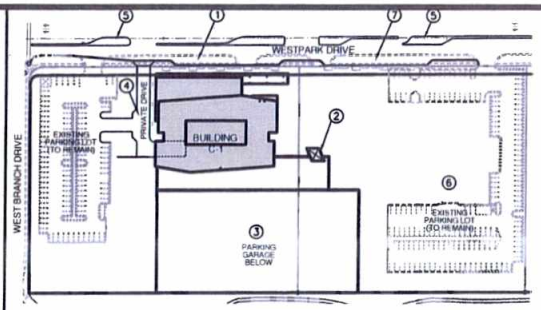



## PHASE 1 - OPTION 'A'

(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.

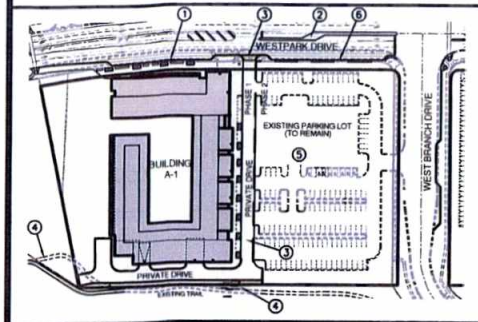



## PHASE 1 - OPTION 'A'

(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).

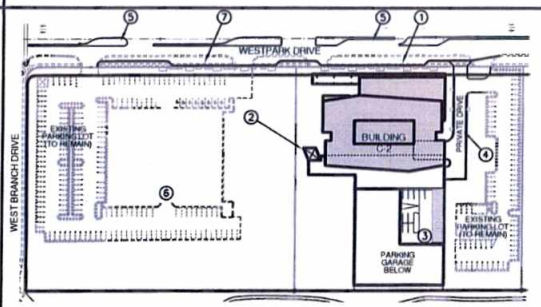



## PHASE 1 - OPTION 'B'

(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 DEVELPMENT
6. CONSTRUCT WESTPARK DRIVE CURB AND UTILITIES (NOT INCLUDING STREETSCAPE) IF REQUIRED BY VDOT AT TIME OF SITE PLAN REVIEW.

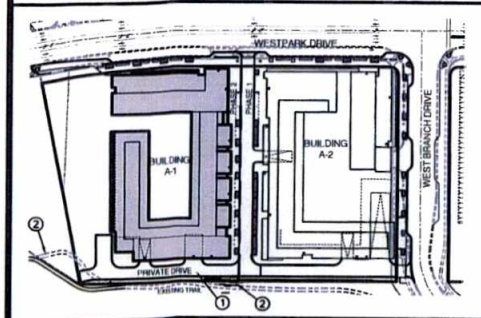



## PHASE 1 - OPTION 'B'

(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).

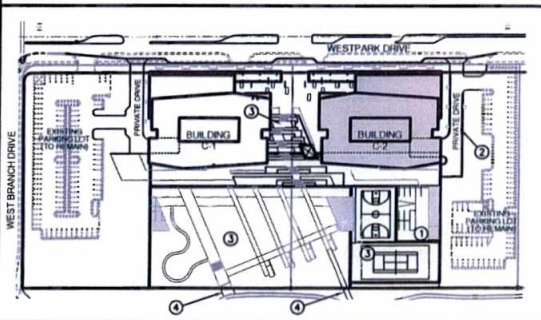



## PHASE 2 - OPTION 'A'

(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.

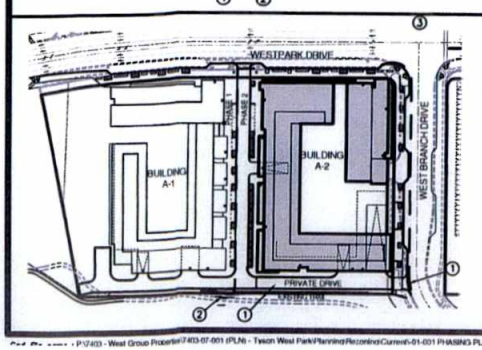



## PHASE 2 - OPTION 'A'

(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.

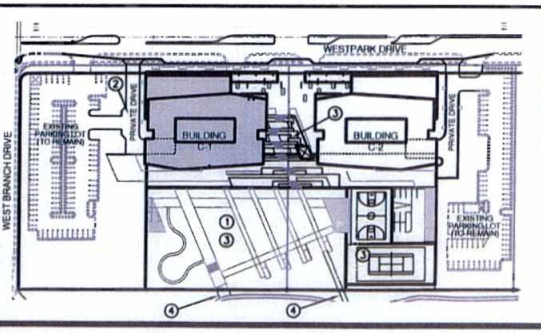



## PHASE 2 - OPTION 'B'

(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 FDP 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 PERIMETER AND WITHIN THE EXISTING PARKING LOTS SHALL BE UTILIZED IN LIEU OF PARKING LOT LANDSCAPE REQUIREMENTS TO THE EXTENT POSSIBLE.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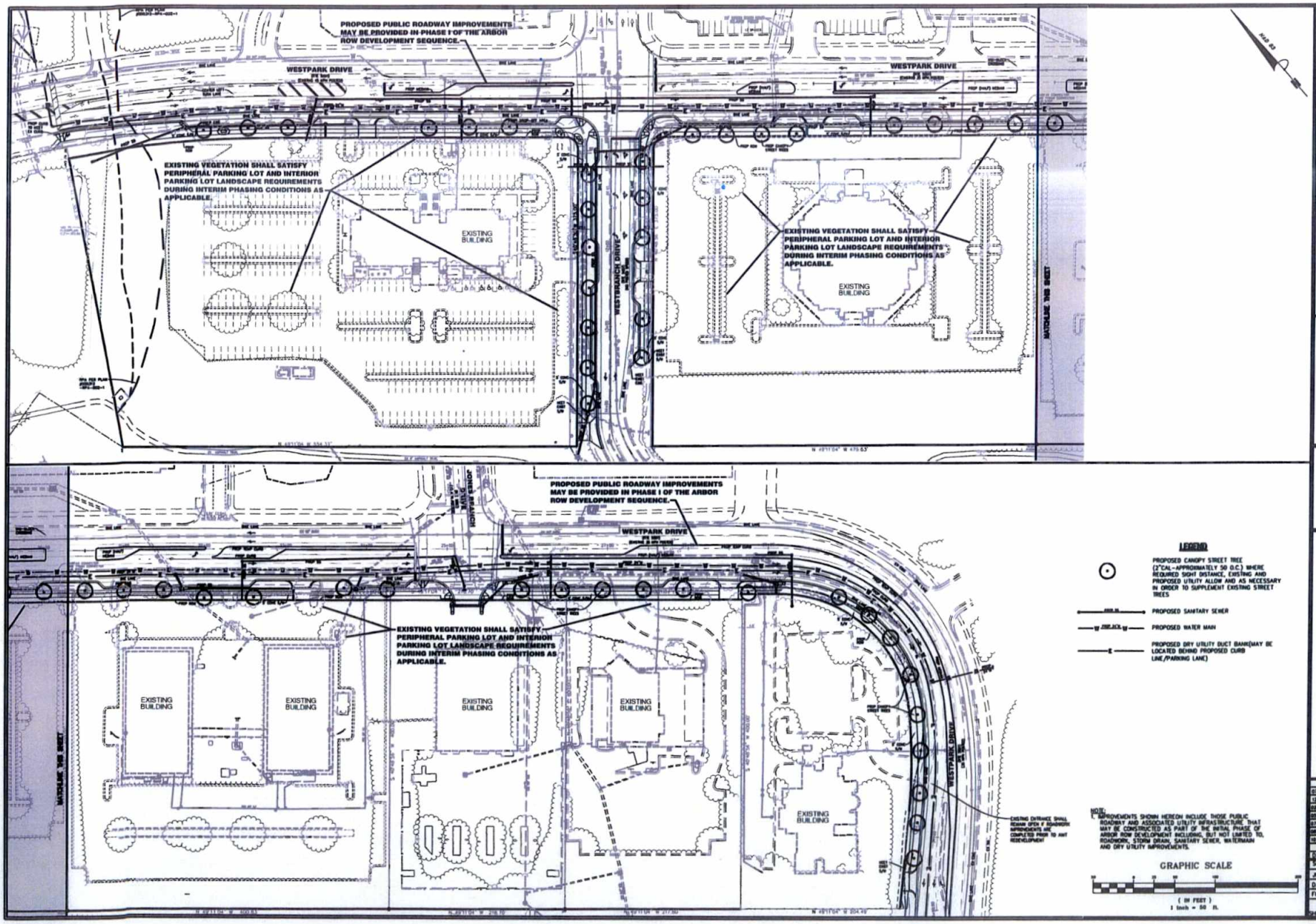
# BLOCKS A & C PHASING EXHIBIT

# ARBOR ROW

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

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 4/20/12 | REV PER COMMENTS |
| 01/23/13 | PER COUNTY COMMENT |
| 06/28/13 | PER COUNTY COMMENT |
| 10/08/13 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

SCALE: NTS-1000'
JOB No.
DATE: APRIL 28, 2011
FILE No. 7403-07-001
SHEET C8.3

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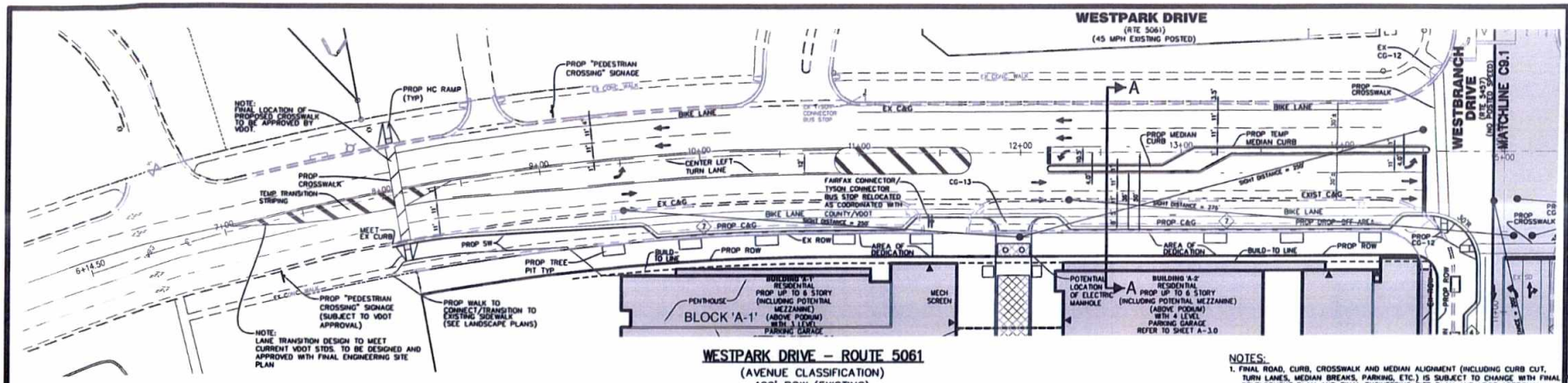
PUBLIC ROADWAY PHASING EXHIBIT
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 06/04/12 | PER COUNTY COMMENT |
| 05/20/13 | PER COUNTY COMMENT |
| 07/23/13 | PER COUNTY COMMENT |
| 08/28/13 | PER COUNTY COMMENT |
| 02/05/14 | PER COUNTY COMMENT |

| DATE | DESCRIPTION |
|---|---|

SCALE 1" = 50'
JOB No.
DATE : APRIL 26, 2011
FILE No. 7403-07-001
SHEET C8.4




## WESTPARK DRIVE – ROUTE 5061

(AVENUE CLASSIFICATION)
100' ROW (EXISTING)
EXISTING POSTED SPEED = 45 MPH
**PROPOSED DESIGN SPEED = 35 MPH**

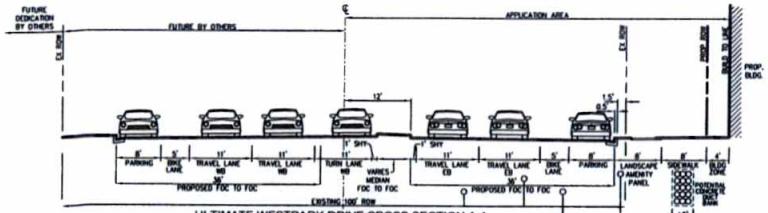
WESTPARK DRIVE APPROXIMATE AREA OF R.O.W. DEDICATION:
BLOCK 'A' FRONTAGE = ±8,938s.f.

LEGEND:

<--> EXISTING LANE DIRECTION
--> PROPOSED LANE DIRECTION

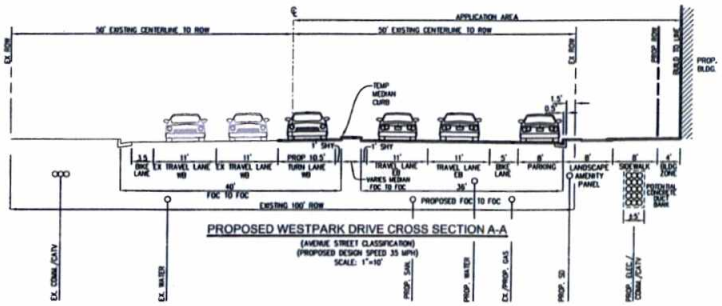
NOTES:

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.
9. PROPOSED DRIVEWAY/ENTRANCE SHALL CONFORM TO THE TYSON T.D.S. AND ARE NOT SUBJECT TO THE P.F.M..



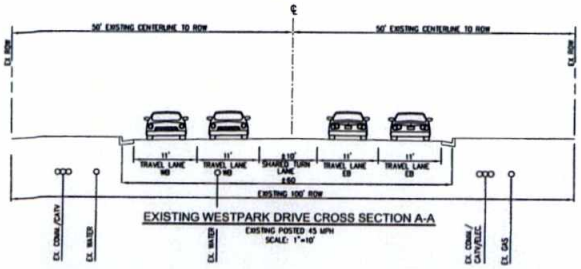

ULTIMATE WESTPARK DRIVE CROSS SECTION A-A
(AVENUE STREET CLASSIFICATION)
(PROPOSED DESIGN SPEED 35 MPH)
SCALE: 1"=10'

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




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'

GRAPHIC SCALE
( IN FEET )
1 inch = 30 ft.

MAP 29

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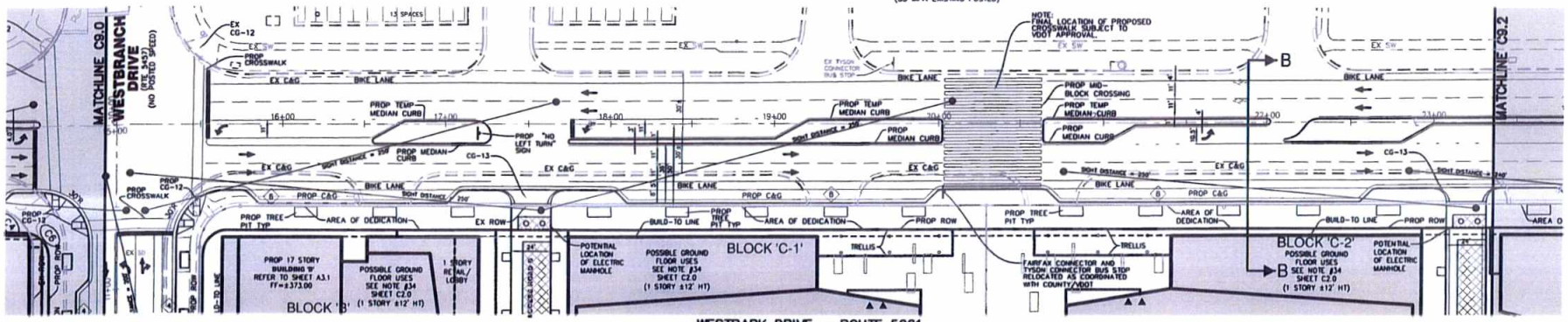
ROADWAY STRIPING AND MARKING PLAN
(SHEET 1 OF 6)
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/23/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/29/12 | PER COUNTY COMMENT |
| 07/13/12 | PER COUNTY COMMENT |
| 06/28/13 | PER COUNTY COMMENT |
| 10/08/13 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

SCALE: H: 1"=30'
JOB No.
DATE: APRIL 26, 2011
FILE No. 7403-07-001
SHEET C9.0




## WESTPARK DRIVE – ROUTE 5061

(AVENUE CLASSIFICATION)
100' ROW (EXISTING)
EXISTING POSTED SPEED = 35 MPH
**PROPOSED DESIGN SPEED = 35 MPH**

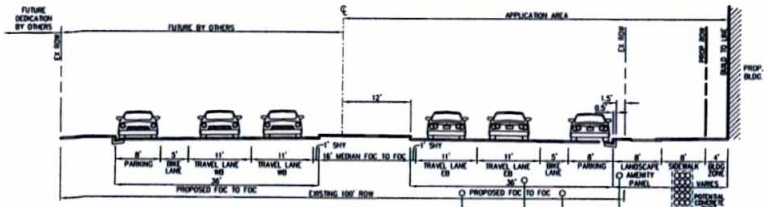
WESTPARK DRIVE APPROXIMATE AREA OF R.O.W. DEDICATION:
BLOCKS "B,C,D&E" FRONTAGE = ±18,920± l.f.

LEGEND:

EXISTING LANE DIRECTION
PROPOSED LANE DIRECTION

NOTES:

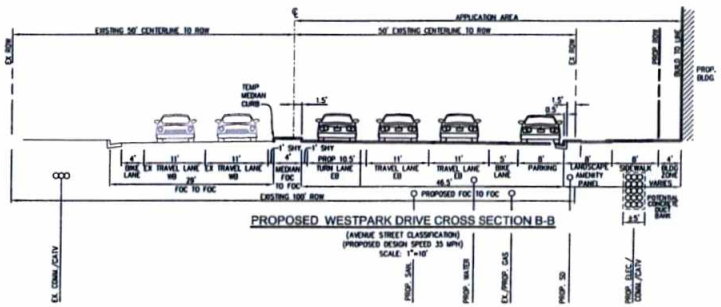
1. FINAL ROAD, CURB, CROSSWALK AND MEDIAN ALIGNMENT (INCLUDING CURB CUT, TURN LANES, MEDIAN BREAKS, PARKING, ETC.) IS SUBJECT TO CHANGE WITH FINAL DEVELOPMENT PLAN AND FINAL ENGINEERING SITE PLAN AND VDOT APPROVAL.
2. REFER TO SHEET L4.0 FOR STREETSCAPE DESIGN ELEMENTS.
3. AREA OF RIGHT OF WAY DEDICATION/VACATION 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.
9. PROPOSED DRIVEWAY/ENTRANCE SHALL CONFORM TO THE TYSON T.D.S. AND ARE NOT SUBJECT TO THE P.F.M..




### ULTIMATE WESTPARK DRIVE CROSS SECTION B-B

(AVENUE STREET CLASSIFICATION)
(PROPOSED DESIGN SPEED 35 MPH)
SCALE: 1"=10'

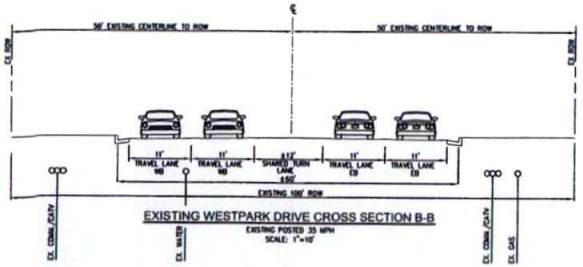
NOTE:
'ULTIMATE' ROAD SECTION ILLUSTRATES THOSE ITEMS TO BE CONSTRUCTED IN THE FUTURE BY OTHERS.




### PROPOSED WESTPARK DRIVE CROSS SECTION B-B

(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 B-B

EXISTING POSTED 35 MPH
SCALE: 1"=10'

GRAPHIC SCALE

( IN FEET )
1 inch = 30 ft.

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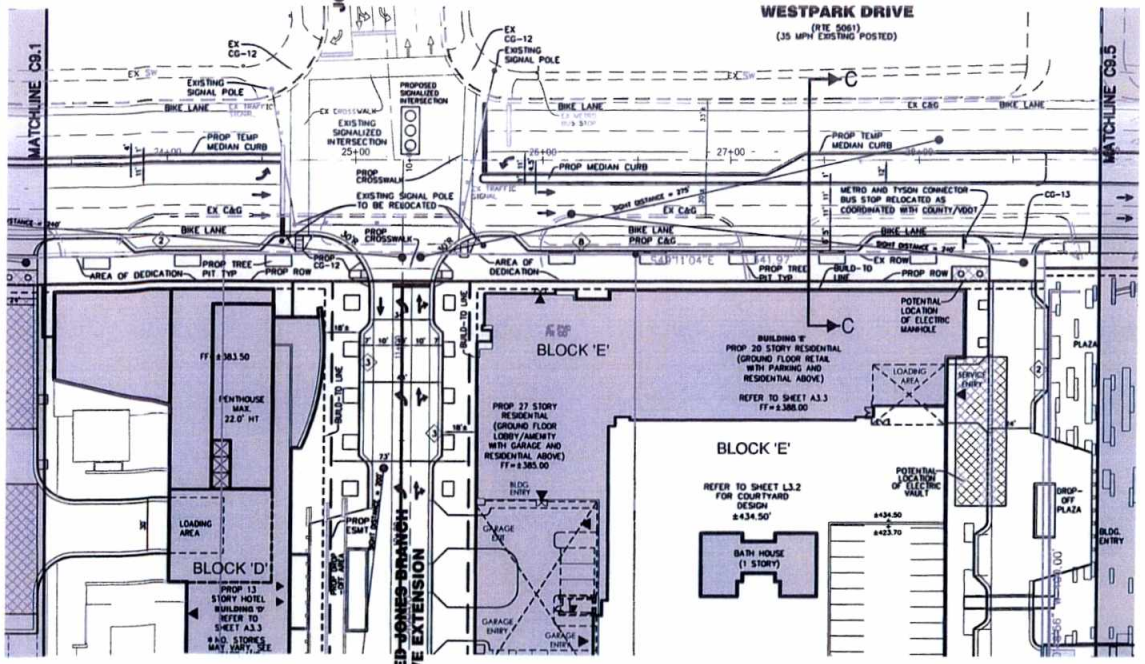
ROADWAY STRIPING AND MARKING PLAN
(SHEET 2 OF 6)
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/25/12 | PER COUNTY COMMENT |
| 05/23/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/29/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |

| DATE | DESCRIPTION |
|---|---|
| SCALE | 1" = 30' |
| JOB No. | |
| DATE | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | C9.1 |




## WESTPARK DRIVE – ROUTE 5061

(AVENUE CLASSIFICATION)
100' ROW
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 = ±18,920±.f.

NOTES:

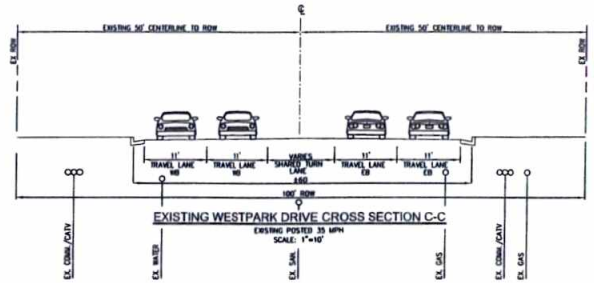
1. FINAL ROAD, CURB, CROSSWALK AND MEDIAN ALIGNMENT (INCLUDING CURB CUT, TURN LANES, MEDIAN BREAKS, PARKING, ETC.) IS SUBJECT TO CHANGE WITH FINAL DEVELOPMENT PLAN AND FINAL ENGINEERING SITE PLAN AND VDOT APPROVAL.
2. REFER TO SHEET L4.0 – L4.1 FOR STREETSCAPE DESIGN ELEMENTS.
3. AREA OF RIGHT OF WAY 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 (TABEL 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.
9. PROPOSED DRIVEWAY/ENTRANCE SHALL CONFORM TO THE TYSON T.D.S. AND ARE NOT SUBJECT TO THE P.F.M.

LEGEND:

EXISTING LANE DIRECTION
PROPOSED LANE DIRECTION

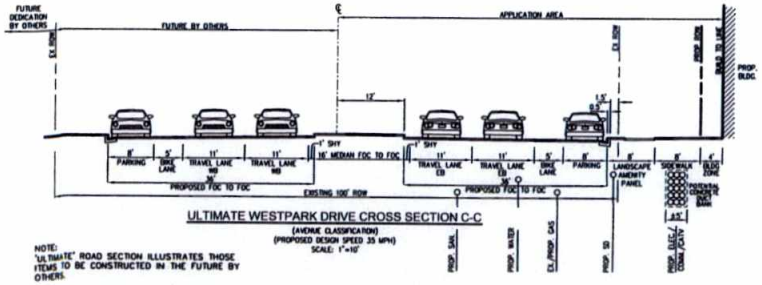
GRAPHIC SCALE

( IN FEET )
1 inch = 20 ft.




EXISTING WESTPARK DRIVE CROSS SECTION C-C

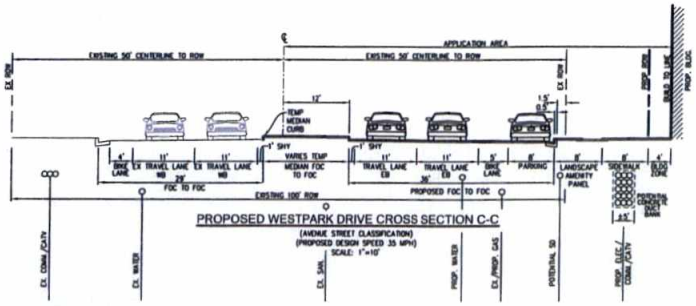
EXISTING POSTED 35 MPH
SCALE: 1"=10'




ULTIMATE WESTPARK DRIVE CROSS SECTION C-C

(AVENUE CLASSIFICATION)
(PROPOSED DESIGN SPEED 35 MPH)
SCALE: 1"=10'

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




PROPOSED WESTPARK DRIVE CROSS SECTION C-C

(AVENUE STREET CLASSIFICATION)
(PROPOSED DESIGN SPEED 35 MPH)
SCALE: 1"=10'

NOTE:
'PROPOSED' ROAD SECTION INCLUDES THOSE ITEMS TO BE CONSTRUCTED WITH THIS APPLICATION.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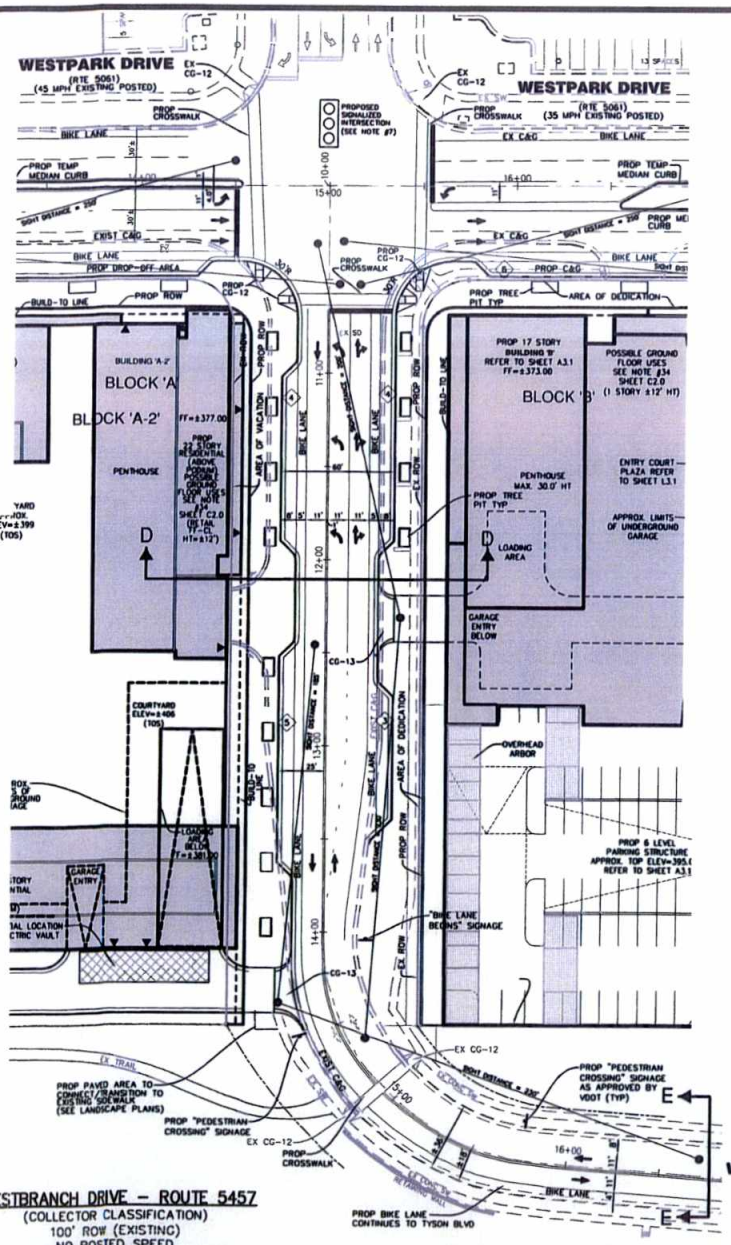
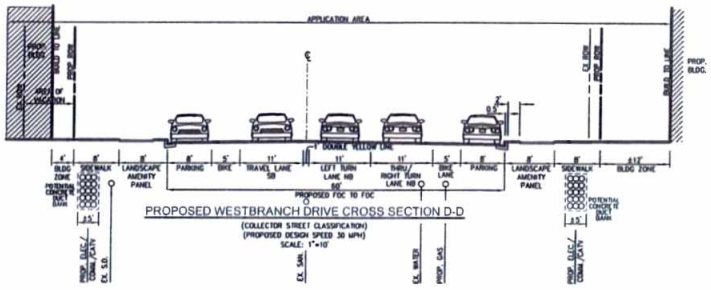
ROADWAY STRIPING AND MARKING PLAN
(SHEET 3 OF 6)
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/29/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

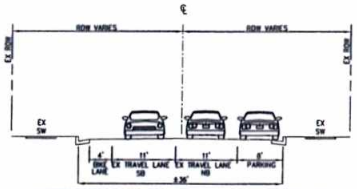
SCALE: 1"=30'
JOB No.
DATE: APRIL 26, 2011
FILE No. 7403-07-001
SHEET C9.2



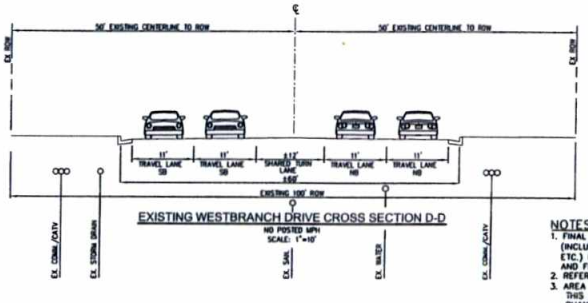

WESTBRANCH DRIVE – ROUTE 5457
(COLLECTOR CLASSIFICATION)
100' ROW (EXISTING)
NO POSTED SPEED
**PROPOSED DESIGN SPEED = 30 MHP**




PROPOSED WESTBRANCH DRIVE CROSS SECTION D-D
(COLLECTOR STREET CLASSIFICATION)
(PROPOSED DESIGN SPEED 30 MPH)
SCALE: 1"=10'




EXISTING WESTBRANCH DRIVE CROSS SECTION E-E
(WITH PROPOSED BIKE LANE)
PROPOSED DESIGN SPEED 30 MPH
SCALE: 1"=10'




EXISTING WESTBRANCH DRIVE CROSS SECTION D-D
NO POSTED MPH
SCALE: 1"=10'

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 L4.1 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. SIGHT DISTANCE DIMENSION IS BASED ON PROPOSED DESIGN SPEED LIMITS AS OUTLINED IN THE VDOT TRANSPORTATION DESIGN STANDARDS FOR TYSON CORNER (TABEL 1.2). SEE PLAN VIEW FOR PROPOSED POSTED SPEED LIMITS.
5. EXISTING UTILITIES REPRESENTED HERE ARE APPROXIMATE IN LOCATION AND DESCRIPTION FOR REFERENCE ONLY OF EXISTING CONDITIONS.
6. ON-STREET PARKING SHOWN FOR INFORMATION ONLY. SPACES SHALL NOT BE STRIPED OR METERED.
7. SIGNAL CONTROL APPARATUS MAY REQUIRE EASEMENTS FROM ADJACENT PROPERTY OWNERS IF INSTALLATION OCCURS OUTSIDE OF VDOT ROW
8. PROPOSED DRIVEWAY/ENTRANCE SHALL CONFORM TO THE TYSON T.D.S. AND ARE NOT SUBJECT TO THE P.F.M..

LEGEND:
EXISTING LANE DIRECTION
PROPOSED LANE DIRECTION

WESTBRANCH DRIVE APPROXIMATE AREA OF R.O.W. VACATION:
BLOCK 'A' FRONTAGE = ±3,428s.f.

WESTBRANCH DRIVE APPROXIMATE AREA OF R.O.W. DEDICATION:
BLOCK 'B' FRONTAGE = ±672s.f.

GRAPHIC SCALE
( IN FEET )
1 inch = 30 ft.

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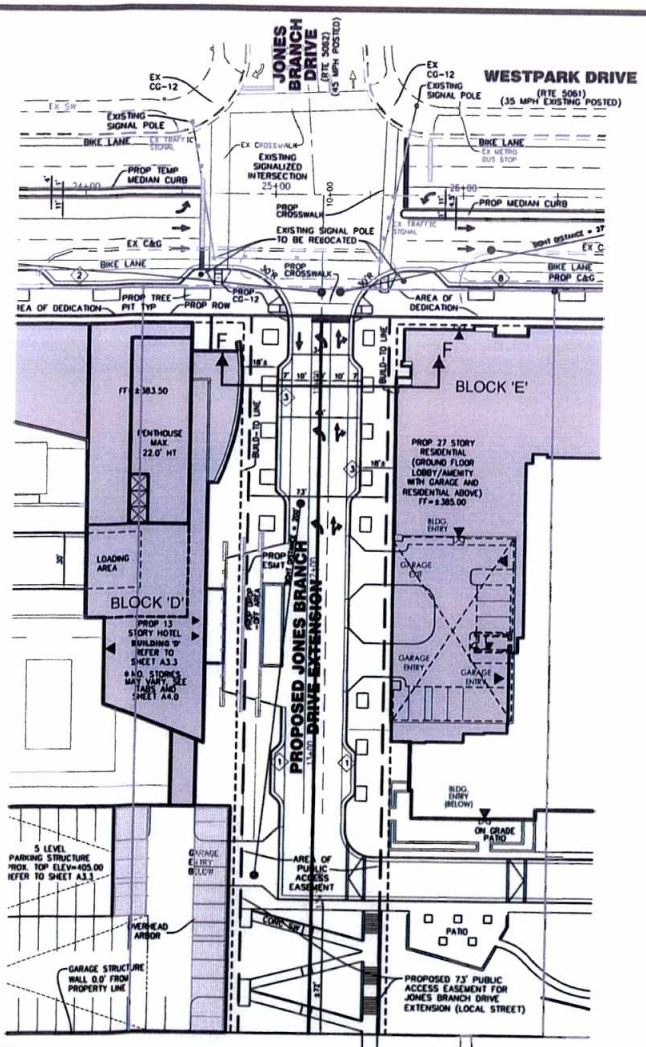
ROADWAY STRIPING AND MARKING PLAN
(SHEET 4 OF 6)
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 04/20/12 | REMOVE ROW TABS |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/29/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

SCALE: 1"=30'
JOB No.
DATE : APRIL 26, 2011
FILE No. 7403-07-001
SHEET C9.3




## JONES BRANCH DRIVE EXTENSION

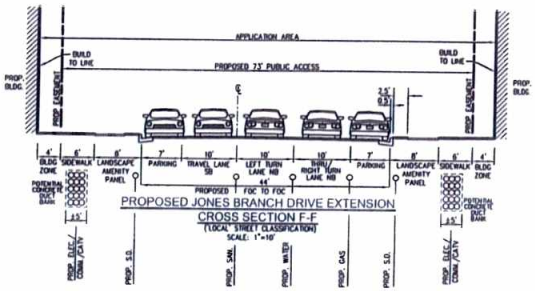
(LOCAL CLASSIFICATION)

PROPOSED PUBLIC ACCESS EASEMENT 73'

**PROPOSED DESIGN SPEED = 30 MPH**

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 L4.1 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 DETERMIND AT TIME OF FINAL SITE PLAN.
4. SIGHT DISTANCE DIMENSION IS BASED ON PROPOSED DESIGN SPEED LIMITS AS OUTLINED IN THE VDOT TRANSPORTATION DESIGN STANDARDS FOR TYSON CORNER (TABEL 12). SEE PLAN VIEW FOR PROPOSED POSED SPEED LIMITS.
5. EXISTING UTILITES REPRESENTED HERE ARE APPROXIMATE IN LOCATION AND DESCRIPTION FOR REFERENCE ONLY OF EXISTING CONDITIONS.
6. ON-STREET PARKING SHOWN FOR INFORMATION ONLY. SPACES SHALL NOT BE STRIPED OR METERED.
7. PROPOSED DRIVEWAY/ENTRANCE SHALL CONFORM TO THE TYSON T.D.S. AND ARE NOT SUBJECT TO THE P.F.M..




PROPOSED JONES BRANCH DRIVE EXTENSION

CROSS SECTION F-F

(LOCAL STREET CLASSIFICATION)

SCALE: 1"=10'

LEGEND:

EXISTING LANE DIRECTION

PROPOSED LANE DIRECTION

GRAPHIC SCALE

( IN FEET )

1 inch = 30 ft.

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ROADWAY STRIPING AND MARKING PLAN
(SHEET 5 OF 6)
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 11/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 04/20/12 | REVISE ROW TABS |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/20/12 | PER COUNTY COMMENT |
| 09/06/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

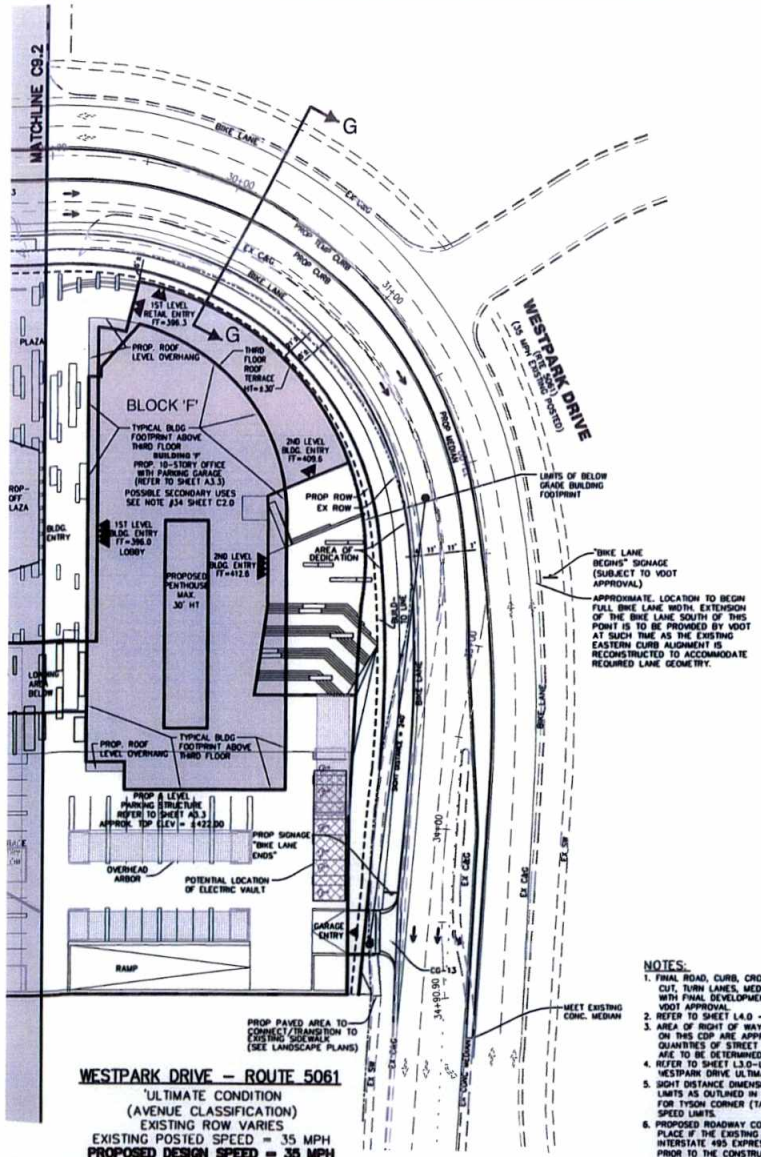
SCALE 1"=30'

JOB No.

DATE : APRIL 26, 2011

FILE No. 7403-07-001

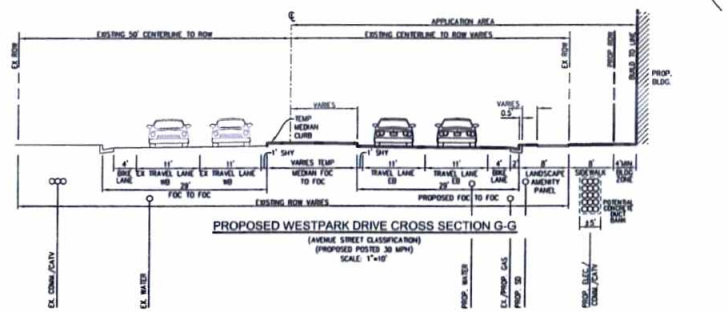
SHEET C9.4



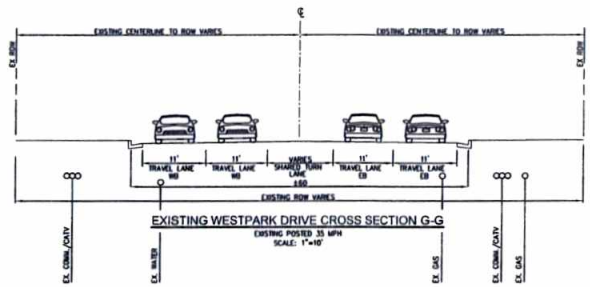

## WESTPARK DRIVE – ROUTE 5061

'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.




PROPOSED WESTPARK DRIVE CROSS SECTION G-G
(AVENUE STREET CLASSIFICATION)
(PROPOSED POSTED 30 MPH)
SCALE: 1"=10'




EXISTING WESTPARK DRIVE CROSS SECTION G-G
EXISTING POSTED 35 MPH
SCALE: 1"=10'

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 (TABEL 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 C8.1 FOR INTERIM ROAD CONDITION IN THE EVENT THE REFERED 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.
9. PROPOSED DRIVEWAY/ENTRANCE SHALL CONFORM TO THE TYSON T.D.S. AND ARE NOT SUBJECT TO THE P.F.M..

LEGEND:

EXISTING LANE DIRECTION
PROPOSED LANE DIRECTION

GRAPHIC SCALE

( IN FEET )
1 inch = 30 ft.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# ROADWAY STRIPING AND MARKING PLAN
(SHEET 6 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 |
| 02/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| DATE | DESCRIPTION |

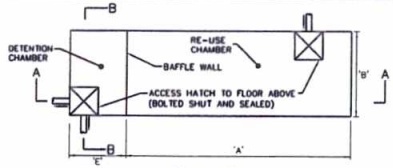
SCALE: 1"=30'
JOB No.
DATE: APRIL 26, 2011
FILE No. 7403-07-001
SHEET C9.5

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

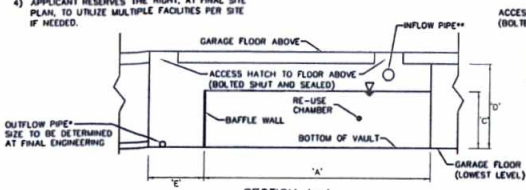
** FINAL NUMBER AND LOCATION OF INFLOW PIPES PER MEP.

NOTES:

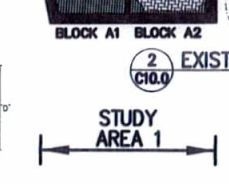
1) FINAL NUMBER, SHAPE, SIZE, LOCATION, AND DESIGN OF SWM VAULTS ARE SUBJECT TO CHANGE AT THE TIME OF FINAL ENGINEERING.
2) SUPPORT AND REINFORCING FOR VAULTS PER STRUCTURAL ENGINEERING PLANS.
3) PUMPS SHALL BE INTEGRATED INTO VAULTS AT THE TIME OF FINAL ENGINEERING ON A CASE BY CASE BASIS.
4) APPLICANT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




PLAN VIEW




SECTION A-A

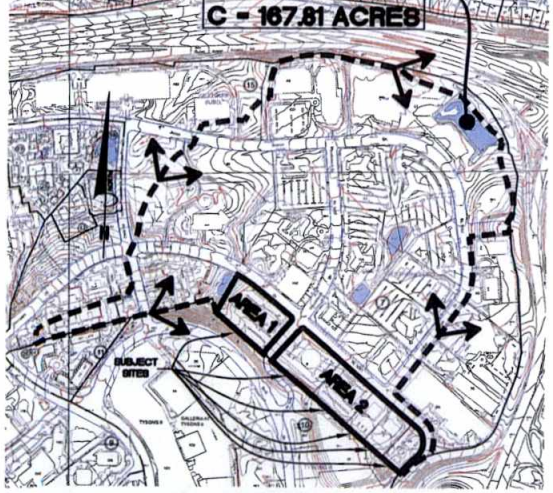



SECTION B-B

## SWM SUMMARY

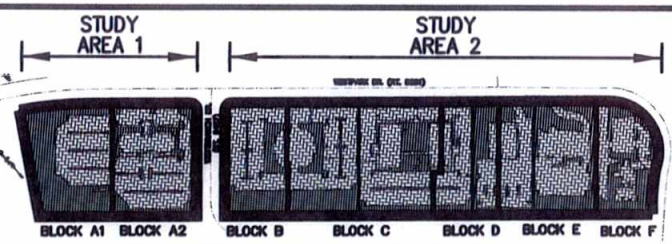
| VAULT ID NAME | REQUIRED VOLUME (CF) | LENGTH (FT) A | WIDTH (FT) B | RE-USE DEPTH (FT) C | STORAGE DEPTH (FT) D | DET. CHAMBER SIZE (FT) E | VOLUME PROVIDED (CF) |
|---|---|---|---|---|---|---|---|
| BLOCK A1 | 13,229 | 56 | 24 | 10 | 12 | 4 | 13,440 |
| BLOCK A2 | 13,577 | 58 | 24 | 10 | 12 | 4 | 13,920 |
| BLOCK B | 10,295 | 62 | 18 | 10 | 12 | 4 | 13,360 |
| 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 C10.0 CONCEPTUAL FACILITY DETAIL
NOT TO SCALE

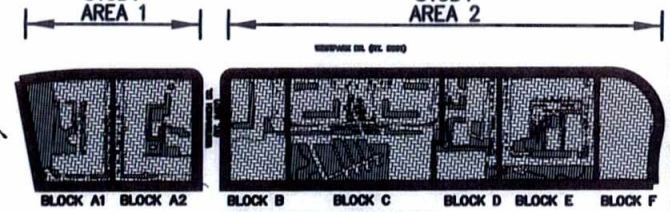



4 C10.0 BMP MAP
SCALE: 1"=600'

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

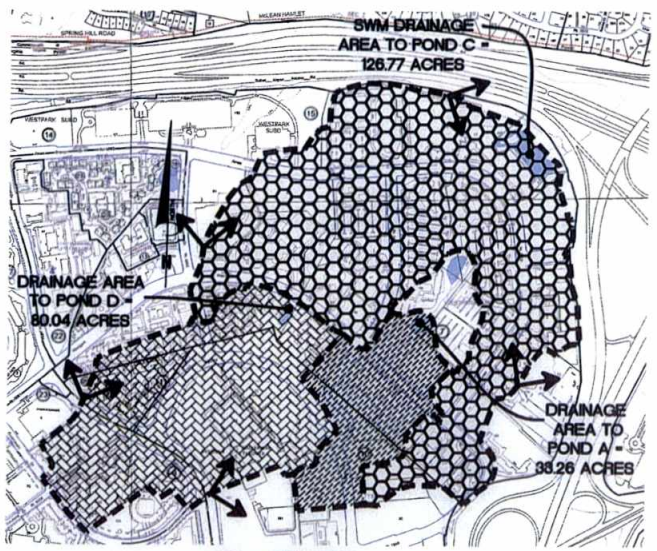



3 C10.0 PRELIMINARY PROPOSED IMPERVIOUS AREA EXHIBIT
SCALE: 1"=200'

IMPERVIOUS AREA =
PERVIOUS AREA =

| Area 1 | |
|---|---|
| Area = | 5.388 AC |
| Ex. Impervious % | 55% |
| Ex. C-Factor = | 0.63 |
| Prop. Impervious % | 72% |
| Prop. C-Factor = | 0.73 |

| Area 2 | |
|---|---|
| Area = | 18.936 AC |
| Ex. Impervious % | 62% |
| Ex. C-Factor = | 0.67 |
| Prop. Impervious % | 78% |
| Prop. C-Factor = | 0.77 |




5 C10.0 SWM MAP
SCALE: 1"=600'

## 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 COMPRISE THE PROPOSED BLOCKS ASSOCIATED WITH THIS APPLICATION: 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 'D' 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 'C' 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 COMPREHENSIVE PLAN, 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 PUBIC 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 OUTLET 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. THE PROPOSED COMPUTATIONS AND STORAGE VOLUMES FOR STORMWATER RE-USE ARE BASED ON A 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 OF 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 PHOSPHOROUS 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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SWM & BMP NARRATIVE
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/28/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |

| DATE | DESCRIPTION |
|---|---|
| SCALE | AS SHOWN |
| JOB No. | |
| DATE: | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | C10.0 |

Cad file name: P:\7403 - West Group Properties\7403-07-001 (PLAN - Tysons West Park\Planning\Rezoning\Current-01-001 SWM BMP NARR.dwg

## 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.

### 1" COMPREHENSIVE PLAN NOTE:

THE INFILTRATION VOLUME IS TO BE DETERMINED AT FDP. IT IS NOT PRACTICABLE TO RETAIN SMALL AREAS OF THE SITE PERIPHERY DUE TO REQUIRED SITE GRADING. HOWEVER, THE FULL 1-INCH RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4-INCHES 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-INCH OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

IN FURTHERANCE OF THE APPLICANT'S COMMITMENTS HEREIN AND WHILE IT INTENDS TO MEET THE 1-INCH USING THE TECHNIQUES SHOWN, IT RESERVES THE RIGHT TO UTILIZE ANY COMBINATION OF LID (EXISTING AND FUTURE) MEASURES TO MEET THIS GOAL SUBJECT TO THE REVIEW AND APPROVAL OF DPWES AT TIME OF SITE PLAN.

RECOGNIZING THAT RUNOFF REDUCTION TECHNOLOGIES ARE RELATIVELY NEW AND STILL EVOLVING, SHOULD THE APPLICANT'S FINAL DESIGN DEVELOPMENT AND/OR DPWES COMMENTS ON THE SITE PLAN RESULT IN CHANGES TO THE LID MEASURES SHOWN ON THE CDP AND/OR FDP, INCLUDING, BUT NOT LIMITED TO, ELIMINATION OR ADDITION OF MEASURES SO LONG AS THESE CHANGES DO NOT AFFECT THE GRID OF STREETS, THE GENERAL LOCATION OF THE POINTS OF ACCESS TO EACH BLOCK, THE GENERAL LOCATION OF THE BUILDINGS, THE BUILD-TO LINES, THE MINIMUM AMOUNT AND GENERAL LOCATION OF PUBLICLY-ACCESS URBAN PARK LAND AS MAY BE APPLICABLE FOR EACH BLOCK AND THE GENERAL QUALITY AND CHARACTER OF THE STREETSCAPE ALONG THE PUBLIC AND PRIVATE STREETS WITHIN AND ABUTTING THE SUBJECT PROPERTY AND AS OTHERWISE SPECIFIED IN THE PROFFERS.

## RUNOFF FLOWRATE COMPUTATIONS:

Total Site Area (ac): 2.66

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

| Type A | Type B | Type C | Type D |
|---|---|---|---|
| 0 | 2.66 | 0 | 0 |

*Per Soils Map approximately 100% type B

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

Weighted CN for site: 73

S for CN to C Calcs.: 3.70

Curve Number (CN) For Soil Type Per Land Use

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

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 |

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:
C = 1 - {S x [1.2 - (S/ (P + 0.8S))]} / P]
where:
P = 24-hr rainfall depth for design storm
S = (1000 / CN) - 10

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 |
|---|---|---|
| 2.17 | 4.49 | 9.48 |

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

Weighted CN for site: 92

S for CN to C Calcs.: 0.87

Curve Number (CN) For Soil Type Per Land Use

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

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 |

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:
C = 1 - {S x [1.2 - (S/ (P + 0.8S))]} / P]
where:
P = 24-hr rainfall depth for design storm
S = (1000 / CN) - 10

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

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

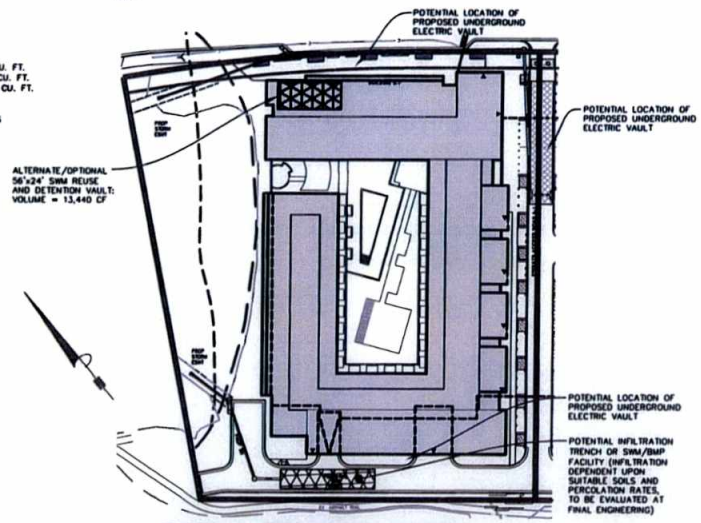
Proposed Conditions Peak Flow Rates (cfs)

| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 6.09 | 10.58 | 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 VAULT LOCATION

SCALE: 1"=60'

## 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 BORMAN 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, TREEPITS, CURB EXTENSIONS, VEGETATED GREEN ROOF, AND PERMABLE 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, TREEPITS, 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.

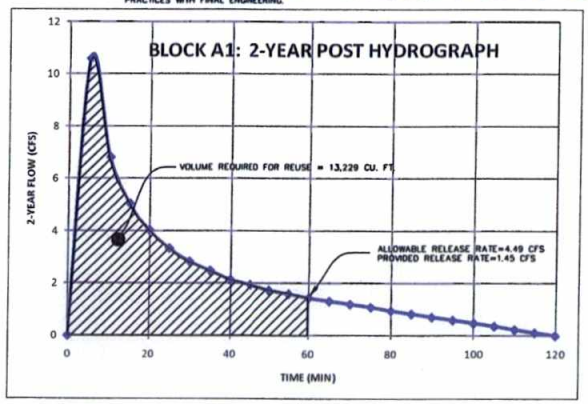
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK A1. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER 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 KNOW, 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 MEET FOR THE 1 YEAR, 2 YEAR, AND 10 YEAR STORMS.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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 |
| 11/07/11 | PER COUNTY COMMENTS |
| 03/26/12 | PER COUNTY COMMENTS |
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: 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) = 26,559 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.

### 1° COMPREHENSIVE PLAN NOTE:

THE INFILTRATION VOLUME IS TO BE DETERMINED AT FDP. IT IS NOT PRACTICABLE TO RETAIN SMALL AREAS OF THE SITE PERIPHERY DUE TO REQUIRED SITE GRADING, HOWEVER, THE FULL 1-INCH RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4-INCHES 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-INCH OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

IN FURTHERANCE OF THE APPLICANT'S COMMITMENTS HEREIN AND WHILE IT INTENDS TO MEET THE 1-INCH USING THE TECHNIQUES SHOWN, IT RESERVES THE RIGHT TO UTILIZE ANY COMBINATION OF LID (EXISTING AND FUTURE) MEASURES TO MEET THIS GOAL SUBJECT TO THE REVIEW AND APPROVAL OF DPWES AT TIME OF SITE PLAN.

RECOGNIZING THAT RUNOFF REDUCTION TECHNOLOGIES ARE RELATIVELY NEW AND STILL EVOLVING, SHOULD THE APPLICANT'S FINAL DESIGN DEVELOPMENT AND/OR DPWES COMMENTS ON THE SITE PLAN RESULT IN CHANGES TO THE LID MEASURES SHOWN ON THE CDP AND/OR FDP, INCLUDING, BUT NOT LIMITED TO, ELIMINATION OR ADDITION OF MEASURES SO LONG AS THESE CHANGES DO NOT AFFECT THE GRID OF STREETS, THE GENERAL LOCATION OF THE POINTS OF ACCESS TO EACH BLOCK, THE GENERAL LOCATION OF THE BUILDINGS, THE BUILD-TO LINES, THE MINIMUM AMOUNT AND GENERAL LOCATION OF PUBLICLY-ACCESS URBAN PARK LAND AS MAY BE APPLICABLE FOR EACH BLOCK AND THE GENERAL QUALITY AND CHARACTER OF THE STREETSCAPE ALONG THE PUBLIC AND PRIVATE STREETS WITHIN AND ABUTTING THE SUBJECT PROPERTY AND AS OTHERWISE SPECIFIED IN THE PROFFERS.

## RUNOFF FLOWRATE COMPUTATIONS:

Total Site Area (ac): 2.73

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

| Type A | Type B | Type C | Type D |
|---|---|---|---|
| 0 | 2.73 | 0 | 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 |

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 |

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

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 |

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 |

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

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

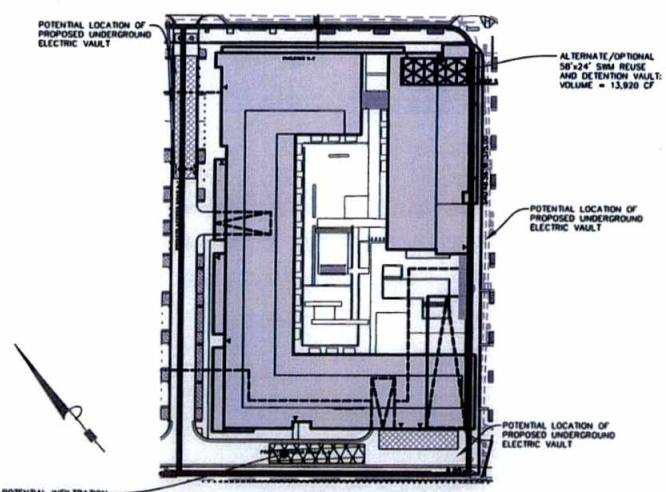
| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 3.27 | 5.45 | 7.27 |

Proposed Conditions Peak Flow Rates (cfs)

| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 6.20 | 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"=60'

## 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, TREEPITS, 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, TREEPITS, 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. 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.

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.

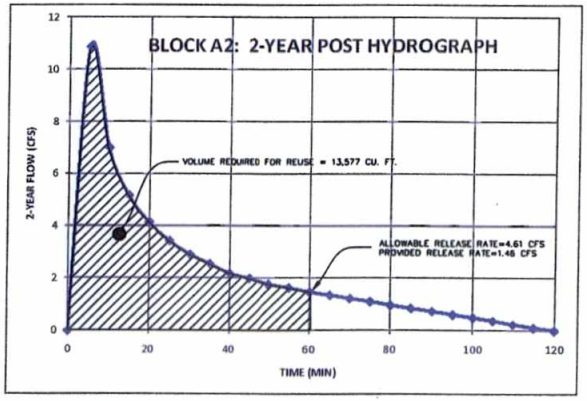
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK A2. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER 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 KNOW, 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 MEET 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

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/31/12 | PER COUNTY COMMENT |
| 08/28/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |

| DATE | DESCRIPTION |
|---|---|
| SCALE | AS NOTED |
| JOB No. | |
| DATE : | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | C10.2 |

Existing Block B.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 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 0.0% Ponds Used | 1.00 | 1.00 | 1.00 |
| 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.

Proposed Block B.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 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 |
| 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) | 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.

**1° COMPREHENSIVE PLAN NOTE:**
THE INFILTRATION VOLUME IS TO BE DETERMINED AT FDP. IT IS NOT PRACTICABLE TO RETAIN SMALL AREAS OF THE SITE PERIPHERY DUE TO REQUIRED SITE GRADING. HOWEVER, THE FULL 1-INCH RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4-INCHES 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-INCH OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

IN FURTHERANCE OF THE APPLICANT'S COMMITMENTS HEREIN AND WHILE IT INTENDS TO MEET THE 1-INCH USING THE TECHNIQUES SHOWN, IT RESERVES THE RIGHT TO UTILIZE ANY COMBINATION OF LID (EXISTING AND FUTURE) MEASURES TO MEET THIS GOAL SUBJECT TO THE REVIEW AND APPROVAL OF DPWES AT TIME OF SITE PLAN.

RECOGNIZING THAT RUNOFF REDUCTION TECHNOLOGIES ARE RELATIVELY NEW AND STILL EVOLVING, SHOULD THE APPLICANT'S FINAL DESIGN DEVELOPMENT AND/OR DPWES COMMENTS ON THE SITE PLAN RESULT IN CHANGES TO THE LID MEASURES SHOWN ON THE CDP AND/OR FDP, INCLUDING, BUT NOT LIMITED TO, ELIMINATION OR ADDITION OF MEASURES SO LONG AS THESE CHANGES DO NOT AFFECT THE GRID OF STREETS, THE GENERAL LOCATION OF THE POINTS OF ACCESS TO EACH BLOCK, THE GENERAL LOCATION OF THE BUILDINGS, THE BUILD-TO LINES, THE MINIMUM AMOUNT AND GENERAL LOCATION OF PUBLICLY-ACCESS URBAN PARK LAND AS MAY BE APPLICABLE FOR EACH BLOCK AND THE GENERAL QUALITY AND CHARACTER OF THE STREETSCAPE ALONG THE PUBLIC AND PRIVATE STREETS WITHIN AND ABUTTING THE SUBJECT PROPERTY AND AS OTHERWISE SPECIFIED IN THE PROFFERS.

## RUNOFF FLOWRATE COMPUTATIONS:

Total Site Area (ac): 2.07

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

| Type A | Type B | Type C | Type D |
|---|---|---|---|
| 0 | 2.07 | 0 | 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 |

Weighted CN for site: 73

S for CN to C Calcs: 3.70

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:
C = 1 - [(S x [1.2 - (S/ (P + 0.8S))]) / 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) — 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 |
|---|---|---|
| 1.66 | 3.50 | 7.37 |

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

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:
C = 1 - [(S x [1.2 - (S/ (P + 0.8S))]) / 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) — in / hr

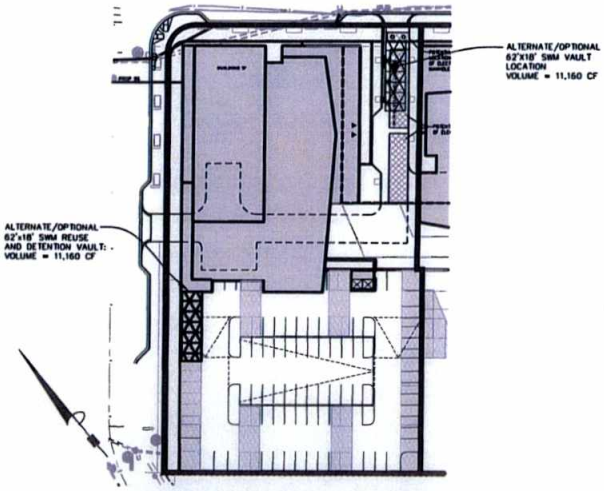
| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 3.27 | 5.45 | 7.27 |

Proposed Conditions Peak Flow Rates — cfs

| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 4.74 | 8.24 | 12.49 |

**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 VAULT LOCATION**
SCALE: 1"=60'

## 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 CONFORMANCE 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.B, 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.

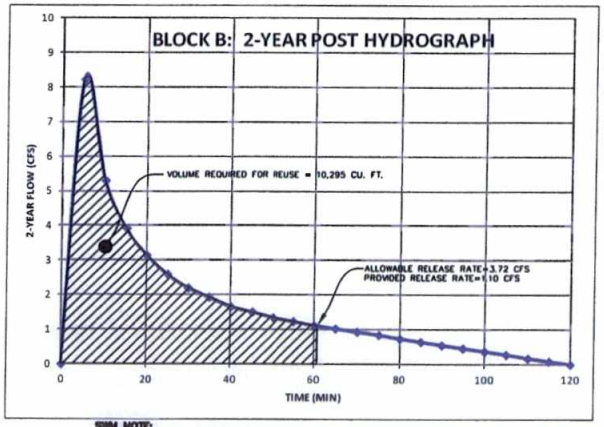
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK B. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER 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 KNOW, 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 MEET FOR THE 1 YEAR, 2 YEAR, AND 10 YEAR STORMS.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BLOCK B SWM COMPUTATIONS
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/28/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |

| DATE | DESCRIPTION |
|---|---|

SCALE: AS SHOWN
JOB No.
DATE : APRIL 28, 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: ____ Date: _____

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 0.0% Ponds Used | 1.00 | 1.00 | 1.00 |
| 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: ____ Date: _____

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 0.0% Ponds Used | 1.00 | 1.00 | 1.00 |
| 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.

## 1" COMPREHENSIVE PLAN NOTE:

THE INFILTRATION VOLUME IS TO BE DETERMINED AT FDP. IT IS NOT PRACTICABLE TO RETAIN SMALL AREAS OF THE SITE PERIPHERY DUE TO REQUIRED SITE GRADING, HOWEVER, THE FULL 1-INCH RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4-INCHES 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-INCH OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

IN FURTHERANCE OF THE APPLICANT'S COMMITMENTS HEREIN AND WHILE IT INTENDS TO MEET THE 1-INCH USING THE TECHNIQUES SHOWN, IT RESERVES THE RIGHT TO UTILIZE ANY COMBINATION OF LID (EXISTING AND FUTURE) MEASURES TO MEET THIS GOAL SUBJECT TO THE REVIEW AND APPROVAL OF DPWES AT TIME OF SITE PLAN.

RECOGNIZING THAT RUNOFF REDUCTION TECHNOLOGIES ARE RELATIVELY NEW AND STILL EVOLVING, SHOULD THE APPLICANT'S FINAL DESIGN DEVELOPMENT AND/OR DPWES COMMENTS ON THE SITE PLAN RESULT IN CHANGES TO THE LID MEASURES SHOWN ON THE CDP AND/OR FDP, INCLUDING, BUT NOT LIMITED TO, ELIMINATION OR ADDITION OF MEASURES SO LONG AS THESE CHANGES DO NOT AFFECT THE GRID OF STREETS, THE GENERAL LOCATION OF THE POINTS OF ACCESS TO EACH BLOCK, THE GENERAL LOCATION OF THE BUILDINGS, THE BUILD-TO LINES, THE MINIMUM AMOUNT AND GENERAL LOCATION OF PUBLICLY-ACCESS URBAN PARK LAND AS MAY BE APPLICABLE FOR EACH BLOCK AND THE GENERAL QUALITY AND CHARACTER OF THE STREETSCAPE ALONG THE PUBLIC AND PRIVATE STREETS WITHIN AND ABUTTING THE SUBJECT PROPERTY AND AS OTHERWISE SPECIFIED IN THE PROFFERS.

## RUNOFF FLOWRATE COMPUTATIONS:

Total Site Area (ac): 4.90

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

| Type A | Type B | Type C | Type D |
|---|---|---|---|
| 0 | 4.90 | 0 | 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 |

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 |

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

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

| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 3.22 | 5.45 | 7.27 |

Existing Conditions Peak Flow Rates — cfs

| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 4.03 | 8.28 | 17.46 |

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 |

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

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

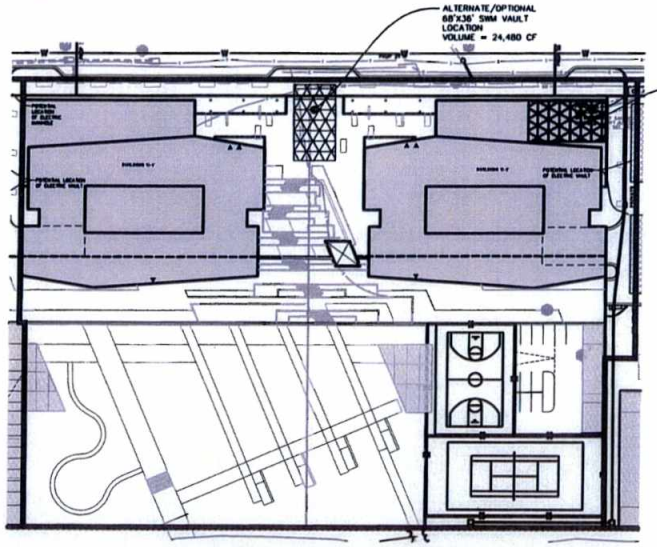
| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 3.27 | 5.45 | 7.27 |

Proposed Conditions Peak Flow Rates — cfs

| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 11.22 | 19.49 | 29.57 |

**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 C SWM VAULT LOCATION

SCALE: 1"=60'

## 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 CONFORMANCE 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.B, 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.

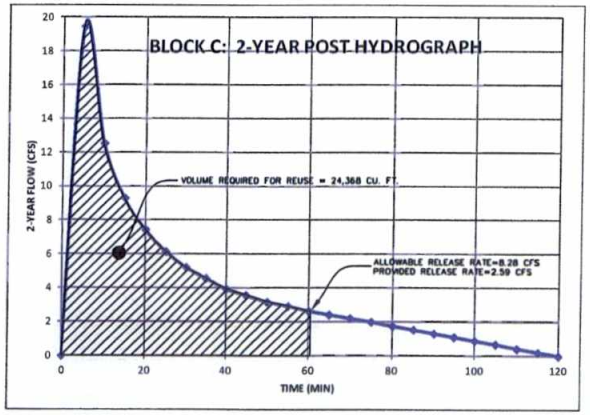
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK C. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER 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 KNOW, 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 MEET 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

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 09/28/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

SCALE: AS SHOWN
JOB No.
DATE: APRIL 26, 2011
FILE No. 7403-07-001
SHEET C10.4

Existing Block D.PRN
GRAPHICAL PEAK DISCHARGE METHOD
Version 2.10

Project : WESTPARK REDEVELOPMENT
County : FAIRFAX State: VA
Subtitle: EXISTING CONDITIONS BLOCK D

User: RSD Checked: ____
Date: 01-31-2011 Date: ____

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 |

**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) = 19,283 CU. FT.

Proposed Block D.PRN
GRAPHICAL PEAK DISCHARGE METHOD
Version 2.10

Project : WESTPARK REDEVELOPMENT
County : FAIRFAX State: VA
Subtitle: PROPOSED CONDITIONS BLOCK D

User: RSD Checked: ____
Date: 01-31-2011 Date: ____

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 |
| 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) | 6 | 7 | 14 |

**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.

**1" COMPREHENSIVE PLAN NOTE:**
THE INFILTRATION VOLUME IS TO BE DETERMINED AT FDP. IT IS NOT PRACTICABLE TO RETAIN SMALL AREAS OF THE SITE PERIPHERY DUE TO REQUIRED SITE GRADING, HOWEVER, THE FULL 1-INCH RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4-INCHES 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-INCH OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

IN FURTHERANCE OF THE APPLICANT'S COMMITMENTS HEREIN AND WHILE IT INTENDS TO MEET THE 1-INCH USING THE TECHNIQUES SHOWN, IT RESERVES THE RIGHT TO UTILIZE ANY COMBINATION OF LID (EXISTING AND FUTURE) MEASURES TO MEET THIS GOAL SUBJECT TO THE REVIEW AND APPROVAL OF DPWES AT TIME OF SITE PLAN.

RECOGNIZING THAT RUNOFF REDUCTION TECHNOLOGIES ARE RELATIVELY NEW AND STILL EVOLVING, SHOULD THE APPLICANT'S FINAL DESIGN DEVELOPMENT AND/OR DPWES COMMENTS ON THE SITE PLAN RESULT IN CHANGES TO THE LID MEASURES SHOWN ON THE CDP AND/OR FDP, INCLUDING, BUT NOT LIMITED TO, ELIMINATION OR ADDITION OF MEASURES SO LONG AS THESE CHANGES DO NOT AFFECT THE GRID OF STREETS, THE GENERAL LOCATION OF THE POINTS OF ACCESS TO EACH BLOCK, THE GENERAL LOCATION OF THE BUILDINGS, THE BUILD-TO LINES, THE MINIMUM AMOUNT AND GENERAL LOCATION OF PUBLICLY-ACCESS URBAN PARK LAND AS MAY BE APPLICABLE FOR EACH BLOCK AND THE GENERAL QUALITY AND CHARACTER OF THE STREETSCAPE ALONG THE PUBLIC AND PRIVATE STREETS WITHIN AND ABUTTING THE SUBJECT PROPERTY AND AS OTHERWISE SPECIFIED IN THE PROFFERS.

## RUNOFF FLOWRATE COMPUTATIONS:

Total Site Area (ac): 1.98

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

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 x [1.2 - (S/ (P + 0.8S))] / P}
where:
P = 24-hr rainfall depth for design storm
S = (1000 / CN) - 10

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 |

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

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

Equivalent C

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

Existing Conditions Peak Flow Rates (cfs)

| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 1.62 | 3.35 | 7.05 |

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 x [1.2 - (S/ (P + 0.8S))] / P}
where:
P = 24-hr rainfall depth for design storm
S = (1000 / CN) - 10

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 |

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

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

Equivalent C

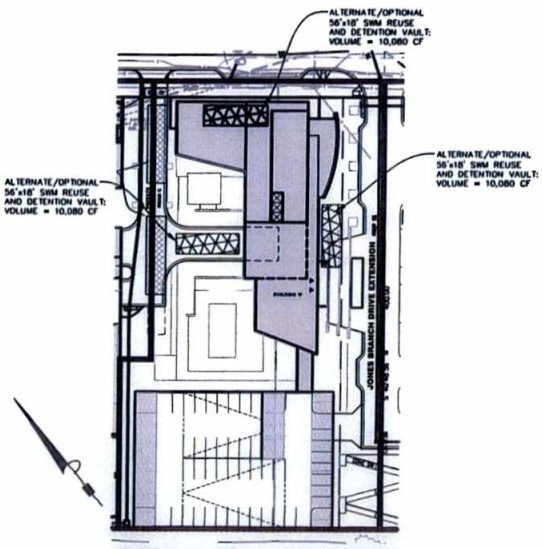
| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 0.70 | 0.73 | 0.83 |

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.




**BLOCK D SWM VAULT LOCATION**
SCALE: 1"=60'

## 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, TREEPITS, 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, TREEPITS, 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.

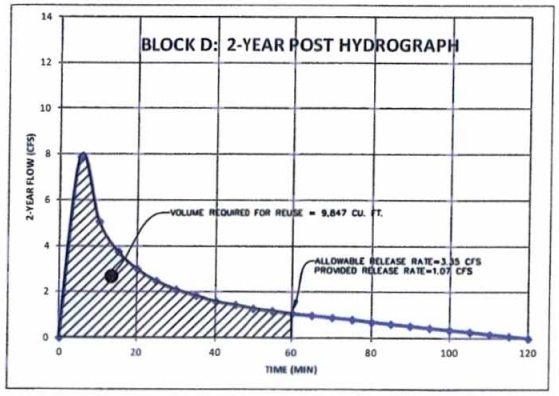
DUE TO THE URBAN NATURE OF THIS SITE, THE BUILDING LAYOUT, AMOUNT OF SOIL TO BE DISTURBED, AND AVAILABLE GREEN SPACE, THE FOLLOWING RUNOFF REDUCTION PRACTICES ARE NOT FEASIBLE OPTIONS: VEGETATED FILTER STRIPS, EXTENDED DETENTION POND, CONSERVATION AREA, GRASS CHANNEL, DRY SWALE, AND BIORETENTION.

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 KNOW, 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 MEET FOR THE 1 YEAR, 2 YEAR, AND 10 YEAR STORMS.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BLOCK D SWM COMPUTATIONS
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/28/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

SCALE : AS SHOWN
JOB No. :
DATE : APRIL 26, 2011
FILE No. 7403-07-001
SHEET C10.5

# RUNOFF FLOWRATE COMPUTATIONS:

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 0.0% Ponds Used | 1.00 | 1.00 | 1.00 |
| Peak Discharge (cfs) | 3 | 5 | 13 |

Total Site Area (ac): 3.14

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

| Type A | Type B | Type C | Type D |
|---|---|---|---|
| 0 | 3.14 | 0 | 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 |

Weighted CN for site: 73

S for CN to C Calcs.: 3.70

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

DesignStorm 24-hr Rainfall Depth (in)

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

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

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

Equivalent C

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

Existing Conditions Peak Flow Rates — cfs

| 1-yr | 2-yr | 10-yr |
|---|---|---|
| 2.97 | 5.31 | 11.19 |

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

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

DesignStorm 24-hr Rainfall Depth (in)

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

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

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

Equivalent C

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

Proposed Conditions Peak Flow Rates — cfs

| 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.

**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 0.0% Ponds Used | 1.00 | 1.00 | 1.00 |
| 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) = 26,786 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.

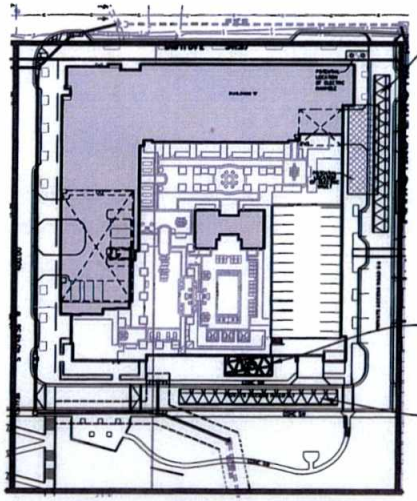
1-YEAR STORM
21,429 CU. FT. - 7,751 CU. FT. = 13,678 CU. FT.

2-YEAR STORM
26,786 CU. FT. - 11,171 CU. FT. = 15,615 CU. FT.

**1" COMPREHENSIVE PLAN NOTE:**
THE INFILTRATION VOLUME IS TO BE DETERMINED AT FDP. IT IS NOT PRACTICABLE TO RETAIN SMALL AREAS OF THE SITE PERIPHERY DUE TO REQUIRED SITE GRADING, HOWEVER, THE FULL 1-INCH RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4-INCHES 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-INCH OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

IN FURTHERANCE OF THE APPLICANT'S COMMITMENTS HEREIN AND WHILE IT INTENDS TO MEET THE 1-INCH USING THE TECHNIQUES SHOWN, IT RESERVES THE RIGHT TO UTILIZE ANY COMBINATION OF LID (EXISTING AND FUTURE) MEASURES TO MEET THIS GOAL SUBJECT TO THE REVIEW AND APPROVAL OF DPWES AT TIME OF SITE PLAN.

RECOGNIZING THAT RUNOFF REDUCTION TECHNOLOGIES ARE RELATIVELY NEW AND STILL EVOLVING, SHOULD THE APPLICANT'S FINAL DESIGN DEVELOPMENT AND/OR DPWES COMMENTS ON THE SITE PLAN RESULT IN CHANGES TO THE LID MEASURES SHOWN ON THE CDP AND/OR FDP, INCLUDING, BUT NOT LIMITED TO, ELIMINATION OR ADDITION OF MEASURES SO LONG AS THESE CHANGES DO NOT AFFECT THE GRID OF STREETS, THE GENERAL LOCATION OF THE POINTS OF ACCESS TO EACH BLOCK, THE GENERAL LOCATION OF THE BUILDINGS, THE BUILD-TO LINES, THE MINIMUM AMOUNT AND GENERAL LOCATION OF PUBLICLY-ACCESS URBAN PARK LAND AS MAY BE APPLICABLE FOR EACH BLOCK AND THE GENERAL QUALITY AND CHARACTER OF THE STREETSCAPE ALONG THE PUBLIC AND PRIVATE STREETS WITHIN AND ABUTTING THE SUBJECT PROPERTY AND AS OTHERWISE SPECIFIED IN THE PROFFERS.




**BLOCK E SWM VAULT LOCATION**
SCALE: 1"=50'

## 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, TREEPITS, 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, TREEPITS, 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.

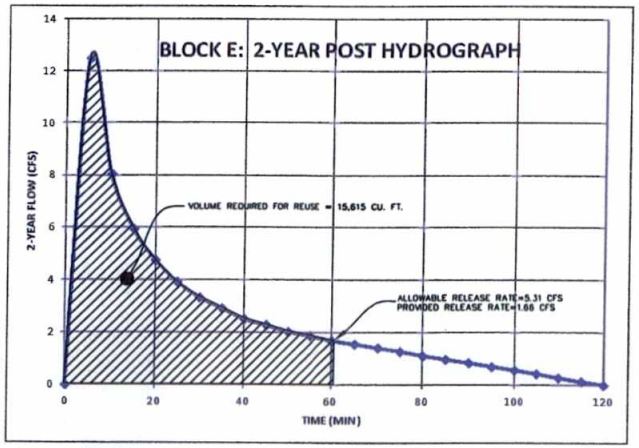
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK E. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER 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 KNOW, 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 MEET FOR THE 1 YEAR, 2 YEAR, AND 10 YEAR STORMS.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BLOCK E SWM COMPUTATIONS
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/21/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/29/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/28/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |

| DATE | DESCRIPTION |
|---|---|

SCALE: AS SHOWN
JOB No.
DATE: APRIL 26, 2011
FILE No. 7403-07-001
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 APPLICATON 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 APPLCATION 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 DEVLOPMENT. THE DEVELOPMENT BEING PROPOSED WITH THIS APPLICATION HAS AN APPROXIMATE PROPOSED DEVELOPED "C" FACTOR OF 0.82 (DISREGARDING THE EFFECT OF THE INFILTRATION). THEREFORE, ADDITONAL 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 MEASURE S 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 | |
|---|---|---|---|---|
| **e-Development:** | | | | |
| (Acres) | 1.84 | | 1.73 | |
| ng Condition Imperviousness (%) | 59 | | 62 | |
| ologic Soil Group * | B | | B | |
| ff Curve Number (CN) | 83 | | 84 | |
| **ost-Development:** | Acres | % | Acres | % |
| Of Vegetated Roof (Some of Third Floor Terrace) | 0.05 | 3.3 | 0.05 | 3.5 |
| Area of Landscaped Areas | 0.10 | 5.4 | 0.07 | 4.0 |
| Remaining Areas | 1.68 | 91.3 | 1.60 | 92.5 |
| Total | 1.84 | 100.0 | 1.73 | 100.0 |
| **CN Factors** | | | | |
| Green Roof (Extensive) | 70 | | 70 | |
| Landscaped Areas | 61 | | 61 | |
| Remaining Surfaces | 98 | | 98 | |
| Weighted Average | 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) |
|---|---|---|
| **Pre-Development:** | | |
| Site Area (Ac) | 1.84 | 1.73 |
| Avg. Site Runoff CN | 83 | 84 |
| Time of Concentration | 6 Min. | 6 Min. |
| $Q_2$ (cfs) | 4.99 | 4.90 |
| $Q_{10}$ (cfs) | 10.20 | N/A |
| **Post-Development:** | | |
| Avg. Site Runoff CN | 95 | 96 |
| Time of Concentration | 6 Min. | 6 Min. |
| Site Area (Ac) | 1.84 | 1.73 |
| $Q_2$ (cfs) Before infiltration and detention | 7.54 | 7.24 |
| $Q_2$ (cfs) Allowable | 4.99 | 3.68 |
| $Q_{10}$ (cfs) Before infiltration and detention | 12.71 | N/A |
| $Q_{10}$ (cfs) Allowable | 10.20 | N/A |

**The peak flow Q values computed using Hydraflow 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.**

## 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 2/2/2012

**Existing Conditons**

| Data: | | | |
|---|---|---|---|
| Drainage Area: | 1.73 | 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 | | |

| 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 1FT/12IN X 43560 = 7,996 CF
2 YR STORM: 1.73 AC X 1.68 IN X 1FT/12IN X 43560 = 10,585 CF

Project: AMT WHP 2/2/2012

**Proposed Conditions**

| Data: | | | |
|---|---|---|---|
| Drainage Area: | 1.73 | Acres | |
| Runoff Curve Number: | 96 | | |
| S=1000/CN - 10 = | 0.41 | | |
| Time of Concentration: | 0.1 | 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 | 5.2 |
| Runoff (In.) | 2.21 | 2.70 | 4.68 |

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

**2-YEAR STORM REQUIRED VOLUME REDUCTION:**
16,955 CF LESS 75% OF 10,585 CF = 9,032 CF

## 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

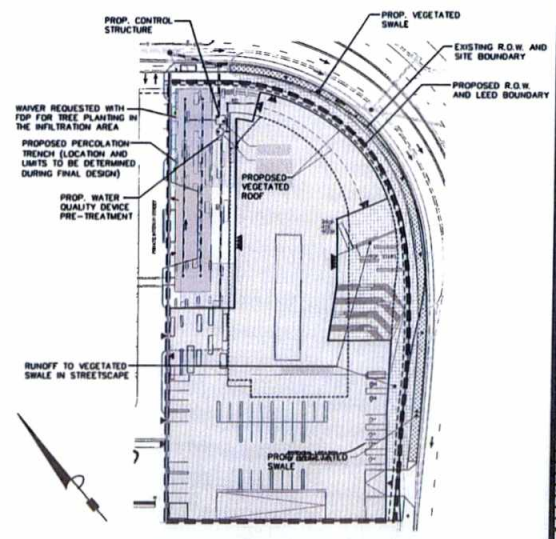
THE WEST PLAZA WILL DRAIN TO THE PRIVATE INTERIOR STREET AND FROM THERE TO WESTPARK DRIVE. THE EAST PLAZA AND NARROW STRIP BETWEEN THE PARKING GARAGE AND BUILDING AND THE SIDEWALK WILL DRAIN TOWARDS WESTPARK DRIVE. THE BUILDING WILL NOT FLOOD IN A 100-YEAR STORM AND OVERLAND RELIEF IS PROVIDED.

## 1" COMPREHENSIVE PLAN NOTE:

THE INFILTRATION VOLUME IS TO BE DETERMINED AT FDP. IT IS NOT PRACTICABLE TO RETAIN SMALL AREAS OF THE SITE PERIPHERY DUE TO REQUIRED SITE GRADING, HOWEVER, THE FULL 1-INCH RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4-INCHES 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-INCH OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

IN FURTHERANCE OF THE APPLICANT'S COMMITMENTS HEREIN AND WHILE IT INTENDS TO MEET THE 1-INCH USING THE TECHNIQUES SHOWN, IT RESERVES THE RIGHT TO UTILIZE ANY COMBINATION OF LID (EXISTING AND FUTURE) MEASURES TO MEET THIS GOAL SUBJECT TO THE REVIEW AND APPROVAL OF DPWES AT TIME OF SITE PLAN.

RECOGNIZING THAT RUNOFF REDUCTION TECHNOLOGIES ARE RELATIVELY NEW AND STILL EVOLVING, SHOULD THE APPLICANT'S FINAL DESIGN DEVELOPMENT AND/OR DPWES COMMENTS ON THE SITE PLAN RESULT IN CHANGES TO THE LID MEASURES SHOWN ON THE CDP AND/OR FDP, INCLUDING, BUT NOT LIMITED TO, ELIMINATION OR ADDITION OF MEASURES SO LONG AS THESE CHANGES DO NOT AFFECT THE GRID OF STREETS, THE GENERAL LOCATION OF THE POINTS OF ACCESS TO EACH BLOCK, THE GENERAL LOCATION OF THE BUILDINGS, THE BUILD-TO LINES, THE MINIMUM AMOUNT AND GENERAL LOCATION OF PUBLICLY-ACCESS URBAN PARK LAND AS MAY BE APPLICABLE FOR EACH BLOCK AND THE GENERAL QUALITY AND CHARACTER OF THE STREETSCAPE ALONG THE PUBLIC AND PRIVATE STREETS WITHIN AND ABUTTING THE SUBJECT PROPERTY AND AS OTHERWISE SPECIFIED IN THE PROFFERS.




## BLOCK F SWM VAULT LOCATION

SCALE: 1"=60'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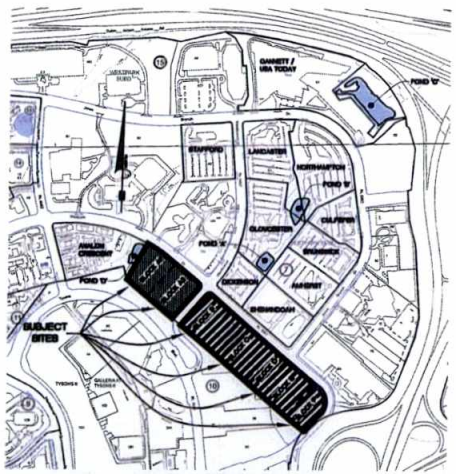
BLOCK F SWM COMPUTATIONS
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 02/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 08/29/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |

| DATE | DESCRIPTION |
|---|---|
| SCALE | AS SHOWN |
| JOB No. | |
| DATE : | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | C10.6.1 |

1 C10.7 EX VICINITY MAP

SCALE: 1"=600'

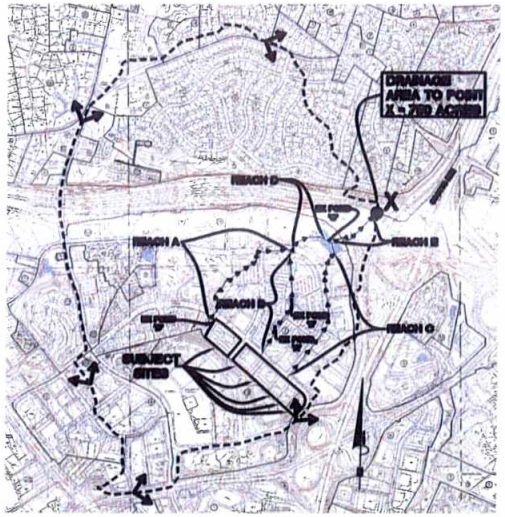



2 C10.7 PROP VICINITY MAP

SCALE: 1"=600'

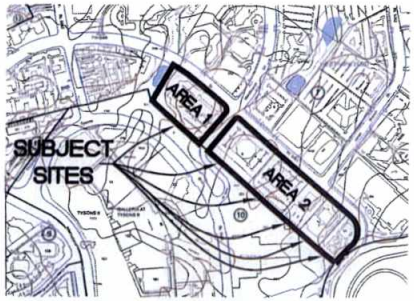
AREA 1

AREA 2




3 C10.7 OUTFALL MAP

SCALE: 1"=1,000'




4 C10.7 SOILS MAP

SCALE: 1"=600'

*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((7))-0010, 0294((7))-0009, 0294((7))-0003, 0294((7))-0002, 0294((7))-0001, 0294((7))-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 HIS INCLUDED AS SHEET C10.7.2. THE COMPUTATIONS SHOW THAT THE Qcap IS GREATER THAN THE Qinflow 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 Qcap IS APPROXIMATELY 60% GREATER THAN THE Qinflow. 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. (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 SCOTTS 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 6-0203.3A, 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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WESTPARK DEVELOPMENT CORP.

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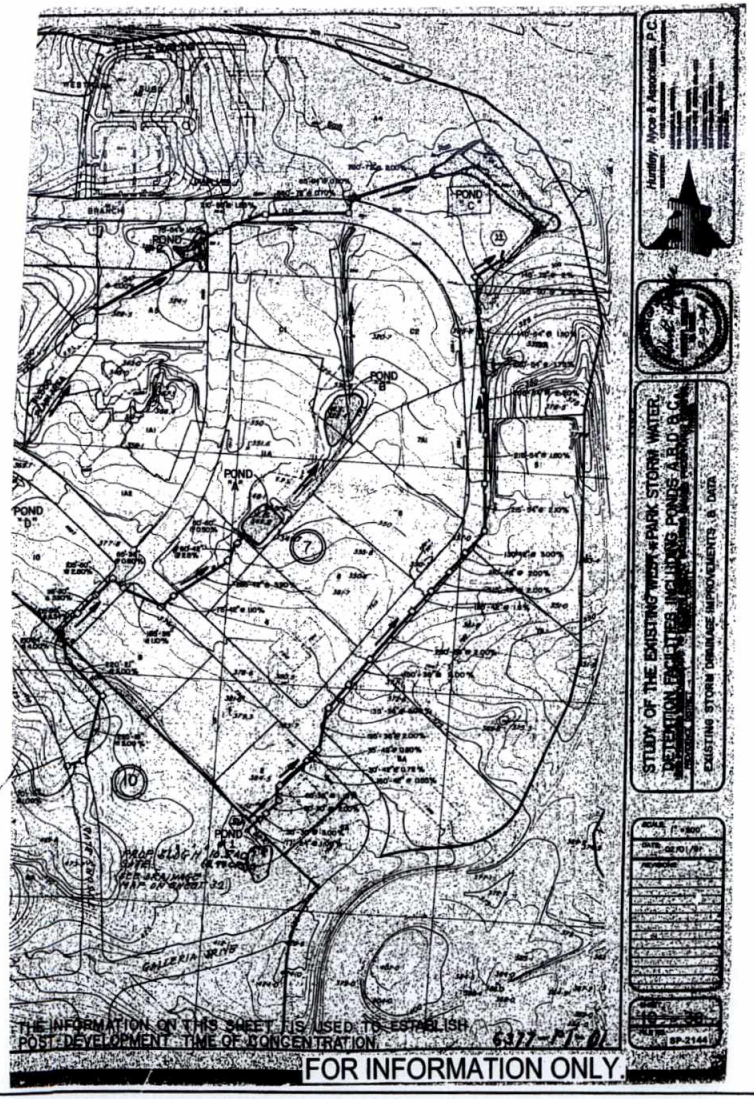
ADEQUATE OUTFALL
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/23/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 03/24/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 09/28/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |

| DATE | DESCRIPTION |
|---|---|
| SCALE | AS NOTED |
| JOB No. | |
| DATE : | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | C10.7 |




Hartley, Joyce & Associates, P.C.

STUDY OF THE EXISTING WITH PARK STORM WATER DETENTION FACILITIES INCLUDING PONDS A, B, C, D, E

EXISTING STORM DRAINAGE IMPROVEMENTS & DATA

SCALE 1" = 200'

## STORM DRAINAGE COMPUTATIONS

| FROM STR STR # | TO STR # | AREA ac | TOTAL ac | RUNOFF C | CA | ACCUM. CA | Tc TO MIN | I IN/HR | INC. CFS | TOTAL CFS | DIA. IN | SLOPE % | LENGTH FT | n | Q CAP CFS | VELOCITY ACTU. FPS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pond #1,51B | 51A | 10.50 | 10.50 | | | | | | 8.99 | 8.99 | | | | | | |
| 51A | 51 | 0.00 | 10.50 | | 0.00 | | 5 | 7.27 | 0.00 | 8.99 | 18 | | | | | |
| site2 | 51 | 0.54 | 0.54 | 0.83 | 0.45 | 0.45 | 5 | 7.27 | 3.26 | 3.26 | | | | | | |
| 60 | 51 | 0.67 | 0.67 | 0.80 | 0.54 | 0.54 | 5 | 7.27 | 3.90 | 3.90 | | | | | | |
| 51 | C | 0.00 | 11.71 | 0.00 | 0.00 | 0.98 | 5 | 7.27 | 0.00 | 16.15 | 30 | 2.00% | | 0.013 | 67.99 | 10.31 |
| C | D | 0.30 | 12.01 | 0.85 | 0.26 | 1.24 | 5 | 7.27 | 1.85 | 18.00 | 36 | 1.70% | | 0.013 | 86.93 | 9.85 |
| 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 | 1.00% | | 0.013 | 143.59 | 8.49 |
| G | 6 | 3.80 | 16.83 | 0.83 | 3.15 | 5.26 | 5 | 7.27 | 22.93 | 47.23 | 42 | 0.99% | | 0.013 | 100.07 | 10.31 |
| 6 | 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 | 56.38 | 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 | 1.59 | 20.23 | 0.89 | 1.42 | 8.21 | 5 | 7.27 | 10.29 | 68.70 | 36 | 3.73% | | 0.013 | 128.77 | 18.49 |
| 9 | 10 | 0.99 | 21.22 | 0.54 | 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 | 19.55 |
| 12 | 20 | 1.98 | 24.65 | 0.72 | 1.43 | 11.15 | 5 | 7.27 | 10.36 | 90.06 | 42 | 2.62% | | 0.013 | 162.79 | 17.41 |
| 20 | ext3,(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 | 17.65 |
| ext3, (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 | 201.85 | 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 | 136.18 | 54 | 2.09% | | 0.013 | 284.19 | 17.70 |
| 16, (ex22) | 17 | 1.60 | 35.12 | 0.73 | 1.17 | 18.68 | 5 | 7.27 | 8.49 | 144.67 | 54 | 2.02% | | 0.013 | 279.39 | 17.83 |
| 17 | 18 | 1.90 | 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 | 1.19 | 38.21 | 0.90 | 0.95 | 21.15 | 5 | 7.27 | 6.92 | 162.78 | 54 | 1.84% | | 0.013 | 266.85 | 17.00 |
| 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 | 18.09 |
| 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 | 1.68 | 27.12 | 5 | 7.27 | 12.21 | 206.15 | 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.

Dewberry

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FAX: 703 849-0516

TYSONS II
BUILDING "H"
ROUGH GRADING PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL

COMMONWEALTH OF VIRGINIA
Timothy Charles Collstrop
Lic. No. 28112
4-1-08
PROFESSIONAL ENGINEER

KEY PLAN

SCALE

AS NOTED

| No. | DATE | BY | Description |
|---|---|---|---|

REVISIONS

DRAWN BY VC
APPROVED BY TCC
CHECKED BY DGM
DATE JULY, 2008

TITLE

OUTFALL ANALYSIS

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

SHEET NO. 32A of 33
~~15B of 33~~
SP-2162

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

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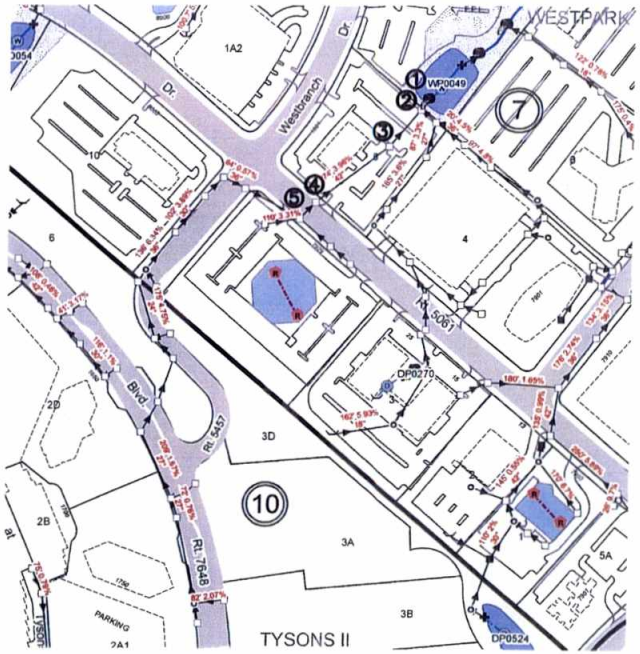
| 10/05/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | AS SHOWN |
| 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) INCREMENT | AREA DRAIN "A" (ACRES) ACCUMULATED (3) | RUN-OFF COEF. C (4) | CA INCREMENT (5) | CA ACCUMULATED (6) | INLET TIME MINUTES (7) | RAIN FALL IN / HR. (8) | RUN-OFF Q C.F.S. (9) | INVERT ELEVATIONS LOWER END (10) | INVERT ELEVATIONS UPPER END (11) | LENGTH FT. (12) | n | ACTUAL SLOPE % (13) | MIN. SLOPE % | DIA. IN. (14) | CAPA-CITY C.F.S. (15) | FULL FLOW VEL. F.P.S. | ACTUAL VEL. F.P.S. (16) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 4 | 20.92 | 20.92 | 0.69 | 14.43 | 14.43 | 5.00 | 7.27 | 104.94 | - | - | 73 | 0.013 | 1.10 | 1.08 | 42 | 105.52 | 10.87 | 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 | 1.13 | 42 | 200.31 | 20.51 | 21.29 |
| 3 | 2 | 1.05 | 22.28 | 0.75 | 0.79 | 15.49 | 5.31 | 7.27 | 112.58 | - | - | 110 | 0.013 | 3.52 | 1.26 | 42 | 188.76 | 19.62 | 20.40 |
| 2 | 1 | 1.35 | 23.63 | 0.52 | 4.12 | 19.61 | 5.40 | 7.27 | 142.55 | - | - | 27 | 0.013 | 0.55 | 2.30 | 60 | 181.15 | 9.64 | 10.70 |
| | | | | | | | | | | | | | | | | | | | |
| - | 2 | 5.70 | 5.70 | 0.60 | 3.42 | 3.42 | 5.00 | 7.27 | 24.86 | - | - | 110 | 0.013 | 1.00 | 0.14 | 36 | 68.70 | 8.44 | 8.80 |




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

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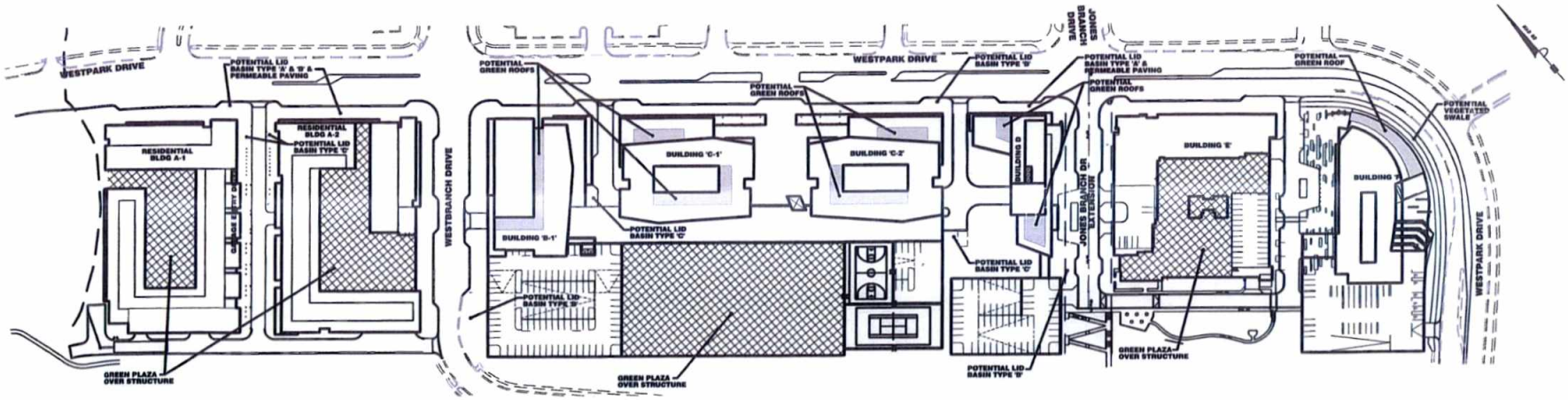
ADEQUATE OUTFALL
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

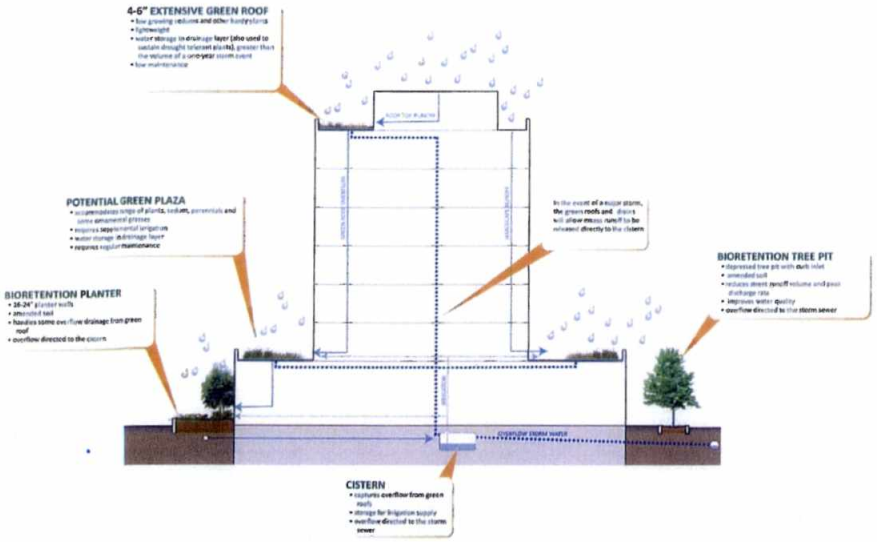
| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENT |
| 12/07/11 | PER COUNTY COMMENT |
| 03/26/12 | PER COUNTY COMMENT |
| 05/25/12 | PER COUNTY COMMENT |
| 07/23/12 | PER COUNTY COMMENT |
| 09/28/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

SCALE HEAD SPECIFIED
JOB No.
DATE : APRIL 28, 2011
FILE No. 7403-07-001
SHEET C10.7.2




1 LOW IMPACT DEVELOPMENT TECHNIQUES - CONCEPT PLAN

NTS




CONCEPTUAL BUILDING DIAGRAM FOR L.I.D TECHNIQUES

BASIN TYPE 'B'

BASIN TYPE 'A' & PERMEABLE PAVERS

BASIN TYPE 'C'

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.

GRAPHIC SCALE

( IN FEET )
1 inch = 80 ft.

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LOW IMPACT DEVELOPMENT
CONCEPT PLAN
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
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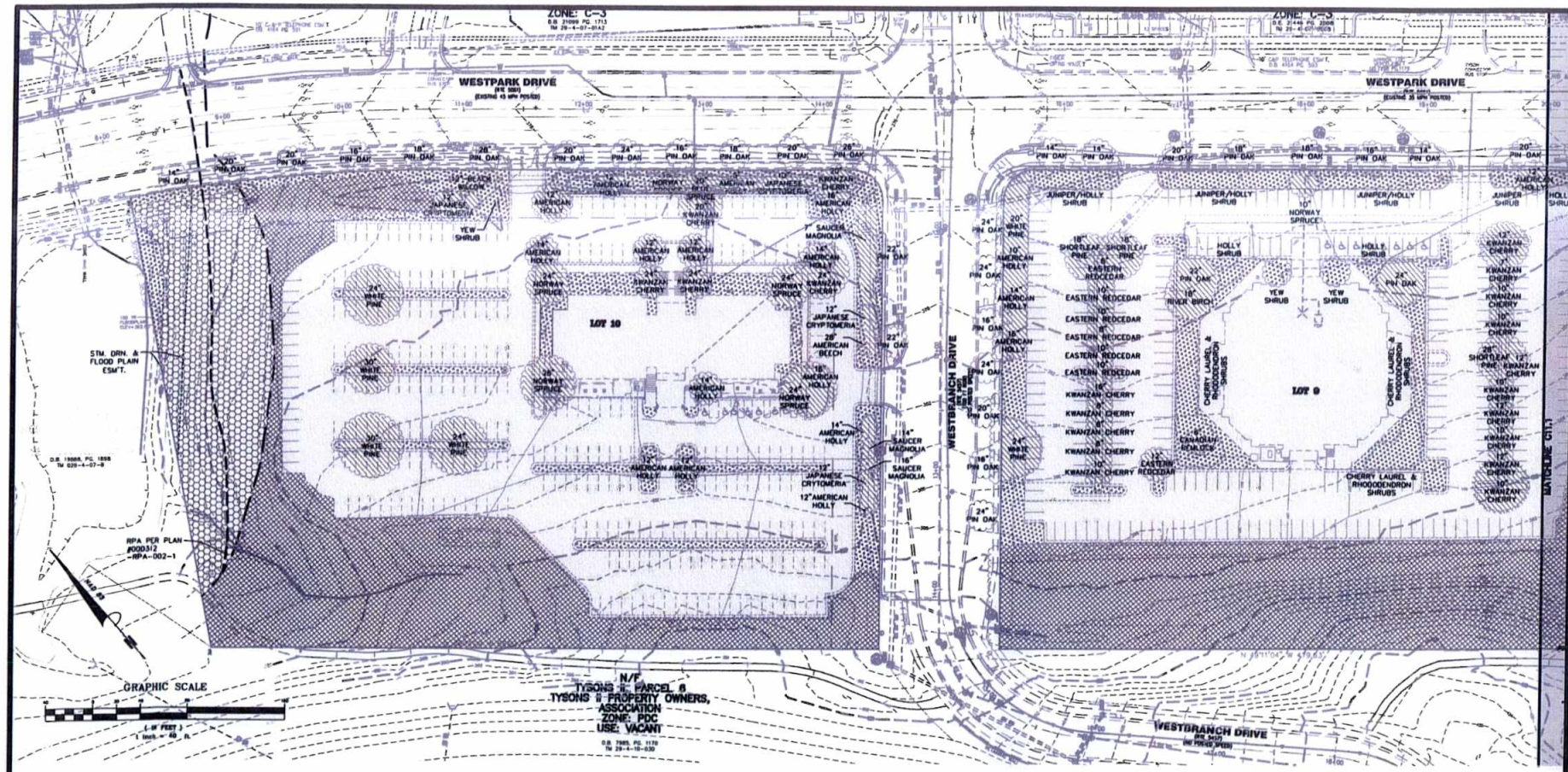
| 10/05/12 | PER COUNTY COMMENT |
| DATE | DESCRIPTION |

SCALE 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 30-year canopy required for site (see Table 12.4) = (Per Comprehensive Plan Goal = 10%) | 30% (1.93 AC.) |
| D | Percentage of the 30-year tree canopy requirement that should be met throught 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 30-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.

## LEGEND

EXISTING INDIVIDUAL TREE LINE

EXISTING TREE CANOPY LINE

* DOMINANT TREE SPECIES

TOTAL SITE AREA = 5.3887 AC.

EXISTING TREE CANOPY = 95,791 S.F. OR 2.20 AC. (.52 AC. OR 22,810 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 |
|---|---|---|---|---|---|
| | EARLY SUCCESSIONAL FOREST COMMUNITY | *TULIP POPLAR, BLACK LOCUST, BLACK CHERRY, WHITE PINE, RED OAK, RED MAPLE, BLACK WALNUT | EARLY | FAIR | 1.1344 AC. |
| | DEVELOPED LAND | N/A | N/A | N/A | 2.7343 AC. |
| | BOTTOM-LAND FOREST | *TULIP POPLAR, BLACK CHERRY, AMERICAN ELM, BLACK LOCUST, WHITE PINE, RED MAPLE, AILANTHUS, CATALPA | EARLY | FAIR | .55 AC. |
| | LANDSCAPE TREE CANOPY | SEE EVM | MID-LATE | FAIR TO GOOD | .52 AC. |
| | 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 |
|---|---|---|---|---|---|
| | EARLY SUCCESSIONAL FOREST COMMUNITY | *TULIP POPLAR, BLACK LOCUST, BLACK CHERRY, WHITE PINE, BLACK WALNUT, RED MAPLE | EARLY | FAIR | 1.0706 AC. |
| | DEVELOPED LAND | N/A | N/A | N/A | 2.4606 AC. |
| | LANDSCAPE TREE CANOPY | SEE EVM | MID-LATE | FAIR TO GOOD | .46 AC. |
| | 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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VDC ARCHITECTS

# 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 |
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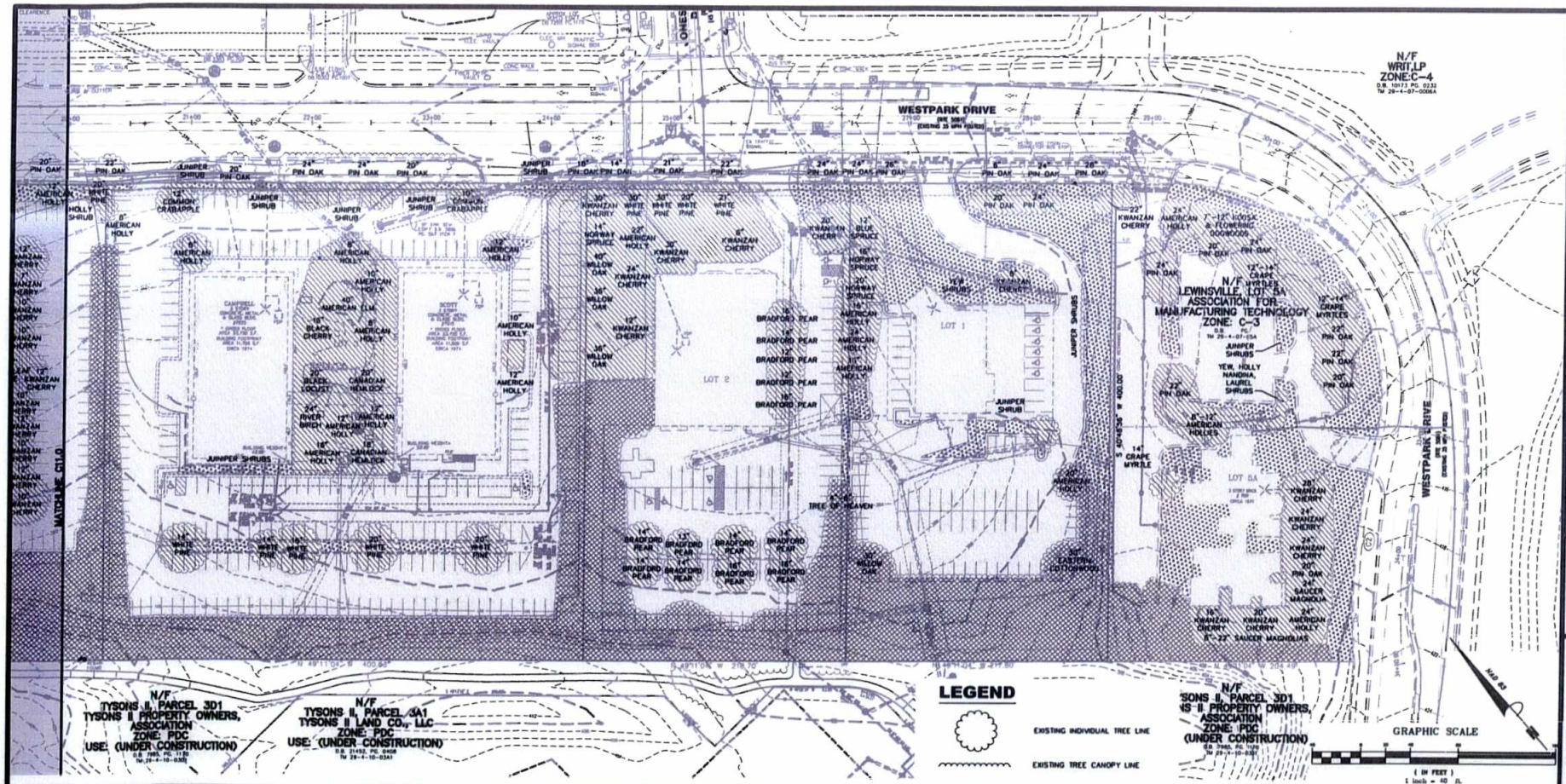
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1" = 40'
JOB No.
DATE : APRIL 26, 2011
FILE No. 7403-07-001
SHEET C11.0




## LOT 3 COVER TYPE

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

## LOT 2 COVER TYPE

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

* 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)

## LOT 1 COVER TYPE

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

*DOMINANT TREE SPECIES

TOTAL SITE AREA = 2.00 AC.

EXISTING TREE CANOPY = 25,820 S.F. OR .59 AC. (.14 AC. OR 5,973 S.F. LANDSCAPE TREE CANOPY + .45 AC. OR 19,847 S.F. FOREST)

## LOT 5A COVER TYPE

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

*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)

## *OVERALL COVER TYPE

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

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

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)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# EXISTING VEGETATION MAP (SHEET 2 OF 2)

## ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/27/11 | PER COUNTY COMMENT |
| 10/27/11 | PER COUNTY COMMENT |
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| 07/23/12 | PER COUNTY COMMENT |
| 10/05/12 | PER COUNTY COMMENT |
| | |
| | |
| DATE | DESCRIPTION |

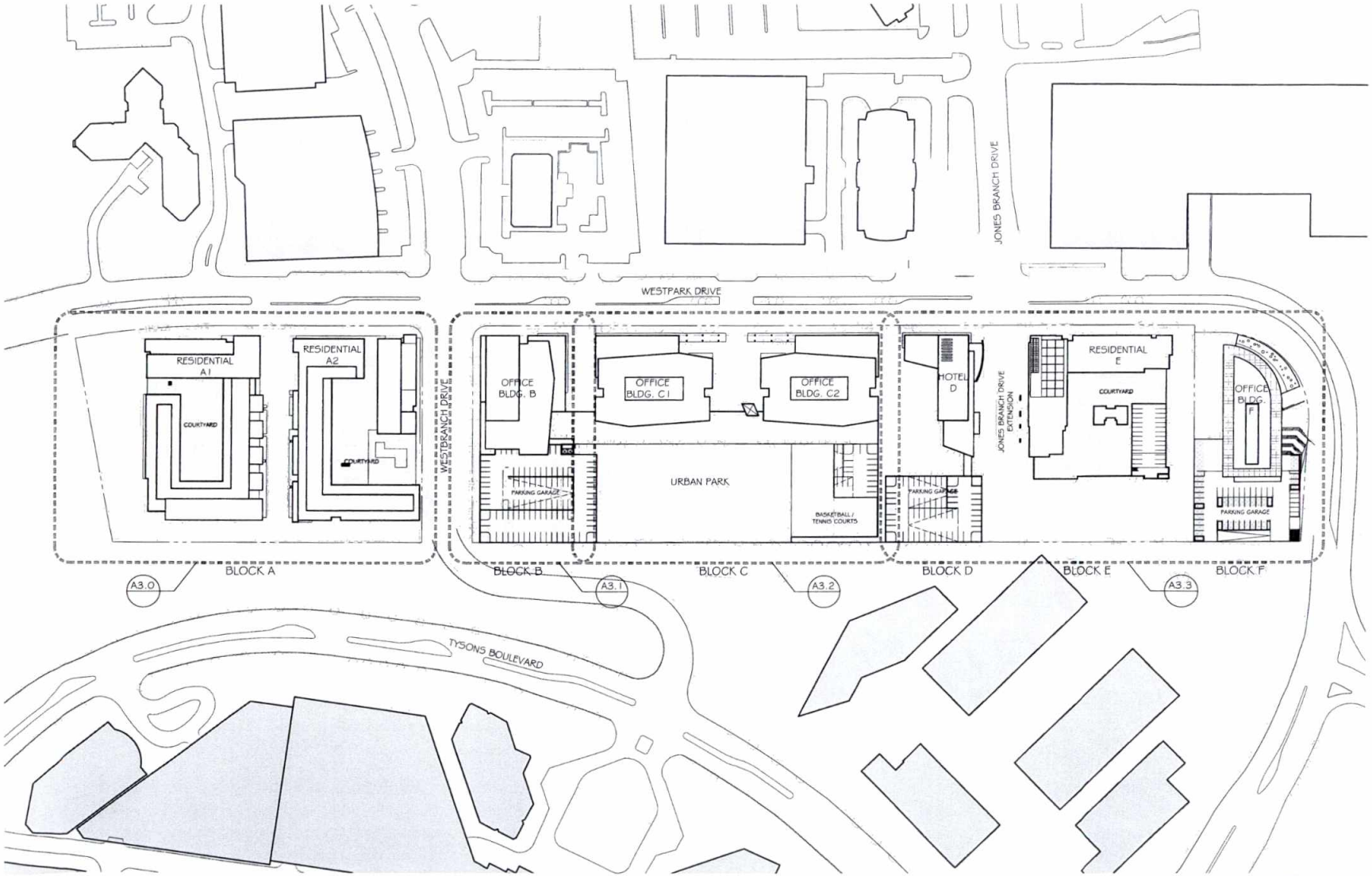
SCALE 1" = 40'

JOB No.

DATE : APRIL 28, 2011

FILE No. 7403-07-001

SHEET C11.1




**01** OVERALL ROOF PLAN - BLOCKS A THROUGH F

SCALE: 1" = 80'-0"

*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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# KEY PLAN (BLOCKS A - F)

## ARBOR ROW

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

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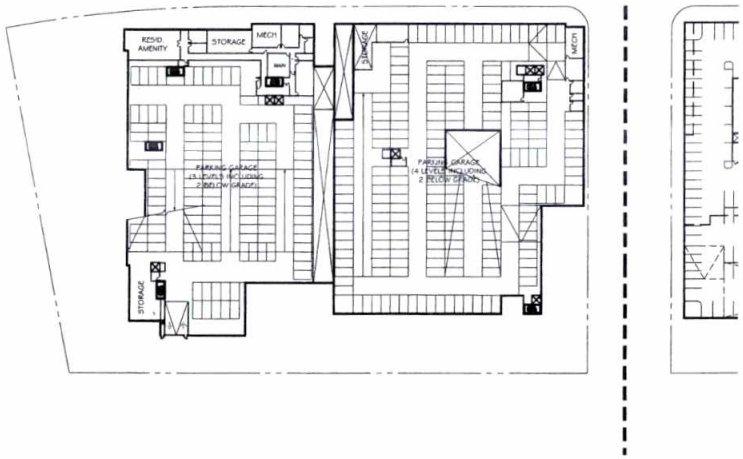
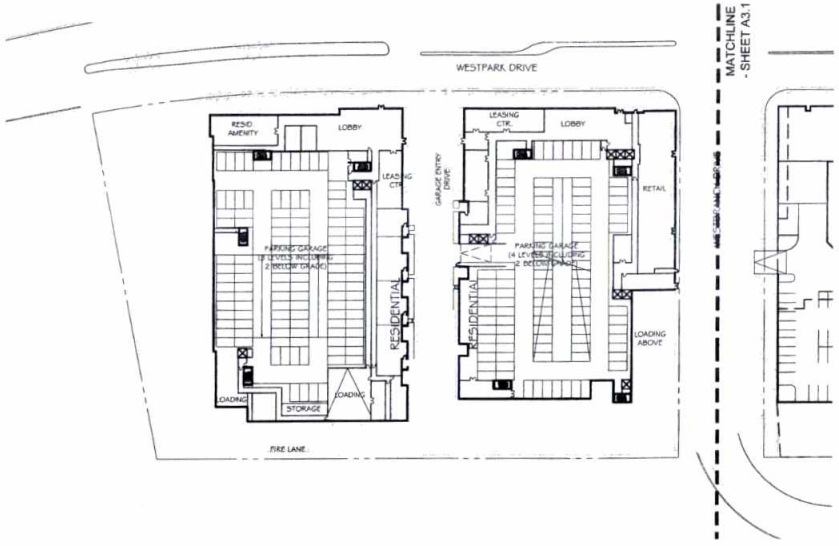
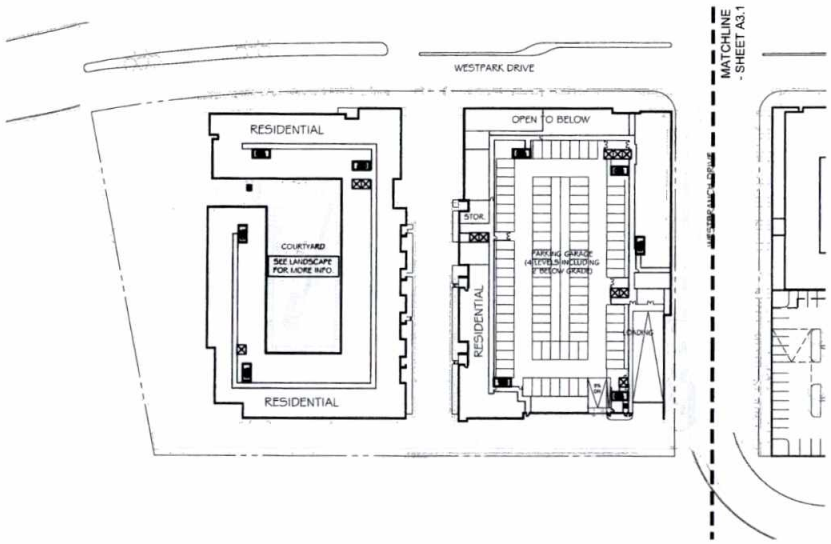
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | H: |
| JOB No. | |
| DATE : | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | A1.0 |



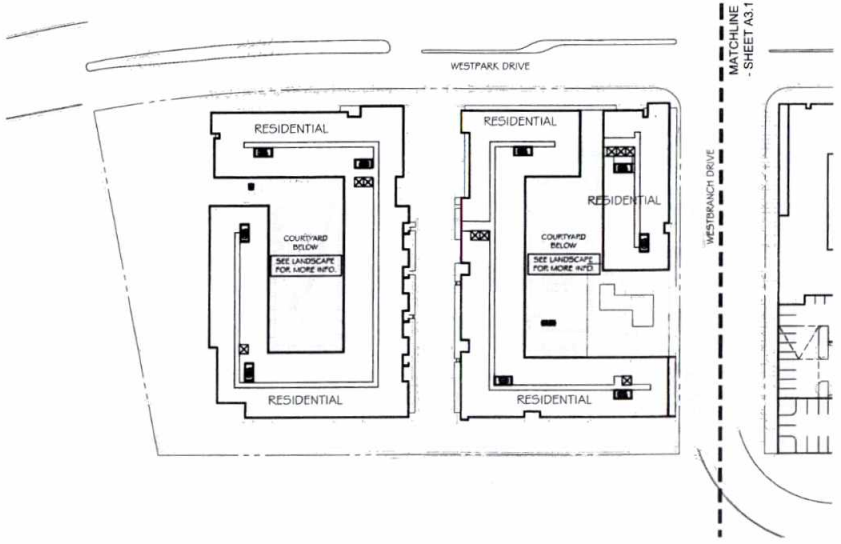

01 LEVEL B1 PLAN
SCALE: 1" = 60'-0"




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




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




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.

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* See Civil/Landscape drawings for proposed site information

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

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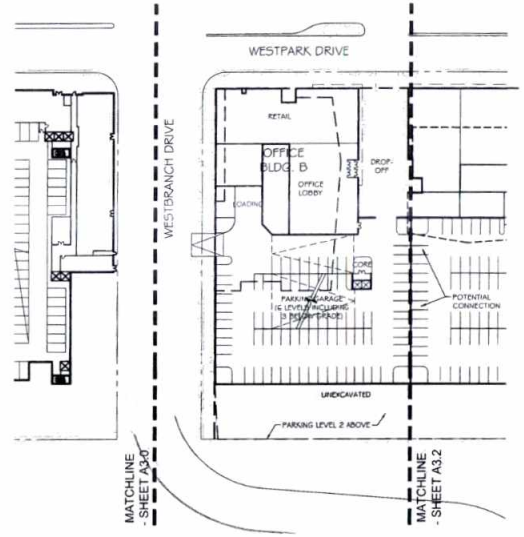
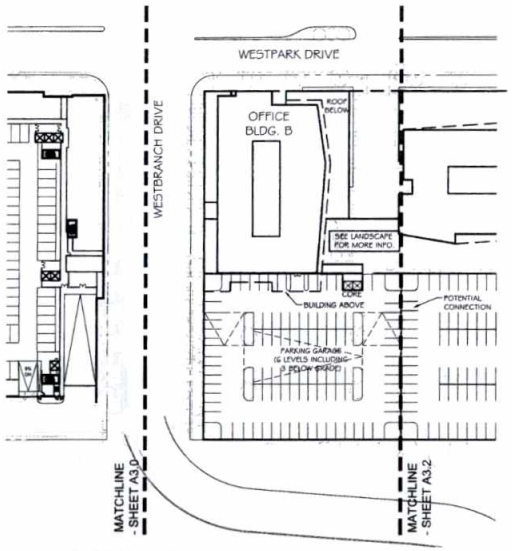
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: H:
JOB No.
DATE: APRIL 26, 2011
FILE No. 7403-07-001
SHEET A3.0

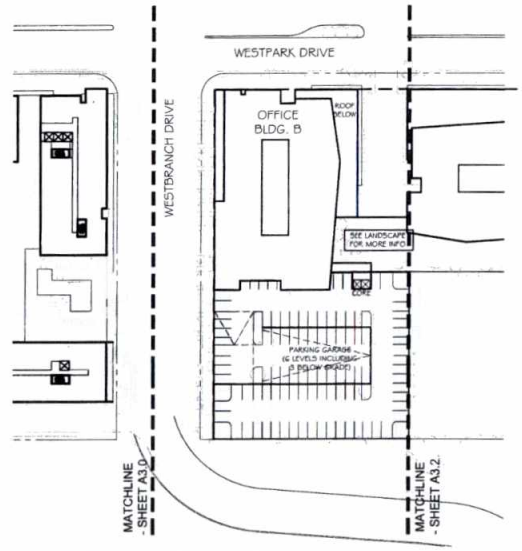
**01** LEVEL B1 PLAN (LEVEL B2/B3 SIMILAR)
SCALE: 1" = 60'-0"




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




**03** SECOND LEVEL PLAN (GARAGE LEVEL3)
SCALE: 1" = 60'-0"




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

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

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENTS |
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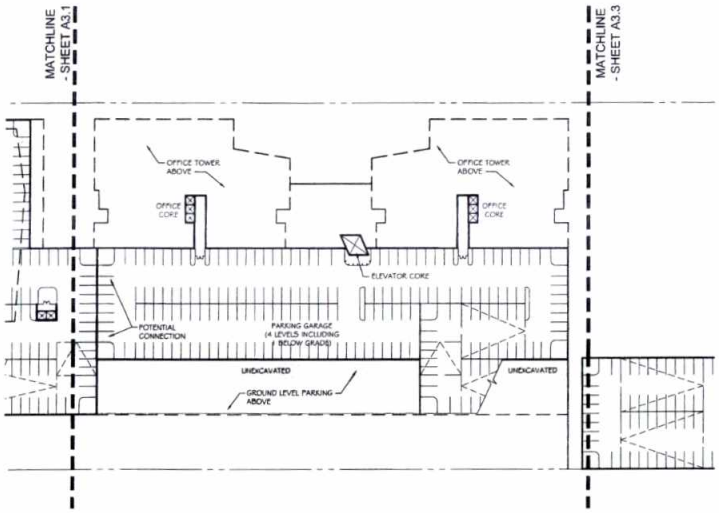
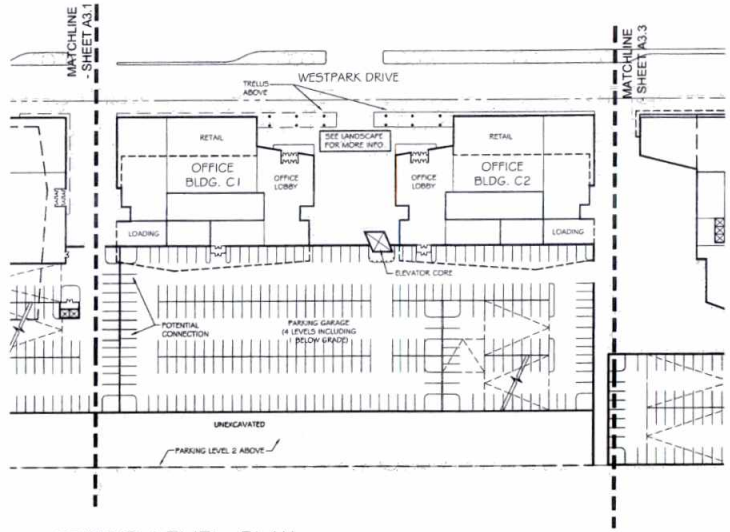
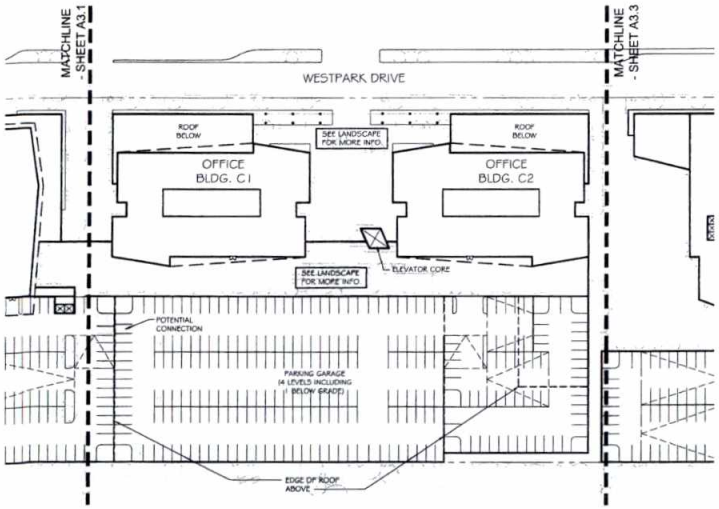
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | H: |
| JOB No. | |
| DATE : | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | A3.1 |



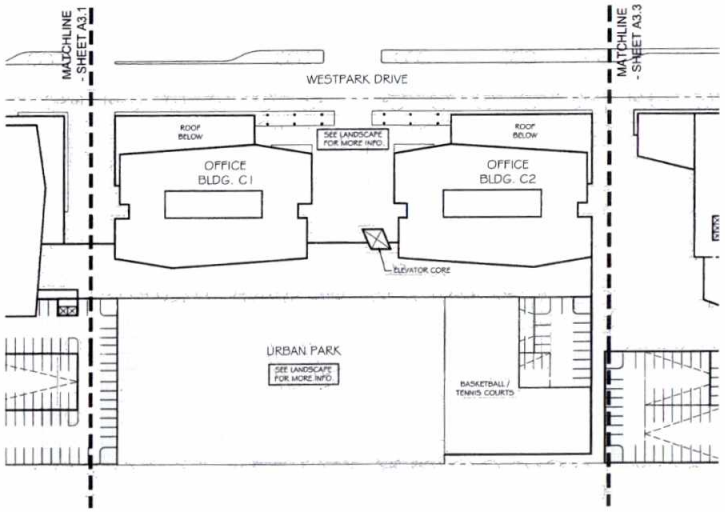

**01** LEVEL B1 PLAN
SCALE: 1" = 60'-0"




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




**03** SECOND LEVEL PLAN (GARAGE LEVEL3)
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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E-mail: wdg@wdgarch.com

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# BLOCK C 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 |
| 05/29/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

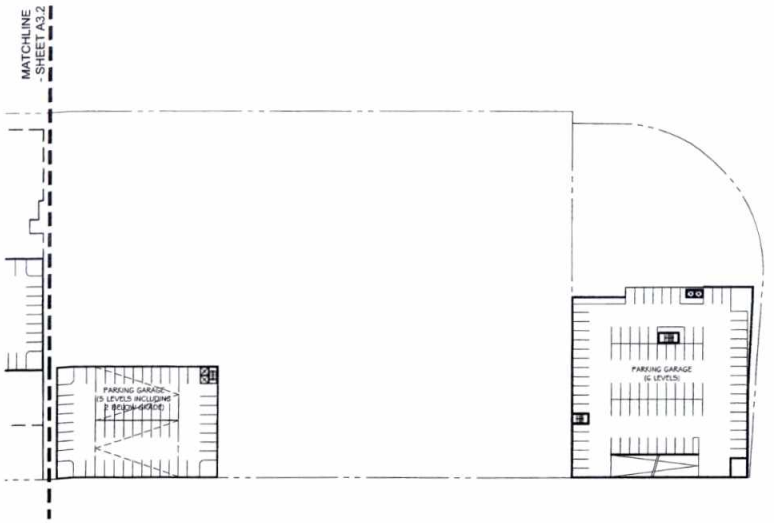
SCALE H:

JOB No.

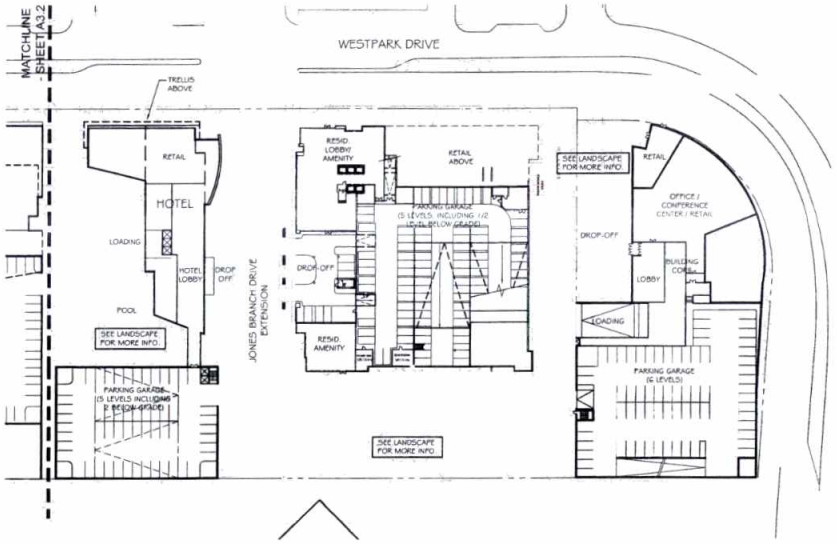
DATE : APRIL 26, 2011

FILE No. 7403-07-001

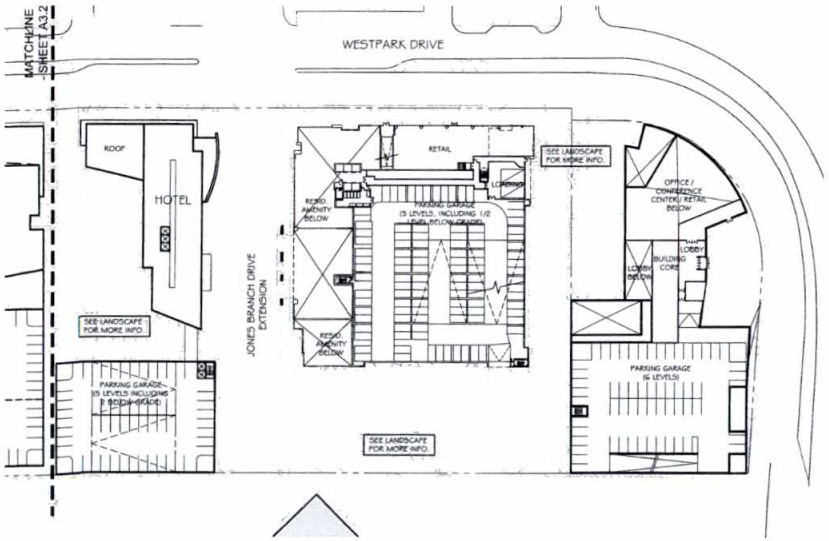
SHEET A3.2



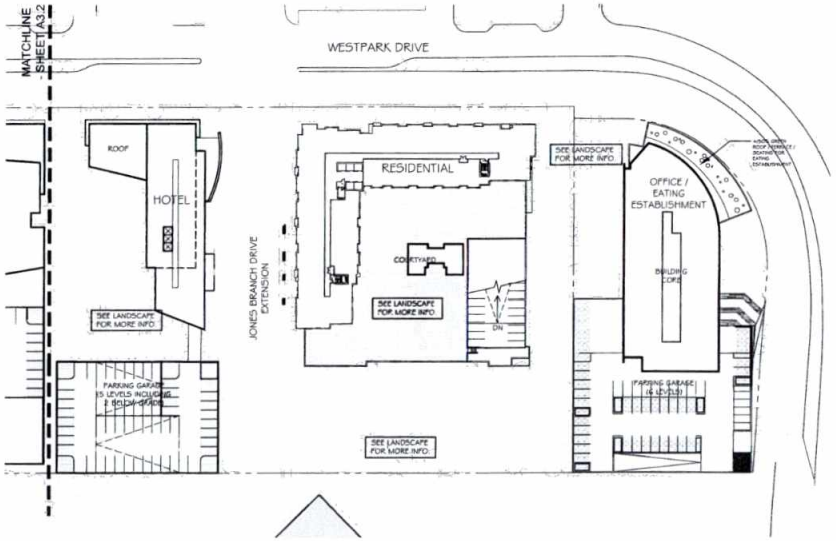

**01** LEVEL B1 PLAN
SCALE: 1" = 60'-0"




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




**03** SECOND 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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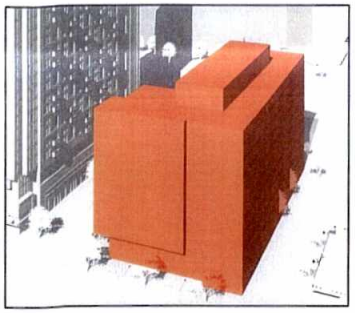
# BLOCKS D, E, & F PLANS
# ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

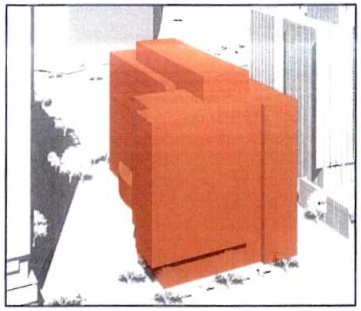
| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENTS |
| 12/07/11 | PER COUNTY COMMENTS |
| 02/24/12 | PER COUNTY COMMENTS |
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE H:
JOB No.
DATE : APRIL 26, 2011
FILE No. 7403-07-001
SHEET A3.3

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

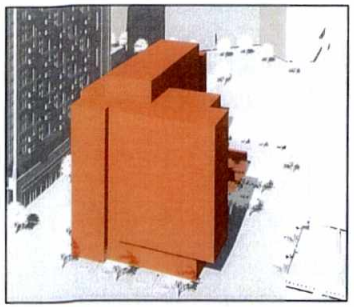
BUILDING HEIGHT : 119'-0"
NUMBER OF FLOORS: 10

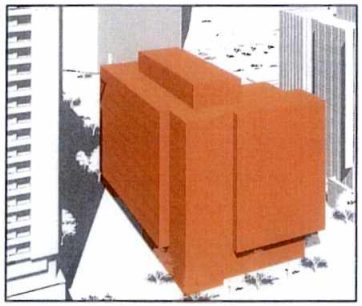




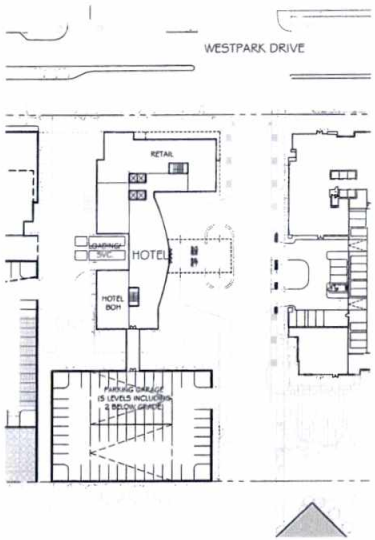
ALTERNATE 1 - MASSING STUDY

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

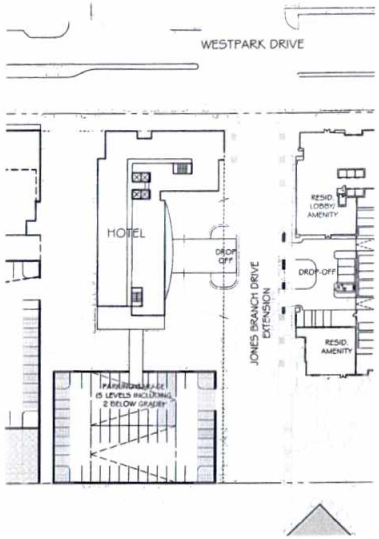




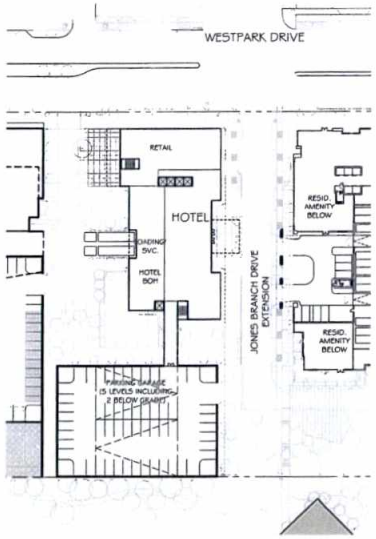
ALTERNATE 2 - MASSING STUDY



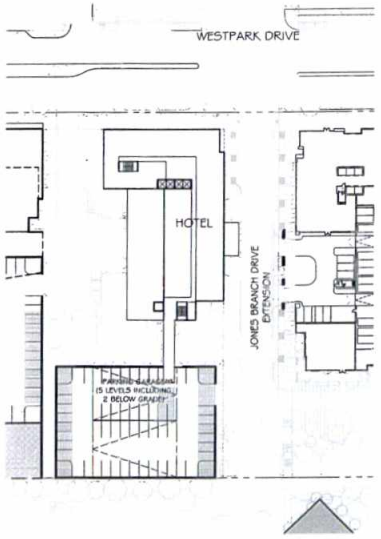

**01** ALTERNATE 1 - GROUND LEVEL PLAN
SCALE: 1" = 60'-0"




**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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Contact: Lynne Hall@wdgarch.com
WDG ARCHITECTURE

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# 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 |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

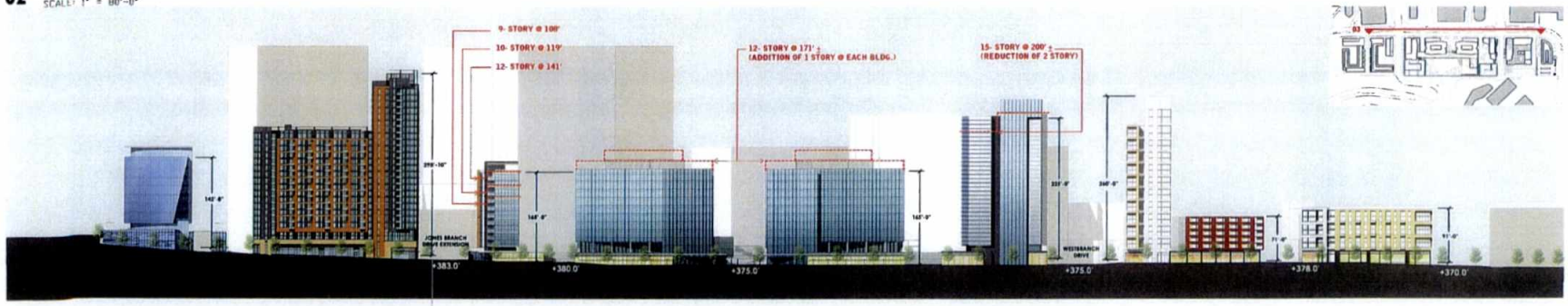
SCALE H:
JOB No.
DATE : APRIL 26, 2011
FILE No. 7403-07-001
SHEET A3.4

**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"

*Site sections presented on this sheet are preliminary and are provided to aid in the understanding of grade change across the subject property and the relationship of proposed buildings and other uses. Building design and the final grading are subject to change with final engineering and architectural design.*

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

| REVISIONS | |
|---|---|
| 09/10/ | FIRST COUNTY COMMENTS |
| 10/29/ | 2ND COUNTY COMMENTS |
| 03/29/ | 3RD COUNTY COMMENTS |
| 07/25/12 | 4TH COUNTY COMMENTS |
| 09/28/12 | 5TH COUNTY COMMENTS |
| 12/06/12 | 6TH COUNTY COMMENTS |
| NO. | DESCRIPTION |

SCALE: 1" = —

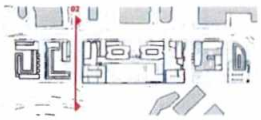
DATE: APRIL 26, 2011

7403-07-001

A4.0

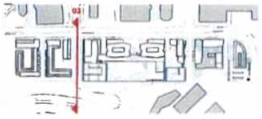
**01** SITE SECTION - EAST ALONG JONES BRANCH DRIVE EXTENSION

SCALE: 1" = 80'-0"



**02** SITE SECTION - WEST ALONG WESTBRANCH DRIVE

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/A.1/A.2. Refer to C2.1/Table 1 for allowable building height ranges.*

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

| REVISIONS | |
|---|---|
| 12/17/10 | FOR COUNTY COMMENTS |
| 12/20/10 | FOR COUNTY COMMENTS |
| 10/24 | [illegible] |
| 04/01/11 | FOR COUNTY COMMENTS |
| 07/21/11 | FOR COUNTY COMMENTS |
| 08/29/11 | FOR COUNTY COMMENTS |
| 10/05/11 | FOR COUNTY COMMENTS |
| DATA | DESCRIPTION |

SEAL

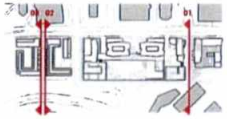
DATE APRIL 26, 2011

NO. 7403-07-001

A4.1

**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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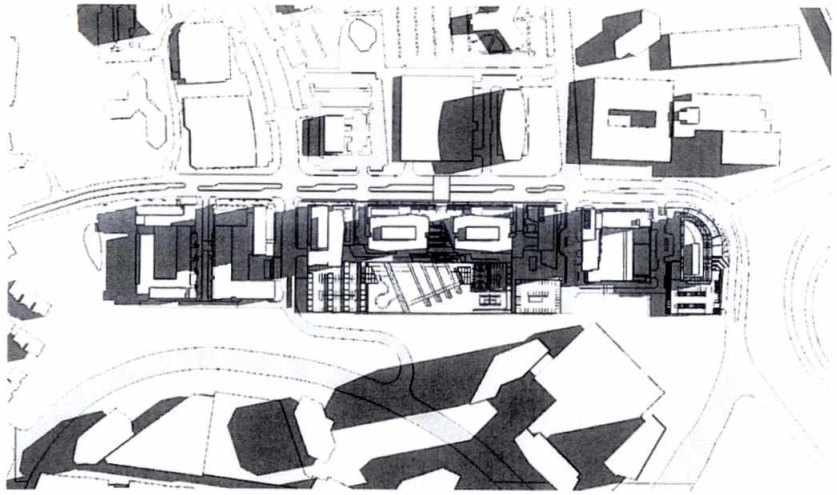
# ENLARGED SITE SECTIONS

## ARBOR ROW

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

| REVISIONS | |
|---|---|
| 4/29/11 | FOR COUNTY COMMENTS |
| 10/07/11 | FOR DRAFT COMMENTS |
| 02/24/12 | FOR COUNTY COMMENTS |
| 03/26/12 | FOR COUNTY COMMENTS |
| 07/13/12 | FOR COUNTY COMMENTS |
| 08/29/12 | FOR COUNTY COMMENTS |
| 10/05/12 | FOR COUNTY COMMENTS |
| TITLE | SHEET REVISIONS |

SCALE:
JOB No.:
DATE: APRIL 26, 2011
FILE No.: 7403-07-001
SHEET No.: A4.2



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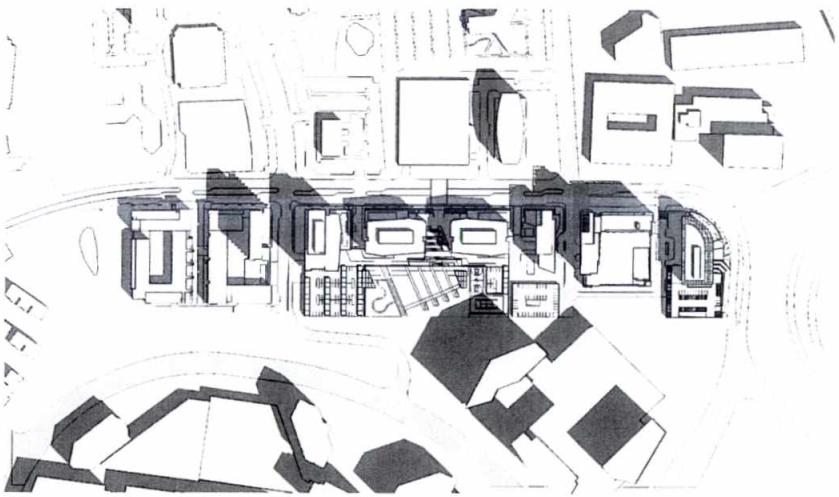

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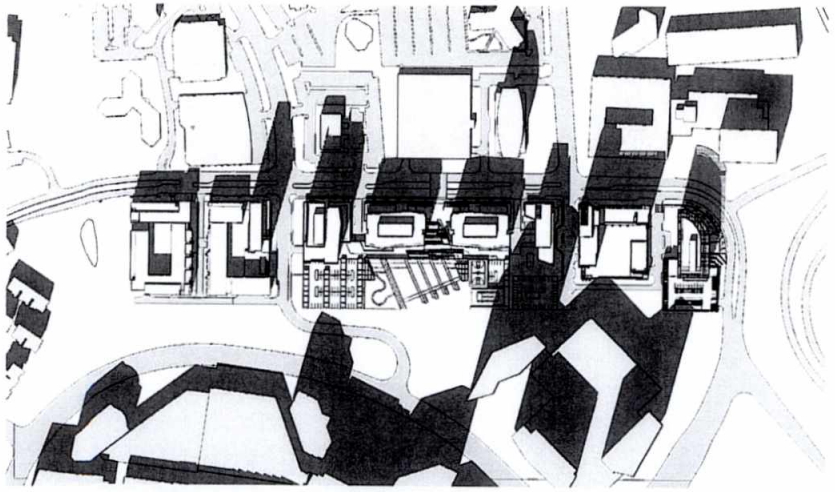

03 3:00 PM
NTS

MARCH / SEPTEMBER 21ST
SHADOW ANALYSIS

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

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fax 202 463 7198
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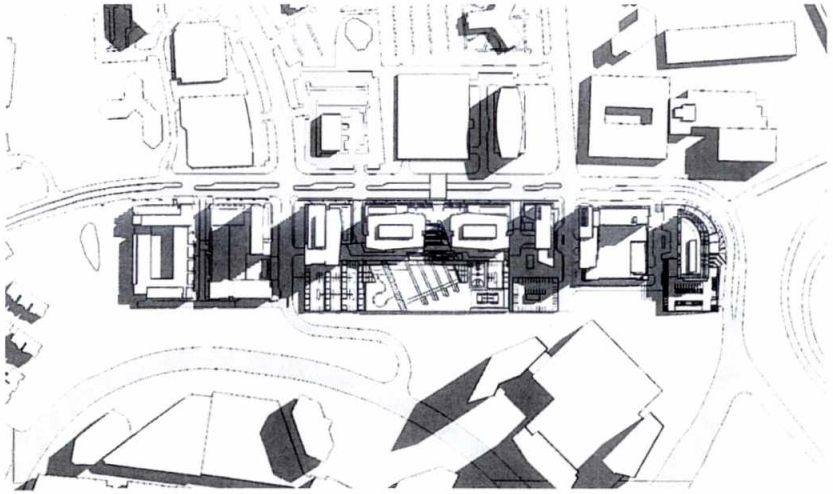
SHADOW ANALYSIS
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| 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 |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | H: |
| JOB No. | |
| DATE | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | A5.0 |



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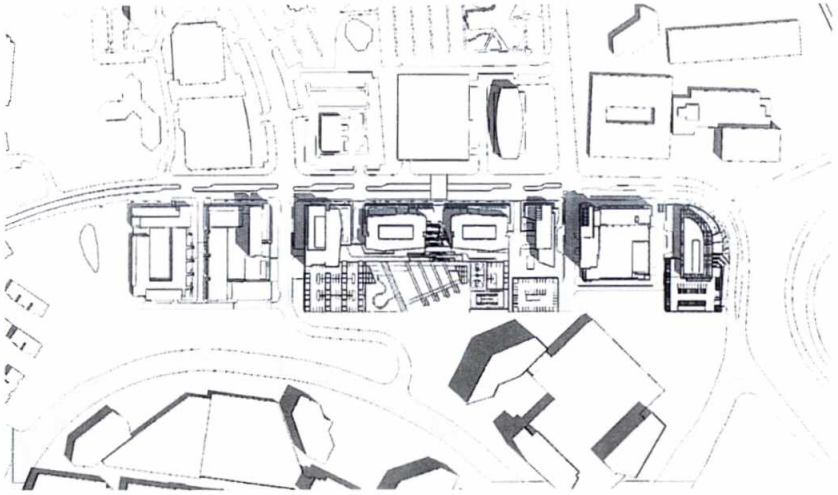

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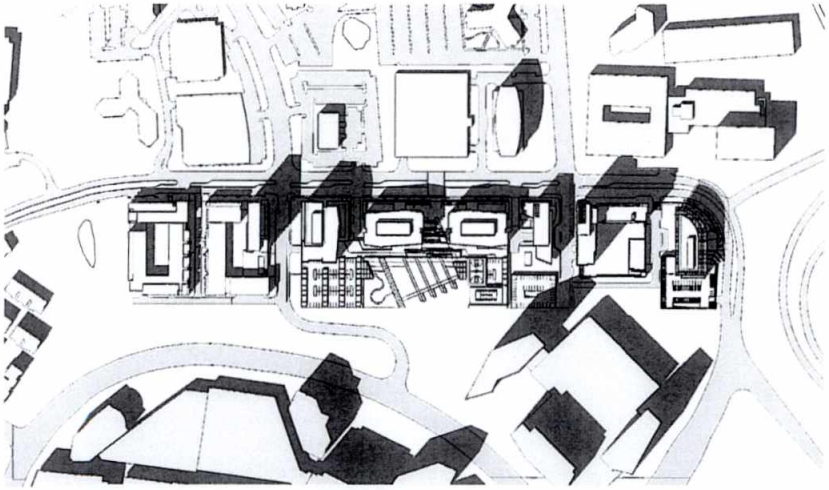

03 3:00 PM
NTS

JUNE 21ST
SHADOW ANALYSIS

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

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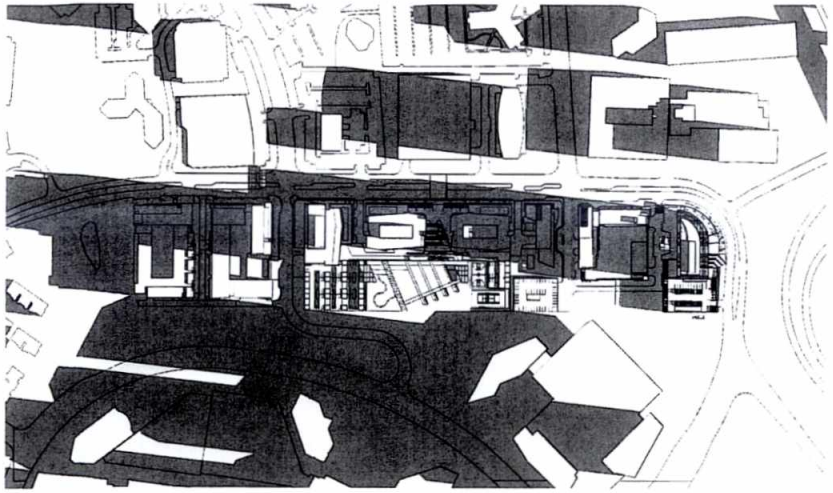
SHADOW ANALYSIS
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| 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 |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | H: |
| JOB No. | |
| DATE | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | A5.1 |



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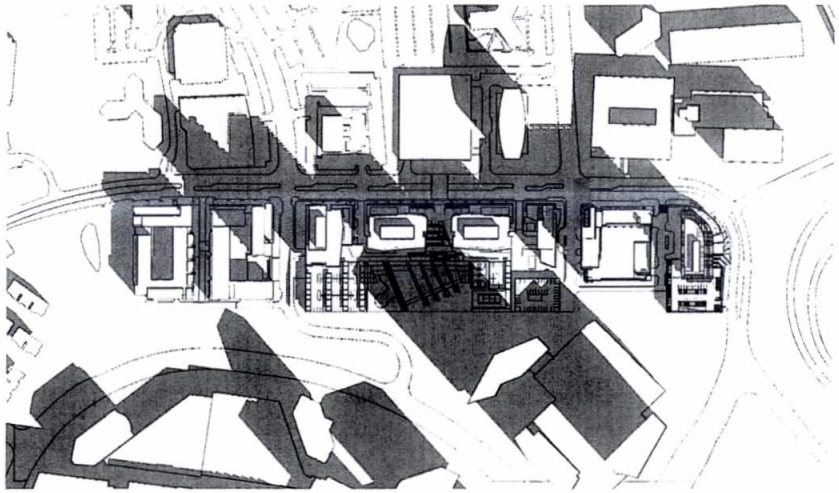

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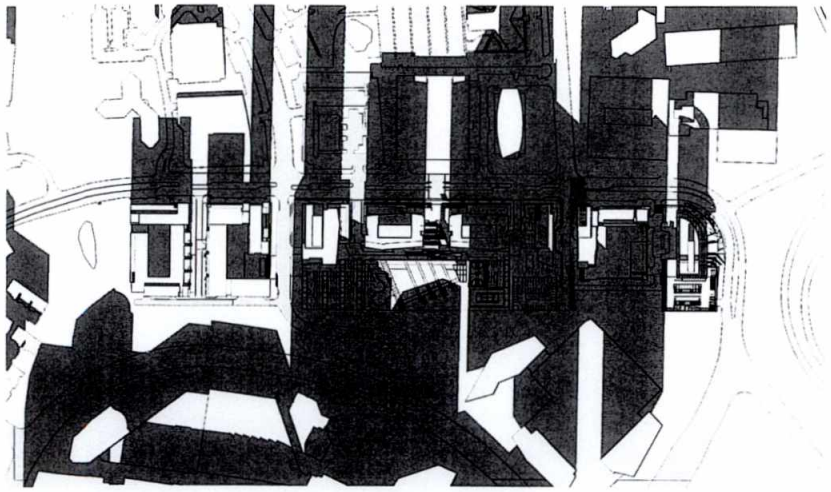

03 3:00 PM
NTS

DECEMBER 21ST
SHADOW ANALYSIS

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email wdg@wdgarch.com

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SHADOW ANALYSIS

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 |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | H: |
| JOB No. | |
| DATE : | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | A5.2 |

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

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For Information Only

# PERSPECTIVES

## ARBOR ROW

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| 09/29/12 | PER COUNTY COMMENTS |
| 10/30/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | 1" |
| JOB No. | |
| DATE | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | A6.0 |


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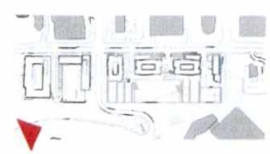

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JOB No.

DATE : APRIL 26, 2011

FILE No. 7403-07-001

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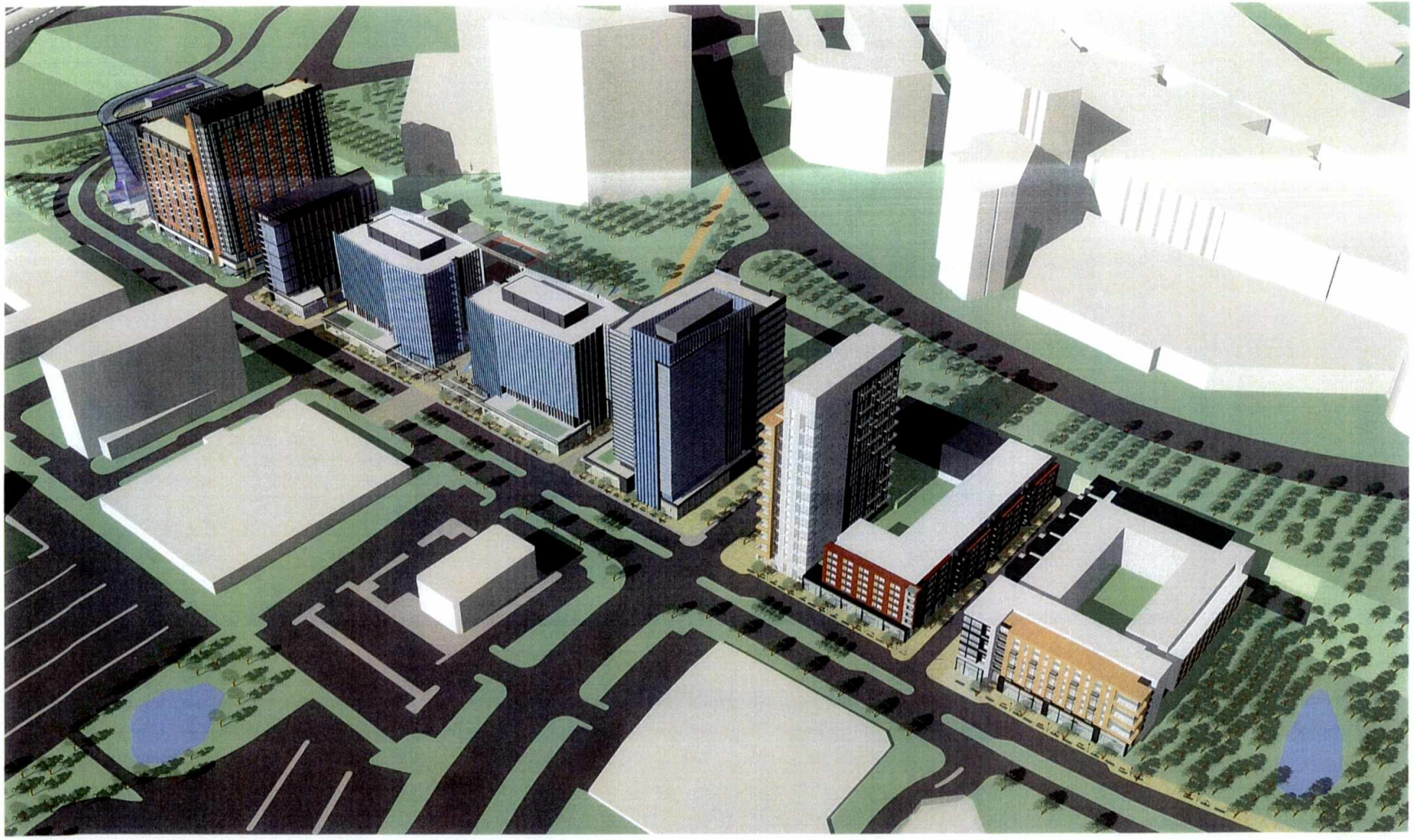

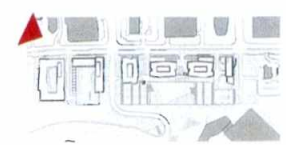

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| JOB No. | |
| DATE: | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | A6.2 |

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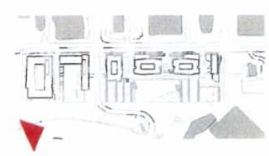

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| 10/30/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | NE |
| JOB No. | |
| DATE | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | A6.3 |


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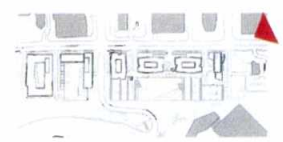

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| 10/29/12 | PER COUNTY COMMENTS |
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| SHEET | A6.4 |


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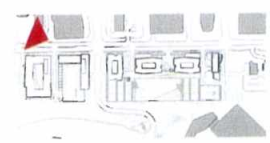

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JOB No.

DATE: APRIL 26, 2011

FILE No. 7403-07-001

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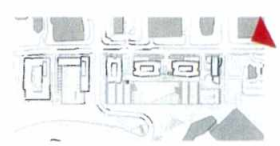

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| DATE | DESCRIPTION |
|---|---|
| SCALE | 1" |
| JOB No. | |
| DATE | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | A6.6 |


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ILLUSTRATIVE LANDSCAPE PLAN

ARBOR ROW

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PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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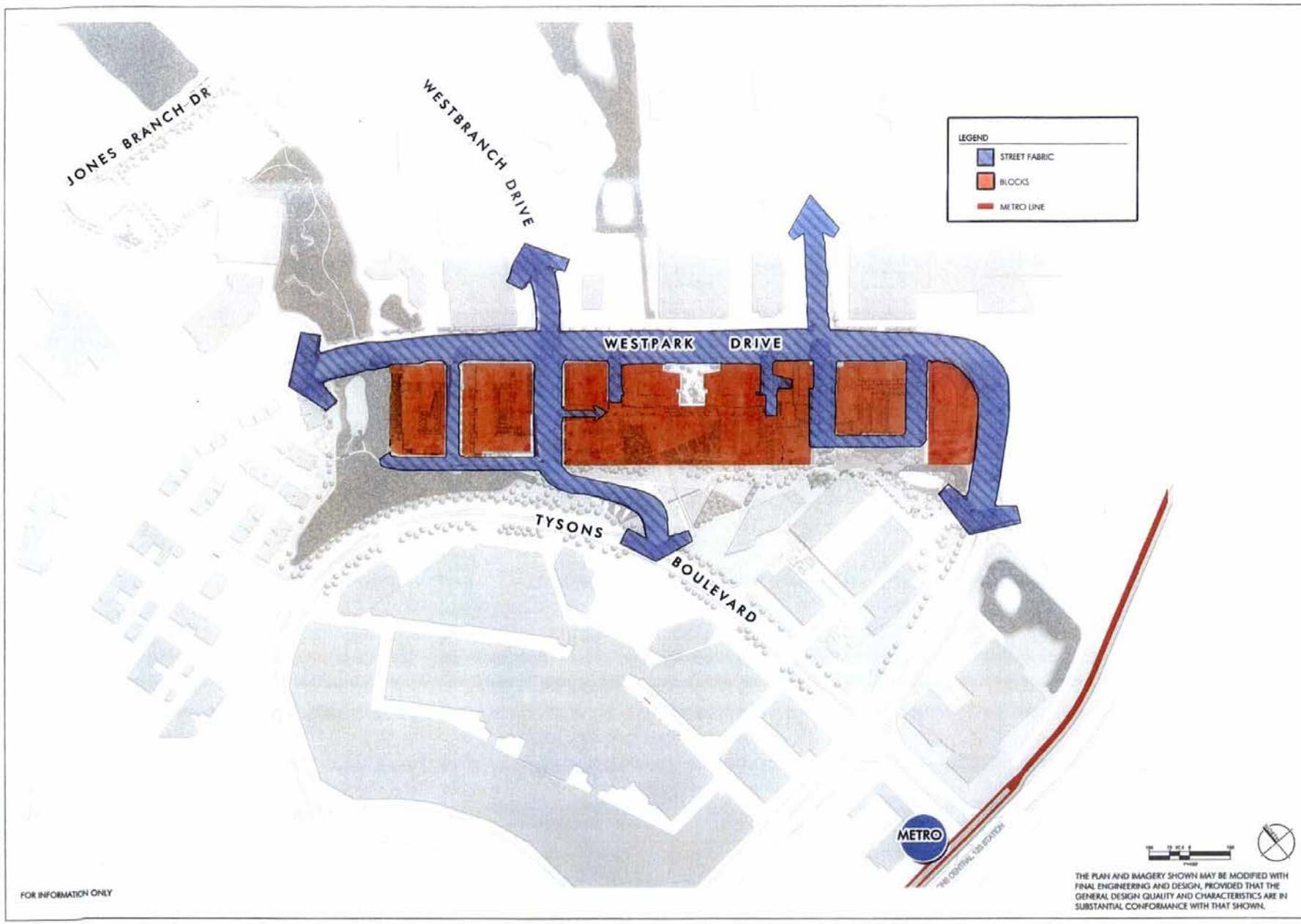
| FILE No. | 7403-07-001 |
| SHEET | L1.0 |

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URBAN FABRIC & BLOCKS DIAGRAM

ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

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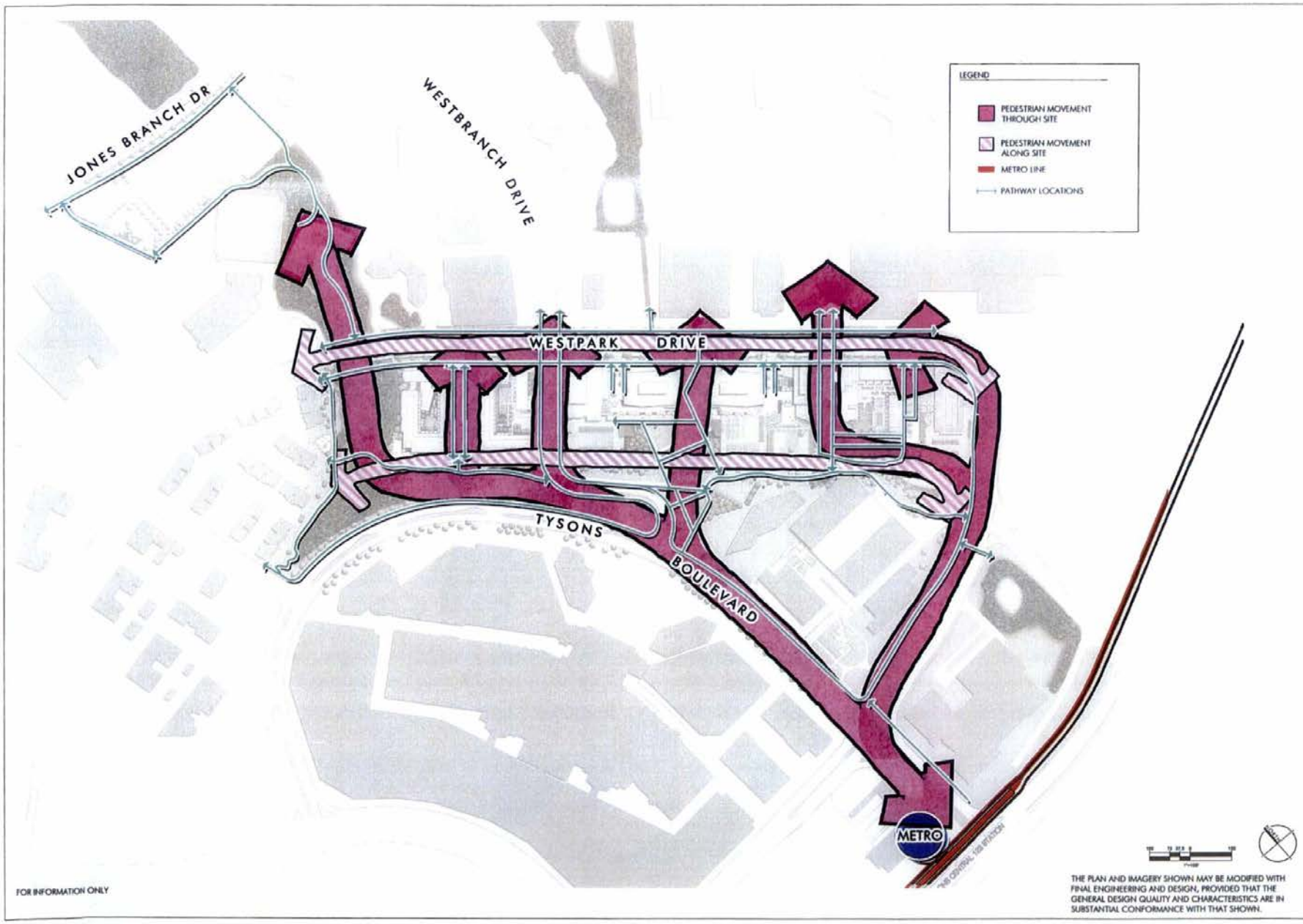
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | H: 1" = 150'-0" |
| JOB No. | |
| DATE : | APRIL 28, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | L2.0 |

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PEDESTRIAN FLOW DIAGRAM

ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

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| DATE | DESCRIPTION |

SCALE N 1" = 100'-0"

JOB No.

DATE : APRIL 26, 2011

FILE No. 7403-07-001

SHEET L2.1

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OPEN SPACE CONNECTIONS DIAGRAM

ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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SCALE: H: 1" = 150'-0"

JOB No.

DATE: APRIL 28, 2011

FILE No. 7403-07-001

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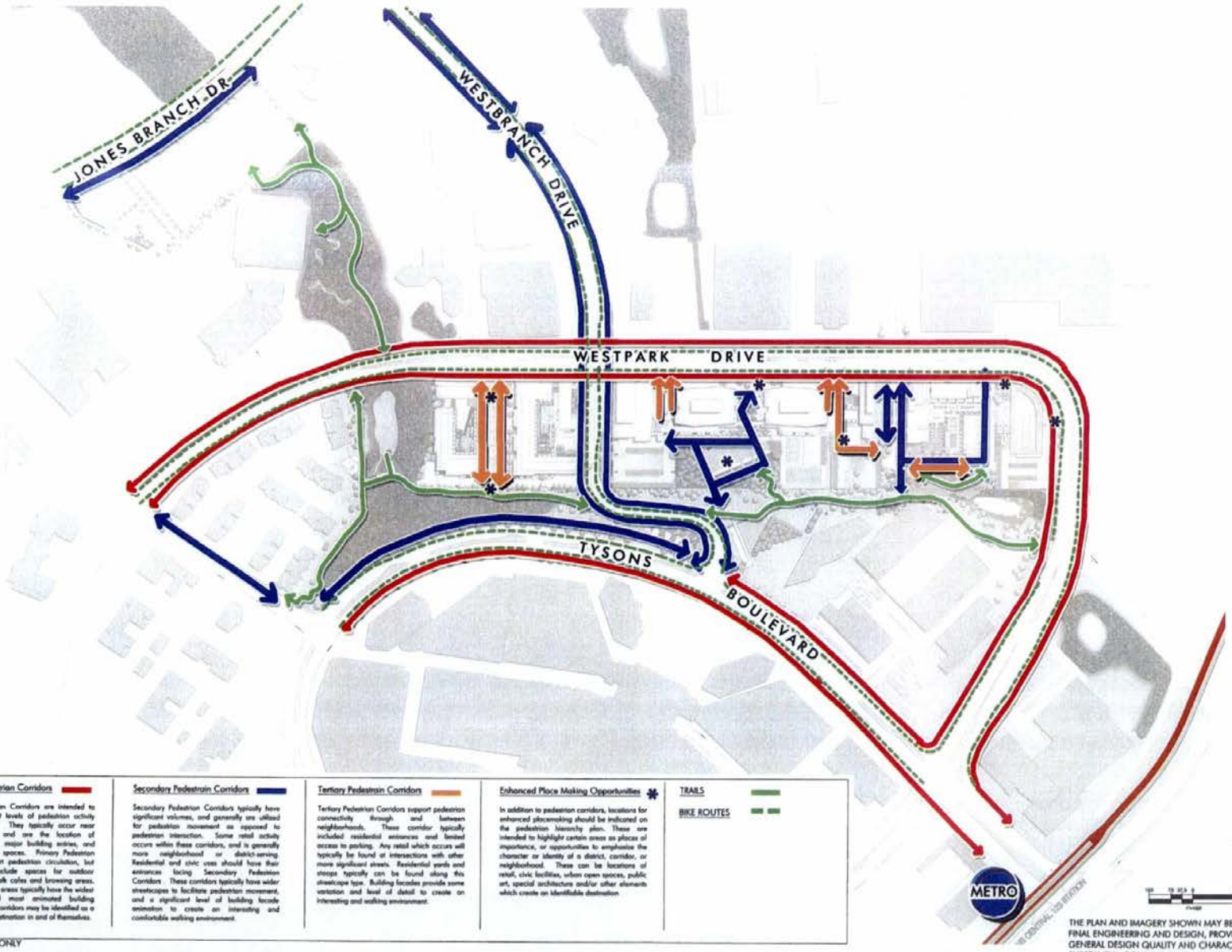


**Primary Pedestrian Corridors**

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 Pedestrain 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 Pedestrain Corridors**

Tertiary Pedestrian Corridors support pedestrian connectivity through and between neighborhoods. These corridor typically included 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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# PEDESTRIAN HIERARCHY PLAN

## ARBOR ROW

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JOB No.

DATE APRIL 26, 2011

FILE No. 7403-07-001

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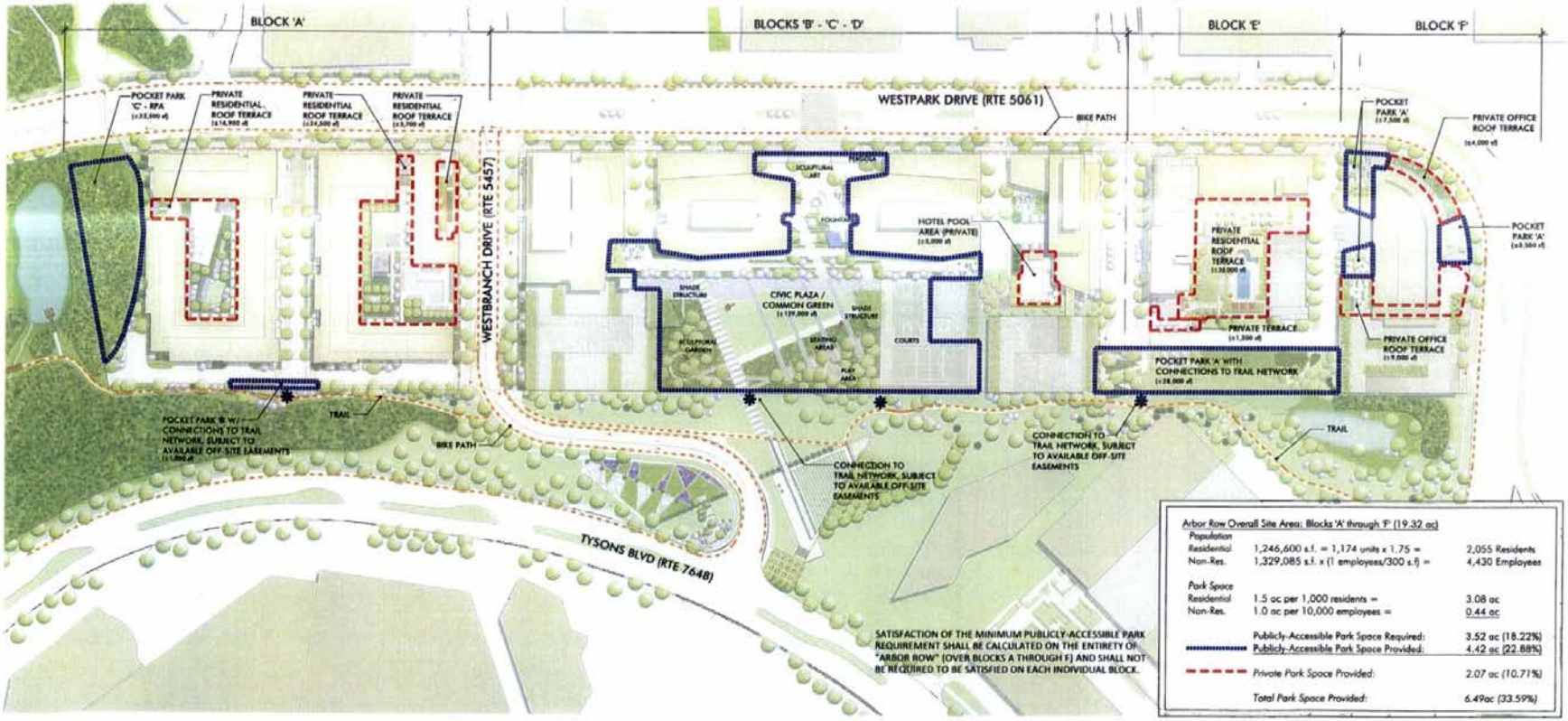



| Arbor Row Overall Site Area: Blocks 'A' through 'F' (19.32 ac) | | |
|---|---|---|
| *Population* | | |
| Residential | 1,246,600 s.f. = 1,174 units x 1.75 = | 2,055 Residents |
| Non-Res. | 1,329,085 s.f. x (1 employee/300 s.f) = | 4,430 Employees |
| *Park Space* | | |
| Residential | 1.5 ac per 1,000 residents = | 3.08 ac |
| Non-Res. | 1.0 ac per 10,000 employees = | 0.44 ac |
| | Publicly-Accessible Park Space Required: | 3.52 ac (18.22%) |
| | Publicly-Accessible Park Space Provided: | 4.42 ac (22.88%) |
| | *Private Park Space Provided:* | 2.07 ac (10.71%) |
| | *Total Park Space Provided:* | 6.49ac (33.59%) |

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 place including public art and large enough to support annual unprogrammed use as well as community events. Serves as a focal point and unique placemaking places 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 Commercial Programs
- Bosque of Trees
- Raised Garden
- 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
- Landscape 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 Prolibra

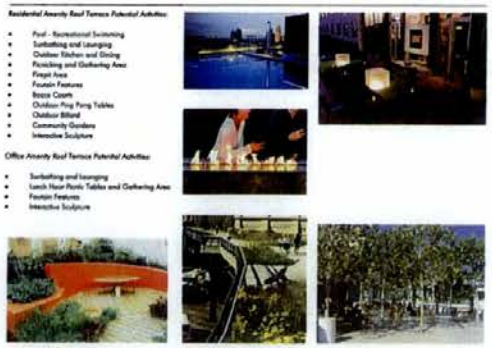
PRIVATE AMENITY ROOF TERRACES - provides outdoor amenity space for residents and workers of residential building and office complexes.

*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

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

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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F 703.527.1556
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URBAN PARKS PLAN
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 |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE H: 1" = 80'-0"

JOB No.

DATE : APRIL 28, 2011

FILE No: 7402-07-001

SHEET L2.4

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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BLOCK 'A' ILLUSTRATIVE PLAN

ARBOR ROW

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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 |
| 06/06/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE H: 1" = 30'-0"

JOB No.

DATE : APRIL 28, 2011

FILE No. 7403-07-001

SHEET L3.0

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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BLOCK 'B' & 'C' ILLUSTRATIVE PLAN

ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENTS |
| 12/02/11 | 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 |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: H: 1" = 30'-0"

JOB No.

DATE: APRIL 26, 2011

FILE No. 7403-07-001

SHEET L3.1

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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BLOCK 'D', 'E' & 'F' ILLUSTRATIVE PLAN

ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/02/11 | PER COUNTY COMMENTS |
| 11/07/11 | PER COUNTY COMMENTS |
| 02/09/12 | PER COUNTY COMMENTS |
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

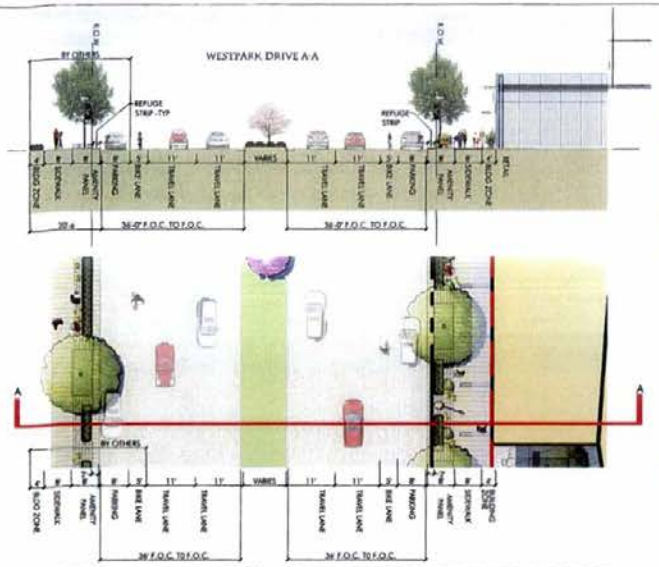
SCALE is 1" = 30'-0"

JOB No.

DATE | APRIL 26, 2011

FILE No. 7403-07-001

SHEET L3.2

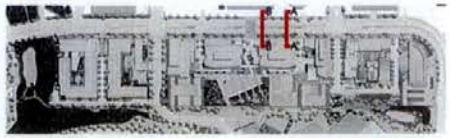



01 WESTPARK DRIVE (RTE 5061) - STREET SECTION A (AVENUE) - ULTIMATE

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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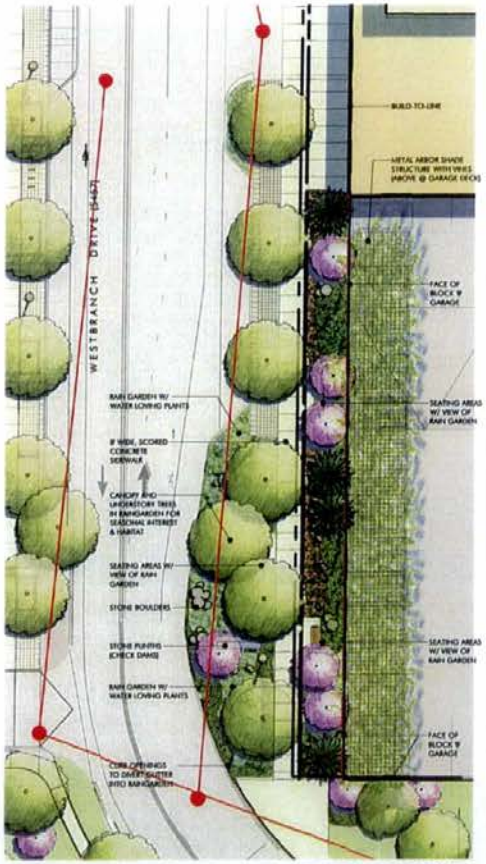


03 BLOCK 'B' RAIN GARDEN PARK - PLAN ENLARGEMENT

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

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TYPICAL STREET SECTIONS
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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 |
| 02/23/12 | PER COUNTY COMMENTS |
| 05/25/12 | PER COUNTY COMMENTS |
| 07/20/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

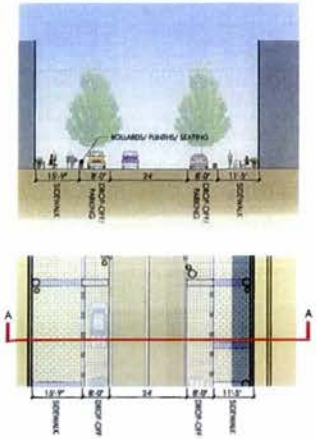
SCALE : AS NOTED

JOB No.

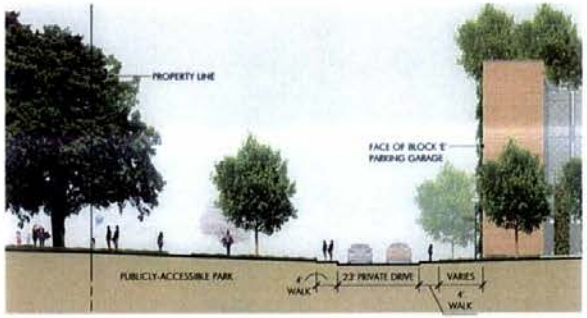
DATE : APRIL 26, 2011

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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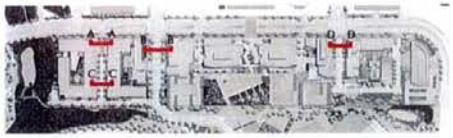
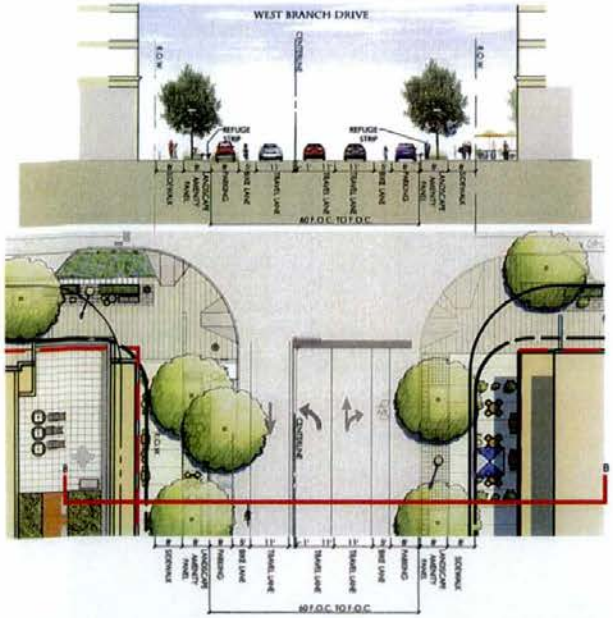
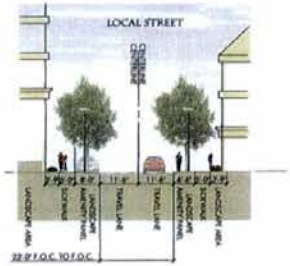
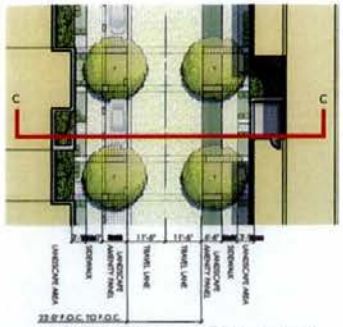



REFERENCE PLAN

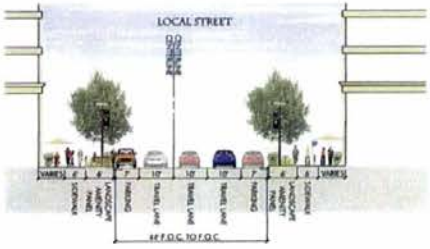


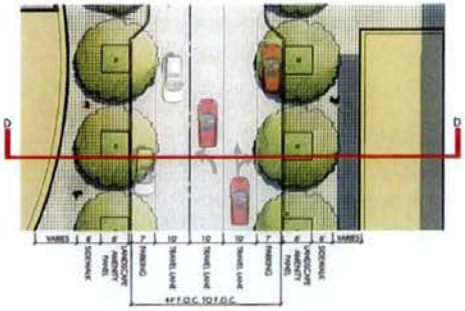

**01** WEST BRANCH DRIVE (RTE 5457) - STREET SECTION (COLLECTOR)
SCALE : 1/16" = 1'-0" SECTION B-B




**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

| PLAN STATUS | |
|---|---|
| 01/23/01 | PER COUNTY COMMENTS |
| 02/01/01 | 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 |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE H: AS NOTED
JOB No.
DATE APRIL 28, 2011
FILE No. 7403-07-001
SHEET L4.1

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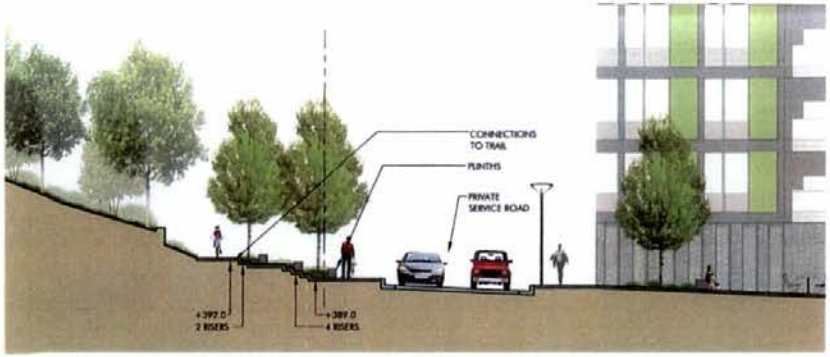
REFERENCE PLAN




**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

| PLAN STATUS | |
|---|---|
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| 07/23/12 | PER COUNTY COMMENTS |
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| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

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

JOB No.

DATE APRIL 26, 2011

FILE No. 7402-07-001

SHEET L4.2

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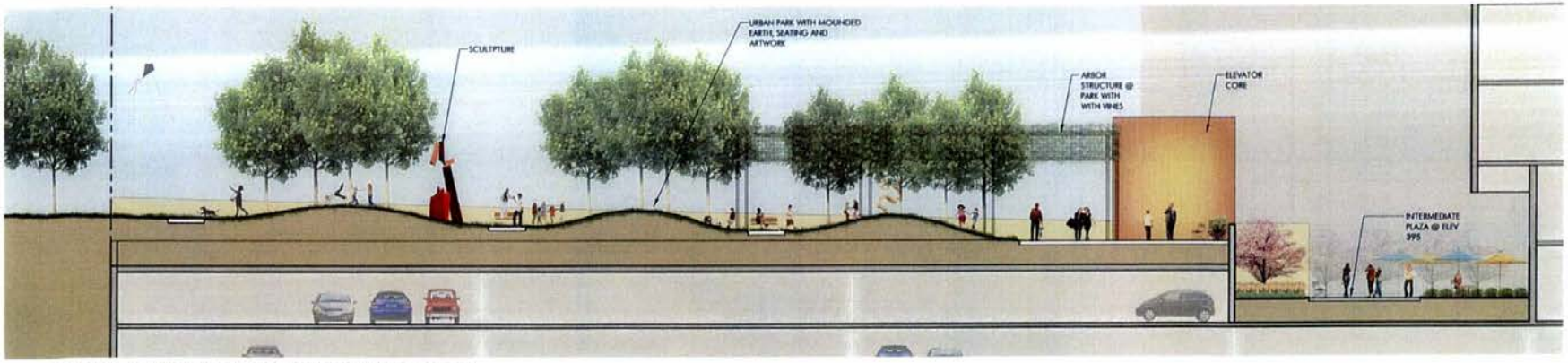
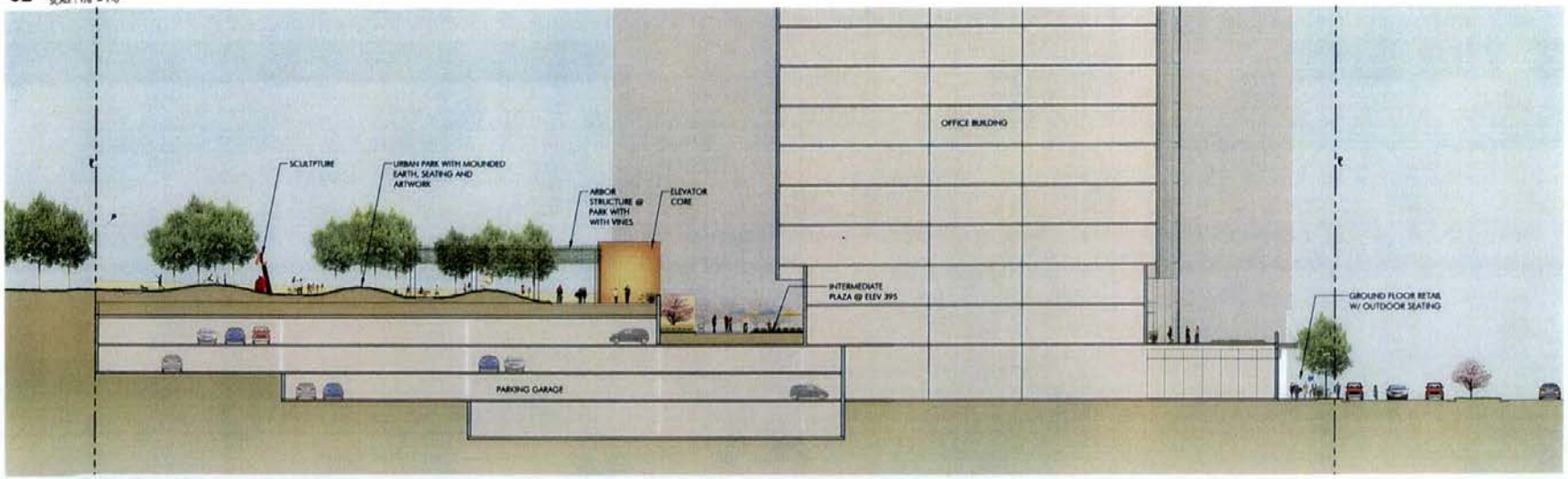



**02** BLOCK C - OFFICE SECTION ELEVATION (ENLARGEMENT)

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

| 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 |
| 08/28/12 | PER COUNTY COMMENTS |
| 09/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

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

JOB No.

DATE : APRIL 26, 2011

FILE No. 7403-07-001

SHEET L4.3

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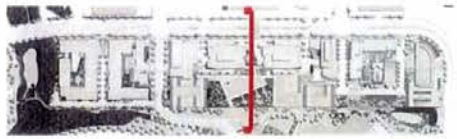
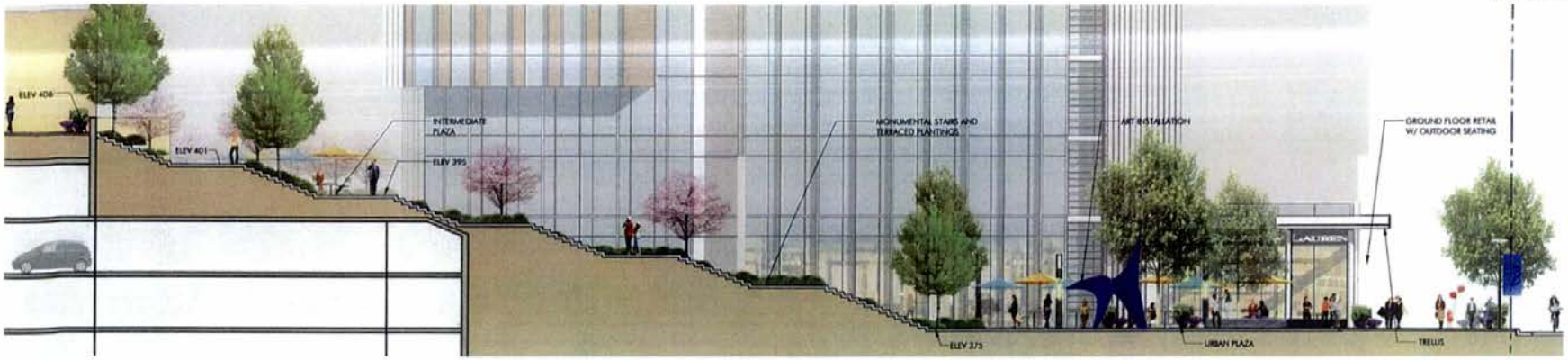
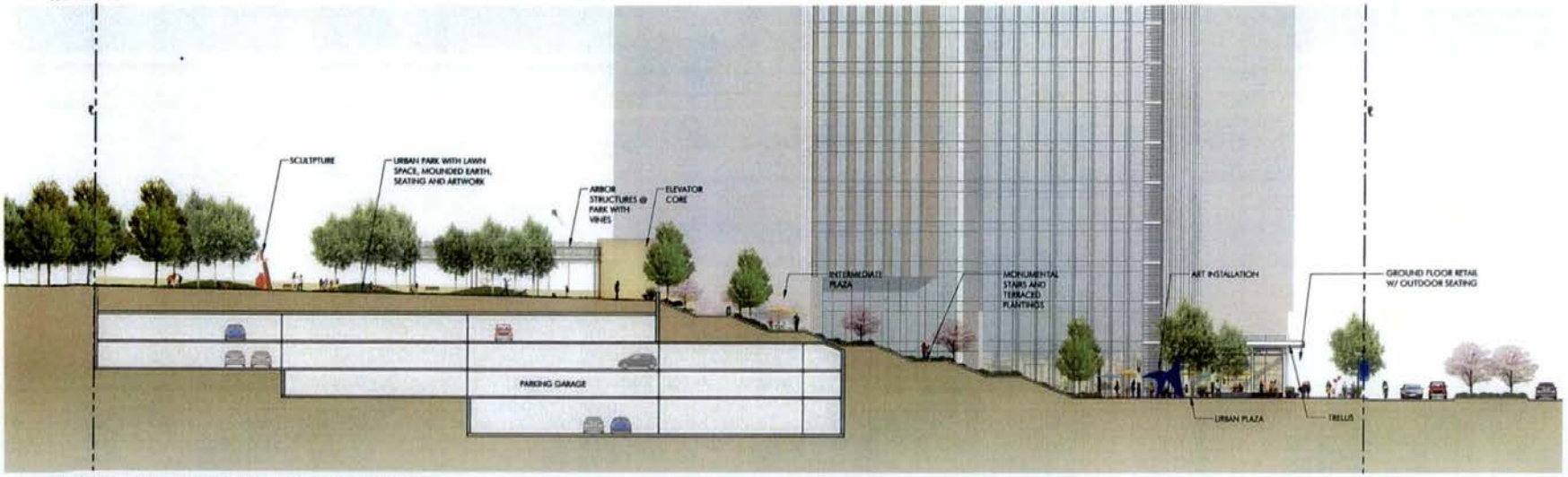


REFERENCE PLAN




**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

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENTS |
| 12/02/11 | PER COUNTY COMMENTS |
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| 05/23/12 | PER COUNTY COMMENTS |
| 01/23/13 | PER COUNTY COMMENTS |
| 08/28/13 | PER COUNTY COMMENTS |
| 10/08/13 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

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

JOB No.

DATE : APRIL 26, 2011

FILE No. 7403-07-001

SHEET L4.4

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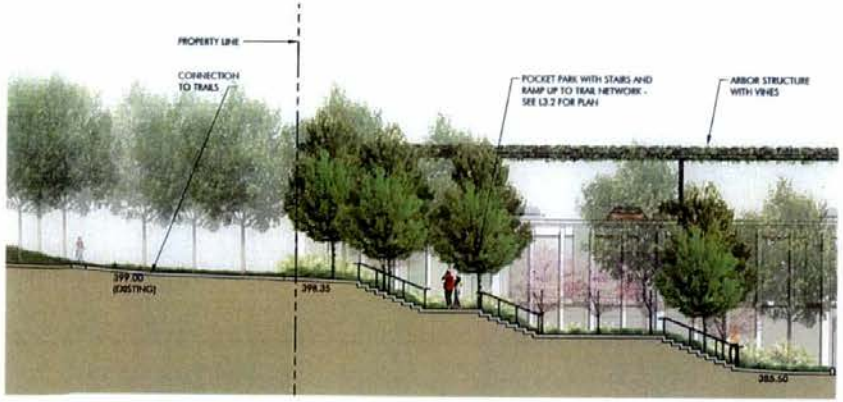

## 02 BLOCK D - HOTEL SECTION ELEVATION (ENLARGEMENTS)

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

## 01 BLOCK D - HOTEL SECTION ELEVATION

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

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SITE SECTION - BLOCK 'D'

ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 07/30/11 | PER COUNTY COMMENTS |
| 12/07/11 | PER COUNTY COMMENTS |
| 02/24/12 | PER COUNTY COMMENTS |
| 05/25/12 | PER COUNTY COMMENTS |
| 07/13/12 | PER COUNTY COMMENTS |
| 09/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

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

JOB No.

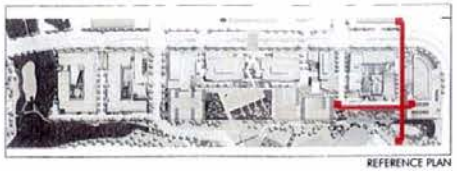
DATE : APRIL 20, 2011

FILE No. 7403-07-001

SHEET L4.5

**02** BLOCK E - SOUTH ELEVATION

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



REFERENCE PLAN

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.

SITE SECTIONS PRESENTED ON THIS SHEET ARE PROVIDED TO AID IN THE UNDERSTANDING OF GRADE CHANGE ACROSS THE SUBJECT PROPERTY AND THE RELATIONSHIP OF PROPOSED BUILDINGS AND OTHER USES. BUILDING DESIGN AND THE FINAL GRADING ARE SUBJECT TO CHANGE WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN.

**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

| PLAN STATUS | |
|---|---|
| 07/23/10 | PER COUNTY COMMENTS |
| 10/04/10 | PER COUNTY COMMENTS |
| 03/24/12 | PER COUNTY COMMENTS |
| 05/23/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/09/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

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

JOB No.

DATE : APRIL 26, 2011

FILE No. 7403-07-001

SHEET L4.6

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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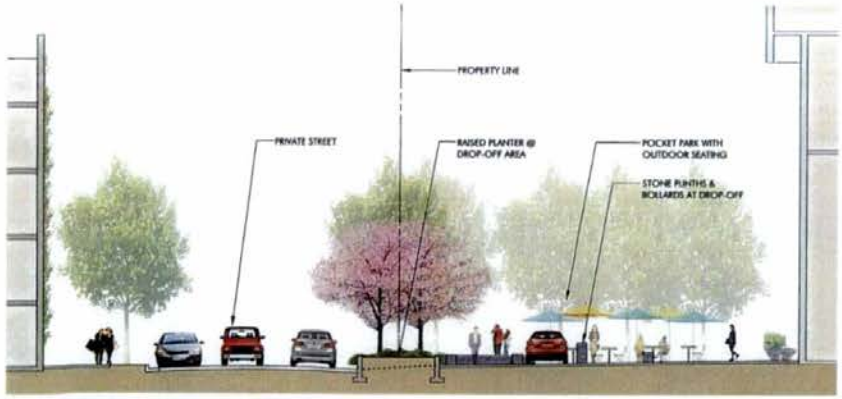
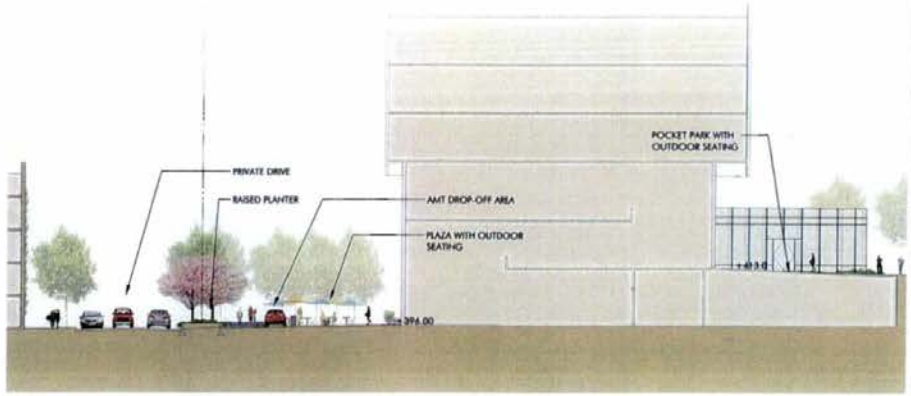
REFERENCE PLAN




**02** BLOCK 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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SITE SECTION - BLOCK 'F'

ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 01/22/11 | PER COUNTY COMMENTS |
| 12/02/11 | 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 |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

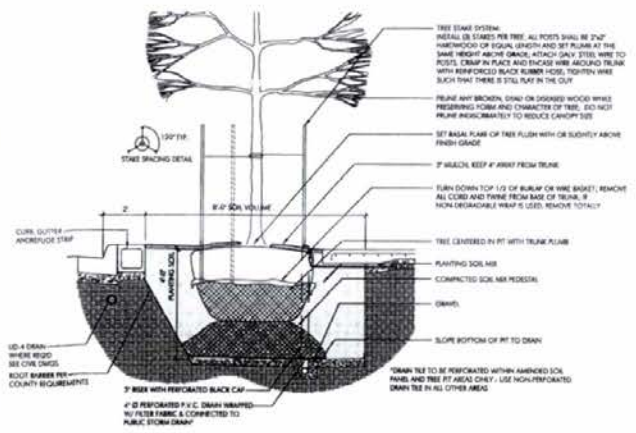
SCALE : H: 1/16" = 1'-0"

JOB No.

DATE : APRIL 26, 2011

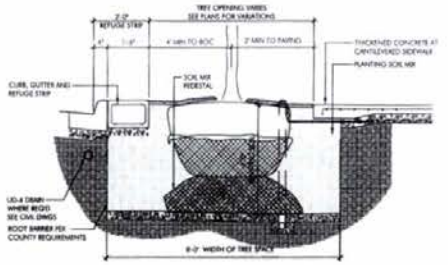
FILE No. 7402-07-001

SHEET L4.7




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

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




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

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

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.

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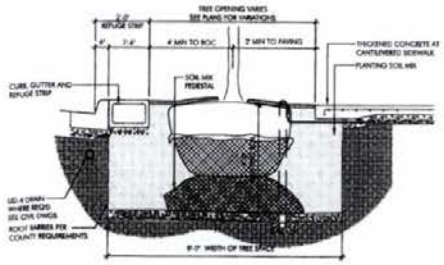
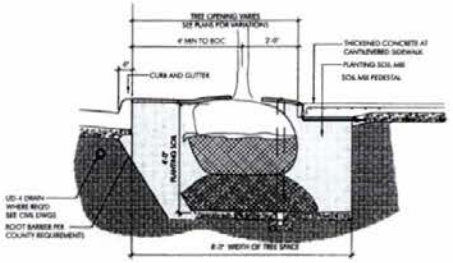


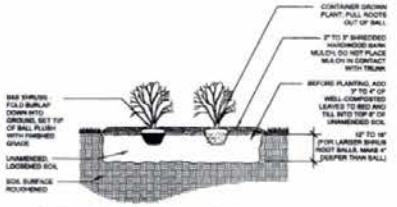

**02** WESTPARK DRIVE - TYP. TREE PLT DETAIL @ REFUGE STRIP - TREE SOIL SPACE

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



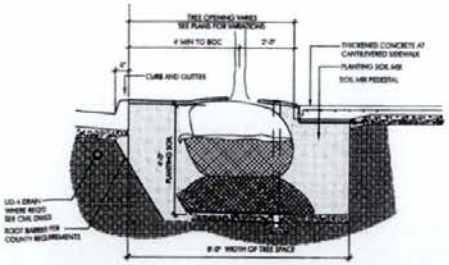

**05** PRIVATE STREET - TYP. TREE PLT DETAIL @ CURB - TREE SOIL SPACE

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



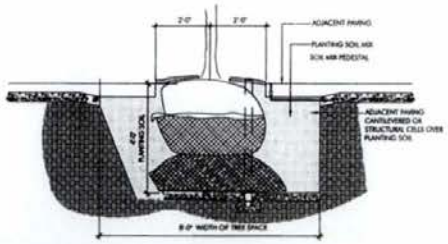

**07** SHRUB PLANTING DETAIL

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



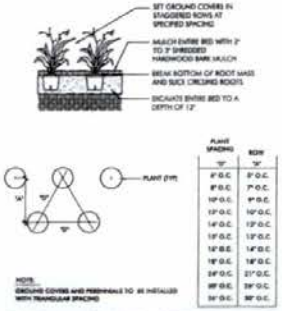

**03** JONES BRANCH DRIVE - TYP. TREE PLT DETAIL @ CURB - TREE SOIL SPACE

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




**06** TREE PLT DETAIL @ PLAZA - TREE SOIL SPACE

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




| PLANT SPACING | ROW |
|---|---|
| 5" | 5" |
| 6" O.C. | 6" 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. | 26" O.C. |
| 36" O.C. | 30" O.C. |

**08** GROUNDCOVER / PERENNIAL PLT DETAIL

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

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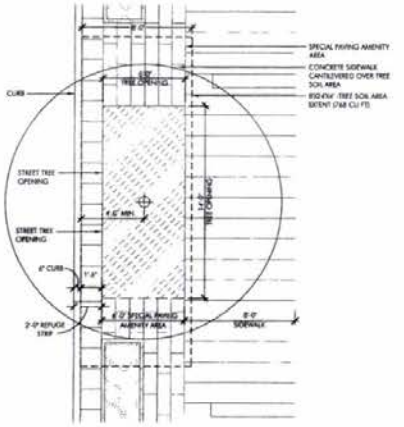
TYPICAL DETAILS
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

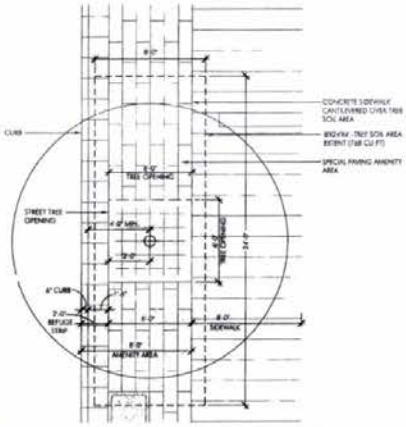
| PLAN STATUS | |
|---|---|
| 07/22/11 | PER COUNTY COMMENTS |
| 12/09/11 | PER COUNTY COMMENTS |
| 03/24/12 | PER COUNTY COMMENTS |
| 05/29/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | 10/10/2012 |
| SCALE | H: VARIES |

JOB No.
DATE : APRIL 26, 2011
FILE No. 7403-07-001
SHEET L4.8

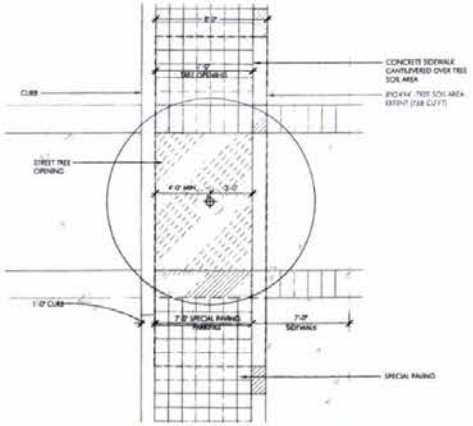
THE PLAN AND IMAGERY SHOWN MAY BE MODIFIED WITH FINAL ENGINEERING AND DESIGN, PROVIDED THAT THE GENERAL DESIGN QUALITY AND CHARACTERISTICS ARE IN SUBSTANTIAL CONFORMANCE WITH THAT SHOWN.



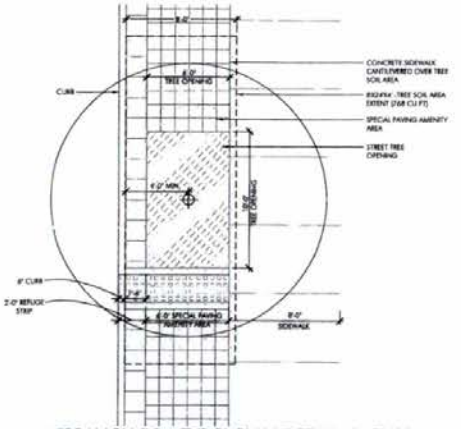

**01** WESTPARK DR - TYP PL PLAN DETAIL @ REFUGE STRIP
SCALE : 1/2"=1'-0"



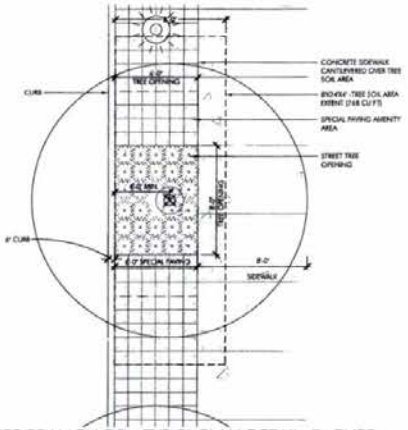

**02** WESTPARK DR - TYP PL PLAN DTL @ REFUGE STRIP W/ GRATE
SCALE : 1/2"=1'-0"



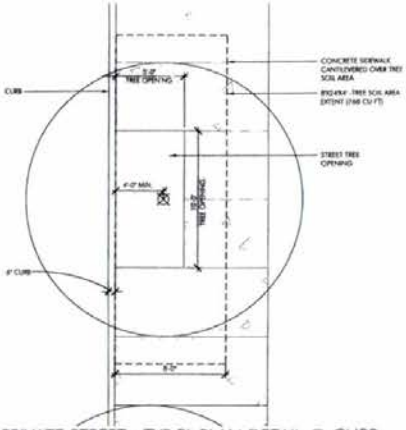

**03** PRIVATE STREET - TYP PL PLAN DETAIL @ CURB
SCALE : 1/2"=1'-0"




**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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PLANTING DETAILS AND SCHEDULE

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

| PLAN STATUS | |
|---|---|
| 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 |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | H VARIES |
| JOB No. | |
| DATE : | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | L4.9 |

## LANDSCAPE COMPUTATIONS - ARBOR ROW - OVERALL CDP

**13-201: INTERIOR PARKING LOT LANDSCAPE CALCULATIONS**

| | |
|---|---|
| Total Parking Area (garage) | 93,300 see CDP L4.8 for |
| 5% Percent Required | 4,785 preliminary calculations |
| Provided: Proposed Covered Arbors w/ Vines | 21,200 |

**13-202: PERIPHERAL PARKING LOT LANDSCAPE CALCULATIONS**

| | |
|---|---|
| Above-grade parking structures adjacent to public ROW (LF) | 288 see CDP L4.8 for |
| One (1) tree per forty (40) feet required | 8 preliminary calculations |
| Trees provided in landscape strip, rain garden or streetscape | 19 |

**13-301: TRANSITIONAL SCREENING AND BARRIERS**

Property Zoning District: PTC
Adjacent Zoning Districts: I-5, C-7, PDC, PTC/HC

Transitional Screening and Barriers are Not Required

**13-401: TREE COVER CALCULATIONS**

Table 12.12 10 year Tree Canopy Calculation Worksheet

| Step | | Totals | Reference |
|---|---|---|---|
| **A. Tree Preservation Target and Statement** | | | |
| A1 | Place the Tree Preservation Target calculations and statement here preceding the 10-year tree canopy calculations | | see § 12-0508.2 for list of required elements and worksheets |
| **B. Tree Canopy Requirement** | | | |
| B1 | Identify gross site area | 841,385 | § 12-0511.1A |
| B2 | Subtract area dedicated to parks, road frontage, and | 33,430 | § 12-0511.1B |
| B3 | Subtract area of exemptions | | § 12-0511.1C(1) |
| B4 | Adjusted Gross Site Area (B1 - B2) | 807,955 | |
| B5 | Identify site's zoning and/or use | PTC | |
| B6 | Percentage of 10-year Tree Canopy Required | 10% | § 12-0510.1 and Table 12.4 |
| B7 | Area of 10-year Tree Canopy Requirements requested? | 80,796 | |
| B8 | Modification of 10-year tree canopy requirements requested? If B8 is yes, then list plan sheet where modification request is located | No | Yes or No |
| B9 | | | Sheet number |
| **C. Tree Preservation** | | | |
| C1 | Tree Preservation Target Area | 0 | |
| C2 | Total canopy area meeting standards of § 12-0400 | | |
| C3 | C2 x 1.25 | | § 12-0510.3B |
| C4 | Total canopy area provided by unique or valuable forest or woodland communities | 0 | |
| C5 | C4 x 1.5 | | § 12-0510.3B(1) |
| C6 | Total of canopy area provided by "Heritage," "Memorial," "specimen," or "street" trees | 0 | |
| C7 | C6 x 1.5 to 3.0 | | § 12-0510.3B(2) |
| C8 | Canopy area of trees within Resource Protection Areas and 100-year floodplains | 21,708 | see CDP C8.0 |
| C9 | C8 X 1.0 | 21,708 | |
| C10 | Total of C3, C5, C7 and C9 | 21,708 | § 12-0510.3D(1) If area of C10 is less than B7 then remainder of requirement must be meth through tree planting - go to |
| | | 21,708 | D |
| **D. Tree Planting** | | | |
| D1 | Area of canopy to be met through tree planting (B7-C10) | 59,088 | |
| D2 | Area of canopy planted for air quality benefits | 0 | |
| D3 | X 1.5 | | § 12-0510.4B(1) |
| D4 | Area of canopy planted for energy conservation | 0 | |
| D5 | X 1.5 | | § 12-0510.4B(2) |
| D6 | Area of canopy planted for water quality benefits | 0 | |
| D7 | X 1.25 | | § 12-0510.4B(3) |
| D8 | Area of canopy planted for wildlife benefits | 0 | |
| D9 | X 1.5 | | § 12-0510.4B(4) |
| D10 | Area of canopy provided by native trees | 0 | |
| D11 | X 1.5 | | § 12-0510.4B(5) |
| D12 | Area of canopy provided by improved cultivars and varieties | 0 | |
| D13 | X 1.25 | | § 12-0510.4B(6) |
| D14 | Area of canopy provided through tree seedlings = X 1.0 | 0 | § 12-0510.4D(1) |
| D15 | Area of canopy provided through native shrubs = X 1.0 | 0 | § 12-0510.4D(1) |
| D16 | Percent of D14 represented by D 15 | 0 | Must no exceed 33% of D14 |
| D17 | Total of canopy area provided through tree planting | 83,675 | see CDP 04/L4.8 |
| D18 | Is an offsite planting relief requested? | No | Yes or No |
| D19 | Tree bank or Tree Fund? | | § 12-0512 |
| D20 | Canopy area requested to be provided through offsite banking or tree fund | 0 | |
| D21 | Amount to be deposited into the Tree Preservation and Planting Fund | 0 | |
| **E. Total of 10-year Tree Canopy Provided** | | | |
| E1 | Total of Canopy Provided through tree preservation (C10) | 21,708 | |
| E2 | Total of canopy area provided through tree planting (D17) | 83,675 | |
| E3 | Total of canopy area provided through offsite mechanism (D19) | 0 | |
| E4 | Total of 10-year Tree Canopy Provided = (E1+E2+E3) | 105,383 | Total of E1 through E3. Area should meet or exceed are required by B7 |

**01** LANDSCAPE COMPUTATIONS
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.
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**Arbor Row - Parking Garage Preliminary Landscape Calculation**

| Block | Garage Parking Area (SF) | Required 5% Coverage (1) | Arbor Coverage Provided (1) | % Coverage Provided (1) |
|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 |
| B | 35,800 | 1,790 | 8,500 | 27% |
| C | 7,900 | 395 | 1,700 | 22% |
| D | 25,800 | 1,065 | 5,000 | 22% |
| E | 6,800 | *Waiver - see CDP C3.0 | | 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.

**ARBOR ROW OVERALL CDP - PRELIMINARY PLANTING LIST & CANOPY COVERAGE**

| KEY | BOTANICAL NAME | COMMON NAME | QTY. | STOCK SIZE | STOCK TYPE | 10-YR TREE CANOPY FT² | TREE CANOPY SUB-TOTAL FT² | REMARKS |
|---|---|---|---|---|---|---|---|---|
| | **Category I Deciduous Trees** | | | | | | | |
| CT | Gleditsia triacanthos 'Halgedan' | Columnar Hawthorn | 8 | 3" col. | B&B | 72 | 600 | single leader |
| | **Category II Deciduous Trees** | | | | | | | |
| AO | Acer platanoides | Amur Maple | 40 | 3" col. | B&B | 125 | 5,000 | multistem - 3 stems minimum; full branching |
| AL | Amelanchier laevis | Allegheny Serviceberry | 57 | 3" col. | B&B | 100 | 5,700 | multistem - 3 stems minimum; full branching |
| CB | Carpinus betulus | Hornbeam | 36 | 3" col. | B&B | 125 | 3,500 | single leader |
| MS | Magnolia stellata | Star Magnolia | 43 | 2" col. | B&B | 100 | 4,300 | multistem - 3 stems minimum; full branching |
| | **Category III Deciduous Trees** | | | | | | | |
| BH | Betula nigra | River Birch | 26 | 3" col. | B&B | 175 | 3,500 | multistem - 3 stems minimum; full branching |
| GT | Gleditsia triacanthos inermis | Honeylocust, thornless | 20 | 3" col. | B&B | 175 | 2,500 | single leader; full branching |
| NS | Nyssa sylvatica | Black Gum, Tupelo | 9 | 3" col. | B&B | 175 | 1,575 | single leader; full branching; symmetrical |
| | **Category IV Deciduous Trees** | | | | | | | |
| AR | Acer rubrum | Red Maple | 38 | 3" col. | B&B | 250 | 9,500 | single leader; full branching; symmetrical |
| PA | Platanus x acerifolia 'Bloodgood' | Bloodgood London Planetree | 44 | 3" col. | B&B | 250 | 11,000 | single leader; full branching; symmetrical |
| QM | Quercus muhl | Huckel Oak | 29 | 3" col. | B&B | 250 | 7,250 | single leader; full branching; symmetrical |
| QP | Quercus palustris | Pin Oak | 73 | 3" col. | B&B | 250 | 18,250 | single leader; full branching; symmetrical |
| QR | Quercus rubra | Red Oak | 42 | 3" col. | B&B | 250 | 10,500 | single leader; full branching; symmetrical |
| | **Category V Evergreen Trees** | | | | | | | |
| IH | Ilex x Nellie Stevens | Nellie Stevens Holly | 37 | 8-10ht. | B&B | 30 | 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 |

**02** PRELIMINARY TREE PLANTING LIST AND CANOPY COVERAGE
SCALE : NTS


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© Bowman Consulting Group, Ltd.

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Cityline PARTNERS
A Subsidiary of DLJ Real Estate Capital Partners


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

| PLAN STATUS | |
|---|---|
| 01/23/11 | 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 |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE H: VARIES
JOB No.
DATE : APRIL 26, 2011
FILE No. 7623-07-001
SHEET L4.9A

REFERENCE PLAN

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.

FOR INFORMATION ONLY

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VDC

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STREETSCAPE PERSPECTIVES

ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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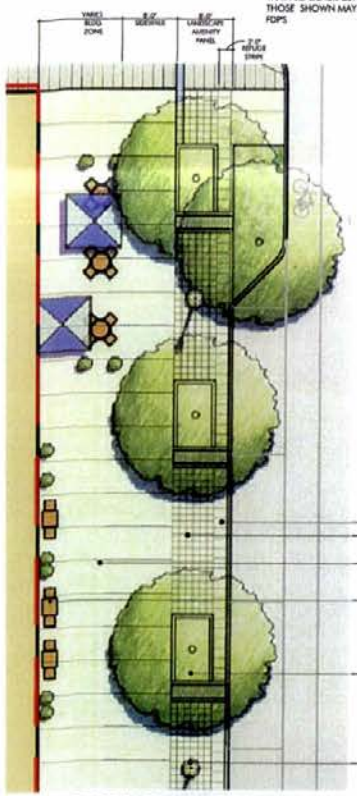
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/08/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | H: NTS |
| JOB No. | |
| DATE : | APRIL 28, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | L5.0 |

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 FDPS




## 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"

### 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: NEOUWNO
ALUMINUM AND HARDWOOD
SIZE: 27" x 31" x 69"
*SINGLE SEAT TO MATCH BENCH

OPT 3
MAKE: LANDSCAPE FORMS
MODEL: REST
SIZE: 26 3/4" 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 TYSONS URBAN DESIGN GUIDLINES

OPT 1
MAKE: SELUX
MODEL: ARC / ARC MINI
HID OR LED
AT106 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-175D-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: RENTE OR SCAPE
SIZE: 48"

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

### TRASH RECEPICLES

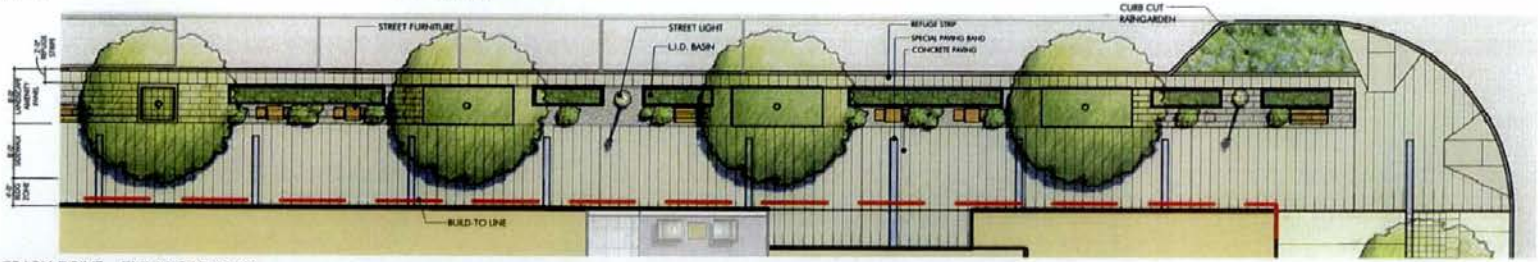
OPT 1
MAKE: VICTOR STANLEY, INC
MODEL: SDC-24 Steelstee
SIZE: 24-gallon

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"

FOR INFORMATION ONLY

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Landscape Architecture

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Fax: 202.857.1108
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STREETSCAPE ELEMENTS
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
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| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1/8" = 1'-0"

JOB No.

DATE : APRIL 05, 2011

FILE No. 7403-07-001

SHEET L5.1

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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CONCEPT IMAGERY

ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 09/28/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE H: NTS

JOB No.

DATE : APRIL 08, 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

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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SUSTAINABILITY STRATEGIES

ARBOR ROW

CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | H: NTS |
| JOB No. | |
| DATE : | APRIL 26, 2011 |
| FILE No. | 7403-07-001 |
| SHEET | L5.3 |

RECEIVED
Department of Planning & Zoning

OCT 05 2012

Zoning Evaluation Division

# ARBOR ROW - BLOCK A

PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

## FINAL DEVELOPMENT PLAN

FDP 2011-PR-023-1
(CONCURRENT RZ/CDP 2011-PR-023)

### CIVIL SHEET INDEX


| | |
|---|---|
| C1.0 | COVER SHEET |
| C2.0 | GENERAL NOTES AND CORRESPONDANCE |
| C2.1 | TABULATIONS AND WAIVERS |
| C3.0 | CONTEXT PLAN AND VICINITY MAP |
| C4.0 | OVERALL DEVELOPMENT PLAN |
| C5.0 | EXISTING CONDITIONS PLAN |
| C6.0 | FINAL DEVELOPMENT PLAN |
| C6.1 | PHASING EXHIBIT |
| C7.0 | WESTPARK DRIVE ROADWAY STRIPING AND CROSS SECTIONS |
| C7.1 | WESTBRANCH DRIVE ROADWAY STRIPING AND CROSS SECTIONS |
| C7.2 | FIRE VEHICULAR ACCESS EXHIBIT |
| C8.0 | ADEQUATE OUTFALL AND SWM CHECKLIST |
| C8.0.1 | ADEQUATE OUTFALL AND SWM CHECKLIST |
| C8.1 | SWM & BMP NARRATIVE |
| C8.2 | SWM & BMP NARRATIVE |
| C8.0 | CONCEPTUAL SWM PLAN |
| C8.1 | BLOCK A-1 SWM COMPUTATIONS |
| C8.2 | BLOCK A-1 SWM COMPUTATIONS |
| C8.3 | BLOCK A-2 SWM COMPUTATIONS |
| C8.4 | BLOCK A-2 SWM COMPUTATIONS |
| C10.0 | LOW IMPACT DEVELOPMENT CONCEPT PLAN |
| C11.0 | EXISTING VEGETATION MAP |


### ARCHITECTURAL SHEET INDEX


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| A-020 | SHADOW STUDY |
| A-101 | LEVEL B2 FLOOR PLAN |
| A-102 | LEVEL B1 FLOOR PLAN |
| A-103 | LEVEL 1 FLOOR PLAN |
| A-104 | LEVEL 2 FLOOR PLAN |
| A-105 | ROOF PLAN |
| A-201 | EAST WEST SECTIONS |
| A-202 | NORTH SOUTH SECTIONS |
| A-301 | SITE PERSPECTIVES |
| A-302 | SITE PERSPECTIVES |
| A-303 | SITE PERSPECTIVES |
| A-401 | BUILDING ELEVATIONS |
| A-402 | BUILDING ELEVATIONS |
| A-403 | BUILDING ELEVATIONS |
| A-404 | ENLARGED BUILDING ELEVATIONS |


### LANDSCAPE ARCHITECTURAL SHEET INDEX


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|---|---|
| L0.01 | URBAN PARKS PLAN |
| L0.02 | REFERENCE LANDSCAPE PLAN |
| L0.03 | ILLUSTRATIVE PLAN |
| L1.01 | LANDSCAPE PLAN - STREET LEVEL A-1 |
| L1.02 | LANDSCAPE PLAN - STREET LEVEL A-2 |
| L1.03 | LANDSCAPE PLAN - ROOF TERRACES |
| L2.01 | SITE SECTIONS - BLOCK 'A' |
| L2.02 | STREET SECTIONS |
| L3.01 | PLANTING DETAILS AND SCHEDULE |
| L5.01 | STREETSCAPE ELEMENTS |
| L5.02 | SUSTAINABILITY STRATEGIES |
| 49 | TOTAL SHEETS |



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CO- APPLICANT/CONTRACT PURCHASER
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LANDSCAPE ARCHITECTURE:
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ATTORNEYS:
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OCTOBER 5, 2012
AUGUST 29, 2012
JULY 23, 2012
JUNE 25, 2012
APRIL 20, 2012
DECEMBER 7, 2011

SHEET C1.0

## NOTES:

THE SUBJECT PROPERTY OF THIS APPLICATION IS DESCRIBED AS FOLLOWS:

| TAX MAP # | OWNER | DEED BOOK / PAGE | ACREAGE |
|---|---|---|---|
| 029-4-((7))-0010 | Frederick 8003 Westpark LLC | 21145/0050 | 5.39 AC |
| 029-4 (Westbranch Drive ROW) | Board of Supervisors Fairfax County Virginia | | 0.08 AC |

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

1. THE TOTAL APPLICATION AREA IS APPROXIMATELY 5.47 ACRES (INCLUDES ALL OF LOT 10 AND THE AREA OF WESTBRANCH DRIVE VACATION), CURRENTLY ZONED C-3 (OFFICE), AND CONSTITUTES "BLOCK A" OF THE PROPOSED ARBOR ROW DEVELOPMENT.

2. THE SUBJECT PROPERTY IS PART OF CONCURRENT REZONING APPLICATION RZ/CDP 2011-PR-023 WITH A PROPOSED ZONING CATEGORY OF PTC, AND IS INCLUDED AS PART OF PENDING APPLICATION PCA-86-D-005-7.

3. THE SUBJECT PROPERTY LIES WITHIN "SUBAREA TWO SOUTH WEST PARK" OF THE NORTH TYSONS CENTRAL 123 SUBDISTRICT" OF THE TYSONS CORNER URBAN CENTER PLAN." THE PROPOSED DEVELOPMENT IS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE COMPREHENSIVE PLAN AS DESCRIBED IN THE APPLICANT'S/CO-APPLICANT'S STATEMENT OF JUSTIFICATION.

4. THE TOPOGRAPHIC INFORMATION ASSOCIATED WITH LOT 10 IS AT A CONTOUR INTERVAL OF TWO (2) FEET BASED ON FIELD RUN SURVEY COMPLETED BY BOWMAN CONSULTING IN 2011.

5. THE BOUNDARY INFORMATION ASSOCIATED WITH LOT 10 IS FROM A FIELD RUN SURVEY PREPARED BY BOWMAN CONSULTING GROUP COMPLETED IN APRIL 2010.

6. THERE IS ONE EXISTING OFFICE BUILDING OF APPROXIMATELY 74,548 S.F. TOTAL GROSS FLOOR AREA AND ASSOCIATED SURFACE PARKING LOTS ON THE SUBJECT PROPERTY.

7. THE COUNTY TRAILS MAP IDENTIFIES NO PLANNED TRAILS ALONG THE FRONTAGE OF THE SUBJECT PROPERTY.

8. THE PROPERTY IS LOCATED IN THE BLUE PLAINS/SCOTT'S RUN E-1 SANITARY SEWER DISTRICT WATERSHED, AND THE SCOTT'S RUN STORM DRAINAGE WATERSHED.

9. A PORTION OF THE LOT 10 APPLICATION AREA LIES WITHIN A RESOURCE PROTECTION AREA (RPA) (PER APPROVED PLAN #000312-RPA-002-1) WHICH ALSO INCLUDES AREA WITHIN A RECORDED FLOODPLAIN EASEMENT. AS SET FORTH IN THE PROFFERS, MINOR IMPROVEMENTS PROPOSED WITHIN THIS RPA WILL BE PROCESSED FOR APPROVAL THROUGH DPW&ES UNDER SEPARATE APPLICATION.

10. THERE ARE NO KNOWN UTILITY EASEMENTS OF 25 FEET OR GREATER IN WIDTH ON THE SITE.

11. THERE ARE NO AREAS CONTAINING SCENIC ASSETS. THE RPA ON SITE MAY BE CONSIDERED A NATURAL FEATURE DESERVING OF PROTECTION OR PRESERVATION TO THE EXTENT POSSIBLE WITH ALLOWABLE IMPROVEMENTS AS SHOWN WITHIN THIS FDP.

12. THERE ARE NO KNOWN GRAVES OR BURIAL SITES ON THE SUBJECT PROPERTY.

13. TO THE BEST OF OUR KNOWLEDGE THERE WILL BE NO ADVERSE IMPACTS ON ADJACENT AND NEIGHBORING PROPERTIES.

14. ALL NECESSARY PUBLIC UTILITIES ARE READILY ACCESSIBLE TO THE SITE OR WILL BE EXTENDED/RELOCATED OR IMPROVED BY THE APPLICANT'S/CO-APPLICANT'S OR UTILITY COMPANY AS MAY BE APPROPRIATE FOR THE PROPOSED DEVELOPMENT. EXISTING UTILITIES SHOWN HEREON WERE OBTAINED FROM FIELD OBSERVATION/SURVEY AVAILABLE RECORDS, AND COUNTY RECORD GIS INFORMATION.

15. TO THE BEST OF OUR KNOWLEDGE THE PROPOSED DEVELOPMENT CONFORMS TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS, WITH THE EXCEPTIONS LISTED HEREIN.

16. STORM WATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) REQUIREMENTS FOR THIS SITE ARE PROPOSED THROUGH THE USE OF BOTH EXISTING OFF SITE SWM/BMP SURFACE PONDS AND ON-SITE UNDERGROUND FACILITY AS CONCEPTUALLY SHOWN ON THE FDP. APPLICANT'S/CO-APPLICANT'S RESERVES THE RIGHT TO PROVIDE TEMPORARY STORM WATER MANAGEMENT AND BMP FACILITIES (I.E. PONDS, INFILTRATION SYSTEMS, UNDERGROUND VAULTS ETC) IF THE DEVELOPMENT IS TO OCCUR IN PHASES. REFER TO "SWM DEVIATION NARRATIVE" ON SHEET C-8.2

17. SITE AMENITIES, FEATURES AND FURNISHINGS REPRESENTED HEREON ARE CONCEPTUAL AND, AS SUCH, ARE INTENDED TO REFLECT THE GENERAL THEME AND CHARACTER OF THE PROPOSED DEVELOPMENT. FINAL SELECTION MAY VARY AT THE TIME OF SITE PLAN, BUT WILL BE CONSISTENT WITH THE QUALITY OF THE DESIGN REPRESENTED HEREON. ADDITIONAL SITE AMENITIES AND FEATURES SUCH AS PLANTERS, GAZEBOS, BENCHES OTHER SEATING AREAS, WALKWAYS, TRELLISES, WATER FOUNTAINS OR SPECIAL FEATURES, PUBLIC ART, SIGNS, WALLS, LIGHTS, UTILITY STRUCTURES AND SIMILAR FEATURES NOT REPRESENTED HEREON MAY BE PROVIDED AS LONG AS THE RESULTANT DEVELOPMENT IS IN SUBSTANTIAL CONFORMANCE WITH THE QUALITY REPRESENTED ON THE GRAPHICS.

18. THE DEVELOPMENT SCHEDULE FOR THIS PROJECT IS DEPENDENT ON MARKET CONDITIONS AND THE SECURING OF ALL REQUIRED APPROVALS AND PERMITS. IT IS ANTICIPATED AT THIS TIME THAT PROPOSED BUILDING A-2 WILL BE CONSTRUCTED FIRST, WITH ASSOCIATED FRONTAGE IMPROVEMENTS ETC., AND PROPOSED BUILDING A-1 WOULD BE CONSTRUCTED SOMETIME THEREAFTER.

19. TO THE BEST OF OUR KNOWLEDGE THE PROPOSED DEVELOPMENT IS IN ACCORDANCE WITH THE DEVELOPMENT CRITERIA OF THE COMPREHENSIVE PLAN, PARTICULARLY THROUGH APPROPRIATE SITE DESIGN, SIGNIFICANT LANDSCAPING, PROVISION OF SITE AMENITIES AND THE DESIGN OF AN APPROPRIATE STREETSCAPE THAT COMPLIMENTS THE EXISTING COMMUNITY.

20. 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 AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 116.4, 302.4, AND 355; ANY HAZARDOUS WASTE AS SET FORTH IN COMMONWEALTH OF VIRGINIA/DEPARTMENT OF WASTE MANAGEMENT VR 672-10-1 - VIRGINIA HAZARDOUS WASTE MANAGEMENT REGULATIONS; AND/OR ANY PETROLEUM PRODUCTS AS DEFINED IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 280.

21. 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 AS DESCRIBED IN SECTION 16-102. OF THE ZONING ORDINANCE.

22. PARKING WILL BE PROVIDED IN A COMBINATION OF ABOVE AND BELOW GRADE PARKING STRUCTURES AND SURFACE (ROADWAY) SPACES AND IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 6-509 OF THE ZONING ORDINANCE. THE APPLICANT/CO-APPLICANT RESERVES THE RIGHT TO PROVIDE MORE OR LESS THAN THE NUMBER OF PARKING SPACES PRESENTED HEREON PROVIDED THAT THE AMOUNT OF PARKING SPACES WILL BE SUFFICIENT TO COMPLY WITH ARTICLE 6-509 AND ARTICLE 11, PART 1 OF THE ZONING ORDINANCE. PARKING PROVIDED WITHIN THE GARAGE STRUCTURE INCLUDES TANDEM AND VALET SPACES. THE NUMBER OF ABOVE GRADE STORIES WILL NOT INCREASE FOR PARKING STRUCTURES FROM THAT SHOWN ON THE FDP.

23. ARCHITECTURAL DESIGN AND LANDSCAPE FEATURES SHOWN ARE SUBJECT TO MODIFICATIONS, PROVIDED THAT THE GENERAL DESIGN STRATEGY, QUALITY AND CHARACTERISTICS OF THE PROJECT ARE MAINTAINED AND IN SUBSTANTIAL CONFORMANCE WITH THE CDP. THE EXACT LOCATION, SHAPE AND SIZE OF THE PROPOSED BUILDING(S), WINDOWS, BALCONIES, AND PARKING STRUCTURE(S) SHOWN ON THE GRAPHIC ARE SUBJECT TO ADJUSTMENT AND REFINEMENT WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN SO LONG AS THEY REMAIN IN SUBSTANTIAL CONFORMANCE WITH THE FDP.

24. DEDICATION OF A PORTION OF THE APPLICATION AREA IS PROPOSED FOR A PORTION OF WESTPARK DRIVE. APPLICANT/CO-APPLICANT RESERVES THE RIGHT TO UTILIZE AREA OF DEDICATION IN THE CALCULATION OF PROPOSED DENSITY AND F.A.R. PER ARTICLE 2-308-4 OF THE ZONING ORDINANCE.

25. PROPOSED SIGNAGE WILL BE PROVIDED IN ACCORDANCE WITH THE ZONING ORDINANCE OR A COMPREHENSIVE SIGN PLAN AS MAY BE APPROVED BY THE PLANNING COMMISSION.

26. TRANSITIONAL SCREENING IS NOT REQUIRED AS SET FORTH IN ARTICLE 6-510.C OF THE ZONING ORDINANCE.

27. APPLICANT'S/CO-APPLICANT'S RESERVE THE RIGHT TO UTILIZE EXISTING SURFACE PARKING FOR INTERIM CONDITION IN AREAS RESERVED FOR FUTURE DEVELOPMENT, SEE PROFFERS.

28. THE SUBJECT PROPERTY MAY BE SUBDIVIDED IN THE FUTURE FOR THE PURPOSE OF SALE, PHASING, OR JOINT VENTURE. ANY PROPOSED SUBDIVISION SHOWN ON THE FDP MAY BE MODIFIED ADMINISTRATIVELY BY THE DIRECTOR OF DPW&ES WITHOUT REQUIRING MODIFICATION OF THE FDP.

29. PROPOSED ROADWAY IMPROVEMENTS (ENTRANCES, CURBING, MEDIAN ETC) MAY REQUIRE EXCEPTION FROM VDOT "ACCESS MANAGEMENT DESIGN STANDARDS" AND P.F.M., (AS MAY BE DETERMINED AT FINAL SITE PLAN APPLICATION) IN ORDER TO CONFORM WITH THE TYSONS TRANSPORTATION DESIGN STANDARDS FOR THE TYSON URBAN CENTER. APPROVAL OF SUCH EXCEPTIONS SHALL NOT REQUIRE AMENDMENT TO THE FDP.

## NOTES (CONTINUED):

30. INDIVIDUAL BUILDING HEIGHTS AND NUMBER OF FLOORS/STORIES SHOWN ARE CONCEPTUAL AND MAY BE CHANGED PROVIDED THE PROPOSED MINIMUM MAXIMUM BUILDING HEIGHT IS NOT EXCEEDED, AND ARE IN SUBSTANTIAL CONFORMANCE WITH THE FDP

31. 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 TABULATIONS, THE FOLLOWING ADDITIONAL USES SHALL BE PERMITTED WITHIN ARBOR ROW WITHOUT REQUIRING AN AMENDMENT TO THE CDP AND LISTED ON INDIVIDUAL FDPs, INCLUDING BUT NOT LIMITED TO ACCESSORY USES, ATMs, BUSINESS SERVICE and SUPPLY SERVICE ESTABLISHMENTS, QUICK SERVICE FOOD STORES, FAST FOOD RESTAURANTS, HEALTH CLUBS and similar COMMERCIAL RECREATIONAL USES, COMMUNITY USES, EATING ESTABLISHMENTS, FINANCIAL INSTITUTIONS, GARMENT CLEANING ESTABLISHMENTS, OFFICES, PERSONAL SERVICE ESTABLISHMENTS, PUBLIC and QUASI PUBLIC USES (INCLUDING A CONFERENCE CENTER OPERATED BY A NON-PROFIT ORGANIZATION, AS PERMITTED UNDER THE COUNTY ZONING ORDINANCE), RETAIL SALES ESTABLISHMENTS AND SIMILAR USES.

DRIVE-IN FINANCIAL INSTITUTIONS AND CHILD CARE CENTER SHALL BE PERMITTED, SUBJECT TO APPROVAL AS SHOWN ON A FDP OR SE.

PURSUANT TO PARAGRAPH 20 OF SECTION 10-102 OF THE ZONING ORDINANCE, "LIVE-WORK UNITS" SHALL BE DEEMED A PERMITTED "ACCESSORY USE".

32. "PRIVATE ACCESS ROADS" SHOWN ON THE FDP SHALL NOT BE CONSIDERED "STREETS" AND, AS SHOWN, DEVIATE FROM THE TYSONS TRANSPORTATION DESIGN STANDARDS AND STREETSCAPE RECOMMENDATIONS IN THE COMPREHENSIVE PLAN

33. 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.

34. ONE ELECTRIC CHARGING STATION SERVING TWO SPACES SHALL BE PROVIDED WITHIN THE GARAGE.

## 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 PUBLIC ROAD, ARE CONSIDERED EXEMPT FROM 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 (8) OF THAT SUBSECTION, INCLUDING APPROVAL OF A WRITTEN REQUEST FOR THE EXEMPTION BY THE DIRECTOR OF DPWES. THE TWO STORM SEWER OUTFALLS THAT 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-1", A WQIA WILL BE SUBMITTED IN ACCORDANCE WITH ARTICLE 4 OF THE CPBO 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 ABUT 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 DPWES. 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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GENERAL NOTES AND CORRESPONDANCE

# ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 04/20/12 | PCA/CL PROF 1485 |
| 06/25/12 | PER COUNTY COMMENTS |
| 07/31/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE: H: NO SCALE

JOB No.

DATE: December 7, 2011

FILE No. 7403-09-003

SHEET C2.0

## WAIVER / MODIFICATION REQUESTS (AS APPROVED WITH RZ/CDP 2011-PR-023) FOR INFORMATION:

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 6-505.7 REQUIRING THE DESIGNATION OF SPECIFIC OUTDOOR DINING AREAS ON THE CDP/FDP, RATHER, OUTDOOR DINING MAY BE PROVIDED IN ANY AREA WHERE THE USE INCLUDES DINING ACTIVITY AND WILL BE INDICATED AT THE TIME OF FINAL SITE PLAN.

ZONING ORDINANCE ARTICLE 10 – ACCESSORY USES, ACCESSORY SERVICE USES, AND HOME OCCUPATIONS
- AS ALLOWED WITHIN ZONING ORDINANCE SECTION 10-104.3.E AND G APPLICANT REQUESTS A MODIFICATION 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 AS INDICATED ON THE CDP.

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, FOR RESIDENTIAL AND OFFICE USES. SUCH STACKED SPACES IN ACCORDANCE WITH SECTION 11-101(1) AND 6-508(1) MAY COUNT TOWARD REQUIRED PARKING SPECIFIED IN THE ZONING ORDINANCE, AND SHALL BE PROVIDED IN ACCORDANCE WITH THE PARKING PLAN SUBMITTED WITH THIS APPLICATION.
- 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 IS REQUESTED IN FAVOR OF THOSE WHICH ARE SHOWN ON THE CDP.
- MODIFICATION OF SECTION 11-202(4) REQUIRING MINIMUM DISTANCE OF FORTY FEET (40') OF A LOADING SPACE IN PROXIMITY TO TRAVEL WAYS OR STREETS, AS PERTAINS TO BLOCK A, TO THAT AS DEMONSTRATED ON THE CDP.

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, AS ALLOWED PER SECTION 13-202, PARA 6, TO THAT SHOWN ON THE CDP AND DESCRIBED BELOW:
  - a. FOR INTERIM SURFACE PARKING LOTS: INTERIOR LANDSCAPING WILL BE DEMONSTRATED ON SUBSEQUENT FDP APPLICATIONS AND WILL UTILIZE EXISTING VEGETATION WITHIN PARKING LOTS, TO THE EXTENT POSSIBLE.
  - b. FOR PROPOSED ABOVE GRADE PARKING STRUCTURES: INTERIOR LANDSCAPING MAY INCLUDE INNOVATIVE PLANTING DESIGN AND TECHNIQUES, INCLUDING BUT NOT LIMITED TO, OVERHEAD VEGETATIVE ARBORS.
  - c. WITHIN BLOCK 'E' – WAIVER OF THE INTERIOR PARKING LOT LANDSCAPE REQUIREMENTS FOR THE EXPOSED PARTIAL UPPER LEVEL, AS THE ELEVATION OF THE DECK IS APPROXIMATELY TEN (10') FEET BELOW THE SURROUNDING COURTYARD AND IS SCREENED FROM VIEW OF ADJACENT PROPERTIES BY ARCHITECTURAL ELEMENTS.
- MODIFICATION OF PERIPHERAL LANDSCAPE REQUIREMENTS SECTION 13-203-5, FOR ABOVE GRADE PARKING STRUCTURES AND INTERIM SURFACE LOTS AS ALLOWED BY SECTION 13-203, PARA 3, TO THAT SHOWN ON THE CDP AND DESCRIBED BELOW:
  - a. FOR INTERIM SURFACE PARKING LOTS: PERIPHERAL LANDSCAPING WILL BE DEMONSTRATED ON SUBSEQUENT FDP APPLICATIONS AND WILL UTILIZE EXISTING VEGETATION WITHIN PARKING LOTS, TO THE EXTENT POSSIBLE.
  - b. FOR PROPOSED ABOVE GRADE PARKING STRUCTURES: PERIPHERAL LANDSCAPING WILL BE PROVIDED USING TREES WITHIN URBAN STREETSCAPES (PER TYSONS URBAN DESIGN GUIDELINES) WHERE GARAGES ARE ADJACENT TO STREET FRONTAGE AND BY EXISTING TOPOGRAPHIC FEATURES OR OTHER URBAN DESIGN ELEMENTS WHERE GARAGES ARE ADJACENT TO NON STREET FRONTAGE.

ZONING ORDINANCE ARTICLE 16 – DEVELOPMENT PLANS
- WAIVER OF ZONING ORDINANCE SECTION 16-403 REQUIRING THE SUBMISSION OF A FINAL DEVELOPMENT PLAN APPLICATION ASSOCIATED WITH THE PUBLIC ROADWAY AND INFRASTRUCTURE PHASING EXHIBIT SHOWN WITHIN THE CDP.

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-(1) REQUIRING STREETSCAPE IMPROVEMENTS WITHIN THE R.P.A ALONG WESTPARK DRIVE NEAR THE WESTERN PORTION OF BLOCK A, AND IN RETURN, PROVISION OF CONCRETE SIDEWALK AS SHOWN ON THE CDP.
- MODIFICATION OF SECTION 17-201-(2) AND (4) TO PROVIDE INTERIM ROAD AND TRAIL CONDITIONS ALONG THE WESTPARK DRIVE FRONTAGE OF BLOCK 'F' (AS SHOWN ON THE CDP), AS A RESULT OF THE CONSTRUCTION OF THE I-495 EXPRESS LANE IMPROVEMENTS AND IN ORDER TO TRANSITION THE ULTIMATE IMPROVEMENTS.

  WITH REGARD TO HANOVER PARCEL (T.M. #29-2-((15))-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 6-0303.8, TO ALLOW STORM WATER MANAGEMENT FACILITIES (SWM AND BMP) TO BE PROVIDED WITHIN UNDERGROUND SYSTEMS WITHIN THE RESIDENTIAL BLOCKS OF THE PROPOSED DEVELOPMENT.
- MODIFICATION OF PFM SECTION 7-0800 TO ALLOW TANDEM/VALET PARKING SPACES, CONTROLLED BY BUILDING MANAGEMENT, AND THAT SUCH SPACES SHALL COUNT TOWARD REQUIRED PARKING.
- MODIFICATION OF SECTION 7-0802.2 (PARKING GEOMETRIC STANDAROS), TO ALLOW FOR UP TO 1.5 FEET OF PROJECTION OF STRUCTURAL COLUMNS INTO THE REQUIRED PARKING STALL AREA. THE PARKING STALLS AFFECTED BY SUCH STRUCTURAL COLUMNS SHALL COUNT TOWARD THE NUMBER OF REQUIRED PARKING SPACES FOR UP TO 10% OF THE TOTAL SPACES PROVIDED.
- MODIFICATION OF SECTION 12-0508 TREE PRESERVATION TARGET, AS ALLOWED BY DEVIATIONS DESCRIBED IN SECTION 12-0508.3A(1) THROUGH SECTION 12-0508.3A(3) AND AS DESCRIBED IN REQUEST LETTER ATTACHED ON SHEET C-2.2
- MODIFICATION OF SECTION 12-0511-4 FOR REQUIRED TEN PERCENT TREE CANOPY COVERAGE ON INDIVIDUAL LOTS/LAND BAYS, TO ALLOW FOR CANOPY TO BE CALCULATED ON THE OVERALL ARBOR ROW DEVELOPMENT AREA, AS DEMONSTRATED ON THE CDP HEREIN.

### TABLE 1

**Site Tabulation**

| | | |
|---|---|---|
| Existing Zone: | C-3 (Office District) | |
| Proposed Zone: | PTC (Planned Tysons Corner Urban District (By RZ/CDP 2011-PR-023) | |
| Existing Site Area | 234,733 Sq. Ft. | 5.39 AC |
| Area of Right of Way Vacation (West Branch Drive) | +/- 3,428 Sq. Ft. | 0.08 AC |
| Total Area of FDP | 238,161 Sq. Ft. | 5.47 AC |

**Density Tabulation**

| | | |
|---|---|---|
| Existing Site Area | 234,733 Sq. Ft. | 5.39 AC |
| Area of Right of Way Dedication (West Park Drive) | +/- 8,936 Sq. Ft. | 0.2052 AC |
| Area of Right of Way Vacation/Abandonment (West Branch Drive) | +/- 3,428 Sq. Ft. | 0.08 AC |
| Total Area for Density Purposes | 238,161 Sq. Ft. (1) | 5.47 AC (1) |
| Proposed Gross Floor Area: | 744,800 Sq. Ft (2) | |
| Floor Area Ratio: | 3.13 (3) | |

(1) Includes square footage reserved from proposed dedication of Westpark Drive (as allowed per Z.O. Section 2-308-4) and area of proposed ROW Vacation within Westbranch Drive. Final area of dedication and vacation/abandonment to be determined with final site plan.

(2) GFA includes Superlative GFA for Public Facilities Contribution from Hanover Parcel (Tax # 29-2-((15))-B2) and Bonus GFA for provision of WDU. Refer to Residential Density Tabulation Table 1

(3) FAR shown for Block A within this FDP application is demonstrated as a stand alone calculation. Refer to rezoning application RZ/CDP 2011-PR-023 for FAR calcuation of entire base zoning application area (includes Blocks A-F)

### TABLE 3
### (OVERALL ARBOR ROW RESIDENTIAL DENSITY TABULATION)

**2,062,320 GFA AVAILABLE 'OVERALL' SITE AREA GFA PER COMP PLAN-(Table 2)**

- 1,108,420 GFA (PROPOSED OFFICE BLOCKS B-C, & F)
- 312,000 GFA (PROPOSED HOTEL BLOCK D)
- 38,424 GFA (PROPOSED RETAIL - BLOCKS A-F)

**= 203,476 GFA AVAILABLE RESIDENTIAL GSF "ON-SITE"**

**+ 518,783 GFA AVAILABLE FROM HANOVER SITE (345,522 SF@ 1.5 F.A.R)**

**= 871,518 GFA "BASE" RESIDENTIAL AVAILABLE (553,310 SF + 318,208 SF)**

**+ 174,304 GFA WFDU BONUS (87,152 SF x 2DU)**

**= 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)**

### TABLE 2
### Development Tabulation - Table 2

| Building | Allowable Building Height | Proposed Building Height(11)(12) Min/Max | Penthouse Height (1)(2) | Maximum Proposed Stories /Floors (1)(9) | Use (3) | Proposed GFA by Use (4) | Proposed Maximum Building GFA (4)(12) | Multi-Family Dwelling Units (5)(8) | Required Parking 1/4 - 1/2 mile (Per 1000 GFA) (6) Min | Max | Total Required Parking (6) Min | Max | Parking Provided (6) | Parking Ratio Per Use | Loading Space Required | Loading Space Provided (10) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 175'-225' | 79'-139' | N/A | 6 | Residential | 279,405 | 279,405 | 297 | 1.1 | 1.7 | 294 | 454 | 347 | 1.3 D.U. | | 2 |
| A2 | 175'-225' | 79'-275' | N/A | 6,22 | Residential | 407,595 | 465,395 | 427 | 1.1 | 1.7 | 470 | 726 | 595 | 1.3 D.U. | | 2 |
| | | | | | Retail/Services (3) | 8,000 | | | 0 | 6 | 0 | 18 | 40 | (7) | | |
| Total | | | | | | | 744,800 | (Up To) 724 | | | 764 | 1180 | 942 | | 5 | 4 |

(1) Individual building heights and number of floors/stories shown are conceptual and may be changed provided the allowable building height is not exceeded. (Refer to Architectural Site Sections for Average Grade Elevations)

(2) Building Height includes penthouse and mechanical screens.

(3) Retail and/or Service use may include a variety of commercial type uses including but not limited to eating establishments and fast food restaurants (Refer to Note # 31 on sheet C 2.0). Areas designated for retail use may also be converted to up to ten (10) 'Live Work' units as determined with final site plan. In the event this conversion occurs, a maximum of 704 total dwelling units shall be permitted within Block A.

(4) The square footage for individual uses and buildings shown is conceptual. The Applicant reserves the right to transfer square footage between and within uses (residential or service/retail) and buildings provided the allowable overall FAR is not exceeded.

(5) Number of dwelling units/bedroom types may be changed and will be determined at the time of final site plan.

(6) Parking required and provided is estimated based on FDP documents. For reporting purposes herein, residential parking is based an approximate unit type mix of 45% 1 BRD and 55% 2 BRD (subject to change with Final Site Plan). Number of required parking spaces may be changed based on the final dwelling unit count, final bedroom mix, final specific building uses, and final GFA, which is to be determined at the time of final site plan. The Applicant reserves 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.

(7) Per Section 6-508.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)

(8) The required number of WDUs will be determined at final site plan based on the total square footage of 'base' residential area constructed.

(9) Up to six (6) Stories inclusive of possible mezzanine.

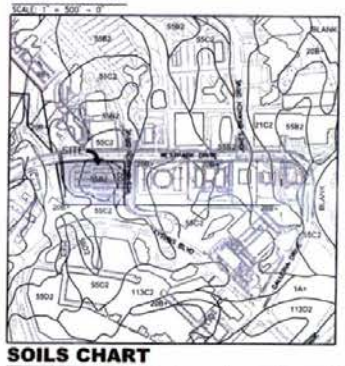
(10) Loading space reduction as approved by waiver granted with CDP.

(11) Min-Max heights refer to the allowable maximum height range.

(12) Proposed minimum GFA shall be fifty percent (50%) of proposed maximum GFA.

## SOILS MAP

SCALE: 1" = 500' - 0"




## SOILS CHART

| SOIL NUMBER | SOIL SERIES | PROBLEM CLASS | DRAINAGE | SEPTIC FIELDS | EROSION POTENTIAL |
|---|---|---|---|---|---|
| 20B+ | MEADOWVILLE | B | MARGINAL | POOR | MODERATE |
| 21C2 | MANOR | C | GOOD | GOOD | HIGH |
| 21D2 | MANOR | C | GOOD | GOOD | HIGH |
| 55B2 | GLENELG | C | GOOD | GOOD | HIGH |
| 55C2 | GLENELG | C | GOOD | GOOD | HIGH |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TABULATIONS AND WAIVERS

# ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 04/30/12 | REVISE PROP TABS |
| 06/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

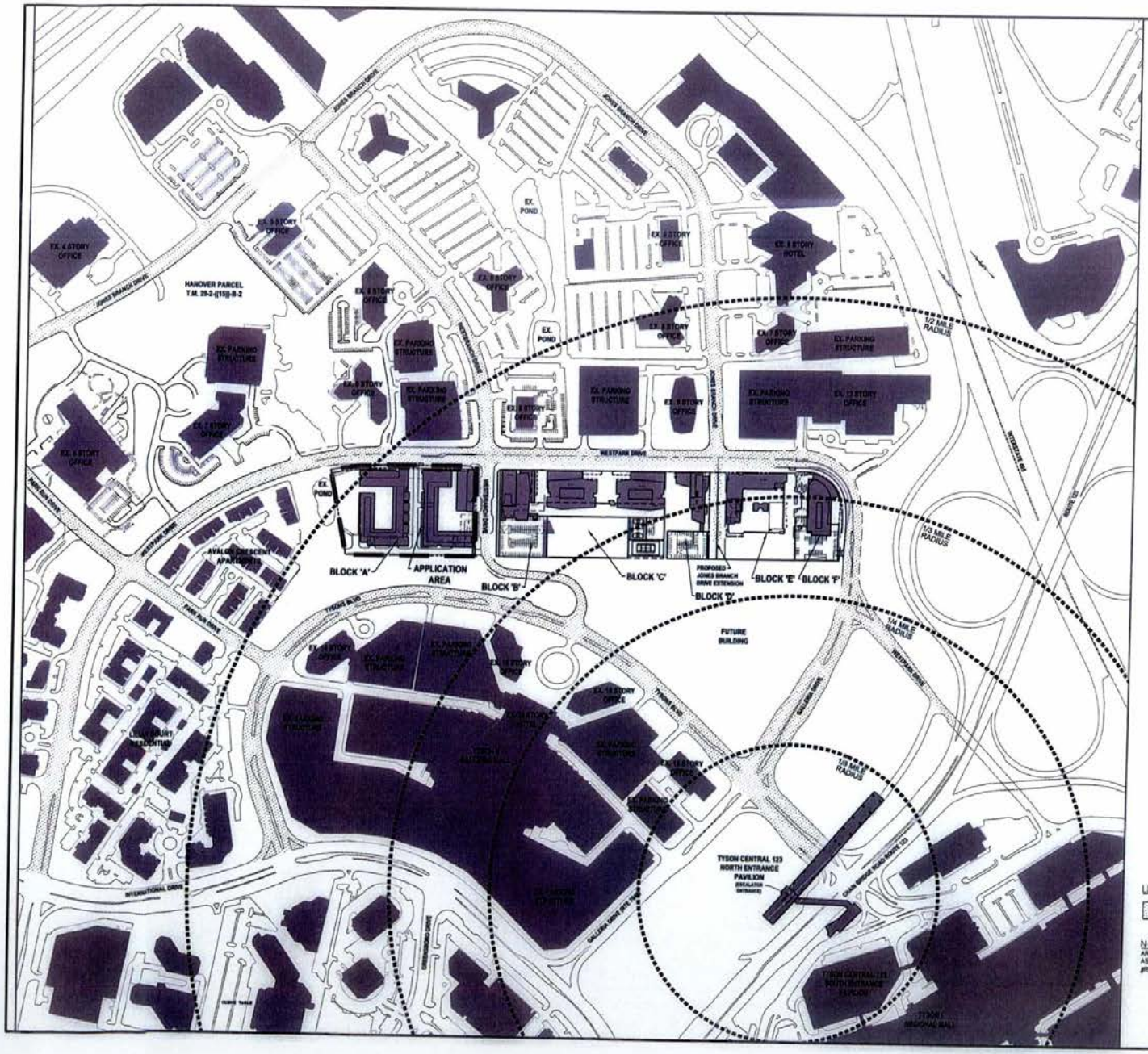
SCALE: H: NO SCALE

JOB No.:

DATE: December 7, 2011

FILE No. 7403-09-003

SHEET: C2.1




## VICINITY MAP

SCALE: 1" = 2000' - 0"

LEGEND:

EXISTING/PROPOSED PUBLIC ROADWAY

NOTE:
ARBOR ROW BLOCKS B-F ARE SHOWN FOR INFORMATION ONLY AS ASSOCIATED WITH OVERALL ARBOR ROW REZONING APPLICATION #RZ/CDP 2011-PR-023.

GRAPHIC SCALE

( IN FEET )
1 inch = 200 ft.

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CONTEXT PLAN AND VICINITY MAP

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

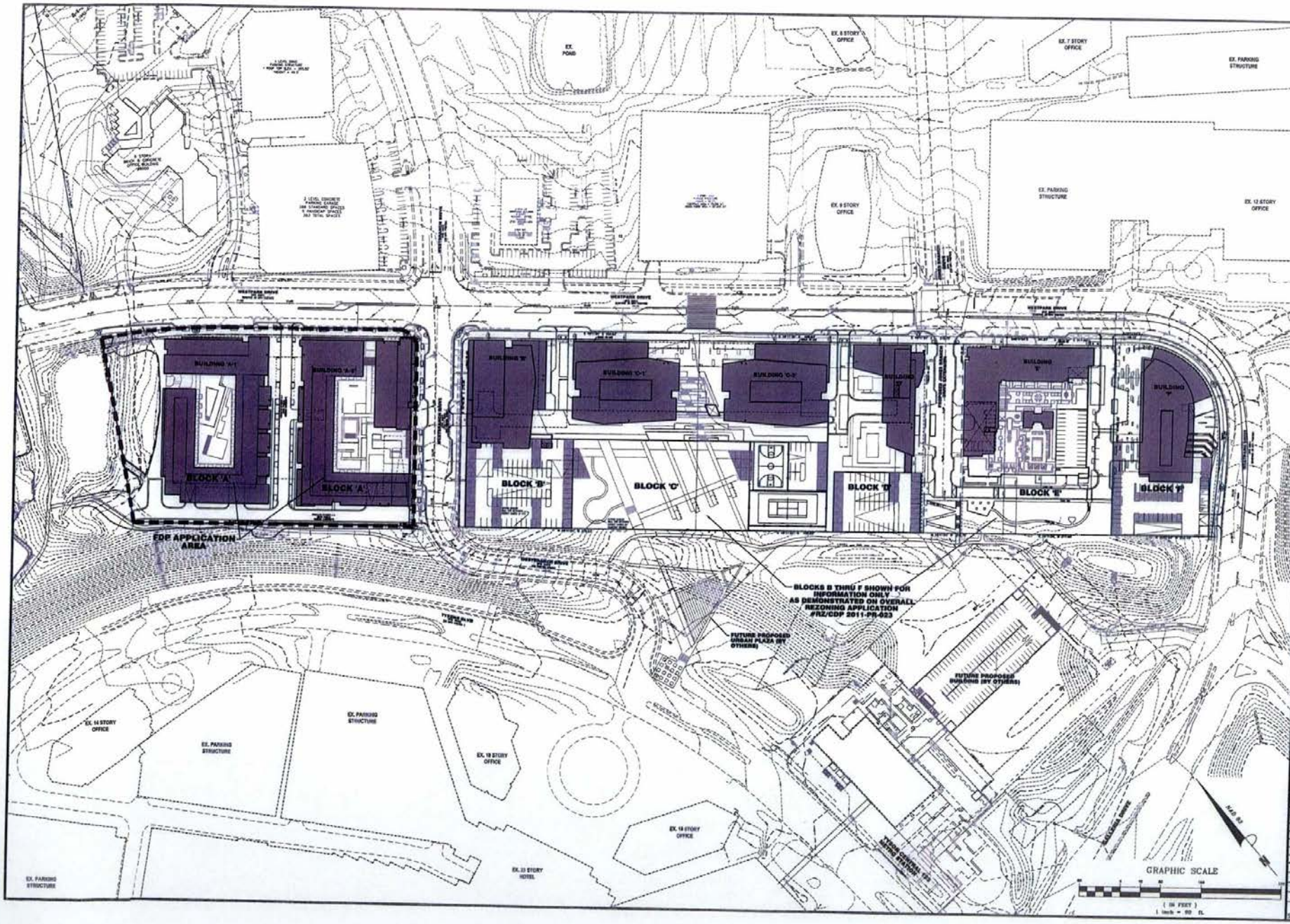
SCALE: H: 1"=200'

JOB No.

DATE: December 7, 2011

FILE No. 7403-09-003

SHEET C3.0

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# OVERALL DEVELOPMENT PLAN

## ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 04/23/12 | REVISE APP AREA |
| 06/23/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/23/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| DATE | DESCRIPTION |

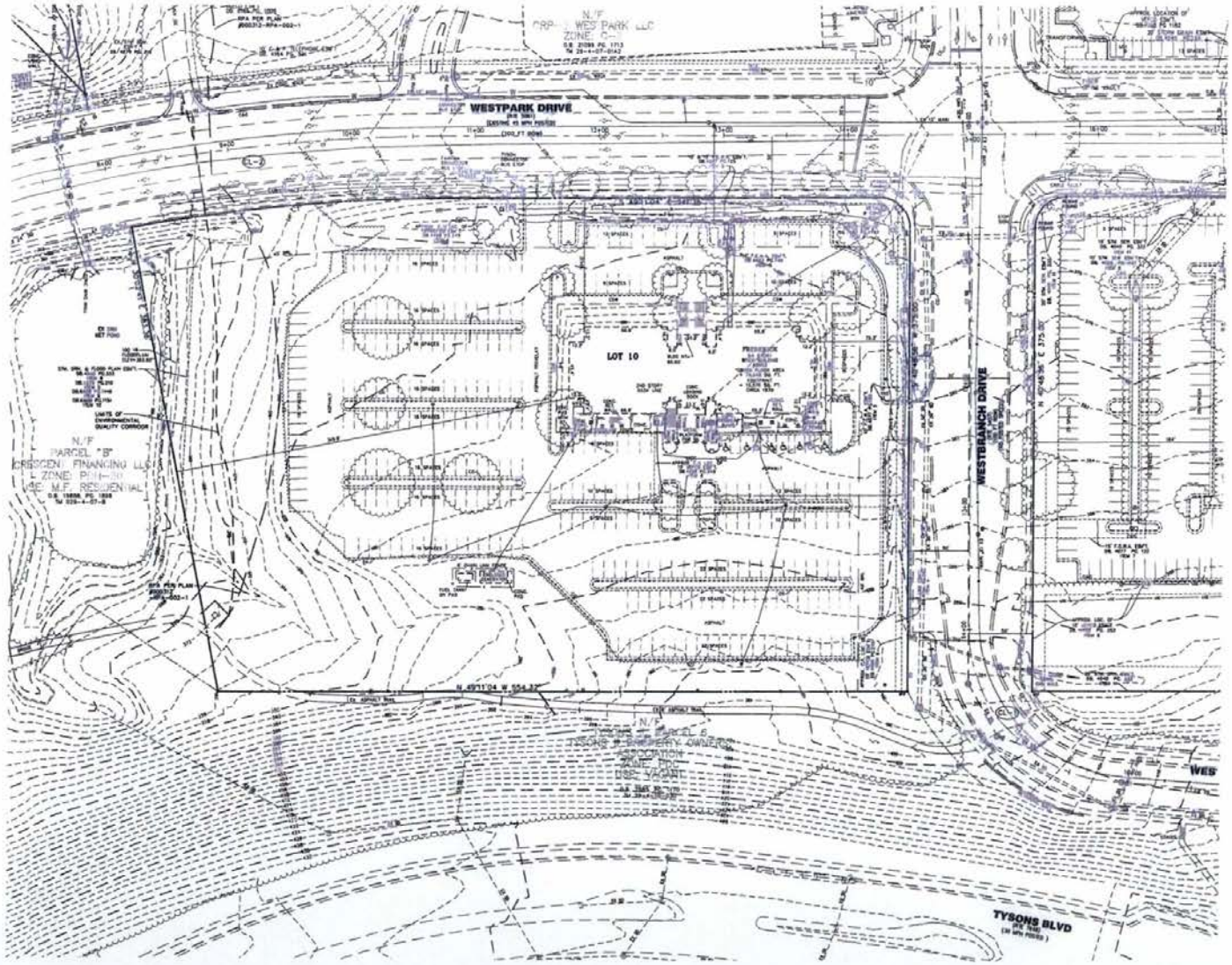
SCALE 1" = 60'

JOB No.

DATE December 7, 2011

FILE No. 7403-09-003

SHEET C4.0




NOTE:
1. RPA SHOWN HERE ON AS APPROVED WITH PLAN #00312-RPA-002-1.
2. EXISTING CONDITIONS SHOWN HEREON AS OF APRIL 26, 2011.
3. EXISTING BUILDING TO BE DEMOLISHED.

EXISTING ROADWAY CENTERLINE DATA

| | | | |
|---|---|---|---|
| WESTBRANCH DRIVE | CL-1 | EXISTING CENTERLINE RADIUS | |
| WESTPARK DRIVE | CL-2 | 125 | |
| | | NONE | |

CURVE TABLE: LOT 10

| CURVE | RADIUS | LENGTH | CHORD BEARING | CHORD | DELTA | TANGENT |
|---|---|---|---|---|---|---|
| C1 | 1145.91 | 81.60' | S 64°11'11" E | 81.60 | 4°08'16" | 130.89 |
| C2 | 25.00 | 39.27' | S 64°11'11" E | 35.36 | 90°00'00" | 25.00 |

GRAPHIC SCALE

( IN FEET )
1 inch = 40 ft.

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# EXISTING CONDITIONS PLAN

## ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/20/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

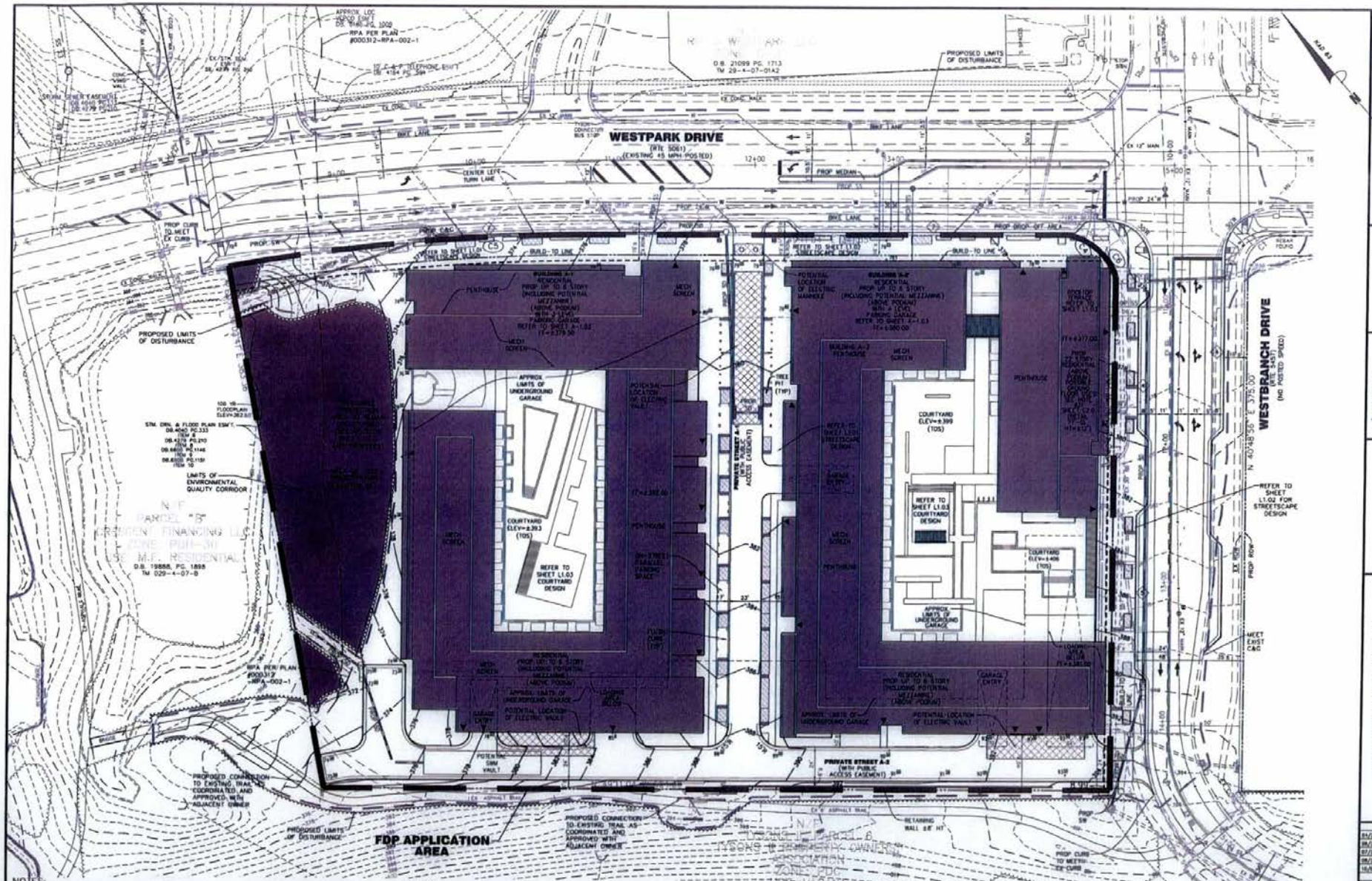
SCALE: H: 1" = 40'

JOB No.

DATE: December 7, 2011

FILE No. 7403-09-003

SHEET C5.0




NOTES:

1. REFER TO SHEET C7.0 AND C7.1 FOR PROPOSED ROAD DESIGN, STRIPING AND MARKING PLAN.
2. PROPOSED CONTOURS AND ELEVATIONS SHOWN ARE PRELIMINARY AND SUBJECT TO REVISION WITH FINAL ENGINEERING.
3. BUILD-TO LINE BASED ON COMPREHENSIVE PLAN URBAN DESIGN GUIDELINE.
4. CROSSWALK LOCATIONS ARE CONCEPTUAL AND SUBJECT TO APPROVAL BY VDOT.
5. REFER TO SHEET C8.1 FOR BLOCK "A" PHASING SEQUENCE.
6. STREETSCAPE IMPROVEMENTS WEST OF BUILDING A-1 ARE MODIFIED AS SHOWN HEREON.

LEGEND:

- (8) PROPOSED ON STREET PARKING QUANTITY. (FOR INFORMATION ONLY) SPACES SHALL NOT BE STRIPED OR METERED.
- ▶ PROPOSED BUILDING ENTRY
- APPLICATION AREA
- APPROXIMATE LIMITS OF DISTURBANCE

CURVE TABLE:

| CURVE | RADIUS | LENGTH | CHORD BEARING | CHORD | DELTA | TANGENT |
|---|---|---|---|---|---|---|
| C4 | 25.00' | 39.27' | S 04°11'03" E | 35.36' | 90°00'00" | 25.00' |
| C5 | 1446.31' | 261.00' | S 54°21'11" E | 260.63' | 10°20'23" | 130.85' |
| C6 | 15.00' | 19.59' | S 03°24'32" W | 18.33' | 74°49'08" | 11.47' |

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FINAL DEVELOPMENT PLAN
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-025-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 04/20/12 | REVISE RPT AREA |
| 06/20/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/20/12 | PER COUNTY COMMENTS |
| 10/09/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|

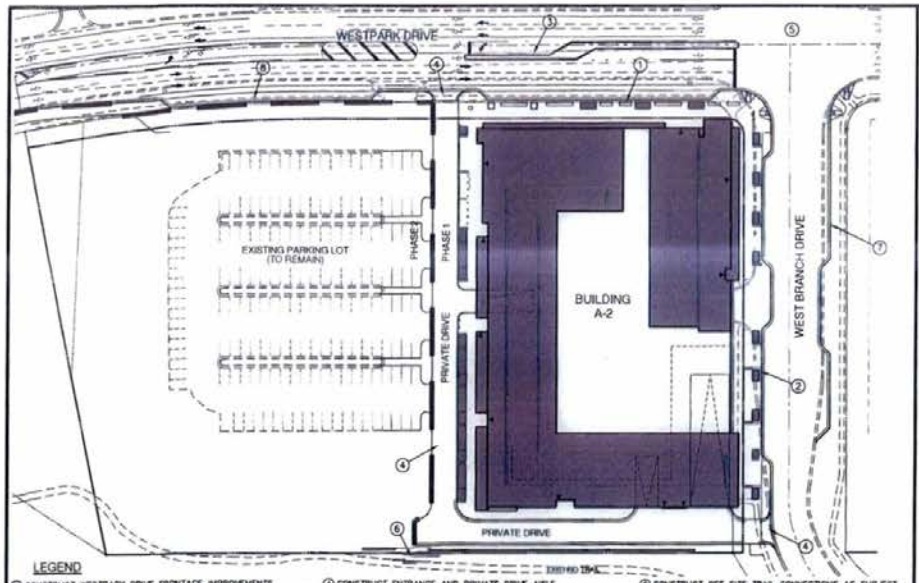
SCALE H: 1"=30'

JOB No.

DATE : December 7, 2011

FILE No. 7403-09-003

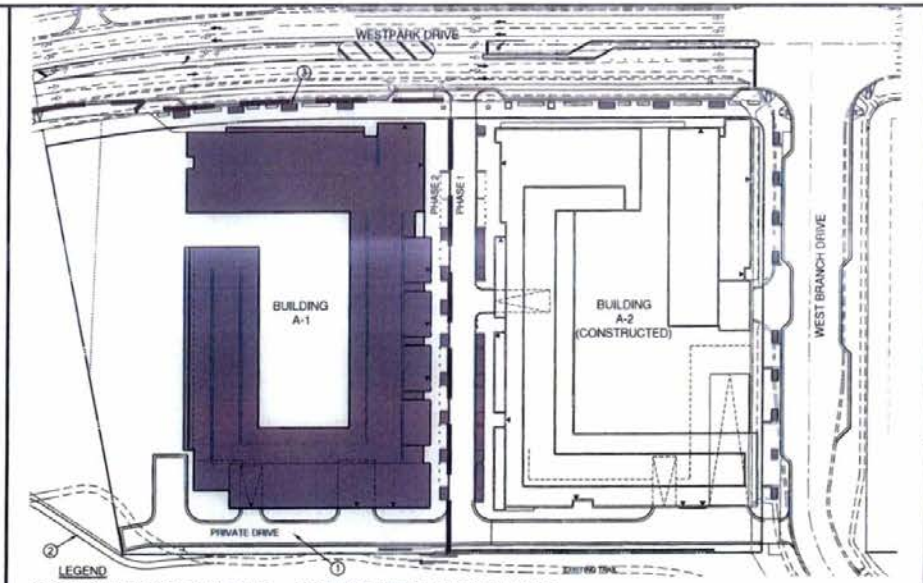
SHEET C6.0




LEGEND

① CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE(ALONG BLDG FRONTAGE OF A-2)).
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 PER PROFFER.
⑥ CONSTRUCT OFF SITE TRAIL CONNECTIONS AS SUBJECT TO AVAILABILITY OF OFFSITE EASEMENTS.
⑦ CONSTRUCT WESTBRANCH DRIVE EAST SIDE CURB, IF IMPROVEMENTS REQUIRED BY VDOT.
⑧ CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (CURB AND UTILITIES ONLY).

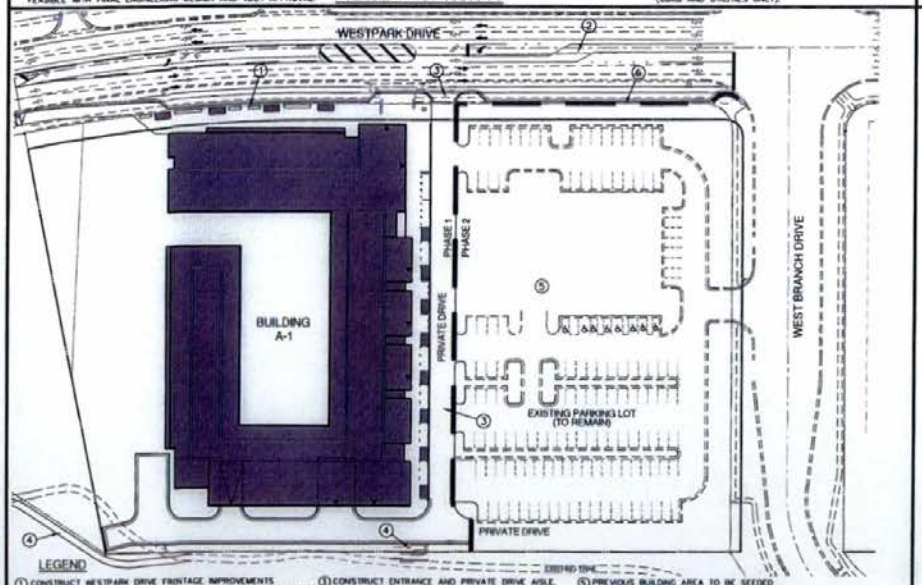
PHASE 1 - OPTION 'A'




LEGEND

① CONSTRUCT ENTRANCE AND PRIVATE DRIVE AISLE.
② CONSTRUCT OFF SITE TRAIL CONNECTIONS AS SUBJECT TO AVAILABILITY OF OFFSITE EASEMENTS.
③ CONSTRUCT REMAINING WESTPARK DRIVE STREETSCAPE ALONG A-1.

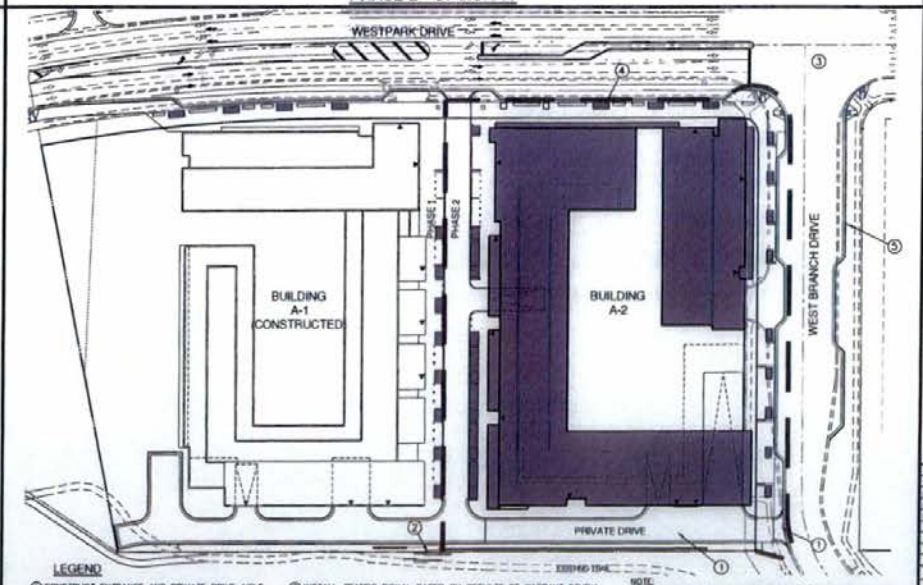
PHASE 2 - OPTION 'A'




LEGEND

① CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (ROADWAY AND STREETSCAPE(ALONG BLDG FRONTAGE OF A-1)).
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 CONNECTIONS AS SUBJECT TO AVAILABILITY OF OFFSITE EASEMENTS.
⑤ PREVIOUS BUILDING AREA TO BE SEEDED SUBJECT TO DEVELOPMENT OF PHASE II TIMING.
⑥ CONSTRUCT WESTPARK DRIVE FRONTAGE IMPROVEMENTS (CURB AND UTILITIES ONLY).

PHASE 1 - OPTION 'B'




LEGEND

① CONSTRUCT ENTRANCE AND PRIVATE DRIVE AISLE.
② CONSTRUCT OFF SITE TRAIL CONNECTIONS AS SUBJECT TO AVAILABILITY OF OFFSITE EASEMENTS.
③ INSTALL TRAFFIC SIGNAL BASED ON RESULTS OF WARRANT STUDY.
④ CONSTRUCT REMAINING WESTPARK DRIVE STREETSCAPE.
⑤ CONSTRUCT WESTBRANCH DRIVE EAST SIDE CURB, IF IMPROVEMENTS REQUIRED BY VDOT.

LIMITS OF PROPOSED PHASE IMPROVEMENTS

NOTE:
1. DEVELOPMENT PHASING OF BLOCK "A" MAY BE CHANGED BASED ON MARKET CONDITIONS AT THE TIME OF FINAL SITE PLAN.
2. 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.

PHASE 2 - OPTION 'B'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PHASING EXHIBIT

# ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 4/25/12 | REV PER COMMENTS |
| 06/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE 1" = 1'-30'

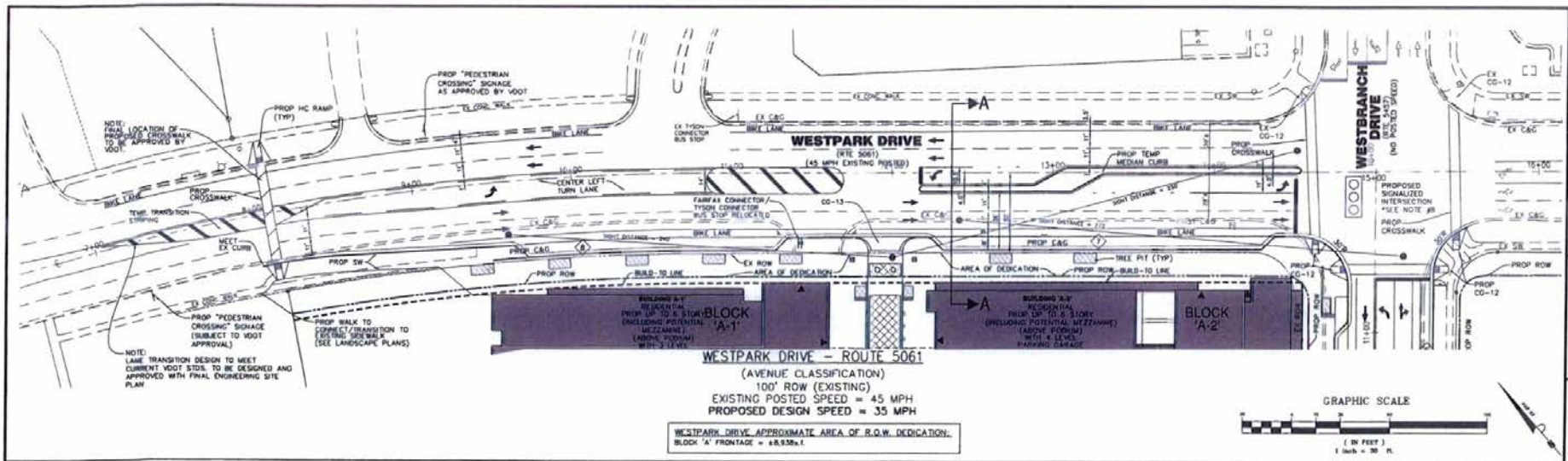
JOB No.

DATE December 7, 2011

FILE No. 7403-09-003

SHEET C6.1

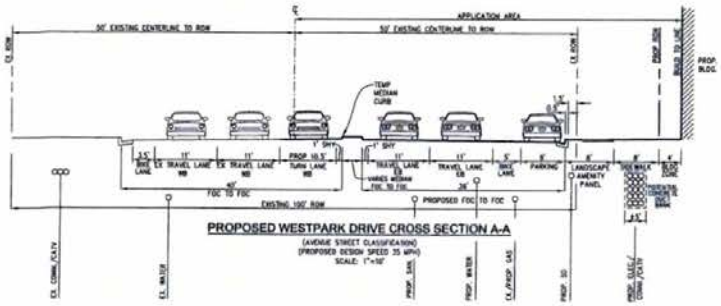
Cad file name : P:\7403 - West Group Properties\7403-09-003 (PLN) - Twin West Park Frederick Site Mc\Lean VA\Planning\Plans\FDP Frederick-01-001 FDP v6 11-PHASING PLAN.dwg




WESTPARK DRIVE – ROUTE 5061

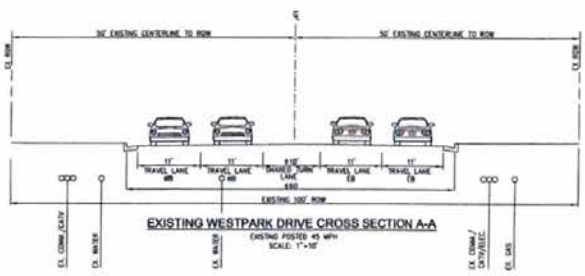
(AVENUE CLASSIFICATION)
100' ROW (EXISTING)
EXISTING POSTED SPEED = 45 MPH
**PROPOSED DESIGN SPEED = 35 MPH**

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




PROPOSED WESTPARK DRIVE CROSS SECTION A-A

(AVENUE STREET CLASSIFICATION)
(PROPOSED DESIGN SPEED 35 MPH)
SCALE: 1"=10'




EXISTING WESTPARK DRIVE CROSS SECTION A-A

EXISTING POSTED 45 MPH
SCALE: 1"=10'

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 ENGINEERING SITE PLAN AND VDOT APPROVAL.
2. REFER TO SHEET L1.01–L1.02 FOR STREETSCAPE DESIGN ELEMENTS.
3. AREA OF RIGHT OF WAY DEDICATION/VACATION SHOWN ON THIS FDP 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 L0.01 FOR ILLUSTRATION OF NORTH SIDE WESTPARK DRIVE ULTIMATE ROAD DESIGN.
5. EXISTING UTILITIES REPRESENTED HERE ARE APPROXIMATE IN LOCATION AND DESCRIPTION FOR REFERENCE ONLY OF EXISTING CONDITIONS.
6. PROPOSED UTILITY LOCATIONS SHOWN ARE FOR GENERAL REFERENCE ONLY AND SUBJECT TO CHANGE WITH 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. SIGNAL CONTROL APPARATUS MAY REQUIRE EASEMENTS FROM ADJACENT PROPERTY OWNERS IF INSTALLATION OCCURS OUTSIDE OF VDOT ROW
9. BUS STOP RELOCATION TO BE COORDINATED WITH COUNTY/VDOT AT TIME OF SITE PLAN APPLICATION.
10. PROPOSED DRIVEWAY/ENTRANCE SHALL CONFORM TO THE TYSON F.D.S. AND ARE NOT SUBJECT TO THE P.F.M..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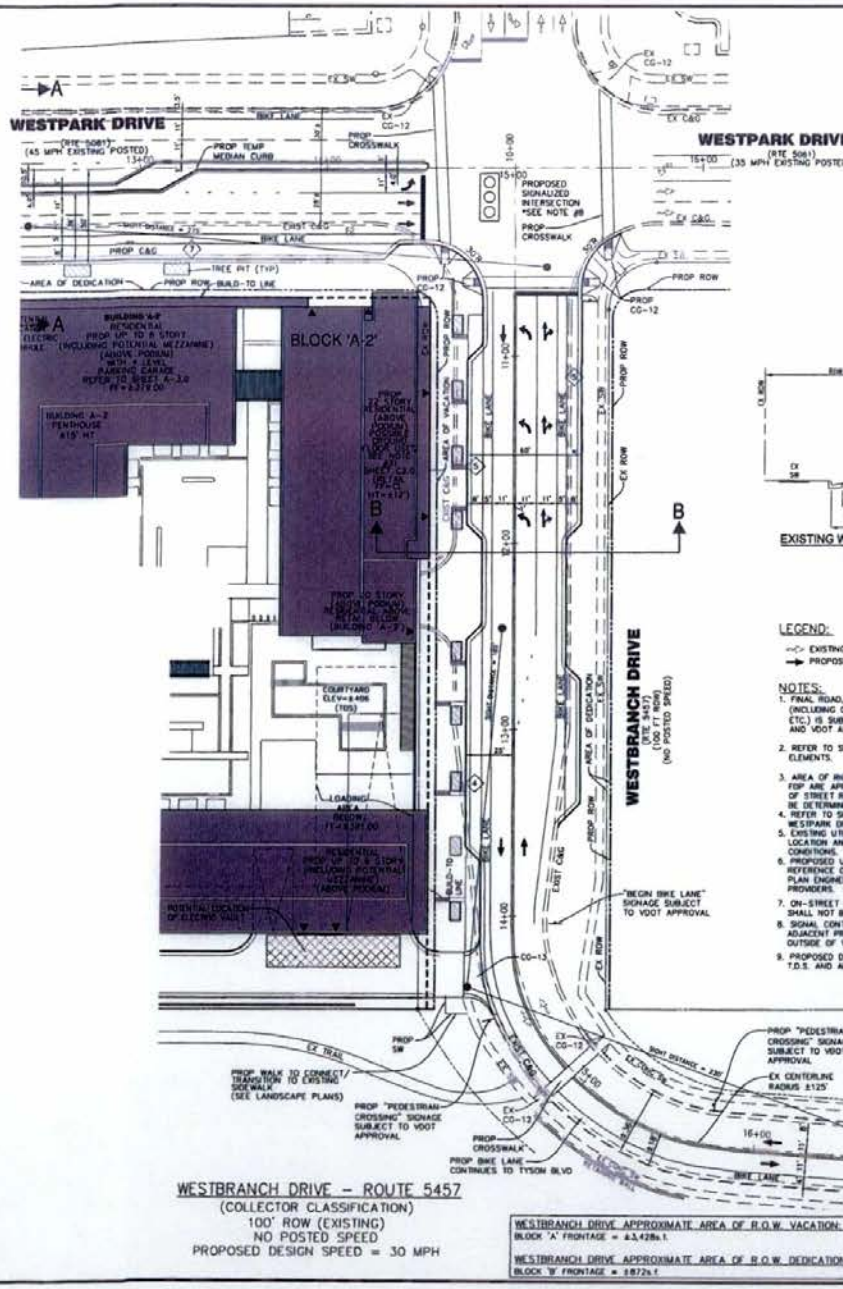
# WESTPARK DRIVE ROADWAY STRIPING AND CROSS SECTIONS

## ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | PER COUNTY COMMENTS |
| 07/02/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

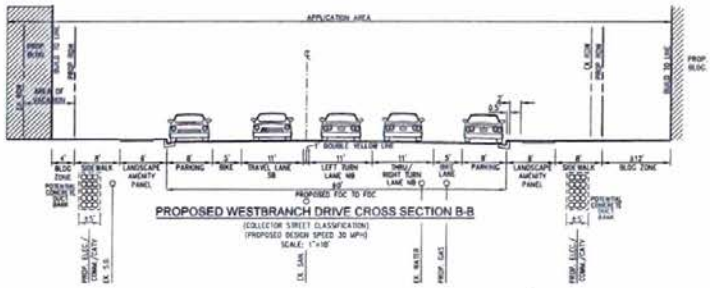
SCALE: H: AS SHOWN
JOB No.
DATE: December 7, 2011
FILE No. 7403-09-003
SHEET C7.0

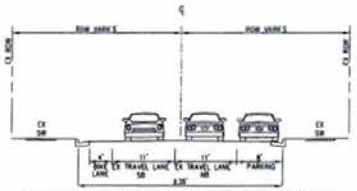


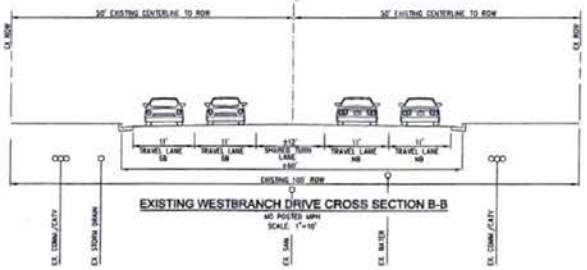

WESTBRANCH DRIVE – ROUTE 5457
(COLLECTOR CLASSIFICATION)
100' ROW (EXISTING)
NO POSTED SPEED
PROPOSED DESIGN SPEED = 30 MPH

WESTBRANCH DRIVE APPROXIMATE AREA OF R.O.W. VACATION:
BLOCK 'A' FRONTAGE = ±3,428s.f.

WESTBRANCH DRIVE APPROXIMATE AREA OF R.O.W. DEDICATION:
BLOCK 'B' FRONTAGE = ±872s.f.



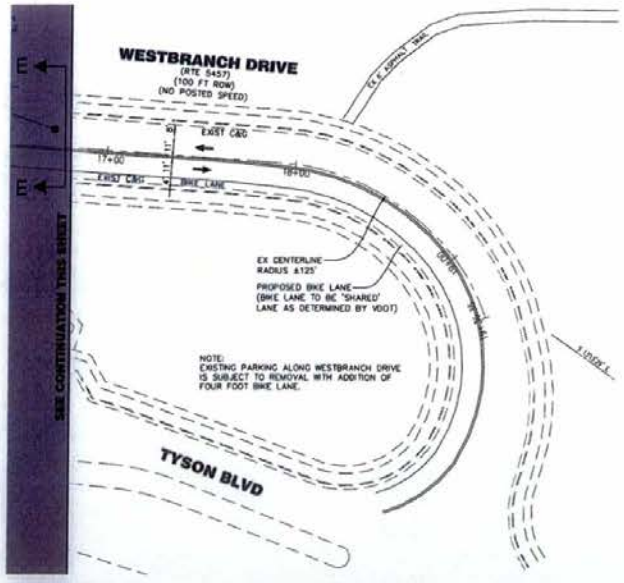

LEGEND:

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 ENGINEERING SITE PLAN AND VDOT APPROVAL.
2. REFER TO SHEET L1.01–L1.02 FOR STREETSCAPE DESIGN ELEMENTS.
3. AREA OF RIGHT OF WAY DEDICATION/VACATION SHOWN ON THIS PDP 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 LO.01 FOR ILLUSTRATION OF NORTH SIDE WESTPARK DRIVE ULTIMATE ROAD DESIGN.
5. EXISTING UTILITIES REPRESENTED HERE ARE APPROXIMATE IN LOCATION AND DESCRIPTION FOR REFERENCE ONLY OF EXISTING CONDITIONS.
6. PROPOSED UTILITY LOCATIONS SHOWN ARE FOR GENERAL REFERENCE ONLY AND SUBJECT TO CHANGE WITH 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. SIGNAL CONTROL APPARATUS MAY REQUIRE EASEMENTS FROM ADJACENT PROPERTY OWNERS IF INSTALLATION OCCURS OUTSIDE OF VDOT ROW
9. PROPOSED DRIVEWAY/ENTRANCE SHALL CONFORM TO THE TYSON T.D.S. AND ARE NOT SUBJECT TO THE P.F.M.




WESTBRANCH DRIVE – BIKE LANE EXTENSION EXHIBIT
SCALE: 1"=50'

GRAPHIC SCALE
( IN FEET )
1 inch = 50 ft.

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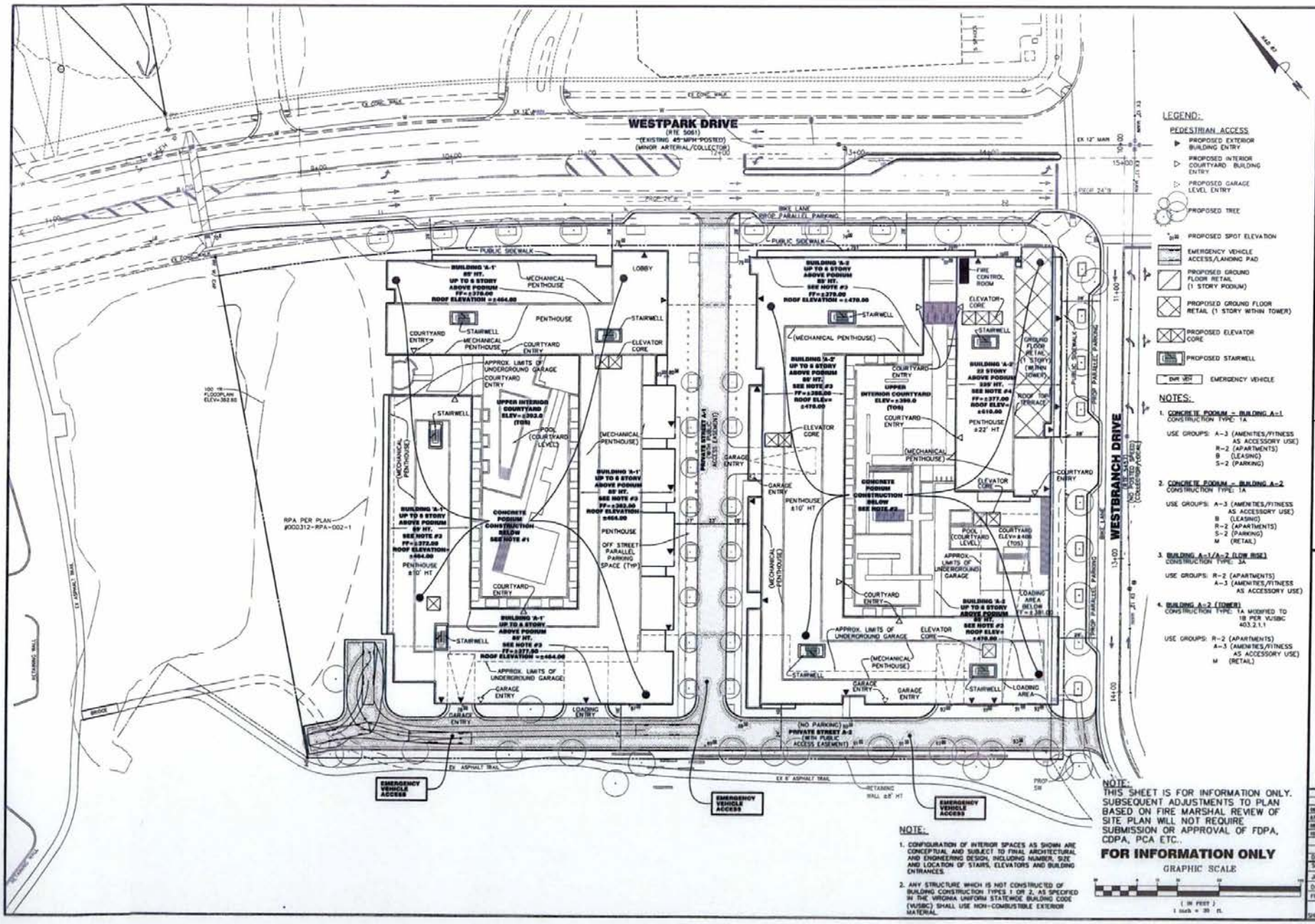
WESTBRANCH DRIVE ROADWAY
STRIPING AND CROSS SECTIONS
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011/PR-022-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 04/20/12 | REVISE ROW TABS |
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/08/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: H.AS SHOWN
JOB No.
DATE: December 7, 2011
FILE No. 7403-09-003
SHEET C7.1




LEGEND:

PEDESTRIAN ACCESS

- PROPOSED EXTERIOR BUILDING ENTRY
- PROPOSED INTERIOR COURTYARD BUILDING ENTRY
- PROPOSED GARAGE LEVEL ENTRY
- PROPOSED TREE
- PROPOSED SPOT ELEVATION
- EMERGENCY VEHICLE ACCESS/LANDING PAD
- PROPOSED GROUND FLOOR RETAIL (1 STORY PODIUM)
- PROPOSED GROUND FLOOR RETAIL (1 STORY WITHIN TOWER)
- PROPOSED ELEVATOR CORE
- PROPOSED STAIRWELL
- EMERGENCY VEHICLE

NOTES:

1. CONCRETE PODIUM – BUILDING A-1
   CONSTRUCTION TYPE: 1A
   USE GROUPS: A-3 (AMENITIES/FITNESS AS ACCESSORY USE)
   R-2 (APARTMENTS)
   B (LEASING)
   S-2 (PARKING)
2. CONCRETE PODIUM – BUILDING A-2
   CONSTRUCTION TYPE: 1A
   USE GROUPS: A-3 (AMENITIES/FITNESS AS ACCESSORY USE)
   B (LEASING)
   R-2 (APARTMENTS)
   S-2 (PARKING)
   M (RETAIL)
3. BUILDING A-1/A-2 (LOW RISE)
   CONSTRUCTION TYPE: 3A
   USE GROUPS: R-2 (APARTMENTS)
   A-3 (AMENITIES/FITNESS AS ACCESSORY USE)
4. BUILDING A-2 (TOWER)
   CONSTRUCTION TYPE: 1A MODIFIED TO 1B PER VUSBC 403.2.1.1
   USE GROUPS: R-2 (APARTMENTS)
   A-3 (AMENITIES/FITNESS AS ACCESSORY USE)
   M (RETAIL)

NOTE:
THIS SHEET IS FOR INFORMATION ONLY. SUBSEQUENT ADJUSTMENTS TO PLAN BASED ON FIRE MARSHAL REVIEW OF SITE PLAN WILL NOT REQUIRE SUBMISSION OR APPROVAL OF FDPA, CDPA, PCA ETC..

**FOR INFORMATION ONLY**

GRAPHIC SCALE

( IN FEET )
1 inch = 30 ft.

NOTE:

1. CONFIGURATION OF INTERIOR SPACES AS SHOWN ARE CONCEPTUAL AND SUBJECT TO FINAL ARCHITECTURAL AND ENGINEERING DESIGN, INCLUDING NUMBER, SIZE AND LOCATION OF STAIRS, ELEVATORS AND BUILDING ENTRANCES.
2. ANY STRUCTURE WHICH IS NOT CONSTRUCTED OF BUILDING CONSTRUCTION TYPES 1 OR 2, AS SPECIFIED IN THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUSBC) SHALL USE NON-COMBUSTIBLE EXTERIOR MATERIAL.

Bowman Consulting

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Home Properties

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FIRE VEHICULAR ACCESS EXHIBIT
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

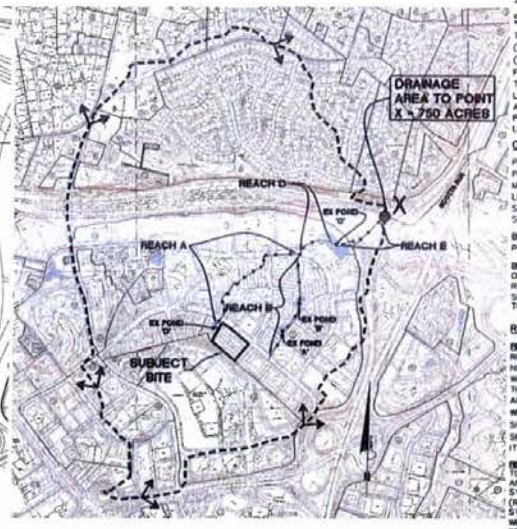
| PLAN STATUS | |
|---|---|
| 08/23/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 06/29/12 | PER COUNTY COMMENTS |
| 03/05/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|

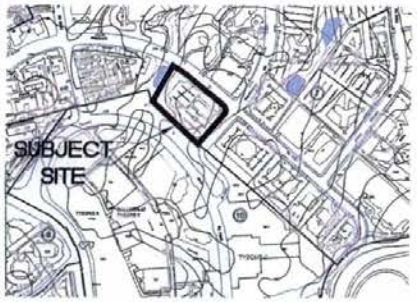
SCALE: 1" = 30'
JOB No.
DATE: December 7, 2011
FILE No: 7403-00-003
SHEET: C7.2

1 C8.0 EX VICINITY MAP
SCALE: 1"=500'

2 C8.0 PROP VICINITY MAP
SCALE: 1"=500'




3 C8.0 OUTFALL MAP
SCALE: 1"=1,000'




4 C8.0 SOILS MAP
SCALE: 1"=500'

*ALL SOILS OF SUBJECT SITES ARE OF HYDROLOGIC GROUP B

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

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

This information is required under the following Zoning Ordinance paragraphs:

| | |
|---|---|
| Special Permits (9-011 2J & 2L) | Special Exceptions (9-011 2J & 2L) |
| Cluster Subdivision (9-615 1G & 1N) | Commercial Revitalization Districts (9-622 2A (12) & (14)) |
| Development Plans PRC District (16-302 3 & 4L) | PRC Plan (16-303 1E & 1G) |
| PDP P Districts (except PRC) (16-502 1F & 1G) | Amendments (18-202 10F & 10I) |

☑ 1. Plat is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100').

☑ 2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet C8.0.

☑ 3. Provide:

| Facility Name/ Type & No. | On-site area served (acres) | Off site area served (acres) | Drainage area (acres) | Footprint area (sf) | Storage Volume (cf) | If pond, dam height (ft) |
|---|---|---|---|---|---|---|
| A1 SWM VAULT | 1.57 | - | 1.57 | 1,056 | 10,560 | N/A |
| A2 SWM VAULT | 1.86 | - | 1.86 | 726 | 7,260 | N/A |
| | | | | | | |
| | | | | | | |
| Totals | | | | | | |

☑ 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet C8.0. Pond inlet and outlet pipe systems are shown on Sheet C8.0.

☑ 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet C8.0. Type of maintenance access road surface noted on the plat is ASPHALT (asphalt, pavement, gravel, etc.).

☒ 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet N/A.

☑ 7. A "stormwater management narrative" which contains a description of how detention and best management practices requirements will be met is provided on Sheet C8.1.

☑ 8. A description of the existing conditions of each numbered site outfall extended downstream from the site to a point which is at least 100 times the site area or which has a drainage area of at least one square mile (640 acres) is provided on Sheet C8.0.

☑ 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet C8.0.

☑ 10. Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an air survey or field run is provided on Sheets C8.0.

☑ 11. A submission waiver is requested for UNDERGROUND DETENTION FOR RESIDENTIAL PROJECT.

☒ 12. Stormwater management is not required because N/A.

## OUTFALL NARRATIVE

### SITE DESCRIPTION:

THE SUBJECT SITE IS 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 SITE INCLUDES THE FREDERICK BUILDING WHICH IS LOCATED ON FFX. CO. TAX MAP PARCEL #029-4-((7))-0010. SEE VICINITY MAP ON THIS SHEET. THE SUBJECT SITE HAS EXISTING OFFICE BUILDINGS WITH SURFACE PARKING AND LANDSCAPE ISLANDS. THE SITE IS FRONTED BY WESTPARK DR. (RT. 5061) TO THE NORTH AND IS WOODED ALONG ITS SOUTHERN PROPERTY LINE. THE TOTAL SITE AREA OF THIS PARCEL IS APPROXIMATELY 5.38 ACRES. THE EXISTING SITE PROPOSES NEW PROPERTY LINES TO CREATE BLOCKS A1 & A2. 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. THE SITE IS MADE UP OF BLOCKS A1 AND A2.

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 GOES FROM REACH A TO D TO E TO POINT X. APPROXIMATELY 60% (EASTERN PORTION) OF THE SITE'S STORM WATER IS PART OF REACH B FLOW PATH AND GOES FROM REACH B TO D TO 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 SITE 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 SITE ENTERS 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 C8.0.1. THE COMPUTATIONS SHOW THAT THE Qcap IS GREATER THAN THE Qinflow 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 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 SCOTTS 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 130 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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Cityline PARTNERS
A Subsidiary of DLJ Real Estate Capital Partners

ADEQUATE OUTFALL AND SWM CHECKLIST
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-029-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

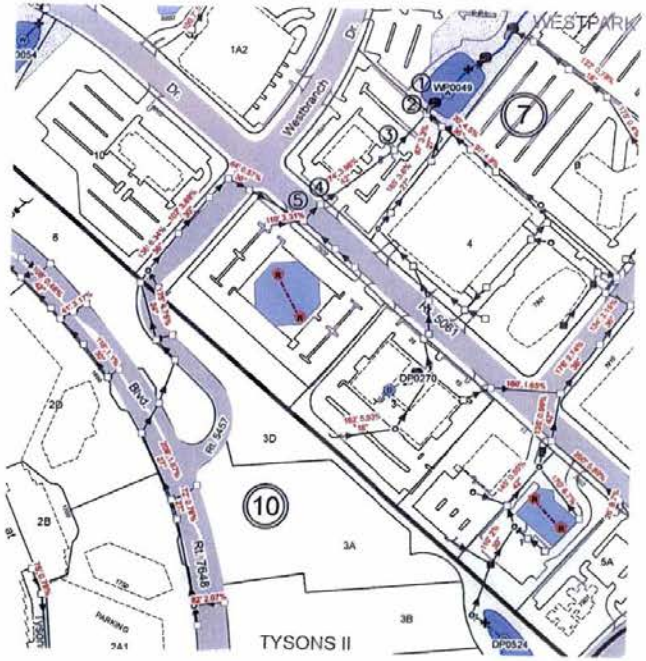
| PLAN STATUS | |
|---|---|
| 06/20/12 | PER COUNTY COMMENTS |
| 07/31/12 | PER COUNTY COMMENTS |
| 09/28/12 | PER COUNTY COMMENTS |
| 10/09/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|

SCALE: 1" = 50' SHOWN
JOB No.
DATE: December 7, 2011
FILE No. 7403-09-003
SHEET C8.0

## REACH B EXISTING PIPE COMPUTATIONS

| FROM POINT (1) | TO POINT (2) | AREA DRAIN "A" (ACRES) INCRE-MENT (3) | AREA DRAIN "A" (ACRES) ACCUM-ULATED (3) | RUN-OFF COEF. C (4) | CA INCRE-MENT (5) | CA ACCUM-ULATED (5) | INLET TIME MIN-UTES (7) | RAIN FALL IN. / HR. (8) | RUN-OFF Q C.F.S. (9) | INVERT ELEVATIONS LOWER END (10) | INVERT ELEVATIONS UPPER END (11) | LENGTH FT. (12) | n | ACTUAL SLOPE % (13) | MIN. SLOPE % | DIA. IN. (14) | CAPA-CITY C.F.S. (15) | FULL FLOW VEL. F.P.S. | ACTUAL VEL. F.P.S. (16) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 4 | 20.82 | 20.82 | 0.69 | 14.43 | 14.43 | 5.00 | 7.27 | 104.94 | - | - | 75 | 0.013 | 1.10 | 1.09 | 42 | 105.52 | 19.97 | 12.80 |
| 4 | 3 | 0.31 | 21.23 | 0.65 | 0.20 | 14.63 | 5.13 | 7.27 | 106.35 | - | - | 374 | 0.013 | 2.80 | 1.13 | 42 | 109.21 | 20.61 | 21.29 |
| 3 | 2 | 1.09 | 22.28 | 0.75 | 0.75 | 15.49 | 6.31 | 7.27 | 112.53 | - | - | 70 | 0.013 | 2.53 | 1.29 | 42 | 115.19 | 21.82 | 22.51 |
| 2 | 1 | 1.35 | 23.63 | 0.72 | 4.12 | 19.61 | 5.40 | 7.27 | 142.55 | - | - | 27 | 0.013 | 0.74 | 0.32 | 50 | 131.18 | 18.4 | 15.12 |
| | | | | | | | | | | | | | | | | | | | |
| - | 2 | 5.70 | 5.70 | 0.80 | 3.42 | 3.42 | 5.00 | 7.27 | 24.86 | - | - | 110 | 0.013 | 1.00 | 0.14 | 36 | 38.70 | 5.44 | 8.00 |




1 C8.0.1 REACH B OUTFALL MAP
NOT TO SCALE

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ADEQUATE OUTFALL AND SWM CHECKLIST
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN Z011-PR-025-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 08/23/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 05/29/12 | PER COUNTY COMMENTS |
| 10/05/11 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

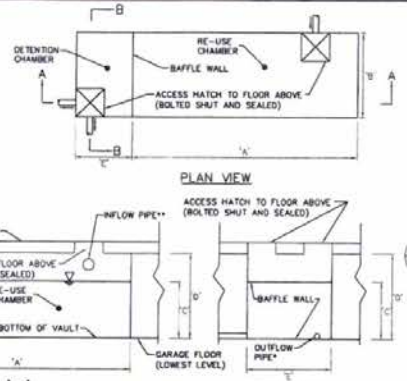
SCALE: 1" = AS SHOWN
JOB No.:
DATE: December 7, 2011
FILE No. 7403-09-003
SHEET C8.0.1

* 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:

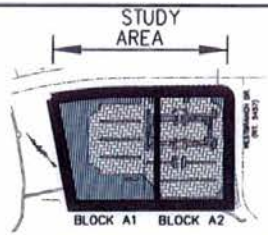
1) FINAL NUMBER, SHAPE, SIZE, LOCATION, AND DESIGN OF SWM VAULTS ARE SUBJECT TO CHANGE AT THE TIME OF FINAL ENGINEERING.
2) SUPPORT AND REINFORCING FOR VAULTS PER STRUCTURAL ENGINEERING PLANS.
3) PUMPS SHALL BE INTEGRATED INTO VAULTS AT THE TIME OF FINAL ENGINEERING ON A CASE BY CASE BASIS.



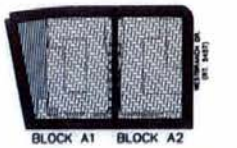

## SWM SUMMARY

| VAULT ID NAME | REQUIRED VOLUME (CF) | LENGTH (FT) | WIDTH (FT) | RE-USE DEPTH (FT) | STORAGE DEPTH (FT) | DET. CHAMBER SIZE (FT) | VOLUME PROVIDED (CF) |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | |
| BLOCK A1 | 153 | 5 | 5 | 10 | 12 | 4 | 250 |
| BLOCK A2 | 355 | 7 | 7 | 10 | 12 | 4 | 490 |

1 C8.1 FACILITY DETAIL
NOT TO SCALE

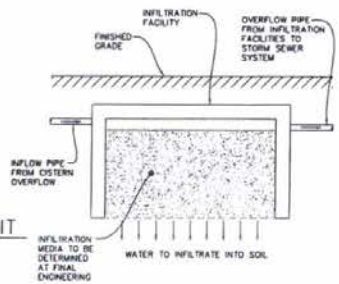



2 C8.1 EX IMPERVIOUS AREA EXHIBIT
SCALE: 1"=200'




3 C8.1 PRELIMINARY PROPOSED IMPERVIOUS AREA EXHIBIT
SCALE: 1"=200'

IMPERVIOUS AREA =
PERVIOUS AREA =



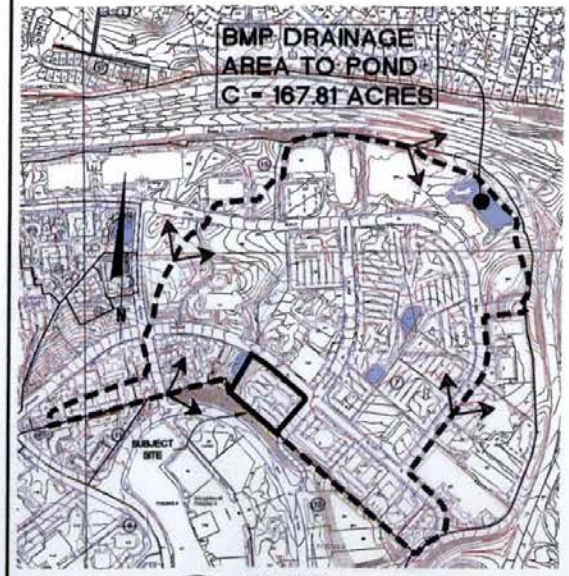

THE APPLICANT RESERVES THE RIGHT TO ALTER INFILTRATION TRENCH DESIGN, STYLE, VOID MEDIA, SIZE, ETC. AT THE TIME OF FINAL ENGINEERING.

6 C8.1 TYP. INFILTRATION DETAIL
NOT TO SCALE

NOTE:

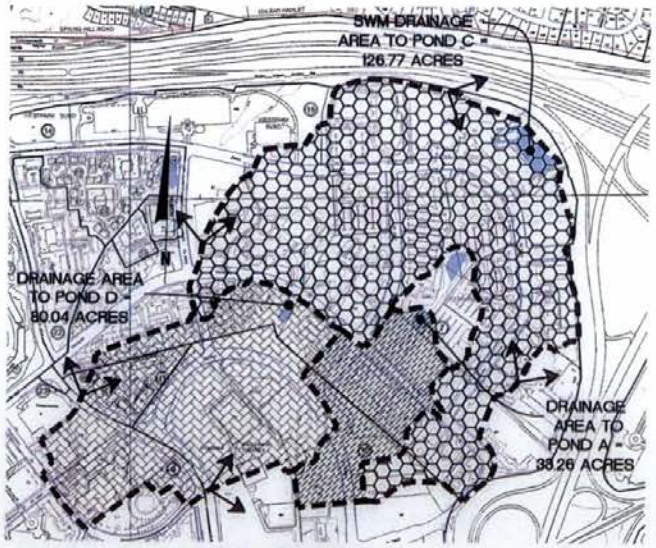
1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) ANALYSIS, NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED FDP APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL SITE PLAN APPLICATIONS.
2. THE APPLICANT RESERVES THE RIGHT TO VARY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

| Study Area | |
|---|---|
| Area = | 5.369 Ac |
| Ex. Impervious % | 55% |
| Ex. C-Factor = | 0.63 |
| Prop. Impervious % | 70% |
| Prop. C-Factor = | 0.77 |




4 C8.1 BMP MAP
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.




5 C8.1 SWM MAP
SCALE: 1"=500'

## STORMWATER MANAGEMENT NARRATIVE:

**GENERAL INFO.**

THE SUBJECT SITE OF THIS APPLICATION, ALSO KNOW AS THE FREDERICK SITE, IS LOCATED ON FAIRFAX COUNTY TAX MAP PARCEL #029-4-((7))-0010. THIS SITE COMPRISES THE PROPOSED "A" BLOCK (BLOCKS A-1 AND A-2) AS NOTED IN THE CDP APPLICATION, CDP PLAN# RZ/CDP 2011-PR-023.
STORMWATER (SWM) DETENTION FOR THE SUBJECT SITE IS CURRENTLY PROVIDED FOR BY EXISTING PONDS "A" AND "D". PONDS "A" 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 "D" 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. SEE SWM MAP ON THIS SHEET. HOWEVER, ALTHOUGH STORMWATER REQUIREMENTS FOR THE SUBJECT SITE ARE CURRENTLY SATISFIED VIA OFFSITE EXISTING SWM FACILITIES, ADDITIONAL STORMWATER MANAGEMENT SHALL BE PROVIDED ONSITE FOR THE SUBJECT APPLICATION, AS DESCRIBED IN FURTHER DETAIL BELOW.

SWM CONTROL FOR THE SUBJECT APPLICATION SHALL BE ACHIEVED THROUGH A COMBINATION OF METHODS INCLUDING STORAGE OF STORMWATER IN CISTERNS FOR RE-USE, TREE BOX PLANTERS, CURB EXTENSIONS, GREEN ROOFS, INFILTRATION, AND MINIMIZING IMPERVIOUS AREAS. PER THE TYSONS CORNER URBAN CENTER COMPREHENSIVE PLAN, THERE ARE THREE SEPARATE CRITERIA/GOALS FOR STORMWATER CONTROL, WHICH INCLUDE 1" RAINFALL CAPTURE/RE-USE COMPLIANCE, LEED COMPLIANCE, AND PFM DETENTION COMPLIANCE. THE SWM COMPUTATIONS AND ANALYSES FOR EACH GOAL ARE DISCUSSED BELOW.

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

THE PROPOSED BLOCKS A-1 AND A-2 HAVE PROPERTY AREAS OF 3.06 AND 2.33 ACRES, RESPECTIVELY, 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 THAT IS AVAILABLE TO BOWMAN AT THE TIME OF FDP SUBMISSION, THE 1" RETENTION REQUIREMENT MAY NOT BE A FULLY ACHIEVABLE GOAL AT THIS TIME. 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, RAINWATER HARVESTING CISTERN, STORMWATER PLANTERS, TREEPITS, CURB EXTENSIONS, VEGETATED GREEN ROOF, AND A CONSERVATION AREA. PRELIMINARY IRRIGATION DEMANDS WERE CALCULATED FOR BLOCKS A-1 AND A-2 WHICH RESULTED IN AN AVERAGE DAILY DRAWDOWN OF 228 GALLONS AND 531 GALLONS, RESPECTIVELY.

INFILTRATION FACILITIES WOULD BE THE IDEAL PRACTICE. INFILTRATION TESTING HAS NOT BEEN COMPLETED, BUT IT IS ANTICIPATED THAT THE SOIL IS SUITABLE FOR THE PRACTICE. THE PREFERRED LOCATIONS FOR THE INFILTRATION FACILITY WOULD BE IN THE REAR OF THE PROPERTY UNDER THE PRIVATE CONNECTOR STREET. FOR DESIGN PURPOSES WE HAVE UTILIZED A MINIMUM INFILTRATION RATE OF 0.54 IN/HR. THE INFILTRATION FACILITY FOR BLOCK A-1 WAS PRELIMINARILY SIZED TO PROVIDE 13,500 CUBIC FEET OF STORAGE AND PROVIDE A RUNOFF REDUCTION VOLUME OF 8,056 CUBIC FEET. THE DRAINAGE AREA TO THE INFILTRATION FACILITY IS 2.05 ACRES WITH A C-VALUE OF 0.73. SIZING OF THE PRACTICE HAS TAKEN INTO ACCOUNT OVERFLOW FROM THE RAINWATER HARVESTING CISTERN THAT CAPTURES THE 1.50 ACRES OF THE BUILDING AND GARAGE FOOTPRINT. THE INFILTRATION FACILITY FOR BLOCK A-2 WAS PRELIMINARILY SIZED TO PROVIDE 19,440 CUBIC FEET OF STORAGE AND PROVIDE A RUNOFF REDUCTION VOLUME OF 8,498 CUBIC FEET. THE DRAINAGE AREA TO THE INFILTRATION FACILITY IS 2.21 ACRES WITH A C-VALUE OF 0.88. SIZING OF THE PRACTICE HAS TAKEN INTO ACCOUNT OVERFLOW FROM THE RAINWATER HARVESTING CISTERN THAT CAPTURES THE 1.80 ACRES OF THE BUILDING AND GARAGE FOOTPRINT. SEE COMPUTATIONS ON SHEETS C9.2 AND C9.3.

ROOF RAINWATER HARVESTING WILL BE UTILIZED TO CAPTURE 1" OF RAINWATER THAT FALLS ONTO THE BUILDING AND GARAGE FOOTPRINTS. 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 CISTERNS VIA UNDERDRAINS WITHIN THE BUILDINGS. THE RAINWATER HARVESTING CISTERNS FOR BLOCKS A-1 AND A-2 HAVE BEEN SIZED TO HOLD APPROXIMATELY 1,140 GALLONS (153 CF), AND 2,655 GALLONS (355 CF), RESPECTIVELY, WHICH IS APPROXIMATELY 5 DAYS WORTH OF IRRIGATION WATER DEMAND (228 GALLONS PER DAY FOR BLOCK A-1 AND 531 GALLONS PER DAY FOR BLOCK A-2). ONCE THE CISTERN VOLUMES HAVE REACHED CAPACITY, THE OVERFLOW RELIEF WILL GO TO THE INFILTRATION FACILITIES. FOR BLOCK A-1, ROOF RAINWATER HARVESTING WILL GENERATE APPROXIMATELY 5,182 CUBIC FEET OF RUNOFF AND PROVIDE AN APPROXIMATE RUNOFF REDUCTION CREDIT OF 259 CUBIC FEET WITH THE REMAINING CREDIT OF 5,175 CUBIC FEET OVERFLOWING TO THE INFILTRATION FACILITY. FOR BLOCK A-2, ROOF RAINWATER HARVESTING WILL GENERATE APPROXIMATELY 8,190 CUBIC FEET OF RUNOFF AND PROVIDE AN APPROXIMATE RUNOFF REDUCTION CREDIT OF 592 CUBIC FEET WITH THE REMAINING CREDIT OF 3,924 CUBIC FEET OVERFLOWING TO THE INFILTRATION FACILITY.

VEGETATED GREEN ROOF WILL BE UTILIZED TO CAPTURE AN AREA OF APPROXIMATELY 0.16 ACRES WITH A STORAGE VOLUME OF 7,057 CUBIC FEET FOR BLOCK A-1 AND AN AREA OF APPROXIMATELY 0.19 ACRES WITH A STORAGE VOLUME OF 9,670 CUBIC FEET FOR BLOCK A-2. THIS PRACTICE WILL BE LINKED IN SERIES TO THE CISTERNS VIA UNDERDRAINS WITHIN THE BUILDINGS. THIS PRACTICE WILL PROVIDE AN APPROXIMATE RUNOFF REDUCTION CREDIT OF 545 CUBIC FEET FOR BLOCK A-1 AND 538 CUBIC FEET FOR BLOCK A-2.

DISCONNECTED STORMWATER PLANTERS, TREEPITS, AND CURB EXTENSIONS ARE PROPOSED IN THE SIDEWALKS ALONG WESTPARK DRIVE (RT. 5061), AND THE PRIVATE STREET BETWEEN AND BEHIND BLOCKS A-1 AND A-2. FOR BLOCKS A-1 AND A-2 THESE MEASURES ARE EXPECTED TO COLLECT IMPERVIOUS AREAS (0.32 AND 0.27 ACRES) AND MANAGED TURF COVER (0.09 AND 0.03 ACRES) OUTSIDE OF THE CISTERN AND INFILTRATION PRACTICE DRAINAGE AREAS WHICH RESULT IN RUNOFF VOLUMES OF 3,377 AND 888 CUBIC FEET, RESPECTIVELY. THIS PRACTICE WILL PROVIDE AN APPROXIMATE STORAGE VOLUME OF 2,071 CUBIC FEET AND A RUNOFF REDUCTION VOLUME CREDIT OF 2,071 CUBIC FEET FOR BLOCK A-1, AND AN APPROXIMATE STORAGE VOLUME OF 2,968 CUBIC FEET AND A RUNOFF REDUCTION VOLUME CREDIT OF 888 CUBIC FEET FOR BLOCK A-2.

A CONSERVATION AREA OF APPROXIMATELY 0.60 ACRES IS PROPOSED FOR BLOCK A-1. THIS CONSERVATION AREA WILL BE MOSTLY UNTOUCHED WITH THE PROPOSED IMPROVEMENTS AND IS WITHIN THE RPA ZONE. TWO STORMWATER OUTFALL PIPES ARE PROPOSED WITHIN THE RPA AND THE LAND DISTURBED BY THIS PRACTICE IS APPROXIMATELY 0.10 ACRES AND IS TREATED AS MANAGED TURF SHEETFLOW TO CONSERVATION AREA WITH A/B SOILS.

PERMEABLE PAVEMENT IS PROPOSED IN THE STREETSCAPE ALONG WESTPARK DRIVE FOR BOTH BLOCKS A-1 AND A-1. BLOCKS A-1 AND A-2 PERMEABLE PAVEMENT WILL BOTH COLLECT A DRAINAGE AREA OF 0.02 ACRES. BLOCK A-1 WILL COLLECT A RUNOFF VOLUME OF 69 CUBIC FEET AND PROVIDE A RUNOFF REDUCTION VOLUME OF 37 CUBIC. BLOCK A-2 WILL COLLECT A RUNOFF VOLUME OF 76 CUBIC FEET AND PROVIDE A RUNOFF REDUCTION VOLUME OF 43 CUBIC FEET. PERMEABLE PAVEMENT COULD BE USED IN THE DRIVE AISLE SURROUNDING THE BUILDINGS; 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 INCLUDE BIORETENTION TREE PITS, GREEN ROOFS, AND 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 C10.0, FOR FURTHER DETAIL.

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 BLOCKS A-1 AND A-2. 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.

THROUGH THE VOLUMES PROVIDED BY THE RAINWATER HARVESTING CISTERN AND INFILTRATION FACILITIES, THESE PRACTICES WILL, TO THE MAXIMUM EXTENT POSSIBLE, MEET THE COMPREHENSIVE PLAN 1" RUNOFF RETENTION AND REUSE REQUIREMENTS.

**LEED:**

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 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 FOR BLOCK A-1, THE LEED BOUNDARY HAS BEEN DEFINED AS THE LIMITS FROM THE EXISTING PROPERTY LINE ALONG WESTPARK DRIVE (RT. 5061), TO THE EXISTING WESTERN AND SOUTHERN PROPERTY LINES, AND TO THE CENTERLINE OF THE PROPOSED PRIVATE STREET BETWEEN BLOCKS A-1 AND A-2 FOR AN APPROXIMATE AREA OF 3.06 ACRES. FOR THE LEED CALCULATIONS FOR BLOCK A-2, THE LEED BOUNDARY HAS BEEN DEFINED AS THE LIMITS FROM THE EXISTING PROPERTY LINE ALONG WESTPARK DRIVE (RT. 5061), TO THE EXISTING SOUTHERN PROPERTY LINE, TO THE EXISTING PROPERTY LINE ALONG WESTBRANCH DRIVE (RT. 5457), AND TO THE CENTERLINE OF THE PROPOSED PRIVATE STREET BETWEEN BLOCKS A-1 AND A-2 FOR AN APPROXIMATE AREA OF 2.33 ACRES. BLOCK A-1'S AND A-2'S LEED BOUNDARIES ARE SHOWN ON SHEET C9.0. THE LEED COMPLIANCE COMPUTATIONS FOR BLOCK A-1 ARE ON SHEET C9.2. THE COMPUTATIONS RESULT IN THE REQUIRED STORAGE VOLUME THAT IS NEEDED FOR LEED COMPLIANCE. THE REQUIRED VAULT STORAGE VOLUME NEEDED TO SATISFY THE LEED COMPLIANCE IS 8,356 CUBIC FEET. THIS VOLUME IS MET THROUGH A COMBINATION OF THE CISTERN AND INFILTRATION FACILITIES (TOTAL OF 13,500 CF PROVIDED). THE LEED COMPLIANCE COMPUTATIONS FOR BLOCK A-2 ARE ON SHEET C9.4. THE COMPUTATIONS RESULT IN THE REQUIRED STORAGE VOLUME THAT IS NEEDED FOR LEED COMPLIANCE. THE REQUIRED VAULT STORAGE VOLUME NEEDED TO SATISFY THE LEED COMPLIANCE IS 5,181 CUBIC FEET. THIS VOLUME IS MET THROUGH A COMBINATION OF THE CISTERN AND INFILTRATION FACILITIES (TOTAL OF 19,440 CF PROVIDED).

(STORMWATER MANAGEMENT NARRATIVE CONTINUED ON SHEET C8.2)

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SWM & BMP NARRATIVE

# ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: H: AS SHOWN
JOB No.
DATE: December 7, 2011
FILE No. 7403-09-003
SHEET C8.1

**STORMWATER MANAGEMENT NARRATIVE (CONTINUED FROM SHEET 8.1)**

**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 INFILTRATION FACILITIES. AT THE TIME OF FINAL ENGINEERING, THE CISTERN AND INFILTRATION FACILITIES 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 C9.2 AND C9.4 SHOW THAT THE SIZE OF THE INFILTRATION FACILITIES AND CISTERN 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 WELL UNDER THE ALLOWABLE. FOR BLOCK A-1 ALLOWABLE RELEASE RATE AND DETENTION COMPUTATIONS SEE SHEET C9.2. FOR BLOCK A-2 ALLOWABLE RELEASE RATE AND DETENTION COMPUTATIONS SEE SHEET C9.4. FOR BLOCK A-1 THE REQUIRED STORAGE TO SATISFY PFM DETENTION COMPLIANCE IS 2,821 CUBIC FEET. FOR BLOCK A-2 THE REQUIRED STORAGE TO SATISFY PFM DETENTION COMPLIANCE IS 2,373 CUBIC FEET. THE APPLICANT RESERVES THE RIGHT TO UTILIZE EXISTING PONDS, SERVING THE SITE, TO MEET PFM DETENTION REQUIREMENTS. ADDITIONAL COMPUTATIONS WILL BE PROVIDED AT SITE PLAN FOR THESE FACILITIES IF UTILIZED.

**STORMWATER CONTROLS:**
THE CISTERNS WILL PROVIDE BOTH RE-USE AND RETENTION AND THE INFILTRATION FACILITIES WILL PROVIDE RETENTION. DEPENDING ON THE FINAL SELECTION OF METHOD OF WATER RE-USE, STORMWATER WILL FIRST ENTER INTO SOME STRUCTURAL BMP FACILITY FOR WATER QUALITY TREATMENT, EITHER A FILTER OR SEPARATOR OF SOME KIND, AND THEN INTO THE RE-USE CISTERN, WHICH WILL HAVE NO OUTLET EXCEPT FOR A PUMP DISCHARGE TO THE PLUMBING / MECHANICAL / IRRIGATION SYSTEMS FOR RE-USE. ONCE THE CISTERN IS FULL, WATER WILL OVERFLOW BY A PIPE OUTLET TO THE INFILTRATION FACILITY TO BE STORED AND INFILTRATE INTO THE SOIL. WHEN THE INFILTRATION FACILITIES ARE FULL DURING A LARGE STORM EVENT, STORMWATER WILL OVERFLOW INTO AN OUTLET PIPE. THE OUTFALL FROM THE INFILTRATION FACILITIES WILL CONNECT TO THE STORM SEWER SYSTEM. SEE CONCEPTUAL CISTERN AND INFILTRATION DETAILS ON THIS SHEET.

**SUMMARY:**
THE GOAL OF THE 1" RUNOFF IS TO CAPTURE A TARGET RUNOFF REDUCTION VOLUME OF 7,821 CUBIC FEET FOR THE ENTIRE BLOCK A-1 SITE AND 8,352 CUBIC FEET FOR THE ENTIRE BLOCK A-2 SITE. THE RUNOFF REDUCTION VOLUME WHICH WAS ACHIEVED THROUGH THE PRACTICES LISTED ABOVE ARE 9,969 CUBIC FEET FOR BLOCK A-1 AND 8,857 CUBIC FEET FOR BLOCK A-2 WHICH EQUATES TO A MAXIMUM EXTENT PRACTICABLE RAINFALL DEPTH CAPTURED.
THE APPLICANT RESERVES THE RIGHT TO REVISE THE SWM DESIGN BASED ON THE ACTUAL PROPOSED IMPERVIOUS PERCENTAGE AT THE TIME OF FINAL DEVELOPMENT PLAN AND FINAL SITE PLAN. THE APPLICANT ALSO RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, AND LOCATION OF THE DEPICTED SWM VAULTS AT THE TIME OF FINAL DEVELOPMENT PLAN AND FINAL SITE PLAN.

**BMP NARRATIVE:**
EXISTING POND "C" IS LOCATED AT THE SOUTHWEST CORNER OF RTE #495 & DULLES AIRPORT ACCESS ROAD. IT PROVIDES BMP (WATER QUALITY) OF 167.81 ACRES OF WESTPARK WATERSHED PER PLAN #6377-PI-01. THE ENTIRE SITE OF THE SUBJECT APPLICATION IS INCLUDED WITHIN THIS WATERSHED. SEE BMP MAP ON SHEET 8.1. 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 & E" (PLAN #6377-PI-01). THEREFORE, SINCE THE PROPOSED REDEVELOPMENT OF THE SUBJECT SITE RESULTS IN A C-FACTOR LESS THAN OR EQUAL TO 0.80, THE BMP REQUIREMENTS FOR ALL BLOCKS ARE SATISFIED BY POND "C". SEE IMPERVIOUS AREA ANALYSIS ON SHEET 8.1 WHICH CONFIRMS THAT THE SITE AREA WILL HAVE A C-FACTOR OF LESS THAN 0.80. PER PFM 6-0101.2c, THE SUBJECT APPLICATION IS CURRENTLY ADEQUATELY SERVED BY AN EXISTING OFFSITE BMP FACILITY AND THE PROJECTED PHOSPHORUS RUNOFF POLLUTION LOAD AFTER DEVELOPMENT SHALL NOT EXCEED THE EXISTING PHOSPHOROUS POLLUTION LOAD. THIS SHOULD BE NOTED THAT ALL BMP FACILITES PROPOSED BY THIS APPLICATION, INCLUDING TREE BOX FILTERS, INFILTRATION, WATER REUSE VAULTS, AND STRUCTURAL PRE-TREATMENT FILTERS OR SEPARATORS WILL PROVIDE ADDITIONAL WATER QUALITY BENEFITS BEYOND THOSE ALREADY PROVIDED BY THE OFFSITE POND.

**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' for the redevelopment of land in the Tysons Corner Urban Center, the following deviations from the strict adherence to the Public Facilities Manual (PFM) will be necessary in order to implement such objectives:

- Deviation of PFM Section 6-1304.4I to allow utilization of infiltration rates less than 0.52 in / hr for field test rate of infiltration systems utilized to meet the Comprehensive Plan requirement for retention of the first 1" of runoff onsite.
- Deviation of PFM Section 6-1306.3F to allow for any detention facility located within a building or garage structure to be governed by building code requirements for access and maintenance.
- Deviation of PFM Section 6-1307.2C to allow for installation of Bio-retention and infiltration facilities that utilize infiltration to be constructed on in-situ fill material, provided field tests show adequate infiltration rates exist for in-situ material.
- Deviation of PFM Section 6-1307.2E to set the minimum horizontal setbacks from building foundations be reduced to zero (0) feet in order to facilitate installation of bio-retention and infiltration systems in an urban environment set forth in the Tyson's Corner Design Guidelines.
- Deviation of PFM Section 6-1307.2F to allow installation of Bio-retention facilities in the vicinity of loading docks, vehicle maintenance areas or outdoor storage areas to accommodate the urban environment set forth in the Tyson's Corner Design Guidelines.
- Deviation of PFM Section 6-1307.2G to allow for the maximum drainage areas to bio-retention filters utilized for retention of the first 1" of runoff be eliminated in order to accommodate rooftop runoff piped to proposed structures.
- Deviation of PFM Section 6-1309.2C to allow installation of tree box filters in the vicinity of loading docks, vehicle maintenance areas or outdoor storage areas to accommodate the urban environment set forth in the Tyson's Corner Design Guidelines.


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SWM & BMP NARRATIVE

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
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| 10/05/12 | PER COUNTY COMMENTS |
| | |
| | |
| DATE | DESCRIPTION |

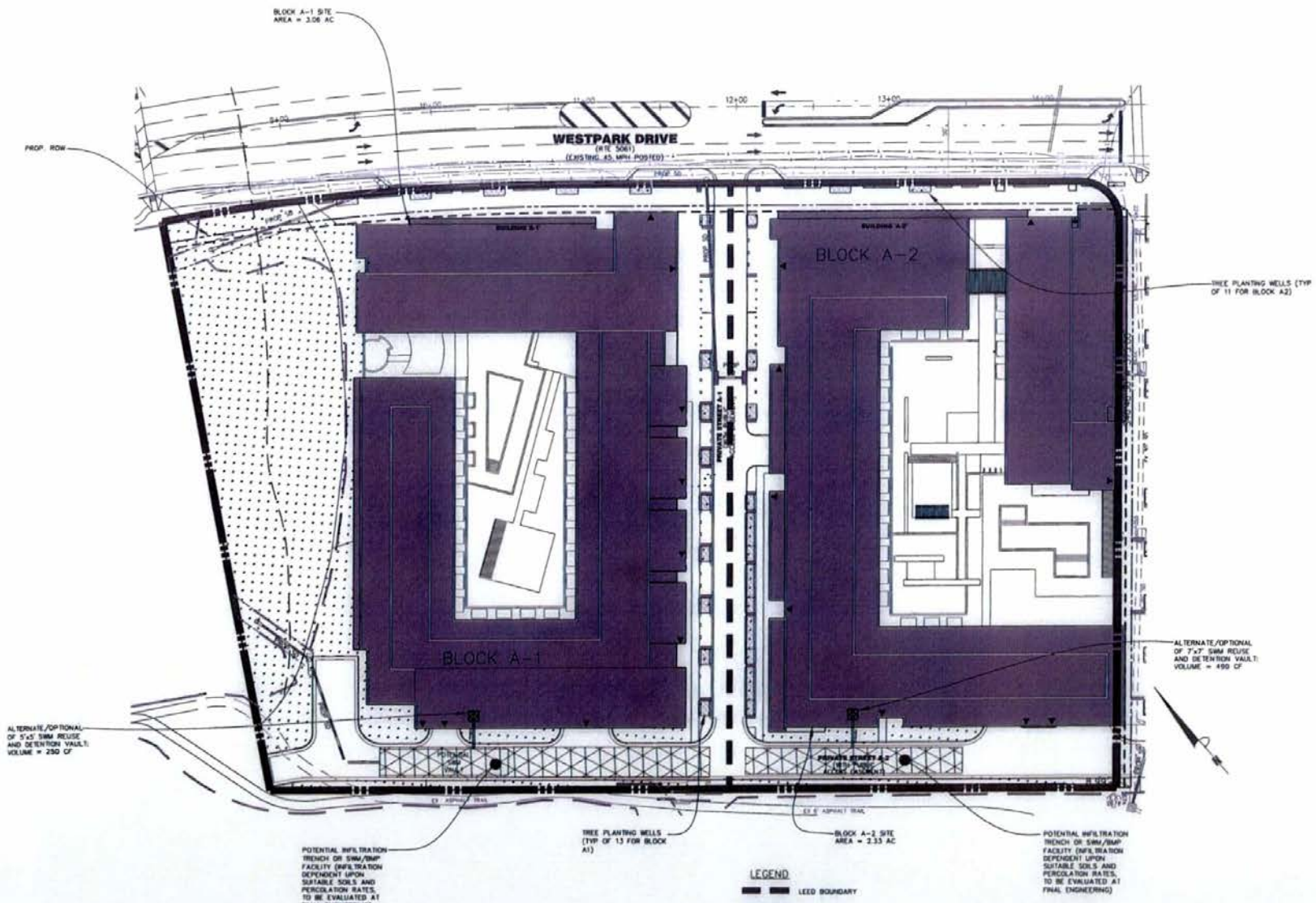
SCALE : AS SHOWN

JOB No.

DATE : December 7, 2011

FILE No. 7403-09-003

SHEET C8.2




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.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CONCEPTUAL SWM PLAN

# ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE H: 1" = 30'

JOB No.

DATE : December 7, 2011

FILE No. 7403-09-003

SHEET C9.0

# BLOCK A-1 FIRST INCH OF RUNOFF COMPUTATIONS:

## Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012

Site Name: Block A1

Description: All soils present are type B soils with a total area of 3.06 Acres (133,302.48 SF). DA A is to Tree Pits. DA B is to Cistern and Infiltration. DA C is undisturbed to Pond.

**Post-Development Land Cover**

(data input cells highlighted in yellow)

**Drainage Area A**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | 0.09 | | | | 0.09 |
| Impervious Cover (acres) | 0.32 | | | | 0.32 |
| Total | | | | | 0.41 |

**Drainage Area B**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | 0.19 | | | | 0.19 |
| Impervious Cover (acres) | 1.88 | | | | 1.88 |
| Total | | | | | 2.06 |

**Drainage Area C**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | 0.50 | | | 0.50 |
| Managed Turf (acres) | | 0.10 | | | 0.10 |
| Impervious Cover (acres) | | | | | 0.00 |
| Total | | | | | 0.60 |

**Drainage Area D**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| Total | | | | | 0.00 |

**Drainage Area E**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| Total | | | | | 0.00 |

**Rv Coefficients**

| Land Cover Type * | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils |
|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open space or reforested land | 0.02 | 0.03 | 0.04 | 0.05 |
| Managed Turf | 0.15 | 0.20 | 0.22 | 0.25 |
| Impervious Cover | 0.95 | 0.95 | 0.95 | 0.95 |

* See the instructions tab for a definition of each land cover type

**Land Cover Summary**

| | |
|---|---|
| Forest / Preserved Open Space (ac) | 0.50 |
| Weighted Rv (forest) | 0.03 |
| % Forest | 16% |
| Managed Turf (acres) | 0.37 |
| Weighted Rv (turf) | 0.20 |
| % Managed Turf | 12% |
| Impervious Cover (acres) | 2.19 |
| Rv (impervious) | 0.95 |
| % Impervious | 72% |
| Total Site Area (acres) | 3.06 |
| Site Rv | 0.71 |

**Rainfall / Runoff Summary**

| | |
|---|---|
| Target Rainfall to Retain Onsite (inches) | 1.0 |
| 1-inch Rainfall Volume for entire site (cf) | 11,120 |
| Volume Not Converted to Runoff (cf) | 3,237 |
| 1-inch Runoff Volume for entire site (cf) | 7,883 |

**Runoff Reduction Summary**

| | |
|---|---|
| Target Runoff Reduction Volume (cf) | 7,883 |
| Runoff Reduction Volume Achieved (cf) | 10,404 |
| Total Runoff Volume Retained (cf) | 13,641 |
| Total Area of Site Captured in a BMP (acres) | 3.64 |

**Conformance with Comprehensive Plan Goal**

Total Site Area Captured by a BMP (%) 119% — SEE NOTE ON THIS SHEET.

Rainfall Depth Retained Onsite (inch) 1.00

## Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012

Site Name: Block A1

Drainage Area A Post-Development Land Cover

| | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Managed Turf | 0.09 | 0.00 | 0.00 | 0.00 | 0.09 |
| Impervious Cover | 0.00 | 0.32 | 0.00 | 0.00 | 0.32 |
| D.A. Total (acres) | | | | | 0.41 |

Rv (turf) 0.20; Rv (impervious) 0.95; Runoff from 1" Rainfall (cf) = 1,161

(data input cells highlighted)

| Apply Runoff Reduction Practices | Description of Area | Roof Area Contributing to RWH (ac) | Design Rainfall for RWH (in) | Max Volume Captured by Practice (cf) | NRHS Credit | Input % RR from Model | % Credit | Volume Received from Upstream Practices (cf) | Total Volume Received by Practice (cf) | Avg Daily Drawdown (gallons) | Available Cistern Volume (gallons) | Runoff Reduction Vol (cf) | Remaining Volume (cf) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Estimate RWH RR % Credit | | | | |
| Rooftop Rainwater Harvesting | | 1.00 | | 0 | SELECT RWH DESIGN METHOD | | | 0 | 0 | | | 0 | 0 | |

| Apply Runoff Reduction Practices | Description of Area | Impervious Cover in Contributing D.A. (ac) | Managed Turf in Contributing D.A. (ac) | Max Volume Received by Practice (cf) | Description of Credit | % Credit | Volume Received from Upstream Practices (cf) | Total Volume Received by Practice (cf) | Surface Area of Practice (sf) | Storage Vol Provided by Practice (cf) | Runoff Reduction Vol (cf) | Remaining Volume (cf) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Infiltration Practice | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Vegetated Roof | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 2 Design Spec | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 1 Design Spec | | 0.10 | N/A | 50 | Reduce vol. through permeable pavement by 0.045 cf/sf of permeable pavement. | N/A | N/A | 50 | 0.01 | N/A | 37 | 37 | Downstream to Stormwater Planter |
| Bioretention - DCR Level 2 Design Spec (enhanced) | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Bioretention - DCR Level 1 Design Spec (standard) | | | | 0 | Subtract 60% of provided storage vol. | 60% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to A/B Soils or Compost-Amended Filter Path | | | N/A | 0 | Reduce volume to conservation area by 0.04 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to CD Soils | | | N/A | 0 | Reduce volume to conservation area by 0.02 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to Conservation Area | | | N/A | 0 | Reduce volume to conservation area by 0.06 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Disconnection to Bioretention | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 2 Design | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 1 Design | | | N/A | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Stormwater Planter, Extended Tree Pit, or Curb Extension (Urban Bioretention) | | 0.37 | N/A | 2,345 | Subtract 100% of provided storage vol. | 100% | 12 | 2,377 | N/A | 1,571 | 3,571 | 306 | |
| Dry Swale - DCR Level 2 Design Spec | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 1 Design Spec | | | | 0 | Subtract 60% of provided storage vol. | 60% | 0 | 0 | N/A | | 0 | 0 | |
| Grass Channel A/B Soils | | | | 0 | Reduce volume conveyed through grass channel by 10%. | 20% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel C/D Soils | | | | 0 | Reduce volume conveyed through grass channel by 10%. | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel with Compost Amended Soils | | | | 0 | Reduce volume conveyed through grass channel by 20%. | 30% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Extended Detention Pond | | | | 0 | Reduce volume directed to extended detention pond by 10%. | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Sheetflow to Conservation Area with A/B Soils | | | | 0 | Reduce volume by 0.06 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Sheetflow to Conservation Area with C/D Soils | | | | 0 | Reduce volume by 0.04 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Sheetflow to Vegetated Filter Strip in A/B Soils or Amended C/D Soils | | | | 0 | Reduce volume by 0.06 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Proprietary / Other practice not listed above | | | | 0 | Subtract % Credit of provided storage vol. | | 0 | 0 | N/A | | 0 | 0 | |
| Totals: | 0.39 | 0.00 | | | | | | | | | | | |

Total Drainage Area Treated (acres): 0.39

Runoff Reduction Volume Achieved for Drainage Area A (cubic feet): 3,108

See the Data and Summary Tab for Site Results

**NOTE:**

THE INFILTRATION VOLUME IS APPROXIMATELY 13,333 OF 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-INCH RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4-INCHES 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-INCH OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

IN FURTHERANCE OF THE APPLICANT'S COMMITMENTS HEREIN AND WHILE IT INTENDS TO MEET THE 1-INCH USING THE TECHNIQUES SHOWN, IT RESERVES THE RIGHT TO UTILIZE ANY COMBINATION OF LID (EXISTING AND FUTURE) MEASURES TO MEET THIS GOAL SUBJECT TO THE REVIEW AND APPROVAL OF DPWES AT TIME OF SITE PLAN.

RECOGNIZING THAT RUNOFF REDUCTION TECHNOLOGIES ARE RELATIVELY NEW AND STILL EVOLVING, THE APPLICANT'S FINAL DESIGN DEVELOPMENT AND/OR DPWES COMMENTS ON THE SITE PLAN MAY RESULT IN CHANGES TO THE LID MEASURES SHOWN ON THE CDP AND/OR FDP, INCLUDING, BUT NOT LIMITED TO, ELIMINATION OR ADDITION OF MEASURES SO LONG AS THESE CHANGES DO NOT AFFECT THE GRID OF STREETS, THE GENERAL LOCATION OF THE POINTS OF ACCESS TO EACH BLOCK, THE GENERAL LOCATION OF THE BUILDINGS, THE BUILD-TO LINES, THE MINIMUM AMOUNT AND GENERAL LOCATION OF PUBLICLY-ACCESS URBAN PARK LAND AS MAY BE APPLICABLE FOR EACH BLOCK AND THE GENERAL QUALITY AND CHARACTER OF THE STREETSCAPE ALONG THE PUBLIC AND PRIVATE STREETS WITHIN AND ABUTTING THE SUBJECT PROPERTY AND AS OTHERWISE SPECIFIED IN THE PROFFERS.

## Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012

Site Name: Block A1

Drainage Area B Post-Development Land Cover

| | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Managed Turf | 0.00 | 0.19 | 0.00 | 0.00 | 0.19 |
| Impervious Cover | 0.00 | 1.88 | 0.00 | 0.00 | 1.88 |
| D.A. Total (acres) | | | | | 2.06 |

Rv (turf) 0.20; Rv (impervious) 0.95; Runoff from 1" Rainfall (cf) = 6,696

(data input cells highlighted)

| Apply Runoff Reduction Practices | Description of Area | Roof Area Contributing to RWH (ac) | Design Rainfall for RWH (in) | Max Volume Captured by Practice (cf) | NRHS Credit | Input % RR from Model | % Credit | Volume Received from Upstream Practices (cf) | Total Volume Received by Practice (cf) | Avg Daily Drawdown (gallons) | Available Cistern Volume (gallons) | Runoff Reduction Vol (cf) | Remaining Volume (cf) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Estimate RWH RR % Credit | | | | |
| Rooftop Rainwater Harvesting | | 1.00 | 1.00 | 5,182 | Estimate Runoff Reduction % Using Spreadsheet | | 5% | 0 | 5,182 | 208 | 1,148 | 259 | 5,175 | Infiltration Practice |

| Apply Runoff Reduction Practices | Description of Area | Impervious Cover in Contributing D.A. (ac) | Managed Turf in Contributing D.A. (ac) | Max Volume Received by Practice (cf) | Description of Credit | % Credit | Volume Received from Upstream Practices (cf) | Total Volume Received by Practice (cf) | Surface Area of Practice (sf) | Storage Vol Provided by Practice (cf) | Runoff Reduction Vol (cf) | Remaining Volume (cf) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Infiltration Practice | | 0.22 | 0.19 | 861 | Subtract 100% of provided storage vol. | 100% | 5,175 | 6,036 | N/A | 13,340 | 6,036 | 0 | |
| Vegetated Roof | | 0.68 | N/A | 545 | Subtract 100% of provided storage vol. | 100% | N/A | 545 | N/A | 1,607 | 545 | 0 | Rooftop Rainwater Harvesting |
| Permeable Pavement - DCR Level 2 Design Spec | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 1 Design Spec | | | N/A | 0 | Reduce vol. through permeable pavement by 0.045 cf/sf of permeable pavement. | N/A | N/A | 0 | | N/A | 0 | 0 | |
| Bioretention - DCR Level 2 Design Spec (enhanced) | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Bioretention - DCR Level 1 Design Spec (standard) | | | | 0 | Subtract 60% of provided storage vol. | 60% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to A/B Soils or Compost-Amended Filter Path | | | N/A | 0 | Reduce volume to conservation area by 0.04 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to CD Soils | | | N/A | 0 | Reduce volume to conservation area by 0.02 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to Conservation Area | | | N/A | 0 | Reduce volume to conservation area by 0.06 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Disconnection to Bioretention | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 2 Design | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 1 Design | | | N/A | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Stormwater Planter, Extended Tree Pit, or Curb Extension (Urban Bioretention) | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 2 Design Spec | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 1 Design Spec | | | | 0 | Subtract 60% of provided storage vol. | 60% | 0 | 0 | N/A | | 0 | 0 | |
| Grass Channel A/B Soils | | | | 0 | Reduce volume conveyed through grass channel by 20%. | 20% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel C/D Soils | | | | 0 | Reduce volume conveyed through grass channel by 10%. | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel with Compost Amended Soils | | | | 0 | Reduce volume conveyed through grass channel by 30%. | 30% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Extended Detention Pond | | | | 0 | Reduce volume directed to extended detention pond by 10%. | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Sheetflow to Conservation Area with A/B Soils | | | | 0 | Reduce volume by 0.06 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Sheetflow to Conservation Area with C/D Soils | | | | 0 | Reduce volume by 0.04 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Sheetflow to Vegetated Filter Strip in A/B Soils or Amended C/D Soils | | | | 0 | Reduce volume by 0.06 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Proprietary / Other practice not listed above | | | | 0 | Subtract % Credit of provided storage vol. | | 0 | 0 | N/A | | 0 | 0 | |
| Totals: | 1.87 | 0.19 | | | | | | | | | | | |

Total Drainage Area Treated (acres): 2.06

Runoff Reduction Volume Achieved for Drainage Area B (cubic feet): 6,696

See the Data and Summary Tab for Site Results

## Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012

Site Name: Block A1

Drainage Area C Post-Development Land Cover

| | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space | 0.00 | 0.50 | 0.00 | 0.00 | 0.50 |
| Managed Turf | 0.00 | 0.10 | 0.00 | 0.00 | 0.10 |
| Impervious Cover | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| D.A. Total (acres) | | | | | 0.60 |

Rv (turf) 0.20; Rv (impervious) 0.95; Runoff from 1" Rainfall (cf) = 107

(data input cells highlighted)

| Apply Runoff Reduction Practices | Description of Area | Roof Area Contributing to RWH (ac) | Design Rainfall for RWH (in) | Max Volume Captured by Practice (cf) | NRHS Credit | Input % RR from Model | % Credit | Volume Received from Upstream Practices (cf) | Total Volume Received by Practice (cf) | Avg Daily Drawdown (gallons) | Available Cistern Volume (gallons) | Runoff Reduction Vol (cf) | Remaining Volume (cf) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Estimate RWH RR % Credit | | | | |
| Rooftop Rainwater Harvesting | | | 1.00 | 0 | SELECT RWH DESIGN METHOD | | | 0 | 0 | | | 0 | 0 | |

| Apply Runoff Reduction Practices | Description of Area | Impervious Cover in Contributing D.A. (ac) | Managed Turf in Contributing D.A. (ac) | Max Volume Received by Practice (cf) | Description of Credit | % Credit | Volume Received from Upstream Practices (cf) | Total Volume Received by Practice (cf) | Surface Area of Practice (sf) | Storage Vol Provided by Practice (cf) | Runoff Reduction Vol (cf) | Remaining Volume (cf) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Infiltration Practice | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Vegetated Roof | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 2 Design Spec | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 1 Design Spec | | | N/A | 0 | Reduce vol. through permeable pavement by 0.045 cf/sf of permeable pavement. | N/A | N/A | 0 | | N/A | 0 | 0 | |
| Bioretention - DCR Level 2 Design Spec (enhanced) | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Bioretention - DCR Level 1 Design Spec (standard) | | | | 0 | Subtract 60% of provided storage vol. | 60% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to A/B Soils or Compost-Amended Filter Path | | | N/A | 0 | Reduce volume to conservation area by 0.04 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to CD Soils | | | N/A | 0 | Reduce volume to conservation area by 0.02 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to Conservation Area | | | N/A | 0 | Reduce volume to conservation area by 0.06 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Disconnection to Bioretention | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 2 Design | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 1 Design | | | N/A | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Stormwater Planter, Extended Tree Pit, or Curb Extension (Urban Bioretention) | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 2 Design Spec | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 1 Design Spec | | | | 0 | Subtract 60% of provided storage vol. | 60% | 0 | 0 | N/A | | 0 | 0 | |
| Grass Channel A/B Soils | | | | 0 | Reduce volume conveyed through grass channel by 20%. | 20% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel C/D Soils | | | | 0 | Reduce volume conveyed through grass channel by 10%. | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel with Compost Amended Soils | | | | 0 | Reduce volume conveyed through grass channel by 30%. | 30% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Extended Detention Pond | | | | 0 | Reduce volume directed to extended detention pond by 10%. | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Sheetflow to Conservation Area with A/B Soils | | | | 0.60 | Reduce volume by 0.06 cu. ft per sq. ft. of conservation area. | N/A | 0 | 436 | 0.03 | N/A | 436 | 0 | N/A |
| Sheetflow to Conservation Area with C/D Soils | | | | 0 | Reduce volume by 0.04 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Sheetflow to Vegetated Filter Strip in A/B Soils or Amended C/D Soils | | | | 0 | Reduce volume by 0.06 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Proprietary / Other practice not listed above | | | | 0 | Subtract % Credit of provided storage vol. | | 0 | 0 | N/A | | 0 | 0 | |
| Totals: | 0.00 | 0.00 | | | | | | | | | | | |

Total Drainage Area Treated (acres): 0.60

Runoff Reduction Volume Achieved for Drainage Area A (cubic feet): 436

See the Data and Summary Tab for Site Results

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BLOCK A-1 SWM COMPUTATIONS
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS

| DATE | DESCRIPTION |
|---|---|
| 06/20/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/20/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |

SCALE: H: AS SHOWN

JOB No.:

DATE: December 7, 2011

FILE No. 7403-09-003

SHEET: C9.1

# BLOCK A-1 LEED COMPUTATIONS:

**NOTE:**
SEE SHEET C9.0 FOR LIMITS OF 3.06 ACRES LEED BOUNDARY.

```
                    FDFPA1.PRN
        GRAPHICAL PEAK DISCHARGE METHOD                    Version 2.10

Project : WESTPARK REDEVELOPMENT                User: RSO      Date: 10-20-2011
County  : FAIRFAX          State: VA            Checked: ____  Date: ________
Subtitle: EXISTING CONDITIONS BLOCK A1

  Data: Drainage Area      :  3.06   Acres
        Runoff Curve Number :  82
        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 | 5.1 |
| Ia/P Ratio | 0.16 | 0.14 | 0.08 |
| Used | 0.16 | 0.14 | 0.10 |
| Runoff (in) | 1.15 | 1.14 | 3.13 |
| Unit Peak Discharge (cfs/acre/in) | 1.542 | 1.557 | 1.576 |
| Pond and Swamp Factor 0.0% Ponds Used | 1.00 | 1.00 | 1.00 |
| Peak Discharge (cfs) | 5 | 7 | 17 |

**TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)**
1 YR STORM: 3.06 AC X 1.15 (IN) X 1FT/12IN X 43560 = 12,774 CU. FT.
2 YR STORM: 3.06 AC X 1.54 (IN) X 1FT/12IN X 43560 = 17,107 CU. FT.

```
                    FDFPA1.PRN
        GRAPHICAL PEAK DISCHARGE METHOD                    Version 2.10

Project : WESTPARK REDEVELOPMENT                User: RSO      Date: 10-20-2011
County  : FAIRFAX          State: VA            Checked: ____  Date: ________
Subtitle: PROPOSED CONDITIONS BLOCK A1

  Data: Drainage Area      :  3.06   Acres
        Runoff Curve Number :  87
        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 | 5.1 |
| Ia/P Ratio | 0.11 | 0.09 | 0.05 |
| Used | 0.11 | 0.10 | 0.10 |
| Runoff (in) | 1.48 | 1.91 | 4.04 |
| Unit Peak Discharge (cfs/acre/in) | 1.572 | 1.578 | 1.578 |
| Pond and Swamp Factor 0.0% Ponds Used | 1.00 | 1.00 | 1.00 |
| Peak Discharge (cfs) | 7 | 9 | 20 |

**TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS)**
1 YR STORM: 3.06 AC X 1.48 (IN) X 1FT/12IN X 43560 = 16,440 CU. FT.
2 YR STORM: 3.06 AC X 1.91 (IN) X 1FT/12IN X 43560 = 21,216 CU. FT.

**TOTAL RUNOFF VOLUME (ALLOWABLE RELEASE)**
PER LEED, POST-DEVELOPED VOLUME FOR THE 1 YEAR AND 2 YEAR STORMS MUST NOT EXCEED 75% OF THE EXISTING CONDITIONS VOLUMES. THEREFORE ANY STORAGE REQUIRED SHALL BE MET WITH A REUSE VAULT.

1-YEAR STORM
16,440 CU. FT. - (0.75 X 12,774 CU. FT.) = 6,860 CU. FT.

2-YEAR STORM
21,216 CU. FT. - (0.75 X 17,107 CU. FT.) = 8,386 CU. FT.

**SUMMARY**
THE 2-YEAR STORM EVENT CONTROLS, AND 8,386 CF OF STORAGE IS NEEDED TO SATISFY THE LEED REQUIREMENT.

# BLOCK A-1 PFM COMPLIANCE:

**ALLOWABLE RELEASE COMPUTATIONS (RATIONAL METHOD):**

Q=CIA

1.) PRE-DEVELOPMENT RUNOFF
TOTAL SITE AREA = 3.06 AC
C = 0.54
I2 = 5.45 IN/HR
I10 = 7.27 IN/HR
Q2 = 9.01 CFS
Q10 = 12.01 CFS

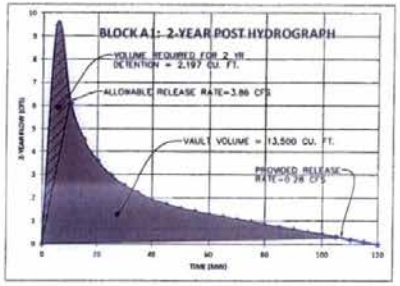
2.) POST-DEVELOPMENT DETENTION FACILITY INFLOW
AREA = 2.05 AC
C = 0.85
I2 = 5.45 IN/HR
I10 = 7.27 IN/HR
Q2 = 9.50 CFS
Q10 = 12.67 CFS

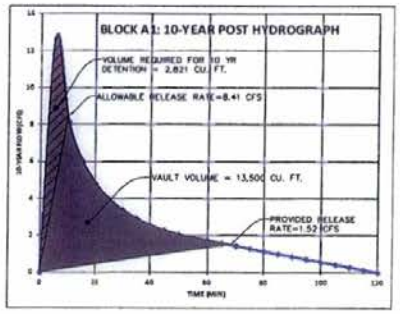
3.) POST-DEVELOPMENT ONSITE UNDETAINED
AREA = 1.01 AC
C = 0.49
I2 = 5.45 IN/HR
I10 = 7.27 IN/HR
Q2 = 2.70 CFS
Q10 = 3.60 CFS

4.) ALLOWABLE RELEASE RATE COMPUTATION
Q(ALLOWABLE) = [PRE-DEVELOPED RUNOFF] - [ONSITE UNDETAINED]
Q2(ALLOWABLE) = 9.01 CFS - 2.70 CFS = 6.31 CFS
Q10(ALLOWABLE) = 12.01 CFS - 3.60 CFS = 8.41 CFS

5.) SWM VAULT RELEASE RATE
Q2 PEAK OUT = 0.28 CFS
Q10 PEAK OUT = 1.52 CFS

THE RELEASE RATES FROM THE SWM/REUSE VAULT SHALL BE LOWER THAN THE ALLOWABLE RELEASE RATES FOR THE 2-YR AND 10-YR STORM EVENTS, AS SUCH THE PFM DETENTION REQUIREMENTS HAVE BEEN MET.




# INFILTRATION SIZING COMPUTATIONS:

**INFILTRATION TRENCH DESIGN**

1. Given the infiltration rate, calculate the design infiltration rate:

$f_d = 0.5 * f$

| | | |
|---|---|---|
| f = | 0.04 | in/hr |
| $f_d$ = | 0.02 | in/hr |

2. Calculate the maximum design depth depth for the infiltration trench:

$d_{max} = f_d * T_{max} / V_f$

| | | |
|---|---|---|
| $T_{max}$ = | 48.00 | hr |
| $V_f$ = | 0.40 | |
| $d_{max}$ = | 2.76 | ft |

3. Calculate the water quality volume requirements for the trench:

$VOLreq = I_{WQ}/Ia * Ave\ Rush\ depth$

| | | |
|---|---|---|
| Drainage Area = | 2.05 | Ac |
| I-Value = | 0.73 | |
| First Flush Depth = | 1.00 | in |
| $VOL_{req}$ = | 5,333 | cf |

4. Calculate the minimum surface area for the bottom of the infiltration trench:

SAmin = VOLreq / (ff * Tmax)

| | | |
|---|---|---|
| $SA_{min}$ = | 4,939 | sf |
| Design Length = | 250.00 | ft |
| Design Width = | 20.00 | ft |
| Design SA = | 5,000 | sf |
| Design Depth = | 2.70 | ft |

Design Depth is Less than Max

5. Compare provided volume to required volume:

Required Volume = VOLreq/Vi
Provided Volume = Design Length * Design Width * Design Depth

| | | |
|---|---|---|
| Required Volume = | 13,333 | $ft^3$ |
| Provided Volume = | 13,500 | $ft^3$ |

Design Volume is Sufficient

# BLOCK A-1 OVERALL SWM SUMMARY:

| | REQUIRED STORAGE |
|---|---|
| LEED: | 8,386 CF |
| 1" RUNOFF: | 5,162 CF |
| PFM: | 2,821 CF |

← CONTROLS SWM VAULT STORAGE REQUIREMENT

TO ENSURE THAT THE STORAGE NECESSARY TO DETAIN THE 10-YEAR STORM (PER THE PFM) IS AVAILABLE WITHIN 48 HOURS OF A PREVIOUS STORM, THE VAULT HAS BEEN SIZED AS FOLLOWS:

MAX VOLUME FOR REUSE (LEED) = 7,380 CF
AMOUNT THAT CAN BE DRAINED IN 48 HOURS DURING THE WINTER = 0 CF (WATER TOWER DEMAND)
VOLUME FOR 10-YEAR STORM DETENTION (PFM) = 2,816 CF

8,386 - 0 + 2,821 = 11,201 => 11,250 CF OF STORAGE NEEDED

FINAL BLOCK A-1 STORAGE REQUIREMENT = 11,201 CF
STORAGE PROVIDED THROUGH INFILTRATION: 13,500 CF

**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.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BLOCK A-1 SWM COMPUTATIONS
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-029-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 08/23/11 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 06/25/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE N.A.S.H.O.W.N.
JOB No.
DATE December 7, 2011
FILE No. 7403-09-003
SHEET C9.2

# INFILTRATION SIZING COMPUTATIONS:

**INFILTRATION TRENCH DESIGN**

1. Given the infiltration rate, calculate the design infiltration rate

$f_d = 0.5 * f$

| | | |
|---|---|---|
| f = | 0.54 | in/hr |
| $f_d$ = | 0.02 | in/hr |

2. Calculate the maximum design depth depth for the infiltration trench

$d_{max} = f_d * T_{max} / V_r$

| | | |
|---|---|---|
| $T_{max}$ = | 48.00 | hr |
| $V_r$ = | 0.40 | |
| $d_{max}$ = | 2.70 | ft |

3. Calculate the water quality volume requirements for the trench

$VOLwq = impAreas * first\ flush\ depth$

| | | |
|---|---|---|
| Drainage Area = | 2.21 | Ac |
| C-Value = | 0.85 | |
| First Flush Depth = | 1.00 | in |
| $VOL_{wq}$ = | 7,755 | cf |

4. Calculate the minimum surface area for the bottom of the infiltration trench

$SAmin = VOLwq / (d * Tmax)$

| | | |
|---|---|---|
| $SA_{min}$ = | 7,180 | sf |
| Design Length = | 300.00 | ft |
| Design Width = | 30.00 | ft |
| Design SA = | 7,200 | sf |
| Design Depth = | 2.70 | ft |

Design Depth is Less than Max

5. Compare provided volume to required volume

Required Volume = VOLwqVr

Provided Volume = Design Length * Design Width * Design Depth

| | | |
|---|---|---|
| Required Volume = | 19,387 | $ft^3$ |
| Provided Volume = | 19,440 | $ft^3$ |

Design Volume is Sufficient

**NOTE:**

THE INFILTRATION VOLUME IS APPROXIMATELY 19,387 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-INCH RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4-INCHES 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 DPMES, THE APPLICANT WILL WORK WITH THE COUNTY TO RETAIN THE FIRST 1-INCH OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

IN FURTHERANCE OF THE APPLICANT'S COMMITMENTS HEREIN AND WHILE IT INTENDS TO MEET THE 1-INCH USING THE TECHNIQUES SHOWN, IT RESERVES THE RIGHT TO UTILIZE ANY COMBINATION OF LID (EXISTING AND FUTURE) MEASURES TO MEET THIS GOAL SUBJECT TO THE REVIEW AND APPROVAL OF DPMES AT TIME OF SITE PLAN.

RECOGNIZING THAT RUNOFF REDUCTION TECHNOLOGIES ARE RELATIVELY NEW AND STILL EVOLVING, THE APPLICANT'S FINAL DESIGN DEVELOPMENT AND/OR DPMES COMMENTS ON THE SITE PLAN MAY RESULT IN CHANGES TO THE LID MEASURES SHOWN ON THE CDP AND/OR FDP, INCLUDING, BUT NOT LIMITED TO, ELIMINATION OR ADDITION OF MEASURES SO LONG AS THESE CHANGES DO NOT AFFECT THE GRID OF STREETS, THE GENERAL LOCATION OF THE POINTS OF ACCESS TO EACH BLOCK, THE GENERAL LOCATION OF THE BUILDINGS, THE BUILD-TO LINES, THE MINIMUM AMOUNT AND GENERAL LOCATION OF PUBLICLY-ACCESS URBAN PARK LAND AS MAY BE APPLICABLE FOR EACH BLOCK AND THE GENERAL QUALITY AND CHARACTER OF THE STREETSCAPE ALONG THE PUBLIC AND PRIVATE STREETS WITHIN AND ABUTTING THE SUBJECT PROPERTY AND AS OTHERWISE SPECIFIED IN THE PROFFERS.

# BLOCK A-2 FIRST INCH OF RUNOFF COMPUTATIONS:

**Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012**

Site Name: Block A2

Description: All soils present are type B soils with a total area of 2.33 Acres (101406.89 SF). DA A is to Tree Pits. DA B is to Cistern.

**Post-Development Land Cover**

(data input cells highlighted in yellow)

**Drainage Area A**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | 0.03 | | | 0.03 |
| Impervious Cover (acres) | | 0.27 | | | 0.27 |
| | | | | Total | 0.30 |

**Drainage Area B**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | 0.08 | | | 0.08 |
| Impervious Cover (acres) | | 2.13 | | | 2.13 |
| | | | | Total | 2.21 |

**Drainage Area C**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| | | | | Total | 0.00 |

**Drainage Area D**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| | | | | Total | 0.00 |

**Drainage Area E**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| | | | | Total | 0.00 |

**Rv Coefficients**

| Land Cover Type * | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils |
|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open space or reforested land | 0.02 | 0.03 | 0.04 | 0.05 |
| Managed Turf | 0.15 | 0.20 | 0.22 | 0.25 |
| Impervious Cover | 0.95 | 0.95 | 0.95 | 0.95 |

* See the instructions tab for a definition of each land cover type.

**Land Cover Summary**

| | |
|---|---|
| Forest / Preserved Open Space (ac) | 0.00 |
| Weighted Rv (forest) | 0.00 |
| % Forest | 0% |
| Managed Turf (acres) | 0.11 |
| Weighted Rv (turf) | 0.20 |
| % Managed Turf | 4% |
| Impervious Cover (acres) | 2.40 |
| Rv (impervious) | 0.95 |
| % Impervious | 96% |
| Total Site Area (acres) | 2.51 |
| Site Rv | 0.92 |

**Rainfall / Runoff Summary**

| | |
|---|---|
| Target Rainfall to Retain Onsite (inches) | 1.0 |
| 1-inch Rainfall Volume for entire site (cf) | 9,104 |
| Volume Not Converted to Runoff (cf) | 752 |
| 1-inch Runoff Volume for entire site (cf) | 8,352 |

**Runoff Reduction Summary**

| | |
|---|---|
| Target Runoff Reduction Volume (cf) | 8,352 |
| Runoff Reduction Volume Achieved (cf) | 8,657 |
| Total Runoff Volume Retained (cf) | 9,409 |
| Total Area of Site Captured in a BMP (acres) | 2.48 |

**Conformance with Comprehensive Plan Goal**

Total Site Area Captured by a BMP (%): 99% — SEE NOTE ON THIS SHEET.

Rainfall Depth Retained Onsite (inch): 1.00

**Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012** — Site Name: Block A2

Drainage Area A Post-Development Land Cover

| | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Managed Turf | 0.00 | 0.03 | 0.00 | 0.00 | 0.03 |
| Impervious Cover | 0.00 | 0.27 | 0.00 | 0.00 | 0.27 |
| D.A. Total (acres) | | | | | 0.30 |

Rv (turf) 0.20; Rv (impervious) 0.95; Runoff from 1" Rainfall (cf) = 950

(data input cells highlighted)

| Apply Runoff Reduction Practices | Description of Area | Roof Area Contributing to RWH (ac) | Storage Rainfall for RWH (in) | Max Volume Captured by Practice (cf) | RWHS Credit | Input % IMP from Model | Extra % Credit | Volume Received from Upstream Practices (cf) | Total Volume Received by Practice (cf) | Avg Daily Drawdown (gallons) | Available Open Volume (gallons) | Runoff Reduction Vol (cf) | Remaining Volume (cf) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rooftop Rainwater Harvesting | | | 1.00 | 0 | SELECT RUNO DESIGN METHOD | | | 0 | 0 | | | 0 | 0 | |

| Apply Runoff Reduction Practices | Description of Area | Impervious Cover to Contributing D.A. (ac) | Managed Turf to Contributing D.A. (ac) | Max Volume Received by Practice (ft³) | Description of Credit | % Credit | Volume Received from Upstream Practices (ft³) | Total Volume Received by Practice (ft³) | Surface Area of Practice (ft²) | Storage Vol Provided by Practice (ft³) | Runoff Reduction Vol (ft³) | Remaining Volume (ft³) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Infiltration Practice | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Vegetated Roof | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 2 Design Spec | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 1 Design Spec | | 0.02 | N/A | 76 | Reduce vol. through permeable pavement by 0.042 cf/cf of permeable pavement | N/A | N/A | 76 | 2100 | 504 | 42 | 33 | Disconnection to Stormwater Planter |
| Bioretention - DCR Level 2 Design Spec (enhanced) | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Bioretention - DCR Level 1 Design Spec (standard) | | | | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to A/B Soils w Compost-Amended Filter Path | | | N/A | 0 | Reduce volume to conservation area by 0.04 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to C/D Soils | | | N/A | 0 | Reduce volume to conservation area by 0.02 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to Conservation Area | | | N/A | 0 | Reduce volume to conservation area by 0.05 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Disconnection to Bioretention | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 2 Design | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 1 Design | | | N/A | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Stormwater Planter, Extended Tree Pit, or Curb Extension (Urban Bioretention) | | 0.25 | N/A | 853 | Subtract 100% of provided storage vol. | 100% | 33 | 886 | N/A | 2,950 | 886 | 0 | |
| Dry Swale - DCR Level 2 Design Spec | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 1 Design Spec | | | | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Grass Channel A/B Soils | | | | 0 | Reduce volume conveyed through grass channel by 20% | 20% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel C/D Soils | | | | 0 | Reduce volume conveyed through grass channel by 30% | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel with Compost Amended Soils | | | | 0 | Reduce volume conveyed through grass channel by 50% | 30% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Extended Detention Pond | | | | 0 | Reduce volume directed to extended detention pond by 10% | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Shortfall to Conservation Area with A/B Soils | | | | 0 | Reduce volume by 0.04 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Shortfall to Conservation Area with C/D Soils | | | | 0 | Reduce volume by 0.02 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Shortfall to Vegetated Filter Strip in A/B Soils or Amended C/D Soils | | | | 0 | Reduce volume by 0.05 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Proprietary / Other practice not listed above | | | | 0 | Subtract % Credit of provided storage vol. | | 0 | 0 | N/A | | 0 | 0 | |
| Totals: | | 0.27 | 0.08 | | | | | | | | | | |

Total Drainage Area Treated (acres): 0.27

See the Data and Summary Tab for Site Results

Runoff Reduction Volume Achieved for Drainage Area A (cubic feet): 824

**Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012** — Site Name: Block A2

Drainage Area B Post-Development Land Cover

| | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Managed Turf | 0.00 | 0.08 | 0.00 | 0.00 | 0.08 |
| Impervious Cover | 0.00 | 2.13 | 0.00 | 0.00 | 2.13 |
| D.A. Total (acres) | | | | | 2.21 |

Rv (turf) 0.20; Rv (impervious) 0.95; Runoff from 1" Rainfall (cf) = 7,455

(data input cells highlighted)

| Apply Runoff Reduction Practices | Description of Area | Roof Area Contributing to RWH (ac) | Storage Rainfall for RWH (in) | Max Volume Captured by Practice (cf) | RWHS Credit | Input % IMP from Model | Extra % Credit | Volume Received from Upstream Practices (cf) | Total Volume Received by Practice (cf) | Avg Daily Drawdown (gallons) | Available Open Volume (gallons) | Runoff Reduction Vol (cf) | Remaining Volume (cf) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rooftop Rainwater Harvesting | | 1.00 | 1.00 | 6,100 | Extended Runoff Reduction % Using Spreadsheet | 10% | 0 | 6,100 | 331 | 2,000 | 332 | 5,504 | Infiltration Practice |

| Apply Runoff Reduction Practices | Description of Area | Impervious Cover to Contributing D.A. (ac) | Managed Turf to Contributing D.A. (ac) | Max Volume Received by Practice (ft³) | Description of Credit | % Credit | Volume Received from Upstream Practices (ft³) | Total Volume Received by Practice (ft³) | Surface Area of Practice (ft²) | Storage Vol Provided by Practice (ft³) | Runoff Reduction Vol (ft³) | Remaining Volume (ft³) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Infiltration Practice | | 0.10 | 0.00 | 372 | Subtract 100% of provided storage vol. | 100% | 5,504 | 5,880 | N/A | 10,440 | 5,880 | 0 | |
| Vegetated Roof | | 0.05 | N/A | 238 | Subtract 100% of provided storage vol. | 100% | N/A | 238 | N/A | | 238 | 0 | Rooftop Rainwater Harvesting |
| Permeable Pavement - DCR Level 2 Design Spec | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 1 Design Spec | | | N/A | 0 | Reduce vol. through permeable pavement by 0.042 cf/cf of permeable pavement | N/A | N/A | 0 | | N/A | 0 | 0 | |
| Bioretention - DCR Level 2 Design Spec (enhanced) | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Bioretention - DCR Level 1 Design Spec (standard) | | | | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to A/B Soils w Compost-Amended Filter Path | | | N/A | 0 | Reduce volume to conservation area by 0.04 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to C/D Soils | | | N/A | 0 | Reduce volume to conservation area by 0.02 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to Conservation Area | | | N/A | 0 | Reduce volume to conservation area by 0.05 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Disconnection to Bioretention | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 2 Design | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 1 Design | | | N/A | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Stormwater Planter, Extended Tree Pit, or Curb Extension (Urban Bioretention) | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 2 Design Spec | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 1 Design Spec | | | | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Grass Channel A/B Soils | | | | 0 | Reduce volume conveyed through grass channel by 20% | 20% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel C/D Soils | | | | 0 | Reduce volume conveyed through grass channel by 30% | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel with Compost Amended Soils | | | | 0 | Reduce volume conveyed through grass channel by 50% | 30% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Extended Detention Pond | | | | 0 | Reduce volume directed to extended detention pond by 10% | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Shortfall to Conservation Area with A/B Soils | | | | 0 | Reduce volume by 0.04 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Shortfall to Conservation Area with C/D Soils | | | | 0 | Reduce volume by 0.02 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Shortfall to Vegetated Filter Strip in A/B Soils or Amended C/D Soils | | | | 0 | Reduce volume by 0.05 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Proprietary / Other practice not listed above | | | | 0 | Subtract % Credit of provided storage vol. | | 0 | 0 | N/A | | 0 | 0 | |
| Totals: | | 0.15 | 0.08 | | | | | | | | | | |

Total Drainage Area Treated (acres): 2.21

See the Data and Summary Tab for Site Results

Runoff Reduction Volume Achieved for Drainage Area A (cubic feet): 7,759

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BLOCK A-2 SWM COMPUTATIONS
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS

| DATE | DESCRIPTION |
|---|---|
| 06/20/12 | PER COUNTY COMMENTS |
| 01/23/12 | PER COUNTY COMMENTS |
| 08/26/11 | PER COUNTY COMMENTS |
| 10/05/10 | PER COUNTY COMMENTS |

| | |
|---|---|
| DATE | DESCRIPTION |
| SCALE | AS SHOWN |
| JOB No. | |
| DATE | December 7, 2011 |
| FILE No. | 7403-09-003 |
| SHEET | C9.3 |

# BLOCK A-2 LEED COMPUTATIONS:

**NOTE:**
SEE SHEET C9.0 FOR LIMITS OF 2.33 ACRES LEED BOUNDARY.

```
                    FDPRAZ.PRN
          GRAPHICAL PEAK DISCHARGE METHOD                    Version 2.10

Project : WESTPARK REDEVELOPMENT                  User: RSD      Date: 10-20-2011
County  : FAIRFAX          State: VA              Checked: ____  Date: ________
Subtitle: EXISTING CONDITIONS BLOCK A2

Data: Drainage Area       :  2.33   Acres
      Runoff Curve Number :  93
      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) | 1.97 | 2.45 | 4.68 |
| 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) | 7 | 9 | 17 |

**TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)**
1 YR STORM: 2.33 AC X 1.97 (IN) X 1FT/12IN X 43560 = 16,663 CU. FT.
2 YR STORM: 2.33 AC X 2.45 (IN) X 1FT/12IN X 43560 = 20,722 CU. FT.

```
                    FDPRAZ.PRN
          GRAPHICAL PEAK DISCHARGE METHOD                    Version 2.10

Project : WESTPARK REDEVELOPMENT                  User: RSD      Date: 10-20-2011
County  : FAIRFAX          State: VA              Checked: ____  Date: ________
Subtitle: PROPOSED CONDITIONS BLOCK A2

Data: Drainage Area       :  2.33   Acres
      Runoff Curve Number :  98
      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) | 1.97 | 2.45 | 4.68 |
| 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) | 7 | 9 | 17 |

**TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS)**
1 YR STORM: 2.33 AC X 1.97 (IN) X 1FT/12IN X 43560 = 16,663 CU. FT.
2 YR STORM: 2.33 AC X 2.45 (IN) X 1FT/12IN X 43560 = 20,722 CU. FT.

**TOTAL RUNOFF VOLUME (ALLOWABLE RELEASE)**
PER LEED, POST-DEVELOPED VOLUME FOR THE 1 YEAR AND 2 YEAR STORMS MUST NOT EXCEED 75% OF THE EXISTING CONDITIONS VOLUMES. THEREFORE ANY STORAGE REQUIRED SHALL BE MET WITH A REUSE VAULT.

**1-YEAR STORM**
16,663 CU. FT. - (0.75 X 16,663 CU. FT.) = 4,166 CU. FT.

**2-YEAR STORM**
20,722 CU. FT. - (0.75 X 20,722 CU. FT.) = 5,181 CU. FT.

**SUMMARY**
THE 2-YEAR STORM EVENT CONTROLS, AND 5,181 CF OF STORAGE IS NEEDED TO SATISFY THE LEED REQUIREMENT.

# BLOCK A-2 PFM COMPLIANCE:

**ALLOWABLE RELEASE COMPUTATIONS (RATIONAL METHOD):**

Q=CIA

1.) PRE-DEVELOPMENT RUNOFF
TOTAL SITE AREA = 2.33 AC
C = 0.72
I2 = 5.45 IN/HR
I10 = 7.27 IN/HR
Q2 = 9.14 CFS
Q10 = 12.20 CFS

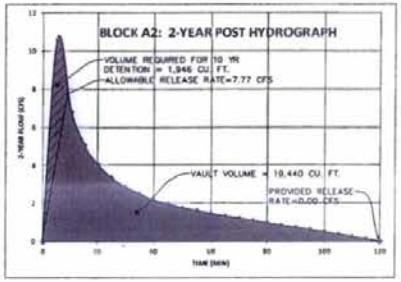
2.) POST-DEVELOPMENT DETENTION FACILITY INFLOW
AREA = 2.21 AC
C = 0.88
I2 = 5.45 IN/HR
I10 = 7.27 IN/HR
Q2 = 10.60 CFS
Q10 = 14.14 CFS

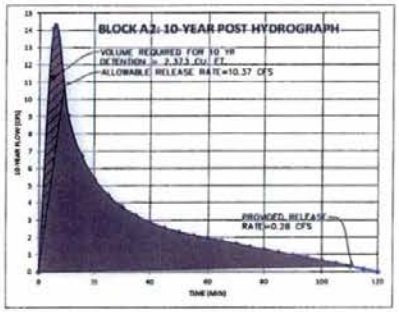
3.) POST-DEVELOPMENT ONSITE UNDETAINED
AREA = 0.30 AC
C = 0.84
I2 = 5.45 IN/HR
I10 = 7.27 IN/HR
Q2 = 1.37 CFS
Q10 = 1.83 CFS

4.) ALLOWABLE RELEASE RATE COMPUTATION
Q(ALLOWABLE) = [PRE-DEVELOPED RUNOFF] - [ONSITE UNDETAINED]
Q2(ALLOWABLE) = 9.14 CFS - 1.37 CFS = 7.77 CFS
Q10(ALLOWABLE) = 12.20 CFS - 1.83 CFS = 10.37 CFS

5.) SWM VAULT RELEASE RATE
Q2 PEAK OUT = 0.00 CFS
Q10 PEAK OUT = 0.28 CFS

THE RELEASE RATES FROM THE SWM/REUSE VAULT SHALL BE LOWER THAN THE ALLOWABLE RELEASE RATES FOR THE 2-YR AND 10-YR STORM EVENTS, AS SUCH THE PFM DETENTION REQUIREMENTS HAVE BEEN MET.




# BLOCK A-2 OVERALL SWM SUMMARY:

| | REQUIRED STORAGE |
|---|---|
| LEED: | 5,181 CF |
| 1" RUNOFF: | 6,190 CF |
| PFM: | 2,373 CF |

← CONTROLS SWM VAULT STORAGE REQUIREMENT

TO ENSURE THAT THE STORAGE NECESSARY TO DETAIN THE 10-YEAR STORM (PER THE PFM) IS AVAILABLE WITHIN 48 HOURS OF A PREVIOUS STORM, THE VAULT HAS BEEN SIZED AS FOLLOWS:

MAX VOLUME FOR REUSE (1" RUNOFF) = 6,190 CF
AMOUNT THAT CAN BE DRAINED IN 48 HOURS DURING THE WINTER = 0 CF (WATER TOWER DEMAND)
VOLUME FOR 10-YEAR STORM DETENTION (PFM) = 1,390 CF

6,190 - 0 + 2,373 = 8,563 => 8,600 CF OF STORAGE NEEDED

FINAL BLOCK A-2 STORAGE REQUIREMENT = 8,600 CF
STORAGE PROVIDED THROUGH INFILTRATION: 19,440 CF

**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.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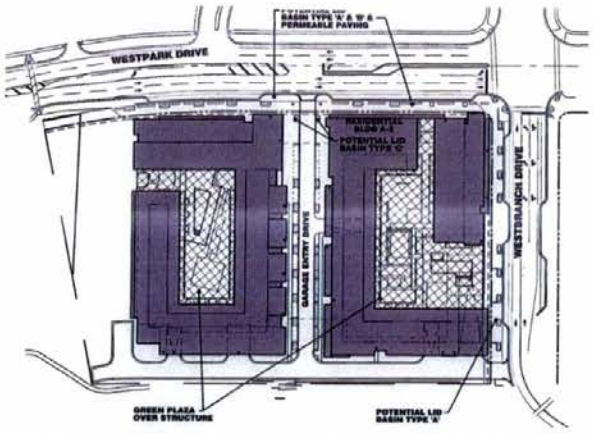
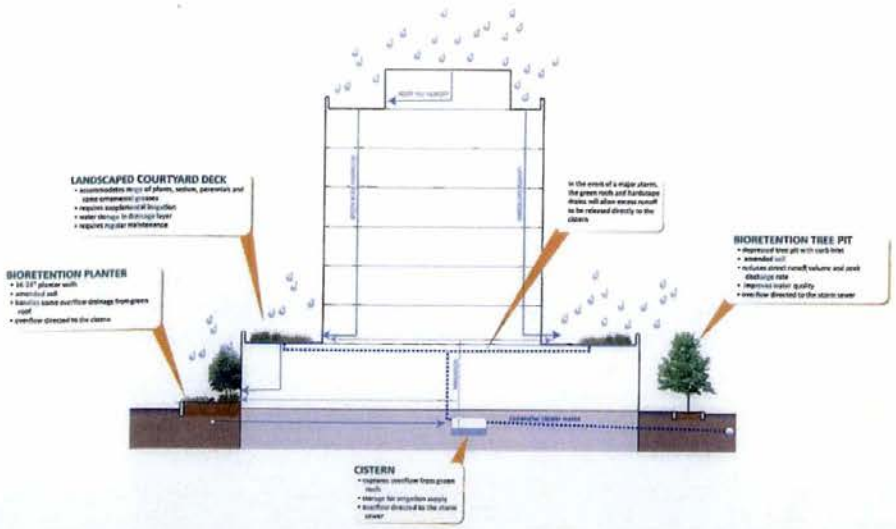
BLOCK A-2 SWM COMPUTATIONS
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | PER COUNTY COMMENTS |
| 07/13/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: AS SHOWN
JOB No.
DATE: December 7, 2011
FILE No. 7403-09-003
SHEET C9.4




1 LOW IMPACT DEVELOPMENT TECHNIQUES - CONCEPT PLAN
NTS




CONCEPTUAL BUILDING DIAGRAM FOR L.I.D TECHNIQUES

BASIN TYPE 'A' & PERMEABLE PAVERS

BASIN TYPE 'B'

BASIN TYPE 'C'

COMMONWEALTH OF VIRGINIA
MATTHEW J. TAUCHER
No. 000832
LANDSCAPE ARCHITECT

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 LS.02 FOR ADDITIONAL SUSTAINABILITY DESIGN INFORMATION.

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ARCHITECT: PARKER RODRIGUEZ, INC.
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LOW IMPACT DEVELOPMENT CONCEPT PLAN
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 08/23/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 06/26/12 | PER COUNTY COMMENTS |
| 10/25/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: 1" AS SHOWN
JOB No.
DATE: December 7, 2011
FILE No. 7403-09-003
SHEET: C10.0

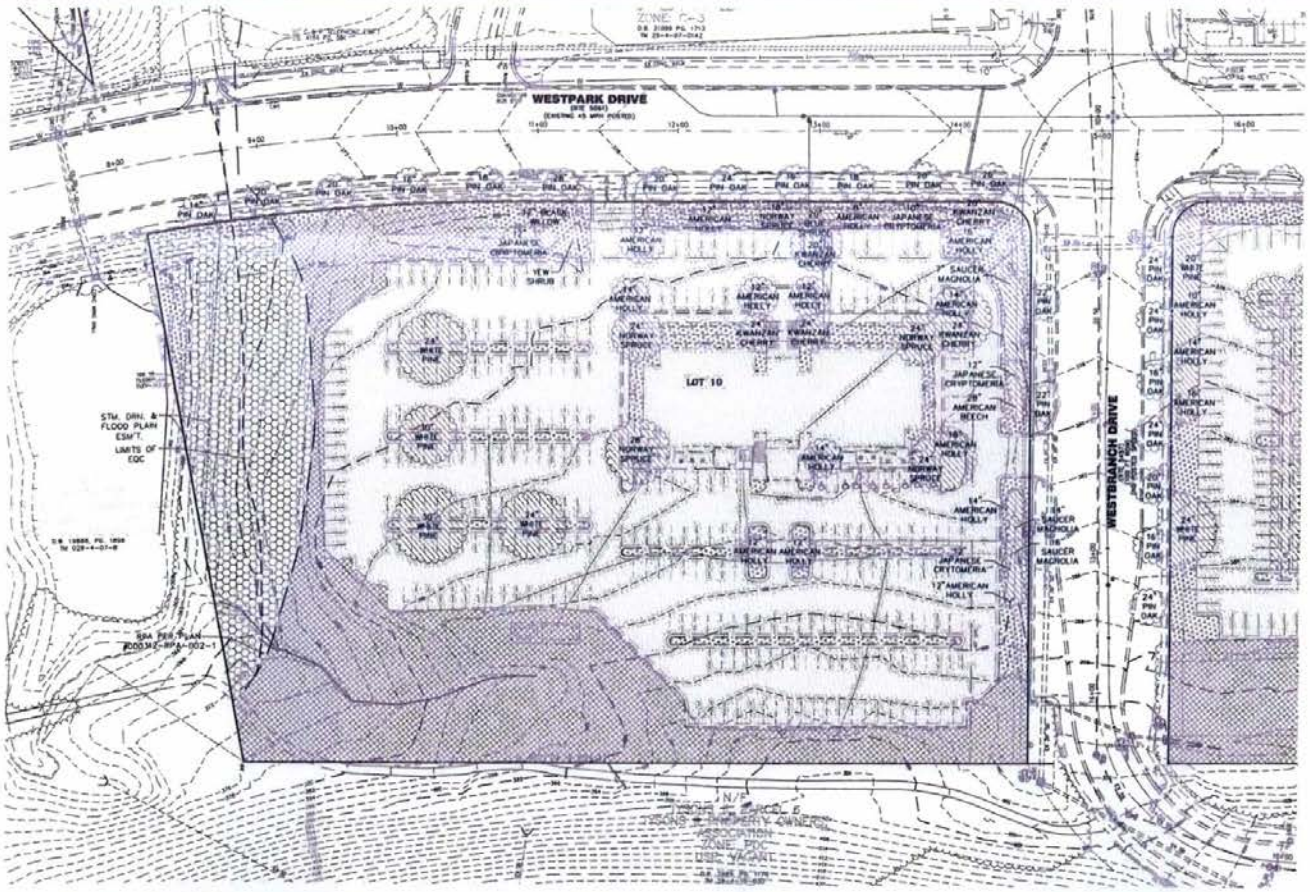


**Table 12.3 Tree Preservation Target Calculations and Statement**

| | | |
|---|---|---|
| A | Pre-development area of existing tree canopy (from Existing Vegetation Map) = | 2.20 AC. |
| B | Percentage of gross site area covered by existing tree canopy = | 42% |
| C | Percentage of 10-year canopy required for site (see Table 12.4) = (Per Comprehensive Plan Goal = 10%) | 10% (0.54 AC.) |
| D | Percentage of the 10-year tree canopy requirement that should be met through tree preservation = | 41% (0.22 AC.) |
| E | Proposed percentage of canopy requirement that will be met through tree preservation = | 59% (0.50 AC.) |
| F | Has the Tree Preservation Target minimum been met? | YES |
| 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 |

## LEGEND

EXISTING INDIVIDUAL TREE LINE

EXISTING TREE CANOPY LINE

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

GRAPHIC SCALE

( IN FEET )
1 inch = 40 ft.

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EXISTING VEGETATION MAP

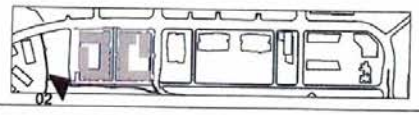
# ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

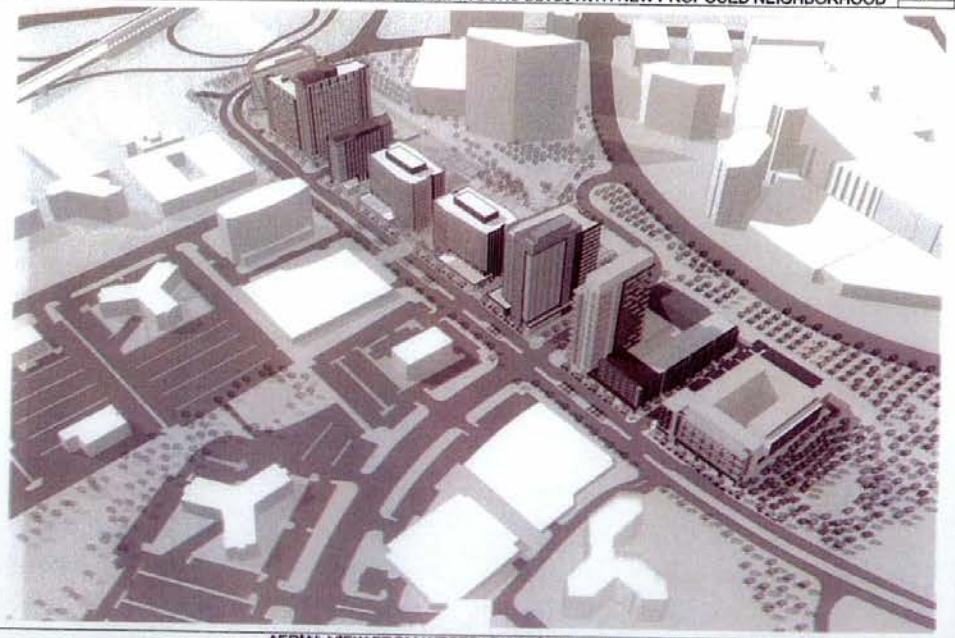
PLAN STATUS

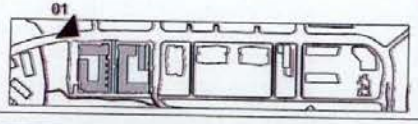
| DATE | DESCRIPTION |
|---|---|
| 08/25/12 | PER COUNTY COMMENTS |
| 07/13/12 | PER COUNTY COMMENTS |
| 08/25/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |

SCALE H: 1" = 40'
JOB No.
DATE : December 7, 2011
FILE No. 7403-09-003
SHEET C11.0




AERIAL VIEW FROM TYSONS BLVD. WITH NEW PROPOSED NEIGHBORHOOD NTS 02






AERIAL VIEW FROM WESTPARK DRIVE WITH NEW PROPOSED NEIGHBORHOOD NTS 01

NOTE:

THE AERIAL VIEWS SHOWN ARE ILLUSTRATIVE AND DO NOT REPRESENT THE MAXIMUM ALLOWABLE BUILDING HEIGHTS PROPOSED FOR BLOCK A AND NEIGHBORHOOD DEVELOPMENT BEYOND.

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CONTEXTUAL AERIAL VIEWS

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 05/25/12 | PER COUNTY COMMENTS |
| 03/28/12 | PER COUNTY COMMENTS |
| 02/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| | |
| | |
| | |
| | |
| | |

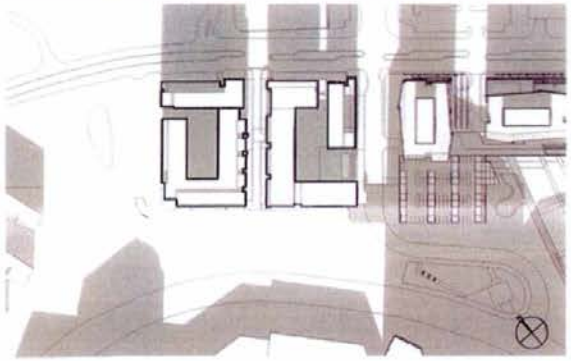
SCALE AS

JOB No.

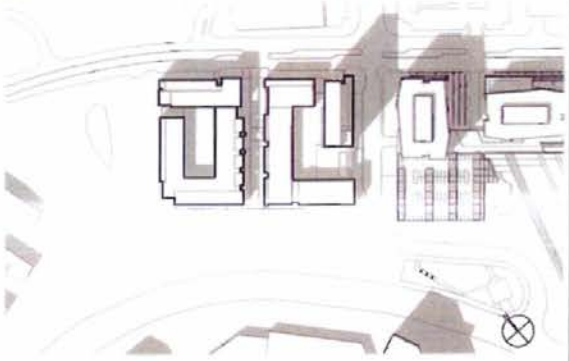
DATE : DECEMBER 07, 2011

FILE No.

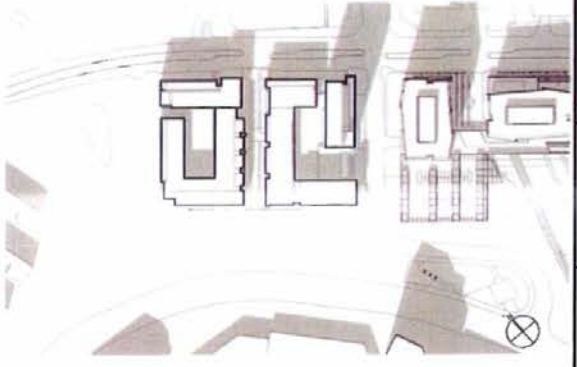
SHEET A-010



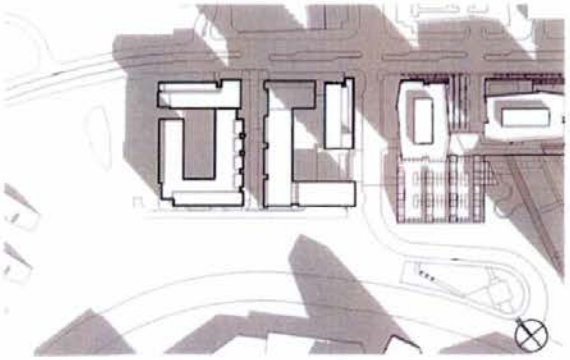
DECEMBER 21 - 3:00 PM NTS 09



JUNE 21 - 3:00 PM NTS 06

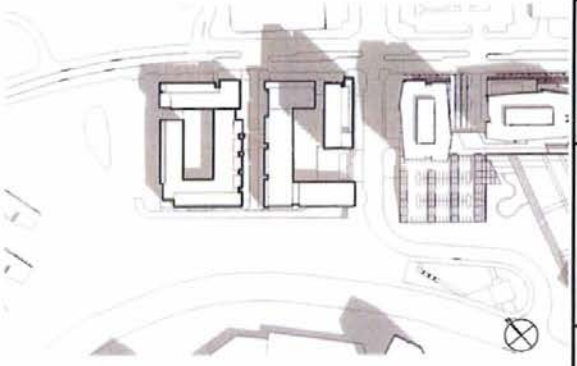


MARCH/SEPTEMBER 21 - 3:00 PM NTS 03

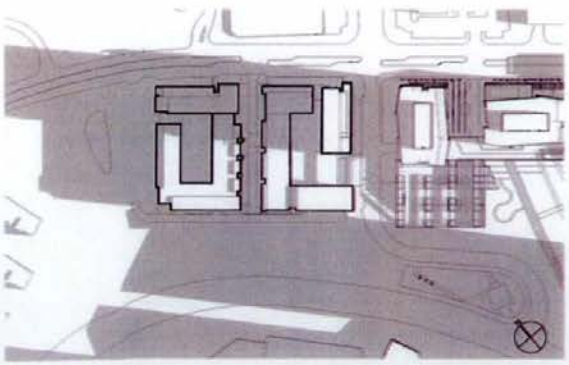


DECEMBER 21 - 12:00 PM NTS 08

JUNE 21 - 12:00 PM NTS 05

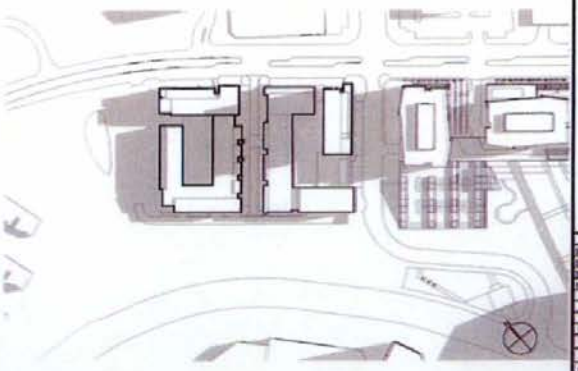


MARCH/SEPTEMBER 21 - 12:00 PM NTS 02



DECEMBER 21 - 9:00 AM NTS 07

JUNE 21 - 9:00 AM NTS 04



MARCH/SEPTEMBER 21 - 9:00AM NTS 01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SHADOW STUDY

# ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 05/25/12 | PER COUNTY COMMENTS |
| 02/28/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/09/12 | PER COUNTY COMMENTS |
| | |
| | |
| DATE | DESCRIPTION |

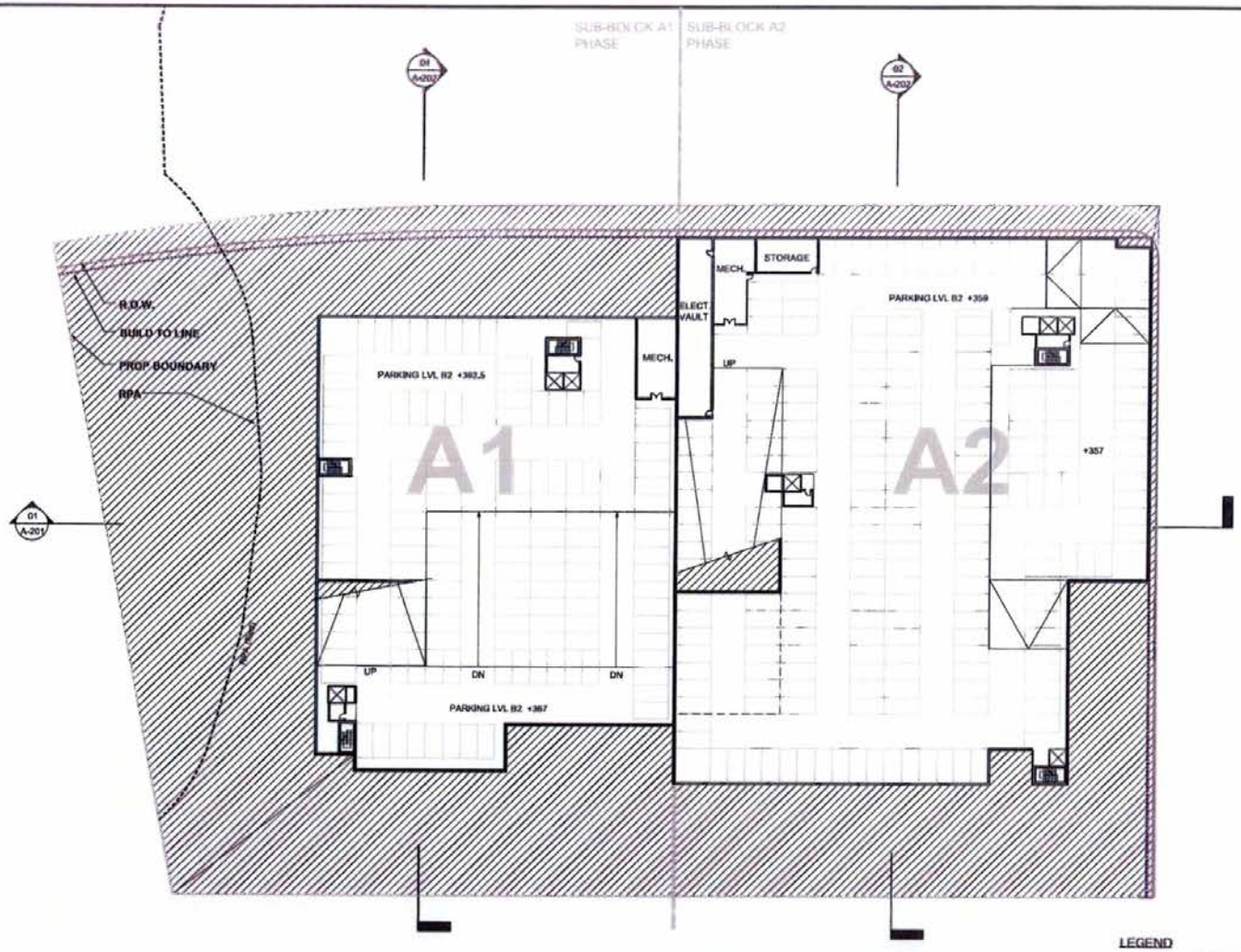
SCALE: N.

JOB No.:

DATE: DECEMBER/OCT 2011

FILE No.:

SHEET A-020




**NOTES**

1- IT IS ANTICIPATED THAT THIS PROJECT WILL BE BUILT IN TWO PHASES WITH BLOCK A2 BEING BUILT FIRST, FOLLOWED BY BLOCK A1, SUBJECT TO MARKET CONDITIONS. SEE C6.1 FOR PHASING DETAILS.

2- SLAB & ROOF ELEVATIONS, AS INDICATED, MAY VARY BUT WILL NOT EXCEED MAXIMUM HEIGHTS LISTED.

3- CONFIGURATION OF INTERIOR SPACES AS SHOWN ARE CONCEPTUAL & SUBJECT TO FINAL ARCHITECTURAL & ENGINEERING DESIGN, INCLUDING NUMBER, SIZE & LOCATIONS OF STAIRS, ELEVATORS, AND BLDG. ENTRANCES. FINAL LAYOUTS MAY VARY.

4- ABOVE GRADE BUILDING SETBACKS ARE APPROXIMATE & WILL BE FINALIZED AT SITE PLAN.

5- SEE LANDSCAPE DRAWINGS FOR EXTENT OF ROOF, COURTYARD & STREETSCAPE DESIGN.

6- SEE CIVIL DRAWINGS FOR SWM & STREET DESIGNS & SECTIONS.

7- PARKING SPACE LAYOUT AS SHOWN IS SUBJECT TO MODIFICATIONS. FINAL CONFIGURATION OF PARKING IS SUBJECT TO RESIDENTIAL UNIT MIX, FINAL PARKING COUNT, STRUCTURE & MECHANICAL SYSTEM LAYOUT, AND WILL BE FINALIZED AT BUILDING PERMIT.

**LEGEND**

- BLDG FOOTPRINT ABOVE
- SPOT ELEVATION
- PEDESTRIAN ENTRY
- VEHICULAR ENTRY
- PROPERTY (ROW) LINE
- BUILD TO LINE
- BELOW GRADE

LEVEL B2 - PARKING PLAN 01

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HOME PROPERTIES

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LEVEL B2 FLOOR PLAN

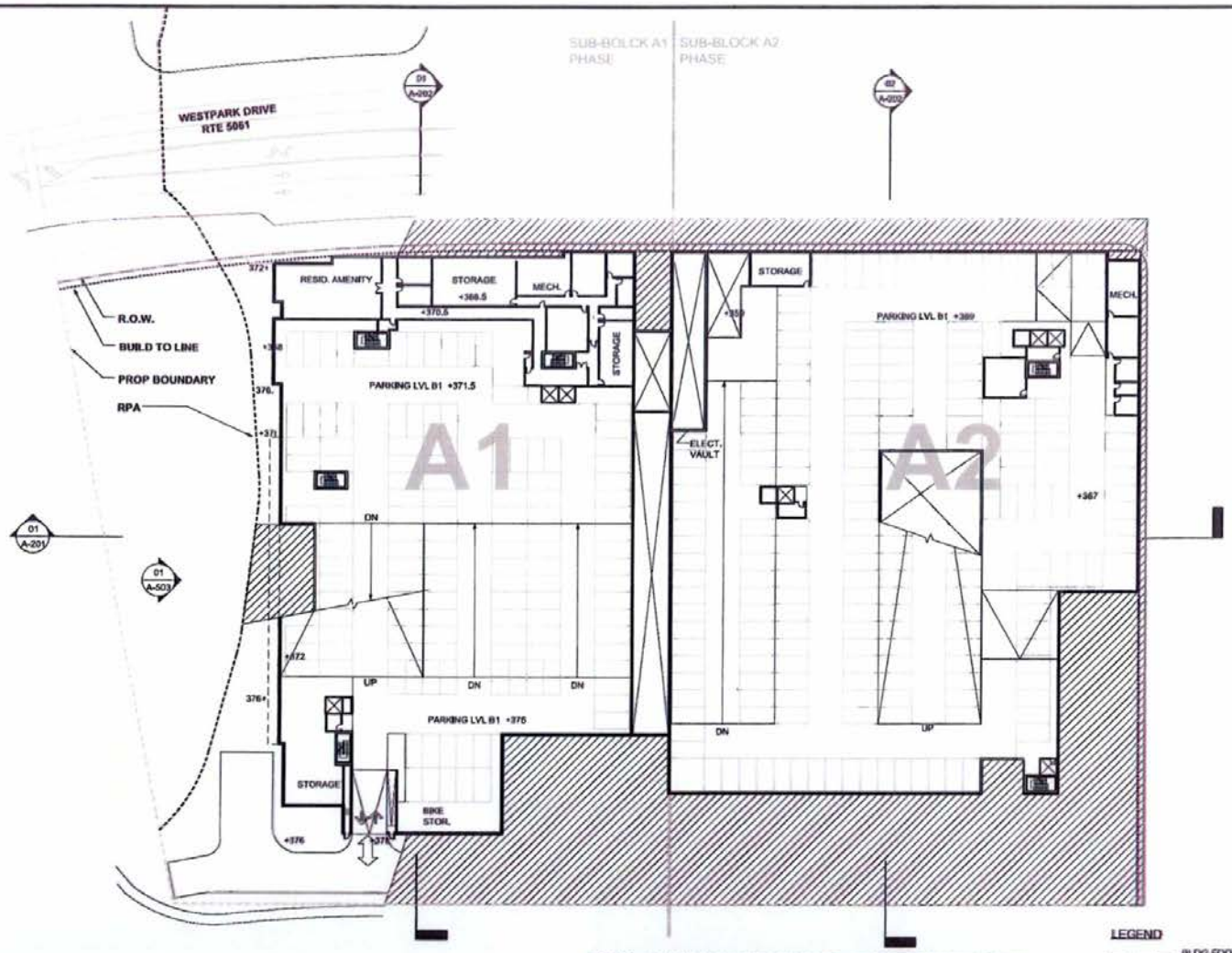
ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 3/2/2012 | PER COUNTY COMMENTS |
| 3/23/12 | PER COUNTY COMMENTS |
| 3/27/12 | PER COUNTY COMMENTS |
| 10/8/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | NI |
| JOB No. | |
| DATE | DECEMBER 07, 2011 |
| FILE No. | |
| SHEET | A-101 |




**NOTES**

1- IT IS ANTICIPATED THAT THIS PROJECT WILL BE BUILT IN TWO PHASES WITH BLOCK A2 BEING BUILT FIRST, FOLLOWED BY BLOCK A1, SUBJECT TO MARKET CONDITIONS. SEE C6.1 FOR PHASING DETAILS.

2- SLAB & ROOF ELEVATIONS, AS INDICATED, MAY VARY BUT WILL NOT EXCEED MAXIMUM HEIGHTS LISTED.

3- CONFIGURATION OF INTERIOR SPACES AS SHOWN ARE CONCEPTUAL & SUBJECT TO FINAL ARCHITECTURAL & ENGINEERING DESIGN, INCLUDING NUMBER, SIZE & LOCATIONS OF STAIRS, ELEVATORS, AND BLDG. ENTRANCES. FINAL LAYOUTS MAY VARY.

4- ABOVE GRADE BUILDING SETBACKS ARE APPROXIMATE & WILL BE FINALIZED AT SITE PLAN.

5- SEE LANDSCAPE DRAWINGS FOR EXTENT OF ROOF, COURTYARD & STREETSCAPE DESIGN.

6- SEE CIVIL DRAWINGS FOR SWM & STREET DESIGNS & SECTIONS.

7- PARKING SPACE LAYOUT AS SHOWN IS SUBJECT TO MODIFICATIONS. FINAL CONFIGURATION OF PARKING IS SUBJECT TO RESIDENTIAL UNIT MIX, FINAL PARKING COUNT, STRUCTURE & MECHANICAL SYSTEM LAYOUT, AND WILL BE FINALIZED AT BUILDING PERMIT.

**LEGEND**

- BLDG FOOTPRINT ABOVE
- SPOT ELEVATION
- PEDESTRIAN ENTRY
- VEHICULAR ENTRY
- PROPERTY (ROW) LINE
- BUILD TO LINE
- BELOW GRADE

LEVEL B1 - PARKING PLAN 01

Bowman CONSULTING

PARKER RODRIGUEZ, INC.

HOME PROPERTIES

Cityline PARTNERS

LEVEL B1 FLOOR PLAN

ARBOR ROW - BLOCK 'A'

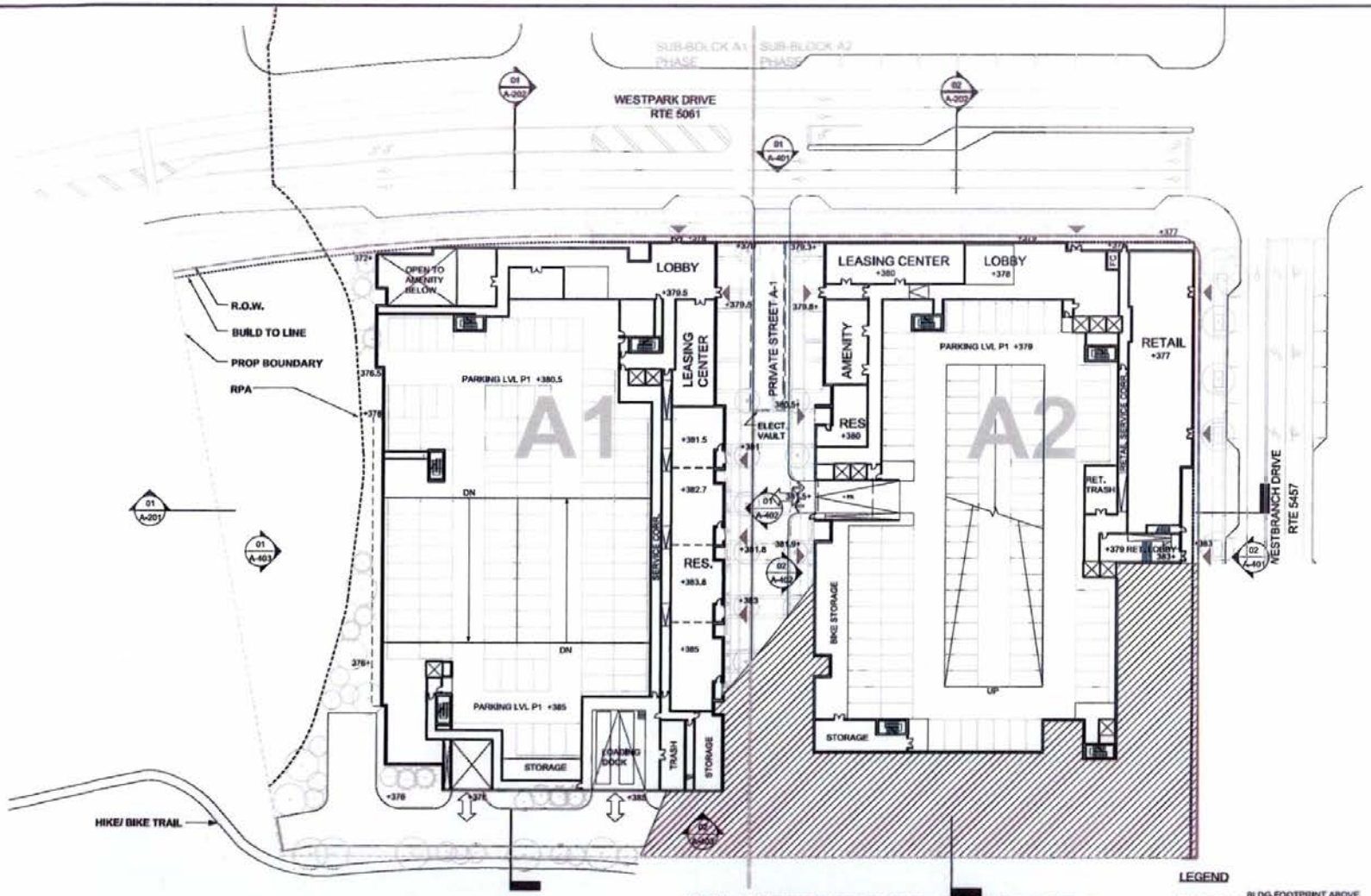
FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS

| | |
|---|---|
| 06/25/12 | PER COUNTY COMMENTS |
| 07/02/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/03/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | NI |
| JOB No. | |
| DATE | DECEMBER 07, 2011 |
| FILE No. | |
| SHEET | A-102 |




**NOTES**

1- IT IS ANTICIPATED THAT THIS PROJECT WILL BE BUILT IN TWO PHASES WITH BLOCK A2 BEING BUILT FIRST, FOLLOWED BY BLOCK A1, SUBJECT TO MARKET CONDITIONS. SEE C8.1 FOR PHASING DETAILS.

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5- SEE LANDSCAPE DRAWINGS FOR EXTENT OF ROOF, COURTYARD & STREETSCAPE DESIGN.

6- SEE CIVIL DRAWINGS FOR SWM & STREET DESIGNS & SECTIONS.

7- PARKING SPACE LAYOUT AS SHOWN IS SUBJECT TO MODIFICATIONS. FINAL CONFIGURATION OF PARKING IS SUBJECT TO RESIDENTIAL UNIT MIX, FINAL PARKING COUNT, STRUCTURE & MECHANICAL SYSTEM LAYOUT, AND WILL BE FINALIZED AT BUILDING PERMIT.

**LEGEND**

- BLDG FOOTPRINT ABOVE
- SPOT ELEVATION
- PEDESTRIAN ENTRY
- VEHICULAR ENTRY
- PROPERTY (ROW) LINE
- BUILD TO LINE
- BELOW GRADE

LEVEL 1 - GROUND FLOOR PLAN 1/16"=1'0" 01

Bowman CONSULTING

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www.bowmanconsulting.com
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Alexandria VA 22314
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Planning Urban Design
Landscape Architecture

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Suite 100
Springfield, Virginia 22150
tel 703 370 7500
fax 703 370 7501

Cityline PARTNERS
A Development of
DLJ Real Estate Capital Partners

LEVEL 1 FLOOR PLAN

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 05/23/12 | 4TH COUNTY COMMENTS |
| 3/30/2012 | 3RD COUNTY COMMENTS |
| 08/26/11 | 2ND COUNTY COMMENTS |
| 10/05/11 | 1ST COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

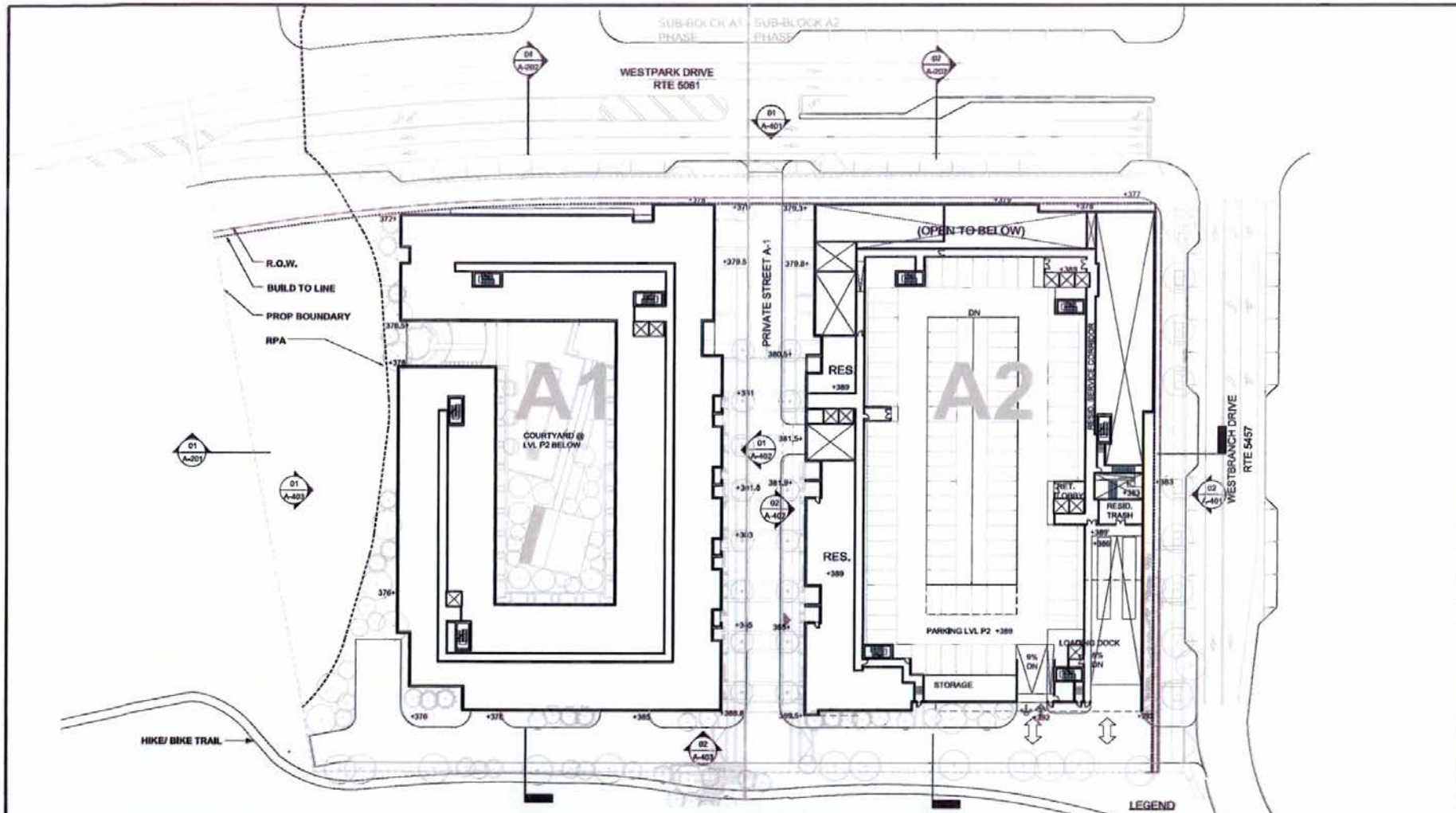
SCALE: N/

JOB No.

DATE: DECEMBER 07, 2011

FILE No.

SHEET A-103




**NOTES**

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4- ABOVE GRADE BUILDING SETBACKS ARE APPROXIMATE & WILL BE FINALIZED AT SITE PLAN.

5- SEE LANDSCAPE DRAWINGS FOR EXTENT OF ROOF, COURTYARD & STREETSCAPE DESIGN.

6- SEE CIVIL DRAWINGS FOR SWM & STREET DESIGNS & SECTIONS.

7- PARKING SPACE LAYOUT AS SHOWN IS SUBJECT TO MODIFICATIONS. FINAL CONFIGURATION OF PARKING IS SUBJECT TO RESIDENTIAL UNIT MIX, FINAL PARKING COUNT, STRUCTURE & MECHANICAL SYSTEM LAYOUT, AND WILL BE FINALIZED AT BUILDING PERMIT.

**LEGEND**

- BLDG FOOTPRINT ABOVE
- SPOT ELEVATION
- PEDESTRIAN ENTRY
- VEHICULAR ENTRY
- PROPERTY (ROW) LINE
- BUILD TO LINE
- BELOW GRADE

LEVEL 2 - FLOOR PLAN 01

Bowman CONSULTING

PARKER RODRIGUEZ, INC.

HOME PROPERTIES

Cityline PARTNERS

LEVEL 2 FLOOR PLAN

ARBOR ROW - BLOCK 'A'

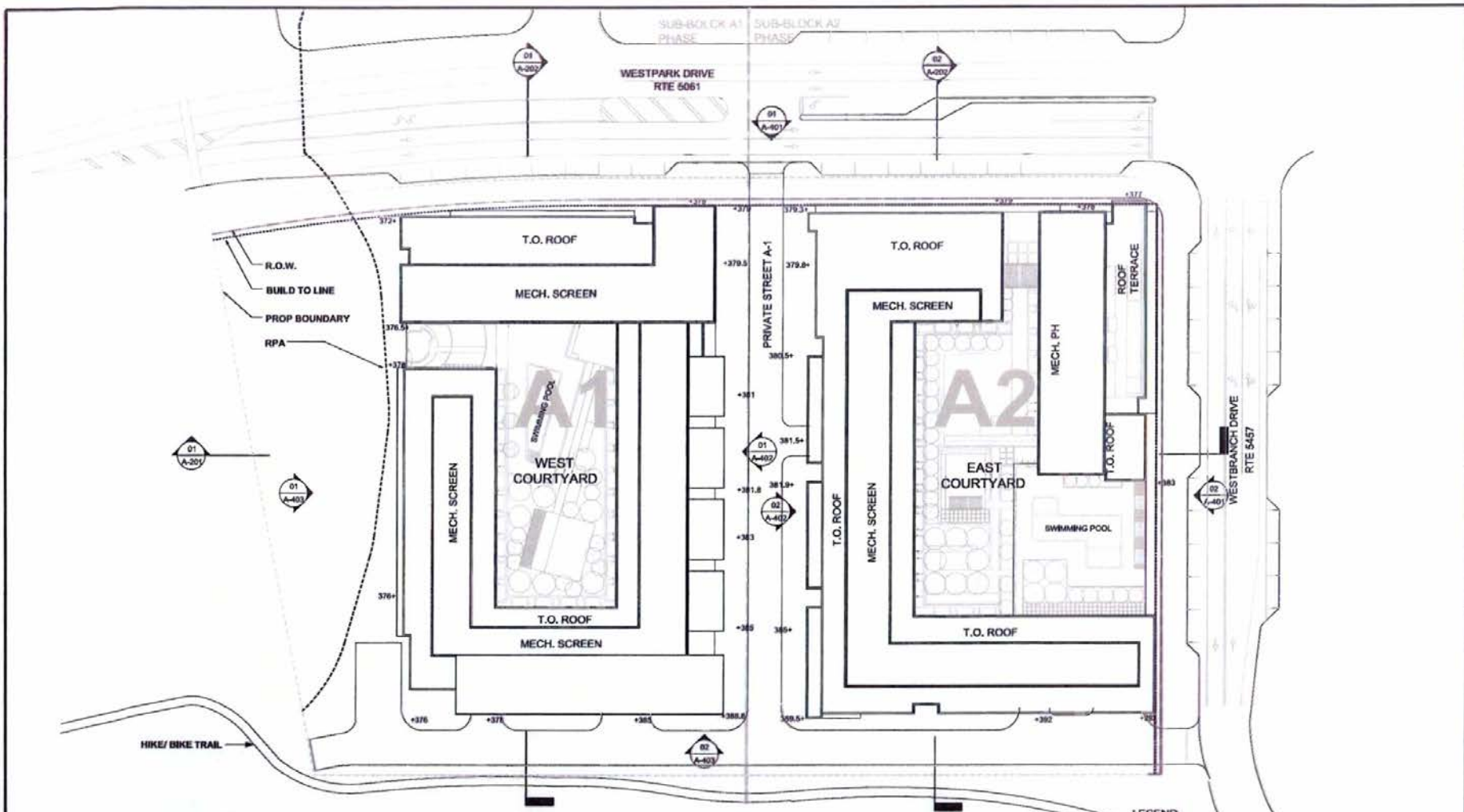
FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS

| | |
|---|---|
| 06/25/12 | REV COUNTY COMMENTS |
| 07/23/12 | REV COUNTY COMMENTS |
| 08/20/12 | REV COUNTY COMMENTS |
| 10/09/12 | REV COUNTY COMMENTS |

| | |
|---|---|
| DATE | DESCRIPTION |
| SCALE | N |
| JOB No. | |
| DATE | DECEMBER 07, 2011 |
| FILE No. | |
| SHEET | A-104 |

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**LEGEND**

- BLDG. FOOTPRINT ABOVE
- SPOT ELEVATION
- PEDESTRIAN ENTRY
- VEHICULAR ENTRY
- PROPERTY (ROW) LINE
- BUILD TO LINE
- BELOW GRADE

ROOF PLAN

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/05/12 | PER COUNTY COMMENTS |
| 07/20/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/09/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

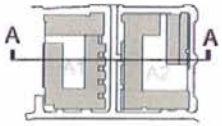
SCALE: N/

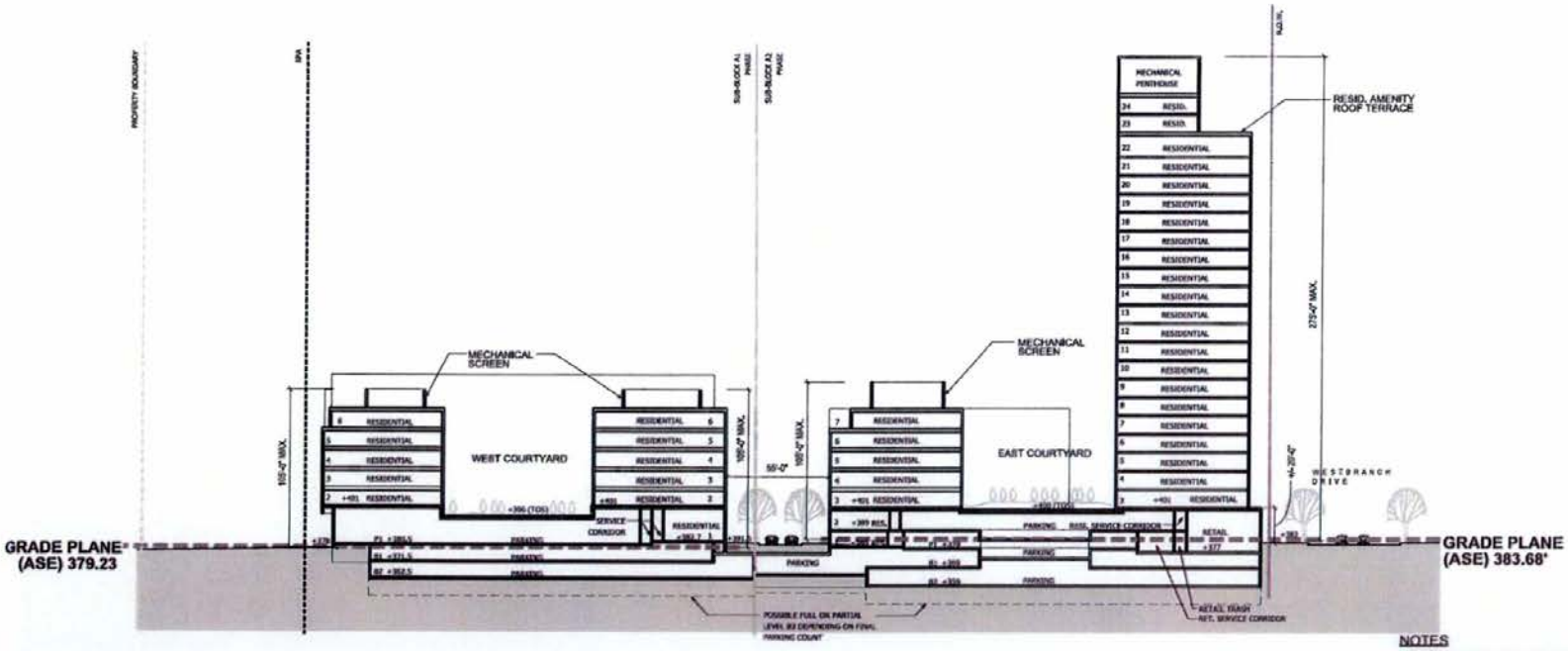
JOB No.

DATE: DECEMBER 07, 2011

FILE No.

ROOF PLAN | 01 | SHEET A-105




## NOTES

1- SITE SECTIONS PRESENTED ON THIS SHEET ARE PROVIDED TO AID IN THE UNDERSTANDING OF GRADE CHANGE ACROSS THE SUBJECT PROPERTY & THE RELATIONSHIP OF PROPOSED BUILDINGS & OTHER USES. BUILDING DESIGN AND FINAL GRADING ARE SUBJECT TO CHANGE IN FINAL ENGINEERING & ARCHITECTURAL DESIGN.

2- GRADE PLANE AVERAGE SITE ELEVATION MAY VARY SLIGHTLY BASED ON FINAL SITE GRADING.

3- NUMBER OF FLOORS MAY VARY, BUT SHALL NOT EXCEED MAXIMUM BUILDING HEIGHTS LISTED AND SHALL BE IN CONFORMANCE WITH CODE & ZONING REQUIREMENTS.

4- PARKING CONFIGURATION & NUMBER OF PARKING LEVELS MAY VARY DEPENDING ON UNIT MIX, FINAL PARKING COUNT, STRUCTURE & MECH. SYSTEMS LAYOUT, AND WILL BE FINALIZED AT TIME OF BUILDING PERMIT.

EAST-WEST SECTION 01

Bowman CONSULTING

PARKER RODRIGUEZ, INC.

HOME PROPERTIES

Cityline PARTNERS

EAST-WEST SECTION

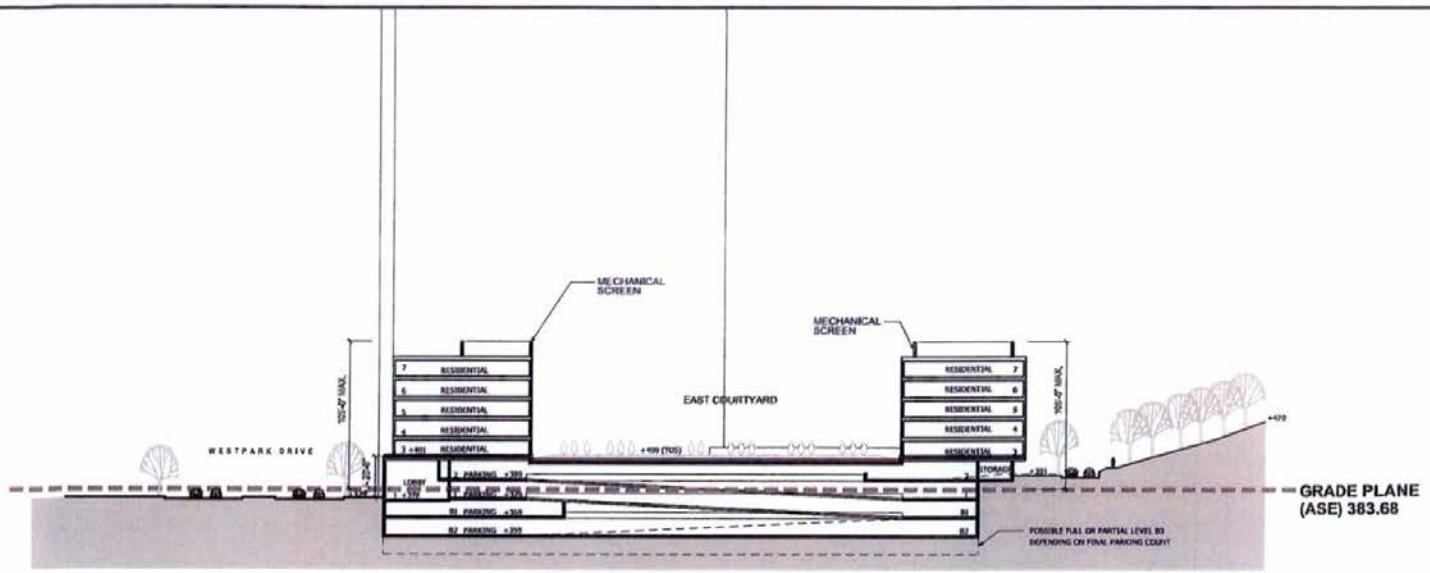
ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

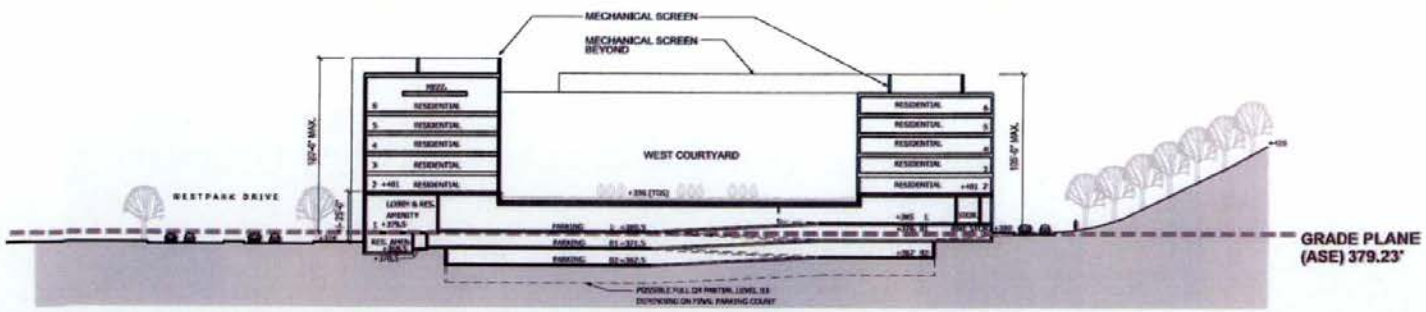
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS

| DATE | DESCRIPTION |
|---|---|
| SCALE | 1" |
| JOB No. | |
| DATE | DECEMBER 07, 2011 |
| FILE No. | |
| SHEET | A-201 |




NORTH-SOUTH SECTION AT A2 1" = 30'-0" 02




NORTH-SOUTH SECTION AT A1 1" = 30'-0" 01

## NOTES

1- SITE SECTIONS PRESENTED ON THIS SHEET ARE PROVIDED TO AID IN THE UNDERSTANDING OF GRADE CHANGE ACROSS THE SUBJECT PROPERTY & THE RELATIONSHIP OF PROPOSED BUILDINGS & OTHER USES. BUILDING DESIGN AND FINAL GRADING ARE SUBJECT TO CHANGE IN FINAL ENGINEERING & ARCHITECTURAL DESIGN.

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Bowman CONSULTING

PARKER RODRIGUEZ, INC.

HOME PROPERTIES

Cityline PARTNERS

NORTH-SOUTH SECTIONS

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | FCPA COUNTY COMMENTS |
| 07/02/12 | FCPA COUNTY COMMENTS |
| 08/29/12 | FCPA COUNTY COMMENTS |
| 10/09/12 | FCPA COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: N

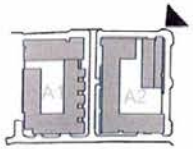
JOB No.

DATE: DECEMBER 07, 2011

FILE No.

SHEET A-202

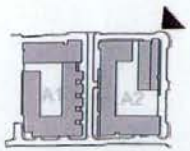
TOWER CORNER VIEW AT WESPARK AND WESTBRANCH DRIVE NTS 02




**NOTES**

1- ARCHITECTURAL ELEVATIONS SHOWN ARE SUBJECT TO MODIFICATIONS, PROVIDED THAT GENERAL DESIGN STRATEGY, QUALITY & CHARACTERISTICS OF THE PROJECT ARE MAINTAINED & IN SUBSTANTIAL CONFORMANCE WITH THE CDP. BUILDING MATERIALS & COLORS, & THE EXACT LOCATION, SHAPE & SIZE OF WINDOWS & BALCONIES ARE SUBJECT TO ADJUSTMENT & REFINEMENT WITH FINAL ENGINEERING & ARCHITECTURAL DESIGN SO LONG AS THEY REMAIN IN SUBSTANTIAL CONFORMANCE WITH CDP.

2- THE FINAL ELEVATIONS MAY VARY IN GLASS AREA. GLASS MAY BE SUBSTITUTED FOR ARCHITECTURAL SYSTEM PANEL, MASONRY OR OTHER MATERIALS. HOWEVER, THE GROUND FLOOR GLAZING SHALL BE MAINTAINED SUCH THAT PEDESTRIAN CORRIDOR STANDARDS FOR GLAZING ARE MET IN COMPLIANCE WITH THE PROFFERS.



ENLARGED VIEW - TOWER CORNER NTS 01

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PARKER RODRIGUEZ, INC.

HOME PROPERTIES

Cityline PARTNERS

SITE PERSPECTIVES

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06.25.12 | PER COUNTY COMMENTS |
| 07.23.12 | PER COUNTY COMMENTS |
| 08.09.12 | PER COUNTY COMMENTS |
| 09.06.12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

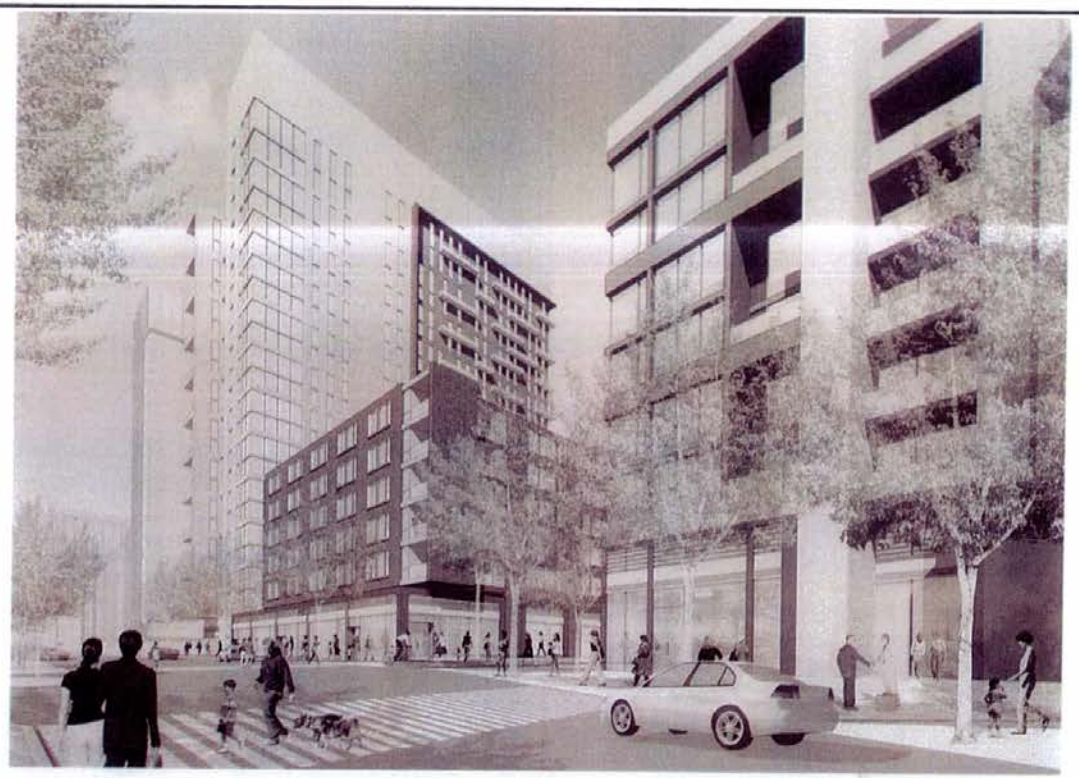
SCALE AS

JOB No.

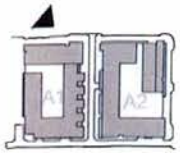
DATE DECEMBER 07, 2011

FILE No.

SHEET A-301



WESTPARK DRIVE VIEW FROM NORTHWEST NTS 02

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ENLARGED VIEW - WESTPARK DRIVE NTS 01

Bowman CONSULTING

PARKER RODRIGUEZ INC

HOME PROPERTIES

Cityline PARTNERS

SITE PERSPECTIVES

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 12/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

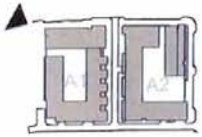
SCALE: N

JOB No.:

DATE: DECEMBER 07, 2011

FILE No.:

SHEET A-302



WESTPARK DRIVE VIEW NTS 02

**NOTES**

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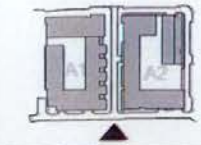

INTERIOR STREET VIEW FROM SOUTH NTS 01

Bowman CONSULTING
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e-mail: info@bowmanconsulting.com

PARKER RODRIGUEZ, INC.
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Planning Urban Design
Landscape Architecture

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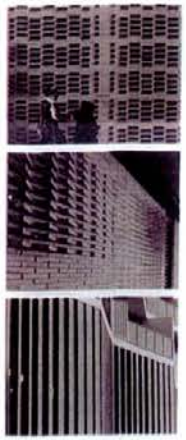
Suite 300
Washington, DC 20007
Tel 202.342.0555
Fax 202.342.0235

Cityline Partners
A subsidiary of
D.C. Real Estate Capital Partners

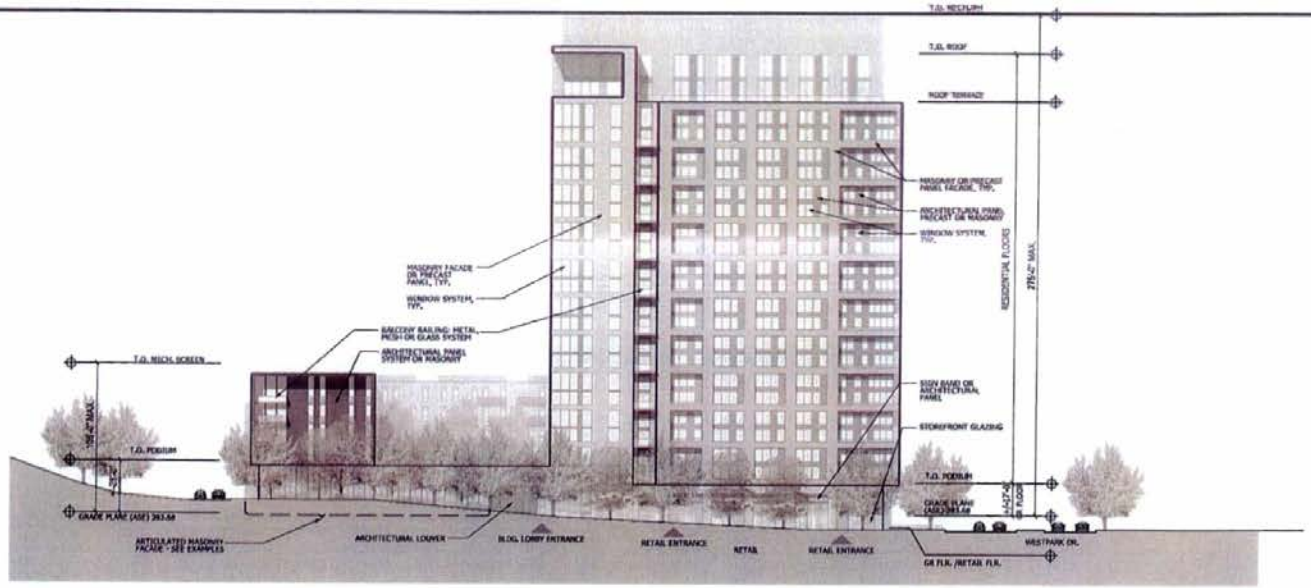
SITE PERSPECTIVES
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/20/12 | FCR COUNTY COMMENTS |
| 10/19/12 | FCR COUNTY COMMENTS |
| 08/29/12 | FCR COUNTY COMMENTS |
| 10/05/12 | FCR COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

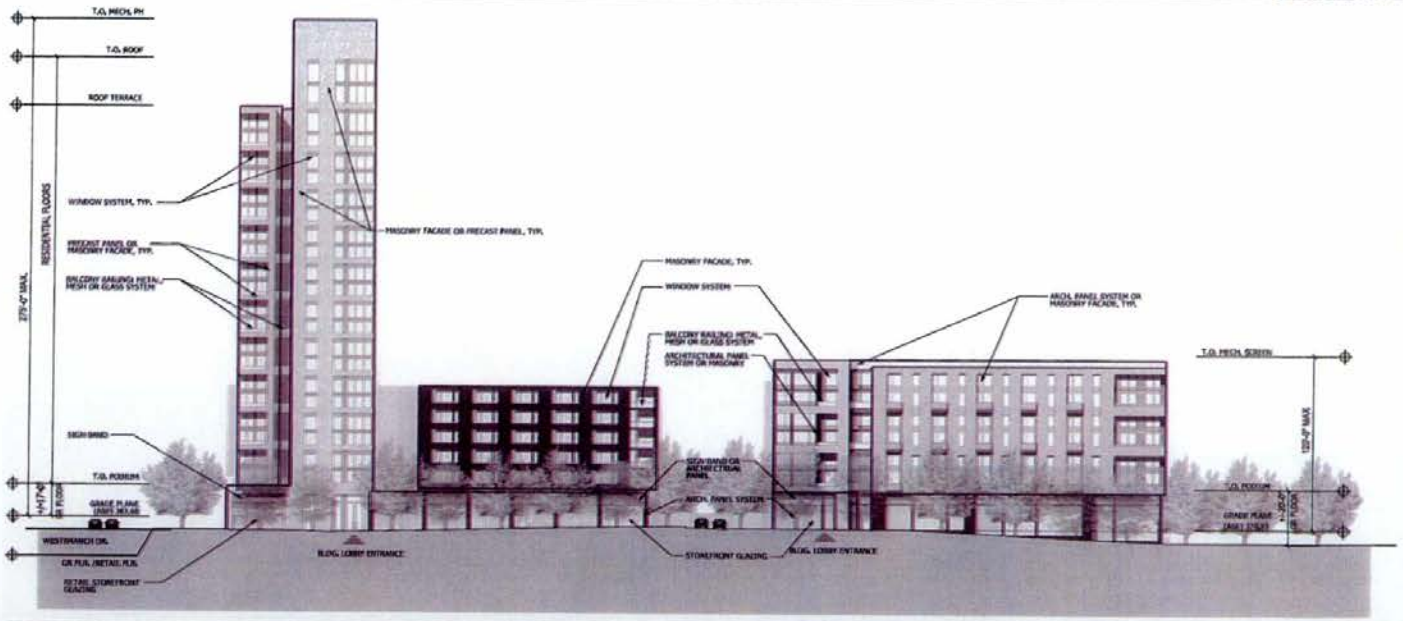
SCALE: N.
JOB No.
DATE: DECEMBER 07, 2011
FILE No.
SHEET A-303



EXAMPLES OF ARTICULATED FACADE




EAST ELEVATION (WESTBRANCH DRIVE) 1" = 30'-0" 02




NORTH ELEVATION (WESTPARK DRIVE) 1" = 30'-0" 01

## NOTES

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2- THE FINAL ELEVATIONS MAY VARY IN GLASS AREA. GLASS MAY BE SUBSTITUTED FOR ARCHITECTURAL SYSTEM PANEL, MASONRY OR OTHER MATERIALS. HOWEVER, THE GROUND FLOOR GLAZING SHALL BE MAINTAINED SUCH THAT PEDESTRIAN CORRIDOR STANDARDS FOR GLAZING ARE MET IN COMPLIANCE WITH THE PROFFERS.

## MATERIALS NOTES

ARCHITECTURAL PANEL SYSTEM REFERS TO ONE OF THE FOLLOWING POSSIBLE MATERIALS:

1- METAL PANEL SYSTEM
2- FIBER CEMENT BOARD PANELING SYSTEM

Bowman CONSULTING
Bowman Consulting Group, Ltd.
14020 Thunderbolt Place, Suite 255
Chantilly, Virginia 20151
Phone (703) 481-9020
Fax (703) 481-9021
www.bowmanconsulting.com

PARKER RODRIGUEZ, INC.
101 North Union St., 400B
Alexandria, VA 22314
703.548.8010
Planning Urban Design
Landscape Architecture

HOME PROPERTIES
6850 Stevenson Boulevard
Fremont, California 94555
Tel 510.578.7500

Cityline PARTNERS
A Joint Venture of Cityline Partners and Home Properties

BUILDING ELEVATIONS

ARBOR ROW - BLOCK 'A'

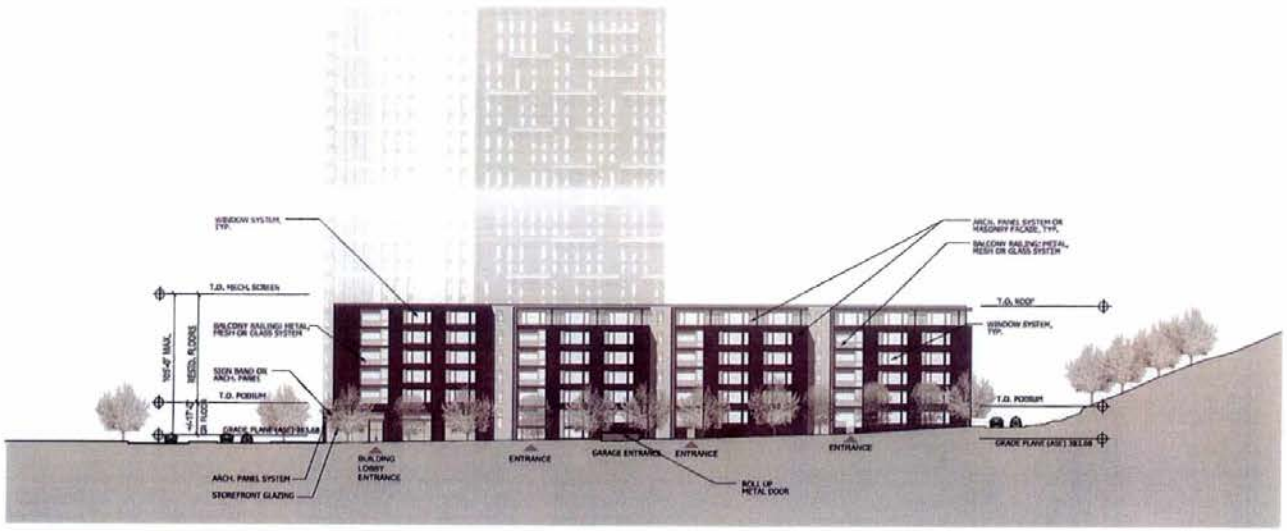
FINAL DEVELOPMENT PLAN 2011-PR-022B-1

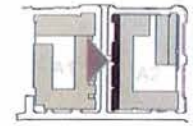
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | NON-COUNTY COMMENTS |
| 07/23/12 | NON-COUNTY COMMENTS |
| 08/28/12 | NON-COUNTY COMMENTS |
| 10/05/12 | NON-COUNTY COMMENTS |

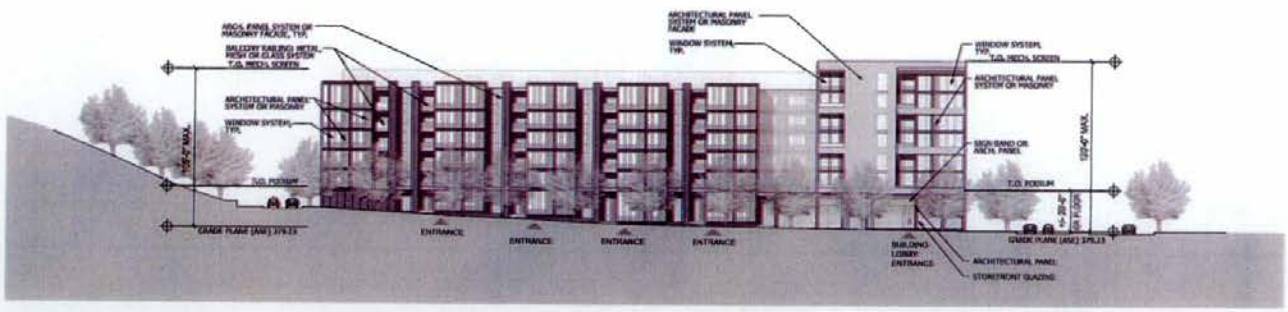
| DATE | DESCRIPTION |
|---|---|
| | |
| | |
| | |

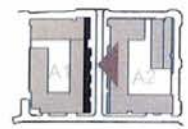
SCALE: AS
JOB No.
DATE: DECEMBER 07, 2011
FILE No.
SHEET A-401




INTERIOR STREET EAST ELEVATION 1" = 30'-0" 02




## NOTES

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2- THE FINAL ELEVATIONS MAY VARY IN GLASS AREA. GLASS MAY BE SUBSTITUTED FOR ARCHITECTURAL SYSTEM PANEL, MASONRY OR OTHER MATERIALS. HOWEVER, THE GROUND FLOOR GLAZING SHALL BE MAINTAINED SUCH THAT PEDESTRIAN CORRIDOR STANDARDS FOR GLAZING ARE MET IN COMPLIANCE WITH THE PROFFERS.

## MATERIALS NOTES

ARCHITECTURAL PANEL SYSTEM REFERS TO ONE OF THE FOLLOWING POSSIBLE MATERIALS:

1- METAL PANEL SYSTEM
2- FIBER CEMENT BOARD PANELING SYSTEM

INTERIOR STREET WEST ELEVATION 1" = 30'-0" 01

Bowman CONSULTING

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HOME PROPERTIES

Cityline PARTNERS

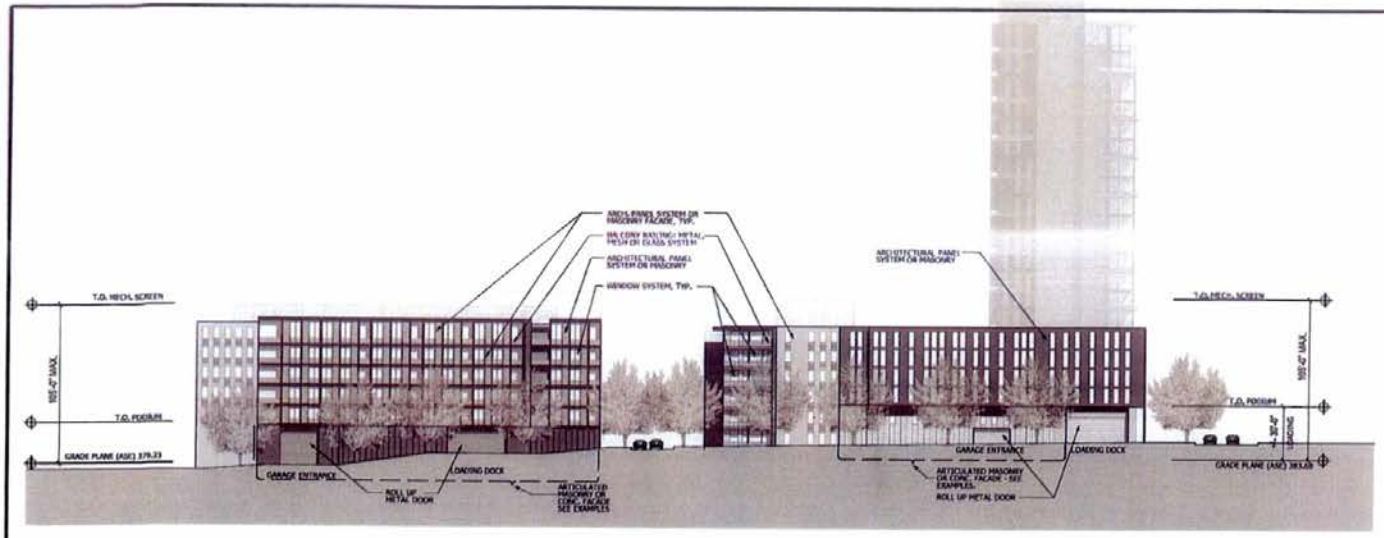
BUILDING ELEVATIONS

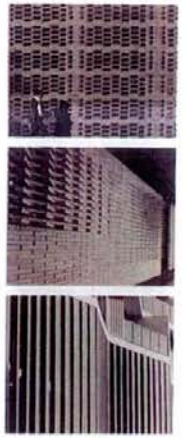
ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

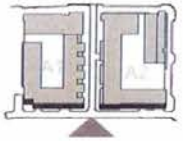
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | PER COUNTY COMMENTS |
| 07/03/12 | PER COUNTY COMMENTS |
| 08/25/12 | PER COUNTY COMMENTS |
| 10/03/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |
| SCALE | 1" |
| JOB No. | |
| DATE | DECEMBER 07, 2011 |
| FILE No. | |
| SHEET | A-402 |

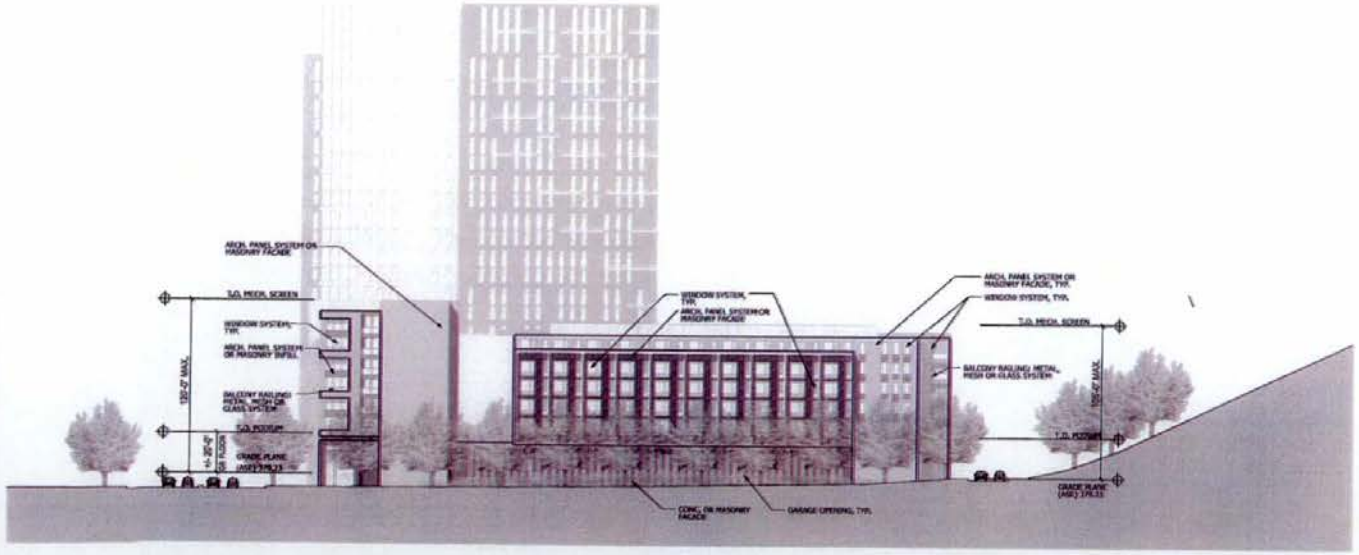


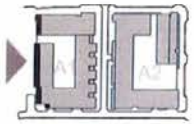



EXAMPLES OF ARTICULATED FACADE



SOUTH ELEVATION 1" = 30'-0" 02



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2- FIBER CEMENT BOARD PANELING SYSTEM

WEST ELEVATION 1" = 30'-0" 01

Bowman CONSULTING
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PARKER RODRIGUEZ, INC.
107 North Oak St., #200
Falls Church, VA 22046
703.538.5510
Planning Urban Design
Landscape Architecture

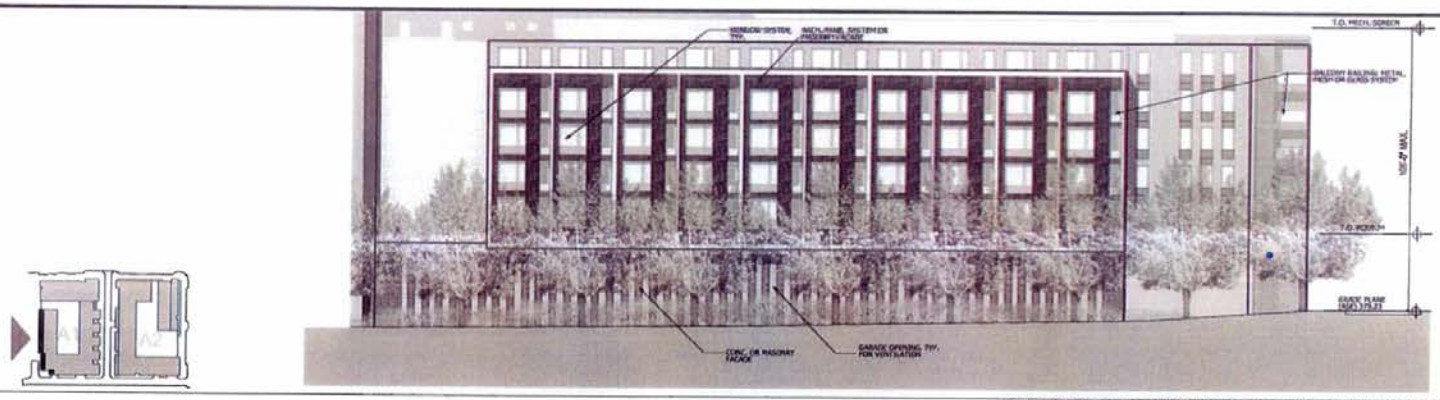
HOME PROPERTIES
6570 Dean Martin Drive
Suite 100
Las Vegas, Nevada 89118
Tel 702.570.7500
Fax 702.570.7599

Cityline PARTNERS
A Subsidiary of DLJ Real Estate Capital Partners

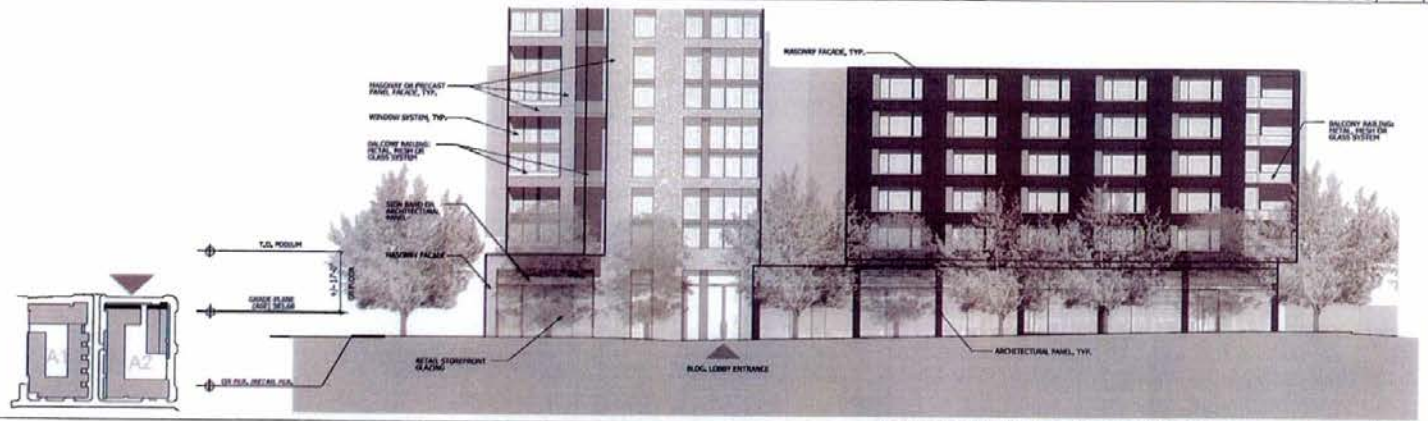
BUILDING ELEVATIONS
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 05/23/12 | PER COUNTY COMMENTS |
| 03/05/12 | PER COUNTY COMMENTS |
| 08/23/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | N |
| JOB No. | |
| DATE | DECEMBER 07, 2011 |
| FILE No. | |
| SHEET | A-403 |




ENLARGED BASE - TOWNHOUSE WALK-UP UNITS 03




ENLARGED BASE - NORTH ELEVATION OF A2 GROUND FLOOR 02

## NOTES

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## MATERIALS NOTES

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ENLARGED BASE - NORTH ELEVATION OF A1 GROUND FLOOR 01

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HOME PROPERTIES

Cityline PARTNERS

ENLARGED BUILDING ELEVATIONS

ARBOR ROW - BLOCK 'A'

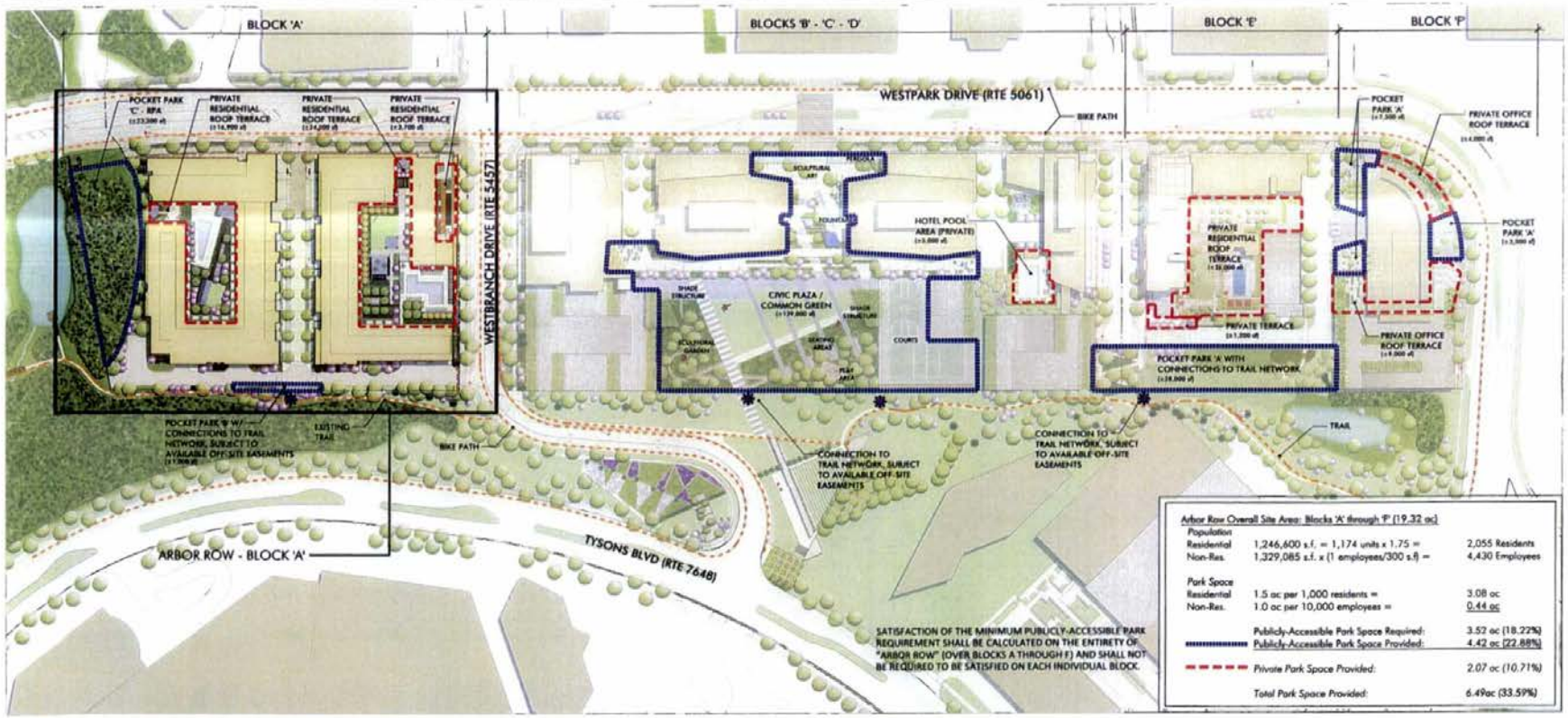
FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

PLAN STATUS

| DATE | DESCRIPTION |
|---|---|
| SCALE | N |
| JOB No. | |
| DATE | DECEMBER 07, 2011 |
| FILE No. | |

SHEET A-404



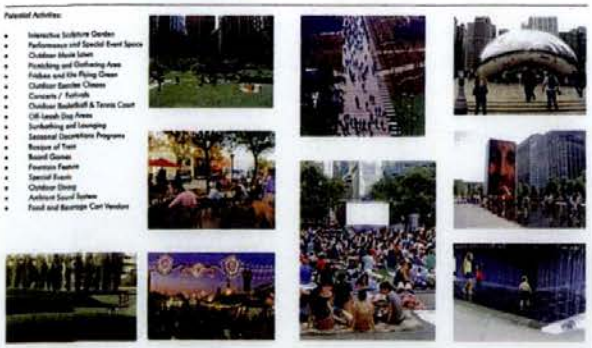

**Arbor Row Overall Site Area: Blocks 'A' through 'F' (19.32 ac)**

| | | |
|---|---|---|
| *Population* | | |
| Residential | 1,246,600 s.f. = 1,174 units x 1.75 = | 2,055 Residents |
| Non-Res. | 1,329,085 s.f. x (1 employee/300 s.f) = | 4,430 Employees |
| *Park Space* | | |
| Residential | 1.5 ac per 1,000 residents = | 3.08 ac |
| Non-Res. | 1.0 ac per 10,000 employees = | 0.44 ac |
| | Publicly-Accessible Park Space Required: | 3.52 ac (18.22%) |
| | Publicly-Accessible Park Space Provided: | 4.42 ac (22.88%) |
| | *Private Park Space Provided:* | *2.07 ac (10.71%)* |
| | *Total Park Space Provided:* | *6.49ac (33.59%)* |

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 place including public art and large enough to support casual unprogrammed use as well as community events. Serves as a focal point and unique placemaking places for civic purposes and commercial supporting activities.

*Potential Activities:*

- Interactive Sculpture Garden
- Performance and Special Event Space
- Outdoor Movie Screen
- Picnicking and Gathering Area
- Frisbee and the Flying Green
- Outdoor Bocce Courts
- Concerts / Festivals
- Outdoor Basketball & Tennis Court
- Off-Leash Dog Areas
- Sunbathing and Lounging
- Seasonal Decorations Programs
- Bosque 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:*

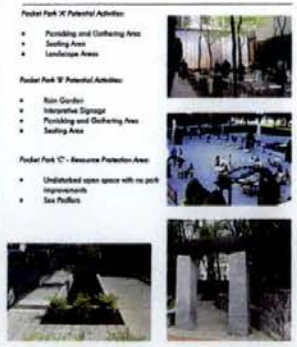
- Picnicking and Gathering Area
- Seating Area
- Landscape Areas

*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
- Sea Profiles



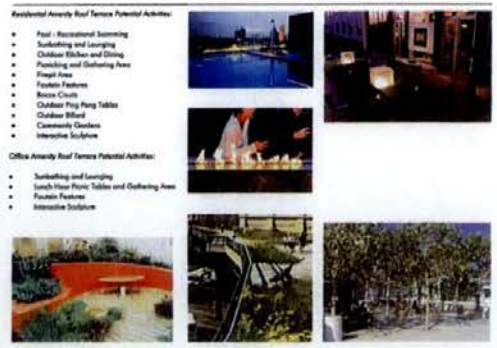
PRIVATE AMENITY ROOF TERRACES - provides outdoor amenity space for residents and workers of residential building and office complexes.

*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



**BLOCK 'A' FDP CALCULATIONS**

Overall Site Area 234,733 sf (5.39 ac)

*Population*
Residential: ±736,800 sf
Retail: ±8,000 sf
Office: 0

Publicly-Accessible Park Space: ±24,500 sf (0.61 ac)
*Private Park Space Provided:* ±45,100 sf (1.04 ac)

*Total Park Space Provided*:* ±69,600 sf (1.60ac)
**For reference only.*

PUBLICLY-ACCESSIBLE PARK SPACE PROVIDED WITHIN BLOCK 'A' SHALL CONTRIBUTE TO THE OVERALL PUBLICLY-ACCESSIBLE PARK SPACE OF THE ARBOR ROW CDP

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.

Bowman Consulting
Parker Rodriguez, Inc.
Home Properties
Cityline Partners

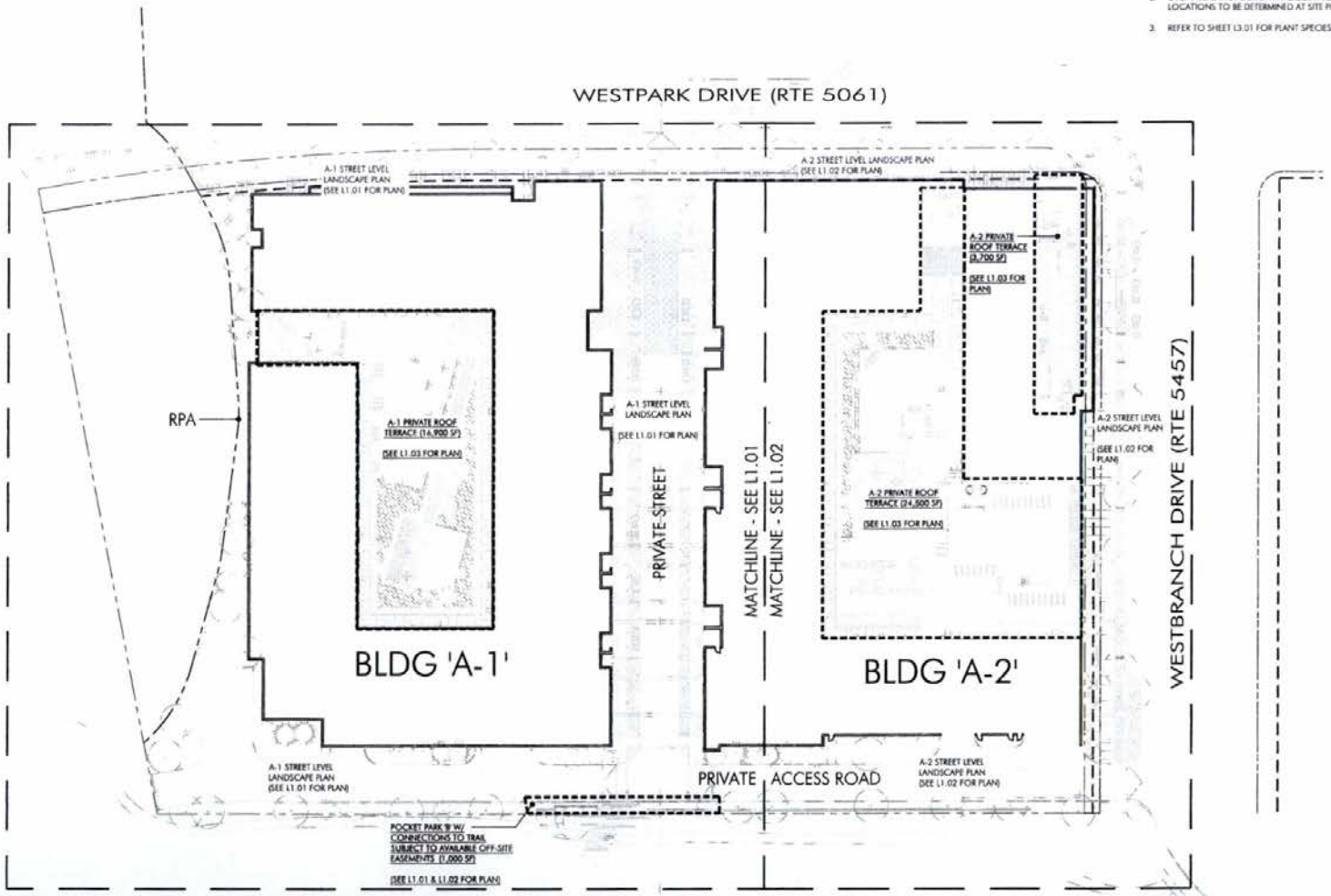
URBAN PARKS PLAN
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 09/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | H: 1" = 60'-0" |
| JOB No. | |
| DATE | DECEMBER 7, 2011 |
| FILE No. | |
| SHEET | L0.01 |

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. REFER TO SHEET L3.01 FOR PLANT SPECIES SCHEDULE

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14020 Thunderbolt Place Suite 300
Chantilly, Virginia 20151
Phone: (703) 481-9292
Fax: (703) 481-9295
Planning, Civil Engineering, Land Development, Transportation
www.bowmanconsulting.com

PARKER RODRIGUEZ, INC.
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Alexandria, VA 22314
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Planning, Urban Design, Landscape Architecture

shalom baranes associates
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850 Stone Boulevard
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Mount Laurel, NJ 08054
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F 856.778.1801

Cityline PARTNERS
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REFERENCE LANDSCAPE PLAN

# ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | PER COUNTY COMMENTS |
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| 10/08/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1" = 30'-0"

JOB No.

DATE : DECEMBER 7, 2011

FILE No.

SHEET L0.02

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Bowman CONSULTING

PARKER RODRIGUEZ, INC.

HOME PROPERTIES

Cityline PARTNERS

ILLUSTRATIVE PLAN

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/24/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

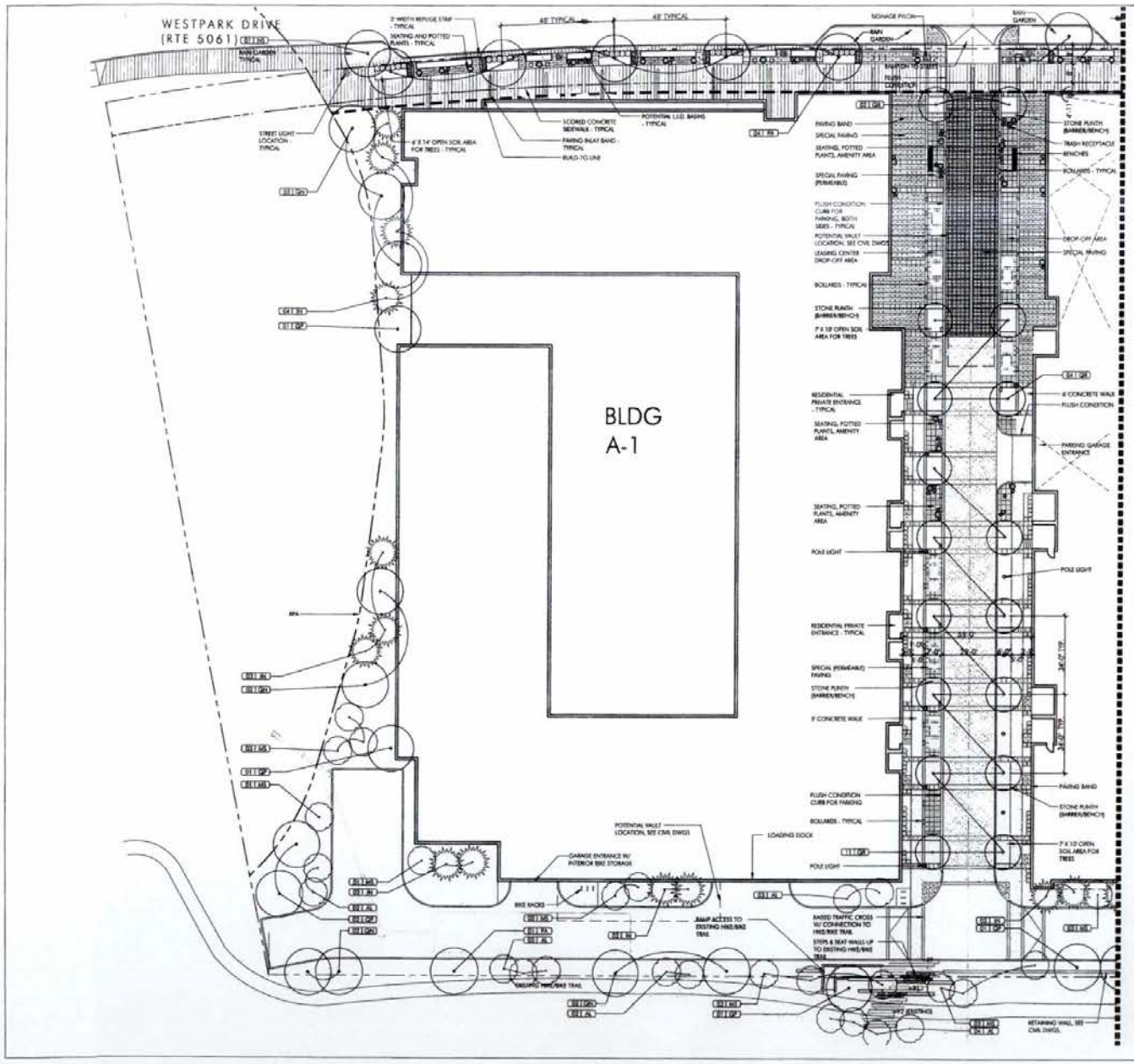
SCALE 1" = 30'-0"

JOB No.

DATE DECEMBER 7, 2011

FILE No.

SHEET L0.03

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4. REFER TO SHEET L3.01 FOR PLANT SPECIES SCHEDULE.
5. REFER TO SHEETS LS.01/2 FOR REPRESENTATIVE FURNISHINGS AND DESIGN DETAILS.

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architects PARKER RODRIGUEZ, INC.
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Alexandria, VA 22314
703.548.0010
Planning Urban Design
Landscape Architecture

Urban Partners Associates
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Suite 410
Washington, DC 20037
tel 202 521 1200
fax 202 347 3300

HOME PROPERTIES
6850 Bryan Boulevard
Suite 300
Fairfax, VA 22030
tel 703 359 7563
fax 703 359 7564

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LANDSCAPE PLAN - STREET LEVEL A-1

# ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
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| 10/05/12 | PER COUNTY COMMENTS |
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| DATE | DESCRIPTION |

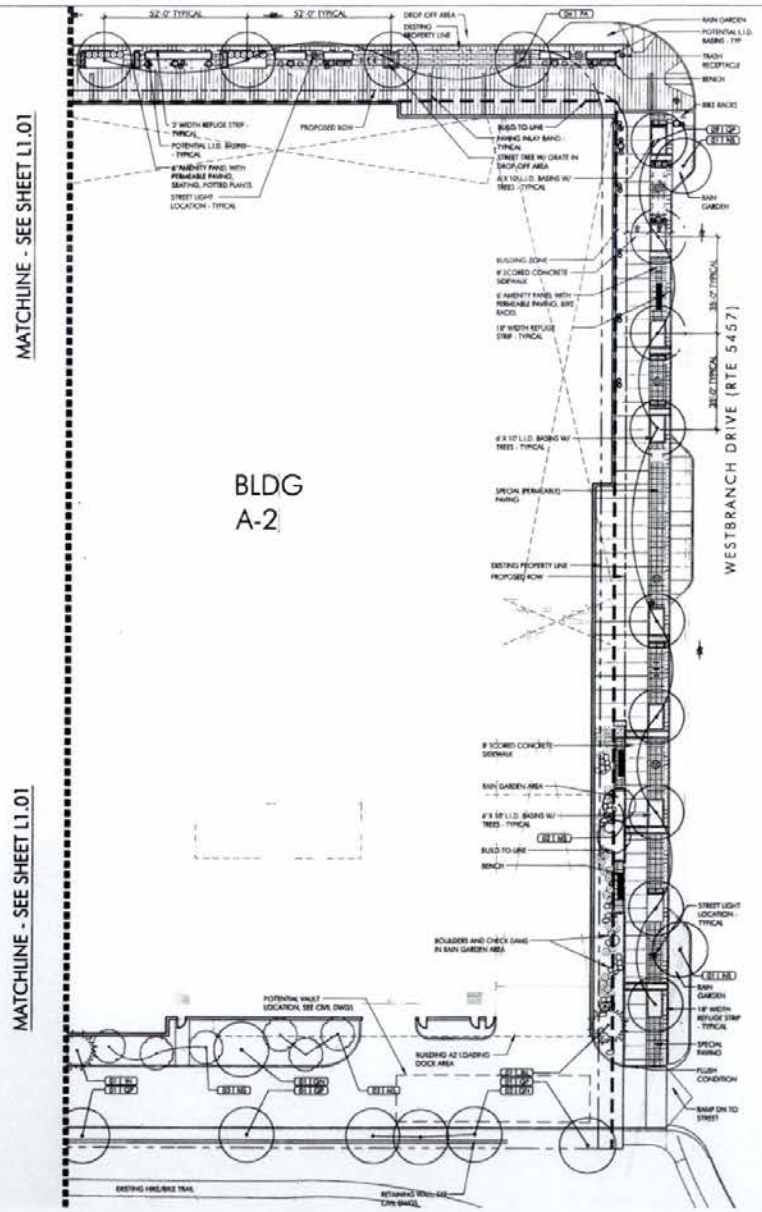
SCALE H: 1" = 20'-0"

JOB No.

DATE : DECEMBER 7, 2011

FILE No.

SHEET L1.01

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HOME PROPERTIES
Cityline PARTNERS
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LANDSCAPE PLAN - STREET LEVEL A-2

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-029-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/28/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/08/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1" = 30'-0"

JOB No.

DATE DECEMBER 7, 2011

FILE No.

SHEET L1.02

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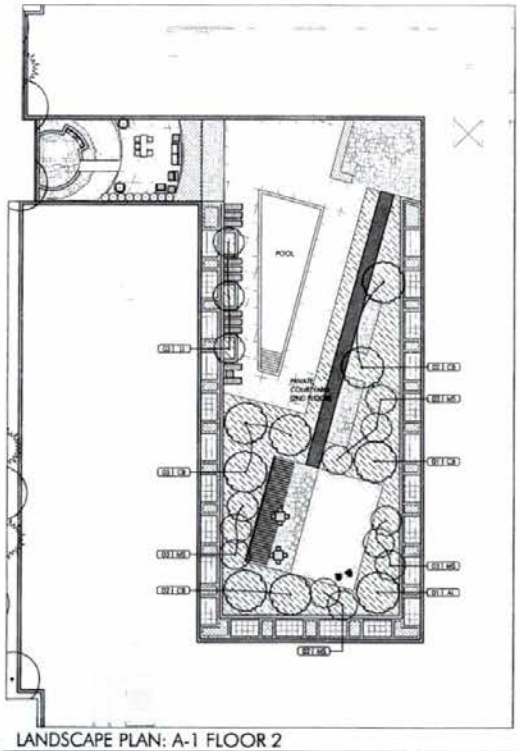
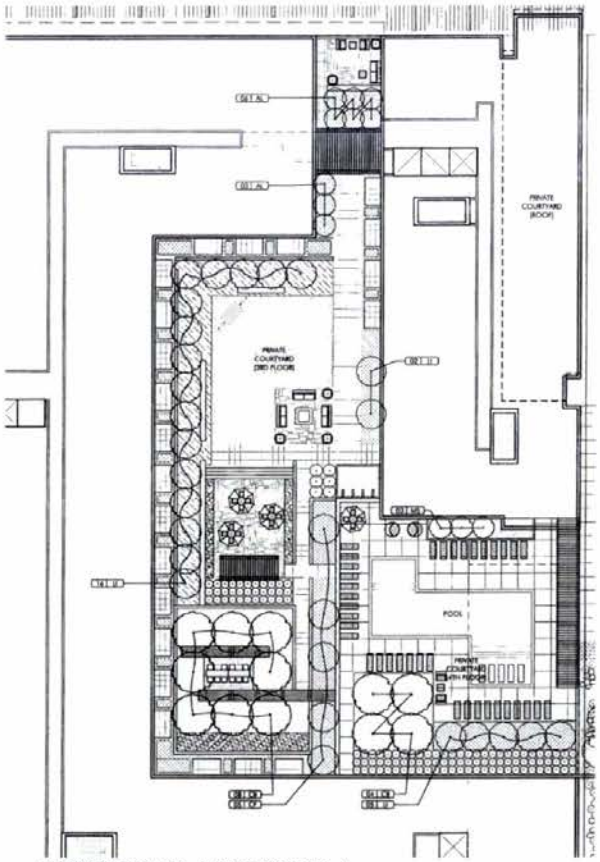
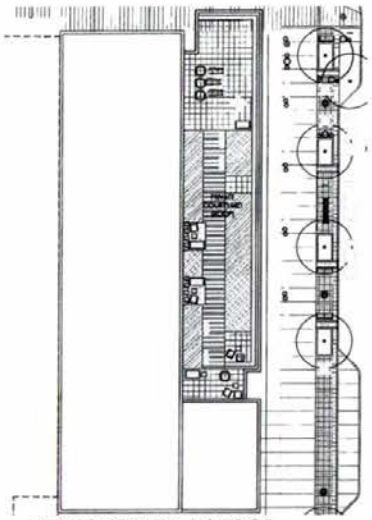



01 LANDSCAPE PLAN: A-1 FLOOR 2
SCALE : 1" = 20'-0"




02 LANDSCAPE PLAN: A-2 FLOORS 3 & 4
SCALE : 1" = 20'-0"



03 LANDSCAPE PLAN: A-2 ROOF
SCALE : 1" = 20'-0"

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Landscape Architecture

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LANDSCAPE PLAN - ROOF TERRACES
• ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

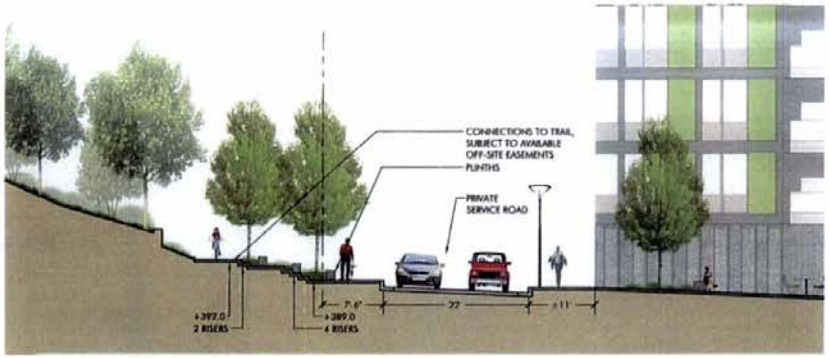
| PLAN STATUS | |
|---|---|
| 06/20/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/24/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE : H: 1" = 20'-0"
JOB No.
DATE : DECEMBER 7, 2011
FILE No.
SHEET L1.03

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.

SITE SECTIONS PRESENTED ON THIS SHEET ARE PROVIDED TO AID IN THE UNDERSTANDING OF GRADE CHANGE ACROSS THE SUBJECT PROPERTY AND THE RELATIONSHIP OF PROPOSED BUILDINGS AND OTHER USES. BUILDING DESIGN AND THE FINAL GRADING ARE SUBJECT TO CHANGE WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN.

REFERENCE PLAN




**02** BLOCK A - CONNECTION TO TRAIL

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

**03** BLOCK A - FLUSH PAVED LOBBY, AMENITY, LEASING OFFICES AREA

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

**01** BLOCK A - RESIDENTIAL BUILDING SECTION ELEVATION

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

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Cityline PARTNERS

A Washington Firm
DLJ Real Estate Capital Partners

SITE SECTION - BLOCK 'A'

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
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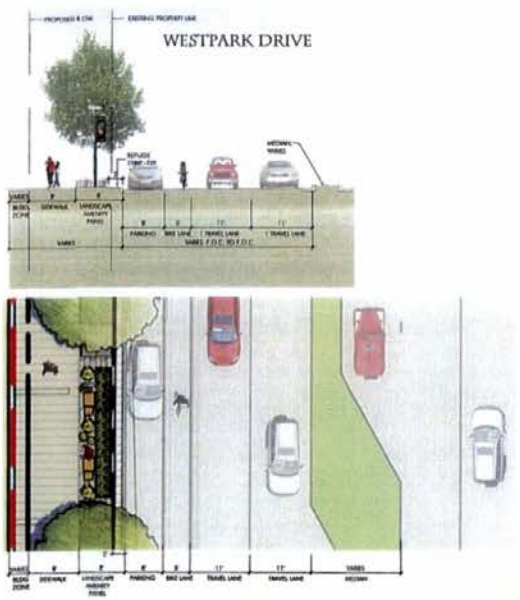
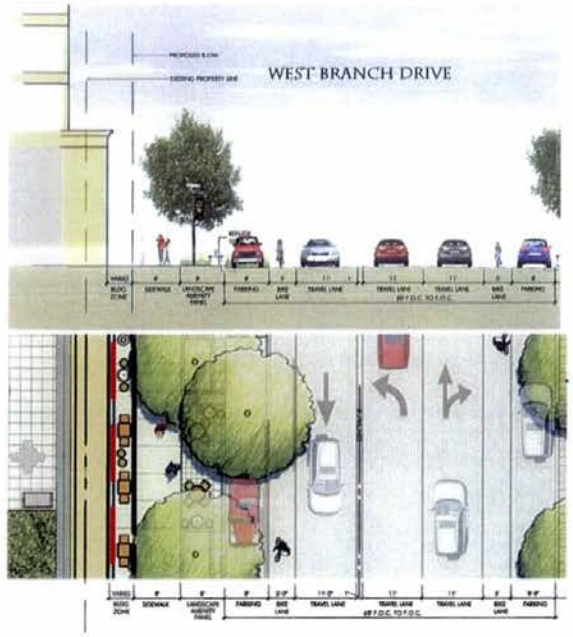
| 01/23/12 | PER COUNTY COMMENTS |
| 08/09/11 | PER COUNTY COMMENTS |
| 10/06/10 | PER COUNTY COMMENTS |

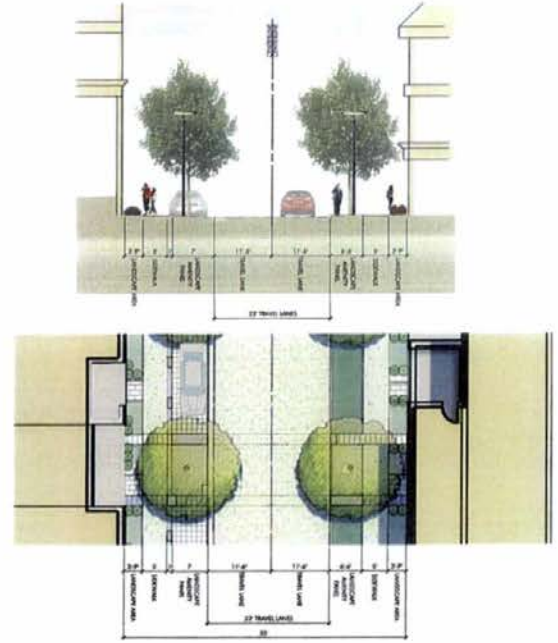
| DATE | DESCRIPTION |
|---|---|
| SCALE | H: 1/16" = 1'-0" |
| JOB No. | |
| DATE | DECEMBER 7, 2011 |
| FILE No. | |
| SHEET | L2.01 |



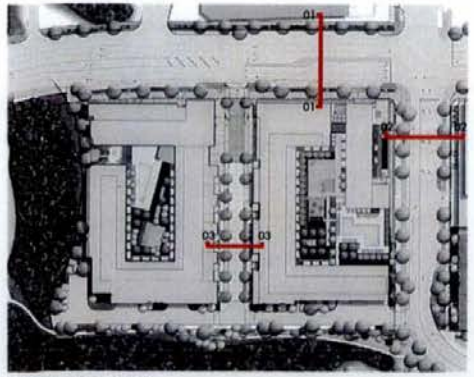

**01** WESTPARK DRIVE - STREET SECTION (AVENUE)
SCALE : 1" = 10'-0"




**02** WEST BRANCH DRIVE - STREET SECTION (COLLECTOR)
SCALE : 1" = 10'-0"



**03** BLOCK 'A' - PRIVATE STREET A-1
SCALE : 1" = 10'-0"




**04** KEY PLAN - BLOCK A
SCALE : NTS

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.

Bowman CONSULTING

PARKER RODRIGUEZ, INC.

HOME PROPERTIES

Cityline PARTNERS
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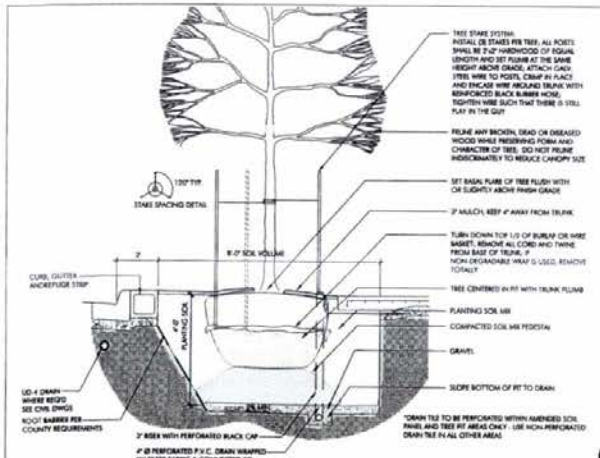
STREET SECTIONS
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

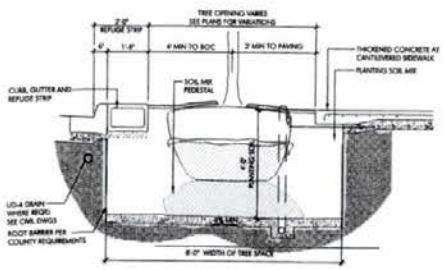
| PLAN STATUS | |
|---|---|
| 09/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/30/12 | PER COUNTY COMMENTS |

| | |
|---|---|
| DATE | DESCRIPTION |
| SCALE | H: AS NOTED |
| JOB No. | |
| DATE | DECEMBER 7, 2011 |
| FILE No. | |
| SHEET | L2.02 |



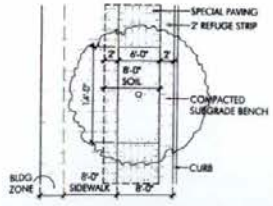

## 01 TREE PLANTING DETAIL - TYPICAL STREET TREE

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




## 02 TREE PLANTING DETAIL - TREE SOIL BRIDGE

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



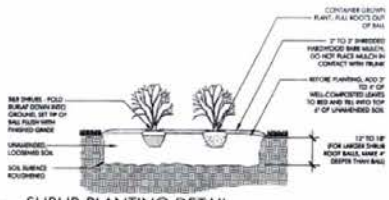

## 03 PLAN VIEW - CANTILEVERED SIDEWALK

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

LANDSCAPE NOTES :

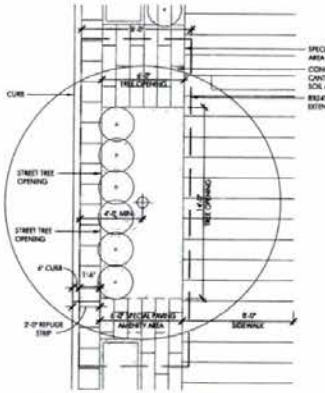
1. THE PROPOSED LANDSCAPE WILL BE USED TO MEET THE MINIMUM TREE COVER REQUIREMENTS. LOCATIONS, SPECIES AND QUANTITIES MAY BE ADJUSTED WITH FINAL DESIGN.
2. UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED AT SITE PLAN.
3. ALL STREET LEVEL TREES ARE PLANTED ON GRADE UNLESS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

| ARBOR ROW OVERALL CDP - CANOPY COVERAGE | | |
|---|---|---|
| TOTAL 10-YEAR TREE CANOPY REQ'D : | 80,796 | s.f |
| TOTAL 10-YEAR TREE CANOPY PROVIDED : | 83,875 | s.f |
| **ARBOR ROW BLOCK 'A' - CONTRIBUTION TO CANOPY COVERAGE** | | |
| BLOCK 'A' 10 YR TREE CANOPY PROVIDED : | 45,880 | s.f |
| **ARBOR ROW BLOCK 'B,C,D,E,F' - CONTRIBUTION TO CANOPY COVERAGE** | | |
| BLOCK B,C,D,E,F' 10 YR TREE CANOPY TO BE PROVIDED : | 37,995 | s.f |



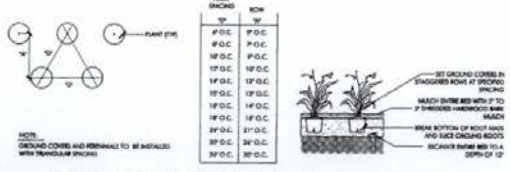

## 05 SHRUB PLANTING DETAIL

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




## 06 WESTPARK DR - TYP PL PLAN DETAIL @ REFUGE STRIP

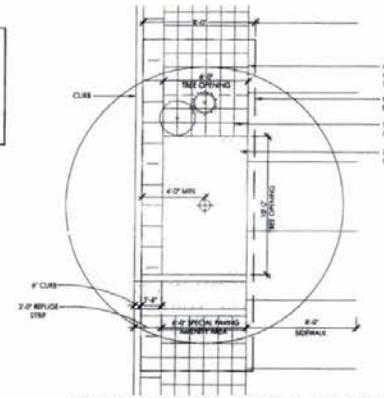
SCALE : 1/4"=1'-0"




| PLANT SPACING 'D' | ROW 'W' |
|---|---|
| 4' O.C. | 3' O.C. |
| 5' O.C. | 3' O.C. |
| 6' O.C. | 5' O.C. |
| 7' O.C. | 5' O.C. |
| 8' O.C. | 6' O.C. |
| 9' O.C. | 7' O.C. |
| 10' O.C. | 8' O.C. |
| 12' O.C. | 10' O.C. |
| 14' O.C. | 12' O.C. |
| 16' O.C. | 14' O.C. |
| 18' O.C. | 16' O.C. |
| 20' O.C. | 17' O.C. |
| 25' O.C. | 24' O.C. |
| 30' O.C. | 26' O.C. |

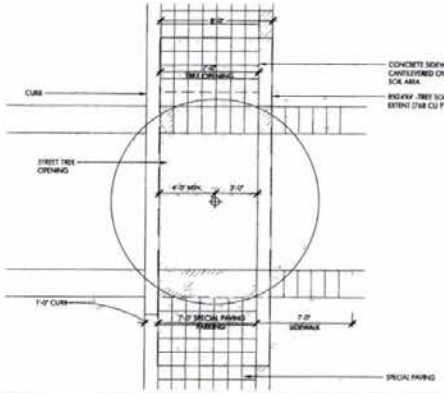
## 04 GROUNDCOVER / PERENNIAL PLANTING DETAIL

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




## 07 WESTBRANCH DR - TYP PL PLAN DETAIL @ CURB

SCALE : 1/4"=1'-0"




## 08 PRIVATE STREET - TYP PL PLAN DETAIL @ CURB

SCALE : 1/4"=1'-0"

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**LANDSCAPE COMPUTATIONS - ARBOR ROW - BLOCK 'A'**

**13-201: INTERIOR PARKING LOT LANDSCAPE CALCULATIONS**

No Surface Parking Lots

Interior Parking Lot Landscaping Not Required

**13-202: PERIPHERAL PARKING LOT LANDSCAPE CALCULATIONS**

No Surface Parking Lots

Peripheral Parking Lot Landscaping Not Required

**13-301: TRANSITIONAL SCREENING AND BARRIERS**

Property Zoning District: PTC
Adjacent Zoning Districts: I-5, C-7, PDC, PTC/HC

Transitional Screening and Barriers are Not Required

**13-401: TREE COVER CALCULATIONS**

Table 13.12 10 year Tree Canopy Calculation Worksheet

| Step | | Totals |
|---|---|---|
| **A. Tree Preservation Target and Statement** | | |
| A1 | See Tabulations on Sheet C 11.0 | |
| **B. Tree Canopy Requirement** | | |
| B1 | Gross Site Area | 254,715 |
| B2 | Land Dedicated to park, road frontage, Personal Dedications (SWM) | 8,498 |
| B3 | Adjusted Gross Site Area | 226,275 |
| B4 | Site Zoning | PTC |
| B5 | Percentage of 10-year Tree Canopy Cover Required | 10% |
| B6 | Area of 10-year tree canopy cover | 22,628 |
| B7 | Modification of 10-year tree canopy cover requested | No |
| B8 | Plan sheet where modification is requested | n/a |
| **C. Tree Preservation** | | |
| C1 | Tree Preservation Target (B 22 ac) | 9,583 s.f |
| C2 | Total Canopy area meeting standards of 12-0200 | 0 |
| C3 | C2 X 1.25 | 0 |
| C4 | Total canopy area provided by unique or valuable forest or woodland communities | 0 |
| C5 | C4 X 1.25 | 0 |
| C6 | Total of canopy are provided by "Heritage," "Memorial," "Specimen," or "Street" Trees | 0 |
| C7 | C6 X 1.5 | 0 |
| C8 | Canopy area of trees within Resource Protection Areas and 100-year floodplains | 21,780 |
| C9 | C8 X 1.0 | 21,780 |
| C10 | Total of C3, C5, C7 and C9 | 21,780 |
| **D. Tree Planting** | | |
| D1 | Area of Canopy met through tree planting (B7-C10) | 1,148 |
| D2 | Area of canopy Planted for air quality benefits | 0 |
| D3 | X 1.5 | 0 |
| D4 | Area of canopy planted for energy conservation benefits | 0 |
| D5 | X 1.5 | 0 |
| D6 | Area of canopy planted for water quality benefits | 0 |
| D7 | X 1.5 | 0 |
| D8 | Area of canopy planted for wildlife benefits | 0 |
| D9 | X 1.5 | 0 |
| D10 | Area of canopy provided by native trees | 0 |
| D11 | X 1.5 | 0 |
| D12 | Area of canopy provided by improved cultivars and varieties | 0 |
| D13 | X 1.25 | 0 |
| D14 | Area of canopy provided by seedlings | 0 |
| D15 | X 1.0 | 0 |
| D16 | Percent of D14 represented by D 15 | 0 |
| D17 | Total of canopy area provided through tree planting | 23,905 |
| D18 | Is an offsite planting relief requested? | No |
| D19 | Tree bank or Tree Fund | No |
| D20 | Canopy area requested to be provided through offsite banking or trust fund | 0 |
| D21 | Amount to be deposited into the Tree Preservation and Planting Fund | 0 |
| **E. Total of 10-year Tree Canopy Provided** | | |
| E1 | Total of Canopy Provided through tree preservation (C10) | 21,780 |
| E2 | Total of canopy area provided through tree planting (D17) | 23,905 |
| E3 | Total of canopy area provided through offsite mechanism (D19) | 0 |
| E4 | Total of 10-year Tree Canopy Provided | 45,685 |

**ARBOR ROW BLOCK 'A' - PLANTING LIST & CANOPY COVERAGE**

| KEY | BOTANICAL NAME | COMMON NAME | QTY. | STOCK SIZE | STOCK TYPE | 10-YR TREE CANOPY FT² | TREE CANOPY SUB-TOTAL FT² | REMARKS |
|---|---|---|---|---|---|---|---|---|
| | *Category I Deciduous Trees* | | | | | | | |
| CI | Celtis laevigata 'Prairie Pride' | Columbia Hackberry | 8 | 3" col. | B&B | 75 | 600 | single leader |
| QB | Quercus robur 'Fastigiata' | Columnar English Oak | 17 | 3" col. | B&B | 75 | 1,275 | single leader; full branching; symmetrical |
| | *Category II Deciduous Trees* | | | | | | | |
| AD | Acer ginnala | Amur Maple | 24 | 2" col. | B&B | 100 | 2,400 | multistem - 3 stems minimum; full branching |
| AL | Amelanchier laevis | Allegheny Serviceberry | 24 | 2" col. | B&B | 100 | 2,400 | multistem - 3 stems minimum; full branching |
| CB | Carpinus betulus | Hornbeam | 20 | 3" col. | B&B | 125 | 2,500 | single leader |
| MS | Magnolia stellata | Star Magnolia | 32 | 2" col. | B&B | 100 | 3,200 | multistem - 3 stems minimum; full branching |
| | *Category III Deciduous Trees* | | | | | | | |
| HB | Hippo aesculus | Black Gum, Tupelo | 3 | 3" col. | B&B | 175 | 525 | single leader; full branching; symmetrical |
| | *Category IV Deciduous Trees* | | | | | | | |
| PA | Platanus x acerifolia 'Bloodgood' | Bloodgood London Planetree | 11 | 3" col. | B&B | 250 | 2,750 | single leader; full branching; symmetrical |
| QH | Quercus nuttallii | Explorer® Nuttall Oak | 14 | 3" col. | B&B | 250 | 3,500 | single leader; full branching; symmetrical |
| QP | Quercus palustris | Pin Oak | 16 | 3" col. | B&B | 250 | 4,000 | single leader; full branching; symmetrical |
| | *Category I Evergreen Trees* | | | | | | | |
| IH | Ilex x Nellie Stevens | Nellie Stevens Holly | 19 | 8' Ht. | B&B | 50 | 750 | multistem - 3 stems minimum; full branching |
| | TOTAL 10-YEAR TREE CANOPY PROVIDED BY PLANTING | | | | | | 23,905 | |

Note: Plant species are provided to indicate a general intent of tree size. Final species selection may vary from this list but will match tree category type.

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Cityline PARTNERS
A DEVELOPMENT FIRM
D.C./ Real Estate Capital Partners

PLANTING DETAILS AND SCHEDULE
ARBOR ROW - BLOCK 'A'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
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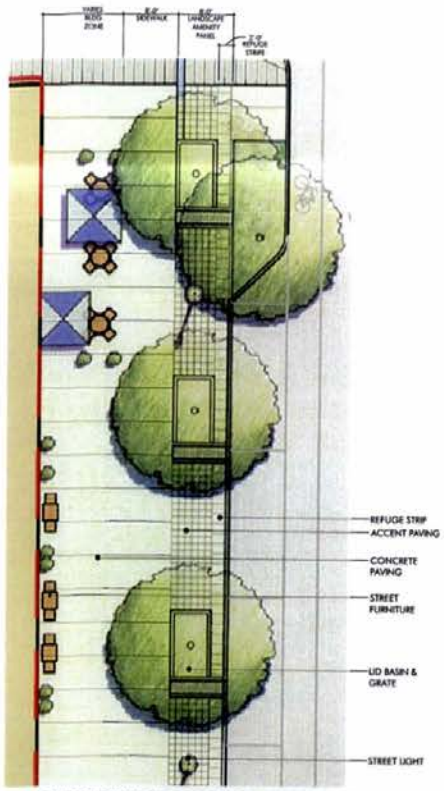



**01** WEST BRANCH DRIVE - ENLARGED PLAN

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"

### 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: NEOLIVANO
ALUMINUM AND HARDWOOD
SIZE: 27" x 31" x 69"
*SINGLE SEAT TO MATCH BENCH

OPT 3
MAKE: LANDSCAPE FORMS
MODEL: REST
SIZE: 26 3/4" x 33 1/2" x 80"

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

### METAL TREE GRATE

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

OPT 2
MAKE: HUB
MODEL: 5304 TREE GRATE
SIZE: 1050mm x 1050mm x 35mm

### STREET LIGHTS - PER TYSON'S URBAN DESIGN GUIDLINES

OPT 1
MAKE: SELUX
MODEL: ARC / ARC MINI
HID OR LED
AT106 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-1750-8
LED MODEL: FH-T3-9PLED-8W-11A-1834
*DUAL ARMS MOUNTED AT PEDESTRIAN & VEHICULAR HEIGHTS

### PLANTERS

TBD BY OWNER

TBD BY OWNER

TBD BY OWNER

### VEHICULAR BOLLARDS

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

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

### TRASH RECEPTACLES

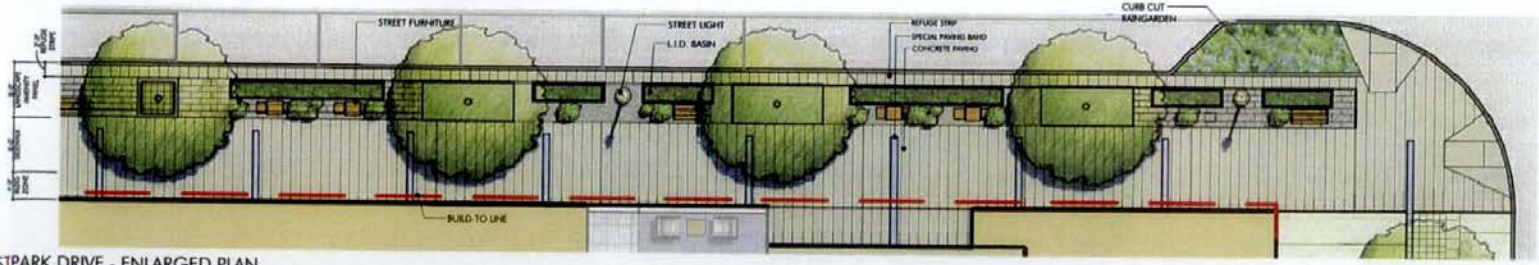
OPT 1
MAKE: VICTOR STANLEY, INC
MODEL: SDC-24 Steelstes
SIZE: 24-gallon

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"

FOR INFORMATION ONLY

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Cityline PARTNERS

A SUBSIDIARY OF
DLJ Real Estate Capital Partners

STREETSCAPE ELEMENTS

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-025-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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| | |
| | |
| | |
| DATE | DESCRIPTION |

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

JOB No.

DATE : DECEMBER 7, 2011

FILE No.

SHEET L5.01

## SUSTAINABILITY STRATEGIES:

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

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PARKER RODRIGUEZ, INC.

HOME PROPERTIES

Cityline PARTNERS

SUSTAINABILITY STRATEGIES

ARBOR ROW - BLOCK 'A'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/25/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE H: NTS

JOB No.

DATE : DECEMBER 7, 2011

FILE No.

SHEET L5.02

# THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

## ARBOR ROW - BLOCK "F"

7901 WESTPARK DRIVE

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

## FINAL DEVELOPMENT PLAN

FDP 2011-PR-023-02

(CONCURRENT RZ/CDP 2011-PR-023)

RECEIVED
Department of Planning & Zoning

OCT 05 2012

Zoning Evaluation Division

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02/24/2012
REV. 05/25/2012
REV. 07/23/2012
REV. 08/29/2012
REV. 10/05/2012

SHEET : P.101

## NOTES

1. OWNER/APPLICANT:

   AMT - THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
   7901 WESTPARK DRIVE
   MCLEAN, VA 22102

2. THE PROPERTY SHOWN ON THIS PLAN IS IDENTIFIED ON THE FAIRFAX COUNTY TAX MAP AS 028-4-07-0005A. THE PROPERTY IS APPROXIMATELY 1.8366 ACRES.

3. THE SITE IS CURRENTLY ZONED C-3 AND CONSTITUTES "BLOCK F" OF THE PROPOSED ARBOR ROW DEVELOPMENT AND IS PROPOSED TO BE REZONED TO PTC DISTRICT THROUGH APPLICATION RZ/CDP 2011-PR-023.

4. 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 PLAN. THE PROPOSED DEVELOPMENT IS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE COMPREHENSIVE PLAN AS DESCRIBED IN THE APPLICATION NARRATIVE.

5. THE COUNTY TRAILS MAP IDENTIFIES AN ON ROAD BIKE TRAIL WITHIN WESTPARK DRIVE. IN SATISFACTION THERE OF AN ON ROAD BICYCLE LANE HAS BEEN DEPICTED ON THIS FDP.

6. THE PROPOSED DEVELOPMENT WILL MEET THE PARKING REQUIREMENTS OF ARTICLE 11 OF THE ZONING ORDINANCE. PARKING SHALL BE PROVIDED THROUGH A PROPOSED BELOW GRADE PARKING STRUCTURE.

7. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS FROM FIELD RUN AND AERIAL SURVEY BY WALTER L. PHILLIPS, INC. CONTOUR INTERVAL IS TWO (2) FEET.

8. TO THE BEST OF OUR KNOWLEDGE THE PROPOSED DEVELOPMENT WILL NOT POSE ANY ADVERSE IMPACTS ON THE ADJACENT PROPERTIES OR NEIGHBORING PROPERTIES.

9. IT IS ANTICIPATED THAT DEVELOPMENT OF THIS PROJECT WILL OCCUR IMMEDIATELY FOLLOWING COUNTY APPROVAL OF THE SITE PLAN.

10. 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 AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 116.4, 302.4, AND 355. ANY HAZARDOUS WASTE AS SET FORTH IN COMMONWEALTH OF VIRGINIA/DEPARTMENT OF WASTE MANAGEMENT VR 672-10-1 – VIRGINIA HAZARDOUS WASTE MANAGEMENT REGULATIONS, AND/OR ANY PETROLEUM PRODUCTS AS DEFINED IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 280.

11. THE SITE IS SERVED BY PUBLIC WATER AND SEWER.

12. A GRAPHIC DEPICTION OF THE ANGLE BULK PLANE FOR THE PROPOSED DEVELOPMENT SITE IS NOT REQUIRED AS THIS DEVELOPMENT IS NOT LOCATED NEAR THE PERIPHERY OF THE TYSONS URBAN CENTER AS DESCRIBED IN SECTION 18-102 OF THE ZONING ORDINANCE.

13. ALL NECESSARY PUBLIC UTILITIES ARE READILY ACCESSIBLE TO THE SITE OR WILL BE EXTENDED OR IMPROVED BY THE APPLICANT OR UTILITY COMPANY AS MAY BE APPROPRIATE FOR THE PROPOSED DEVELOPMENT.

14. SITE AMENITIES, FEATURES AND FURNISHINGS REPRESENTED HEREON ARE CONCEPTUAL AND, AS SUCH, ARE INTENDED TO REFLECT THE GENERAL THEME AND CHARACTER OF THE PROPOSED DEVELOPMENT. FINAL PRODUCT SELECTION MAY VARY AT THE TIME OF SITE PLAN, BUT WILL BE CONSISTENT WITH THE QUALITY OF THE DESIGN REPRESENTED HEREON. ADDITIONAL SITE AMENITIES AND FEATURES SUCH AS GAZEBOS, PLANTERS, BENCHES, OTHER SEATING AREAS, WALKWAYS, TRELLISES, WATER FOUNTAINS OR SPECIAL FEATURES, PUBLIC ART, SIGNS, WALLS, LIGHTS, UTILITY MAINTENANCE STRUCTURES AND SIMILAR FEATURES NOT REPRESENTED HEREON MAY BE PROVIDED AS LONG AS THE RESULTANT DEVELOPMENT IS IN SUBSTANTIAL CONFORMANCE WITH THAT REPRESENTED ON THE GRAPHICS.

15. THERE ARE NO RESOURCE PROTECTION AREA OR ENVIRONMENTAL QUALITY CORRIDORS ON THE PROPERTY.

16. THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP FOR FAIRFAX COUNTY, VIRGINIA, COMMUNITY-PANEL NUMBERS 515525 0100 D, EFFECTIVE DATE MARCH 5, 1990, DESIGNATES THE PROPERTY AS BEING IN ZONE X, AN AREA DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.

17. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO GRAVES LOCATED ON THE SITE.

18. THE PROPOSED SIGNAGE WILL BE IN ACCORDANCE WITH THE ZONING ORDINANCE, WITH A SINGLE COMPREHENSIVE SIGN PLAN FOR THE PROPERTY OR WITH A COMPREHENSIVE SIGN PLAN FILED ON THE PROPERTY TOGETHER WITH ONE OR MORE OF THE OTHER BLOCKS ON ARBOR ROW.

19. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO UTILITY EASEMENTS HAVING A WIDTH OF 25 FEET OR MORE ON THE PROPERTY.

20. THERE ARE NO SCENIC ASSETS OR NATURAL FEATURES ON THIS PROPERTY DESERVING OF PROTECTION AND/OR PRESERVATION.

21. TRANSITIONAL SCREENING IS NOT REQUIRED AS SET FORTH IN ARTICLE 6-310.C OF THE ZONING ORDINANCE.

22. THE PROPOSED APPLICATION CONFORMS TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES, REGULATIONS, AND ADOPTED STANDARDS, EXCEPT AS NOTED IN THE WAIVERS/MODIFICATIONS REQUESTED IN THE CDP AND NOTED HEREON FOR ILLUSTRATIVE PURPOSES.

23. APPLICANT INTENDS TO REMOVE THE EXISTING STRUCTURES, OR THEY MAY REMAIN IN PERPETUITY.

24. THIS PLAN IS CONCEPTUAL AND IS INTENDED TO BE USED IN CONJUNCTION WITH THE LAND USE APPROVAL PROCESS ONLY. IT IS NOT AN ENGINEERING CONSTRUCTION DRAWING, AND MINOR DEVIATIONS AND ADJUSTMENTS MAY BE REQUIRED, AND ARE PERMITTED PURSUANT TO ZONING ORDINANCE SECTION 18-204(5), AS PART OF THE FINAL DESIGN AND SITE PLAN APPROVAL PROCESS. HOWEVER, THE FINAL CONSTRUCTION DRAWINGS SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THIS PLAN.

25. PROPOSED ROADWAY IMPROVEMENTS (ENTRANCES, CURBING, MEDIAN ETC.) MAY REQUIRE EXCEPTION FROM VDOT ACCESS MANAGEMENT DESIGN STANDARDS, AS MAY BE DETERMINED DURING SITE PLAN REVIEW.

26. ARCHITECTURAL DESIGN AND LANDSCAPE FEATURES SHOWN ARE SUBJECT TO MODIFICATIONS, PROVIDED THAT THE GENERAL DESIGN STRATEGY, QUALITY AND CHARACTERISTICS OF THE PROJECT ARE MAINTAINED AND IN SUBSTANTIAL CONFORMANCE WITH THE CDP. THE EXACT LOCATION, SHAPE AND SIZE OF THE PROPOSED BUILDING, WINDOWS, AND PARKING STRUCTURE SHOWN ON THE GRAPHIC ARE SUBJECT TO ADJUSTMENT AND REFINEMENT WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN SO LONG AS THEY REMAIN IN SUBSTANTIAL CONFORMANCE WITH THE CDP.

27. DEDICATION OF A PORTION OF THE APPLICATION AREA IS PROPOSED FOR THE STREETSCAPE IMPROVEMENTS OF WESTPARK DRIVE. APPLICANT RESERVES THE RIGHT TO UTILIZE AREA OF DEDICATION IN THE CALCULATION OF PROPOSED DENSITY AND F.A.R. PER ARTICLE 2-308-4 OF THE ZONING ORDINANCE.

28. PERMITTED USES IDENTIFIED IN SECTION 6-502 OF THE ZONING ORDINANCE MAY BE PROVIDED WITHOUT REQUIRING AN AMENDMENT TO THE CDP OR FDP, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

   ACCESSORY USES
   ATMS
   BUSINESS SERVICE AND SUPPLY SERVICE ESTABLISHMENTS
   QUICK SERVICE FOOD STORES
   FAST FOOD RESTAURANTS
   HEALTH CLUBS AND SIMILAR COMMERCIAL RECREATIONAL USES
   COMMUNITY USES
   EATING ESTABLISHMENTS
   OFFICES
   PERSONAL SERVICES ESTABLISHMENTS
   PUBLIC AND QUASI PUBLIC USES, INCLUDING A CONFERENCE CENTER OPERATED BY A NONPROFIT ORGANIZATION, AS PERMITTED UNDER THE FAIRFAX COUNTY ZONING ORDINANCE.
   RETAIL SALES ESTABLISHMENT AND SIMILAR USES

29. INCREASED OR DEDICATED PARKING FOR ANY PERMITTED SECONDARY USE, INCLUDING ACCESSORY AND/OR RETAIL USE, ON THE PROPERTY, SHALL BE ACCOMMODATED THROUGH THE USE OF TANDEM AND/OR VALET PARKING.

30. ALL PUBLICALLY-ACCESSIBLE PARK SPACE AND RECREATIONAL FACILITIES ARE SATISFIED ACROSS THE ENTIRETY OF ARBOR ROW AND NOT ON EACH INDIVIDUAL BLOCK AS SHOWN ON THE CDP.

31. THE PROVISION OF SPACE AND INFRASTRUCTURE FOR "ELECTRIC-VEHICLE READY" PARKING SPACES IN THE AFFECTED PARKING DECKS SHALL BE CONSIDERED. "ELECTRIC-VEHICLE READY" MEANS THE PROVISION OF SPACE, CONDUIT BANKS, CONDUITS AND ACCESS POINTS ALLOWING FOR EASY INSTALLATION OF VEHICLE CHARGING STATIONS IN THE FUTURE, BUT DOES NOT INCLUDE THE INSTALLATION OF TRANSFORMERS, SWITCHES, WIRING, OR CHARGING STATIONS. IN ADDITION, TO THE EXTENT THERE ARE MASTER ELECTRIC, GAS AND WATER METERS FOR ENTIRE BUILDINGS, UPON REQUEST BY THE COUNTY, AGGREGATED NON-PROPRIETARY ENERGY AND WATER CONSUMPTION DATA, AS PRACTICABLE, SHALL BE PROVIDED TO THE COUNTY FOR THE BUILDINGS WITHIN EACH RESPECTIVE BLOCK AS MAY BE APPLICABLE.

32. THE PROPERTY LINES SHOWN ON THE CDP AND FDPs ARE BASED ON RECORDED PLATS AND DEEDS FROM THE 1970s AND MAY BE ADJUSTED BASED ON INFORMATION FROM RECENT FIELD SURVEYS AT SITE PLAN.

## WAIVERS / MODIFICATIONS AS LISTED ON THE CDP
### (FOR INFORMATIONAL PURPOSES ONLY)

ZONING ORDINANCE ARTICLE 2 – GENERAL REGULATIONS

1. WAIVER AND/OR 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 3 FEET.

ZONING ORDINANCE ARTICLE 6 – PLANNED DEVELOPMENT DISTRICT REGULATIONS

2. WAIVER OF ZONING ORDINANCE SECTION 6-505.7 REQUIRING THE DESIGNATION OF SPECIFIC OUTDOOR DINING AREAS ON THE CDP/FDP, RATHER, OUTDOOR DINING MAY BE PROVIDED IN ANY AREA WHERE THE USE INCLUDES DINING ACTIVITY AND WILL BE INDICATED AT THE TIME OF FINAL SITE PLAN.

ZONING ORDINANCE ARTICLE 11 – PARKING AND LOADING

3. MODIFICATION OF ZONING ORDINANCE SECTION 11-102(12) AND SECTION 6-506(1) TO ALLOW FOR TANDEM SPACES AND VALET SPACES CONTROLLED BY BUILDING MANAGEMENT, FOR RESIDENTIAL AND OFFICE USES. SUCH STACKED SPACES IN ACCORDANCE WITH SECTION 11-102(1) AND 6-506(1) MAY COUNT TOWARD REQUIRED PARKING SPECIFIED IN THE ZONING ORDINANCE, AND SHALL BE PROVIDED IN ACCORDANCE WITH THE PARKING PLAN SUBMITTED WITH THE CDP.

4. MODIFICATION OF ZONING ORDINANCE SECTION 11-201 AND SECTION 11-203 FOR THE REQUIRED NUMBER OF LOADING SPACES WITHIN OFFICE AND RETAIL/SERVICE USES IS REQUESTED IN FAVOR OF THOSE WHICH ARE SHOWN ON THE CDP, WHICH EXPERIENCE SUGGESTS WILL BE SUFFICIENT.

ZONING ORDINANCE ARTICLE 13 – LANDSCAPING

5. MODIFICATION OF INTERIOR PARKING LOT LANDSCAPE REQUIREMENTS (SECTION 13-202-8) FOR ABOVE GRADE PARKING STRUCTURES AND INTERIM SURFACE LOTS, AS ALLOWED PER SECTION 13-202, PARA 6, TO THAT SHOWN ON THE CDP AND DESCRIBED BELOW.

5.a FOR PROPOSED ABOVE GRADE PARKING STRUCTURES: INTERIOR LANDSCAPING MAY INCLUDE INNOVATIVE PLANTING DESIGN AND TECHNIQUES, INCLUDING BUT NOT LIMITED TO, OVERHEAD VEGETATIVE ARBORS, TO SATISFY CANOPY COVERAGE REQUIREMENTS.

5.b FOR INTERIM SURFACE PARKING LOTS: INTERIOR LANDSCAPING WILL BE DEMONSTRATED ON SUBSEQUENT FDP APPLICATIONS AND WILL UTILIZE EXISTING VEGETATION WITHIN PARKING LOTS, TO THE EXTENT POSSIBLE, TO MEET REQUIRED STANDARDS.

6. MODIFICATION OF PERIPHERAL LANDSCAPE REQUIREMENTS (SECTION 13-203-5) FOR ABOVE GRADE PARKING STRUCTURES AND INTERIM SURFACE LOTS AS ALLOWED BY SECTION 13-203, PARA 3, TO THAT SHOWN ON THE CDP AND DESCRIBED BELOW.

6.a FOR PROPOSED ABOVE GRADE PARKING STRUCTURES: PERIPHERAL LANDSCAPING WILL BE SATISFIED BY THE PROVISION OF URBAN STREETSCAPES (PER TYSONS URBAN DESIGN GUIDELINES) WHERE GARAGES ARE ADJACENT TO STREET FRONTAGE AND BY EXISTING TOPOGRAPHIC FEATURES OR OTHER URBAN DESIGN ELEMENTS WHERE GARAGES ARE ADJACENT TO NON STREET FRONTAGE.

6.b FOR INTERIM SURFACE PARKING LOTS: PERIPHERAL LANDSCAPING WILL BE DEMONSTRATED ON SUBSEQUENT FDP APPLICATIONS AND WILL UTILIZE EXISTING VEGETATION WITHIN PARKING LOTS, TO THE EXTENT POSSIBLE, TO MEET REQUIRED STANDARDS.

ZONING ORDINANCE ARTICLE 16 – DEVELOPMENT PLANS

7. WAIVER OF ZONING ORDINANCE SECTION 16-403 REQUIRING THE SUBMISSION OF A FINAL DEVELOPMENT PLAN APPLICATION ASSOCIATED WITH THE PUBLIC ROADWAY AND INFRASTRUCTURE PHASING EXHIBIT SHOWN WITHIN THE CDP.

ZONING ORDINANCE ARTICLE 17 – SITE PLAN

8. WAIVER OF SECTION 17-201-(3)(B) REQUIRING ADDITIONAL INTER-PARCEL ACCESS TO ADJOINING PARCELS (OTHER THAN THOSE SHOWN ON THE CDP).

9. MODIFICATION OF SECTION 17-201-(2) AND (4) TO PROVIDE INTERIM ROAD AND TRAIL CONDITIONS ALONG WESTPARK DRIVE AS SHOWN ON THE CDP AS A RESULT OF THE CONSTRUCTION OF THE I-495 EXPRESS LANE IMPROVEMENTS AND IN ORDER TO TRANSITION THE ULTIMATE IMPROVEMENTS.

PUBLIC FACILITIES MANUAL

10. MODIFICATION OF PFM SECTION 7-0800 TO ALLOW TANDEM/VALET PARKING SPACES, CONTROLLED BY BUILDING MANAGEMENT, AND THAT SUCH SPACES SHALL COUNT TOWARD REQUIRED PARKING.

11. MODIFICATION OF SECTION 7-0802.2 PARKING GEOMETRIC STANDARDS, TO ALLOW FOR PROJECTION OF STRUCTURAL COLUMNS WITHIN PARKING STRUCTURES FOR UP TO 1.5 FEET INTO THE REQUIRED PARKING STALL AREA. THE PARKING STALLS AFFECTED BY SUCH STRUCTURAL COLUMNS SHALL COUNT TOWARD THE NUMBER OF REQUIRED PARKING SPACES FOR UP TO 10% OF THE TOTAL SPACES PROVIDED.

12. MODIFICATION OF SECTION 12-0508 TREE PRESERVATION TARGET, AS ALLOWED BY DEVIATIONS DESCRIBED IN SECTION 12-0508.3A(1) THROUGH SECTION 12-0508.3A(3) AND AS DESCRIBED IN REQUEST LETTER ATTACHED TO THE CDP.

13. MODIFICATION OF SECTION 12-0510.4C(5) TO PERMIT REDUCTION OF THE MINIMUM PLANTING AREA FROM EIGHT (8) FEET, TO A MINIMUM OF FOUR (4) FEET IN ORDER FOR TREES TO SATISFY THE TREE COVER REQUIREMENT. REFER TO LANDSCAPE PLANS HEREIN FOR GRAPHIC OF THE PROPOSED PLANTING AREAS.

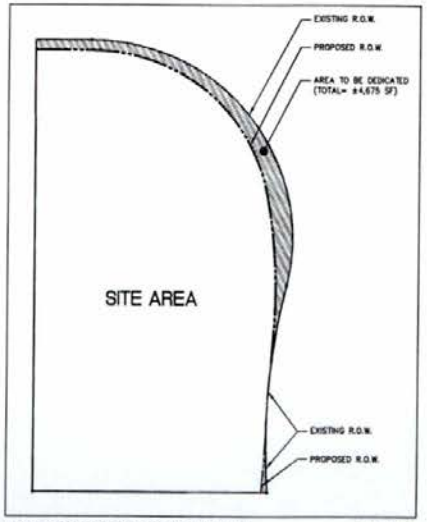
14. MODIFICATION OF SECTION 12-0511-4 FOR REQUIRED TEN (10) PERCENT TREE CANOPY COVERAGE ON INDIVIDUAL LOTS/LAND BAYS, TO ALLOW FOR CANOPY TO BE CALCULATED ON THE OVERALL ARBOR ROW DEVELOPMENT AREA, AS DEMONSTRATED ON THE CDP.

## STORMWATER MANAGEMENT DESIGN
## PFM DEVIATION NARRATIVE

IN KEEPING WITH THE COMPREHENSIVE PLANS 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" FOR THE REDEVELOPMENT OF LAND IN THE TYSONS CORNER URBAN CENTER, THE FOLLOWING DEVIATIONS FROM THE STRICT ADHERENCE TO THE PUBLIC FACILITIES MANUAL (PFM) WILL BE NECESSARY IN ORDER TO IMPLEMENT SUCH OBJECTIVES:

- DEVIATION OF PFM SECTION 6-1304.4I TO ALLOW UTILIZATION OF INFILTRATION RATES LESS THAN 0.52 IN/HR FOR FIELD TESTED RATE OF INFILTRATION SYSTEMS UTILIZED TO MEET THE COMPREHENSIVE PLAN REQUIREMENT FOR RETENTION OF THE FIRST 1" OF RUNOFF ONSITE.
- DEVIATION OF PFM SECTION 6-1305.3 TO ALLOW FOR ANY DETENTION FACILITY LOCATED WITHIN A BUILDING OR GARAGE STRUCTURE TO BE GOVERNED BY BUILDING CODE REQUIREMENTS FOR ACCESS AND MAINTENANCE.
- DEVIATION OF PFM SECTION 6-1307.2C TO ALLOW FOR INSTALLATION OF BIO-RETENTION AND INFILTRATION FACILITIES THAT UTILIZE INFILTRATION TO BE CONSTRUCTED ON IN-SITU FILL MATERIAL, PROVIDED FIELD TESTS SHOW ADEQUATE INFILTRATION RATES EXIST FOR IN-SITU MATERIAL.
- DEVIATION OF PFM SECTION 6-1307.2E TO SET THE MINIMUM HORIZONTAL SETBACKS FROM THE BUILDING FOUNDATIONS BE REDUCED TO ZERO (0) FEET IN ORDER TO FACILITATE INSTALLATION OF BIO-RETENTION AND INFILTRATION SYSTEMS IN AN URBAN ENVIRONMENT SET FORTH IN THE TYSONS CORNER DESIGN GUIDELINES.
- DEVIATION OF PFM SECTION 6-1307.2F TO ALLOW INSTALLATION OF BIO-RETENTION AND INFILTRATION FACILITIES IN THE VICINITY OF LOADING DOCKS, VEHICLE MAINTENANCE AREAS OR OUTDOOR STORAGE AREAS TO ACCOMMODATE THE URBAN ENVIRONMENT SET FORTH IN THE TYSONS CORNER DESIGN GUIDELINES.
- DEVIATION OF PFM SECTION 6-1307.2G TO ALLOW FOR THE MAXIMUM DRAINAGE AREAS TO BIO-RETENTION FILTERS UTILIZED FOR RETENTION OF THE FIRST 1" OF RUNOFF BE ELIMINATED IN ORDER TO ACCOMMODATE ROOFTOP RUNOFF PIPED TO PROPOSED STRUCTURES.
- DEVIATION OF PFM SECTION 6-1309.2C TO ALLOW INSTALLATION OF TREE BOX FILTERS IN THE VICINITY OF LOADING DOCKS, VEHICLE MAINTENANCE AREAS OR OUTDOOR STORAGE AREAS TO ACCOMMODATE THE URBAN ENVIRONMENT SET FORTH IN THE TYSONS CORNER DESIGN GUIDELINES.

VICINITY MAP SCALE: 1"=2000'




RIGHT OF WAY DEDICATION DETAIL SCALE: 1"=50'

AREA OF DEDICATION = ±4,675 SF

## ZONING TABULATION

EXISTING ZONE: C-3, OFFICE DISTRICT
PROPOSED ZONE: PTC, PLANNED TYSONS CORNER URBAN DISTRICT

| | REQUIRED | PROVIDED |
|---|---|---|
| MIN. LOT AREA | NONE | ±80,001 SF/±1.8366 AC |
| MIN. LOT WIDTH | NONE | ±323 FT |
| ALLOWABLE BLDG HT * | 175 FT -225 FT | ±135-175 FT MAX. (PLUS ±20 FT PENTHOUSE) |
| MIN. YARD REQUIREMENTS | | |
| FRONT * | RECOMMENDED: 4'-12' | ±4'-±15' |
| SIDE | NONE | 0 FT |
| REAR | NONE | 0 FT |

* RECOMMENDED PER COMPREHENSIVE PLAN

## SITE AREA / F.A.R. TABULATION

TOTAL SITE AREA: ±80,001 SF/±1.8366 AC
PROP. R.O.W. DEDICATION AREA = ±4,675 SF
PROP. BUILDING AREA:
PROP. OFFICE = ±197,844 SF
PROP. RETAIL = ±2,156 SF
TOTAL PROP. BUILDING AREA = ±200,000 SF*
PROP. F.A.R. = ±2.49**

* MINIMUM GFA = 50% OF 200,000 SF
** FAR BASED ON PRE-DEDICATION AREA

## PARKING TABULATION

REQUIRED PARKING

USE: OFFICE
MAXIMUM RATE: 2.2 SPACES/1000 SF OF GFA
(±197,844 SF/1,000 SF X 2.2 = 435)

MAXIMUM PARKING ALLOWED = 435 PARKING SPACES

TOTAL PARKING PROVIDED = 435 PARKING SPACES
(±2,156 SF OF RETAIL EXCLUDED FROM PARKING RATIO PER PTC ZONING DISTRICT)

## LOADING TABULATION

REQUIRED LOADING

USE: OFFICE
RATE: 1 SPACE FOR THE FIRST 10,000 SF OF GROSS FLOOR AREA PLUS 1 SPACE FOR EACH ADDITIONAL 20,000 SF OR MAJOR FRACTION THEREOF

±197,844 SF - 10,000 SF = 187,844 SF

187,844/20,000 = 9.39 SPACES
10,000 = 1 SPACE
10.39 SPACES

TOTAL LOADING REQUIRED = 11 SPACES (SEE NOTE BELOW)

PROPOSED LOADING

LOADING PROVIDED = 2 SPACES

NOTE
MAXIMUM OF 5 LOADING SPACES REQUIRED PER ZONING ORDINANCE.
WAIVER REQUESTED WITH THIS APPLICATION.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NOTES, TABULATIONS, AND WAIVERS
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | N/A |
| JOB No. | 09039 |
| DATE: | 2/24/2012 |
| FILE No. | 09039F-0101 |

SHEET P.102

## LEGEND

| | |
|---|---|
| APPROX. LOC. | APPROXIMATE LOCATION |
| B1 | BUILDING INGET |
| CFC | CITY OF FALLS CHURCH |
| CO | CLEANOUT |
| CONC. | CONCRETE |
| CPY | CANOPY |
| DB | DEED BOOK |
| EP | EDGE OF PAVEMENT |
| ESMT | EASEMENT |
| FC | HEADER CURB |
| FCWA | FAIRFAX COUNTY WATER AUTHORITY |
| FDC | FIRE DEPARTMENT CONNECTION |
| FF | FINISH/FINISH FLOOR ELEVATION |
| FP | FLAG POLE |
| GV | GAS VALVE |
| HC | HANDICAPPED RAMP |
| ICV | IRRIGATION CONTROL VALVE |
| INV | INVERT |
| IFF | IRON PIN FOUND |
| N/F | NOW OR FORMERLY |
| OH | UPPER LEVEL OVERHANG |
| PG | PAGE |
| PKS | P.K. NAIL SET (PROPERTY CORNER) |
| RET | RETAINING WALL |
| SD | STORM SEWER STRUCTURE |
| SS | SANITARY SEWER STRUCTURE |
| SW | SIDEWALK |
| TVLT | TELECOMMUNICATIONS VAULT |
| WV | WATER VALVE |
| | FIRE HYDRANT |
| | DRIVEWAY/ENTRANCE |
| | LIGHT POLE |
| —x— | FENCE |
| | GUY WIRE |
| —E— | OVERHEAD WIRES |
| —E— | UNDERGROUND ELECTRIC LINE |
| —G— | UNDERGROUND GAS LINE |
| —T— | UNDERGROUND TELEPHONE LINE |
| —W— | UNDERGROUND WATER LINE |
| | TREE |
| | LIMITS OF TREE CANOPY/VEGETATION |
| | CURB AND GUTTER |
| | ELECTRIC TRANSFORMER |
| | SPOT ELEVATION |
| | SIGN |
| | GROUND LIGHT |
| | RESERVED FOR HANDICAPPED |

**TABLE 12.3**

TABLE 12.3 TREE PRESERVATION TARGET CALCULATIONS AND STATEMENT

A. PRE-DEVELOPMENT AREA OF EXISTING TREE CANOPY (FROM EVM): 21,893 SF

B. PERCENTAGE OF GROSS SITE AREA COVERED BY EXISTING TREE CANOPY: 54.8 %

C. PERCENTAGE OF 10-YEAR TREE CANOPY REQUIRED FOR SITE: 10%
(8,000 SF) (TOTAL SITE AREA = 80,001 SF)

D. PERCENTAGE OF 10 YEAR TREE CANOPY REQUIREMENT THAT SHOULD BE MET THROUGH TREE PRESERVATION: (8,000 x .346) 34.8% = 2,784 SF

E. PROPOSED PERCENTAGE OF CANOPY REQUIREMENT THAT WILL BE MET THROUGH TREE PRESERVATION: (0 = 2,784) 0%

F. HAS THE TREE PRESERVATION TARGET MINIMUM BEEN MET? NO

**TABLE 12.10**

SEE SHEET L.301

### EXISTING VEGETATION MAP INFORMATION

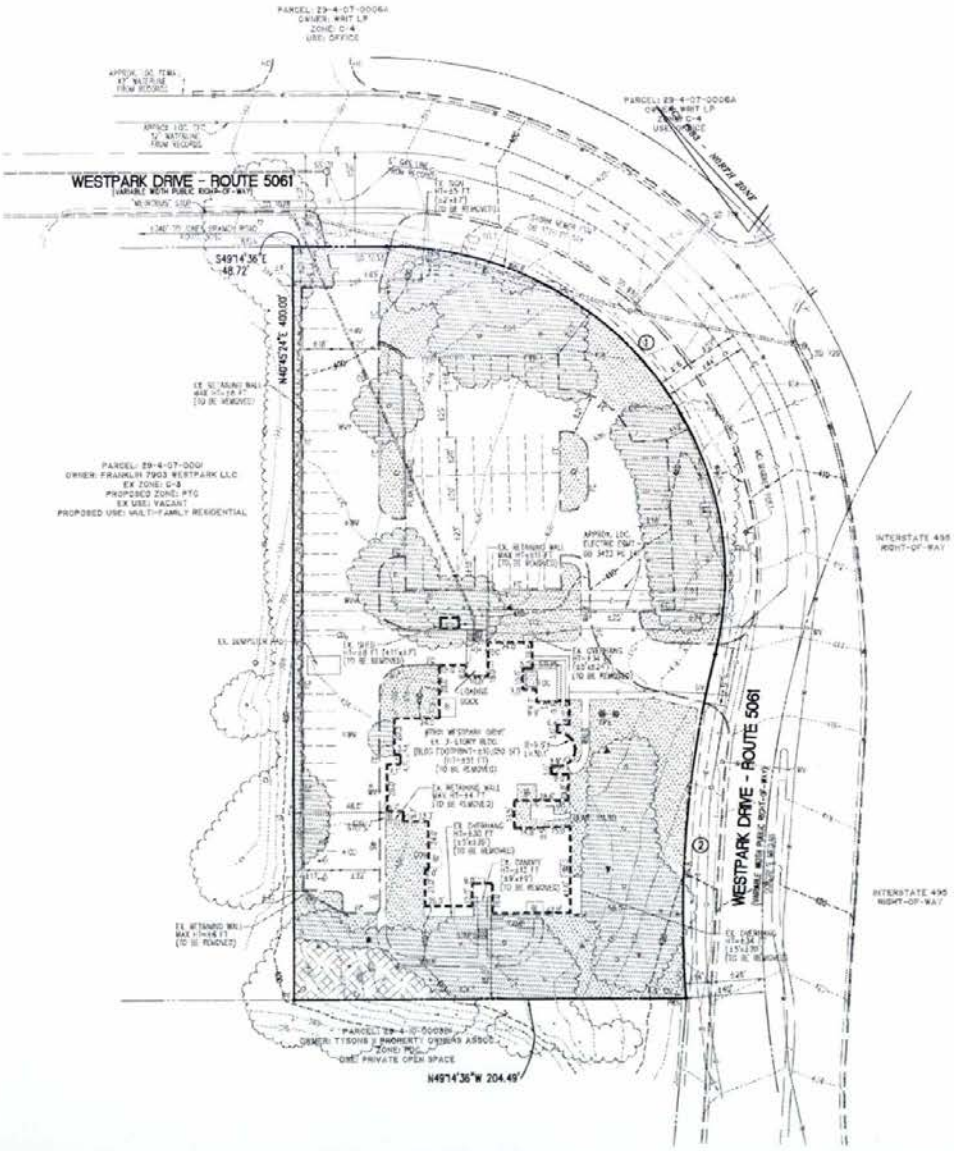
| | | COVER TYPE | PRIMARY SPECIES | SUCCESSIONAL STAGE | CONDITION | ACREAGE |
|---|---|---|---|---|---|---|
| A | | EARLY SUCCESSION FOREST COMMUNITY | BLACK LOCUST, RED MAPLE, BLACK CHERRY, TULIP POPLAR, SHORTLEAF PINE | EARLY | FAIR TO POOR | 0.14 AC. |
| B | | DEVELOPED LAND | N/A | N/A | N/A | 0.74 AC. |
| C | | LANDSCAPE TREE CANOPY | CRAPE MYRTLES, PIN OAKS, CHERRY, AMERICAN HOLLY | MID-LATE | FAIR TO GOOD | 0..55 AC. |
| D | | MISC. (SHRUBS AND GROUNDCOVER) | N/A | N/A | FAIR TO GOOD | 0.40 AC. |

* DOMINANT TREE SPECIES

TOTAL SITE AREA: ±1.83 AC.

### CURVE TABLE

| CURVE | RADIUS | LENGTH | DELTA | TANGENT | CHORD | CHORD BEARING |
|---|---|---|---|---|---|---|
| 1 | 176.00' | 218.46' | 102°45'51" | 223.99' | 276.78' | S32°33'34"W |
| 2 | 550.87' | 163.74' | 17°49'00" | 82.82' | 163.07' | S45°37'51"W |




GRAPHIC SCALE

( IN FEET )
1 inch = 30 ft.

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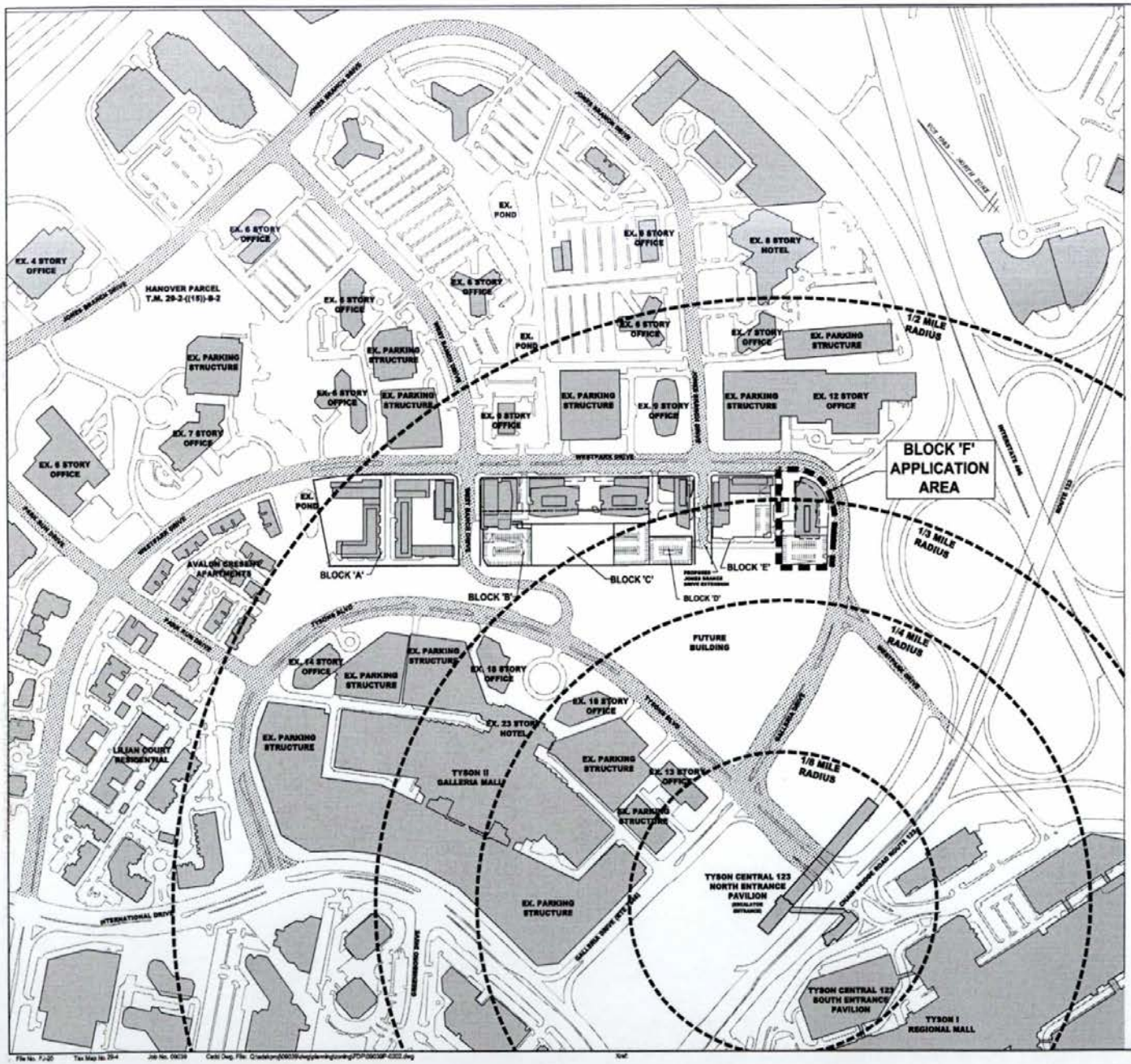
EXISTING CONDITIONS / EXISTING VEGETATION MAP
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 6/29/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|

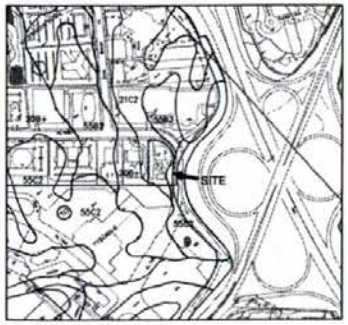
SCALE 1"=30'
JOB No. 09039
DATE : 2/24/2012
FILE No. 09039P-0201
SHEET P.201

File No. F-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: O:\design\09039\dwg\planning\civil\FDP\09039P-0201.dwg




## SOILS MAP

SCALE: 1"=500'




## SOILS CHART

| SOIL NUMBER | SOIL SERIES | PROBLEM CLASS | DRAINAGE | SEPTIC FIELDS | EROSION POTENTIAL |
|---|---|---|---|---|---|
| 20B+ | MEADOWVILLE | B | MARGINAL | POOR | MODERATE |
| 21C2 | MANOR | C | GOOD | GOOD | HIGH |
| 55C2 | GLENELG | C | GOOD | GOOD | HIGH |

## LEGEND

EXISTING/ PROPOSED PUBLIC ROADWAY

200 0 100 200 400 800

(IN FEET)
1 INCH = 200'

CONTEXT PLAN

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

ARBOR ROW - BLOCK "F"

7901 WESTPARK DRIVE

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/20/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1"=200'

JOB No. 09039

DATE : 2/24/2012

FILE No. 09039P-0202

SHEET P.202

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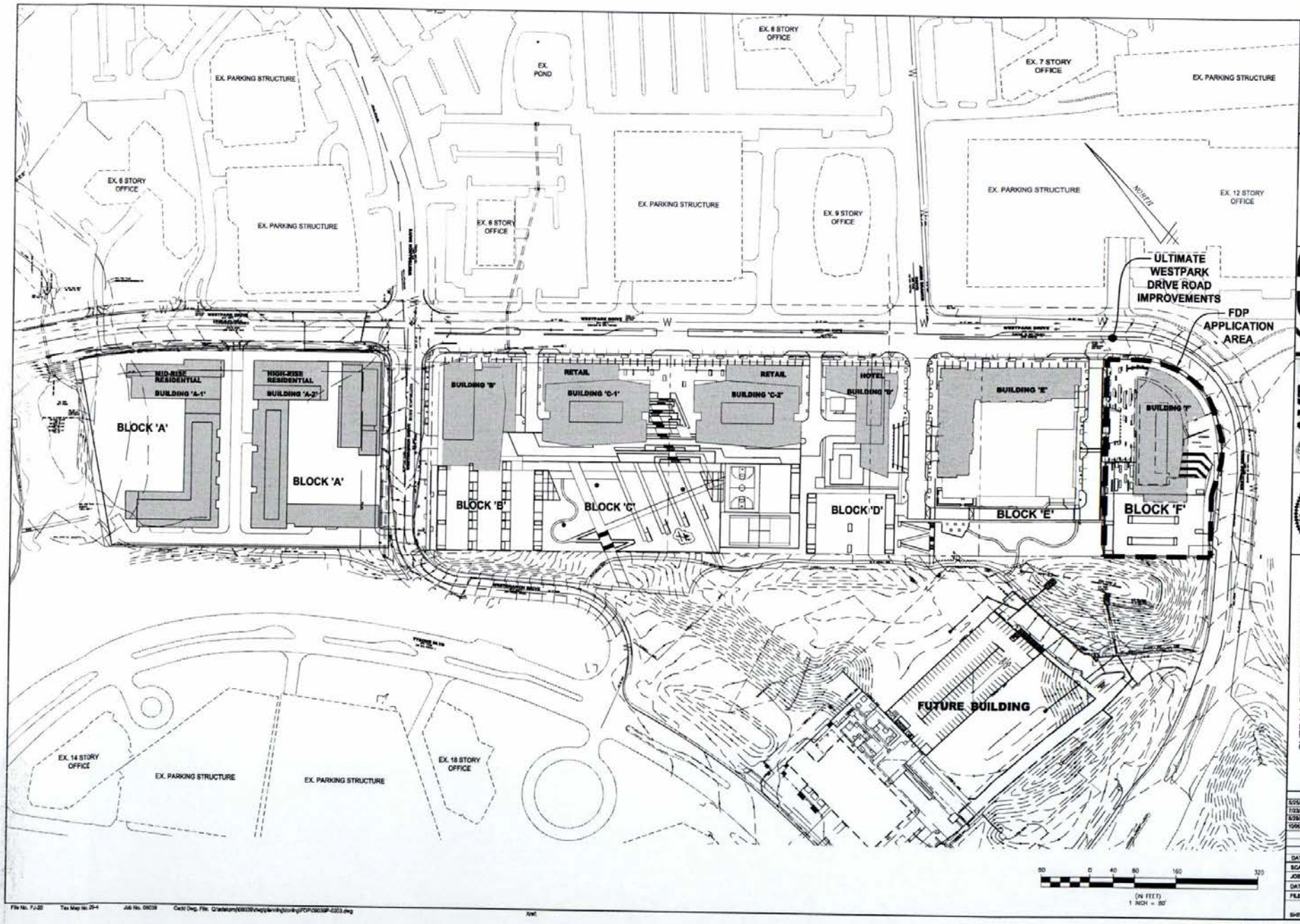
10/05/12

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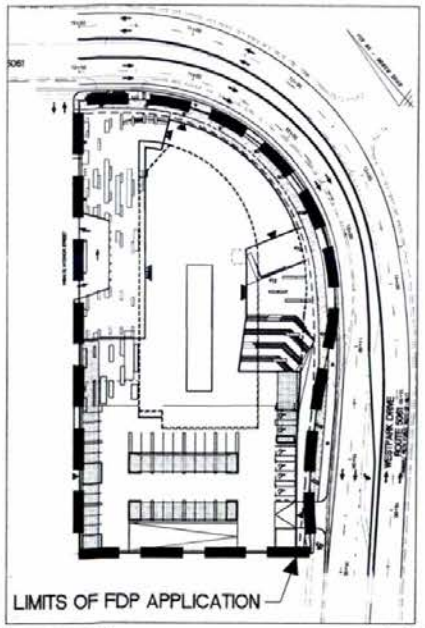
OVERALL DEVELOPMENT PLAN
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |
| DATE | DESCRIPTION |

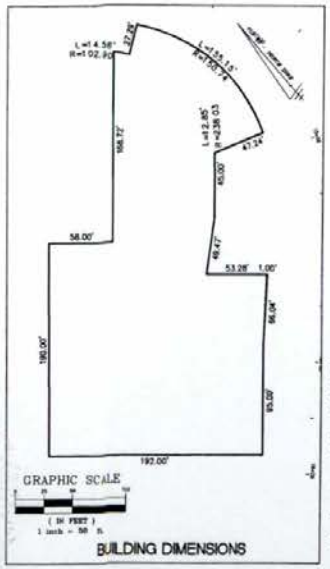
| | |
|---|---|
| SCALE | 1"=80' |
| JOB No. | 09039 |
| DATE: | 2/24/2012 |
| FILE No. | 09039P-0203 |
| SHEET | P.203 |

File No. FJ-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: Q:\data\proj\09039\shepplan\fdp\fdp\09039P-0203.dwg

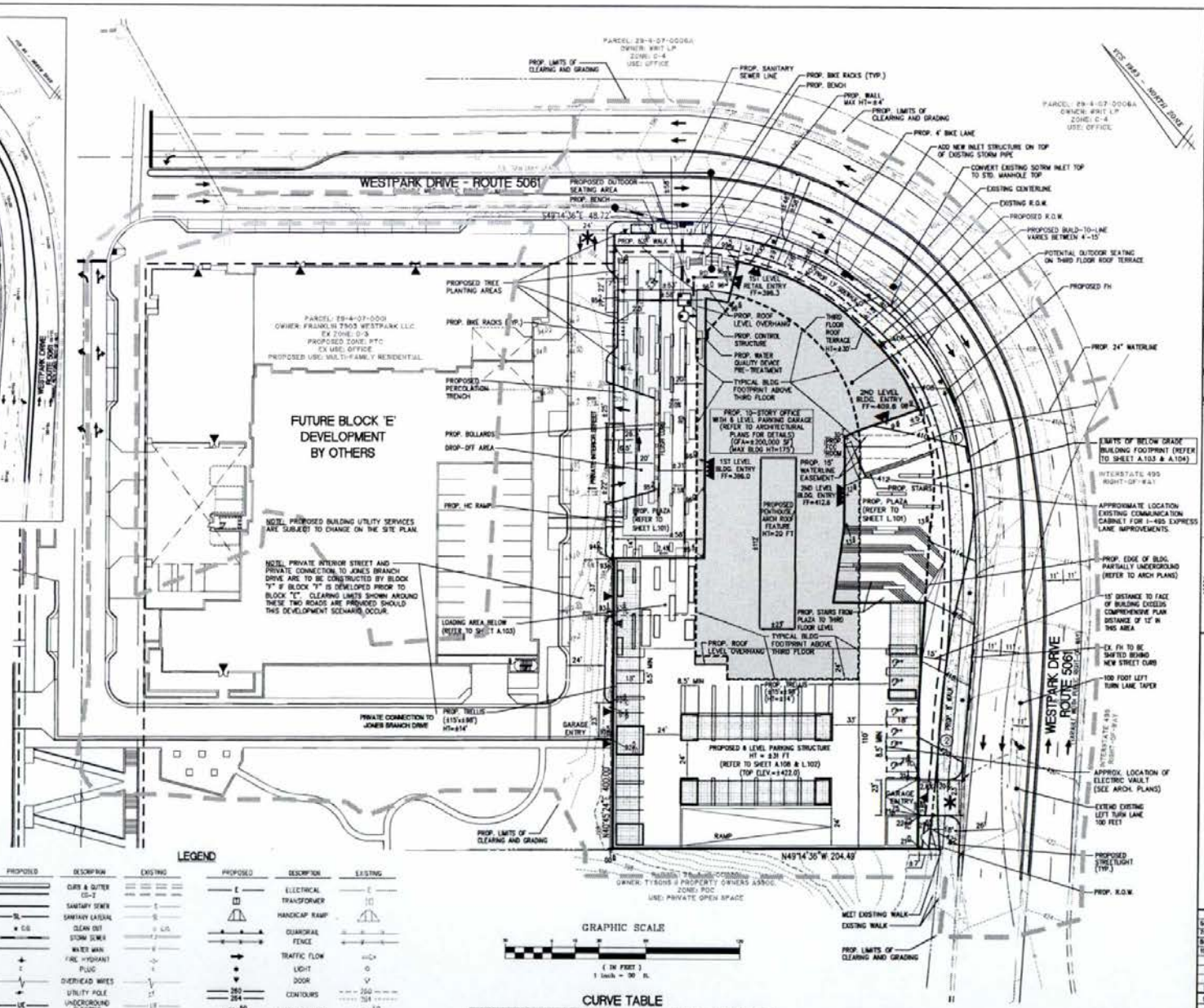



GRAPHIC SCALE

( IN FEET )
1 inch = 50 ft.




BUILDING DIMENSIONS




## LEGEND

| PROPOSED | DESCRIPTION | EXISTING | PROPOSED | DESCRIPTION | EXISTING |
|---|---|---|---|---|---|
| | CURB & GUTTER CG-2 | | E | ELECTRICAL | E |
| | SANITARY SEWER | S | | TRANSFORMER | |
| SL | SANITARY LATERAL | SL | | HANDICAP RAMP | |
| CO | CLEAN OUT | CO | | GUARDRAIL | |
| | STORM SEWER | | | FENCE | |
| | WATER MAIN | W | | TRAFFIC FLOW | |
| | FIRE HYDRANT / PLUG | | | LIGHT | |
| | OVERHEAD WIRES | | | DOOR | |
| | UTILITY POLE | | 260 / 264 | CONTOURS | 260 / 264 |
| UE | UNDERGROUND ELECTRIC | UE | +264.50 | SPOT ELEVATION | +264.50 |
| T | TELEPHONE | T | | LIMITS OF CLEARING AND GRADING | |
| G | GAS MAIN | G | | | |

## CURVE TABLE

| CURVE | RADIUS | LENGTH | DELTA | TANGENT | CHORD | CHORD BEARING |
|---|---|---|---|---|---|---|
| 1 | 176.00' | 218.49' | 152°49'31" | 223.99' | 276.18' | S82°35'53"W |
| 2 | 580.83' | 163.74' | 17°18'00" | 82.62' | 163.00' | S40°23'31"W |

* ENTRANCE WIDTH COMPLIES WITH TRANSPORTATION DESIGN STANDARDS FOR TYSONS CORNER URBAN CENTER

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10-02-12

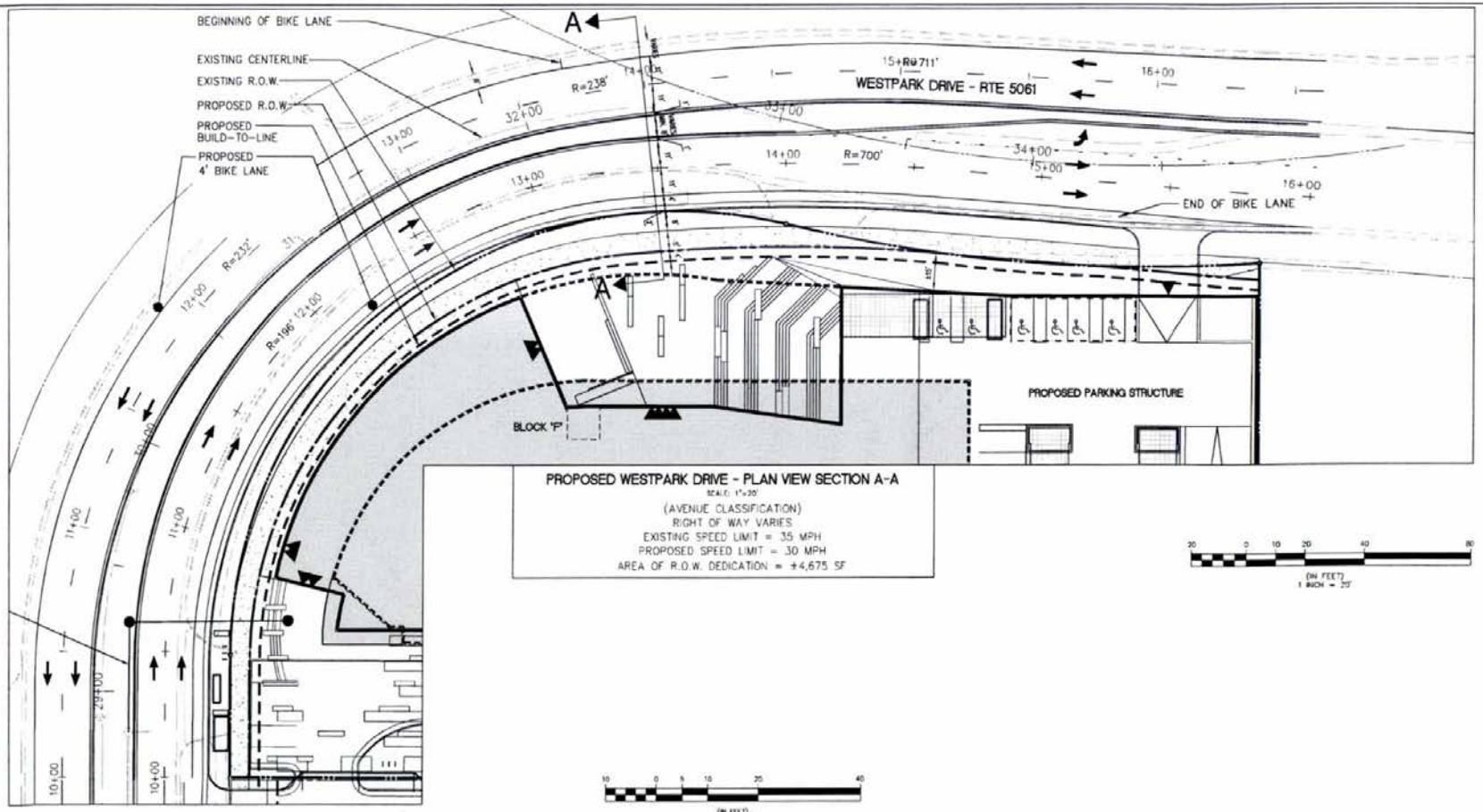
# FINAL DEVELOPMENT PLAN

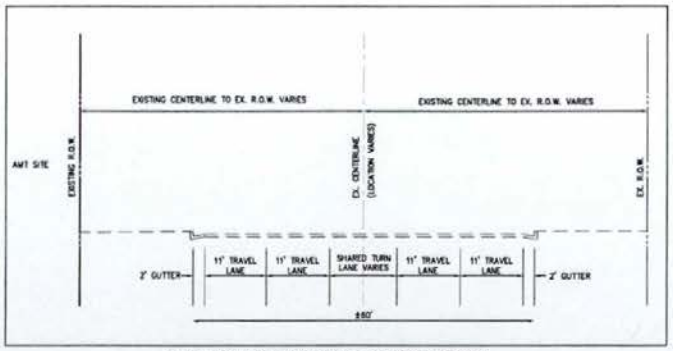
## THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
## ARBOR ROW - BLOCK "F"
## 7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | AS NOTED |
| JOB No. | 09039 |
| DATE: | 2/24/2012 |
| FILE No. | 09039P-0301 |
| SHEET | P.301 |

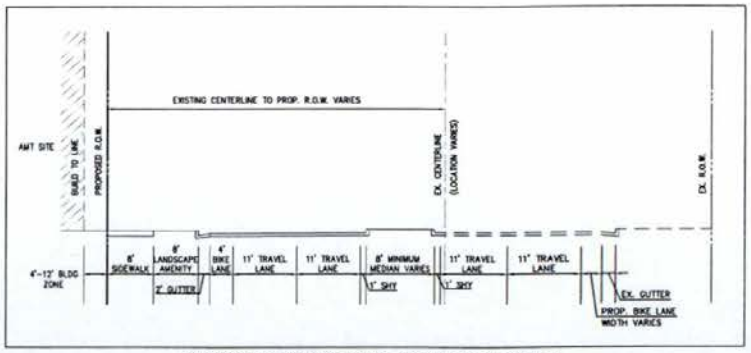
File No. FJ-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: G:\adelpha\09039\dwg\planning\zoning\FDP\09039P-0301.dwg Xref:




EXISTING WESTPARK DRIVE - CROSS SECTION

SCALE: 1"=10'




PROPOSED WESTPARK DRIVE - CROSS-SECTION A-A

SCALE: 1"=10'

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# WESTPARK DRIVE CROSS-SECTIONS

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

## ARBOR ROW - BLOCK "F"

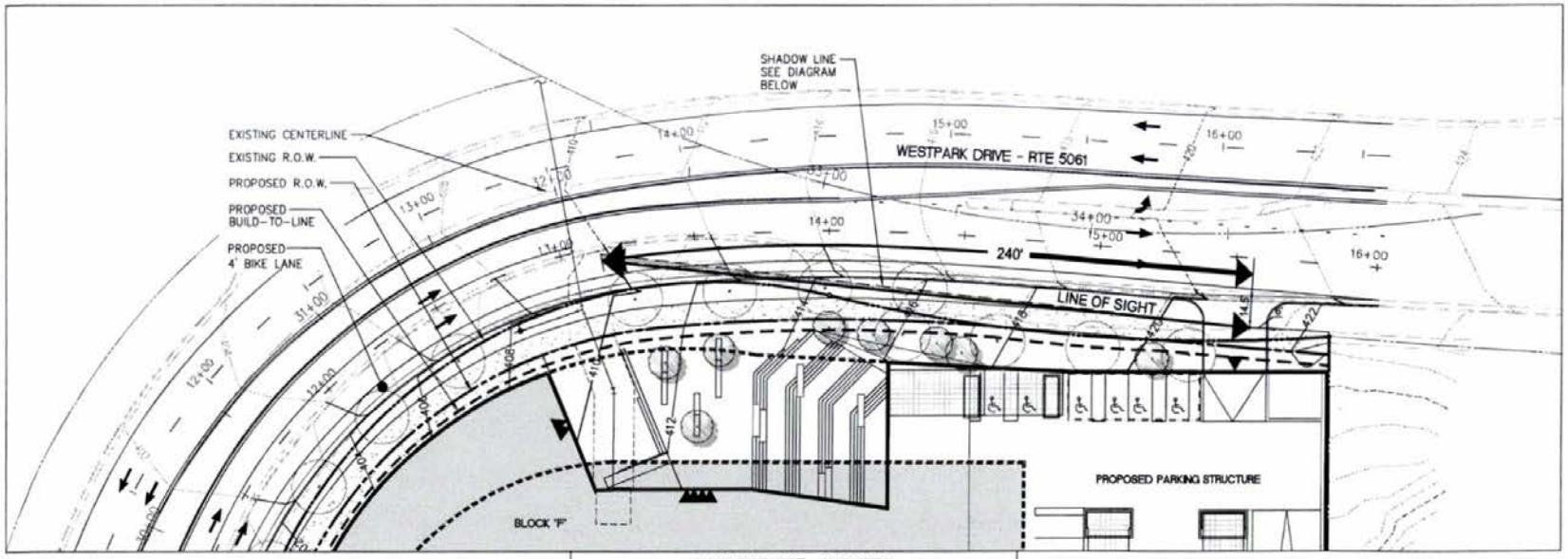
7901 WESTPARK DRIVE

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 2/22/2012 | COUNTY COMMENTS |
| 7/13/2012 | COUNTY COMMENTS |
| 8/10/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: AS NOTED
JOB No.: 09039
DATE: 2/24/2012
FILE No.: 09039P-0302
SHEET: P.302

File No. FJ-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: C:\addkorp\09039\dwg\planning\zonfrp\FDP-09039P-0302.dwg Xref:



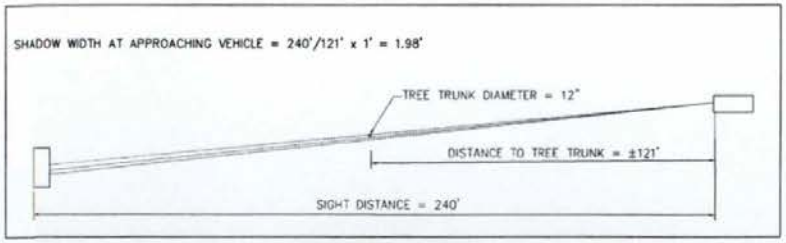

**SIGHT DISTANCE - PLAN VIEW**

SCALE: 1"=20'

(AVENUE CLASSIFICATION)
RIGHT OF WAY VARIES
EXISTING SPEED LIMIT = 35 MPH
PROPOSED SPEED LIMIT = 30 MPH
AREA OF R.O.W. DEDICATION = ±4,675 SF

NOTE

MINIMUM LINE OF SIGHT REQUIRED, PER THE TRANSPORTATION DESIGN STANDARDS FOR TYSONS CORNER URBAN CENTER, FOR A DESIGN SPEED OF 35 MPH IS 240 FEET AS SHOWN ON THIS SHEET.




**SHADOW BAND DIAGRAM**

SCALE: 1"=20'

20 0 10 20 40 80
(IN FEET)
1 INCH = 20'

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16/05/12

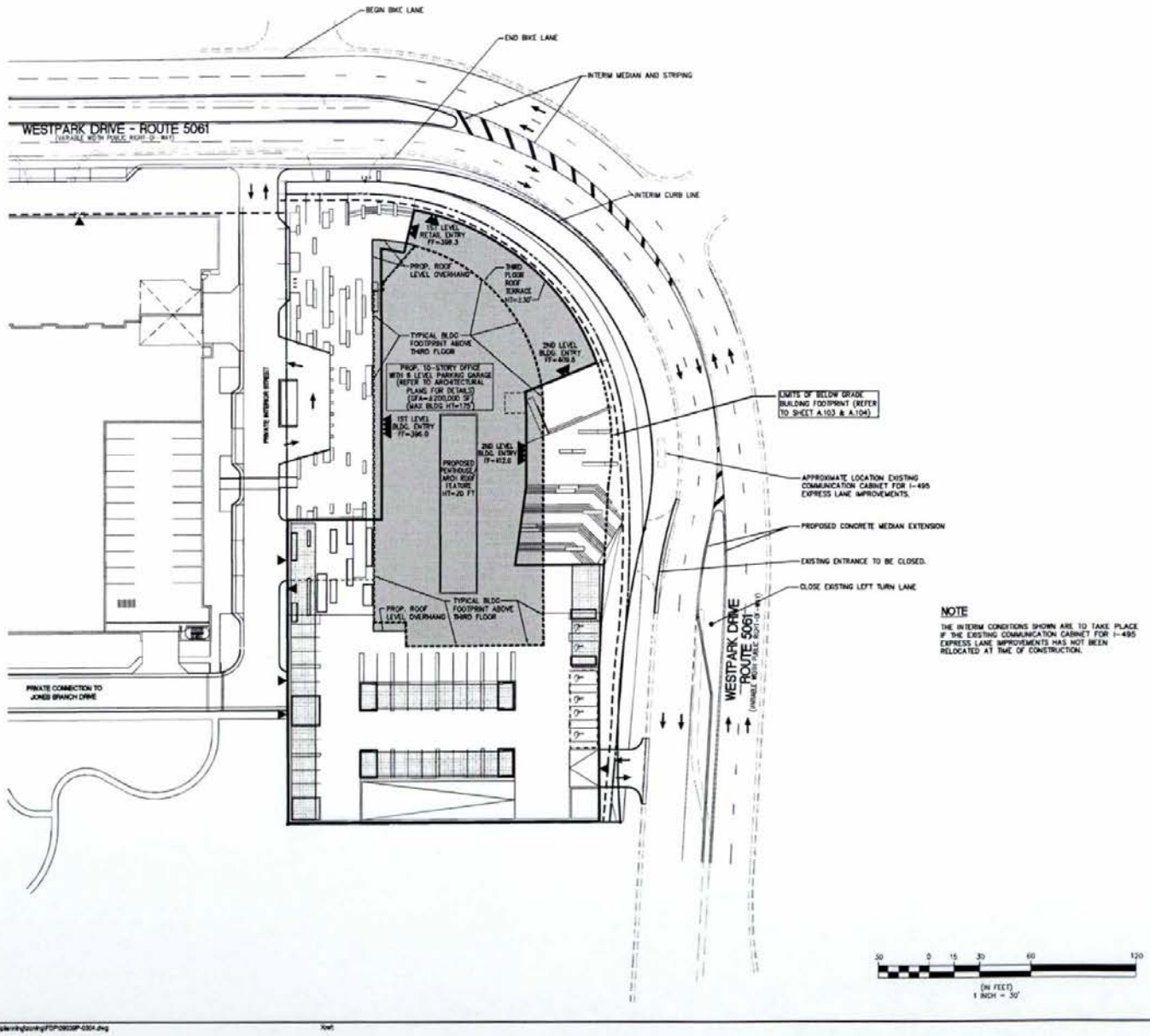
SIGHT DISTANCE EXHIBIT
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
**ARBOR ROW - BLOCK "F"**
**7901 WESTPARK DRIVE**
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/24/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE 1"=20'
JOB No. 09039
DATE : 2/24/2012
FILE No. 09039P-0301

SHEET P.303

File No. 7-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: G:\wlpinc\09039\dwg\planning\zoning\FDP09039P-0303.dwg Xref:




**NOTE**

THE INTERIM CONDITIONS SHOWN ARE TO TAKE PLACE IF THE EXISTING COMMUNICATION CABINET FOR I-495 EXPRESS LANE IMPROVEMENTS HAS NOT BEEN RELOCATED AT TIME OF CONSTRUCTION.

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PETER J. STUCKI
LIC. No. 047275
04/05/13

BLOCK F - INTERIM FRONTAGE IMPROVEMENTS

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

**ARBOR ROW - BLOCK "F"**

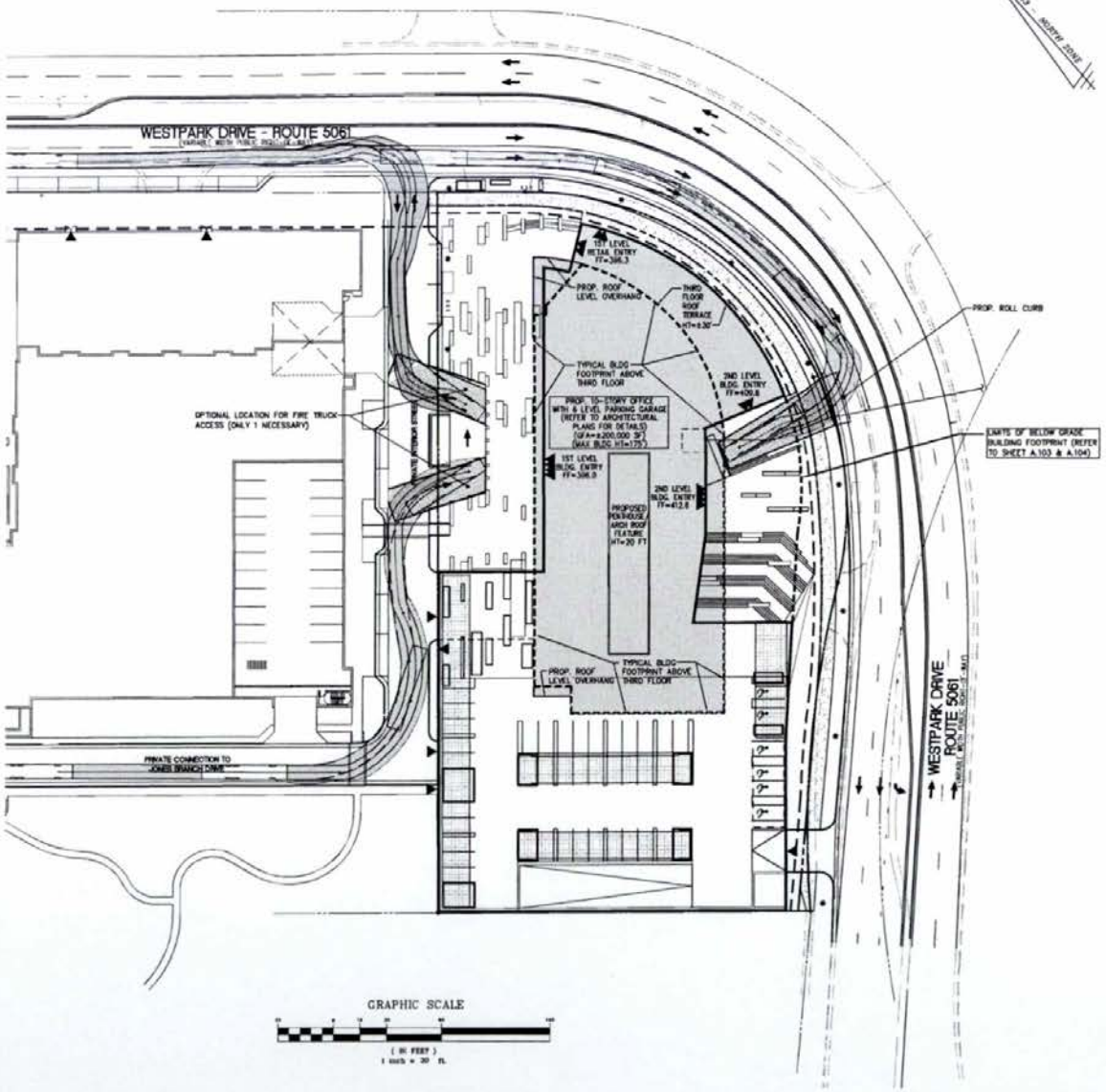
**7901 WESTPARK DRIVE**

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 6/25/2012 | COUNTY COMMENTS |
| 10/5/2012 | COUNTY COMMENTS |
| 6/28/2013 | COUNTY COMMENTS |
| 12/05/2013 | COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

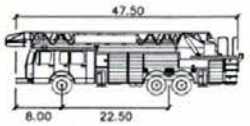
| | |
|---|---|
| SCALE | 1"=30' |
| JOB No. | 09039 |
| DATE: | 2/24/2012 |
| FILE No. | 09039P-0304 |
| SHEET | P.304 |

File No. FJ-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: Q:\wlpinc\09039\dwg\planning\zoning\FDP\09039P-0304.dwg Xref:




LEGEND

SHOWN UNDER FIRE TRUCK ZONE FOR GRAPHICAL PURPOSES ONLY AND NOT INTENDED TO BE A SPECIAL DESIGNATED CONCRETE PATTERN




Fairfax Ladder Truck

| | feet |
|---|---|
| Width | : 8.00 |
| Track | : 8.00 |
| Lock to Lock Time | : 6.00 |
| Steering Angle | : 40.0 |

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FIRE TRUCK MOVEMENT PLAN

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

ARBOR ROW - BLOCK "F"

7901 WESTPARK DRIVE

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/13/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/5/2012 | COUNTY COMMENTS |
| DATE | DESCRIPTION |

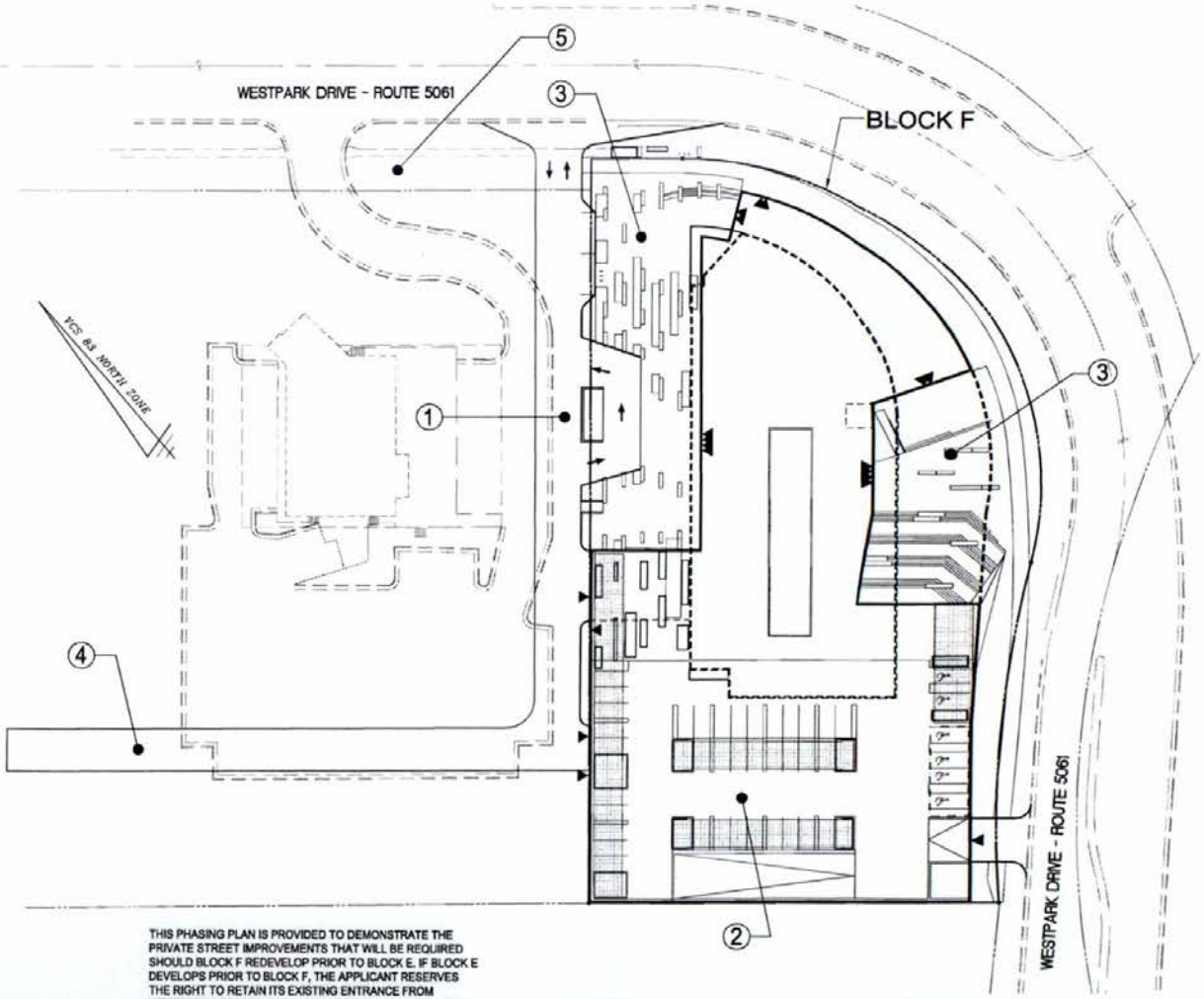
SCALE: AS NOTED

JOB No.: 09039

DATE: 2/24/2012

FILE No.: 09039P-0305

SHEET: P.305




THIS PHASING PLAN IS PROVIDED TO DEMONSTRATE THE PRIVATE STREET IMPROVEMENTS THAT WILL BE REQUIRED SHOULD BLOCK F REDEVELOP PRIOR TO BLOCK E. IF BLOCK E DEVELOPS PRIOR TO BLOCK F, THE APPLICANT RESERVES THE RIGHT TO RETAIN ITS EXISTING ENTRANCE FROM WESTPARK DRIVE TO THE NORTHWEST CORNER OF BLOCK F UNTIL IT COMPLETES CONSTRUCTION OF THE REDEVELOPMENT OF BLOCK F, IF VDOT PERMITS THE EXISTING ENTRANCE AND A NEW ENTRANCE FROM WESTPARK DRIVE TO BLOCK E TO BE OPEN AND IN OPERATION SIMULTANEOUSLY.

## LEGEND

1. CONSTRUCT PRIVATE DRIVE CONNECTION TO WESTPARK DR. (NOT INCLUDING WESTERN STREETSCAPE)
2. CONSTRUCT PARKING GARAGE
3. CONSTRUCT OPENSPACE IMPROVEMENTS
4. CONSTRUCT PRIVATE DRIVE CONNECTION TO FUTURE JONES BRANCH DRIVE EXTENSION
5. REPLACE EXISTING INADEQUATE STORM SEWER IN STREET

## NOTES

1. FINAL ROAD, CURB AND MEDIAN ALIGNMENT (INCLUDING CURB CUT, TURN LANES, MEDIAN BREAKS, PARKING, ETC.) IS SUBJECT TO CHANGE WITH FINAL ENGINEERING SITE PLAN.
2. EXTENT OF FRONTAGE IMPROVEMENTS THAT MAY BE CONSTRUCTED WITH INDIVIDUAL BLOCKS WILL BE DETERMINED WITH FINAL ENGINEERING INCLUDING LANE WIDENING, TRANSITIONS, MARKINGS, STREETSCAPE ETC.

30 0 15 30 60 120
(IN FEET)
1 INCH = 30'

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JEFFREY A. STOKES
LIC. No. 22170
10/05/12

PHASING PLAN
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/13/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE 1"=30'
JOB No. 09039
DATE: 3/24/2012
FILE No. 09039P-0306
SHEET P.306

File No. 7-2-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: Q:\adelpro\09039\dwg\planning\zoning\FDP\09039P-0306.dwg XWF

## OUTFALL NARRATIVE

**EXISTING CONDITIONS:**

THE SITE IS CURRENTLY DEVELOPED AS AN OFFICE BUILDING WITH SURFACE PARKING. RUNOFF IS COLLECTED BY STORM DRAINS AND DIRECTED INTO THE STORM SEWER IN WESTPARK DRIVE. THE STORM SEWER SYSTEM FIRST HEADS NORTHWEST IN WESTPARK DRIVE AND THEN TURNS NORTHEAST IN JONES BRANCH DRIVE. THIS STORM SEWER CONVEYS THE RUNOFF TO REGIONAL POND "C" LOCATED ADJACENT TO THE SOUTHEAST QUADRANT OF THE RTE. 267/I-495 INTERCHANGE. THIS POND IS PART OF THE SCOTTS RUN WATHER SHED. PLEASE REFER TO THE OUTFALL DRAINAGE MAP THIS SHEET.

**PROPOSED CONDITIONS:**

THE RUNOFF FROM THE SITE WILL BE CONVEYED TO AN UNDERGROUND INFILTRATION/DETENTION FACILITY THAT WILL BE LOCATED IN THE NORTHWEST CORNER OF THE PROJECT SITE. THIS PROPOSED FACILITY WILL STORE THE WATER IN A PROPOSED GRAVEL PERCOLATION TRENCH. THE FACILITY IS DESIGNED TO INFILTRATE SOME OF THE STORMWATER RUNOFF TO REDUCE THE VOLUME OF RUNOFF AS REQUIRED BY THE COMPREHENSIVE PLAN. ADDITIONAL STORMWATER RUNOFF WILL BE DETAINED SO THE RUNOFF LEAVING THE SITE FROM 2 AND 10 YEAR EVENTS IS IN COMPLIANCE WITH THE LEED AND STANDARD PFM REQUIREMENTS.

AS DEPICTED, OUR PROJECT SITE WILL DISCHARGE TO EXISTING STORM STRUCTURE #1028 LOCATED IN WESTPARK DRIVE AT THE NORTHEAST CORNER OF OUR SITE. THE TOTAL DRAINAGE AREA TO INLET #1028 EQUALS 5.7 ACRES.

**SITE PLAN OUTFALL ANALYSIS REVIEW (PER PFM):**

IN ACCORDANCE WITH PFM SECTION 6-0203.2A, THE EXTENT OF OUTFALL REVIEW ENDS 150' DOWNSTREAM OF STRUCTURE #1103 WHICH IS THE LOCATION WHERE THE RECEIVING PIPE IS JOINED BY ANOTHER PIPE THAT HAS A DRAINAGE AREA (14.1 AC) THAT IS AT LEAST 90 PERCENT OF THE SIZE OF THE FIRST DRAINAGE AREA (5.7 AC) AT THE POINT OF CONFLUENCE. AS A RESULT, THE LAST 150' OF OUTFALL ANALYSIS INCLUDES TWO STORM SEWER PIPES: THE PIPE FROM STRUCTURE 1103 TO 1735 AND PART OF THE PIPE FROM STRUCTURE 1735 TO 1738.

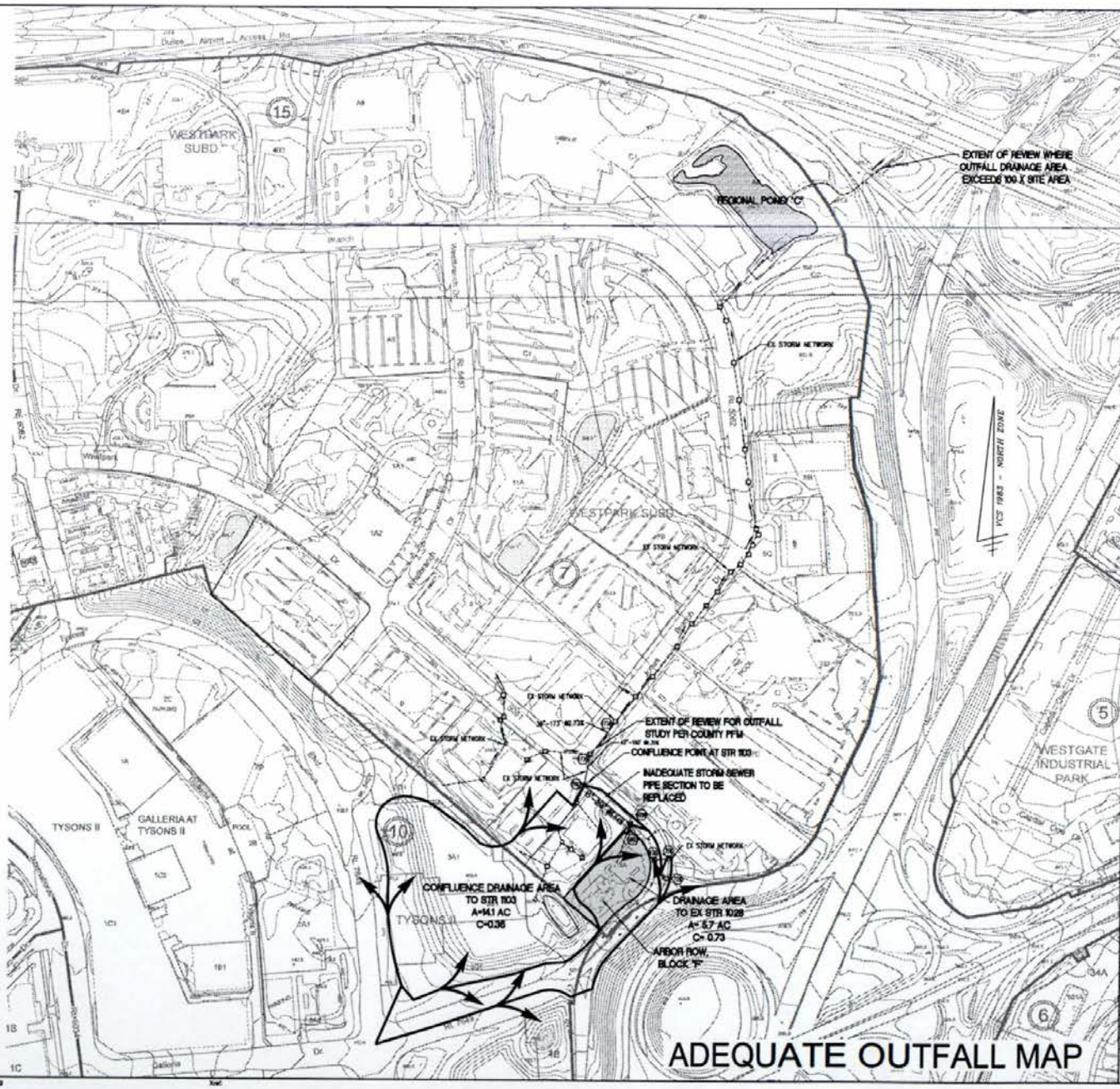
THE STORM SEWER PIPES FROM THE SITE TO THE EXTENT OF REVIEW ARE ADEQUATE EXCEPT FOR THE PIPE BETWEEN STRUCTURES 1028 AND 1103. THIS SECTION OF PIPE WILL BE REPLACED WITH AN ADEQUATE PIPE. THEREFORE, IT IS OUR OPINION THAT THE OUTFALL WILL BE ADEQUATE ONCE THE ONE INADEQUATE PIPE IS REPLACED.

**FDP OUTFALL ANALYSIS REVIEW (PER ZONING ORDINANCE):**

IN ACCORDANCE WITH THE ZO, THE EXTENT OF REVIEW EXTENDS TO A POINT WHERE THE OUTFALL'S DRAINAGE AREA EXCEEDS 100 TIMES THE SITE AREA OF 1.84 AC. SEE OUTFALL MAP FOR EXTENT OF REVIEW. PLEASE REFER TO THE PROJECT GDP FOR THE OUTFALL ANALYSIS TO THE EXTENT OF REVIEW PER THE ZO. HOWEVER THE SITE PLANS EXTENT OF REVIEW WILL BE DETERMINED IN ACCORDANCE WITH THE PFM.

### STORM AS-BUILT DATA

| | | |
|---|---|---|
| ID 718 | | |
| CURB INLET TOP = | | 404.34 |
| 15"RCP OUT | (ID 970)= | 400.44 |
| | | |
| ID 729 | | |
| CURB INLET TOP = | | 407.70 |
| INVERT (INACCESSIBLE) | | |
| FULL OF DIRT | | |
| | | |
| ID 970 | | |
| CURB INLET TOP = | | 404.80 |
| 15"RCP IN | (ID 729)= | 400.00 |
| 15"RCP IN | (ID 718)= | 399.75 |
| 15"RCP OUT | (ID 1028)= | 398.65 |
| | | |
| ID 1033 | | |
| TRACK DRAIN TOP = | | 395.99 |
| 15"RCP OUT | (ID 1028)= | 393.99 |
| | | |
| ID 1028 | | |
| CURB INLET TOP = | | 394.98 |
| 15"RCP IN | (ID 1033)= | 392.28 |
| 15"RCP IN | (ID 970)= | 391.33 |
| 12"RCP IN | (SOUTH)= | 391.00 |
| 15"RCP OUT | (ID 1103)= | 390.18 |
| | | |
| ID 1103 | | |
| CURB INLET TOP = | | 384.32 |
| 15"RCP IN | (ID 1028)= | 376.32 |
| 48"RCP IN | (S.WEST)= | 373.25 |
| 42"RCP OUT | (NORTH)= | 372.05 |




200 0 100 200 400 800

(IN FEET)
1 INCH = 200'

PRELIMINARY OUTFALL ANALYSIS

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

**ARBOR ROW - BLOCK "F"**

7901 WESTPARK DRIVE

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

WALTER L. PHILLIPS ENGINEERING

KGD

AMT

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | 1"=200' |
| JOB No. | 09039 |
| DATE : | 2/24/2012 |
| FILE No. | 09039P-0501 |
| SHEET | P.501 |

File No. 7-J-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: Q:\acad\09039\dwg\planning\county\FDP\09039P-0501.dwg

## NOTES

1. LOCATIONS AND LIMITS OF STORMWATER MANAGEMENT FACILITIES SUBJECT TO CHANGE WITH FINAL DESIGN.
2. STORMWATER BMP'S TO BE PRIVATELY MAINTAINED.
3. PROPOSED VEGETATED SWALES MAY BE REPLACED WITH URBAN BIORETENTION.

## 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.

## STORMWATER MANAGEMENT CHECKLIST

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

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

This information is required under the following Zoning Ordinance paragraphs:

| | |
|---|---|
| Special Permits (9-011 2J & 2L) | Special Exceptions (9-011 2J & 2L) |
| Cluster Subdivision (9-615 1G & 1N) | Commercial Revitalization Districts (9-622 2A (12) & (14)) |
| Development Plans PRC District (16-302 3 & 4L) | PRC Plan (16-303 1E & 1O) |
| FDP P Districts (except PRC) (16-502 1F & 1O) | Amendments (16-202 16F & 1O) |

[X] 1. Plat is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100').

[X] 2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet P.502

[X] 3. Provide

| | Facility Name/ Type & No. | On-site area served (acres) | Off-site area served (acres) | Drainage area (acres) | Footprint area (sf) | Storage Volume (cf) | If pond, dam height (ft) |
|---|---|---|---|---|---|---|---|
| PERCOLATION TRENCH | | 1.38 | 0 | 1.38 | 5,730 | 11,550 | N/A |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | Totals | | | | | | |

[X] 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet P.502
Pond inlet and outlet pipe systems are shown on Sheet N/A

[ ] 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet N/A.
Type of maintenance access road surface noted on the plat is N/A (asphalt, gravel, grass, etc.)

[X] 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet L.105

[X] 7. A "stormwater management narrative" which contains a description of how detention and best management practices requirements will be met is provided on Sheet P.504

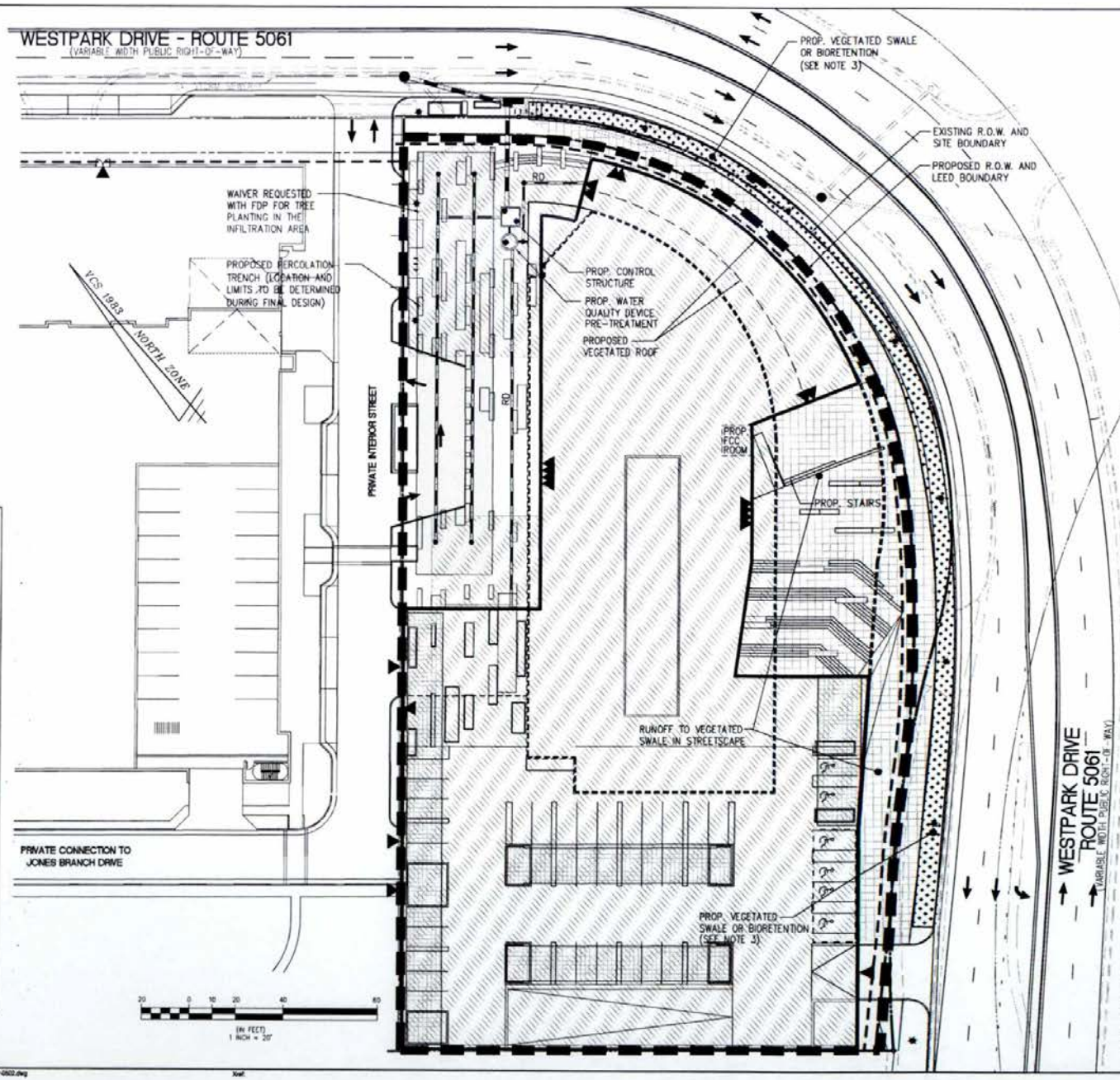
[X] 8. A description of the existing conditions of each numbered site outfall extended downstream from the site to a point which is at least 100 times the site area or which has a drainage area of at least one square mile (640 acres) is provided on Sheet P.503

[X] 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet P.501

[X] 10. Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an air survey or field run is provided on Sheets P.102-P.105

[ ] 11. A submission waiver is requested for N/A

[ ] 12. Stormwater management is not required because _____

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Jeffrey A. Gates
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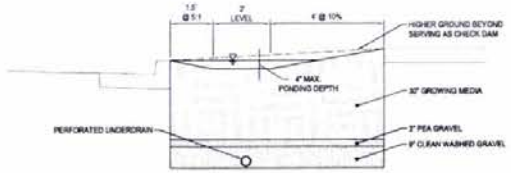
No. 036 037041
10/02/12
COMMONWEALTH OF VIRGINIA

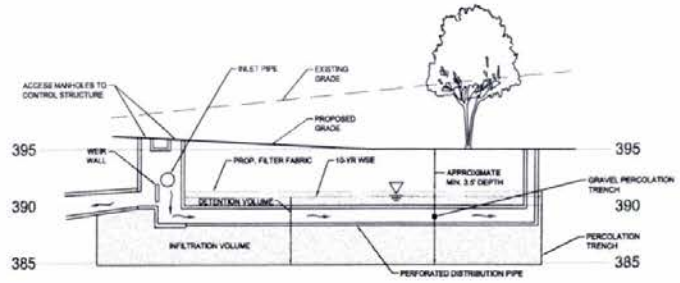
STORMWATER MANAGEMENT PLAN
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 6/25/2012 | COUNTY COMMENTS |
| 7/25/2012 | COUNTY COMMENTS |
| 8/28/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

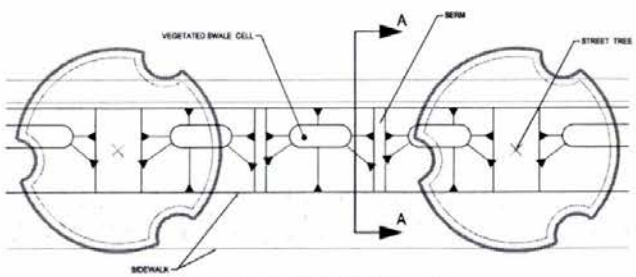
SCALE 1"=20'
JOB No. 09039
DATE : 2/24/2012
FILE No. 09039P-0502
SHEET P.502




VEGETATED SWALE
TYPICAL CROSS SECTION A-A
(NOT TO SCALE)




GRAVEL PERCOLATION TRENCH DETAIL
(NOT TO SCALE)




AMT CONCEPTUAL STREET SCAPE
VEGETATED SWALE DETAIL
(NOT TO SCALE)

NOTE: VEGETATED SWALE DETAILS MAY VARY FROM THE FAIRFAX COUNTY PFM AND/OR DCR SPECIFICATIONS AS APPROVED BY THE COUNTY DPWES DURING SITE PLAN REVIEW IN ORDER TO ACCOMMODATE THE CONSTRAINTS IMPOSED BY THE STREETSCAPE APPLICATION. VEGETATED SWALES MAY BE REPLACED WITH URBAN BIORETENTION.

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JEFFREY E. DUCKO
Lic. No. 011-02-0173
10/4/12

STORMWATER MANAGEMENT DETAILS
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE N/A
JOB No. 09039
DATE : 2/24/2012
FILE No. 09039F-0002
SHEET P.503

File No. FJ-30 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: Q:\adelphi\09039\dwg\planning\zoning\FDP09039F-0002.dwg Xref:

## GENERAL INFORMATION:

THE SUBJECT SITE OF THE APPLICATION IS THE ARI PROPERTY AND IS LOCATED ON TAX MAP PARCEL 029-4-01-0004A. 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. 123/495 INTERCHANGE AS SHOWN IN PLAN NO. 6517-PR-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 UNITS 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 PRESENTATION 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. 123/495 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-503.

## 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 STORMWATER DETENTION FACILITIES INCLUDING PONDS A, B, D, BC (PLAN NO. 6517-PR-01).

COMPLIANCE:

THE REGIONAL POND IS DESIGNED ASSUMING THAT THE POST DEVELOPMENT "C" FACTOR FOR ALL PROPERTIES WITHIN ITS DRAINAGE AREA WOULD BE 0.30 AT ULTIMATE DEVELOPMENT. THE DEVELOPMENT BEING PROPOSED WITH THIS APPLICATION HAS AN APPROXIMATE PROPOSED DEVELOPED "C" FACTOR OF 0.32 (CONSIDERING 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 AREA. 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 | 5,384 | 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) | 9,552 | CF |

THE INFILTRATION VOLUME PROVIDED IS APPROXIMATELY 9,936 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-INCH RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4-INCHES 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-INCH OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

IN FURTHERANCE OF THE APPLICANT'S COMMITMENTS HEREIN AND WHILE IT INTENDS TO MEET THE 1-INCH USING THE TECHNIQUES SHOWN IT RESERVES THE RIGHT TO UTILIZE ANY COMBINATION OF LID (EXISTING AND FUTURE) MEASURES TO MEET THIS GOAL SUBJECT TO THE REVIEW AND APPROVAL OF DPWES AT TIME OF SITE PLAN.

RECOGNIZING THAT RUNOFF REDUCTION TECHNOLOGIES ARE RELATIVELY NEW AND STILL EVOLVING, SHOULD THE APPLICANT'S FINAL DESIGN DEVELOPMENT AND/OR DPWES COMMENTS ON THE SITE PLAN RESULT IN CHANGES TO THE LID MEASURES SHOWN ON THE CDP AND/OR FDP, INCLUDING BUT NOT LIMITED TO, ELIMINATION OR ADDITION OF MEASURES SO LONG AS THESE CHANGES DO NOT AFFECT THE GRID OF STREETS, THE GENERAL LOCATION OF THE POINTS OF ACCESS TO EACH BLOCK, THE GENERAL LOCATION OF THE BUILDINGS, THE BUILD-TO LINES, THE MINIMUM AMOUNT AND GENERAL LOCATION OF PUBLICLY-ACCESS URBAN PARK LAND AS MAY BE APPLICABLE FOR EACH BLOCK AND THE GENERAL QUALITY AND CHARACTER OF THE STREETSCAPE ALONG THE PUBLIC AND PRIVATE STREETS WITHIN AND ABUTTING THE SUBJECT PROPERTY AND AS OTHERWISE SPECIFIED IN THE PROFFERS.

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-503 AND ASSOCIATED COMPUTATIONS ON THIS SHEET.

## AMT DRAINAGE AREA SUMMARY

| | ENTIRE SITE | | LEED BOUNDARY | |
|---|---|---|---|---|
| **Pre-Development:** | | | | |
| Area (Acres) | 1.84 | | 1.73 | |
| Existing Condition Impervious(ness) (%) | 59 | | 62 | |
| Hydrologic Soil Group * | B | | B | |
| Runoff Curve Number (CN) | 83 | | 84 | |
| **Post-Development:** | Acres | % | Acres | % |
| Area Of Vegetated Roof (Some of Third Floor Terrace) | 0.06 | 3.3 | 0.06 | 3.5 |
| Area of Landscaped Areas | 0.10 | 5.4 | 0.07 | 4.0 |
| Remaining Areas | 1.68 | 91.3 | 1.60 | 92.5 |
| Total | 1.84 | 100.0 | 1.73 | 100.0 |
| CN Factors | | | | |
| Green Roof (Extensive) | 70 | | 70 | |
| Landscaped Areas | 61 | | 61 | |
| Remaining Surfaces | 98 | | 98 | |
| Weighted Average | 96 | | 96 | |
| Onsite 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 site area.

## PEAK RUNOFF RATE COMPUTATIONS

| | ENTIRE SITE (To comply with PFM) | LEED BOUNDARY (To comply with Comp. Plan) |
|---|---|---|
| **Pre-Development:** | | |
| Site Area (Ac) | 1.84 | 1.73 |
| Avg. Site Runoff CN | 83 | 84 |
| Time of Concentration | 6 Min. | 6 Min. |
| $Q_2$ (cfs) | 4.99 | 4.90 |
| $Q_{10}$ (cfs) | 10.20 | N/A |
| **Post-Development:** | | |
| Avg. Site Runoff CN | 95 | 96 |
| Time of Concentration | 6 Min. | 6 Min. |
| Site Area (Ac) | 1.84 | 1.73 |
| $Q_2$ (cfs) Before infiltration and detention | 7.54 | 7.24 |
| $Q_2$ (cfs) Allowable | 4.99 | 3.68 |
| $Q_{10}$ (cfs) Before infiltration and detention | 12.71 | N/A |
| $Q_{10}$ (cfs) Allowable | 10.20 | N/A |

The peak flow Q values computed using Hydraflow 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.

## LEED STORMWATER QUANTITY CREDIT COMPUTATIONS

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 — 2/2/2012

**Existing Conditions**

Data:

| | | |
|---|---|---|
| Drainage Area: | 1.73 | 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 | |

| 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 1FT/12IN X 43560 = 7,896 CF
2 YR STORM: 1.73 AC X 1.68 IN X 1FT/12IN X 43560 = 10,565 CF

Project: AMT — WHP — 2/2/2012

**Proposed Conditions**

Data:

| | | |
|---|---|---|
| Drainage Area: | 1.73 | 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 | |

| 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 | 4.68 |

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

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


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STORMWATER MANAGEMENT COMPUTATIONS
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | N/A |
| JOB No. | 08039 |
| DATE: | 2/24/2012 |
| FILE No. | 08039F-0502 |

SHEET P.504

## Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012

Site Name: Arbor Row - Block F

| Drainage Area A Post-Development Land Cover | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Managed Turf | 0.00 | 0.10 | 0.00 | 0.00 | 0.10 |
| Impervious Cover | 0.00 | 1.74 | 0.00 | 0.00 | 1.74 |
| D.A. Total (acres) | | 1.84 | | | |

Rv (turf) 0.20
Rv (impervious) 0.95

Runoff from 1" Rainfall (cf) = 6,573

[ ] data input cells highlighted

| Apply Runoff Reduction Practices | Description of Area | Roof Area Contributing to RWH (sq.) | Design Rainfall for RWH (in) | Max Volume Captured by Practice (cf) | RWHS Credit | Input % RR from Model | Extra % Credit | Volume Received from Upstream Practices (cf) | Total Volume Received by Practice (cf) | Estimate RWH RR % Credit: Avg Daily Drawdown (gallons) | Available Cistern Volume (gallons) | Runoff Reduction Vol (cf) | Remaining Volume (cf) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rooftop Rainwater Harvesting | Bldg but not garage | 8,45 | 1.40 | 3,138 | Runoff Reduction % Credit from Continuous-Simulation Model | 3% | | 0 | 3,138 | | | 94 | 3,162 | Infiltration Practice |

| Apply Runoff Reduction Practices | Description of Area | Impervious Cover in Contributing D.A. (sq) | Managed Turf in Contributing D.A. (sq) | Max Volume Received by Practice (ft³) | Description of Credit | % Credit | Volume Received from Upstream Practices (ft³) | Total Volume Received by Practice (ft³) | Surface Area of Practice (ft²) | Storage Vol Provided by Practice (ft³) | Runoff Reduction Vol (ft³) | Remaining Volume (ft³) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Infiltration Practice | | 0.63 | 0.04 | 2,202 | Subtract 100% of provided storage vol. | 100% | 3,162 | 5,364 | N/A | 5,552 | 5,364 | 0 | |
| Vegetated Roof | | 0.06 | N/A | 207 | Subtract 100% of provided storage vol. | 100% | N/A | 207 | N/A | 207 | 207 | 0 | |
| Permeable Pavement - DCR Level 2 Design Spec | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 1 Design Spec | | | N/A | 0 | Reduce vol. through permeable pavement by 0.045 cf/sf of permeable pavement. | N/A | N/A | 0 | | N/A | 0 | 0 | |
| Bioretention - DCR Level 2 Design Spec (enhanced) | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Bioretention - DCR Level 1 Design Spec (standard) | | | | 0 | Subtract 60% of provided storage vol. | 60% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to A/B Soils or Compost-Amended Filter Path | | | N/A | 0 | Reduce volume to conservation area by 0.04 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to C/D Soils | | | N/A | 0 | Reduce volume to conservation area by 0.02 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to Conservation Area | | | N/A | 0 | Reduce volume to conservation area by 0.06 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Disconnection to Bioretention | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 2 Design | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain-DCR Level 1 Design | | | N/A | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Stormwater Planter, Extended Tree Pit, or Curb Extension (Urban Bioretention) | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 2 Design Spec | | 0.21 | | 724 | Subtract 100% of provided storage vol. | 100% | 0 | 724 | N/A | 724 | 724 | 0 | |
| Dry Swale - DCR Level 1 Design Spec | | | | 0 | Subtract 40% of provided storage vol. | 40% | 0 | 0 | N/A | | 0 | 0 | |
| Grass Channel A/B Soils | | | | 0 | Reduce volume conveyed through grass channel by 20%. | 20% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel C/D Soils | | | | 0 | Reduce volume conveyed through grass channel by 10%. | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel with Compost Amended Soils | | | | 0 | Reduce volume conveyed through grass channel by 30%. | 30% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Extended Detention Pond | | | | 0 | Reduce volume directed to extended detention pond by 10%. | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Sheetflow to Conservation Area with A/B Soils | | | | 0 | Reduce volume by 0.09 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Sheetflow to Conservation Area with C/D Soils | | | | 0 | Reduce volume by 0.04 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Sheetflow to Vegetated Filter Strip in A/B Soils or Amended C/D Soils | | | | 0 | Reduce volume by 0.06 cu. ft per sq. ft. of conservation area. | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Proprietary / Other practice not listed above | | | | 0 | Subtract % Credit of provided storage vol. | | 0 | 0 | N/A | | 0 | 0 | |
| Totals: | | 1.90 | 0.04 | | | | | | | | | | |

Total Drainage Area Treated (acres): 1.89

Runoff Reduction Volume Achieved for Drainage Area A (cubic feet): 6,369

See Site Data and Summary Tab for Site Results

## Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012

Site Name: Arbor Row - Block F

Description: AMT redevelopment

### Post-Development Land Cover

[ ] data input cells highlighted in yellow

**Drainage Area A**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | 0.10 | | | 0.10 |
| Impervious Cover (acres) | | 1.74 | | | 1.74 |
| | | | | Total | 1.84 |

**Drainage Area B**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| | | | | Total | 0.00 |

**Drainage Area C**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| | | | | Total | 0.00 |

**Drainage Area D**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| | | | | Total | 0.00 |

**Drainage Area E**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| | | | | Total | 0.00 |

**Rv Coefficients**

| Land Cover Type * | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils |
|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open space or reforested land | 0.02 | 0.03 | 0.04 | 0.05 |
| Managed Turf | 0.15 | 0.20 | 0.22 | 0.25 |
| Impervious Cover | 0.95 | 0.95 | 0.95 | 0.95 |

* See the Methodology tab for a definition of each land cover type.

**Land Cover Summary**

| | |
|---|---|
| Forest / Preserved Open Space (ac) | 0.00 |
| Weighted Rv (forest) | 0.00 |
| % Forest | 0% |
| Managed Turf (acres) | 0.10 |
| Weighted Rv (turf) | 0.20 |
| % Managed Turf | 5% |
| Impervious Cover (acres) | 1.74 |
| Rv (impervious) | 0.95 |
| % Impervious | 95% |
| **Total Site Area (acres)** | **1.84** |
| **Site Rv** | **0.91** |

**Rainfall / Runoff Summary**

| | |
|---|---|
| Target Rainfall to Retain Onsite (inches) | 1.0 |
| 1-inch Rainfall Volume for entire site (cf) | **6,579** |
| Volume Not Converted to Runoff (cf) | **506** |
| **1-inch Runoff Volume for entire site (cf)** | **6,073** |

**Runoff Reduction Summary**

| | |
|---|---|
| Target Runoff Reduction Volume (cf) | 6,073 |
| Runoff Reduction Volume Achieved (cf) | 6,369 |
| Total Runoff Volume Retained (cf) | 5,995 |
| Total Area of Site Captured in a BMP (acres) | 1.59 |

**Conformance with Comprehensive Plan Goal**

**Total Site Area Captured by a BMP (%): 86%**

**Rainfall Depth Retained Onsite (inch): 1.00**

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STORMWATER MANAGEMENT CHECKLIST
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/05/2012 | COUNTY COMMENTS |
| | |
| | |
| DATE | DESCRIPTION |

SCALE N/A
JOB No. 09039
DATE: 2/24/2012
FILE No. 09039F-0002
SHEET P.505

[DRAFT] **Tysons Corner Comprehensive Plan Stormwater Conformance Checklist**

Project: ARBOR ROW – BLOCK F

Submitted by: WALTER L. PHILLIPS, INC. Date: 05/25/12

Reviewed by: _____ Date: _____

An amendment to the Comprehensive Plan for Fairfax County envisions a new Tysons Corner Urban Center. The Board of Supervisors adopted the new Plan for Tysons Corner on June 22, 2010. Included within the Environmental Stewardship section of the Area wide Recommendations is stormwater management guidance intended to protect receiving waters downstream of Tysons Corner by reducing runoff from impervious surfaces using a progressive approach to stormwater management. Achieving a goal of retaining on-site and/or reusing the first inch of rainfall will ensure that runoff characteristics associated with the site will mimic those of a good forest condition for a significant majority of rainfall events. (The adopted Comprehensive Plan Amendment can be downloaded at this link: http://www.fairfaxcounty.gov/tysonscorner/complan/)

This checklist provides a tool for county staff, submitting engineers, and development teams to assist in the preparation and review of stormwater plans in Tysons Corner. Using this checklist at the conceptual and final design phases is encouraged to ensure that the adopted stormwater management goals are integrated into each plan's stormwater management strategies early in the design process and implemented at final design.

**Sec. 6-0202 / Comprehensive Plan Stormwater Management Goals** — Sheet No. or Applicable

☑ ☐ A **stormwater management narrative*** is provided and explains how the proposed stormwater management strategy will comply with the goals of the Tysons Corner Comprehensive Plan Amendment, Environmental Stewardship Guidelines for Stormwater including, at a minimum, the following stormwater goals: P.504

FEE NET

☑ ☐ The narrative describes how infiltration BMPs and/or rainwater harvesting will be used and if not used, demonstrates why they are not practicable. This is in support of the goal that states: *"Stormwater management and water quality controls for redevelopment should be designed to* ***return water into the ground where soils are suitable or reuse it, where allowed, to the extent practicable****. Reduction of stormwater runoff volume is the single most important stormwater design objective for Tysons."* P.504

☑ ☐ The narrative describes how the first 1 inch of rainfall will be retained onsite and if not fully achievable, demonstrates why it is not practicable. This supports the goal that states: *"****At a minimum, the first inch of rainfall should be retained on-site*** *through infiltration, evapotranspiration and/or reuse. If, on a given site, the retention on-site of the first inch of rainfall is demonstrated not to be fully achievable, all available measures should be implemented to the extent possible in order to support this goal and achieve partial retention of the first inch of rainfall."* P.504

*FOOTNOTE: Strategies described in the narrative are to be shown, as appropriate (total), on the CDP, FDP, and site plans.

**Sec. 6-0203 / Runoff Reduction Practices** — Sheet No. or Applicable

☑ ☐ The narrative describes how runoff reduction practices will be used, or if not, then demonstrated to not be practicable as a strategy toward meeting the stormwater goal. *"Redevelopment projects in Tysons should incorporate innovative stormwater management measures in a manner that will,* ***first and foremost, optimize reduction of stormwater runoff volume*** *and control of peak flows for the remaining stormwater that cannot be completely captured on site."* P.504

☑ ☐ The narrative describes how the project will meet **eligibility for LEED Stormwater Credit** in support of the goal: *"At a minimum, stormwater management measures that are sufficient to attain both the stormwater design-quantity control and stormwater design-quality control credits of the most current version of the LEED-NC or LEED-CS rating system for the equivalent of these credits) should be provided. If, on a given site, the attainment of the stormwater design LEED credits for equivalent) is demonstrated not to be fully achievable, all available measures should be implemented to the extent possible in support of this goal."* P.504

☐ ☑ If stormwater goals are not fully achievable onsite, the narrative describes how **offsite or shared stormwater alternatives** will be used to meet all, or a part of the stormwater goals. This supports the goal that states: *"Equivalent approaches may incorporate coordinated stormwater management on multiple development sites and/or off-site controls. Additional stormwater management efforts should be encouraged."* ___

**Sec. 6-0204 / Stormwater Conveyance Systems** — Sheet No. or Applicable

☑ ☐ ☐ The narrative describes how **low impact development (LID) techniques are incorporated into the street design** in order to satisfy the goal: *"LID techniques of stormwater management should also be incorporated into new and redesigned streets where allowed and practicable."* P.504

☐ ☐ ☑ The narrative describes **opportunities for stream restoration** in accordance with the goal: *"Restoration and/or stabilization of degraded streams on development sites should be pursued where feasible; restoration and stabilization techniques that incorporate ecologically and aesthetically beneficial, vegetated approaches are preferred. Off-site efforts to restore and/or stabilize streams in Tysons Corner should also be encouraged. The above guidelines are intended to improve stormwater management controls sufficiently to allow for improvements to the habitat and recreational values of streams in Tysons Corner through natural restorative processes and/or through restoration projects."* ___

**Sec. 6-0205 / Detention Facilities** — Sheet No. or Applicable

☑ ☐ The target stormwater treatment volume is calculated as 1 inch of rainfall over the entirety of the property that is subject to the zoning application, including areas planned for dedication as public rights-of-way. P.505

☐ ☑ Will the design include new and innovative stormwater practices? If yes, describe: P.502

_____ ___

☑ ☐ Will the design provide safe and adequate access to the inlet structure, outlet structure and around the perimeter of the stormwater BMP facilities as needed for inspection, maintenance, and repair? P.502

☑ ☐ Will the plan include a commitment for private maintenance of stormwater BMPs? P.502

☑ ☐ Will the proposed design create a safe environment for the public? P.503

☐ ☑ Is the project to be designed and constructed in phases? If yes, does the narrative and plan address how phasing will impact stormwater management and how stormwater goals will be met in the interim and ultimate build-out conditions? ___

☑ ☐ Is a PFM modification or waiver request anticipated? If yes, describe: P.502

REDUCE PERCOLATION TRENCH SET BACK FROM BUILDING

**Sec. 6-0206 / Maintenance Facilities** — Sheet No. or Applicable

☐ ☐ ☑ If used, will stormwater vaults be located where they do not adversely impact the landscape amenity panel and sidewalk zone? ___

☐ ☐ ☑ If used, will stormwater vaults be located where they can be readily accessed by equipment (e.g. vacuum truck) and maintenance personnel? ___

**Sec. 6-0207 / Infiltration Practices** — Sheet No. or Applicable

☑ ☐ Are one or more **infiltration BMPs** being proposed (i.e. infiltration practice, bioretention with infiltration, permeable pavement with infiltration, etc.)? P.502

☑ ☐ If yes, **has a soil analysis** been completed or sufficient documentation provided to demonstrate that site conditions are suitable for infiltration? Prior to final design the PFM requires a soils analysis be prepared and infiltration tests conducted by a licensed professional engineer with experience in geotechnical engineering and soil evaluation, a certified professional soil scientist, or a certified professional geologist. A minimum field measured infiltration rate of 0.52 inches per hour is required for infiltration. The design infiltration rate shall be half of the field measured rate (PFM 6-1304.4) and PFM 6-1307.8(3). P.504

- Previous pavement systems with infiltration may not be constructed on fill material (PFM 6-1304.2C)
- Bottom of facility shall be > 4 ft. above groundwater table and bedrock (PFM 6-1304.4G)
- Soils with CBR ≤ 5% are unsuitable; > 5 or higher measures are not suitable for infiltration (PFM 6-1304.4G)
- Bioretention facilities that utilize infiltration may not be constructed on fill material (PFM 6-1307.2C)
- Infiltration shall not be used where there is evidence of soil contamination

☐ ☑ Will all of the runoff from the site's first inch of rainfall be captured by infiltration BMPs? If yes, the plan meets the Comprehensive Plan goal to retain the first 1 inch onsite. If no, continue to the next checklist item. Additional BMPs are needed to help meet the Comprehensive Plan goal. ___

**Sec. 6-0208 / Rainwater Harvesting** — Sheet No. or Applicable

☐ ☑ Does the plan propose **rainwater harvesting** that captures onsite, or all of the roof runoff? Using rainwater harvesting as a stormwater strategy requires reliable, year-round demand that will draw down the storage cistern to make capacity available for the next storm. Which of the following reasons are proposed? ___

- ☐ Water closet flushing (permanent year-round)
- ☐ Cooling tower makeup water (seasonal)
- ☐ Laundry (permanent year-round)
- ☐ Irrigation (seasonal)
- ☐ Equipment washing (year-round)
- ☐ Exterior washing (seasonal)
- ☐ Landscape water feature (seasonal)
- ☐ Other _____

☐ ☑ For final design of the rainwater harvesting (RWH) system, sufficient documentation will be provided to support demand assumptions and cistern sizing including the following: ___

- ☐ A continuous simulation model for sizing the storage cistern (Virginia DCR spreadsheet or equal) using local historic daily rainfall data for the inflow and detailed assumptions for the drawdown assuming seasonal and other demand variations. ___
- ☐ The RWH system design will include a first flush (first 0.05 inches of rainwater) bypass to protect water quality, an overflow and/or bypass system for larger storms, and additional storage capacity as a factor of safety. ___
- ☐ In times of reduced demand or overflow, the RWH system will discharge to a BMP or adequate channel. ___
- ☐ If the RWH system will be oversized to provide stormwater detention (in addition to reuse), then adequate volume for the design storms will be provided with supporting calculations including routing of the 2 and 10-yr storm, outfall to an adequate channel, and provision for overland relief. ___

☑ ☐ Instead of reuse will the design collect roof runoff and discharge it directly to a BMP (i.e. infiltration, bioretention, stormwater planter, landscape feature, simple rooftop disconnection, etc.)? P.502

☐ ☑ Does the RWH system alone, or in combination with infiltration practices, manage the volume of runoff from the first 1 inch of rainfall over the entire site? If yes, the plan meets the Comprehensive Plan goal to retain the first 1 inch onsite. If no, continue to the next checklist item. Additional BMPs are needed to help meet the Comprehensive Plan goal. ___

**Sec. 6-0209 / Runoff Reduction Practices** — Sheet No. or Applicable

☑ ☐ Will **Runoff Reduction BMPs** with underdrains and a subsurface stone storage layer be used to capture and treat some, or all, of the runoff from the first 1 inch of rainfall for the entire site? P.503

☐ ☑ Will the design of runoff reduction practices conform to the PFM and/or Virginia DCR Stormwater Design Specifications found at the Virginia BMP Clearinghouse Website? P.503

☐ ☑ Does the total volume treated by infiltration, RWH system, and runoff reduction BMPs - either alone or in combination - meet or exceed the volume of runoff from the first 1 inch of rainfall over the entire site? If yes, the plan meets the Comprehensive Plan goal to retain the first 1 inch onsite. If no, continue to the next checklist item. Additional BMPs are needed to help meet the Comprehensive Plan goal. ___

**Sec. 6-0210 / New & Innovative BMPs** — Sheet No. or Applicable

☐ ☑ If the stormwater goals are not fully achievable using the stormwater practices listed above, then innovative BMPs that have been approved for use in other jurisdictions may be used to meet the stormwater goals. Are any other **new and innovative BMP practices** proposed that will reduce runoff volume and/or control peak flows for the first 1" of rainfall? ___

☐ ☐ If yes, have the proposed new and innovative practices been accepted for use in another jurisdiction? If so, what is the name of the jurisdiction(s) where the practice has been _____ ___

☐ ☑ Will the plan and calculations include a runoff reduction and/or total phosphorus removal rate that has been assigned by another jurisdiction? (Fairfax County will verify runoff reduction rates, efficiencies, and/or removal rates with the named jurisdiction) ___

☐ ☐ Will the innovative practice(s) proposed be appropriate for use in Fairfax County considering local soils, climatic patterns, availability of materials, cost of maintenance, and other factors? ___

☐ ☐ Will the plans and documentation include recommended maintenance procedures and frequency of inspection for the innovative practice(s)? ___

☐ ☑ Does the total volume treated by infiltration, RWH, runoff reduction BMPs, and Tier 2 and 3 practices - either alone or in combination - meet or exceed the volume of runoff from the first 1 inch of rainfall over the entire site? If yes, the plan meets the Comprehensive Plan goal to retain the first 1 inch onsite. If no, continue to the next checklist item. Additional BMPs are needed to help meet the Comprehensive Plan goal. ___

**Sec. 6-0211 / Other New & Innovative BMPs** — Sheet No. or Applicable

☐ ☑ Will the plan propose any other **new and innovative practices** that are not within the PFM, previously approved for use by Fairfax County, Virginia BMP Clearinghouse, or approved for use in another jurisdiction? (If yes, then adequate documentation should be included for the county to evaluate the innovative practice). ___

☐ ☐ If yes, will the innovative practice(s) proposed be appropriate for use in Fairfax County considering local soils, climatic patterns, availability of materials, cost of maintenance, and other factors? ___

☐ ☐ Will the plans and documentation include recommended maintenance procedures and frequency of inspection for the innovative practice(s)? ___

☐ ☑ Does the total volume treated by infiltration, RWH, runoff reduction BMPs, and Tier 2 and 3 practices - either alone or in combination - meet or exceed the volume of runoff from the first 1 inch of rainfall over the entire site? If yes, the plan meets the Comprehensive Plan goal to retain the first 1 inch onsite. If no, continue to the next checklist item. Additional BMPs are needed to help meet the Comprehensive Plan goal. ___

**Sec. 6-0212 / Offsite & Shared Facilities** — Sheet No. or Applicable

☐ ☑ Will **shared, or offsite stormwater management facilities** be used to manage some, or all, of the runoff from the first 1 inch of rainfall for the entire site? If so, where will the offsite facilities be located? _____ ___

If yes, proposed offsite / shared practices include:

- ☐ Infiltration
- ☐ Rainwater harvesting
- ☐ Runoff reduction practices
- ☐ Other _____

**Sec. 6-0213 / Conformance with Comprehensive Plan Stormwater Goals** — Sheet No. or Applicable

☐ ☑ Will the proposed design manage the first 1 inch of rainfall in a way that infiltrates, stores, or evaporates rainfall before it leaves the site? If yes, the plan meets the Comprehensive Plan goal to retain the first 1 inch onsite. ___

☑ ☐ Will the proposed design optimize runoff reduction by employing runoff reduction stormwater practices (i.e. rainwater harvesting, infiltration, bioretention, permeable pavement, green roof, etc.) to the extent possible? P.502

☑ ☐ ☐ If the "1-inch" goal cannot be fully achieved, has it been demonstrated that all available measures were considered for implementation 'to the extent possible' to achieve total or at least partial retention of the first inch of rainfall? P.504

☑ ☐ ☐ If retaining the runoff from the first 1 inch of rainfall is not fully achieved, does the proposed design control peak flow for that which cannot be retained onsite? ___

☐ ☐ ☑ Has runoff from streets been addressed, either through innovative BMPs and low impact development techniques that would be integrated into the street design or through other measures? ___

☐ ☐ ☑ If street runoff has not been addressed, does the stormwater narrative justify why this is not feasible, allowed, and/or practicable? ___

☐ ☐ ☑ If applicable, is restoration and/or stabilization of degraded streams proposed using restoration and stabilization techniques that incorporate ecologically and aesthetically beneficial, vegetated approaches (including off-site efforts to restore and/or stabilize streams in Tysons Corner)? ___

**Sec. 6-0214 / Other Stormwater Requirements** — Sheet No. or Applicable

☑ ☐ Does the narrative address how the proposed stormwater management strategy will comply with requirements of the Public Facilities Manual (PFM)? This should include, as a minimum: ___

- ☑ The adequate channel requirements of PFM 6-0200 P.501
- ☑ The stormwater detention requirements of PFM 6-0300 P.504
- ☑ The water quality requirements of PFM 6-0400 P.504
- ☑ The overland relief requirements of PFM 6-1500 P.507

REMARKS: _____

* Designers are encouraged to use the "Tysons Corner Stormwater Conformance Spreadsheet" to evaluate how the chosen BMP practices help meet the goal of retaining the first 1 inch of rainfall onsite. The Excel spreadsheet with instructions can be downloaded from the Fairfax County website at this link: http://www.fairfaxcounty.gov/tysons/

updated: 03/13/2012 [DRAFT]

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STORMWATER MANAGEMENT CHECKLIST
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
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| 10/05/2012 | COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|

SCALE N/A
JOB No. 09039
DATE: 2/24/2012
FILE No. 09039P-0502
SHEET P.506

File No. FJ-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: G:\dataproj\09039\engineering\cadd\FDP\09039P-0502.dwg Xref:

GeoConcepts Engineering, Inc.

July 30, 2012

Ms. Linda G. Hoeffert
The Association for Manufacturing Technology
7901 Westpark Drive
McLean, Virginia 22102-4206

**Subject:** **Revised In-Situ Infiltration Report, The Association for Manufacturing Technology, 7901 Westpark Drive, McLean, Fairfax County, Virginia (Our 12009)**

Dear Ms. Hoeffert:

GeoConcepts Engineering, Inc. (GeoConcepts) is pleased to provide the following revised in-situ infiltration report prepared for The Association for Manufacturing Technology, 7901 Westpark Drive, McLean, Fairfax County, Virginia.

We appreciate the opportunity to serve as your geotechnical consultant on this project. Please do not hesitate to contact me if you have any questions or wish to meet to discuss the findings and recommendations contained in the report.

Sincerely,
GEOCONCEPTS ENGINEERING, INC.

Paul E. Burkhart, PE
Principal

GeoConcepts Engineering, Inc.

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Figure 1: Site Vicinity Plan

APPENDIX A: Subsurface Investigation
APPENDIX B: Soil Laboratory Test Results


GeoConcepts Engineering, Inc.

## 1.0 Scope of Services

This report presents the results of the field investigation, soil laboratory testing, and engineering analysis of the geotechnical data. This report specifically presents recommended design infiltration rate for stormwater management based on the results of in-situ infiltration testing and soil laboratory gradation analyses. Services not specifically identified in the contract for this project are not included in the scope of services.

## 2.0 Site Description and Proposed Construction

The site is currently developed with an existing 3-story masonry building, with associated surface asphalt parking areas. The site is gently sloping, with existing grades ranging from about elevation (EL) 395 in the northeast corner to about EL 430 in the southwest corner. We understand that an underground infiltration area is planned on the northwest portion of the site, with a design invert at about EL 386.25.

## 3.0 Subsurface Conditions

Subsurface conditions were investigated by drilling a total of four test borings at the proposed infiltration area. Test boring logs and a boring location plan are presented in Appendix A of this report.

### 3.1 Geology

The site lies within the Piedmont Physiographic Province of Virginia. The Piedmont is bordered to the east by the Coastal Plain Physiographic Province and to the west by the Blue Ridge Physiographic Province and contains several fault-bordered basins. Bedrock in the Piedmont typically consists of highly weathered metamorphic and igneous bedrock. Surface topography in the Piedmont is the result of millions of years of erosion. Specifically, according to local geologic maps, the site is mapped in the Mather Gorge Formation of the Early Cambrian geologic period. Based on our subsurface investigations, the sediments are strongly correlated formally to the geologic publications.

The existing fill soils of Stratum A are believed to be generated from previous site development. The underlying natural soils of Stratum B1 are residual materials derived from the physical and chemical weathering of the underlying bedrock.

### 3.2 Stratification

The subsurface materials encountered have been identified for purposes of our discussion herein. These stratum designations do not imply that the materials encountered are continuous across the site. Stratum designations have been established to characterize similar subsurface conditions based on material gradations and parent geology. The subsurface materials encountered in the test borings completed at the site have been assigned to the following strata:

| | |
|---|---|
| Stratum A (Existing Fill) | None to firm, silty sand and sandy silt, FILL, moist, red-brown |
| Stratum B1 (Residual) | Firm to compact, silty SAND (SM) and sandy SILT (ML), micaceous, moist, brown, red, white |

The soil letter designations indicated in the strata descriptions presented above and on the test boring logs represent the Unified Soil Classification System (USCS) group symbol and group name for soil samples based on laboratory testing per ASTM D-2487 and visual classifications per ASTM D-2488. It should be noted that visual classifications per ASTM D-2488 may not match classifications determined by laboratory testing per ASTM D-2487.

GeoConcepts Engineering, Inc.

### 3.3 Groundwater

Groundwater level observations were made in the field during drilling and up to 24 days after the completion of the test borings. Longer-term groundwater level readings were attempted in temporary observation standpipes installed in test borings B-13 to B-17. Groundwater was not encountered to the depths investigated. Accordingly, groundwater should be at least 15 feet below the proposed infiltration invert.

## 4.0 Engineering Analysis

Recommendations regarding stormwater management by infiltration are presented herein.

### 4.1 Infiltration Analysis

Two methods were used to estimate infiltration capabilities on the subject site: in-situ infiltration testing and published correlations with soil classifications. Details regarding the in-situ infiltration and classification test techniques, the estimated infiltration rates from the individual methods, and the recommended design infiltration rate for the site soils are presented herein.

#### 4.1.1 Measured Infiltration Test Results

In-situ infiltration tests are performed in the field to determine the rate at which water will permeate the soil under saturated conditions. Three test borings were drilled in the area of planned infiltration. Test borings were initially drilled to depths of at least 4 feet below the planned infiltration invert elevation, and allowed to remain open for a period of approximately 24 hours to allow any groundwater levels within the borehole to stabilize. Offset infiltration test holes were drilled at the boring locations to advise at levels of the planned infiltration invert elevations. Four inch diameter PVC casing was set in the bottom of the test holes. The purpose of the casing is to prevent caving of test hole sidewalls. After setting the PVC casing, the borehole was filled with water to saturate the bottom soils. The following day, the test hole was refilled with water and the water level in each test hole was recorded every hour for a 4-hour period (a falling head test in accordance with "Testing Guidelines for Infiltration Facilities, Fairfax County, Virginia", dated June 2010). Using this procedure, the average change in the water level over the 4-hour period is considered the measured infiltration rate. The measured infiltration rates are presented in the table below, and the field test data is presented in Appendix A.

| Test Boring No. | Approximate Test Depth (feet) | Measured Field Infiltration Rate (inches/hour) |
|---|---|---|
| B-15A | 13.0 | 13.0* |
| B-15B | 13.0 | 0.3 |
| B-16A | 11.0 | 0.6 |
| B-16B | 15.0 | 8.0* |
| B-17A | 14.0 | 6.0* |
| B-17B | 18.0 | 0.7 |

* These infiltration rates were not used in the calculation of the design infiltration rate in accordance with "Testing Guidelines for Infiltration Facilities, Fairfax County, Virginia", dated June 2010.

#### 4.1.2 Classification Test Results

The classification test method is performed with grain-size sieve analyses including hydrometer testing on samples obtained from corresponding proposed infiltration depths, to determine the USDA soil texture classifications. Published correlations between USDA classifications and infiltration rates were used to provide estimated hydraulic conductivity values. Since hydraulic conductivity and infiltration values are dominantly equal at no head conditions, using the hydraulic conductivity values to estimate the infiltration rates provides a conservative estimate of infiltration for use in design. Estimated infiltration rates using the USDA soil texture classifications are presented below.

| Test Boring No. | Approximate Test Depth (feet) | USDA Soil Texture Classification | Estimated Infiltration Rate (inches/hour) |
|---|---|---|---|
| B-15 | 13.0-15.0 | sandy loam | 1.02 |
| B-16 | 15.0-17.0 | sandy loam | 1.02 |
| B-17 | 16.0-18.0 | loam | 0.52 |

#### 4.1.3 Recommended Design Infiltration Rate

Based on the results of the in-situ infiltration tests in B-15B, B-16A and B-17B, and soil laboratory classification tests, we recommend that a design infiltration rate of 0.46 inch/hour be used for design of infiltration structures. It should be noted that the recommended design infiltration rate presented herein is intended for use in design. However, during construction, observations of the subgrade conditions should be made to confirm that the subgrade soils are consistent with the soils encountered in this report.

## 5.0 General Limitations

Recommendations contained in this report are based upon the data obtained from the relatively limited number of field borings. This report does not reflect conditions that may occur between the borings investigated, or between sampling intervals in test borings. The nature and extent of variations between soil borings and sampling intervals may not become evident until the course of construction. Therefore, it is essential that on-site observations of subgrade conditions be performed during the construction period to determine if re-evaluation of the recommendations in this report must be made. It is critical to the successful completion of this project that GeoConcepts be retained during construction to observe the implementation of the recommendations provided herein.

This report has been prepared to aid in the evaluation of the site and to assist your office and the design professionals in the design of this project. It is intended for use with regard to the specific project as described herein. Changes in proposed construction, grading plans, structural loads, etc. should be brought to our attention so that we may determine any effect on the recommendations presented herein.

An allowance should be established for additional costs that may be required for foundation and earthwork construction as recommended in this report. Additional funds may be required for various reasons including soft/wet materials, soil subgrade conditions, unexpected groundwater problems, rock excavation, etc.

This report should be made available to bidders prior to submitting their proposals to supply them with facts relative to the subsurface conditions revealed by our investigation and the results of analyses and studies that have been performed for this project. In addition, this report should be given to the successful contractor and subcontractors for their information only.

We recommend this project specifications contain the following statement: "A geotechnical engineering report has been prepared for this project by GeoConcepts Engineering, Inc. This report is for informational purposes only and should not be considered part of the contract documents. The opinions expressed in this report are those of the geotechnical engineer and represent their interpretation of the subsurface conditions, tests and results of analyses that they performed. Should the data contained in this report not be adequate for your intended purpose, the contractor may make their own investigations, tests and analyses prior to bidding."

This report was prepared in accordance with generally accepted geotechnical engineering practices. No warranties, expressed or implied, are made as to the professional services included in this report.

We appreciate the opportunity to be of service for this project. Please contact the undersigned if you require clarification of any aspect of this report.

Sincerely,
GEOCONCEPTS ENGINEERING, INC.

Paul E. Burkhart, PE
Senior Engineer

Paul E. Burkhart, PE
Principal

COMMONWEALTH OF VIRGINIA
PAUL E. BURKHART
Lic. No. 021956
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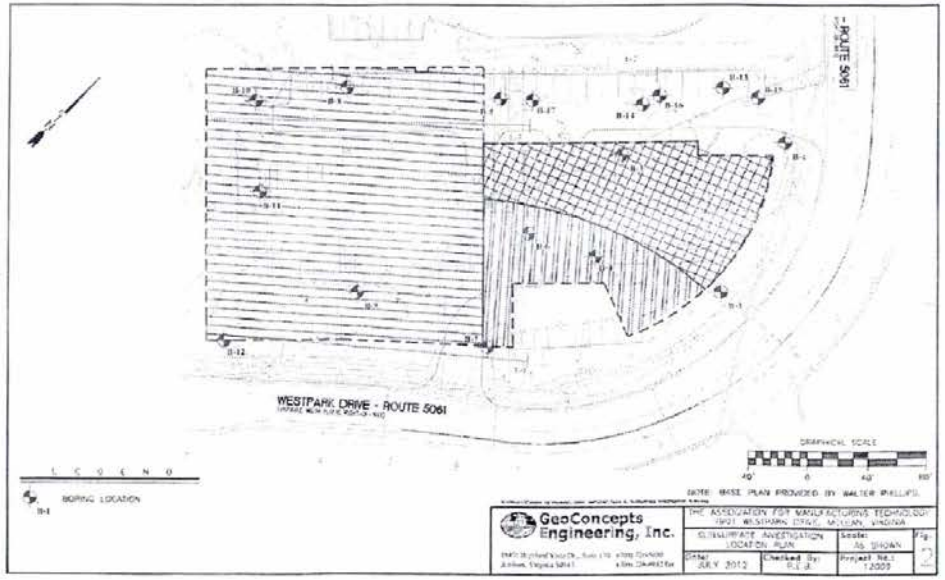


GeoConcepts Engineering, Inc.
8407 Richland Vista Dr., Suite 130, Annandale, Virginia 22003

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
7901 WESTPARK DRIVE, MCLEAN, VIRGINIA

SUBSURFACE INVESTIGATION LOCATION PLAN

Scale: As Shown
Date: JULY 2012
Checked By: P.E.B.
Project No.: 12009
Fig.: 1

SEALED FOR INFORMATION PURPOSES ONLY

INFILTRATION LETTER
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 6/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
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| DATE | DESCRIPTION |
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| SCALE | N/A |
| JOB No. | 09039 |
| DATE: | 2/24/2012 |
| FILE No. | 09039F-002 |
| SHEET | P.507 |

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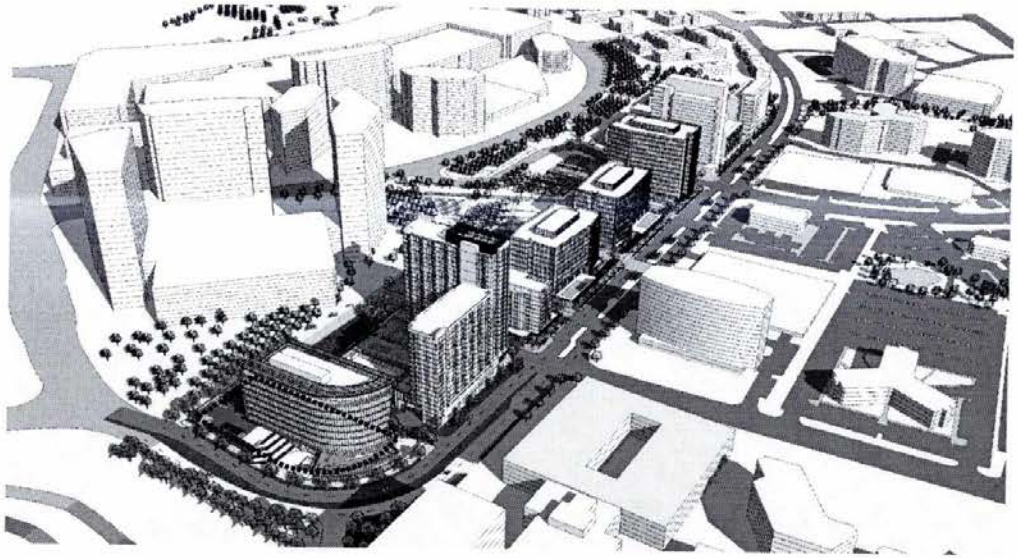
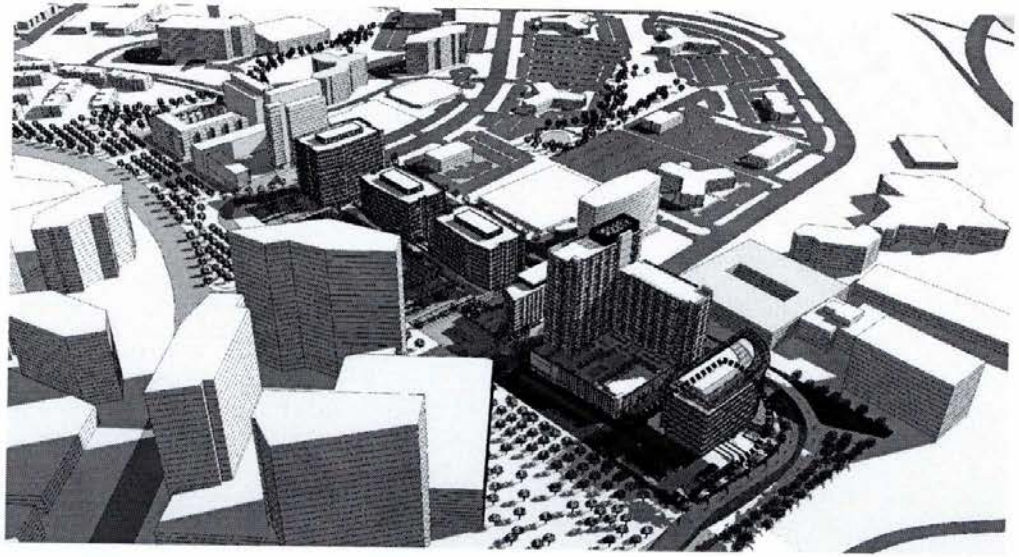
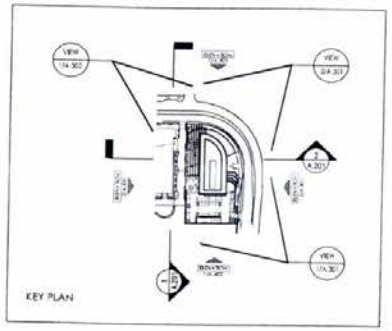


2 / A.010 AERIAL VIEW FROM CAPITAL BELTWAY



1 / A.010 AERIAL VIEW FROM TYSONS BLVD.




LEGEND

BLOCK F BOUNDARY LINE

NOTES

1. ARCHITECTURAL DESIGN AND LANDSCAPE FEATURES SHOWN ARE SUBJECT TO MODIFICATIONS, PROVIDED THAT THE GENERAL DESIGN STRATEGY, QUALITY AND CHARACTERISTICS OF THE PROJECT ARE MAINTAINED AND IN SUBSTANTIAL CONFORMANCE WITH THE CDP. THE EXACT LOCATION, SHAPE AND SIZE OF THE PROPOSED BUILDING, WINDOWS, TERRACES, PLAZAS, PRIVATE DECKS AND PARKING STRUCTURE SHOWN ON THE GRAPHIC ARE SUBJECT TO ADJUSTMENT AND REFINEMENT WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN SO LONG AS THEY REMAIN IN SUBSTANTIAL CONFORMANCE WITH THE CDP.

2. THE FINAL PERSPECTIVES AND MATERIALS WILL VARY TO MEET BUILDING CODE AND SUSTAINABILITY REQUIREMENTS.

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ILLUSTRATIVE CONTEXTUAL AERIAL VIEWS

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

**ARBOR ROW - BLOCK "F"**

**7901 WESTPARK DRIVE**

**PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA**

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| | |
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| | |
| DATE | DESCRIPTION |

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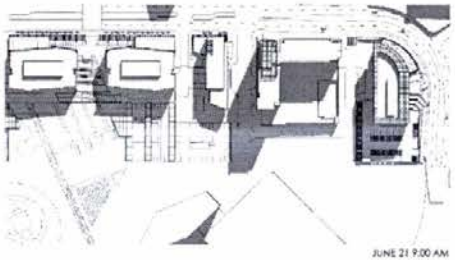
|---|---|
| SCALE | AS NOTED |
| JOB No. | 09039 |
| DATE : | 2/24/2012 |
| FILE No. | |
| SHEET | A.010 |

File No. 7-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: Kwt



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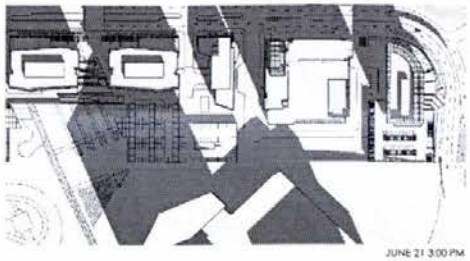

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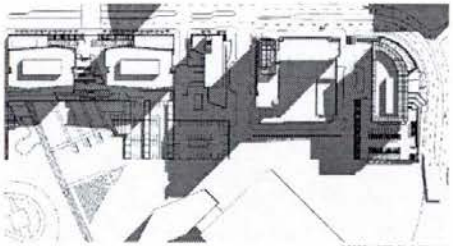
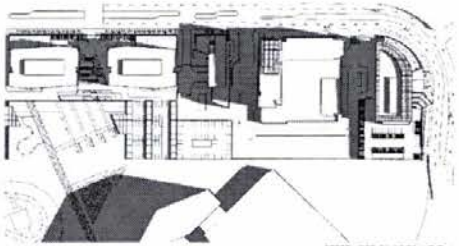
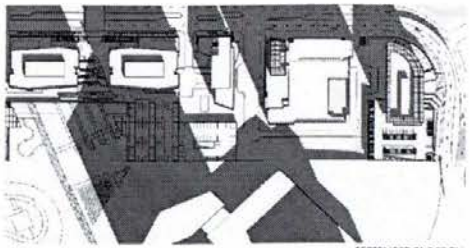
SUMMER



SEPTEMBER 21 9:00 AM
MARCH 21 9:00 AM

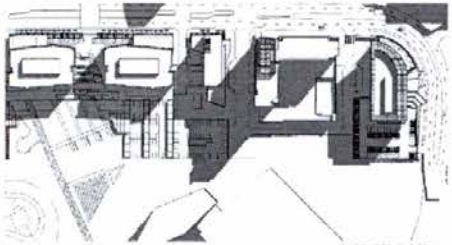


SEPTEMBER 21 12:00 NOON
MARCH 21 12:00 NOON

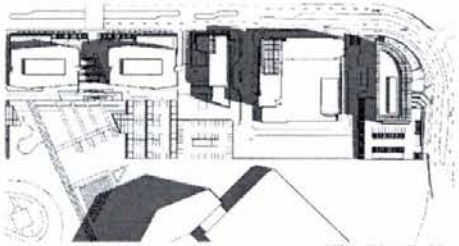


SEPTEMBER 21 3:00 PM
MARCH 21 3:00 PM

SPRING / FALL



DECEMBER 21 9:00 AM



DECEMBER 21 12:00 NOON

DECEMBER 21 3:00 PM

WINTER

LEGEND

BLOCK F
BOUNDARY LINE

N

FOR INFORMATION ONLY

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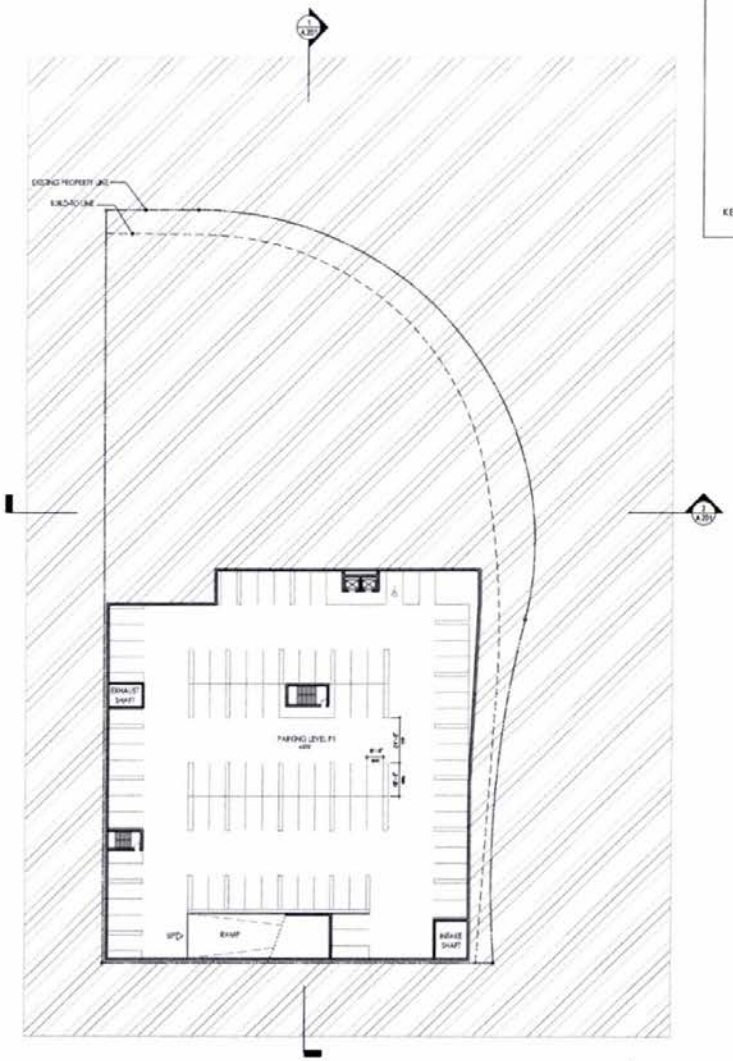
ILLUSTRATIVE SHADOW STUDY

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

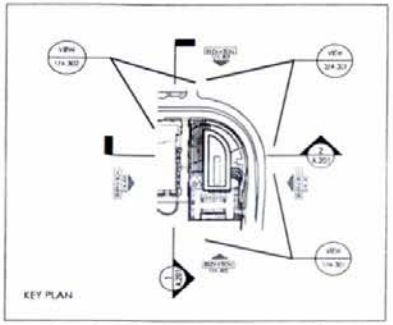
| PLAN STATUS | |
|---|---|
| 5/29/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/28/2012 | COUNTY COMMENTS |
| 10/5/2012 | COUNTY COMMENTS |
| | |
| | |
| | |
| | |
| DATE | DESCRIPTION |

| | |
|---|---|
| SCALE | AS NOTED |
| JOB NO. | 09039 |
| DATE: | 2/24/2012 |
| FILE NO. | |
| SHEET | A.020 |




1 A.101 P1 LEVEL PLAN
1" = 30'-0"

0' 30' 50' 100'




LEGEND

BELOW GRADE

NOTES

1. ARCHITECTURAL DESIGN AND LANDSCAPE FEATURES SHOWN ARE SUBJECT TO MODIFICATIONS, PROVIDED THAT THE GENERAL DESIGN STRATEGY, QUALITY AND CHARACTERISTICS OF THE PROJECT ARE MAINTAINED AND IN SUBSTANTIAL CONFORMANCE WITH THE CDP. THE EXACT LOCATION, SHAPE AND SIZE OF THE PROPOSED BUILDING, WINDOWS, TERRACES, PLAZAS, PRIVATE DECKS AND PARKING STRUCTURE SHOWN ON THE GRAPHIC ARE SUBJECT TO ADJUSTMENT AND REFINEMENT WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN SO LONG AS THEY REMAIN IN SUBSTANTIAL CONFORMANCE WITH THE CDP.

2. SLAB & ROOF ELEVATIONS ARE SUBJECT TO CHANGE WITH FINAL DESIGN BUT WILL NOT EXCEED MAXIMUM HEIGHTS LISTED.

3. SEE LANDSCAPE DRAWINGS FOR EXTENT OF ROOF AND STREETSCAPE DESIGN.

4. SEE CIVIL DRAWINGS FOR STORM WATER MANAGEMENT AND STREET DESIGN.

5. PARKING SPACE LAYOUT IS SUBJECT TO CHANGE WITH FINAL ARCHITECTURAL DESIGN BUT WILL NOT EXCEED MAXIMUM LIMITS LISTED.

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ILLUSTRATIVE P1 LEVEL PLAN

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

ARBOR ROW - BLOCK "F"

7901 WESTPARK DRIVE

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/30/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 12/6/2012 | COUNTY COMMENTS |
| | |
| | |
| | |
| | |
| DATE | DESCRIPTION |

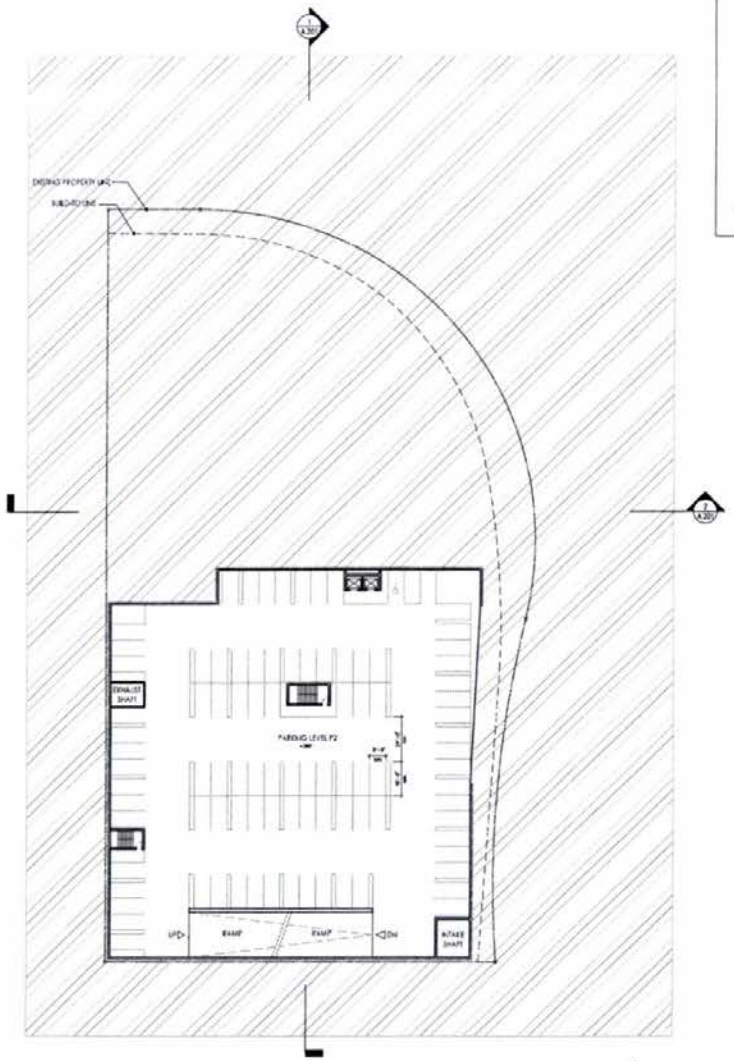
SCALE AS NOTED

JOB No. 09039

DATE: 2/24/2012

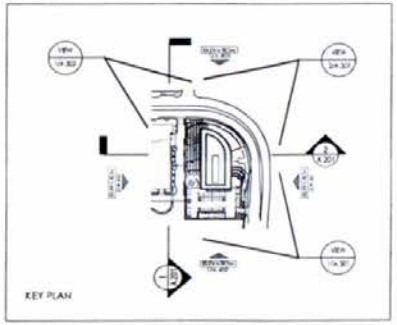
FILE No.

SHEET A.101




1 / A.102 P2 LEVEL PLAN
1" = 30'-0"

0' 30' 50' 100'




LEGEND

BELOW GRADE

NOTES

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2. SLAB & ROOF ELEVATIONS ARE SUBJECT TO CHANGE WITH FINAL DESIGN BUT WILL NOT EXCEED MAXIMUM HEIGHTS LISTED.

3. SEE LANDSCAPE DRAWINGS FOR EXTENT OF ROOF AND STREETSCAPE DESIGN.

4. SEE CIVIL DRAWINGS FOR STORM WATER MANAGEMENT AND STREET DESIGN.

5. PARKING SPACE LAYOUT IS SUBJECT TO CHANGE WITH FINAL ARCHITECTURAL DESIGN BUT WILL NOT EXCEED MAXIMUM LIMITS LISTED.

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www.parkerrogers.com

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Suite 250
Rosslyn, Virginia 22209
703.528.5788 Fax 703.528.5789
www.kgdarchitecture.com

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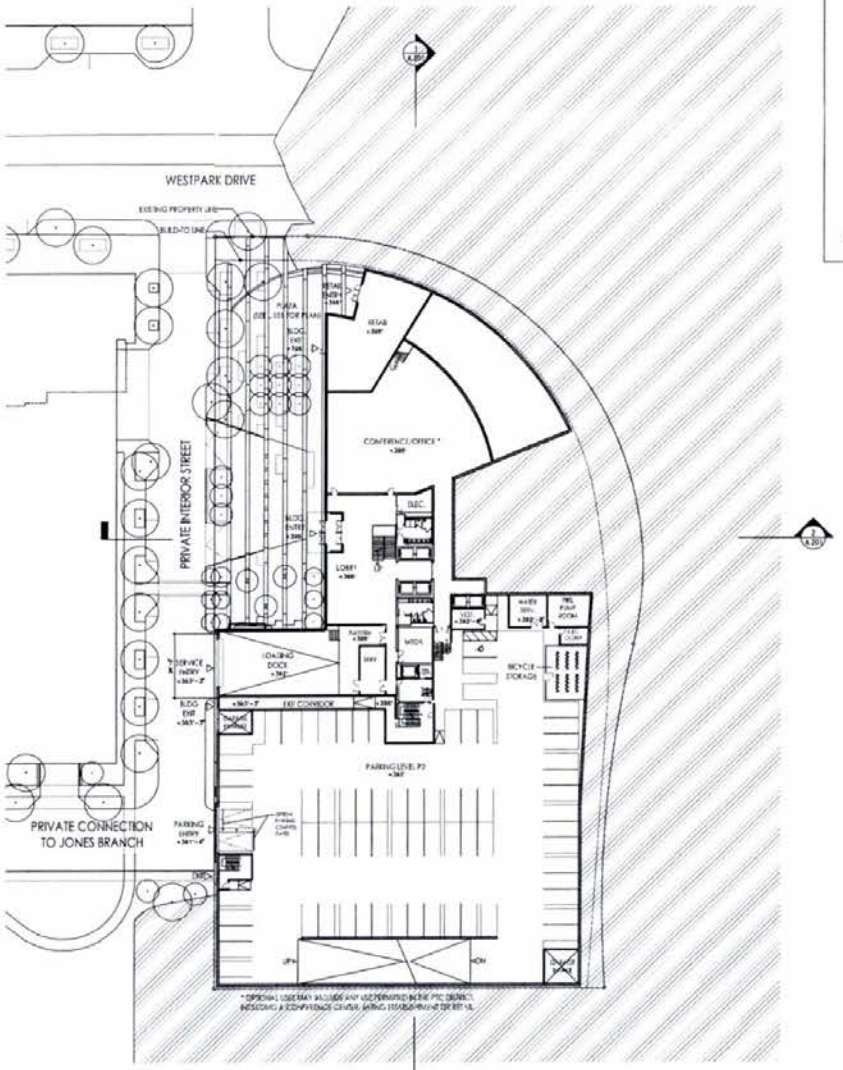
800.553.4575
www.amtpllc.com

ILLUSTRATIVE P2 LEVEL PLAN
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

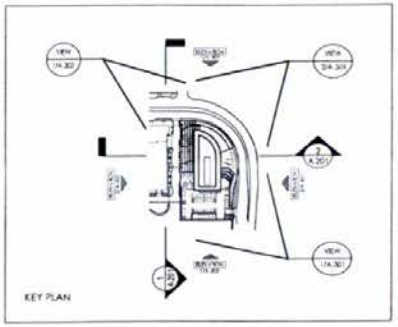
| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/28/2012 | COUNTY COMMENTS |
| 10/5/2012 | COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE AS NOTED
JOB No. 09039
DATE : 2/24/2012
FILE No.
SHEET A.102




1 A.103 P3 / GROUND FLOOR LEVEL PLAN
1" = 30'-0"

0' 30' 50' 100'




LEGEND

BELOW GRADE

NOTES

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2. SLAB & ROOF ELEVATIONS ARE SUBJECT TO CHANGE WITH FINAL DESIGN BUT WILL NOT EXCEED MAXIMUM HEIGHTS LISTED.

3. SEE LANDSCAPE DRAWINGS FOR EXTENT OF ROOF AND STREETSCAPE DESIGN.

4. SEE CIVIL DRAWINGS FOR STORM WATER MANAGEMENT AND STREET DESIGN.

5. PARKING SPACE LAYOUT IS SUBJECT TO CHANGE WITH FINAL ARCHITECTURAL DESIGN BUT WILL NOT EXCEED MAXIMUM LIMITS LISTED.

FOR INFORMATION ONLY

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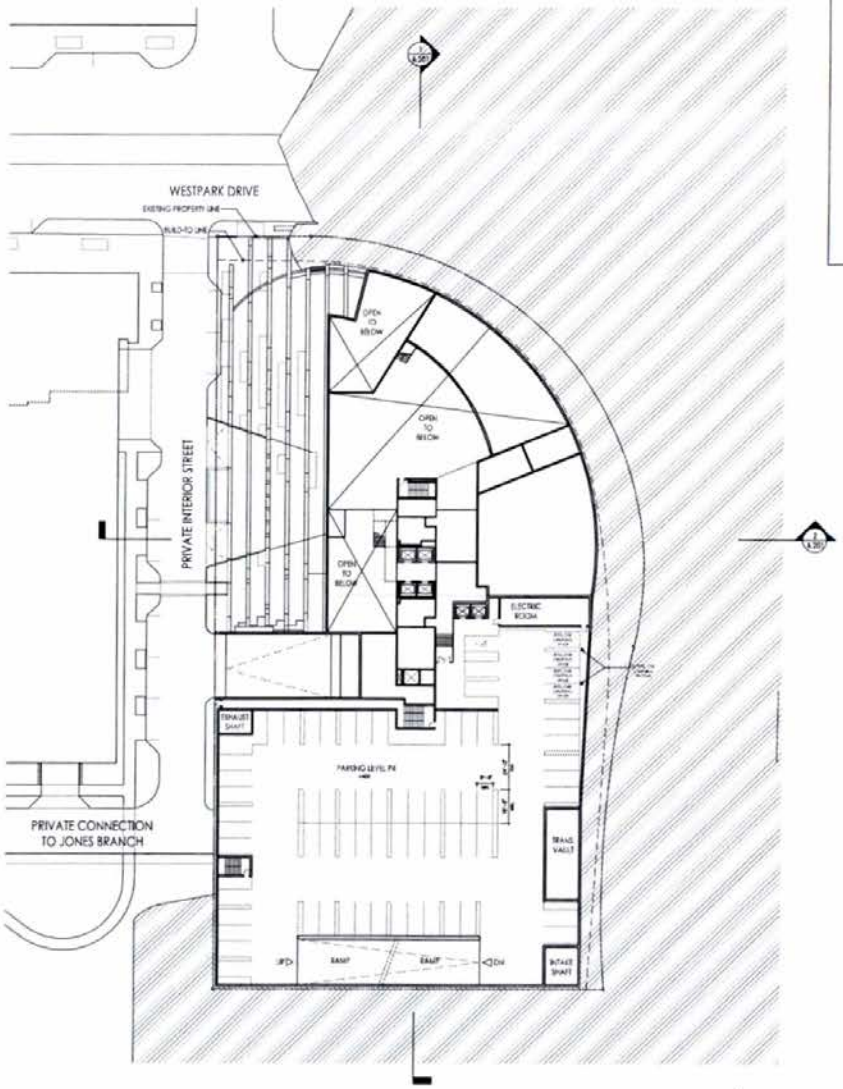
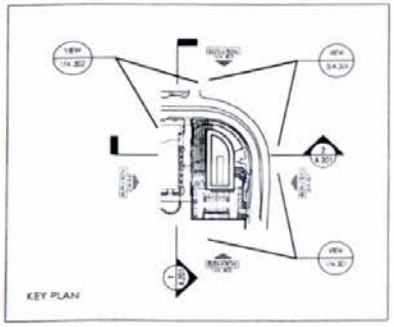
ILLUSTRATIVE P3 / GROUND FLOOR LEVEL PLAN
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/28/2012 | COUNTY COMMENTS |
| 10/5/2012 | COUNTY COMMENTS |
| DATE | DESCRIPTION |
| SCALE | AS NOTED |
| JOB No. | 09019 |
| DATE | 2/24/2012 |
| FILE No. | |
| SHEET | A.103 |




1 / A.104 P4 LEVEL PLAN
1" = 30'-0"




LEGEND

BELOW GRADE

NOTES

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4. SEE CIVIL DRAWINGS FOR STORM WATER MANAGEMENT AND STREET DESIGN.

5. PARKING SPACE LAYOUT IS SUBJECT TO CHANGE WITH FINAL ARCHITECTURAL DESIGN BUT WILL NOT EXCEED MAXIMUM LIMITS LISTED.

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(703) 528-3000 | 703-558-9042
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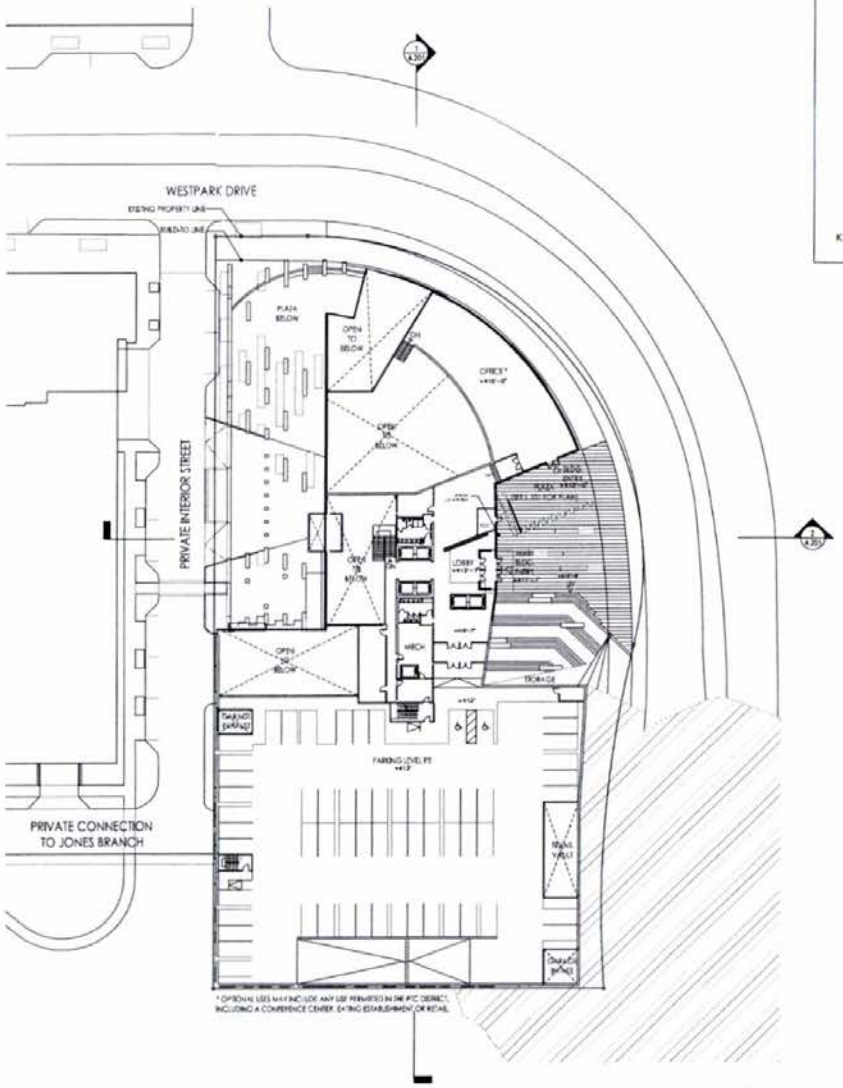
800-524-0475

ILLUSTRATIVE P4 LEVEL PLAN
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

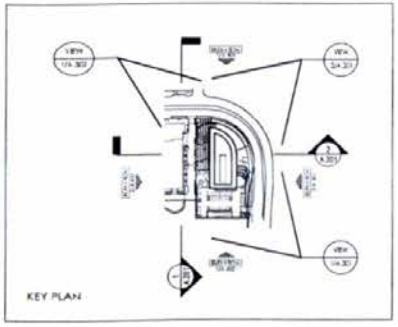
| PLAN STATUS | |
|---|---|
| 5/29/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 8/28/2012 | COUNTY COMMENTS |
| 10/9/2012 | COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |
| SCALE | AS NOTED |
| JOB No. | 09039 |
| DATE: | 2/24/2012 |
| FILE No. | |
| SHEET | A.104 |

File No. 7-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File: Xref:




1 / A.105 P5 / SECOND FLOOR LEVEL PLAN
1" = 30'-0"

0' 30' 50' 100'




LEGEND

BELOW GRADE

NOTES

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3. SEE LANDSCAPE DRAWINGS FOR EXTENT OF ROOF AND STREETSCAPE DESIGN.

4. SEE CIVIL DRAWINGS FOR STORM WATER MANAGEMENT AND STREET DESIGN.

5. PARKING SPACE LAYOUT IS SUBJECT TO CHANGE WITH FINAL ARCHITECTURAL DESIGN BUT WILL NOT EXCEED MAXIMUM LIMITS LISTED.

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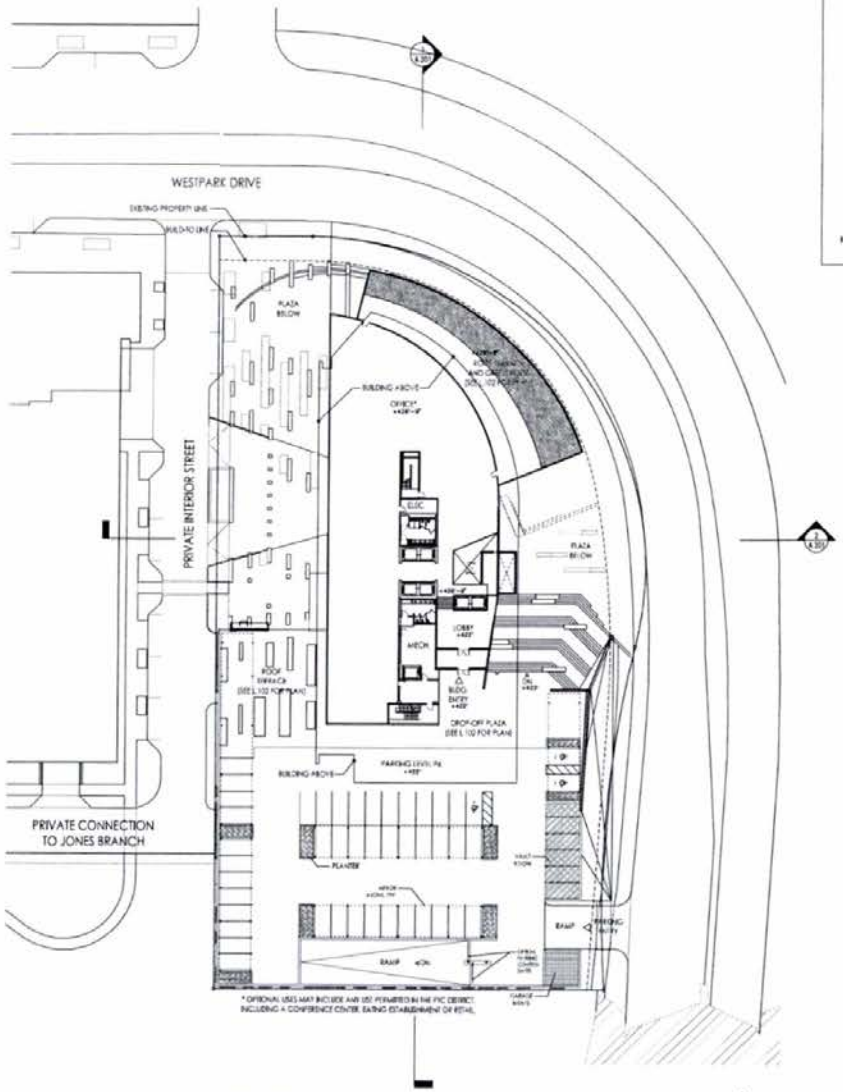
ILLUSTRATIVE P5 / SECOND FLOOR LEVEL PLAN
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

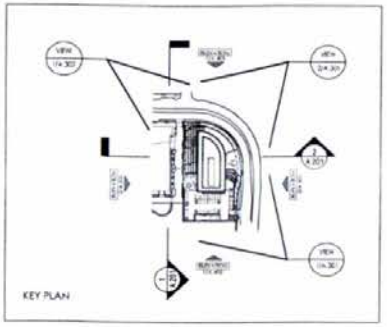
| PLAN STATUS | |
|---|---|
| 1/25/2012 | COUNTY COMMENTS |
| 1/23/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/5/2012 | COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: AS NOTED
JOB No. 09039
DATE: 2/24/2012
FILE No.
SHEET A.105




1 / A.106 P6 / THIRD FLOOR LEVEL PLAN
1" = 30'-0"

0' 30' 60' 100'




LEGEND

BELOW GRADE

NOTES

1. ARCHITECTURAL DESIGN AND LANDSCAPE FEATURES SHOWN ARE SUBJECT TO MODIFICATIONS, PROVIDED THAT THE GENERAL DESIGN STRATEGY, QUALITY AND CHARACTERISTICS OF THE PROJECT ARE MAINTAINED AND IN SUBSTANTIAL CONFORMANCE WITH THE CDP. THE EXACT LOCATION, SHAPE AND SIZE OF THE PROPOSED BUILDING, WINDOWS, TERRACES, PLAZAS, PRIVATE DECKS AND PARKING STRUCTURE SHOWN ON THE GRAPHIC ARE SUBJECT TO ADJUSTMENT AND REFINEMENT WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN SO LONG AS THEY REMAIN IN SUBSTANTIAL CONFORMANCE WITH THE CDP.

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4. SEE CIVIL DRAWINGS FOR STORM WATER MANAGEMENT AND STREET DESIGN.

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800-624-8472
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Mark Adjunt (SEAL)
Mark Adjunt (SEAL)

ILLUSTRATIVE P6 / THIRD FLOOR LEVEL PLAN

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

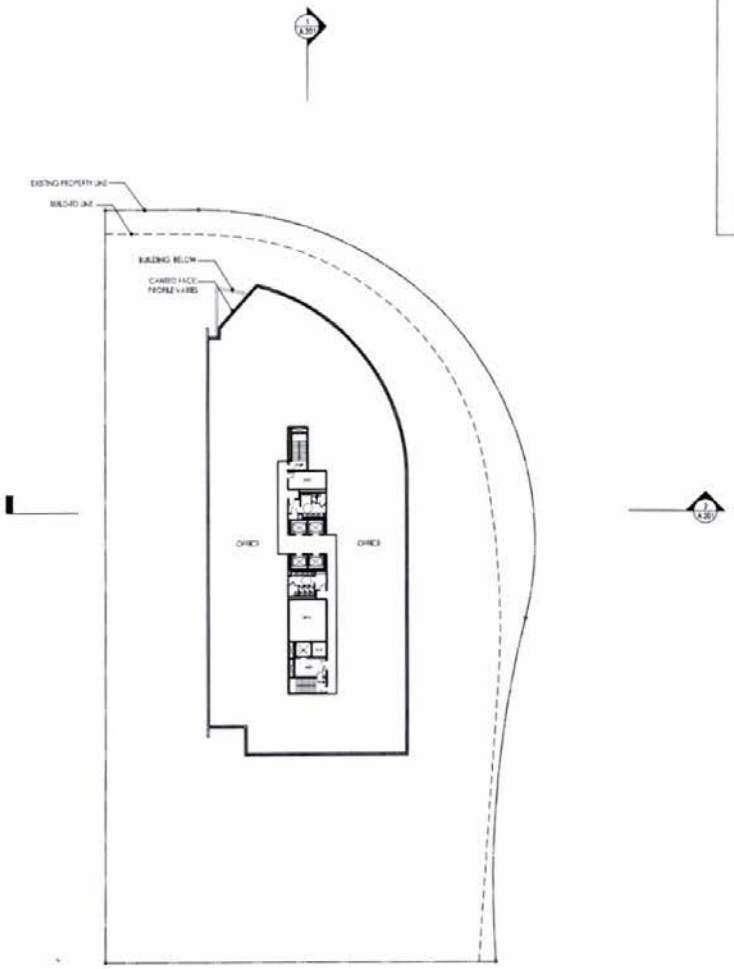
# ARBOR ROW - BLOCK "F"

7901 WESTPARK DRIVE

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

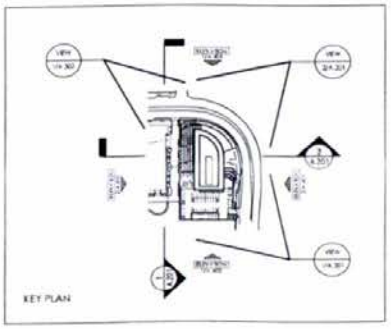
| PLAN STATUS | |
|---|---|
| 5/30/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
| 4/19/2012 | COUNTY COMMENTS |
| 10/5/2012 | COUNTY COMMENTS |
| | |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE: AS NOTED
JOB No.: 09039
DATE: 2/24/2012
FILE No.:
SHEET: A.106




1 / A.107 TYPICAL FLOOR LEVEL PLAN
1" = 30'-0"

0' 30' 50' 100'




NOTES

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5. PARKING SPACE LAYOUT IS SUBJECT TO CHANGE WITH FINAL ARCHITECTURAL DESIGN BUT WILL NOT EXCEED MAXIMUM LIMITS LISTED.

FOR INFORMATION ONLY

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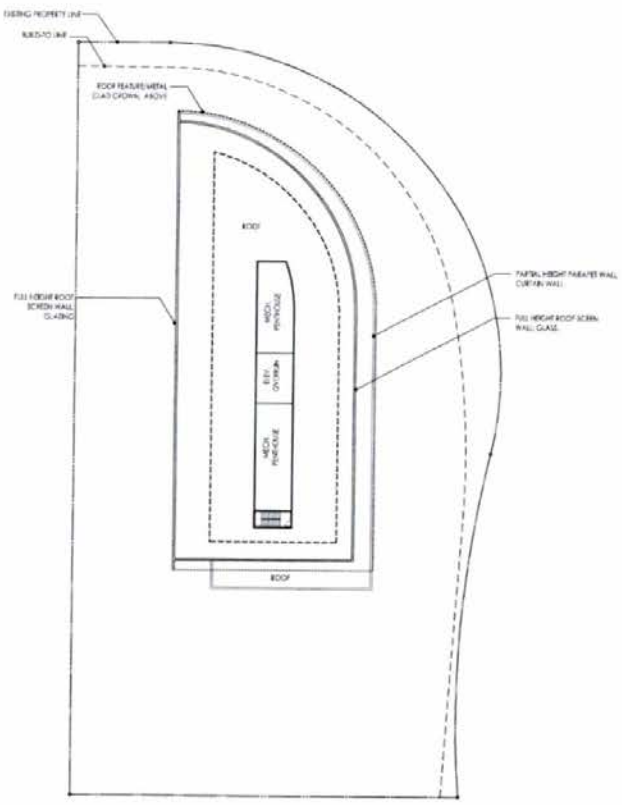
ILLUSTRATIVE TYPICAL FLOOR LEVEL PLAN

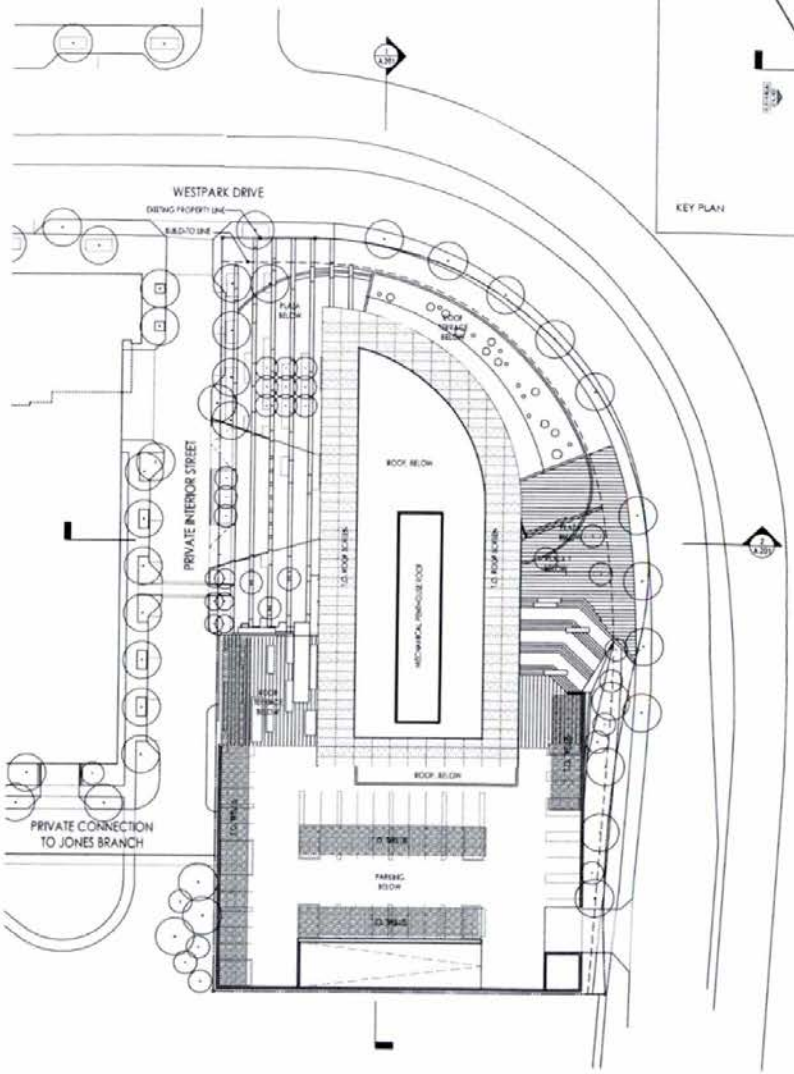
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 6/29/2012 | COUNTY COMMENTS |
| 9/23/2012 | COUNTY COMMENTS |
| 6/29/2012 | COUNTY COMMENTS |
| 11/9/2012 | COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

| | |
|---|---|
| SCALE | AS NOTED |
| JOB No. | 09039 |
| DATE | 2/24/2012 |
| FILE No. | |
| SHEET | A.107 |

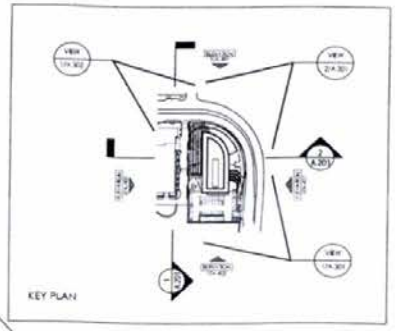



2 A.108 PENTHOUSE PLAN
1" = 30'-0"




1 A.108 ROOF PLAN
1" = 30'-0"

0 30' 50' 100'




NOTES

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2. SLAB & ROOF ELEVATIONS ARE SUBJECT TO CHANGE WITH FINAL DESIGN BUT WILL NOT EXCEED MAXIMUM HEIGHTS LISTED.

3. SEE LANDSCAPE DRAWINGS FOR EXTENT OF ROOF AND STREETSCAPE DESIGN.

4. SEE CIVIL DRAWINGS FOR STORM WATER MANAGEMENT AND STREET DESIGN.

5. PARKING SPACE LAYOUT IS SUBJECT TO CHANGE WITH FINAL ARCHITECTURAL DESIGN BUT WILL NOT EXCEED MAXIMUM LIMITS LISTED.

6. ARCHITECTURAL FEATURES TO INCLUDE THE ROOF FEATURE AND ROOFTOP SCREEN FEATURES SHOWN ARE NOT COUNTED AS GFA IN THE FAR CALCULATIONS.

FOR INFORMATION ONLY

WALTER L. PHILLIPS

KGD

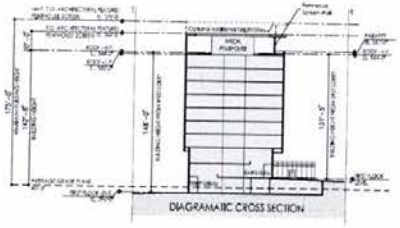
AMT

ILLUSTRATIVE ROOF PLAN

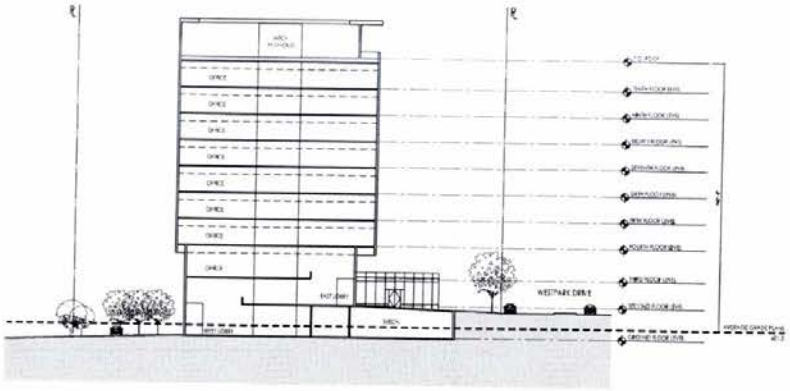
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 6/22/2012 | COUNTY COMMENTS |
| 8/29/2012 | COUNTY COMMENTS |
| 10/8/2012 | COUNTY COMMENTS |
| DATE | DESCRIPTION |

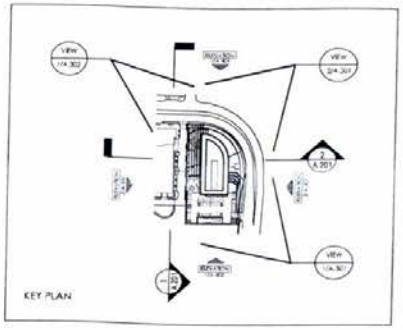
SCALE AS NOTED
JOB No. 09038
DATE: 2/24/2012
FILE No.
SHEET A.108

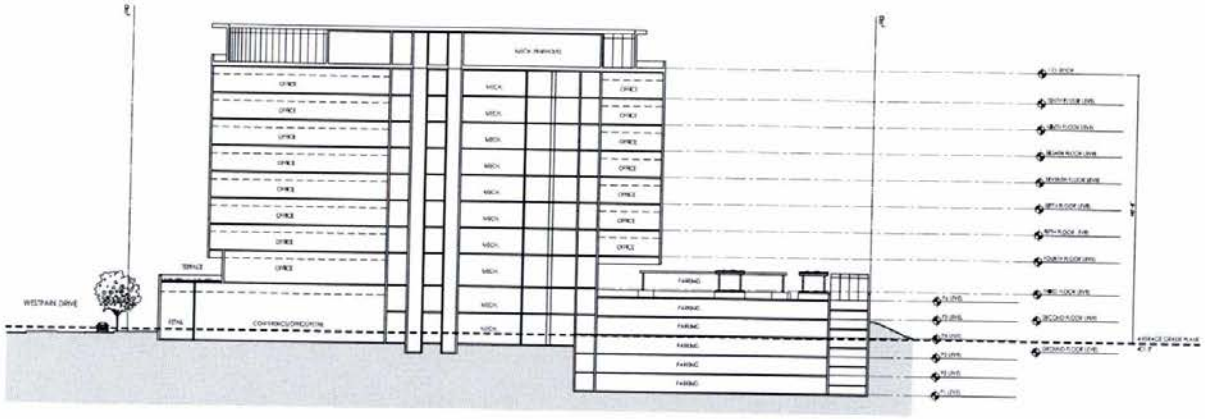



3 A.201 BUILDING HEIGHT DIAGRAM
1" = 60'-0"




2 A.201 EAST - WEST SECTION
1" = 30'-0"




1 A.201 NORTH - SOUTH SECTION
1" = 30'-0"

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4. THE NUMBER OF FLOORS MAY VARY BUT OVERALL BUILDING HEIGHT WILL NOT EXCEED MAXIMUM BUILDING HEIGHT LISTED.

5. AVERAGE GRADE PLANE SITE ELEVATION MAY VARY BASED ON FINAL SITE GRADING.

6. SITE SECTIONS PRESENTED ON THIS SHEET ARE PROVIDED TO AID IN THE UNDERSTANDING OF GRADE CHANGE ACROSS THE SUBJECT PROPERTY AND THE RELATIONSHIP OF PROPOSED BUILDINGS AND OTHER USES. BUILDING DESIGN AND THE FINAL GRADING ARE SUBJECT TO CHANGE WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN.

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ILLUSTRATIVE BUILDING SECTIONS
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/2012 | COUNTY COMMENTS |
| 7/23/2012 | COUNTY COMMENTS |
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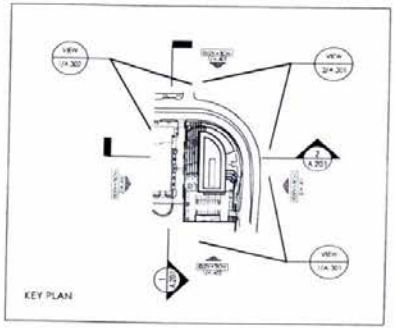
| | |
| DATE | DESCRIPTION |

| | |
|---|---|
| SCALE | AS NOTED |
| JOB No. | 09039 |
| DATE : | 2/24/2012 |
| FILE No. | |
| SHEET | A.201 |

File No. 7-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File:

2 / A.301 VIEW FROM CAPITAL BELTWAY

1 / A.301 VIEW FROM TYSONS BLVD.




KEY PLAN

NOTES

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5. THE FINAL PERSPECTIVES AND MATERIALS WILL VARY TO MEET BUILDING CODE AND SUSTAINABILITY REQUIREMENTS.

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ILLUSTRATIVE SITE PERSPECTIVES

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

ARBOR ROW - BLOCK "F"

7901 WESTPARK DRIVE

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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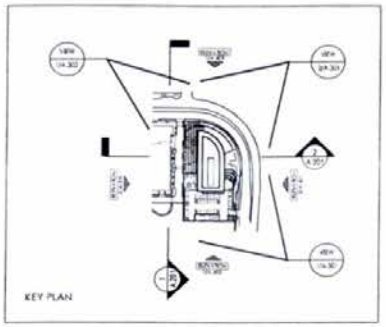
| FILE No. | |
| SHEET | A.301 |

File No. 7-20 Tax Map No. 29-4 Job No. 09039 Cadd Dwg. File:



1 A.302 VIEW FROM WESTPARK DRIVE

NOTES

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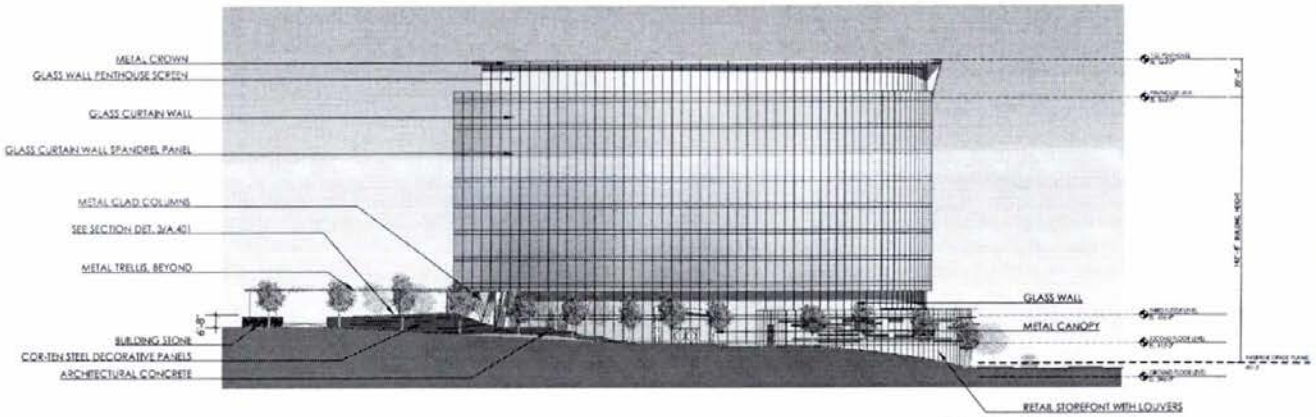
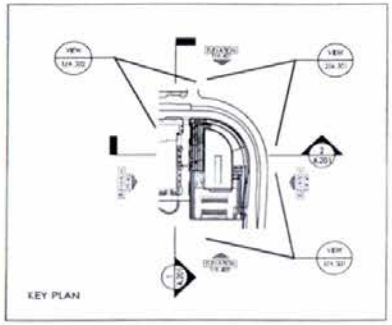
| FILE NO. | |
| SHEET | A.302 |




2 A.401 EAST ELEVATION
1" = 30'-0"

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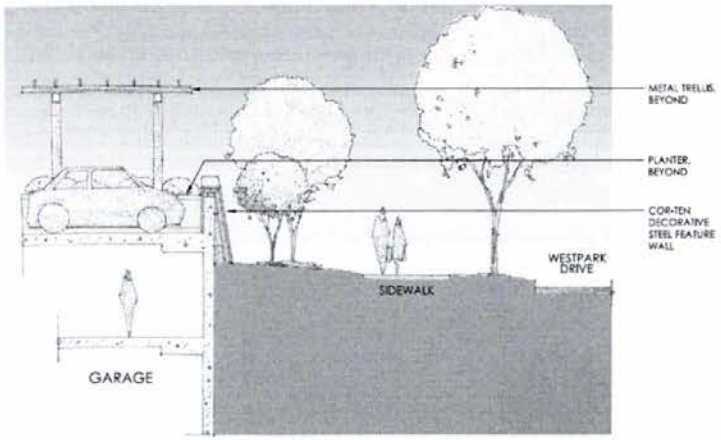
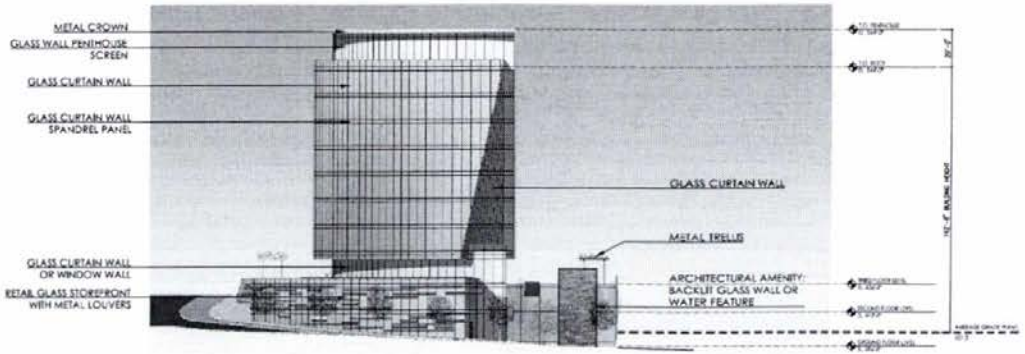



3 A.401 WALL SECTION DETAIL AT GARAGE
3/16" = 1'-0"




1 A.401 NORTH ELEVATION
1" = 30'-0"

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ILLUSTRATIVE BUILDING ELEVATIONS
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ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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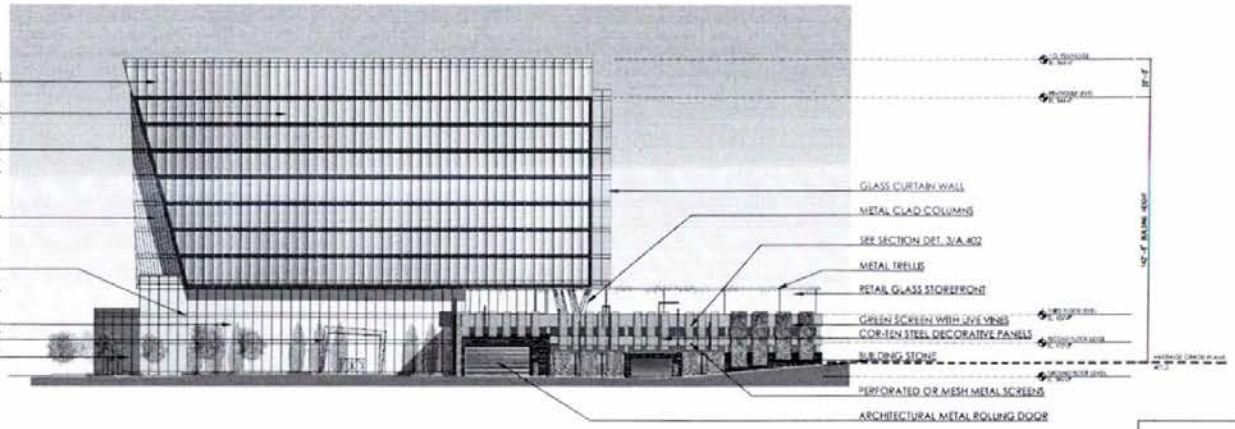
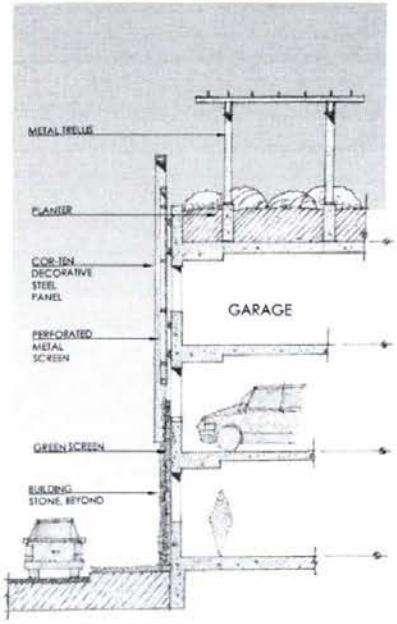
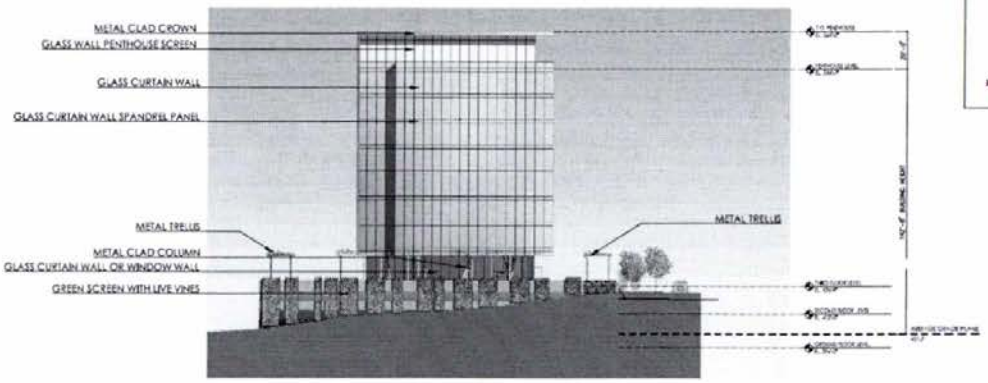


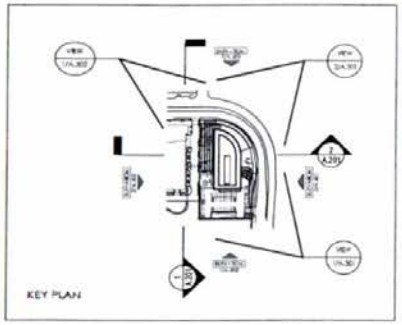

2 A.402 WEST ELEVATION
1" = 30'-0"




3 A.402 WALL SECTION DETAIL AT GARAGE
3/16" =1'-0"




1 A.402 SOUTH ELEVATION
1" = 30'-0"

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WALTER L. PHILLIPS

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ILLUSTRATIVE BUILDING ELEVATIONS
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ARBOR ROW - BLOCK "F"
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PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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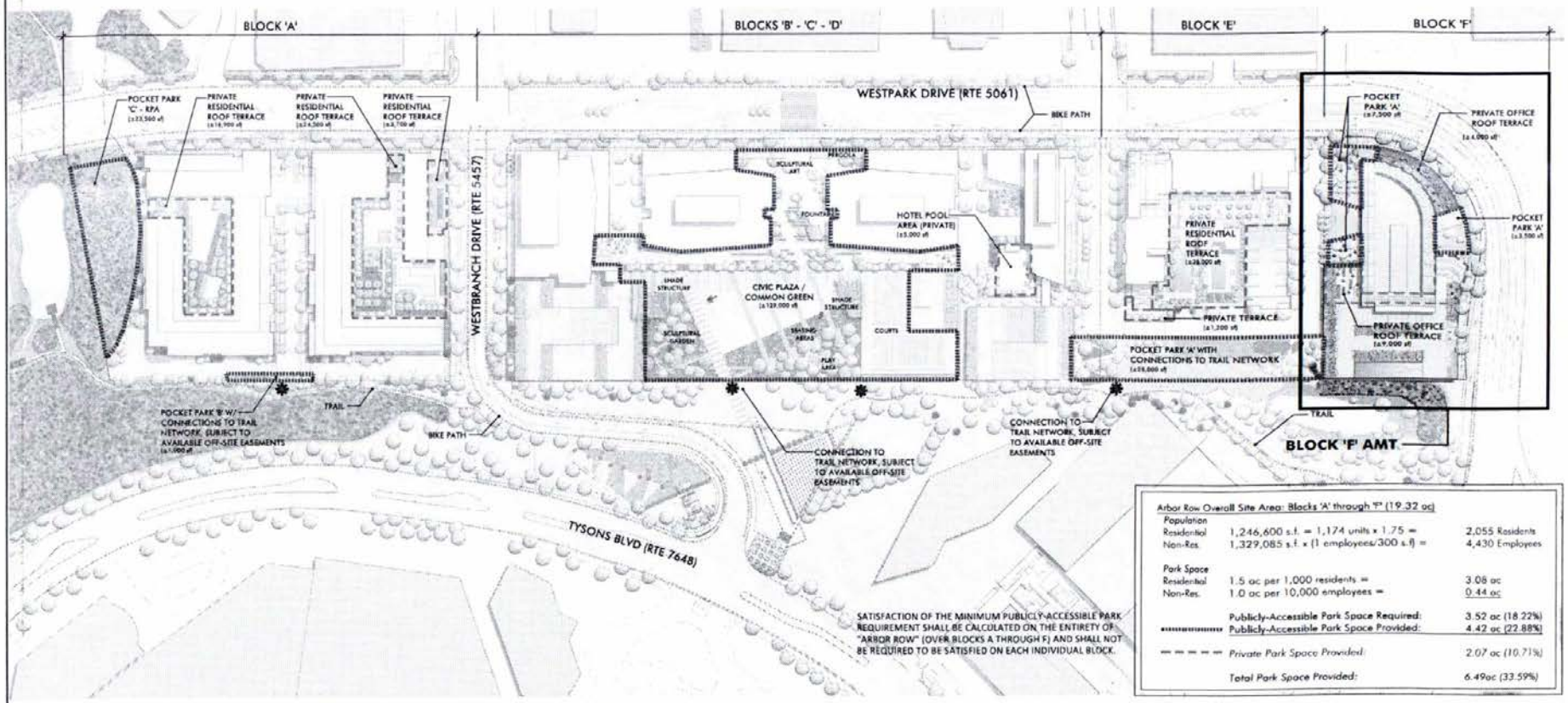
SCALE: AS NOTED
JOB No.: 08039
DATE: 2/24/2012
FILE No.:
SHEET A.402




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.

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

| | | |
|---|---|---|
| Population | | |
| Residential | 1,246,600 s.f. = 1,174 units x 1.75 = | 2,055 Residents |
| Non-Res. | 1,329,085 s.f. x (1 employee/300 s.f) = | 4,430 Employees |
| Park Space | | |
| Residential | 1.5 ac per 1,000 residents = | 3.08 ac |
| Non-Res. | 1.0 ac per 10,000 employees = | 0.44 ac |
| | Publicly-Accessible Park Space Required: | 3.52 ac (18.22%) |
| | Publicly-Accessible Park Space Provided: | 4.42 ac (22.88%) |
| | Private Park Space Provided: | 2.07 ac (10.71%) |
| | Total Park Space Provided: | 6.49ac (33.59%) |

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 place including public art and large enough to support casual arrangements and use as well as community events. Serves as a focal point and unique placemaking element for civic purpose and commercial supporting activities.

Potential Activities

- Interactive Sculpture Garden
- Performance and Special Event Space
- Outdoor Movie Lawn
- Picnicking and Gathering Area
- Fireplace and Kite Flying Green
- Outdoor Exercise Classes
- Contests / Festivals
- Outdoor Basketball & Tennis Court
- Off-Leash Dog Areas
- Sunbathing and Lounging
- Seasonal Decorations Programs
- Bosque 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:

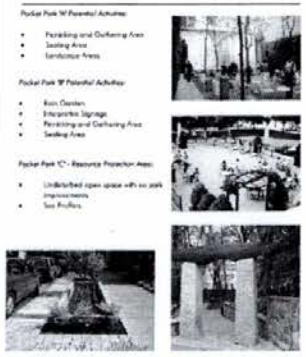
- Picnicking and Gathering Area
- Seating Area
- Landscape Areas

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 Profiles



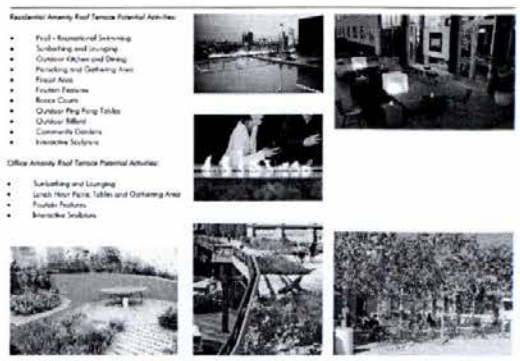
PRIVATE AMENITY ROOF TERRACES - provides outdoor amenity space for residents and workers of residential building and office employees.

Residential Amenity Roof Terrace Potential Activities:

- Pool - Recreational Swimming
- Sunbathing and Lounging
- Outdoor Kitchen and Dining
- Picnicking and Gathering Area
- Fitness Area
- Fountain Feature
- 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



**BLOCK 'F' (AMT SITE) FDP CALCULATIONS**

Overall Site Area 80,001 sf (1.84 ac)

Population
Residential: 0
Retail: ±2,156 sf
Office: ±197,844 sf

Publicly-Accessible Park Space: ±11,000 sf (0.25 ac)
Private Open Space Provided*: ±13,000 sf (0.30 ac)

Total Open Space Provided*: ±24,000 sf (0.55 ac)
*For reference 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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| 07/03/12 | PER COUNTY COMMENTS |
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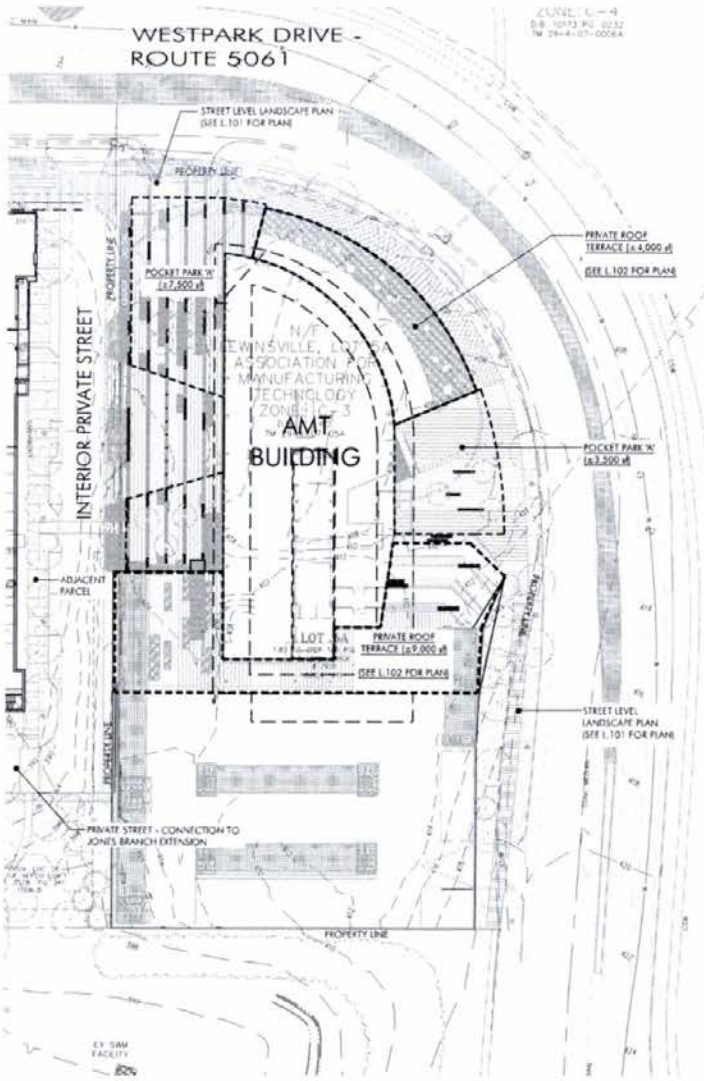
| 10/03/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1" = 80'-0"
JOB No.
DATE : February 24, 2012
FILE No.
SHEET L.001

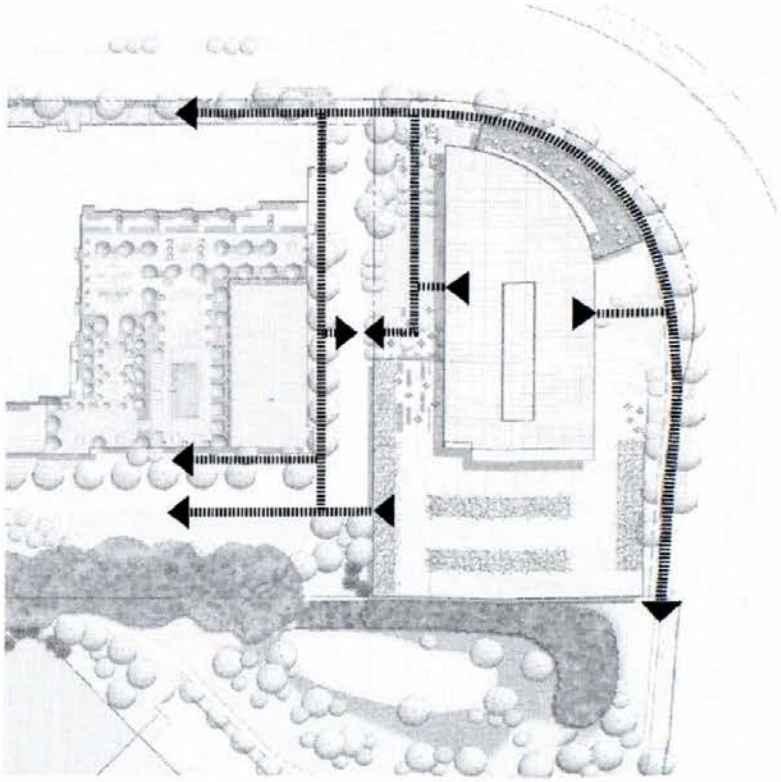



1 REFERENCE LANDSCAPE PLAN

SCALE: 1" = 20'-0"

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. REFER TO SHEET L3.01 FOR PLANT SPECIES SCHEDULE



2 PEDESTRIAN CIRCULATION PLAN

SCALE: NTS

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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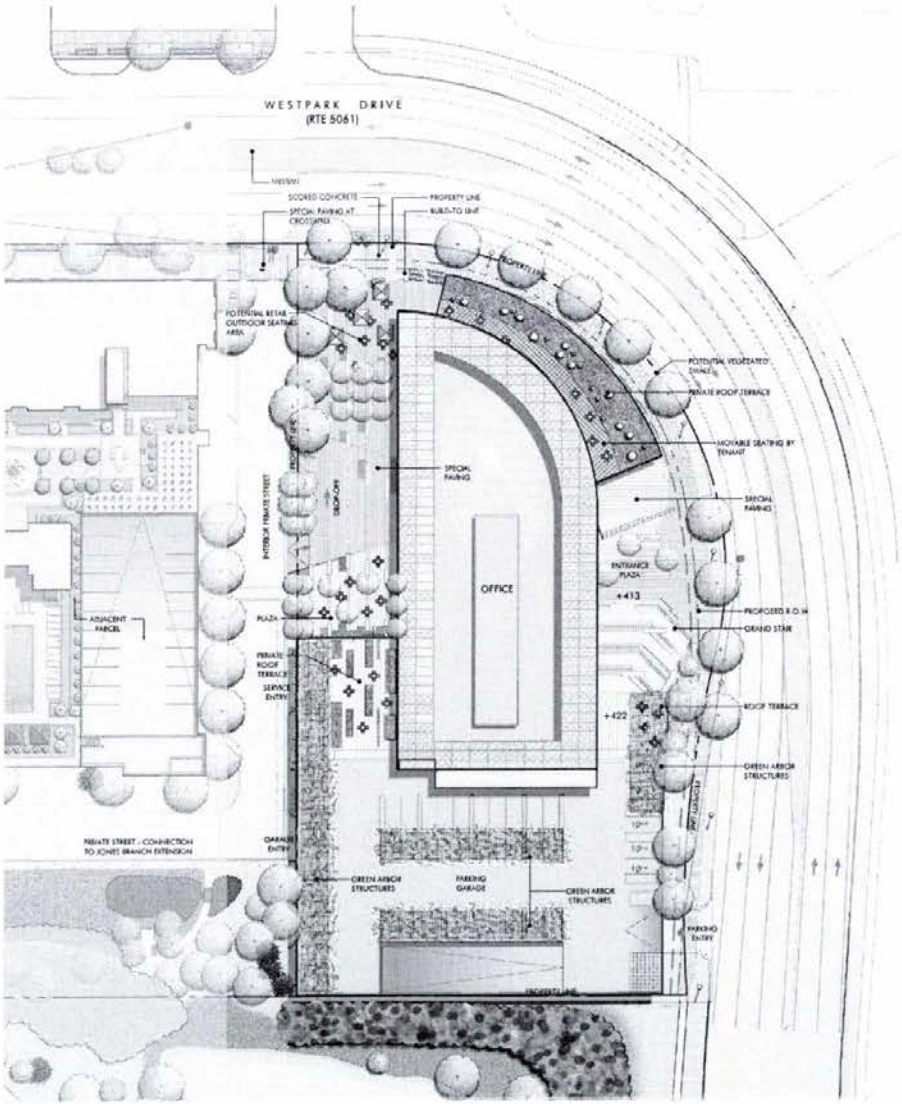
REFERENCE LANDSCAPE PLAN
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/05/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1" = 30'-0"
JOB No.
DATE: February 24, 2012
FILE No.
SHEET L.002

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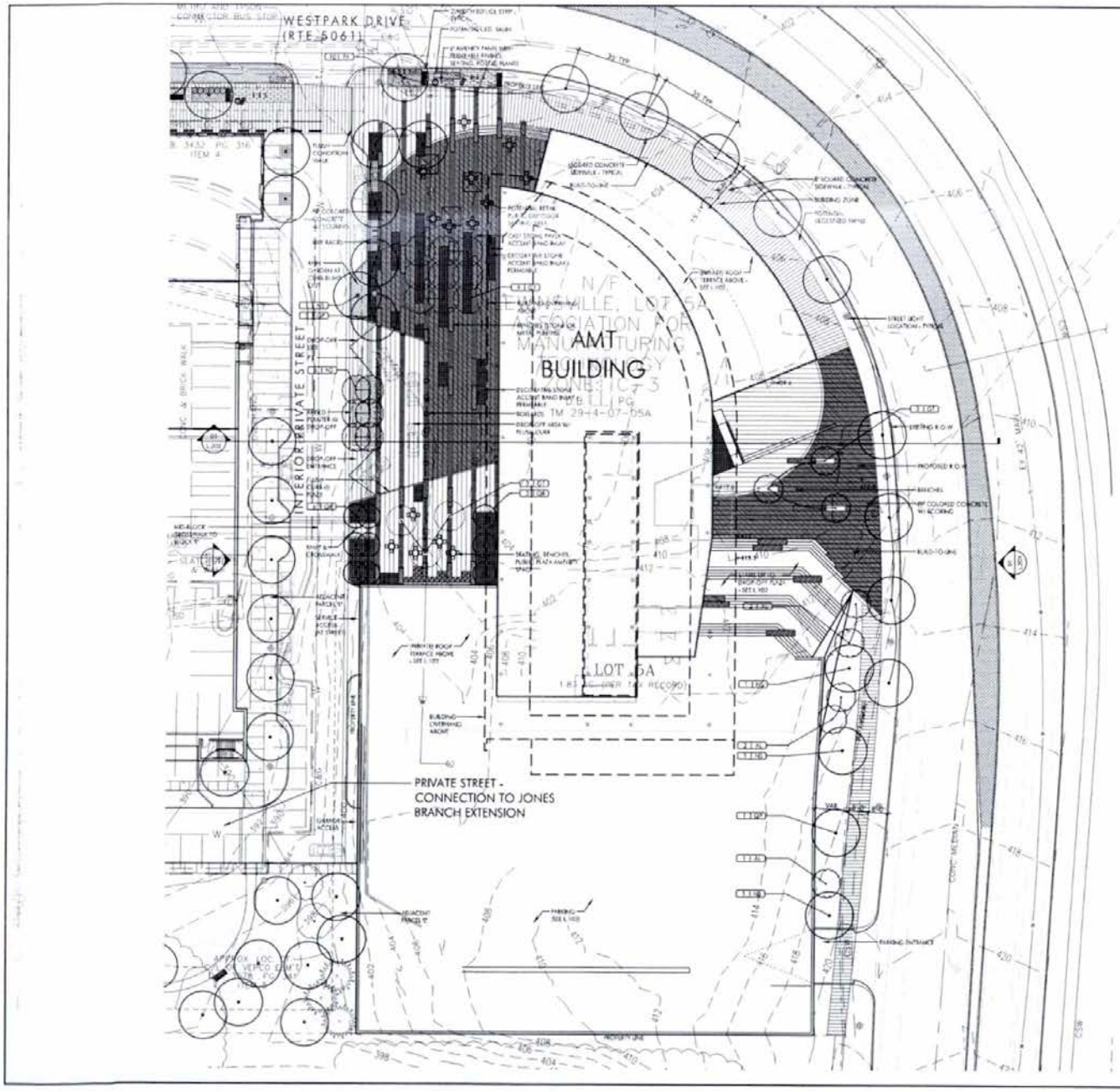
ILLUSTRATIVE PLAN

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1" = 30'-0"
JOB No.
DATE : February 24, 2012
FILE No.
SHEET L.003




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.
4. REFER TO SHEET L.301 FOR PLANT SPECIES SCHEDULE
5. REFER TO SHEETS L.501/2 FOR REPRESENTATIVE FURNISHINGS AND DESIGN DETAILS

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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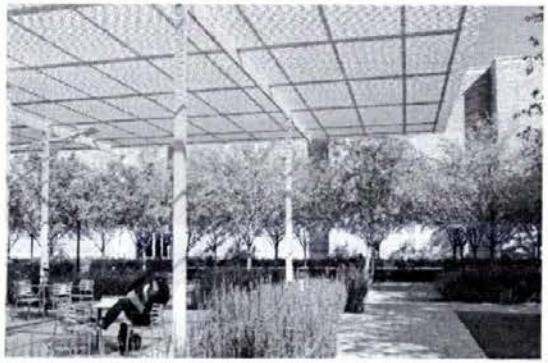
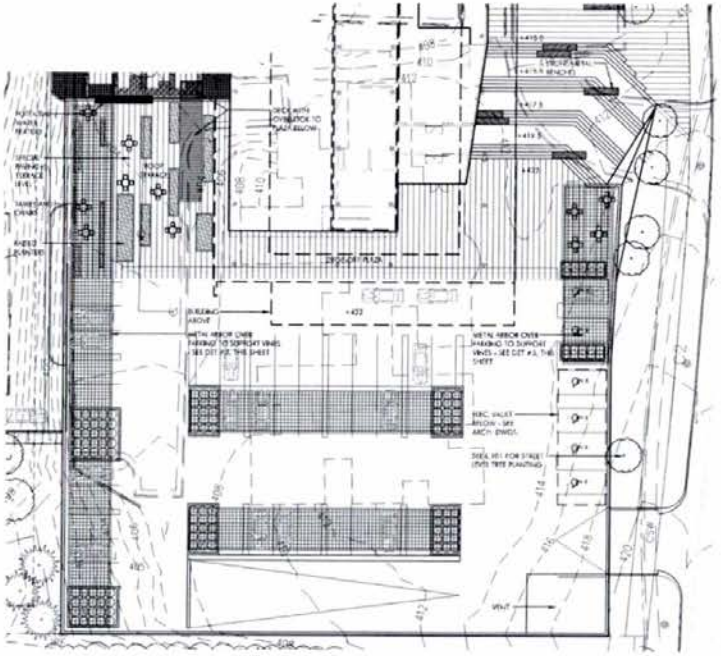
LANDSCAPE PLAN - STREET LEVEL
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
ARBOR ROW - BLOCK "F"
7901 WESTPARK DRIVE
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1" = 20'-0"
JOB No.
DATE February 24, 2012
FILE No.
SHEET L.101

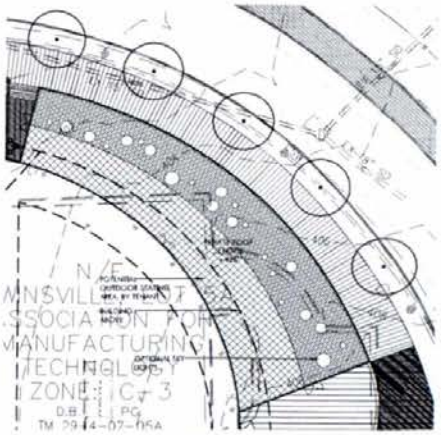


**03** CONCEPTUAL METAL ARBOR OVER PARKING



**01** LANDSCAPE PLAN: DROP-OFF PLAZA AND ROOF TERRACE

SCALE : 1" = 20'-0"



**02** LANDSCAPE PLAN: PRIVATE ROOF TERRACE

SCALE : 1" = 20'-0"

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. REFER TO SHEET L.301 FOR PLANT SPECIES SCHEDULE

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LANDSCAPE PLAN - ROOF TERRACES

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

ARBOR ROW - BLOCK "F"

7901 WESTPARK DRIVE

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

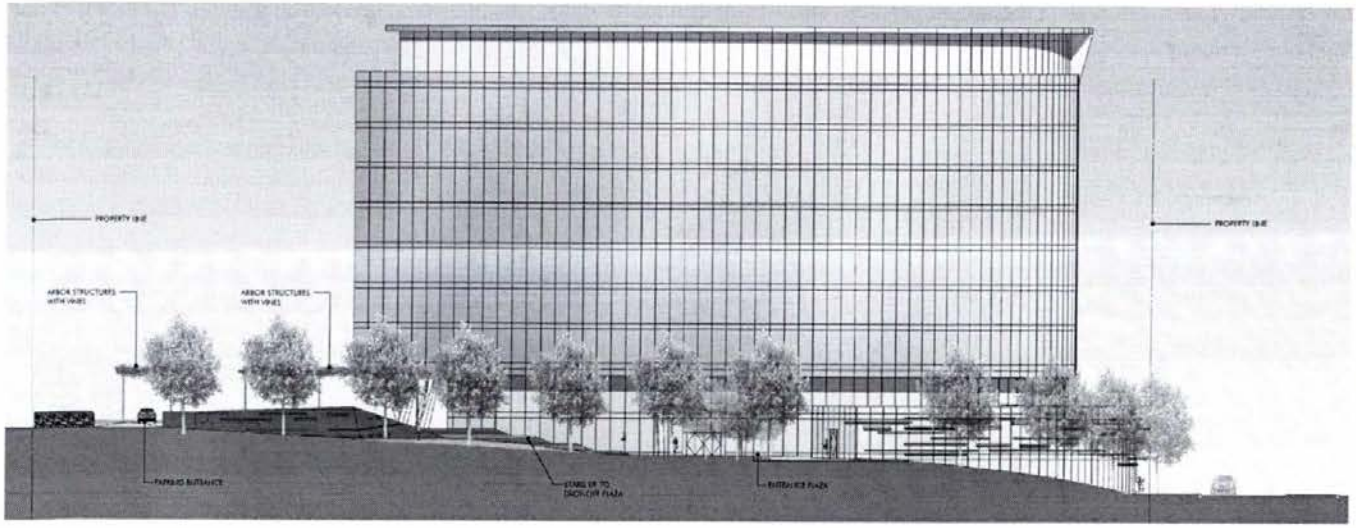
SCALE 1" = 20'-0"

JOB No.

DATE : February 24, 2012

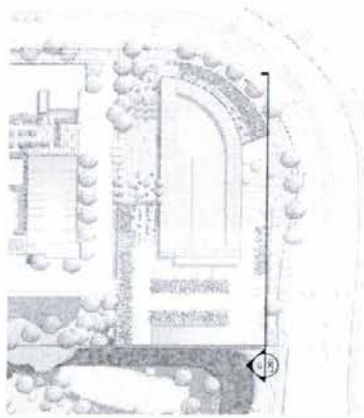
FILE No.

SHEET L.102

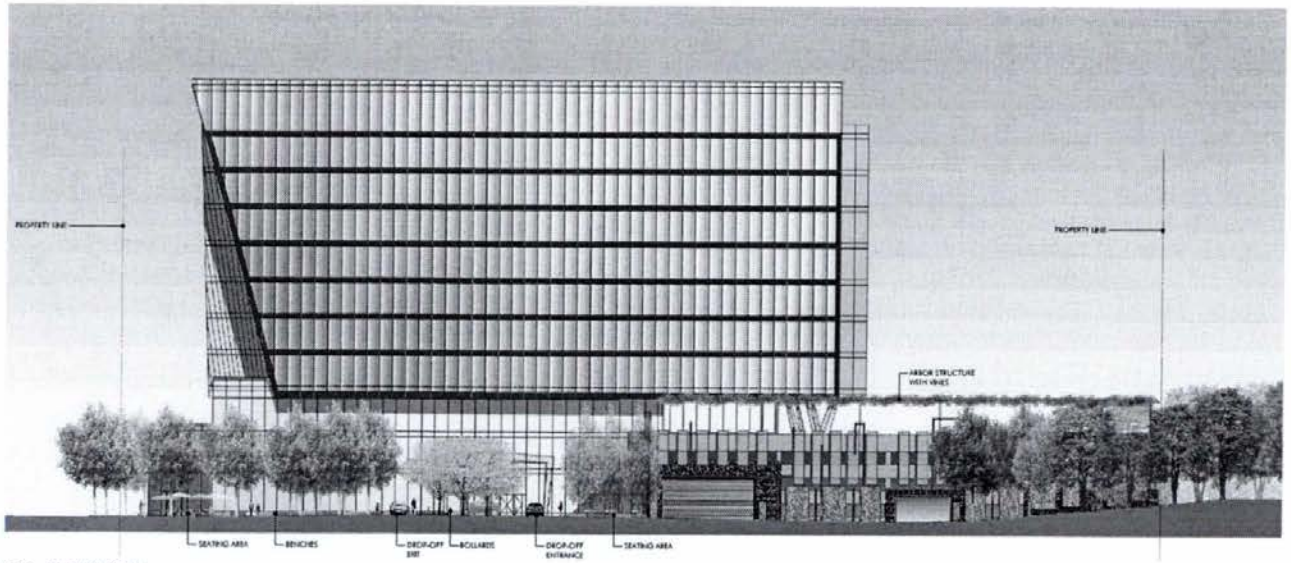



**01** EAST - ELEVATION

SCALE : 1" = 8'-0"

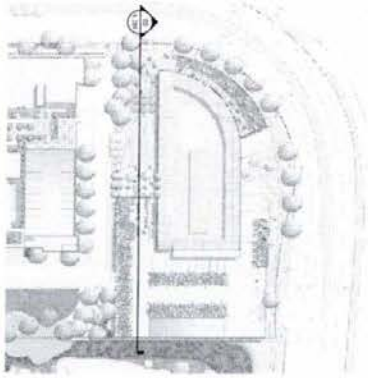


REFERENCE PLAN




**02** WEST - ELEVATION

SCALE : 1" = 8'-0"



REFERENCE PLAN

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SITE SECTIONS PRESENTED ON THIS SHEET ARE PROVIDED TO AID IN THE UNDERSTANDING OF GRADE CHANGE ACROSS THE SUBJECT PROPERTY AND THE RELATIONSHIP OF PROPOSED BUILDINGS AND OTHER USES. BUILDING DESIGN AND THE FINAL GRADING ARE SUBJECT TO CHANGE WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN.

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SITE & STREET SECTIONS

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

**ARBOR ROW - BLOCK "F"**

**7901 WESTPARK DRIVE**

**PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA**

| PLAN STATUS | |
|---|---|
| 05/25/12 | FCA COUNTY COMMENTS |
| 07/23/12 | FCA COUNTY COMMENTS |
| 08/29/12 | FCA COUNTY COMMENTS |
| 10/05/12 | FCA COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

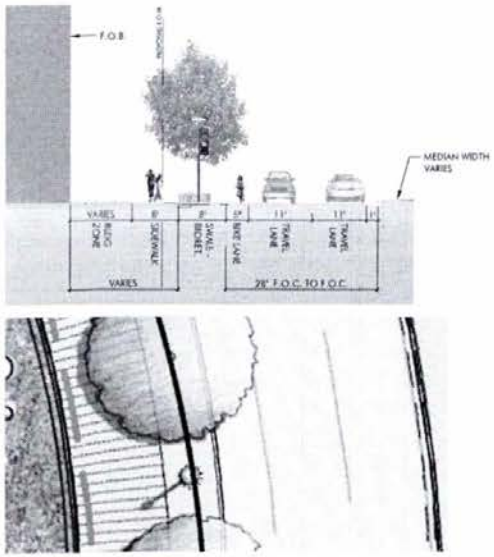
SCALE AS NOTED

JOB No.

DATE : February 24, 2012

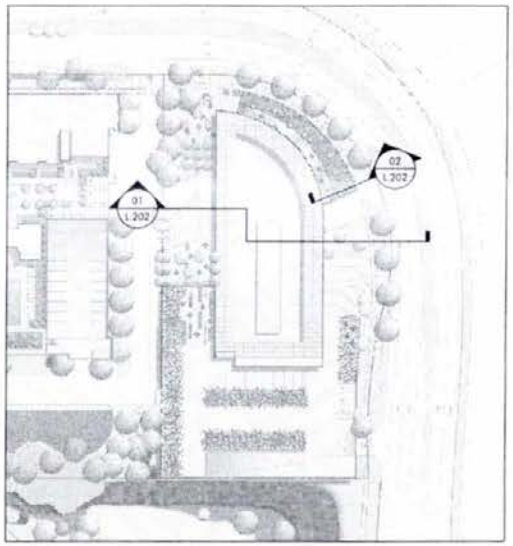
FILE No.

SHEET L.201




02 WESTPARK DRIVE - STREET SECTION (AVENUE)

SCALE : 1" = 10'-0"




REFERENCE PLAN

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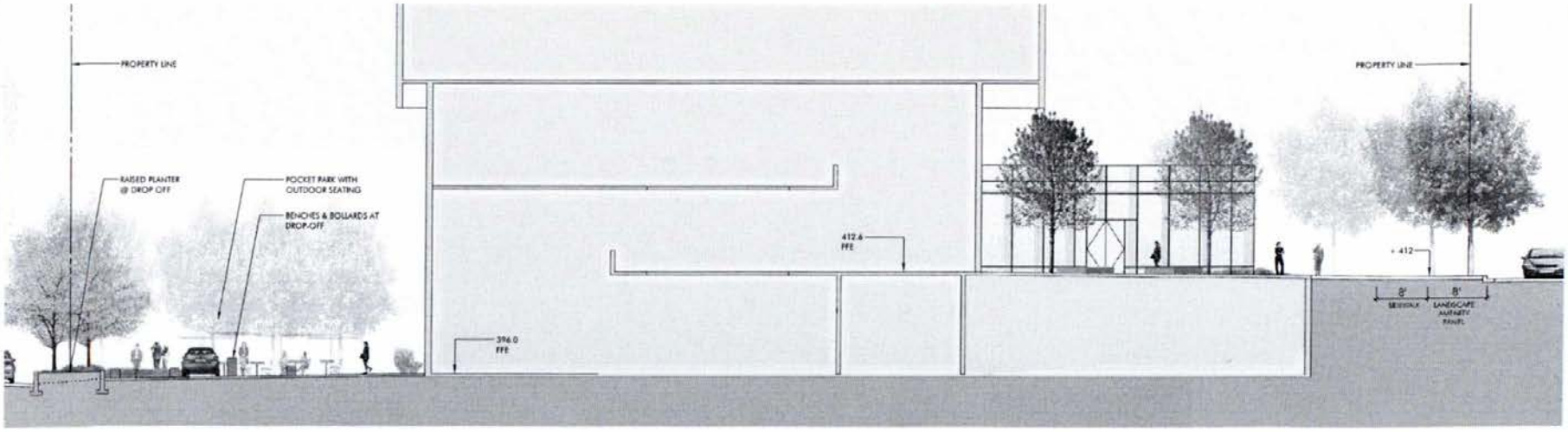


01 BLOCK F - AMT BUILDING SECTION ELEVATION

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

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STREET SECTIONS

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

ARBOR ROW - BLOCK "F"

7901 WESTPARK DRIVE

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 05/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

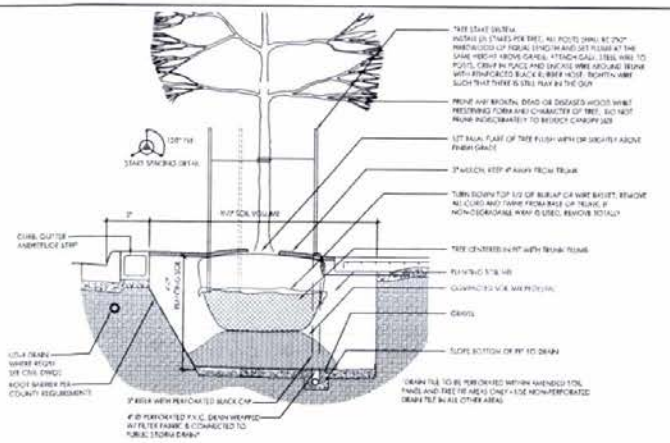
SCALE AS NOTED

JOB No.

DATE : February 24, 2012

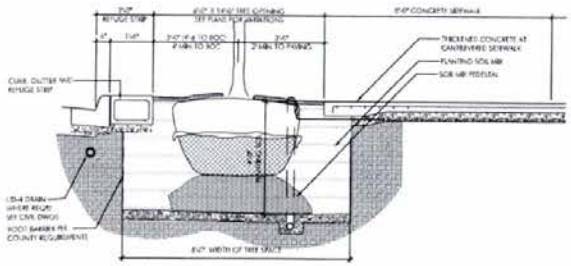
FILE No.

SHEET L.202



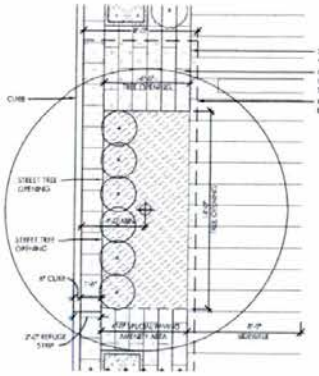
## 01 TREE PLANTING DETAIL - TYPICAL STREET TREE

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



## 02 TREE PLANTING DETAIL - TREE SOIL SPACE

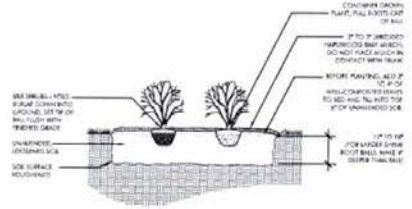
SCALE : 1/2"=1'-0"



## 03 PLAN VIEW - CANTILEVERED WALK ON WESTPARK

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

| ARBOR ROW OVERALL CDP - CANOPY COVERAGE | | |
|---|---|---|
| TOTAL 10-YEAR TREE CANOPY REQD : | 80,796 | sf |
| TOTAL 10-YEAR TREE CANOPY PROVIDED : | 81,675 | sf |
| **ARBOR ROW BLOCK 'F' & A1 - CONTRIBUTION TO CANOPY COVERAGE** | | |
| BLOCK 'F' 10-YR TREE CANOPY PROVIDED | 9,875 | sf |
| BLOCK A1 10-YR TREE CANOPY REQUIRED / PROVIDED | 45,680 | sf |
| SUBTOTAL | 54,555 | sf |
| **ARBOR ROW BLOCK 'B,C,D,E' - CONTRIBUTION TO CANOPY COVERAGE** | | |
| BLOCK 'B,C,D,E' 10 YR TREE CANOPY TO BE PROVIDED | 25,120 | sf |



## 04 SHRUB PLANTING DETAIL

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

LANDSCAPE NOTES :

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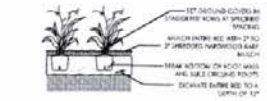
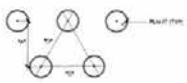
3. ALL STREET LEVEL TREES ARE PLANTED ON GRADE UNLESS OTHERWISE NOTED.



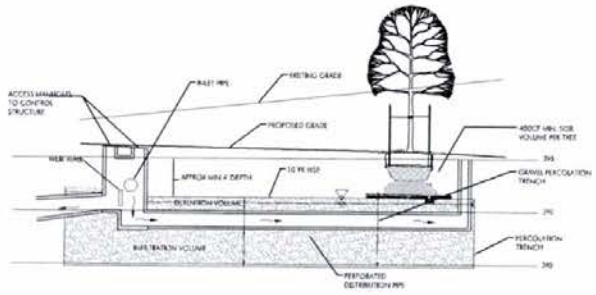


| PLANT SPACING | |
|---|---|
| 12" | 12" |
| 6"O.C. | 3"O.C. |
| 8"O.C. | 3"O.C. |
| 10"O.C. | 3"O.C. |
| 12"O.C. | 3"O.C. |
| 18"O.C. | 3"O.C. |
| 12"O.C. | 3"O.C. |
| 12"O.C. | 3"O.C. |
| 18"O.C. | 4"O.C. |
| 18"O.C. | 4"O.C. |
| 24"O.C. | 3"O.C. |
| 30"O.C. | 24"O.C. |
| 30"O.C. | 24"O.C. |

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

## 05 GC / PERENNIAL PL DETAIL

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



## 06 SECTION : GRAVEL TRENCH DRAIN

SCALE : 3/16"=1'-0"

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.

### LANDSCAPE COMPUTATIONS - ARBOR ROW - BLOCK "F"

**13-201: INTERIOR PARKING LOT LANDSCAPE CALCULATIONS**

| | |
|---|---|
| Total Parking Area (garage) | 23,500 (SEE L.101 FOR AREA OF |
| 5% Percent Required Coverage | 1,175 PARKING) |
| Provided: Proposed Covered Arbors w/ Vines | 5,800 |

**13-202: PERIPHERAL PARKING LOT LANDSCAPE CALCULATIONS**

| | |
|---|---|
| Abovegrade parking structures adjacent to public ROW (LF) | 126 (SEE L.101 FOR AREA |
| One (1) tree per forty (40) feet required | 3.2 AND DIMENSION OF FRONTAGE |
| Trees provided in landscape strip - rain garden or streetscape | 8 |

13-301: TRANSITIONAL SCREENING AND BARRIERS

Property Zoning Districts : PTC
Adjacent Zoning Districts : I-5, C-7, PDC, PTC(HI)

Transitional Screening and Barriers are Not Required

**13-401: TREE COVER CALCULATIONS**

Table 12.12: 10-year Tree Canopy Calculation Worksheet

| Step | | Totals | Reference |
|---|---|---|---|
| A. Tree Preservation Target and Statement | | | see § 12-0506.2 for list of required elements and worksheets |
| A1 | Place the Tree Preservation Target calculations and statement here preceding the 15-year tree canopy calculations | | |
| **B. Tree Canopy Requirement** | | | |
| B1 | Identify gross site area | 80,801 | § 12-0511.1A |
| B2 | Subtract area dedicated to parks, road frontage, and | 4,629 | § 12-0511.1B |
| B3 | Subtract area of exemptions | 0 | § 12-0511.1C(1) |
| B4 | Adjusted Gross Site Area (B1 - B3) | 76,328 | |
| B5 | Identify site's zoning and/or use | PTC | |
| B6 | Percentage of 10-year Tree Canopy Required | 10% | § 12-0510.1 and Table 12.4 |
| B7 | Area of 10-year Tree Canopy Requirements requested | 7,633 | |
| B8 | Modification of 15-year tree canopy requirements requested? If B8 is yes, then list plan sheet where modification request is located | No Yes or No | Sheet number |
| **C. Tree Preservation** | | | |
| C1 | Tree Preservation Target Area | 0 | 12-0506.3A(1) |
| C2 | Total canopy area meeting standards of § 12-0400 C2 x 1.25 | 0 | § 12-0515.3B |
| C4 | Total canopy area provided by unique or valuable forest or undeveloped communities C4 x 1.5 | 0 | § 12-0510.3B(1) |
| C6 | Total of canopy area provided by "Heritage," "Memorial," "specimen," or "champion" trees C6 x 1.5 to 2.0 | 0 | § 12-0510.3B(2) |
| C7 | Canopy area of trees within Resource Protection Areas and 100-year floodplains C8 x 1.0 | 0 | |
| C9 | Total of C3, C5, C7 and C9 | 0 | § 12-0510.3C(1) If area of C10 is less than B7 then remainder of requirement must be met through new planting - go to D |
| C10 | | 0 D | |
| **D. Tree Planting** | | | |
| D1 | Area of canopy to be met through tree planting (B7-C10) | 7,633 | |
| D2 | Area of canopy planted for air quality benefits X 1.5 | 0 | § 12-0510.4B(1) |
| D3 | Area of canopy planted for energy conservation X 1.5 | 0 | § 12-0510.4B(2) |
| D4 | Area of canopy planted for water quality benefits X 1.25 | 0 | § 12-0510.4B(3) |
| D5 | Area of canopy planted for wildlife benefits X 1.5 | 0 | § 12-0510.4B(4) |
| D6 | Area of canopy provided by native trees X 1.5 | 0 | § 12-0510.4B(5) |
| D7 | Area of canopy provided by mature cultivars and varieties X 1.25 | 0 | § 12-0510.4B(6) |
| D8 | Area of canopy provided through tree seedlings X 1.0 | 0 | § 12-0510.4D(1) |
| D9 | Area of canopy provided through native shrubs X 1.0 | 0 | § 12-0510.4D(1) Must not exceed 33% of D14 |
| D10 | Percent of D14 represented by D15 | 0 | |
| D11 | Total of canopy area provided through tree planting | 6,875 | |
| D12 | Is an offsite planting relief requested? | No Yes or No | |
| D13 | Tree bank or Tree Fund? | | § 12-0512 |
| D14 | Canopy area requested to be provided through offsite banking or tree fund | 0 | |
| D15 | Amount to be deposited into the Tree Preservation and Planting Fund | 0 | |
| **E. Total of 10-year Tree Canopy Provided** | | | |
| E1 | Total of Canopy Provided through tree preservation (C10) | 0 | 12-0506.3A(1) |
| E2 | Total of canopy area provided through tree planting (D17) | 6,875 | |
| E3 | Total of canopy area provided through offsite mechanism (D15) | 0 | Total of E1 through E3 Area should meet or |
| E4 | Total of 10-year Tree Canopy Provided = (E1+E2+E3) | 6,875 | exceed area required by B7 |

### ARBOR ROW BLOCK 'F' (AMT SITE) : PLANTING LIST & CANOPY COVERAGE

| KEY | BOTANICAL NAME | COMMON NAME | QTY. | STOCK SIZE | STOCK TYPE | 10 YR TREE CANOPY FT² | TREE CANOPY SUB-TOTAL FT² | REMARKS |
|---|---|---|---|---|---|---|---|---|
| | Category I Deciduous Trees | | | | | | | |
| QB | Quercus bicolor Swamp white oak | Columnar Engles Oak | 4 | 2" cal. | B&B | 75 | 270 | single leader, full branching, symmetrical roof |
| | Category II Deciduous Trees | | | | | | | |
| AG | Amelanchier laevis | Allegheny Serviceberry | 5 | 2" cal. | B&B | 120 | 600 | multistem - 3 stems minimum, full branching |
| | Category III Deciduous Trees | | | | | | | |
| AG | Acer ginnala | Amur Maple | 6 | 3" cal. | B&B | 175 | 750 | multistem - 3 stems minimum, full branching |
| GT | Gleditsia triacanthos inermis | Honeylocust, thornless | 15 | 3" cal. | B&B | 175 | 2,730 | single leader, full branching |
| NS | Nyssa sylvatica | Black Gum, Tupelo | 4 | 3" cal. | B&B | 175 | 700 | single leader, full branching, symmetrical roof |
| | Category IV Deciduous Trees | | | | | | | |
| PA | Platanus x acerifolia 'Bloodgood' | Bloodgood London Planetree | 10 | 2" cal. | B&B | 250 | 2,500 | single leader, full branching, symmetrical roof |
| QP | Quercus palustris | Pin Oak | 6 | 2" cal. | B&B | 250 | 1,500 | single leader, full branching, symmetrical roof |
| | | | | | | TOTAL 10-YEAR TREE CANOPY PROVIDED BY PLANTING | 6,875 | |

Note: Plant sizes are provided in caliper or gallons based on tree size. Final species selection may vary from this list but will match tree canopy type.

WALTER L. PHILLIPS INCORPORATED
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Landscape Architects • Arborists
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AMT The Association for Manufacturing Technology
7901 West Park Drive
McLean, Virginia 22102-4206
800-524-0475

PLANTING DETAILS AND SCHEDULE

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
**ARBOR ROW - BLOCK "F"**
**7901 WESTPARK DRIVE**
**PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA**

| PLAN STATUS | |
|---|---|
| 09/25/12 | PER COUNTY COMMENTS |
| 07/25/12 | PER COUNTY COMMENTS |
| 06/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | AS NOTED |
| JOB No. | |
| DATE : | February 24, 2012 |
| FILE No. | |
| SHEET | L.301 |

## 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"

## 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 22" x 32"

## BENCHES

OPT 3
MAKE: LANDSCAPE FORMS
MODEL: REST
SIZE: 26 3/4" x 33 3/4" x 80"

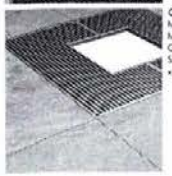
OPT 4
MAKE: LANDSCAPE FORMS
MODEL: NU
STEEL & HARDWOOD
SIZE: 8'-6" Length

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: NEOLIMANO
ALUMINUM AND HARDWOOD
SIZE: 27" x 31" x 69"
*SINGLE SEAT TO MATCH BENCH

## 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
AT106 POLE WITH AT63S 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

## TRASH RECEPICLES

OPT 1
MAKE: VICTOR STANLEY, INC
MODEL: SDC-24 Stainlstee
SIZE: 24-gallon

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

## L.I.D. BASINS

## VEHICULAR BOLLARDS

OPT 2 (RIGHT)
MAKE: BEGA
MODEL: STAINLESS BOLLARD WITH LOUVER
SIZE: 41 3/4"

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

## 01 SITE FURNISHING EXHIBITS

SCALE : NTS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STREETSCAPE ELEMENTS

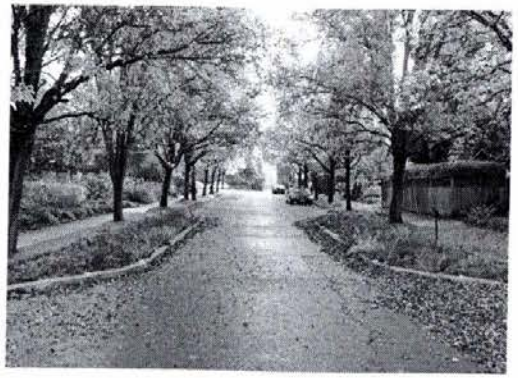
THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY
**ARBOR ROW - BLOCK "F"**
**7901 WESTPARK DRIVE**
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 03/23/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: AS SHOWN
JOB No.
DATE: February 24, 2012
FILE No.
SHEET L.501

## SUSTAINABILITY STRATEGIES:

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



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.

WALTER L. PHILLIPS INCORPORATED

KGD

AMT

SUSTAINABILITY STRATEGIES

THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

ARBOR ROW - BLOCK "F"

7901 WESTPARK DRIVE

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 06/25/12 | PER COUNTY COMMENTS |
| 07/23/12 | PER COUNTY COMMENTS |
| 09/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: NTS

JOB No:

DATE: February 24, 2012

FILE No:

SHEET L.502

RECEIVED
Department of Planning & Zoning
OCT 05 2012
Zoning Evaluation Division

# ARBOR ROW - BLOCK E

PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

## FINAL DEVELOPMENT PLAN

FDP 2011-PR-023-03
(CONCURRENT RZ/CDP 2011-PR-023)

### CIVIL SHEET INDEX


| | |
|---|---|
| C1.0 | COVER SHEET |
| C2.0 | GENERAL NOTES AND CORRESPONDANCE |
| C2.1 | TABULATIONS AND WAIVERS |
| C3.0 | CONTEXT PLAN AND VICINITY MAP |
| C4.0 | OVERALL DEVELOPMENT PLAN |
| C5.0 | EXISTING CONDITIONS PLAN |
| C6.0 | FINAL DEVELOPMENT PLAN PHASE I CONDITIONS |
| C6.1 | FINAL DEVELOPMENT PLAN PHASE II CONDITIONS |
| C7.0 | WESTPARK DRIVE ROADWAY STRIPING AND CROSS SECTION |
| C7.1 | JONES BRANCH DRIVE EXTENSION ROADWAY STRIPING AND CROSS SECTIONS |
| C7.2 | FIRE VEHICULAR ACCESS EXHIBIT |
| C8.0 | ADEQUATE OUTFALL AND SWM CHECKLIST |
| C8.0.1 | ADEQUATE OUTFALL AND SWM CHECKLIST |
| C8.1 | SWM & BMP NARRATIVE |
| C9.0 | CONCEPTUAL SWM PLAN |
| C9.1 | BLOCK E SWM COMPUTATIONS (1 OF 2) |
| C9.2 | BLOCK E SWM COMPUTATIONS (2 OF 2) |
| C10.0 | LOW IMPACT DEVELOPMENT CONCEPT PLAN |
| C11.0 | EXISTING VEGETATION MAP |


### ARCHITECTURAL SHEET INDEX


| | |
|---|---|
| A-0.1 | PLANS |
| A-0.2 | SECTIONS A-A, B-B, C-C |
| A-0.3 | PROPOSED DEVELOPMENT WITH PROPOSED NEIGHBORING PROPERTIES |
| A-0.4 | SHADOW STUDY |
| A-0.5 | ELEVATIONS |
| A-0.6 | ELEVATIONS - BASE |
| A-0.7 | VIEWS - ENTRANCE |
| A-0.8 | VIEWS - WESTPARK DRIVE EAST |
| A-0.9 | ROOF VIEWS |


### LANDSCAPE ARCHITECTURAL SHEET INDEX


| | |
|---|---|
| L0.01 | URBAN PARKS PLAN |
| L0.02 | REFERENCE LANDSCAPE PLAN |
| L0.03 | ILLUSTRATIVE PLAN |
| L1.01 | LANDSCAPE PLAN - STREET LEVEL |
| L1.02 | LANDSCAPE PLAN - STREET LEVEL |
| L1.03 | LANDSCAPE PLAN - ROOF TERRACES |
| L2.01 | SITE & STREET SECTIONS |
| L2.02 | STREET SECTIONS |
| L3.01 | PLANTING DETAILS AND SCHEDULE |
| L3.02 | PLANTING DETAILS AND SCHEDULE |
| L5.01 | STREETSCAPE ELEMENTS |
| L5.02 | SUSTAINABILITY STRATEGIES |
| 48 | TOTAL SHEETS |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LANDSCAPE ARCHITECTURE:
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SUITE 320
ALEXANDRIA, VIRGINIA 22314
703.548.5010

ATTORNEYS:
Hunton & Williams LLP
1751 PINNACLE DRIVE
SUITE 1700
McLEAN, VIRGINIA 22102
703.714.7400

OCTOBER 5, 2012
AUGUST 20, 2012
JULY 23, 2012
MAY 25, 2012
FEBRUARY 24, 2012
SHEET C1.0

## NOTES:

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

| TAX MAP # | OWNER | DEED BOOK / PAGE | ACREAGE |
|---|---|---|---|
| 029-4-{(7)}-0001 | Franklin 7903 Westpark LLC | 21145/0045 | 2.00 AC |
| 029-4-{(7)}-0002 | Grayson 7913 Westpark LLC | 21145/0080 | 2.01 AC (PORTION OF) |

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 APPLICATION AREA IS APPROXIMATELY 3.14 ACRES (INCLUDES ALL OF LOT 1 AND APPROXIMATELY 1.14 ACRES OF LOT 2), CURRENTLY ZONED C-3 (OFFICE) HC, AND SC, SUBJECT TO PROFFERS, AND CONSTITUTES "BLOCK E" OF THE PROPOSED ARBOR ROW DEVELOPMENT.

3. THE SUBJECT PROPERTY LIES WITHIN "SUBAREA TWO SOUTH WEST PARK" OF THE NORTH TYSONS CENTRAL 123 SUBDISTRICT" OF THE TYSONS CORNER URBAN CENTER PLAN." THE PROPOSED DEVELOPMENT IS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE COMPREHENSIVE PLAN AS DESCRIBED IN THE APPLICANT'S STATEMENT OF JUSTIFICATION.

4. THE SUBJECT PROPERTY IS PART OF CONCURRENT REZONING APPLICATION RZ/CDP 2011-PR-023 WITH A PROPOSED ZONING CATEGORY OF PTC, AND IS INCLUDED AS PART OF PENDING APPLICATION PCA-88-D-005-7

5. THE TOPOGRAPHIC INFORMATION ASSOCIATED WITH LOTS 1 AND 2 ARE AT A CONTOUR INTERVAL OF TWO (2) FEET BASED ON FIELD RUN SURVEY COMPLETED BY BOWMAN CONSULTING IN 2011.

6. THE BOUNDARY INFORMATION ASSOCIATED WITH LOTS 1 AND 2 IS BASED ON RECORDED PLATS AND DEEDS AND A FIELD RUN SURVEY PREPARED BY BOWMAN CONSULTING GROUP COMPLETED IN APRIL 2010.

7. THERE ARE TWO EXISTING OFFICE BUILDINGS ON THE SUBJECT PROPERTY, INCLUDING APPROXIMATELY 81,000 S.F. AREA WITHIN LOT 2 AND 21,500 S.F. WITHIN LOT 1, AND ASSOCIATED SURFACE PARKING LOTS.

8. THE COUNTY TRAILS MAP IDENTIFIES AN ON ROAD BIKE TRAIL ALONG THE FRONTAGE OF THE SUBJECT PROPERTY. TRAILS AND BICYCLE LANES SHALL BE PROVIDED AS SHOWN ON THE FDP AND IN ACCORDANCE WITH THE PROFFERS.

9. THE PROPERTY IS LOCATED IN THE BLUE PLAINS/SCOTT'S RUN E-1 SANITARY SEWER DISTRICT WATERSHED, AND THE SCOTTS RUN STORM DRAINAGE WATERSHED.

10. THERE ARE NO AREAS OF LOTS 1 AND 2 WITHIN A RPA OR FLOODPLAIN ACCORDING TO FAIRFAX COUNTY GIS CHESAPEAKE BAY MAPS.

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 OR UTILITY COMPANY AS MAY BE APPROPRIATE FOR THE PROPOSED DEVELOPMENT. EXISTING UTILITIES SHOWN HEREON WERE OBTAINED FROM FIELD OBSERVATION/SURVEY AVAILABLE RECORDS, AND COUNTY RECORD GIS INFORMATION.

16. TO THE BEST OF OUR KNOWLEDGE THE PROPOSED DEVELOPMENT CONFORMS TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS, WITH THE EXCEPTION OF THOSE ITEMS LISTED HEREIN.

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/BMP SURFACE PONDS AND ON-SITE UNDERGROUND FACILITY AS CONCEPTUALLY SHOWN ON THE FDP. THE APPLICANT RESERVES THE RIGHT TO PROVIDE TEMPORARY STORM WATER MANAGEMENT AND BMP FACILITIES (I.E. PONDS, INFILTRATION SYSTEMS, UNDERGROUND VAULTS ETC) IF THE DEVELOPMENT IS TO OCCUR IN PHASES. REFER TO "SWM DEVIATION NARRATIVE" ON SHEET C9.0.

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. FINAL SELECTION MAY VARY AT THE TIME OF SITE PLAN, BUT WILL BE CONSISTENT WITH THE QUALITY OF THE DESIGN REPRESENTED HEREIN. ADDITIONAL SITE AMENITIES AND FEATURES SUCH AS PLANTERS, GAZEBOS, BENCHES OTHER SEATING AREAS, WALKWAYS, TRELLISES, WATER FOUNTAINS OR SPECIAL FEATURES, PUBLIC ART, SIGNS, WALLS, LIGHTS, UTILITY STRUCTURES AND SIMILAR FEATURES NOT REPRESENTED HEREIN MAY BE PROVIDED AS LONG AS THE RESULTANT DEVELOPMENT IS IN SUBSTANTIAL CONFORMANCE WITH THE QUALITY REPRESENTED ON THE GRAPHICS.

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, PARTICULARLY THROUGH APPROPRIATE SITE DESIGN, SIGNIFICANT LANDSCAPING, PROVISION OF SITE AMENITIES AND THE DESIGN OF AN APPROPRIATE STREETSCAPE THAT COMPLIMENTS THE EXISTING COMMUNITY.

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 AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 116.4, 302.4, AND 355; ANY HAZARDOUS WASTE AS SET FORTH IN COMMONWEALTH OF VIRGINIA/DEPARTMENT OF WASTE MANAGEMENT VR 672-10-1 - VIRGINIA HAZARDOUS WASTE MANAGEMENT REGULATIONS; AND/OR ANY PETROLEUM PRODUCTS AS DEFINED IN TITLE 40, CODE OF FEDERAL REGULATIONS PART 280.

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 AS DESCRIBED IN SECTION 16-102. OF THE ZONING ORDINANCE.

23. PARKING WILL BE PROVIDED IN A COMBINATION OF ABOVE AND BELOW GRADE PARKING STRUCTURE AND SURFACE (ROADWAY) SPACES AND IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 6-509 OF THE ZONING ORDINANCE. THE APPLICANT RESERVES THE RIGHT TO PROVIDE MORE OR LESS THAN THE NUMBER OF PARKING SPACES PRESENTED HEREON PROVIDED THAT THE AMOUNT OF PARKING SPACES WILL BE SUFFICIENT TO COMPLY WITH ARTICLE 6-509 AND ARTICLE 11, PART 1 OF THE ZONING ORDINANCE. PARKING PROVIDED WITHIN THE GARAGE STRUCTURE MAY INCLUDE TANDEM AND VALET SPACES.

24. ARCHITECTURAL DESIGN AND LANDSCAPE FEATURES SHOWN ARE SUBJECT TO MODIFICATIONS, PROVIDED THAT THE GENERAL DESIGN STRATEGY, QUALITY AND CHARACTERISTICS OF THE PROJECT ARE MAINTAINED AND IN SUBSTANTIAL CONFORMANCE WITH THE CDP. THE EXACT LOCATION, SHAPE AND SIZE OF THE PROPOSED BUILDING(S), WINDOWS, BALCONIES, AND PARKING STRUCTURE(S) SHOWN ON THE GRAPHIC ARE SUBJECT TO ADJUSTMENT AND REFINEMENT WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN SO LONG AS THEY REMAIN IN SUBSTANTIAL CONFORMANCE WITH THE FDP.

25. DEDICATION OF A PORTION OF THE APPLICATION AREA IS PROPOSED FOR A PORTION OF WESTPARK DRIVE. APPLICANT RESERVES THE RIGHT TO UTILIZE AREA OF DEDICATION IN THE CALCULATION OF PROPOSED DENSITY AND F.A.R. PER ARTICLE 2-308-4 OF THE ZONING ORDINANCE.

26. PROPOSED SIGNAGE WILL BE PROVIDED IN ACCORDANCE WITH THE ZONING ORDINANCE OR A COMPREHENSIVE SIGN PLAN AS MAY BE APPROVED BY THE PLANNING COMMISSION.

27. TRANSITIONAL SCREENING IS NOT REQUIRED AS SET FORTH IN ARTICLE 6-510.C OF THE ZONING ORDINANCE.

28. APPLICANT RESERVES THE RIGHT TO UTILIZE EXISTING SURFACE PARKING FOR INTERIM CONDITION IN AREAS RESERVED FOR FUTURE DEVELOPMENT. SEE PROFFERS.

29. THE SUBJECT PROPERTY MAY BE SUBDIVIDED IN THE FUTURE FOR THE PURPOSE OF SALE, PHASING, OR JOINT VENTURE. ANY PROPOSED SUBDIVISION SHOWN ON THE FDP MAY BE MODIFIED ADMINISTRATIVELY BY THE DIRECTOR OF DPWES WITHOUT REQUIRING AN AMENDMENT OF THE FDP.

30. PROPOSED ROADWAY IMPROVEMENTS (ENTRANCES, CURBING, MEDIAN ETC) MAY REQUIRE EXCEPTION FROM VDOT 'ACCESS MANAGEMENT DESIGN STANDARDS' AND P.F.M. (AS MAY BE DETERMINED AT FINAL SITE PLAN APPLICATION) IN ORDER TO CONFORM WITH THE TYSONS TRANSPORTATION DESIGN STANDARDS FOR THE TYSON URBAN CENTER. APPROVAL OF SUCH EXCEPTIONS SHALL NOT REQUIRE AMENDMENT TO THE FDP.

## NOTES (CONTINUED):

31. INDIVIDUAL BUILDING HEIGHTS AND NUMBER OF FLOORS/STORIES SHOWN ARE CONCEPTUAL AND MAY BE CHANGED PROVIDED THE PROPOSED MAXIMUM BUILDING HEIGHT AND GARAGE HEIGHT IS NOT EXCEEDED, AND ARE IN SUBSTANTIAL CONFORMANCE WITH THE FDP.

32. ACCESSORY USES AS IDENTIFIED WITHIN ARTICLE 6-502 OF THE ZONING ORDINANCE MAY BE PROVIDED WITHOUT REQUIRING AMENDMENT TO THE FDP, INCLUDING BUT NOT LIMITED TO ACCESSORY USES, ATMs, BUSINESS SERVICE and SUPPLY SERVICE ESTABLISHMENTS, QUICK SERVICE FOOD STORES, FAST FOOD RESTAURANTS, HEALTH CLUBS and similar COMMERCIAL RECREATIONAL USES, COMMUNITY USES, EATING ESTABLISHMENTS, FINANCIAL INSTITUTIONS, GARMENT CLEANING ESTABLISHMENTS, OFFICES, PERSONAL SERVICE ESTABLISHMENTS, PUBLIC and QUASI PUBLIC USES, RETAIL SALES ESTABLISHMENTS AND SIMILAR USES.

DRIVE-IN FINANCIAL INSTITUTIONS AND CHILD CARE CENTERS SHALL BE PERMITTED, SUBJECT TO APPROVAL OF A FDPA OR S.E.

PURSUANT TO PARAGRAPH 20 OF SECTION 10-102 OF THE ZONING ORDINANCE, "LIVE-WORK UNITS" SHALL BE DEMED A PERMITTED "ACCESSORY USE"

33. "PRIVATE ACCESS ROADS" SHOWN ON THE FDP SHALL NOT BE CONSIDERED "STREETS" AND, AS SHOWN, MAY DEVIATE FROM THE TYSONS TRANSPORTATION DESIGN STANDARDS AND STREETSCAPE RECOMMENDATIONS OF THE COMPREHENSIVE PLAN.

34. 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

35. ONE ELECTRIC CHARGING STATION SERVING TWO SPACES SHALL BE PROVIDED WITH THE GARAGE.


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GENERAL NOTES AND CORRESPONDANCE

# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-03

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 3/28/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE H: NO SCALE

JOB No.

DATE : February 24, 2012

FILE No. 7403-12-001

SHEET C2.0

## WAIVER / MODIFICATION REQUESTS (AS APPROVED WITH RZ/CDP 2011-PR-023) FOR INFORMATION:

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 6-505.7 REQUIRING THE DESIGNATION OF SPECIFIC OUTDOOR DINING AREAS ON THE CDP/FDP. RATHER, OUTDOOR DINING MAY BE PROVIDED IN ANY AREA WHERE THE USE INCLUDES DINING ACTIVITY AND WILL BE INDICATED AT THE TIME OF FINAL SITE PLAN.

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

- AS ALLOWED WITHIN ZONING ORDINANCE SECTION 10-104.3.E AND C APPLICANT REQUESTS A MODIFICATION 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 AS INDICATED ON THE CDP.

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, FOR RESIDENTIAL AND OFFICE USES. SUCH STACKED SPACES IN ACCORDANCE WITH SECTION 11-101(1) AND 6-509(1) MAY COUNT TOWARD REQUIRED PARKING SPECIFIED IN THE ZONING ORDINANCE, AND SHALL BE PROVIDED IN ACCORDANCE WITH THE PARKING PLAN SUBMITTED WITH THIS APPLICATION.
- 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 IS REQUESTED IN FAVOR OF THOSE WHICH ARE SHOWN ON THE CDP.
- MODIFICATION OF SECTION 11-202(4) REQUIRING MINIMUM DISTANCE OF FORTY FEET (40') OF A LOADING SPACE IN PROXIMITY TO TRAVEL WAYS OR STREETS, AS PERTAINS TO BLOCK A, TO THAT AS DEMONSTRATED ON THE CDP.

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, AS ALLOWED PER SECTION 13-202, PARA 6, TO THAT SHOWN ON THE CDP AND DESCRIBED BELOW.
  - a. FOR INTERIM SURFACE PARKING LOTS: INTERIOR LANDSCAPING WILL BE DEMONSTRATED ON SUBSEQUENT FDP APPLICATIONS AND WILL UTILIZE EXISTING VEGETATION WITHIN PARKING LOTS, TO THE EXTENT POSSIBLE.
  - b. FOR PROPOSED ABOVE GRADE PARKING STRUCTURES: INTERIOR LANDSCAPING MAY INCLUDE INNOVATIVE PLANTING DESIGN AND TECHNIQUES, INCLUDING BUT NOT LIMITED TO, OVERHEAD VEGETATIVE ARBORS.
  - c. WITHIN BLOCK 'C'- WAIVER OF THE INTERIOR PARKING LOT LANDSCAPE REQUIREMENTS FOR THE EXPOSED PARTIAL UPPER LEVEL, AS THE ELEVATION OF THE DECK IS APPROXIMATELY TEN (10') FEET BELOW THE SURROUNDING COURTYARD AND IS SCREENED FROM VIEW OF ADJACENT PROPERTIES BY ARCHITECTURAL ELEMENTS.
- MODIFICATION OF PERIPHERAL LANDSCAPE REQUIREMENTS SECTION 13-203-5, FOR ABOVE GRADE PARKING STRUCTURES AND INTERIM SURFACE LOTS AS ALLOWED BY SECTION 13-203, PARA 3, TO THAT SHOWN ON THE CDP AND DESCRIBED BELOW.
  - a. FOR INTERIM SURFACE PARKING LOTS: PERIPHERAL LANDSCAPING WILL BE DEMONSTRATED ON SUBSEQUENT FDP APPLICATIONS AND WILL UTILIZE EXISTING VEGETATION WITHIN PARKING LOTS, TO THE EXTENT POSSIBLE.
  - b. FOR PROPOSED ABOVE GRADE PARKING STRUCTURES: PERIPHERAL LANDSCAPING WILL BE PROVIDED USING TREES WITHIN URBAN STREETSCAPES (PER TYSONS URBAN DESIGN GUIDELINES) WHERE GARAGES ARE ADJACENT TO STREET FRONTAGE AND BY EXISTING TOPOGRAPHIC FEATURES OR OTHER URBAN DESIGN ELEMENTS WHERE GARAGES ARE ADJACENT TO NON STREET FRONTAGE.

ZONING ORDINANCE ARTICLE 16 – DEVELOPMENT PLANS

- WAIVER OF ZONING ORDINANCE SECTION 16-403 REQUIRING THE SUBMISSION OF A FINAL DEVELOPMENT PLAN APPLICATION ASSOCIATED WITH THE PUBLIC ROADWAY AND INFRASTRUCTURE PHASING EXHIBIT SHOWN WITHIN THE CDP.

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-(1) REQUIRING STREETSCAPE IMPROVEMENTS WITHIN THE R.P.A. ALONG WESTPARK DRIVE NEAR THE WESTERN PORTION OF BLOCK A, AND IN RETURN, PROVISION OF CONCRETE SIDEWALK AS SHOWN ON THE CDP.
- MODIFICATION OF SECTION 17-201-(2) AND (4) TO PROVIDE INTERIM ROAD AND TRAIL CONDITIONS ALONG THE WESTPARK DRIVE FRONTAGE OF BLOCK 'F' (AS SHOWN ON THE CDP), AS A RESULT OF THE CONSTRUCTION OF THE I-495 EXPRESS LANE IMPROVEMENTS AND IN ORDER TO TRANSITION THE ULTIMATE IMPROVEMENTS.

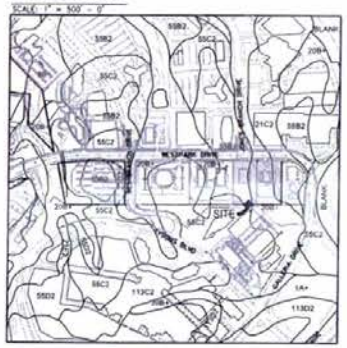
  WITH REGARD TO HANOVER PARCEL (T.M. #29-2-((15))-B-2):
  - WAIVER OF SECTIONS 17-201-3(B),4,12-14 REQUIRING THE CONSTRUCTION OR INSTALLATION OF THE FOLLOWING, BUT NOT LIMITED TO: INTER-PARCEL ACCESS, ROADWAY FRONTAGE IMPROVEMENTS, UTILITY RELOCATIONS, DRIVEWAYS, STREET LIGHTS OR OTHER IMPROVEMENTS OTHER THAN THOSE IDENTIFIED ON EXHIBIT 'A' OF THE PROFFERS.

PUBLIC FACILITIES MANUAL

- WAIVER OF PFM SECTION 6-0303.8, TO ALLOW STORM WATER MANAGEMENT FACILITIES (SWM AND BMP) TO BE PROVIDED WITHIN UNDERGROUND SYSTEMS WITHIN THE RESIDENTIAL BLOCKS OF THE PROPOSED DEVELOPMENT.
- MODIFICATION OF PFM SECTION 7-0800 TO ALLOW TANDEM/VALET PARKING SPACES, CONTROLLED BY BUILDING MANAGEMENT, AND THAT SUCH SPACES SHALL COUNT TOWARD REQUIRED PARKING.
- MODIFICATION OF SECTION 7-0802.2 (PARKING GEOMETRIC STANDARDS), TO ALLOW FOR UP TO 1.5 FEET OF PROJECTION OF STRUCTURAL COLUMNS INTO THE REQUIRED PARKING STALL AREA, THE PARKING STALLS AFFECTED BY SUCH STRUCTURAL COLUMNS SHALL COUNT TOWARD THE NUMBER OF REQUIRED PARKING SPACES FOR UP TO 10% OF THE TOTAL SPACES PROVIDED.
- MODIFICATION OF SECTION 12-0508 TREE PRESERVATION TARGET, AS ALLOWED BY DEVIATIONS DESCRIBED IN SECTION 12-0508.3A(1) THROUGH SECTION 12-0508.3A(3) AND AS DESCRIBED IN REQUEST LETTER ATTACHED ON SHEET C-2.2
- MODIFICATION OF SECTION 12-0511-4 FOR REQUIRED TEN PERCENT TREE CANOPY COVERAGE ON INDIVIDUAL LOTS/LAND BAYS, TO ALLOW FOR CANOPY TO BE CALCULATED ON THE OVERALL ARBOR ROW DEVELOPMENT AREA, AS DEMONSTRATED ON THE CDP HEREIN.

## SOILS MAP

SCALE: 1" = 500' - 0"




## SOILS CHART

FAIRFAX COUNTY SOILS DATA 2008

| SOIL NUMBER | SOIL SERIES | PROBLEM CLASS | DRAINAGE | SEPTIC FIELDS | EROSION POTENTIAL |
|---|---|---|---|---|---|
| 20B+ | MEADOWVILLE | B | MARGINAL | POOR | MODERATE |
| 21C2 | MANOR | C | GOOD | GOOD | HIGH |
| SBB2 | GLENELG | C | GOOD | GOOD | HIGH |
| SBC2 | GLENELG | C | GOOD | GOOD | HIGH |

**TABLE 3**

**(OVERALL ARBOR ROW RESIDENTIAL DENSITY TABULATION)**

- **1,682,030 GFA** AVAILABLE 'OVERALL' SITE AREA GFA PER COMP PLAN (Table 2:
  - 1,188,420 GFA (PROPOSED OFFICE BLOCKS B,C, & F)
  - 161,000 GFA (PROPOSED HOTEL BLOCK D)
  - 59,850 GFA (PROPOSED RETAIL- BLOCKS B,F)
- **= 353,235 GFA** AVAILABLE RESIDENTIAL GSF "ON-SITE"
- **+ 518,383 GFA** AVAILABLE FROM HANOVER SITE (345,522 SQF X 1.5 F.A.R)
- **= 871,618 GFA** "BASE" RESIDENTIAL AVAILABLE (353,235 SF + 518,383 SF)
- + 174,994 GFA WFDU BONUS (875,168 SF x 20%)
- **= 1,046,612 GFA** TOTAL RESIDENTIAL AVAILABLE

- = 300,776 GFA REQUESTED FROM SUPERLATIVE CONTRIBUTION
- **= 1,346,600 GFA** TOTAL RESIDENTIAL PROPOSED (BLOCKS A and E)

**TABLE 1**

**Site Tabulation**

| | | |
|---|---|---|
| Proposed Site Area | +/-136,788 Sq. Ft. | +/-3.14 AC |
| Area of Right of Way Dedication<br>West Park Drive | +/- 4,930 Sq. Ft. | 0.113 AC |
| Total Area for Density Purpose: | +/-136,788 Sq. Ft. (1) | +/-3.14 AC (1) |
| Existing Zone: C-3 (Office District)<br>Proposed Zone: PTC (Planned Tysons Corner Urban District (By RZ/CDP 2011-PR-023) | | |
| Proposed Gross Floor Area:<br>Floor Area Ratio | 516,600 Sq. Ft (2)<br>3.8 (3) | |

(1) Includes square footage reserved for density credit from proposed dedication of Westpark Drive (as allowed per Z.O. Section 2-308-4). Final area of dedication to be determined with final site plan.

(2) Density includes Superlative GFA for Public Facilities Contribution allocated from Hanover Parcel (TM # 29-2-((15))-B-2) and Bonus GFA for provision of WDU. Refer to Residential Density Tabulation Table 3

(3) FAR shown for Block E is demonstrated as a stand alone calculation for purposes of this FDP application. Refer to rezoning application RZ/CDP 2011-PR-023 for FAR calculation of entire zoning application area (including Blocks A-F).

**TABLE 2**

**Development Tabulation**

| Building | TIER 2 Allowable Building Height | Proposed Maximum Building Height(1)(2) | Proposed Maximum Penthouse Height (1)(2) | Proposed Stories (Floors (1) | Use (3) | Proposed GFA by Use (4) | Proposed Maximum Building GFA (4)(5) | Multi-Family Dwelling Units (6)(8) | Required Parking 1/4 - 1/2 mile (Per 1000 GFA) (6) Min | Required Parking 1/4 - 1/2 mile (Per 1000 GFA) (6) Max | Total Required Parking (6) Min | Total Required Parking (6) Max | Parking Provided (9) | Proposed Parking Ratio Per Use | Loading Space Required | Loading Space Provided |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | 175'-225' | 300' | N/A | 20 & 27 | Residential | 555,800 | 515,800 | 430-480 | 1.1 | 1.7 | 473-528 | 731-816 | 710 | 1.4 - 1.7 S.U. | | |
| | | | | | Retail/Services (3) | 7,000 | | | 0 | 6 | 0 | 12 | 12 | (7) | | |
| Total | | | | | | | 515,800 | 430-480 | | | 473-528 | 743-828 | 722 | | 3 | 2 |

(1) Individual building heights and number of floors/stories shown are conceptual and may be changed provided the proposed maximum building height listed above is not exceeded. (Refer to Architectural Site Sections for Average Grade Elevations)

(2) Building Heights include penthouse.

(3) Retail and/or Service use may include a variety of commercial type uses including but not limited to eating establishments and fast food restaurants (refer to note #32 sheet C2.3). Areas designated for retail use may also be converted to up to ten (10) 'Live Work' units as determined with final site plan, and as described in the proffers.

(4) The square footage for individual uses and building shown is conceptual. The Applicant reserves the right to transfer square footage between and within uses (residential or service/retail) and buildings provided the allowable overall FAR is not exceeded.

(5) Number of dwelling units/bedroom types may be changed and will be determined at the time of final site plan.

(6) Parking required and provided is estimated based on FDP documents. Number of required parking spaces may be changed based on the final dwelling unit count, final bedroom mix, final specific building uses, and final GFA, which is to be determined at the time of final site plan. The Applicant reserves 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.

(7) 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)

(8) The required number of WDU/ADUs will be determined at final site plan based on the total number of 'base' residential units constructed.

(9) Proposed minimum GFA shall be fifty percent (50%) of proposed maximum GFA.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TABULATIONS AND WAIVERS

# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-03

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 3/23/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE: NO SCALE

JOB No.

DATE: February 24, 2012

FILE No: 7403-12-001

SHEET C2.1

## VICINITY MAP

SCALE: 1" = 2000' - 0"

LEGEND:

EXISTING/PROPOSED PUBLIC ROADWAY

NOTE:
ARBOR ROW BLOCKS A-D,F ARE SHOWN FOR INFORMATION ONLY AS ASSOCIATED WITH OVERALL ARBOR ROW REZONING APPLICATION #RZ/COP 2011-PR-023.

GRAPHIC SCALE

( IN FEET )
1 inch = 200 ft.

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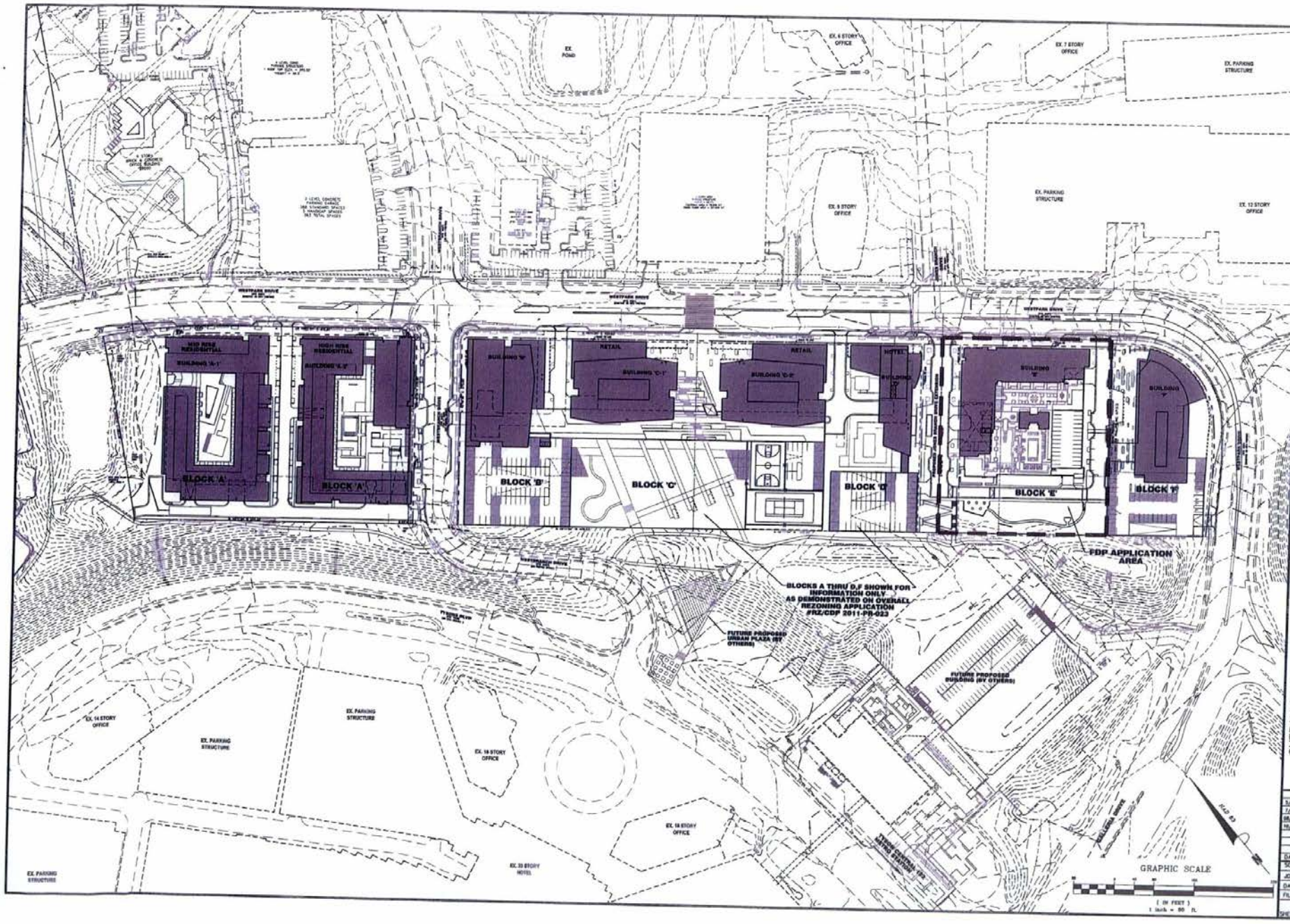
# CONTEXT PLAN AND VICINITY MAP

## ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/12 | PER COUNTY COMMENTS |
| 1/23/12 | PER COUNTY COMMENTS |
| 08/29/11 | PER COUNTY COMMENTS |
| 10/20/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE: 1" = 200'
JOB No.
DATE: February 24, 2012
FILE No. 7463-12-001
SHEET C3.0

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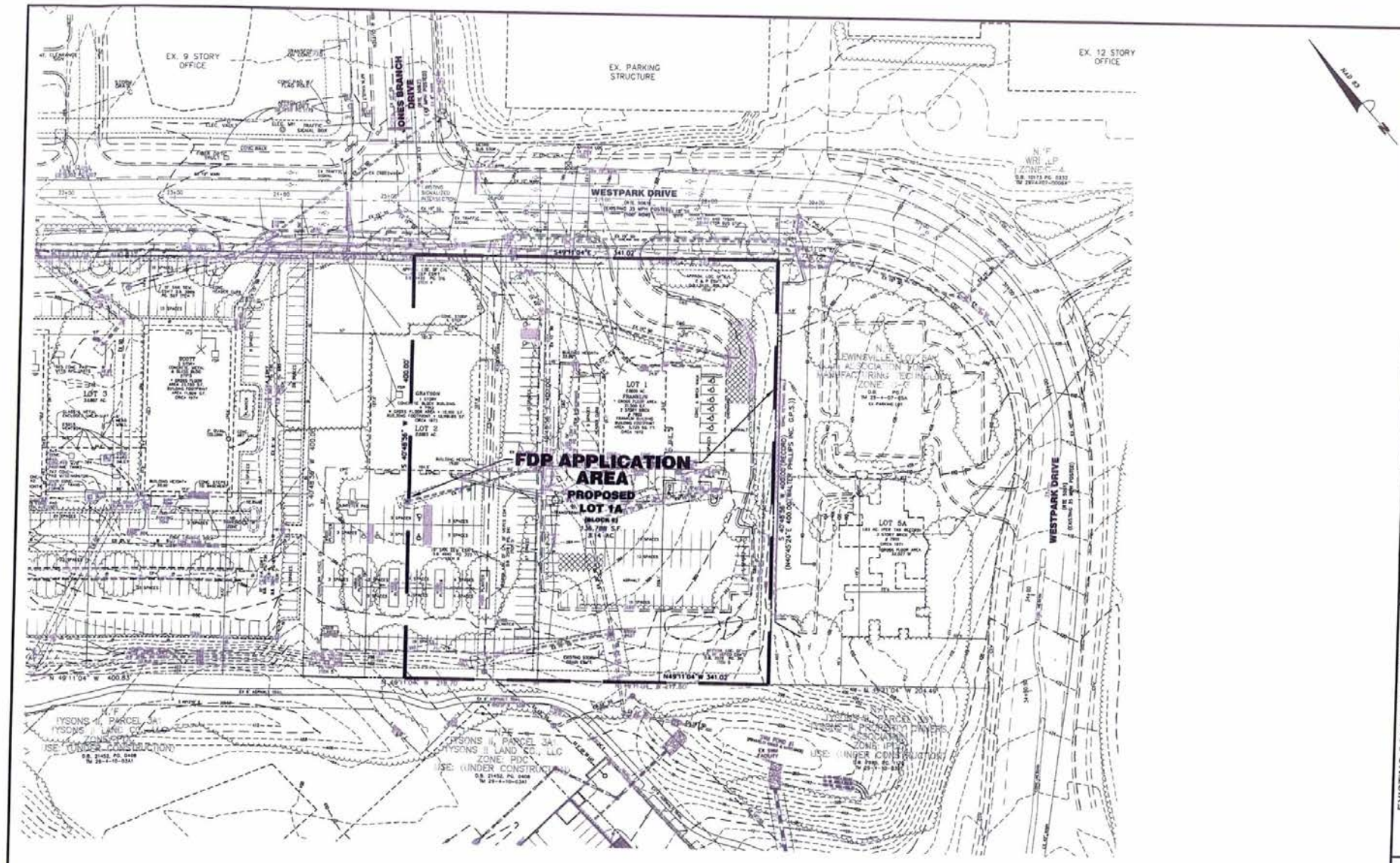
OVERALL DEVELOPMENT PLAN

# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE 1" = 80'
JOB No.
DATE February 24, 2012
FILE No. 7403-12-001
SHEET C4.0




NOTE:
THE PROPERTY LINE SHOWN ON THE FDP IS BASED ON RECORDED PLATS AND DEEDS FROM THE 1970'S AND MAY BE ADJUSTED BASED ON INFORMATION FROM RECENT FIELD SURVEYS AT TIME OF SITE PLAN.

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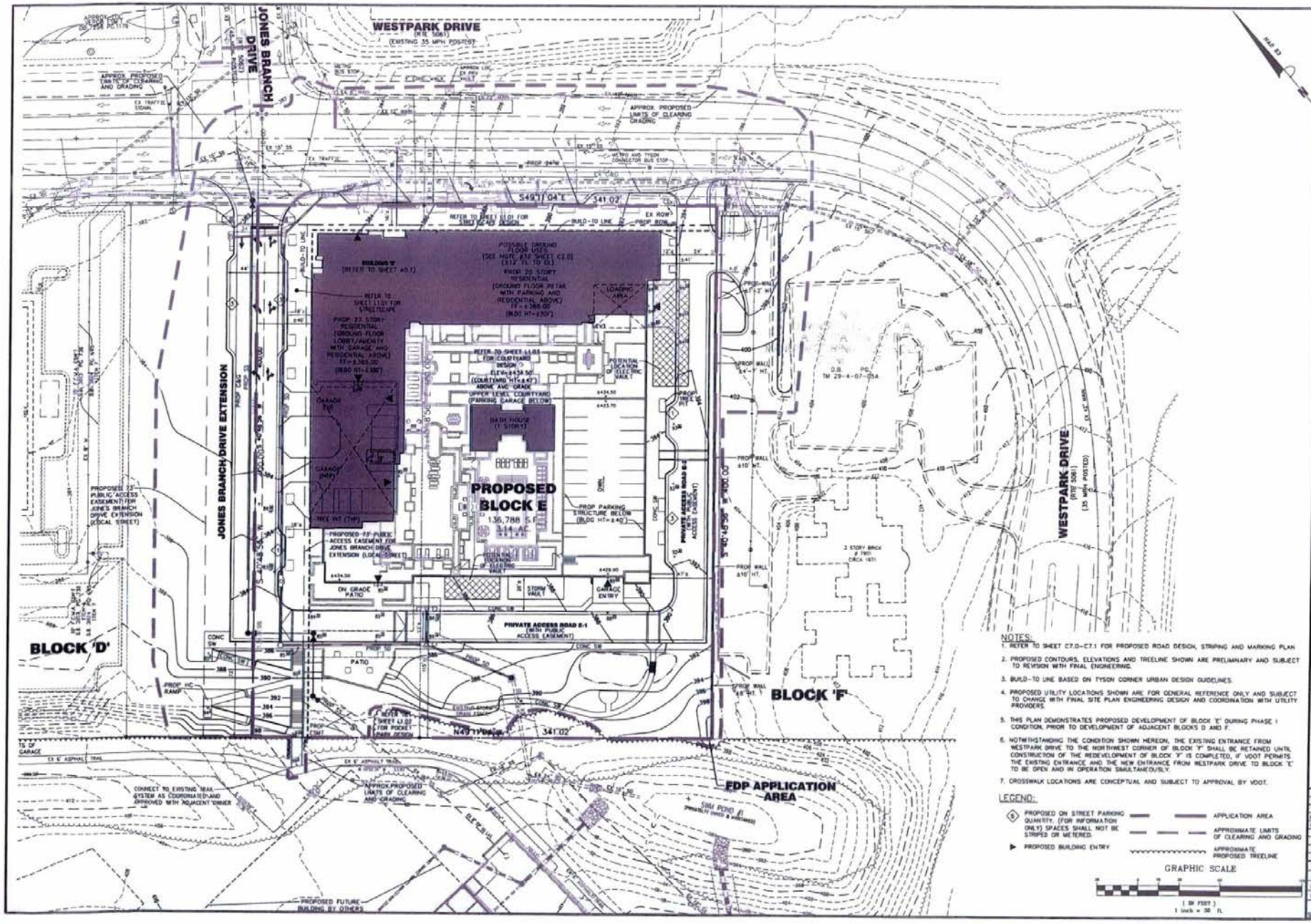
EXISTING CONDITIONS PLAN
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 3/23/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE 1" = 40'
JOB No.
DATE : February 24, 2012
FILE No. 7403-12-001
SHEET C5.0

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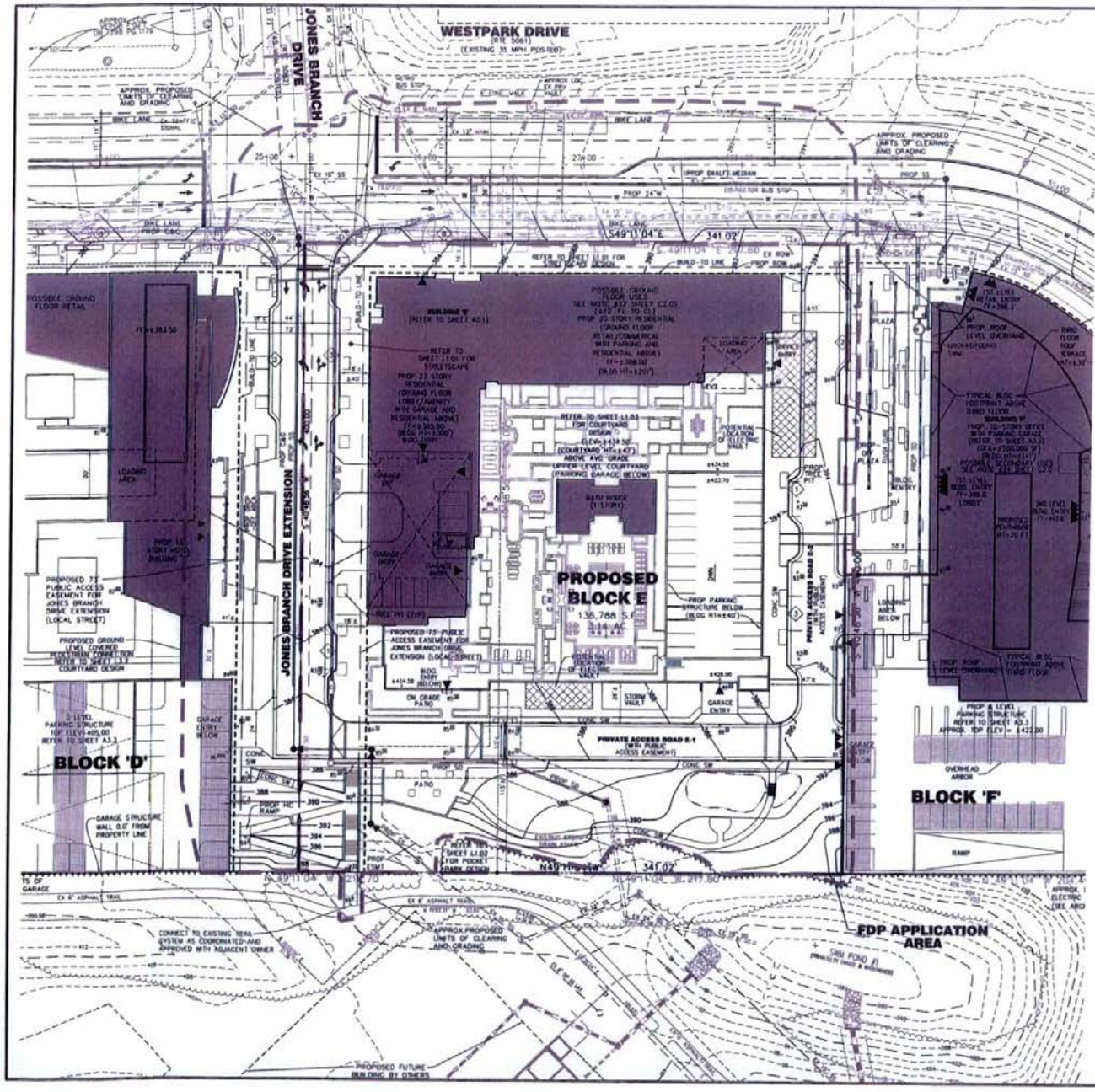
# FINAL DEVELOPMENT PLAN
## PHASE I CONDITIONS
# ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 3/20/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1"=30'
JOB No.
DATE : February 24, 2012
FILE No. 7403-12-001
SHEET C6.0




NOTES:

1. REFER TO SHEET C7.0–C7.1 FOR PROPOSED ROAD DESIGN, STRIPING AND MARKING PLAN
2. PROPOSED CONTOURS, ELEVATIONS AND TREE LINE SHOWN ARE PRELIMINARY AND SUBJECT TO REVISION WITH FINAL ENGINEERING.
3. BUILD–TO LINE BASED ON TYSON CORNER URBAN DESIGN GUIDELINES.
4. PROPOSED UTILITY LOCATIONS SHOWN ARE FOR GENERAL REFERENCE ONLY AND SUBJECT TO CHANGE WITH FINAL SITE PLAN ENGINEERING DESIGN AND COORDINATION WITH UTILITY PROVIDERS.
5. THIS PLAN DEMONSTRATES PROPOSED DEVELOPMENT OF BLOCK "E" IN THE ULTIMATE CONDITION AFTER THE BUILDOUT OF THE ARBOR ROW PROJECT. REFER TO SHEET C8.0 FOR INTERIM CONDITION OF BLOCK E INDIVIDUAL DEVELOPMENT.
6. CROSSWALK LOCATIONS ARE CONCEPTUAL AND SUBJECT TO APPROVAL BY VDOT.

LEGEND:

- APPLICATION AREA
- (6) PROPOSED ON STREET PARKING QUANTITY. (FOR INFORMATION ONLY) SPACES SHALL NOT BE STRIPED OR METERED.
- APPROXIMATE LIMITS OF CLEARING AND GRADING
- APPROXIMATE PROPOSED TREELINE
- ▶ PROPOSED BUILDING ENTRY

GRAPHIC SCALE

( IN FEET )
1 inch = 30 ft.

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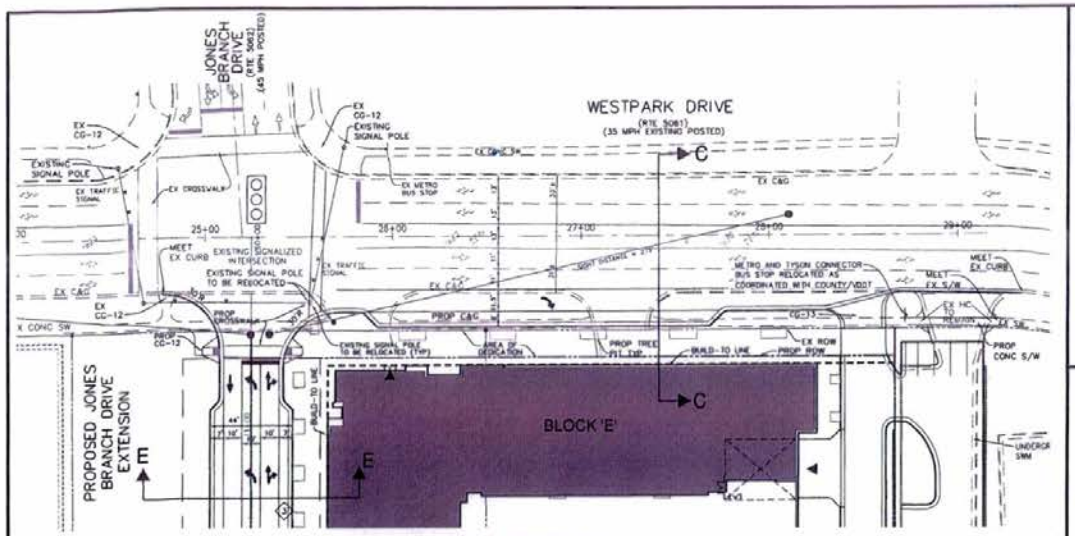
FINAL DEVELOPMENT PLAN
PHASE II CONDITIONS
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

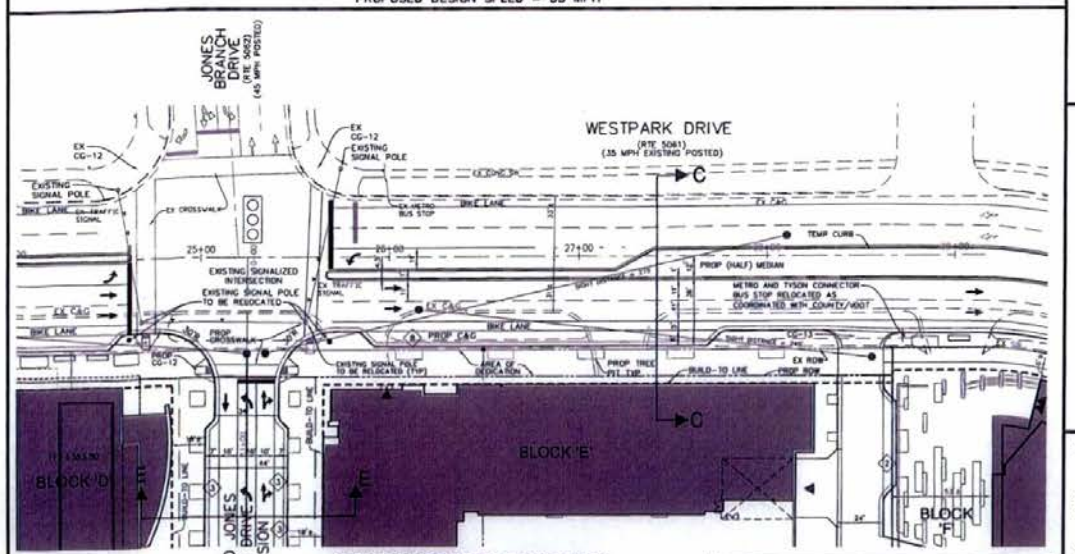
| PLAN STATUS | |
|---|---|
| 5/25/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1" = 30'
JOB No.
DATE : February 24, 2012
FILE No. 7403-12-001
SHEET C6.1



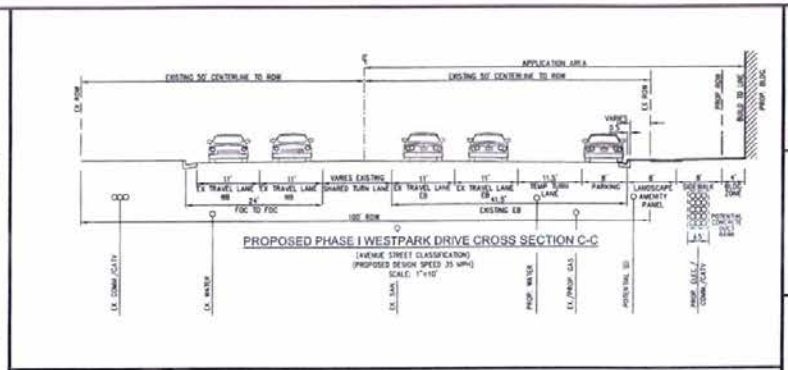

**WESTPARK DRIVE - ROUTE 5061**
**PROPOSED PHASE I**
(AVENUE CLASSIFICATION)
100' ROW
EXISTING POSTED SPEED = 35 MPH
**PROPOSED DESIGN SPEED = 35 MPH**

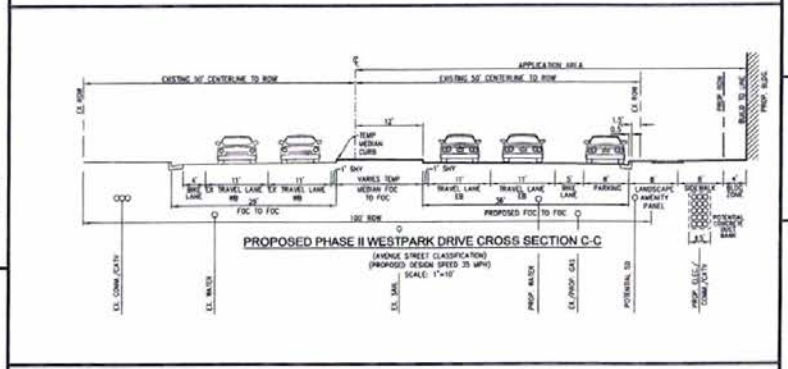
WESTPARK DRIVE APPROXIMATE AREA OF R.O.W. DEDICATION:
BLOCKS 'E' FRONTAGE = ±4,900s.f.

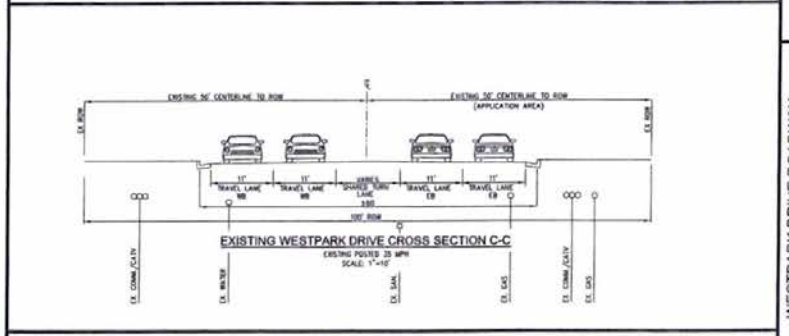



**WESTPARK DRIVE - ROUTE 5061**
**PROPOSED PHASE II**
(AVENUE CLASSIFICATION)
100' ROW
EXISTING POSTED SPEED = 35 MPH
**PROPOSED DESIGN SPEED = 35 MPH**

WESTPARK DRIVE APPROXIMATE AREA OF R.O.W. DEDICATION:
BLOCKS 'E' FRONTAGE = ±4,900s.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 ENGINEERING SITE PLAN AND VDOT APPROVAL.
2. REFER TO SHEET L1.01 FOR STREETSCAPE DESIGN ELEMENTS.
3. AREA OF RIGHT OF WAY DEDICATION SHOWN ON THIS FDP IS APPROXIMATE. FINAL AREAS, LOCATION AND QUANTITIES OF STREET RIGHT OF WAY DEDICATION IS TO BE DETERMINED AT TIME OF FINAL SITE PLAN.
4. REFER TO SHEET L0.01 FOR ILLUSTRATION OF NORTH SIDE WESTPARK DRIVE ULTIMATE ROAD DESIGN.
5. EXISTING UTILITIES REPRESENTED HERE ARE APPROXIMATE IN LOCATION AND DESCRIPTION FOR REFERENCE ONLY OF EXISTING CONDITIONS.
6. PROPOSED UTILITY LOCATIONS SHOWN ARE FOR GENERAL REFERENCE ONLY AND SUBJECT TO CHANGE WITH 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.
9. PROPOSED DRIVEWAY/ENTRANCE SHALL CONFORM TO THE TYSON T.O.S. AND ARE NOT SUBJECT TO THE P.F.M..

GRAPHIC SCALE
( IN FEET )
1 inch = 20 ft.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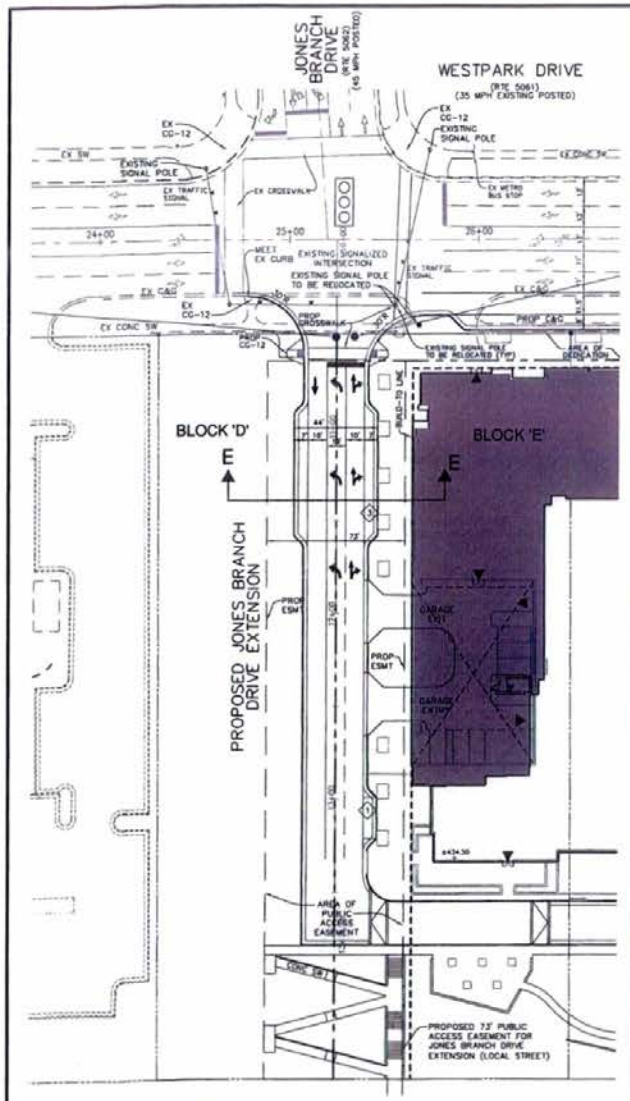
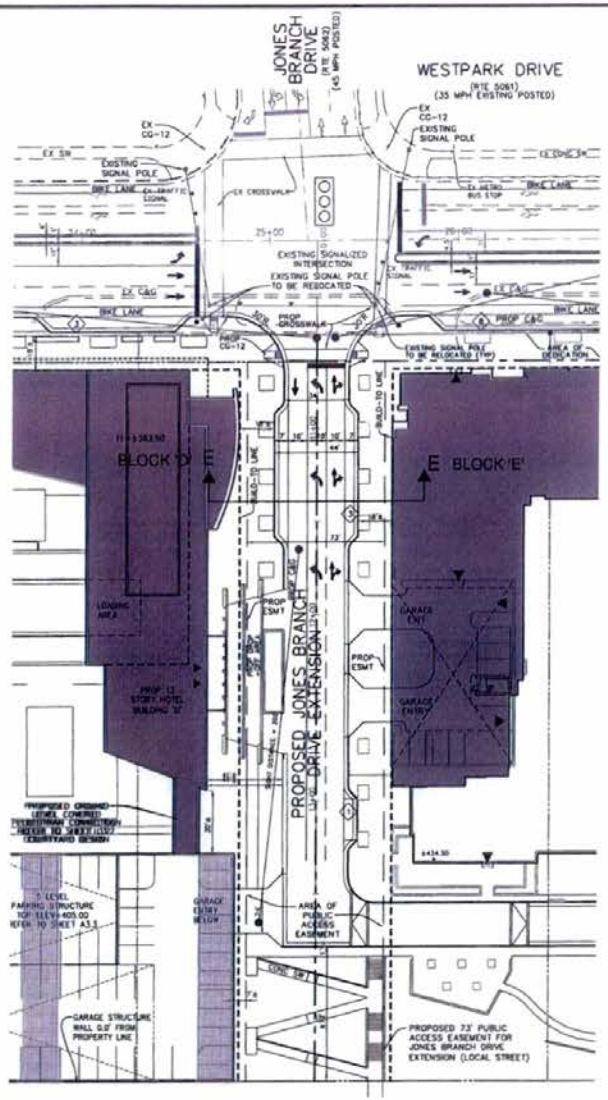
WESTPARK DRIVE ROADWAY
STRIPING AND CROSS SECTION
**ARBOR ROW - BLOCK 'E'**
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 3/23/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

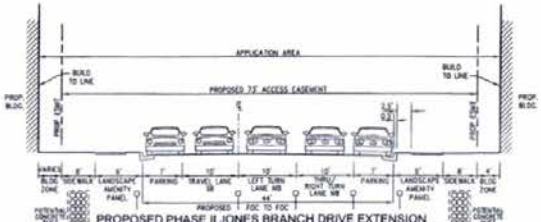
SCALE H: 1"=30'
JOB No.
DATE : February 24, 2012
FILE No. 7493-12-001
SHEET C7.0



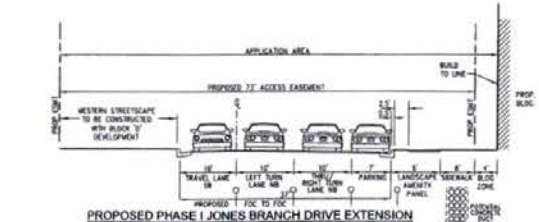

**JONES BRANCH DRIVE EXTENSION**
**PROPOSED PHASE I**
(LOCAL CLASSIFICATION)
PROPOSED EASEMENT 73'
PROPOSED DESIGN SPEED = 30 MPH




**JONES BRANCH DRIVE EXTENSION**
**PROPOSED PHASE II**
(LOCAL CLASSIFICATION)
PROPOSED EASEMENT 73'
PROPOSED DESIGN SPEED = 30 MPH




PROPOSED PHASE II JONES BRANCH DRIVE EXTENSION
CROSS SECTION E-E
(LOCAL STREET CLASSIFICATION)
PROPOSED DESIGN SPEED 30 MPH
SCALE: 1"=10'




PROPOSED PHASE I JONES BRANCH DRIVE EXTENSION
CROSS SECTION E-E
(LOCAL STREET CLASSIFICATION)
PROPOSED DESIGN SPEED 30 MPH
SCALE: 1"=10'

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 ENGINEERING SITE PLAN AND VDOT APPROVAL.
2. REFER TO SHEET L1.01 FOR STREETSCAPE DESIGN ELEMENTS.
3. AREA OF RIGHT OF WAY DEDICATION SHOWN ON THIS FDP IS APPROXIMATE. FINAL AREAS, LOCATION AND QUANTITIES OF STREET RIGHT OF WAY DEDICATION IS TO BE DETERMINED AT TIME OF FINAL SITE PLAN.
4. REFER TO SHEET LD.01 FOR ILLUSTRATION OF NORTH SIDE WESTPARK DRIVE ULTIMATE ROAD DESIGN.
5. EXISTING UTILITIES REPRESENTED HERE ARE APPROXIMATE IN LOCATION AND DESCRIPTION FOR REFERENCE ONLY OF EXISTING CONDITIONS.
6. PROPOSED UTILITY LOCATIONS SHOWN ARE FOR GENERAL REFERENCE ONLY AND SUBJECT TO CHANGE WITH 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. PROPOSED DRIVEWAY/ENTRANCE SHALL CONFORM TO THE TYSON T.D.S. AND ARE NOT SUBJECT TO THE P.F.M.

GRAPHIC SCALE

( IN FEET )
1 inch = 20 ft.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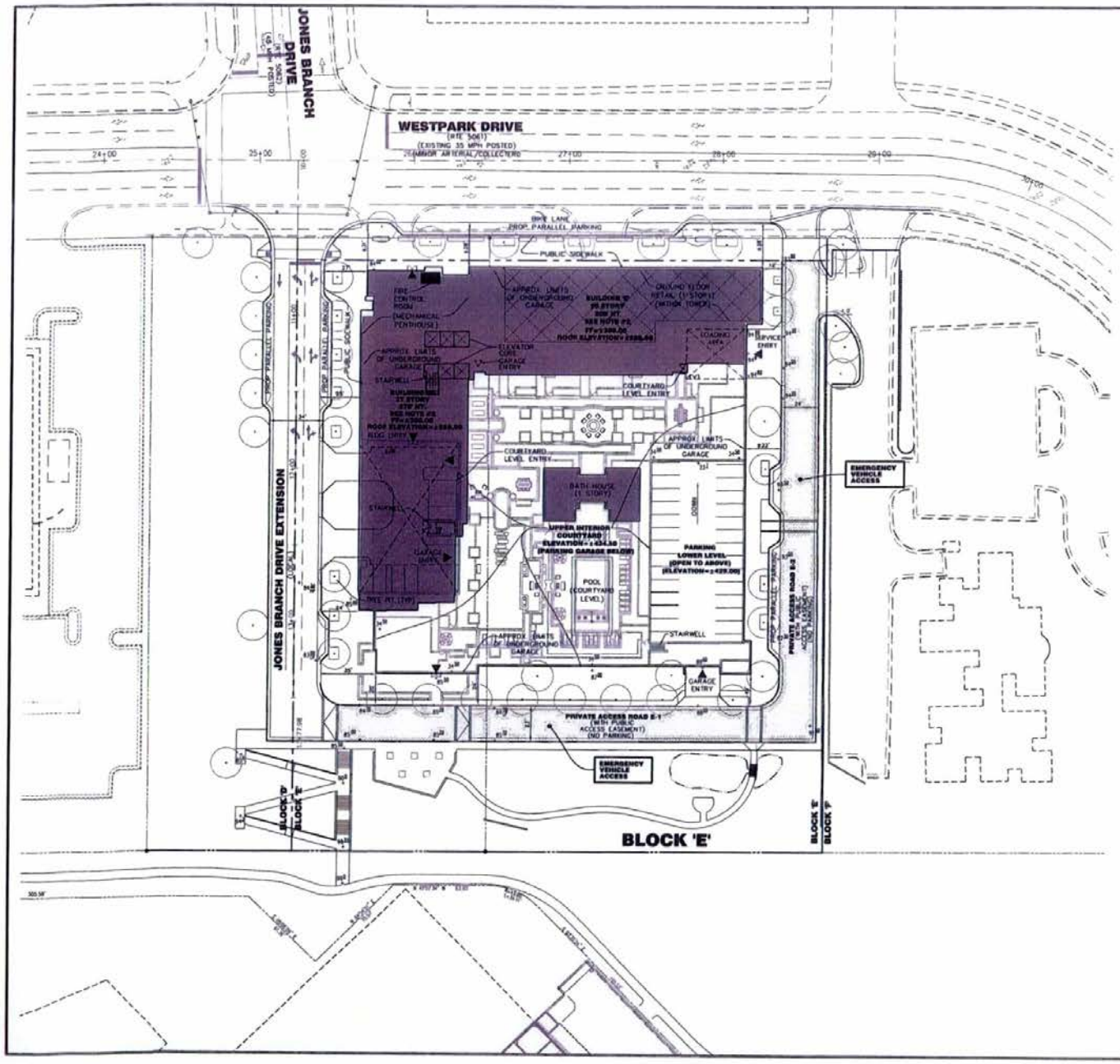
JONES BRANCH DRIVE EXTENSION
ROADWAY STRIPING AND CROSS SECTIONS
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 3/26/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/23/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE 1"=30'
JOB No.
DATE : February 24, 2012
FILE No. 7403-12-001
SHEET C7.1




LEGEND:

PEDESTRIAN ACCESS

- PROPOSED EXTERIOR BUILDING ENTRY
- PROPOSED INTERIOR COURTYARD BUILDING ENTRY
- PROPOSED GARAGE LEVEL ENTRY
- PROPOSED TREE
- PROPOSED SPOT ELEVATION
- PROPOSED GROUND FLOOR RETAIL (1 STORY WITHIN TOWER)
- PROPOSED ELEVATOR CORE
- PROPOSED STAIRWELL

NOTE:

1. BUILDING E
   CONSTRUCTION TYPE: 1A MODIFIED TO 1B PER TABLE 601 (EXCEPTION 403.2.1.1)

   USE GROUPS: R-2 (APARTMENTS)(PRIMARY)
   A-3 (AMENITIES)(GROUND FLOOR AND LEVEL 5 COURTYARD)
   B (LEASING)
   S-2 (PARKING GARAGE)
   S-1 (RESIDENTIAL STORAGE)
   M (MERCANTILE/RETAIL)

NOTES:

1. THIS SHEET IS FOR GENERAL REPRESENTATION OF EMERGENCY AERIAL APPARATUS VEHICLE ACCESS ONLY.
2. LOCATION OF BUILDING CORE ELEMENTS ARE SUBJECT TO REVISION WITH FINAL ARCHITECTURAL DESIGN.

NOTE:
THIS SHEET IS FOR INFORMATION ONLY. SUBSEQUENT ADJUSTMENTS TO PLAN BASED ON FIRE MARSHAL REVIEW OF SITE PLAN WILL NOT REQUIRE SUBMISSION OR APPROVAL OF FDPA, CDPA, PCA ETC..

GRAPHIC SCALE

( IN FEET )
1 inch = 20 ft.

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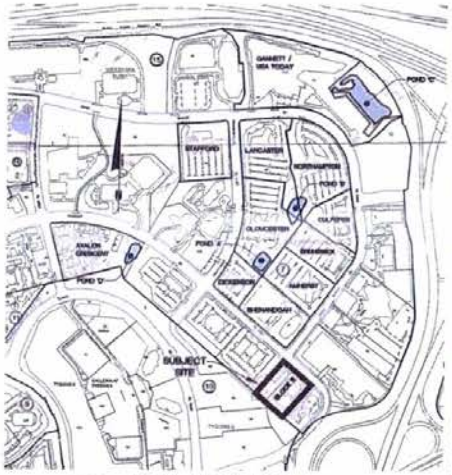
# FIRE VEHICULAR ACCESS EXHIBIT
## ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

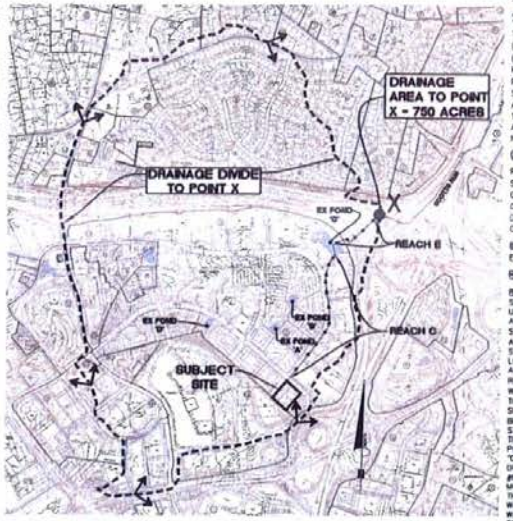
| PLAN STATUS | |
|---|---|
| 3/29/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1" = 20'
JOB No.
DATE : February 24, 2012
FILE No. 7403-12-001
SHEET C7.2

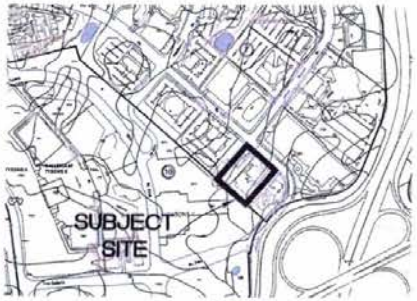
1 C8.0 EX VICINITY MAP
SCALE: 1"=500'




2 C8.0 PROP VICINITY MAP
SCALE: 1"=500'




3 C8.0 OUTFALL MAP
SCALE: 1"=1,000'




4 C8.0 SOILS MAP
SCALE: 1"=500'

*ALL SOILS OF SUBJECT SITES ARE OF HYDROLOGIC GROUP B

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

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

This information is required under the following Zoning Ordinance paragraphs:

| | |
|---|---|
| Special Permits (9-011 2J & 2L) | Special Exceptions (9-011 2J & 2L) |
| Cluster Subdivision (9-616 1G & 1H) | Commercial Revitalization Districts (9-622 2A (12) & (14)) |
| Development Plans PRC District (16-302 3 & 4L) | PRC Plan (16-303 1E & 1G) |
| PDP P Districts (except PRC) (16-502 1F & 1G) | Amendments (18-202 10F & 10I) |

☑ 1. Plat is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100')

☑ 2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet C9.0

☑ 3. Provide:

| Facility Name/ Type & No. | On site area served (acres) | Off-site area served (acres) | Drainage area (acres) | Footprint area (sf) | Storage Volume (cf) | If pond, dam height (ft) |
|---|---|---|---|---|---|---|
| E SWM VAULT (underground storage) | 1.21 | - | 1.21 | 697 | 5,061 | N/A |
| GREEN ROOF | 0.29 | - | 0.29 | 12,695 | 15,234 | N/A |
| INFILTRATION | 0.86 | - | 0.86 | 2,240 | 15,390 | N/A |
| SWM PLANTERS | 0.78 | - | 0.78 | 1,280 | 2,430 | N/A |
| Totals | 3.14 | - | 3.14 | 16,912 | 42,115 | N/A |

☑ 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet C8.0
Pond inlet and outlet pipe systems are shown on Sheet C9.0

☑ 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet C9.0
Type of maintenance access road surface noted on the plat is ASPHALT (asphalt, pavement, gravel, etc.)

☒ 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet N/A.

☑ 7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet C8.1

☑ 8. A description of the existing conditions of each numbered site outfall extended downstream from the site to a point which is at least 100 times the site area or which has a drainage area of at least one square mile (640 acres) is provided on Sheet C8.0

☑ 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet C8.0

☑ 10. Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an as survey or field run is provided on Sheets C5.0

☑ 11. A submission waiver is requested for UNDERGROUND DETENTION FOR RESIDENTIAL PROJECT

☒ 12. Stormwater management is not required because N/A.

## OUTFALL NARRATIVE

### SITE DESCRIPTION:

THE SUBJECT SITE IS 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 SITE INCLUDES THE FRANKLIN BUILDING AND APPROXIMATELY HALF OF THE GRAYSON BUILDING WHICH ARE LOCATED ON FFX. CO. TAX MAP PARCELS #029-4-((7))-0001 AND #029-4-((7))-0002. SEE VICINITY MAP ON THIS SHEET. THE SUBJECT SITE HAS EXISTING OFFICE BUILDINGS WITH SURFACE PARKING AND LANDSCAPE ISLANDS. THE SITE IS FRONTED BY WESTPARK DR. (RT. 5061) TO THE NORTH AND IS WOODED ALONG ITS SOUTHERN PROPERTY LINE. THE TOTAL SITE AREA OF THIS PARCEL IS APPROXIMATELY 3.14 ACRES. THE EXISTING SITE PROPOSES NEW PROPERTY LINES TO CREATE BLOCK E. 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 SITE TO POINT X. SEE OUTFALL MAP ON THIS SHEET FOR REACH LOCATIONS.

BLOCK E (EASTERN HALF OF GRAYSON SITE AND FRANKLIN SITE) – REACH C TO REACH E TO POINT "X".

### REACH DESCRIPTIONS:

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 C8.0.1 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 Qcap IS APPROXIMATELY 60% GREATER THAN THE Qinflow. 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 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 SWM 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 SCOTTS RUN WHICH FLOWS NORTHEAST, PARALLEL TO CAPITAL BELTWAY I-495.

### SUMMARY:

STORMWATER LEAVES THE SUBJECT SITE 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 THE SUBJECT SITE TO BE INCLUDED IN A SITE PLAN, WHICH WILL DETERMINE THE ADEQUACY OF THE 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).

### CONCLUSION:

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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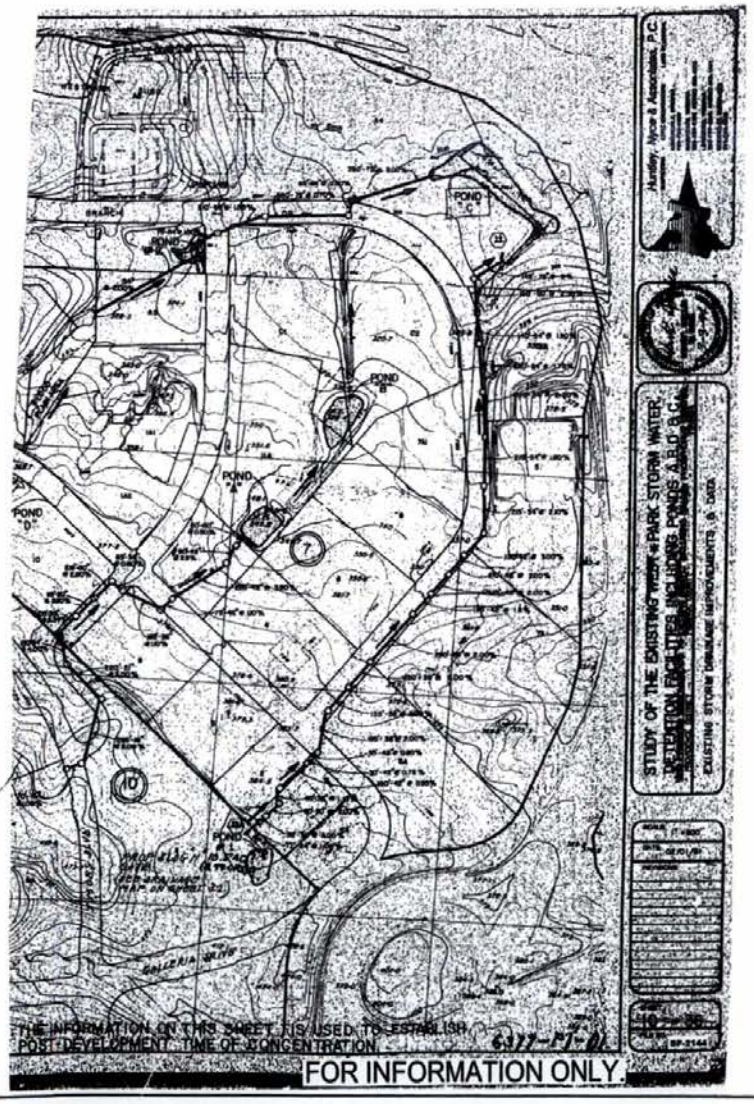
ADEQUATE OUTFALL AND SWM CHECKLIST
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/20/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE: AS SHOWN
JOB No.
DATE: February 24, 2012
FILE No. 7403-12-001
SHEET C8.0




## STORM DRAINAGE COMPUTATIONS

| FROM STR STR # | TO STR # | AREA AC | TOTAL AC | RUNOFF C | CA | ACCUM CA | Tc TO MH | I INHR | INC. CFS | TOTAL CFS | DIA IN | SLOPE % | LENGTH FT | n | Q CAP CFS | VELOCITY ACTU FPS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pond #1,51B | 51A | 10.50 | 10.50 | | | | | | 8.99 | 8.99 | | | | | | |
| 51A | 51 | 0.00 | 10.50 | | 0.00 | | 5 | 7.27 | 0.00 | 8.99 | 18 | | | | | |
| site2 | 51 | 0.54 | 0.54 | 0.83 | 0.45 | 0.45 | 5 | 7.27 | 3.26 | 3.26 | | | | | | |
| 60 | 51 | 0.67 | 0.67 | 0.80 | 0.54 | 0.54 | 5 | 7.27 | 3.90 | 3.90 | | | | | | |
| 51 | C | 0.00 | 11.71 | 0.00 | 0.00 | 0.99 | 5 | 7.27 | 0.00 | 16.15 | 30 | 2.00% | | 0.013 | 57.99 | 10.31 |
| C | D | 0.30 | 12.01 | 0.85 | 0.26 | 1.24 | 5 | 7.27 | 1.85 | 18.00 | 36 | 1.70% | | 0.013 | 86.93 | 9.85 |
| 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 | 1.00% | | 0.013 | 143.59 | 8.49 |
| G | 6 | 3.80 | 16.83 | 0.83 | 3.15 | 5.26 | 5 | 7.27 | 22.93 | 47.23 | 42 | 0.99% | | 0.013 | 100.07 | 10.31 |
| 6 | 7 | 1.29 | 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 | 56.38 | 36 | 3.20% | | 0.013 | 118.27 | 16.73 |
| 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 | 1.59 | 20.23 | 0.89 | 1.42 | 8.21 | 5 | 7.27 | 10.29 | 68.70 | 36 | 3.73% | | 0.013 | 128.77 | 18.49 |
| 9 | 10 | 0.99 | 21.22 | 0.54 | 0.53 | 8.75 | 5 | 7.27 | 3.89 | 72.59 | 36 | 3.79% | | 0.013 | 129.63 | 18.87 |
| 10 | 11 | 0.72 | 21.94 | 0.80 | 0.58 | 9.33 | 5 | 7.27 | 4.19 | 76.78 | 36 | 3.49% | | 0.013 | 122.84 | 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 | 136.15 | 19.95 |
| 12 | 20 | 1.98 | 24.65 | 0.72 | 1.43 | 11.15 | 5 | 7.27 | 10.36 | 90.06 | 42 | 2.82% | | 0.013 | 162.79 | 17.41 |
| 20 | ex13,(B) | 1.17 | 25.83 | 0.78 | 0.89 | 12.04 | 5 | 7.27 | 6.46 | 96.53 | 42 | 2.82% | | 0.013 | 162.79 | 17.55 |
| ex13,(B) | 15 | 1.13 | 26.96 | 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 | 29.49 | 0.72 | 1.82 | 14.77 | 5 | 7.27 | 13.24 | 116.34 | 42 | 4.00% | | 0.013 | 201.55 | 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) | 3.58 | 33.52 | 0.67 | 2.41 | 17.50 | 5 | 7.27 | 17.48 | 136.18 | 54 | 2.09% | | 0.013 | 284.19 | 17.70 |
| 16, (ex22) | 17 | 1.60 | 35.12 | 0.73 | 1.17 | 18.68 | 5 | 7.27 | 8.49 | 144.67 | 54 | 2.02% | | 0.013 | 279.39 | 17.63 |
| 17 | 18 | 1.90 | 37.02 | 0.81 | 1.54 | 20.20 | 5 | 7.27 | 11.19 | 155.86 | 54 | 2.06% | | 0.013 | 281.46 | 18.21 |
| 18 | 19 | 1.19 | 38.21 | 0.80 | 0.95 | 21.15 | 5 | 7.27 | 6.92 | 162.78 | 54 | 1.84% | | 0.013 | 266.65 | 17.60 |
| 19 | 20 | 3.15 | 41.36 | 0.82 | 2.58 | 23.74 | 5 | 7.27 | 18.78 | 181.56 | 54 | 2.00% | | 0.013 | 279.39 | 18.08 |
| 20 | 21 | 2.05 | 43.41 | 0.83 | 1.70 | 25.44 | 5 | 7.27 | 12.37 | 193.93 | 60 | 2.40% | | 0.013 | 408.35 | 20.81 |
| 21 | 22 | 2.00 | 45.41 | 0.84 | 1.68 | 27.12 | 5 | 7.27 | 12.21 | 206.15 | 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.

Dewberry

Dewberry & Davis LLC

TYSONS II
BUILDING "H"
ROUGH GRADING PLAN

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL

KEY PLAN

SCALE

AS NOTED

| No. | DATE | BY | Description |
|---|---|---|---|
| REVISIONS | | | |

DRAWN BY VC
APPROVED BY TCC
CHECKED BY DGM
DATE JULY, 2008

TITLE

OUTFALL ANALYSIS

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

SHEET NO. 32A of 83 ~~15B~~ ~~of 49~~ SP-3162

Bowman CONSULTING

PARKER/RODRIGUEZ, INC.

WDC

The Hanover Company

Cityline PARTNERS

ADEQUATE OUTFALL AND SWM CHECKLIST
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/25/12 | PER COUNTY COMMENTS |
| 10/25/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|

SCALE 1" AS SHOWN
JOB No.
DATE February 24, 2012
FILE No. 7403-12-001
SHEET C8.0.1

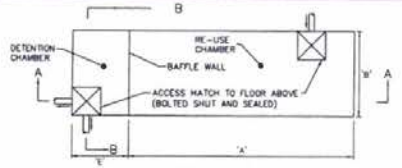
PROVIDED FOR INFORMATION ONLY! FROM FFX PLAN #6028-SP-018-2

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

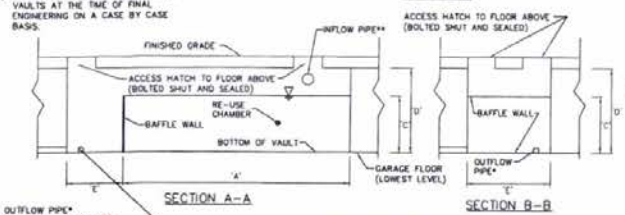
** FINAL NUMBER AND LOCATION OF INFLOW PIPES PER MEP.

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.




PLAN VIEW




SECTION A–A

SECTION B–B

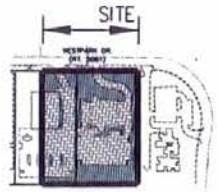
OUTFLOW PIPE* SIZE TO BE DETERMINED AT FINAL ENGINEERING TO INFILTRATION

## SWM SUMMARY

| VAULT ID NAME | REQUIRED VOLUME (CF) | LENGTH (FT) A | WIDTH (FT) B | RE-USE DEPTH (FT) C | STORAGE DEPTH (FT) D | DET. CHAMBER SIZE (FT) E | VOLUME PROVIDED (CF) |
|---|---|---|---|---|---|---|---|
| BLOCK E | 935 | 22 | 10 | 4 | 6 | 4 | 880 |

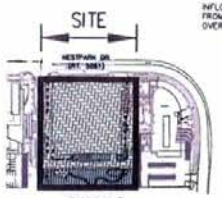
1 C8.1 TYP. CISTERN DETAIL

NOT TO SCALE




2 C8.1 EX IMPERVIOUS AREA EXHIBIT

SCALE: 1"=200'



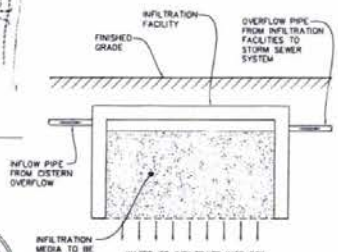

3 C8.1 PROPOSED IMPERVIOUS AREA EXHIBIT

SCALE: 1"=200'

| Site | |
|---|---|
| Area = | 3.140 Ac |
| Ex. Impervious % | 62% |
| Ex. C-Factor = | 0.67 |
| Prop. Impervious % | 72% |
| Prop. C-Factor = | 0.73 |

IMPERVIOUS AREA =

PERVIOUS AREA =



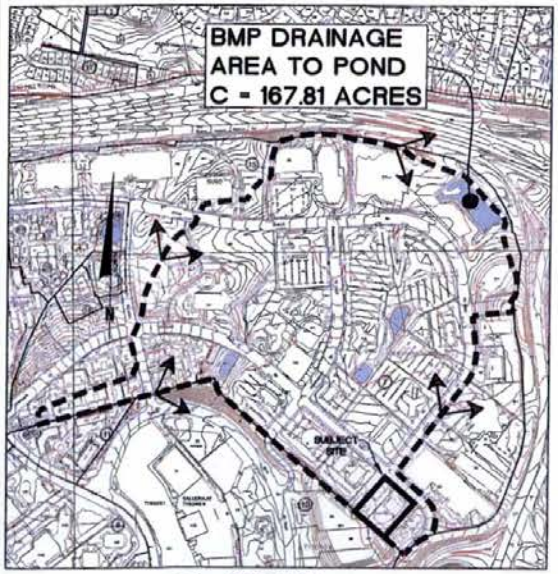

THE APPLICANT RESERVES THE RIGHT TO ALTER INFILTRATION TRENCH DESIGN, STYLE, VOID MEDIA, SIZE, ETC. AT THE TIME OF FINAL ENGINEERING.

6 C8.1 TYP. INFILTRATION DETAIL

NOT TO SCALE

NOTE:

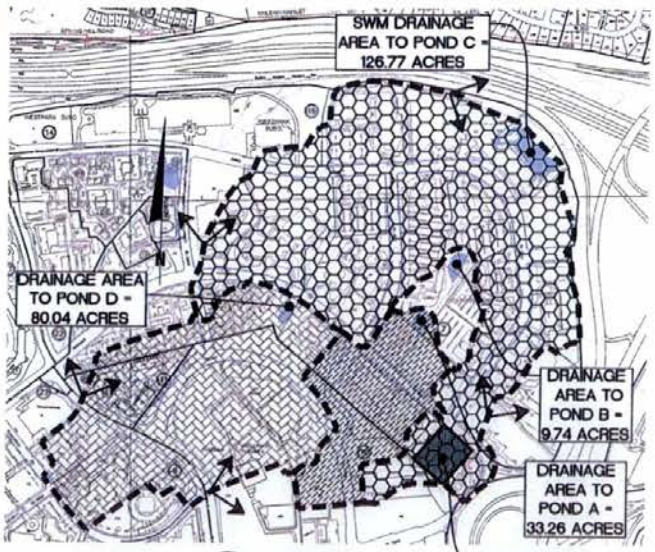
1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) ANALYSIS, NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED FOR APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL SITE PLAN APPLICATIONS.
2. THE APPLICANT RESERVES THE RIGHT TO VARY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




4 C8.1 BMP MAP

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.




5 C8.1 SWM MAP

SCALE: 1"=500'

## STORMWATER MANAGEMENT NARRATIVE:

### GENERAL INFO:

THE SUBJECT SITE OF THIS APPLICATION, ALSO KNOW AS THE FRANKLIN SITE AND GRAYSON SITE, IS LOCATED ON FAIRFAX COUNTY TAX MAP PARCELS #029-4-((7))-0001 AND #029-4((7))-0002, RESPECTIVELY. THIS SITE COMPRISES THE PROPOSED "E" BLOCK AS NOTED IN THE CDP APPLICATION, CDP PLAN# RZ/CDP 2011-PR-023.

STORMWATER (SWM) DETENTION FOR THE SUBJECT SITE IS CURRENTLY PROVIDED FOR BY THE EXISTING POND "C". POND "C" 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, ALTHOUGH STORMWATER REQUIREMENTS FOR THE SUBJECT SITE ARE CURRENTLY SATISFIED VIA OFFSITE EXISTING SWM FACILITIES, ADDITIONAL STORMWATER MANAGEMENT SHALL BE PROVIDED ONSITE FOR THE SUBJECT APPLICATION, AS DESCRIBED IN FURTHER DETAIL BELOW.

SWM CONTROL FOR THE SUBJECT APPLICATION SHALL BE ACHIEVED THROUGH A COMBINATION OF METHODS INCLUDING STORAGE OF STORMWATER IN VAULTS FOR RE-USE, TREE BOX PLANTERS, CURB EXTENSIONS, GREEN ROOFS, INFILTRATION, POSSIBLE BIORETENTION, MINIMIZING IMPERVIOUS AREAS AND BY DETAINING STORMWATER IN VAULTS TO REDUCE PEAK FLOW RATES OF GIVEN RAIN STORM EVENTS. PER THE TYSONS CORNER URBAN CENTER COMPREHENSIVE PLAN, THERE ARE THREE SEPARATE CRITERIA/GOALS FOR STORMWATER CONTROL, WHICH INCLUDE 1" RAINFALL CAPTURE/RE-USE COMPLIANCE, LEED COMPLIANCE, AND PFM DETENTION COMPLIANCE. THE SWM COMPUTATIONS AND ANALYSES FOR EACH GOAL ARE DISCUSSED BELOW.

### COMPREHENSIVE PLAN (1" RUNOFF RETENTION COMPLIANCE):

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 THAT IS AVAILABLE TO BOWMAN AT THE TIME OF FDP SUBMISSION, THE 1" RETENTION REQUIREMENT MAY NOT BE A FULLY ACHIEVABLE GOAL AT THIS TIME. 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, RAINWATER HARVESTING CISTERN, STORMWATER PLANTERS, TREEPITS, CURB EXTENSIONS, VEGETATED GREEN ROOF, AND BIORETENTION. PRELIMINARY IRRIGATION DEMANDS WERE CALCULATED FOR BLOCK E WHICH RESULTED IN AN AVERAGE DAILY DRAWDOWN OF 1,200 GALLONS.

INFILTRATION FACILITIES WOULD BE THE IDEAL PRACTICE. INFILTRATION TESTING WAS DONE WHICH SHOWED THAT THE SOIL IS SUITABLE FOR THE PRACTICE. THE PREFERRED LOCATIONS FOR THE INFILTRATION FACILITY WOULD BE IN THE REAR OF THE PROPERTY UNDER THE PRIVATE CONNECTOR STREET WHICH HAS AN INFILTRATION RATE OF 5.66 IN/HR, AND UNDER THE DRIVE AISLE BETWEEN THE BUILDING AND THE EASTERN PROPERTY LINE WHICH HAS AN INFILTRATION RATE OF 1.28 IN/HR. THE INFILTRATION FACILITIES WERE PRELIMINARILY SIZED TO PROVIDE 15,380 CUBIC FEET OF STORAGE AND PROVIDE A RUNOFF REDUCTION VOLUME OF 5,379 CUBIC FEET. THE DRAINAGE AREA TO THE INFILTRATION FACILITIES IS 2.36 ACRES WITH A C-VALUE OF 0.73. SIZING OF THE PRACTICE HAS TAKEN INTO ACCOUNT OVERFLOW FROM THE RAINWATER HARVESTING CISTERN THAT CAPTURES THE 1.50 ACRES OF THE BUILDING AND GARAGE FOOTPRINT. SEE COMPUTATIONS ON SHEET C9.1.

ROOF RAINWATER HARVESTING WILL BE UTILIZED TO CAPTURE 1" 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. THE RAINWATER HARVESTING CISTERN HAS BEEN SIZED TO HOLD APPROXIMATELY 6,000 GALLONS (801 CF), WHICH IS APPROXIMATELY 5 DAYS WORTH OF IRRIGATION WATER DEMAND (1,200 GALLONS PER DAY). ONCE THE CISTERN VOLUME HAS REACHED CAPACITY, THE OVERFLOW RELIEF WILL GO TO THE INFILTRATION FACILITY. ROOF RAINWATER HARVESTING WILL GENERATE APPROXIMATELY 4,173 CUBIC FEET OF RUNOFF AND PROVIDE AN APPROXIMATE RUNOFF REDUCTION CREDIT OF 1,235 CUBIC FEET WITH THE REMAINING CREDIT OF 3,158 CUBIC FEET OVERFLOWING TO THE INFILTRATION FACILITY.

VEGETATED GREEN ROOF WILL BE UTILIZED TO CAPTURE AN AREA OF APPROXIMATELY 0.20 ACRES WITH A STORAGE VOLUME OF 10,819 CUBIC FEET. THIS PRACTICE WILL BE LINKED IN SERIES TO THE CISTERN VIA UNDERDRAINS WITHIN THE BUILDING. THIS PRACTICE WILL PROVIDE AN APPROXIMATE RUNOFF REDUCTION CREDIT OF 1,000 CUBIC FEET.

DISCONNECTED STORMWATER PLANTERS, TREEPITS, AND CURB EXTENSIONS ARE PROPOSED IN THE SIDEWALKS ALONG WESTPARK DRIVE (RT. 5081), THE PROPOSED JONES BRANCH DRIVE (RT. 5082) EXTENSION, AND THE PRIVATE STREET SURROUNDING THE BUILDING. THESE MEASURES ARE EXPECTED TO COLLECT IMPERVIOUS AREAS (0.60 ACRES) AND MANAGED TURF COVER (0.18 ACRES) OUTSIDE OF THE CISTERN AND INFILTRATION PRACTICE DRAINAGE AREAS WHICH RESULT IN A RUNOFF VOLUME OF 2,069 CUBIC FEET. THIS PRACTICE WILL PROVIDE AN APPROXIMATE STORAGE VOLUME OF 2,430 CUBIC FEET AND A RUNOFF REDUCTION VOLUME CREDIT OF 2,069 CUBIC FEET.

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 BASED ON INFILTRATION RATES FOUND IN THE AREA. THIS PRACTICE COULD BE USED IF ADDITIONAL INFILTRATION IS NEEDED.

PERMEABLE PAVEMENT 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 INCLUDE BIORETENTION TREE PITS, GREEN ROOFS, AND BASIN TYPE "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 C10.0, FOR FURTHER DETAIL.

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.

THROUGH THE VOLUMES PROVIDED BY THE RAINWATER HARVESTING CISTERN AND INFILTRATION FACILITIES, THESE PRACTICES WILL, TO THE MAXIMUM EXTENT POSSIBLE, MEET THE COMPREHENSIVE PLAN 1" RUNOFF RETENTION AND REUSE REQUIREMENTS.

### LEED:

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 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 HAS BEEN DEFINED AS THE LIMITS FROM THE EXISTING PROPERTY LINE ALONG WESTPARK DRIVE (RT. 5081), TO THE PROPOSED ACCESS EASEMENT ALONG THE JONES BRANCH EXTENSION (RT. 5082), TO THE PROPOSED SOUTHERN AND EASTERN PROPERTY LINES FOR AN APPROXIMATE AREA OF 2.81 ACRES. BLOCK E'S LEED BOUNDARY IS SHOWN ON SHEET C8.0. THE LEED COMPLIANCE COMPUTATIONS FOR BLOCK E ARE ON SHEET C9.2. THE COMPUTATIONS RESULT IN THE REQUIRED STORMWATER VOLUME THAT IS NEEDED FOR LEED COMPLIANCE. THE REQUIRED VAULT STORAGE VOLUME NEEDED TO SATISFY THE LEED COMPLIANCE IS 7,166 CUBIC FEET. THIS VOLUME IS MET THROUGH A COMBINATION OF THE CISTERN AND INFILTRATION FACILITES (TOTAL OF 16,185 CF PROVIDED).

### 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 INFILTRATION FACILITIES. AT THE TIME OF FINAL ENGINEERING, THE CISTERN AND INFILTRATION FACILITES 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 SHEET C9.2 SHOW THAT THE SIZE OF THE INFILTRATION FACILITIES AND CISTERN 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 WELL UNDER THE ALLOWABLE. FOR BLOCK E ALLOWABLE RELEASE RATE AND DETENTION COMPUTATIONS SEE SHEET C9.2. THE REQUIRED STORAGE TO SATISFY PFM DETENTION COMPLIANCE IS 1,478 CUBIC FEET. THE APPLICANT RESERVES THE RIGHT TO UTILIZE EXISTING PONDS, SERVING THE SITE, TO MEET PFM DETENTION REQUIREMENTS. ADDITIONAL COMPUTATIONS WILL BE PROVIDED AT SITE PLAN FOR THESE FACILITIES IF UTILIZED.

### STORMWATER CONTROLS:

THE CISTERN WILL PROVIDE BOTH RE-USE AND RETENTION AND THE INFILTRATION FACILITIES WILL PROVIDE RETENTION. DEPENDING ON THE FINAL SELECTION OF METHOD OF WATER RE-USE, STORMWATER WILL FIRST ENTER INTO SOME STRUCTURAL BMP FACILITY FOR WATER QUALITY TREATMENT, EITHER A FILTER OR SEPARATOR OF SOME KIND, AND THEN INTO THE RE-USE CISTERN, WHICH WILL HAVE NO OUTLET EXCEPT FOR A PUMP DISCHARGE TO THE PLUMBING / MECHANICAL / IRRIGATION SYSTEMS FOR RE-USE. ONCE THE CISTERN IS FULL, WATER WILL OVERFLOW BY A PIPE OUTLET TO THE INFILTRATION FACILITES TO BE STORED AND INFILTRATE INTO THE SOIL. WHEN THE INFILTRATION FACILITES ARE FULL DURING A LARGE STORM EVENT, STORMWATER WILL OVERFLOW INTO AN OUTLET PIPE. THE OUTFALL FROM THE INFILTRATION FACILITES WILL CONNECT TO THE STORM SEWER SYSTEM. SEE CONCEPTUAL CISTERN AND INFILTRATION DETAILS ON THIS SHEET.

### SUMMARY:

THE GOAL OF THE 1" RUNOFF IS TO CAPTURE A TARGET RUNOFF REDUCTION VOLUME OF 9,376 CUBIC FEET FOR THE ENTIRE SITE. THE RUNOFF REDUCTION VOLUME WHICH WAS ACHIEVED THROUGH THE PRACTICES LISTED ABOVE IS 9,365 CUBIC FEET WHICH EQUATES TO A MAXIMUM EXTENT PRACTICABLE RAINFALL DEPTH CAPTURED.

THE APPLICANT RESERVES THE RIGHT TO REVISE THE SWM DESIGN BASED ON THE ACTUAL PROPOSED IMPERVIOUS PERCENTAGE AT THE TIME OF FINAL DEVELOPMENT PLAN AND FINAL SITE PLAN. THE APPLICANT ALSO RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, AND LOCATION OF THE DEPICTED SWM VAULTS AT THE TIME OF FINAL DEVELOPMENT PLAN AND FINAL SITE PLAN.

### BMP NARRATIVE:

EXISTING POND "C" IS LOCATED AT THE SOUTHWEST CORNER OF RTE. #123 & DULLES AIRPORT ACCESS ROAD. IT PROVIDES BMP (WATER QUALITY) FOR 167.81 ACRES OF THE WESTPARK WATERSHED PER PLAN #6377-PI-01. THE SITE OF THE SUBJECT APPLICATION IS 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 8 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 SITE RESULTS IN A C-FACTOR LESS THAN OR EQUAL TO 0.80, THE BMP REQUIREMENTS ARE SATISFIED BY POND "C". SEE IMPERVIOUS AREA ANALYSIS ON THIS SHEET WHICH CONFIRMS THAT THE SITE AREA WILL HAVE A C-FACTOR OF 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 PHOSPHOROUS RUNOFF POLLUTION LOAD AFTER REDEVELOPMENT SHALL NOT EXCEED THE EXISTING PHOSPHORUS POLLUTION LOAD. IT SHOULD BE NOTED THAT ALL BMP FACILITIES PROPOSED WITH THIS APPLICATION, INCLUDING TREE BOX FILTERS, WATER RE-USE VAULTS, AND STRUCTURAL PRE-TREATMENT FILTERS OR SEPARATORS WILL PROVIDE ADDITIONAL WATER QUALITY BENEFITS BEYOND THOSE ALREADY PROVIDED BY THE OFFSITE POND.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SWM & BMP NARRATIVE

# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-03

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/20/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

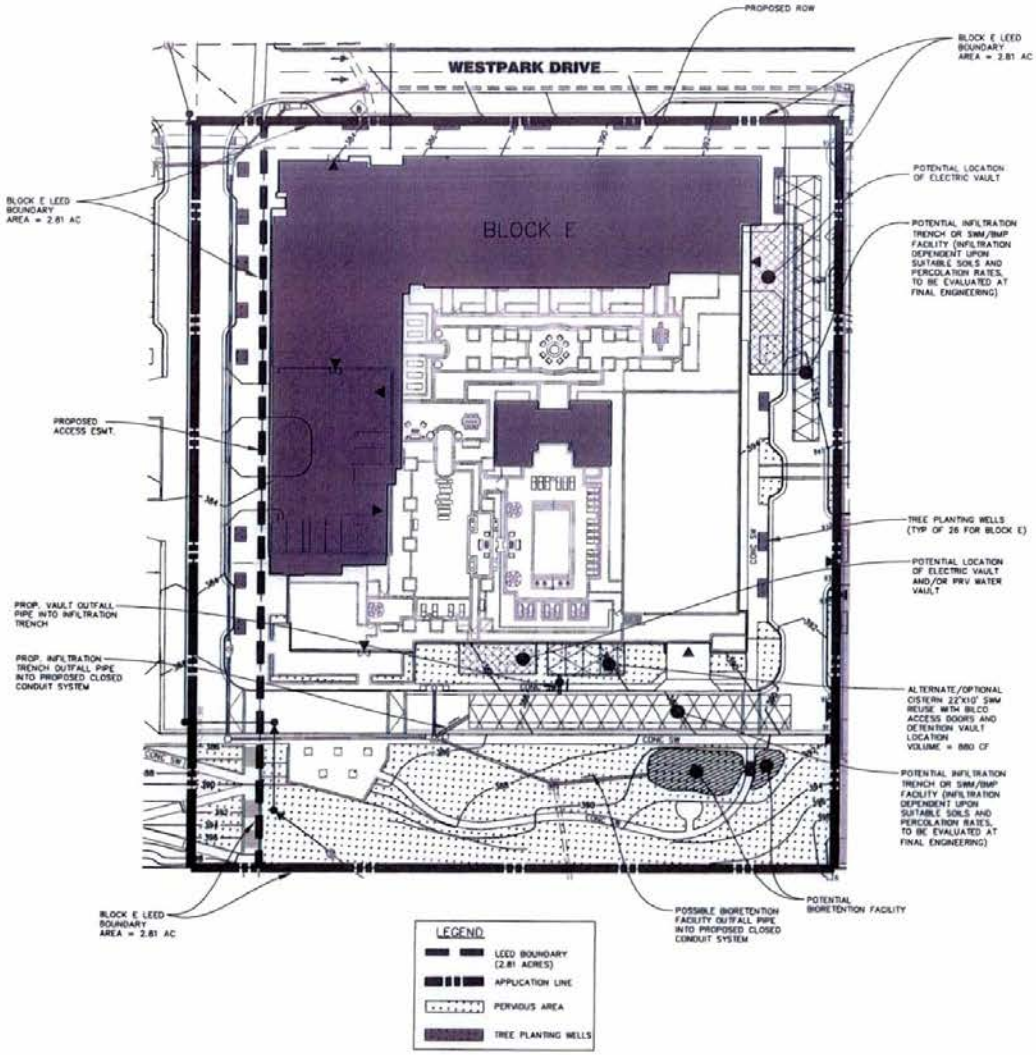
SCALE: 1" AS SHOWN

JOB No.

DATE: February 24, 2012

FILE No. 7403-12-001

SHEET C8.1




**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.

## 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' for the redevelopment of land in the Tysons Corner Urban Center, the following deviations from the strict adherence to the Public Facilities Manual (PFM) will be necessary in order to implement such objectives:

- Deviation of PFM Section 6-1304.4I to allow utilization of infiltration rates less than 0.52 in / hr for field test rate of infiltration systems utilized to meet the Comprehensive Plan requirement for retention of the first 1" of runoff onsite.
- Deviation of PFM Section 6-1306.3F to allow for any detention facility located within a building or garage structure to be governed by building code requirements for access and maintenance.
- Deviation of PFM Section 6-1307.2C to allow for installation of bio-retention and infiltration facilities that utilize infiltration to be constructed on in-situ fill material, provided field tests show adequate infiltration rates exist for in-situ material.
- Deviation of PFM Section 6-1307.2E to set the minimum horizontal setbacks from building foundations be reduced to zero (0) feet in order to facilitate installation of bio-retention and infiltration systems in an urban environment set forth in the Tyson's Corner Design Guidelines.
- Deviation of PFM Section 6-1307.2F to allow installation of bio-retention facilities in the vicinity of loading docks, vehicle maintenance areas or outdoor storage areas to accommodate the urban environment set forth in the Tyson's Corner Design Guidelines.
- Deviation of PFM Section 6-1307.2G to allow for the maximum drainage areas to bio-retention filters utilized for retention of the first 1" of runoff be eliminated in order to accommodate rooftop runoff piped to proposed structures.
- Deviation of PFM Section 6-1309.2C to allow installation of tree box filters in the vicinity of loading docks, vehicle maintenance areas or outdoor storage areas to accommodate the urban environment set forth in the Tyson's Corner Design Guidelines.

GRAPHIC SCALE

( IN FEET )
1 inch = 30 ft.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CONCEPTUAL SWM PLAN
# ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 3/28/12 | PER COUNTY COMMENTS |
| 7/13/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/30/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE 1" = 30'
JOB No.
DATE : February 24, 2012
FILE No. 7403-12-001
SHEET C9.0

# INFILTRATION SIZING COMPUTATIONS:

**INFILTRATION TRENCH DESIGN**

1. Given the infiltration rate, calculate the design infiltration rate:

$f_d = 0.5 * f$

| | | |
|---|---|---|
| f = | 5.66 | in/hr |
| $f_d$ = | 0.24 | ft/hr |

2. Calculate the maximum design depth depth for the infiltration trench:

$d_{max} = f_d * T_{max} / V_f$

| | | |
|---|---|---|
| $T_{max}$ = | 48.00 | hr |
| $V_f$ = | 0.40 | |
| $d_{max}$ = | 28.20 | ft |

3. Calculate the water quality volume requirements for the trench:

$VOLwq = ImpArea * first\ flush\ depth$

| | | |
|---|---|---|
| Drainage Area = | 2.36 | Ac |
| C-Value = | 0.73 | |
| First Flush Depth = | 1.00 | in |
| $VOL_{req}$ = | 6,137 | cf |

4. Calculate the minimum surface area for the bottom of the infiltration trench:

$SAmin = VOLwq / (ft * Tmax)$

| | | |
|---|---|---|
| $SA_{min}$ = | 543 | sf |
| Design Length = | 171.00 | ft |
| Design Width = | 18.00 | ft |
| Design SA = | 3,078 | sf |
| Design Depth = | 5.00 | ft |

Design Depth is Less than Max

5. Compare provided volume to required volume:

Required Volume = VOLwq/Vr

Provided Volume = Design Length * Design Width * Design Depth

| | | |
|---|---|---|
| Required Volume = | 15,342 | $ft^3$ |
| Provided Volume = | 15,390 | $ft^3$ |

Design Volume is Sufficient

NOTE:
THE INFILTRATION VOLUME IS APPROXIMATELY 15,342 CF WHICH EXCEEDS THE REQUIRED VOLUME TO MEET THE COMPREHENSIVE PLAN GOALS. IT IS NOT PRACTICABLE TO RETAIN SMALL AREAS OF THE SITE PERIMPHERY DUE TO REQUIRED SITE GRADING. HOWEVER, THE FULL 1-INCH RAIN EVENT CAN BE RETAINED ON SITE BY OVER RETAINING UP TO 1.4-INCHES 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-INCH OF RAINFALL TO THE EXTENT PRACTICABLE IN ACCORDANCE WITH THE COMPREHENSIVE PLAN GOAL.

IN FURTHERANCE OF THE APPLICANT'S COMMITMENTS HEREIN AND WHILE IT INTENDS TO MEET THE 1-INCH USING THE TECHNIQUES SHOWN, IT RESERVES THE RIGHT TO UTILIZE ANY COMBINATION OF LID (EXISTING AND FUTURE) MEASURES TO MEET THIS GOAL SUBJECT TO THE REVIEW AND APPROVAL OF DPWES AT TIME OF SITE PLAN.

RECOGNIZING THAT RUNOFF REDUCTION TECHNOLOGIES ARE RELATIVELY NEW AND STILL EVOLVING, THE APPLICANT'S FINAL DESIGN DEVELOPMENT AND/OR DPWES COMMENTS ON THE SITE PLAN MAY RESULT IN CHANGES TO THE LID MEASURES SHOWN ON THE CDP AND/OR FDP, INCLUDING, BUT NOT LIMITED TO, ELIMINATION OR ADDITION OF MEASURES SO LONG AS THESE CHANGES DO NOT AFFECT THE GRID OF STREETS, THE GENERAL LOCATION OF THE POINTS OF ACCESS TO EACH BLOCK, THE GENERAL LOCATION OF THE BUILDINGS, THE BUILD-TO LINES, THE MINIMUM AMOUNT AND GENERAL LOCATION OF PUBLICLY-ACCESS URBAN PARK LAND AS MAY BE APPLICABLE FOR EACH BLOCK AND THE GENERAL QUALITY AND CHARACTER OF THE STREETSCAPE ALONG THE PUBLIC AND PRIVATE STREETS WITHIN AND ABUTTING THE SUBJECT PROPERTY AND AS OTHERWISE SPECIFIED IN THE PROFFERS.

# BLOCK E FIRST INCH OF RUNOFF COMPUTATIONS:

**Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012**

Site Name: Block E

Description: Total Drainage area = 3.14 Ac. D.A.A. = Rooftop drainage area to cistern and infiltration. D.A.B. = drainage area to Tree pits and curb extensions. All soils are B.

**Post-Development Land Cover**

(data input cells highlighted in yellow)

**Drainage Area A**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | 0.38 | | | | 0.38 |
| Impervious Cover (acres) | 1.57 | | | | 1.57 |
| | | | | Total | 2.36 |

**Drainage Area B**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | 0.18 | | | | 0.18 |
| Impervious Cover (acres) | 0.60 | | | | 0.60 |
| | | | | Total | 0.78 |

**Drainage Area C**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| | | | | Total | 0.00 |

**Drainage Area D**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| | | | | Total | 0.00 |

**Drainage Area E**

| Land Cover Type | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open | | | | | 0.00 |
| Managed Turf (acres) | | | | | 0.00 |
| Impervious Cover (acres) | | | | | 0.00 |
| | | | | Total | 0.00 |

**Rv Coefficients**

| Land Cover Type * | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils |
|---|---|---|---|---|
| Forest / Preserved Open Space - Undisturbed, protected forest and open space or reforested land | 0.02 | 0.03 | 0.04 | 0.05 |
| Managed Turf | 0.15 | 0.20 | 0.22 | 0.25 |
| Impervious Cover | 0.95 | 0.95 | 0.95 | 0.95 |

* See the material library tab for a definition of each land cover type.

**Land Cover Summary**

| | |
|---|---|
| Forest / Preserved Open Space (ac) | 0.00 |
| Weighted Rv (forest) | 0.00 |
| % Forest | 0% |
| Managed Turf (acres) | 0.57 |
| Weighted Rv (turf) | 0.20 |
| % Managed Turf | 18% |
| Impervious Cover (acres) | 2.57 |
| Rv (impervious) | 0.95 |
| % Impervious | 82% |
| Total Site Area (acres) | 3.14 |
| Site Rv | 0.81 |

**Rainfall / Runoff Summary**

| | |
|---|---|
| Target Rainfall to Retain Onsite (inches) | 1.0 |
| 1-inch Rainfall Volume for entire site (cf) | 11,398 |
| Volume Not Converted to Runoff (cf) | 2,122 |
| 1-inch Runoff Volume for entire site (cf) | 9,276 |

**Runoff Reduction Summary**

| | |
|---|---|
| Target Runoff Reduction Volume (cf) | 9,276 |
| Runoff Reduction Volume Achieved (cf) | 9,382 |
| Total Runoff Volume Retained (cf) | 11,503 |
| Total Area of Site Captured in a BMP (acres) | 2.96 |

**Conformance with Comprehensive Plan Goal**

Total Site Area Captured by a BMP (%): 94% — SEE NOTE ON THIS SHEET.

Rainfall Depth Retained Onsite (inch): 1.00

**Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012**

Site Name: Block E

Drainage Area A Post Development Land Cover

| | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Managed Turf | 0.00 | 0.38 | 0.00 | 0.00 | 0.38 |
| Impervious Cover | 0.00 | 1.57 | 0.00 | 0.00 | 1.57 |
| | | | O.A. Total (acres) | | 2.36 |

Rv (full) 0.20; Rv (impervious) 0.95; Runoff from 1" Rainfall (cf) = 7,077

(data input cells highlighted)

| Apply Runoff Reduction Practices | Description of Area | Roof Area Contributing to RWH (sf) | Design Rainfall for RWH (in) | Max Volume Captured by Practice (cf) | RWHS Credit | Input % RR from Water | Volume Received from Upstream Practices (cf) | Total Volume Received by Practice (cf) | Surface Area of Practice (ft²) | Storage Vol Provided by Practice (ft³) | Avg Daily Drawdown (gallons) | Available Gallons Volume (gallons) | Runoff Reduction Vol (cf) | Remaining Volume (ft³) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Estimate Runoff Reduction % Using Spreadsheet | | | | | | Estimate RR% Bill % Credit | | | | |
| Rooftop Rainwater Harvesting | | 1.00 | 1.00 | 4,480 | | 39% | 0 | 4,480 | 1,200 | 8,000 | 1,244 | 2,400 | | | Infiltration Practice |

| Apply Runoff Reduction Practices | Description of Area | Impervious Cover to Contributing D.A. (ac) | Managed Turf to Contributing D.A. (ac) | Max Volume Received by Practice (ft³) | Description of Credit | % Credit | Volume Received from Upstream Practices (ft³) | Total Volume Received by Practice (ft³) | Surface Area of Practice (ft²) | Storage Vol Provided by Practice (ft³) | Runoff Reduction Vol (ft³) | Remaining Volume (ft³) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Infiltration Practice | | 0.47 | 0.19 | 1,504 | Subtract 100% of provided storage vol. | 100% | 1,470 | 2,974 | 18,000 | 2,974 | 0 | 0 | |
| Vegetated Roof | | 0.00 | N/A | 880 | Subtract 100% of provided storage vol. | 100% | N/A | 880 | N/A | 10,000 | 880 | 0 | Rooftop Rainwater Harvesting |
| Permeable Pavement - DCR Level 1 Design Spec | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 1 Design Spec | | | N/A | 0 | Reduce vol. through permeable pavement by 0.045 cfs/sf of permeable pavement | N/A | N/A | 0 | | N/A | 0 | 0 | |
| Bioretention - DCR Level 1 Design Spec (enhanced) | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Bioretention - DCR Level 1 Design Spec (standard) | | | | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to A/B Soils or Compost-Amended Filter Path | | | N/A | 0 | Reduce volume to conservation area by 0.02 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to C/D Soils | | | N/A | 0 | Reduce volume to conservation area by 0.01 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to Conservation Area | | | N/A | 0 | Reduce volume to conservation area by 0.05 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Disconnection to Bioretention | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain DCR Level 2 Design | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain DCR Level 1 Design | | | N/A | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Stormwater Planter, Extended Tree Pit, or Curb Extension (Urban Bioretention) | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 2 Design Spec | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 1 Design Spec | | | | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Grass Channel A/B Soils | | | | 0 | Reduce volume conveyed through grass channel by 20% | 20% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel C/D Soils | | | | 0 | Reduce volume conveyed through grass channel by 10% | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel with Compost Amended Soils | | | | 0 | Reduce volume conveyed through grass channel by 30% | 30% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Extended Detention Pond | | | | 0 | Reduce volume detained for extended detention period by 10% | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Swale/Bioretention Area with A/B Soils | | | | 0 | Reduce volume by 0.05 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Swale/Bioretention Area with C/D Soils | | | | 0 | Reduce volume by 0.04 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Swale/Bioretention Vegetated Filter Strip in A/B Soils or Amended C/D Soils | | | | 0 | Reduce volume by 0.06 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Proprietary / Other practice not listed above | | | | 0 | Subtract % Credit of provided storage vol. | | 0 | 0 | N/A | | 0 | 0 | |
| Totals: | | 1.07 | 0.20 | | | | | | | | | | |

Total Drainage Area Treated (acres): 2.36

Runoff Reduction Volume Achieved for Drainage Area A (cubic feet): 7,015

See Worksheet Summary Tab for Site Results

**Tysons Corner Comprehensive Plan Stormwater Conformance Spreadsheet - Beta Version 4-18-2012**

Site Name: Block E

Drainage Area B Post Development Land Cover

| | HSG A soils | HSG B Soils | HSG C Soils | HSG D Soils | Totals |
|---|---|---|---|---|---|
| Forest / Preserved Open Space | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Managed Turf | 0.00 | 0.18 | 0.00 | 0.00 | 0.18 |
| Impervious Cover | 0.00 | 0.60 | 0.00 | 0.00 | 0.60 |
| | | | O.A. Total (acres) | | 0.78 |

Rv (full) 0.20; Rv (impervious) 0.95; Runoff from 1" Rainfall (cf) = 2,200

(data input cells highlighted)

| Apply Runoff Reduction Practices | Description of Area | Impervious Cover to Contributing D.A. (ac) | Managed Turf to Contributing D.A. (ac) | Max Volume Received by Practice (ft³) | Description of Credit | % Credit | Volume Received from Upstream Practices (ft³) | Total Volume Received by Practice (ft³) | Surface Area of Practice (ft²) | Storage Vol Provided by Practice (ft³) | Avg Daily Drawdown (gallons) | Available Gallons Volume (gallons) | Runoff Reduction Vol (cf) | Remaining Volume (ft³) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Estimate Runoff Reduction % Using Spreadsheet | | | | | | Estimate RR% Bill % Credit | | | | |
| Rooftop Rainwater Harvesting | | | 1.00 | 0 | SELECT RWHS Credit or NO RWH | | 0 | 0 | | | | | 0 | 0 | |

| Apply Runoff Reduction Practices | Description of Area | Impervious Cover to Contributing D.A. (ac) | Managed Turf to Contributing D.A. (ac) | Max Volume Received by Practice (ft³) | Description of Credit | % Credit | Volume Received from Upstream Practices (ft³) | Total Volume Received by Practice (ft³) | Surface Area of Practice (ft²) | Storage Vol Provided by Practice (ft³) | Runoff Reduction Vol (cf) | Remaining Volume (ft³) | Downstream Practice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Infiltration Practice | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Vegetated Roof | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 2 Design Spec | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | N/A | 0 | N/A | | 0 | 0 | |
| Permeable Pavement - DCR Level 1 Design Spec | | | N/A | 0 | Reduce vol. through permeable pavement by 0.045 cfs/sf of permeable pavement | N/A | N/A | 0 | | N/A | 0 | 0 | |
| Bioretention - DCR Level 2 Design Spec (enhanced) | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Bioretention - DCR Level 1 Design Spec (standard) | | | | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to A/B Soils or Compost-Amended Filter Path | | | N/A | 0 | Reduce volume to conservation area by 0.04 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to C/D Soils | | | N/A | 0 | Reduce volume to conservation area by 0.02 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Simple Disconnection to Conservation Area | | | N/A | 0 | Reduce volume to conservation area by 0.08 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | |
| Disconnection to Bioretention | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain DCR Level 2 Design | | | N/A | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Dry Well/French Drain DCR Level 1 Design | | | N/A | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Disconnection to Stormwater Planter, Extended Tree Pit, or Curb Extension (Urban Bioretention) | | 0.60 | N/A | 2,000 | Subtract 100% of provided storage vol. | 100% | 0 | 2,000 | N/A | 2,100 | 2,000 | 0 | |
| Dry Swale - DCR Level 2 Design Spec | | | | 0 | Subtract 100% of provided storage vol. | 100% | 0 | 0 | N/A | | 0 | 0 | |
| Dry Swale - DCR Level 1 Design Spec | | | | 0 | Subtract 50% of provided storage vol. | 50% | 0 | 0 | N/A | | 0 | 0 | |
| Grass Channel A/B Soils | | | | 0 | Reduce volume conveyed through grass channel by 20% | 20% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel C/D Soils | | | | 0 | Reduce volume conveyed through grass channel by 10% | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Grass Channel with Compost Amended Soils | | | | 0 | Reduce volume conveyed through grass channel by 30% | 30% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Extended Detention Pond | | | | 0 | Reduce volume detained for extended detention period by 10% | 10% | 0 | 0 | N/A | N/A | 0 | 0 | |
| Swale/Bioretention Area with A/B Soils | | | | 0 | Reduce volume by 0.05 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Swale/Bioretention Area with C/D Soils | | | | 0 | Reduce volume by 0.04 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Swale/Bioretention Vegetated Filter Strip in A/B Soils or Amended C/D Soils | | | | 0 | Reduce volume by 0.06 cu. ft per sq. ft. of conservation area | N/A | 0 | 0 | | N/A | 0 | 0 | N/A |
| Proprietary / Other practice not listed above | | | | 0 | Subtract % Credit of provided storage vol. | | 0 | 0 | N/A | | 0 | 0 | |
| Totals: | | 0.60 | 0.20 | | | | | | | | | | |

Total Drainage Area Treated (acres): 0.80

Runoff Reduction Volume Achieved for Drainage Area A (cubic feet): 2,009

See Site Data and Summary Tab for Site Results

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BLOCK E SWM COMPUTATIONS (1 OF 2)
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 3/20/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/20/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|

SCALE: N AS SHOWN
JOB No.:
DATE: February 24, 2012
FILE No. 7403-12-001
SHEET: C9.1

# BLOCK E LEED COMPUTATIONS:

NOTE:
SEE SHEET C9.0 FOR LIMITS OF 2.81 ACRES LEED BOUNDARY.

FDPKEE2.PRN
GRAPHICAL PEAK DISCHARGE METHOD — Version 2.10

Project : WESTPARK REDEVELOPMENT — User: RSB — Date: 02-01-2012
County : Fairfax — State: VA — Checked: ____ — Date: _____
Subtitle: EXISTING CONDITIONS BLOCK E

Data: Drainage Area : 2.81 Acres
Runoff Curve Number : 89
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 | 0.15 | 0.13 | 0.07 |
| Used | 0.15 | 0.13 | 0.10 |
| Runoff (in) | 1.21 | 1.61 | 3.63 |
| Unit Peak Discharge (cfs/acre/in) | 1.548 | 1.582 | 1.576 |
| Pond and Swamp Factor 0.0% Ponds Used | 1.00 | 1.00 | 1.00 |
| Peak Discharge (cfs) | 5 | 7 | 16 |

TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)
1 YR STORM: 2.81 AC X 1.21 (IN) X 1FT/12IN X 43560 = 12,343 CU. FT.
2 YR STORM: 2.81 AC X 1.61 (IN) X 1FT/12IN X 43560 = 16,423 CU. FT.

FDPPE.PRN
GRAPHICAL PEAK DISCHARGE METHOD — Version 2.10

Project : WESTPARK REDEVELOPMENT — User: 450 — Date: 02-01-2012
County : FAIRFAX — State: VA — Checked: ____ — Date: _____
Subtitle: PROPOSED CONDITIONS BLOCK E

Data: Drainage Area : 2.81 Acres
Runoff Curve Number : 87
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 | 0.11 | 0.09 | 0.05 |
| Used | 0.11 | 0.10 | 0.10 |
| Runoff (in) | 1.48 | 1.91 | 4.04 |
| Unit Peak Discharge (cfs/acre/in) | 1.172 | 1.578 | 1.578 |
| Pond and Swamp Factor 0.0% Ponds Used | 1.00 | 1.00 | 1.00 |
| Peak Discharge (cfs) | 7 | 8 | 16 |

TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS)
1 YR STORM: 2.81 AC X 1.48 (IN) X 1FT/12IN X 43560 = 15,097 CU. FT.
2 YR STORM: 2.81 AC X 1.91 (IN) X 1FT/12IN X 43560 = 19,483 CU. FT.

TOTAL RUNOFF VOLUME (ALLOWABLE RELEASE)
PER LEED, POST-DEVELOPED VOLUME FOR THE 1 YEAR AND 2 YEAR STORMS MUST NOT EXCEED 75% OF THE EXISTING CONDITIONS VOLUMES. THEREFORE ANY STORAGE REQUIRED SHALL BE MET WITH A REUSE VAULT.

1-YEAR STORM
15,097 CU. FT. - (0.75 X 12,343 CU. FT.) = 5,840 CU. FT.

2-YEAR STORM
19,483 CU. FT. - (0.75 X 16,423 CU. FT.) = 7,166 CU. FT.

SUMMARY
THE 2-YEAR STORM EVENT CONTROLS, AND 7,166 CF OF STORAGE IS NEEDED TO SATISFY THE LEED REQUIREMENT.

# BLOCK E PFM COMPLIANCE:

ALLOWABLE RELEASE COMPUTATIONS (RATIONAL METHOD):

Q=CIA

1.) PRE-DEVELOPMENT RUNOFF
TOTAL SITE AREA = 3.14 AC
C = 0.67
$I_2$ = 5.45 IN/HR
$I_{10}$ = 7.27 IN/HR
$Q_{pre2}$ = 11.47 CFS
$Q_{pre10}$ = 15.29 CFS

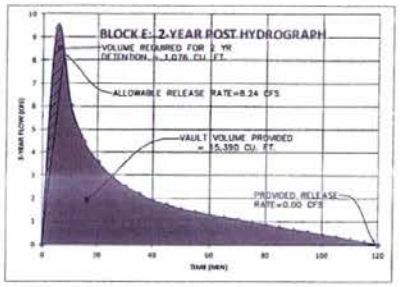
2.) POST-DEVELOPMENT DETENTION FACILITY INFLOW
AREA = 2.359 AC
C = 0.73
$I_2$ = 5.45 IN/HR
$I_{10}$ = 7.27 IN/HR
$Q_{post2}$ = 9.39 CFS
$Q_{post10}$ = 12.52 CFS

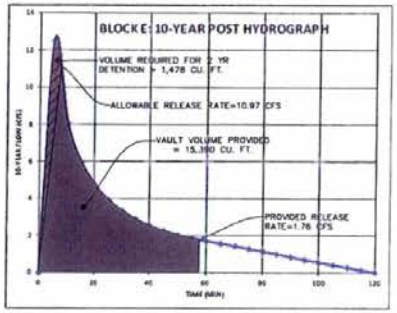
3.) POST-DEVELOPMENT ONSITE UNDETAINED
AREA = 0.781 AC
C = 0.76
$I_2$ = 5.45 IN/HR
$I_{10}$ = 7.27 IN/HR
$Q_{post2}$ = 3.23 CFS
$Q_{post10}$ = 4.32 CFS

4.) ALLOWABLE RELEASE RATE COMPUTATION
Q(ALLOWABLE) = [PRE-DEVELOPED RUNOFF] - [ONSITE UNDETAINED]
$Q_2$(ALLOWABLE) = 11.47 CFS - 3.23 CFS = 8.24 CFS
$Q_{10}$(ALLOWABLE) = 15.29 CFS - 4.32 CFS = 10.97 CFS

5.) SWM VAULT RELEASE RATE
$Q_2$ PEAK OUT = 0.00 CFS
$Q_{10}$ PEAK OUT = 1.76 CFS

THE RELEASE RATES FROM THE SWM/REUSE VAULT SHALL BE LOWER THAN THE ALLOWABLE RELEASE RATES FOR THE 2-YR AND 10-YR STORM EVENTS, AS SUCH THE PFM DETENTION REQUIREMENTS HAVE BEEN MET.




# BLOCK E OVERALL SWM SUMMARY:

| | REQUIRED STORAGE |
|---|---|
| LEED: | 7,166 CF |
| 1" RUNOFF: | 4,173 CF |
| PFM: | 1,478 CF |

← CONTROLS SWM VAULT STORAGE REQUIREMENT

TO ENSURE THAT THE STORAGE NECESSARY TO OBTAIN THE 10-YEAR STORM (PER THE PFM) IS AVAILABLE WITHIN 48 HOURS OF A PREVIOUS STORM, THE VAULT HAS BEEN SIZED AS FOLLOWS:

MAX VOLUME FOR REUSE (LEED) = 7,166 CF
AMOUNT THAT CAN BE DRAINED IN 48 HOURS DURING THE WINTER = 0 CF (IRRIGATION DEMAND)
VOLUME FOR 10-YEAR STORM DETENTION (PFM) = 1,478 CF

7,166 - 0 + 1,478 = 8,644 => 8,750 CF OF STORAGE NEEDED

FINAL BLOCK E STORAGE REQUIREMENT = 8,750 CF
STORAGE PROVIDED THROUGH INFILTRATION: 15,390 CF

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.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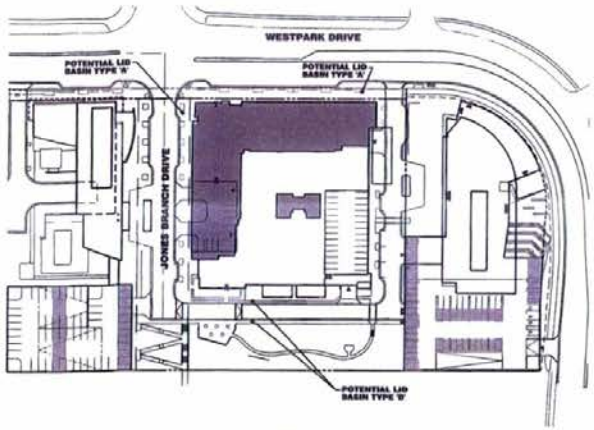
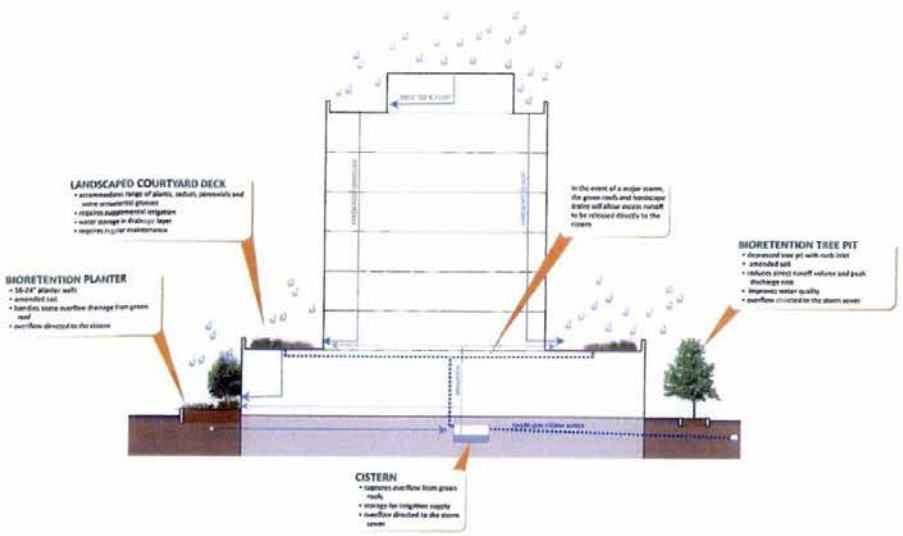
BLOCK E SWM COMPUTATIONS (2 OF 2)
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-022-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/23/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

SCALE : AS SHOWN
JOB No. :
DATE : February 24, 2012
FILE No. 7403-12-001
SHEET C9.2




1 LOW IMPACT DEVELOPMENT TECHNIQUES - CONCEPT PLAN
NTS




CONCEPTUAL BUILDING DIAGRAM FOR L.I.D TECHNIQUES

BASIN TYPE 'A' & PERMEABLE PAVERS

BASIN TYPE 'B'

COMMONWEALTH OF VIRGINIA
MATTHEW J. TUCKER
No. 000852
LANDSCAPE ARCHITECT

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 LS.02 FOR ADDITIONAL SUSTAINABILITY DESIGN INFORMATION.

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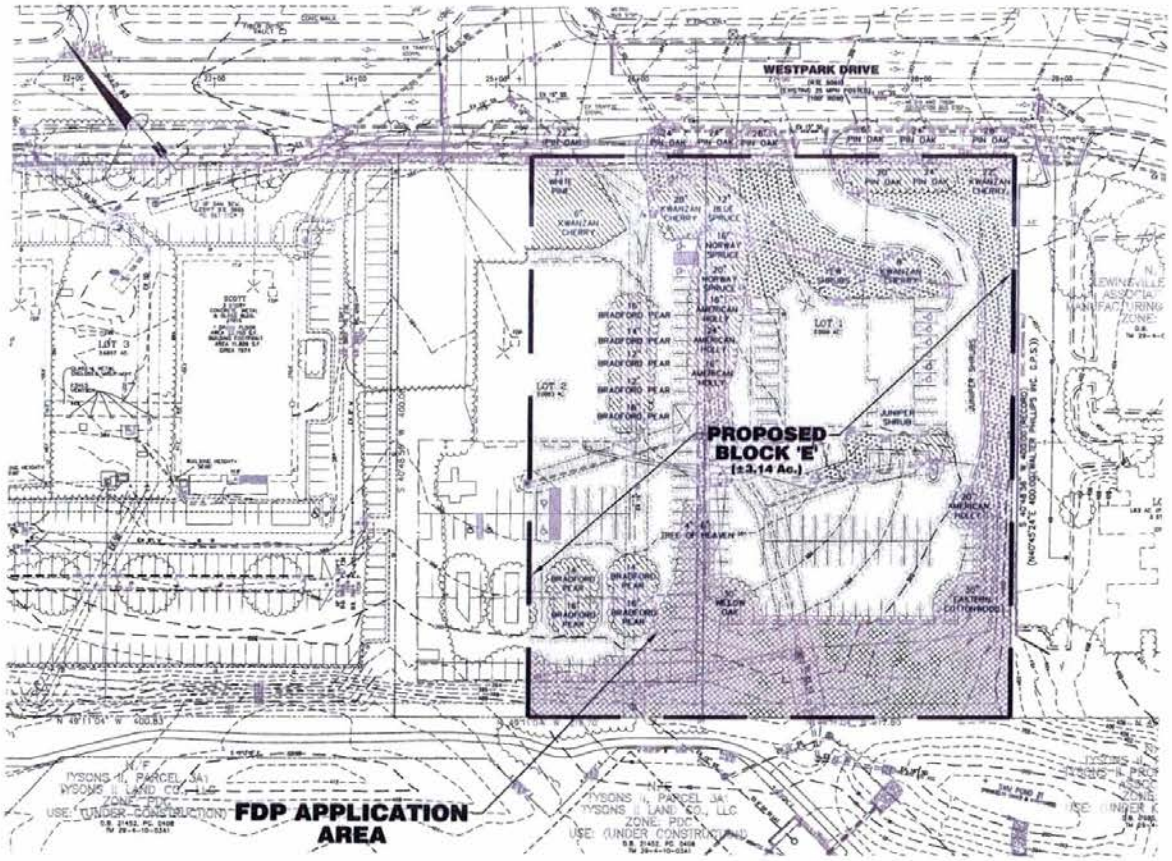
LOW IMPACT DEVELOPMENT
CONCEPT PLAN
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/28/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE H: AS SHOWN
JOB No.
DATE February 24, 2012
FILE No. 7403-12-001
SHEET C10.0




| Table 12.3 Tree Preservation Target Calculations and Statement | | |
|---|---|---|
| A | Pre-development area of existing tree canopy (from Existing Vegetation Map) = | 1.02 AC. |
| B | Percentage of gross site area covered by existing tree canopy = | 32% |
| C | Percentage of 10-year canopy required for site (see Table 12.4) = (Per Comprehensive Plan Goal = 10%) | 10% (0.314 AC.) |
| D | Percentage of the 10-year tree canopy requirement that should be met through tree preservation = | 32% (0.10 AC.) |
| E | Proposed percentage of canopy requirement that will be met through tree preservation = | 0% (0.00 AC.) |
| F | Was 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 12-0508.6 | 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.

## 'BLOCK E' COVER TYPE

| KEY | COVER TYPE | SPECIES TYPE | SUCCESSION STAGE | CONDITION | TOTAL AREA |
|---|---|---|---|---|---|
| | EARLY SUCCESSION FOREST COMMUNITY | *OSAGE ORANGE, BLACK LOCUST, BLACK CHERRY, NORWAY SPRUCE, PIN OAK, WHITE PINE, TULIP POPLAR | EARLY | FAIR TO POOR | .62 AC. |
| | DEVELOPED LAND | N/A | N/A | N/A | 1.68 AC. |
| | LANDSCAPE TREE CANOPY | SEE EVM | MID-LATE | FAIR TO GOOD | .40 AC. |
| | MISC. SHRUB AND GROUND COVER | N/A | N/A | FAIR TO GOOD | .44 AC. |

*DOMINANT TREE SPECIES

TOTAL SITE AREA = 3.14 AC.

EXISTING TREE CANOPY = 44,516 S.F. OR 1.02 AC.
(.40 AC. OR 17,472 S.F. LANDSCAPE TREE CANOPY +
.62 AC. OR 27,044 S.F. FOREST)

**Bowman**
CONSULTING

July 23, 2012

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

**Re: Arbor Row Block 'E' Tree Preservation Target Deviation Request**
**FDP 2011-PR-023-03**

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 number 0204-07-0061 and a portion (.87 acres) of 0204-07-0002. 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 part of a concurrent rezoning application RZ/CDP 2011-PR-023 with proposed zoning category of PTC, and is subject of partial PCA 88-D-005-7.

According to the Existing Vegetation Map, prepared by Bowman Consulting Group, the property (3.14 acres) is currently covered by approximately 1.02 acres or 32% tree/shrub cover. The final development plan proposes to clear 1.02 acres for proposed grading and construction improvements. Per the Comprehensive Plan 10-year tree canopy goals, 10% (.314 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 .10 acres (.314 acres x 32%). Since no preservation credit will be taken, 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 would 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 12-0401 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 smaller 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, 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 lean, broken/dead scaffold branches, girdling, etc. Per Section 12-0403.5-A, 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 12-0403.3B, 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,

Greg Elliott, Applicant Representative
RLA, ISA Certified Arborist, MA-0016A
Bowman Consulting Group

## LEGEND

EXISTING INDIVIDUAL TREE LINE

EXISTING TREE CANOPY LINE

AREA OF FDP APPLICATION

GRAPHIC SCALE

( IN FEET )
1 inch = 40 ft.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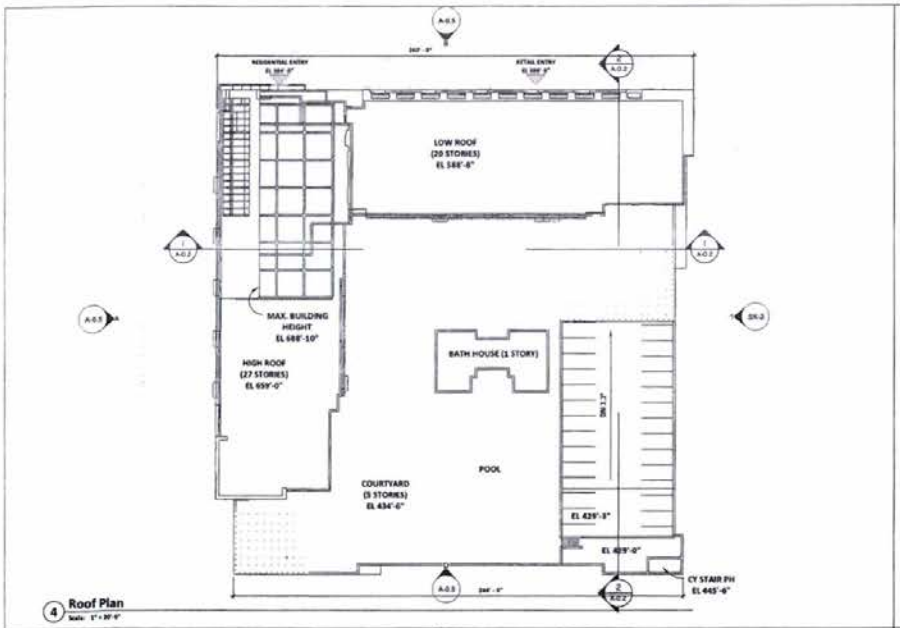
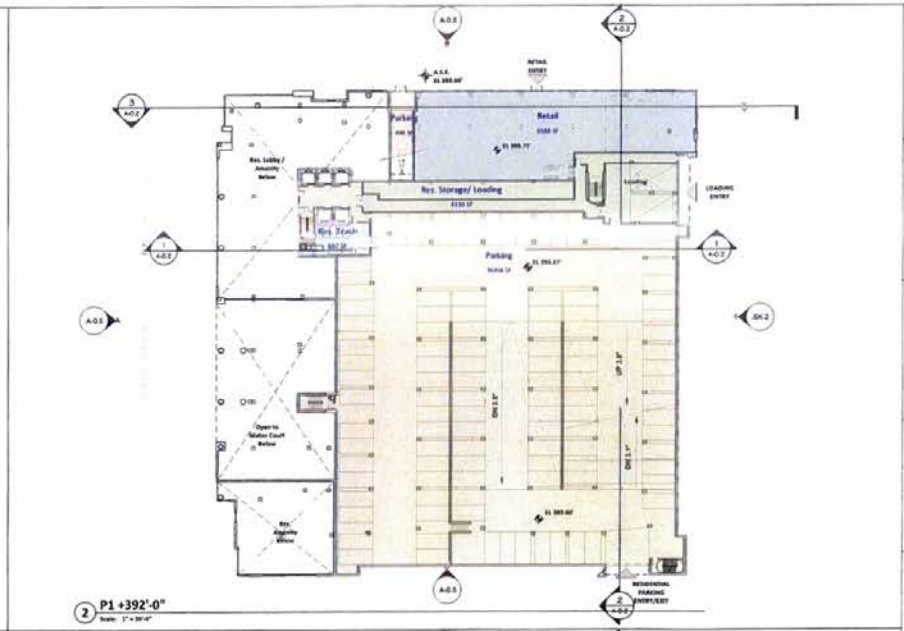
EXISTING VEGETATION MAP
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-03
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 3/23/12 | PER COUNTY COMMENTS |
| 7/23/12 | PER COUNTY COMMENTS |
| 08/29/12 | PER COUNTY COMMENTS |
| 10/05/12 | PER COUNTY COMMENTS |
| DATE | DESCRIPTION |

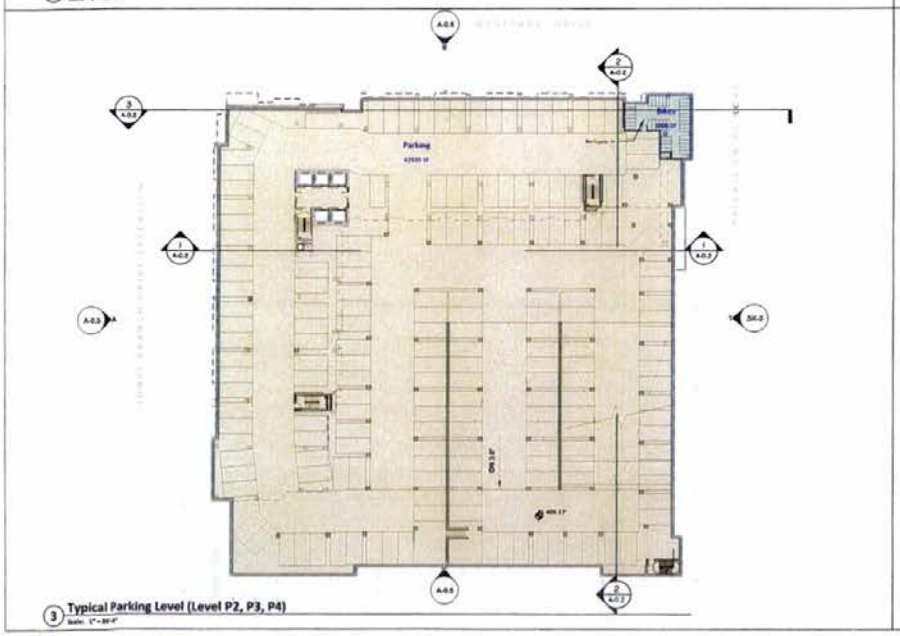
SCALE 1" = 40'
JOB No.
DATE February 24, 2012
FILE No. 7403-12-001
SHEET C11.0



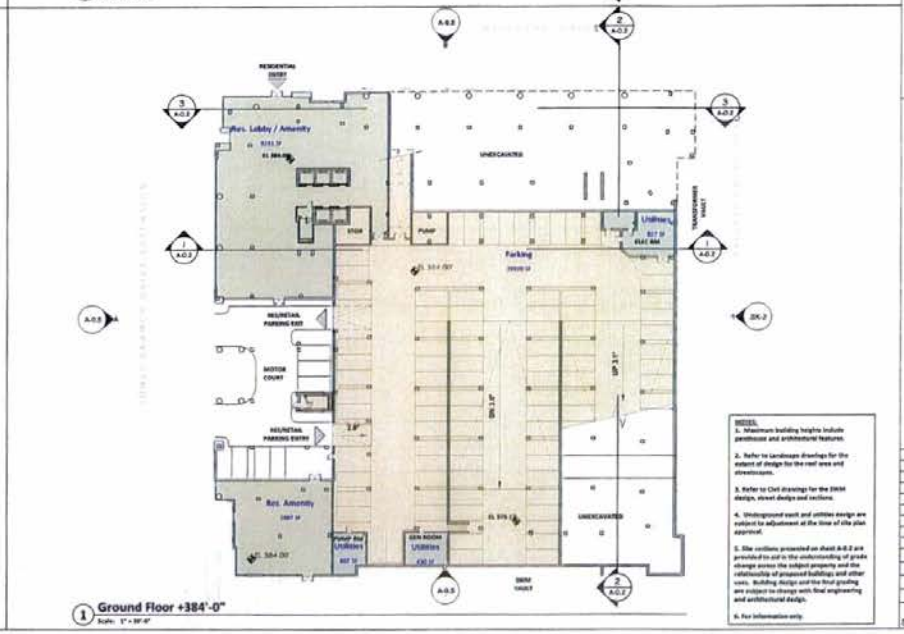

4 Roof Plan




2 P1 +392'-0"




3 Typical Parking Level (Level P2, P3, P4)




1 Ground Floor +384'-0"

NOTES:

1. Maximum building heights include penthouse and architectural features.

2. Refer to Landscape drawings for the extent of design for the roof area and streetscape.

3. Refer to Civil drawings for the SWM design, street design and sections.

4. Underground vault and utilities design are subject to adjustment at the time of site plan approval.

5. Site sections presented on sheet A-0.2 are provided to aid in the understanding of grade change across the subject property and the relationship of proposed buildings and other uses. Building design and the final grading are subject to change with final engineering and architectural design.

6. For information only.

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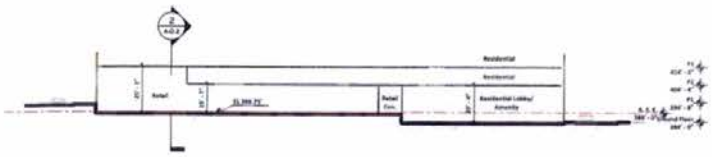
PLANS

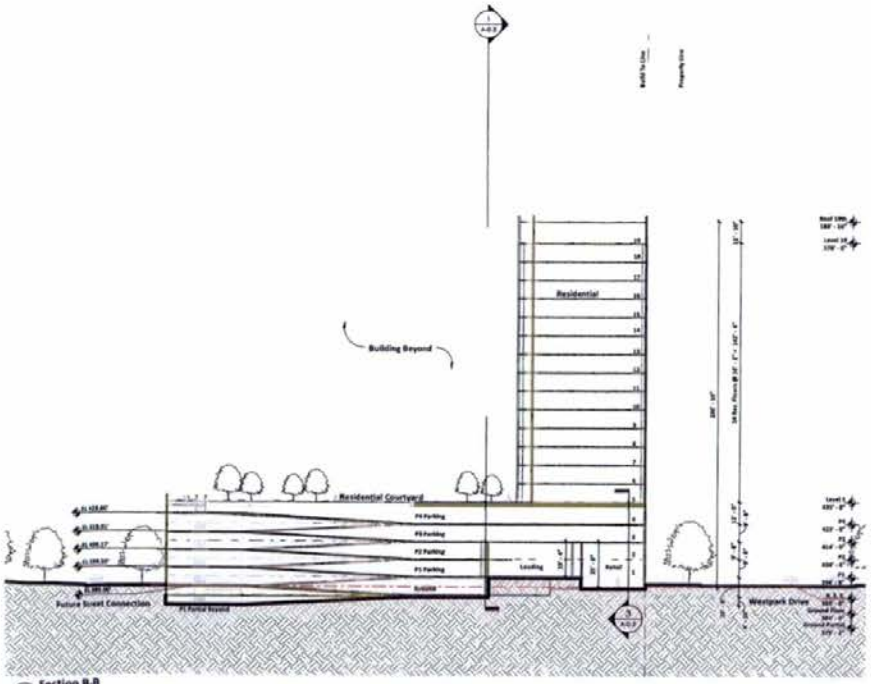
# ARBOR ROW - BLOCK 'E'

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

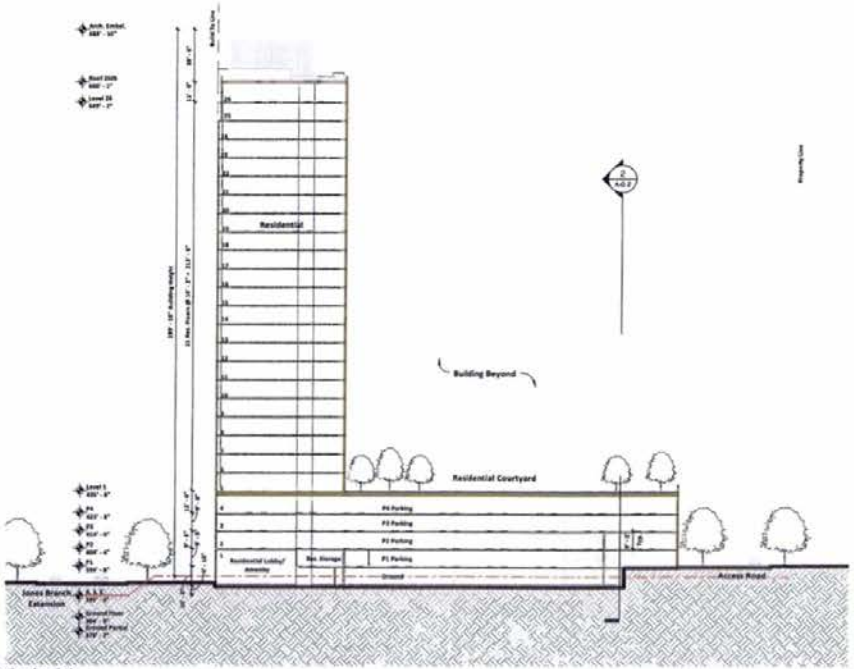
| PLAN STATUS | |
|---|---|
| 5/25/12 | Per County Comments |
| 7/23/12 | Per County Comments |
| 9/28/12 | Per County Comments |
| 10/05/12 | Per County Comments |
| | |
| | |
| | |
| DATE | DESCRIPTION |
| SCALE: | As indicated |
| JOB No.: | WA11041 |
| DATE: | 2012.03.08 |
| FILE No.: | 7483-12-001 |
| SHEET | A-0.1 |




3 Section C-C
Scale: 1" = 30'-0"

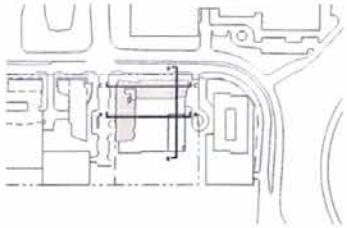



2 Section B-B
Scale: 1" = 30'-0"




1 Section A-A
Scale: 1" = 30'-0"

NOTES:
1. Maximum building heights include penthouse and architectural features.
2. Refer to landscape drawings for the extent of design for the roof area and streetscapes.
3. Refer to Civil drawings for the field design, street design and sections.
4. Underground vault and utilities design are subject to adjustment at the time of site plan approval.
5. Site sections presented on sheet A-0.2 are provided to aid in the understanding of grade change across the subject property and the relationship of proposed buildings and other uses. Building design and the final grading are subject to change with final engineering and architectural design.
6. For information only.



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SECTIONS A-A, B-B, C-C

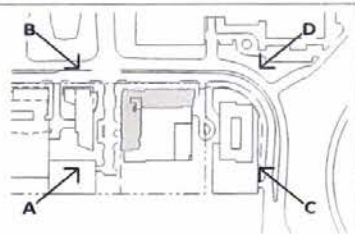
ARBOR ROW - BLOCK 'E'

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

| PLAN STATUS | |
|---|---|
| 1/25/12 | Per County Comments |
| 1/23/12 | Per County Comments |
| 8/29/12 | Per County Comments |
| 10/05/12 | Per County Comment |
| | |
| | |
| DATE | DESCRIPTION |

| | |
|---|---|
| SCALE: | As indicated |
| JOB No.: | WA11041 |
| DATE: | 2012.03.06 |
| FILE No.: | 7403-12-001 |
| SHEET | A-0.2 |

NOTE:
For information only. Birds eye views massings shown are illustrative, and do not represent the maximum allowable building height proposed for each building.



A

B

C

D

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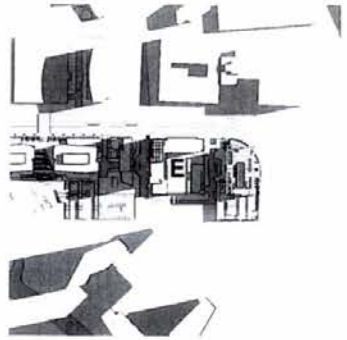
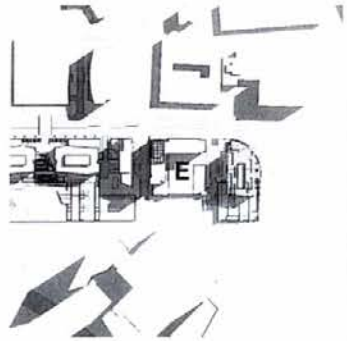
PROPOSED DEVELOPMENT WITH PROPOSED NEIGHBORING PROPERTIES
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/12 | Per County Comments |
| 7/23/12 | Per County Comments |
| 8/29/12 | Per County Comments |
| 10/05/12 | Per County Comments |
| | |
| | |
| | |
| DATE | DESCRIPTION |

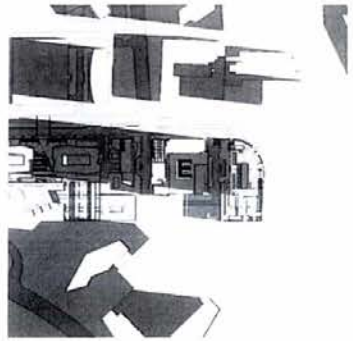
| | |
|---|---|
| SCALE: | As indicated |
| JOB No.: | WA11041 |
| DATE: | 2012.03.09 |
| FILE No.: | 7403-12-001 |
| SHEET | A-0.3 |



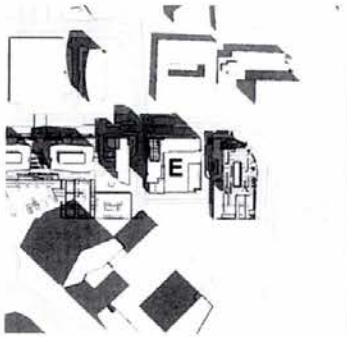

March 21, September 21 - 9:00 am



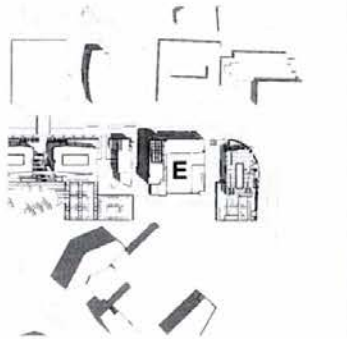

June 21 - 9:00 am



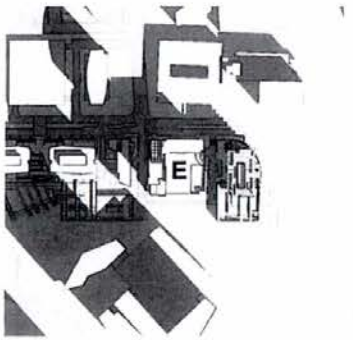

December 21 - 9:00 am



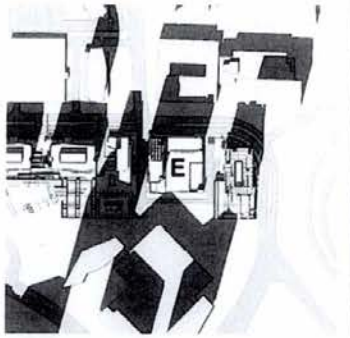

March 21, September 21 - 12:00 pm



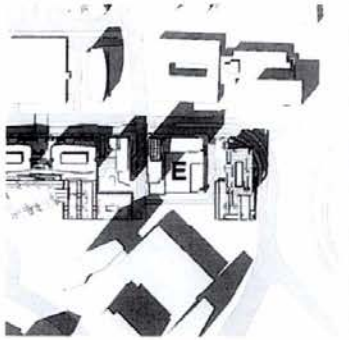

June 21 - 12:00 pm




December 21 - 12:00 pm




March 21, September 21 - 3:00 pm

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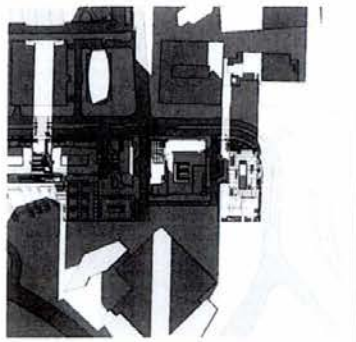


December 21 - 3:00 pm

NOTE:
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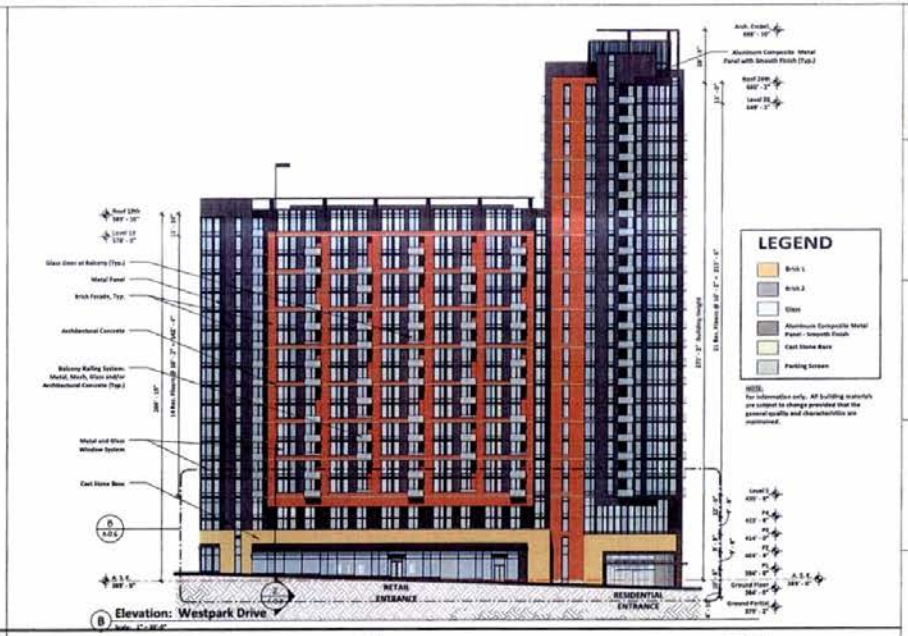
SHADOW STUDY

ARBOR ROW - BLOCK 'E'

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

| PLAN STATUS | |
|---|---|
| 5/25/12 | Per County Comments |
| 7/23/12 | Per County Comments |
| 8/29/12 | Per County Comments |
| 10/05/12 | Per County Comments |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE:
JOB No: WA11041
DATE: 2012.03.08
FILE No: 7403-12-001
SHEET A-0.4



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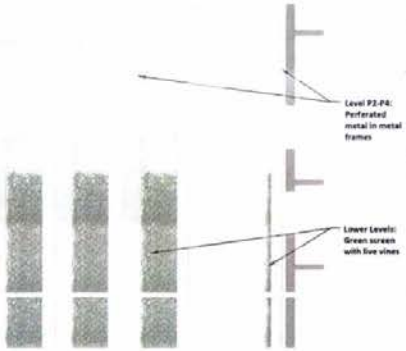
ELEVATIONS

# ARBOR ROW - BLOCK 'E'

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

| PLAN STATUS | |
|---|---|
| 5/25/12 | Per County Comments |
| 7/23/12 | Per County Comments |
| 8/29/12 | Per County Comments |
| 10/09/12 | Per County Comments |
| | |
| | |
| DATE | DESCRIPTION |

| | |
|---|---|
| SCALE: | As indicated |
| JOB No.: | WA11041 |
| DATE: | 2012.03.06 |
| FILE No.: | 7403-12-001 |
| SHEET | A-0.5 |

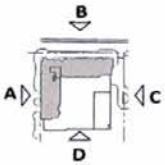



**Green Screen Detail**

NOT TO SCALE

**OVERHEAD DOORS DETAIL**

NOT TO SCALE



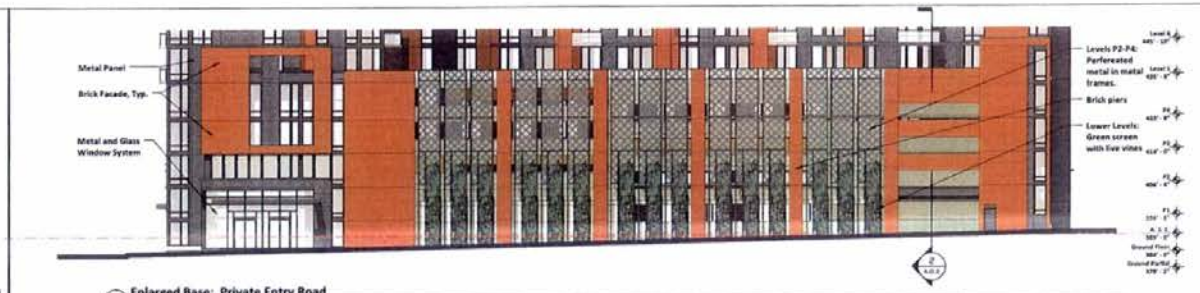

**MOTOR COURT MATERIALS**

WALLS - Cast Stone & Brick

ROADWAY - Precast Pavers

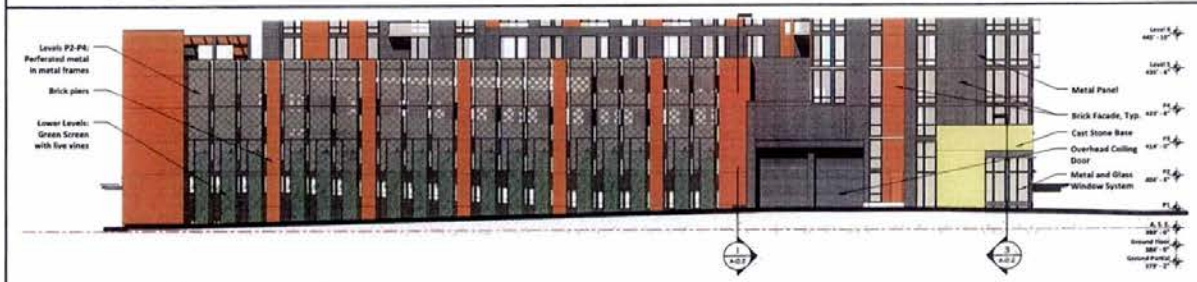
CEILING - Gypsum board with special and decorative lighting

NOTE:
For information only. All building materials are subject to change provided that the general quality and characteristics are maintained.




(D) **Enlarged Base: Private Entry Road**

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




(C) **Enlarged Base: Private Entry Road**

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

(B) **Enlarged Base: Westpark Drive**

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

(A) **Enlarged Base: Jones Branch Drive Extension**

Scale: 1/16" = 1'-0"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ELEVATIONS - BASE

# ARBOR ROW - BLOCK 'E'

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

| PLAN STATUS | |
|---|---|
| 5/29/12 | Per County Comments |
| 7/23/12 | Per County Comments |
| 8/29/12 | Per County Comments |
| 10/05/12 | Per County Comments |
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| | |
| DATE | DESCRIPTION |

| | |
|---|---|
| SCALE: | As indicated |
| JOB No.: | WA11041 |
| DATE: | 2012.03.06 |
| FILE No.: | 7403-12-001 |
| SHEET | A-0.6 |

NOTE:
For information only. These view are illustrative examples and are subject to final engineering and design.

**Overall View Looking at Entrance**

**Enlarged View at Base of Building Looking at Entrance**

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VIEWS - ENTRANCE

ARBOR ROW - BLOCK 'E'

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

| PLAN STATUS | |
|---|---|
| 5/25/12 | Per County Comments |
| 7/23/12 | Per County Comments |
| 8/29/12 | Per County Comments |
| 10/05/12 | Per County Comments |
| | |
| | |
| DATE | DESCRIPTION |
| SCALE: | 12" = 1'-0" |
| JOB No.: | WA11041 |
| DATE: | 2012.03.08 |
| FILE No.: | 7403-12-001 |
| SHEET | A-0.7 |

NOTE:
For information only. These view are illustrative examples and are subject to final engineering and design.

**Overall View from Westpark Drive East**

**Enlarged View at Base of Building from Westpark Drive East**

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VIEWS - WESTPARK DRIVE EAST

ARBOR ROW - BLOCK 'E'

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

PLAN STATUS

| DATE | DESCRIPTION |
|---|---|
| 5/29/12 | Per County Comments |
| 7/23/12 | Per County Comments |
| 8/29/12 | Per County Comments |
| 10/05/12 | Per County Comments |

| | |
|---|---|
| SCALE: | 12" = 1'-0" |
| JOB No.: | WA11041 |
| DATE: | 2012.03.08 |
| FILE No.: | 7403-12-001 |
| SHEET | A-0.8 |

NOTE:
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Rooftop View: North

Rooftop View: South

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ROOF VIEWS

# ARBOR ROW - BLOCK 'E'

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

| PLAN STATUS | |
|---|---|
| 5/25/12 | Per County Comments |
| 7/23/12 | Per County Comments |
| 8/29/12 | Per County Comments |
| 10/05/12 | Per County Comments |

| DATE | DESCRIPTION |
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| SCALE: | 12" = 1'-0" |
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| DATE: | 2012.03.06 |
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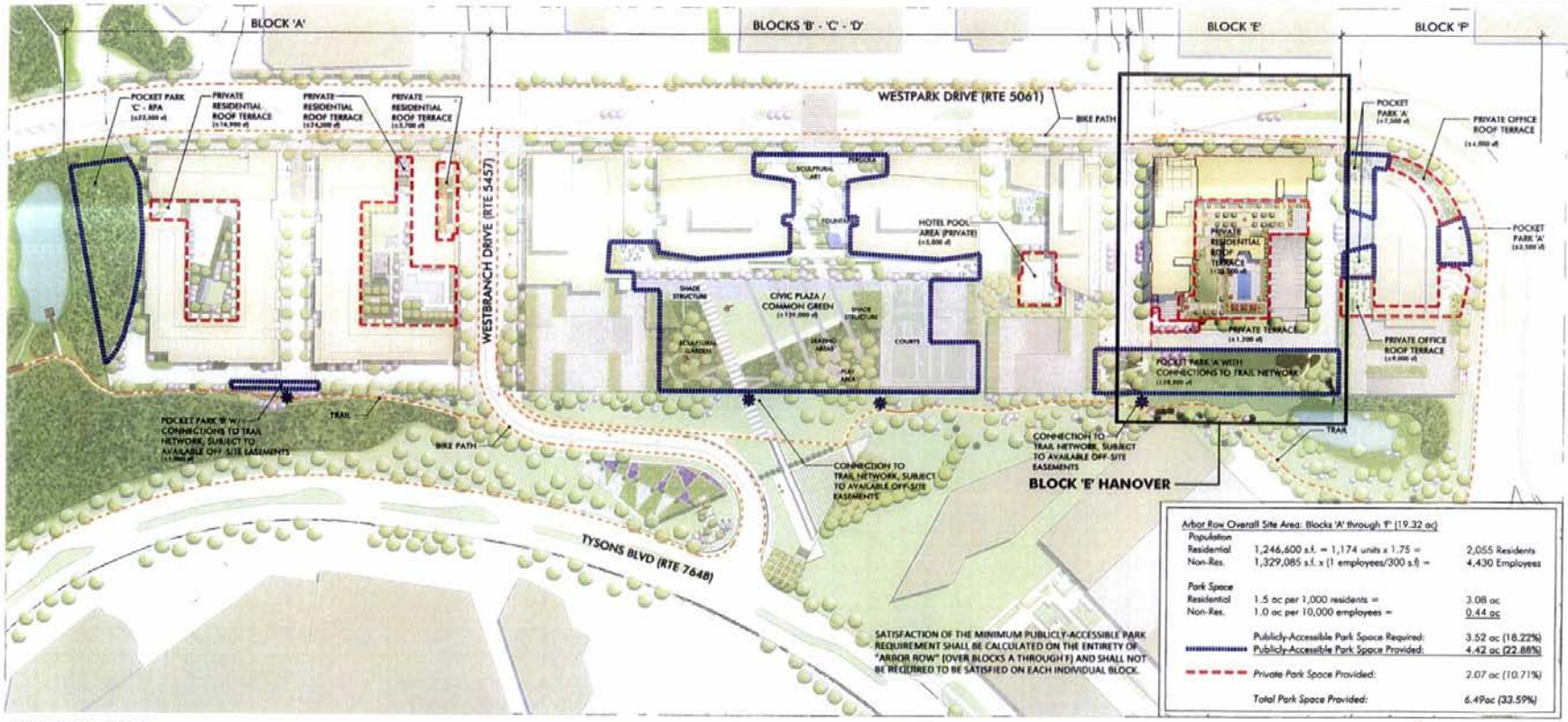
| SHEET | A-0.9 |




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.

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

| | | |
|---|---|---|
| *Population* | | |
| Residential | 1,246,600 s.f. = 1,174 units x 1.75 = | 2,055 Residents |
| Non-Res. | 1,329,085 s.f. x (1 employees/300 s.f) = | 4,430 Employees |
| *Park Space* | | |
| Residential | 1.5 ac per 1,000 residents = | 3.08 ac |
| Non-Res. | 1.0 ac per 10,000 employees = | 0.44 ac |
| | Publicly-Accessible Park Space Required: | 3.52 ac (18.22%) |
| | Publicly-Accessible Park Space Provided: | 4.42 ac (22.88%) |
| | *Private Park Space Provided:* | *2.07 ac (10.71%)* |
| | *Total Park Space Provided:* | *6.49ac (33.59%)* |

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 place including public art and large enough to support casual unprogrammed use as well as community events. Serves as a focal point and unique placemaking places for civic purposes and commercial supporting activities.

*Potential Activities:*

- Interactive Sculpture Garden
- Performance and Special Event Space
- Outdoor Movie Screen
- 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
- Bosque of Trees
- Board Games
- Fountain Feature
- Special Events
- Outdoor Dining
- Outdoor 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
- Landscape 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 Profiles

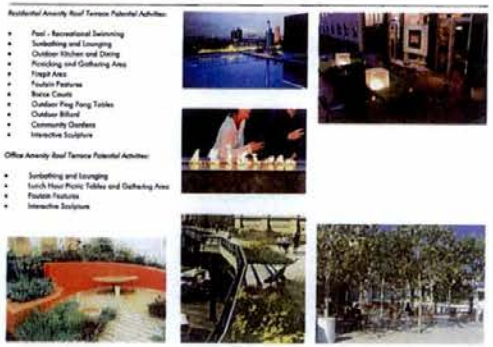
PRIVATE AMENITY ROOF TERRACES - provides outdoor amenity space for residents and workers of residential building and office complexes.

*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



BLOCK 'E' FOP CALCULATIONS

Overall Site Area 136,788 sf (3.14 ac)

*Population*
Residential: ±509,800 sf
Retail: ±7,000 sf
Office: 0

| | |
|---|---|
| Publicly-Accessible Park Space: | ±28,000 sf (0.64 ac) |
| *Private Park Space Provided:* | ±27,200 sf (0.62 ac) |
| *Total Park Space Provided*:* | ±55,200 sf (1.27ac) |

**For reference only.*

PUBLICLY-ACCESSIBLE PARK SPACE PROVIDED WITHIN BLOCK 'E' SHALL CONTRIBUTE TO THE OVERALL PUBLICLY-ACCESSIBLE PARK SPACE OF THE ARBOR ROW CDP

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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URBAN PARKS PLAN

# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

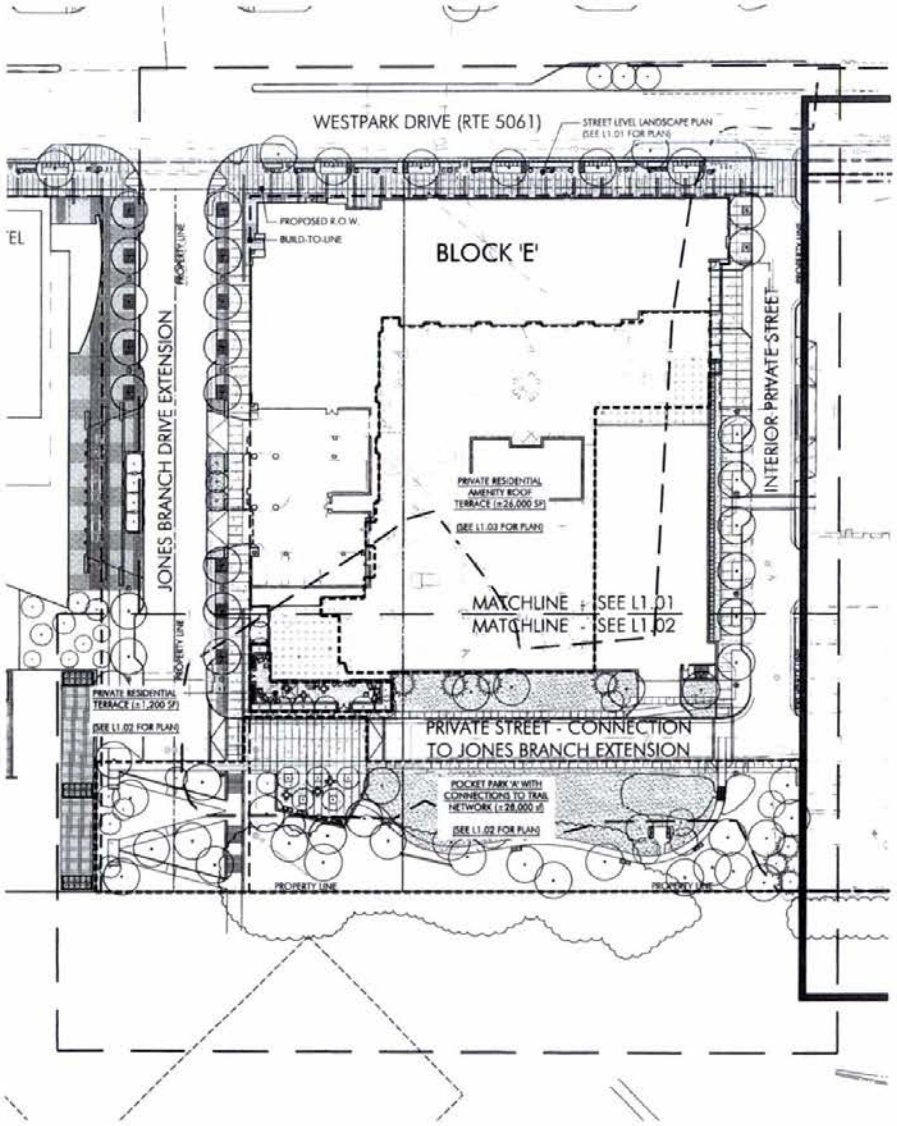
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 9/20/12 | COUNTY COMMENTS |
| 7/23/12 | COUNTY COMMENTS |
| 8/29/12 | COUNTY COMMENTS |
| 10/05/12 | COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE 1" = 80'-0"
JOB No.
DATE February 24, 2012
FILE No. 7403-12-001
SHEET L0.01

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. REFER TO SHEET L3.01 FOR PLANT SPECIES SCHEDULE




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 LANDSCAPE PLAN

# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-025-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/29/12 | COUNTY COMMENTS |
| 7/23/12 | COUNTY COMMENTS |
| 8/29/12 | COUNTY COMMENTS |
| 10/05/12 | COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

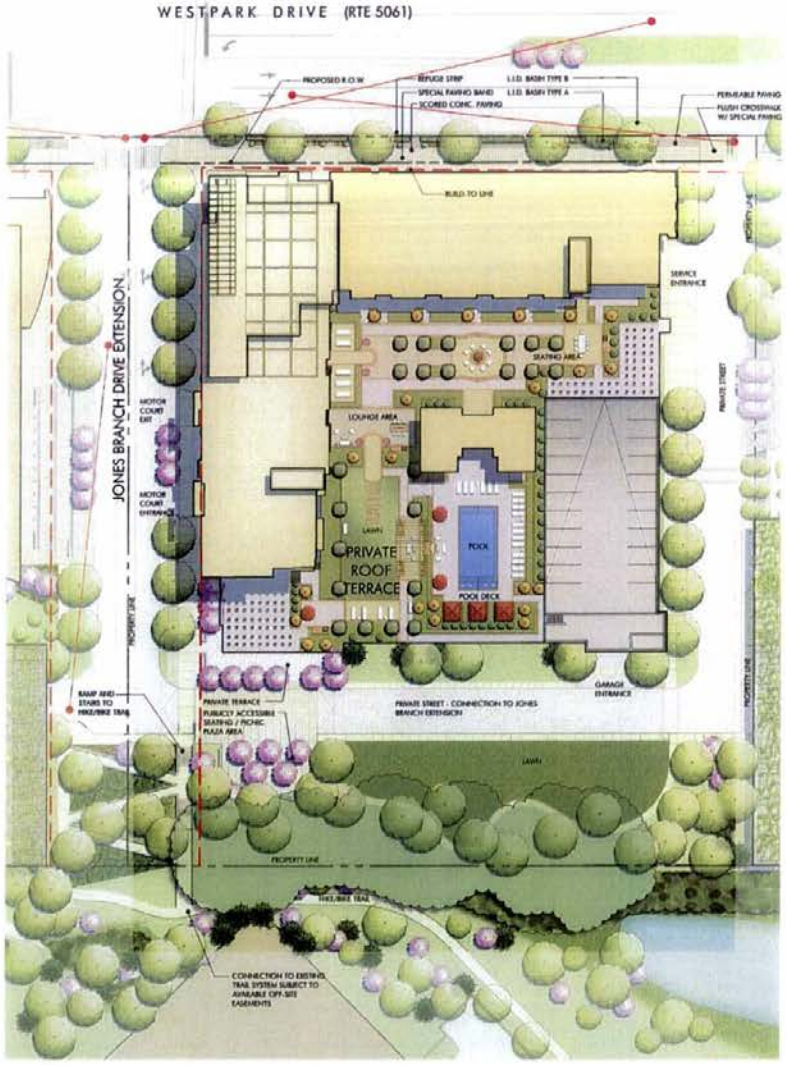
SCALE: H: 1" = 30'-0"

JOB No.

DATE : February 24, 2012

FILE No. 7403-12-001

SHEET L0.02

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ILLUSTRATIVE PLAN

# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/29/12 | COUNTY COMMENTS |
| 7/23/12 | COUNTY COMMENTS |
| 8/29/12 | COUNTY COMMENTS |
| | |
| | |
| | |
| | |
| DATE | DESCRIPTION |

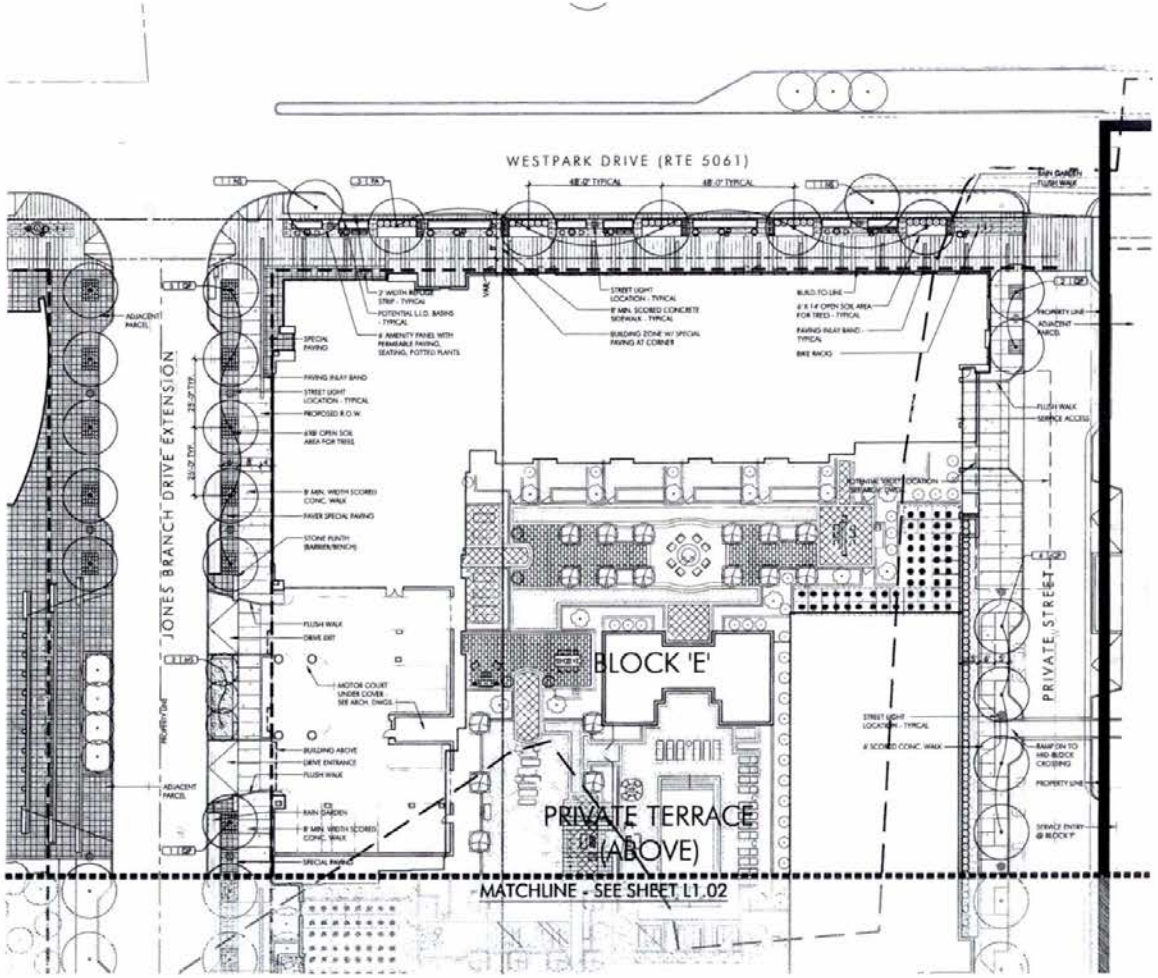
SCALE H: 1" = 30'-0"

JOB No.

DATE : February 24, 2012

FILE No. 7402-12-001

SHEET L0.03




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.
4. REFER TO SHEET L3.01 FOR PLANT SPECIES SCHEDULE.
5. REFER TO SHEETS L5.01/2 FOR REPRESENTATIVE FURNISHINGS AND DESIGN DETAILS.
6. REFER TO L3.01/L3.02 FOR TYPICAL STREET TREE PLANTING DETAILS TO ACCOMMODATE 400-700 CU/FT OF SOIL VOLUME.

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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LANDSCAPE PLAN - STREET LEVEL

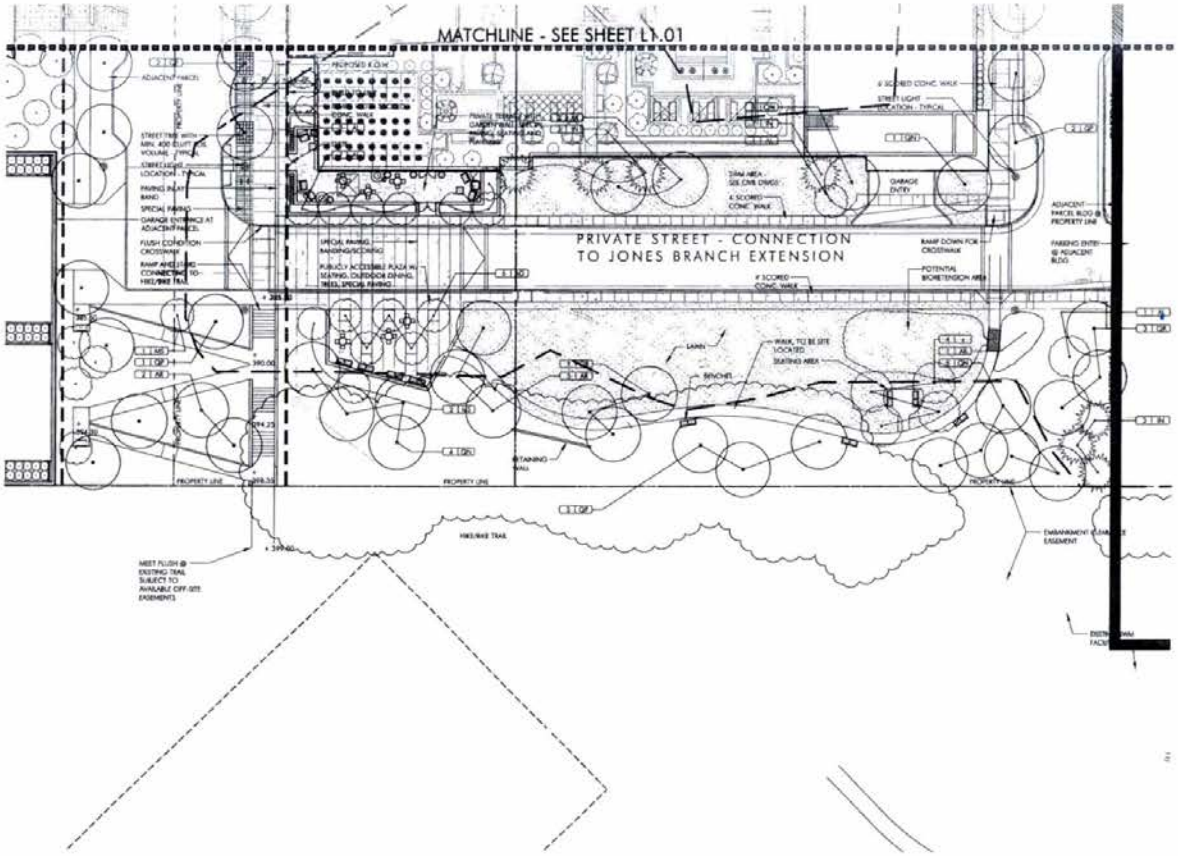
# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/09/12 | COUNTY COMMENTS |
| 7/23/12 | COUNTY COMMENTS |
| 8/09/12 | COUNTY COMMENTS |
| 10/09/12 | COUNTY COMMENTS |

| | |
|---|---|
| DATE | DESCRIPTION |
| SCALE | 1:1" = 20'-0" |
| JOB No. | |
| DATE | February 24, 2012 |
| FILE No. | 7403-12-001 |
| SHEET | L1.01 |




LANDSCAPE NOTES :

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4. REFER TO SHEET L3.01 FOR PLANT SPECIES SCHEDULE
5. REFER TO SHEETS L5.01/2 FOR REPRESENTATIVE FURNISHINGS AND DESIGN DETAILS
6. REFER TO L3.01/L3.02 FOR TYPICAL STREET TREE PLANTING DETAILS TO ACCOMMODATE 400-700 CU.FT OF SOIL VOLUME

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LANDSCAPE PLAN - STREET LEVEL

# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

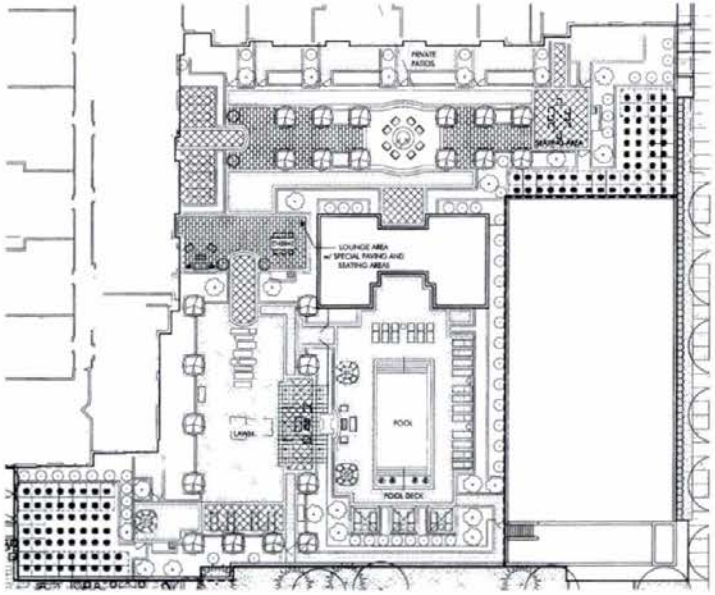
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/26/12 | COUNTY COMMENTS |
| 7/23/12 | COUNTY COMMENTS |
| 8/29/12 | COUNTY COMMENTS |
| 10/05/12 | COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | H:1" = 20'-0" |
| JOB No. | |
| DATE : | February 24, 2012 |
| FILE No. | 7403-12-001 |
| SHEET | L1.02 |

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. THE LANDSCAPE TREATMENT, DESIGN FEATURES, AND DETAILS MAY CHANGE WITH FINAL DESIGN PROVIDED THAT THE USE OF THE SPACE AND THE CHARACTER AND QUALITY OF THE FEATURES AND PLANTINGS REMAIN IN SUBSTANTIAL CONFORMANCE WITH THAT SHOWN.
3. UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED AT SITE PLAN.
4. REFER TO SHEET L3.01 FOR PLANT SPECIES SCHEDULE




**01** LANDSCAPE PLAN: PRIVATE ROOF TERRACE

SCALE : 1" = 20'-0"

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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LANDSCAPE PLAN - ROOF TERRACES

ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-025-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/29/12 | COUNTY COMMENTS |
| 7/23/12 | COUNTY COMMENTS |
| 8/29/12 | COUNTY COMMENTS |
| 10/05/12 | COUNTY COMMENTS |
| | |
| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE 1" = 20'-0"

JOB No.

DATE February 24, 2012

FILE No. 7403-12-001

SHEET L1.03

**02** BLOCK 'E' - RESIDENTIAL SOUTH ELEVATION

SCALE : 1" = 16'-0"

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.

SITE SECTIONS PRESENTED ON THIS SHEET ARE PROVIDED TO AID IN THE UNDERSTANDING OF GRADE CHANGE ACROSS THE SUBJECT PROPERTY AND THE RELATIONSHIP OF PROPOSED BUILDINGS AND OTHER USES. BUILDING DESIGN AND THE FINAL GRADING ARE SUBJECT TO CHANGE WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN.

**01** BLOCK 'E' - RESIDENTIAL EAST ELEVATION

SCALE : 1" = 16'-0"


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SITE & STREET SECTIONS

# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 8/29/12 | COUNTY COMMENTS |
| 10/31/12 | COUNTY COMMENTS |
| 8/29/12 | COUNTY COMMENTS |
| | |
| | |
| | |
| | |
| DATE | DESCRIPTION |

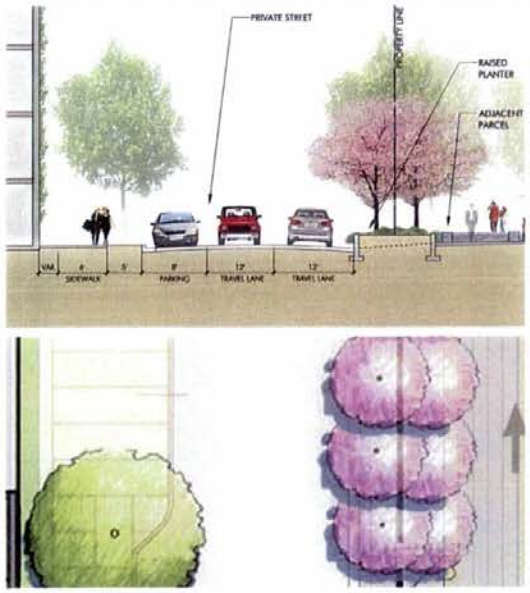
SCALE : 1" AS NOTED

JOB No.

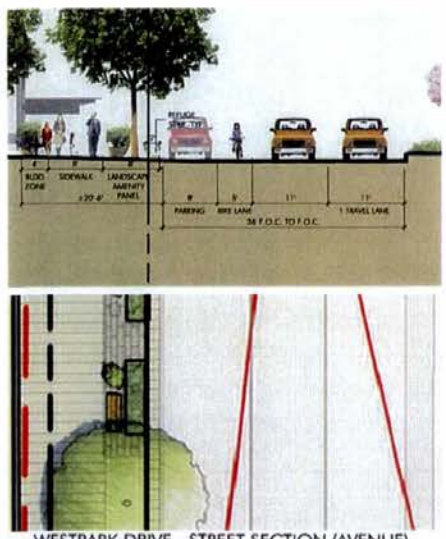
DATE : February 24, 2012

FILE No. 7403-12-001

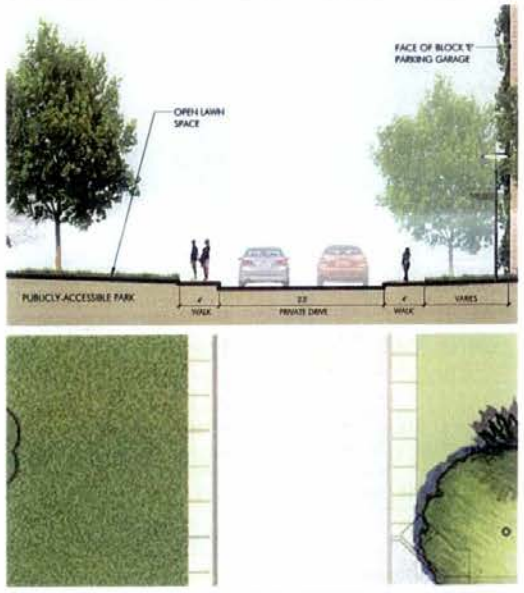
SHEET L2.01



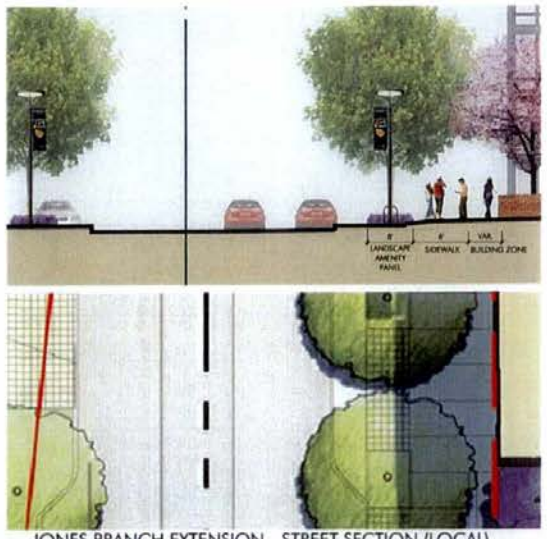

01 PRIVATE DRIVE - STREET SECTION
SCALE : 1/8" = 1'-0"




02 WESTPARK DRIVE - STREET SECTION (AVENUE)
SCALE : 1/8" = 10'-0"




03 PRIVATE DRIVE (JONES BRANCH CONNECTION) - SECTION
SCALE : 1/8" = 1'-0"




04 JONES BRANCH EXTENSION - STREET SECTION (LOCAL)
SCALE : 1/8" = 10'-0"

KEY PLAN

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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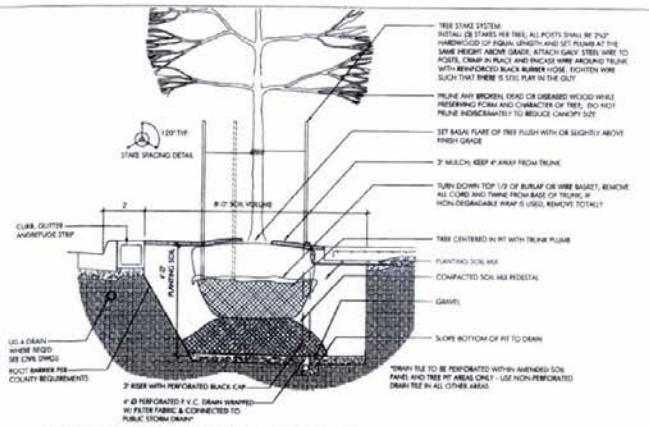
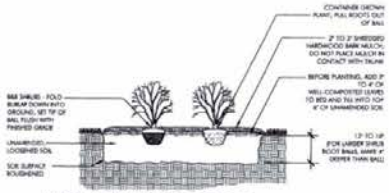
STREET SECTIONS
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/25/12 | COUNTY COMMENTS |
| 7/23/12 | COUNTY COMMENTS |
| 8/29/12 | COUNTY COMMENTS |
| 10/05/12 | COUNTY COMMENTS |
| | |
| | |
| DATE | DESCRIPTION |
| SCALE | H: AS NOTED |
| JOB No. | |
| DATE | February 24, 2012 |
| FILE No. | 7403-12-001 |
| SHEET | L2.02 |




## 01 TREE PLANTING DETAIL - TYPICAL STREET TREE

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




LANDSCAPE NOTES :

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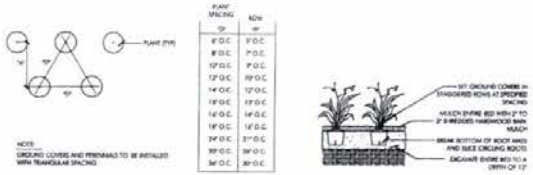
## 04 SHRUB PLANTING DETAIL

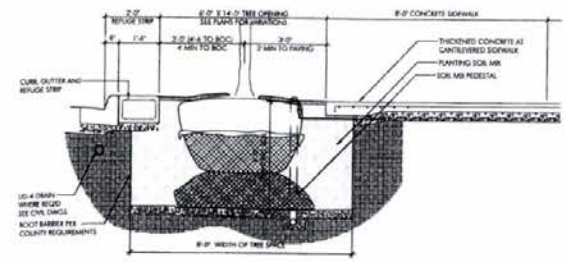
SCALE : 1/2"=1'-0"




| PLANT SPACING "D" | ROW "H" |
|---|---|
| 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. | 26" O.C. |
| 36" O.C. | 30" O.C. |

## 05 GROUNDCOVER / PERENNIAL PLANTING DETAIL

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




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

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

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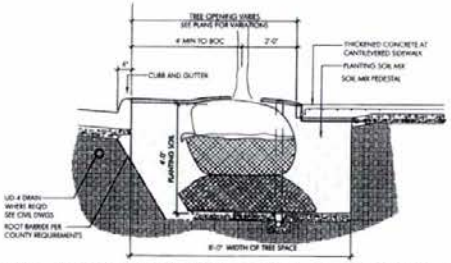
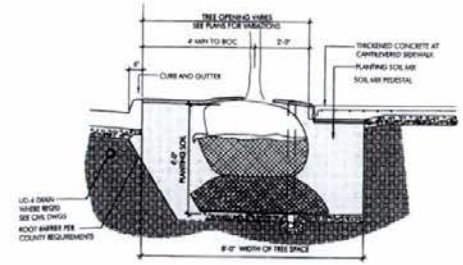


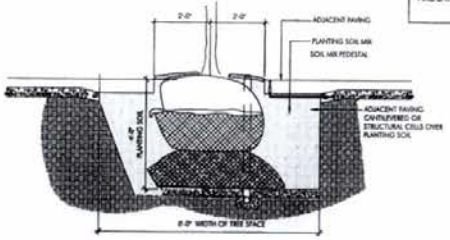

## 06 PRIVATE STREET - TYP. TREE PLT DETAIL @ CURB - TREE SOIL SPACE

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




## 03 JONES BRANCH DRIVE - TYP. TREE PLT DETAIL @ CURB

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




## 07 TYP. TREE PLT DETAIL @ PLAZA - TREE SOIL SPACE

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

### ARBOR ROW OVERALL CDP - CANOPY COVERAGE

| | | |
|---|---|---|
| TOTAL 10-YEAR TREE CANOPY REQ'D : | 80,756 | sf |
| TOTAL 10-YEAR TREE CANOPY PROVIDED : | 83,675 | sf |

### ARBOR ROW BLOCK 'E,F & A' - CONTRIBUTION TO CANOPY COVERAGE

| | | |
|---|---|---|
| BLOCK E 10 YR TREE CANOPY PROVIDED : | 15,850 | sf |
| BLOCK F 10 YR TREE CANOPY PREVIOUSLY PROVIDED : | 8,875 | sf |
| BLOCK A' 10 YR TREE CANOPY PREVIOUSLY PROVIDED : | 40,880 | sf |
| SUBTOTAL | 70,405 | sf |

### ARBOR ROW BLOCK 'B,C,D' - CONTRIBUTION TO CANOPY COVERAGE

| | | |
|---|---|---|
| BLOCK B,C,D' 10 YR TREE CANOPY TO BE PROVIDED : | 13,270 | sf |

### ARBOR ROW BLOCK 'E' (HANOVER SITE) - PLANTING LIST & CANOPY COVERAGE

| KEY | BOTANICAL NAME | COMMON NAME | QTY. | STOCK SIZE | STOCK TYPE | 10-YR TREE CANOPY FT² | TREE CANOPY SUB-TOTAL FT² | REMARKS |
|---|---|---|---|---|---|---|---|---|
| | Category I Deciduous Trees | | | | | | | |
| CF | Carpinus betulus 'Fastigiata' | Columnar Hornbeam | 0 | 3" cal. | B&B | 75 | 0 | single leader |
| | Category II DeciduousTrees | | | | | | | |
| AG | Acer ginnala | Amur Maple | 5 | 2" cal. | B&B | 100 | 500 | multistem - 3 stems minimum, full branching |
| AL | Amelanchier laevis | Allegheny Serviceberry | 13 | 2" cal. | B&B | 100 | 1,300 | multistem - 3 stems minimum, full branching |
| MS | Magnolia soulica | Star Magnolia | 6 | 2" cal. | B&B | 100 | 600 | multistem - 3 stems minimum, full branching |
| | Category III DeciduousTrees | | | | | | | |
| NS | Nyssa sylvatica | Black Gum, Tupelo | 3 | 3" cal. | B&B | 175 | 525 | single leader, full branching, symmetrical |
| | Category IV DeciduousTrees | | | | | | | |
| AR | Acer rubrum | Red Maple | 8 | 3" cal. | B&B | 250 | 2,000 | single leader, full branching, symmetrical |
| PA | Platanus x acerifolia 'Bloodgood' | Bloodgood London Plane | 5 | 3" cal. | B&B | 250 | 1,250 | single leader, full branching, symmetrical |
| QM | Quercus nuttall | Nuttall Oak | 10 | 3" cal. | B&B | 250 | 2,500 | single leader, full branching, symmetrical |
| QP | Quercus palustris | Pin Oak | 20 | 3" cal. | B&B | 250 | 5,000 | single leader, full branching, symmetrical |
| QR | Quercus rubra | Red Oak | 6 | 3" cal. | B&B | 250 | 1,500 | single leader, full branching, symmetrical |
| | Category I Evergreen Trees | | | | | | | |
| IH | Ilex x 'Nellie Stevens' | Nellie Stevens Holly | 7 | 8'-10'Ht. | B&B | 50 | 350 | multistem - 3 stems minimum, full branching |

TOTAL 10-YEAR TREE CANOPY PROVIDED BY PLANTING: 15,850

Note: Plant species are provided to indicate a general idea of tree size. Final species selection may vary from this list but will match tree category type.

### LANDSCAPE COMPUTATIONS - ARBOR ROW - BLOCK 'E'

**13-201: INTERIOR PARKING LOT LANDSCAPE CALCULATIONS**

| | |
|---|---|
| Total Parking Area (gross): | 6,000 |
| 5% Percent Required: | 300 |
| Refer to CDP-FD 2011-PR-023 C2.0 Waiver | |

**13-202: PERIPHERAL PARKING LOT LANDSCAPE CALCULATIONS**

No Surface Parking Lots

Peripheral Parking Lot Landscaping Not Required

**13-301: TRANSITIONAL SCREENING AND BARRIERS**

Property Zoning Districts: PTC

Adjacent Zoning Districts: I-5, C-7, PDC, PTC/HC

Transitional Screening and Barriers are Not Required

13-401: TREE COVER CALCULATIONS

Table 12.12 10 year Tree Canopy Calculation Worksheet

| Step | | Totals | Reference |
|---|---|---|---|
| A. Tree Preservation Target and Statement | | | |
| A1 | Place the Tree Preservation Target calculations and statements here preceding the 10-year tree canopy calculations | | see § 12-0508.2 for list of required elements and worksheets |
| B. Tree Canopy Requirement | | | |
| B1 | Identify gross site area | 136,788 | § 12-0511.1A |
| B2 | Subtract area dedicated to parks, road frontage, and | 19,683 | § 12-0511.1B |
| B3 | Subtract area of exemptions | 0 | § 12-0511.1C(1) |
| B4 | Adjusted Gross Site Area (B1 - B2) | 117,105 | |
| B5 | Identify site's zoning and/or use | PTC | |
| B6 | Percentage of 10-year Tree Canopy Required | 10% | § 12-0510.1 and Table 12.4 |
| B7 | Area of 10-year Tree Canopy Requirements requested? | 11,714 | |
| B8 | Modification of 10-year tree canopy requirements requested? If B8 is yes, then list plan sheet where modification request is located | No Yes or No | Sheet number |
| C. Tree Preservation | | | |
| C1 | Tree Preservation Target Area | 0 | |
| C2 | Total canopy area meeting standards of § 12-0506 | 0 | |
| C3 | C2 x 1.25 | 0 | § 12-0510.3B |
| C4 | Total canopy area provided by unique or valuable forest or woodland communities | 0 | |
| C5 | C4 x 1.5 | 0 | § 12-0510.3B(1) |
| C6 | Total of canopy area provided by "Heritage," "Memorial," "specimen," or "street" trees | 0 | |
| C7 | C6 x 1.5 to 3.0 | 0 | § 12-0510.3B(2) |
| C8 | Canopy area of trees within Resource Protection Areas and 100-year floodplains | 0 | |
| C9 | C8 X 1.0 | 0 | |
| C10 | Total of C3, C5, C7 and C9 | 0 | § 12-0510.3C(1) If area of C10 is less than B7 then remainder of requirement must be meth through tree planting - go to D |
| D. Tree Planting | | | |
| D1 | Area of canopy to be met through tree planting (B7-C10) | 11,714 | |
| D2 | area of canopy planted for air quality benefits | 0 | |
| D3 | X 1.5 | 0 | § 12-0510.4B(1) |
| D4 | Area of canopy planted for energy conservation | 0 | |
| D5 | X 1.5 | 0 | § 12-0510.4B(2) |
| D6 | Area of canopy planted for water quality benefits | 0 | |
| D7 | X 1.25 | 0 | § 12-0510.4B(3) |
| D8 | Area of canopy planted for wildlife benefits | 0 | |
| D9 | X 1.5 | 0 | § 12-0510.4B(4) |
| D10 | Area of canopy provided by native trees | 0 | |
| D11 | X 1.5 | 0 | § 12-0510.4B(5) |
| D12 | Area of canopy provided by improved cultivars and varieties | 0 | |
| D13 | X 1.25 | 0 | § 12-0510.4B(6) |
| D14 | Area of canopy provided through tree seedlings = X 1.0 | 0 | § 12-0510.4D(1) |
| D15 | Area of canopy provided through native shrubs = X 1.0 | 0 | § 12-0510.4D(1) Must not exceed 33% |
| D16 | Percent of D14 represented by D15 | 0 of D14 | |
| D17 | Total of canopy area provided through tree planting | 11,025 | |
| D18 | Is an offsite planting relief requested? | No Yes or No | |
| D19 | Tree bank or Tree Fund? | 0 | § 12-0512 |
| D20 | Canopy area requested to be provided through offsite banking or tree fund | 0 | |
| D21 | Amount to be deposited into the Tree Preservation and Planting Fund | 0 | |
| E. Total of 10-year Tree Canopy Provided | | | |
| E1 | Total of Canopy Provided through tree preservation (C10) | 0 | |
| E2 | Total of canopy area provided through tree planting (D17) | 11,025 | |
| E3 | Total of canopy area provided through offsite mechanism (D19) | 0 | |
| E4 | Total of 10-year Tree Canopy Provided = (E1+E2+E3) | 11,025 | Total of E1 through E3. Area should meet or exceed are required by B7 |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PLANTING DETAILS AND SCHEDULE

# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 3/29/12 | COUNTY COMMENTS |
| 7/23/12 | COUNTY COMMENTS |
| 8/29/12 | COUNTY COMMENTS |
| 10/05/12 | COUNTY COMMENTS |
| | |
| | |
| | |
| DATE | DESCRIPTION |

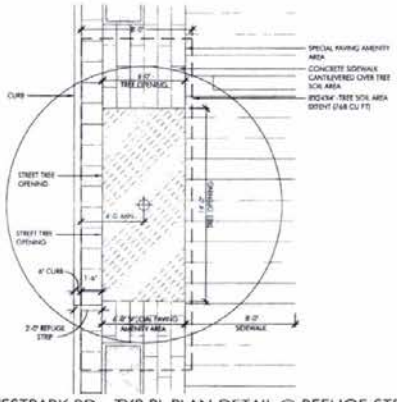
SCALE : H.AS NOTED

JOB No.

DATE : February 24, 2012

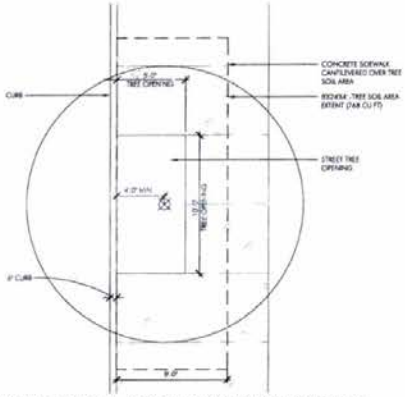
FILE No. 7403-12-001

SHEET L3.01



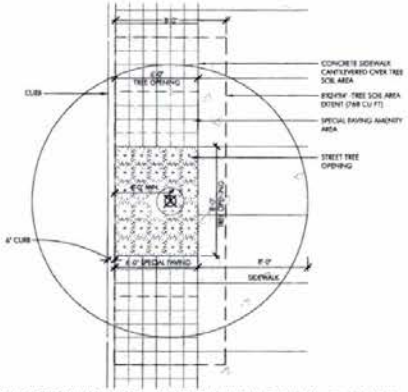

**01** WESTPARK RD - TYP PL PLAN DETAIL @ REFUGE STRIP

SCALE : 1/4"=1'-0"




**02** PRIVATE STREET - TYP PL PLAN DETAIL @ CURB

SCALE : 1/4"=1'-0"




**02** JONES BRANCH RD - TYP PL PLAN DETAIL @ CURB

SCALE : 1/4"=1'-0"

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PLANTING DETAILS AND SCHEDULE

# ARBOR ROW - BLOCK 'E'

FINAL DEVELOPMENT PLAN 2011-PR-023-1

PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/09/12 | COUNTY COMMENTS |
| 7/23/12 | COUNTY COMMENTS |
| 8/09/12 | COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | H AS NOTED |
| JOB No. | |
| DATE | February 24, 2012 |
| FILE No. | 7403-12-001 |
| SHEET | L3.02 |

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"

BIKE RACKS

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

OPT 2
MAKE: LANDSCAPE FORMS
MODEL: IZEY
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: NEOLIMANO
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"

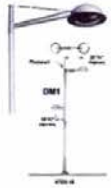
OPT 4
MAKE: LANDSCAPE FORMS
MODEL: NU
STEEL & HARDWOOD
SIZE: 8' 6" Length

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
AT106 POLE WITH AT635 BASE COVER
*DUAL ARMS MOUNTED AT PEDESTRIAN & VEHICULAR HEIGHTS

OPT 2
MAKE: ARCHITECTURAL AREA LIGHTING
MODEL: PLEX
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

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TRASH RECEPICLES

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

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

I.I.D. BASINS

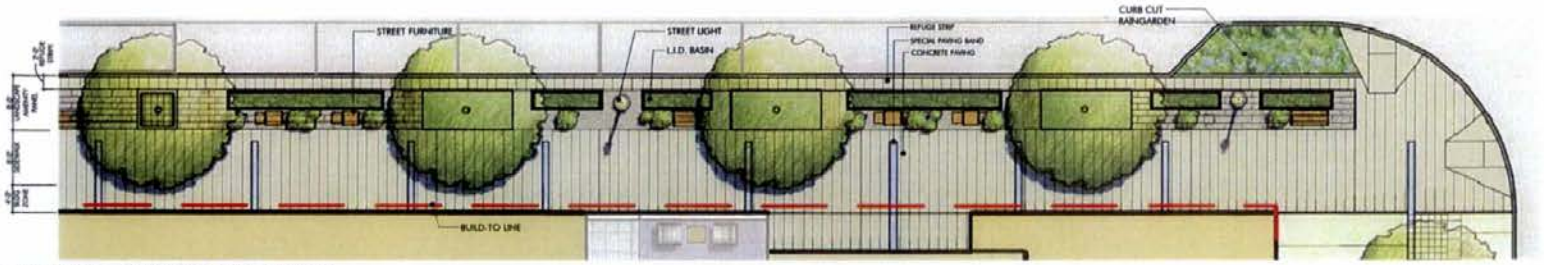
VEHICULAR BOLLARDS

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

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

## 02 SITE FURNISHING EXHIBITS

SCALE : NTS




## 01 WESTPARK DRIVE - ENLARGED PLAN, TYPICAL

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

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VDC

The Hanover Company

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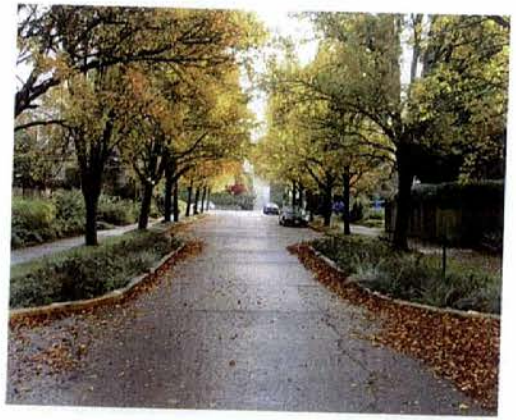
STREETSCAPE ELEMENTS
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

| PLAN STATUS | |
|---|---|
| 5/29/12 | COUNTY COMMENTS |
| 7/27/12 | COUNTY COMMENTS |
| 8/29/12 | COUNTY COMMENTS |

| DATE | DESCRIPTION |
|---|---|
| SCALE | 1/8" AS SHOWN |
| JOB No. | |
| DATE | February 24, 2012 |
| FILE No. | 7403-12-001 |
| SHEET | L5.01 |

## SUSTAINABILITY STRATEGIES:

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



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SUSTAINABILITY STRATEGIES
ARBOR ROW - BLOCK 'E'
FINAL DEVELOPMENT PLAN 2011-PR-023-1
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGINIA

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| | |
| | |
| | |
| DATE | DESCRIPTION |

SCALE: H: NTS
JOB No.:
DATE: February 24, 2012
FILE No. 7403-12-001
SHEET: L5.02