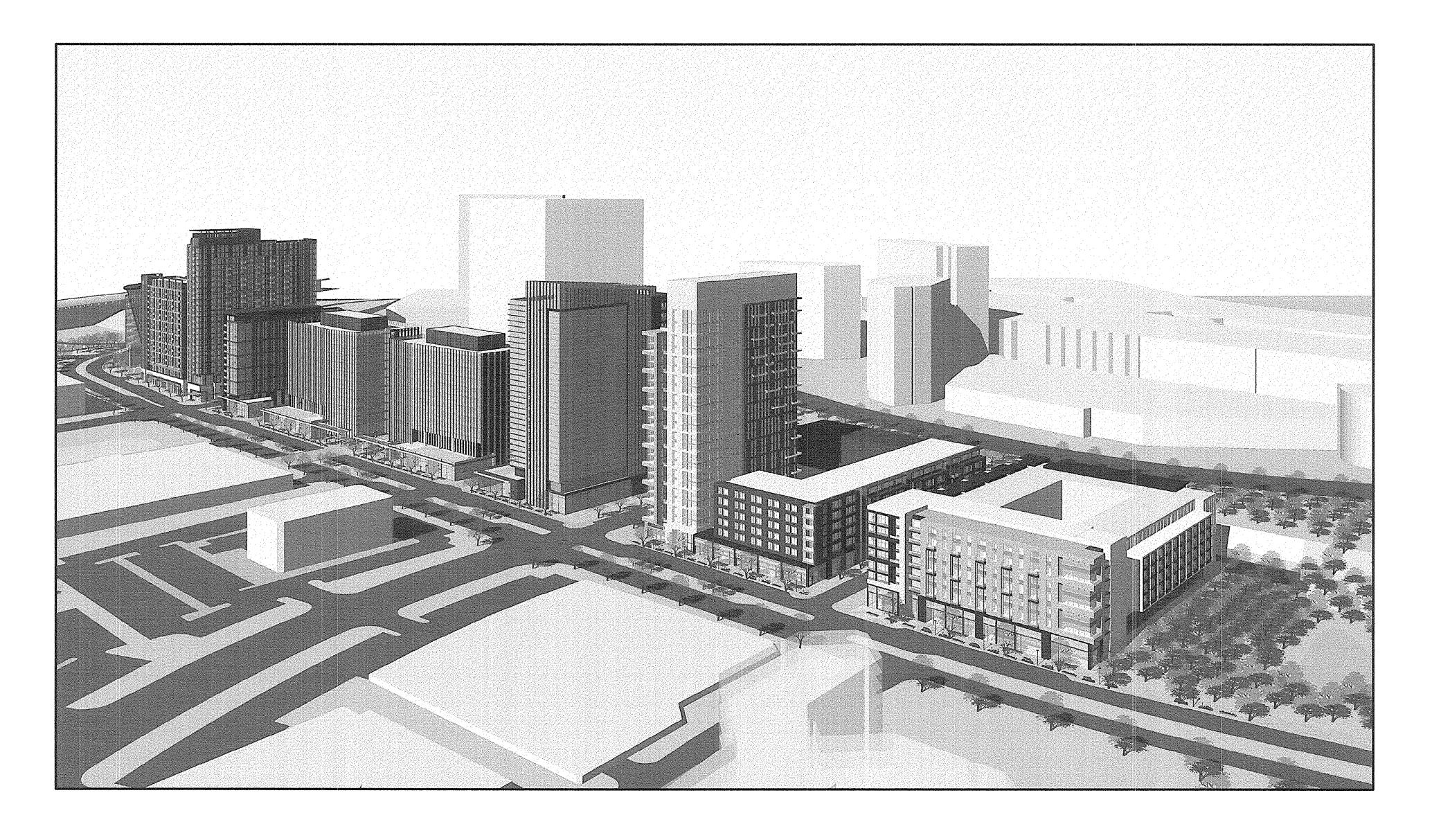
ARBOR ROW

PROVIDENCE DISTRICT

FAIRFAX COUNTY, VIRGINIA

CONCEPTUAL DEVELOPMENT PLAN

RZ/CDP 2011-PR-023



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Application No: RZ 2011-PR-023 Staff: M. Ladd

APPROVED DEVELOPMENT PLAN

(_GDP) (\(\subseteq CDP\) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (\(\subseteq BOS\)) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

Sheet 1 of 78

CIVIL SHEET INDEX

GENERAL NOTES AND WAIVERS SITE TABULATIONS CORRESPONDENCE CONTEXT PLAN AND VICINITY MAP **EXISTING CONDITIONS PLAN (SHEET 1 OF 2) EXISTING CONDITIONS PLAN (SHEET 2 OF 2) BLOCK 'F' INTERIM FRONTAGE IMPROVEMENTS** OVERALL DEVELOPMENT PHASING EXHIBIT PUBLIC ROADWAY PHASING EXHIBIT ROADWAY STRIPING AND MARKING PLAN (SHEET 5 OF 6) ADEQUATE OUTFALL C10.7.1 ADEQUATE OUTFALL C10.7.2 ADEQUATE OUTFALL LOW IMPACT DEVELOPMENT CONCEPT PLAN EXISTING VEGETATION MAP (SHEET 1 OF 2) EXISTING VEGETATION MAP (SHEET 2 OF 2)

ARCHITECTURAL SHEET INDEX

A1.0 KEY PLAN (BLOCKS A-F) A3.0 BLOCK A PLANS A3.1 BLOCK B PLANS A3.2 BLOCK C PLANS A3.3 BLOCK D.E. & F PLANS A3.4 BLOCK D ALTERNATE PLANS A4.0 SITE SECTIONS A4.1 SITE SECTIONS A4.2 ENLARGED SITE SECTIONS A5.0 SHADOW ANALYSIS A5.1 SHADOW ANALYSIS A5.2 SHADOW ANALYSIS A6.0 PERSPECTIVES A6.1 PERSPECTIVES A6.2 PERSPECTIVES A6.3 PERSPECTIVES A6.4 PERSPECTIVES A6.5 PERSPECTIVES

A6.6 PERSPECTIVES

LANDSCAPE ARCHITECTURAL SHEET INDEX

LANDSCAPE ARCHITECTURAL SHI

L1.0 ILLUSTRATIVE LANDSCAPE PLAN

L2.0 URBAN FABRIC AND BLOCKS DIAGRAM

L2.1 PEDESTRIAN FLOW DIAGRAM

L2.2 OPEN SPACE CONNECTIONS DIAGRAM

L2.3 PEDESTRIAN HIERARCHY PLAN

L2.4 URBAN PARKS PLAN

L3.0 BLOCK 'A' ILLUSTRATIVE PLAN

L3.1 BLOCKS 'B' AND 'C' ILLUSTRATIVE PLAN

L3.2 BLOCKS 'D', 'E' AND 'F' ILLUSTRATIVE PLAN

L4.0 TYPICAL STREET SECTIONS

L4.1 TYPICAL STREET SECTIONS

L4.2 SITE SECTION BLOCK 'A'

L4.3 SITE SECTION BLOCK 'C'

L4.2 SITE SECTION BLOCK A
L4.3 SITE SECTION BLOCK 'C'
L4.4 SITE SECTION BLOCK 'C'
L4.5 SITE SECTION BLOCK 'D'

L4.6 SITE SECTION BLOCK 'E'
L4.7 SITE SECTION BLOCK 'F'

L4.7 SHE SECTION BLOCK F

L4.8 TYPICAL DETAILS

L4.9 PLANTING DETAILS AND SCHEDULES

L4.9A LANDSCAPE NOTES
L5.0 STREETSCAPE PERSPECTIVES
L5.1 STREETSCAPE ELEMENTS

L5.2 CONCEPT IMAGERY
L5.3 SUSTAINABILITY STRATEGIES

78 TOTAL SHEETS



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 26, 2011

SHEET C1.0

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
- 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)
- 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.

AND ASSOCIATED SURFACE PARKING LOTS 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
- 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
- 38. ONE ELECTRIC CHARGING STATION SERVING TWO SPACES SHALL BE PROVIDED WITHIN EACH BLOCK AS FURTHER DESCRIBED IN THE PROFFERS.

<u>Stormwater Management Design – PFM Deviation Narrative</u>

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/FDI 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

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.

Application No: RZ 2011-PR-023 Staff: M. Ladd

APPROVED DEVELOPMENT PLAN

(_GDP) (\(\subseteq CDP\) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (\(\subseteq BOS\)) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

Sheet 2 of 78

Sowman Consulting Group, Ltd. 4020 Thunderbolt Place Suite 300 Chantilly, Virginia 20151 Phone: (703) 464-1000

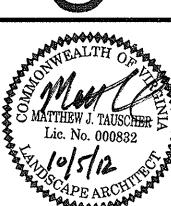
14020 Thunderbolt Pl Chantilly, Virginia 201 Phone: (703) 464-100 Fax: (703) 481-9720 www.bowmanconsult

North Union St., #320 kandria VA 22314
-548-5010 ining Urban Design dscape Architecture

101 North Union 3 Alexandria VA 22 rch.∞m 703.548.5010 Planning Urban I

Fig. 202 857 8300 Alexa fax 202 463 2198 703.5 e-mail wdg@wdgarch.com Planni

PARTNE



MATTHEW J. TAUSCHER S. Lic. No. 000832

ARBOR ROW

JAL DEVELOPMENT PLAN 2011-PR-023

E DISTRICT - FAIRFAX COUNTY, VIRGINI

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

12/07/11 PER COUNTY COMMENT:
02/24/12 PER COUNTY COMMENT:
04/20/12 REVISE PROP NOTES
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 H:

JOB No.

DATE: APRIL 26, 2011

FILE No. 7403-07-001

SHEET

C2.0

ET

DATE DESCRIPTION SCALE H:

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

SHEET

TABLE 1- CDP - SITE TABULATIONS: Maximum Proposed osed Stories /Floors Proposed GFA | Proposed Maximum **Dwelling Units** Hotel Rooms (5) 1/4 - 1/2 mile Parking **Parking Ratio** Block Land Area (SF) by Use (4) Building GFA (4)(13) (Per Unit or 1000 GFA) Required Parking (6)
Min Max Min Max Provided (6) GFA (4) Per Use Maximun FAR (Min-Max) A1 175'-225' 70'-120' NA 6 (11) 279,405 279,405 744.800 (9) 495 - 763 | 765 - 1180 | 1.3/ D.U. 238,161 (8)(10) 457,395 A2 175'-225' 70'-275' N/A 22 465,395 8,000 (12) 0 Block B 175'-225' 175'-225' 30' 1.8/1,000 GFA Block C C1 Retail/Services 12,500 1.8/1,000 GFA 175'-225' 105'-180' 30' 275,650 8-13 389,863 (8) 1,114,085 263,150 C2 Retail/Services 12,500 175'-225' 105'-180' 30' 8-13 275,650 (7) Office 263,150 Block D 74/Room 162,000 Hotel D 175'-225' 108'-200' 22' 9-17 170.000 8,000 Retail/Services Block E 509,800 Residential 430 - 480 1.7 473 - 528 731 - 816 710 175'-225' 270'-300' N/A 20 & 27 516,800 Retail/Services 136,788 (8) 516,800 (9) Block F 0 2.2 0 435 435 2.2/1,000 GFA 80.001 (8) 200,000 175'-225' 135'-175' 200,000 Retail/Services 2.575.685 880 - 1174 250 844,813 (10) 2,575,685(9) TOTAL

(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 penthouses may be up to 30 foot 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 6-509.B.(1) - the first 5,000 square feet of ground floor retail has been subtracted prior to retail parking calculation. Retail parking based on 6 Spaces per 1,000 SF (after the first 5,000 SF). Other uses may be provided per Note #34 on sheet C 2.0.

(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 (TM # 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.

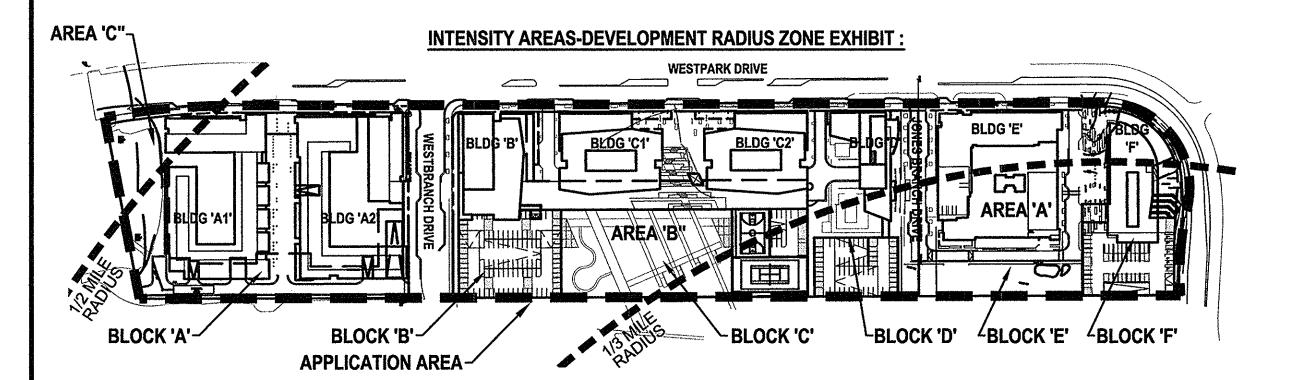


TABLE 2 - INTENSITY AREAS-DEVELOPMENT RADIUS ZONE TABULATION:

		ERGI MENTITORDIO GONE INDUM		
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 A
COMPREHENSIVE PLAN	2.0 F.A.R.	2.0 F.A.R.	1.5 F.A.R.	
DISTRICT RECOMMENDATIONS	480,158 GFA	1,180,244 GFA	21,918 GFA	1,682,320 GFA
	Proposed GFA	Proposed GFA	Proposed GFA	
		Bldg A1/A2: 696,670 GFA (1)	Bldg A1: 48,130 GFA (1)	
CDP PLAN		Bldg B: 392,785 GFA		
İ		Bldg C1/C2: 551,300 GFA		
}	Bldg D: 34,000 GFA	Bldg D: 136,000 GFA		
	Bldg E: 143,280 GFA (1)	Bldg E: 373,520 GFA (1)		
	Bldg F: 143,583 GFA	Bldg F: 56,417 GFA		
TOTAL GFA	320,863 GFA	2,206,692 GFA	48,130 GFA	2,575,685 GFA (1)
AREA F.A.R				3.05

(1) GFA includes superlative GFA for public facilities contribution allocated from 'Hanover Site' (TM # 29-2-((15))-B-2) as recommended by the Tysons Urban Center Comprehensive Plan -See Residential Density Tabulation Table 6

(2) Final building square footage assignments are subject to change by the applicant/block owners at time of FDP and Final Site Plan. See Proffers.

(3) Includes square footage of future potential right of way vacation/abandonment of Westbranch Drive.

841,385 Sq. Ft. +/-32,558 Sq. Ft. +/- 872 Sq Ft.	19.32 AC +/-0.75 AC
• •	+/-0.75 AC
• •	+/-0.75 AC
+/- 872 Sa Ft	
·/ 0/2041ti	+/-0.02 AC
+/-33,430 Sq Ft	+/-0.77 AC
+/-3,428 Sq. Ft.	+/-0.80 AC
+/-3,428 Sq. Ft.	+/-0.08 AC
844,813 Sq. Ft. (1)	19.40 AC (1)
	+/-3,428 Sq. Ft.

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

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	175,940		185,696
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	72,082		72,082
0294 07 0008	A-3	Dickenson	53,092		53,092
0294 07 0011A	A-3	Gloucester	111,430		111,430
0294 07 C1	A-3	Lancaster	111,430		111,430
0294 07 C2	A-3	Northampton	157,800		157,800
0294 07 0005A	В	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	170,833		910,585
0294 07 0010	G	Frederick	74,548		0
TOTAL			2,155,343		2,996,147

s	
uilt office GFA is based on Exhibit E within PCA 88-D-005-7 -Statement of Justification (column titled "GFA Built,	Γ
r Not Included")	ı

Application No: RZ 2011-PR-023 (2) WestMac Phase 4: GFA obtained from Site Plan # 9698-SP-002-5 and PCA 88-D-005-7 associated with this application

APPROVED DEVELOPMENT PLAN (_GDP) (<u>XCDP</u>) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC) SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED: Date of Final Approval: Nov 20, 2012 (<u>KBOS</u>) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 3 of 78

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)

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

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

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

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

+ 200,778 GFA REQUESTED FROM SUPERLATIVE CONTRIBUTION

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

Tier 1: 225' - 400'

ntensity Categories

Edge Condition

Tier 2: 175' - 225' Tier 3: 130' - 175' Tier 4: 75' - 130' (Fig. 1) Tier 5: 50' - 75' Tier 6: 35' - 50'

0 - 1/8 Mile From Metro

1/8 - 1/4 Mile From Metro

1/4 - 1/3 Mile From Metro 1/3 - 1/2 Mile From Metro

Non-TOD Urban Character

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. Staff: M. Ladd

TABLE 6: RESIDENTIAL DENSITY TABULATION

58,656 GFA (PROPOSED RETAIL—BLOCKS A-F)

= 1,045,822 GFA TOTAL RESIDENTIAL AVAILABLE

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

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-

Jim Zook, DPZ Matt Ladd, DPZ

CC: Dan Rathbone, FCDOT
Fairfax County Department of Transportation
Jeff Hermann FCDOT
4050 Legato Road, Suite 400
Fairfax, VA 22033-2895 Phone: (703) 877-5600 TTY: 711 Page (703) 877-5723 www.fairforcounty.gov/fedot

Bowman

July 23, 2012

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

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

Dear Mr. Knapp,

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

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

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

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

Significant portions of the existing vegetation on the referenced site had been planted with the previous development of the property while other portions of the existing vegetation on the site are remnant wooded areas that were not cleared during the previous development process. Attempting to save any of these onsite trees would adversely impact development potential as envisioned by the Comprehensive Plan/PTC District and would result in unnecessary and unreasonable hardship to the developer. Per field observation, the many of the existing trees and shrubs proposed to be removed are in fair/poor condition, displaying unsuitable health and/or structural conditions that may be hazardous to either life or property, including unhealthy crowns, exaggerated leans, broken/dead scaffold branches, girdling, etc. Per Section 12-0403.3-4, trees that do not meet pre-development standards for structural integrity and health shall not be afforded tree canopy cover credits and shall be subject to removal.

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

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

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

Application No: RZ 2011-PR-023

APPROVED DEVELOPMENT PLAN (_GDP) (XCDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC) SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED: Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 4 of 78

Staff: M. Ladd

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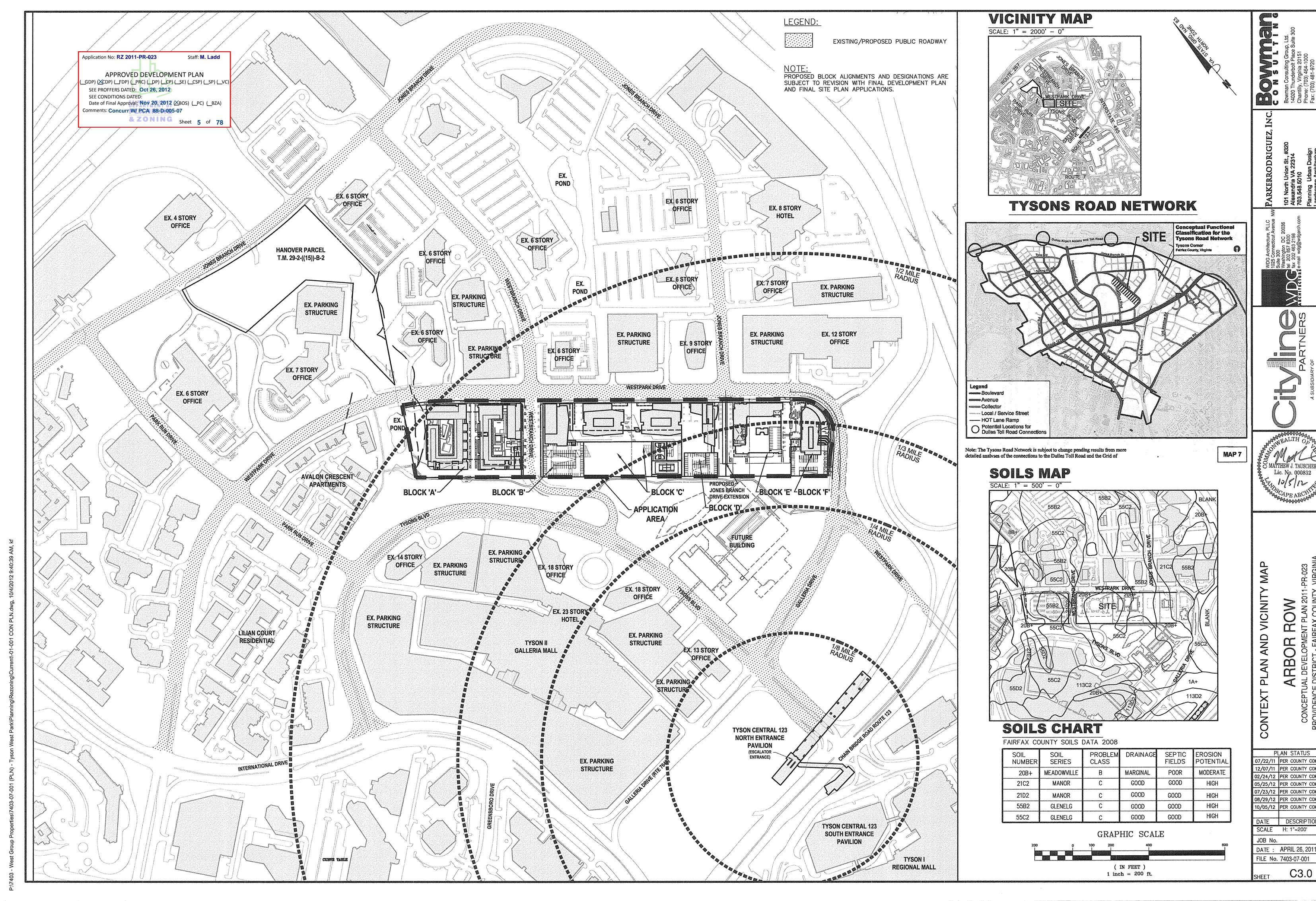
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PLAN STATUS 07/22/11 PER COUNTY COMMENTS 12/07/11 PER COUNTY COMMENTS 02/24/12 PER COUNTY COMMENTS 05/25/12 PER COUNTY COMMENTS 07/23/12 PER COUNTY COMMENTS 08/29/12 PER COUNTY COMMENTS 10/05/12 PER COUNTY COMMENTS

DATE DESCRIPTION SCALE H:

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

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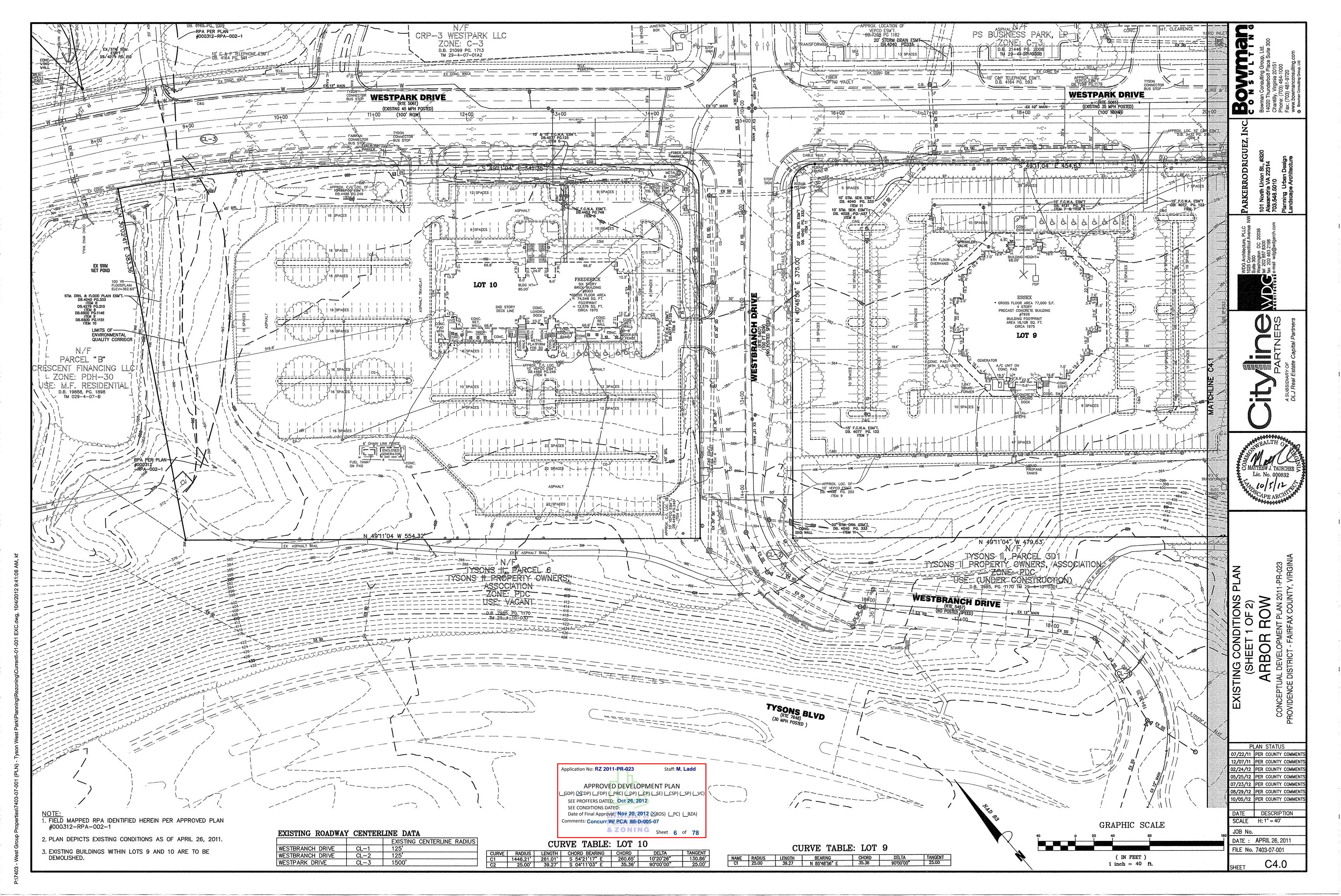


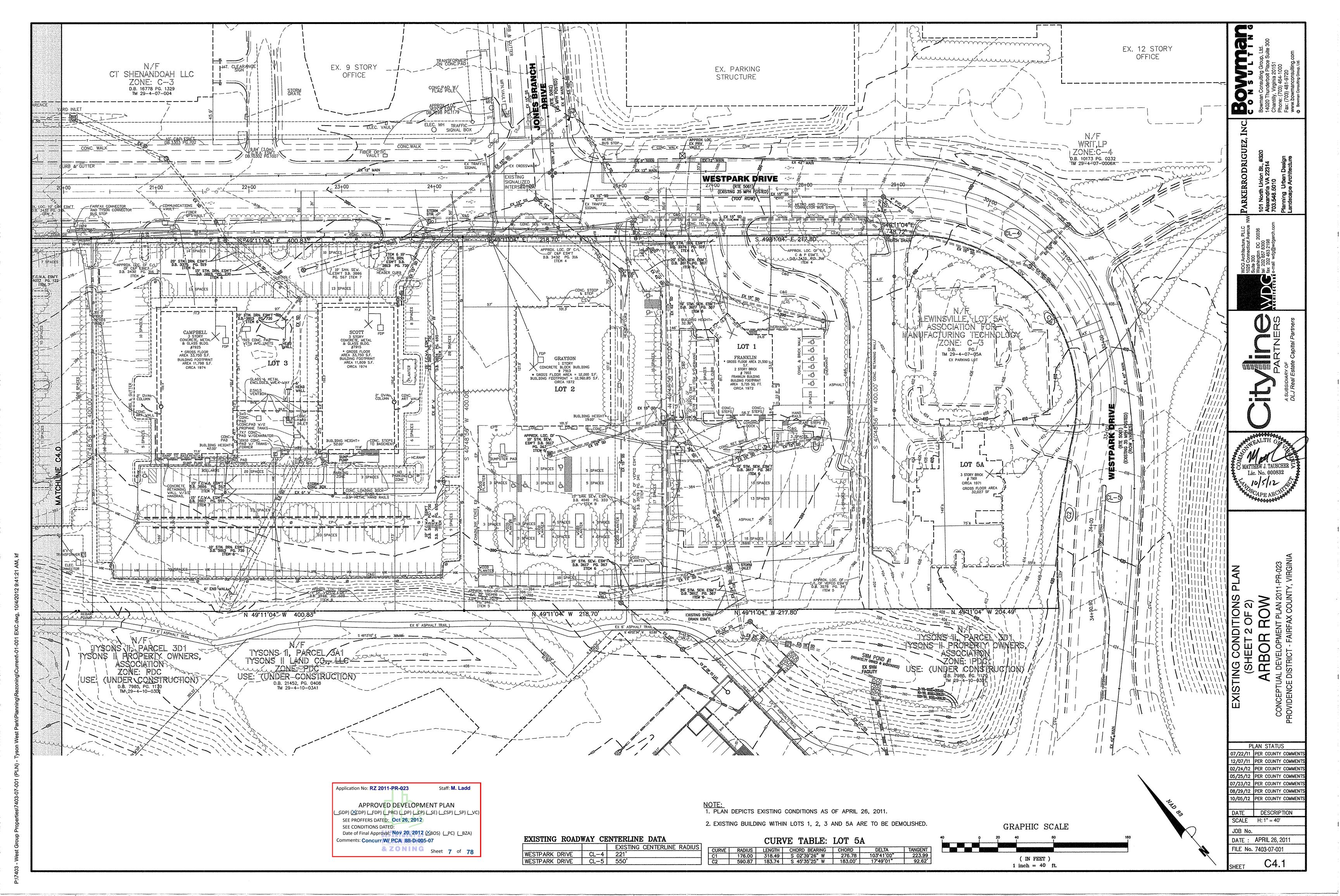
MATTHEW J. TAUSCHER ELic. No. 000832

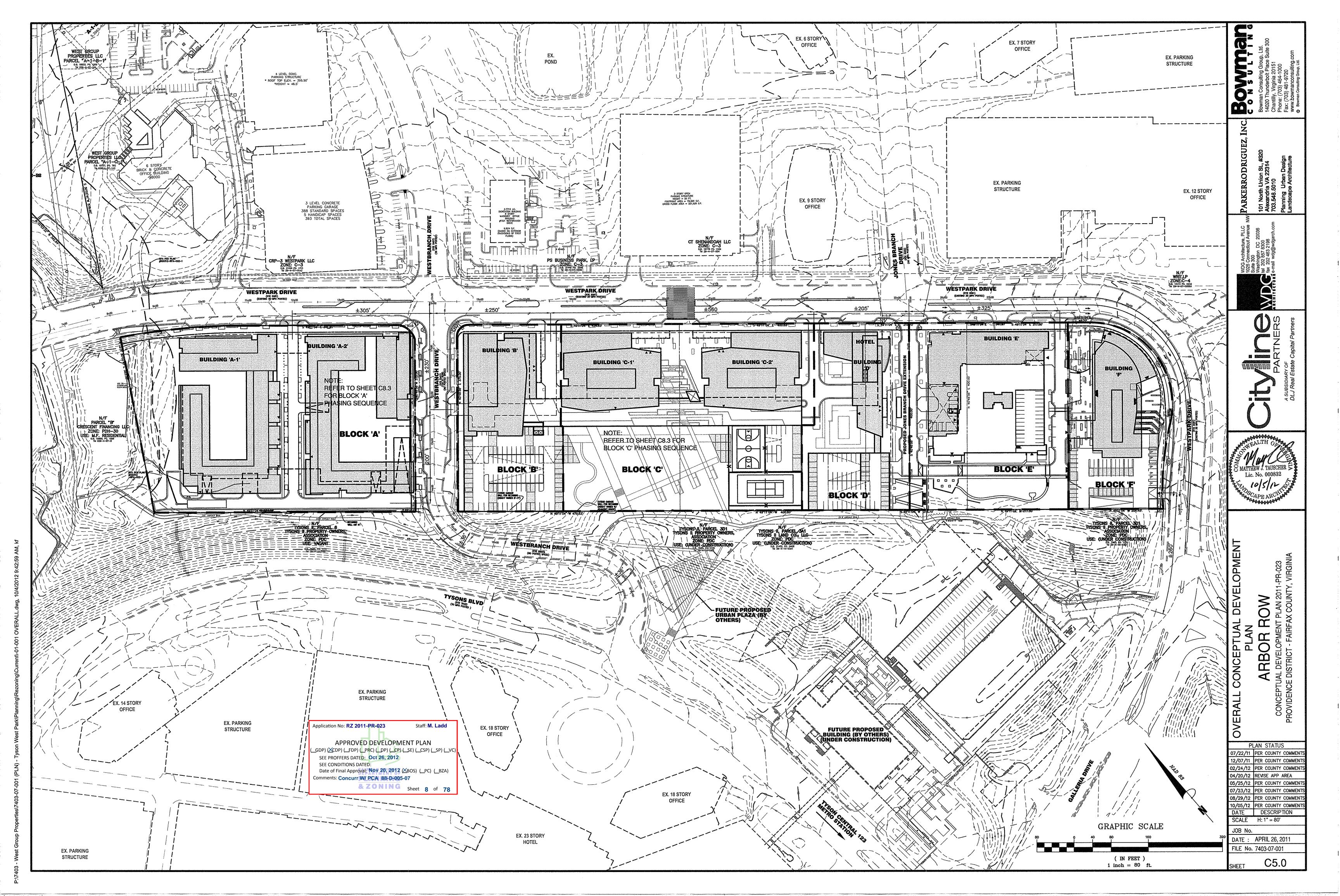
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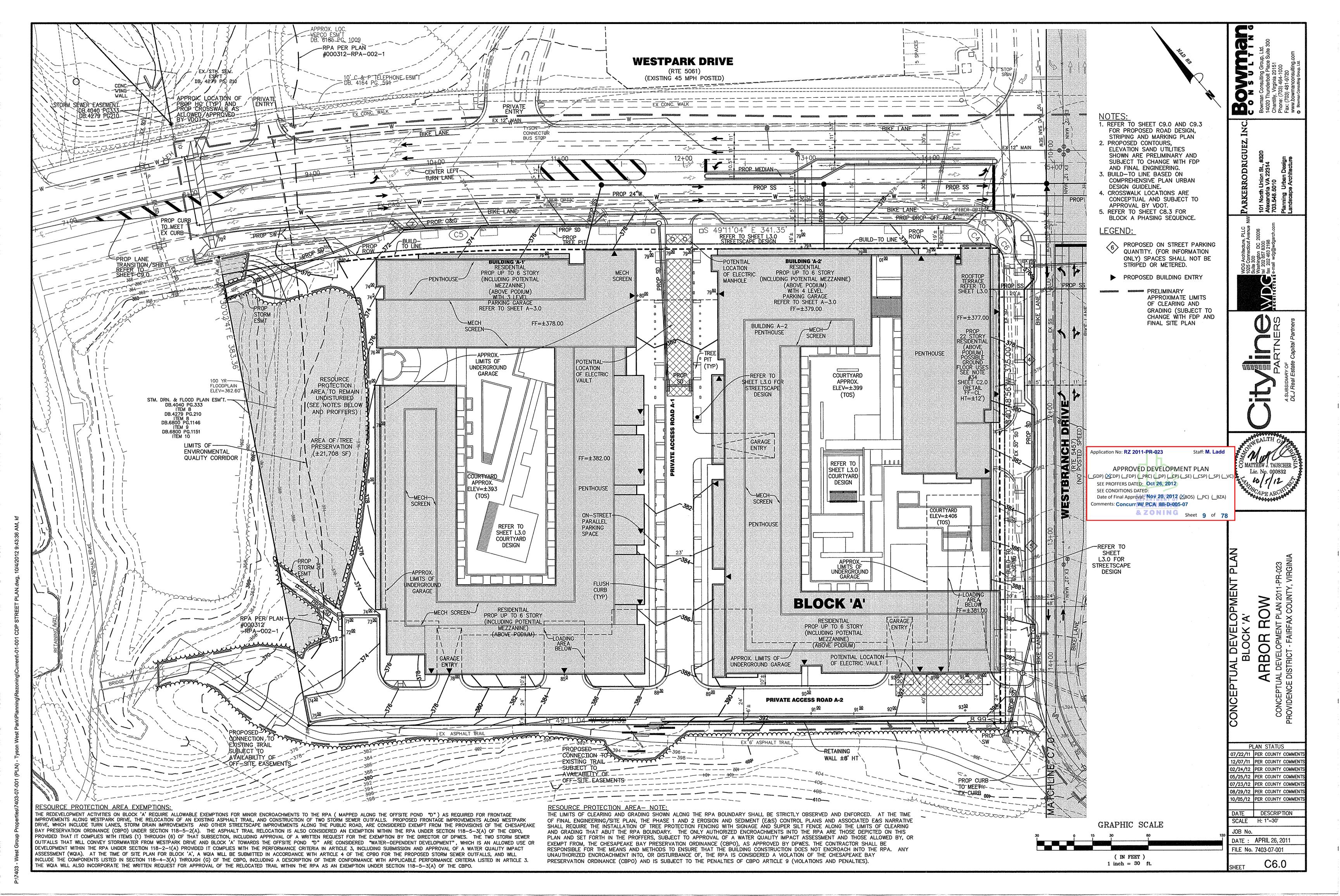
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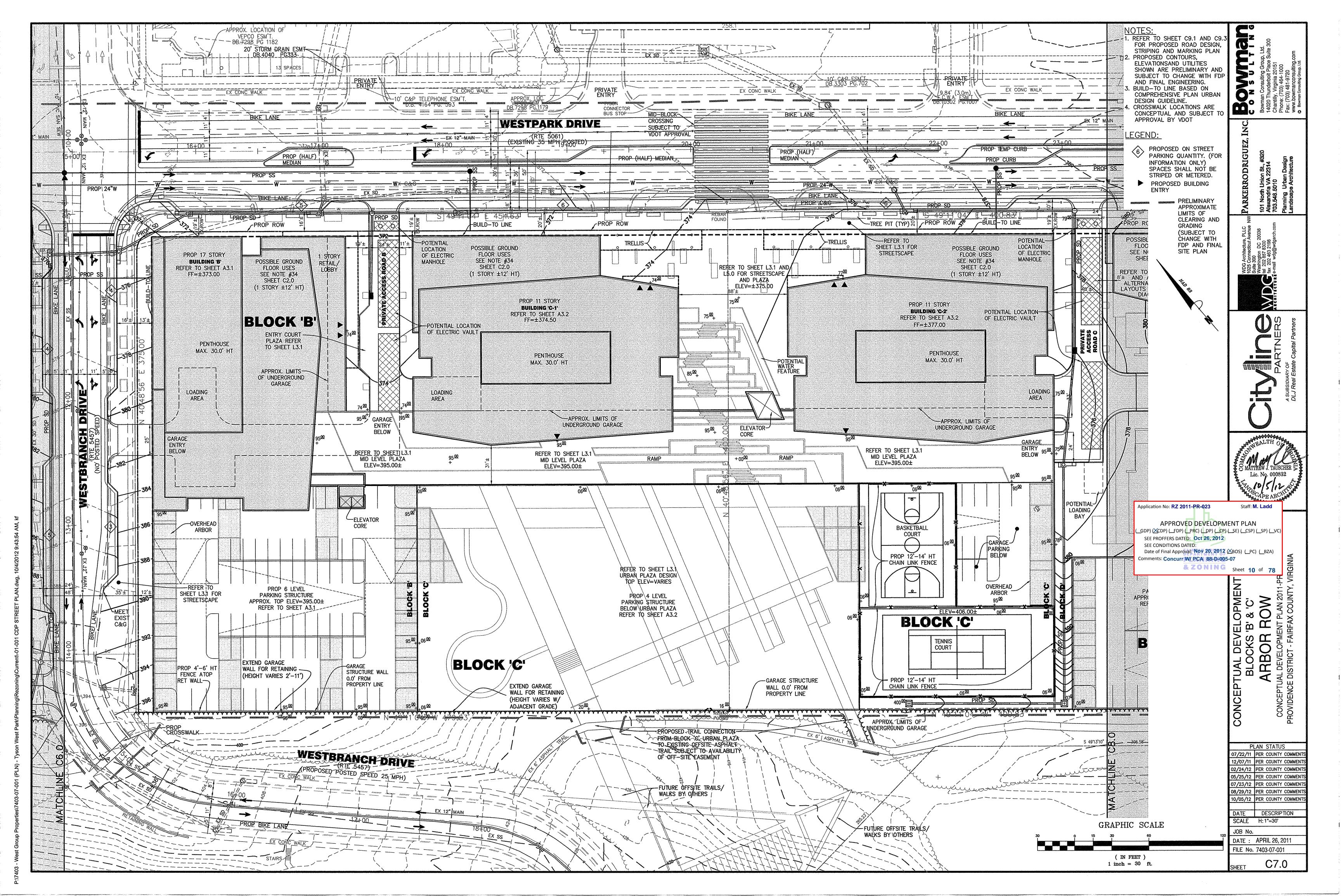
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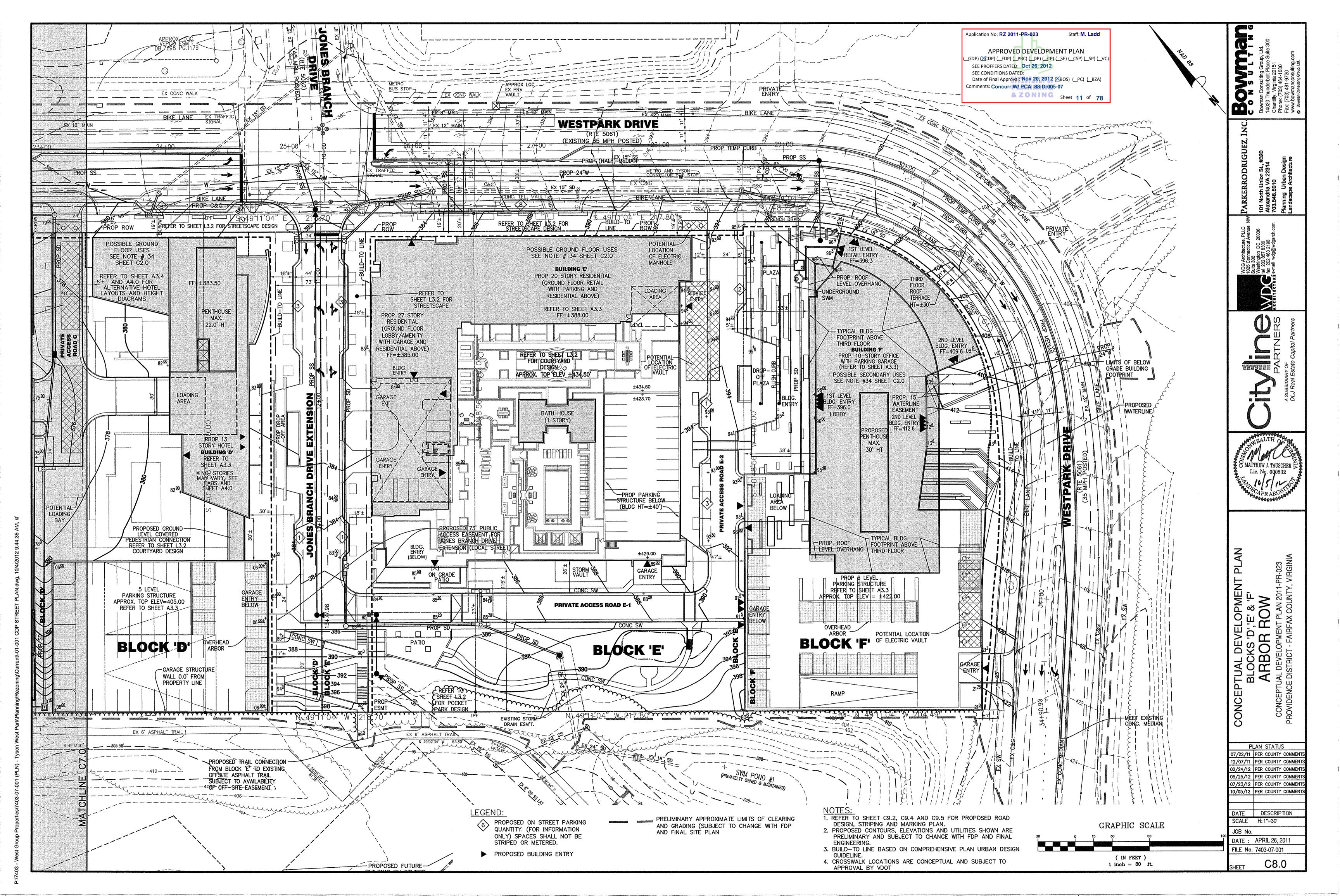


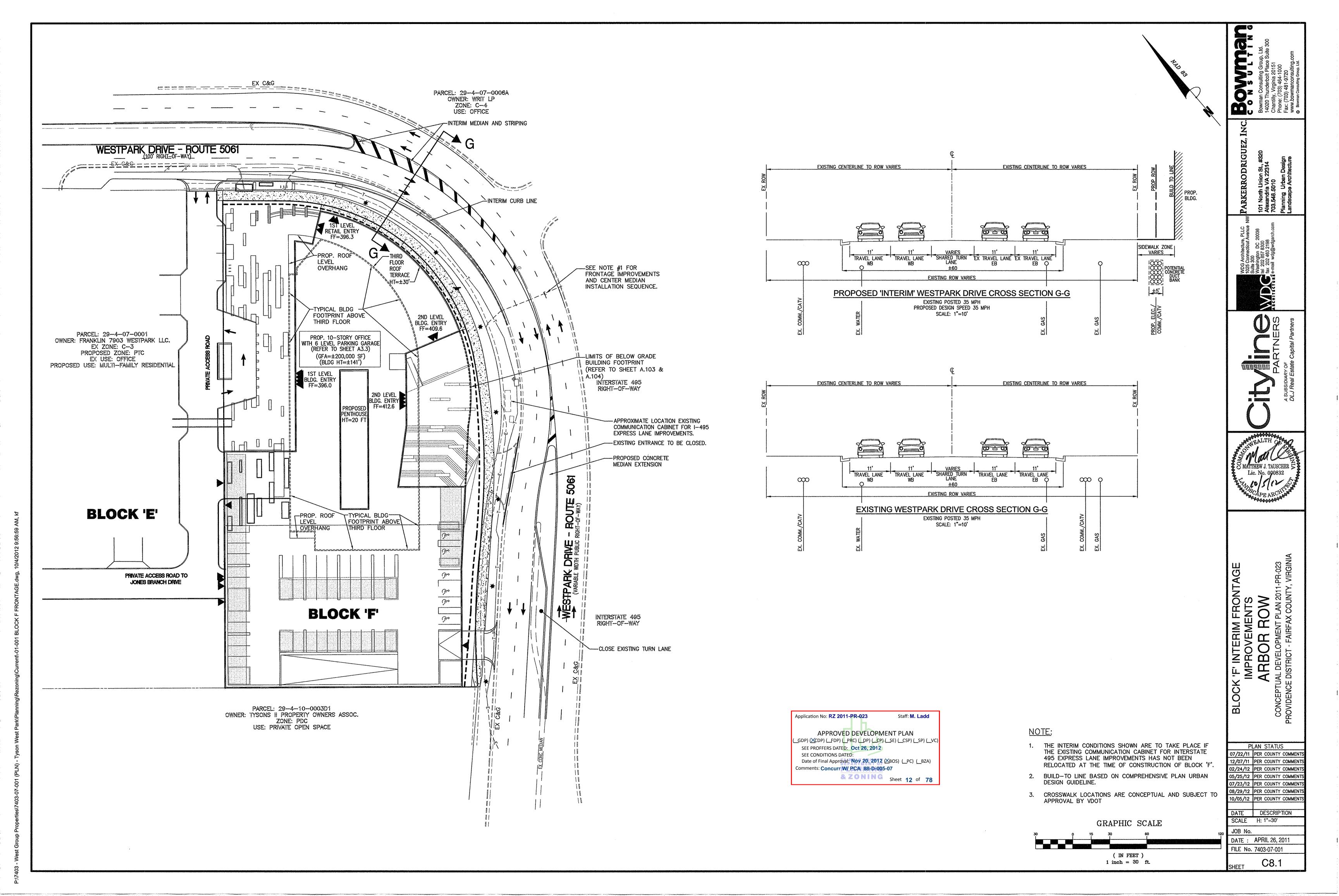


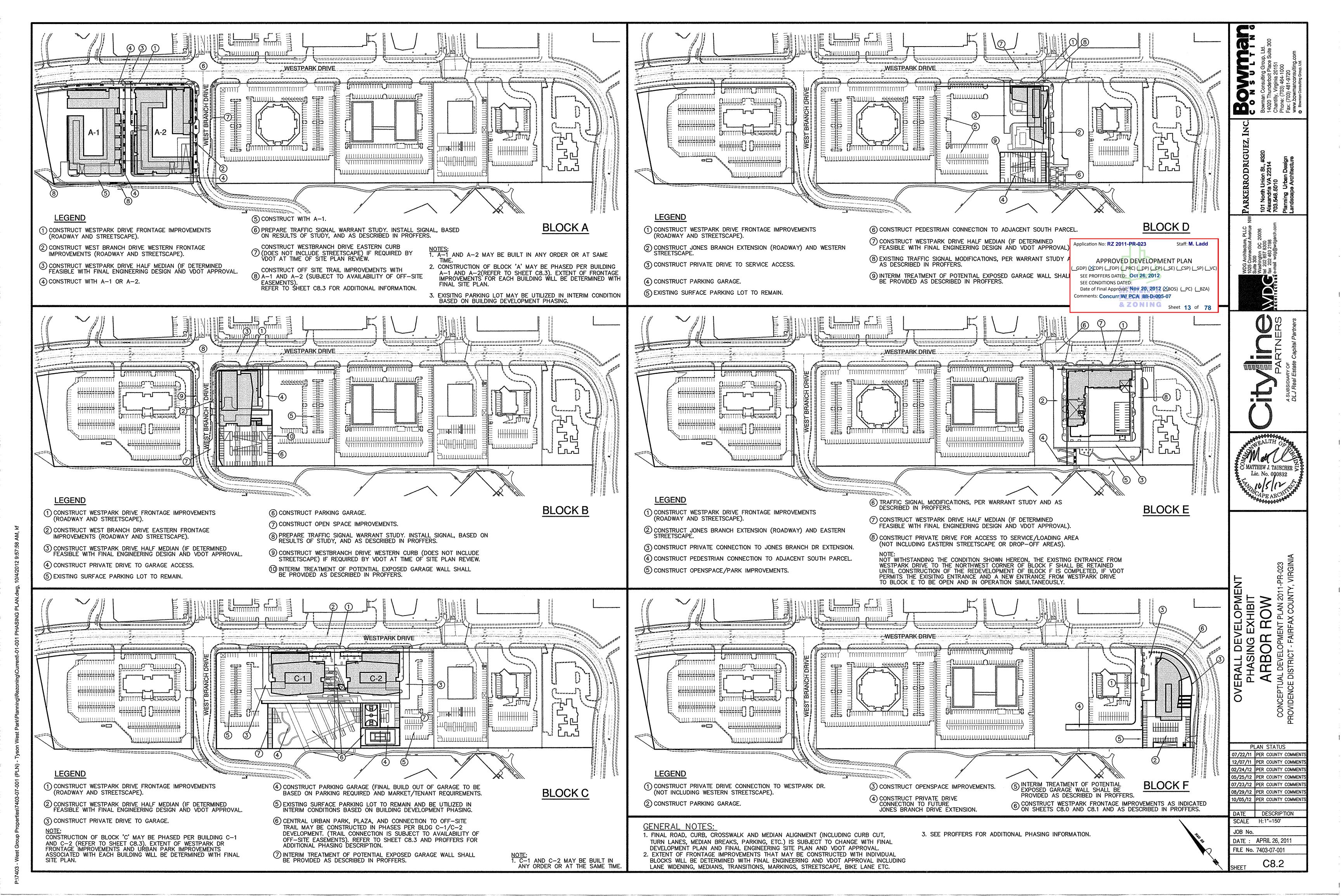


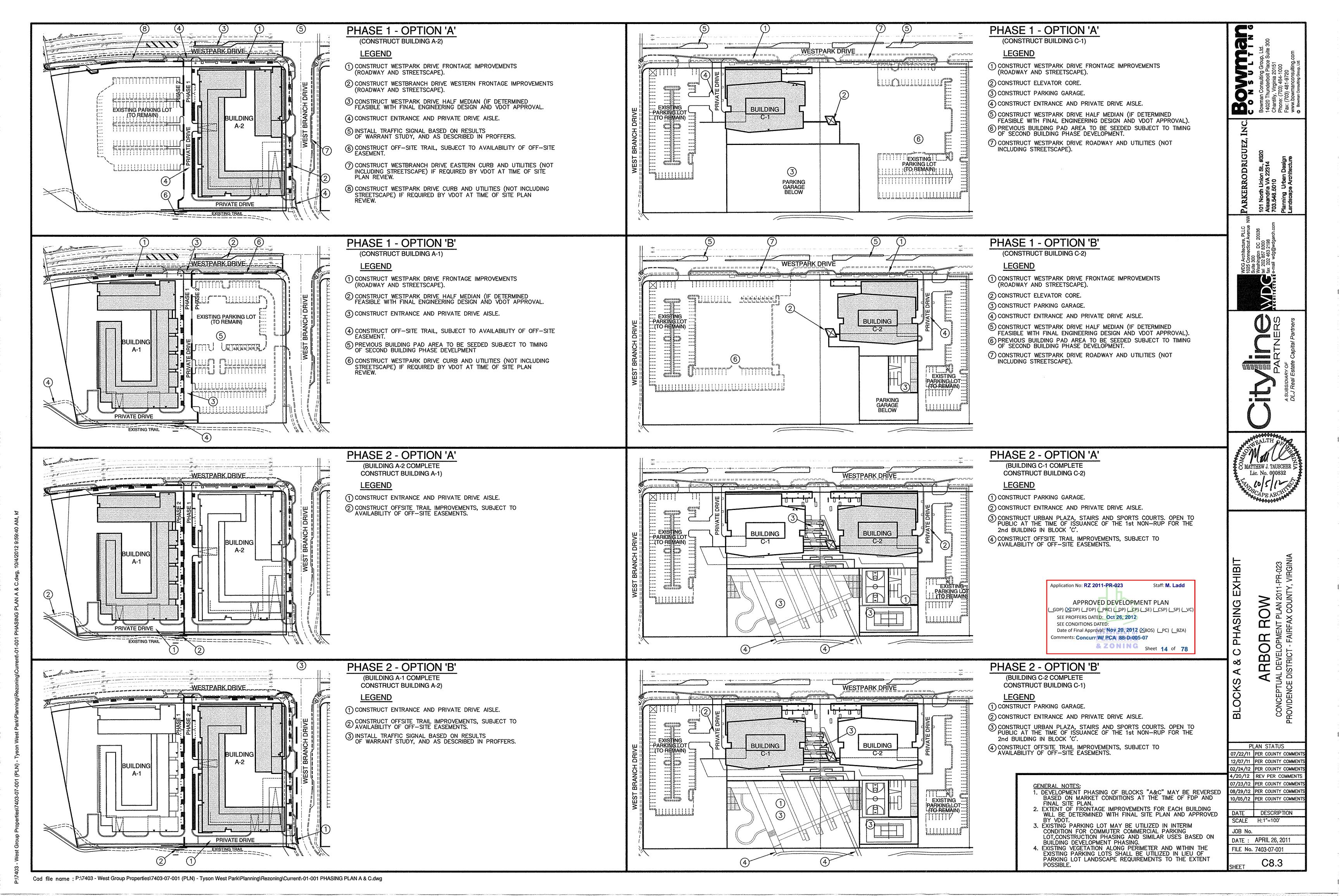


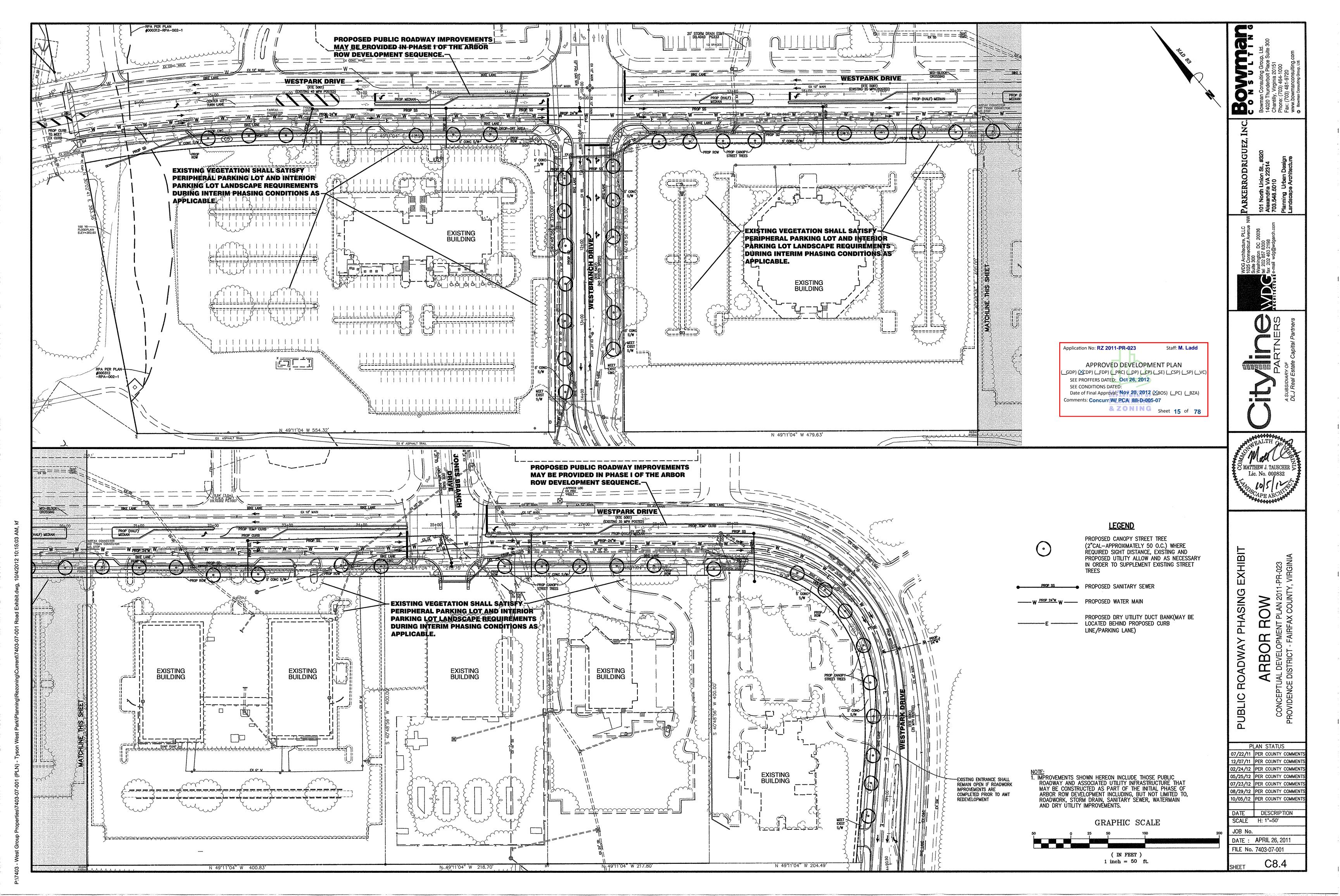


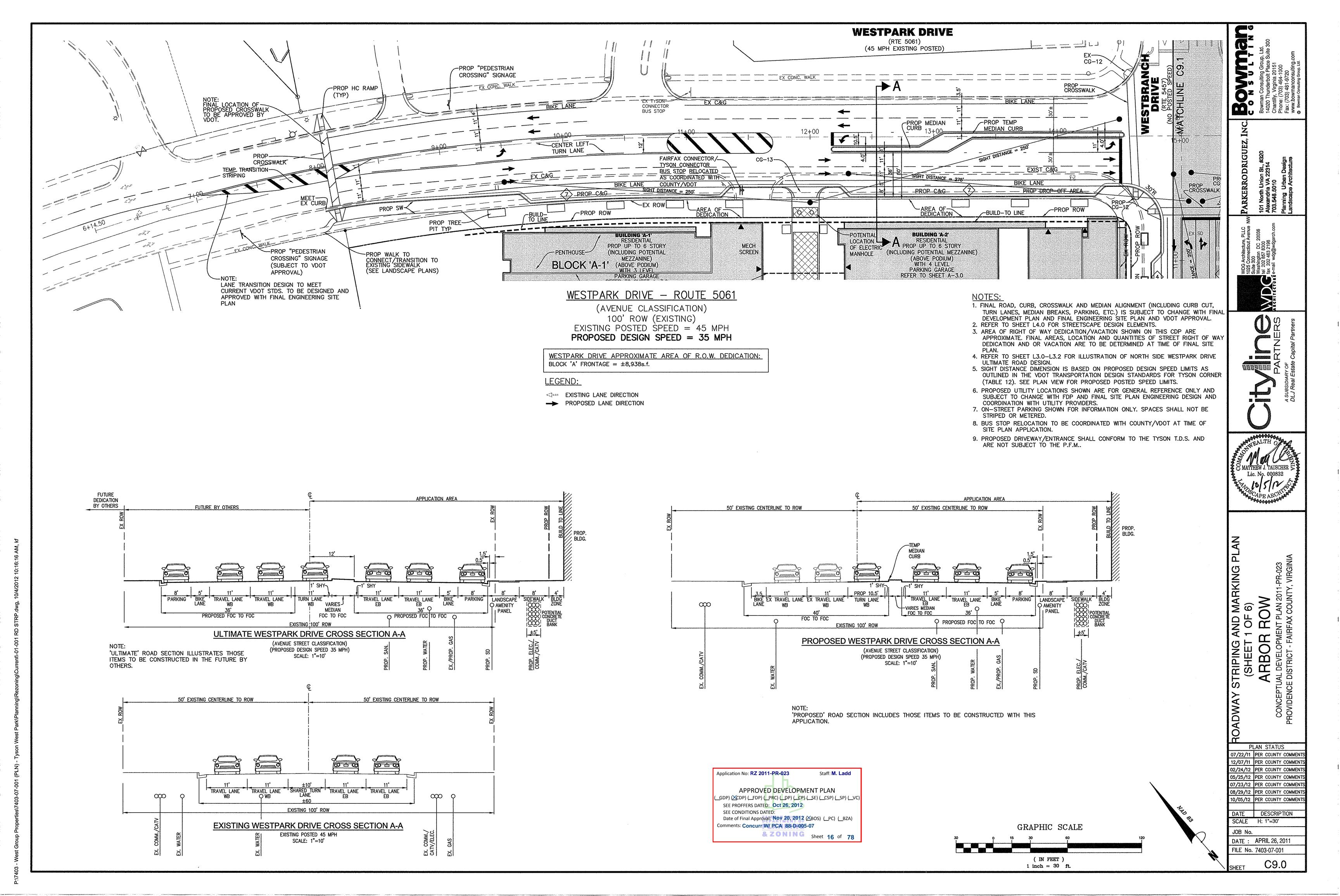


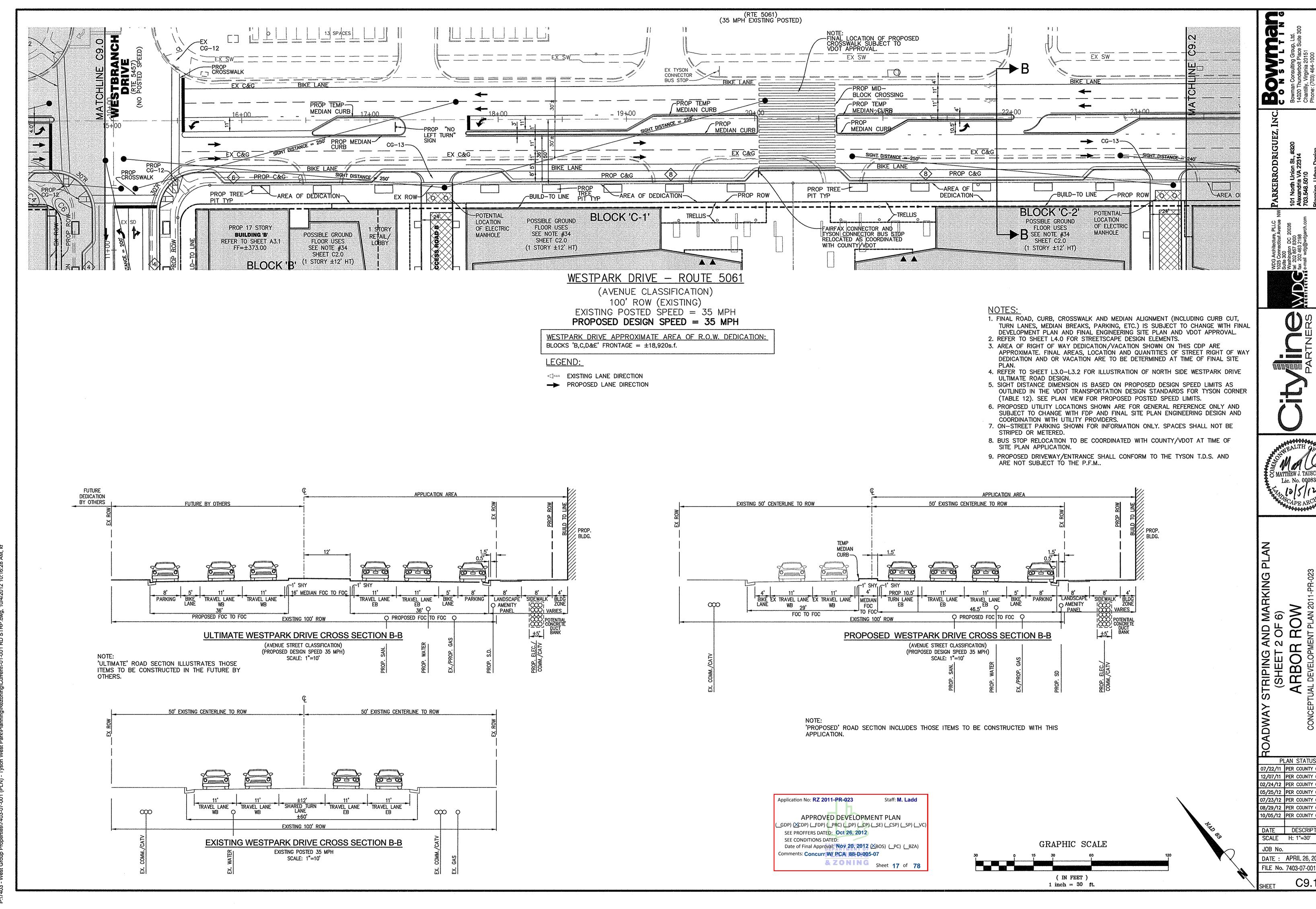












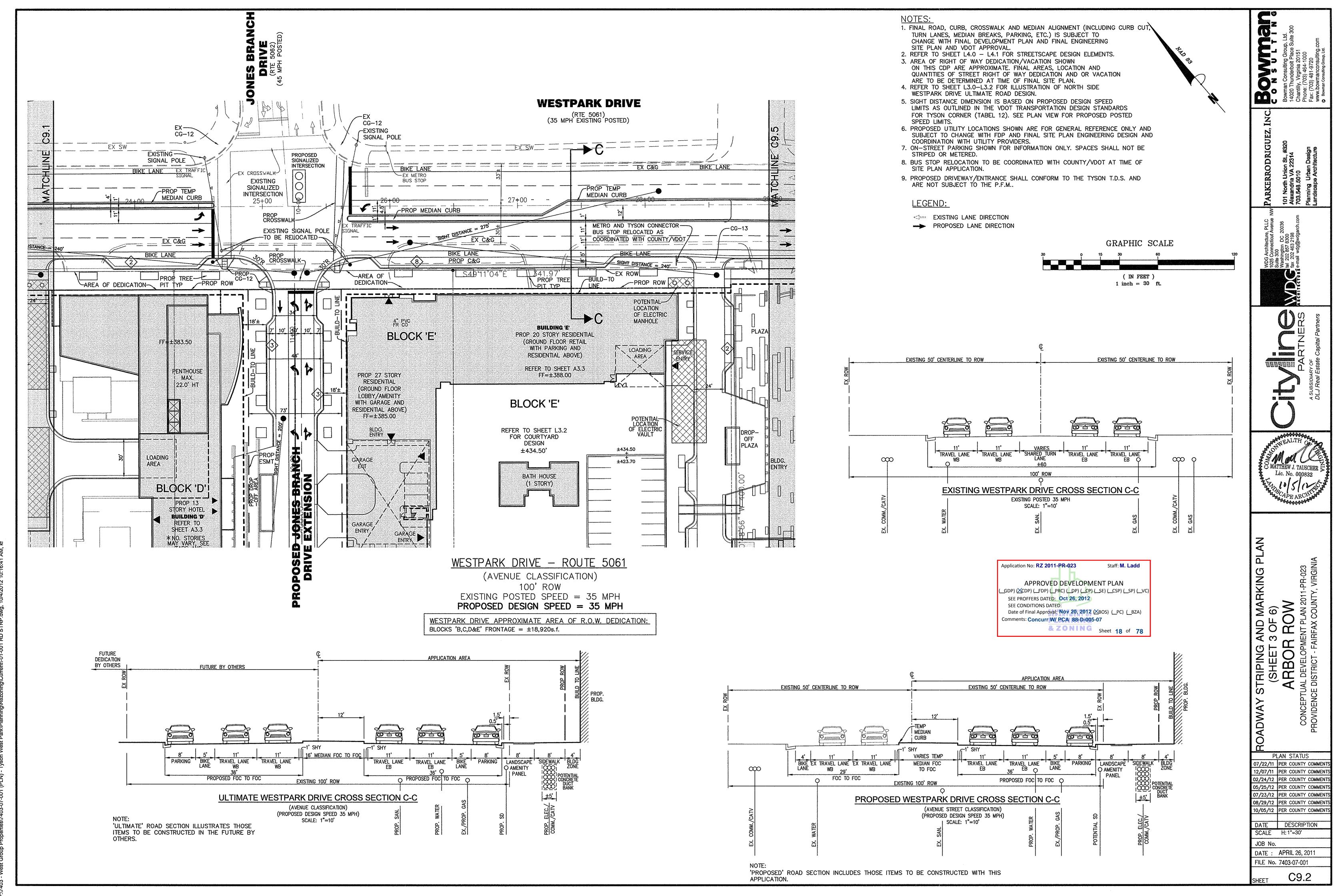
WDG Architec 1025 Connect Suite 300 Washington I tel 202 857 8 fax 202 463 2 e-mail wdo@

S MATTHEW J. TAUSCHER 5 Lic. No. 000832

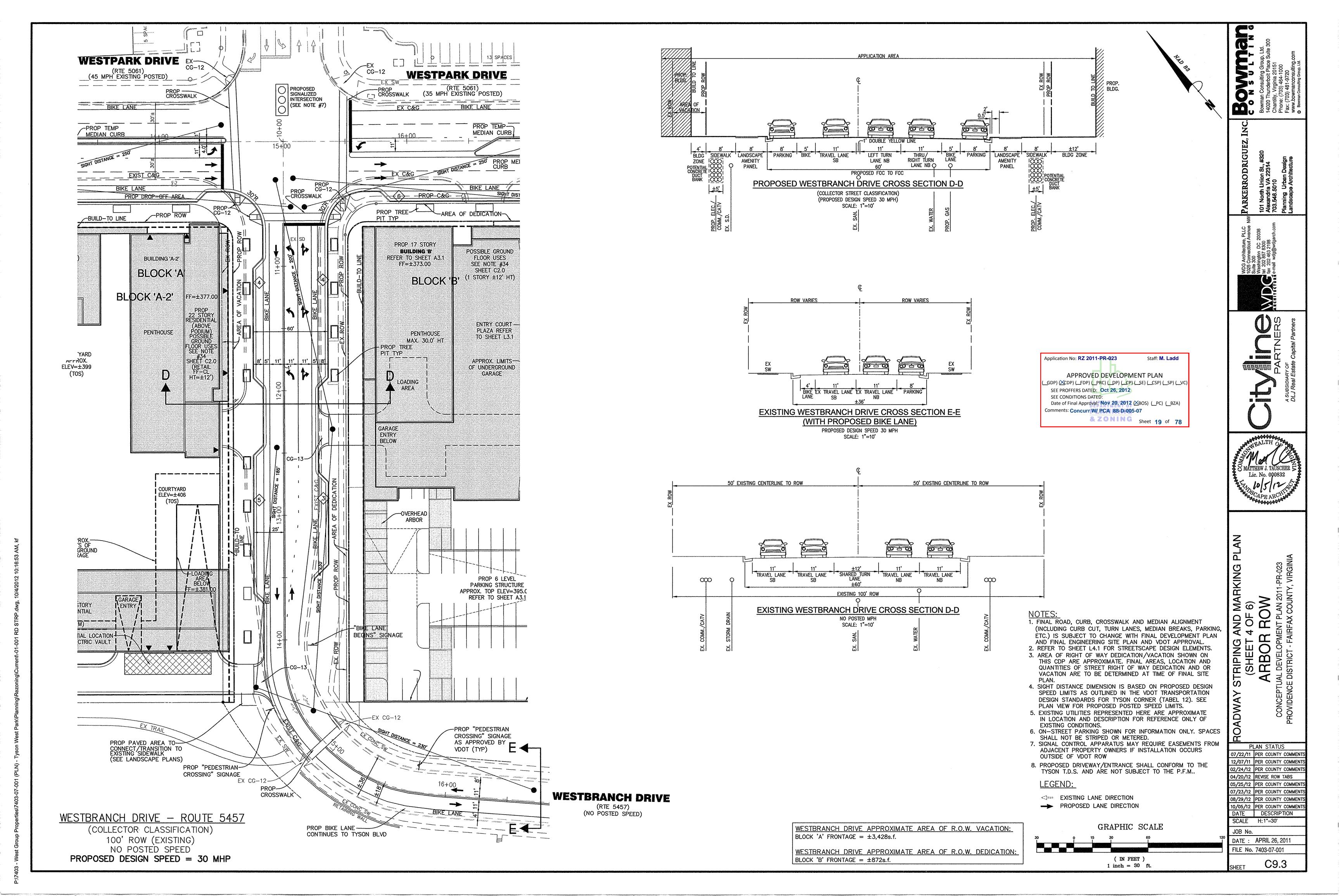
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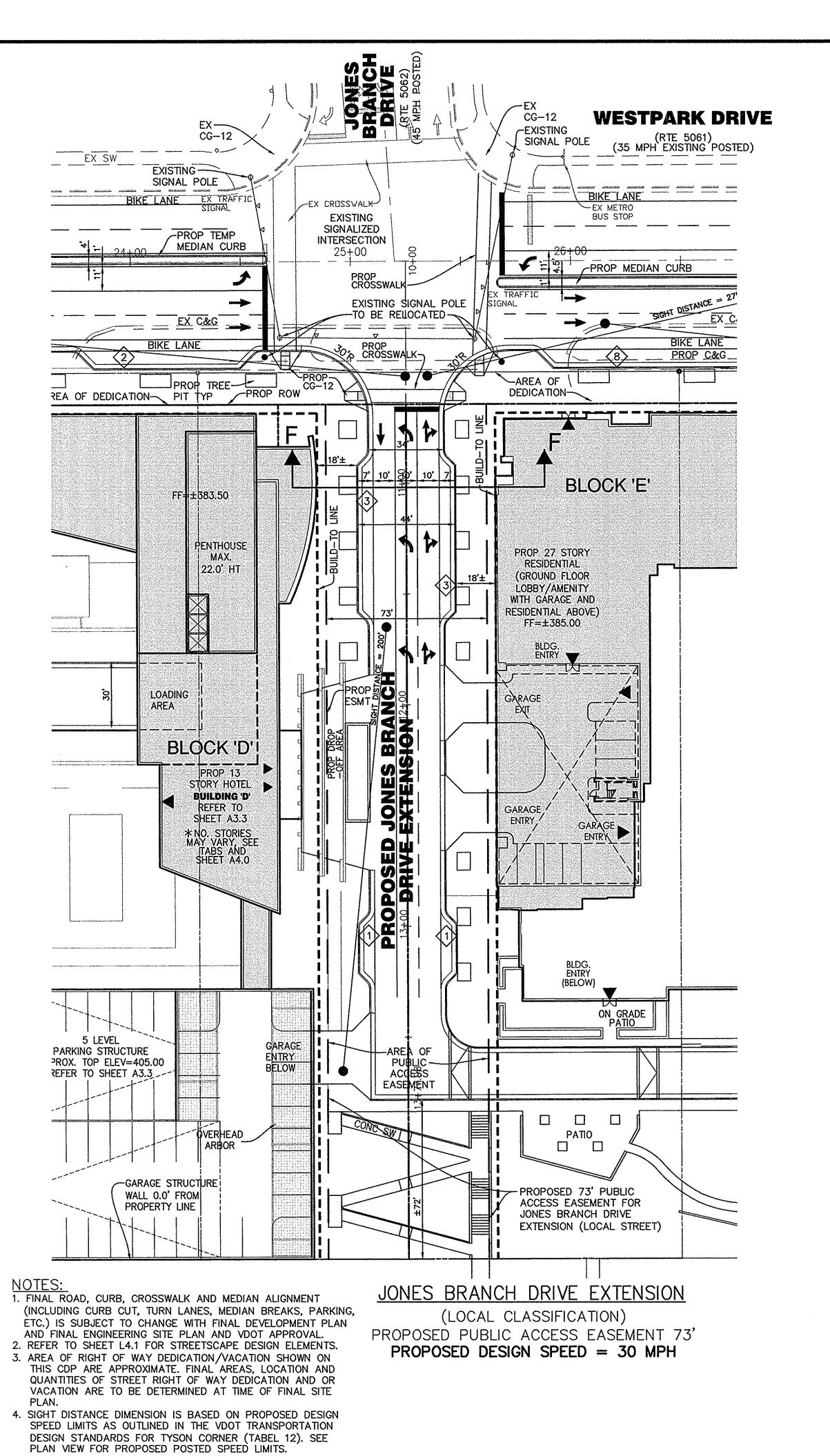
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West Group Properties\7403-07-001 (PLN) - Tyson West Park\Planning\Rezoning\Current\-01-001 RD STRP.dwg, 10/4/2012 10:





Application No: RZ 2011-PR-023 Staff: M. Ladd APPROVED DEVELOPMENT PLAN _GDP) (<u>X</u>CDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC) SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED: Date of Final Approval: Nov 20, 2012 (<u>KBOS</u>) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07 & ZONING Sheet 20 of 78

APPLICATION AREA

PROPOSED 73' PUBLIC ACCESS

PROPOSED FOC TO FOC PROPOSED JONES BRANCH DRIVE EXTENSION

CROSS SECTION F-F ('LOCAL' STREET CLASSIFICATION) SCALE: 1"=10'

BLDG SIDEWALK LANDSCAPE
ZONE
ZONE
POTENTIAL
CONCRETE
DUCT
BANK
PROPOSED JONES E

CROSS

BUILD TO LINE-

CAMENITY CONE

BLDG.

07/22/11 PER COUNTY COMMENT 12/07/11 PER COUNTY COMMENT

LEGEND:

<!=== EXISTING LANE DIRECTION</pre> --> PROPOSED LANE DIRECTION

10/05/12 PER COUNTY COMMENT DATE DESCRIPTION SCALE H:1"=30' JOB No. DATE: APRIL 26, 2011 FILE No. 7403-07-001

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PLAN STATUS

02/24/12 PER COUNTY COMMENT

05/25/12 PER COUNTY COMMENT 7/23/12 PER COUNTY COMMENTS

08/29/12 PER COUNTY COMMENT

04/20/12 REVISE ROW TABS

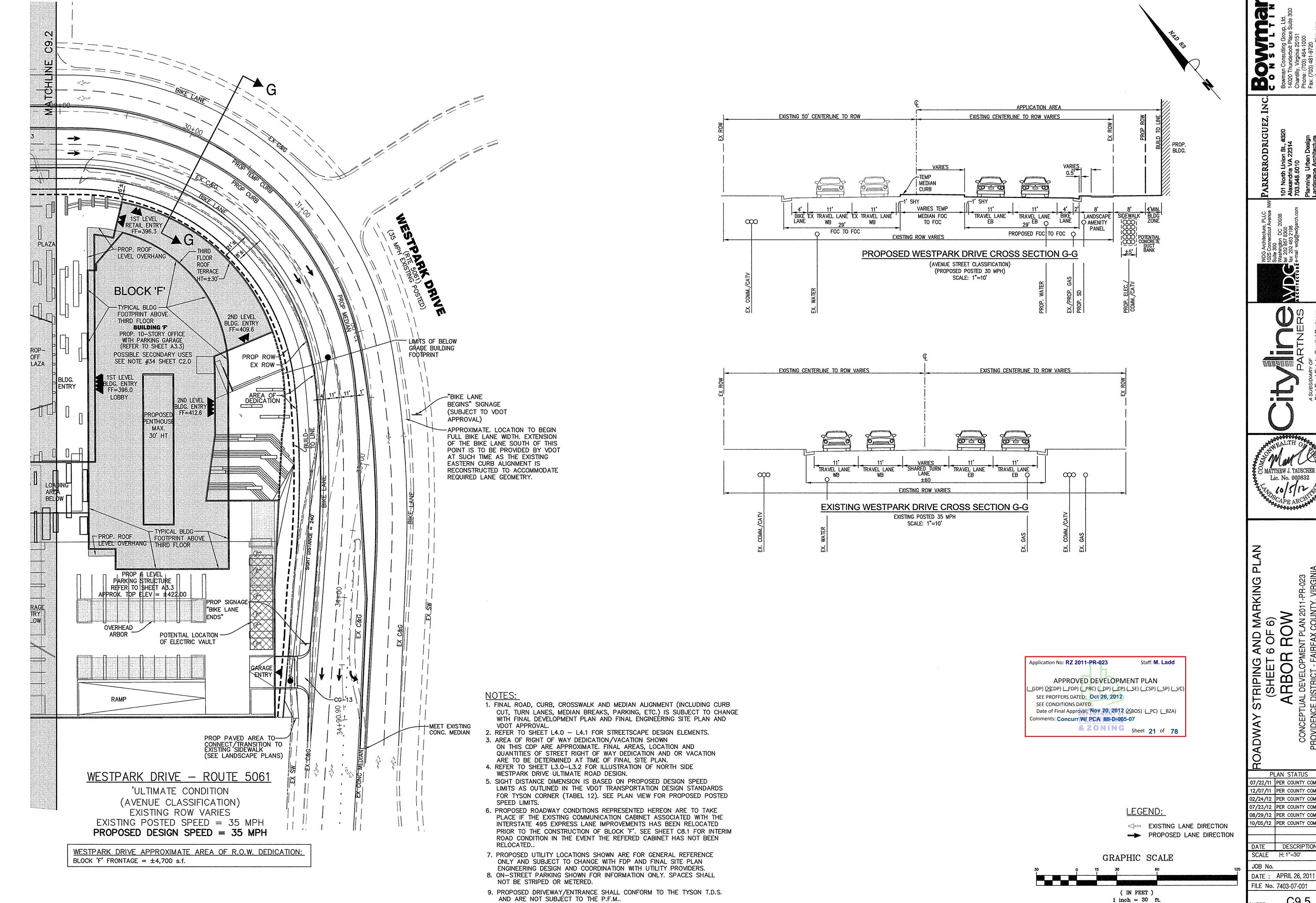
5. EXISTING UTILITIES REPRESENTED HERE ARE APPROXIMATE IN LOCATION AND DESCRIPTION FOR REFERENCE ONLY OF EXISTING GRAPHIC SCALE 6. ON-STREET PARKING SHOWN FOR INFORMATION ONLY. SPACES SHALL NOT BE STRIPED OR METERED. 7. PROPOSED DRIVEWAY/ENTRANCE SHALL CONFORM TO THE TYSON T.D.S. AND ARE NOT SUBJECT TO THE P.F.M.. (IN FEET) 1 inch = 30 ft.

S MATTHEW J. TAUSCHER ELic. No. 000832

C STRIPING AND MARKING P
(SHEET 5 OF 6)

ARBOR ROW

PTUAL DEVELOPMENT PLAN 2011-PR-023
NCE DISTRICT - FAIRFAX COUNTY, VIRGINIA



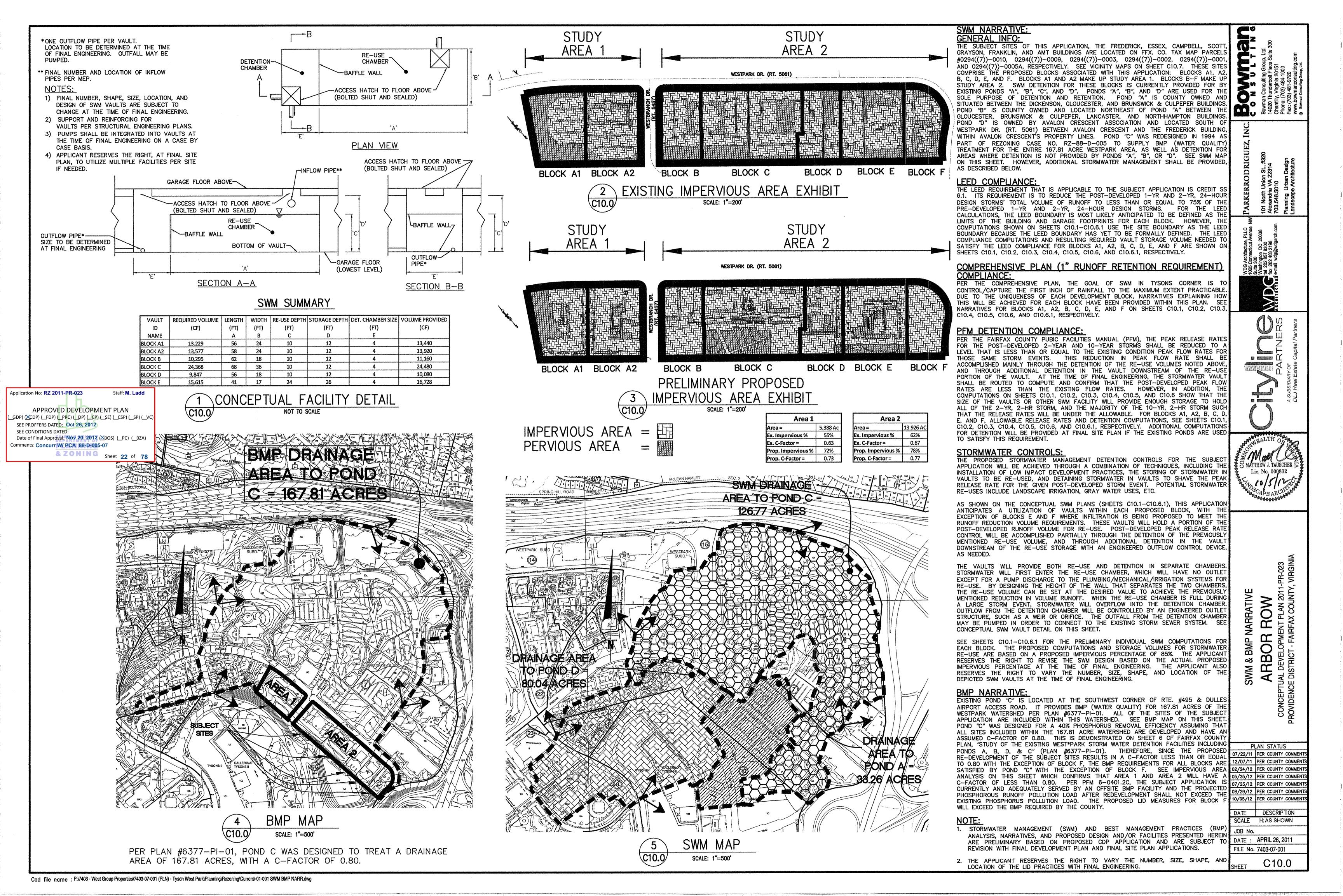
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STRIPING AND MARKING F
(SHEET 6 OF 6)
ARBOR ROW
PTUAL DEVELOPMENT PLAN 2011-PR-023

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10/05/12 PER COUNTY COMMENTS DATE DESCRIPTION SCALE H: 1"=30"

FILE No. 7403-07-001 C9.5



RUNOFF FLOWRATE COMPUTATIONS:

Total Site Area (ac) Type A Type B Type C Type D 2.66 0 2.66 0 Type B Type C Type D 0 Baseline Flow Rates Land Use = Ex Conditions (0% Imp) Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is: Type A Type B Type C Type D Curve Number (CN) For Soil Type Per Land Use Type B Type C Type D C=1-[{S x [1.2 - (S/{P + 0.8S})]}/P]		Amo	unt of Site Area (Ac)	Per Hydrologic Soil G	roup*	*Per Soils Map	approximately 100%	type B	
Baseline Flow Rates Land Use = Ex Conditions (0% Imp) Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:	Total Site Area (ac)	Type A	Type B	Type C	Type D				
Land Use = Ex Conditions (0% Imp) Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is:	2.66	0	2.66	0	0				
Per County Adequate Outfall Presentation formula for the County Adequate Outfall Presentation formula for the Conversion from CN to rational method C-Factor (C) is:	Baseline Flow Rates								
Curve Number (CN) For Soil Type Per Land Use conversion from CN to rational method C-Factor (C) is:	Land Use = Ex Conditions (0% Imp)								
		O	irve Number (CN) Fo	r Soil Type Per Land U	lse	•	· ·		
		Type A	Type B	Type C	Type D				, ,= ,
57 73 82 86 where:			73	82	86	where:			
P = 24-hr rainfall depth for design storm								orm	
Weighted CN for site S = (1000 / CN) - 10						S = (1000 / CN)	- 10		
73 5 Minute TC in	/3						5 Minute TC		in/h
Design Storm 24-hr Rainfall Depth (in) Design Storm Rainfall Intensity (I)		Design S	Storm 24-hr Rainfall D	epth (in)		Desig		nsity (I)	
S for CN to C Calcs. 1-yr 2-yr 10-yr 1-yr 2-yr 10-yr	S for CN to C Calcs.	1-yr	2-yr	10 -yr		1-yr	2-yr	10-yr	
3.70 2.7 3.2 5.5 3.27 5.45 7.27	3.70	2.7	3.2	5.5		3.27	5.45	7.27	ļ
Equivalent C Existing Conditions Peak Flow Rates C			Equivalent C			Existin	g Conditions Peak Flo	w Rates	cfs
1-yr 2-yr 10-yr 1-yr 2-yr 10-yr		1-yr	•	10-yr		1	=		
0.25 0.31 0.49 2.17 4.49 9.48			·			Extend the control of	4.49	9.48	j

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.

	1	GRAPHIC			k A1.PRN RGE METHOD		Vers	sion 2.10
- [- (Project : WESTPARK REDE County : FAIRFAX Subtitle: PROPOSED COND		State:	VA 1	User: Checked:	RSD	Date: Date:	01-31-2011
	Data: Drainage Area Runoff Curve Nu Time of Concent Rainfall Type Pond and Swamp	mber : ration:	0.10 II	Acres Hours				
1	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				

ALLOWABLE RELEASE RATE

Proposed Flow Rates

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

Weighted CN for site

S for CN to C Calcs.

0.87

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.

TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS)

1 YR STORM: $2.66 \text{ AC } \times 1.88 \text{ (IN)} \times 1 \text{FT} / 12 \text{IN} \times 43560 \text{ (SF/AC)} = 18,153 \text{ CU. FT.}$ 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.

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.

> Staff: M. Ladd Application No: RZ 2011-PR-023

APPROVED DEVELOPMENT PLAN __GDP) (<u>X</u>CDP) (__FDP) (__PRC) (__DP) (__CP) (__SE) (__CSP) (__SP) (__VC) SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED: Date of Final Approval: **Nov 20, 2012** (<u>KBOS</u>) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07 & ZONING Sheet 23 of 78

Curve Number (CN) For Soil Type Per Land Use Type D

10-yr

5.5

10-yr

0.83

conversion from CN to rational method C-Factor (C) is: $C = 1 - [{S \times [1.2 - (S/{P + 0.8S})]}/P]$ P = 24-hr rainfall depth for design storm

Per County Adequate Outfall Presentation formula for the

S = (1000 / CN) - 10

5 Minute TC Design Storm Rainfall Intensity (I) 7.27 5.45

Proposed Conditions Peak Flow Rates cfs 10-y 2-yr 10.58 16.05

** 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.

Design Storm 24-hr Rainfall Depth (in)

3.2

Equivalent C

2-yr

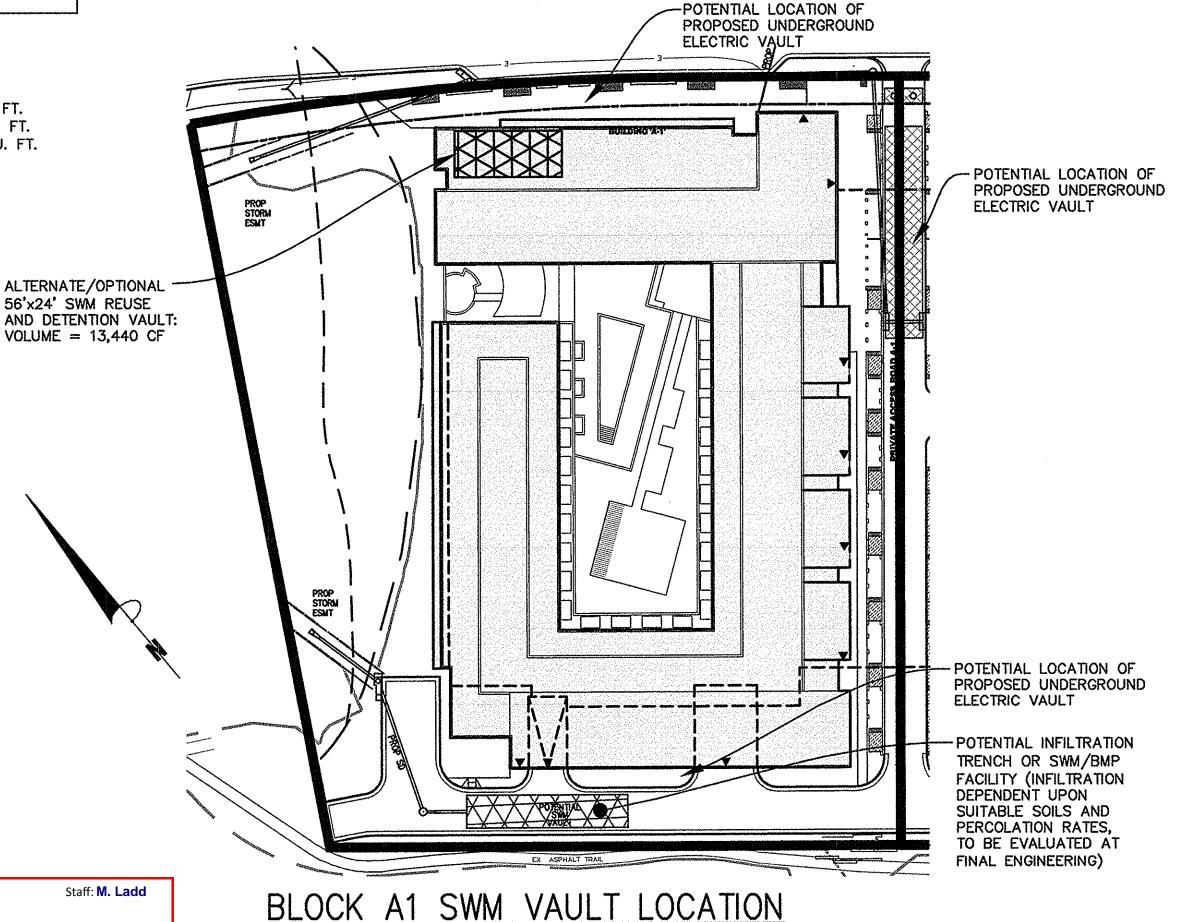
0.73

1-yr

2.7

1-yr

0.70



SCALE: 1"=50"

BLOCK A1 SWM NARRATIVE:

COMPREHENSIVE PLAN (1" RUNOFF RETENTION REQUIREMENT):

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

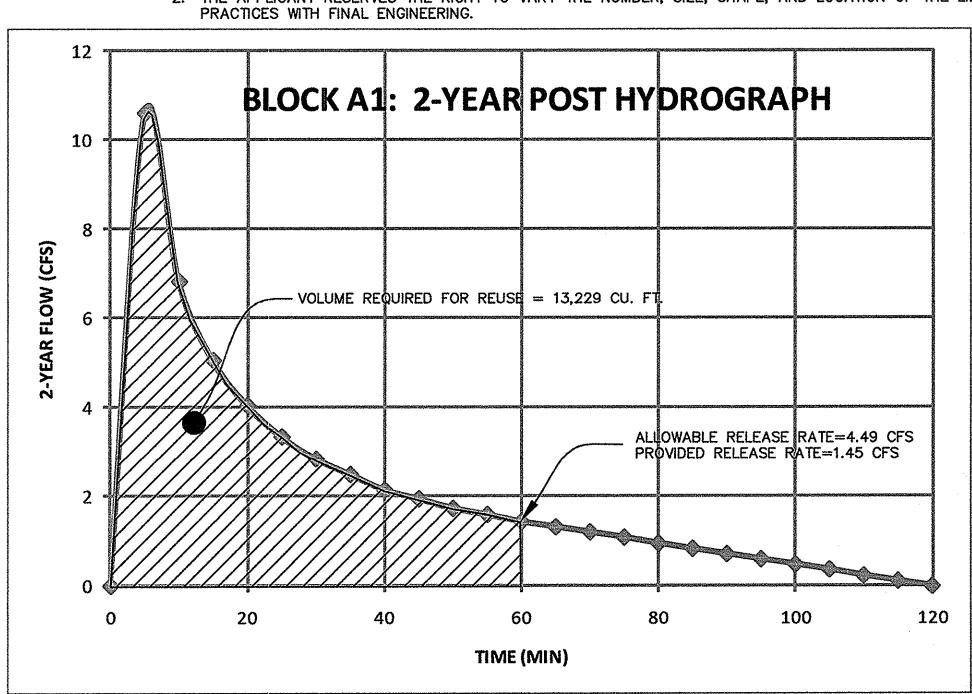
SUMMARY:

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 KNOWN THIS NARRATIVE AND ASSOCIATED COMPUTATIONS WILL BE AMENDED ACCORDINGLY.

NOTE:

1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) 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.

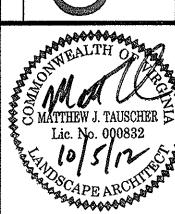
2. THE APPLICANT RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE, AND LOCATION OF THE LID



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.

EUMO NO NO

PLLC



COMPUTATIONS ROW RBOR

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

C10.1 SHEET

Existing Block A2.PRN GRAPHICAL PEAK DISCHARGE METHOD

User: RSD

User: RSD

Version 2.10

Date: 01-31-2011

Date:

Project: WESTPARK REDEVELOPMENT County : FAIRFAX Checked: Subtitle: EXISTING CONDITIONS BLOCK A2 Data: Drainage Area Runoff Curve Number : 73 Time of Concentration: 0.10 Hours Rainfall Type Pond and Swamp Area : NONE 1 | 2 | 3 Storm Number 10 Frequency (yrs) 2.7 24-Hr Rainfall (in) 3.2 5.5

0.27 | 0.23 | 0.13 Ia/P Ratio 0.68 | 0.98 | 2.68 Runoff (in) 1.478 | 1.502 | 1.558 Unit Peak Discharge (cfs/acre/in) Pond and Swamp Factor | 1.00 | 1.00 | 1.00 0.0% Ponds Used 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

Date: 01-31-2011

Date: ____

Project : WESTPARK REDEVELOPMENT Checked: ____ County : FAIRFAX State: VA 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 Frequency (yrs) 2.7 24-Hr Rainfall (in) 3.2 5.5 0.06 | 0.05 | 0.03 Ia/P Ratio 0.10 | 0.10 | 0.10 1.88 | 2.35 | 4.58 Runoff (in) Unit Peak Discharge | 1.578 | 1.578 | 1.578 (cfs/acre/in) Pond and Swamp Factor 1.00 1.00 1.00 0.0% Ponds Used 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.

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

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 BUILIDNGS, 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.

> Application No: RZ 2011-PR-023 Staff: M. Ladd APPROVED DEVELOPMENT PLAN _GDP) (<u>X</u>CDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC) SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED: Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 24 of 78

RUNOFF FLOWRATE COMPUTATIONS:

Per Soils Map approximately 100% type B Amount of Site Area (Ac) Per Hydrologic Soil Group Type C Type D Type A Type B Total Site Area (ac) 2.73 Baseline Flow Rates Land Use = Ex Conditions (0% Imp)

Curve Number (CN) For Soil Type Per Land Use Type A Type C Type D Type B Weighted CN for site 73

S for CN to C Calcs.

3.70

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

Weighted CN for site

S for CN to C Calcs.

PLAN.

TRENCH OR SWM/BMP

FACILITY (INFILTRATION

SUITABLE SOILS AND

PERCOLATION RATES,

TO BE EVALUATED AT

FINAL ENGINEERING)

DEPENDENT UPON

0.87

ALLOWABLE RELEASE RATE

Proposed Flow Rates

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

Equivalent C 10-yr 0.49 0.25 0.31

5,45 7.27 Existing Conditions Peak Flow Rates 2.23 4.61 9.73

5 Minute TC

Design Storm Rainfall Intensity (I)

10-yr

Per County Adequate Outfall Presentation formula for the

conversion from CN to rational method C-Factor (C) is:

 $C = 1 - \{\{S \times [1.2 - (S/\{P + 0.8S\})]\}/P\}$

S = (1000 / CN) - 10

S = (1000 / CN) - 10

P = 24-hr rainfall depth for design storm

Curve Number (CN) For Soil Type Per Land Use Type D

10-yr

5.5

10-yr

0.83

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

5 Minute TC Design Storm Rainfall Intensity (I) 7.27 5.45

Proposed Conditions Peak Flow Rates cfs 6.25 10.86 16.47

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

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

Design Storm 24-hr Rainfall Depth (in)

Equivalent C

2-yr

0.73

2.7

1-yr

0.70

POTENTIAL LOCATION OF PROPOSED UNDERGROUND ELECTRIC VAULT ALTERNATE/OPTIONAL 58'x24' SWM REUSE AND DETENTION VAULT: VOLUME = 13.920 CFPOTENTIAL LOCATION OF PROPOSED UNDERGROUND ELECTRIC VAULT -POTENTIAL LOCATION OF PROPOSED UNDERGROUND ELECTRIC VAULT POTENTIAL INFILTRATION

BLOCK A2 SWM VAULT LOCATION

SCALE: 1"=50'

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.

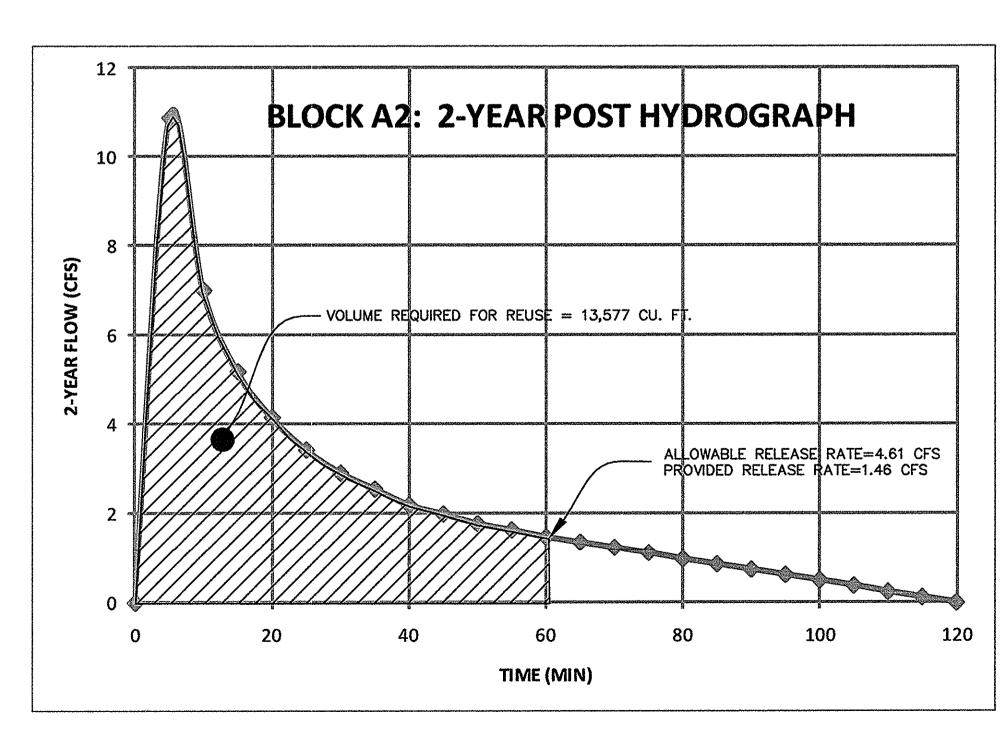
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK A2. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER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

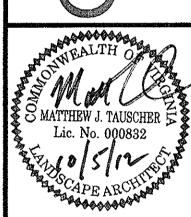
NOTE:

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



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

RKERRODRIGUI



COMPUTATIONS ROW RBOR

PLAN STATUS 17/22/11 PER COUNTY COMMENT 12/07/11 PER COUNTY COMMENTS 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 COMMENTS

DATE DESCRIPTION SCALE H: AS SHOWN

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

10

5.5

State: VA

2

3.2

0.27 | 0.23 | 0.13

0.68 | 0.98 | 2.68

..478 | 1.502 | 1.558

User: RSD

Checked:

Project : WESTPARK REDEVELOPMENT

Rainfall Type

Subtitle: EXISTING CONDITIONS BLOCK B

Runoff Curve Number :

Pond and Swamp Area : NONE

Pond and Swamp Factor | 1.00 | 1.00 | 1.00

Peak Discharge (cfs) 2 3 9

TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)

Time of Concentration: 0.10 Hours

1

2.7

County : FAIRFAX

Storm Number

Ia/P Ratio

Runoff (in)

Frequency (yrs)

24-Hr Rainfall (in)

Unit Peak Discharge

(cfs/acre/in)

0.0% Ponds Used

Data: Drainage Area

Version 2.10

Date: 01-31-2011

Date: 01-31-2011

Date: ____

Date: _____

RUNOFF FLOWRATE COMPUTATIONS:

Amount of Site Area (Ac) Per Hydrologic Soil Group* Total Site Area (ac) 2.07 Baseline Flow Rates Land Use = Ex Conditions (0% Imp) Curve Number (CN) For Soil Type Per Land Use Type D Type C where: S = (1000 / CN) - 10Weighted CN for site 73 Design Storm 24-hr Rainfall Depth (in) S for CN to C Calcs. 10-yr 5.5 3.70 2.7 Equivalent C 2-yr 10-yr 0.25 0.31 0.49 Proposed Flow Rates

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

User: RSD

County:	WESTPARK FAIRFAX PROPOSED		State		User: Checked:
Data: D	rainage Ar Lunoff Curv	ea e Number	2.07	' Acres	
T	ime of Containfall Ty Cond and Sw	centration ne	: 0.10 : II) Hours	

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: $2.07 \text{ AC } \times 1.88 \text{ (IN)} \times 1 \text{FT}/12 \text{IN} \times 43560 \text{ (SF/AC)} = 14,127 \text{ CU. FT.}$ 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.

14,127 CU. FT. - 5,110 CU. FT. = 9,017 CU. FT.

17,659 CU. FT. - 7,364 CU. FT. = 10,295 CU. FT.

<u>' COMPREHENSIVE PLAN NOTE:</u>

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.

> Application No: RZ 2011-PR-023 Staff: M. Ladd APPROVED DEVELOPMENT PLAN _GDP) (<u>X</u>CDP) (__FDP) (__PRC) (__DP) (__CP) (__SE) (__CSP) (__SP) (__VC) SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED:

Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 25 of 78

*Per Soils Map approximately 100% type B Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is: $C = 1 - \{\{S \times [1.2 - (S/\{P + 0.8S\})]\}/P\}$ P = 24-hr rainfall depth for design storm 5 Minute TC Design Storm Rainfall Intensity (I) 2-yr 7.27 5.45 Existing Conditions Peak Flow Rates 10-yr 7.37 3.50 **Land Use = Proposed Conditions (85% Imp) ** Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is: Curve Number (CN) For Soil Type Per Land Use $C = 1 - \{\{S \times [1.2 - (S/\{P + 0.8S\})]\}/P\}$ Type D Type C P = 24-hr rainfall depth for design storm S = (1000 / CN) - 10Weighted CN for site 92 5 Minute TC in/hr Design Storm 24-hr Rainfall Depth (in) Design Storm Rainfall Intensity (I) S for CN to C Calcs. 10-yr 5.5 7.27 0.87 2.7 3.2

Proposed Conditions Peak Flow Rates

8.24

10-yr

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.

10-yr

0.83

** 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.

Equivalent C

2-yr

0.73

0.70

ALTERNATE/OPTIONAL 62'X18' SWM VAULT LOCATION VOLUME = 11,160 CFALTERNATE / OPTIONAL-62'x18' SWM REUSE AND DETENTION VAULT: VOLUME = 11,160 CFBLOCK B SWM VAULT LOCATION SCALE: 1"=50'

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 C10.8, FOR FURTHER DETAIL.

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

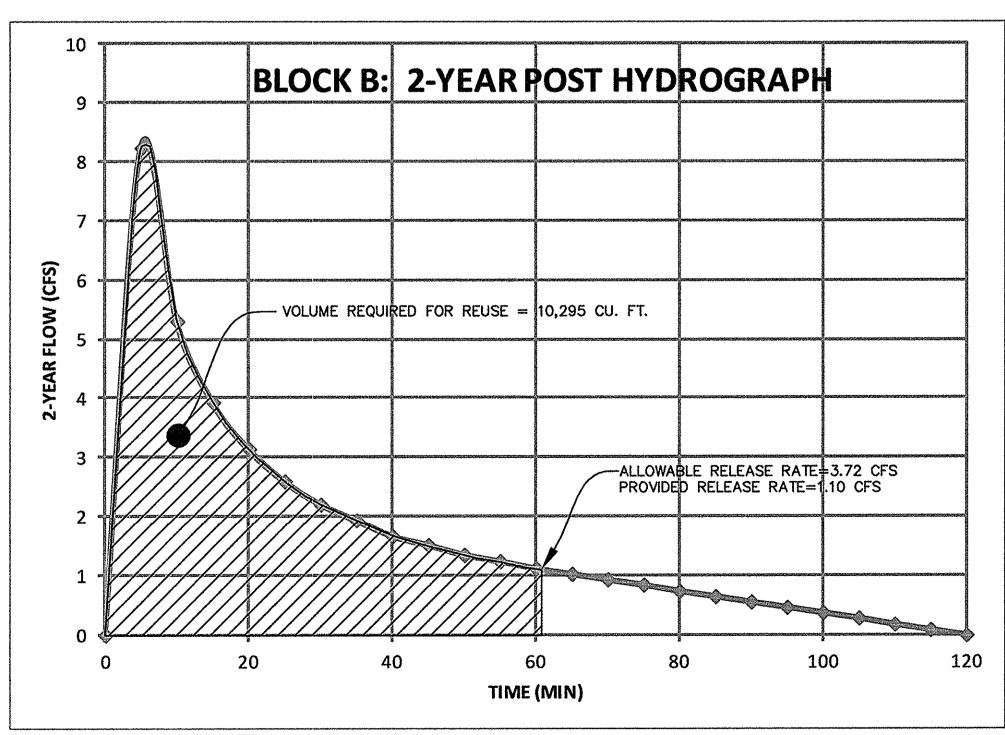
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK B. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER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

SUMMARY:

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

1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) 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

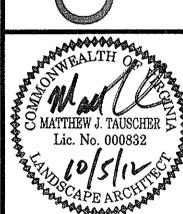
2. THE APPLICANT RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE, AND LOCATION OF THE LID PRACTICES WITH FINAL ENGINEERING.



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.

Parkerrodriguez,

, PLLC Avenue



COMPUTATIONS ROW RBOR $\mathbf{\Omega}$

PLAN STATUS 7/22/11 PER COUNTY COMMENT 12/07/11 PER COUNTY COMMENTS 02/24/12 PER COUNTY COMMENT 05/25/12 PER COUNTY COMMENT 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: APRIL 26, 2011 FILE No. 7403-07-001

Date: 01-31-2011

Date:

Baseline Flow Rates

S for CN to C Calcs.

3.70

Land Use = Proposed Conditions (85% Imp)

Weighted CN for site

S for CN to C Calcs.

0.87

RUNOFF FLOWRATE COMPUTATIONS:

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

Data: Drainage Area 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)

Project: WESTPARK REDEVELOPMENT

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

User: RSD

Checked: _____

County : FAIRFAX Subtitle: PROPOSED CONDITIONS	State: LOCK C	
Data: Drainage Area Runoff Curve Number	4.9 92	Acres
Kanon Carve Number	2	

Time of Concent Rainfall Type Pond and Swamp	ration:	0.10 II NONE	Hours
Storm Number	1	2	3
Frequency (yrs)	1	2	10
24-Hr Rainfall (in)	2.7	3.2	5.5
To/D Dotio	0.06	0.05	0.02

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

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.

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

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

<u>" COMPREHENSIVE PLAN NOTE:</u>

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.

Application No: RZ 2011-PR-023

APPROVED DEVELOPMENT PLAN _GDP) (<u>X</u>CDP) (__FDP) (__PRC) (__DP) (__CP) (__SE) (__CSP) (__SP) (__VC) SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED:

Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07

Staff: M. Ladd

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

Total Site Area (ac) Type C Type B

Land Use = Ex Conditions (0% Imp) Curve Number (CN) For Soil Type Per Land Use Type C Type D

Weighted CN for site 73

Type C

5.5

10-yr

0.83

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

Equivalent C 2-yr 10-yr 0.25 0.31 0.49

7.27 **Existing Conditions Peak Flow Rates** 2-yr

17.46

5 Minute TC Design Storm Rainfall Intensity (I)

Per County Adequate Outfall Presentation formula for the

conversion from CN to rational method C-Factor (C) is:

 $C = 1 - [\{S \times [1.2 - (S/\{P + 0.8S\})]\}/P]$

S = (1000 / CN) - 10

P = 24-hr rainfall depth for design storm

Per County Adequate Outfall Presentation formula for the conversion from CN to rational method C-Factor (C) is: Curve Number (CN) For Soil Type Per Land Use

Type D

P = 24-hr rainfall depth for design storm

 $C = 1 - [\{S \times [1.2 - (S/\{P + 0.8S\})]\}/P]$

S = (1000 / CN) - 10

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

> **Proposed Conditions Peak Flow Rates** cfs 2-yr 29.57 11.22 19.49

ALLOWABLE RELEASE RATE

0.70

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

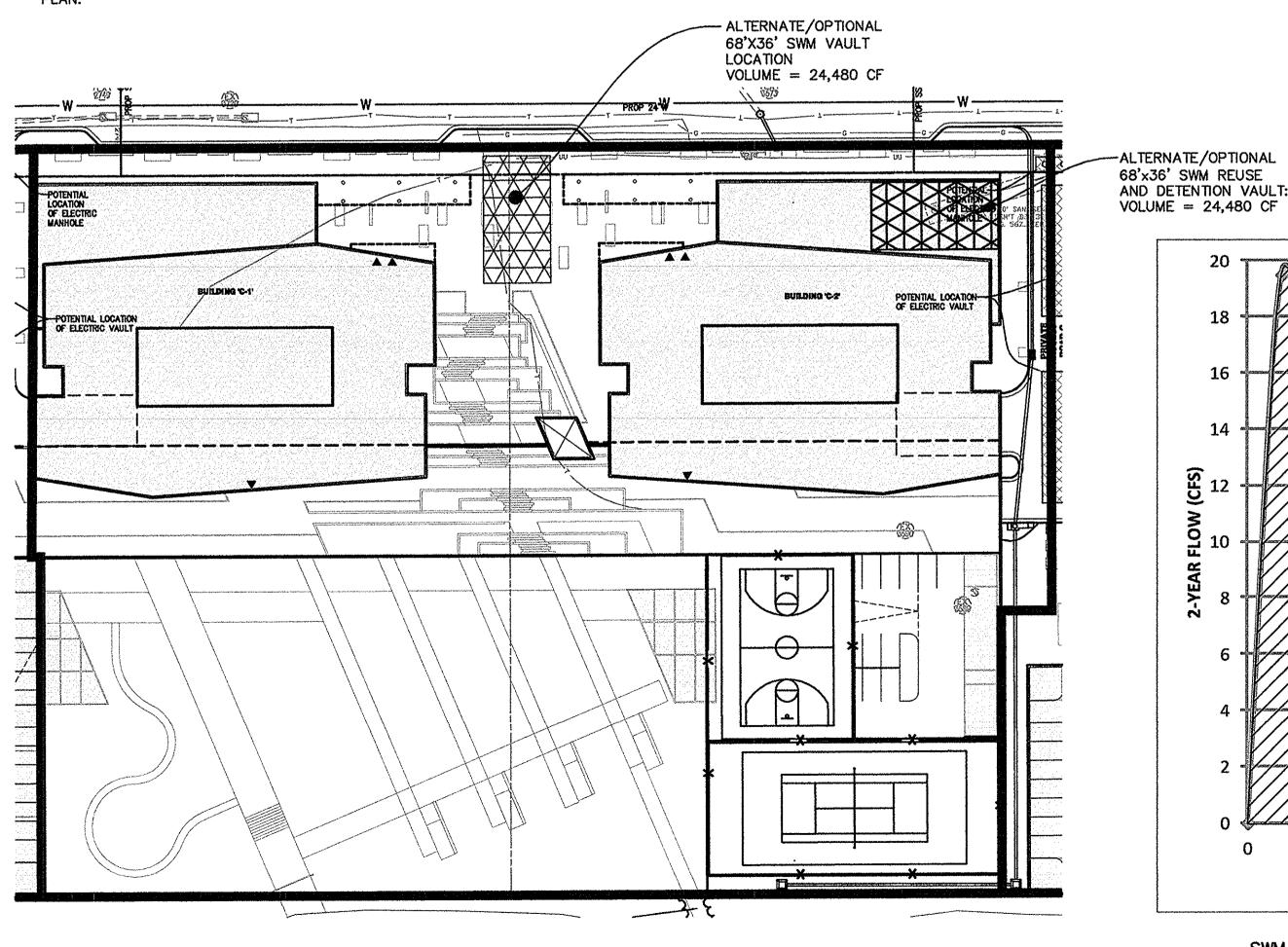
Design Storm 24-hr Rainfall Depth (in)

3.2

Equivalent C

2-yr

0.73



BLOCK C SWM VAULT LOCATION

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

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

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

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

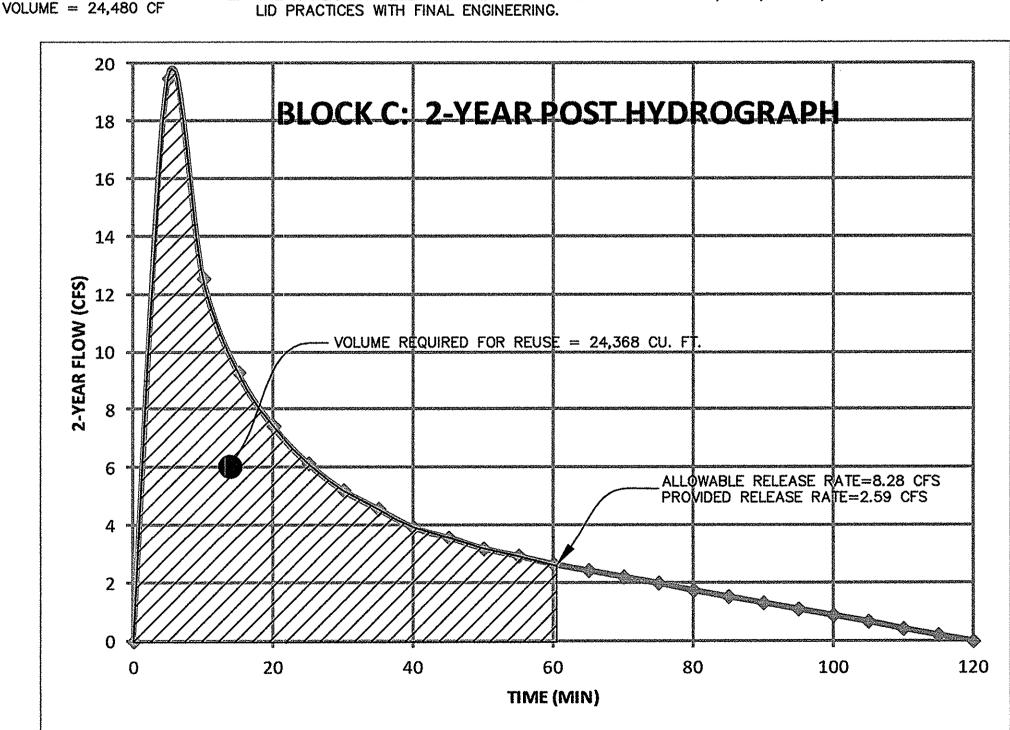
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK C. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER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

SUMMARY:

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

ALTERNATE/OPTIONAL

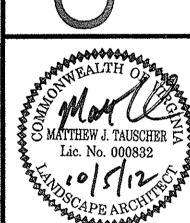
- 1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED CDP APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL SITE PLAN
- 2. THE APPLICANT RESERVES THE RIGHT TO VARY THE NUMBER, SIZE, SHAPE,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



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.

CULINOS N C

Parkerrodrigue



COMPUTATIONS ROW ARBOR \circ 99 X

PLAN STATUS 7/22/11 PER COUNTY COMMENT 2/07/11 PER COUNTY COMMENT 02/24/12 PER COUNTY COMMENT 5/25/12 PER COUNTY COMMENT 07/23/12 PER COUNTY COMMENTS 08/29/12 PER COUNTY COMMENTS 10/05/12 PER COUNTY COMMENTS

DATE DESCRIPTION SCALE H: AS SHOWN

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

State: VA

User: RSD

Checked:

Date: _____

Version 2.10

Date: 01-31-2011

Date: ____

RUNOFF FLOWRATE COMPUTATIONS:

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

Date: 01-31-2011 Total Site Area (ac) Type A

Baseline Flow Rates

Proposed Flow Rates

Land Use = Ex Conditions (0% Imp)

Weighted CN for site

72

S for CN to C Calcs.

3.70

S for CN to C Calcs.

0.87

*Per Soils Map approximately 100% type B

Subtitle: EXISTING CONDITIONS BLOCK D Data: Drainage Area Runoff Curve Number Time of Concentration: 0.10 Rainfall Type Pond and Swamp Area : NONE Storm Number 10 Frequency (yrs) 2.7 24-Hr Rainfall (in) 3.2 5.5 0.27 | 0.23 | 0.13 Ia/P Ratio 0.68 Runoff (in) 0.98 2.68 Unit Peak Discharge ..478 |1.502 |1.558

1 YR STORM: 1.98 AC X 0.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 4,888 CU. FT.

2 YR STORM: 1.98 AC X 0.98 (IN) X 1FT/12IN X 43560 (SF/AC) = 7,044 CU. FT.

10 YR STORM: 1.98 AC X 2.68 (IN) X 1FT/12IN X 43560 (SF/AC) = 19,263 CU. FT.

State: VA

II

1

2.7

1 | 2 | 3

2

3.2

0.06 | 0.05 | 0.03

0.10 | 0.10 | 0.10

1.88 | 2.35 | 4.58

1.578 1.578 1.578

10

5.5

Proposed Block D.PRN

User: RSD

Checked:

GRAPHICAL PEAK DISCHARGE METHOD

Pond and Swamp Factor | 1.00 | 1.00 | 1.00

Peak Discharge (cfs) 2 3 8

TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)

Project : WESTPARK REDEVELOPMENT

Rainfall Type

Subtitle: PROPOSED CONDITIONS BLOCK D

Runoff Curve Number :

Time of Concentration: 0.10

Pond and Swamp Area : NONE

County : FAIRFAX

Storm Number

Ia/P Ratio

Runoff (in)

Frequency (yrs)

24-Hr Rainfall (in)

Unit Peak Discharge

(cfs/acre/in)

0.0% Ponds Used

Data: Drainage Area

Project: WESTPARK REDEVELOPMENT

County : FAIRFAX

(cfs/acre/in)

0.0% Ponds Used

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

Design Storm 24-hr Rainfall Depth (in) 10-yr 5.5

1.98

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

Per County Adequate Outfall Presentation formula for the

conversion from CN to rational method C-Factor (C) is:

 $C = 1 - \{\{S \times \{1.2 - \{S/\{P + 0.8S\}\}\}\} / P\}$

S = (1000 / CN) - 10

P = 24-hr rainfall depth for design storm

Equivalent C 10-yr 2-yr 0.25 0.49 0.31

Existing Conditions Peak Flow Rates 10-yr 1.62 7.05 3.35

Per County Adequate Outfall Presentation formula for the

conversion from CN to rational method C-Factor (C) is:

** Land Use = Proposed Conditions (85% Imp) Curve Number (CN) For Soil Type Per Land Use Type (Type D

 $C = 1 - [\{S \times [1.2 - (S/\{P + 0.8S\})]\}/P]$ P = 24-hr rainfall depth for design storm

S = (1000 / CN) - 10

Weighted CN for site

5 Minute TC Design Storm Rainfall Intensity (I) Design Storm 24-hr Rainfall Depth (in) 10-yr 1-yr 7.27 3.27 5.5

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

Proposed Conditions Peak Flow Rates 1-yr 4.53 11.95 7.88

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

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.

Pond and Swamp Factor | 1.00 | 1.00 | 1.00

Peak Discharge (cfs) | 6 | 7 | 14

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.

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

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

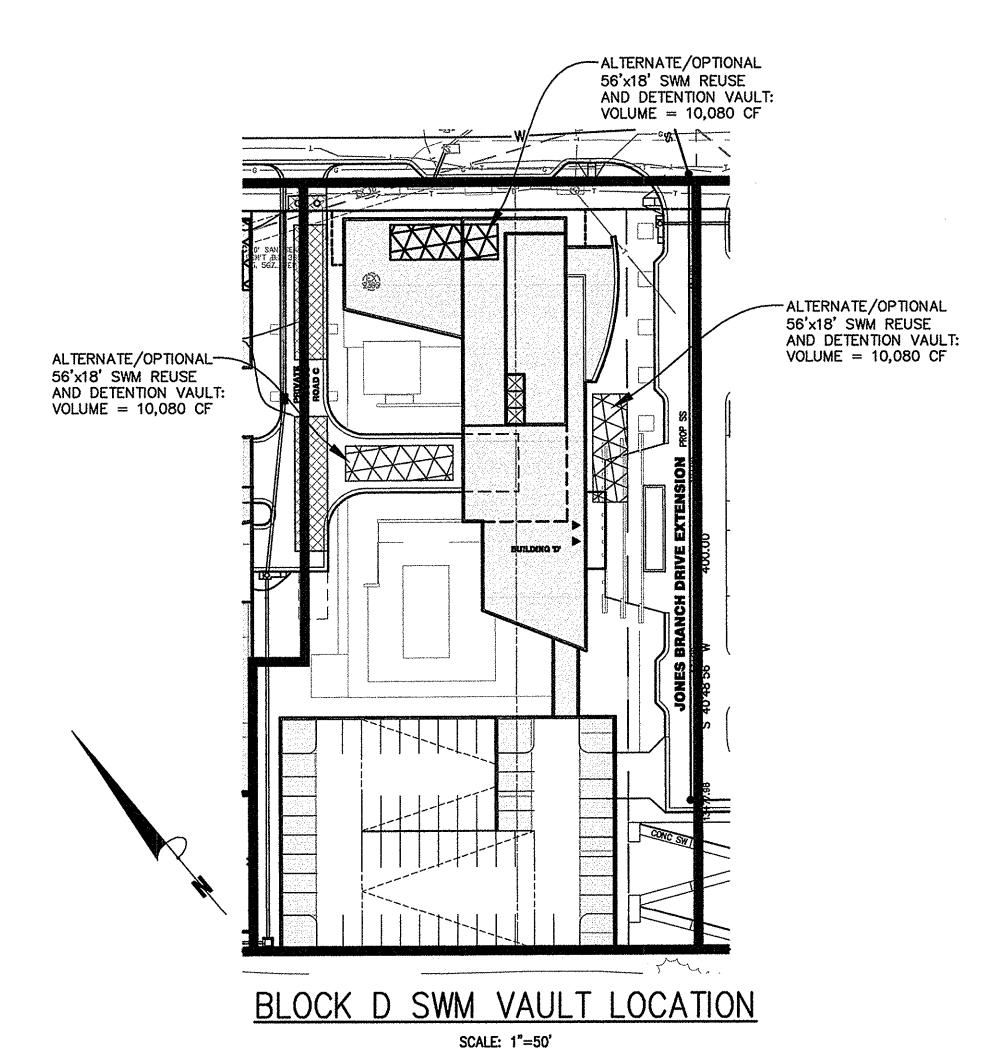
COMPREHENSIVE PLAN NOTE:

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.

Application No: RZ 2011-PR-023 APPROVED DEVELOPMENT PLAN _GDP) (<u>X</u>CDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC) SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED: Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07 & ZONING Sheet 27 of 78



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.

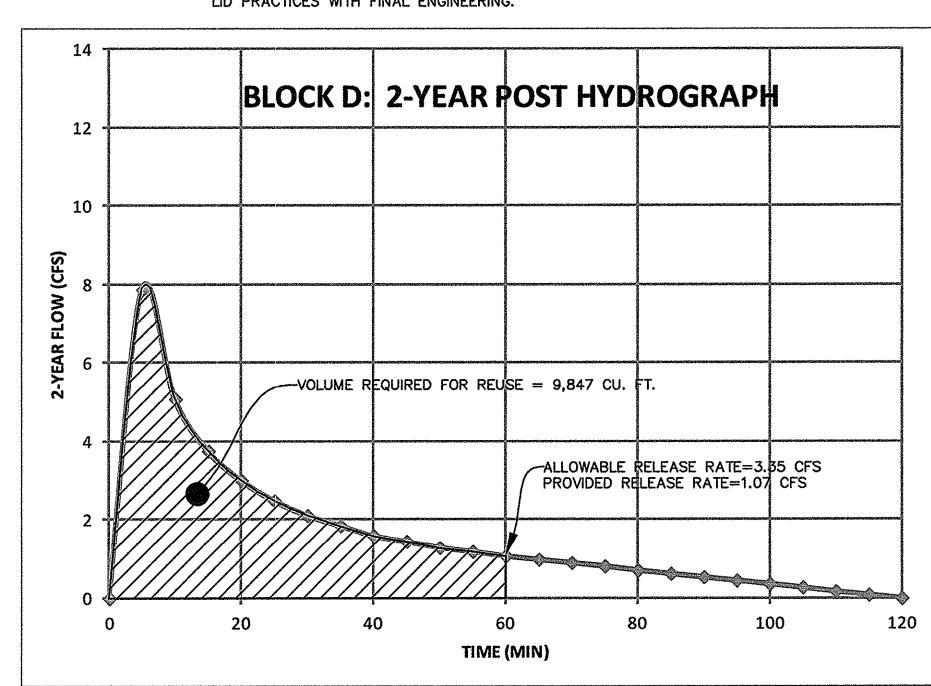
ACCORDING TO THE "TYSONS CORNER COMPREHENSIVE PLAN AMENDMENT," RESTORATION AND/OR STABILIZATION OF DEGRADED STREAMS ON DEVELOPMENT SITES SHALL BE PURSUED WHERE FEASIBLE. NO STREAMS OR CHANNELS ARE PRESENT ON BLOCK D. THE PROPOSED STORMWATER RUNOFF REDUCTION MEASURES ARE INTENDED TO IMPROVE STORMWATER 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 KNOWN THIS NARRATIVE AND ASSOCIATED COMPUTATIONS WILL BE AMENDED ACCORDINGLY.

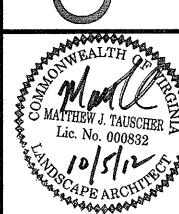
1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) NARRATIVES, AND PROPOSED DESIGN AND/OR FACILITIES PRESENTED HEREIN ARE PRELIMINARY BASED ON PROPOSED CDP APPLICATION AND ARE SUBJECT TO REVISION WITH FINAL SITE PLAN APPLICATIONS.

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.

PARKERRODRIGUEZ,



OMPUTATIONS ROW ARBOR OCK S

PLAN STATUS 77/22/11 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 COMMENTS 08/29/12 PER COUNTY COMMENTS 10/05/12 PER COUNTY COMMENTS DATE DESCRIPTION

SCALE H: AS SHOWN

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

2.7

0.68

2 | 3

3.2

0.98 2.68

0.27 | 0.23 | 0.13

1.478 | 1.502 | 1.558

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.

10

5.5

Proposed Block E.PRN

10

5.5

User: RSD

Checked:

GRAPHICAL PEAK DISCHARGE METHOD

State: VA

3.2

1.578 | 1.578 | 1.578

0.05 | 0.03

0.10 | 0.10

2.35 | 4.58

Pond and Swamp Area : NONE

Pond and Swamp Factor | 1.00 | 1.00 | 1.00

Peak Discharge (cfs) 3 5 13

TOTAL RUNOFF VOLUME (EXISTING CONDITIONS)

Project: WESTPARK REDEVELOPMENT

Rainfall Type

Subtitle: PROPOSED CONDITIONS BLOCK E

Runoff Curve Number

Time of Concentration: 0.10 Hours

1 |

1

2.7

0.06

0.10

1.88

Pond and Swamp Factor | 1.00 | 1.00 | 1.00

Peak Discharge (cfs) | 9 | 12 | 23

Pond and Swamp Area : NONE

: II

County : FAIRFAX

Storm Number

Ia/P Ratio

Runoff (in)

Frequency (yrs)

24-Hr Rainfall (in)

Unit Peak Discharge

0.0% Ponds Used

(cfs/acre/in)

Data: Drainage Area

Storm Number

Ia/P Ratio

Runoff (in)

Frequency (yrs)

24-Hr Rainfall (in)

Unit Peak Discharge (cfs/acre/in)

0.0% Ponds Used

Version 2.10

Date: 01-31-2011

Version 2.10

Date: 01-31-2011

Date: _____

Date:

Total Site Area (ac)

RUNOFF FLOWRATE COMPUTATIONS:

Per Soils Map approximately 100% type B Amount of Site Area (Ac) Per Hydrologic Soil Group Type C Type D

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

Weighted CN for site

73

S for CN to C Calcs.

3.70

Weighted CN for site

S for CN to C Calcs.

0.87

ALLOWABLE RELEASE RATE

Curve Number (CN) For Soil Type Per Land Use Type D Type C

5 Minute TC Design Storm Rainfall Intensity (I) Design Storm 24-hr Rainfall Depth (in) 5.5 3.27 5.45 2.7

94

Existing Conditions Peak Flow Rates Equivalent C 10-yr 10-yr 2-yr 1-yr 1-yr 0.25 0.49 2.57 11.19 0.31

Proposed Flow Rates **Land Use = Proposed Conditions (85% Imp) ** Curve Number (CN) For Soil Type Per Land Use Type D Type A Type C

2.7

1-yr

0.70

 $C = 1 - [{S \times [1.2 - (S/{P + 0.8S})]}/P]$ P = 24-hr rainfall depth for design storm

Per County Adequate Outfall Presentation formula for the

Per County Adequate Outfall Presentation formula for the

conversion from CN to rational method C-Factor (C) is:

POTENTIAL INFILTRATION

TRENCH OR SWM/BMP

FACILITY (INFILTRATION DEPENDENT UPON

SUITABLE SOILS AND PERCOLATION RATES, TO BE EVALUATED AT

FINAL ENGINEERING)

7.27

conversion from CN to rational method C-Factor (C) is:

 $C = 1 - [\{S \times [1.2 - (S/\{P + 0.8S\})]\}/P]$

P = 24-hr rainfall depth for design storm

where:

S = (1000 / CN) - 10

S = (1000 / CN) - 10

5 Minute TC Design Storm Rainfall Intensity (I) Design Storm 24-hr Rainfall Depth (in) 10-yr 7.27 5.5 5.45

Proposed Conditions Peak Flow Rates Equivalent C 10-v 10-yr 2-yr 0.83 7.19 12.49 18.95

CONDITIONS PEAK 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

POTENTIAL— LOCATION OF ELECTRIC MANHOLE

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

TOTAL RUNOFF VOLUME (PROPOSED CONDITIONS)

1 YR STORM: 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.

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

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

<u>" COMPREHENSIVE PLAN NOTE:</u>

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.

> Application No: RZ 2011-PR-023 Staff: M. Ladd APPROVED DEVELOPMENT PLAN _GDP) (<u>X</u>CDP) (__FDP) (__PRC) (__DP) (__CP) (__SE) (__CSP) (__SP) (__VC) SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED: Date of Final Approval: Nov 20, 2012 (KBOS) (PC) (BZA)

> > & ZONING Sheet 28 of 78

Comments: Concurr W/ PCA 88-D-005-07

-ALTERNATE/OPTIONAL 41'x17' SWM REUSE AND DETENTION VAULT: VOLUME = 16.728 CFPOTENTIAL INFILTRATION TRENCH OR SWM/BMP FACILITY (INFILTRATION DEPENDENT UPON SUITABLE SOILS AND PERCOLATION RATES,

TO BE EVALUATED AT FINAL ENGINEERING)

BLOCK E SWM VAULT LOCATION

SCALE: 1"=50"

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.

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.

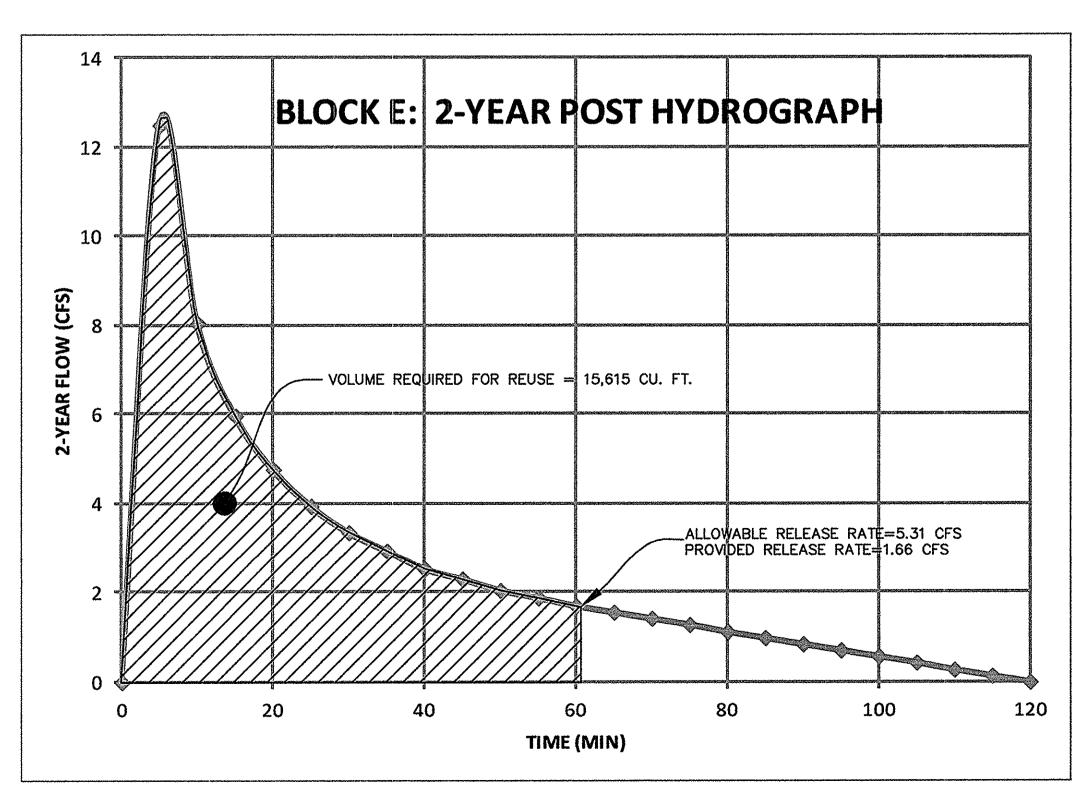
DUE TO THE URBAN NATURE OF THIS SITE. THE BUILDING LAYOUT. AMOUNT OF SOIL TO BE DISTURBED, AND AVAILABLE GREEN SPACE, THE FOLLOWING RUNOFF REDUCTION PRACTICES ARE NOT FEASIBLE OPTIONS: VEGETATED FILTER STRIPS, EXTENDED DETENTION POND, CONSERVATION AREA, GRASS CHANNEL, AND DRY SWALE.

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.

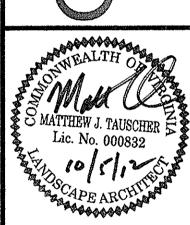
SUMMARY:

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 KNOWN THIS NARRATIVE AND ASSOCIATED COMPUTATIONS WILL BE AMENDED ACCORDINGLY.

- 1. STORMWATER MANAGEMENT (SWM) AND BEST MANAGEMENT PRACTICES (BMP) 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.



PARKERRODRIGU



MPUTATIONS ROW RBOR $\overline{\mathcal{O}}$ Ш

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 COMMENTS 08/29/12 PER COUNTY COMMENTS 10/05/12 PER COUNTY COMMENTS

DATE DESCRIPTION SCALE H: AS SHOWN JOB No.

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

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-

PROPOSED CONDITIONS:

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

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

SWM REQUIREMENTS AND GOALS:

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

DESIGN INTENT:

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

STANDARD PFM SWM NARRATIVE:

REQUIREMENT:

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

COMPLIANCE:

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

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

STANDARD BMP NARRATIVE:

REQUIREMENT:

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

COMPLIANCE:

THE REGIONAL POND IS DESIGNED ASSUMING THAT THE POST DEVELOPMENT "C" FACTOR FOR ALL PROPERTIES WITHIN ITS DRAINAGE AREA WOULD BE 0.80 AT ULTIMATE 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.

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-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 BUILIDNGS, 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-0503 AND ASSOCIATED COMPUTATIONS ON THIS SHEET

AMT DRAINAGE AREA SUMMARY

	ENTIR	E SITE		ED IDARY
Pre-Development: Area (Acres) Existing Condition Imperviousness (%) Hydrologic Soil Group * Runoff Curve Number (CN)	5	84 69 B 33	6	73 32 B 84
<u>Post-Development:</u> Area Of Vegetated Roof (Some of Third Floor Terrace) Area of Landscaped Areas Remaining Areas Total	Acres 0.06 0.10 1.68 1.84	% 3.3 5.4 <u>91.3</u> 100.0	Acres 0.06 0.07 <u>1.60</u> 1.73	% 3.5 4.0 <u>92.5</u> 100.0
CN Factors Green Roof (Extensive) Landscaped Areas Remaining Surfaces Weighted Average	6	70 51 98	6	70 51 98
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

Pre-Development:	ENTIRE SITE (To comply with PFM)	<u>LEED BOUNDARY</u> (To comply with Comp. Plan
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 postdevelopment runoff below the allowable runoff peak rates.

Application No: RZ 2011-PR-023 Staff: M. Ladd APPROVED DEVELOPMENT PLAN __GDP) (<u>\</u>CDP) (__FDP) (__PRC) (__DP) (__CP) (__SE) (__CSP) (__SP) (__V SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED: Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07 & ZONING Sheet 29 of 78

LEED STORMWATER QUANTITY CREDIT COMPUTATIONS

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

<u>TOTAL RUNOFF VOLUME (ALLOWABLE RELEASE)</u>

2-YEAR STORM REQUIRED VOLUME REDUCTION

16,955 CF LESS 75% OF 10,565 CF =

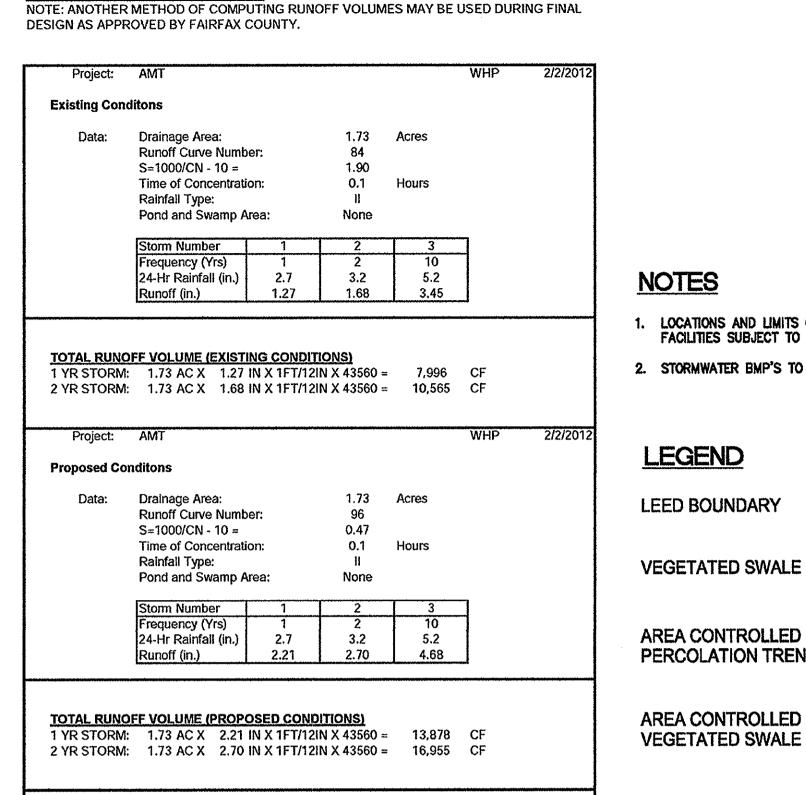
PER LEED, FOR SITES THAT HAVE GREATER THAN 50% IMPERVIOUS COVER IN THE

2 YEAR STORM CANNOT EXCEED THE EXISTING CONDITIONS VOLUME LESS 25%.

EXISTING CONDITION, THE POST-DEVELOPED STORMWATER RUNOFF VOLUME FOR T

9,032 CF

Using Graphical Peak Discharge Method



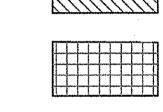
- LOCATIONS AND LIMITS OF STORMWATER MANAGEMENT FACILITIES SUBJECT TO CHANGE WITH FINAL DESIGN.
- 2. STORMWATER BMP'S TO BE PRIVATELY MAINTAINED.

LEED BOUNDARY

+ + + + + +

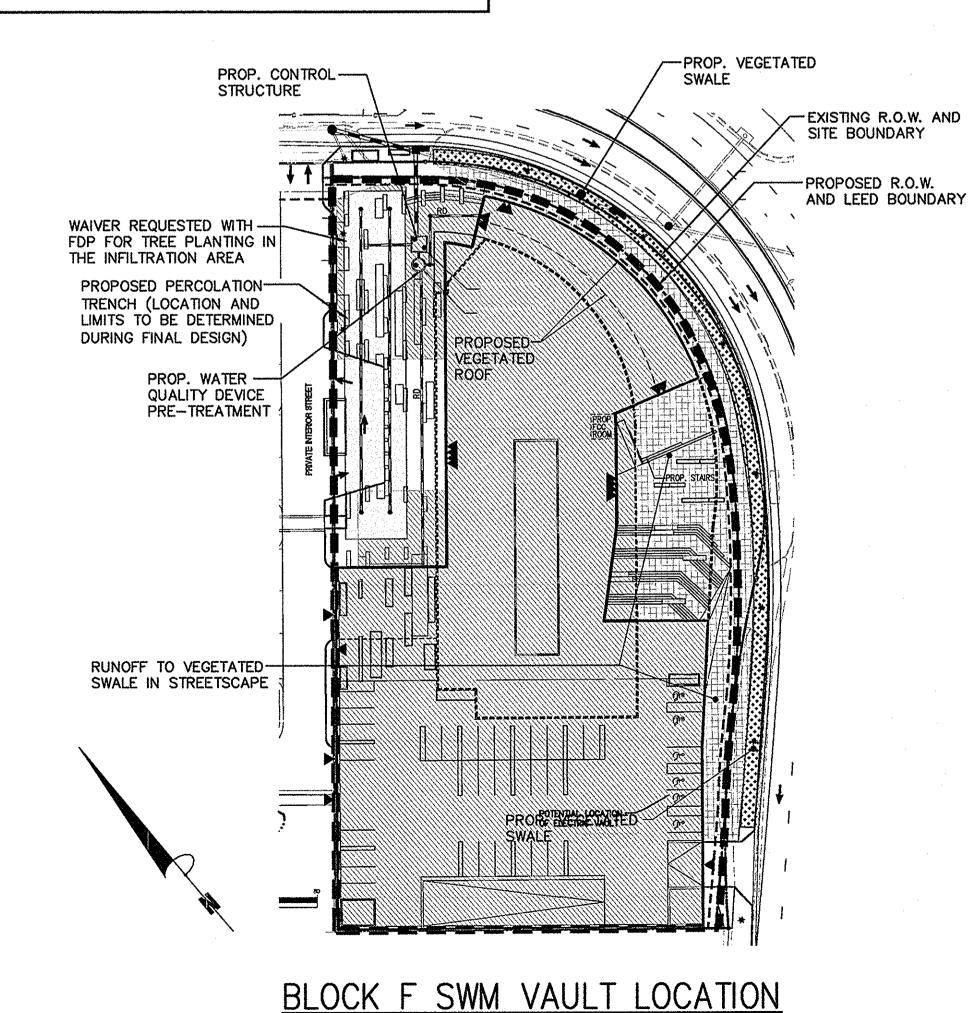
AREA CONTROLLED BY PERCOLATION TRENCH

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.



SCALE: 1"=50"

m RRODRIG

S MATTHEW J. TAUSCHER Lic. No. 000832

> COMPUTATIONS ROW α SWM

BO α \mathcal{A}

PLAN STATUS 07/22/11 PER COUNTY COMMEN 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 H: AS SHOWN

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

C10.6.1

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

REACHD

REACH B

REACH /

SUBJECT

APPROVED DEVELOPMENT PLAN

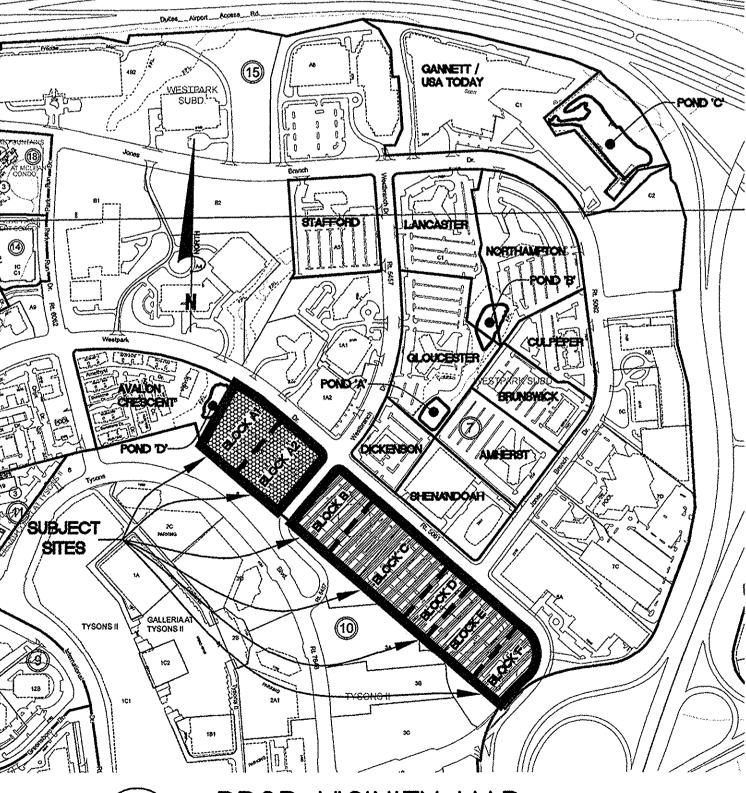
GDP) (XCDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

Sheet 30 of 78



PROP VICINITY MAP

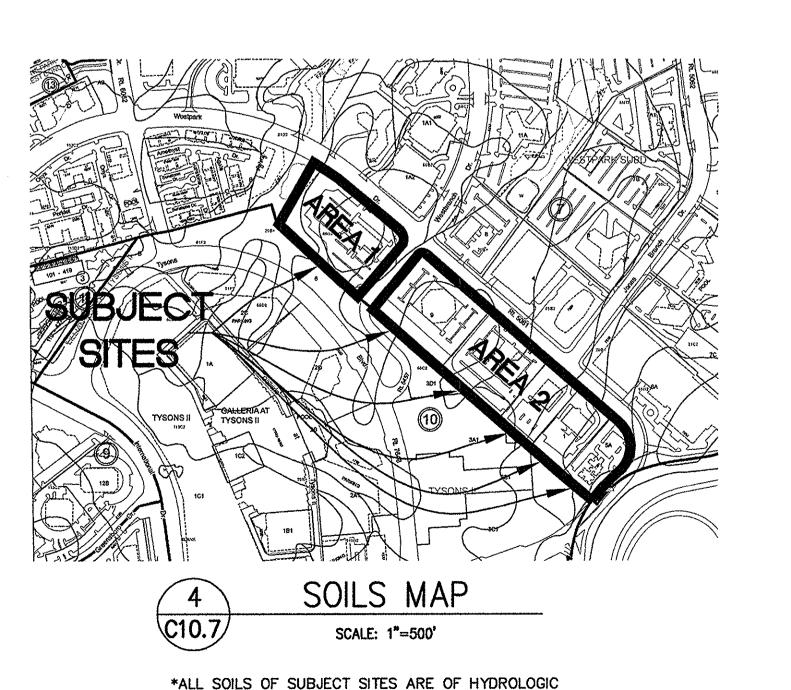
SCALE: 1"=500"

AREA 1

C10.7

AREA 2





OUTFALL NARRATIVE

SITE DESCRIPTION:

DRANAGE

AREA TO POINT

-750 ACRES

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 AT (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'.

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:

BEACH 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 QINFIGHOUN 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.

BEACH 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 QCOP 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 6-0203.2A, WHICH DEFINES THE EXTENT TO BE TO A POINT THAT IS AT LEAST 150 FEET DOWNSTREAM OF A POINT WHERE THE RECEIVING PIPE OR CHANNEL IS JOINED BY ANOTHER THAT HAS A DRAINAGE AREA THAT IS AT LEAST 90% OF THE SIZE OF THE FIRST DRAINAGE AREA AT THE POINT OF CONFLUENCE. STORM SEWER COMPUTATIONS SHALL BE PROVIDED FOR THE EXISTING CLOSED CONDUIT SYSTEM WHERE THE 150' POINT OF CONFLUENCE IS WITHIN THE SYSTEM, OR FIELD MEASURED CROSS-SECTIONS SHALL BE ANALYZED 150' DOWNSTREAM FROM THE POINT OF CONFLUENCE, PER PFM SECTION 6-0203.3B(1).

SUMMARY:

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

ON SULTING Owman Consulting Group, Ltd.

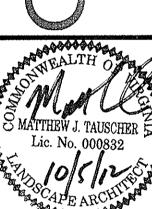
Bowman Consulting Gr 14020 Thunderbolt Pla Chantilly, Virginia 2015 Phone: (703) 464-1000 Fax: (703) 481-9720 www.bowmanconsultin

North Union St., #320 candria VA 22314 548.5010 ning Urban Design

C 20036 101 North U 00 Alexandria 198 703.548.50 Planning U

WDG Architecture, PLLC 1025 Connecticut Avenue N Sults 300 Washington DC 20036 tel 202 857 8300 fax 202 463 2198

PARTNERS



R-023

RBOR ROW

DEVELOPMENT PLAN 2011-PR-

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

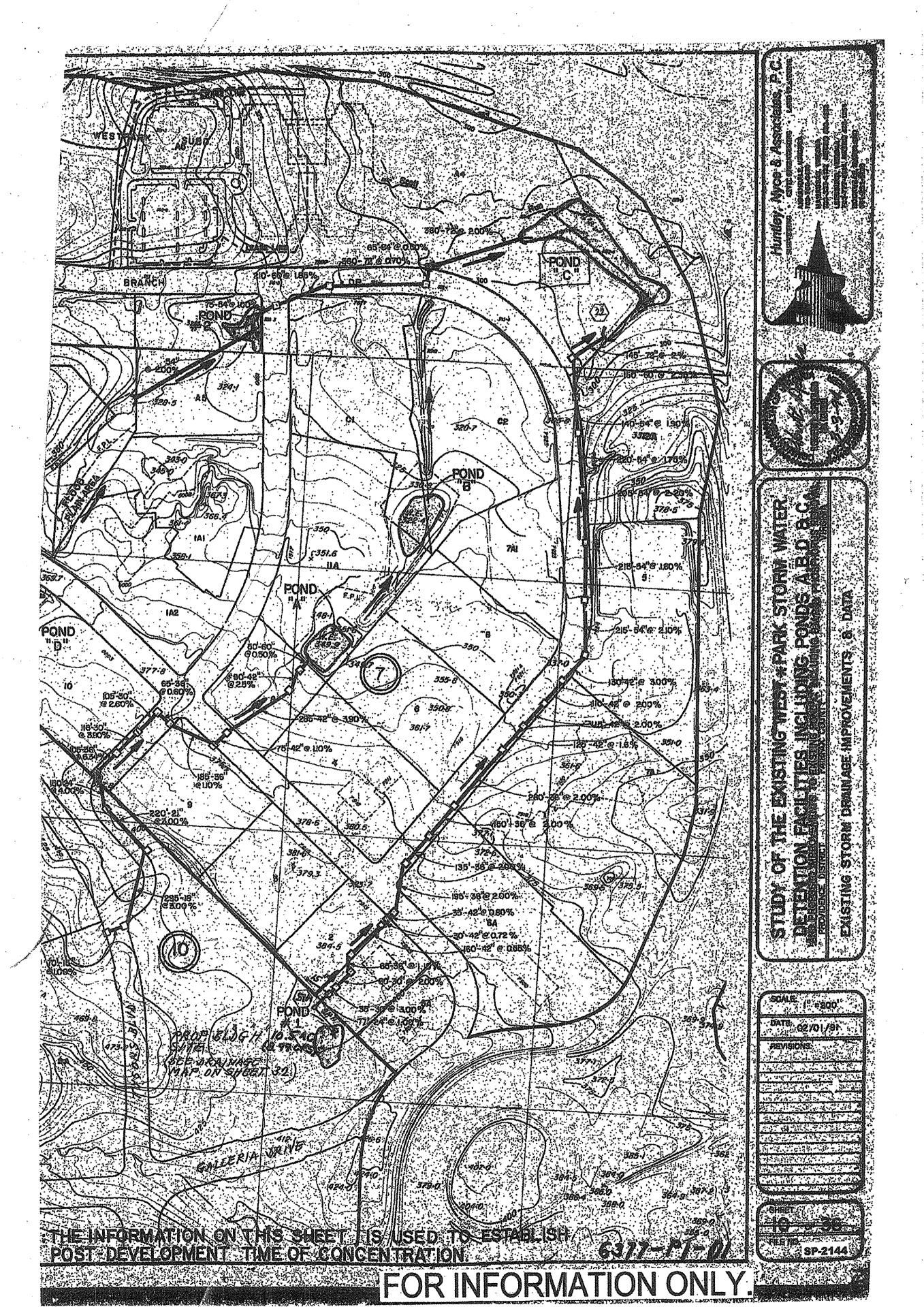
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JOB No.

DATE: APRIL 26, 2011

FILE No. 7403-07-001

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		make pro- pro-construct with the second properties.			agreemen aga antagan in an an airmean h											
Pond #1,51B	51A	10.50	10.50		******************************	and the same as were the straintings of the same and		E Germanian de la companya de la com	8.99	8.99		A CONTRACTOR OF THE CONTRACTOR				
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			a datum mangasi pakanganan dapa sahab sandrahah dahar sahab			
51		0.00	11.71	0.00	0.00	0.98	5	7.27	0.00	16.15	30	2.00%	and an analysis and an analysi	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	9.65
D	E	0.51	12.52	0.85	0.43	1.67	5	7.27	3.15	21.15	42	0.55%		0.013	74.59	6.77
E	F	0.51	13.03	0.85	0.43	2.11	5	7.27	3.15	24.30	42	0.90%		0.013	95.41	8.34
F	G	0.00	13.03	0.00	0.00	2.11	5	7.27	0.00	24.30	48	1.00%		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	136.15	19.95
12	20	1.98	24.65	0.72	1.43	11.15	5	7.27	10.36	90.06	42	2.62%		0.013	162.79	17.41
20	ex13,(8)	1.17	25.82	0.76	0.89	12.04	5	7.27	6.46	98.53	42	2.62%	ì	0.013	162.79	17.65
ex13, (8)	15	1.13	26.95	0.80	0.90	12.94	5	7.27	6.57	103.10	42	3.01%		0.013	174.49	18.91
15	15A	2.53	29.48	0.72	1.82	14.77	5	7.27	13.24	116.34	42	4.02%		0.013	201.65	21.71
15A	14	0.45	29.93	0.72	0.32	15.09	5	7.27	2.36	118.70	42	3.00%		0.013	174.20	19.48
14	13	0.00	29.93	0.00	0.00	15.09	5	7.27	0.00	118.70	54	2.09%		0.013	284.19	17.17
13	16, (e)(22)	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	18.66	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	0.80	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	2.02%		0.013	279.39	18.69
20	21	2.05	43.41	0.83	1.70	25.44	5	7.27	12.37	193.93	60	~ 4 ~~~ ~~~~ ~~~~		0.013	408.35	20.61
21	22	2.00	45.41	0.84	1.68	27.12	5	7.27	12.21	208.15	72	1.53%		0.013	523.67	17.50

Application No: RZ 2011-PR-023

_GDP) (<u>XCDP)</u> (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC SEE PROFFERS DATED: Oct 26, 2012

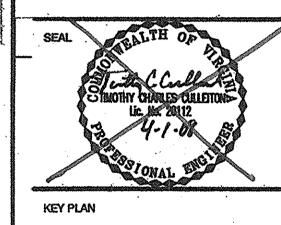
Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA)

& ZONING Sheet 31 of 78

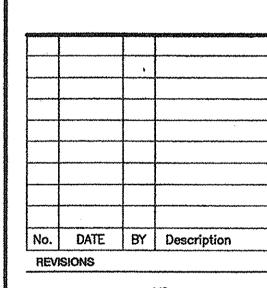
Comments: Concurr W/ PCA 88-D-005-07

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

Dewberry & Davis LLC 8401 ARLINGTON BLVD. FARFAX, VA 22031 PHONE: 703.849.0100 FAX:703.849.0518



AS NOTED



JULY, 2008

OUTFALL ANALYSIS

PROJECT NO. 6028-RGP-008

32A of 83 SHEET NO. = 15B-of -33

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



ARBOR ROW

10/05/12 PER COUNTY COMMENTS

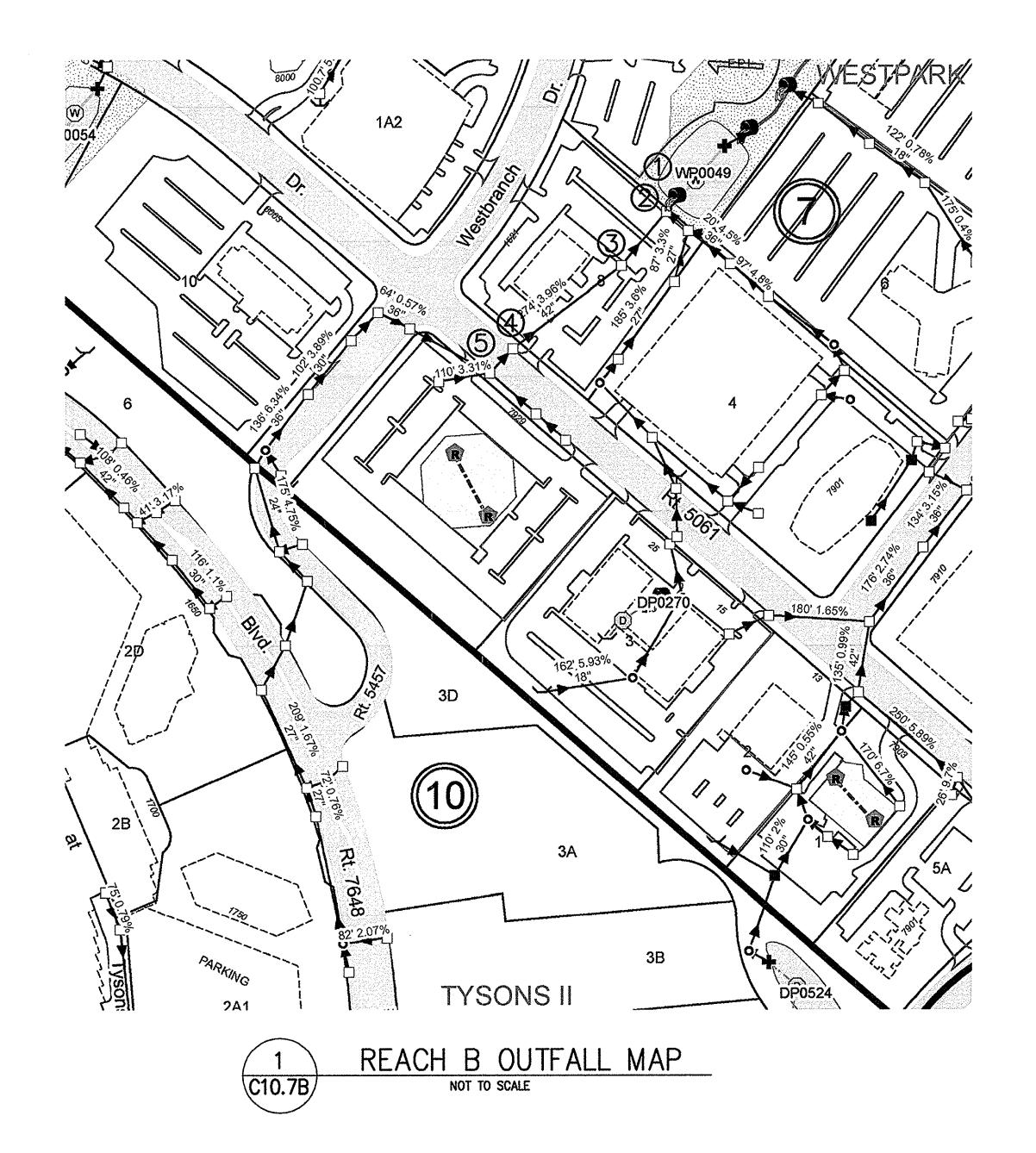
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DATE: APRIL 26, 2011 FILE No. 7403-07-001

SHEET C10.7.1

REACH B EXISTING PIPE COMPUTATIONS

FROM	TO		DRAIN CRES)	RUN- OFF COEF.	c	:A	INLET TIME	RAIN FALL	RUN- OFF Q	INVI ELEVA		LENGTH		ACTUAL SLOPE	MIN. SLOPE	DIA.	CAPA- CITY	FULL FLOW VEL.	ACTUAL VEL.
POINT F	POINT	INCRE- MENT	ACCUM- ULATED	С	INCRE- MENT	ACCUM- ULATED	MIN- UTES	IN. / HR.	C.F.S.	LOWER END	UPPER END	FT.	n	%	%	IN.	C.F.S.	F.P.S.	F.P.S.
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)		(13)		(14)	(15)		(16)
5	4	20.92	20.92	0.69	14.43	14.43	5.00	7.27	104.94	-	-	73	0.013	1.10	1.09	42	105.52	10.97	12.60
4	3	0.31	21.23	0.85	0.26	14.70	5.10	7.27	106.86	-	•	274	0.013	3.96	1.13	42	200.21	20.81	21.20
3	2	1.05	22.28	0.75	0.79	15.49	5.31	7.27	112.58	-	-	110	0.013	3.52	1.25	42	188.76	19.62	20.40
2	1	1.35	29.33	0.52	4.12	19.61	5.40	7.27	142.55	-	**	27	0.013	0.55	0.30	60	193.15	9.84	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	66.70	9.44	8.80



Application No: RZ 2011-PR-023 Staff: M. Ladd APPROVED DEVELOPMENT PLAN
(_GDP) (XCDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC) SEE PROFFERS DATED: Oct 26, 2012
SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (<u>SBOS</u>) (_PC) (_BZA)
Comments: Concurr W/ PCA 88-D-005-07 & ZONING Sheet 32 of 78

MATTHEW J. TAUSCHER D. Lic. No. 000832

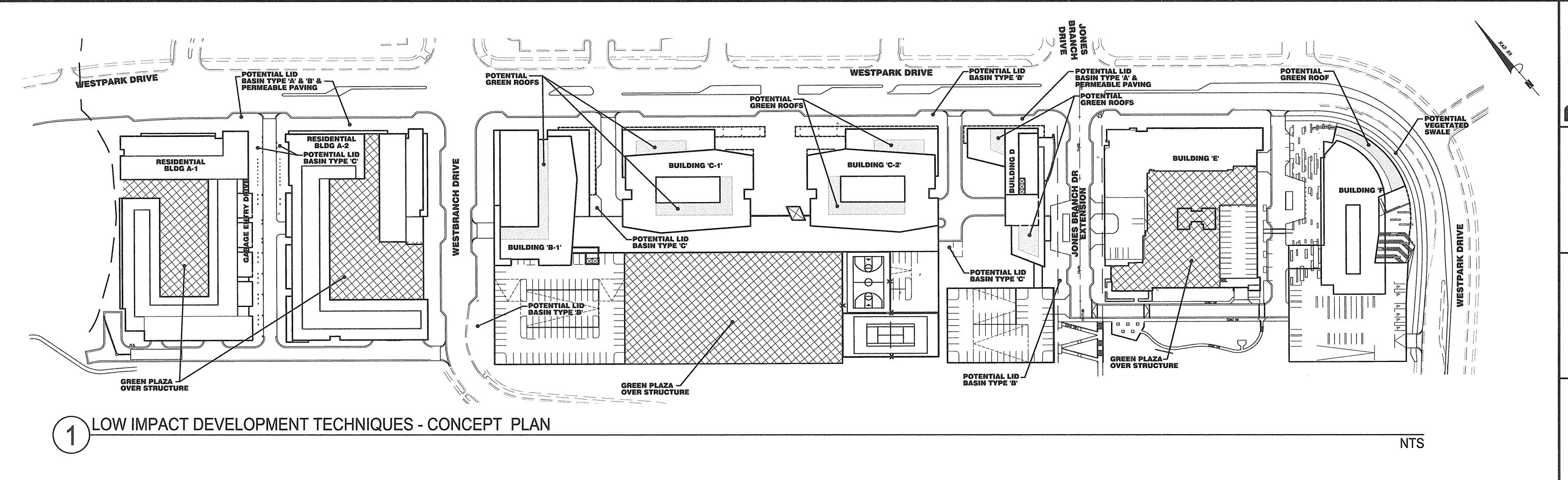
ARBOR ROW
TUAL DEVELOPMENT PLAN 2011-PR-02
SE DISTRICT - FAIRFAX COUNTY, VIRG ADEQUATE OUTFALL

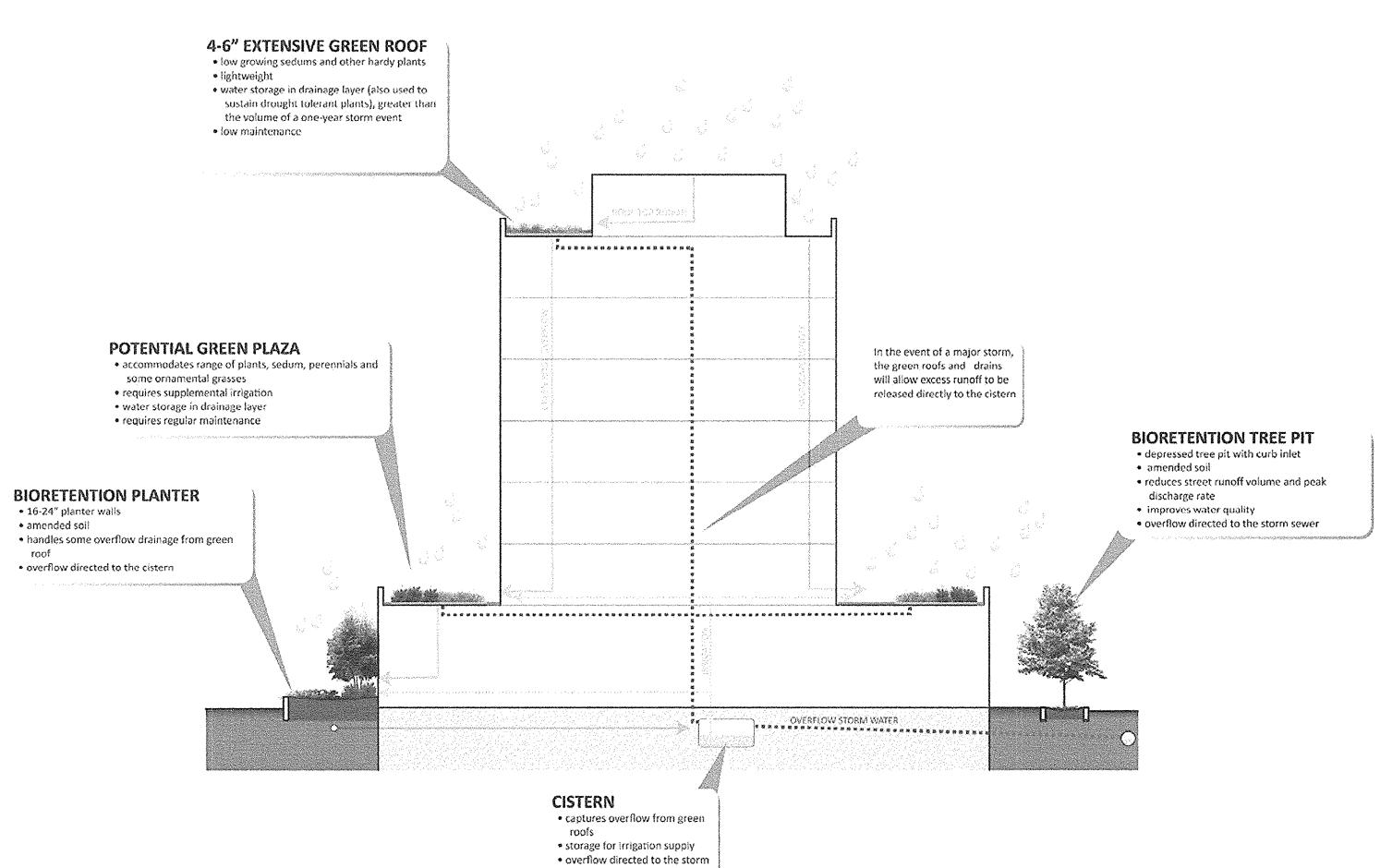
PLAN STATUS 07/22/11 PER COUNTY COMMENTS
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10/05/12 PER COUNTY COMMENTS

DATE DESCRIPTION
SCALE H: AS SHOWN

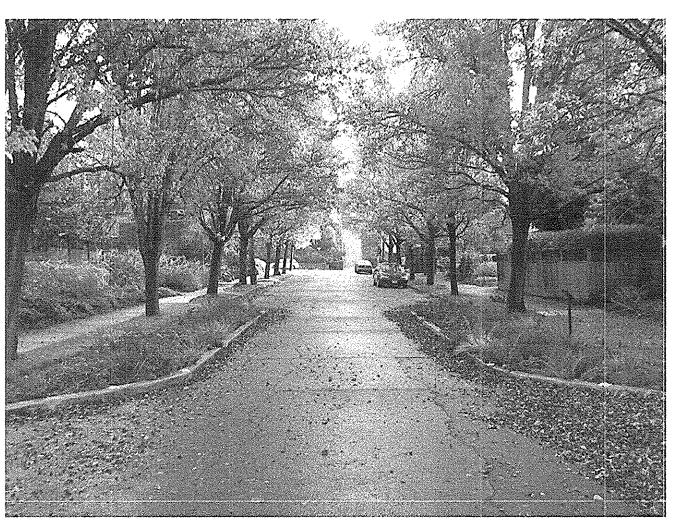
DATE: APRIL 26, 2011 FILE No. 7403-07-001

SHEET C10.7.2





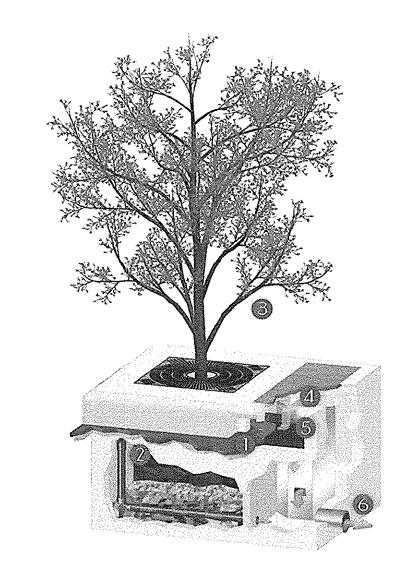
CONCEPTUAL BUILDING DIAGRAM FOR L.I.D TECHNIQUES



BASIN TYPE 'B'



BASIN TYPE 'A' & PERMEABLE PAVERS



BASIN TYPE 'C'



NO

- 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

0 40 80 160 (IN FEET) 1 inch = 80 ft. 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" = 80'

JOB No.
DATE: APRIL 26, 2011

PLAN STATUS

07/22/11 PER COUNTY COMMENTS

12/07/11 PER COUNTY COMMENTS

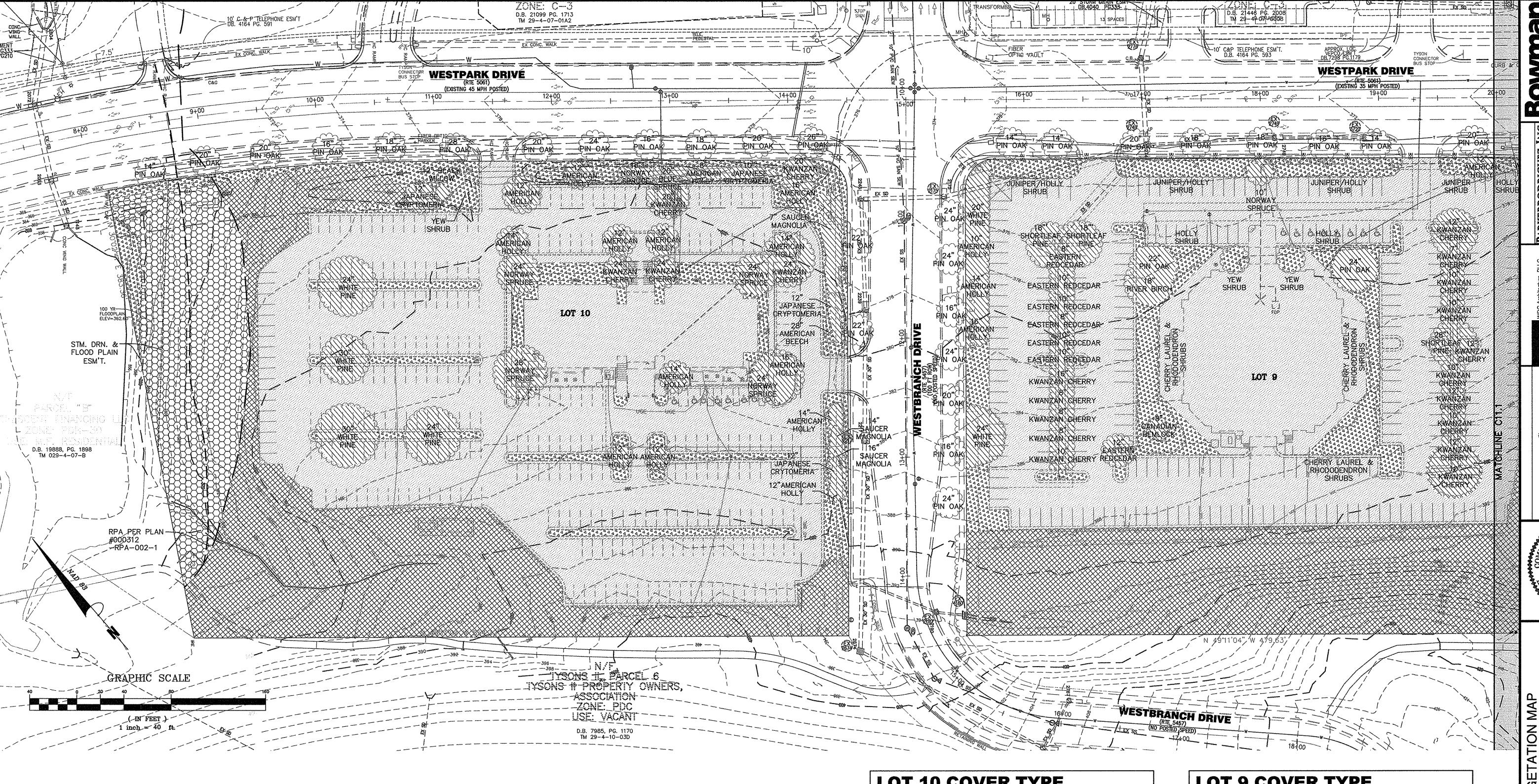
02/24/12 PER COUNTY COMMENTS

DEVELOPMENT EPT PLAN

DATE: APRIL 26, 2011

FILE No. 7403-07-001

SHEET C10.8



12,3 Tr	e Preservation Target Calculations and Statement	
A	Pre-development area of existing tree canopy (from Existing Vegetation Map) =	7.29 AC.
<u>B</u>	Percentage of gross site area covered by existing tree canopy =	38%
<u>c</u>	Percentage of 10-year canopy required for site (see Table 12.4) = (Per Comprehensive Plan Goal = 10%)	10% (1.93 AC.)
D	Percentage of the 10-year tree canopy requirement that should be met throught tree preservation =	38% (.73 AC.)
<u>E</u>	Proposed percentage of canopy requirement that will be met through tree preservation =	28% (.55 AC.)
<u>E</u>	Has the Tree Preservation Target minimum been met?	NO
<u>G</u>	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	A 4
<u>H</u>	sheet number where deviation request is located. If step G requires a narrative, it shall be prepared in accordance with 12-0508.4	<u> ОК</u>
<u></u>	Place this information prior to the 10-year Tree Canopy Calculations as per instructions in Table 12.10	

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 \mathcal{M} Application No: RZ 2011-PR-023 Staff: M. Ladd APPROVED DEVELOPMENT PLAN _GDP) (<u>X</u>CDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC) SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED: Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07 & ZONING Sheet 34 of 78

* 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)

KEY	COVER TYPE	SPECIES TYPE	SUCCESSION STAGE	CONDITION	TOTAL AREA
	FOREST	*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		FAIR	.55 AC.
	LANDSCAPE TREE CANOPY	SEE EVM	MID-LATE	FAIR TO GOOD	.52 AC.
14444444444444444444444444444444444444	MISC. (SHRUB AND GROUND COVER)	N/A	N/A	FAIR TO GOOD	.45 AC.

LOI	9 00	VEKI	YPE		
KEY	COVER TYPE	SPECIES TYPE	SUCCESSION STAGE	CONDITION	TOTAL AREA
	EARLY SUCCESSION 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.
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	MISC. (SHRUB AND GROUND COVER)	N/A	N/A	FAIR TO GOOD	.41 AC.

* DOMINANT TREE SPECIES

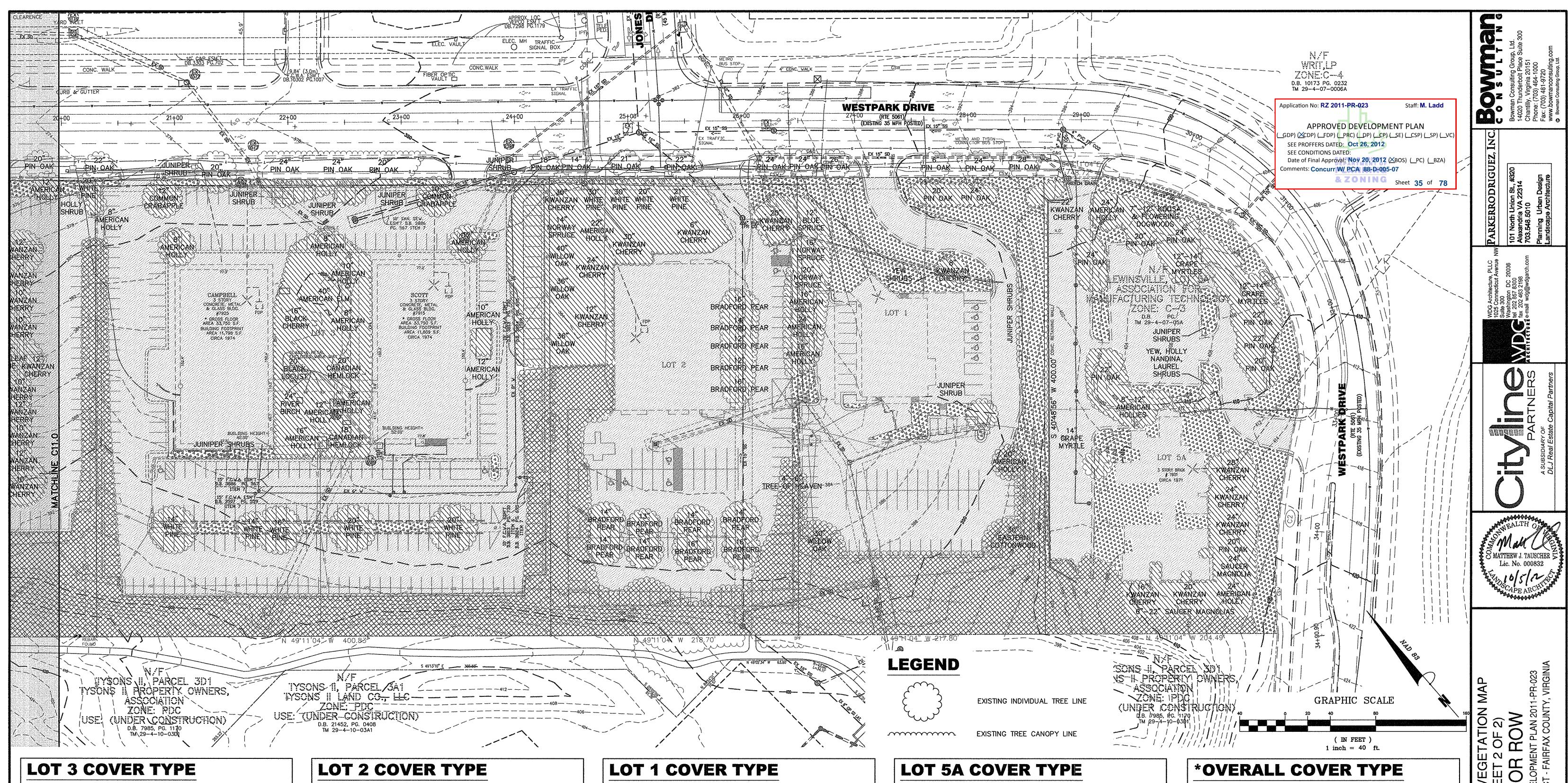
TOTAL SITE AREA = 4.4012 AC.

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)

PLAN STATUS 7/22/11 PER COUNTY COMMEN 2/07/11 PER COUNTY COMMENT 05/25/12 PER COUNTY COMMENT 07/23/12 PER COUNTY COMMENT 10/05/12 PER COUNTY COMMENT

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

C11.0



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	: :	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.
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	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)

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		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.						
44444444444444444444444444444444444444	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)

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.							
444444444444444444444444444444444444444	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 = 25,620 S.F. OR .59 AC. (.14 AC. OR 5,973 S.F. LANDSCAPE TREE CANOPY + .45 AC. OR 19,647 S.F. FOREST)

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.
4444444 14444444 144444444 14444444444	GROUND	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)

*OVERAL	L 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.	
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	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)

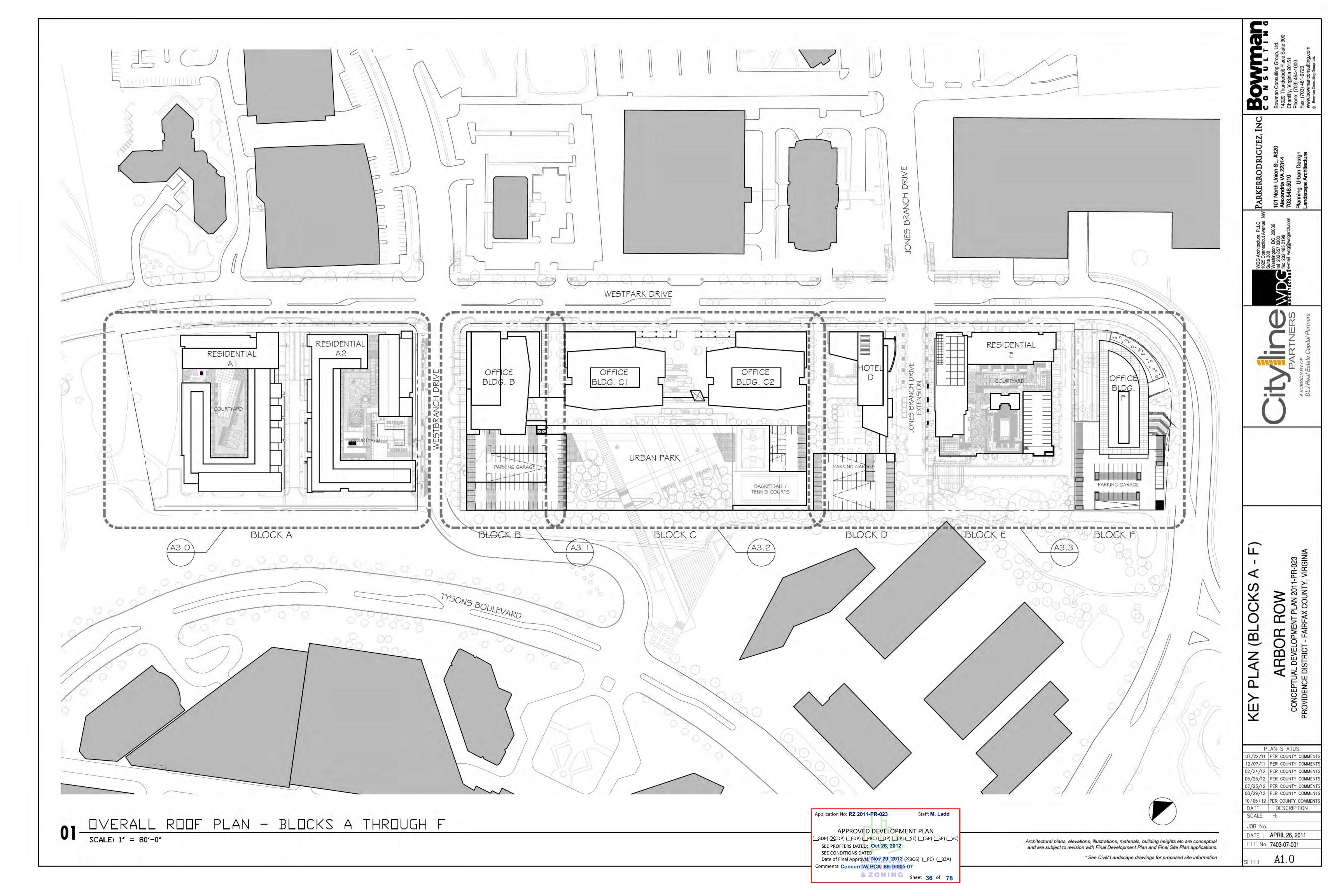
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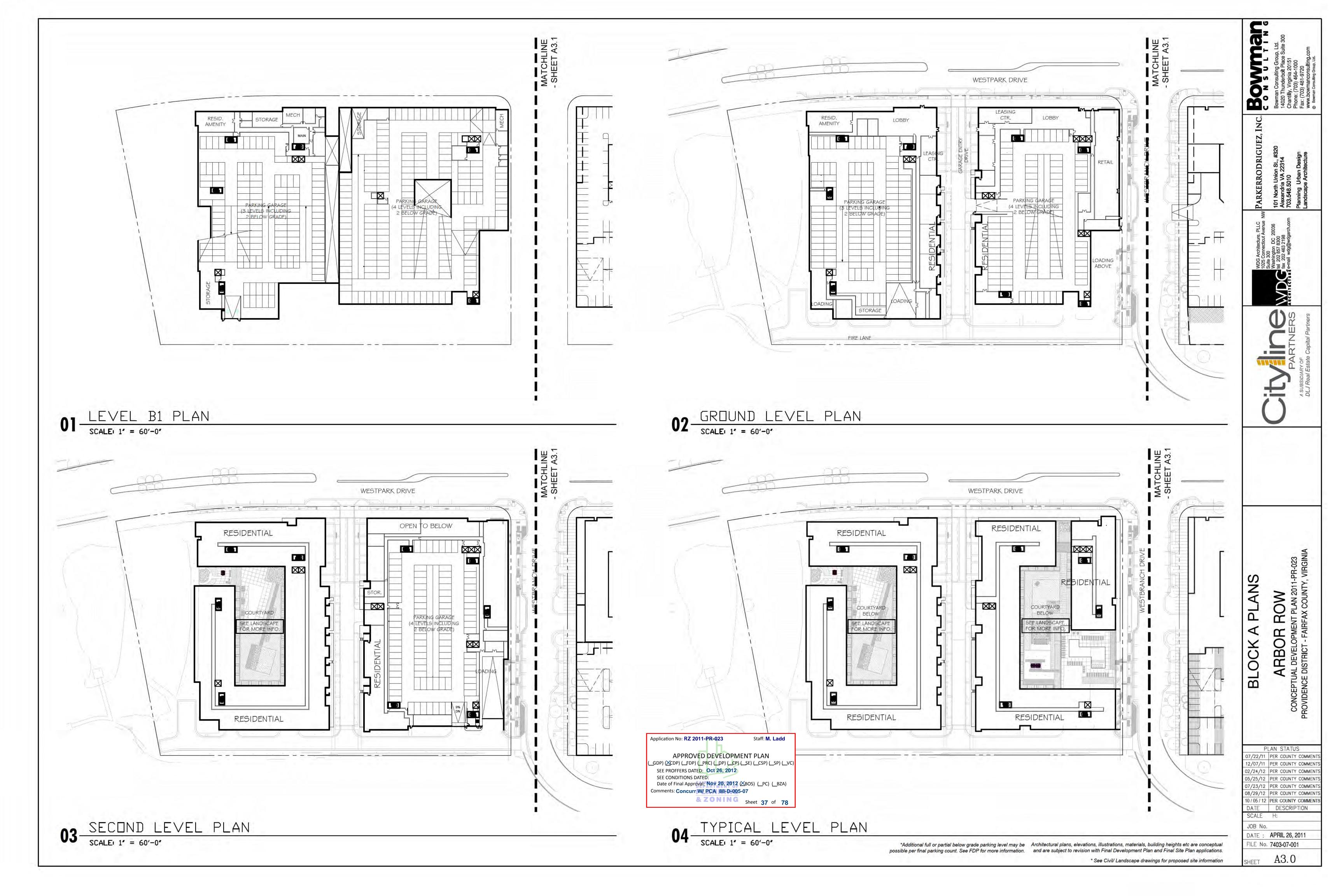
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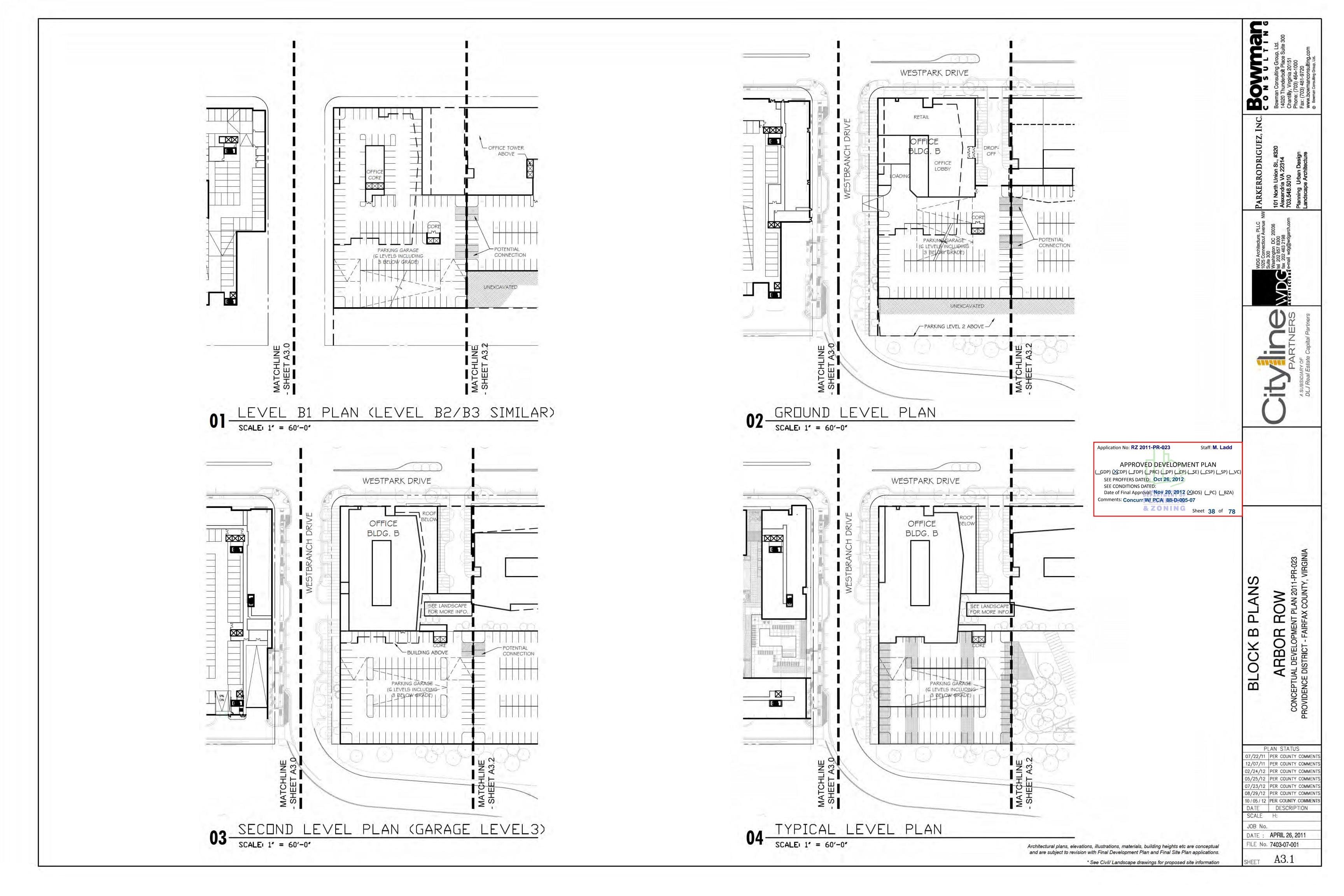
JOB No. DATE: APRIL 26, 2011

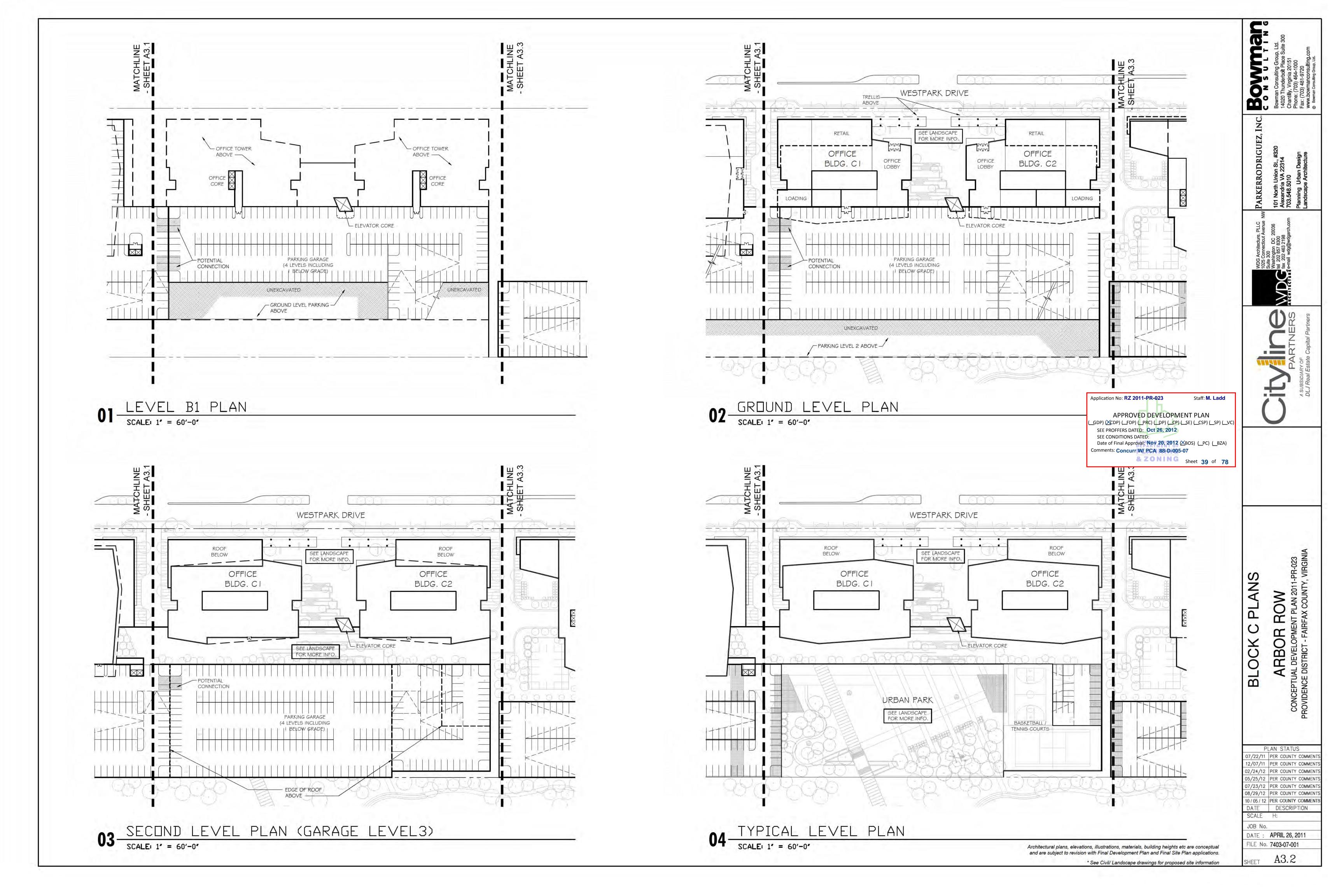
FILE No. 7403-07-001

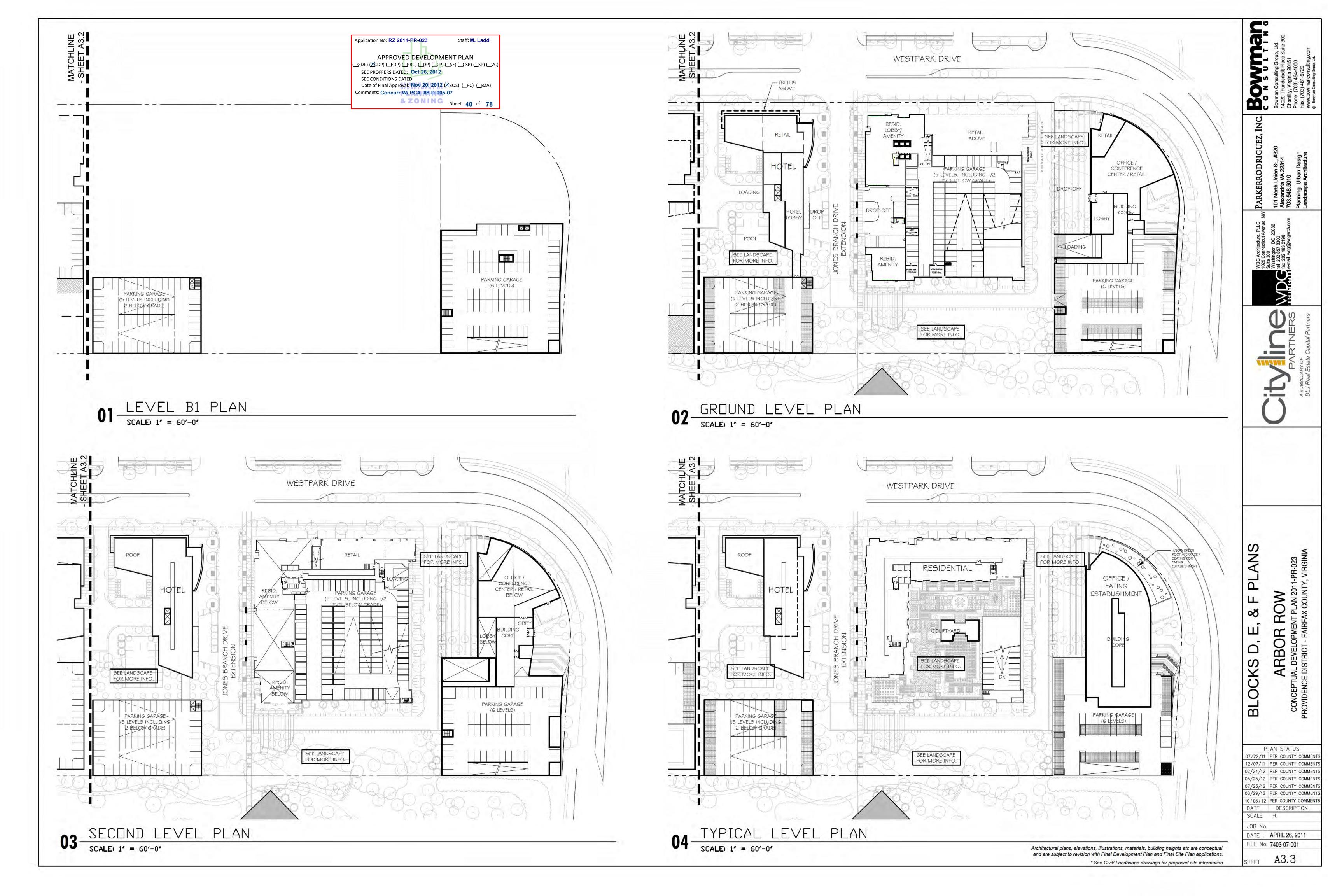
C11.1

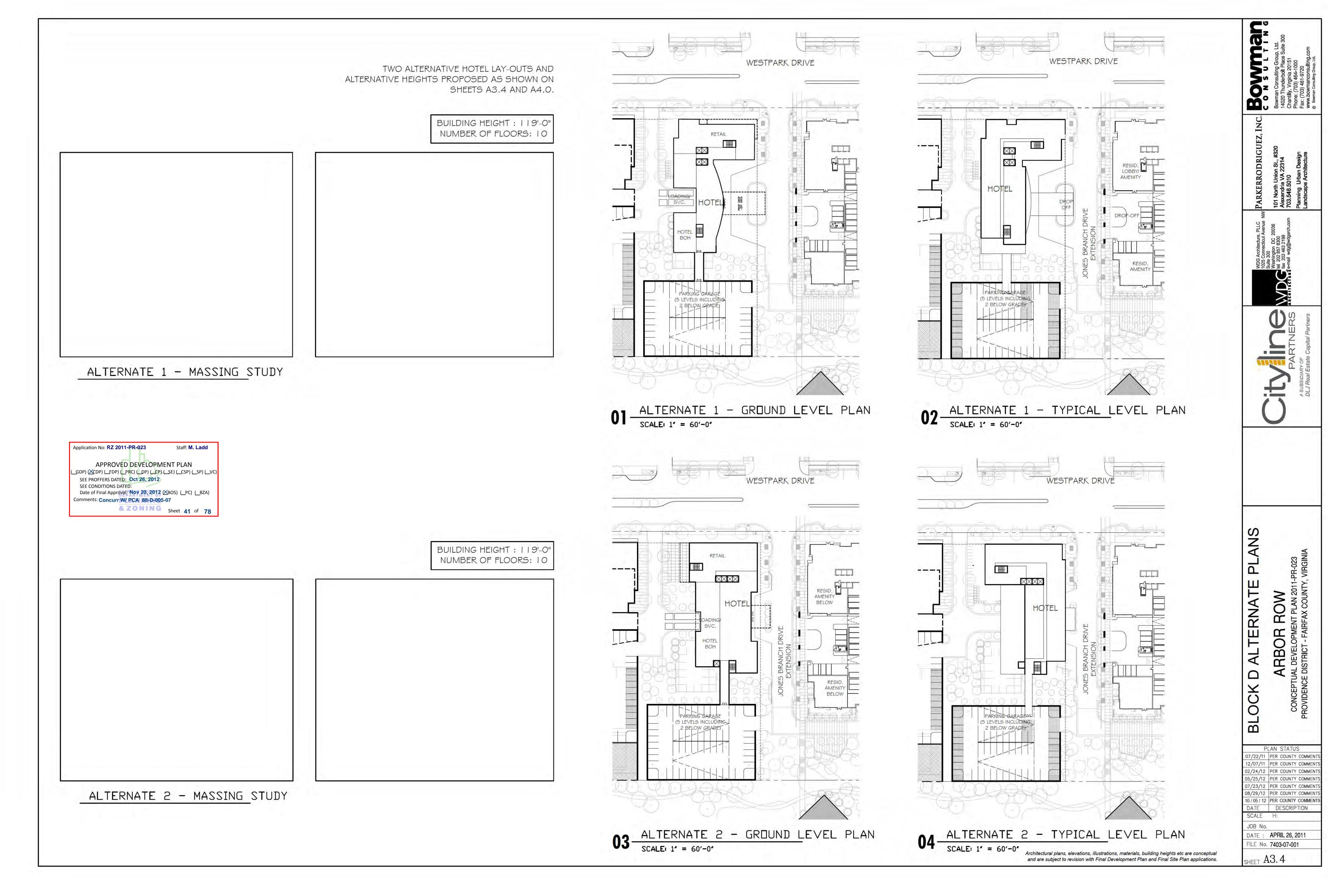












SITE SECTION - NORTH ALONG WESTPARK DRIVE



SITE SECTION - SOUTH



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.

Application No: RZ 2011-PR-023 Staff: M. Ladd

APPROVED DEVELOPMENT PLAN

(_GDP) (\(\subseteq CDP \) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (\(\subseteq BOS \)) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

Sheet 42 of 78

-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.

Architectural plans, elevations, illustrations, materials, building heights etc are conceptual and are subject to revision with Final Development Plan and Final Site Plan applications.

WDG Architecture, PLLC 1025 Connecticut Avenue NW Suite 300 Washington DC 20036 tel 202 857 8300 Alexar Alexar ARCHITECTURE e-mail wdg@wdgarch.com 703.54 Plannir

CITY PARTNERS
A SUBSIDIARY OF DLJ Real Estate Capital Partners

SITE SECTIONS

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

JOB No.
DATE: APRIL 2

ATE : APRIL 26, 2011

ILE No. 7403-07-001

HEET A4.0

SITE SECTION - EAST ALONG JONES BRANCH DRIVE EXTENSION



02 SITE SECTION - WEST ALONG WESTBRANCH DRIVE



SITE SECTION - EAST ALONG WESTBRANCH DRIVE

SCALF: 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.

Application No: RZ 2011-PR-023 Staff: M. Ladd

APPROVED DEVELOPMENT PLAN

APPROVED DEVELOPMENT PLAN

_GDP) (\(\subsetem \text{CDP}\) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (\(\subsetem \text{BOS}\)) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 43 of 78

-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.

Architectural plans, elevations, illustrations, materials, building heights etc are conceptual and are subject to revision with Final Development Plan and Final Site Plan applications.

CITATION PARTNERS AND A SERVICE OF THE PARTNERS

SITE SECTIONS
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PR-023
PROVIDENCE DISTRICT - FAIRFAX COUNTY, VIRGIN

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:

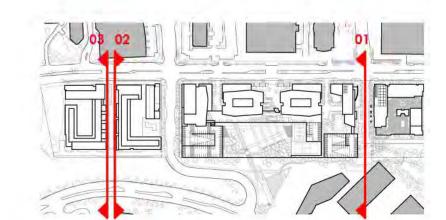
DATE DESCRIPTION

JOB No.
DATE: APRIL 26, 2

DATE: APRIL 26, 2011
FILE No. 7403-07-001
SHEET A4.1



SITE SECTION - EAST ALONG JONES BRANCH DRIVE EXTENSION SCALE: 1" = 50'-0"



+375.0' SITE SECTION - WEST ALONG WESTBRANCH DRIVE



SITE SECTION - EAST ALONG WESTBRANCH DRIVE

-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. Architectural plans, elevations, illustrations, materials, building heights etc are conceptual and are subject to revision with Final Development Plan and Final Site Plan applications. SECTIONS SITE ENLARGED

ARBOR ROW

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

PLAN STATUS 7/22/11 PER COUNTY COMMENT 2/07/11 PER COUNTY COMMENT 2/24/12 PER COUNTY COMMEN 5/25/12 PER COUNTY COMMENT 7/23/12 PER COUNTY COMMENT 8/29/12 PER COUNTY COMMENT 0/05/12 PER COUNTY COMMENT DATE DESCRIPTION

SCALE H: JOB No.

APRIL 26, 2011 7403-07-001

A4.2

APPROVED DEVELOPMENT PLAN (_GDP) (XCDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC) SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED: Date of Final Approval: **Nov 20, 2012** (<u>KBOS</u>) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07 & ZONING Sheet 44 of 78

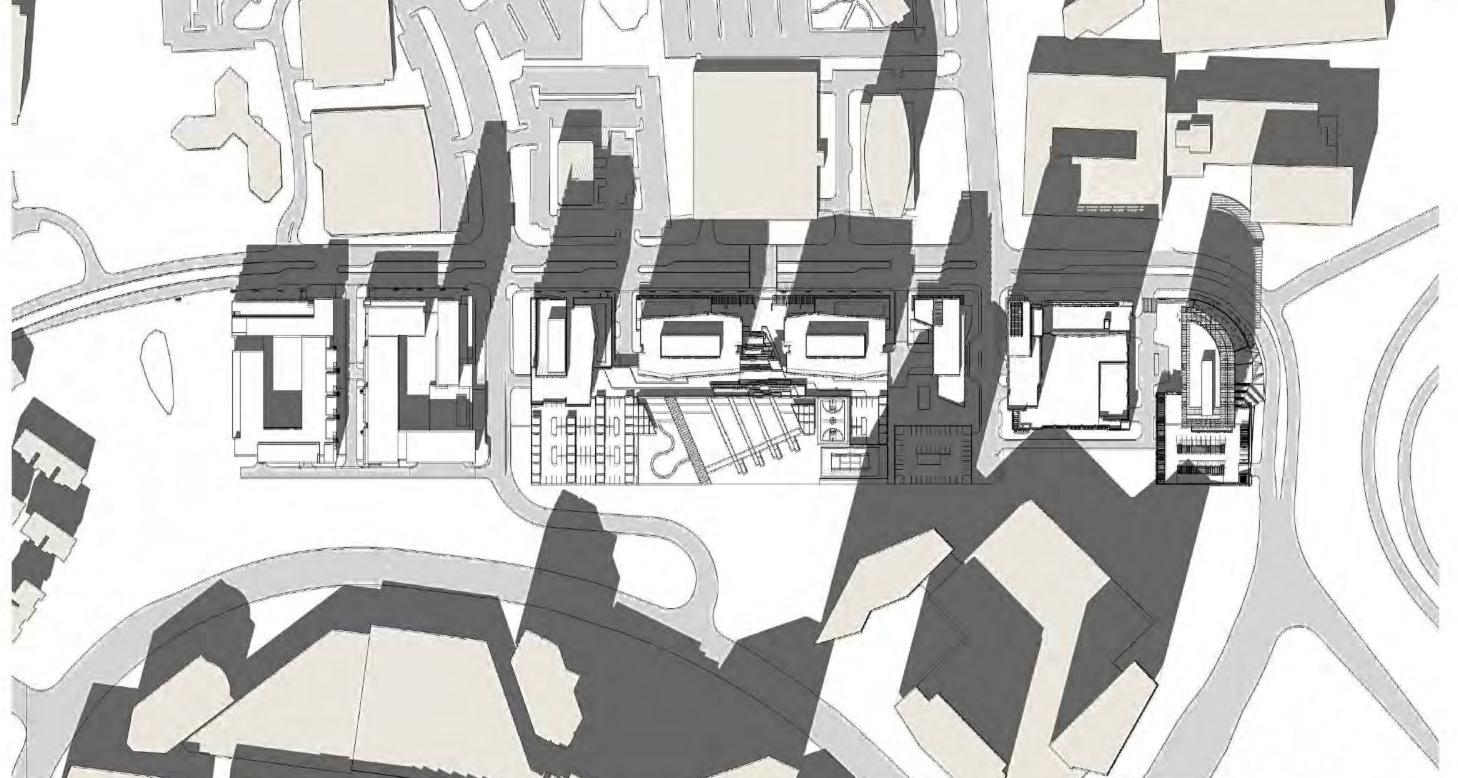
Staff: M. Ladd

Application No: RZ 2011-PR-023









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For Information Only



Application No: RZ 2011-PR-023 Staff: M. Ladd APPROVED DEVELOPMENT PLAN
(_GDP) (\(\times\)CDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (<u>KBOS</u>) (_PC) (_BZA)
Comments: Concurr W/ PCA 88-D-005-07 & ZONING Sheet 45 of 78

MARCH / SEPTEMBER 21ST SHADOW ANALYSIS

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

Architectural plans, elevations, illustrations, materials, building heights etc are conceptual and are subject to revision with Final Development Plan and Final Site Plan applications.

SHADOW ANALYSIS

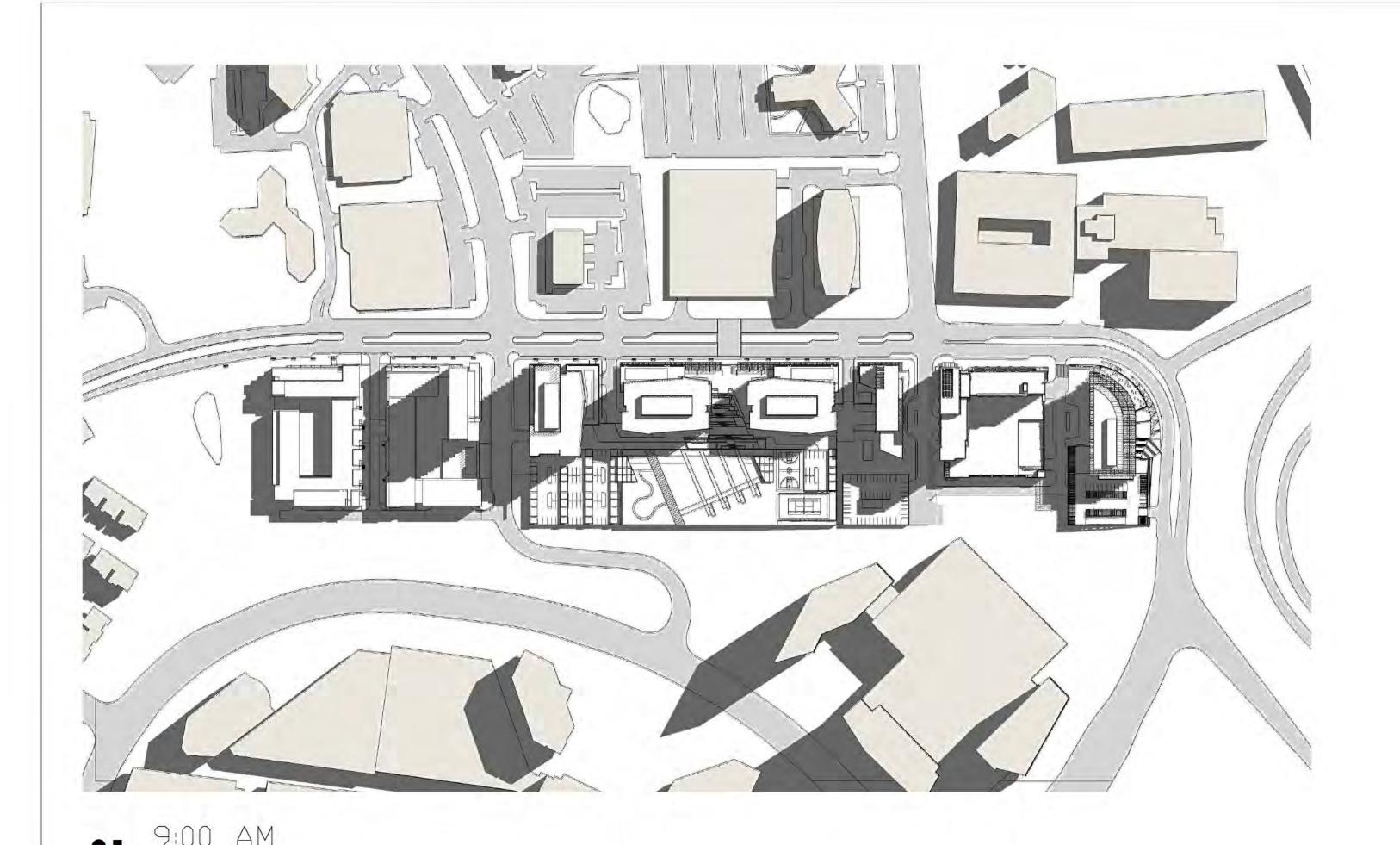
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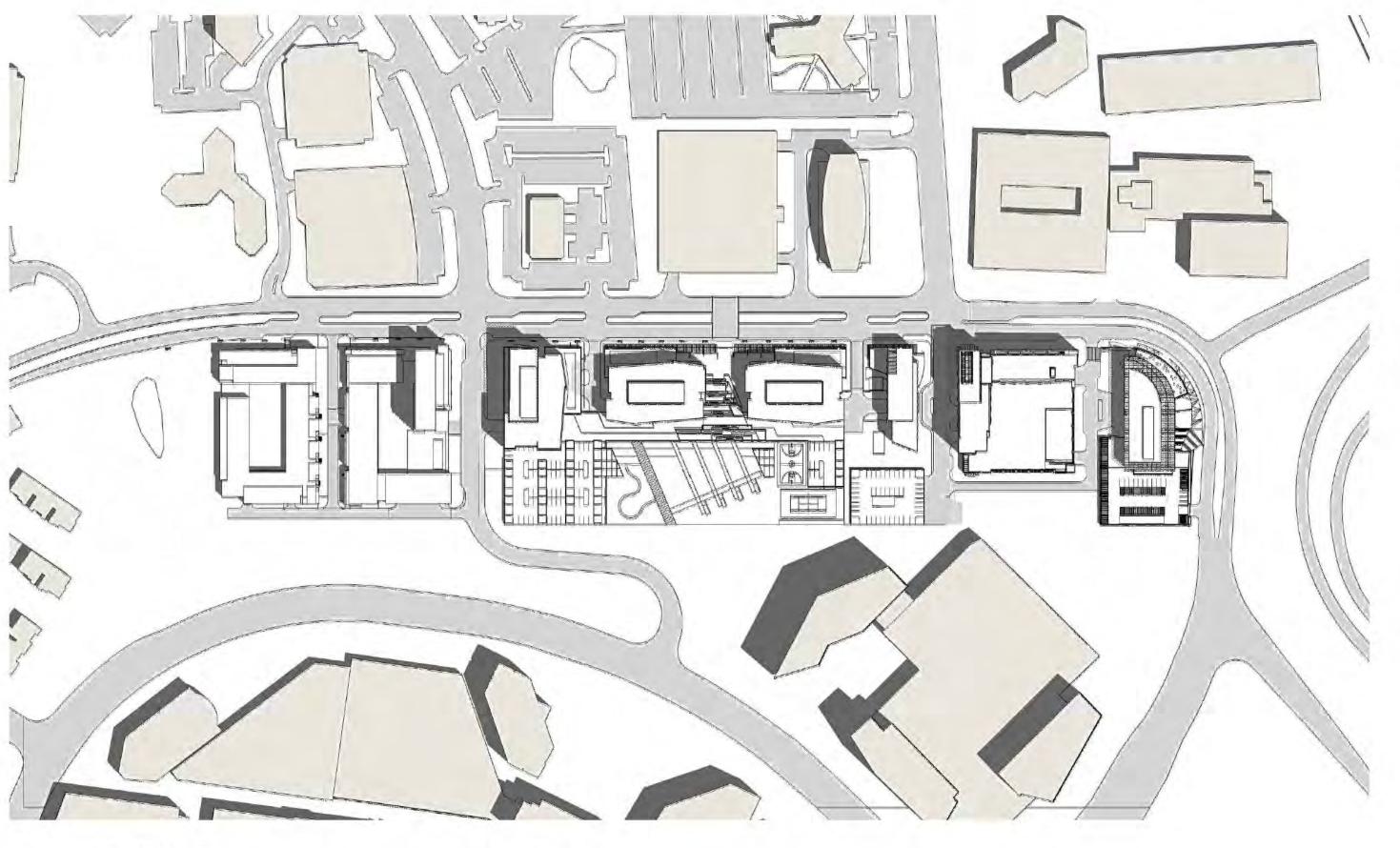
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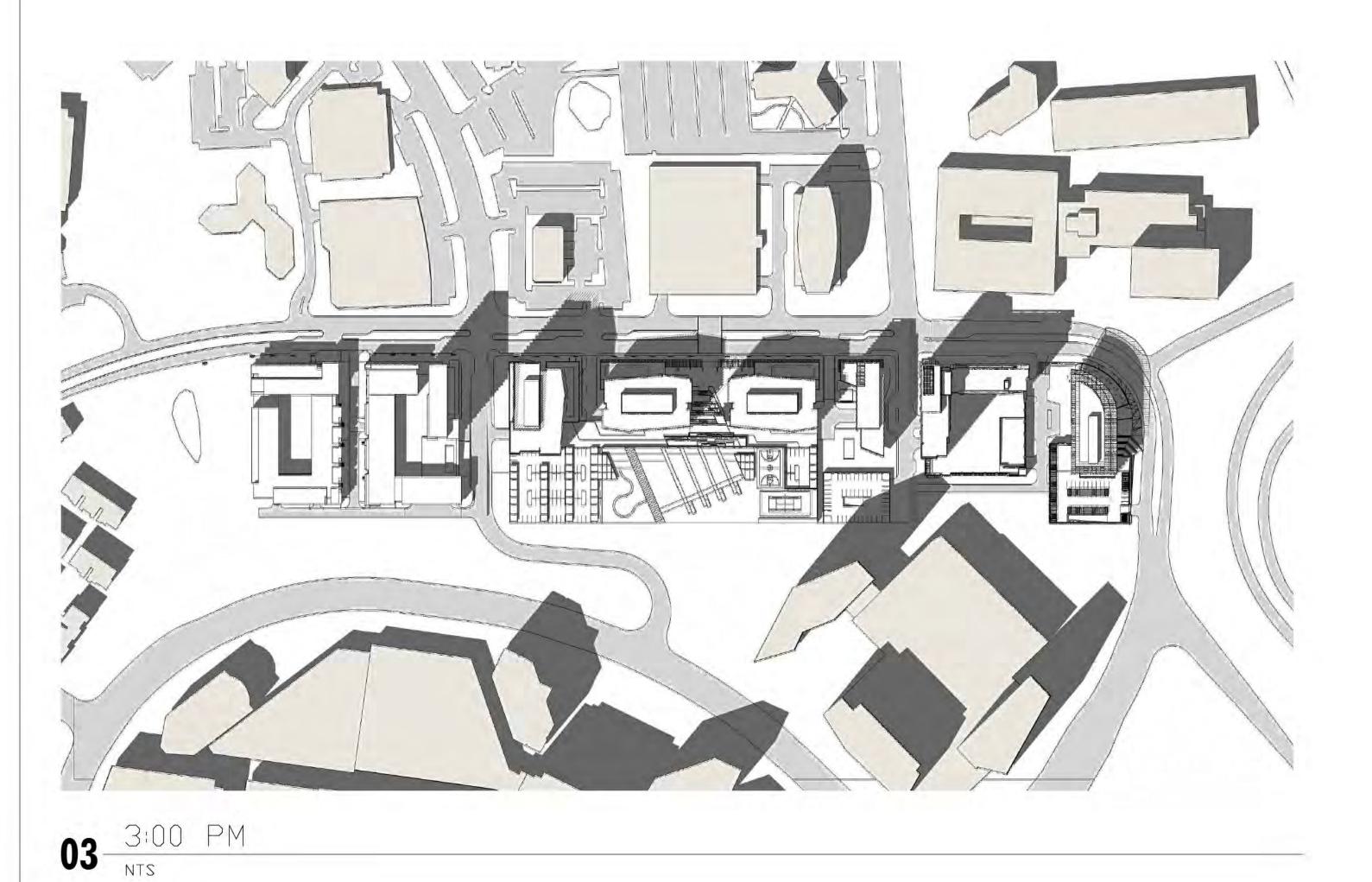
SCALE H:

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

SHEET A5.0







Application No: RZ 2011-PR-023 Staff: M. Ladd

APPROVED DEVELOPMENT PLAN

(_GDP) (\(\times\)CDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:

Date of Final Approval: Nov 20, 2012 (\(\times\)BOS) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 46 of 78

JUNE 21ST

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

Architectural plans, elevations, illustrations, materials, building heights etc are conceptual and are subject to revision with Final Development Plan and Final Site Plan applications.

SHADOW ANALYSIS

DATE DESCRIPTION

SCALE H:

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

SHEET A5.1

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

ARBOR ROW

UAL DEVELOPMENT PLAN 2011-PR-023
E DISTRICT - FAIRFAX COUNTY, VIRGINIA

SHADOW ANALYSIS

For Information Only









APPROVED DEVELOPMENT PLAN

(_GDP) (\(\subsetem \text{CDP}\) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:

Date of Final Approval: Nov 20, 2012 (\(\subsetem \text{BOS}\)) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet **47** of **78**

Staff: M. Ladd

SHADOW ANALYSIS

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

Architectural plans, elevations, illustrations, materials, building heights etc are conceptual and are subject to revision with Final Development Plan and Final Site Plan applications.

DECEMBER 21ST

08/29/12 PER COUNTY COMMENTS 10/05/12 PER COUNTY COMMENTS DATE DESCRIPTION

SCALE H: DATE: APRIL 26, 2011

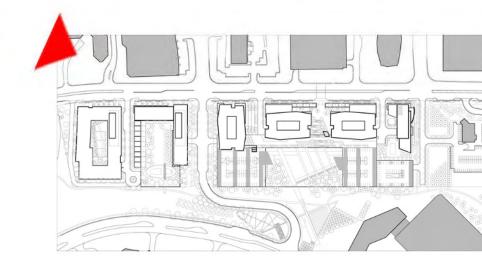
PLAN STATUS 07/22/11 PER COUNTY COMMENTS 12/07/11 PER COUNTY COMMENTS 02/24/12 PER COUNTY COMMENTS 05/25/12 PER COUNTY COMMENTS 07/23/12 PER COUNTY COMMENTS

FILE No. 7403-07-001 SHEET A5.2

For Information Only

SHADOW ANALYSIS





APPROVED DEVELOPMENT PLAN

(_GDP) (XCDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:

Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 48 of 78

Staff: M. Ladd

7/22/11 PER COUNTY COMMENT 2/07/11 PER COUNTY COMMENTS /25/12 PER COUNTY COMMENTS 7/23/12 PER COUNTY COMMENTS 08/29/12 PER COUNTY COMMENTS 0/05/12 PER COUNTY COMMENTS DATE DESCRIPTION SCALE H:

PLAN STATUS

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

A6.0

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

Architectural plans, elevations, illustrations, materials, building heights etc are conceptual and are subject to revision with Final Development Plan and Final Site Plan applications.

For Information Only



Staff: M. Ladd

APPROVED DEVELOPMENT PLAN

(_GDP) (XCDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

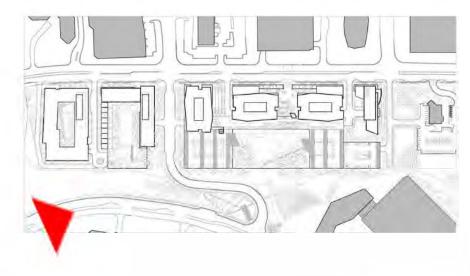
SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:

Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 49 of 78



SCALE H:

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

A6.1

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

Architectural plans, elevations, illustrations, materials, building heights etc are conceptual and are subject to revision with Final Development Plan and Final Site Plan applications.

For Information Only

PERSPECTIVES

PLAN STATUS 7/22/11 PER COUNTY COMMENT

12/07/11 PER COUNTY COMMENTS 02/24/12 PER COUNTY COMMENTS

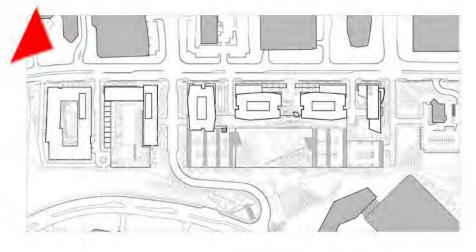
5/25/12 PER COUNTY COMMENTS 7/23/12 PER COUNTY COMMENTS 08/29/12 PER COUNTY COMMENTS 10/05/12 PER COUNTY COMMENTS DATE DESCRIPTION



Staff: M. Ladd

APPROVED DEVELOPMENT PLAN (_GDP) (XCDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC) SEE PROFFERS DATED: Oct 26, 2012

& ZONING Sheet 50 of 78



SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (<u>BOS</u>) (_PC) (_BZA)
Comments: Concurr W/ PCA 88-D-005-07

DATE : APRIL 26, 2011

FILE No. 7403-07-001 A6.2

SCALE H:

PLAN STATUS 7/22/11 PER COUNTY COMMENT 2/07/11 PER COUNTY COMMENTS 02/24/12 PER COUNTY COMMENTS

5/25/12 PER COUNTY COMMENTS 07/23/12 PER COUNTY COMMENTS

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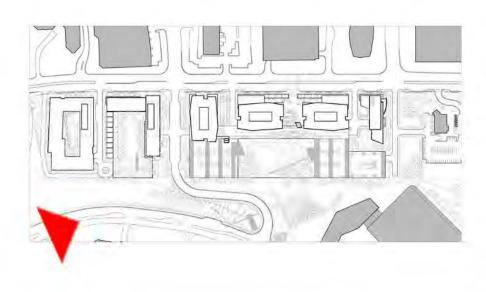
-See FDP for Block A, E, and F for additional details.



Staff: M. Ladd

APPROVED DEVELOPMENT PLAN (_GDP) (<u>X</u>CDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC) SEE PROFFERS DATED: Oct 26, 2012
SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (\(\subseteq\)BOS) (_PC) (_BZA)
Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 51 of 78



PERSPECTIVES

PLAN STATUS 07/22/11 PER COUNTY COMMENT

12/07/11 PER COUNTY COMMENTS 02/24/12 PER COUNTY COMMENTS 5/25/12 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:

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



Staff: M. Ladd

APPROVED DEVELOPMENT PLAN (_GDP) (XCDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

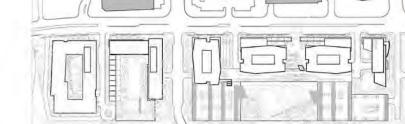
SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:

Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 52 of 78



PERSPECTIVES

PLAN STATUS 07/22/11 PER COUNTY COMMENT 12/07/11 PER COUNTY COMMENT 02/24/12 PER COUNTY COMMENT 5/25/12 PER COUNTY COMMENTS 07/23/12 PER COUNTY COMMENTS 08/29/12 PER COUNTY COMMENTS 10/05/12 PER COUNTY COMMENTS

ARBOR ROW

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

SCALE H:

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

DATE DESCRIPTION

A6.4

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

Architectural plans, elevations, illustrations, materials, building heights etc are conceptual and are subject to revision with Final Development Plan and Final Site Plan applications.

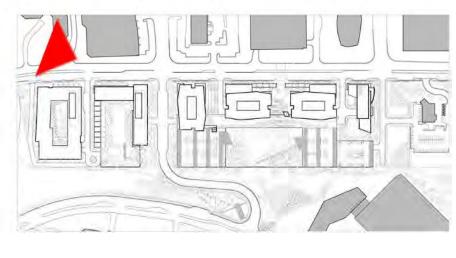


Staff: M. Ladd

APPROVED DEVELOPMENT PLAN $(\underline{\mathsf{GDP}})$ $(\underline{\mathsf{XCDP}})$ $(\underline{\mathsf{PRC}})$ $(\underline{\mathsf{DP}})$ $(\underline{\mathsf{CP}})$ $(\underline{\mathsf{SE}})$ $(\underline{\mathsf{CSP}})$ $(\underline{\mathsf{SP}})$ $(\underline{\mathsf{VC}})$ SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED:
Date of Final Approval: **Nov 20, 2012** (△BOS) (△PC) (△BZA)

Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 53 of 78



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

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

For Information Only

ARBOR ROW

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

PLAN STATUS 7/22/11 PER COUNTY COMMENT 2/07/11 PER COUNTY COMMENT 02/24/12 PER COUNTY COMMENT 5/25/12 PER COUNTY COMMENT 7/23/12 PER COUNTY COMMENTS 08/29/12 PER COUNTY COMMENTS

10/05/12 PER COUNTY COMMENTS DATE DESCRIPTION SCALE H:

A6.5



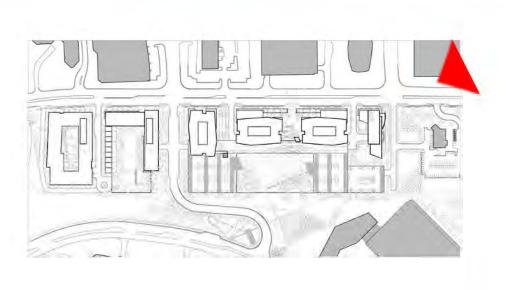
Staff: M. Ladd APPROVED DEVELOPMENT PLAN (_GDP) (★CDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:

Date of Final Approval: Nov 20, 2012 (△BOS) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 54 of 78



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

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ARBOR ROW

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

PLAN STATUS 07/22/11 PER COUNTY COMMENT 12/07/11 PER COUNTY COMMENTS 02/24/12 PER COUNTY COMMENT 5/25/12 PER COUNTY COMMENT 7/23/12 PER COUNTY COMMENTS 08/29/12 PER COUNTY COMMENTS 10/05/12 PER COUNTY COMMENTS

DATE DESCRIPTION

SCALE H:

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

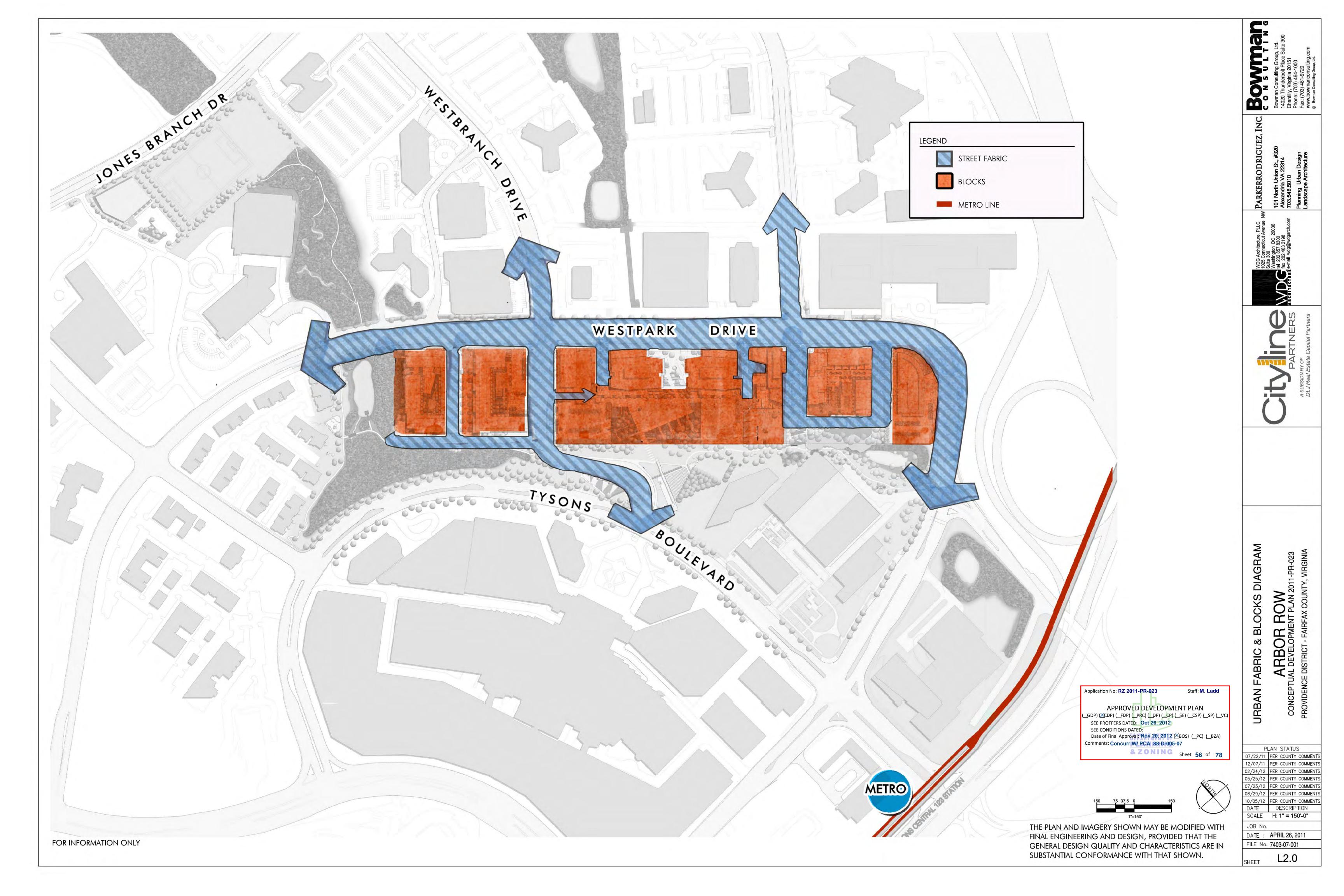
A6.6

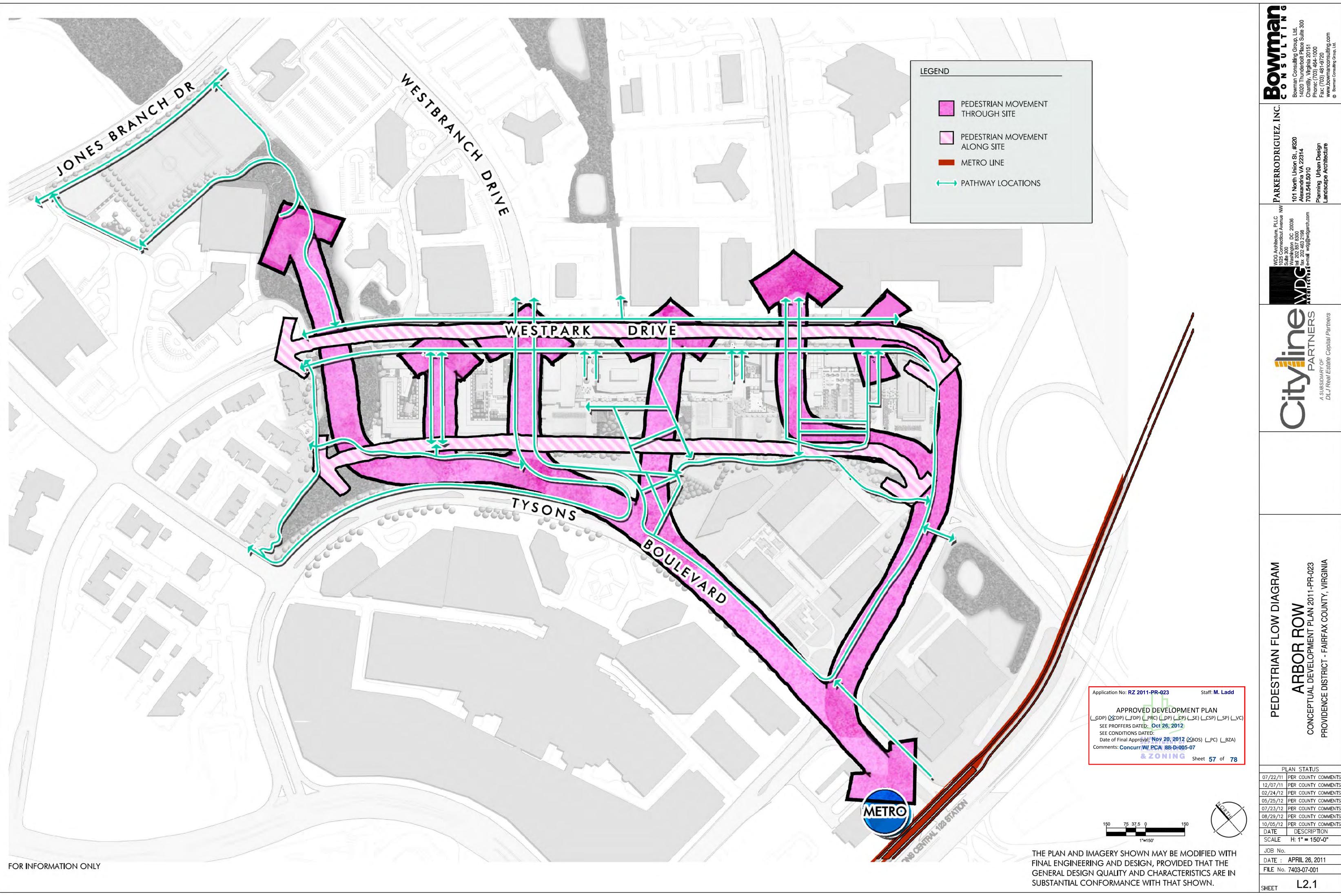


PLAN STATUS
07/22/11 PER COUNTY COMMENTS 12/07/11 PER COUNTY COMMENTS 02/24/12 PER COUNTY COMMENTS 05/25/12 PER COUNTY COMMENTS 07/23/12 PER COUNTY COMMENTS

10/05/12 PER COUNTY COMMENTS
DATE DESCRIPTION SCALE H: 1" = 150'-0"

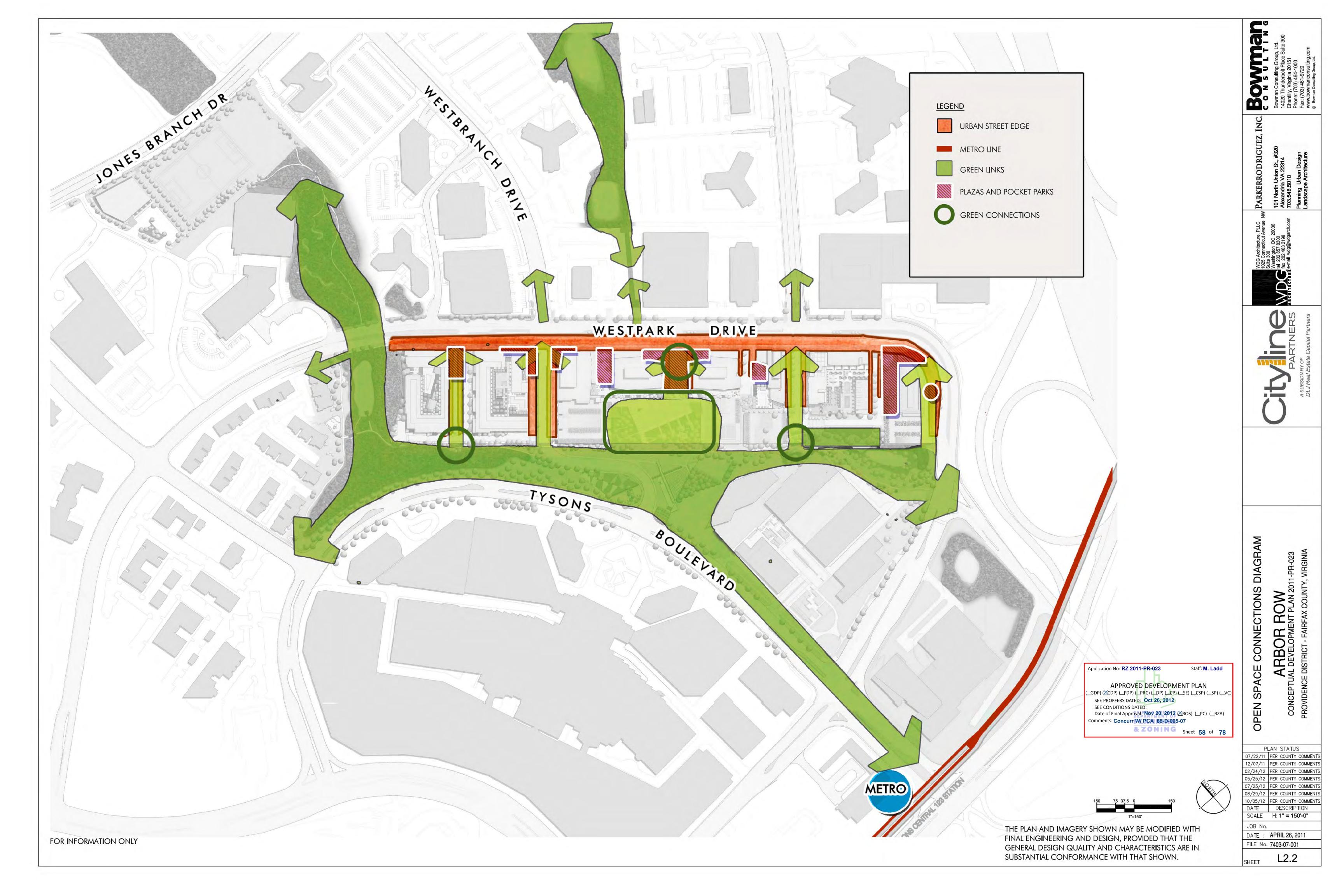
DATE: APRIL 26, 2011 FILE No. 7403-07-001

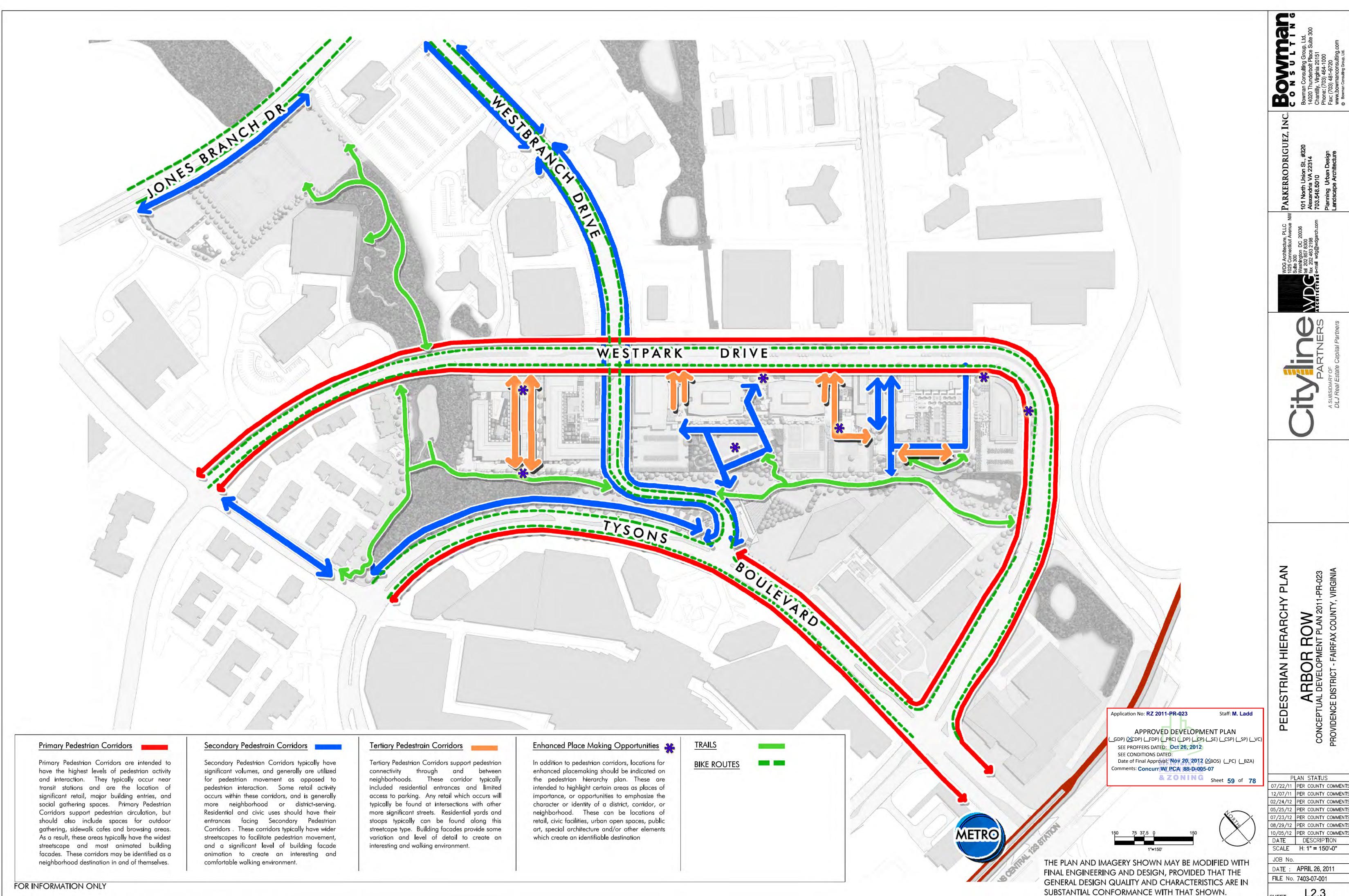




PLAN STATUS 07/22/11 PER COUNTY COMMENTS 12/07/11 PER COUNTY COMMENTS 02/24/12 PER COUNTY COMMENTS 05/25/12 PER COUNTY COMMENTS 07/23/12 PER COUNTY COMMENTS 08/29/12 PER COUNTY COMMENTS

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





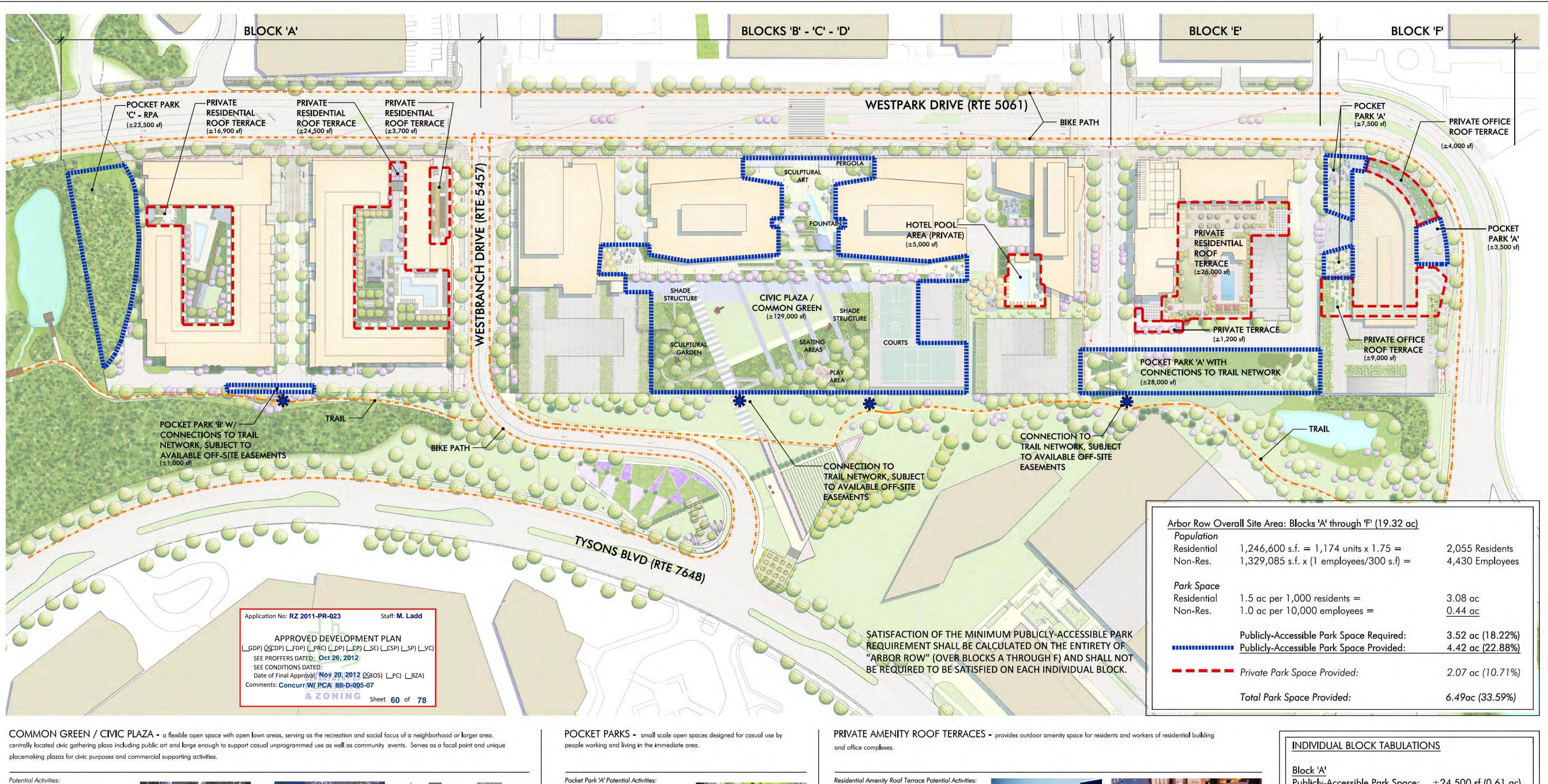
ARBOR ROW

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 7/23/12 PER COUNTY COMMENTS

DATE DESCRIPTION SCALE H: 1" = 150'-0"

DATE: APRIL 26, 2011

SHEET L2.3



Potential Activities:

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



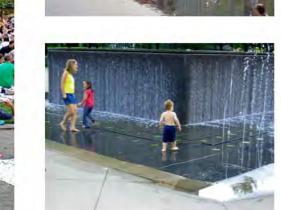












Pocket Park 'A' Potential Activities:

- Picnicking and Gathering Area
- Seating Area Landscape Areas

Seating Area

See Proffers

Pocket Park 'B' Potential Activities:

- Rain Garden
- Interpretive Signage Picnicking and Gathering Area
- Pocket Park 'C' Resource Protection Area:
- Undisturbed open space with no park







- Pool Recreational Swimming
- Sunbathing and Lounging
- Outdoor Kitchen and Dining
- Picnicking and Gathering Area
- Firepit Area Foutain Features
- **Bocce Courts**
- Outdoor Ping Pong Tables

Interactive Sculpture

Outdoor Billard Community Gardens

Office Amenity Roof Terrace Potential Activities:

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







Publicly-Accessible Park Space: $\pm 24,500 \text{ sf } (0.61 \text{ ac})$ Private Open Space Provided*: $\pm 45,100 \text{ sf } (1.04 \text{ ac})$

Blocks 'B' - 'C' - 'D'

Publicly-Accessible Park Space: $\pm 129,000 \text{ sf } (2.96 \text{ ac})$ Private Open Space Provided*: $\pm 5,000 \text{ sf } (0.11 \text{ ac})$

Block 'E'

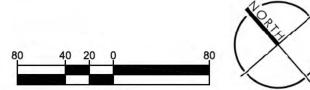
Publicly-Accessible Park Space: $\pm 28,000 \text{ sf } (0.64 \text{ ac})$ Private Open Space Provided*: $\pm 27,200 \text{ sf } (0.62 \text{ ac})$

Block 'F'

Publicly-Accessible Park Space: $\pm 11,000 \text{ sf } (0.25 \text{ ac})$ Private Open Space Provided*: $\pm 13,000 \text{ sf } (0.30 \text{ ac})$

Total Open Space Provided*: *For reference only.

±282,800 sf (6.49ac) (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.

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

PLAN STATUS

07/22/11 PER COUNTY COMMENTS

12/07/11 PER COUNTY COMMENTS 02/24/12 PER COUNTY COMMENT 05/25/12 PER COUNTY COMMENTS 07/23/12 PER COUNTY COMMENT 08/29/12 PER COUNTY COMMENTS 10/05/12 PER COUNTY COMMENTS DATE DESCRIPTION

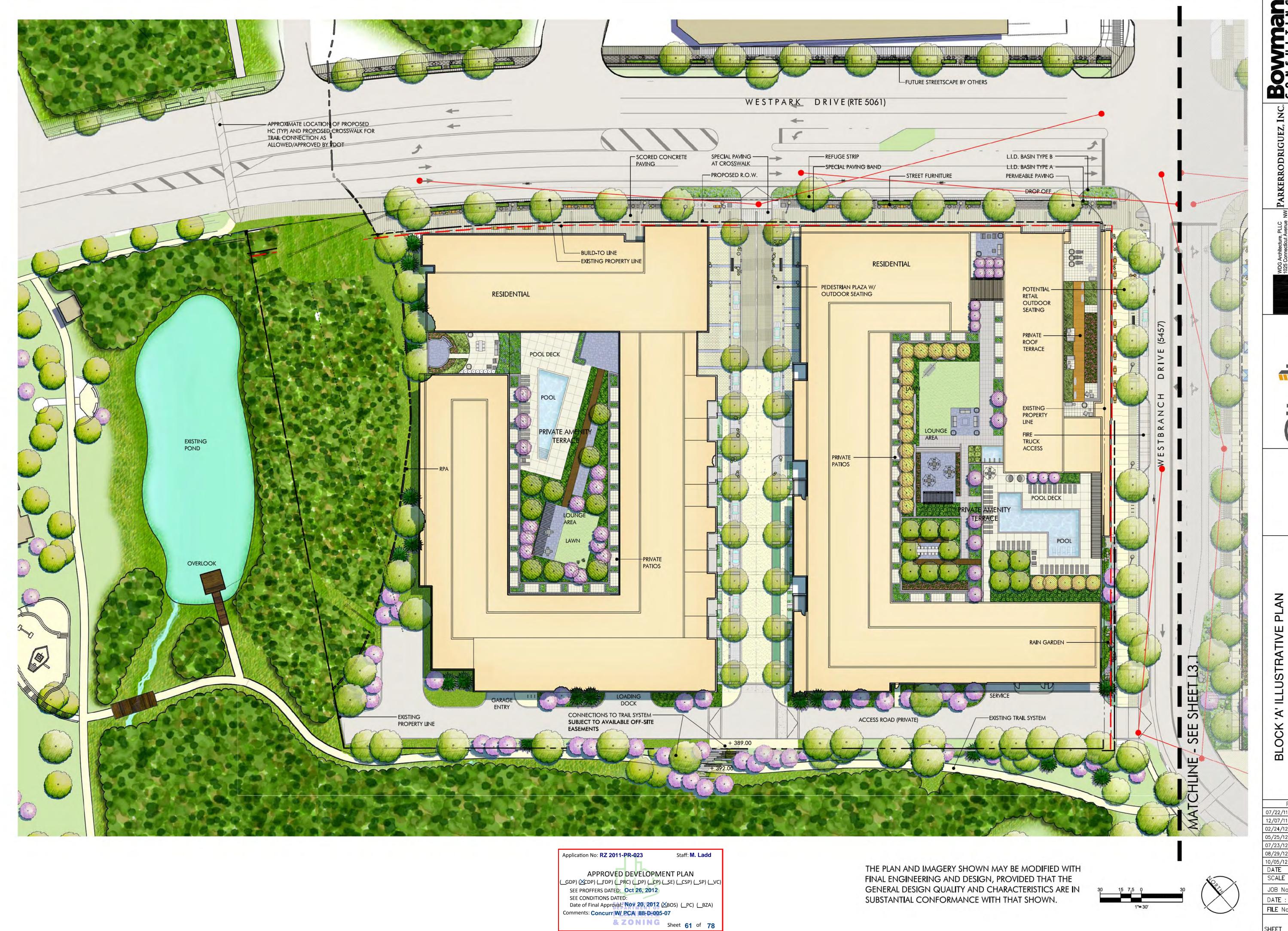
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SHEET L2.4



ARBOR ROW

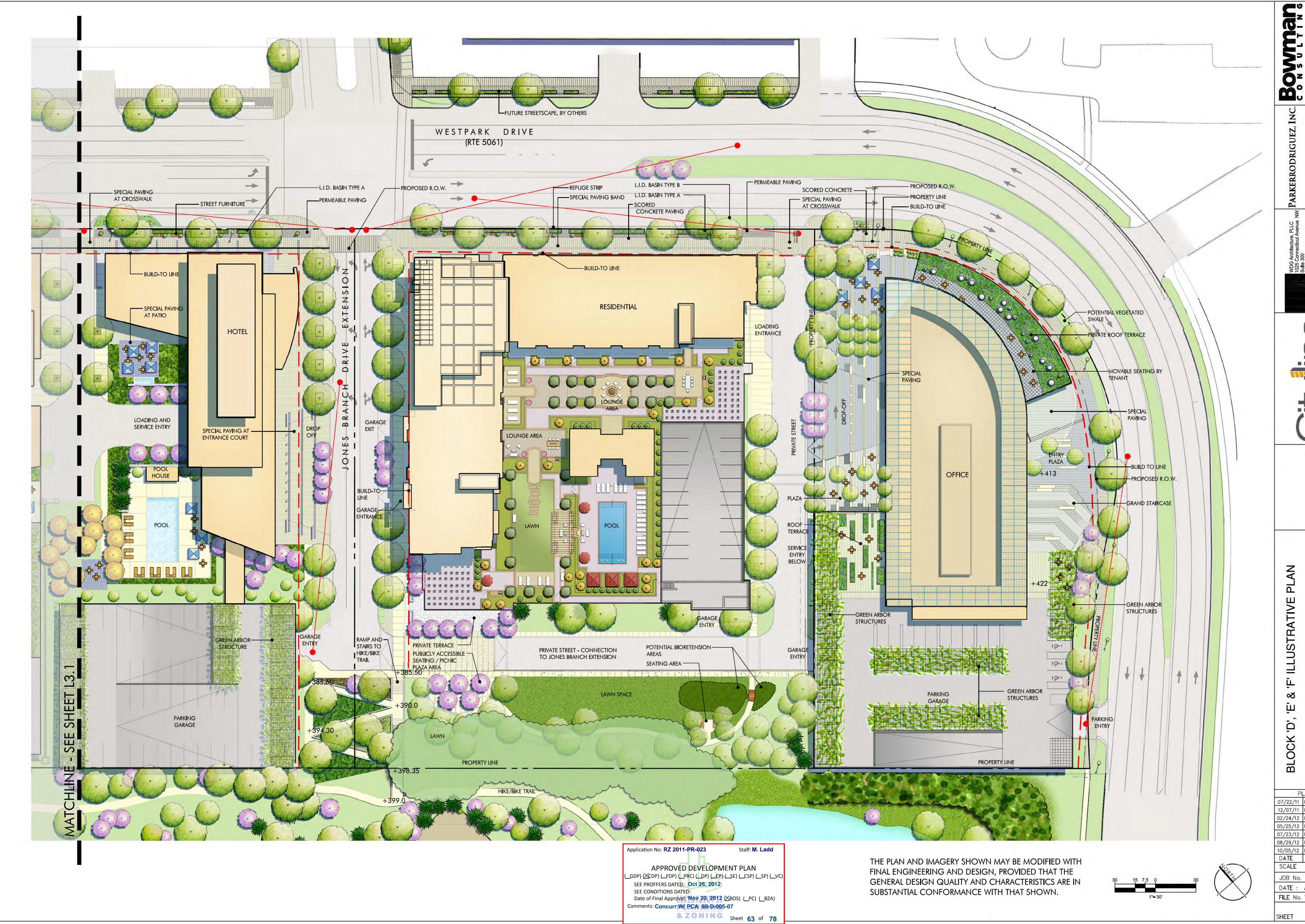
PLAN STATUS 07/22/11 PER COUNTY COMMENTS 12/07/11 PER COUNTY COMMENTS 02/24/12 PER COUNTY COMMENTS 05/25/12 PER COUNTY COMMENTS 07/23/12 PER COUNTY COMMENTS 08/29/12 PER COUNTY COMMENTS 10/05/12 PER COUNTY COMMENTS DATE DESCRIPTION

SCALE H: 1" = 30'-0" JOB No.

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

SHEET L3.0



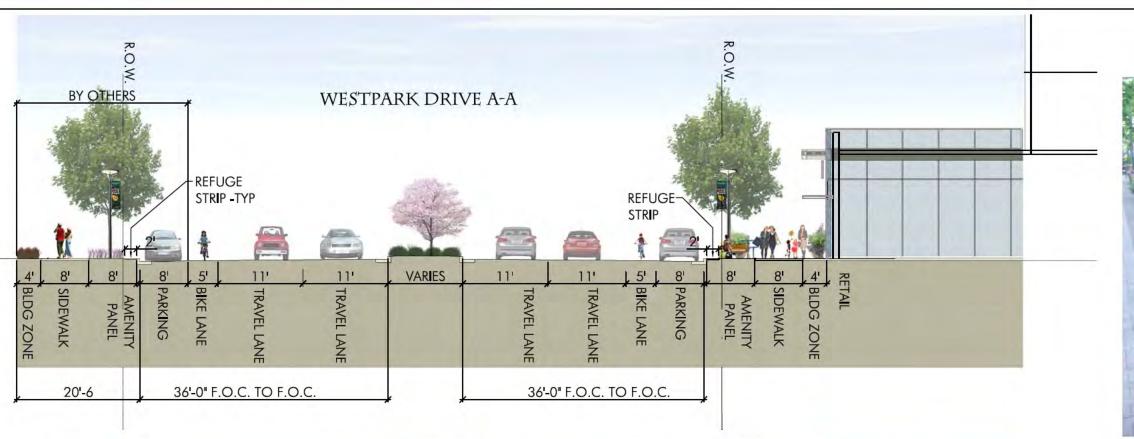


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10/05/12 PER COUNTY COMMENTS
DATE DESCRIPTION SCALE H: 1" = 30'-0"

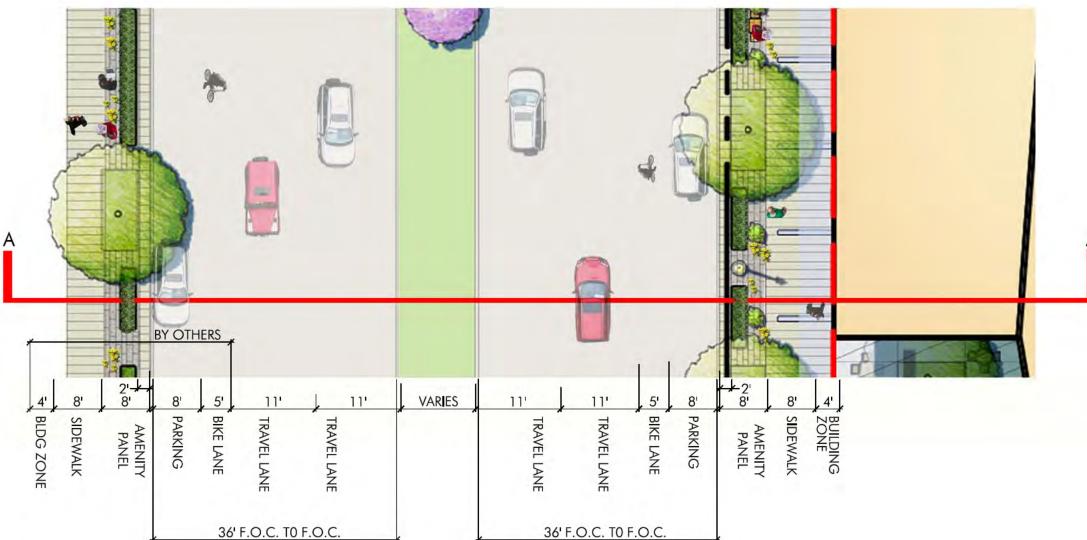
DATE: APRIL 26, 2011 FILE No. 7403-07-001

L3.2



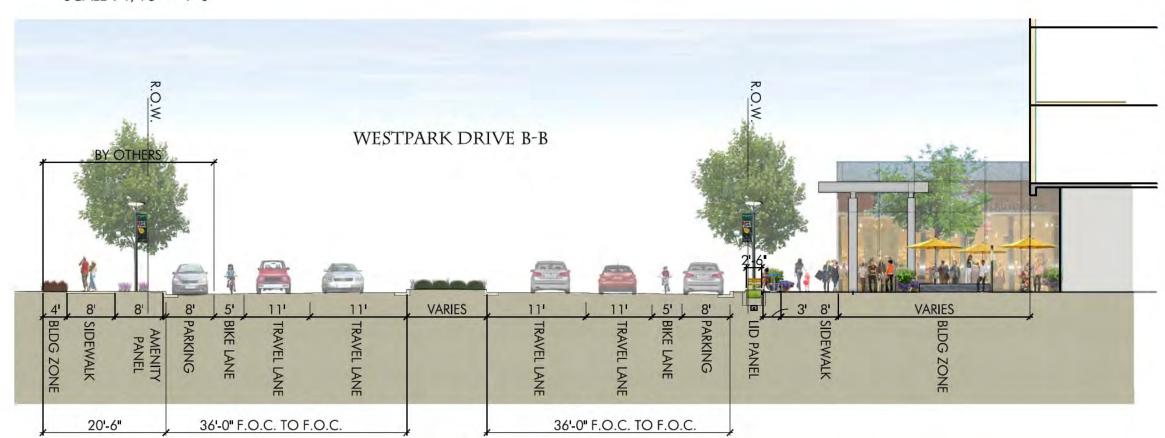






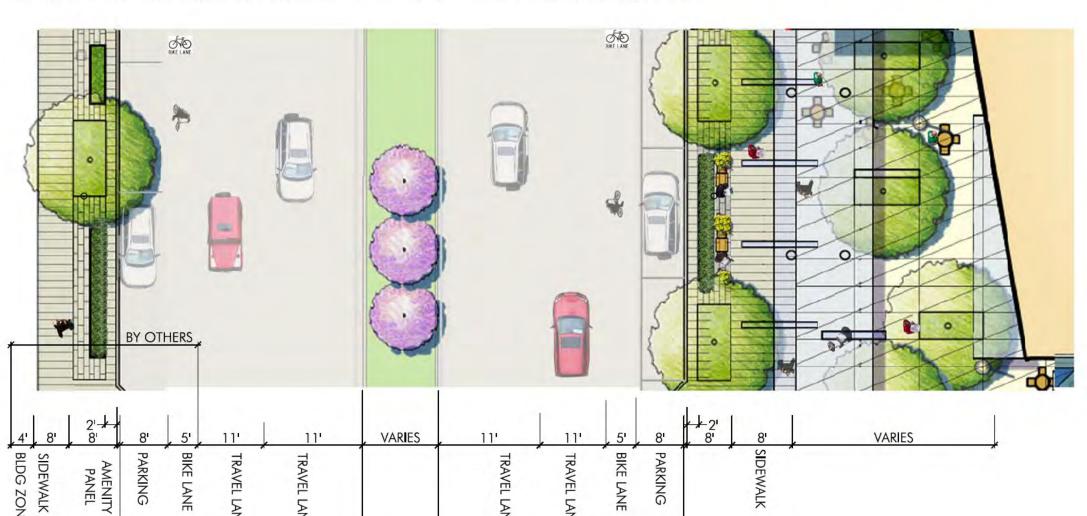


WESTPARK DRIVE (RTE 5061) - STREET SECTION A (AVENUE) - ULTIMATE SCALE: 1/16" = 1'-0"

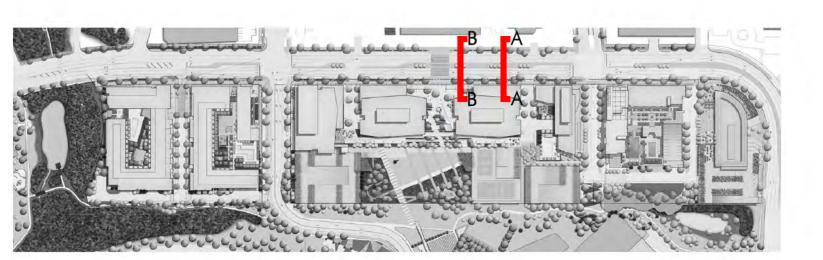










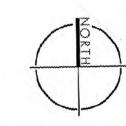


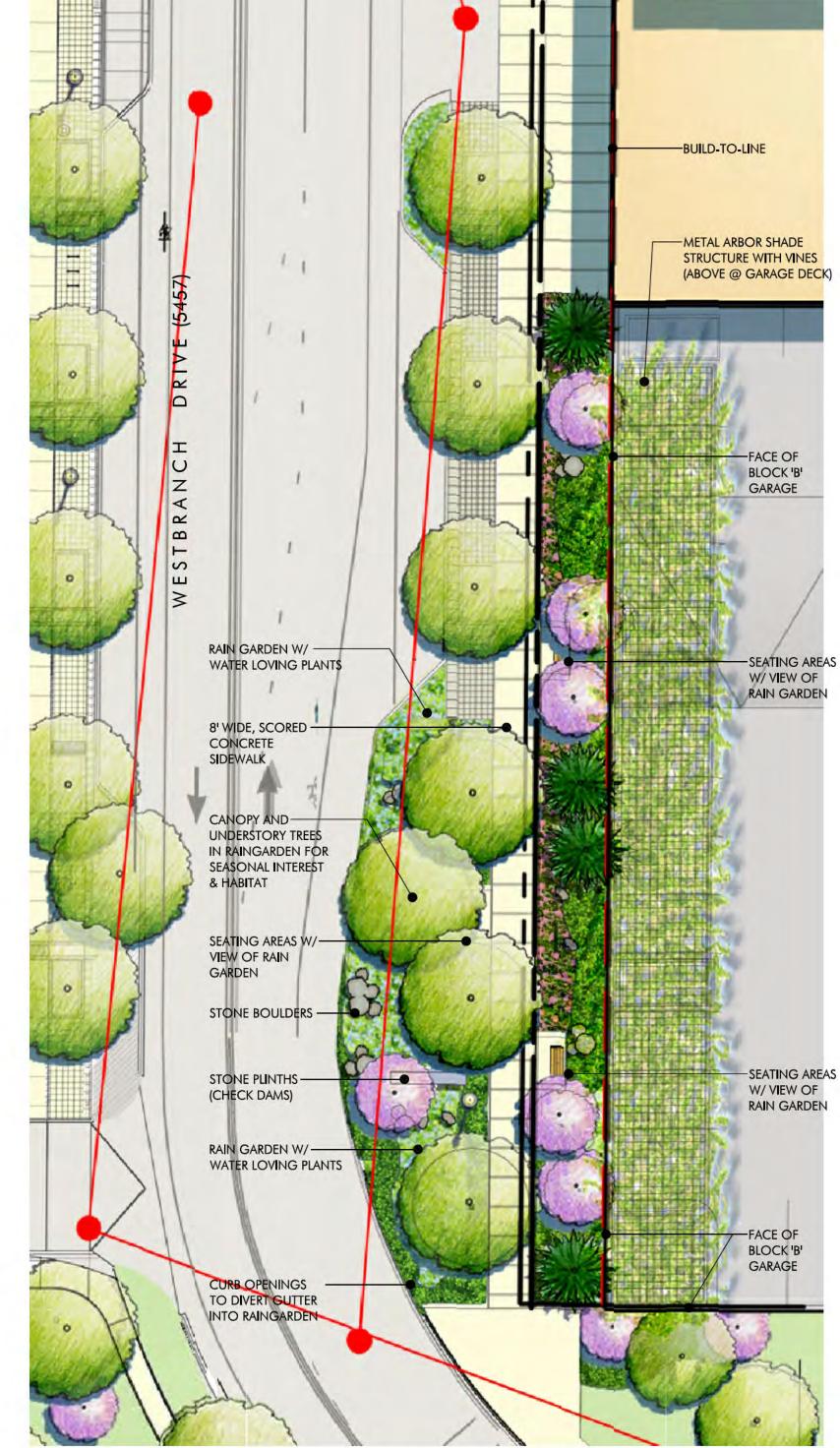
REFERENCE PLAN

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.

> Application No: RZ 2011-PR-023 APPROVED DEVELOPMENT PLAN __GDP) (<u>X</u>CDP) (__FDP) (__PRC) (__DP) (__CP) (__SE) (__CSP) (__SP) (__V(SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED: Date of Final Approval: Nov 20, 2012 (△BOS) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07 & ZONING Sheet 64 of 78





BLOCK 'B' RAIN GARDEN PARK - PLAN ENLARGEMENT

WESTPARK DRIVE (RTE 5061) - STREET SECTION B (AVENUE) - ULTIMATE

36' F.O.C. T0 F.O.C.

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

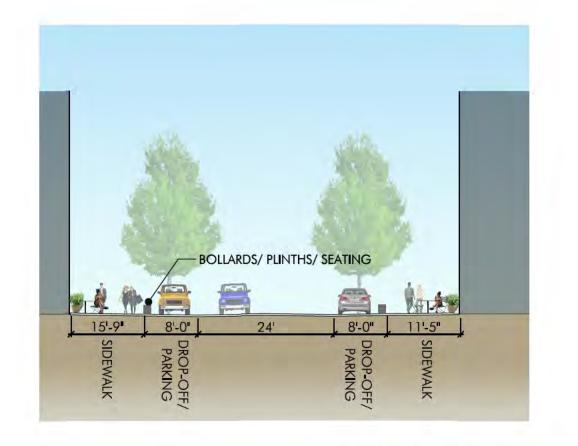
36' F.O.C. T0 F.O.C

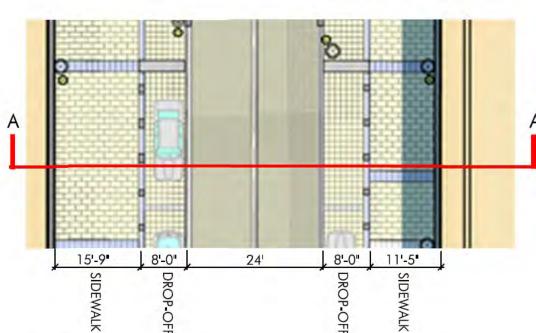
FILE No. 7403-07-001 L4.0

DATE: APRIL 26, 2011

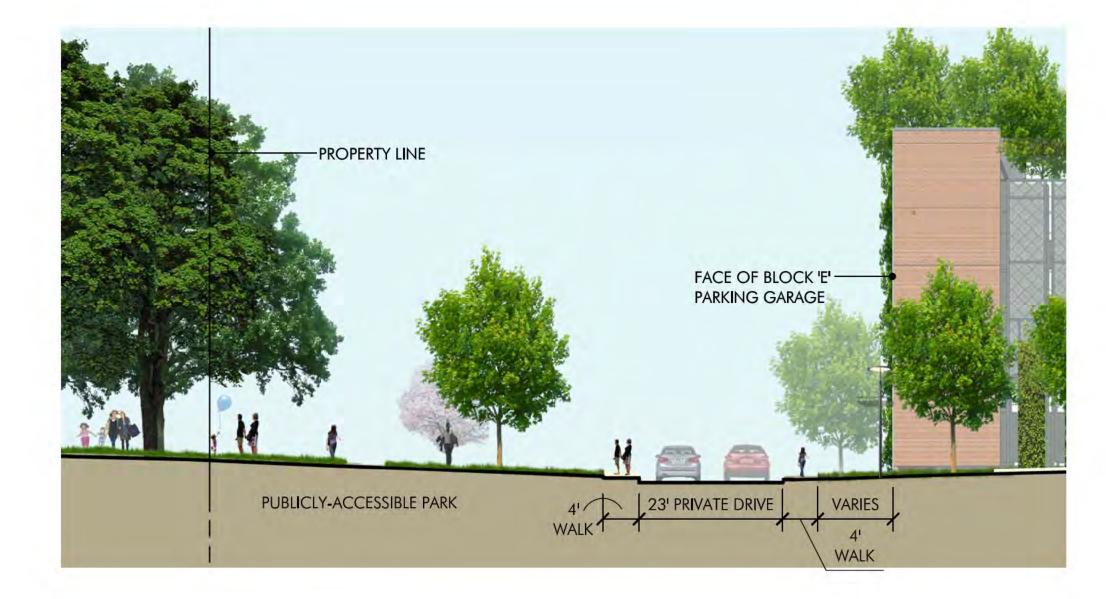
DATE DESCRIPTION SCALE H: AS NOTED

STREET SECTIONS





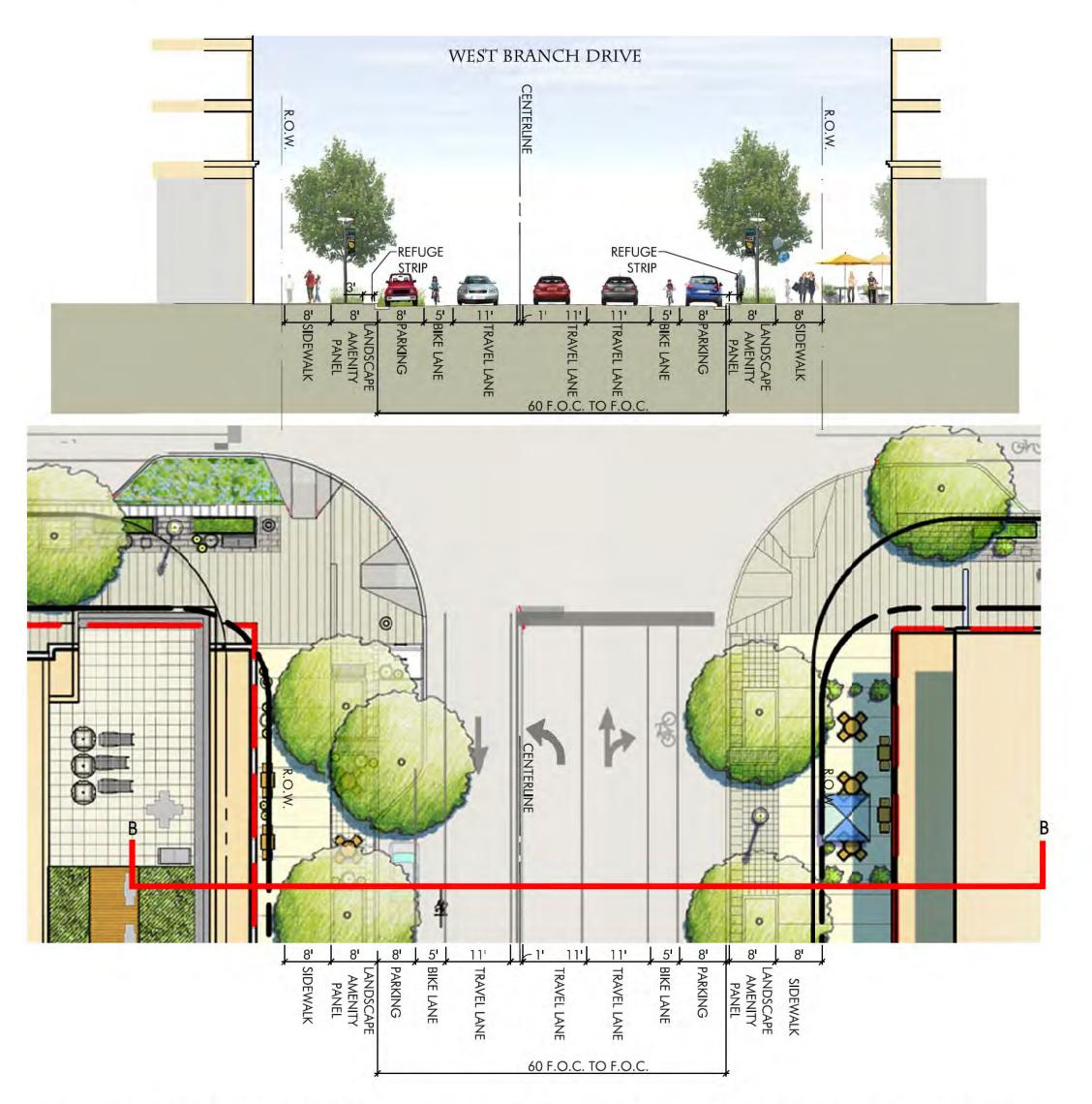
BLOCK 'A' - PRIVATE STREET



SECTION A-A

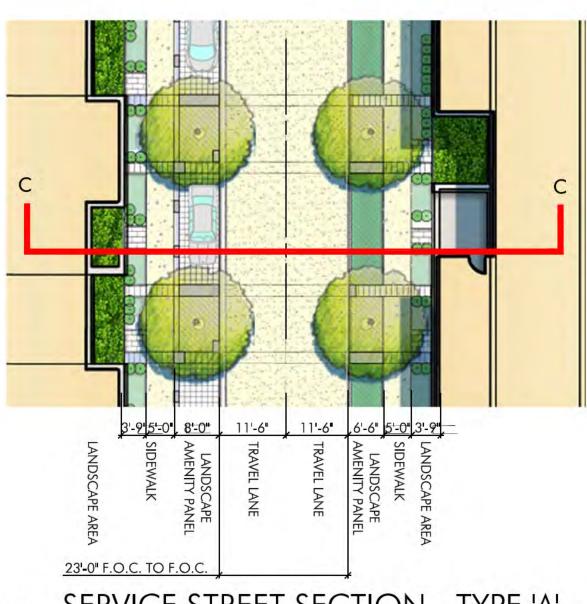
BLOCK 'E' - PRIVATE STREET (CONNECTOR TO JONES BRANCH)

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



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

LOCAL STREET 23'-0" F.O.C. TO F.O.C



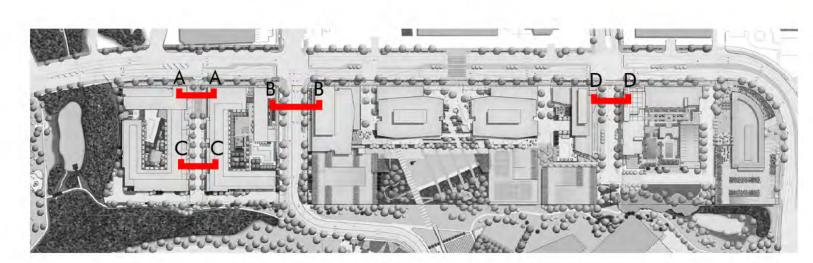
SCALE : 1/16" = 1'-0"

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.

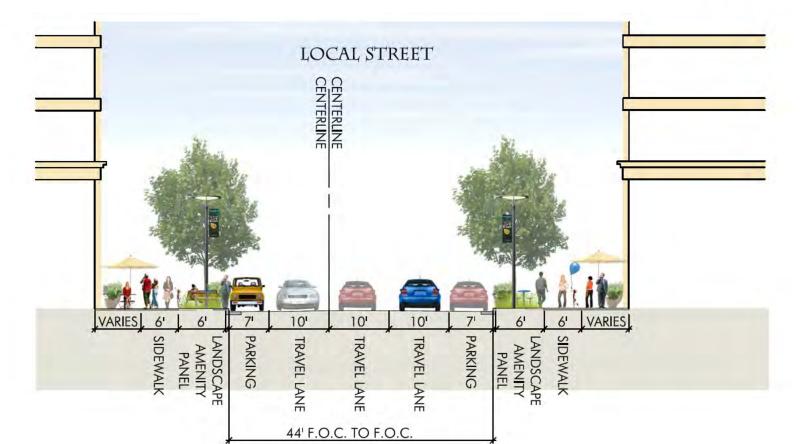
SITE SECTIONS PRESENTED ON THIS SHEET ARE PROVIDED TO AID IN THE UNDERSTANDING OF GRADE CHANGE ACROSS THE SUBJECT PROPERTY AND THE RELATIONSHIP OF PROPOSED BUILDINGS AND OTHER USES. BUILDING DESIGN AND THE FINAL GRADING ARE SUBJECT TO CHANGE WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN.







REFERENCE PLAN



Application No: RZ 2011-PR-023

APPROVED DEVELOPMENT PLAN (_GDP) (<u>XCDP</u>) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)
SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (<u>BOS</u>) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07

LOCAL STREET SECTION - JONES BRANCH EXT.

44' F.O.C. TO F.O.C

Staff: M. Ladd

& ZONING Sheet 65 of 78

STREET SECTIONS

DATE DESCRIPTION

SCALE H: AS NOTED

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

L4.1

SECTION B-B

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

SECTION D-D

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Application No: RZ 2011-PR-023

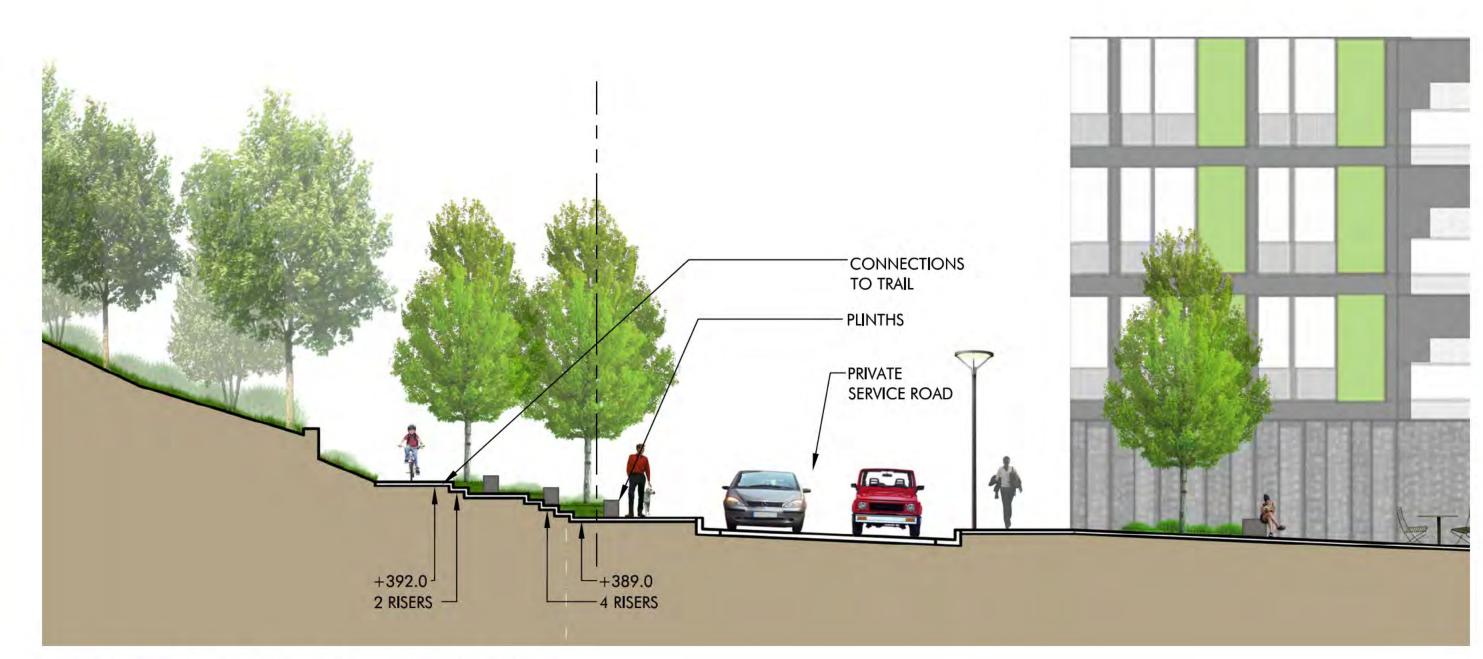
SEE CONDITIONS DATED:

SEE PROFFERS DATED: Oct 26, 2012

APPROVED DEVELOPMENT PLAN (_GDP) (<u>X</u>CDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

REFERENCE PLAN

Staff: M. Ladd



- GROUND FLOOR LOBBY/ AMENITY/ LEASING OFFICES

BLOCK A - CONNECTION TO TRAIL

BLOCK A - FLUSH PAVED LOBBY, AMENITY, AND LEASING OFFICE AREA

Date of Final Approval: **Nov 20, 2012** (∠BOS) (_PC) (_BZA) Comments: **Concurr W/PCA 88-D-005-07** & ZONING Sheet 66 of 78 EXISTING WOODLAND CONNECTIONS -COURTYARD TO TRAIL - GROUND FLOOR LOBBY/ I AMENITY/ LEASING **OFFICES** BOLLARDS

BLOCK A - RESIDENTIAL BUILDING SECTION ELEVATION

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

- BLOCK 'A' SECTION

ARBOR ROW SITE

PLAN STATUS 07/22/11 PER COUNTY COMMENTS 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

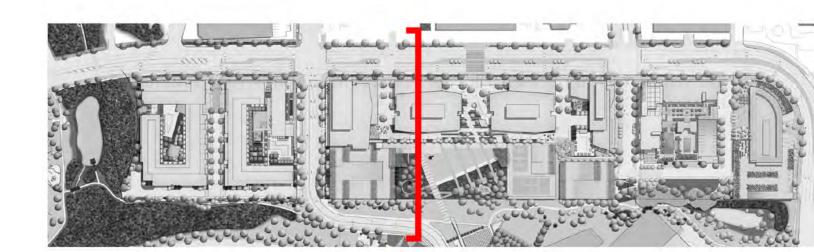
DATE DESCRIPTION SCALE H: 1/16" = 1'-0"

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

L4.2

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& ZONING Sheet 67 of 78

REFERENCE PLAN

- BLOCK 'C' SECTION SITE

PLAN STATUS 07/22/11 PER COUNTY COMMENTS

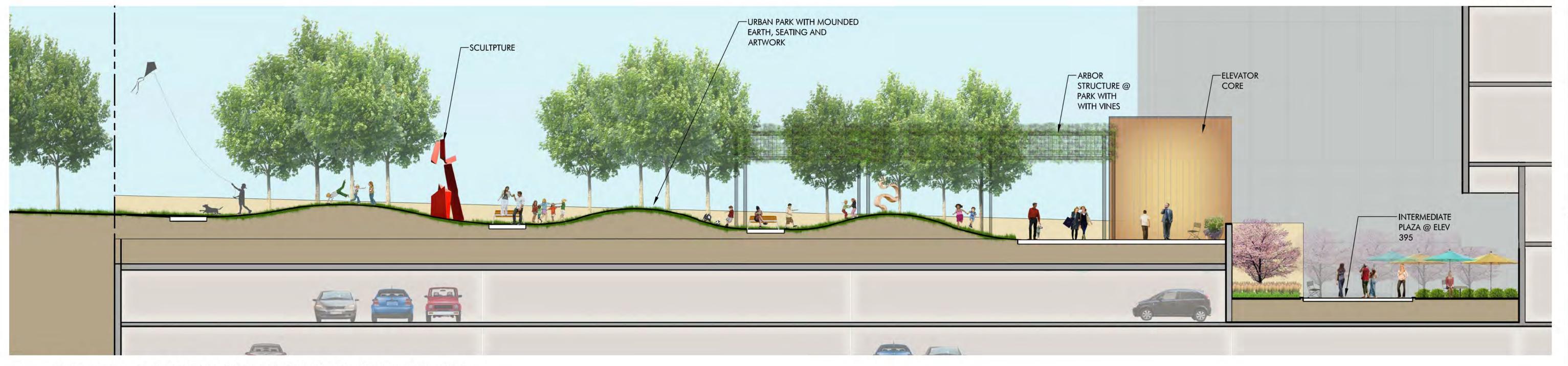
12/07/11 PER COUNTY COMMENT 02/24/12 PER COUNTY COMMENT 05/25/12 PER COUNTY COMMENT 07/23/12 PER COUNTY COMMENT 08/29/12 PER COUNTY COMMENT 10/05/12 PER COUNTY COMMENTS
DATE DESCRIPTION

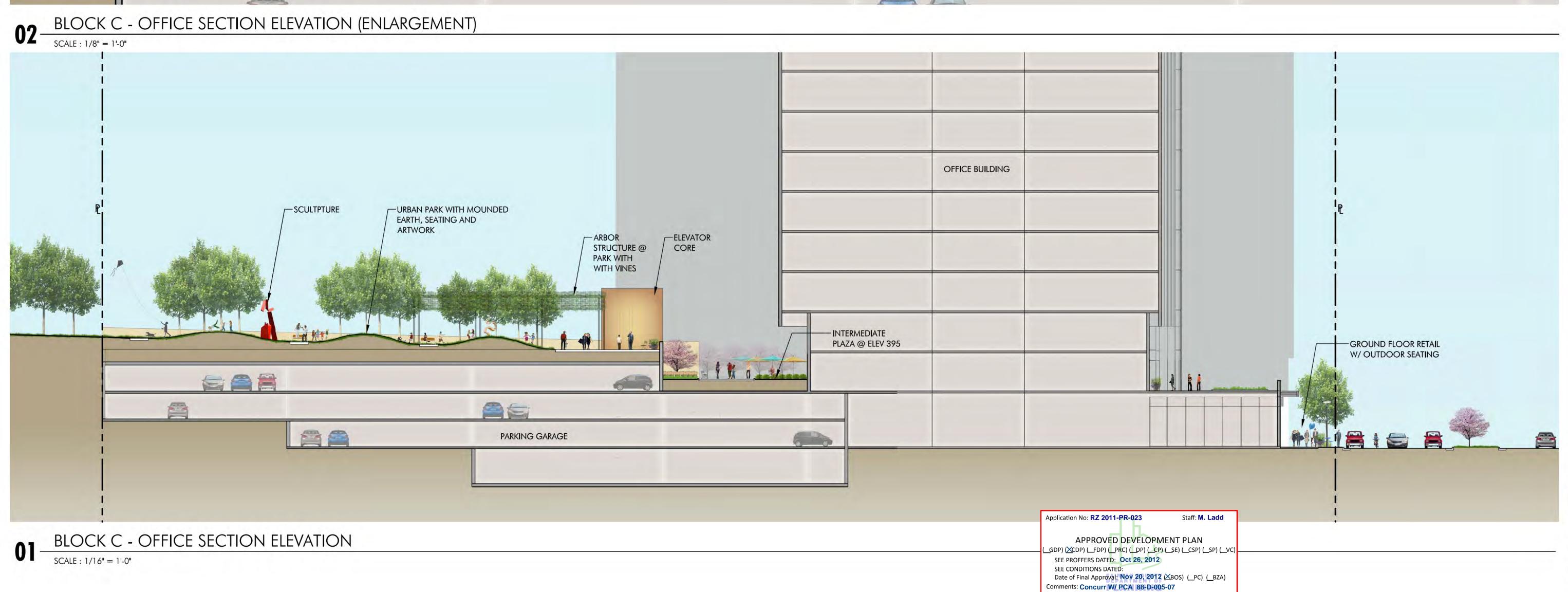
SCALE H: 1/16" = 1'-0"

L4.3

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

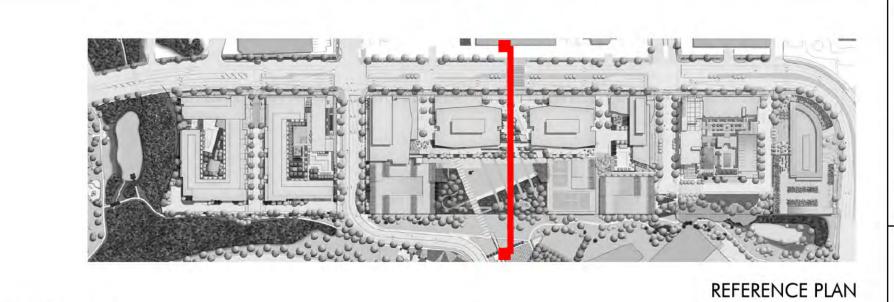
SHEET





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BLOCK 'C' SECTION

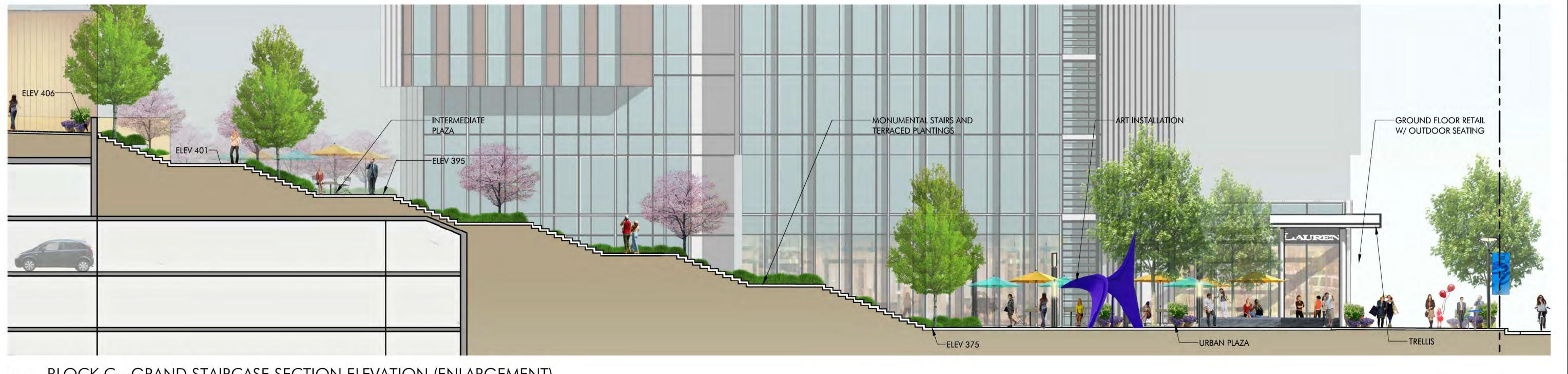
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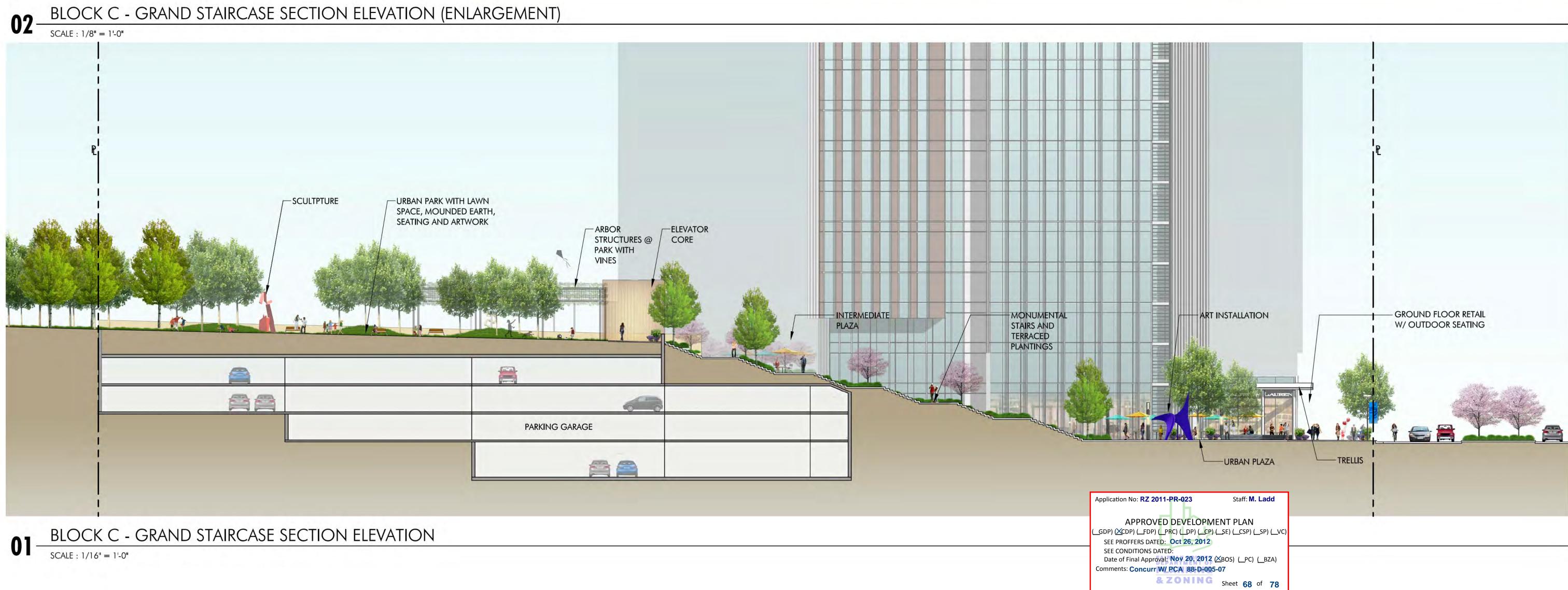
PLAN STATUS 07/22/11 PER COUNTY COMMENTS 12/07/11 PER COUNTY COMMENT 02/24/12 PER COUNTY COMMENT 05/25/12 PER COUNTY COMMENTS

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

SCALE H: 1/16" = 1'-0" JOB No.

DATE: APRIL 26, 2011 FILE No. 7403-07-001 L4.4





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PROPERTY LINE —

CONNECTION

(EXISTING)



GROUND FLOOR RETAIL W/OUTDOOR SEATING

- BLOCK 'D' ARBOR ROW SECTION SITE

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

L4.5

10/05/12 PER COUNTY COMMENT DATE DESCRIPTION SCALE H: 1/16" = 1'-0"

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

REFERENCE PLAN -PROPERTY LINE

ARBOR STRUCTURE WITH VINES

POCKET PARK WITH STAIRS AND

RAMP UP TO TRAIL NETWORK -

SEE L3.2 FOR PLAN

- STREET TREES IN AMENITY PANEL, TYP.

BLOCK D - HOTEL SECTION ELEVATION (ENLARGEMENTS)







REFERENCE PLAN

PARKERRODRIGUEZ, INC.

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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PROPERTY LINE PROPERTY LINE PRIVATE AMENITY ROOF-TERRACE WITH POOL, SEATING AND PLANTINGS -CONNECTION TO TRAILS, SUBJECT TO AVAILABLE OFF-SITE EASEMENTS -LOADING ENTRANCE -GROUND FLOOR W/ POTENTIAL FOR PUBLICLY ACCESSIBLE PRIVATE OUTDOOR SEATING OPEN SPACE WITH STREET CONNECTIONS TO Application No: RZ 2011-PR-023 Staff: M. Ladd BLOCK E - EAST ELEVATION APPROVED DEVELOPMENT PLAN _GDP) (<u>X</u>CDP) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_V(

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

BLOCK E - SOUTH ELEVATION

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

SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED:

Date of Final Approval: Nov 20, 2012 (XBOS) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 70 of 78

12/07/11 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 H: 1/16" = 1'-0"

PLAN STATUS 07/22/11 PER COUNTY COMMENT

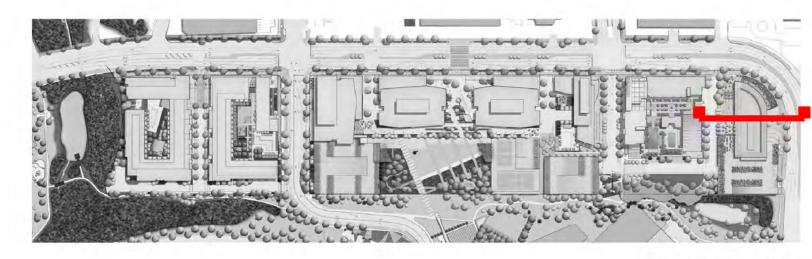
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DATE: APRIL 26, 2011 FILE No. 7403-07-001

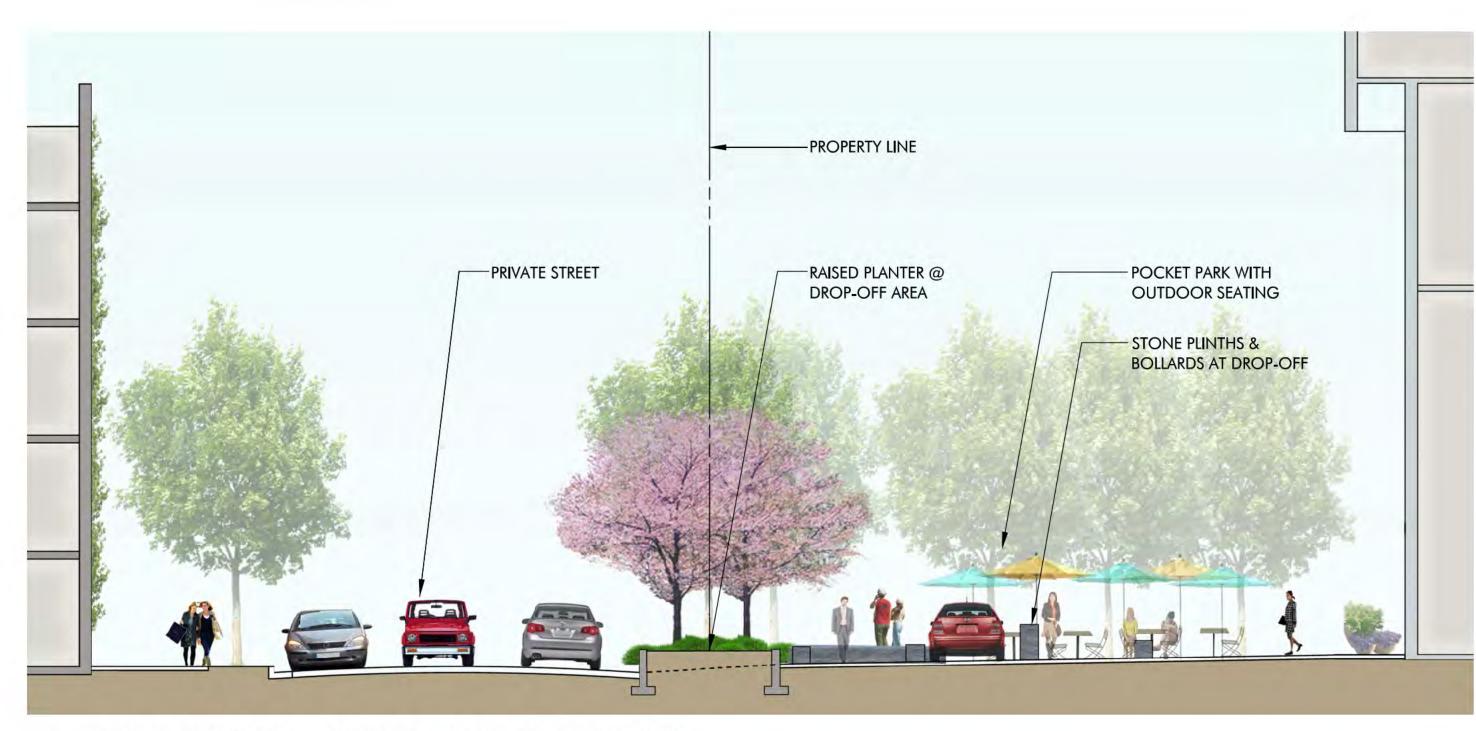
L4.6

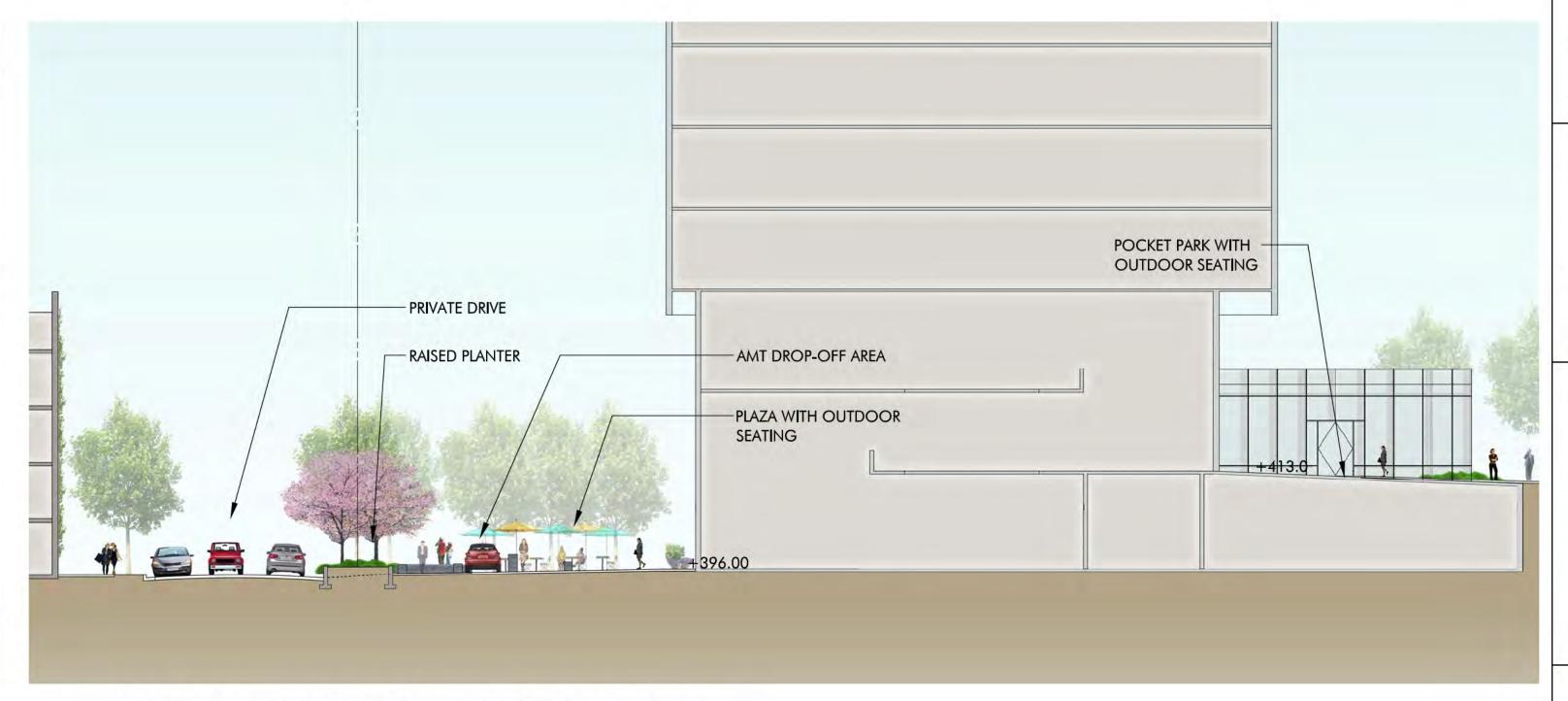
THE PLAN AND IMAGERY SHOWN MAY BE MODIFIED WITH FINAL ENGINEERING AND DESIGN, PROVIDED THAT THE GENERAL DESIGN QUALITY AND CHARACTERISTICS ARE IN SUBSTANTIAL CONFORMANCE WITH THAT SHOWN.

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.



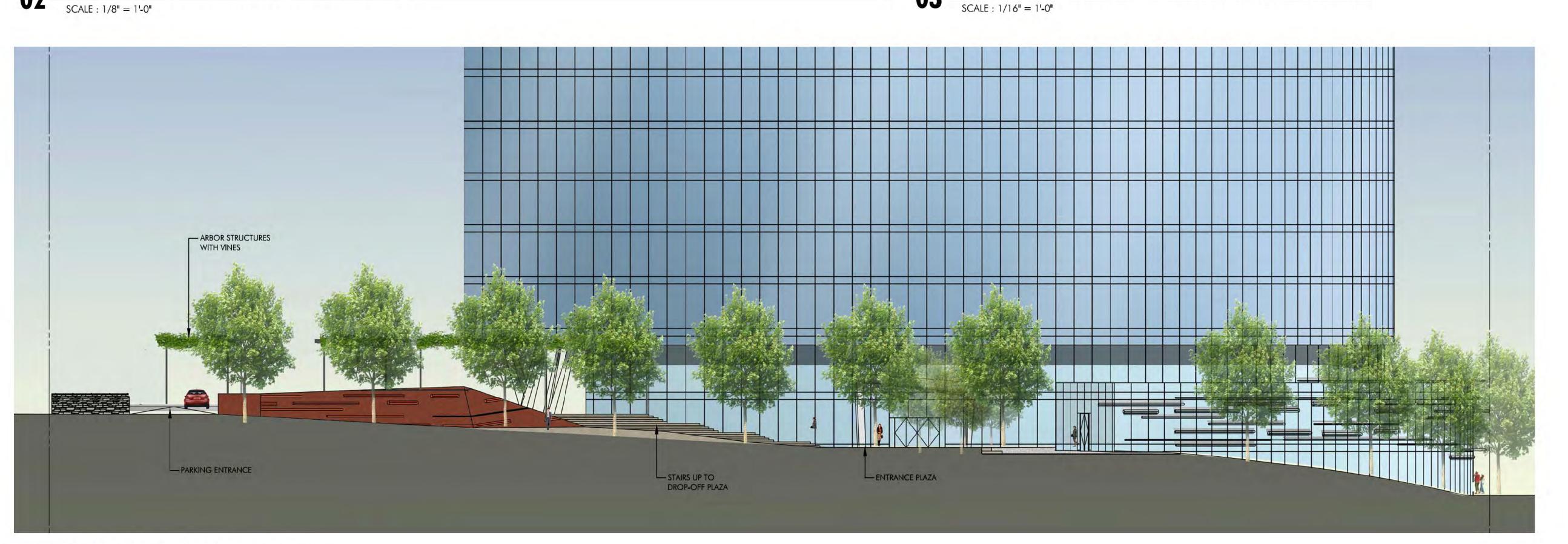
REFERENCE PLAN





BLOCK E & F - PRIVATE STREET SECTION

BLOCK F - AMT BUILDING SECTION ELEVATION



BLOCK F - EAST ELEVATION

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

Application No: RZ 2011-PR-023 Staff: M. Ladd

APPROVED DEVELOPMENT PLAN

(_GDP) (\(\subseteq CDP\) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (\(\subseteq BOS\)) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

Sheet 71 of 78

SITE SECTION - BLOCK 'F'
ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 2011-PF

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

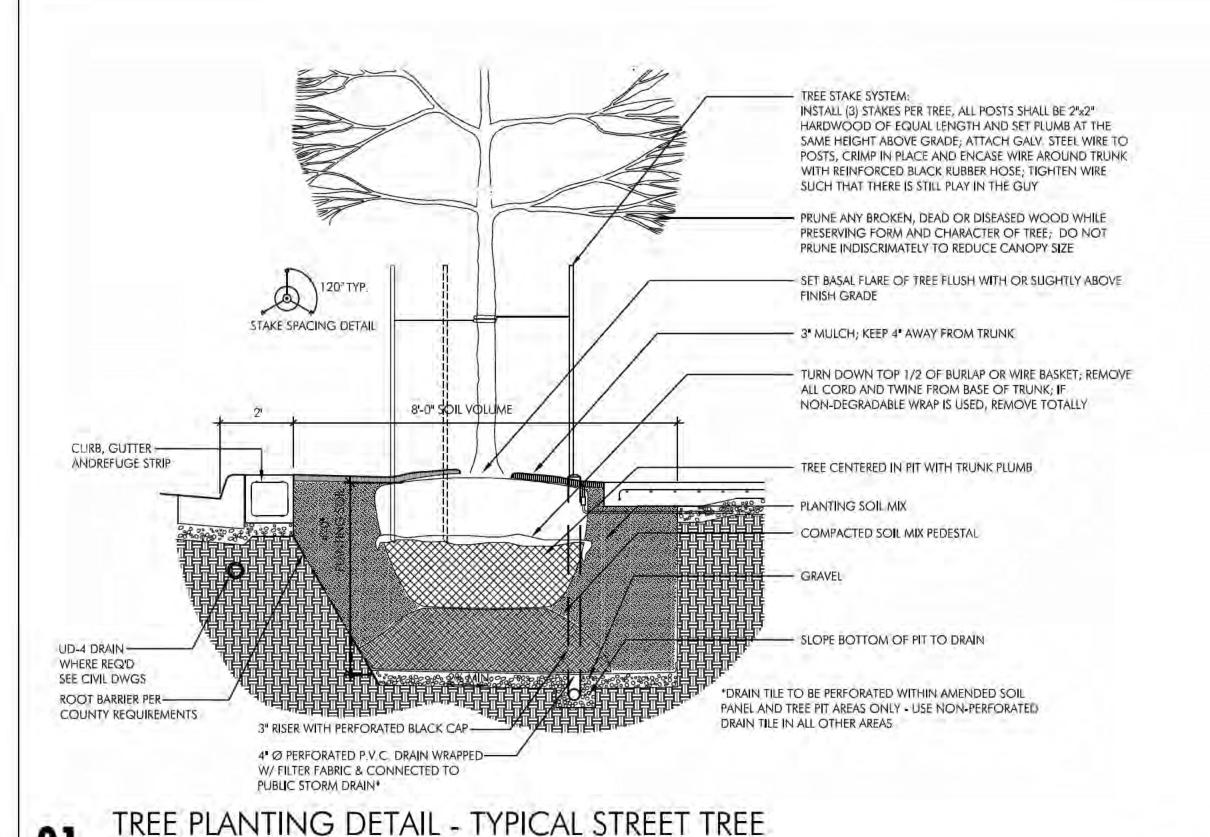
DATE DESCRIPTION

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

DATE: APRIL 26, 2011

FILE No. 7403-07-001

SHEET L4.7



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

CURB, GUTTER AND -

REFUGE STRIP

UD-4 DRAIN ---

WHERE REQ'D

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

COUNTY REQUIREMENTS

SEE CIVIL DWGS

ROOT BARRIER PER COUNTY REQUIREMENTS 2'-0" REFUGE STRIP

TREE OPENING VARIES SEE PLANS FOR VARIATIONS REFUGE STRI 4" MIN TO BOC 2' MIN TO PAVING 1'-6" THICKENED CONCRETE AT CANTILEVERED SIDEWALK PLANTING SOIL MIX - SOIL MIX CURB, GUTTER AND-PEDESTAL REFUGE STRIP TO THE HOLD SHOWS UD-4 DRAIN ----WHERE REQ'D TERRESE SE SE LIES ES CONTROL SEE CIVIL DWGS ROOT BARRIER PER -COUNTY REQUIREMENTS 8-0" WIDTH OF TREE SPACE

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

- THICKENED CONCRETE AT

CANTILEVERED SIDEWALK

SOIL MIX PEDESTAL

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

TREE OPENING VARIES SEE PLANS FOR VARIATIONS 4' MIN TO BOC ---PLANTING SOIL MIX -CURB AND GUTTER UD-4 DRAIN-WHERE REQ'D SEE CIVIL DWGS ROOT BARRIER PER COUNTY REQUIREMENTS 8'-0" WIDTH OF TREE SPACE

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

4º MIN TO BOC 2-0 —THICKENED CONCRETE AT CANTILEVERED SIDEWALK CURB AND GUTTER SOIL MIX PEDESTAL UD-4 DRAIN-WHERE REQ'D SEE CIVIL DWGS ROOT BARRIER PER

TREE OPENING VARIES

2' MIN TO PAVING

- THICKENED CONCRETE AT

CANTILEVERED SIDEWALK

-PLANTING 50IL MIX

4' MIN TO BOC

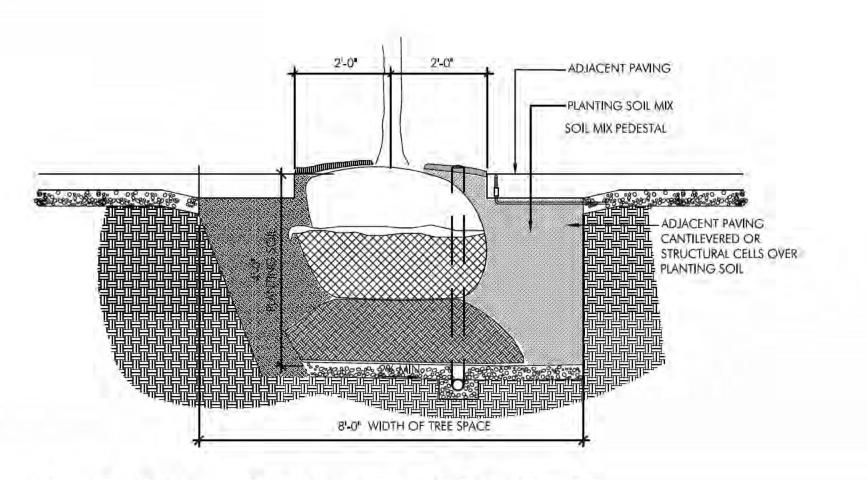
- SOIL MIX

PEDESTAL

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

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

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



TREE PLT DETAIL @ PLAZA - TREE SOIL SPACE

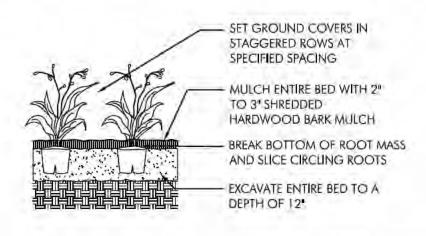
LANDSCAPE NOTES

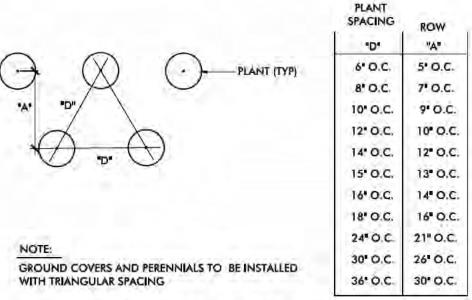
- 1. THE PROPOSED LANDSCAPE WILL BE USED TO MEET THE MINIMUM TREE COVER REQUIREMENTS. LOCATIONS, SPECIES AND QUANTITIES MAY BE ADJUSTED WITH FINAL DESIGN.
- 2. UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED AT SITE PLAN.
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> Application No: RZ 2011-PR-023 Staff: M. Ladd APPROVED DEVELOPMENT PLAN __GDP) (<u>X</u>CDP) (__FDP) (__PRC) (__DP) (__CP) (__SE) (__CSP) (__SP) (__VC) SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED: Date of Final Approval: Nov 20, 2012 (<u>KBOS</u>) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07 & ZONING Sheet 72 of 78

CONTAINER GROWN PLANT; PULL ROOTS OUT OF BALL - 2" TO 3" SHREDDED HARDWOOD BARK MULCH; DO NOT PLACE MULCH IN CONTACT WITH TRUNK BEFORE PLANTING, ADD 3" TO 4" OF WELL-COMPOSTED FOLD BURLAP LEAVES TO BED AND TILL INTO TOP 6" OF UNAMENDED SOIL DOWN INTO GROUND, SET TIP OF BALL FLUSH WITH FINISHED (FOR LARGER SHRUB ROOT BALLS, MAKE 4" DEEPER THAN BALL) UNAMENDED, LOOSENED SOIL ROUGHENED





GROUNDCOVER / PERENNIAL PLT DETAIL

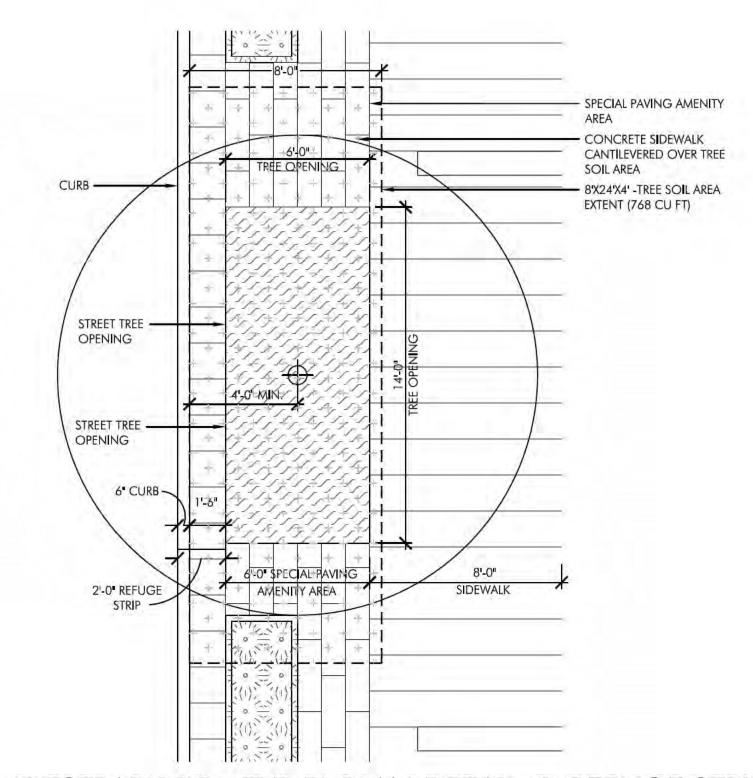
SCALE: 1/2"=1'-0"

DETAILS **TYPICAL**

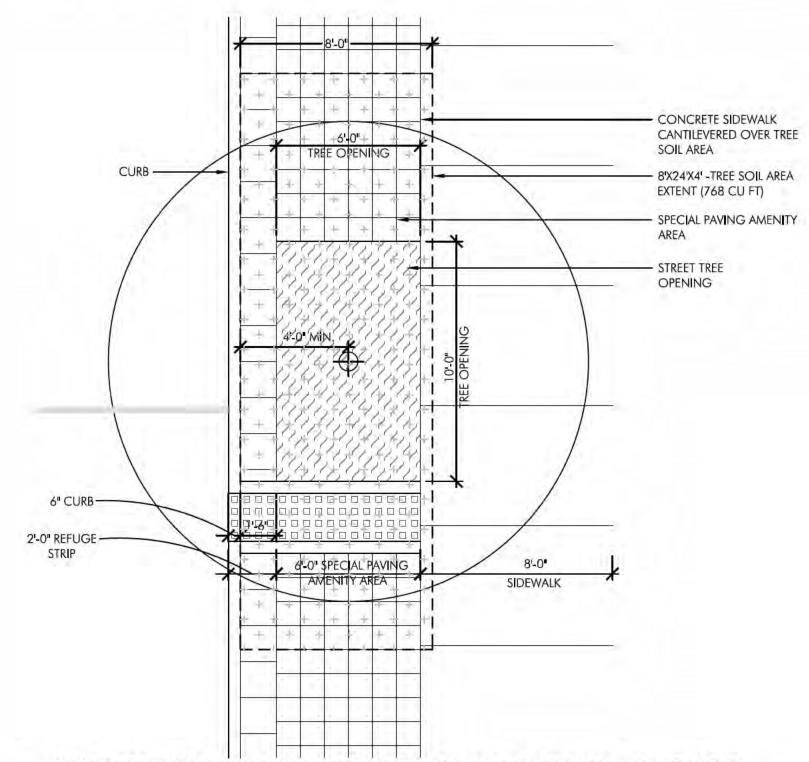
PLAN STATUS 5/25/12 PER COUNTY COMMENT 8/29/12 PER COUNTY COMMEN

0/05/12 PER COUNTY COMMENT DATE DESCRIPTION SCALE H: VARIES

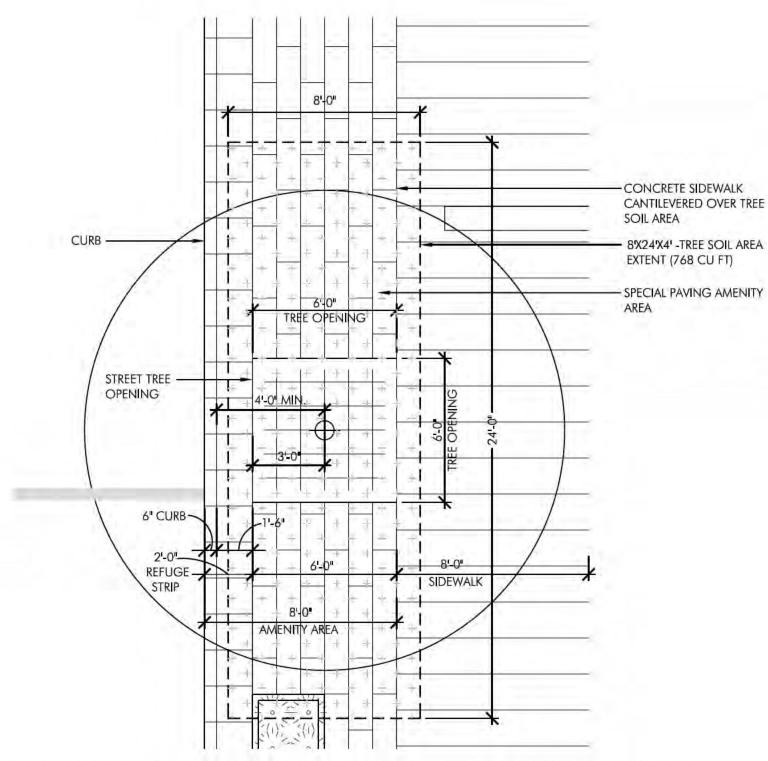
DATE: APRIL 26, 2011 FILE No. 7403-07-001 L4.8 SHEET



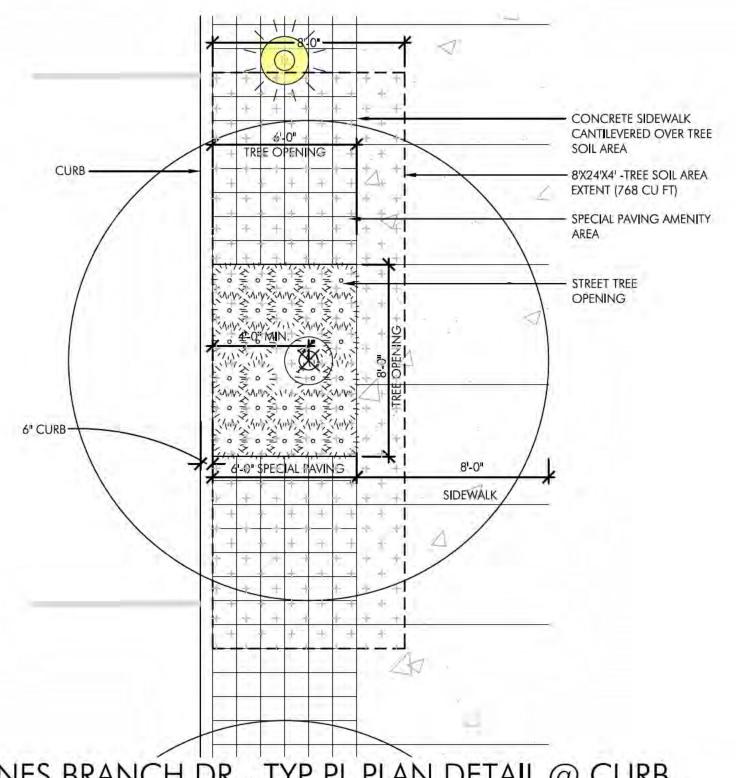
WESTPARK DR - TYP PL PLAN DETAIL @ REFUGE STRIP SCALE: 1/2"=1'-0"



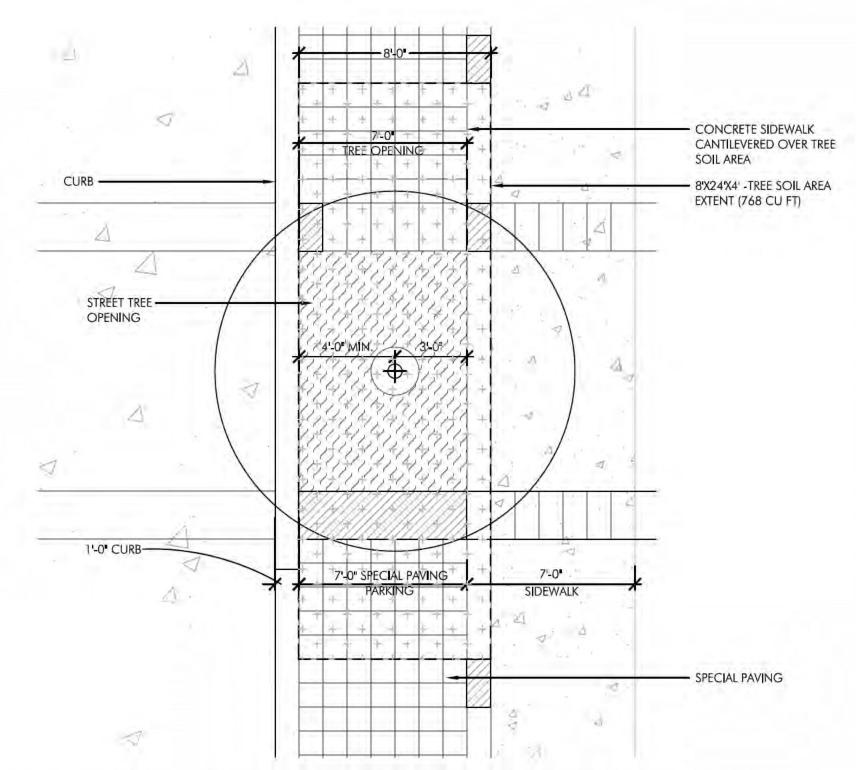
WESTBRANCH DR - TYP PL PLAN DETAIL @ CURB



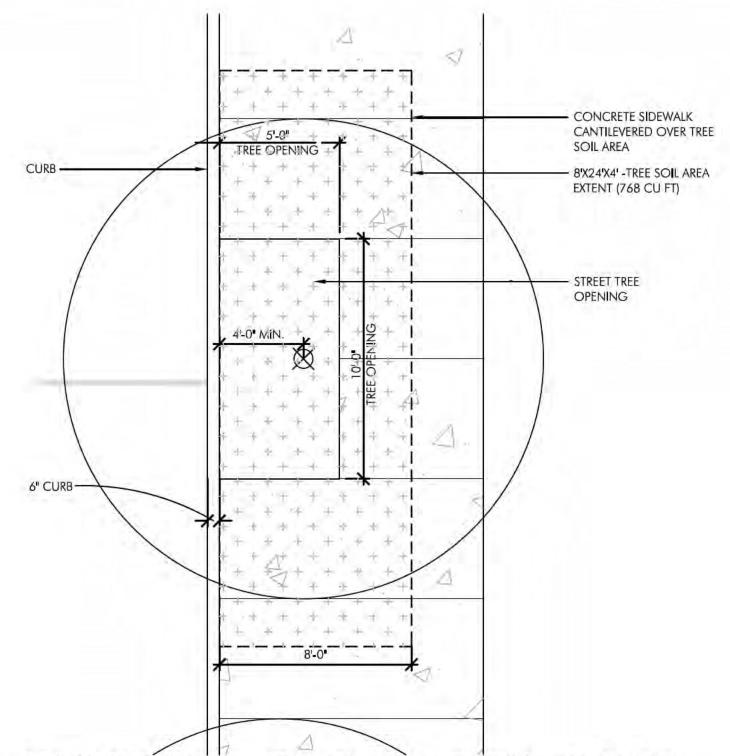
WESTPARK DR - TYP PL PLAN DTL @ REFUGE STRIP W/ GRATE SCALE: 1/2"=1'-0"



JONES BRANCH DR - TYP PL PLAN DETAIL @ CURB



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



PRIVATE STREET - TYP PL PLAN DETAIL @ CURB

Application No: RZ 2011-PR-023 Staff: M. Ladd APPROVED DEVELOPMENT PLAN
(_GDP) (\(\times\text{CDP}\) (_FDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC) SEE PROFFERS DATED: Oct 26, 2012 SEE CONDITIONS DATED: Date of Final Approval: **Nov 20, 2012** (<u>KBOS</u>) (_PC) (_BZA) Comments: Concurr W/ PCA 88-D-005-07 & ZONING Sheet 73 of 78

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

PLANTING DETAILS AND SCHEDULE

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 COMMENTS DATE DESCRIPTION SCALE H: VARIES JOB No.

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

L4.9 SHEET

L	ANDSCAPE COMPUTATIONS - ARBOR ROW - OVE	ERALL CDP	
13-20	1: INTERIOR PARKING LOT LANDSCAPE CALCULATIONS		
	Parking Area (garage) ercent Required	1 00000	see CDP L4.8 for preliminary calculations
Provid	led: Proposed Covered Arbors w/ Vines	21,200	
13-20	2: PERIPHERAL PARKING LOT LANDSCAPE CALCULATIONS		
	e-grade parking structures adjacent to public ROW (LF) 1) tree per forty (40) feet required		see CDP L4.8 for preliminary calculations
Trees	provided in landscape strip, rain garden or streetscape	15	
13-30	1: TRANSITIONAL SCREENING AND BARRIERS		
	erty Zoning District: PTC ent Zoning Districts; I-5, C-7, PDC, PTC/HC		
	itional Screening and Barriers are Not Required		
13-40	1: TREE COVER CALCULATIONS		
Table Step	12.12 10 year Tree Canopy Calculation Worksheet	Totals	Reference
	e Preservation Target and Statement	Totalo	
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. Tr e B1	ee Canopy Requirement Identify gross site area	841 385	§ 12-0511.1A
B2	Subtract area dedicated to parks, road frontage, and		§ 12-0511.1B
B3 B4	Subtract area of exemptions	907.055	§ 12-0511.1C(1)
34 35	Adjusted Gross Site Area (B1 - B2) Identify site's zoning and/or use	807,955 PTC	
36	Percentage of 10-year Tree Canopy Required		§ 12-0510.1 and Table 12.
37	Area of 10-year Tree Canopy Requirements requested?	80,796	V N-
38	Modification of 10-year tree canopy requirements requested? If B8 is yes, then list plan sheet where modification request is	No	Yes or No
B9	located		Sheet number
C. Tre	ee Preservation Tree Preservation Target Area	0	
02	Total canopy area meeting standards of § 12-0400		
23	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)
	Canopy area of trees within Resource Protection Areas and 100-		see CDP C6.0
C8 C9	year floodplains C8 X 1.0	21,708 21,708	
C10	Total of C3, C5, C7 and C9		§ 12-0510.3C(1) If area of C10 is less than B7 then remainder of requirement must be meth through tree planting - go to
	ee Planting		
D1 D2	Area of canopy to be met through tree planting (B7-C10) Area of canopy planted for air quality benefits	59,088 0	
D3	X1.5		§ 12-0510.4B(1)
D4 D5	Area of canopy planted for energy conservation X 1.5	0	§ 12-0510.4B(2)
D6	Area of canopy planted for water quality benefits	0	
D7 D8	X 1.25 Area of canopy planted for wildlife benefits	0	§ 12-0510.4B(3)
D9	X 1.5		§ 12-0510.4B(4)
D10	Area of canopy provided by native trees	0	
D11 D12	X 1.5 Area of canopy provided by improved cultivars and varieties	0	§ 12-0510.4B(5)
D13	X 1.25		§ 12-0510.4B(6)
D14 D15	Area of canopy provided through tree seedlings = X1.0 Area of canopy provided through native shrubs = X1.0		§ 12-0510.4D(1) § 12-0510.4D(1)
D16	Percent of D14 represented by D 15		Must no exceed 33% of D14
D17	Total of canopy area provided through tree planting		see CDP 04/L4.8
D18	Is an offsite planting relief requested?		Yes or No
D19	Tree bank or Tree Fund? Canopy area requested to be provided through offsite banking or		§ 12-0512
	tree fund		
D20	Amount to be deposited into the Tree Preservation and Planting	0	
	Fund		
D21			
D21 E. To E1	tal of 10-year Tree Canopy Provided Total of Canopy Provided through tree preservation (C10)	21,708	
E1 E2	tal of 10-year Tree Canopy Provided Total of Canopy Provided through tree preservation (C10) Total of canopy area provided through tree planting (D17)	83,675	
D21 E. To E1 E2	tal of 10-year Tree Canopy Provided Total of Canopy Provided through tree preservation (C10)		
021 E. To 1 2	tal of 10-year Tree Canopy Provided Total of Canopy Provided through tree preservation (C10) Total of canopy area provided through tree planting (D17)	83,675	

LANDSCAPE COMPUTATIONS

SCALE : NTS

LANDSCAPE NOTES:

- 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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Block	Garage Parking Area (SF)	Required 5% Coverage (1)	Arbor Coverage Provided (1)	% Coverage Provided (1)
A	0	0	0	0
В	35,800	1,790	9,500	27%
С	7,900	395	1,700	22%
D	21,300	1,065	5,000	23%
E	6,800	*Waiver - see CDP C2.0		0
F	23,500	1.175	5.000	21%

(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.

ΚEΥ	BOTANICAL NAME	COMMON NAME	QTY.	STOCK SIZE	STOCK TYPE	10-YR TREE CANOPY FT ²	TREE CANOPY SUB-TOTAL FT ²	REMARKS
	Category I Deciduous Trees							
CF	Carpinus betulus 'Fastigiata'	Columnar Hornbeam	8	3" cal.	B&B	75	600	single leader
	Category II DeciduousTrees							
AG	Acer ginnala	Amur Maple	40	3º cal.	B&B	125	5,000	multistem - 3 stems minimum; full branching
AL	Amelanchier laevis	Allegheny Serviceberry	57	2º cal.	B&B	100	5,700	multistem - 3 stems minimum; full branching
CB	Carpinus betulus	Hornbeam	20	3" cal.	B&B	125	2,500	single leader
MS	Magnolia stellata	Star Magnolia	43	2º cal.	B&B	100	4,300	multistem - 3 stems minimum; full branching
	Category III DeciduousTrees							
BN	Betula nigra	River Birch	20	3" cal.	B&B	175	3,500	multistem - 3 stems minimum; full branching
GT	Gleditsia triacanthos inermis	Honeylocust, thornless	20	3" cal.	B&B	175	3,500	single leader; full branching
NS	Nyssa sylvatica	Black Gum, Tupelo	9	3" cal.	B&B	175	1,575	single leader; full branching; symmetrical
	Category IV DeciduousTrees							
AR	Acer rubrum	Red Maple	38	3" cal.	B&B	250	9,500	single leader; full branching; symmetrical
PA	Platanus × acerifolia 'Bloodgood'	Bloodgood London Planetree	46	3° cal.	B&B	250	11,500	single leader; full branching; symmetrical
QN	Quercus nutali	Nuttall Oak	29	3" cal.	B&B	250	7,250	single leader; full branching; symmetrical
QP	Quercus palustris	Pin Oak	73	3" cal.	B&B	250	18,250	single leader; full branching; symmetrical
QR	Quercus rubra	Red Oak	42	3" cal.	B&B	250	10,500	single leader; full branching; symmetrical
	Cateogory Evergreen Trees							
IZ	llex x Nellie Stevens	Nellie Stevens Holly	27	8'-10'Ht.	B&B	50	1,350	multistem - 3 stems minimum; full branching
		TOTAL 10	0-YEAR TR	EE CANOPY	PROVIDED	BY PLANTING :	83,675	sf
			EXISTING SITE AREA :			841,385		
			TOTAL AREA OF R.O.W. DEDICATION :			33,430	sf sf	
			ADJUSTED GROSS SITE AREA:				sf	
			10% COVERAGE REQUIREMENT =				807,955 80,796	sf

PRELIMINARY TREE PLANTING LIST AND CANOPY COVERAGE

SCALE: NTS

LANDSCAPE NOTES ARBOR ROW
CONCEPTUAL DEVELOPMENT PLAN 20
PROVIDENCE DISTRICT - FAIRFAX COUNT

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: VARIES JOB No.

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

L4.9A

REFERENCE PLAN





Application No: RZ 2011-PR-023 Staff: M. Ladd APPROVED DEVELOPMENT PLAN

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& ZONING Sheet 75 of 78

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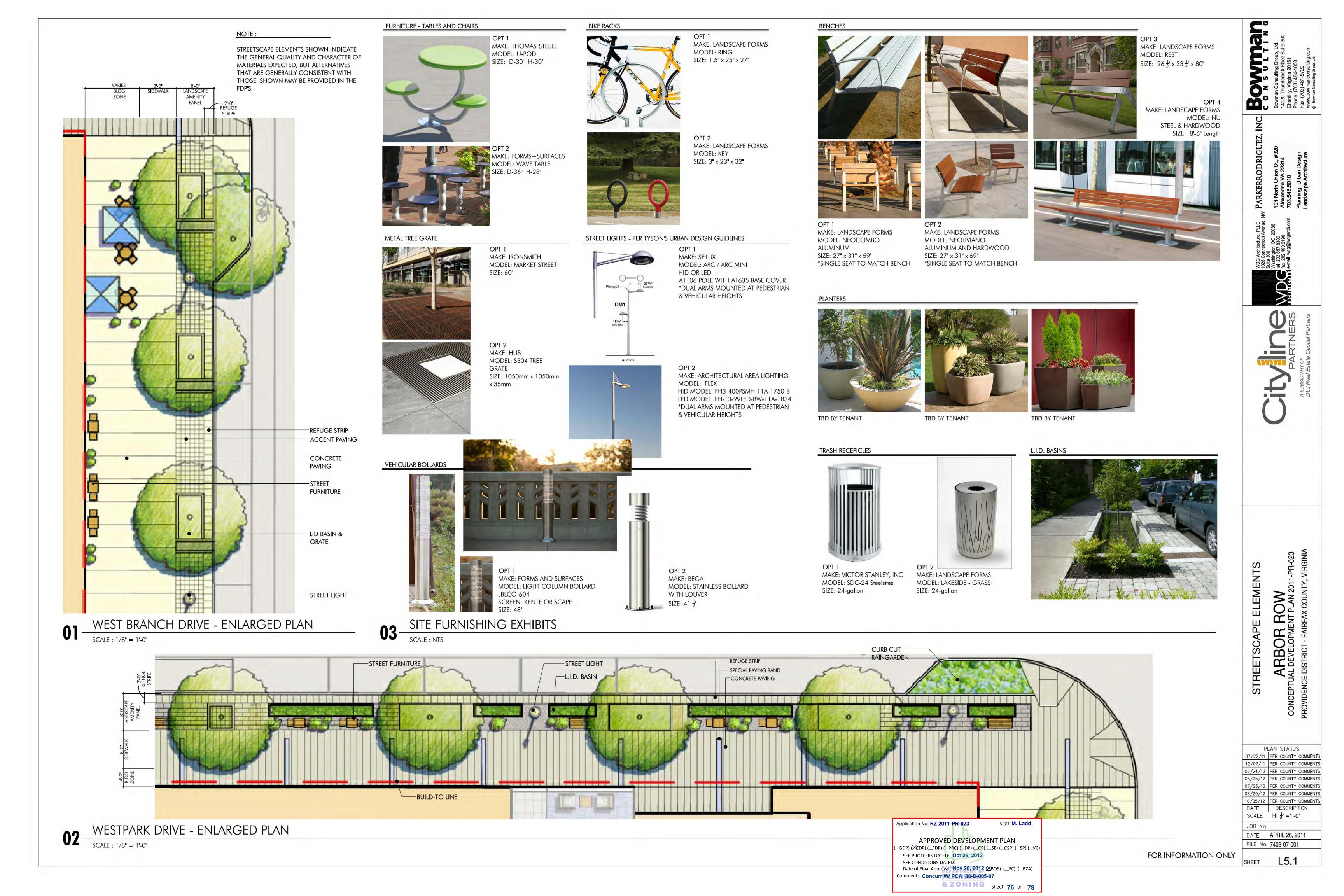
FOR INFORMATION ONLY

PERSPECTIVES STREETSCAPE

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: NTS JOB No. DATE: APRIL 26, 2011

FILE No. 7403-07-001 SHEET L5.0



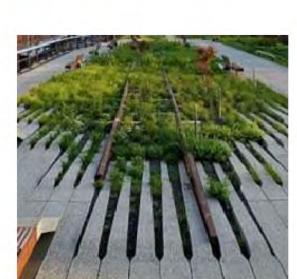
08/29/12 PER COUNTY COMMENTS
10/05/12 PER COUNTY COMMENTS
DATE DESCRIPTION SCALE H: NTS

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

SHEET L5.2

FOR INFORMATION ONLY



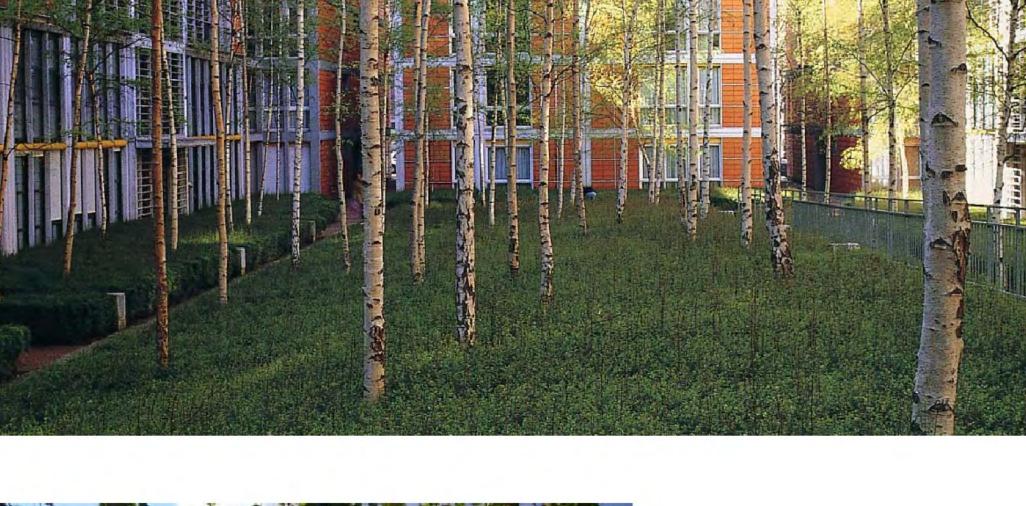












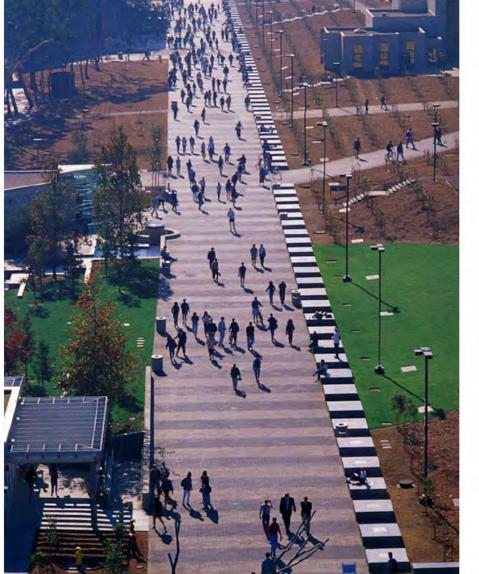






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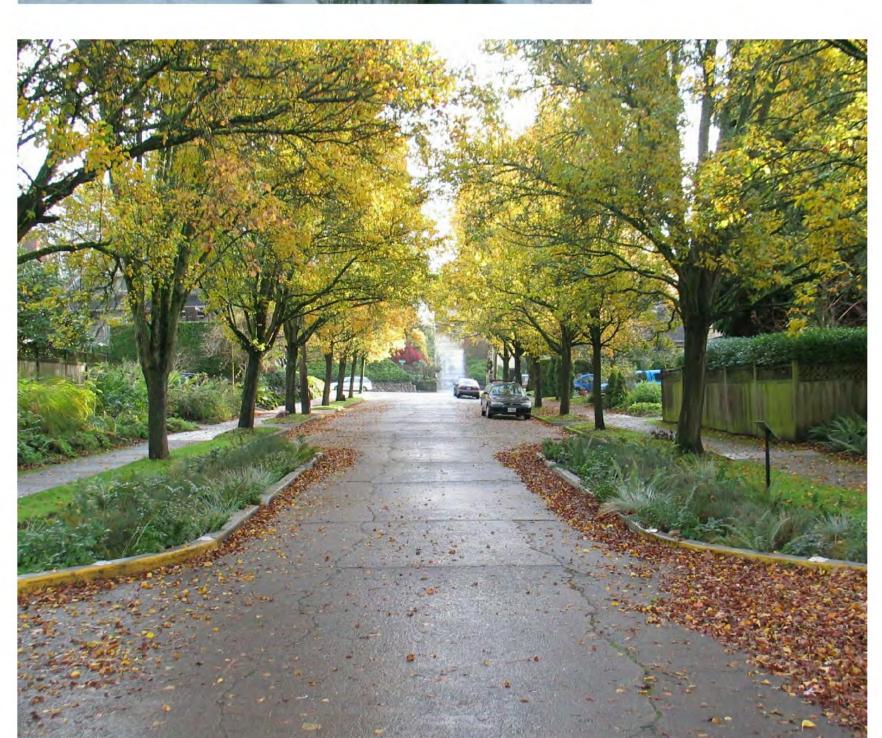
















APPROVED DEVELOPMENT PLAN (_GDP) (_CDP) (_PDP) (_PRC) (_DP) (_CP) (_SE) (_CSP) (_SP) (_VC)

SEE PROFFERS DATED: Oct 26, 2012

SEE CONDITIONS DATED:
Date of Final Approval: Nov 20, 2012 (_BOS) (_PC) (_BZA)

Comments: Concurr W/ PCA 88-D-005-07

& ZONING Sheet 78 of 78

SUSTAINABILITY STRATEGIES:

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



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FOR INFORMATION ONLY

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

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

SHEET L5.3