MONTGOMERY COUNTY PLANNING DEPARTMENT
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MCPB
Item No.
Date: 1/23/2014

Shady Grove Station-Westside, Site Plan No. 820130220

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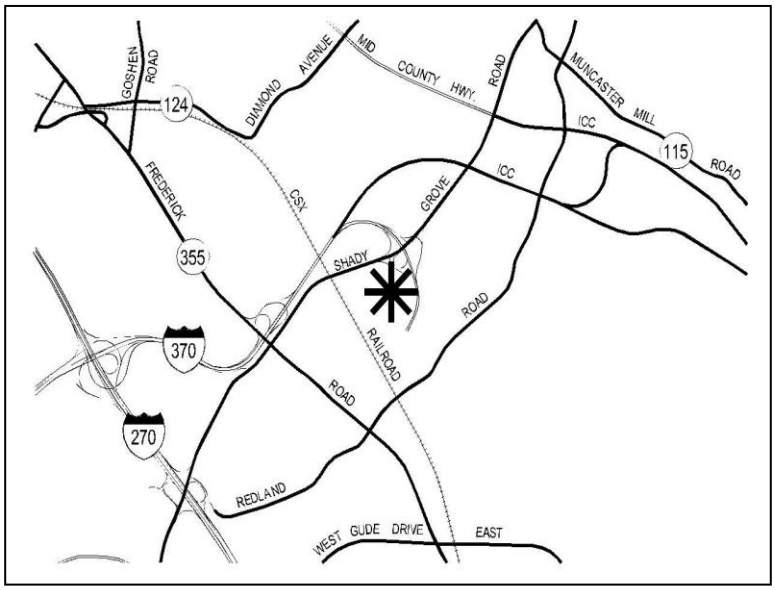
Completed: 1/13/2014

Description

- Request to construct 1,521 residential dwelling units, including 211 Moderately Priced Dwelling Units and 116 Workforce Housing units; 41,828 square feet of retail; a public library; and public use space;
- Located north of Shady Grove Metro Station, south of Shady Grove Road and west of Crabbs Branch Way;
- TOMX-2/TDR Zone; 41.8 gross acres; 2006 Shady Grove Sector Plan
- Filing Date: 4/9/13;
- Applicant: EYA/CSP Associates (Montgomery County and EYA).



Summary

- Staff recommends approval of the Site Plan and Final Forest Conservation Plan with conditions.
- The Planning Board previously approved Preliminary Plan No. 120120080, Shady Grove Station, by Resolution No. 12-89 on September 11, 2012.
- Staff has received no correspondence from notified parties.

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SECTION 1: SITE PLAN RECOMMEDATIONS AND CONDITIONS

Staff recommends approval of Site Plan No. 820130220, Shady Grove Station-Westside, for up to 1,521 residential dwelling units, 41,828 square feet of retail, and a public library on approximately 41.8 gross acres in the TOMX-2/TDR Zone. All site development elements as shown on the site, landscape, and lighting plans stamped by the M-NCPPC on September 18, 2013, are required except as modified by the following conditions:

1. Preliminary Plan Conformance
   The proposed development must comply with the conditions of the approved Resolution No. 12-89 for Preliminary Plan No. 120120080, unless amended and approved by the Planning Board.

2. Density
   This Site Plan is limited to a maximum of 407 residential townhouses, 1,114 multifamily residential units, 41,828 square feet of general retail, and space for a public library.

3. Affordable Housing
   a. The proposed development must provide 167 multifamily residential dwelling units and 44 townhouses as moderately priced dwelling units (MPDUs) in accordance with an Agreement-to-Build with the Department of Housing and Community Affairs ("DHCA").
   b. The proposed development must provide 91 multifamily residential dwelling units and 25 townhouses as Workforce Housing units.
   c. Prior to the release of any building permits, the Applicant shall execute the MPDU and Workforce Housing agreements.
   d. MPDU and Workforce Housing units will be phased with each multifamily building and row of residential townhouses.

4. Transferable Development Rights (TDRs)
   a. Prior to record plat for each multifamily building, the Applicant must secure the following TDRs: 19 TDRs for Building A; 18 TDRs for Building B; 15 TDRs for Building C; and 12 TDRs for Building D. The Applicant must reflect serialization and liber/folio references for these TDRs on the applicable record plat(s).

5. Transportation
   a. The Applicant must satisfy the *Shady Grove Sector Plan's* traffic mitigation requirements by entering into a Traffic Mitigation Agreement with the Planning Board and Montgomery County Department of Planning (MCDOT). In the Agreement, the Applicant must participate in the Greater Shady Grove Traffic Management Organization (TMO) to assist in achieving the non-auto-driver mode share goals of the Sector Plan. As a new development generating 100 or more additional new peak-hour vehicular trips, the non-auto-driver mode share goals are a reduction of 65% of the employees' vehicular trips and 50% of the residential vehicular trips. The Agreement must be executed prior to approval of the first building permit for the development.

b. The Applicant must design, construct, maintain and provide public easements for Roads P and I, subject to the following conditions:
    i. Public easements must be granted for the roadways and must be reviewed and approved by MCDOT and M-NCPPC.
    ii. The design of the roads shall correspond to Montgomery County Road Code standard (2005.02 modified) for a similar public road, as modified in the cross-sections contained in the approved Preliminary Plan or as shown on the Certified Site Plan.
    iii. Installation of any public utilities must be permitted within such easement.
    iv. The roads may not be closed for any reason unless approved by MCDOT.
    v. The public access easement must be volumetric to accommodate uses above or below the designated easement area.
    vi. Montgomery County may require the Applicant to install appropriate traffic control devices within the public easement and the easement must grant the right to the County to construct and install such devices.
    vii. Maintenance and Liability Agreements will be required for each Easement Area. These agreements must identify the Applicant's responsibility to maintain all of the improvements within the Easement Area in good fashion and in accordance with applicable laws and regulations.
    viii. Montgomery County will inspect these streets and ensure that each has been constructed in accordance with the corresponding Road Code standard for a similar public road as modified by the cross-sections contained in the Preliminary Plan or as shown on the Certified Site Plan.
    ix. The Applicant is obligated to remove snow and provide repairs to keep the roads in working order and open, and if, for any reason, the Applicant does not, the County must have the right, but is not obliged, to remove snow and/or provide repairs.

c. The record plat must reflect a public use and access easement over all private streets and adjacent parallel sidewalks and must clearly delineate the boundaries of the easement areas.

d. The Applicant must provide 27 inverted-U bike racks, or an alternative as approved by Staff, in the following locations:
    i. Eight distributed on the east and west sides of the community building, pool and open play area
    ii. Four in front of the pocket park
    iii. Two in front of the HOA community garden
    iv. Thirteen distributed in front of the main entrances of the four multi-family residential buildings in a weather-protected area, where possible.

e. The Applicant must provide bicycle storage rooms for at least 20 bicycles in the parking garages of the four multifamily buildings, near an elevator in a well-lit area.

f. The Applicant must provide a bike sharing station/dock in front of proposed Building B.

6. Environment
   a. The Final Forest Conservation Plan, associated variance, and the Shady Grove Station Public Infrastructure Improvements are approved subject to the following conditions:

      i. Prior to any land disturbing activities, other than demolition of the existing buildings by Montgomery County or related site work, the Applicant must provide a Certificate of Compliance for 8.94 acres of off-site forest banking to satisfy planting requirements for Shady Grove Station-Westside.
      ii. Prior to the release of the first building permit for Phase I, the Applicant must provide a Certificate of Compliance for 1.55 acres of off-site forest banking to satisfy a portion of the planting requirements for the public infrastructure improvements. This may be combined with the 8.94 acres listed in the above condition for a total off-site banking requirement of 10.49 acres.
      iii. Prior to the release of the first use and occupancy permit for Phase I, the Applicant must provide nine *Acer rubrum* (red maple) trees along the Metro Access Road as shown on Sheet FCP-11 to fulfill the remainder of the planting requirement for the Public Infrastructure Improvements.
      iv. Prior to the release of the first use and occupancy permit for Phase I, the Applicant must provide three *Quercus phellos* (willow oak) trees as shown on Sheet FCP-12 to mitigate for the removal of Variance tree #T-51. The three replacement trees must be a minimum of 3" caliper each.

7. Noise
   a. Prior to submission of building permits for multifamily Buildings B and C and the residential townhouses that are adjacent to the CSX rail tracks, the Applicant must provide:

      i. A certification from an engineer specializing in acoustics that the building shells have been designed to attenuate projected exterior noise levels to an interior level not to exceed 45 dBA Ldn. The Applicant must commit to construct the units in accord with these design specifications, with any changes that may affect acoustical performance to be approved by the engineer and the Staff in advance of installation.

      ii. Prior to issuance of a Use and Occupancy Permit, certification from an engineer specializing in acoustics that the building shell has been built to the designed specifications to attenuate projected exterior noise. For Buildings B and C, the Applicant must provide one certification per floor, per building along the CSX tracks. For the townhouses along the CSX tracks, the Applicant must provide one certification per string of townhouses.

iii. Along the proposed noise wall, the Applicant must install a green screen on the wall at the following intersections: Parcel G, Parcel H, Parcel J, Parcel L, Parcel C and Road H. The green screen must be a minimum of 20 feet in width and 15 feet in height.

8. Placemaking Plan

The Applicant must provide public use and open space amenities in accordance with the "Placemaking and Amenity Plan-Shady Grove Station" ("Placemaking Plan") under the following stipulations:

a. The Applicant must provide Staff with post-construction documentation at each Phase, showing compliance with the Placemaking Plan.
b. If public art is provided, including at the traffic circle (Roads I, K and P), the Public Arts Trust Steering Committee must review the art proposal and the Placemaking Plan must be amended, as needed.
c. The Applicant must ensure that all installed site amenities and materials must meet the applicable building codes.

9. Recreation Facilities

At a minimum, the Applicant must provide the following recreation facilities to satisfy the Planning Board's Recreation Guidelines (1992):

a. One tot lot;
b. Eight picnic/sitting areas;
c. One open play area;
d. One pedestrian system;
e. Five swimming pools;
f. Five indoor community spaces;
g. Four indoor fitness facilities; and
h. One community garden

10. Maintenance

Maintenance of all on-site Public Use Space is the responsibility of the Applicant and subsequent owner(s). This includes maintenance of paving, plantings, lighting, benches, fountains, and artwork on the Subject Property. Maintenance may be taken over by a governmental agency by agreement with the owner and applicable agency.

11. Architecture

The final exterior architectural character, proportion, materials, and articulation must be substantially similar to the schematic elevations shown on the architectural drawings submitted on September 18, 2013, as determined by Staff.

12. Performance Bond and Agreement

Prior to issuance of the first Core and Shell building permit for each relevant phase of development, the Applicant must provide a performance bond(s) or other form of financial surety in accordance with Section 59-D-3.5(d) of the Montgomery County Zoning Ordinance with the following provisions:

a. Applicant must provide a cost estimate of the materials and facilities, which, upon Staff approval, will establish the initial surety amount.
b. The amount of the bond or surety shall include, as applicable, plant materials, on-site lighting, recreational facilities, site furniture, public art, private roads, and entrance piers within the relevant phase of development.
c. Prior to issuance of the first building permit, the Applicant must enter into a Site Plan Surety & Maintenance Agreement with the Planning Board in a form approved by the M-NCPPC Office of the General Counsel that outlines the responsibilities of the Applicant and incorporates the cost estimate.
d. The bond or surety shall be tied to the development program, and completion of plantings and installation of particular materials and facilities covered by the surety for each phase of development will be followed by inspection and reduction of the surety.

13. Development Program

The Applicant must construct the development in accordance with a development program that will be reviewed and approved by Staff prior to the approval of the Certified Site Plan. The development program must include the following items in its phasing schedule:

a. Prior to approval of the Certified Site Plan, demolition of existing buildings may commence.
b. Prior to the release of a Use and Occupancy Certificate for each multifamily building and row of townhouses, street lamps and sidewalks adjacent to that building or row of townhouses must be installed. Street tree planting may wait until the next growing season.
c. Prior to the release of a Use and Occupancy Certificate for each multifamily building and row of townhouses, on-site amenities adjacent to that building or row of townhouses must be installed, including, but not limited to, recreation amenities and public use space.
d. Prior to the release of the first townhouse building permit for Phase 3 as indicated in the Applicant's phasing plan, the community building, pool and open play area must be completed.
e. Clearing and grading must correspond to the construction phasing to minimize soil erosion and must not occur prior to the approval of the Final Forest Conservation Plan, Sediment Control Plan, and Staff inspection and approval of all applicable environmental protection measures and devices.
f. Phasing for installation of on-site landscaping and lighting.
g. Phasing of dedications, stormwater management, sediment and erosion control, afforestation, and other features.

14. Certified Site Plan

Prior to approval of the Certified Site Plan and subject to Staff review and approval, the Applicant must:

a. Provide adequate spot elevations along Roads I, P, and K to ensure ADA accessibility.
b. Provide six additional benches along Road I.
c. Provide vines, such as Trumpet Creeper, Purple Passionflower or similar type vines for the green screens on the garages and noise wall.
d. Include the off-site location for recreation calculations.
e. Specify the type of materials for the following roadway intersections: Roads K and B; Roads H and K; and Roads I, P and K.
f. Include the proposed dog park on the landscape plan and site plan.
g. Include the Final Forest Conservation Plan approval, stormwater management concept approval, development program, inspection schedule, and Site Plan Resolution on the cover sheet.
h. Add a note to the Site Plan stating that "M-NCPPC staff must inspect all tree-save areas and protection devices prior to clearing and grading."
i. Make corrections and clarifications to recreation guidelines, labeling, data tables, and schedules.
j. Ensure consistency of all details and layout between site plan and landscape plan.

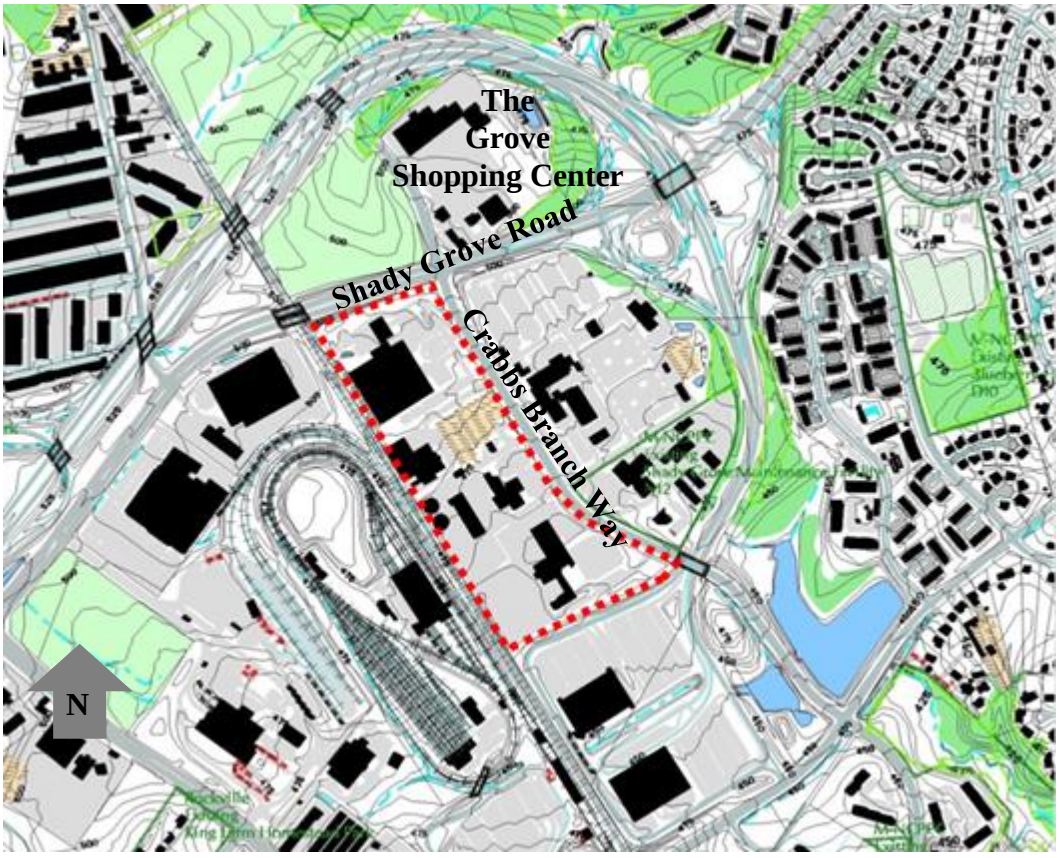
SECTION 2: CONTEXT AND PROPOSAL

SITE DESCRIPTION

Site Vicinity

Shady Grove Station is the approved Preliminary Plan name for the redevelopment of the Montgomery County Service Park (CSP), which is located south of Shady Grove Road, north of Redland Road, east of the CSX rail tracks, and west of the Shady Grove Metro Access Road. Crabbs Branch Way runs north-south through the CSP dividing the area into two segments. All of the CSP is in the Transit Oriented Mixed Use/Transferable Development Rights (TOMX-2/TDR Zone).

Shady Grove Station-Westside constitutes the western portion of the Shady Grove Station development, which is west of Crabbs Branch Way as shown in the map below. Immediately northeast of the intersection of Shady Grove Road and Crabbs Branch Way is the Grove Shopping Center in the Residential-Mixed Use Development, Specialty Center, Commercial Base/Transferable Development Rights (RMX-2C/TDR) zone, while the new David F. Bone Equipment Maintenance and Transit Operations Center (EMTOC) is located at the northwest intersection of Shady Grove Road and Crabbs Branch Way in the Industrial Park (I-3) zone.



Shady Grove Station-Westside Site Vicinity

The Shady Grove Sector Plan refers to the western segment of the CSP as Metro North-CSP and the eastern segment as Jeremiah Park. The Parks Department Maintenance and Training Center and the Montgomery County Public Schools Bus Depot are located in the eastern segment.

Site Analysis

The Property is generally flat. The southern area close to the Metro Station is generally lower, while the northern portion close to Shady Grove Road is slightly higher. Salt domes, surface parking areas for trucks and Ride-On buses, and low-rise office buildings are located on the west of Crabbs Branch Way. Stormwater runoff drains primarily from west to east across the site, and is currently collected and conveyed to a regional stormwater pond in the northwest quadrant of the intersection of Redland Road and Crabbs Branch Way. The Property lies within the Rock Creek Watershed. There are no known historical or cultural significant resources on the site, and the site is served with public water and sewer.

Overview of the Montgomery County Service Park, looking southwest

PROJECT DESCRIPTION

Previous Approvals

The Planning Board approved Preliminary Plan No. 120120080, Shady Grove Station, via Resolution No. 12-89 for all of the Montgomery County Service Park (CSP) redevelopment on September 11, 2012. The Preliminary Plan limited the CSP redevelopment to: 1,458 multifamily residential units; 752 residential townhouses; 41,828 square feet of retail; 131,422 square feet of office; a library; an elementary school site; and a four-acre local park.

Smart Growth Initiative

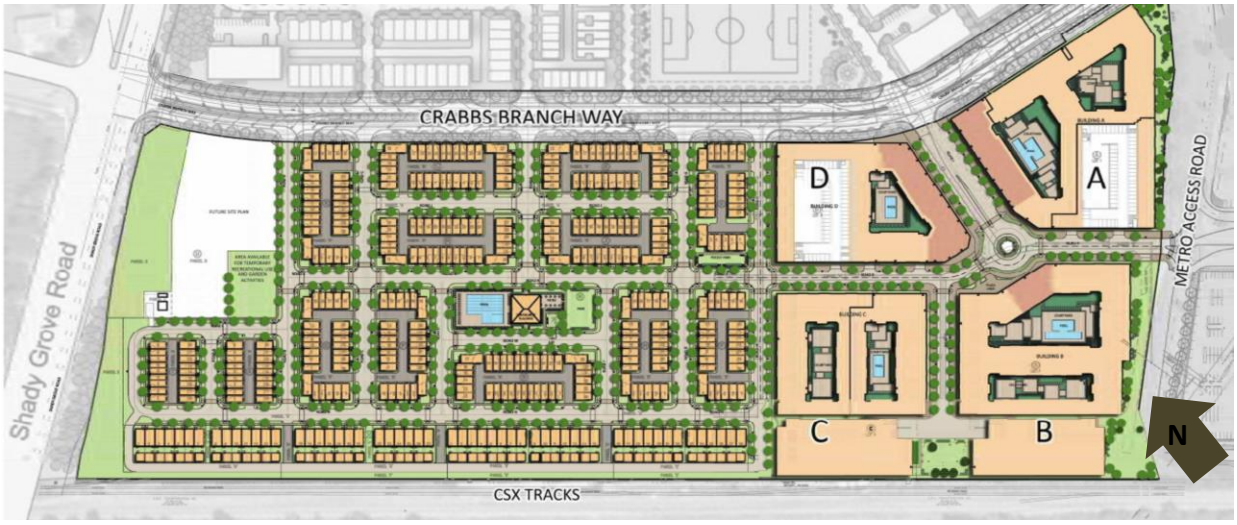
The County Executive, in September 2008, established the Smart Growth Initiative to redevelop the County Service Park (CSP), as envisioned in the *Shady Grove Sector Plan* (2006), and to provide a new site for the Public Safety Training Academy (PSTA). The County has purchased several properties to relocate existing CSP uses, including two properties at the northwestern intersection of Crabbs Branch Way and Shady Grove Road. The new David F. Bone Equipment Maintenance and Transit Operations Center (EMTOC) is now located on these two properties. On December 20, 2010, EYA and Montgomery County entered into a Master Planning and Real Estate Purchase Agreement. This agreement gave EYA the exclusive right to purchase and redevelop the western side of Crabbs Branch Way and to serve as the master planner for all of the CSP. Shady Grove Station-Westside represents the continued implementation of the Smart Growth Initiative.

Proposal

EYA of Bethesda, MD (EYA) will redevelop Shady Grove Station-Westside with 1,521 residential dwelling units, including 211 moderately priced dwelling units (MPDUs) and 116 Workforce Housing (WF) units; 41,828 square feet of retail; and a public library. An office building, approved in the Preliminary Plan at Shady Grove Road and Crabbs Branch Way is not included in this Site Plan application.

Four multifamily residential buildings (A, B, C, and D in the figure below) with 1,114 residential units are located in the southern portion of the site that is adjacent to the Metro Station. North of the multifamily buildings are 407 residential townhouses. A central park, a community building, a swimming pool and other smaller public use spaces define the townhouse section of the development. A network of new private streets between Crabbs Branch Way and CSX rail tracks will provide access to the residential townhouses and multifamily buildings.

EYA will provide all internal private streets and amenities for the proposed development. Montgomery County will provide external improvements, including the reconstruction of Crabbs Branch Way into an urban boulevard; utility upgrades; pedestrian upgrades at the Shady Grove Metro Station; and a trail system around the regional stormwater management pond at Crabbs Branch Way and Redland Road. These improvements are associated with Mandatory Referral No. 2014019, which is reviewed concurrently with this application.



Overall Site Plan for Shady Grove Station-Westside

Multifamily Buildings

Four mid-rise multifamily residential buildings are located immediately north of the Metro Station. These buildings, which vary in height from 48 feet to 70 feet, are located along Roads K, P and I. Ground floor retail is proposed for Buildings A and D, while Building B has the proposed library. No retail is associated with Building C. Architecturally, all multifamily buildings are designed with traditional balconies, awnings, and Juliet balconies. Brick is the primary façade material for the four buildings. Both Buildings A and D have residential patios that front onto Crabbs Branch Way. There are also patios on Building D that front onto Street H. Structured parking, interior court-yards, and swimming pools are provided with each multi-family building.

Proposed multifamily residential buildings

Multifamily residential buildings at the intersection of Roads I, P and K

Townhouses

Contemporary style townhouses are proposed with brick facades, and flat roofs that accommodate terraces on upper levels. Most of the townhouses have rear loaded garages, while the townhouses adjacent to the CSX tracks have detached garages.

Townhouse section of Shady Grove Station-Westside

Proposed Townhouse Elevations

Phasing Plan

Shady Grove Station-Westside will be implemented in four phases as follows:

Phase 1
- Multi-family (Building A): 334 dwelling units and ±20,000 sq.ft of retail
- Townhouses (Section B): 124 townhouses

Phase 2
- Multi-family (Building D): 308 dwelling units and ±20,000 sq.ft of retail
- Townhouses (Section C): 138 townhouses

Phase 3
- Multi-family (Building C): 263 dwelling units
- Townhouses (Section D): 145 townhouses

Phase 4
- Multi-family (Building B): 209 dwelling units and a public library

Each phase will provide both moderately priced dwelling units (MDPUs) and Workforce Housing (WF) units as indicated in the table below:

	Multi-Family Residential				**Townhouses**		
	Phase 1 (Building A)	Phase 2 (Building D)	Phase 3 (Building C)	Phase 4 (Building B)	Phase 1 Section B	Phase 2 Section C	Phase 3 Section D
Market Rate Units	257	236	203	160	105	117	116
MPDUs	49	47	39	32	13	14	17
Workforce Housing Units	28	25	21	17	6	7	12
Total Units	**334**	**308**	**263**	**209**	**124**	**138**	**145**

COMMUNITY OUTREACH

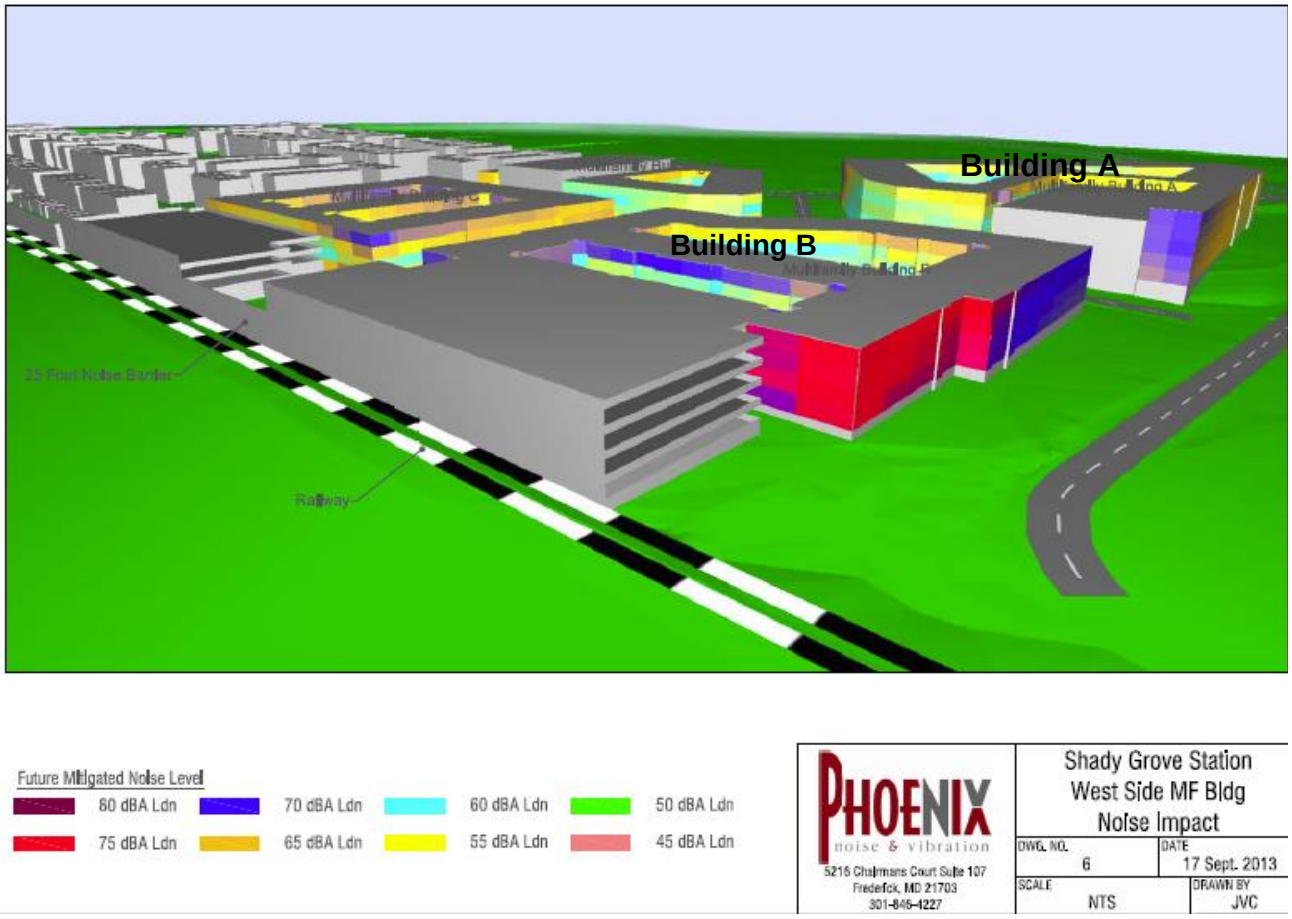
The Applicant has complied with all the required submission and noticing requirements for the Site Plan. On February 13, 2013, the Applicant held its pre-submission meeting at the Parks Department Training Center on Crabbs Branch Way. The Applicant has also met twice with Shady Grove Civic Alliance to discuss this Site Plan. As of the date of this report, staff has received no emails, phone calls, or written responses on the submitted Site Plan.

SECTION 3: SITE PLAN REVIEW

DEVELOPMENT ISSUES

Noise

Noise is an issue of concern for this development, which is surrounded by significant noise sources including Crabbs Branch Way, Shady Grove Road, the CSX railroad tracks, and the Metro Access Road. According to a report by the Applicant's noise consultant, Phoenix Noise and Vibration (October 10, 2013), residences and outdoor areas abutting these noise sources will be subjected to exterior noise levels exceeding the 65 dBA Ldn noise standard for urban areas in Montgomery County. The Applicant is proposing a 25-foot high noise barrier along the CSX rail tracks; however, additional building measures must be incorporated to achieve the County noise standard of 45 dBA Ldn for building interior.



Proposed Multifamily Residential Buildings A and B with noise impacts.

ENVIRONMENT

Preliminary Forest Conservation Plan

Preliminary Forest Conservation Plan #120120080, approved on February 1, 2013, covered all 97.61 acres of the Shady Grove Station development, permitted the clearing of a total of 5.31 acres of forest, and required 19.94 acres of afforestation and reforestation. A variance request approved with the Preliminary Forest Conservation Plan allowed the removal of 18 specimen trees and permitted impacts to the Critical Root Zone (CRZ) of an additional four trees.

Final Forest Conservation Plan for Shady Grove Station-Westside

Minor changes to the development in this Site Plan have reduced the total afforestation and reforestation requirement for the entire site to 19.37 acres. Of this total, 8.94 acres of afforestation and reforestation are required to be completed for Shady Grove Station-Westside, which the applicant is proposing to meet through 8.94 acres of forest planting (or 17.88 acres of forest preservation) in an approved off-site forest bank. This leaves an obligation of 10.43 acres remaining for implementation in later phases of the development of Shady Grove Station.

The proposed Final Forest Conservation Plan also incorporates several public infrastructure improvements required to serve the development of Shady Grove Station, including improvements to Crabbs Branch Way, a sewer line extension, and construction of a paved trail around a portion of the Crabbs Branch Regional Stormwater Pond. These Public Infrastructure Improvements are included in Mandatory Referral No. 2014019 and reviewed concurrently as a separate action, have a net tract area of 4.2 acres not counted in this Site Plan. Impacts from these improvements will remove an additional 1.19 acres of forest and result in a mitigation requirement of 1.77 acres of forest planting. The Montgomery County Department of General Services will satisfy the planting requirement with 0.22 acres of landscape credit, to be achieved through the planting of nine *Acer rubrum* (red maple) trees along the Metro garage entrance road, and with 1.55 acres of forest planting (or 3.10 acres of forest preservation) in an approved off-site forest bank. Therefore, approval of this Final Forest Conservation Plan also fulfills the Chapter 22A Forest Conservation Law requirements for Mandatory Referral MR2014019.

Certificates of Compliance demonstrating compliance with Forest Conservation requirements must be submitted to the Planning Department prior to the release of building permits for the first building(s) constructed in Shady Grove Station-Westside. The Applicants may submit separate Certificates of Compliance for the Site Plan and Mandatory Referral portions of the development, or the requirements can be met through one Certificate of Compliance totaling 10.49 acres of forest planting (or 20.98 acres of forest preservation) in an approved forest conservation bank.

No on-site Category I Forest Conservation easements are proposed as part of the Final Forest Conservation Plan.

Variance

The Planning Board approved the original tree variance request submitted with the Preliminary Forest Conservation Plan, which allowed the removal of 18 specimen-size trees in the overall Shady Grove Station development. Ten of the specimen-size trees will be removed for Shady Grove Station-Westside. The Shady Grove Public Infrastructure Improvements project by Montgomery County will need to remove one additional specimen tree, number T-51, and impact five additional trees which were not approved in the original variance. The following discussion applies to the new variance request for removal of this tree and impacts to five additional trees not covered by the original variance approval.

Forest Conservation Variance - Section 22A-12(b) (3) of Montgomery County Forest Conservation Law provides criteria that identify certain individual trees as high priority for retention and protection. Any impact to these trees, including removal of the subject tree or disturbance within the tree's critical root zone (CRZ) requires a variance. An applicant for a variance must provide certain written information in support of the required findings in accordance with Section 22A-21 of the County Forest Conservation Law. The law requires no impact to trees that measure 30 inches or greater Diameter at Breast Height (DBH); are part of a historic site or designated with a historic structure; are designated as a national, State, or County champion tree; are at least 75 percent of the diameter of the current State champion tree of that species; or trees, shrubs, or plants that are designated as Federal or State rare, threatened, or endangered species. The applicant has submitted a variance request for the impacts/removal to trees with the proposed layout (Attachment 4). The Shady Grove Public Infrastructure Improvements project will remove one tree that is 30 inches and greater, DBH, and impact, but not remove, five others that are considered high priority for retention under Section 22A-12(b) (3) of the County Forest Conservation Law.

Table 1: Trees to be removed or potentially removed

Tree Number	Species	DBH	Status
T-51	*Quercus phellos*	34"	Remove

Table 2: Trees to be affected but retained

Tree Number	Species	D.B.H	CRZ Impact	Status
T-71	*Quercus phellos*	30"	0.33%	Save
T-72	*Quercus phellos*	32"	3.69%	Save
T-73	*Quercus phellos*	37"	8.35%	Save
T-75	*Quercus phellos*	31"	3.46%	Save
T-76	*Quercus phellos*	34.5"	6.73%	Save

Unwarranted Hardship Basis

The proposed development is in accordance with both the intent and recommendations of the *Shady Grove Sector Plan* and the TOMX-2/TDR Zone, both of which are intended to create higher density uses in the vicinity of the Shady Grove Metro Station. The proposed development is adjacent to the Metro Station and it within the Metro neighborhood, which is part of the urban village recommendation in the Sector Plan. The combination of an urban scale of development, medium-to-high density residential development, and associated amenities has constrained the site; therefore, the entire site will be intensely developed to achieve the Sector Plan's vision for this area.

Variance tree number T-51 now lies near the center of the limit of disturbance for the sewer line extension required to serve the proposed development. Saving this tree would require a realignment of the sewer line further into the road accessing the Metro garage on WMATA property, causing disruption of the access to the Metro garage.

Trees number T-71, T-72, T-73, T-75 and T-76 lie along the southwestern edge of the Metro garage access road and will be minimally impacted by construction and are therefore proposed to be saved. Not allowing the removal of Variance tree No. T-51, and the impacts to Variance trees No. T-71, T-72, T-73, T-75 and T-76 would require major changes to the proposed development whose current layout is consistent with the Sector Plan. Staff concurs that the Applicant has a sufficient unwarranted hardship to warrant a variance request.

Section 22A-21 of the County Forest Conservation Law sets forth the findings that must be made by the Planning Board or Planning Director, as appropriate, in order for a variance to be granted.

Variance Findings - Staff has made the following determination based on the required findings that granting of the requested variance:

1. *Will not confer on the applicant a special privilege that would be denied to other applicants.*
   The proposed design has attempted to balance all of the competing factors that constrain the site. One variance tree will be removed; however, impacts to the other variance trees are limited and they will be preserved. Given the intensity of the development, impacts to variance trees are unavoidable. Staff believes that reasonable steps have been taken to minimize impact to variance trees, and granting the variance will not confer a special privilege to the applicant.

2. *Is not based on conditions or circumstances which are the result of the actions by the applicant.*
   The requested variance is based on the constraints of the site as well as the density of the proposed development, and the public facilities and amenities as recommended in the Sector Plan, rather than the conditions or circumstances generated by the Applicant's actions.

3. *Is not based on a condition relating to land or building use, either permitted or non-conforming, on a neighboring property.*

   The requested variance is a result of the requirements of the development on the subject property and not a result of land or building use on a neighboring property.

4. *Will not violate State water quality standards or cause measurable degradation in water quality.*

   The Department of Permitting Services (DPS) has approved a final stormwater management (SWM) plan (January 8, 2014) for the proposed development (Attachment 3 (ii). Currently, runoff is treated by the Crabbs Branch Regional stormwater management pond downstream of the site. The SWM concept plan incorporates a combination of on-site structural water quality treatment facilities and Environmental Site Design practices, including micro-scale treatment facilities and permeable pavement. Runoff in excess of the ESD treatment volume will continue to be treated by the Crabbs Branch Regional pond. The addition of on-site ESD practices should improve the water quality of runoff generated by this site. Therefore, staff concurs that the project will not violate State water quality standards or cause measurable degradation in water quality.

Mitigation for Trees Subject to the Variance Provisions – One tree is proposed for removal as a result of the proposed development. Existing policy dictates that replacement should occur at a ratio of approximately 1" DBH for every 4" DBH removed, using trees that are a minimum of 3" DBH. This means that for the 34 caliper inches removed, the required mitigation will be 9" of replacement DBH resulting in three native canopy trees with a minimum size of 3" DBH. While these trees will not be as large as the trees lost, they will provide some immediate canopy and will help augment the canopy coverage. Sheet FCP-12 of the Final Forest Conservation Plan shows the approximate planting locations of the three *Quercus phellos* trees to mitigate the loss of tree #T-51.

No mitigation is recommended for trees impacted but retained.

County Arborist's Recommendation on the Variance - In accordance with Montgomery County Code Section 22A-21(c), the Planning Department is required to refer a copy of the variance request to the County Arborist in the Montgomery County Department of Environmental Protection for a recommendation prior to acting on the request. The County Arborist has recommended approving the variance request (Attachment 4).

Variance Recommendation - Staff recommends that the variance be granted.

Noise

The Applicant's consultant has proposed several measures, including using garages as noise barriers and a 25-foot high noise barrier to further mitigate the ground level noise that will impact residences along the CSX rail tracks. Additionally, outdoor activity areas have been placed in the site's interior farther from road noise sources.

Even with these site design features and noise barriers, some building facades, especially at upper levels, will be exposed to noise levels above 65 dBA Ldn. Mitigating these noise impacts will require building construction techniques and materials capable of reducing interior noise levels to 45 dBA Ldn or less. Buildings exposed to higher noise levels will require the use of building components with higher Sound Transmission Class (STC) ratings to reduce interior noise to acceptable levels. The STC needed ratings cannot be precisely determined until a building shell analysis is completed. This will happen prior to the submission of building permit applications (Attachment 6 is the Applicant's Noise Analysis).

Noise impacts will be greatest at the southwest corner of Building B, where noise levels slightly above 75 dBA Ldn may occur. This building is at the corner of the property adjacent to the CSX tracks and the Metro parking garage. Staff requested that a noise wall be investigated in this area to reduce noise levels. The noise study, conducted by Phoenix Noise and Vibration, concluded that construction of a noise wall is problematic in this location for several reasons: First, to be effective, a 25-foot high wall would have to extend 300 feet south from the parking garage for Building B, a considerable distance onto the adjacent WMATA property. Second, the wall might conflict with the emergency vehicle access lane and turnaround on the south side of the development. Third, the wall would be expensive to construct. Fourth, it would only provide noise mitigation for the southwest corner of Building B. And fifth, some architectural modifications to the building would still be required to bring interior noise levels to at or below 45 dBA Ldn. Therefore, Staff does not recommend installing this wall.

MASTER PLAN

Sector Plan Recommendations

Shady Grove Station-Westside is within the Metro North-CSP neighborhood of the Approved and Adopted (2006) *Shady Grove Sector Plan* area. Key Sector Plan recommendations for this neighborhood (Pages 44-45) are the following:

- To accommodate housing options between Casey 6, Casey 7, Metro North-CSP and Jeremiah Park, allow up to 615 base density units on Metro North-CSP that can be increased to 960 base density units if jointly developed with Casey 6 and Casey 7. This base density can be increased by workforce housing, TDRs and MPDUs bonus density up to 1,540 units with bonus density if jointly developed with Casey 6 and Casey 7.
- Achieve a mix of unit types with sufficient townhouses to offer housing choices but limited enough to achieve a series of community open spaces for adequate passive recreation.
- Provide a minimum of 10 percent workforce housing and 20 percent TDRs staying within density limits for the entire County Service Park that allows up to 2, 240 units.
- Permit up to 40,000 square feet of retail and 133,250 square feet of office uses.

- Avoid locating residential directly adjacent to the rail line and the Solid Waste Transfer Station to minimize noise impacts; and locating non-residential buildings or garages directly adjacent to the Solid Waste Transfer Station or WMATA maintenance yard to create a compatible transition to the proposed mixed-use residential areas.
- Provide a library site with structured parking near Shady Grove Road in a manner that creates a focal point as a civic building in a highly prominent location. At the time the library is constructed, consider whether additional community meeting space (beyond that normally provided in a library) is needed.
- Locate housing with sufficient building setbacks to accommodate street trees, adequate sidewalks and extensive landscaping to establish a garden character throughout the neighborhood.
- Limit building heights to eight stories closest to the Metro and stepping down to four stories along Crabbs Branch Way for a compatible transition to existing single-family neighborhoods to the east. Office development along Shady Grove Road may not exceed five stories. Parking garages adjacent to CSX tracks may exceed the four-story limit.

The proposed Site Plan achieves many of the Sector Plan recommendations for the Metro North-CSP neighborhood. It provides a mix of residential townhouses and multifamily residential units, including MPDUs and Workforce Housing units; structured parking is adjacent to the CSX rail tracks; a series of open spaces are proposed in the development; and TDRs will be purchased. The proposal also provides detached parking garages adjacent to the proposed noise wall and the CSX rail tracks, while residential townhouses are further away. The library, however, is proposed in a different location than was recommended in the Sector Plan, but it is closer to the higher-density portion of the development.

Transportation

Street Network
Shady Grove Station-Westside will implement the Sector Plan's recommended street network for "a new grid system of local streets forming short walkable blocks within the Metro station" (p.83). All internal private streets will have on-street parking, either on one side or on both sides of a street, and environmental site design techniques, including biofilters and permeable pavement will be utilized.

The Applicant will implement all internal private streets and Montgomery County will implement off-site roadway improvements, including Crabbs Branch Way reconstruction. Roads I and P in the multifamily area are subject to several conditions, including public easements and maintenance and liability agreements per Condition No. 7 of the Preliminary Plan No. 120120080. All of the other internal streets are private streets with public access easements.

Bikeway Network
A bike lane is included on both sides of Road I in the multifamily area between Buildings A and D. This bike lane will connect with the proposed shared use path on Crabbs Branch Way. The shared use path and the bike lane will implement the Sector Plan's recommendations.

Pedestrian Network
An extensive network of sidewalks are provided throughout the development, including 12-foot sidewalks within the multifamily residential area; eight-foot sidewalks along Roads K, O, and P; and smaller four-foot sidewalks in portions of the townhouse area. The pedestrian environment is further enhanced with on-street parking, street trees, and street lights. These measures are consistent with the Sector Plan recommendations, which include placing "sidewalks back sufficiently from curbs and travel lanes to separate pedestrians from moving traffic" (p.73).

Environment

The proposed Shady Grove Station Westside will implement several of the Sector Plan's recommendations, including locating parking structures and noise walls adjacent to the CSX rail tracks and incorporating environmental site design techniques. Some of the Sector Plan's recommendations that are applicable to this development are to:

- Increase landscaping wherever feasible, and encourage the use of low-impact development techniques, green roofs, parking lot planting, and other initiatives to address stormwater quality without occupying land needed for development (p. 108).
- Wherever possible, locating structured parking adjacent to CSX tracks to mitigate noise (p. 109).

New open spaces, tree-lined streets, bio-retention and permeable pavement are proposed for this development. The Applicant has also submitted a preliminary Leadership in Energy and Environmental Design (LEED) for Homes checklist for the multifamily residential buildings and residential townhouses indicating that both projects would achieve LEED certified level. The residential townhouses could achieve LEED Silver in the future with additional design measures.

Excessive noise from Shady Grove Road, the CSX rail tracks, and other sources are identified in the Sector Plan as quality of life issues. The Sector Plan recommends "noise compatible site design along Shady Grove Road, MD 355, Metro and CSX rail" and "wherever possible, locating structured parking adjacent to CSX tracks to mitigate noise" (p.109).

A noise wall is proposed along the CSX rail tracks, along with two structure parking garages for Building "B" and "C", to mitigate noise from the rail tracks. However, the Applicant's noise consultant, Phoenix Noise and Vibration, has produced two noise reports that indicate multifamily Buildings "B" and "C", 25 feet above grade, would have noise levels that are above 65dBA Ldn. Additional design modifications will be required to maintain noise levels at 45 dBA Ldn.

Public Use Space

An urban park, a community garden, and a network of sidewalks and small open spaces will comprise the public use space in this phase of Shady Grove Station development.

Approximately 15.64 percent of the net lot area, or 6.53 acres, of the Property will be allocated as public use space. Although the proposed amount (15.64%) is less than required 20% public use space for the property, the remaining public use space, including the four-acre Jeremiah Park, will be provided on the east side of Crabbs Branch Way.

Overall Public Use Space for Shady Grove Station[1]

[1] The purple area at the bottom depicts the proposed public use space on the Property; the green area depicts the public use space on the east side (for a combined total of minimum 20%.

Streetscape

The proposed Shady Grove Station-Westside will also implement the Sector Plan streetscape recommendations, such as "closely spaced street trees" and "special sidewalk and crosswalk paving" (p.89). Proposed street trees are spaced 30 feet on center along most internal streets, and several intersections will have special paving pattern. Further, the streetscape will contribute to the Sector Plan's goal of "regreening of Shady Grove" (p.89).

Public Art

No public art is included in the proposed development. However, the traffic circle within the multifamily area provides an opportunity to install public art. The Sector Plan considers public art as an amenity that would "visually delight, enrich, and support the area's long-term viability" (p.36). If the Applicant installs public art in the traffic circle or any other segment of the development, the Public Arts Steering Committee must review the proposal.

Placemaking Plan

The Applicant has prepared a "Placemaking and Amenity Plan - Shady Grove Station" that illustrates site amenities, such as wayfinding, recreation facilities and public use spaces. The Placemaking Plan provides a set of measures that are linked to the proposed public use space plan and streetscape (Attachment 7-Placemaking Plan).

Building Heights

The heights of the proposed multifamily residential buildings and townhouses are consistent with the Sector Plan recommendations. The Sector Plan recommends "limiting building heights to eight stories closest to the Metro and stepping down to four stories along Crabbs Branch Way for a compatible transition" (p.45). Residential townhouses will not exceed 50 feet in height.

Along Road I, multifamily Buildings A and D have five levels with ground floor retail while the remaining segments of both buildings are four levels. Multifamily buildings will not exceed 70 feet height. Along Crabbs Branch Way, building heights should not exceed four levels in order to be consistent with the Sector Plan recommendations.

Library

A public library is proposed in the multifamily residential Building B. This is consistent with the approved Preliminary Plan and the intent of the Sector Plan. Montgomery County Department of General Services has developed a lease agreement with EYA that provides Montgomery County Public Libraries (MCPL) several options to locate a library in Building B (Attachment 3 (i). Staff supports the library at this location since it implements the Sector Plan recommendations as it will provide a public facility for the Shady Grove area.

Affordable Housing

A goal of the Sector Plan is to "increase housing choice and affordability options" and the Plan recommends "a range of housing types" including townhouses and apartments (p.62). Shady Grove Station-Westside will provide 327 residential dwelling units of the planned residential development as Moderately Priced Dwelling Units (MPDUs) and Workforce Housing units: 25 townhouses and 91 multifamily units as Workforce Housing units, and 44 residential townhouses and 167 multi-family units as MPDUs. These numbers are consistent with the approved Preliminary Plan; achieve the Sector Plan recommendation, including a range of housing types; represent approximately 68 percent of the total required affordable dwelling units for the overall Shady Grove Station development.

Transferable Development Rights (TDRs)

The purchase of Transferable Development Rights (TDRs) is required for this Site Plan since the property is in Transit-Oriented Mixed Use/Transferable Development Rights (TOMX-2/TDR) Zone. The approved Preliminary Plan requires 63 TDRs for the Property. The proposed TDRs are associated with multifamily residential development per Section 59-C-13.2431 of the Zoning Ordinance. Multifamily residential Building A will provide 19 TDRs; Building B will provide 18 TDRs; Building C will provide 15 TDRs; and Building D will provide 12 TDRs.

Sector Plan Staging

The Sector Plan recommends a staging plan that is centered on the potential redevelopment of the County Service Park. It allows 2,540 residential dwelling units and 1,570 jobs to accommodate the CSP redevelopment. Shady Grove Station Preliminary Plan No. 120120080 absorbed 2, 210 residential dwelling units and 630 jobs and Shady Grove Metro Parcel-146 (Site Plan No. 820090070) has absorbed 156 dwelling units.

DEVELOPMENT STANDARDS

The proposed development is in the Transit-Oriented Mixed Use/Transferable Development Rights (TOMX-2/TDR) Zone. The following tables show the application's conformance to the development standards of the zone.

Development Standards	TOMX/TDR-2 Optional Method	Proposed
Minimum Net Lot Area (59-C-13.231)	18,000 sq.ft	41.76 acres
Maximum Building Coverage-percent of net lot area (59-C-13.232)	NA	48% (858,184 sq.ft)
Minimum Public Use Space-percent of net lot area (59-C-13.233)	20%	15.64 %[2] (6.53 acres)
Maximum Density of Development	2 FAR	1.42 FAR
Maximum Building Heights (59-C-13.235)	NA	70 feet[3]
Minimum Setbacks (59-C-13.236)		
From an adjacent commercial or industrial zone	0	130 feet[4]; 75 feet[5]
From an adjacent single-family residential zone	0	NA
From a public right-of-way	0	4 feet[6]

[2] At least 20% of the net lot area of the entire Shady Grove Station site, as delineated in Preliminary Plan No. 120120080, approved by the Planning Board by Resolution MCPB No. 12-89, shall be devoted to public use space, including the proposed public park and other areas on the east side of Crabbs Branch Way in the future.
[3] Residential townhouses will not exceed 50 feet.
[4] For Multifamily Residential Buildings B and C.
[5] For residential townhouses that are adjacent to the noise wall.
[6] From Crabbs Branch Way.

Building Heights

Development Standards	TOMX/TDR-2 Optional Method	Proposed
Maximum Building Heights (59-C-13.235)		
Townhouses	NA	50 feet
Multifamily Buildings	NA	70 feet[7]

Parking

Residential Parking	Parking Requirement	Provided Parking Spaces
Townhouses: 407 units	2 spaces per unit	732 parking spaces[8]
Multifamily Residential: (1,114 dwelling units)		
Studios: 21 units	1 space per unit	21 parking spaces
Studios-MPDU: 4 units	0.5 space per unit	2 parking spaces
Studio WFH: 2 units	1 space per unit	2 parking spaces
1 Bedroom: 488 units	1.25 space per unit	610 parking spaces
1 Bedroom MPDU: 95 units	0.625 space per unit	59.38 parking spaces
1 Bedroom WFH: 52 units	1.25 space per unit	65 parking spaces
2 Bedroom: 347 units	1.5 space per unit	520.50 parking spaces
2 Bedroom MPDU: 68 units	0.75 space per unit	51 parking spaces
2 Bedroom WFH: 37 units	1.5 space per unit	55.50 parking spaces
Multi-family parking spaces without reduction		1386.38 parking spaces
15% parking space reduction[9]		207 parking spaces
Total Multifamily Parking		**1,179 parking spaces**

[7] Multifamily buildings should be four levels along Crabbs Branch Way to be consistent with the Sector Plan.

[8] Section 59-E-3.33 (a) allows for 10% reduction for townhouses located in a transit station area.

[9] Section 59-E-3.33 (a) allows for 15% reduction in residential parking if it is within 1,600 feet of a Metro rail entrance.

Non-Residential Parking	Parking Requirement	Provided Parking Spaces
Community Pool	1 space per 7 persons	15 parking spaces
Community Center	2.5 spaces per 1,000 gross square feet	20.75 parking spaces
Retail	3.5 spaces per 1,000 gross square feet	146.40 parking spaces
Library/retail	3.5 spaces per 1,000 gross square feet	24.13 parking spaces
Non-Residential Parking without reduction		206.38 parking spaces
15% parking space reduction[10]		25.58 parking spaces
Total Non-Residential Parking		**181 parking spaces**

FINDINGS

1. *The site plan conforms to all non-illustrative elements of a development plan or diagrammatic plan, and all binding elements of a schematic development plan, certified by the Hearing Examiner under Section 59-D-1.64, or is consistent with an approved project plan for the optional method of development, if required, unless the Planning Board expressly modifies any element of the project plan.*

   The proposed Site Plan is not subject to a development plan, diagrammatic plan, schematic development plan, or project plan. It is, however, subject to the conditions of Preliminary Plan No. 120120080, Shady Grove Station.

2. *The Site Plan meets all of the requirements of the zone in which it is located, and where applicable conforms to an urban renewal plan approved under Chapter 56*.

   The Site Plan meets the development standards of the TOMX-2/TDR Zone as indicated in the project data table. The development will use parking reductions allowed in sections 59-E.3.33 (a) and 59-E-3.32 (a) for residential and commercial development, respectively, of the Zoning Ordinance since a majority of the proposed development is within 1,600 feet from the Shady Grove Metro Station entrance.

3. *The locations of buildings and structures, open spaces, landscaping, recreation facilities, and pedestrian and vehicular circulation systems are adequate, safe, and efficient.*

   a. Locations of buildings and structures

   The proposed locations of the buildings and structures are adequate, safe, and efficient as envisioned in the Shady Grove Sector Plan. Taller multi-family residential buildings

[10] Section 59-E-3.32 (a) allows for 15% reduction retail uses that are within 1,600 feet of a Metro rail entrance.

with ground floor retail and the proposed library are located close to the Metro Station. All of the proposed retail development is located along Road I in Buildings A and D. Off-street parking for the multifamily residential buildings is provided in four structured parking garages with each multifamily residential building. All of the residential townhouses front onto a street or a public use space. Service to residential townhouses and multifamily buildings is provided throughout the development's street network.

b. Open Spaces

The locations of open spaces are efficient, safe and adequate for the redevelopment of the County Service Park as envisioned in the Sector Plan, including an urban park, community garden, and smaller public open spaces are provided for recreation and social engagement. In addition to the public open spaces, each multifamily building has an internal courtyard and a swimming pool for residents.

c. Landscaping and Lighting

Landscaping and lighting, as well as other site amenities, will ensure that landscaping, lighting, and site amenities will be adequate, safe and efficient for year-round use by employees, visitors and residents. Site furnishings along Roads I, K and P as well as surrounding the urban park and community pool, shade trees, special features, including the community garden and unique design intersections, will be integrated into the site to create a unique place. Street lighting is provided throughout all streets and lights will be provided on all structures.

d. Recreation Facilities

The proposed development meets the Planning Board Recreation Guidelines (1992) through the following on-site recreation facilities:

DEMAND CALCULATIONS

	Number of Units	D1 Tots	D2 Children	D3 Teens	D4 Adults	D5 Seniors
Townhouse	407	68.4	87.9	32.6	524.2	29.3
Garden	1114	120.3	156.0	133.7	1319.0	178.2
Hi-Rise						
Total Units	1521.0					
Total Demand		188.7	243.9	166.2	1843.2	207.5
On-Site Supply		204.0	617.6	552.1	7795.4	858.6
% Demand Met On-Site		108.1	253.2	332.1	422.9	413.7
Off-Site Supply		36.9	90.3	82.7	920.4	107.9
Total On-Site/Off-Site		240.8	707.9	634.9	8715.8	966.4
%Demand Met On + Off		127.6	290.3	381.9	472.9	465.7

ONSITE SUPPLY CALCULATIONS

Ref #	Description	No. Provided	D1 Tots	D2 Children	D3 Teens	D4 Adults	D5 Seniors
1.0	Tot Lot (0-6)	1	9.0	2.0	0.0	4.0	1.0
4.0	Picnic/Sitting	8	8.0	8.0	12.0	40.0	16.0
5B	Open Play Area II	1	3.0	4.0	4.0	10.0	1.0
21.0	Pedestrian System	1	18.9	48.8	33.2	829.4	93.4
24A	Swimming Pool	5	51.9	250.0	170.4	2304.0	155.7
26A	Indoor Community Space	5	94.3	182.9	249.4	2764.8	415.1
27.0	Indoor Fitness Facility	4	0.0	97.5	66.5	1474.6	124.5
28.0	Community Garden	1	18.9	24.4	16.6	368.6	51.9
TOTAL			204	617.6	552.1	7795.4	858.6

This development will take advantage of the existing Blueberry Hill Park recreation facilities, including:

- 1 Multi-age Playground
- 4 Picnic/Sitting Areas
- 1 Multi-purpose (MP) Court
- 1 Tennis Court
- 1 Soccer-Junior Field
- 1 Pedestrian System

e. Pedestrian and Vehicular Circulation Systems

Several new north-south and east-west private streets (Roads B, C, D, E, F, G, H, M, N, K, I, L, and P) will provide vehicular and pedestrian access throughout the development. Pedestrian circulation will improve since all new internal streets will provide sidewalks, some as wide as 11 feet, street furnishings, bike racks, landscaping and on-street parking. Key intersections, such Roads I, P and K, are designed with special paving to enhance walking and handicapped access. This network of sidewalks throughout the development will provide adequate, safe, and efficient pedestrian and circulation systems.

Montgomery County is responsible for converting Crabbs Branch Way into an urban boulevard with a landscape median, on-street parking, sidewalks and shared use paths. The County will also provide pedestrian improvements that link Road P to the Shady Grove Metro Station. These improvements are included in the County's Shady Grove Station Public Improvements Infrastructure Plan Mandatory Referral Application MR2014019, reviewed concurrently with this application.

4. *Each structure and use is compatible with other uses and other site plans and with existing and proposed adjacent development*.

The proposed Shady Grove Station-Westside is compatible with existing uses regarding height, scale and massing as reflected by the Sector Plan recommendations and the approved Preliminary Plan. Future redevelopment of the eastern portion of Shady Grove Station will provide less residential development of up to 700 residential units, a four-acre public park, and an elementary school site. A future office building at the intersection of Shady Grove Road and Crabbs Branch Way, although approved as part of the Shady Grove Station Preliminary Plan, is not part of this application.

There are no other pending site developments in the immediate vicinity.

5. *The Site Plan meets all applicable requirements of Chapter 22A regarding forest conservation, Chapter 19 regarding water resource protection, and any other applicable law.*

As indicated in the Environment section of this report, the Applicant will implement the Forest Conservation Plan requirements by providing 8.94 acres of forest planting in an approved off-site forest conservation bank. The associated Shady Grove Station Public Infrastructure Improvements project will provide 1.55 acres of forest planting in an approved off-site forest conservation bank.

Stormwater Management

The final stormwater management concept plan was approved by the Montgomery County Department of Permitting Services (DPS) on January 8, 2014. The plan proposed to meet stormwater management requirements via Environmental Site Design (ESD) techniques, bioretention facilities, permeable pavement and underground stormwater facilities.

Conclusion

The proposed project implements several conditions for the approved Shady Grove Station Preliminary Plan, furthers the recommendations of the Shady Grove Sector Plan, and it is in compliance with the Forest Conservation Law. Staff recommends approval of the Site Plan No. 820130220, Shady Grove Station-Westside, with the conditions listed at the beginning of this report.

ATTACHMENTS

1. Preliminary Plan Resolution
2. Forest Conservation Plan
3. Agency Approval Letters
    i. Library Lease Terms and Public Library letter
    ii. Department of Permitting Services SWM Approval
    iii. SHA
4. Applicant's Variance Request
5. County Arborist Variance Approval
6. Noise Study
7. Placemaking Plan

Attachment 1

MONTGOMERY COUNTY PLANNING BOARD
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MCPB No. 12-89
Preliminary Plan No. 120120080
Shady Grove Station
Date of Hearing: September 6, 2012

SEP 11 2012

RESOLUTION

WHEREAS, under Montgomery County Code Chapter 50, the Montgomery County Planning Board (Planning Board or Board) is authorized to review preliminary plan applications; and

WHEREAS, on November 15, 2011, EYA/CSP Associates and Montgomery County, filed an application for approval of a preliminary plan of subdivision of property to create 752 townhouse lots, 1,458 multi-family residential units, 41,828 square feet of retail and 131,422 square feet of office development on 90.34 acres in the TOMX-2/TDR zone (the Property), located along Crabbs Branch Way, south of Shady Grove Road in the 2006 Shady Grove Sector Plan (Sector Plan or Plan) area; and

WHEREAS, Applicant's preliminary plan application was designated Preliminary Plan No. 1200120080, Shady Grove Station (Preliminary Plan or Application); and

WHEREAS, Planning Board staff (Staff) issued a memorandum to the Planning Board, July 13, 2012 and an addendum on August 24, 2012, setting forth its analysis and recommendation for approval, of the Application subject to certain conditions (Staff Report); and

WHEREAS, on September 6, 2012 the Planning Board held a public hearing on the Application, and at the hearing the Planning Board heard testimony and received evidence submitted for the record on the Application; and

WHEREAS, on September 6, 2012, the Planning Board voted to approve the Application subject to conditions on motion of Commissioner Presley, seconded by Commissioner Dreyfuss, with a vote of 5-0; Commissioners Anderson, Carrier, Dreyfuss, Presley, and Wells-Harley voting in favor.

NOW, THEREFORE, BE IT RESOLVED THAT, pursuant to Montgomery County Code Chapter 50, the Planning Board approves Preliminary Plan No. 120120080, subject to the following conditions:

Approved for legal sufficiency
M-NCPPC Office of General Counsel

1. This Preliminary Plan is limited to a maximum of 752 townhouse units on up to 752 lots, a maximum of 1,458 multi-family units on up to 95 lots (includes 84 lots for 2 over 2 units and 11 lots for multi-family buildings), 41,828 square feet of retail space on up to 3 lots shared with multi-family units, and a maximum of 131,422 square feet of office development on 1 lot. Additional lots are permitted for common areas, clubhouses, park and school sites, and other County facilities. Ten percent of the total number of residential units excluding MPDUs or resulting MPDU bonus density units must be Workforce Housing units, and 15% of the total number of residential units excluding workforce units must be Moderately Priced Dwelling Units (MPDUs).

2. The Planning Board has accepted the recommendations of the Montgomery County Department of Permitting Services (MCDPS) Water Resources Section in its letter dated June 13, 2012, and hereby incorporates them as conditions of the Preliminary Plan approval. The Applicant must comply with each of the recommendations set forth in the letter, which may be amended by MCDPS provided that the amendments do not conflict with other conditions of the Preliminary Plan approval.

3. The Planning Board has accepted the recommendations of the Montgomery County Department of Transportation (MCDOT) in its letters dated June 13, 2012 and July 20, 2012, and hereby incorporates them as conditions of the Preliminary Plan approval, except that any performance guarantees necessary to ensure that the trip reduction goals under Condition #4 are maintained will be determined by subsequent site plans. The Applicant must comply with each of the recommendations set forth in both letters, which may be amended by MCDOT provided that the amendments do not conflict with other conditions of the Preliminary Plan approval.

4. The Applicant must satisfy the Shady Grove Sector Plan's traffic mitigation requirements by entering into a Traffic Mitigation Agreement with the Planning Board and MCDOT. In the Agreement, the Applicant must participate in the Greater Shady Grove Traffic Management Organization (TMO) to assist in achieving the non-auto-driver mode share goals of the Sector Plan. As a new development generating 100 or more additional new peak-hour vehicular trips in the Shady Grove Metro Station Policy Area, the non-auto-driver mode share goals are a reduction of 65% of the employees' vehicular trips and 50% of the residential vehicular trips with no deduction of existing trips. The Agreement must be executed prior to approval of the first certified site plan.

5. The Applicant must satisfy the Policy Area Mobility Review (PAMR) test by contributing to the Montgomery County Department of Transportation (MCDOT) $292,500 ($11,700 times 25 new peak-hour trips) for transportation infrastructure improvements within the greater Derwood/Shady Grove Policy Area. The PAMR payment must be made prior to issuance of any building permit.

6. The Applicant must dedicate and the record plat must reflect dedication of the following roadways as shown on the Preliminary Plan:

    a. Crabbs Branch Way to the ultimate 120-foot right-of-way.

    b. Shady Grove Road to the ultimate 150-foot right-of-way.

    c. Road DD and Road JJ in the Shady Grove Station East area, that provide access to the elementary school site and Jeremiah Park, must be constructed to the Road Code Commercial Business Street standards, (2005.02 modified) with 70-foot rights-of-way.

7. Road P and Road I in the Shady Grove Station West area may be private streets subject to the following requirements:

    a. Public easements must be granted for the roadways and must be reviewed and approved by MCDOT and M-NCPPC.
    b. The design of the roads shall correspond to Montgomery County Road Code standard (2005.02 modified) for a similar public road, as modified in the cross-sections contained in the preliminary plan.
    c. Installation of any public utilities must be permitted within such easement.
    d. The roads may not be closed for any reason unless approved by MCDOT.
    e. The public access easement must be volumetric to accommodate uses above or below the designated easement area.
    f. Montgomery County may require the Applicant to install appropriate traffic control devices within the public easement and the easement must grant the right to the County to construct and install such devices.
    g. Maintenance and Liability Agreements will be required for each Easement Area. These agreements must identify the Applicant's responsibility to maintain all of the improvements within the Easement Area in good fashion and in accordance with applicable laws and regulations.
    h. Montgomery County will inspect these streets and ensure that each has been constructed in accordance with the corresponding Road Code standard for a similar public road as modified by the cross-sections contained in the preliminary plan.
    i. The Applicant is obligated to remove snow and provide repairs to keep the roads in working order and open, and if, for any reason, the Applicant

does not, the County must have the right, but is not obliged, to remove snow and/or provide repairs.

8. Prior to the submission of a Site Plan for any development in the Shady Grove Station East area, the Applicant must record a plat of reservation for the Metro Access Road Partial Interchange. The land area indicated on the Preliminary Plan (23,973 square feet) may be enlarged after MCDOT conducts preliminary engineering for the partial interchange. This plat of reservation will be valid for a minimum of three years.

9. The Planning Board has accepted the recommendations of the Montgomery County Public Libraries (MCPL) in its letter dated June 1, 2012 and hereby incorporates them as conditions of the Preliminary Plan approval. These conditions may be amended by MCPL, provided the amendments do not conflict with other conditions of the Preliminary Plan approval.

10. The Planning Board has accepted the recommendations of Montgomery County Fire and Rescue (MCF&R) Services in its letter dated May 23, 2012 and hereby incorporates them as conditions of the Preliminary Plan approval. These conditions may be amended by MCF&R, provided the amendments do not conflict with other conditions of the Preliminary Plan approval.

11. The Applicant must dedicate to M-NCPPC the approximately 4.1 acre portion identified as "Block AA" in the Shady Grove Station East area on the Preliminary Plan for use as a local public park. The land must be dedicated to M-NCPPC through notation on the plat and by conveyance at the time of record plat in the form of a deed approved by the Office of General Counsel. At the time of conveyance, the property must be free of any trash and unnatural debris. Location and design of boundary markers and signs must be approved by M-NCPPC.

12. Regarding the Montgomery County Public Schools (MCPS) Site identified as "Block BB" in the Shady Grove Station East area on the Preliminary Plan for use as an elementary school site, the Applicant must:
    a. Move the location of the school site to be co-located with the M-NCPPC park dedication required under condition 11.
    b. Design the combined school and park site to be a minimum of 8.1 usable acres without any bisecting streets.
    c. Ensure that the school and park site are served by frontage on a publicly dedicated right-of-way.
    d. Amend the preliminary plan and plat the dedication of the school and park site in accordance with the above conditions before any site plan subject to this preliminary plan approval is filed for the Shady Grove Station East area or before January 1, 2017, whichever comes first.

13. Before the approval of the first Site Plan for Shady Grove Station East, construction of the trail system around the regional stormwater management pond at Crabbs Branch Way and Redland Road must commence. Trail design details must be coordinated with the Parks Department.

14. The Applicant must reconstruct the entire section of Crabbs Branch Way from Shady Grove Road to Shady Grove Metro Access Road to include on-street parking, shared use paths, and a landscaped median.

15. The Applicant must provide streetscape, landscaping and pedestrian improvements along Shady Grove Road, between the CSX tracks and Metro Access Road, during Site Plan review for Shady Grove Station West.

16. The Applicant must install a traffic signal at each intersection of Crabbs Branch Way and the proposed internal roads "E" and "BB", if MCDOT determines the signals are warranted.

17. The Applicant must coordinate with the Washington Metropolitan Area Transit Authority (WMATA) to provide pedestrian improvements between Road "P" and the Shady Grove Metro Station during the first Site Plan review for Shady Grove Station West.

18. The Applicant must submit a Final Forest Conservation Plan for the area covered by this Preliminary Plan, to be approved with the first Site Plan submitted.

19. The Applicant must re-examine impacts to specimen trees number 32, 39, and 54 during Site Plan review to see if these trees can be saved through site design and construction techniques that reduce impacts to the critical root zones.

20. Fifty shade trees of at least 3" caliper must be included in the Site Plan as mitigation for the removal of 18 specimen trees under the variance. If it is found that trees 32, 39, and/or 54 can be saved, the number of shade trees required may be reduced accordingly. The formula for determining mitigation is 1" of diameter replaced for every 4" of diameter removed, with replacement trees being 3" caliper minimum. These trees do not count toward afforestation requirements.

21. On-site and off-site planting requirements to fulfill the 19.94 acres of forest conservation mitigation will be determined by the Final Forest Conservation Plan.

22. The Applicant must submit a Phase II Noise Analysis prior to Site Plan approval and incorporate noise mitigation measures into the Site Plan.

23. The Applicant must obtain approval of a detailed floodplain study from the Montgomery County Department of Environmental Protection prior to Site Plan approval as required by the Stormwater Management Concept approved by MCDPS.

24. Final approval of the number and location of dwelling units, site circulation, parking, sidewalks, signs, shared use paths, open space and public use space, and sitting areas will be determined at Site Plan.

25. The Adequate Public Facility (APF) review for the Preliminary Plan will remain valid for up to 12 years (144 months) from the date of mailing of the Planning Board Resolution, according to the phases outlined below. Because the validity period is longer than the typical seven years, a phasing schedule for the APF and preliminary plan validity period, in accordance with Sections 50-20(c)(3)(B), 50-34(g), and 50-35(h)(2)(B) of the Subdivision Regulations, is required. Plats must be recorded and building permits issued as follows:

    Phase I – 375 residential units, including MPDUs and workforce housing units, within 60 months from the 30th day after the Resolution is mailed;
    Phase II – 125 residential units, including MPDUs and workforce housing units, within 36 months of the expiration of the Phase I validity period;
    Phase III –250 residential units, including MPDUs and workforce housing units, 41,828 square feet of retail space, and the library within 36 months of the expiration of the Phase II validity period; and
    Phase IV –1,460 residential units, including MPDUs and workforce housing units, and 133,250 square feet of commercial office space within 12 months of the expiration of the Phase III validity period.

26. If a Development District is proposed by Montgomery County, the Applicant must participate in the District.

27. With the exception of demolition of the existing building and site improvements on the property, in accordance with the County's Smart Growth Initiative, no clearing, grading, or recording of plats prior to the approval of the certified site plan.

28. TDRs must be secured before each plat is recorded for multi-family development. Record plat must reflect serialization and liber/folio reference for all TDRs utilized by the development. A TDR will be purchased for every three multi-family residential units.

29. The final number of Workforce Housing units, MPDUs and TDRs will be determined during Site Plan review.

30. Prior to recordation of plat(s), the Applicant must satisfy the provisions for access and improvements as required by MCDOT.

31. The record plat must reflect a public use and access easement over all private streets and adjacent parallel sidewalks.

32. The record plat must reflect all areas under Homeowners Association ownership and specifically identify stormwater management parcels and/or easements.

33. In the event that a subsequent site plan approval substantially modifies the subdivision shown on the approved Preliminary Plan with respect to lot configuration or location or right-of-way width, or alignment, the Applicant must obtain approval of a Preliminary Plan amendment prior to certification of the site plan.

34. The Certified Preliminary Plan must contain the following note: "Unless specifically noted on this plan drawing or in the Planning Board conditions of approval, the building footprints, building heights, on-site parking, site circulation, and sidewalks shown on the Preliminary Plan are illustrative. The final locations of buildings, structures and hardscape will be determined at the time of site plan review. Please refer to the zoning data table for development standards such as setbacks, building restriction lines, building height, and lot coverage for this lot. Other limitations for site development may also be included in the conditions of the Planning Board's approval."

35. Prior to the issuance of any residential building permit covered by this Preliminary Plan, the Applicant must make a School Facilities Payment at the elementary school level to the Montgomery County Department of Permitting Services. The Applicant is proposing townhouses and mid/low-rise multi-family dwellings with residential parking as defined by the Annual School test effective July 1, 2011 for the Gaithersburg Cluster. This amounts to $868.78 per residential townhouse, $456.80 per multi-family garden apartment, and $34.42 per high/low rise residential apartment at the elementary school level. If the type of residential units changes the applicable school facilities payment, per the Annual School Test effective July 1, 2011, will apply.

BE IT FURTHER RESOLVED, that, having considered the recommendations and findings of its Staff as presented at the Hearing and as set forth in the Staff Report, which the Board hereby adopts and incorporates by reference (except as modified herein), and upon consideration of the entire record, the Planning Board FINDS, with the conditions of approval, that:

1. The Preliminary Plan substantially conforms to the Master Plan.

The Property is within the Metro North-CSP and Jeremiah Park neighborhoods of the Sector Plan, although the Preliminary Plan refers to Metro North-CSP as Shady Grove Station West and Jeremiah Park as Shady Grove Station East. A Sectional Map Amendment following the Sector Plan rezoned the Property to the Transit-Oriented Mixed Use/Transferable Development Rights (TOMX-2/TDR).

The Sector Plan provides specific recommendations for both areas of the Property. Shady Grove Station West is within the Metro Neighborhoods, while Shady Grove Station East is within the Plan's Transitional Area and is identified as Jeremiah Park. The Metro Neighborhoods are envisioned "as an urban village, a place that provides vitality, convenience, and a human scale of development. It should become a residential mixed-use area with some office and community-serving retail uses, and recreational areas providing a focus for community life and services. Functionally integrated with the Metro station, the proposed street pattern will create an interconnected network of streets and sidewalks that ensure good vehicular and pedestrian access to Metro."

The Sector Plan recommends that development in the Transitional Area should be "less dense than the Metro Neighborhoods with open spaces, residential uses, and public facilities to serve the planning area. The Transition Area's transitional uses are an opportunity to achieve compatibility and provide needed public facilities for the Derwood Communities." The Preliminary Plan implements the Sector Plan recommendations with office and retail uses, residential development, a local library and interconnected network of streets on Shady Grove Station West, while public facilities, including the local park and dedicated school site and residential development are on Shady Grove East. The Preliminary Plan provides a library in an alternative location from the Plan's recommendations, on the ground floor of a multi-family building instead of as a free-standing community building in a "highly prominent location." The Planning Board accepts the Department of Public Libraries' recommendation to accept the library as proposed because it is in a suitable location within the dense multi-family residential and retail area. Further, Board finds that the proposed location creates a focal point that terminates the retail area.

Street Network

The public and private streets shown on the Preliminary Plan are consistent with the Sector Plan recommendations. The Sector Plan recommends a new grid system of streets forming short walkable blocks, including Streets "J", "I", and "F" as master plan streets with a minimum 70 feet right-of-way. Streets "I and J" -identified as Roads "DD and JJ" on the preliminary plan- are on Shady Grove Station East and a portion of Streets "I and F" are on Shady Grove Station West (Road P and Road I).

The Sector Plan recommends that "at the time of preliminary plan review, specific street locations shall be determined. Recommended rights-of-way are needed to ensure adequate lanes, bus access, emergency vehicle access, pedestrian sidewalks and street parking." It further recommends that "those streets that are listed in the Street and Highway Classification table as Streets 'F' (north of Street 'H'), 'I', and 'J' in the County Service Park are illustrative of the type of right-of-way needed to improve access to Metro and local circulation. Additional streets in the County Service Park that are illustrated but not listed in the table are also of the type desired." The Preliminary Plan road alignments are analogous to the Sector Plan road network.

The Preliminary Plan implements the Sector Plan recommendation for public streets with Roads "DD and JJ" on Shady Grove Station East as public streets. These streets provide access to the local park and school site, and will be designed to the County's Road Code Business Street District Standard, 2005.02. The Preliminary Plan shows the correct dedication for these streets. Remaining streets in Shady Grove Station East will be private streets.

Roads "P" and "I," which serve the library and the multi-family residential and retail area, are private streets. The Planning Board accepts these private streets since several conditions of approval and requirements are added to ensure public access, design standards, and a maintenance liability agreement with Montgomery County Department of Transportation (MCDOT). These private streets allow greater flexibility to incorporate new Environmental Site Design (ESD) stormwater management techniques within the right-of-way. As a condition of approval, all streets throughout the development will have public access easements.

Section 50-29(a) (2) of the Subdivision Regulations states that, "except as otherwise provided in the zoning ordinance, every lot shall abut on a street or road which has been dedicated to public use or which has acquired the status of a public road. In exceptional circumstance, the board may approve not more than two (2) lots on a private driveway or private right-of-way; provided, that proper showing is made that such access is adequate to serve the lots for emergency vehicles, for installation of public utilities, is accessible for other public services, and is not detrimental to future subdivision of adjacent lands. In multi-family and town house development, not subdivided into individually recorded lots, the board may approve more than two (2) lots or buildings on private roads or drives, provided there is adequate access from such roads to a public street, as above."

The Planning Board finds that the private roads shown on the Preliminary Plan achieve the status of a public road because the following criteria are achieved:

- The roads are fully accessible to the public;
- They have minimum pavement widths and be accessible to fire and emergency vehicles;

- They are designed with safe, adequate, and efficient circulation, parking, and sidewalks; and
- They provide frontage for all buildings.

The Planning Board further finds that the street network, with the specified conditions of approval, will provide unrestricted public access, is supported by other County agencies, and will implement the Sector Plan's recommendations.

Partial Interchange

A partial interchange is recommended in the Sector Plan at the southern portion of the County Service Park (CSP), east of Crabbs Branch Way. A preliminary concept for the interchange has been developed. However, the specific amount of land to reserve for the partial interchange is unknown at this time since detailed engineering has not been completed. No development is proposed in the near-term for this area, and the partial interchange requires significant engineering design. The Planning Board finds that the reservation of land should be determined prior to submission of a site plan for any development on SGS East. The funding for the partial interchange is required to be appropriated in the CIP before stage 2 of the Sector Plan may begin.

Crabbs Branch Way

Crabbs Branch Way, between Redland Road and Shady Grove Road, is classified as a commercial business street with a minimum right-of-way at 100 feet. Creating a 'main street' with a landscape median and a shared use path on Crabbs Branch Way is a recommendation in the Sector Plan. The Preliminary Plan shows a right-of-way at 120 feet, which is the existing street right-of-way, to accommodate on-street parking, a landscape median, and a shared use path on the east side of the street. The Planning Board accepts the existing right-of-way since it achieves the Sector Plan's recommendation for a 'main street' with a landscape median, shared use path, and on-street parking.

Shady Grove Road

Shady Grove Road, between the western plan boundary and I-370, is classified as a major highway with a minimum right-of-way at 150 feet. Upgrading Shady Grove Road with sidewalks, lighting, landscaping and street trees are Sector Plan recommendations. The Preliminary Plan shows a right-of-way at 150 feet with 75 feet dedication from the existing centerline of Shady Grove Road. This Preliminary Plan will provide improvements between the CSX tracks and the Metro Access Road.

Bikeway Network

The Preliminary Plan will begin to implement the bikeway recommendation for Crabbs Branch Way. The Sector Plan recommends a Class I bikeway (SP-53) along the east side on Crabbs Branch Way, from Amity Drive to Redland Road. The Preliminary Plan

will implement the shared use path on the east side of Crabbs Branch Way along the Property.

At Shady Grove Road and Crabbs Branch Way, the Sector Plan recommends an underpass under Shady Grove Road to connect both sides of the street. The Preliminary Plan will not implement this recommendation, but it will provide at grade improvements at the intersection. The Planning Board supports at grade improvements since at-grade connections are more direct and the Grove Shopping Center, which is northeast of Shady Grove Road, has not submitted any redevelopment plans and it is unknown if any potential redevelopment will occur. The Sector Plan acknowledges that both Shady Grove Station East (Jeremiah Park) and the Grove Shopping Center must redevelop in order to implement the shared use path under Shady Grove Road.

Environmental

Enhancing the natural environment with green open spaces, establishing a forest buffer along the Metro Access Road, providing noise mitigation, and using environmental site design techniques are some of the recommendations in the Sector Plan. The Preliminary Plan will utilize environmental site design techniques, such as bioswales and permeable surfaces; noise walls and parking garages adjacent to CSX tracks will provide noise mitigation measures for townhouses and multi-family residential; some trees have been retained along the Metro Access Road; new public and private open spaces are integrated throughout the development; and new streetscape is proposed with street trees. These measures will substantially implement the Sector Plan's environmental recommendations.

Staging

The Sector Plan establishes a staging plan that is centered on the potential redevelopment or retention of the CSP with different levels of residential and non-residential development allowed. The three phased staging plan specified the amount of residential development and non-residential development along with required infrastructure triggers, if the CSP was retained or redeveloped. The Sector Plan recommends that "housing capacity of 2,480 units and 520 jobs will be held for development on Jeremiah Park and the Metro North Neighborhood (CSP), unless the Executive branch determines that a land exchange is not feasible or fails to enter into an agreement with a private developer to relocate the CSP within two years of the adoption of the Plan." Further, the Executive Branch was given two years from the adoption of the Sector Plan to complete negotiations to relocate the CSP.

The Planning Board has weighed the Executive Branch's efforts to finalize negotiations with the two year reservation recommended in the Sector Plan and believes that although a development agreement was finalized after the two year reservation period expired, the efforts to achieve the intent of the Sector Plan were in substantial conformance with the Master Plan's recommendations. This Preliminary Plan allows for

the complete implementation of the total amount of development, public facilities, and infrastructure recommended in the Sector Plan. In light of this, and considering all of the Master Plan's objectives, even if the Board could not find that timing of the negotiations' completion substantially conformed to the Master Plan, the Board would find that recommendation to be no longer appropriate.

The Preliminary Plan will implement the Sector Plan's staging recommendations since it provides an elementary school site; a local library; public parks, including Jeremiah Local Park; transportation mitigation agreements will be required when a site plan is submitted; and there is sufficient capacity to accommodate the total amount of development.

Density

The Preliminary Plan density is generally consistent with Sector Plan's overall recommendations. The Sector Plan established base densities while using bonus density provisions through Workforce Housing, Transferable Development Rights (TDRs), and Moderate Priced Dwelling Units (MPDUs) to increase the amount of residential development. The Sector Plan recommends that "base density can be increased by 10 percent workforce housing, 20 percent Transferable Development Rights (TDRs), and 22 percent Moderate Priced Dwelling Units (MPDUs)."

The Sector Plan also envisioned joint development between the CSP and Casey 6 and 7, which are two properties northwest of the intersection of Shady Grove Road and Crabbs Branch Way. In March 2007, the Planning Board approved preliminary plan (#1-20070320) for Casey 6 and 7 with 340 dwelling units and 329,300 square feet of office development. These properties were owned by EYA, but were later purchased by Montgomery County and the State of Maryland to accommodate some of the current CSP uses and the maintenance facility for the Inter-county Connector (MD 200), respectively.

The Preliminary Plan proposes 689 dwelling units on SGS East and 1,521 dwelling units on SGS West. The Sector Plan recommends "up to 700 units with bonus" densities on SGS East (p.52). And, up to "1,540 units with bonus density if jointly developed with Casey 6 and Casey 7" on SGS West (p.44).

The residential density on SGS East is within the Plan's recommendation. Since joint development is no longer possible on Casey 6 and 7, the higher base density for SGS West increases the amount of residential development, including affordable housing, within close proximity to the Metro Station, and it is within the Metro Neighborhoods concept of the Sector Plan. This additional residential development will only occur on SGS West, which is within the Sector Plan's Metro Neighborhoods. The Metro Neighborhoods are envisioned as the area of the Sector Plan where the intense development will occur. Relocating additional units from the Casey properties to the Metro Neighborhoods is consistent with the overall density recommendations of the Sector Plan, and with the Plan's goal of targeting density closest to the Metro.

Unit Mix

The Sector Plan recommends a mix of residential unit types must be provided throughout the CSP. The Applicant will provide a range of units, including multi-family residential, townhouses, and 2 over 2 multi-family units as well as MPDU and Workforce units.

Building Heights

The Preliminary Plan building heights substantially conform to the Sector Plan recommendations. For Shady Grove Station West, the Sector Plan recommends "limiting building heights to eight stories closest to the Metro and stepping down to four stories along Crabbs Branch Way for a compatible transition" and "limiting townhouse building heights to 4 stories with multi-family units up to five stories. Maintain a 4 story building height along Crabbs Branch Way" for SGS East. Both multi-family residential buildings and townhouses building heights will determined at Site Plan review. However, no buildings will exceed 70 feet in height.

Public Facilities

The Preliminary Plan provides a local library, a dedicated elementary school site, and a local park site, Jeremiah Park. The Sector Plan designates "Jeremiah Park as the preferred site for an elementary school"; it recommends "a minimum of four acres for an urban park in the Transition Area, called Jeremiah Park after Derwood's founder;" and a local library in the Metro North-CSP neighborhood.

Although the library is not located at Shady Grove Road and Crabbs Branch Way as recommended in the Sector Plan, the Planning Board finds that the library location within the most compact area of the development is appropriate. The Board also accepts the recommendations of the Department of Public Libraries. County-wide, the Department of Public Libraries is providing smaller libraries because of fiscal and budgetary challenges and new innovations in technology. Further, a large regional library was recently built in Rockville, which is one Metro stop south from Shady Grove.

The dedication of the public park and school site are important public facilities that will implement the Sector Plan recommendations. The school site is important since there are capacity limits at the elementary school level. The Planning Board finds that the location of the elementary school shown on the Preliminary Plan is contrary to the Sector Plan recommendations. Further, it does not take advantage of operational efficiencies by co-locating the school with the park. Therefore, the Planning Board finds, and as a condition of this approval requires, that the Applicant must co-locate both facilities when a Site Plan is submitted for Shady Grove Station East or by January 1, 2017, whichever comes first.

Transferable development rights (TDRs)

The Preliminary Plan is subject to Section 59-C-13.2431 and Section 59-C-13.2433 of the Zoning Ordinance, special regulations for development using transferable development rights in the TOMX/TDR zone and development approval procedures under the standard and optional method of development. The overall dwelling units per acre (dus/acre) is 24.5, while the total Floor Area Ratio (FAR) is 1.125.

Both the dwelling units per acre and FAR measures are above the standard method threshold (0.5 FAR or 20 dus/acre) that requires TDRs, but below the optional method threshold that requires TDRs (1.6 FAR or 40 dus/acre). The Applicant proposes to build 279 TDR bonus units, all multi-family, and to provide 93 TDRs (64 for SGS West and 29 for SGS East) for the development. The Planning Board finds that this is consistent with Section 59-C-13.2431 of the Zoning Ordinance, which requires TDRs in a Metro Station Policy at a ratio of one TDR for three multi-family dwelling units .

Affordable Housing

The Sector Plan encourages maximizing affordable housing, including through the provision of MPDUs and workforce housing.

The Preliminary Plan will provide 476 dwelling units (21.5 percent) of the total residential development as affordable units, Workforce Housing units and MPDUs. The Applicant will provide 169 workforce housing units throughout the development, including 116 workforce dwelling units (25 townhouses and 91 multi-family dwelling units) in Shady Grove Station West and 53 workforce dwelling units (30 townhouses and 23 multi-family dwelling units) in Shady Grove Station East. Since the adoption of the Sector Plan and the TOMX/TDR zone, the requirement for workforce housing is now optional rather than required.

The Applicant will also provide 307 Moderately Priced Dwelling Units (MDPUs) in the development, including 211 MPDU residential units (44 townhouses and 167 multi-family) in Shady Grove Station West and 96 MPDU residential units (47 townhouses and 49 multi-family) in SGS East. The Applicant is utilizing the bonus provision in the zone for MPDUs. Therefore, based on the analysis above and with the conditions of approval, the Planning Board finds the Preliminary Plan substantially conforms to the Approved and Adopted 2006 Shady Grove Sector Plan.

2. *Public facilities will be adequate to support and service the area of the approved subdivision.*

Site Location and Vehicular Site Access Points

The Property is located south of Shady Grove Road and Crabbs Branch Way and is within 1/2 of a mile from the Shady Grove Metro Station entrance. Primary vehicular access to the property is from Crabbs Branch Way.

Transportation Demand Management

The Property is within the boundary of the Greater Shady Grove Transportation Management District (TMD). The Applicant must enter into a traffic mitigation agreement to participate with the TMD and assist the County in achieving and maintaining its non-auto driver mode share (NADMS) goals as required by the conditions.

The Sector Plan recommends that any new development generating 100 or more additional new peak-hour vehicular trips in the Shady Grove Metro Station Policy Area must achieve the non-auto-driver mode share goals reduction of 65% of the employees' vehicular trips and 50% of the residential vehicular trips.

Public Transit Service

The Shady Grove Metrorail Station is located within walking distance from the subject property. Ride-On routes 43 and 61 operate along Shady Grove Road along the northern property frontage. Currently, no bus routes operate along Crabbs Branch Way between Shady Grove Road and Redland Road.

Sector-Planned Roadways and Bikeways

In accordance with the *Sector Plan* and the *Countywide Bikeways Functional Master Plan*, the classified roadways and bikeways are as follows:

1. Crabbs Branch Way is designated as a four-lane divided commercial business district street, B-2, with a recommended 100-foot right-of-way. The Applicant proposes 8-foot-wide shared use path on the east side of the road, consistent with the Countywide requirements for shared use path, SP-53.

2. Shady Grove Road, between the western plan area boundary and I-370, is designated as a six-lane divided major highway, M-42, with a recommended 150-foot right-of-way and a Countywide bike lanes, BL-30.

3. The (Shady Grove) Metro Access Road is a four-lane divided major highway, M-94, with a recommended 150-foot right-of-way and Sector Plan shared use path, B 7. In addition, the Sector Plan recommends a partial interchange with Crabbs Branch Way.

4. The entire segment of master-planned Road "F" (proposed as Road "P") is designated as a two-lane business district street, B-9, with a recommended 70-foot rights-of-way. This street is proposed as a private street serving the proposed commercial area. As specified in the conditions, the Applicant must satisfy certain "private road" requirements.

5. The relocated segment east of Crabbs Branch Way of master-planned Road "I" (proposed as Road "DD") is designated as a two-lane business district street, B-12, with a recommended 70-foot rights-of-way. This street must be a public street as it serves as access to the proposed public school site. A private maintenance and liability agreement, however, may be permitted to allow the Applicant to build stormwater management facilities within the right-of-way.

6. The segment west of Crabbs Branch Way of master-planned Road "I" (proposed as Road "I") is designated as a two-lane business district street, B-12, with a recommended 70-foot right-of-way. This street is proposed to be a private street serving the proposed commercial area. As specified in the conditions, the Applicant must satisfy certain "private road" requirements.

7. The entire segment of master-planned Road "J" (proposed as Road "JJ") is designated as a two-lane business district street, B-13, with a recommended 70-foot right-of-way. This street must be a public street as it serves as access to the proposed public school site. A private maintenance and liability agreement, however, may be permitted to allow the Applicant to build stormwater management facilities within the right-of-way.

Transportation Adequate Public Facilities Review

Table 1 below shows the net increase in the vehicular peak-hour trips generated by the proposed redevelopment during the weekday morning peak period (6:30 to 9:30 a.m.) and the evening peak period (4:00 to 7:00 p.m.).

Table 1: Net Number of Site-Generated Trips

Tenant	Square Feet or Units	Peak-Hour Trips	
		Morning	Evening
Proposed Mixed Use Redevelopment			
Residential Townhouse	752	389 (201)	431 (250)
Mid-Rise Apartments	1,458	590 (384)	688 (399)
General Office Use	131,422	215 (162)	209 (146)
General Retail Use	41,828	82 (49)	328 (189)
Public Park, Library, & Elementary School Site	n/a	n/a	
Subtotal		1,276 (796)	1,656 (984)
Trip Credit for the Existing Traffic generated by the County Service Park		290	536
Net Increase in Peak-Hour Trips		986 (506)	1,120 (448)

Total vehicular trips were reduced based on the following:

a. Close Proximity to Metrorail Station: The percent of trips generated by nearby developments that use transit rather than their automobile during the weekday morning and evening peak hours based on the results of WMATA's Development-Related Ridership Survey.

b. Compatible Land Uses: The percent of the trips that can use non-automobile transportation modes to travel between compatible land uses within a mixed-use development, such as between apartments/townhouses and retail businesses.

The trip credit was determined for the existing trips generated by the County Service Park facilities located along Crabbs Branch Way. Driveway counts were collected at the existing curb cuts with the selected peak hour being the highest of the three hours within morning and evening peak periods at the critical intersection of Shady Grove Road and Crabbs Branch Way. The trips shown in Table 1 above are total trips that include the new, diverted, and pass-by trips, reduced for close proximity to Metro and compatible land uses, as described in a. and b. above. The new trips are shown in parentheses after the total trips.

In accordance with the Local Area Transportation Review and Policy Area Mobility Review Guidelines, a traffic study is required to satisfy LATR test because the net number of peak-hour trips generated by the proposed redevelopment is 30 or more peak-hour trips within the weekday morning and evening peak periods. Based on the result of the traffic study, Table 2 below shows

the calculated Critical Lane Volume (CLV) values at the analyzed intersections in the following traffic conditions:

1. Existing: Existing traffic conditions as they exist now.
2. Background: The existing condition plus the trips generated from approved but un-built nearby developments.
3. Total: The background condition, minus the County Service Park trips, and plus the mixed use redevelopment trips.

As noted with an asterisk in Table 2 below, these CLV values in the total traffic condition are less than the CLV values in the background traffic condition. The net traffic impact by the proposed redevelopment was determined by removing the trips generated from the County Service Park facilities and adding the trips generated by the proposed mixed use redevelopment. As a result, the trips to/from the County Service Park travel in the reverse direction compared to the trips from/to the proposed 2,210 housing units, especially to/from the west on Shady Grove Road.

Table 2: Critical Lane Volume Values

Analyzed Intersection	*Weekday Peak Hour*	*CLV Congestion Standard*	*Traffic Condition*		
			Existing	*Back-ground*	*Total*
Shady Grove Road & Epsilon Drive	Morning	1,475	1,358	1,387	1,368*
	Evening		1,229	1,254	1,206*
Shady Grove Road & Briardale Road	Morning	1,475	1,380	1,409	1,390*
	Evening		1,400	1,424	1,377*
Shady Grove Road & I-370 Northbound Ramp	Morning	1,800	928	945	939*
	Evening		1,356	1,380	1,322*
Shady Grove Road & I-370 Southbound Ramp	Morning	1,800	855	874	902
	Evening		964	1,015	1,001*
Shady Grove Road & Crabbs Branch Way	Morning	1,800	1,035	1,105	1,171
	Evening		1,135	1,200	1,299
Shady Grove Road & Oakmont Avenue	Morning	1,800	1,129	1,163	1,208
	Evening		1,003	1,045	1,035*
Shady Grove Road & Solid Waste Transfer Driveway	Morning	1,800	797	831	876
	Evening		760	790	840
Shady Grove Road & Frederick Road (MD 355)	Morning	1,800	1,564	1,626	1,657
	Evening		1,427	1,492	1,550
Redland Road & Needwood Road	Morning	1,475	845	888	889
	Evening		789	831	828*
Redland Road & Crabbs Branch Way	Morning	1,800	1,104	1,174	1,263
	Evening		1,054	1,144	1,158
Redland Road & Shady Grove Metro Access Road	Morning	1,800	934	1,010	1,032
	Evening		716	775	777
Redland Road & Somerville Drive	Morning	1,800	562	620	632
	Evening		832	889	900
Crabbs Branch Way & Indianola Drive	Morning	1,800	1,094	1,125	1,220
	Evening		979	998	1,105
Indianola Drive & Frederick Road (MD 355)	Morning	1,500	1,117	1,153	1.185
	Evening		984	1,017	1.057
Redland Road & Needwood Road	Morning	1,475	1,041	1,169	1,207
	Evening		1,030	1,077	1,114

The CLV values at all analyzed intersections in all traffic conditions are less than their congestion standard and, thus, the LATR test is satisfied.

Policy Area Mobility Review (PAMR)

Under the current *Subdivision Staging Policy*, the Applicant must satisfy PAMR by mitigating 5% of the new peak-hour trips generated by the proposed mixed-use development. The Applicant proposes to pay $292,500 (or 11,700 times 25 [5% of 506 morning peak-hour trips]) to MCDOT to fund transportation improvements located in the PAMR Derwood/Shady Grove Policy Area.

Other Public Facilities and Services

Except for schools, other public facilities and services are available and will be adequate to serve the proposed development. This site is served by public water and sewer. Gas, electric, and telecommunications services are also available to serve the property. Police stations, firehouses, and health services are currently operating within the standards set by the effective Subdivision Staging Policy.

This Application has been reviewed and approved by the Montgomery County Fire and Rescue Service (MCFRS), which has determined that the property has adequate access for emergency vehicles.

The Property is located within the Gaithersburg High School Cluster, which requires a School Facilities Payment at the elementary school level. This amounts to $868.78 per residential townhouse, $456.80 per multi-family garden apartment, and $34.42 per high/low rise residential apartment at the elementary school level. The School Facilities Payment must be made prior to the issuance of any residential building permit covered by this Preliminary Plan. Therefore, based on the analysis above and with the conditions of approval, the Planning Board finds public facilities are adequate to support and service the area of the Preliminary Plan.

3. The size, width, shape, and orientation of the approved lots are appropriate for the location of the subdivision.

The lots have been reviewed for compliance with 50-29(a) of the Subdivision Regulations. The Planning Board finds that the size, shape, width, and area of the lots are appropriate for their location within the subdivision.

4. The Application satisfies all the applicable requirements of the Forest Conservation Law, Montgomery County Code, Chapter 22A.

Environmental Guidelines

A Natural Resources Inventory/Forest Stand Delineation (NRI/FSD) for the site was approved on June 15, 2012. The site contains no forest, streams or their buffers, wetlands or their buffers, 100-year floodplains, or rare, threatened or endangered species.

A. Forest Conservation

The Preliminary Forest Conservation Plan submitted with the Preliminary Plan indicates that 5.31 acres of forest are slated for removal for the development of this project. This will result in a total afforestation and reforestation requirement of 19.94 acres. The Applicant proposes to meet this requirement through a combination of landscape credit and offsite forest conservation banking. Due to the size of the site and the amount of forest being cleared, this project does not qualify for the use of fee-in-lieu payments to meet its mitigation requirements. Final amounts of landscape credit and offsite forest banking to meet the mitigation requirement will be determined by the Final Forest Conservation Plan. The Preliminary Forest Conservation Plan does not propose any Category I easements on site. The Board finds that as conditioned, the Forest Conservation Plan complies with the requirements of the Forest Conservation Law.

B. Forest Conservation Variance

The Applicant is requesting a variance for the removal of 18 specimen trees on the Property that are 30 inches or greater in diameter. Ten are on Shady Grove Station West and eight are on Shady Grove Station East. These trees are listed in the table below:

Tree Number	Species	DBH	Status
4	*Quercus rubra*	33"	Remove
5	*Tilia cordata*	34"	Remove
14	*Carya tomentosa*	35"	Remove
16	*Carya tomentosa*	32"	Remove
20	*Quercus phellos*	30"	Remove
21	*Quercus phellos*	30"	Remove
30	*Pinus virginiana*	32"	Remove
31	*Fraxinus pennsylvanica*	32"	Remove
32	*Quercus rubra*	31"	Remove
33	*Acer rubrum*	41"	Remove
39	*Acer rubrum*	37"	Remove
54	*Quercus rubra*	41"	Remove
55	*Liriodendron tulipifera*	37"	Remove
57	*Liriodendron tulipifera*	31"	Remove
60	*Liriodendron tulipifera*	34"	Remove
61	*Liriodendron tulipifera*	30"	Remove
63	*Liriodendron tulipifera*	30"	Remove
65	*Liriodendron tulipifera*	31"	Remove

Forest Conservation Variance

Section 22A-12(b) (3) of the Forest Conservation Law identifies certain individual trees as high priority for retention and protection (Protected Trees). Any impact to these Protected Trees, including removal or any disturbance within a Protected Tree's critical root zone (CRZ), requires a variance under Section 22A-12(b)(3) (Variance). Otherwise such resources must be left in an undisturbed condition.

An applicant for a variance must provide certain written information in support of the required findings in accordance with Section 22A-21 of the County Forest Conservation Law. The law requires no impact to trees that: measure 30 inches or greater diameter at breast height (DBH); are part of a historic site or designated with a historic structure;

are designated as a national, State, or County champion trees; are at least 75 percent of the diameter of the current State champion tree of that species; or trees, shrubs, or plants that are designated as Federal or State rare, threatened, or endangered species. The Applicant submitted a variance request on June 4, 2012 for the impacts/removal to trees with the proposed layout. The Applicant proposes to remove 18 trees that are 30 inches or greater DBH and to impact, but not remove, 5 others that are considered high priority for retention under Section 22A-12(b)(3) of the County Forest Conservation Law.

Unwarranted Hardship Basis
The proposed development is in accordance with both the intent and recommendations of the Sector Plan and the Transit-Oriented Mixed Use /Transferable Development Rights (TOMX-2/TDR) zone, both of which are intended to create higher density uses in the vicinity of the Shady Grove Metro Station. The SGS West portion of the site lies closest to the Metro station and is recommended for transformation into an urban village. The SGS East portion of the site is identified as a transition area between the more intensely developed Metro neighborhoods and the existing nearby residential communities and is envisioned to provide multi-family and townhouse residential units, a local park, and an elementary school site. The combination of urban scale of development, medium-to-high density residential development, and major public facilities and amenities further constrains the site. This allows site to be intensely developed to achieve the Sector Plan's vision.

Variance trees numbering 4, 5, 14, 16, 20, 21, 30, 31, and 33 are all isolated trees that currently stand in the middle of the site, primarily in islands in the middle of parking lots. Variance trees numbering 55, 57, 60, 61, 63, and 65 occur along the site's southwestern boundary with the CSX railroad right-of-way where two large parking structures are proposed. Saving these trees would require major changes to the proposed development and would challenge the ability of the project to meet the goals of the Sector Plan.
Variance trees numbering, 32, 39, and 54 lie along the edges of the site. The proposed limits of disturbance would affect significant portions of the critical root zones of these trees and indicate that the trees will need to be removed. These three trees should be reexamined at the time of Site Plan to see if modifications can be made to the grading and limits of disturbance that would allow these trees to be saved.

Variance trees numbering 35, 36, 37, and 38 were originally proposed for removal. These trees lie along the northeast boundary of the Property at the edge of a small off-site forest stand. At staff's request, the Applicant worked to pull back adjacent development and reduce impacts to these trees. Most of the critical root zone impacted lies under an existing road around the edge of the Property; this means that most of these trees' root systems will be found in the forest behind the trees rather than under the existing pavement. Staff believes that these trees can be saved with appropriate tree protection measures.

Tree number 51, which is to be saved, will have no critical root zone impacts; therefore, technically, it does not need to be included in the variance.

Not allowing the removal of Variance trees numbering 4, 5, 14, 16, 20, 21, 30, 31, 32, 33, 39, 54, 55, 57, 60, 61, 63, and 65, and the impacts to Variance trees numbers 35, 36, 37 and 38 would require major changes to the proposed development design which is proposed to be consistent with the Sector Plan. Staff concurs that the Applicant has a sufficient unwarranted hardship to consider a variance request.

Variance Findings

The Planning Board makes the following findings necessary to grant the Variance:

1. *Granting the Variance will not confer on the Applicant a special privilege that would be denied to other applicants.*

   The Planning Board finds that the removal of 18 variance trees is consistent with the requirements and constraints of the Sector Plan, the zone, and what is intended for the property, public facilities, and road networks. Granting the variance would not confer on the Applicant a special privilege that would be denied to other applicants.

   The proposed design has attempted to balance all of the competing factors that constrain the site. While 18 variance trees will need to be removed, the Applicant has modified its plans to reduce the number of variance trees that must be taken. Impacts to the other variance trees have been limited and, as a result, they will likely be preserved. Given the intensity of the development, impacts to variance trees are to be expected.

   The Planning Board believes that reasonable steps have been taken to minimize impact to variance trees, and that granting the variance will not confer a special privilege to the Applicant.

2. *The need for the Variance is not based on conditions or circumstances which are the result of the actions by the Applicant.*

   The Planning Board finds that the variance is based on the constraints of the site and the proposed development density, public facilities, and road network are recommended in the Sector Plan, rather than on conditions or circumstances which are the result of actions by the Applicant.

3. *The need for the Variance is not based on a condition related to land or building use, either permitted or non-conforming, on a neighboring property.*

   The Planning Board finds that the variance is a result of the proposed site design and layout on the Property, and not as a result of land or building use on a neighboring property. There are no conditions relating to land or building use, either permitted or nonconforming, on a neighboring property that have played a role in the need for this variance.

4. *Granting the Variance will not violate State water quality standards or cause measurable degradation in water quality.*

   The Planning Board finds that granting the variance will not violate State water quality standards or cause measurable degradation in water quality. The Montgomery County Department of Permitting Services (DPS) has approved a stormwater management concept, dated June 13, 2012 for the Property. The Stormwater Management (SWM) concept plan incorporates a combination of on-site structural water quality treatment facilities and Environmental Site Design (ESD) practices including micro-scale treatment facilities and alternative surfaces. Runoff in excess of the ESD treatment volume will continue to be treated by the Crabbs Branch Regional stormwater management pond. The addition of on-site ESD practices should improve the water quality of runoff generated by this property.

Mitigation for Trees Subject to the Variance Provisions

Mitigation for the Variance should be at a rate that approximates the form and function of the Protected Trees removed. There are 18 trees proposed for removal as a result of the proposed development. There will also be some disturbance within the CRZ of another 4 trees but they are excellent candidates for safe retention. No mitigation is recommended for trees impacted but retained.

Therefore, the Planning Board is requiring the replacement occur at a ratio of approximately 1" DBH for every 4" DBH removed, using trees that are a minimum of 3" DBH. This means that for the 601 caliper inches of trees removed, the required mitigation will be 50 native canopy trees with a minimum size of 3" DBH. While these trees will not be as large as the trees lost,
they will provide some immediate canopy and will help augment the canopy coverage. The Planning Board is also requiring the 50 native canopy trees with a minimum size of 3" DBH to the landscape plan. Because these trees are in mitigation for specimen trees removed, they do not count toward afforestation requirements.

5. *All storm water management requirements shall be met as provided in Chapter 19, article II, title "Storm Water Management," Sections 19-20 through 19-35.*

   A stormwater management concept plan was approved by the MCDPS on June 13, 2012, meeting stormwater management requirements through a variety of Environmental Site design techniques and structural stormwater management facilities.

BE IT FURTHER RESOLVED, that for the purpose of these conditions, the term "Applicant" shall also mean the developer, the owner, or any successors in interest to the terms of this approval.

BE IT FURTHER RESOLVED, that this Preliminary Plan will remain valid for 85 months from its initiation date (as defined in Montgomery County Code Section 50-35(h)), and that prior to the expiration of this validity period, a final record plat for all property delineated on the approved Preliminary Plan must be recorded in the Montgomery County Land Records, or a request for an extension must be filed [modify as required if Board approves phases with concurrent validity periods – or delete if phased validity periods are set forth in conditions of approval]; and

BE IT FURTHER RESOLVED, that this Resolution constitutes the written opinion of the Board in this matter, and the date of this Resolution is SEP 11 2012 (which is the date that this Resolution is mailed to all parties of record); and

BE IT FURTHER RESOLVED, that any party authorized by law to take an administrative appeal must initiate such an appeal within thirty days of the date of this Resolution, consistent with the procedural rules for the judicial review of administrative agency decisions in Circuit Court (Rule 7-203, Maryland Rules).

* * * * * * * * * * * * *

CERTIFICATION

This is to certify that the foregoing is a true and correct copy of a resolution adopted by the Montgomery County Planning Board of The Maryland-National Capital Park and Planning Commission on motion of Commissioner Dreyfuss, seconded by Commissioner Presley, with Chair Carrier, Vice Chair Wells-Harley, and Commissioners Anderson, Dreyfuss, and Presley voting in favor of the motion, at its regular meeting held on Thursday, September 6, 2012, in Silver Spring, Maryland.

Françoise M. Carrier, Chair
Montgomery County Planning Board

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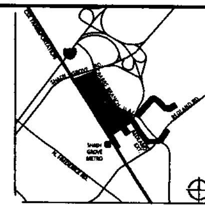
Attachment 2

GENERAL FCP NOTES

[illegible]

FINAL FOREST CONSERVATION PLAN
SHADY GROVE STATION
PHASE I
WEST DEVELOPMENT
& PUBLIC INFRASTRUCTURE IMPROVEMENTS

SHEET INDEX



VICINITY MAP
SCALE: 1" = 2000'

SOILS TABLE

SYMBOL	SOIL	PRIME AGRICULTURE	ERODIBLE	SERPENTINIC	HYDRIC	K FACTOR
400	URBAN LAND	NO	--	NO	--	--
1C	GAILA SILT LOAM 8-15% SLOPES	NO	MODERATE	NO	YES	0.37
2B	GLENELG SILT LOAM 3-8% SLOPES	YES*	SLIGHT	NO	YES	0.32
2C	GLENELG SILT LOAM 8-15% SLOPES	NO	SLIGHT	NO	YES	0.32
5A	GLENVILLE SILT LOAM 0-3% SLOPES	NO	SLIGHT	NO	YES	0.32
5B	GLENVILLE SILT LOAM 3-8% SLOPES	NO	SLIGHT	NO	YES	0.32
6A	BAILE SILT LOAM 0-3% SLOPES	NO	SLIGHT	NO	YES	0.43

*(Urban or built-up areas of the prime agricultural soils are not considered prime farmland per the Soil Survey of Montgomery County, Maryland Page 140; Table 5)

FCP WORKSHEET

SHADY GROVE STATION: OVERALL & PHASE I WEST & CRABBS BRANCH WAY ROAD IMPROVEMENTS

FOREST CONSERVATION WORKSHEET FOR SHADY GROVE STATION

Net Tract Area: (Overall: 91.7 AC+5.77 AC Crabbs Branch Way R/W+0.11 AC off-site LOD)	OVERALL*	PHASE ONE
A. Total Phase I tract area - 52.03 AC LOD + 1.12 AC of off-site impacts = 53.15 AC	97.61	53.15
B. Land dedication acres (parks, county facility, etc.)	0.00	0.00
C. Land dedication for roads or utilities (not being constructed by this plan)	0.75	0.75
D. Area to remain in commercial agricultural production/use	0.00	0.00
E. Other deductions (specify)	0.00	0.00
F. Net Tract Area =	96.86	52.40
LAND USE CATEGORY: (from Trees Technical Manual) Input the number "1" under the appropriate land use, limit to only one: ARA 0, MDR 0, IDA 0, HDR 0, MPD 1, CIA 0		
G. Afforestation Threshold 15% x F =	14.53	7.86
H. Conservation Threshold 20% x F =	19.37	10.48
EXISTING FOREST COVER:		
I. Existing forest cover =	4.84	1.08
Overall: 4.72 AC on-site + 0.11 AC off-site forest impact = 4.83 AC		
Phase I West: 0.97 AC on-site + 0.11 AC off-site forest impact = 1.08 AC		
J. Area of forest above afforestation threshold =	0.00	0.00
K. Area of forest above conservation threshold =	0.00	0.00
BREAK EVEN POINT:		
L. Forest retention above threshold with no mitigation =	0.00	0.00
M. Clearing permitted without mitigation =	0.00	0.00
PROPOSED FOREST CLEARING:		
N. Total area of forest to be cleared =	4.84	1.08
O. Total area of forest to be retained =	0.00	0.00
PLANTING REQUIREMENTS:		
P. Reforestation for clearing above conservation threshold =	0.00	0.00
Q. Reforestation for clearing below conservation threshold =	9.68	2.16
R. Credit for retention above conservation threshold =	0.00	0.00
S. Total reforestation required =	9.68	2.16
T. Total afforestation required =	9.69	6.78
U. Credit for landscaping (may not exceed 20% of "S") =	0.00	0.00
V. Total reforestation and afforestation required =	19.37	8.94

* AS PER APPROVED PRELIMINARY FCP 120120080 AND REVISED TO EXCLUDE 0.75 ACRES OF EXISTING WSSC EASEMENT FROM THE FCP TRACT TOTAL AND TO INCLUDE 0.11 ACRES OF OFF-SITE FOREST IMPACT.

FCP WORKSHEET

PHASE I PUBLIC INFRASTRUCTURE IMPROVEMENTS: TRAIL, WMATA ENTRANCE IMPROVEMENTS & SEWER

FOREST CONSERVATION WORKSHEET FOR SHADY GROVE STATION

NET TRACT AREA:	PHASE I INFRASTRUCTURE TRAIL, WMATA & SEWER
A. Total Phase Infrastructure tract area - 1.20 AC Trail + 3.00 AC WMATA Sewer LOD's =4.20 AC	4.20
B. Land dedication acres (parks, county facility, etc.)	0.00
C. Land dedication for roads or utilities (not being constructed by this plan)	0.00
D. Area to remain in commercial agricultural production/use	0.00
E. Other deductions (specify)	0.00
F. Net Tract Area =	4.20
LAND USE CATEGORY: (from Trees Technical Manual) Input the number "1" under the appropriate land use, limit to only one: ARA 0, MDR 0, IDA 1, HDR 0, MPD 0, CIA 0	
G. Afforestation Threshold 15% x F =	0.63
H. Conservation Threshold 20% x F =	0.84
EXISTING FOREST COVER:	
I. Existing forest cover = Trail LOD = 0.73 AC forest; WMATA/Sewer LOD = 0.46 AC forest	1.19
Overall:	
Phase I West: 0.97 AC on-site + 0.11 AC off-site forest impact = 1.08 AC	
J. Area of forest above afforestation threshold =	0.56
K. Area of forest above conservation threshold =	0.35
BREAK EVEN POINT:	
L. Forest retention above threshold with no mitigation =	0.91
M. Clearing permitted without mitigation =	0.28
PROPOSED FOREST CLEARING:	
N. Total area of forest to be cleared =	1.19
O. Total area of forest to be retained =	0.00
PLANTING REQUIREMENTS:	
P. Reforestation for clearing above conservation threshold =	0.09
Q. Reforestation for clearing below conservation threshold =	1.68
R. Credit for retention above conservation threshold =	0.00
S. Total reforestation required =	1.77
T. Total afforestation required =	0.00
U. Credit for landscaping (may not exceed 20% of "S") =	0.22
V. Total reforestation and afforestation required =	1.55

FOREST CLEARED TABLES

SHADY GROVE STATION: PHASE I WEST & CRABBS BRANCH WAY ROAD IMPROVEMENTS

AREA	TOTAL FOREST CLEARED (ACRES)
Area SGS1	0.11
Area SGS2	0.02
Area SGS3	0.08
Area SGS4	0.76
Area SGS5 (Off-site area)	0.11
TOTAL	1.08

PHASE I PUBLIC INFRASTRUCTURE IMPROVEMENTS

TRAIL

AREA	TOTAL FOREST CLEARED (ACRES)
Area T1	0.12
Area T2	0.54
Area T3	0.004
Area T4	0.002
Area T5	0.06
TOTAL	0.73

WMATA ENTRANCE & SEWER

AREA	TOTAL FOREST CLEARED (ACRES)
Area WS1	0.08
Area WS2	0.32
Area WS3	0.05
Area WS4	0.01
TOTAL	0.46

PHASE I TREE REPLACEMENT TABLES

SHADY GROVE STATION: PHASE I WEST & CRABBS BRANCH WAY ROAD IMPROVEMENTS

1.) TWENTY-EIGHT (28) 3" CALIPER SHADE TREES PROVIDED AS SHOWN ON THIS PLAN.
2.) SEE SHADY GROVE STATION LA PLAN FOR PLANT SPECIES AND ALL PLANTING DETAILS.

TREE REMOVED	" CALIPER	MITIGATION REQUIRED @ 1"/4" REMOVED	# OF 3" CALIPER REPLACEMENT TREES
T-5	34	8.5	2.8
T-30	32	8	2.7
T-31	32	8	2.7
T-54	41	10.25	3.4
T-55	37	9.25	3.1
T-57	31	7.75	2.6
T-60	34	8.5	2.8
T-61	30	7.5	2.5
T-63	30	7.5	2.5
T-65	31	7.75	2.6
TOTALS	332	83	28

PHASE I PUBLIC INFRASTRUCTURE IMPROVEMENTS: SEWER

1.) THREE (3) 3" CALIPER SHADE TREES PROVIDED AS SHOWN ON THIS PLAN.
2.) SEE SHEET FCP-12 FOR LOCATION AND SHEET FCP-17 FOR PLANTING DETAILS.

TREE REMOVED	" CALIPER	MITIGATION REQUIRED @ 1"/4" REMOVED	# OF 3" CALIPER REPLACEMENT TREES
T-51	34	8.5	2.8
TOTALS	34	8.5	3

PHASE I PLANTING SCHEDULE SEWER LINE MITIGATION TREES

PHASE I PUBLIC INFRASTRUCTURE IMPROVEMENTS: SEWER*

QTY.	KEY	BOTANICAL NAME	COMMON NAME	CALIPER	ROOT BALL	REMARKS
3	QP	[illegible]	WILLOW OAK	3" - 3-1/2"	B&B	SINGLE LEADER, MATCHED, SYMMETRICAL, FULL CROWN

* SEE PLANTING NARRATIVE AND PLANTING DETAIL ON SHEET FCP-17.

FCP ENVIRONMENTAL SUMMARY TABLE

SHADY GROVE STATION: OVERALL & PHASE I WEST & CRABBS BRANCH WAY ROAD IMPROVEMENTS

	OVERALL*	PHASE I
ACREAGE OF TRACT	97.61	53.15
ACREAGE OF TRACT REMAINING IN AGRICULTURAL USE	0.00	0.00
ACREAGE OF ROAD & UTILITY ROW'S WHICH WILL NOT BE IMPROVED AS PART OF DEVELOPMENT APPLICATION	0.75	0.75
ACREAGE OF STREAM VALLEY BUFFER	0.00	0.00
ACREAGE OF TOTAL EXISTING FOREST	4.84	1.08
ACREAGE OF TOTAL FOREST RETENTION	0.00	0.00
ACREAGE OF TOTAL FOREST CLEARED	4.84	1.08
LAND USE CATEGORY & CONSERVATION & AFFORESTATION THRESHOLDS SEC. 22A-12(a) FOREST CONS. LAW	MPD: 15% / 20%	MPD: 15% / 20%
ACREAGE OF FOREST RETAINED, CLEARED, & PLANTED WITHIN WETLANDS	Retained: 0.00 Cleared: 0.00 Planted: 0.00	Retained: 0.00 Cleared: 0.00 Planted: 0.00
ACREAGE OF FOREST RETAINED, CLEARED, & PLANTED W/IN 100-YR FLOODPLAINS	Retained: 0.00 Cleared: 0.00 Planted: 0.00	Retained: 0.00 Cleared: 0.00 Planted: 0.00
ACREAGE OF FOREST RETAINED, CLEARED, & PLANTED WITHIN STREAM BUFFERS	Retained: 0.00 Cleared: 0.00 Planted: 0.00	Retained: 0.00 Cleared: 0.00 Planted: 0.00
ACREAGE OF FOREST RETAINED, CLEARED, & PLANTED WITHIN PRIORITY AREAS	Retained: 0.00 Cleared: 0.00 Planted: 0.00	Retained: 0.00 Cleared: 0.00 Planted: 0.00
LINEAR FEET AND AVERAGE WIDTH STREAM BUFFER PROVIDED	Linear Feet: 0.00' Average Width: 0.00'	Linear Feet: 0.00' Average Width: 0.00'

* AS PER APPROVED PRELIMINARY FCP 120120080 AND REVISED TO EXCLUDE 0.75 ACRES OF EXISTING WSSC EASEMENT FROM THE FCP TRACT TOTAL AND TO INCLUDE 0.11 ACRES OF OFF-SITE FOREST IMPACT.

FCP ENVIRONMENTAL SUMMARY TABLE

PHASE I PUBLIC INFRASTRUCTURE IMPROVEMENTS: TRAIL, WMATA ENTRANCE IMPROVEMENTS & SEWER

ACREAGE OF TRACT	4.20
ACREAGE OF TRACT REMAINING IN AGRICULTURAL USE	0.00
ACREAGE OF ROAD & UTILITY ROW'S WHICH WILL NOT BE IMPROVED AS PART OF DEVELOPMENT APPLICATION	0.00
ACREAGE OF STREAM VALLEY BUFFER	1.46
ACREAGE OF TOTAL EXISTING FOREST	1.19
ACREAGE OF TOTAL FOREST RETENTION	0.00
ACREAGE OF TOTAL FOREST CLEARED	1.19
LAND USE CATEGORY & CONSERVATION & AFFORESTATION THRESHOLDS SEC. 22A-12(a) FOREST CONS. LAW	(IDA) MPD: 15% / 20%
ACREAGE OF FOREST RETAINED, CLEARED, & PLANTED WITHIN WETLANDS	Retained: 0.00 Cleared: 0.01 Planted: 0.00
ACREAGE OF FOREST RETAINED, CLEARED, & PLANTED W/IN 100-YR FLOODPLAINS	Retained: 0.00 Cleared: 0.72 Planted: 0.00
ACREAGE OF FOREST RETAINED, CLEARED, & PLANTED WITHIN STREAM BUFFERS	Retained: 0.00 Cleared: 0.80 Planted: 0.00
ACREAGE OF FOREST RETAINED, CLEARED, & PLANTED WITHIN PRIORITY AREAS	Retained: 0.00 Cleared: 1.05 Planted: 0.00
LINEAR FEET AND AVERAGE WIDTH STREAM BUFFER PROVIDED	Linear Feet: 0' Average Width: 0'

PROPOSED REFORESTATION AND AFFORESTATION

SHADY GROVE STATION: PHASE I WEST & CRABBS BRANCH WAY ROAD IMPROVEMENTS

	AC
OVERALL AFFORESTATION/REFORESTATION REQUIRED	19.37
AFFORESTATION/REFORESTATION REQUIRED	8.94
FEE-IN-LIEU CREDIT	0.00
OFF-SITE BANKING CREDIT	8.94
TOTAL CREDITS PHASE I FCP	8.94
REMAINING REQUIREMENT FOR FUTURE PHASES	10.43

PHASE I PUBLIC INFRASTRUCTURE IMPROVEMENTS: TRAIL, WMATA ENTRANCE IMPROVEMENTS & SEWER

AFFORESTATION/REFORESTATION REQUIRED	1.77
LANDSCAPE CREDIT	0.22
FEE-IN-LIEU CREDIT	0.00
OFF-SITE BANKING CREDIT	1.55
TOTAL CREDITS PHASE I FCP	1.77
REMAINING REQUIREMENT	0.00

LANDSCAPE CREDIT TABLE

PHASE I PUBLIC INFRASTRUCTURE IMPROVEMENTS: WMATA ENTRANCE IMPROVEMENTS

KEY	BOTANICAL NAME	COMMON NAME	CALIPER	ASSUMED 20 Yr CANOPY DIAMETER (FT.)	ASSUMED 20 Yr CANOPY SF PER TREE	No. OF TREES CREDITED	FOREST CONSERVATION CREDIT
AR	ACER RUBRUM	RED MAPLE	3.0" - 3-1/2"	48	1809	9	16,278
						MINUS CANOPY OVERLAP	6,763
						TOTAL LANDSCAPE CREDIT SF	9,515
						TOTAL LANDSCAPE CREDIT AC	0.22

SIGNIFICANT AND SPECIMEN TREE TABLE PER NRI 42011120

[illegible]

SIGNIFICANT AND SPECIMEN TREE TABLE PER PUBLIC INFRASTRUCTURE NRI'S 420140100 & 420140200

[illegible]

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.

SIGNATURE ____________ DATE ____________

GEORGE R. WARHOLIC, Jr., RLA — PRINTED NAME
JUNE 6, 2015 — EXPIRATION DATE
TITLE: PROJECT LANDSCAPE ARCHITECT

LICENSE No. 3302

DEVELOPER'S CERTIFICATE

THE UNDERSIGNED AGREES TO EXECUTE ALL THE FEATURES OF THE APPROVED FINAL FOREST CONSERVATION PLAN NO. 820130220 INCLUDING FINANCIAL BONDING, FOREST PLANTING, MAINTENANCE, AND ALL OTHER APPLICABLE AGREEMENTS.

DEVELOPER'S NAME: ____________

CONTACT PERSON OR OWNER: ____________

ADDRESS: ____________

PHONE: ____________

SIGNATURE: ____________

PREPARED FOR: EYA/CSP ASSOCIATES c/o EYA, LLC

CONSULTANTS

REVISIONS

PROFESSIONAL SEAL

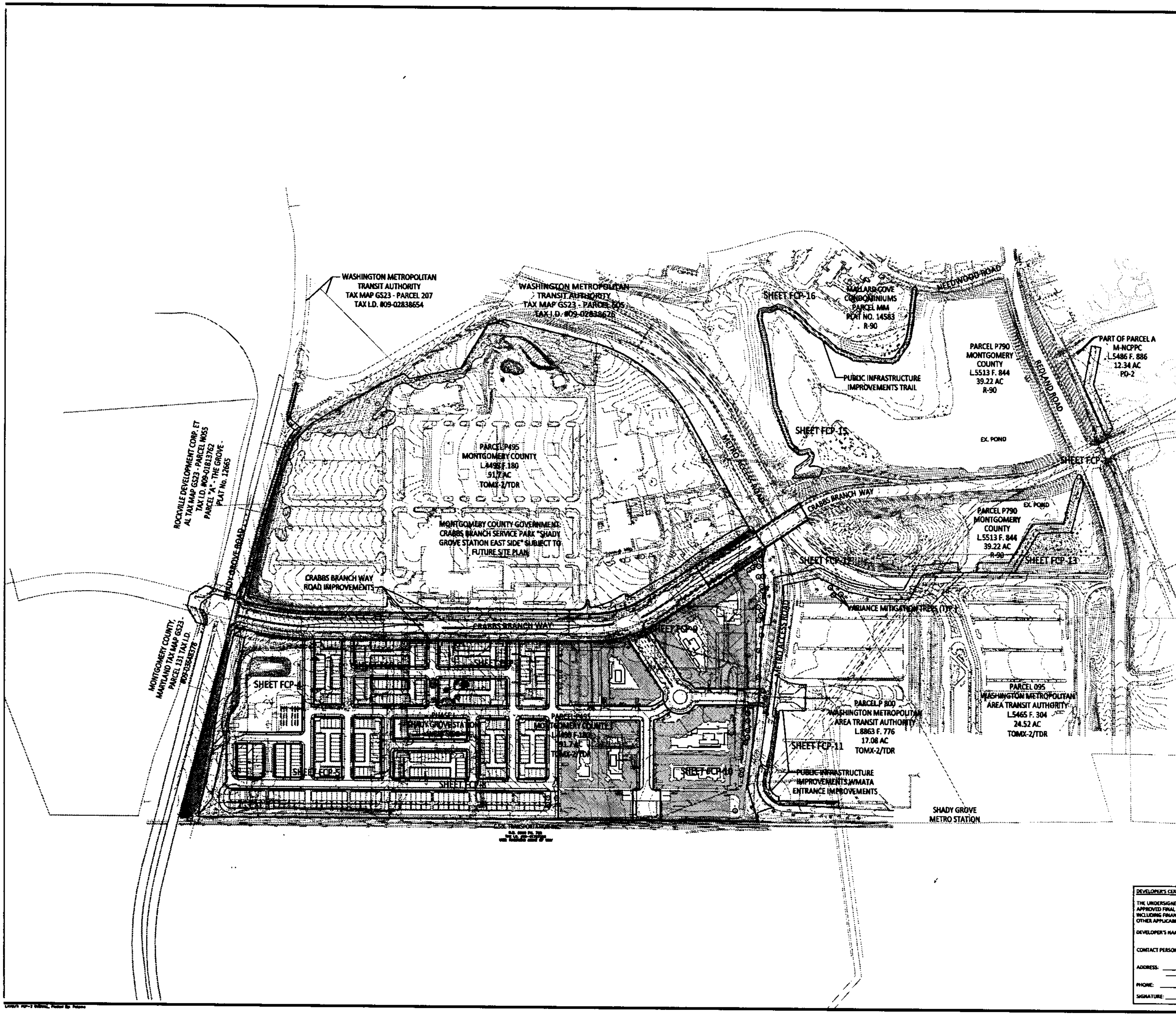
SHADY GROVE STATION
PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123,

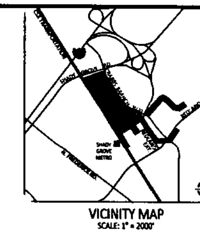
FINAL FOREST CONSERVATION PLAN
#820130220

COVER SHEET

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED: ____

SHEET NO. FCP-1





VICINITY MAP
SCALE: 1" = 2000'

VIKA

ENGINEERS PLANNERS
LANDSCAPE ARCHITECTS SURVEYORS
VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD SUITE 400
GERMANTOWN, MARYLAND 20874
GERMANTOWN, MD MCLEAN, VA

PREPARED FOR:
EYA/CSP ASSOCIATES
c/o EYA, LLC

CONSULTANTS

ARCHITECTS
LESSARD GROUP

KTGY

ATTORNEY
LINOWES & BLOCHER

TRAFFIC ENGINEER
WELLS & ASSOCIATES

PLANNING, CIVIL ENGINEER & LANDSCAPE ARCHITECT
VIKA MARYLAND, LLC

REVISIONS	DATE
REVISED FOR 05/20/13 DRC COMMENTS	07/03/13
REVISED FOR MITIGATION TREE LOCATIONS	08/07/13
REVISED FOR PUBLIC INFRASTRUCTURE	09/23/13
IMPROVEMENTS	
REVISED FOR REVIEWER COMMENTS	11/26/13

PROFESSIONAL SEAL

SHADY GROVE STATION

PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123,

FINAL FOREST CONSERVATION PLAN #820130220

OVERALL FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED:

SHEET NO. FCP-2

DEVELOPER'S CERTIFICATE

THE UNDERSIGNED AGREES TO EXECUTE ALL THE FEATURES OF THE APPROVED FINAL FOREST CONSERVATION PLAN NO. 820130220 INCLUDING FINANCIAL BONDING, FOREST PLANTING, MAINTENANCE, AND ALL OTHER APPLICABLE AGREEMENTS.

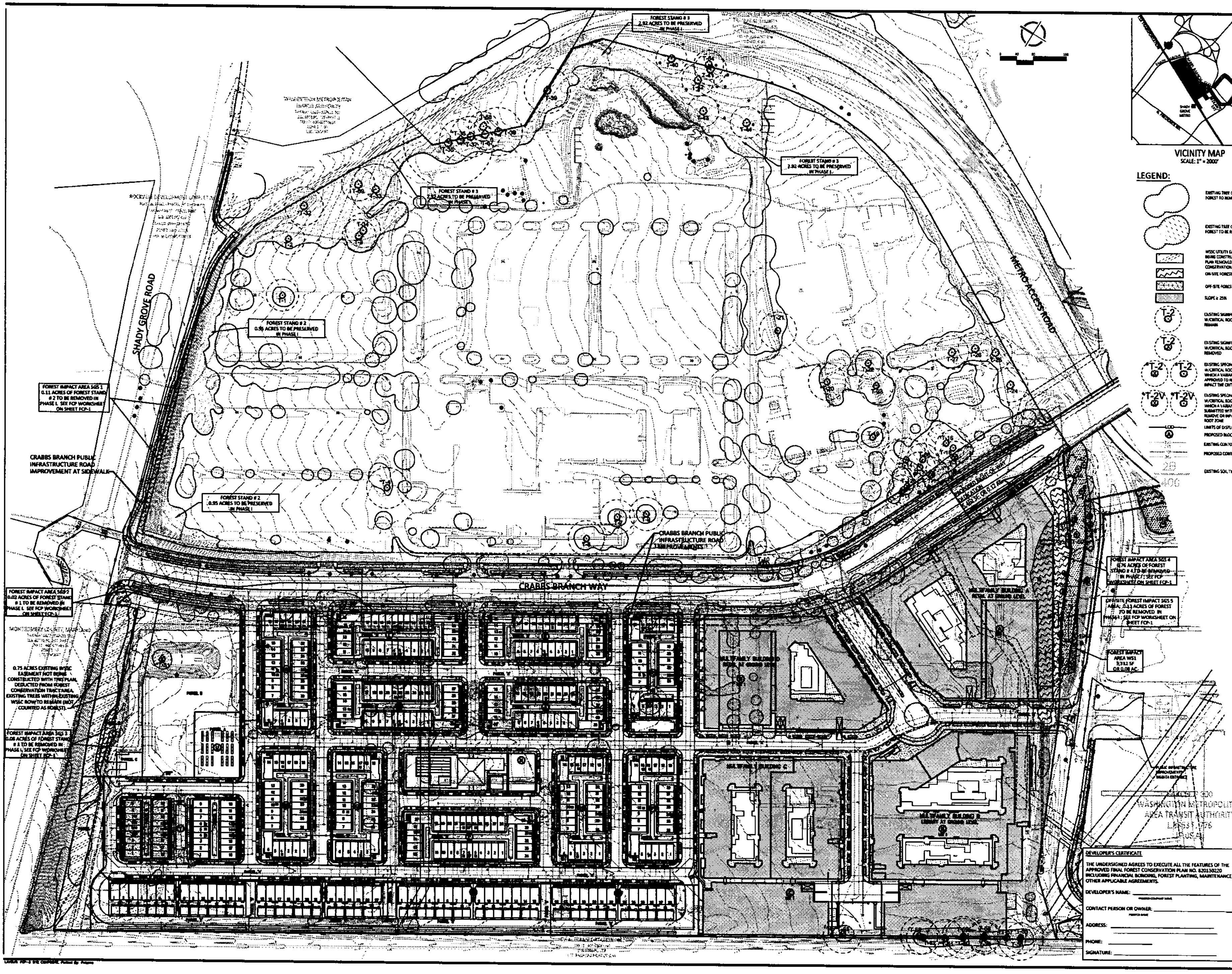
DEVELOPER'S NAME: ______________________

CONTACT PERSON OR OWNER: ______________________

ADDRESS: ______________________

PHONE: ______________________

SIGNATURE: ______________________



DEVELOPER'S CERTIFICATE

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DEVELOPER'S NAME: ____________

CONTACT PERSON OR OWNER: ____________

ADDRESS: ____________

PHONE: ____________

SIGNATURE: ____________

VIKA

ENGINEERS PLANNERS LANDSCAPE ARCHITECTS SURVEYORS
VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD SUITE 400
GERMANTOWN, MARYLAND 20874
PHONE (301) 916-4100
FAX (301) 916-2262
GERMANTOWN, MD MCLEAN, VA

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c/o EYA, LLC
4800 HAMPTON LANE
SUITE 300
BETHESDA, MD 20814

CONSULTANTS

ARCHITECTS
LESSARD GROUP

KTGY

ATTORNEY
LINOWES & BLOCHER

TRAFFIC ENGINEER
WELLS & ASSOCIATES

PLANNING, CIVIL ENGINEER & LANDSCAPE ARCHITECT
VIKA MARYLAND, LLC

REVISIONS	DATE
REVISED FOR 05/20/13 DRC COMMENTS	07/03/13
REVISED FOR MITIGATION TREE LOCATIONS	08/07/13
REVISED FOR PUBLIC INFRASTRUCTURE IMPROVEMENTS	09/23/13
REVISED FOR REVIEWER COMMENTS	11/20/13

PROFESSIONAL SEAL

SHADY GROVE STATION

PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

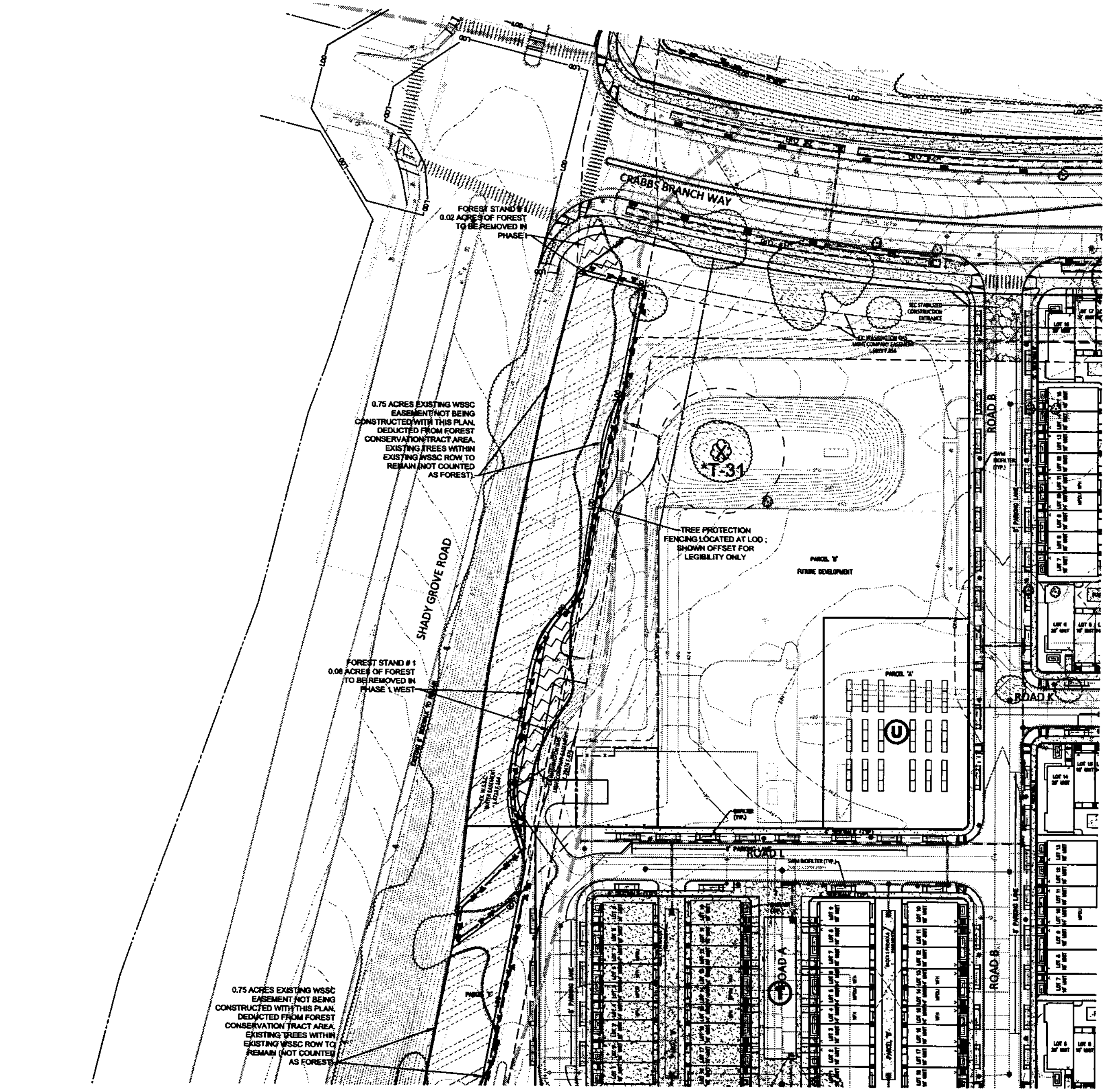
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123,

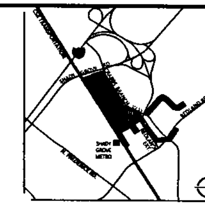
FINAL FOREST CONSERVATION PLAN #820130220

COMPOSITE FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED: ____

SHEET NO. FCP-3





VICINITY MAP
SCALE: 1" = 2000'

LEGEND:

- EXISTING TREE CANOPY, NOT FOREST TO REMAIN
- EXISTING TREE CANOPY, NOT FOREST TO BE REMOVED
- WSSC UTILITY EASEMENT NOT BEING CONSTRUCTED BY THIS PLAN REMOVED FROM FOREST CONSERVATION TRACT AREA
- ON-SITE FOREST IMPACT
- OFF-SITE FOREST IMPACT
- SLOPE ≥25%
- T-2 EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO REMAIN
- T-2 EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO BE REMOVED
- *T-2 EXISTING SPECIMEN TREE W/CRITICAL ROOT ZONE FOR WHICH A VARIANCE HAS BEEN APPROVED TO REMOVE OR IMPACT THE CRITICAL ROOT ZONE
- *T-2V EXISTING SPECIMEN TREE W/CRITICAL ROOT ZONE FOR WHICH A VARIANCE HAS BEEN SUBMITTED TO REMOVE OR IMPACT THE CRITICAL ROOT ZONE
- PROPOSED SHADE TREE FOR MITIGATION OF REMOVAL OF VARIANCE TREES
- 2B / 400 EXISTING SOIL TYPE / MAP UNIT
- SLOPE ≥25%
- TP/RP ROOT PRUNING TRENCH AT TREE PROTECTION FENCE W/SIGNAGE
- TP TREE PROTECTION FENCING W/SIGNAGE
- LOD LIMITS OF DISTURBANCE
- SF SEC SILT FENCE
- SSF SEC SUPER SILT FENCE
- FL-18 SEC FILTER LOGS
- 100 YR 100 YEAR FLOOD PLAIN
- SVB STREAM VALLEY BUFFER
- WB WETLAND BUFFER
- WET WETLAND
- SEC INLET PROTECTION
- SEC EARTH DIKE
- SEC STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED BLOCK DESIGNATION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN EASEMENT
- PROPOSED FDC
- PROPOSED FIRE HYDRANT
- PROPOSED DOOR LOCATION
- PROPOSED PEDESTRIAN LIGHT

DEVELOPER'S CERTIFICATE

THE UNDERSIGNED AGREES TO EXECUTE ALL THE FEATURES OF THE APPROVED FINAL FOREST CONSERVATION PLAN NO. 820130220 INCLUDING FINANCIAL BONDING, FOREST PLANTING, MAINTENANCE, AND ALL OTHER APPLICABLE AGREEMENTS.

DEVELOPER'S NAME: ____________

CONTACT PERSON OR OWNER: ____________

ADDRESS: ____________

PHONE: ____________

SIGNATURE: ____________

VIKA
ENGINEERS PLANNERS LANDSCAPE ARCHITECTS SURVEYORS
VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD, SUITE 400
GERMANTOWN, MARYLAND 20874

PREPARED FOR:
EYA/CSP ASSOCIATES
c/o EYA, LLC

CONSULTANTS

ARCHITECTS
LESSARD GROUP

KTGY

ATTORNEY
LINOWES & BLOCHER

TRAFFIC ENGINEER
WELLS & ASSOCIATES

PLANNING, CIVIL ENGINEER & LANDSCAPE ARCHITECT
VIKA MARYLAND, LLC

REVISIONS	DATE
REVISED FOR 05/20/13 DRC COMMENTS	07/03/13
REVISED FOR MITIGATION TREE LOCATIONS	08/07/13
REVISED FOR PUBLIC INFRASTRUCTURE IMPROVEMENTS	09/23/13
REVISED FOR REVIEWER COMMENTS	11/20/13

PROFESSIONAL SEAL

SHADY GROVE STATION

PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

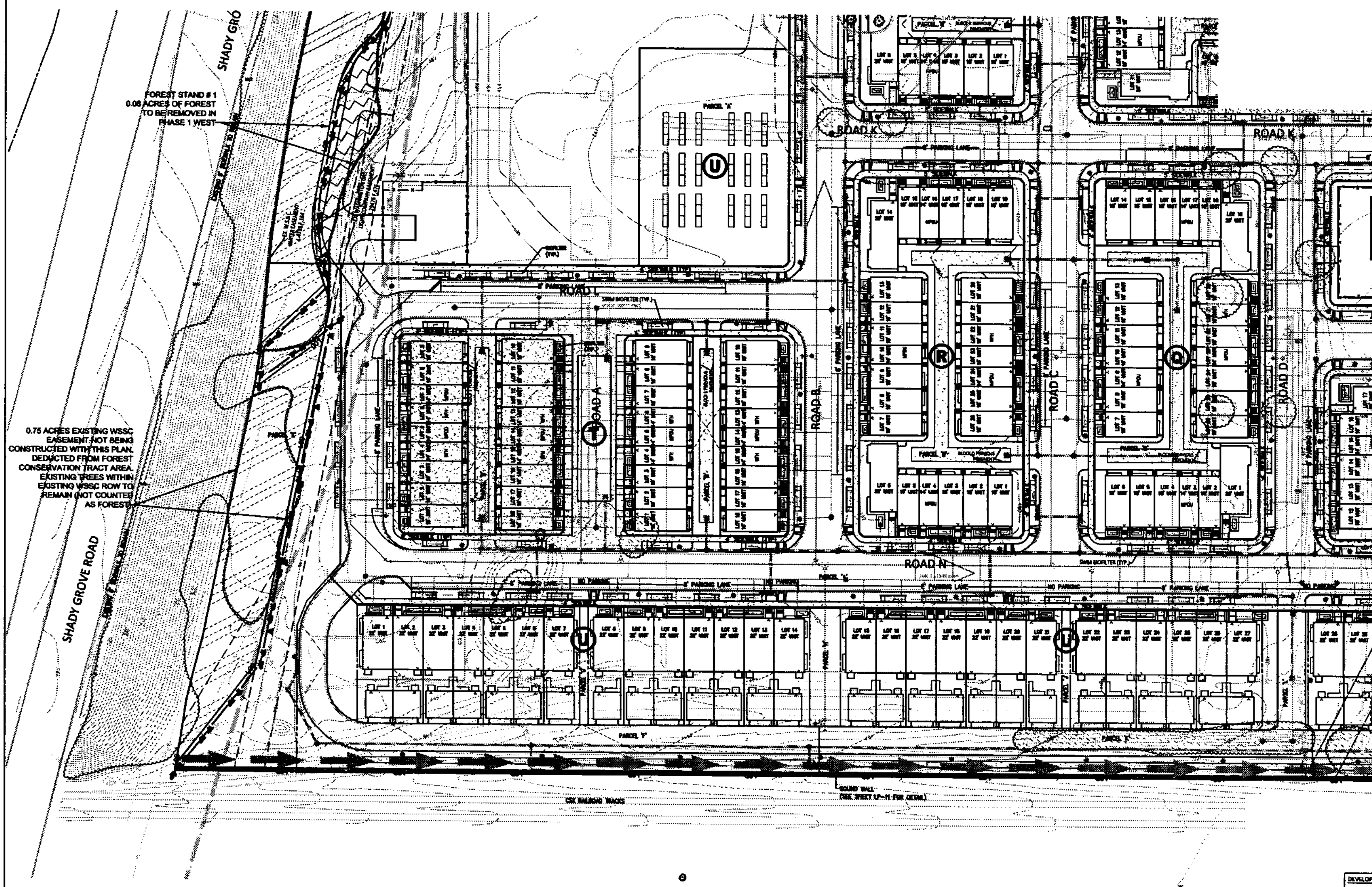
5TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123

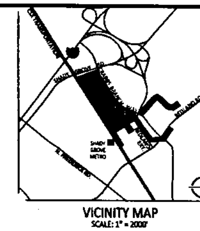
FINAL FOREST CONSERVATION PLAN #820130220

DETAILED FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED:

SHEET NO. FCP-4





VICINITY MAP
SCALE: 1" = 2000'

LEGEND:

- EXISTING TREE CANOPY, NOT FOREST TO REMAIN
- EXISTING TREE CANOPY, NOT FOREST TO BE REMOVED
- WSSC UTILITY EASEMENT NOT BEING CONSTRUCTED BY THIS PLAN REMOVED FROM FOREST CONSERVATION TRACT AREA
- ON-SITE FOREST IMPACT
- OFF-SITE FOREST IMPACT
- SLOPE 25%
- EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO REMAIN
- EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO BE REMOVED
- EXISTING SPECIMEN TREE W/CRITICAL ROOT ZONE FOR WHICH A VARIANCE HAS BEEN APPROVED TO REMOVE OR IMPACT THE CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE W/CRITICAL ROOT ZONE FOR WHICH A VARIANCE HAS BEEN SUBMITTED TO REMOVE OR IMPACT THE CRITICAL ROOT ZONE
- PROPOSED SHADE TREE FOR MITIGATION OF REMOVAL OF VARIANCE TREES
- EXISTING SOIL TYPE / MAP UNIT
- SLOPE 15%
- ROOT PRUNING TRENCH AT TREE PROTECTION FENCE W/SIGNAGE
- TREE PROTECTION FENCING W/SIGNAGE
- LIMITS OF DISTURBANCE
- SSC SILT FENCE
- SSC SUPER SILT FENCE
- SSC FILTER LOGS
- 100 YEAR FLOOD PLAIN
- STREAM VALLEY BUFFER
- WETLAND BUFFER
- WETLAND
- SSC INLET PROTECTION
- SSC EARTH DIKE
- SSC STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED BLOCK DESIGNATION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN EASEMENT
- PROPOSED FDC
- PROPOSED FIRE HYDRANT
- PROPOSED DOOR LOCATION
- PROPOSED PEDESTRIAN LIGHT

0 15 30 60

DEVELOPER'S CERTIFICATE

THE UNDERSIGNED AGREES TO EXECUTE ALL THE FEATURES OF THE APPROVED FINAL FOREST CONSERVATION PLAN NO. 820130220 INCLUDING FINANCIAL BONDING, FOREST PLANTING, MAINTENANCE, AND ALL OTHER APPLICABLE AGREEMENTS.

DEVELOPER'S NAME: ______________________
PRINTED COMPANY NAME

CONTACT PERSON OR OWNER: ______________________
PRINTED NAME

ADDRESS: ______________________

PHONE: ______________________

SIGNATURE: ______________________

VIKA

ENGINEERS PLANNERS
LANDSCAPE ARCHITECTS SURVEYORS
VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD SUITE 400
GERMANTOWN, MARYLAND 20874
PHONE: (301) 916-4100
FAX: (301) 916-2262
GERMANTOWN, MD. MCLEAN, VA.

PREPARED FOR:
EYA/CSP ASSOCIATES
c/o EYA, LLC

CONSULTANTS

ARCHITECTS
LESSARD GROUP

KTGY

ATTORNEY
LINOWES & BLOCHER

TRAFFIC ENGINEER
WELLS & ASSOCIATES

PLANNING, CIVIL ENGINEER & LANDSCAPE ARCHITECT
VIKA MARYLAND, LLC

REVISIONS	DATE
REVISED FOR 05/20/13 DRC COMMENTS	07/09/13
REVISED FOR MITIGATION TREE LOCATIONS	08/07/13
REVISED FOR PUBLIC INFRASTRUCTURE IMPROVEMENTS	09/23/13
REVISED FOR REVIEWER COMMENTS	11/20/13

PROFESSIONAL SEAL

SHADY GROVE STATION

PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

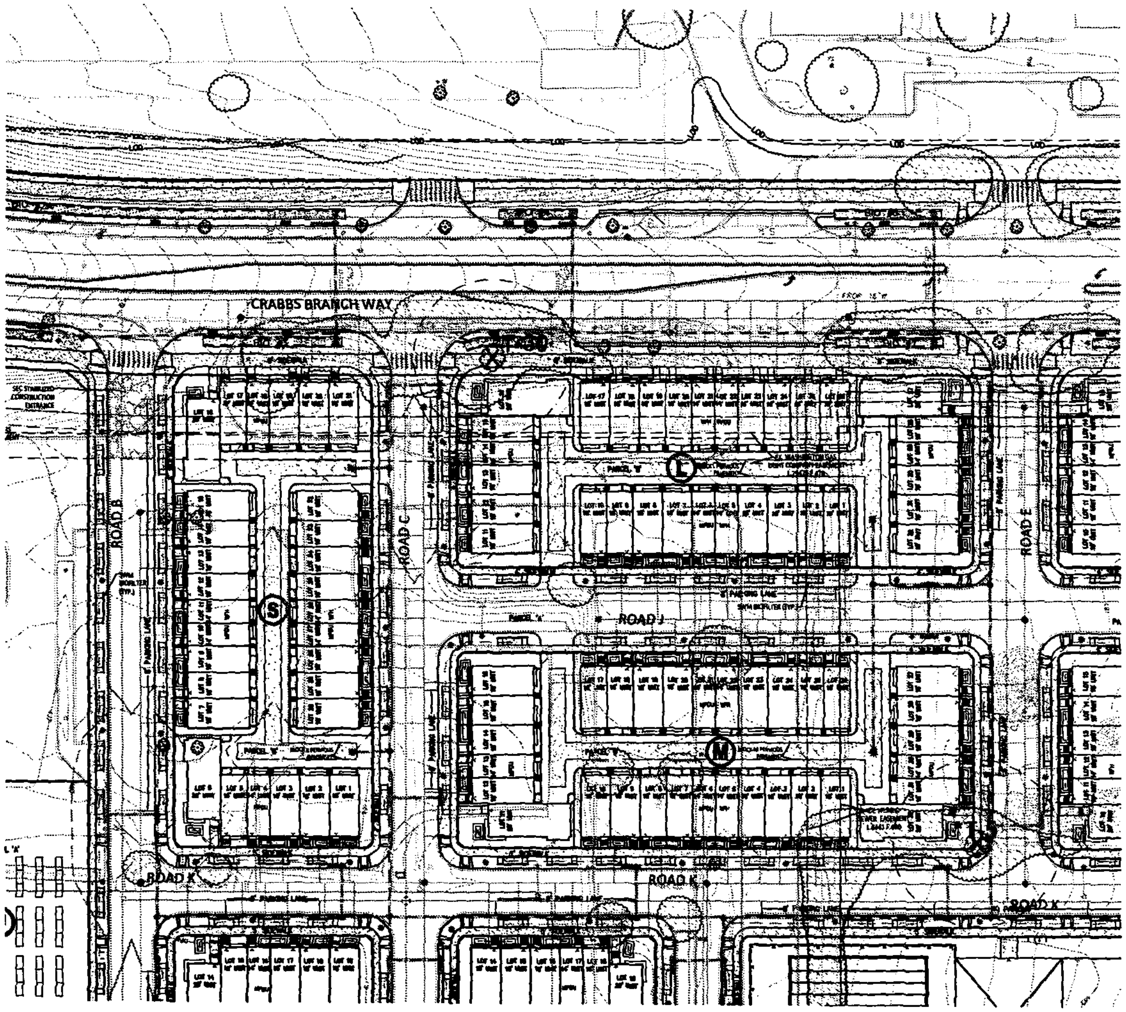
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123,

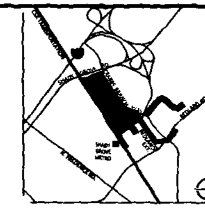
FINAL FOREST CONSERVATION PLAN #820130220

DETAILED FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED: ______

SHEET NO. FCP-5





VICINITY MAP
SCALE: 1" = 2000'

PREPARED FOR:
EYA/CSP ASSOCIATES
c/o EYA, LLC

CONSULTANTS

ARCHITECTS
LESSARD GROUP

KTGY

ATTORNEY
LINOWES & BLOCHER

TRAFFIC ENGINEER
WELLS & ASSOCIATES

PLANNING, CIVIL ENGINEER & LANDSCAPE ARCHITECT
VIKA MARYLAND, LLC

LEGEND:

- EXISTING TREE CANOPY, NOT FOREST TO REMAIN
- EXISTING TREE CANOPY, NOT FOREST TO BE REMOVED
- WSSC UTILITY EASEMENT NOT BEING CONSTRUCTED BY THIS PLAN REMOVED FROM FOREST CONSERVATION TRACT AREA
- ON-SITE FOREST IMPACT
- OFF-SITE FOREST IMPACT
- SLOPE ≥25%
- EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO REMAIN
- EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO BE REMOVED
- EXISTING SPECIMEN TREE W/CRITICAL ROOT ZONE FOR WHICH A VARIANCE HAS BEEN APPROVED TO REMOVE OR IMPACT THE CRITICAL ROOT ZONE
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- PROPOSED SHADE TREE FOR MITIGATION OF REMOVAL OF VARIANCE TREES
- EXISTING SOIL TYPE / MAP UNIT
- SLOPE ≥15%
- ROOT PRUNING TRENCH AT TREE PROTECTION FENCE W/SIGNAGE
- TREE PROTECTION FENCING W/SIGNAGE
- LIMITS OF DISTURBANCE
- SEC SILT FENCE
- SEC SUPER SILT FENCE
- SEC FILTER LOGS
- 100 YEAR FLOOD PLAIN
- STREAM VALLEY BUFFER
- WETLAND BUFFER
- WETLAND
- SEC INLET PROTECTION
- SEC EARTH DIKE
- SEC STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED BLOCK DESIGNATION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN EASEMENT
- PROPOSED FDC
- PROPOSED FIRE HYDRANT
- PROPOSED DOOR LOCATION
- PROPOSED PEDESTRIAN LIGHT

REVISIONS	DATE
REVISED FOR 05/20/13 DRC COMMENTS	07/03/13
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PROFESSIONAL SEAL

DEVELOPER'S CERTIFICATE

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DEVELOPER'S NAME: ____________

CONTACT PERSON OR OWNER: ____________

ADDRESS: ____________

PHONE: ____________

SIGNATURE: ____________

SHADY GROVE STATION

PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

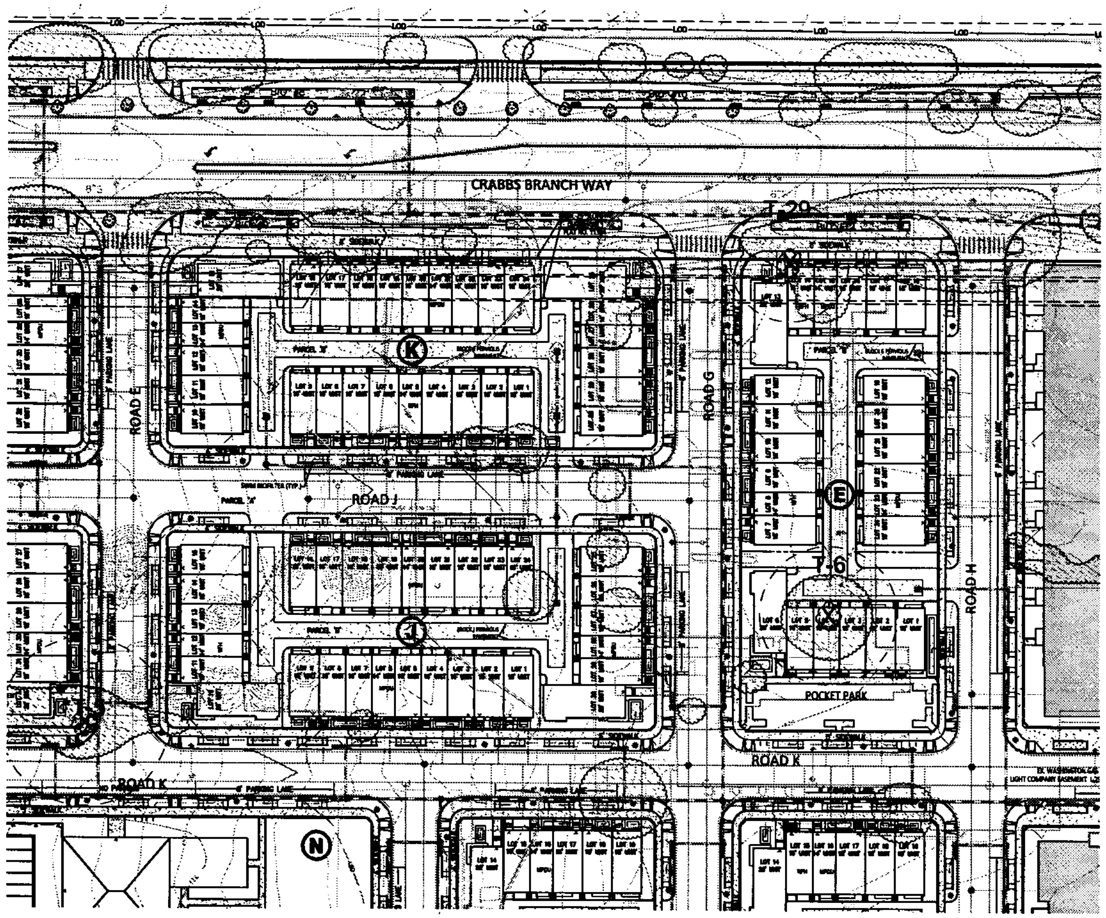
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123,

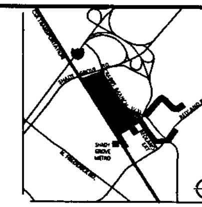
FINAL FOREST CONSERVATION PLAN #820130220

DETAILED FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED: ____

SHEET NO. FCP-6





VICINITY MAP
SCALE: 1" = 2000'

LEGEND:

- EXISTING TREE CANOPY, NOT FOREST TO REMAIN
- EXISTING TREE CANOPY, NOT FOREST TO BE REMOVED
- WSSC UTILITY EASEMENT NOT BEING CONSTRUCTED BY THIS PLAN REMOVED FROM FOREST CONSERVATION TRACT AREA
- ON-SITE FOREST IMPACT
- OFF-SITE FOREST IMPACT
- SLOPE ≥25%
- T-2: EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO REMAIN
- T-2: EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO BE REMOVED
- *T-2: EXISTING SPECIMEN TREE W/CRITICAL ROOT ZONE FOR WHICH A VARIANCE HAS BEEN APPROVED TO REMOVE OR IMPACT THE CRITICAL ROOT ZONE
- *T-2V: EXISTING SPECIMEN TREE W/CRITICAL ROOT ZONE FOR WHICH A VARIANCE HAS BEEN SUBMITTED TO REMOVE OR IMPACT THE CRITICAL ROOT ZONE
- PROPOSED SHADE TREE FOR MITIGATION OF REMOVAL OF VARIANCE TREES
- 2B / 400: EXISTING SOIL TYPE / MAP UNIT
- SLOPE ≥15%
- TP/RP: ROOT PRUNING TRENCH AT TREE PROTECTION FENCE W/SIGNAGE
- TP: TREE PROTECTION FENCING W/SIGNAGE
- LOD: LIMITS OF DISTURBANCE
- SF: SEC SILT FENCE
- SSF: SEC SUPER SILT FENCE
- FL-18: SEC FILTER LOGS
- 100 YR: 100 YEAR FLOOD PLAIN
- SVB: STREAM VALLEY BUFFER
- WB: WETLAND BUFFER
- WET: WETLAND
- SEC INLET PROTECTION
- SEC EARTH DIKE
- SEC STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED BLOCK DESIGNATION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- PROPOSED SEWER
- PROPOSED WATER
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN EASEMENT
- PROPOSED FDC
- PROPOSED FIRE HYDRANT
- PROPOSED DOOR LOCATION
- PROPOSED PEDESTRIAN LIGHT

DEVELOPER'S CERTIFICATE

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CONTACT PERSON OR OWNER: ____________

ADDRESS: ____________

PHONE: ____________

SIGNATURE: ____________

VIKA
ENGINEERS PLANNERS LANDSCAPE ARCHITECTS SURVEYORS
VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD SUITE 400
GERMANTOWN, MARYLAND 20874
PHONE (301) 916-4100
FAX (301) 916-2262
GERMANTOWN, MD. MCLEAN, VA.

PREPARED FOR:
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c/o EYA, LLC
4800 HAMPTON LANE
SUITE 300
BETHESDA, MD 20814

CONSULTANTS

ARCHITECTS
LESSARD GROUP
VIENNA, VA 22182

KTGY
VIENNA, VA 22182

ATTORNEY
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BETHESDA, MD 20814

TRAFFIC ENGINEER
WELLS & ASSOCIATES
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McLean, VA 22102

PLANNING, CIVIL ENGINEER & LANDSCAPE ARCHITECT
VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD
SUITE 400
GERMANTOWN MD, 20874

REVISIONS	DATE
REVISED FOR 05/20/13 DRC COMMENTS	07/03/13
REVISED FOR MITIGATION TREE LOCATIONS	08/07/13
REVISED FOR PUBLIC INFRASTRUCTURE IMPROVEMENTS	08/23/13
REVISED FOR REVIEWER COMMENTS	11/20/13

PROFESSIONAL SEAL

SHADY GROVE STATION
PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

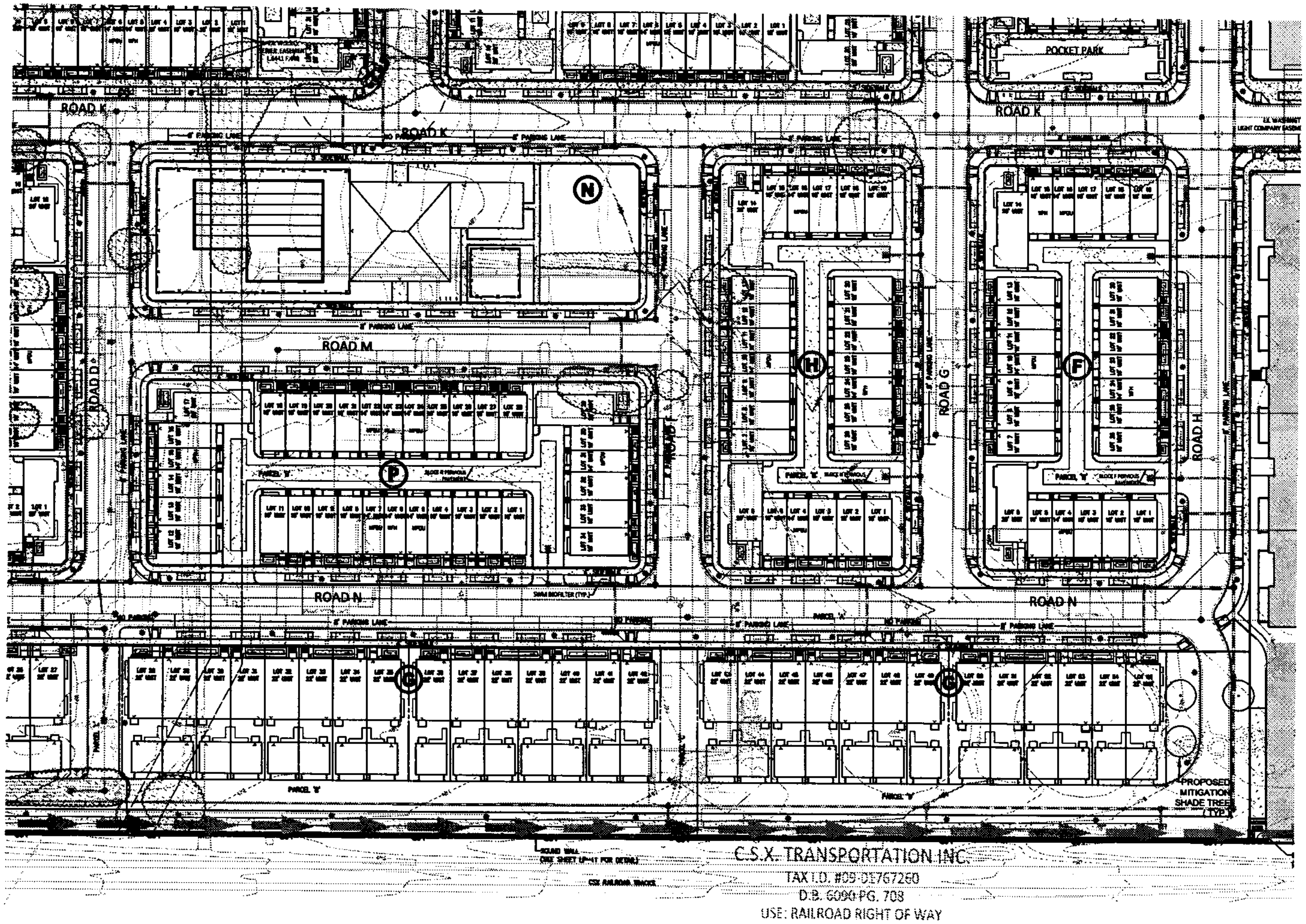
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 223NW08
TAX MAP: GS 121

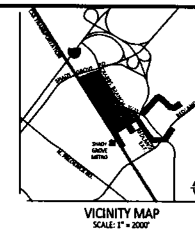
FINAL FOREST CONSERVATION PLAN
#820130220

DETAILED FINAL FOREST CONSERVATION PLAN

DRAWN BY: FBS
DESIGNED BY: CT
DATE ISSUED:

SHEET NO. FCP-7





VICINITY MAP
SCALE: 1" = 2000'

LEGEND:

	EXISTING TREE CANOPY, NOT FOREST TO REMAIN
	EXISTING TREE CANOPY, NOT FOREST TO BE REMOVED
	WSSC UTILITY EASEMENT NOT BEING CONSTRUCTED BY THIS PLAN REMOVED FROM FOREST CONSERVATION TRACT AREA
	ON-SITE FOREST IMPACT
	OFF-SITE FOREST IMPACT
	SLOPE ≥25%
T-2	EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO REMAIN
T-2	EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO BE REMOVED
*T-2 *T-2	EXISTING SPECIMEN TREE W/CRITICAL ROOT ZONE FOR WHICH A VARIANCE HAS BEEN APPROVED TO REMOVE OR IMPACT THE CRITICAL ROOT ZONE
*T-2V *T-2V	EXISTING SPECIMEN TREE W/CRITICAL ROOT ZONE FOR WHICH A VARIANCE HAS BEEN SUBMITTED TO REMOVE OR IMPACT THE CRITICAL ROOT ZONE
	PROPOSED SHADE TREE FOR MITIGATION OF REMOVAL OF VARIANCE TREES
2B / 400	EXISTING SOIL TYPE / MAP UNIT
	SLOPE ≥25%
TP/RP	ROOT PRUNING TRENCH AT TREE PROTECTION FENCE W/SIGNAGE
TP	TREE PROTECTION FENCING W/SIGNAGE
LOD	LIMITS OF DISTURBANCE
SF	SEC SILT FENCE
SSF	SEC SUPER SILT FENCE
FL-18	SEC FILTER LOGS
100 YR	100 YEAR FLOOD PLAIN
SVB	STREAM VALLEY BUFFER
WB	WETLAND BUFFER
WET	WETLAND
	SEC INLET PROTECTION
	SEC EARTH DIKE
	SEC STABILIZED CONSTRUCTION ENTRANCE
(A)	PROPOSED BLOCK DESIGNATION
	EXISTING CONTOURS
	PROPOSED CONTOURS
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	PROPOSED SEWER
	PROPOSED WATER
	PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN EASEMENT
	PROPOSED FDC
	PROPOSED FIRE HYDRANT
	PROPOSED DOOR LOCATION
	PROPOSED PEDESTRIAN LIGHT

DEVELOPER'S CERTIFICATE

THE UNDERSIGNED AGREES TO EXECUTE ALL THE FEATURES OF THE APPROVED FINAL FOREST CONSERVATION PLAN NO. 820130220 INCLUDING FINANCIAL BONDING, FOREST PLANTING, MAINTENANCE, AND ALL OTHER APPLICABLE AGREEMENTS.

DEVELOPER'S NAME: ______________

CONTACT PERSON OR OWNER: ______________

ADDRESS: ______________

PHONE: ______________

SIGNATURE: ______________

VIKA
ENGINEERS PLANNERS
LANDSCAPE ARCHITECTS SURVEYORS
VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD SUITE 400
GERMANTOWN, MARYLAND 20874
PHONE: (301) 916-4100
FAX: (301) 916-2262
GERMANTOWN, MD. MCLEAN, VA.

PREPARED FOR:
EYA/CSP ASSOCIATES
c/o EYA, LLC

CONSULTANTS

ARCHITECTS
LESSARD GROUP

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ATTORNEY
LINOWES & BLOCHER

TRAFFIC ENGINEER
WELLS & ASSOCIATES

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VIKA MARYLAND, LLC

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PROFESSIONAL SEAL

SHADY GROVE STATION
PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

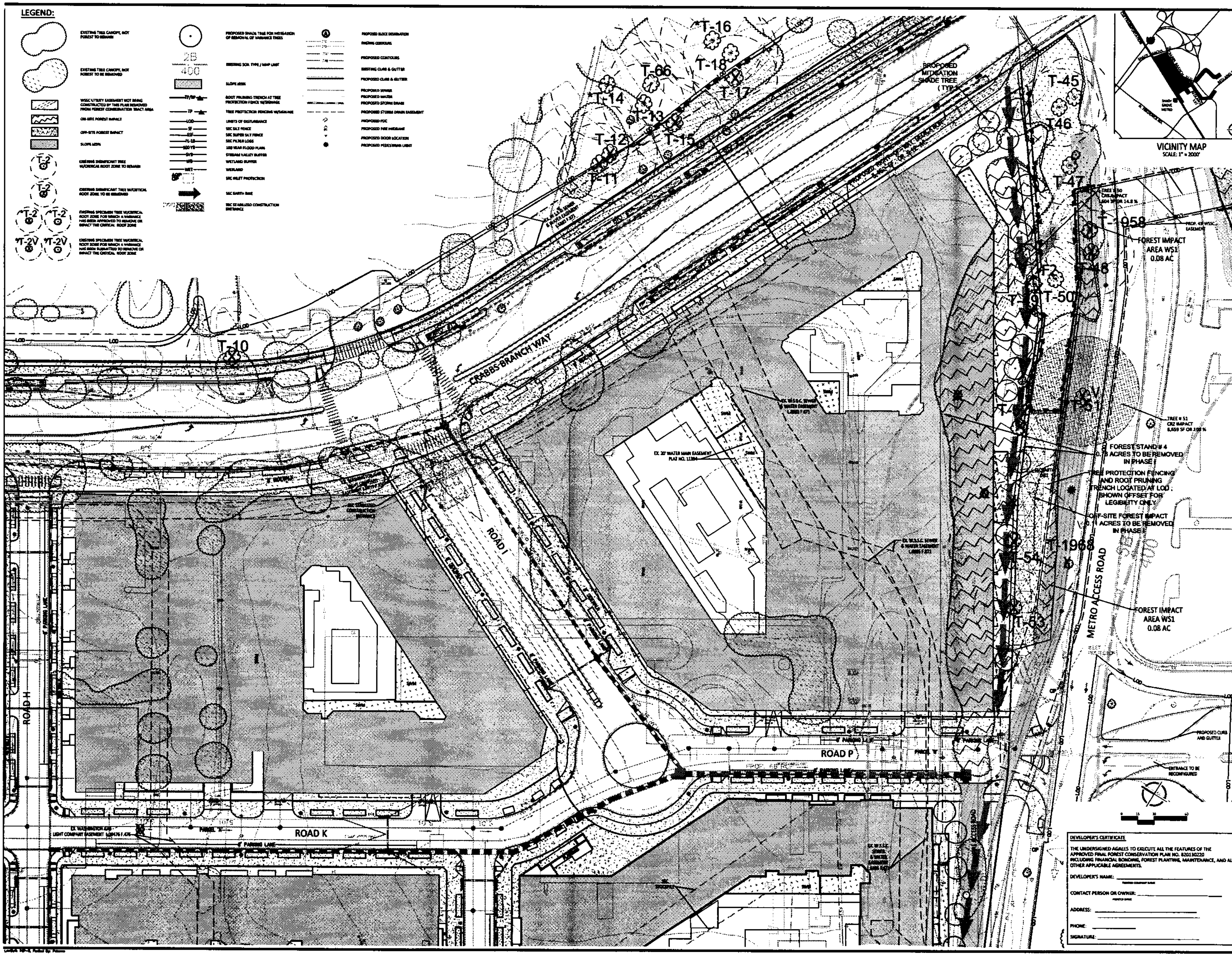
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123

FINAL FOREST CONSERVATION PLAN #820130220

DETAILED FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED:

SHEET NO. FCP-8



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PARCEL 495

9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123,

FINAL FOREST CONSERVATION PLAN #820130220

DETAILED FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
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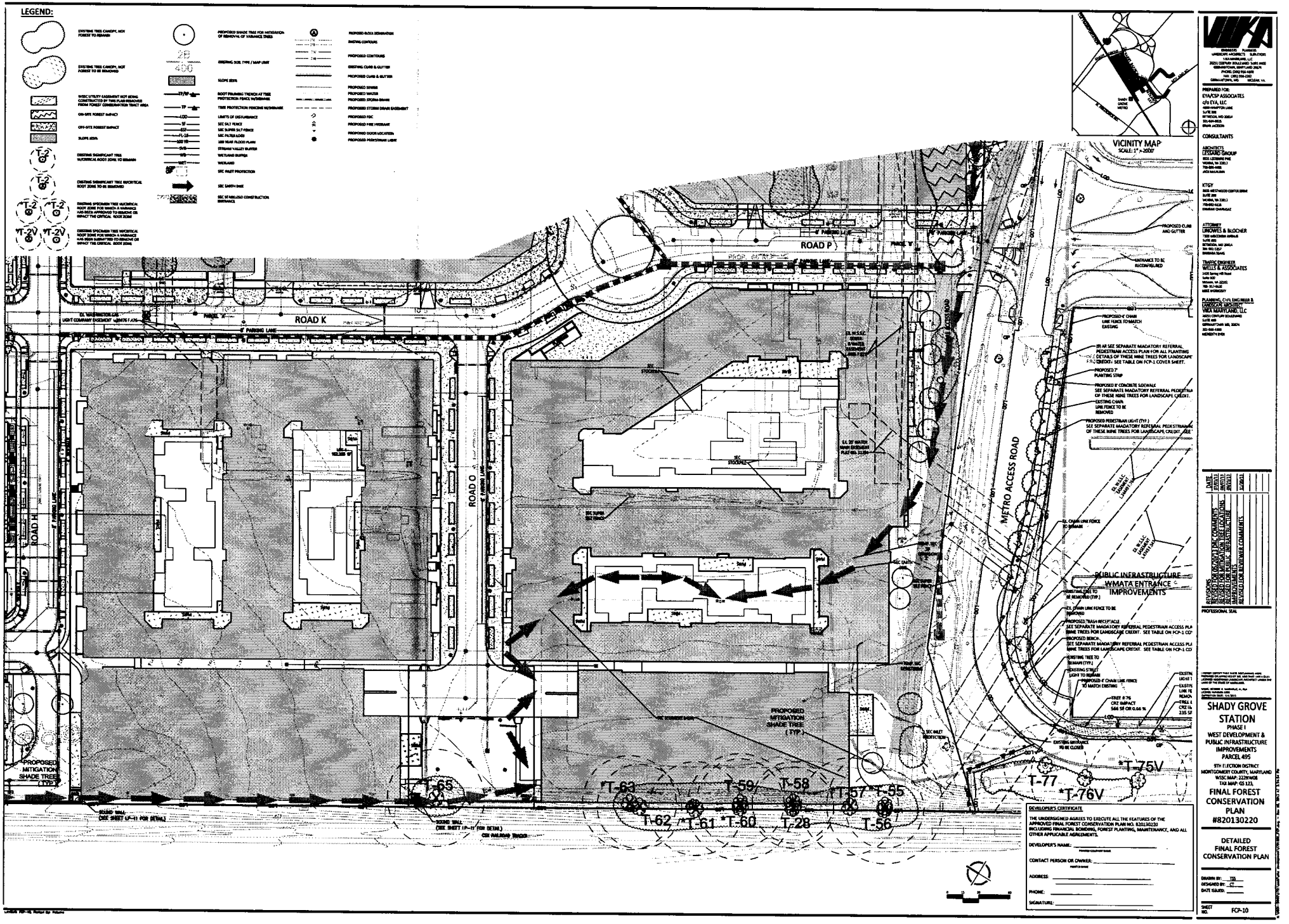
DATE ISSUED:

SHEET NO. FCP-9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ON-SITE FOREST IMPACT
OFF-SITE FOREST IMPACT
SLOPE 25%+
EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO REMAIN
EXISTING SIGNIFICANT TREE W/CRITICAL ROOT ZONE TO BE REMOVED
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PROPOSED SHADE TREE FOR MITIGATION OF REMOVAL OF VARIANCE TREES
SHEETING SIDE, TYPE / MAP UNIT
SLOPE 25%
ROOT PRUNING TRENCH AT TREE PROTECTION FENCE W/SHRUBS
TREE PROTECTION FENCE W/SHRUBS
LIMITS OF DISTURBANCE
SEC SILT FENCE
SEC SUPER SILT FENCE
SEC FILTER LOOP
100 YEAR FLOOD PLAIN
STREAM VALLEY BUFFER
WETLAND BUFFER
WETLAND
SEC INLET PROTECTION
SEC EARTH DIKE
SEC STABILIZED CONSTRUCTION ENTRANCE
PROPOSED BLOCK DESIGNATION
EXISTING CONTOURS
PROPOSED CONTOURS
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PROPOSED CURB & GUTTER
PROPOSED SEWER
PROPOSED WATER
PROPOSED STORM DRAIN
PROPOSED STORM DRAIN EASEMENT
PROPOSED FDC
PROPOSED FIRE HYDRANT
PROPOSED DOOR LOCATION
PROPOSED PEDESTRIAN LIGHT
VICINITY MAP
SCALE: 1" = 2000'
ROAD P
ROAD K
ROAD O
ROAD H
METRO ACCESS ROAD
PROPOSED MITIGATION SHADE TREES (TYP.)
PUBLIC INFRASTRUCTURE
WMATA ENTRANCE IMPROVEMENTS
PROPOSED CURB AND GUTTER
PROPOSED 7' PLANTING STRIP
PROPOSED 8' CONCRETE SIDEWALK
PROPOSED PEDESTRIAN LIGHT (TYP.)
PROPOSED BENCH
PROPOSED TRASH RECEPTACLE
PROPOSED 6' CHAIN LINK FENCE TO MATCH EXISTING
EXISTING STREET LIGHT TO REMAIN
EXISTING TREE TO REMAIN (TYP.)
EXISTING ENTRANCE TO BE CLOSED
ENTRANCE TO BE RECONFIGURED
SOUND WALL (SEE SHEET LP-11 FOR DETAIL)
CSX RAILROAD TRACKS
T-65
T-63
T-62
T-61
T-60
T-59
T-58
T-28
T-57
T-56
T-55
T-77
*T-76V
*T-75V
DEVELOPER'S CERTIFICATE
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DEVELOPER'S NAME:
CONTACT PERSON OR OWNER:
ADDRESS:
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SIGNATURE:
PREPARED FOR:
EYA/CSP ASSOCIATES
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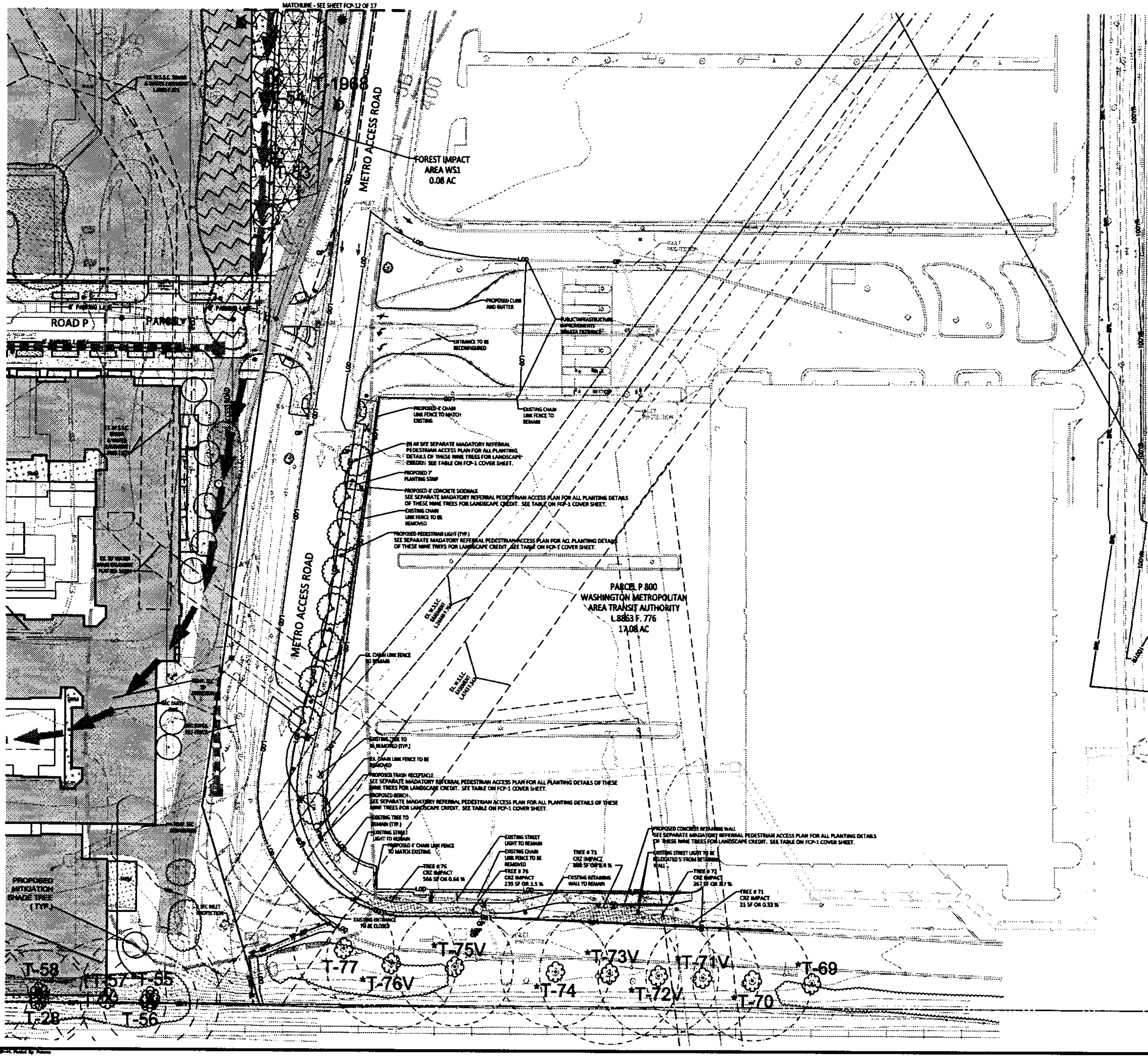
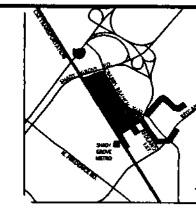
CONSULTANTS
ARCHITECTS
EYDARD GROUP
KTGY
ATTORNEY
LINOWES & BLOCHER
TRAFFIC ENGINEER
WELLS & ASSOCIATES
PLANNING, CIVIL ENGINEER & LANDSCAPE ARCHITECT
VIKA MARYLAND, LLC
REVISIONS
PROFESSIONAL SEAL
SHADY GROVE STATION
PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 223NW08
TAX MAP: GS 123
FINAL FOREST CONSERVATION PLAN #820130220
DETAILED FINAL FOREST CONSERVATION PLAN
DRAWN BY:
DESIGNED BY:
DATE ISSUED:
SHEET NO.
FCP-10





VICINITY MAP
SCALE: 1" = 2000'

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100 YEAR FLOOD PLAIN
STREAM VALLEY BUFFER
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PROPOSED BLOCK DESIGNATION
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PROPOSED DOOR LOCATION
PROPOSED PEDESTRIAN LIGHT

0 15 30 60

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VIKA
ENGINEERS PLANNERS LANDSCAPE ARCHITECTS SURVEYORS
VIKA MARYLAND, LLC
GERMANTOWN, MD MCLEAN, VA

PREPARED FOR:
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CONSULTANTS

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TRAFFIC ENGINEER
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VIKA MARYLAND, LLC

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PROFESSIONAL SEAL

SHADY GROVE STATION

PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

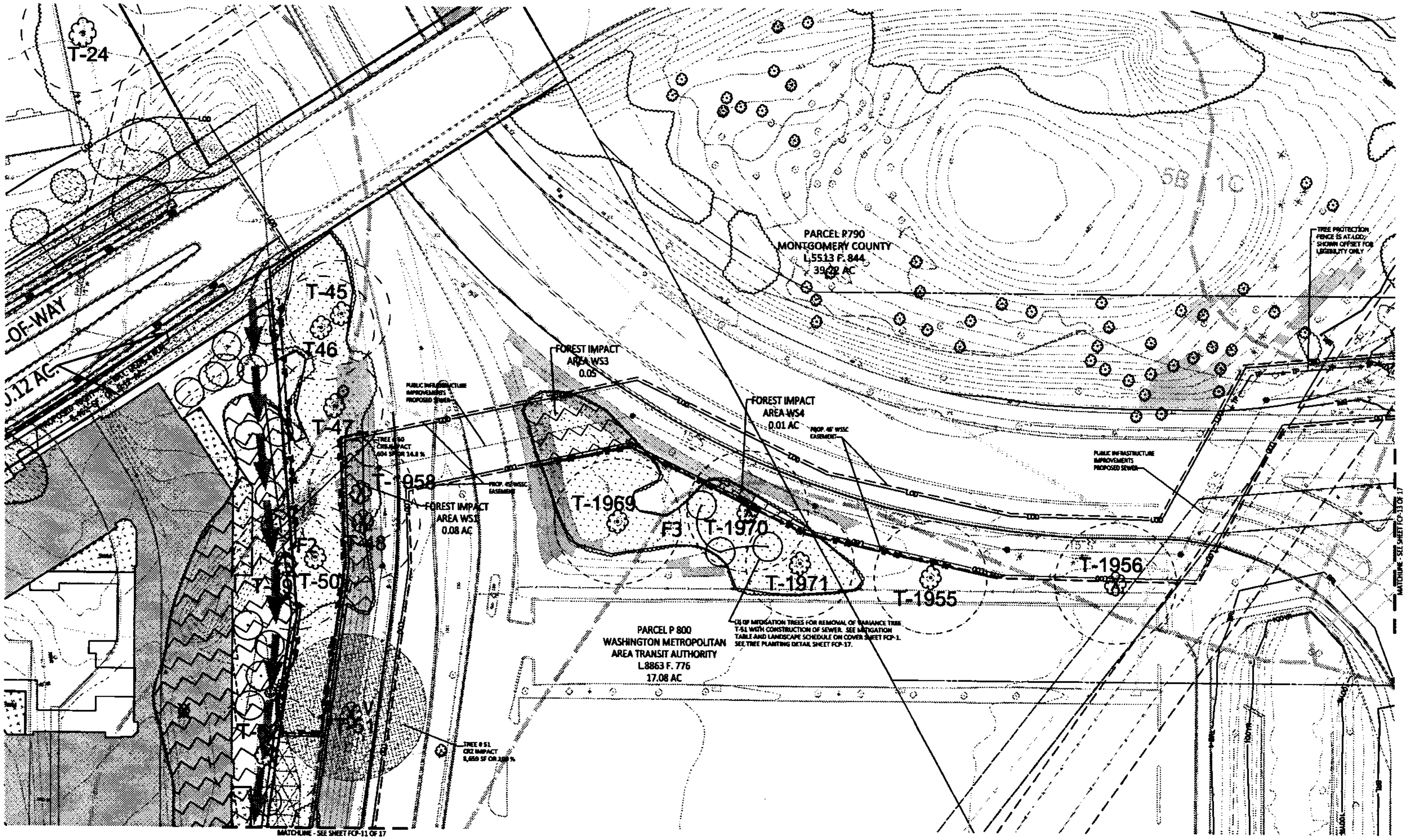
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123,

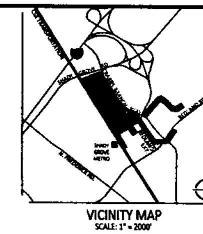
FINAL FOREST CONSERVATION PLAN
#820130220

DETAILED FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED:

SHEET NO. FCP-11





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- WETLAND BUFFER
- WETLAND
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- PROPOSED DOOR LOCATION
- PROPOSED PEDESTRIAN LIGHT

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VIKA
ENGINEERS PLANNERS LANDSCAPE ARCHITECTS SURVEYORS
VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD SUITE 400
GERMANTOWN, MARYLAND 20874
PHONE: (301) 916-4100
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PROFESSIONAL SEAL

SHADY GROVE STATION
PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123

FINAL FOREST CONSERVATION PLAN
#820130220

DETAILED FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
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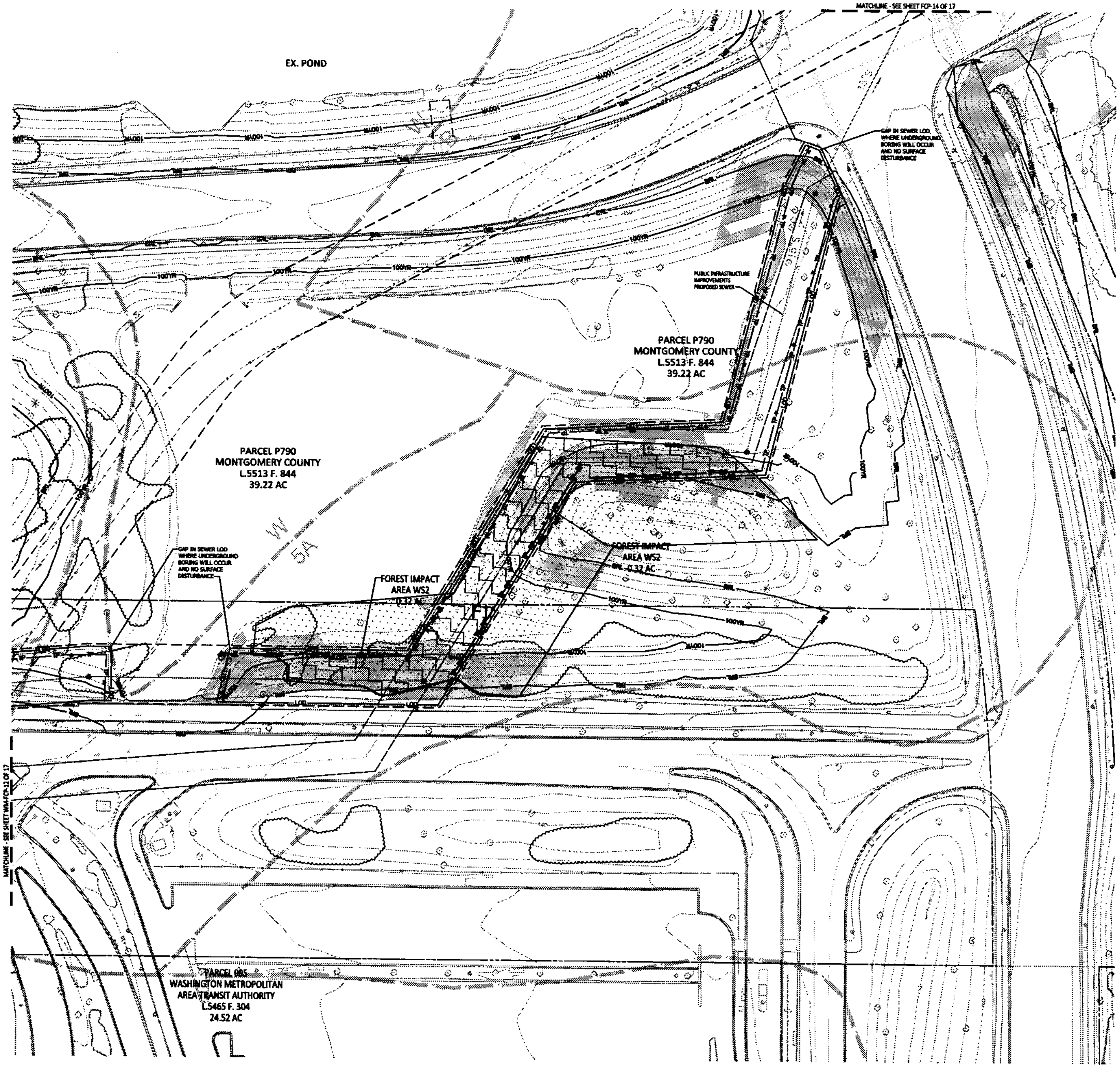

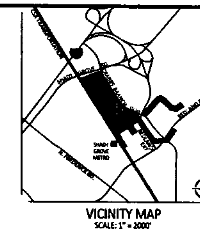

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- S&C STABILIZED CONSTRUCTION ENTRANCE
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VIKA

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VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD SUITE 400
GERMANTOWN, MARYLAND 20874
PHONE: (301) 916-4100
FAX: (301) 916-2262
GERMANTOWN, MD. MCLEAN, VA.

PREPARED FOR:
EYA/CSP ASSOCIATES
c/o EYA, LLC
4800 HAMPDEN LANE
SUITE 300
BETHESDA, MD 20814
301-634-8625
BRIAN JACKSON

CONSULTANTS

ARCHITECTS
LESSARD GROUP
8521 LEESBURG PIKE
VIENNA, VA 22812
703-760-9696
JACK McLAURIN

KTGY
8605 WESTWOOD CENTER DRIVE
SUITE 300
VIENNA, VA 22812
703-992-6116
KAMRAN CHAPARDAZ

ATTORNEY
LINOWES & BLOCHER
7200 WISCONSIN AVENUE
SUITE 800
BETHESDA, MD 20814
301-961-5157
BARBARA SEARS

TRAFFIC ENGINEER
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1420 Spring Hill Road
Suite 600
McLean, VA 22102
703-917-6620
MIKE WORKOSKY

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SHADY GROVE STATION

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WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

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FINAL FOREST CONSERVATION PLAN #820130220

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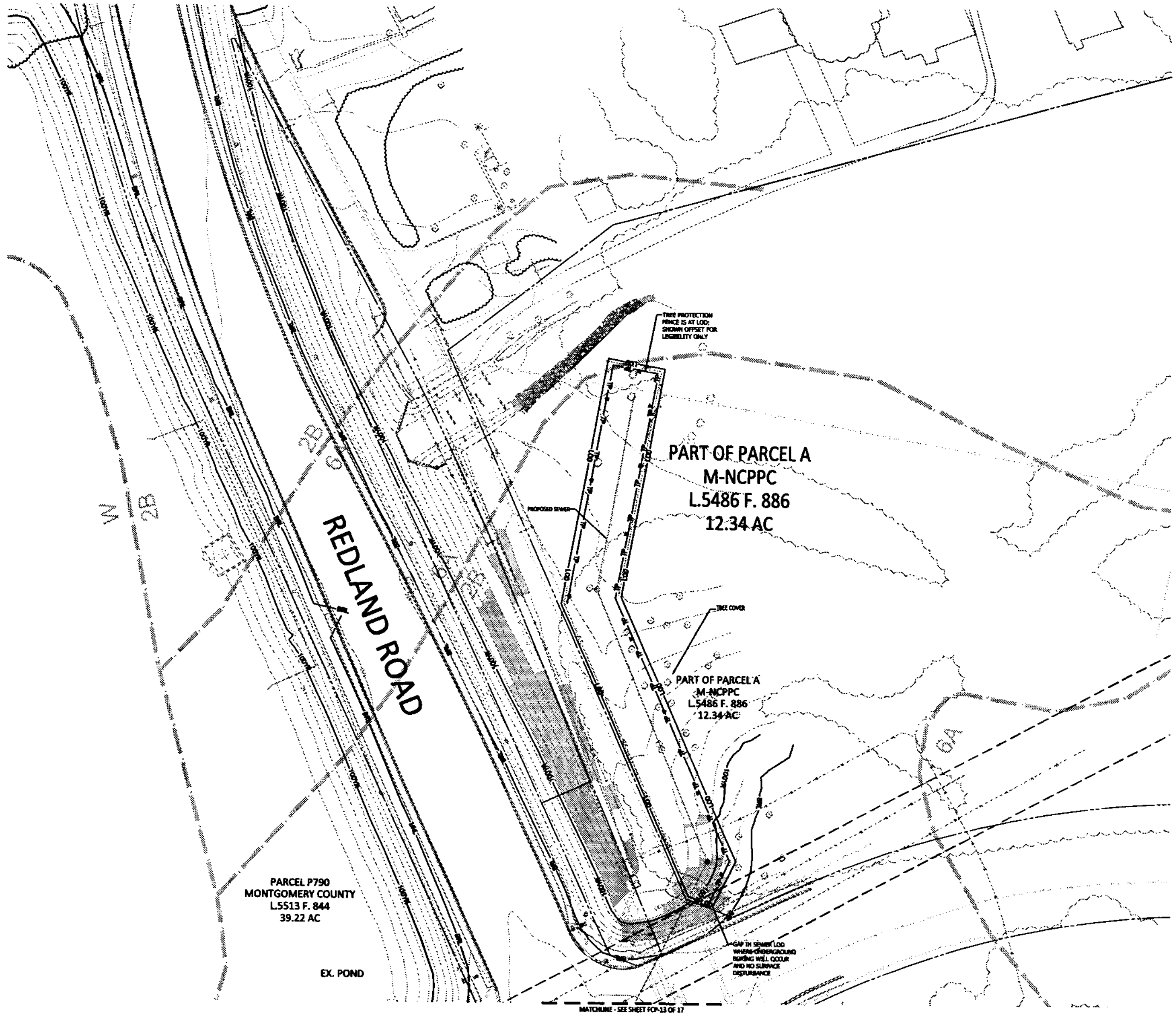
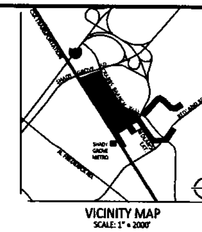
DATE ISSUED: ______

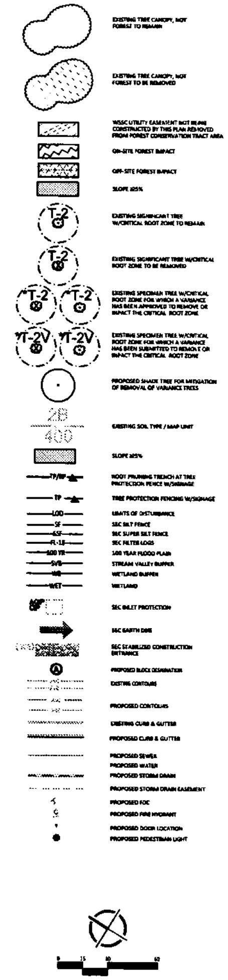
SHEET NO. FCP-13


PART OF PARCEL A
M-NCPPC
L.5486 F. 886
12.34 AC
PART OF PARCEL A
M-NCPPC
L.5486 F. 886
12.34 AC
REDLAND ROAD
PARCEL P790
MONTGOMERY COUNTY
L.5513 F. 844
39.22 AC
EX. POND
TREE PROTECTION FENCE IS AT LOD; SHOWN OFFSET FOR LEGIBILITY ONLY
PROPOSED SEWER
TREE COVER
GAP IN SEWER LOD WHERE UNDERGROUND BORING WILL OCCUR AND NO SURFACE DISTURBANCE
MATCHLINE - SEE SHEET FCP-13 OF 17
2B
6A
W



VICINITY MAP
SCALE: 1" = 2000'

LEGEND:


EXISTING TREE CANOPY, NOT FOREST TO REMAIN
EXISTING TREE CANOPY, NOT FOREST TO BE REMOVED
WSSC UTILITY EASEMENT NOT BEING CONSTRUCTED BY THIS PLAN REMOVED FROM FOREST CONSERVATION TRACT AREA
ON-SITE FOREST IMPACT
OFF-SITE FOREST IMPACT
SLOPE ≥25%
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ROOT PRUNING TRENCH AT TREE PROTECTION FENCE W/SIGNAGE
TREE PROTECTION FENCING W/SIGNAGE
LIMITS OF DISTURBANCE
SEC SILT FENCE
SEC SUPER SILT FENCE
SEC FILTER LOGS
100 YEAR FLOOD PLAIN
STREAM VALLEY BUFFER
WETLAND BUFFER
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SEC EARTH DIKE
SEC STABILIZED CONSTRUCTION ENTRANCE
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PROPOSED STORM DRAIN EASEMENT
PROPOSED FDC
PROPOSED FIRE HYDRANT
PROPOSED DOOR LOCATION
PROPOSED PEDESTRIAN LIGHT

DEVELOPER'S CERTIFICATE

THE UNDERSIGNED AGREES TO EXECUTE ALL THE FEATURES OF THE APPROVED FINAL FOREST CONSERVATION PLAN NO. 820130220 INCLUDING FINANCIAL BONDING, FOREST PLANTING, MAINTENANCE, AND ALL OTHER APPLICABLE AGREEMENTS.

DEVELOPER'S NAME: ____________________

CONTACT PERSON OR OWNER: ____________________

ADDRESS: ____________________

PHONE: ____________________

SIGNATURE: ____________________

VIKA
ENGINEERS PLANNERS
LANDSCAPE ARCHITECTS SURVEYORS
VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD SUITE 400
GERMANTOWN, MARYLAND 20874
PHONE: (301) 916-4100
FAX: (301) 916-2262
GERMANTOWN, MD MCLEAN, VA

PREPARED FOR:
EYA/CSP ASSOCIATES
c/o EYA, LLC

CONSULTANTS

ARCHITECTS
LESSARD GROUP

KTGY

ATTORNEY
LINOWES & BLOCHER

TRAFFIC ENGINEER
WELLS & ASSOCIATES

PLANNING, CIVIL ENGINEER & LANDSCAPE ARCHITECT
VIKA MARYLAND, LLC

REVISIONS	DATE
REVISED FOR 05/20/13 DRC COMMENTS	07/03/13
REVISED FOR MITIGATION TREE LOCATIONS	08/07/13
REVISED FOR PUBLIC INFRASTRUCTURE IMPROVEMENTS	09/23/13
REVISED FOR REVIEWER COMMENTS	11/20/13

PROFESSIONAL SEAL

SHADY GROVE STATION
PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

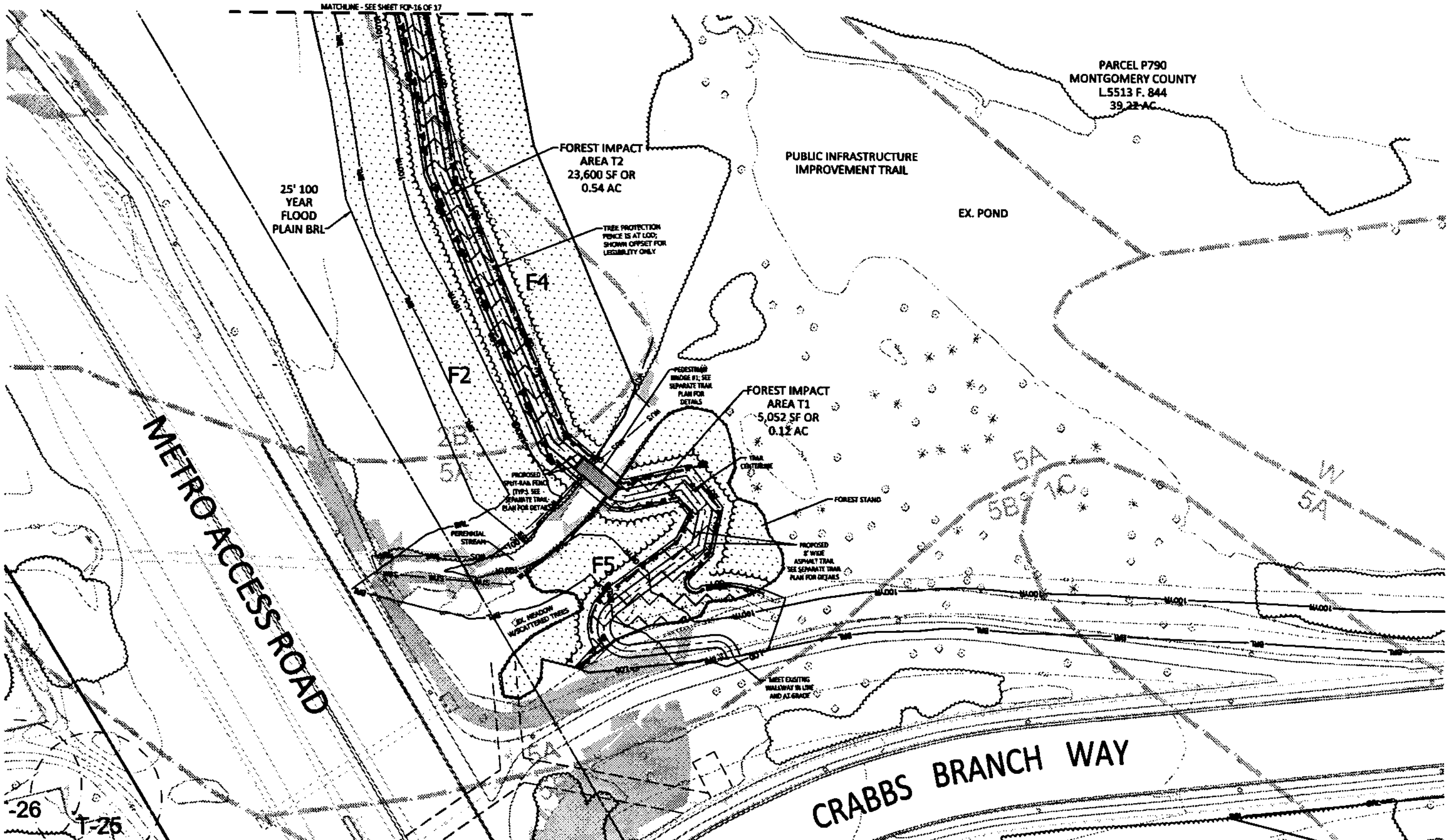
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123,

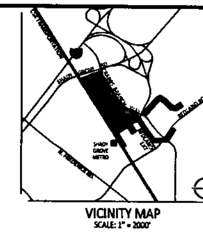
FINAL FOREST CONSERVATION PLAN #820130220

DETAILED FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED: ______

SHEET NO. FCP-14





VICINITY MAP
SCALE: 1" = 2000'

LEGEND:

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- LOD: LIMITS OF DISTURBANCE
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- SVB: STREAM VALLEY BUFFER
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- WET: WETLAND
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- SEC EARTH DIKE
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0 15 30 60

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PREPARED FOR:
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VIKA MARYLAND, LLC

REVISIONS
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- REVISED FOR PUBLIC INFRASTRUCTURE IMPROVEMENTS
- REVISED FOR REVIEWER COMMENTS

DATE: 07/03/13, 08/07/13, 09/23/13, 11/20/13

PROFESSIONAL SEAL

SHADY GROVE STATION

PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495

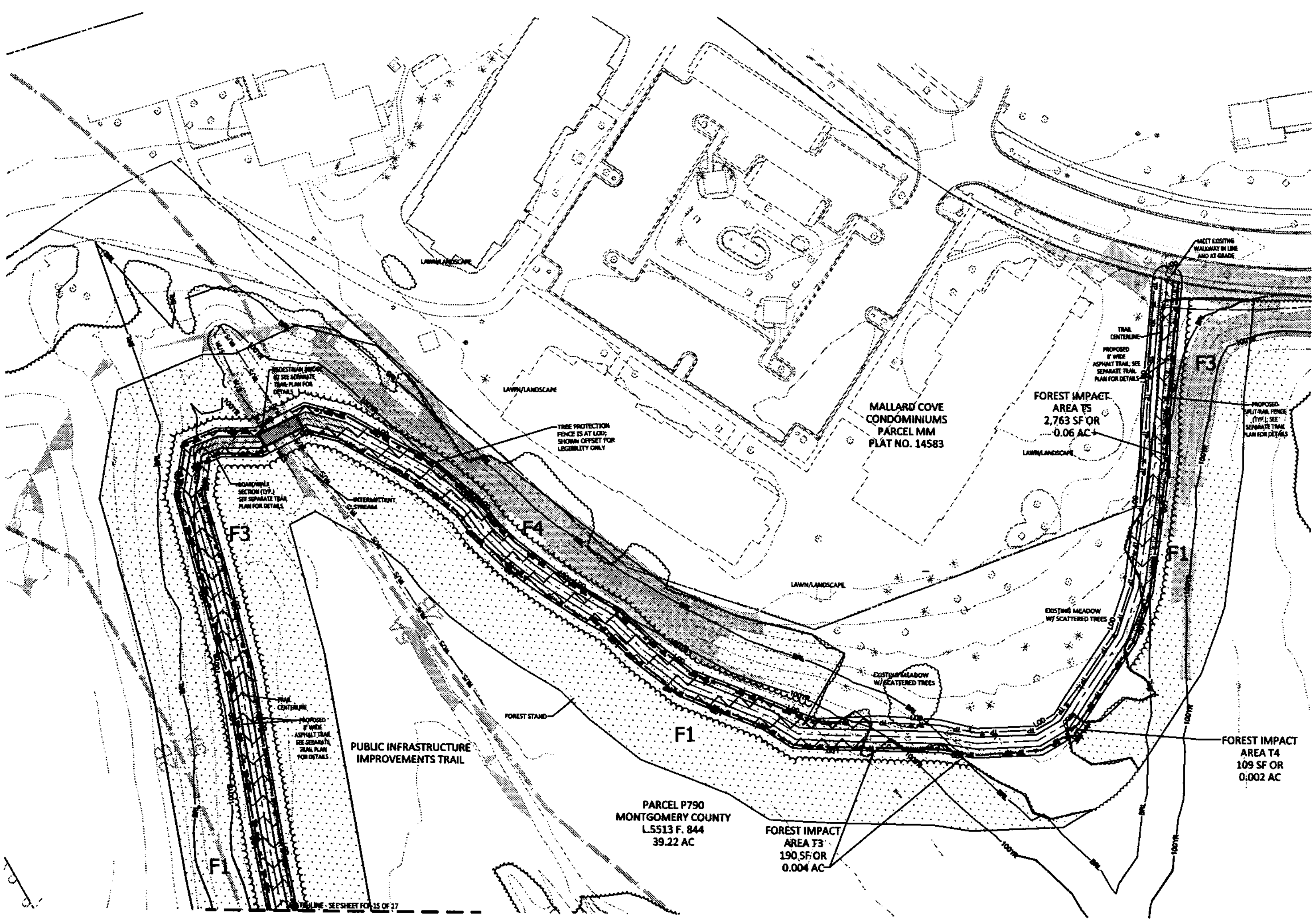
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123,

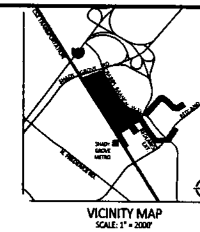
FINAL FOREST CONSERVATION PLAN #820130220

DETAILED FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED:

SHEET NO. FCP-15





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- PROPOSED PEDESTRIAN LIGHT

VIKA
VIKA MARYLAND, LLC
GERMANTOWN, MARYLAND

PREPARED FOR:
EYA/CSP ASSOCIATES
c/o EYA, LLC

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PLANNING, CIVIL ENGINEER & LANDSCAPE ARCHITECT
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	REVISED FOR REVIEWER COMMENTS

PROFESSIONAL SEAL

SHADY GROVE STATION

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PARCEL 495

9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123,

FINAL FOREST CONSERVATION PLAN #820130220

DETAILED FINAL FOREST CONSERVATION PLAN

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED:

SHEET NO. FCP-16

DEVELOPER'S CERTIFICATE

THE UNDERSIGNED AGREES TO EXECUTE ALL THE FEATURES OF THE APPROVED FINAL FOREST CONSERVATION PLAN NO. 820130220 INCLUDING FINANCIAL BONDING, FOREST PLANTING, MAINTENANCE, AND ALL OTHER APPLICABLE AGREEMENTS.

DEVELOPER'S NAME: ______________

CONTACT PERSON OR OWNER: ______________

ADDRESS: ______________

PHONE: ______________

SIGNATURE: ______________

FINAL FOREST CONSERVATION NOTES

SEQUENCE OF EVENTS FOR PROPERTY OWNERS REQUIRED TO COMPLY WITH FOREST CONSERVATION AND/OR TREE-SAVE PLANS PRE-CONSTRUCTION

1. AN ON-SITE PRE-CONSTRUCTION MEETING IS REQUIRED AFTER THE LIMITS OF DISTURBANCE HAVE BEEN STAKED AND FLAGGED, BUT BEFORE ANY CLEARING OR GRADING BEGINS. THE PROPERTY OWNER SHOULD CONTACT THE MONTGOMERY COUNTY PLANNING DEPARTMENT INSPECTION STAFF BEFORE CONSTRUCTION TO VERIFY THE LIMITS OF DISTURBANCE AND DISCUSS TREE PROTECTION AND TREE CARE MEASURES. THE DEVELOPER'S REPRESENTATIVE, CONSTRUCTION SUPERINTENDENT, IS A CERTIFIED ARBORIST OR MARYLAND-LICENSED TREE EXPERT THAT WILL IMPLEMENT THE TREE PROTECTION MEASURES, FOREST CONSERVATION INSPECTOR, DEPARTMENT OF PERMITTING SERVICES (DPS) SEDIMENT CONTROL INSPECTOR AND DPS SITE PLAN INSPECTOR SHOULD ATTEND THIS PRE-CONSTRUCTION MEETING.

2. NO CLEARING OR GRADING SHALL BEGIN BEFORE STRESS-REDUCTION MEASURES HAVE BEEN IMPLEMENTED. APPROPRIATE MEASURES MAY INCLUDE, BUT ARE NOT LIMITED TO:
   a. ROOT PRUNING
   b. CROWN REDUCTION OR PRUNING
   c. WATERING
   d. FERTILIZING
   e. VERTICAL MULCHING
   f. ROOT AERATION MATTING
   MEASURES NOT SPECIFIED ON THE FOREST CONSERVATION PLAN MAY BE REQUIRED AS DETERMINED BY THE FOREST CONSERVATION INSPECTOR IN COORDINATION WITH THE ARBORIST.

3. A MARYLAND-LICENSED TREE EXPERT OR AN INTERNATIONAL SOCIETY OF ARBORICULTURE CERTIFIED ARBORIST MUST PERFORM ALL STRESS REDUCTION MEASURES. DOCUMENTATION OF STRESS REDUCTION MEASURES MUST BE EITHER OBSERVED BY THE FOREST CONSERVATION INSPECTOR OR SENT TO THE INSPECTOR AT 8787 GEORGIA AVENUE, SILVER SPRING, MD 20910. THE FOREST CONSERVATION INSPECTOR WILL DETERMINE THE EXACT METHOD TO CONVEY THE STRESS REDUCTIONS MEASURES DURING THE PRE-CONSTRUCTION MEETING.

4. TEMPORARY TREE PROTECTION DEVICES SHALL BE INSTALLED PER THE FOREST CONSERVATION PLAN/TREE SAVE PLAN AND PRIOR TO ANY CONSTRUCTION ACTIVITIES. TREE PROTECTION FENCING LOCATIONS SHOULD BE STAKED PRIOR TO THE PRE-CONSTRUCTION MEETING. THE FOREST CONSERVATION INSPECTOR, IN COORDINATION WITH THE DPS SEDIMENT CONTROL INSPECTOR, MAY MAKE FIELD ADJUSTMENTS TO INCREASE THE SURVIVABILITY OF TREES AND FOREST SHOWN AS SAVED ON THE APPROVED PLAN. TEMPORARY TREE PROTECT DEVICES MAY INCLUDE:
   a. CHAIN LINK FENCE (FOUR FEET HIGH)
   b. SUPER SILT FENCE WITH WIRE STRUNG BETWEEN SUPPORT POLES (MINIMUM 4 FEET HIGH) WITH HIGH VISIBILITY FLAGGING.
   c. 14 GAUGE 2 INCH X 4 INCH WELDED WIRE FENCING SUPPORTED BY STEEL T-BAR POSTS (MINIMUM 4 FEET HIGH) WITH HIGH VISIBILITY FLAGGING.

5. TEMPORARY PROTECTION DEVICES SHALL BE MAINTAINED AND INSTALLED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION PROJECT AND MUST NOT BE ALTERED WITHOUT PRIOR APPROVAL FROM THE FOREST CONSERVATION INSPECTOR. NO EQUIPMENT, TRUCKS, MATERIALS, OR DEBRIS MAY BE STORED WITHIN THE TREE PROTECTION FENCE AREAS DURING THE ENTIRE CONSTRUCTION PROJECT. NO VEHICLE OR EQUIPMENT ACCESS TO THE FENCED AREA WILL BE PERMITTED. TREE PROTECTION SHALL NOT BE REMOVED WITHOUT PRIOR APPROVAL OF FOREST CONSERVATION INSPECTOR.

6. FOREST RETENTION AREA SIGNS SHALL BE INSTALLED AS REQUIRED BY THE FOREST CONSERVATION INSPECTOR, OR AS SHOWN ON THE APPROVED PLAN.

7. LONG-TERM PROTECTION DEVICES WILL BE INSTALLED PER THE FOREST CONSERVATION PLAN/TREE SAVE PLAN AND ATTACHED DETAILS. INSTALLATION WILL OCCUR AT THE APPROPRIATE TIME DURING THE CONSTRUCTION PROJECT. REFER TO THE PLAN DRAWING FOR LONG-TERM PROTECTION MEASURES TO BE INSTALLED.

DURING CONSTRUCTION

8. PERIODIC INSPECTIONS BY THE FOREST CONSERVATION INSPECTOR WILL OCCUR DURING THE CONSTRUCTION PROJECT. CORRECTIONS AND REPAIRS TO ALL TREE PROTECTION DEVICES, AS DETERMINED BY THE FOREST CONSERVATION INSPECTOR, MUST BE MADE WITHIN THE TIMEFRAME ESTABLISHED BY THE INSPECTOR.

POST-CONSTRUCTION

9. AFTER CONSTRUCTION IS COMPLETED, AN INSPECTION SHALL BE REQUESTED. CORRECTIVE MEASURES MAY INCLUDE:
   a. REMOVAL AND REPLACEMENT OF DEAD AND DYING TREES
   b. PRUNING OF DEAD OR DECLINING LIMBS
   c. SOIL AERATION
   d. FERTILIZATION
   e. WATERING
   f. WOUND REPAIR
   g. CLEAN UP OF RETENTION AREAS

10. AFTER INSPECTION AND COMPLETION OF CORRECTIVE MEASURES HAVE BEEN UNDERTAKEN, ALL TEMPORARY PROTECTION DEVICES SHALL BE REMOVED FROM THE SITE. REMOVAL OF TREE PROTECTION DEVICES THAT ALSO OPERATE FOR EROSION AND SEDIMENT CONTROL MUST BE COORDINATED WITH BOTH THE DEPARTMENT OF PERMITTING SERVICES AND THE FOREST CONSERVATION INSPECTOR. NO ADDITIONAL GRADING, SODDING, OR BURIAL MAY TAKE PLACE AFTER THE TREE PROTECTION FENCING IS REMOVED.

INSPECTIONS

ALL FIELD INSPECTIONS MUST BE REQUESTED BY THE APPLICANT. INSPECTIONS MUST BE CONDUCTED AS FOLLOWS:

TREE SAVE PLANS AND FOREST CONSERVATION PLANS WITHOUT PLANTING REQUIREMENTS.

1. AFTER THE LIMITS OF DISTURBANCE HAVE BEEN STAKED AND FLAGGED, BUT BEFORE ANY CLEARING OR GRADING BEGINS
2. AFTER NECESSARY STRESS REDUCTION MEASURES HAVE BEEN COMPLETED AND PROTECTION MEASURES HAVE BEEN INSTALLED, BUT BEFORE ANY CLEARING AND GRADING BEGIN.
3. AFTER COMPLETION OF ALL CONSTRUCTION ACTIVITIES, BUT BEFORE REMOVAL OF TREE PROTECTION FENCING, TO DETERMINE THE LEVEL OF COMPLIANCE WITH THE PROVISIONS OF THE FOREST CONSERVATION PLAN.

ADDITIONAL REQUIREMENTS FOR PLANS WITH PLANTING REQUIREMENTS.

4. BEFORE THE START OF ANY REQUIRED REFORESTATION AND AFFORESTATION PLANTING.
5. AFTER THE REQUIRED REFORESTATION AND AFFORESTATION PLANTING HAS BEEN COMPLETED TO VERIFY THAT THE PLANTING IS ACCEPTABLE AND PRIOR TO THE START THE MAINTENANCE PERIOD.
6. AT THE END OF THE MAINTENANCE PERIOD TO DETERMINE THE LEVEL OF COMPLIANCE WITH THE PROVISIONS OF THE PLANTING PLAN, RELEASE OF THE PERFORMANCE BOND.

PLANTING NARRATIVE

1. PRE-PLANTING CONSIDERATIONS

A. IN AREAS WITH SUBSTANTIAL GROWTH OF INVASIVE GROUND COVER SPECIES, MEASURES SHALL BE TAKEN TO REMOVE AND CONTROL INVASIVES. THE INFESTED AREAS SHOULD BE MOWN PRIOR TO COMMENCEMENT OF PLANTING. NECESSARY WEED CONTROL MEASURES SHOULD BE DETERMINED DURING THE PRE-PLANTING INSPECTION, INCLUDING, BUT NOT LIMITED TO, MULCHING, PERIODIC MOWING AROUND THE REFORESTATION PLANTINGS, AND FABRIC COVERINGS. THE USE OF CHEMICAL WEED CONTROLS WILL BE LIMITED TO EXTREME CASES AND ONLY WITH PRIOR WRITTEN APPROVAL BY M-NCPPC STAFF. WHERE PERIODIC MOWING WILL OCCUR AS A WEED CONTROL MEASURE, THE TYPICAL TREE PLANTING DISTRIBUTION PATTERN SHOULD BE MODIFIED SO AS TO ALLOW ACCESS BY MOWING EQUIPMENT WITHOUT DAMAGE TO PLANTINGS.

B. A SOILS ANALYSIS WILL BE CONDUCTED PRIOR TO COMMENCEMENT OF REFORESTATION. ON LAND WHERE EXTENSIVE AGRICULTURAL USE HAS OCCURRED IN THE PAST, TEST PITS WILL BE DUG IN AREAS OF UNDISTURBED SOIL TO DETERMINE IF A FRAGIPAN LAYER IS PRESENT. IF FRAGIPAN IS PRESENT, IT SHOULD BE PIERCED BY AUGURING AND PLANTING HOLES SHOULD BE DUG TO TWICE THE NORMAL DIAMETER FOR THE MATERIAL PLANTED.

C. SOILS SHOULD BE TREATED BY INCORPORATING NATURAL MULCH WITHIN THE TOP 12 INCHES, OR AMENDMENTS AS DETERMINED BY THE SOILS ANALYSIS. NATURAL AMENDMENTS, SUCH AS ORGANIC MULCH OR LEAF MOLD COMPOST ARE PREFERRED.

D. IF FILL MATERIAL IS USED AT THE PLANTING SITE, IT SHOULD BE CLEAN FILL WITH 12 INCHES OF NATIVE SOIL. STOCKPILING OF NATIVE TOP SOILS MUST BE DONE IN SUCH A WAY THAT THE HEIGHT OF THE PILE DOES NOT DAMAGE THE SEED BANK.

2. PLANT AMENDMENT MATERIAL STORAGE

IT IS RECOMMENDED THAT PLANTING OCCUR WITHIN 24 HOURS OF DELIVERY TO THE SITE. PLANT MATERIALS WHICH ARE LEFT UNPLANTED FOR MORE THAN 24 HOURS SHOULD BE PROTECTED FROM DIRECT SUN AND WEATHER AND KEPT MOIST. NURSERY STOCK SHOULD NOT BE LEFT UNPLANTED FOR MORE THAN TWO (2) WEEKS.

3. ON-SITE INSPECTION

PRIOR TO PLANTING, PLANTING STOCK SHOULD BE INSPECTED. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS, AND DISEASE SHOULD BE REPLACED.

4. PLANTING SPECIFICATIONS

A. CONTAINER GROWN STOCK: SUCCESSFUL PLANTING OF CONTAINER GROWN STOCK REQUIRES CAREFUL SITE PREPARATION AND INSPECTION OF THE PLANT MATERIAL ROOT SYSTEM. CAUTION IS RECOMMENDED WHEN SELECTING PLANTS GROWN IN A SOILS MEDIUM DIFFERING FROM THAT OF THE PLANTING SITE. THE PLANT SHOULD BE REMOVED FROM THE CONTAINER AND THE ROOTS GENTLY LOOSENED FROM THE SOILS. IF THE ROOTS ENCIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED, AND SUBSTITUTED IF NECESSARY. ROOTS MAY NOT BE TRIMMED ON-SITE, DUE TO THE INCREASED CHANCES OF SOIL BORNE DISEASES. THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED. NATIVE STOCKPILED SOILS SHOULD BE USED TO BACKFILL PLANTING FIELD. RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH 2 TO 4 INCHES OF MULCH.

B. BALLED AND BURLAPPED TREES: BALLED AND BURLAPPED TREES MUST BE HANDLED WITH CARE WHILE PLANTING. TREES SHOULD NOT BE PICKED UP BY THE TRUNK OR DROPPED. AS BOTH PRACTICES WILL TEND TO SEPARATE THE TRUNK FROM THE ROOT BALL. PRIOR TO PLANTING, ROOT BALLS SHOULD BE KEPT MOIST.

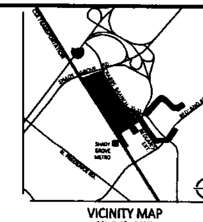
C. PLANTING FIELDS SHOULD BE CREATED EQUAL TO 2.5 TIMES THE DIAMETER OF THE ROOT BALL. USE WATERING TO SETTLE SOIL BACKFILLED AROUND TREES. STOCKPILED NATIVE TOP SOILS, IF AVAILABLE, SHOULD BE USED TO BACKFILL THE PLANTING FIELD. AMENDMENTS ARE NOT RECOMMENDED IN THE PLANTING FIELD, AS STUDIES HAVE SHOWN THAT ROOTS WILL BE ENCOURAGED TO STAY WITHIN THE AMENDED SOILS. SOILS SHOULD BE RAKED EVENLY OVER THE PLANTING FIELD AND COVERED WITH 2 TO 4 INCHES OF MULCH.

D. STAKING OF TREES IS NOT RECOMMENDED EXCEPT IN AREAS OF HIGH WINDS. MOVEMENT IS NECESSARY TO STRENGTHEN THE TRUNK OF THE PLANTED TREE. IF STAKES ARE USED, THEY SHOULD BE REMOVED AFTER THE FIRST GROWING SEASON. WRAPPING IS ALSO NOT RECOMMENDED DUE TO THE INCREASED OPPORTUNITIES FOR INSECT INFESTATION AND DISEASE.

5. POST-PLANTING CONSIDERATIONS

A. SOIL STABILIZATION: FOR AREAS OF LARGE-SCALE DISTURBANCE, SOILS MUST BE STABILIZED USING A NON-TURF-BUILDING GROUND COVER OR ENGINEERING FABRIC.

B. PROTECTIVE DEVICES: TO PREVENT DAMAGE OF PLANTED AREAS, ALL REFORESTATION AND AFFORESTATION SITES MUST BE POSTED WITH APPROPRIATE SIGNS AND FENCED. CONSTRUCTION EQUIPMENT SHALL BE PROHIBITED IN THESE AREAS. SEE FINAL FOREST CONSERVATION NOTES 5-7 ABOVE.



VICINITY MAP
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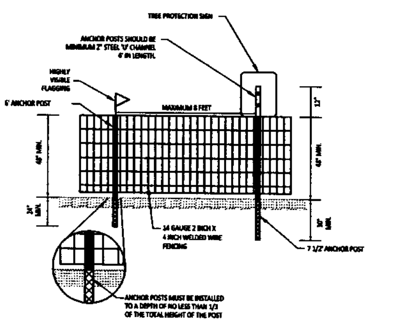
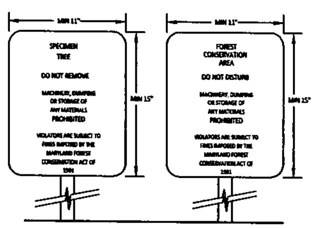


NOTES:

1. THE BOUNDARIES OF THE LIMITS OF DISTURBANCE SHOULD BE STAKED AND FLAGGED PRIOR TO ERECTING THE PROTECTIVE DEVICE.
2. AVOID DAMAGE TO CRITICAL ROOT ZONES OF TREES. ANCHOR POSTS SHOULD BE PLACED TO AVOID SEVERING OR DAMAGING LARGE TREE ROOTS.
3. FENCING MATERIAL SHOULD BE FASTENED SECURELY TO THE ANCHOR POSTS WITH FENCE WIRE.
4. FENCE SIGNS, AND THEREFORE, THE TALLER 7 1/2' POSTS, MUST BE PLACED A MINIMUM OF 50' APART AND AT FENCE CORNERS. CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FURTHER APART. ATTACHING SIGNS TO TREES IS PROHIBITED.
5. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

WELDED WIRE
TREE PROTECTION FENCE
NOT TO SCALE

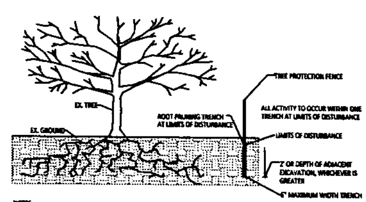


NOTES:
1. BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
2. SIGNS TO BE PLACED APPROXIMATELY 50' APART. CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.

FIGURE D-4

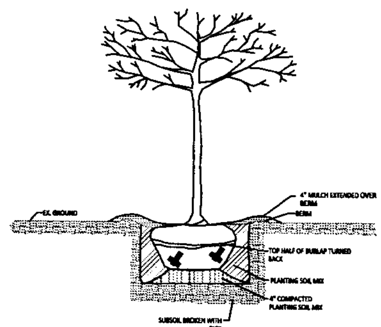
SOURCE: ADAPTED FROM STATE FOREST CONSERVATION TECHNICAL MANUAL

TREE PROTECTION CONSTRUCTION SIGNS
NOT TO SCALE



NOTES:
1. RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREAS TO BE STAKED, FLAGGED, AND/OR FENCED PRIOR TO TRENCHING.
3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR ORGANIC SOIL.
5. ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.
6. ALL ROOT PRUNING MUST BE PERFORMED BY A MARYLAND LICENSED TREE CARE EXPERT (OR AN ISA CERTIFIED ARBORIST LICENSED TO WORK IN THE STATE OF MARYLAND).
7. AREAS OF SHALLOW ROOT PRUNING MAY BE SPECIFIED DURING THE PRE-CONSTRUCTION MEETING.

ROOT PRUNING DETAIL
NOT TO SCALE



NOTES:
1. DIGGING OF TREE PITS IN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES AND/OR IN FOREST CONSERVATION EASEMENT AREAS IS RESTRICTED TO HAND EQUIPMENT ONLY TO PROTECT ADJACENT SAVED TREES.
2. STANDARD PLANTING TECHNIQUE IS TO DIG A TREE PIT THAT IS 2.5 TIMES THE SIZE OF THE ROOTBALL. HOWEVER, THE SIZE OF PLANTING PITS IS TO BE LIMITED AND THE LOCATION OF THE PITS FIELD ADJUSTED WITHIN THE CRZ'S OF SAVED TREES IN ORDER TO PROTECT ROOTS OF THE ADJACENT SAVED TREES THAT ARE 1" OR GREATER IN SIZE.

PLANTING IN CRITICAL ROOT ZONE
OF EXISTING TREES DETAIL
NOT TO SCALE

DEVELOPER'S CERTIFICATE

THE UNDERSIGNED AGREES TO EXECUTE ALL THE FEATURES OF THE APPROVED FINAL FOREST CONSERVATION PLAN NO. 820130220 INCLUDING FINANCIAL BONDING, FOREST PLANTING, MAINTENANCE, AND ALL OTHER APPLICABLE AGREEMENTS.

DEVELOPER'S NAME: ______________________
CONTACT PERSON OR OWNER: ______________________
ADDRESS: ______________________
PHONE: ______________________
SIGNATURE: ______________________

VIKA
ENGINEERS PLANNERS LANDSCAPE ARCHITECTS SURVEYORS
VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD SUITE 400
GERMANTOWN, MARYLAND 20874
GERMANTOWN, MD MCLEAN, VA

PREPARED FOR:
EYA/CSP ASSOCIATES
c/o EYA, LLC

CONSULTANTS

ARCHITECTS
LESSARD GROUP

KTGY

ATTORNEY
LINOWES & BLOCHER

TRAFFIC ENGINEER
WELLS & ASSOCIATES

PLANNING, CIVIL ENGINEER & LANDSCAPE ARCHITECT
VIKA MARYLAND, LLC
20251 CENTURY BOULEVARD
SUITE 400
GERMANTOWN MD, 20874

REVISIONS	DATE
REVISED FOR 05/20/13 DRC COMMENTS	07/03/13
REVISED FOR MITIGATION TREE LOCATIONS	08/07/13
REVISED FOR PUBLIC INFRASTRUCTURE IMPROVEMENTS	09/23/13
REVISED FOR REVIEWER COMMENTS	11/20/13

PROFESSIONAL SEAL

SHADY GROVE STATION
PHASE I
WEST DEVELOPMENT & PUBLIC INFRASTRUCTURE IMPROVEMENTS
PARCEL 495
9TH ELECTION DISTRICT
MONTGOMERY COUNTY, MARYLAND
WSSC MAP: 222NW08
TAX MAP: GS 123,

FINAL FOREST CONSERVATION PLAN #820130220

NOTES, DETAILS AND SCHEDULES

DRAWN BY: TSS
DESIGNED BY: CT
DATE ISSUED: ______

SHEET NO. FCP-17

Exhibit L-2

LIBRARY LEASE TERMS

The Preliminary Plan approved by the Planning Board on September 6, 2012 incorporates the library space as a retail bay on the ground floor of the multifamily building closest to the Shady Grove Metro Station. This location is ideally positioned for pedestrian traffic and is at the center of the project's retail core.

EYA will provide the library space as an unfinished retail bay (e.g. cold dark shell) within the multifamily building. EYA will not have any responsibility for TI/fit out of the library. The County would have the right to lease the space at the closing of EYA's acquisition of the land, with the lease commencing upon delivery of the cold dark shell. To achieve the County's cost-control objectives, EYA will commit to rent the space to the library for a minimal rent designed to recover the costs of the cold dark shell over an extended period of time.

The basic terms are as follows:

Premises: 6,859 sf retail bay located in Building B of Shady Grove Station (or a portion thereof)

Expenses: Triple Net

Rent: Per sf rate established by amortizing the costs of providing a cold, dark shell over a period of 10 years

Availability: Commencement date and space availability to be established in the option notice(s)

Lease Term: 10-year base term with unlimited 5-year extension options

Use: Per sector plan - New library, public/private community center, other public use (subject to EYA approval), or private use

Termination: 12-months written notice

MCPL will have opportunities to exercise its right of first refusal to lease the space under the terms above. Initially, MCPL must exercise its right within sixty days of EYA's acquisition from Montgomery County of the Building D land. At closing, EYA will notify MCPL that the option period has begun. If MCPL doesn't exercise its right, EYA may lease the space to another tenant for a term not to exceed five years (the "Private Sector Lease").

Eighteen months prior to the expiration of the Private Sector Lease, EYA will give MCPL another option notice and MCPL will again have the right to lease the space under the terms above. The option must be exercised within six months of the date of EYA's notice (i.e. one year

before the Private Sector Lease expires). If MCPL again doesn't exercise the second option EYA may enter into another Private Sector Lease of up to five years and 18 months prior to the expiration of that lease EYA will give MCPL a final lease option notice and MCPL again have the right to lease the space under the terms above.

MONTGOMERY COUNTY PUBLIC LIBRARIES

Isiah Leggett
County Executive

B. Parker Hamilton
Director

June 1, 2012

Mr. Nkosi Yearwood
Community-Based Planning
Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, Maryland 20910

Re: Preliminary Plan No. 120120080 (Shady Grove Station) – MCPL Library Site

Dear Mr. Yearwood:

Montgomery County Public Libraries (MCPL) has reviewed the above-referenced preliminary plan regarding the inclusion of a library site in a "highly prominent location" as called for in the Shady Grove Sector Plan.

The preliminary plan proposes locating the library in an approximately 6,200 square foot retail bay on the CSP Metro North parcel within the mixed-use and multifamily retail area near Crabbs Branch Way and proximate to other multifamily dwellings, structured parking, and the access point to the Shady Grove Metro station parking lot. MCPL believes this location is suitable and consistent with the recommendations of the 2006 Shady Grove Sector Plan. The location of the library site is shown on the attached exhibit (Exhibit "A").

County Executive staff, on behalf of MCPL, has worked with the developer to reach agreement on the size and location of the library site. The Developer/Applicant has further agreed that it will provide the library space as an unfinished retail bay within the multifamily building under a long-term arrangement that will be negotiated at a future date. The library would benefit from a highly visible, central location uniquely provided in the ground level retail space of the multifamily building.

Please let us know if you have any questions regarding this matter.

Sincerely,

B. Parker Hamilton
Director

c: Greg Ossont, Deputy Director, Planning and Development, Department of General Services
Brian Jackson, Senior Vice President, EYA
Patrick Butler, Senior Planner, Maryland-National Capital Park and Planning Commission
Ramona Bell-Pearson, Assistant Chief Administrative Officer, Offices of the County Executive
Arthur Holmes, Director, Department of Transportation
Catherine Matthews, Director, Upcounty Region, Community Engagement Cluster
Rita Gale, Public Services Administrator, Department of Public Libraries

Attachment 3 (ii)

DEPARTMENT OF PERMITTING SERVICES

Isiah Leggett
County Executive

Diane R. Schwartz Jones
Director

January 8, 2014

Mr. Michael Goodman
VIKA Maryland, LLC
20251 Century Blvd., Suite 400
Germantown, Maryland 20874

Re: Stormwater Management ***CONCEPT*** Request
for Shady Grove Station - West
Preliminary / Site Plan #: 120120080
SM File #: 240688
Tract Size/Zone: 44.82 Ac. / TOMX - 2.0/TDR
Total Concept Area: 44.82 Ac.
Parcel: P495
Watershed: Upper Rock Creek

Dear Mr. Goodman:

Based on a review by the Department of Permitting Services Review Staff, the stormwater management concept for the above mentioned site is **acceptable**. The stormwater management concept proposes to meet required stormwater management goals via the use of environmental site design practices such as micro-bioretention facilities, permeable pavement and a bio-swale. A waiver of the required ESD volume in excess of that which is provided on-site was requested and is hereby granted based on the stormwater management provided by the downstream Crabbs Branch Regional stormwater management pond.

This stormwater concept approval constitutes the "site development stormwater management concept" for Shady Grove Station – West as required by the previous stormwater concept approval letter, dated June 12, 2012. This approval applies only to the 44.82 acre portion of the project known as Shady Grove Station – West.

The following **items** will need to be addressed **during** the detailed sediment control/stormwater management plan stage:

1. A detailed review of the stormwater management computations will occur at the time of detailed plan review.
2. An engineered sediment control plan must be submitted for this development.
3. All filtration media for manufactured best management practices, whether for new development or redevelopment, must consist of MDE approved material.
4. A geotechnical representative must be present on-site during construction to perform regular inspections and testing as needed to confirm the subgrade soils are suitable for the use in the areas where permeable pavement is utilized.
5. Landscaping shown on the approved Landscape Plan as part of the approved Site Plan are for illustrative purpose only and may be changed at the time of detailed plan review of the Sediment

Control/Storm Water Management plans by the Mont. Co. Department of Permitting Services, Water Resources Section.

This list may not be all-inclusive and may change based on available information at the time.

Payment of a stormwater management quantity contribution in accordance with Section 2 of the Stormwater Management Regulation 4-90 **is required**.

This letter must appear on the sediment control/stormwater management plan at its initial submittal. The concept approval is based on all stormwater management structures being located outside of the Public Utility Easement, the Public Improvement Easement, and the Public Right of Way unless specifically approved on the concept plan. Any divergence from the information provided to this office; or additional information received during the development process; or a change in an applicable Executive Regulation may constitute grounds to rescind or amend any approval actions taken, and to reevaluate the site for additional or amended stormwater management requirements. If there are subsequent additions or modifications to the development, a separate concept request shall be required.

If you have any questions regarding these actions, please feel free to contact Mike Geier at 240-777-6342.

Sincerely,

Mark C. Etheridge, Manager
Water Resources Section
Division of Land Development Services

MCE: me CN240688 Shady Grove Station West Site Plan.mjg.doc

cc: C. Conlon
SM File # 240688

ESD Acres: 44 ac.
STRUCTURAL Acres:
WAIVED Acres: 44 ac.

Attachment 3 (iii)

Martin O'Malley, *Governor*
Anthony G. Brown, *Lt. Governor*

State Highway Administration
Maryland Department of Transportation

James T. Smith, Jr., *Secretary*
Melinda B. Peters, *Administrator*

Josh

August 1, 2013

Ms. Cathy Conlon
Montgomery County Planning Commission
8787 Georgia Ave.
Silver Spring, Maryland 20910

RE: Montgomery County
I-370
Shady Grove Station – West Side
SHA Tracking No: 13APMO025XX
County Tracking No: 820130220
Mile Post: 2.36

Dear Ms. Conlon:

Thank you for the opportunity to review the site plan submittal, dated July 17, 2013, proposing the Shady Grove Station – West Side development in Montgomery County. The State Highway Administration (SHA) offers the following comments:

As stated in the attached letter to Montgomery County dated May 7, 2013, this submittal is a site plan review for the **west side segment** of the development. The proposed site will be accessed from Crabbs Branch Way, a county owned, operated and maintained roadway. SHA has no objections to approval of the subject development. All work is subject to the permitting process and requirements of Montgomery County. It is noted that under SHA tracking number **12APMO072**, the Shady Grove Station mixed-use development traffic impact study was approved on July 18, 2012. Should Montgomery County require any supplemental traffic study specific for the west side segment only, SHA requests inclusion in the scoping effort. Seven (7) copies of the study should be sent directly to Mr. Steve Foster attention of our Technical Review Team within the Access Management Division for review.

If any future improvements to the intersection of Crabbs Branch Way and Shady Grove Road are required as part of this project, plans should be sent to our office for review since that intersection appears to be within SHA right of way. Improvements should include ADA compliant ramps and sidewalks in all 4 quadrants of the intersection as well as appropriate bicycle facilities. As required in the previous letter dated May 7, 2013, please have the developer coordinate with Mr. Dustin Kuzan, SHA's Bicycle and Pedestrian Coordinator to determine the number of bicycle and pedestrian trips so that the bicycle and pedestrian related improvements can be made from the Policy Area Mobility Review (PAMR) funds. For more information on this requirement, please see the attached traffic impact study approval letter dated July 18, 2012.

Please reference the SHA tracking number on future submissions. If you have any questions, or require additional information, please contact Mr. Erich Florence at 410-545-0447, by using our toll free number in Maryland only at 1-800-876-4742 (x0447) or via email at eflorence@sha.state.md.us.

Sincerely,

Erich Florence

for Steven D. Foster, Chief/Development Manager
Access Management Division

SDF/JWR/EMF

Attachments

cc: Mr. Edward Axler, M-NCPPC – Area 2 Transportation Coordinator/
8787Georgia Avenue, Silver Spring, Maryland 20910
Ms. Meredith Byer, Vika Maryland, LLC. /byer@vika.com
20251 Century Boulevard, Suite 400, Germantown, Maryland 20874
Mr. Greg Edwards, SHA – Resident Maintenance Engineer – Gaithersburg Shop
Mr. Victor Grafton, SHA – District 3 Utility Engineer
Mr. Brian Jackson, EYA/CSP Associates c/o EYA, LLC
4800 Hampden Lane, Suite 300, Bethesda, Maryland 20814
Mr. Dustin Kuzan, SHA – Regional Intermodal Planning Division
Mr. Mark McKenzie, SHA – Access Management Division Assistant Regional Engineer
Ms. Anyesha Mookherjee, SHA – District 3 Assistant District Engineer – Traffic
Mr. Scott Newill, SHA - Access Management Division Regional Engineer
Catherine.Conlon@montgomeryplanning.org.

Attachment 4

ENGINEERS ✪ PLANNERS ✪ LANDSCAPE ARCHITECTS ✪ SURVEYORS ✪ SUSTAINABLE DESIGN

September 23, 2013

Mr. Steve Findley
Environmental Planner Coordinator, Area 2
M-NCPPC
8787 Georgia Avenue
Silver Spring, MD20910

RE: Forest Conservation Variance Request
Shady Grove Station Phase I
West Development and Public Infrastructure Improvements
Final Forest Conservation Plan 820130020
VIKA #VM1791B

Dear Mr. Findley:

On behalf of the applicant, the Montgomery County Department of General Services and the developer, EYA/CSP Associates, we are submitting this request for a Variance from the requirements of the Forest Conservation Law for the State of Maryland. This request is made under the variance provisions of the Montgomery County Forest Conservation Ordinance to comply with Natural Resources, Title 5, Section 5-1607 of the Maryland Code, which requires the Applicant to file a request for a variance to remove trees that are 30" DBH or greater or trees that are 75% the diameter of the county champion for that species if a project did not receive Preliminary Forest Conservation Plan (FCP) Approval prior to October 1, 2009.

A variance request was submitted with Preliminary Forest Conservation Plan 120120080 and approved June 20, 2012. This request is submitted with the Shady Grove Station Phase I Final FCP which includes the West Development and the associated public infrastructure improvements required per Preliminary Plan 120120080 approved September 11, 2012. Those improvements include Crabbs Branch Way road improvements, a pedestrian trail, a sewer outfall, and WMATA entrance improvements. With the construction of the sewer line and sidewalk at the WMATA entrance this request is submitted to impact the critical root zone of six specimen trees with five of the trees being preserved and one removed.

VIKA, Incorporated
20251 Century Boulevard, Suite 400 ✪ Germantown, Maryland 20874 ✪ 301.916.4100 Fax 301.916.2262
McLean, VA ✪ Germantown, MD ✪ Washington, DC
www.vika.com

Table 1 below lists the trees as identified on the Forest Conservation Plan and provides their respective measurements.

Table 1

Variance/ Tree #	Species	D.B.H.* (inches)	Condition	Disposition	CRZ Area (sf)	CRZ Impacts (sf)	CRZ Impacts (%)
T-51	Quercus phellos	34	Good	Remove	8,659	8,659	100
T-71	Quercus phellos	30	Good	Save	6,362	21	0.33
T-72	Quercus phellos	32	Good	Save	7,238	267	3.69
T-73	Quercus phellos	37	Good	Save	9,677	808	8.35
T-75	Quercus phellos	31	Good	Save	6,793	235	3.46
T-76	Quercus phellos	34.5	Good	Save	8,413	566	6.73

*Diameter at breast height

The tree assessments below were determined with Natural Resources Inventory Plans 420111200 by Bowman Consulting and 420140200 by Ecotone, Inc. as a visual, at grade level inspection with no invasive, below grade or aerial inspections performed at the time. Decay or weakness may be hidden out of sight for large trees.

Tree # T-51
34" Willow Oak (*Quercus phellos*): located approximately 350' down the Metro Access Road, 18' from the curb and 46' east of the Shady Grove Station West eastern property line. Health-good (+); Structural condition-good (+). This tree is within 6.85' of the proposed sewer line and falls within the LOD for the construction of the sewer and proposed sewer easement and is therefore, proposed for removal. **Proposed CRZ impact: 8,659 SF or 100%. Disposition: Tree is to be removed due to construction of the sewer line.**

Tree # T-71
30" Willow Oak (*Quercus phellos*): located along the southern side of the Metro Access Road adjacent to the railroad tracks. Health-good (+); Structural condition-good (+). This tree is on the opposite side of the 28' wide Metro Access road from the grading for the proposed sidewalk and if any of its critical root zone extends under the road will only be minimally impacted. **Proposed CRZ impact: 21 SF or 0.33%. Disposition: Tree is to be preserved.**

Tree # T-72
32" Willow Oak (*Quercus phellos*): located approximately 35' west of Tree # T-71. Health-good (+); Structural condition-good (+). This tree is on the opposite side of the 28' wide Metro Access road from the grading for the proposed sidewalk and if any of its critical root zone extends under the road will only be minimally impacted. **Proposed CRZ impact: 267 SF or 3.69%. Disposition: Tree is to be preserved.**

Tree # T-73
37" Willow Oak (*Quercus phellos*): located approximately 38' west of Tree # T-72. Health-good (+); Structural condition-good (+). This tree is on the opposite side of the 28' wide Metro Access road from the grading for the proposed sidewalk and if any of its critical root zone extends under the road will only be minimally impacted. **Proposed CRZ impact: 808 SF or 8.35%. Disposition: Tree is to be preserved.**

Tree # T-75
31" Willow Oak (*Quercus phellos*): located approximately 120' west of Tree # T-73. Health-good (+); Structural condition-good (+). This tree is on the opposite side of the 28' wide Metro Access road from the grading for the proposed sidewalk and if any of its critical root zone extends under the road will only be minimally impacted. **Proposed CRZ impact: 235 SF or 3.46%. Disposition: Tree is to be preserved.**

Tree # T-76
34.5" Willow Oak (*Quercus phellos*): located approximately 50' west of Tree # T-75. Health-good (+); Structural condition-good (+). This tree is on the opposite side of the 28' wide Metro Access road from the grading for the proposed sidewalk and if any of its critical root zone extends under the road will only be minimally impacted. **Proposed CRZ impact: 566 SF or 6.73%. Disposition: Tree is to be preserved.**

To grant the requested variance, the Planning Board must find that the request:

1. Will not confer on the applicant a special privilege that would be denied to other applicants;
2. Is not based on conditions or circumstances which are the result of actions by the applicant;
3. Does not arise from a condition relating to land or building use, either permitted or non-conforming, on a neighboring property; and
4. Will not violate State water quality standards or cause measurable degradation in water quality.

We submit the following rationale in support of our request for a Forest Conservation variance:

1. A variance was approved with Preliminary Forest Conservation Plan 820120080 for the overall Shady Grove Station project. At this time, the Final Forest Conservation Plan for Phase I of the overall project details the western development and the public infrastructure improvements as per approved Preliminary Plan 120120080. The sewer alignment has been coordinated with both WMATA and WSSC. Tree T-51 is within 7 feet of the sewer line and falls within the proposed WSSC easement and, therefore, is proposed for removal. The remaining variance trees are minimally impacted by the proposed sidewalk for the WMATA property on the opposite side of the 28' wide Metro Access Road and are being preserved. The conditions related to this request are neither

unique nor special to this project and instead are unavoidable consequences of the development process and the infrastructure improvements required by the Preliminary Plan.

2. The requested variance is based on plans being developed through the County planning process not conditions or circumstances resulting from actions by the applicant. This final sewer alignment has been coordinated with WMATA and WSSC based on numerous design criteria and removal of tree T-51 is unavoidable. The remaining variance trees are minimally impacted by the proposed sidewalk for the WMATA property on the opposite side of the 28' wide Metro Access Road and are being preserved.

3. The variance tree being removed is impacted by the construction of the sewer line as per the approved Preliminary Plan. The remaining variance trees are minimally impacted by the proposed sidewalk for the WMATA property on the opposite side of the 28' wide Metro Access Road and are being preserved. There are no conditions relating to land or building use, either permitted or nonconforming, on a neighboring property that have played a role in the need for this variance.

4. In the existing condition, storm water management facilities or storm drain inlets are not present in the vicinity of the Variance Tree T-51. The proposed condition honors the existing storm drain system. Thus, removal of this tree due to sanitary sewer installation will not adversely affect water quality in any measurable way.

Thank you for your consideration of this variance request. We believe that the supporting information provided justifies the variance and that staff will recommend approval to the Planning Board for this request to remove one specimen tree. If you have any questions or need more information, please do not hesitate to contact us so that we may discuss this matter further.

Sincerely,
VIKA, Inc.

Cynthia A. Todd, RLA
Associate

NP/ct
K:\1501-2000\1791_documents\1791B\planning\environmental\FINAL FCP PH1 WEST\2013_0923 SGS PHI Variance Req.docx

Attachment 5

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Isiah Leggett
County Executive

Robert G. Hoyt
Director

December 13, 2013

Françoise Carrier, Chair
Montgomery County Planning Board
Maryland National Capital Park & Planning Commission
8787 Georgia Avenue
Silver Spring, Maryland 20910

RE: Shady Grove Station (CSP), MR 2014019, NRI/FSD applied for on 1/26/2011

Dear Ms. Carrier:

All applications for a variance from the requirements of Chapter 22A of the County Code submitted after October 1, 2009 are subject to Section 22A-12(b)(3). Accordingly, given that the application for the above referenced request was submitted after that date and must comply with Chapter 22A, and the Montgomery County Planning Department ("Planning Department") has completed all review required under applicable law, I am providing the following recommendation pertaining to this request for a variance.

Section 22A-21(d) of the Forest Conservation Law states that a variance must not be granted if granting the request:

1. Will confer on the applicant a special privilege that would be denied to other applicants;
2. Is based on conditions or circumstances which are the result of the actions by the applicant;
3. Arises from a condition relating to land or building use, either permitted or nonconforming, on a neighboring property; or
4. Will violate State water quality standards or cause measurable degradation in water quality.

Applying the above conditions to the plan submitted by the applicant, I make the following findings as the result of my review:

1. The granting of a variance in this case would not confer a special privilege on this applicant that would be denied other applicants as long as the same criteria are applied in each case. Therefore, the variance can be granted under this criterion.

2. Based on a discussion on March 19, 2010 between representatives of the County, the Planning Department, and the Maryland Department of Natural Resources Forest Service, the disturbance of trees, or other vegetation, as a result of development activity is not, in and of itself, interpreted as a condition or circumstance that is the result of the actions by the applicant. Therefore, the variance can be granted under this criterion, as long as appropriate mitigation is provided for the resources disturbed.

3. The disturbance of trees, or other vegetation, by the applicant does not arise from a condition relating to land or building use, either permitted or nonconforming, on a neighboring property. Therefore, the variance can be granted under this criterion.

4. The disturbance of trees, or other vegetation, by the applicant will not result in a violation of State water quality standards or cause measurable degradation in water quality. Therefore, the variance can be granted under this criterion.

Therefore, I recommend a finding by the Planning Board that this applicant qualifies for a variance conditioned upon the applicant mitigating for the loss of resources due to removal or disturbance to trees, and other vegetation, subject to the law based on the limits of disturbance (LOD) recommended during the review by the Planning Department. In the case of removal, the entire area of the critical root zone (CRZ) should be included in mitigation calculations regardless of the location of the CRZ (i.e., even that portion of the CRZ located on an adjacent property). When trees are disturbed, any area within the CRZ where the roots are severed, compacted, etc., such that the roots are not functioning as they were before the disturbance must be mitigated. Exceptions should not be allowed for trees in poor or hazardous condition because the loss of CRZ eliminates the future potential of the area to support a tree or provide stormwater management. Tree protection techniques implemented according to industry standards, such as trimming branches or installing temporary mulch mats to limit soil compaction during construction without permanently reducing the critical root zone, are acceptable mitigation to limit disturbance. Techniques such as root pruning should be used to improve survival rates of impacted trees but they should not be considered mitigation for the permanent loss of critical root zone. I recommend requiring mitigation based on the number of square feet of the critical root zone lost or disturbed. The mitigation can be met using any currently acceptable method under Chapter 22A of the Montgomery County Code.

In the event that revisions to the LOD are approved by the Planning Department, the mitigation requirements outlined above should apply to the removal or disturbance to the CRZ of all trees subject to the law as a result of the revised LOD.

If you have any questions, please do not hesitate to contact me directly.

Sincerely,

Laura Miller
County Arborist

cc: Steve Finley, Planner Coordinator

Attachment 6

PHOENIX
noise & vibration

Phoenix Noise & Vibration, LLC
5216 Chairmans Court, Suite 107
Frederick, Maryland 21703
301.846.4227 (phone)
301.846.4355 (fax)
www.phoenixnv.com

10 October 2013

Shady Grove Station West Side Transportation Noise Analysis

Montgomery County, Maryland

Report #131010

For: EYA

By: Scott Harvey, P.E., INCE Bd. Cert.
Josh Curley

Acoustical Engineering Solutions.

EXECUTIVE SUMMARY

Phoenix Noise & Vibration has conducted an analysis of transportation noise impact upon the proposed Shady Grove Station West Side mixed-use development in Montgomery County, Maryland. This analysis does not include an evaluation of Shady Grove Station East Side, which will be accounted for once plans for that phase of the development progress.

This analysis, limited to noise impact from Shady Grove Road, Crabbs Branch Way, the Metro Access Road, and the adjacent railway, included:

- 24-hour noise level measurements,
- computer modeling,
- determination of existing and future noise levels, and
- preliminary mitigation recommendations.

The site's noise impact varies with elevation and has been presented at varying heights, including at the ground and upper level throughout the entire site and across select vertical building elevations. The noise levels presented are due only to Shady Grove Road, Crabbs Branch Way, the Metro Access Road, and the adjacent railway, and do not account for noise from other sources such as airplanes, construction, mechanical noise, environmental noise, etc.

The site's ground level (5.5 feet above grade) noise contours indicate impact above 65 dBA Ldn for residences directly facing Shady Grove Road and Crabbs Branch Way; however residences along these roadways will not have ground level outdoor activity areas. Mitigation is not required to reduce ground level noise levels along Shady Grove Road or Crabbs Branch Way. Outdoor activity areas located further into the site will not be exposed to noise levels above 65 dBA Ldn and require no additional mitigation.

The site's upper level (25 feet above grade) noise contours, as well as the vertical building facade noise level calculations for multifamily buildings (Buildings A through D), indicate impact above 65 dBA Ldn for all residences directly facing the railway, Shady Grove Road, Crabbs Branch Way, or the Metro Access Road. Noise impact upon building elevations not directly facing these noise sources, as well as upon residences further into the site, gradually decreases as the distance from these sources increases, such that noise impact throughout a majority of the site is below 65 dBA Ldn.

Residential units impacted by future mitigated transportation noise levels above 65 dBA Ldn require further analysis to determine whether modifications to the proposed standard building construction are necessary to maintain indoor noise levels at 45 dBA Ldn (as required by Montgomery County). Noise levels above 65 dBA Ldn are frequently encountered in residential developments adjacent to major roadways and transportation corridors and can be mitigated with architectural modifications. Modifications, which may include alterations to exterior wall construction and increased STC ratings for windows and doors, will be determined once architectural drawings for impacted residences are well developed (i.e. floor plans, building elevations, window/door sizes, room dimensions, ceiling heights).

Two noise barriers have been designed along the railway adjacent to the site to reduce railway noise impact upon townhomes and multifamily buildings (primarily Multifamily Buildings B and C) closest to the railway. These noise barriers are necessary to reduce railway noise impact to a manageable level (below 75 dBA Ldn) when developing architectural mitigation designs to meet the indoor noise limit.

The noise barriers do not eliminate the need for the modifications to proposed architecture required to comply with the indoor noise limit; however they do make these architectural modifications more feasible. Such architectural modifications have been used throughout the County and in various construction methods, and are well documented and understood; however they can only be determined once exterior wall and window/door assemblies have been designed.

Preliminary mitigation designs to maintain acceptable indoor noise levels are provided based upon standard construction practices. Further analysis is required to determine the exact mitigation measures necessary for reducing transportation noise impact into compliance with Montgomery County's indoor residential noise standard. Final indoor (and outdoor, if necessary) mitigation designs will be developed prior to applications building permits.

NOISE TERMINOLOGY

dB vs. dBA

While the standard unit of measurement for sound is the decibel (dB), discussions of noise impacting the human ear use "dBA." The "A" refers to a frequency weighting network used to simulate the human ear's unequal sensitivity to different frequencies. The A-weighted noise level is therefore more representative of a human's perception of a noise environment than the unweighted overall noise level in dB and is currently used in most all environmental noise studies.

Ldn vs. Leq

The day-night average noise level, or Ldn, is the equivalent sound pressure level averaged over a 24-hour period, obtained by adding 10 dB to sound pressure levels measured from 10:00 p.m. to 7:00 a.m. This 10 dB "penalty" accounts for the added sensitivity caused by noise generated during the nighttime hours.

The Ldn is NOT a measurement of the instantaneous noise level. It is very possible to have several short term events (tractor trailer, emergency vehicle siren, car horn, etc.) which generate a relatively high noise level (e.g. 85 dBA) during a given time period, yet have a more moderate overall Ldn value (e.g. 65 dBA Ldn).

The equivalent-continuous sound level, or Leq, is the sound level averaged over a given time period.

Summing Noise Levels

Noise levels from multiple sources do not add arithmetically; i.e. when two noise sources generate 60 dB individually, they do not produce 120 dB when combined. Noise levels are measured using a logarithmic scale; therefore they must be summed logarithmically. In the decibel scale, two identical, non-coherent noise sources having the same noise level produce a 3 dB increase above the condition of one source alone (i.e. two 80 dB lawnmowers running at the same time generates 83 dB).

Similarly, two different noise sources with a difference of 10 dB in their individual levels results in no measureable increase in noise when they are combined. Put another way, the quieter noise source does not increase the overall noise generated by the louder source; i.e. adding an 80 dB lawnmower into a noise environment where a 90 dB lawnmower is already running does not increase the noise level above 90 dB.

NOISE REGULATIONS

Traffic noise impact for proposed residential developments in Montgomery County is governed by Table 2-1 (reprinted in Table 1) on page 8 of the *Staff Guidelines for the Consideration of Transportation Noise Impacts In Land Use Planning and Development* (June 1983). Accompanying this table is Map 2-1, indicating outdoor noise level requirements not to be exceeded throughout the County.

Table 1: Maximum Levels for Exterior Noise & Building Line[1] For Noise Sensitive Land Uses (Table 2-1).

Guideline Value	Area of Application
Ldn = 55 dBA	This guideline is suggested as an appropriate goal in permanent rural areas of the County where residential zoning is for five or more acres per dwelling unit and background levels are low enough to allow maintenance of a 55 dBA Level. This guideline is consistent with Federal, State, and County goals for residential areas.
Ldn = 60 dBA	This is the basic residential noise guideline which will be applied in most areas of the County where suburban densities predominate. Maintenance of this level will protect health and substantially prevent activity interference both indoors and outdoors. Noise attenuation measures will be recommended to allow attainment of this level.
Ldn = 65 dBA	This guideline will generally be applied in the urban ring, freeway, and major highway corridor areas, where ambient levels are such that application of a stricter guideline would be infeasible or inequitable. Significant activity interference will occur outdoors and indoors if windows are partially opened, but available evidence indicates hearing is adequately protected. Noise attenuation measures will be strongly recommended to attain this level.

[1] Building line as used here refers to habitable structures only. It does not include garages, sheds, or recreational accessory buildings.

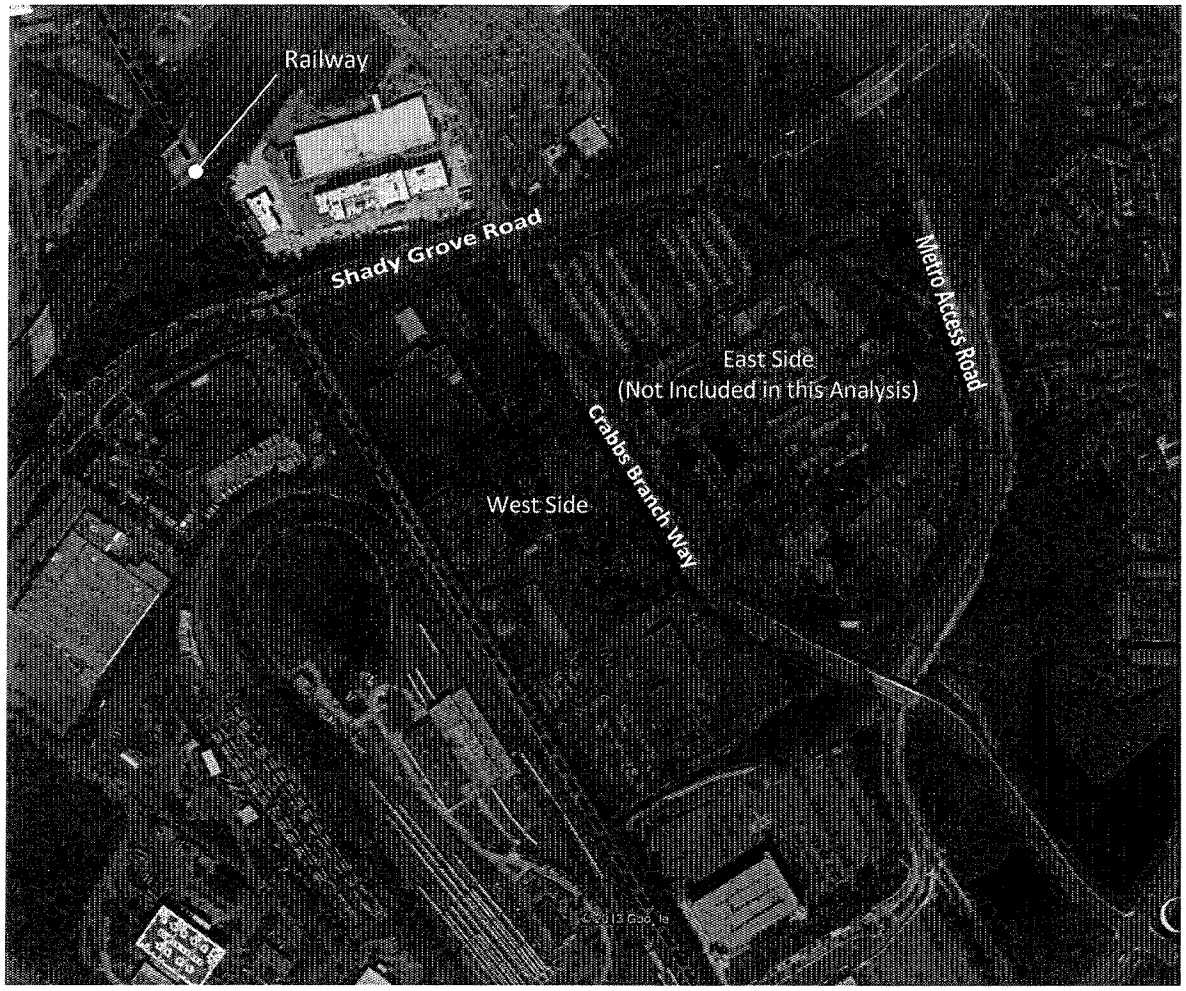
According to Map 2-1, Shady Grove Station is located within the 65 dBA Ldn noise zone, indicating that noise levels in outdoor activity areas throughout the site should be maintained at 65 dBA Ldn. Any outdoor area exposed to future transportation noise levels above 65 dBA Ldn typically requires further analysis to determine the mitigation designs necessary to comply with this requirement.

When outdoor noise levels exceed 65 dBA Ldn, Montgomery County also requires an analysis of indoor noise levels in residential buildings. According to Sections 2.2.2 and 2.2.3 of the *Staff Guidelines*, any residential building impacted by noise levels above 65 dBA Ldn must be evaluated to certify that the building structure will be capable of maintaining indoor noise levels at 45 dBA Ldn.

SITE DESCRIPTION

The West Side property (shown in red in Figure 1) is bounded by Shady Grove Road to the north, a railway used by CSX freight trains and MARC and Amtrak passenger trains to the west, Crabbs Branch Way to the east, and the Metro Access Road to the south. In this region, Shady Grove Road is composed of two to three eastbound lanes and three westbound lanes. Crabbs Branch Way is composed of two northbound and two southbound lanes, and the Metro Access Road is composed of two westbound lanes which terminate at the Metro station parking garage. The railway is composed of two tracks traveling north and south along the western property line.

Figure 1: Existing site (as of October 12, 2012).



NOISE MEASUREMENTS

Phoenix Noise & Vibration conducted three on-site noise measurement surveys in March 2011 to determine the current impact on the site. This involved continuous noise level measurements and monitoring for three separate 24-hour periods. Measurements were made using Norsonics

Type 118 and Type 140 Precision Integrating Sound Level Meters. All meters were calibrated prior to the survey traceable to National Institute of Standards and Technology (NIST). Each meter meets the ANSI S1.4 standard for Type 1 sound level meters.

During the 24-hour measurements, noise levels were recorded and averaged over five minute time intervals. Noise measurements were then used to calculate the site's existing average noise level (or Leq) throughout the daytime and nighttime hours, as well as the 24-hour average (Ldn), which includes the 10 dBA penalty for noise levels measured during nighttime hours.

Noise level measurements were made at five points (shown in Figure 2) throughout the site. Points A and B measured railway noise and were located 25 feet above adjacent grade. Points C, D, and E each measured a separate roadway. Points C and D were elevated 5.5 feet above adjacent grade, while Point E was 25 feet above adjacent grade.

Figure 2: Long-term noise measurement locations.

Measurement locations were chosen such that only noise from each individual source would be measured; i.e. railway noise would not have a significant impact upon the measured values at

Point C, D, and E, and roadway noise would not have a significant impact upon the measured values at Points A and B. Point B was also located near one of the two railway switches (shown in blue in Figure 2) to determine its effect on each train's emitted noise level.

Since railway schedules (primarily freights) can be subject to inconsistency for one day to another, railway noise levels were measured for three nonconsecutive 24-hour periods to more accurately obtain the railway's average noise level. Conversely, roadway noise (during the week) is relatively consistent and does not vary significantly day to day; therefore the noise generated by each roadway was only measured for one continuous 24-hour period.

Results

Railway and roadway noise measurement results are presented in Tables 2 and 3, respectively. Figures 3 and 4 present the railway survey results graphically for Points A and B, respectively, while Figure 5 presents the roadway survey results. Each figure shows the noise level as measured in five minute increments over the 24-hour periods.

Table 2: Railway 24-hour noise measurement results.

		Measured Noise Level (dBA Ldn)	
	Measurement Location	A	B[1]
Measurement Date	March 15 – 16, 2011	77.2	84.2
	March 22 – 23, 2011	77.5	86.3
	March 28 – 29, 2011	78.8	87.4
	Average	**77.8**	**86.0**

1 – Point B was adjacent to the southernmost railway switch.

Table 3: Roadway 24-hour noise measurement results.

Measurement Location	Noise Source	Measurement Date	Measured Noise Level (dBA Ldn)
C	Crabbs Branch Way	March 28 – 29, 2011	74.1
D	Metro Access Road		70.9
E	Shady Grove Road	March 22 – 23, 2011	71.9

Figures 3, 4, and 5 indicate the actual measured values over the 24-hour period, as well as the noise level during nighttime hours with the 10 dBA penalty added when calculating the Ldn. The relatively high peaks shown on Figures 3 and 4 are due to trains passing by the site during that five minute interval.

Note that Figure 5 indicates the noise level from Shady Grove Road did not change between approximately 8:00 AM and 11:00 AM. During the survey, mechanical equipment near the measurement location generated noise levels higher than Shady Grove Road; therefore the roadway noise level shown was assumed when calculating the Ldn at Point E.

Figure 3: Five minute average railway noise levels recorded during 24-hour noise survey at Point A.

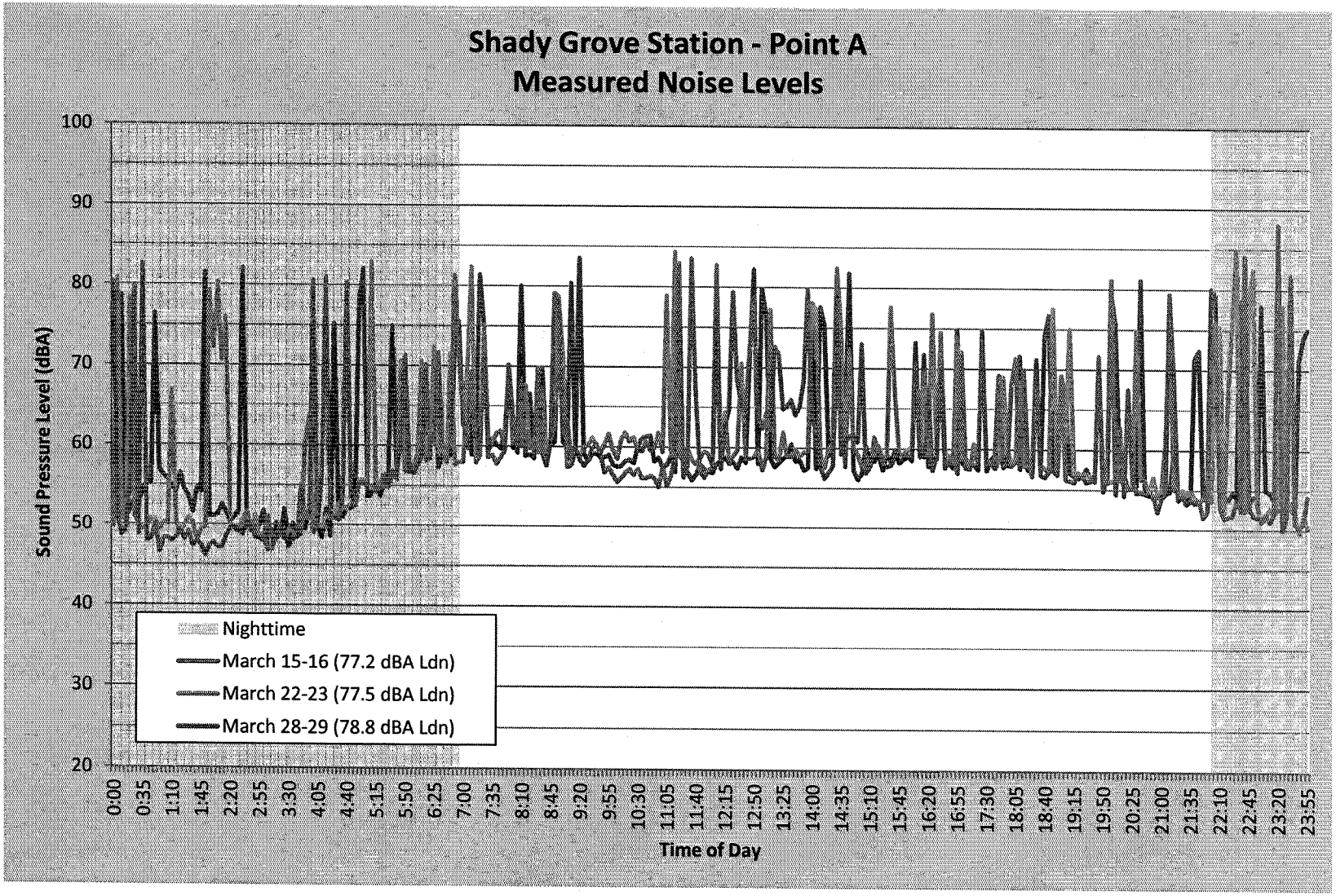


Figure 4: Five minute average railway noise levels recorded during 24-hour noise survey at Point B.

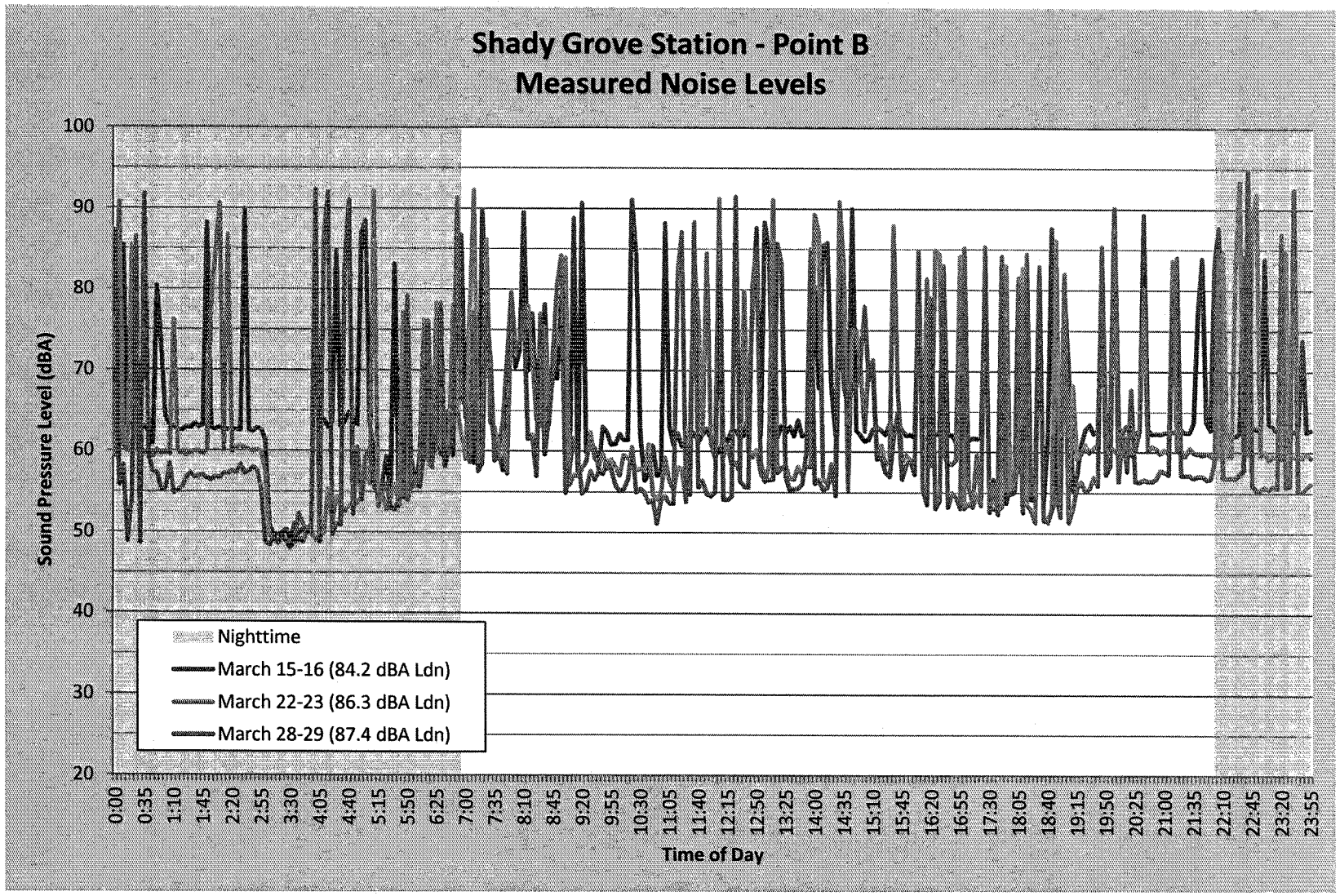
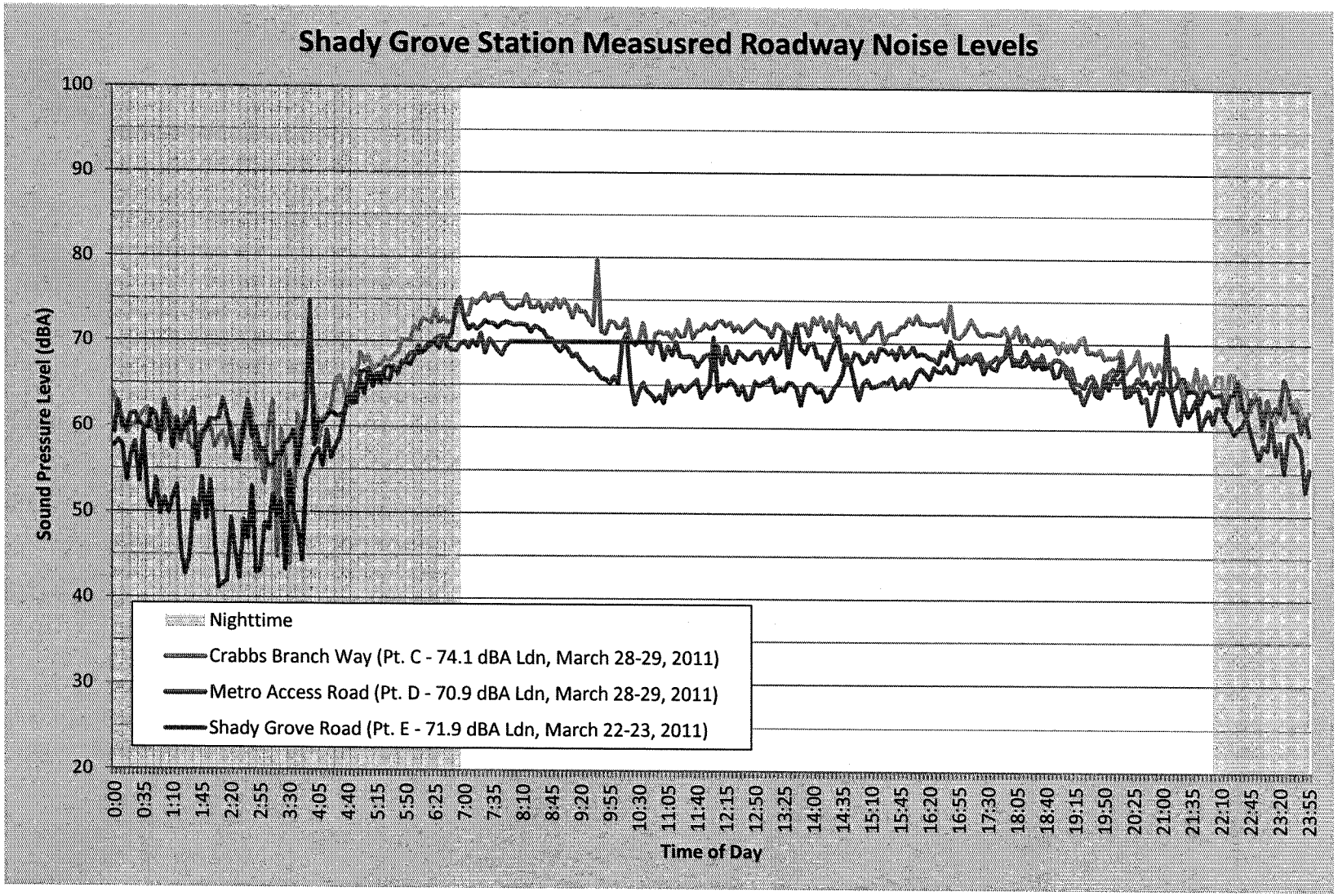


Figure 5: Five minute average roadway noise levels recorded during 24-hour noise surveys.



COMPUTER MODELING

The existing and future sites were computer modeled using the CadnaA software program, a three-dimensional noise propagation model capable of determining the noise level impact from multiple noise sources (roadway and railway) across vertical and horizontal surfaces while accounting for factors such as topography, ground absorption, reflections, and roadway/railway data such as traffic volumes, speeds, and vehicle percentages. Noise levels can be presented either in spot locations or as noise contours of equal value throughout a defined surface area.

Current Model

Information obtained from the current site plan (provided by VIKA Maryland) and aerial (Google Earth) images was used to develop the current model, inputting existing topography, buildings, and roadway and railway alignments. Roadway and railway noise levels were calibrated using the on-site noise measurements by adjusting the modeled input until the modeled noise level output matched the measured roadway and railway values.

Roadway traffic data (shown in Table 4) used in the computer model, including average daily traffic (ADT) volumes, was based on data provided by the Maryland State Highway Administration (MDSHA), a traffic study conducted by Wells + Associates, Inc. (dated September 29, 2011), and observations recorded during the 24-hour noise measurement.

Table 4: Roadway traffic data used in the computer models.

Traffic Data	Shady Grove Road	Crabbs Branch Way	Metro Access Road
2010 ADT	37,311	13,940	10,360
Future ADT[1]	40,220	13,900	10,360
Automobile %	95%	90%	96%[2]
Truck %	5%	10% (Existing) 2% (Future)	4%[2]
Nighttime %[2]	14%	25%	12%
Modeled Speed Limit[2]	45 mph	40 mph	35 - 50 mph

1 – Final site build out.

2 – Based on observations recorded during 24-hour noise measurements.

Future Model

A future model was developed by altering the calibrated current model to include the projected roadway data, future topography, future site buildings, and two proposed noise barriers along the railway. The first noise barrier, ranging in height from 22 to 26 feet, was designed to reduce noise impact upon the three story townhomes directly along the railway, while the second (25 feet in height) connects the Multifamily Building B and C parking garages to reduce noise impact upon these residential buildings (see "Noise Barrier Design" below).

Currently there are no plans to alter the alignments of Shady Grove Road or the Metro Access Road; therefore the existing roadway alignments were used in the future model, along with the future Crabbs Branch Way alignment. The railway data input in the current model was also used in the future model since future railway data is not typically forecasted.

The future model calculated the future "mitigated" ground and upper level noise impact throughout the site, as well as the impact across future multifamily building elevations (Blocks A through D). Mitigated noise levels are calculated in the presence of future site topography and roadway/railway alignments, and account for the noise reduction provided by the presence of future site buildings. Buildings along the roadway and railway act as noise barriers to buildings and building elevations further into the site, shielding these locations from noise exposure and reducing the impact and extent of mitigation required, if any, to comply with Montgomery County noise regulations.

Future Noise Impact

Future ground and upper level noise contours are presented on Drawings 1 and 2 of the Appendix, respectively. Mitigated noise contours represent the noise level throughout the site following the completion of all phases of development. Noise impact across building elevations is presented in Drawings 4, 5, 6, and 7. (Drawing 3 presents the viewpoints used for Drawings 4 through 7.) The colors shown on building facades indicate the noise level at that building elevation.

The site's mitigated noise level contours indicate impact above 65 dBA Ldn for all residences directly along the railway, Shady Grove Road, Crabbs Branch Way, and the Metro Access Road. Residential properties impacted by noise levels above 65 dBA Ldn require further analysis (see "Further Analysis" below) to determine the mitigation measures necessary to maintain indoor and outdoor noise levels at 45 and 65 dBA Ldn, respectively, in accordance with Montgomery County's residential noise standard.

A majority of buildings and outdoor activity areas located further into the site (past the first line of buildings along each noise source) are impacted by future transportation noise levels below 65 dBA Ldn. Furthermore, all units and outdoor activity areas located in the courtyards of Buildings A through D will be shielded from roadway/railway noise exposure and impacted by noise levels below 65 dBA Ldn. Residential units and outdoor activity areas impacted by future noise levels below 65 dBA Ldn require no further analysis or additional mitigation to comply with the County's residential noise standard.

Noise Barrier Design

Note that even with the two noise barriers along the railway, the mitigated upper level impact (Drawing 2) indicates noise levels above 65 dBA Ldn for the three story townhomes and multifamily buildings closest to the railway. Recall that upper level noise contours are calculated at 25 feet above grade to represent the noise impact upon upper floors of residential

buildings. To begin offering any noise reduction, a noise barrier must be at least tall enough to block the line of the sight from the noise receiver (e.g. the third floor of a townhome) to the noise source (e.g. the railway).

The noise barriers are necessary to reduce noise impact upon the townhomes and multifamily buildings (primarily Buildings B and C) to a manageable level (below 75 dBA Ldn) when developing mitigation designs to maintain indoor noise levels at 45 dBA Ldn. The presence of the noise barrier does not eliminate the need for architectural modifications to these townhomes and multifamily buildings; however it makes these modifications much more feasible, as reducing exterior noise impact at levels of 80 dBA Ldn to an indoor level of 45 dBA Ldn is difficult to accomplish economically or structurally through reasonable modifications to standard building construction.

Note that Drawing 6 of the Appendix indicates noise impact slightly above 75 dBA Ldn at the southwest corner of Multifamily Building B. A third noise barrier was investigated south of Multifamily Building B, abutting the Building B parking garage and extending south along the railway towards the Shady Grove Metro Station; however this barrier (25 feet high) would need to extend 300 feet south of the parking garage (and onto Metro property) to be effective.

While this third noise barrier would reduce railway noise impact upon the southwest corner (and west elevation) to a more manageable level (below 70 dBA Ldn), it would be providing noise reduction to only the southwest corner of Multifamily Building B, possibly conflict with other site issues (such as fire lanes and emergency vehicle access), and encroach upon Metro property. Furthermore, even with this 25 foot high, 300 foot long noise barrier, architectural modifications to Building B would still be required.

A noise barrier extended south of Multifamily Building B along the railway is economically unfeasible, interferes with emergency vehicle access, and impacts neighboring properties. Even with noise impact slightly above 75 dBA Ldn at Building B, the required indoor noise level limit can be achieved without a noise barrier and using only architectural modifications (see Table 5 of "Further Analysis" below).

FURTHER ANALYSIS

According to Montgomery County's noise regulations for residential development, residential sites and buildings impacted by noise levels above 65 dBA Ldn (at any height) require further analysis to determine the mitigation measures necessary to maintain noise levels in outdoor activity areas and indoor living spaces at 65 and 45 dBA Ldn, respectively.

Outdoor Activity Areas

While ground level noise levels are above 65 dBA Ldn along Shady Grove Road and Crabbs Branch Way, residences directly facing these roadways will not have ground level outdoor activity areas (i.e. yards). The only outdoor activity areas located along Shady Grove Road and Crabbs Branch Way will be townhomes with rooftop terraces, which may be exposed to noise levels above 65 dBA Ldn at a rooftop height; however Montgomery County does not traditionally impose a transportation noise limit on such outdoor spaces (balconies, decks, etc.) as mitigation measures required to maintain an outdoor noise limit in these spaces (i.e. a noise barrier which would partially or completely enclose the space) are not feasible since they would significantly disrupt the intended function and use.

Noise levels in public and private outdoor areas located further into the site (at any height) will not be above 65 dBA Ldn. No additional mitigation is required for these outdoor areas.

Indoor Living Spaces

The mitigated noise contours (Drawings 1 and 2) and noise impact across multifamily building elevations (Drawings 4 through 7) show that all residences directly facing the railway and roadways will be impacted by noise levels between 65 and 75 dBA Ldn, indicating mitigation will be required. Furthermore, even with the proposed noise barrier, Drawing 2 indicates that townhomes along the railway will be impacted by noise levels above 65 dBA Ldn.

Any residential unit exposed to noise levels above 65 dBA Ldn requires further analysis to determine the mitigation measures necessary to meet the required indoor noise level. According to Montgomery County's residential noise standard, these units must be evaluated to determine whether the proposed building construction will be capable of maintaining indoor noise levels at or below 45 dBA Ldn. This "building shell analysis" calculates a room's indoor noise level based upon its exterior noise level, the Sound Transmission Class (STC)[1] ratings of its various building components, the amount of exposed exterior wall area, and the room's size and finish.

Windows and doors act as weak spots which allow higher noise transmission than what would otherwise pass through a homogenous wall partition. These are typically the weak link in a room's ability to block noise; consequently the STC ratings and exterior surface area percentages they occupy are significant issues. This information is recorded and tracked so that the STC

[1] The STC rating is a single number value which describes a building element's (wall, window, door, roof, etc.) ability to reduce noise transmission from one side of the partition to the other.

ratings of exterior elements can be adjusted accordingly until the required indoor noise level is achieved.

Exact mitigation designs will depend on the specific level of noise impact at each residential unit and can only be determined using well developed architectural drawings. Once architectural drawings are available, STC ratings will be calculated individually for each impacted residential lot to ensure compliance with Montgomery County standards. Table 5 presents the STC rating requirements to be expected for residences exposed to future noise levels between 65 and 80 dBA Ldn.

Table 5: Preliminary STC rating requirements based upon exterior noise impact.

	STC Rating Requirements by Noise Impact[1]	
Building Element	**65 to 68 dBA Ldn**	**68 to 80 dBA Ldn**
Exterior Walls[2] (Exterior Finish)	39 STC (Vinyl Siding)	45 to 56 STC[3] (Hardie Panel Siding to Brick)
Windows & Doors	26 to 28 STC	28 to 40 STC

1 – STC rating requirements vary greatly depending upon the window/door percentage of the exterior wall.
2 – Exterior wall STC ratings are based upon the specific exterior finish in conjunction with a wall consisting of 2x4 wood studs, a minimum exterior layer of either ½" exterior grade drywall, OSB, or plywood with an indoor layer of drywall and 3 ½" of fiberglass batt in the cavity.
3 – Depending upon the exterior finish, resilient channel and/or multiple layers of drywall on indoor walls may also be necessary to meet wall STC rating requirements.

Please note: Table 5 is presented to provide a general understanding of the extent of mitigation to be expected throughout the site and **DOES NOT** forgo the requirement for a building shell analysis. A building shell analysis is required to determine the exact STC rating requirements for all residential units impacted by future noise levels above 65 dBA Ldn. The STC ratings presented in Table 5 cannot be simply applied to the noise impact throughout the site to establish the mitigation measures necessary for each impacted residence.

As of the date of this Transportation Noise Analysis and site plan application, well developed architectural drawings for the residential units throughout the site are not available; therefore an accurate building shell analysis cannot be conducted. Once architectural drawings are well developed, STC ratings for all impacted residential units can be calculated. Building shell analysis results will be completed prior to applications for building permits.

CONCLUSION

Shady Grove Station residences and outdoor activity areas located along the railway, Shady Grove Road, Crabbs Branch Way, and the Metro Access Road will be exposed to roadway/railway noise levels between 65 and 80 dBA Ldn. While this represents a relatively high level of noise impact, outdoor (if necessary) and indoor noise levels can be maintained at 65 and 45 dBA Ldn, respectively, through modifications to the site and the proposed standard building construction.

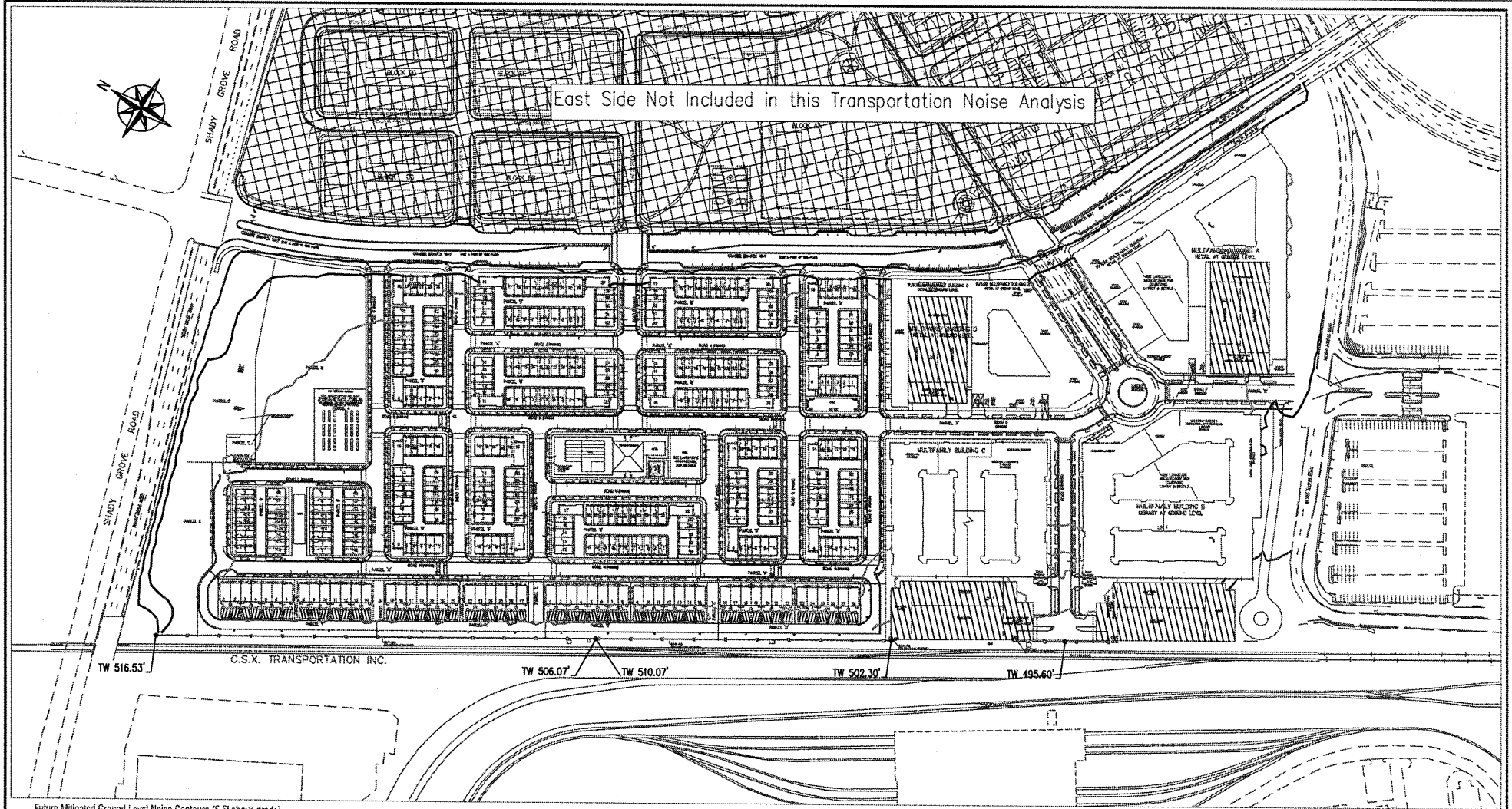
While ground level noise levels are above 65 dBA Ldn for residences along Shady Grove Road and Crabbs Branch Way, these residences will not have outdoor activity areas at this height. Mitigation to reduce ground level noise impact along Shady Grove Road and Crabbs Branch Way is not required.

Residences exposed to future noise levels above 65 dBA Ldn require further analysis and may require modifications to standard building construction. Depending upon the specific level of roadway/railway noise impact, modifications may include increased window/door STC ratings and adjustments to exterior wall construction. Further analysis is required to determine the exact mitigation designs necessary, which will be established prior to applications for building permits.

Outdoor activity areas and residences located on the interior of the site will not be exposed to noise levels above 65 dBA Ldn. These outdoor areas and residences require no further analysis or modifications to comply with Montgomery County's residential noise standard.

Please Note: *The results of this Transportation Noise Analysis have been based upon the site information made available at the time of this study, including existing and proposed topography, existing roadway/railway alignments, projected roadway traffic volumes, and the proposed building layout. Should any of this information be altered, including significant modifications to proposed topography or roadway/railway alignment and projected data, additional analysis will be required to determine if the results and recommendations presented herein are capable of reducing exterior and indoor noise levels to comply with Montgomery County's noise level requirements for residential development.*

APPENDIX



Future Mitigated Ground Level Noise Contours (5.5' above grade)

- 80 dBA Ldn
- 75 dBA Ldn
- 70 dBA Ldn
- 65 dBA Ldn

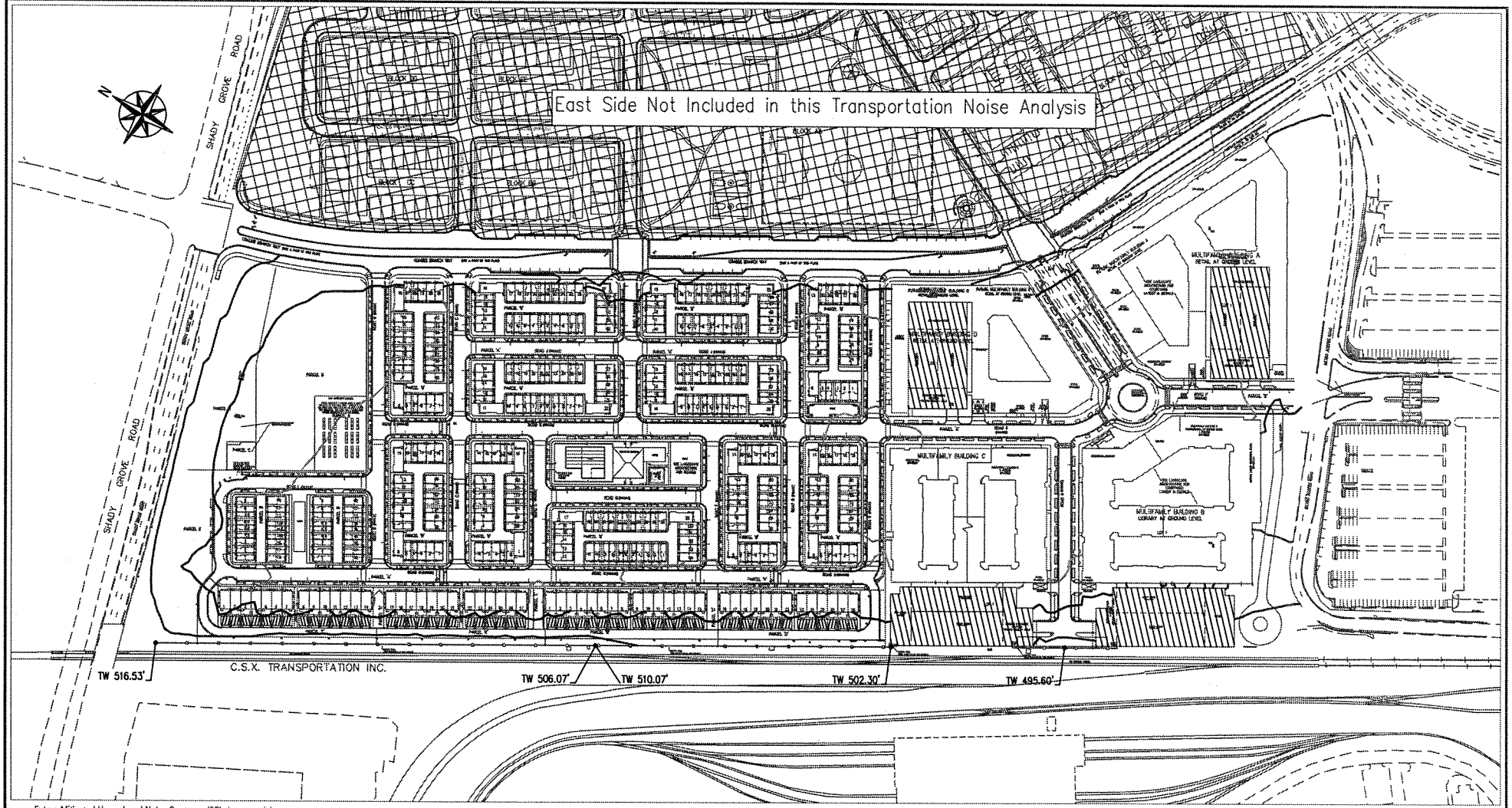
Garage

Proposed Noise Barrier

PHOENIX noise & vibration
5216 Chairmans Court Suite 107
Frederick, MD 21703
301-846-4227

Shady Grove Station West Side Mitigated Ground Level Noise Contours

DWG. NO.	DATE
1	11 Sept. 2013
SCALE	DRAWN BY
1" = 200'	JVC



Future Mitigated Upper Level Noise Contours (25' above grade)

- 80 dBA Ldn
- 75 dBA Ldn
- 70 dBA Ldn
- 65 dBA Ldn

Garage

Proposed Noise Barrier

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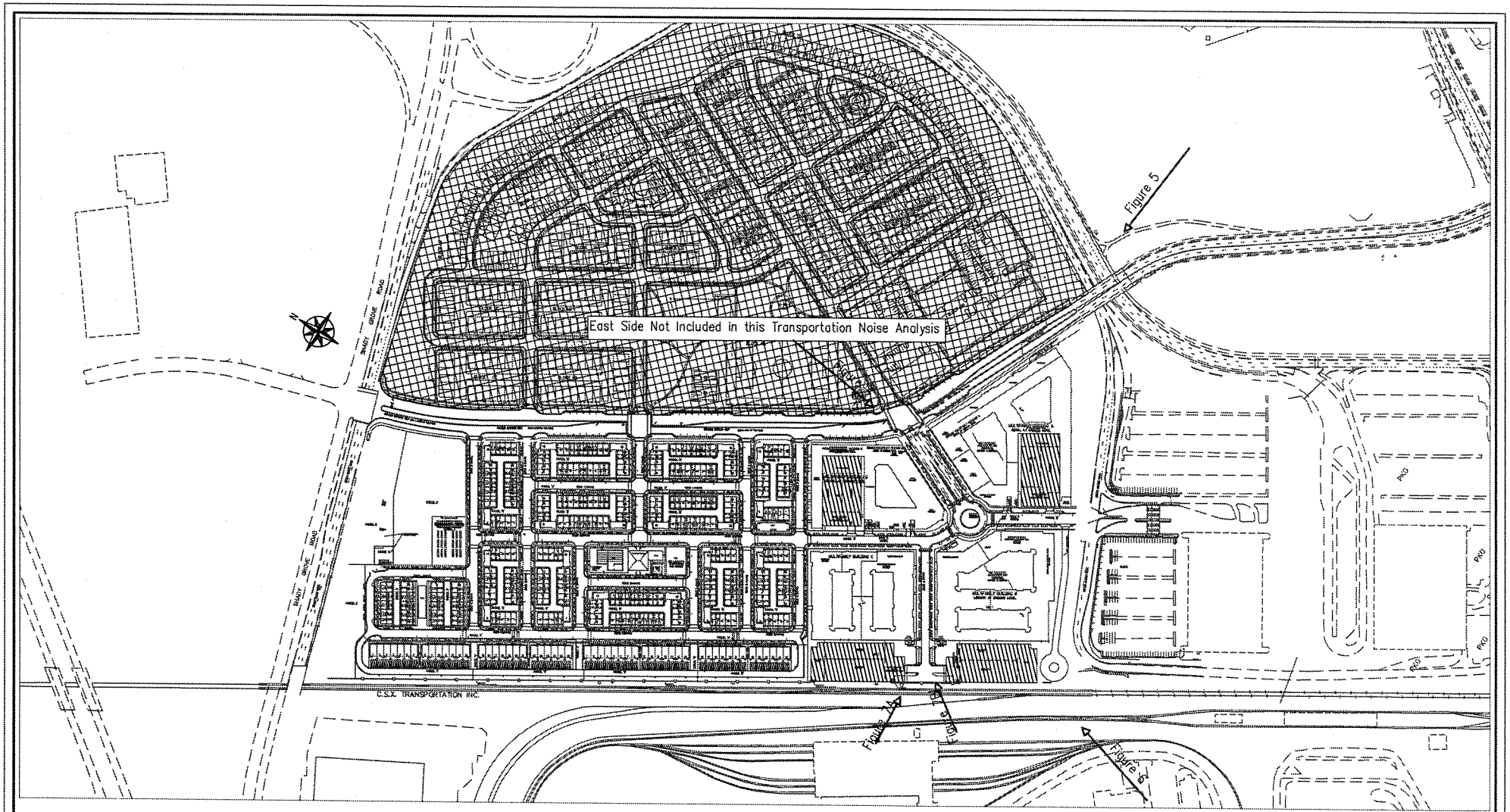
Frederick, MD 21703
301-846-4227

Shady Grove Station West Side Mitigated Upper Level Noise Contours

DWG. NO.	DATE
2	11 Sept. 2013
SCALE	DRAWN BY
1" = 200'	JVC



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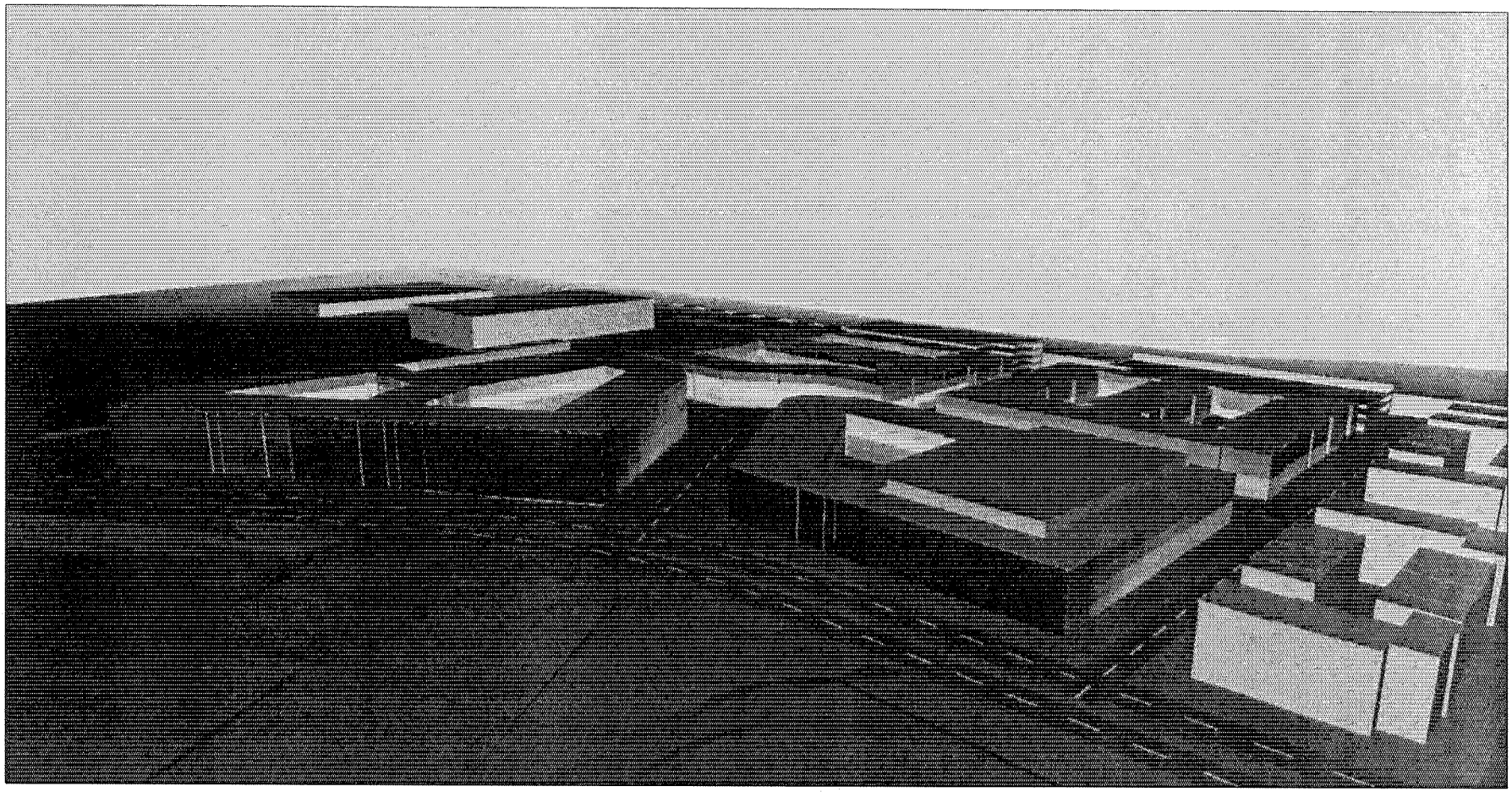
Frederick, MD 21703
301-846-4227

Shady Grove Station
3D Viewing Angles
(Drawings 4, 5, 6, & 7)

DWG. NO.	DATE
3	17 Sept. 2013
SCALE	DRAWN BY
1" = 300'	JVC



Future Mitigated Noise Level

80 dBA Ldn	70 dBA Ldn	60 dBA Ldn	50 dBA Ldn
75 dBA Ldn	65 dBA Ldn	55 dBA Ldn	45 dBA Ldn

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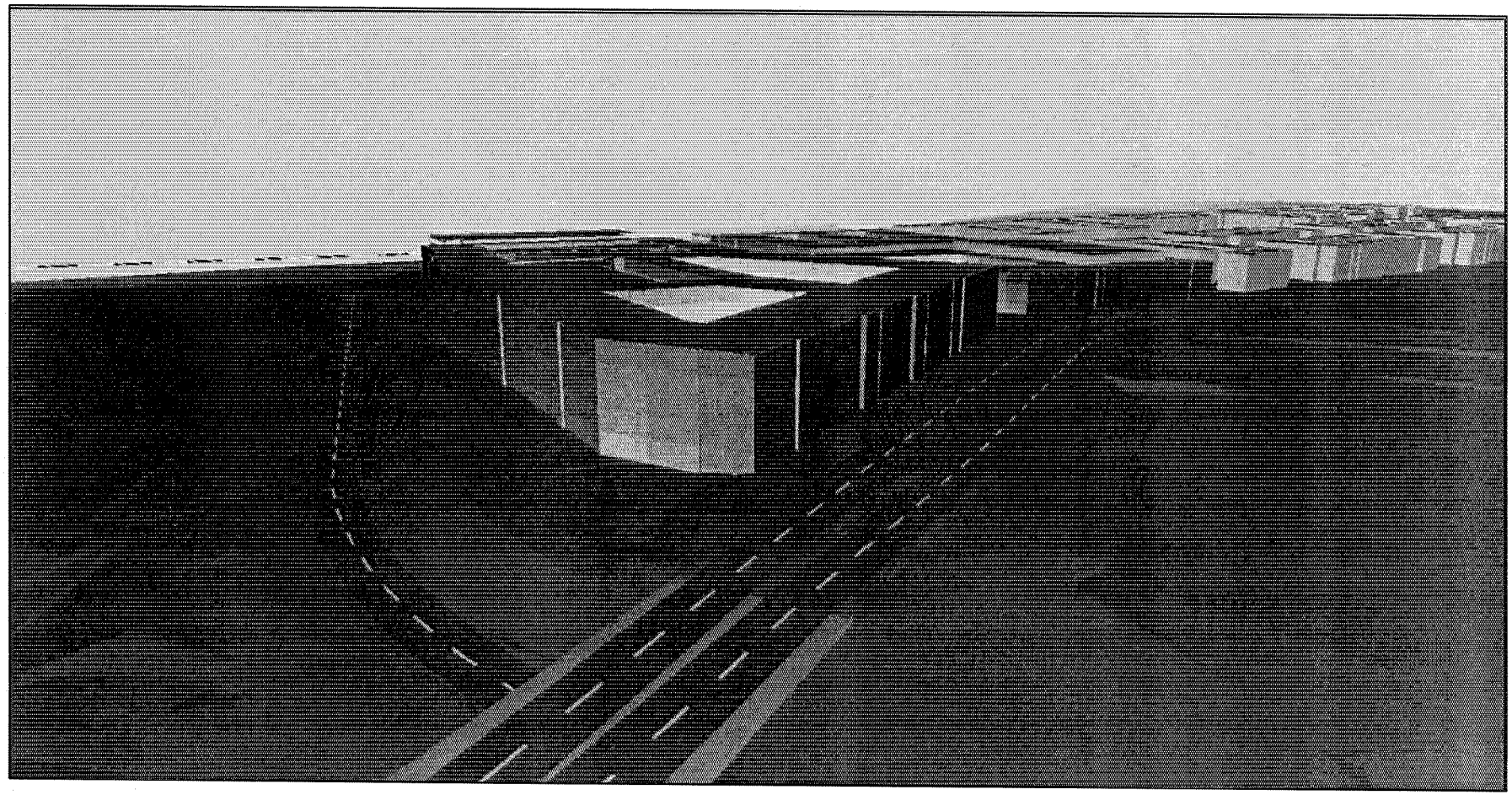
Shady Grove Station West Side MF Bldg Noise Impact

DWG. NO.	DATE
4	17 Sept. 2013
SCALE: NTS	DRAWN BY: JVC



Future Mitigated Noise Level

80 dBA Ldn | 75 dBA Ldn | 70 dBA Ldn | 65 dBA Ldn | 60 dBA Ldn | 55 dBA Ldn | 50 dBA Ldn | 45 dBA Ldn

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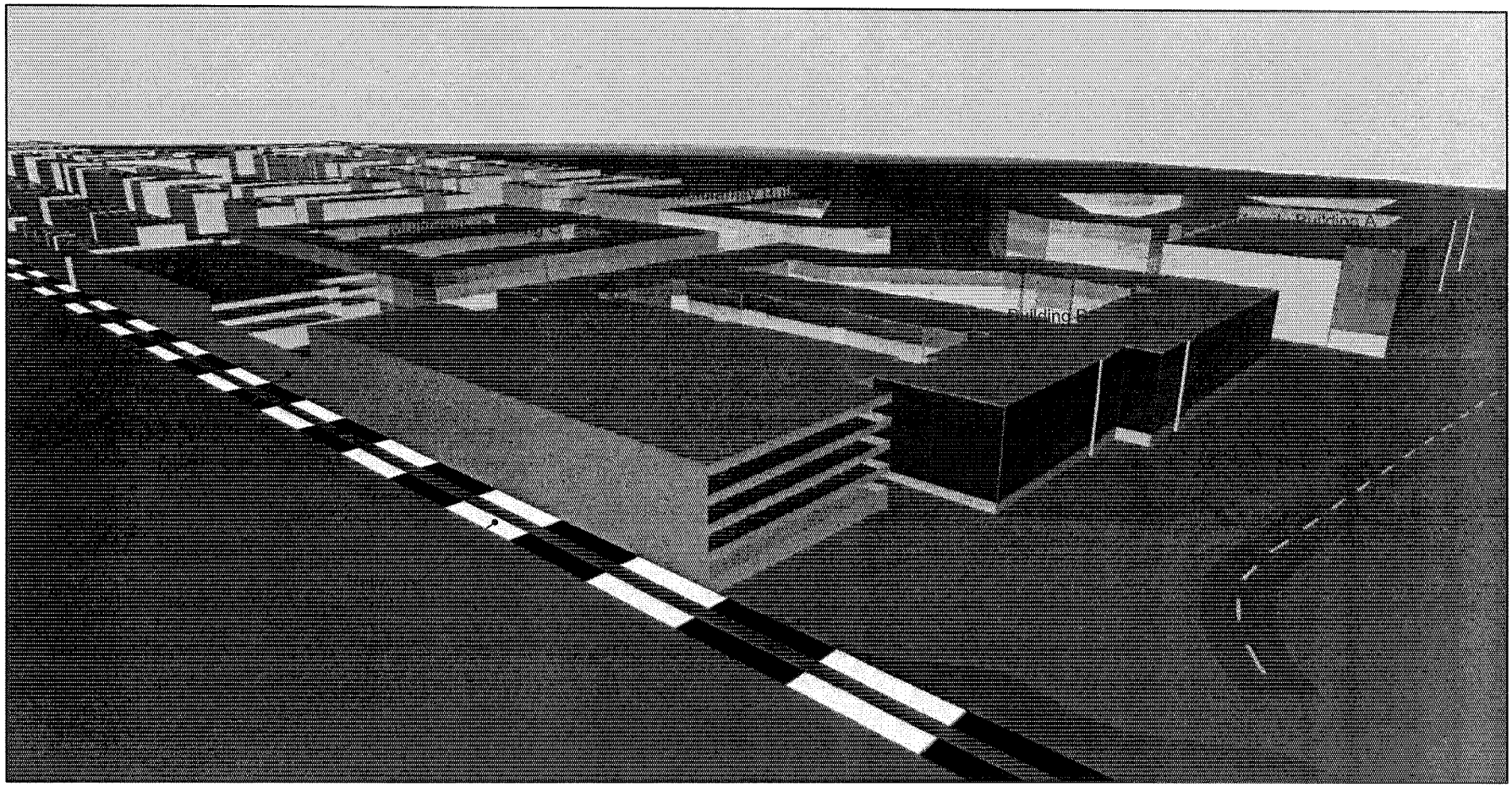
Shady Grove Station
West Side MF Bldg
Noise Impact

DWG. NO.	DATE
5	17 Sept. 2013
SCALE	DRAWN BY
NTS	JVC



Future Mitigated Noise Level

80 dBA Ldn	70 dBA Ldn	60 dBA Ldn	50 dBA Ldn
75 dBA Ldn	65 dBA Ldn	55 dBA Ldn	45 dBA Ldn

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5216 Chairmans Court Suite 107
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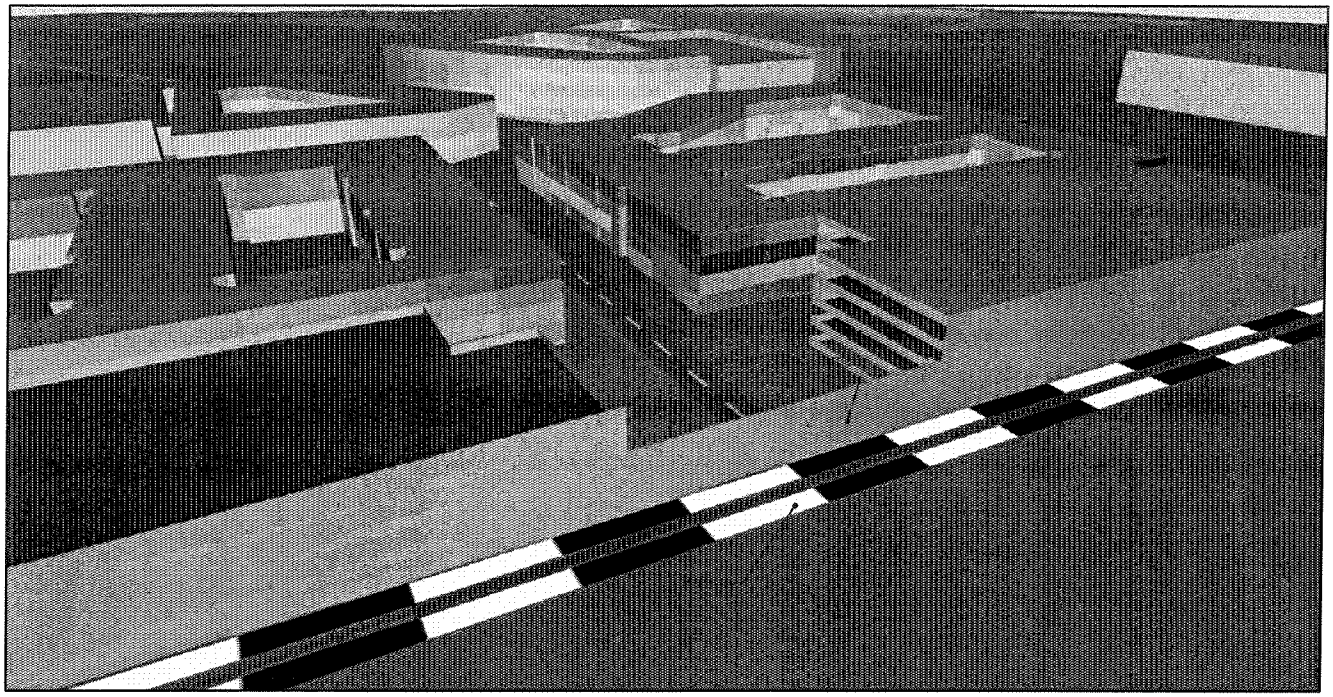
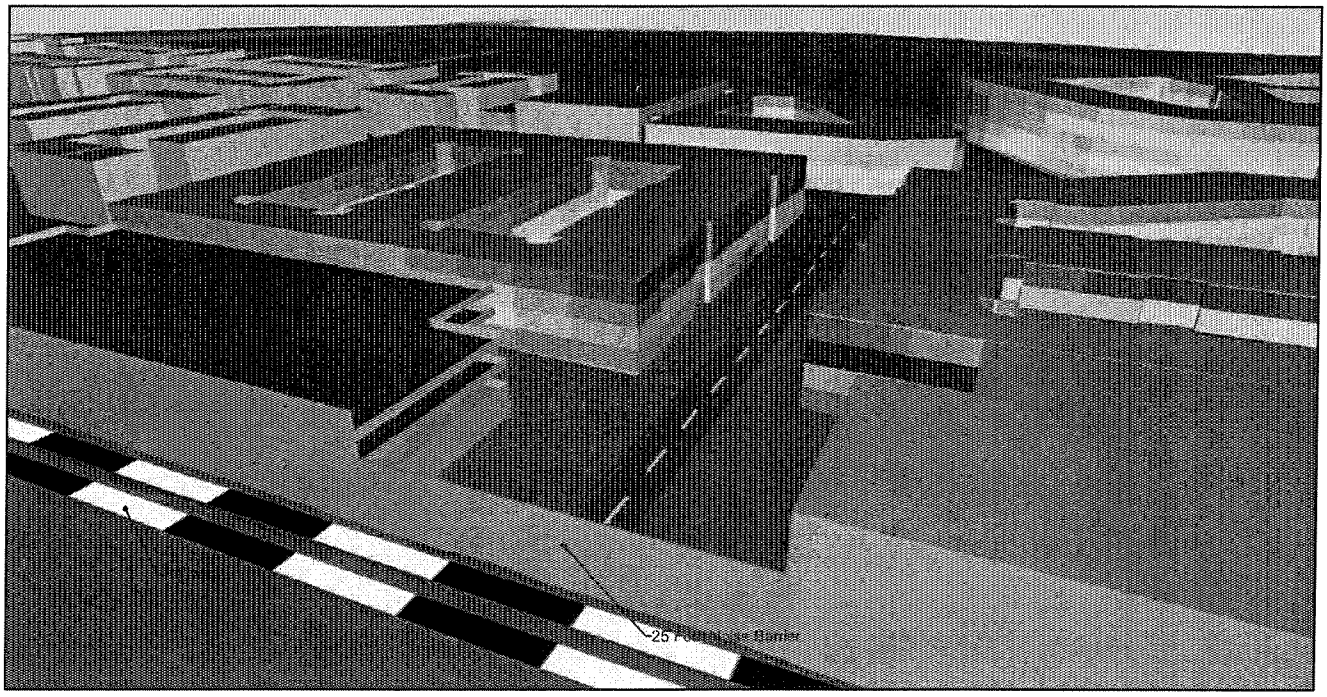
301-846-4227

Shady Grove Station West Side MF Bldg Noise Impact

DWG. NO.	DATE
6	17 Sept. 2013
SCALE: NTS	DRAWN BY: JVC



Drawing 7A



Drawing 7B

Future Mitigated Noise Level

75 dBA Ldn	60 dBA Ldn
70 dBA Ldn	55 dBA Ldn
65 dBA Ldn	50 dBA Ldn

PHOENIX
noise & vibration
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Shady Grove Station Noise Impact Upon MF Buildings B & C

DWG. NO.	DATE
7	17 Sept. 2013
SCALE	DRAWN BY
NTS	JVC

PHOENIX
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18 September 2013
(Originally Submitted 2 February 2012)

Shady Grove Station West Side Transportation Noise Analysis

Montgomery County, Maryland

Report #120202

For: EYA

By: Scott Harvey, P.E., INCE Bd. Cert.
Josh Curley

Acoustical Engineering Solutions.

EXECUTIVE SUMMARY

Phoenix Noise & Vibration has conducted an analysis of transportation noise impact upon the proposed Shady Grove Station West Side mixed-use development in Montgomery County, Maryland. This analysis does not include an evaluation of Shady Grove Station East Side, which will be accounted for once plans for that phase of the development progress.

This analysis, limited to noise impact from Shady Grove Road, Crabbs Branch Way, the Metro Access Road, and the adjacent railway, included:

- 24-hour noise level measurements,
- computer modeling,
- determination of existing and future noise levels, and
- preliminary mitigation recommendations.

The site's noise impact varies with elevation and has been presented at varying heights, including at the ground and upper level throughout the entire site and across select vertical building elevations. The noise levels presented are due only to Shady Grove Road, Crabbs Branch Way, the Metro Access Road, and the adjacent railway, and do not account for noise from other sources such as airplanes, construction, mechanical noise, environmental noise, etc.

The site's ground level (5.5 feet above grade) noise contours indicate impact above 65 dBA Ldn for residences directly facing Shady Grove Road and Crabbs Branch Way; however residences along these roadways will not have ground level outdoor activity areas. Mitigation is not required to reduce ground level noise levels along Shady Grove Road or Crabbs Branch Way. Outdoor activity areas located further into the site will not be exposed to noise levels above 65 dBA Ldn and require no additional mitigation.

The site's upper level (25 feet above grade) noise contours, as well as the vertical building facade noise level calculations for multifamily buildings (Buildings A through D), indicate impact above 65 dBA Ldn for all residences directly facing the railway, Shady Grove Road, Crabbs Branch Way, or the Metro Access Road. Noise impact upon building elevations not directly facing these noise sources, as well as upon residences further into the site, gradually decreases as the distance from these sources increases, such that noise impact throughout a majority of the site is below 65 dBA Ldn.

Residential units impacted by future mitigated transportation noise levels above 65 dBA Ldn require further analysis to determine whether modifications to the proposed standard building construction are necessary to maintain indoor noise levels at 45 dBA Ldn (as required by Montgomery County). Noise levels above 65 dBA Ldn are frequently encountered in residential developments adjacent to major roadways and transportation corridors and can be mitigated with architectural modifications. Modifications, which may include alterations to exterior wall construction and increased STC ratings for windows and doors, will be determined once architectural drawings for impacted residences are well developed (i.e. floor plans, building elevations, window/door sizes, room dimensions, ceiling heights).

Two noise barriers have been designed along the railway adjacent to the site to reduce railway noise impact upon townhomes and multifamily buildings closest to the railway. These noise barriers are necessary to reduce railway noise impact to a manageable level (below 75 dBA Ldn) when developing architectural mitigation designs to meet the indoor noise limit. The noise barriers do not eliminate the need for modifications to proposed architecture required to comply with the indoor noise limit; however they do make these architectural modifications more feasible. Such architectural modifications have been used throughout the County and in various construction methods, and are well documented and understood; however they can only be determined once exterior wall and window/door assemblies have been designed.

Preliminary mitigation designs to maintain acceptable indoor noise levels are provided based upon standard construction practices. Further analysis is required to determine the exact mitigation measures necessary for reducing transportation noise impact into compliance with Montgomery County's indoor residential noise standard. Final indoor (and outdoor, if necessary) mitigation designs will be developed prior to applications building permits.

NOISE TERMINOLOGY

dB vs. dBA

While the standard unit of measurement for sound is the decibel (dB), discussions of noise impacting the human ear use "dBA." The "A" refers to a frequency weighting network used to simulate the human ear's unequal sensitivity to different frequencies. The A-weighted noise level is therefore more representative of a human's perception of a noise environment than the unweighted overall noise level in dB and is currently used in most all environmental noise studies.

Ldn vs. Leq

The day-night average noise level, or Ldn, is the equivalent sound pressure level averaged over a 24-hour period, obtained by adding 10 dB to sound pressure levels measured from 10:00 p.m. to 7:00 a.m. This 10 dB "penalty" accounts for the added sensitivity caused by noise generated during the nighttime hours.

The Ldn is NOT a measurement of the instantaneous noise level. It is very possible to have several short term events (tractor trailer, emergency vehicle siren, car horn, etc.) which generate a relatively high noise level (e.g. 85 dBA) during a given time period, yet have a more moderate overall Ldn value (e.g. 65 dBA Ldn).

The equivalent-continuous sound level, or Leq, is the sound level averaged over a given time period.

Summing Noise Levels

Noise levels from multiple sources do not add arithmetically; i.e. when two noise sources generate 60 dB individually, they do not produce 120 dB when combined. Noise levels are measured using a logarithmic scale; therefore they must be summed logarithmically. In the decibel scale, two identical, non-coherent noise sources having the same noise level produce a 3 dB increase above the condition of one source alone (i.e. two 80 dB lawnmowers running at the same time generates 83 dB).

Similarly, two different noise sources with a difference of 10 dB in their individual levels results in no measureable increase in noise when they are combined. Put another way, the quieter noise source does not increase the overall noise generated by the louder source; i.e. adding an 80 dB lawnmower into a noise environment where a 90 dB lawnmower is already running does not increase the noise level above 90 dB.

NOISE REGULATIONS

Traffic noise impact for proposed residential developments in Montgomery County is governed by Table 2-1 (reprinted in Table 1) on page 8 of the *Staff Guidelines for the Consideration of Transportation Noise Impacts In Land Use Planning and Development* (June 1983). Accompanying this table is Map 2-1, indicating outdoor noise level requirements not to be exceeded throughout the County.

Table 1: Maximum Levels for Exterior Noise & Building Line[1] For Noise Sensitive Land Uses (Table 2-1).

Guideline Value	Area of Application
Ldn = 55 dBA	This guideline is suggested as an appropriate goal in permanent rural areas of the County where residential zoning is for five or more acres per dwelling unit and background levels are low enough to allow maintenance of a 55 dBA Level. This guideline is consistent with Federal, State, and County goals for residential areas.
Ldn = 60 dBA	This is the basic residential noise guideline which will be applied in most areas of the County where suburban densities predominate. Maintenance of this level will protect health and substantially prevent activity interference both indoors and outdoors. Noise attenuation measures will be recommended to allow attainment of this level.
Ldn = 65 dBA	This guideline will generally be applied in the urban ring, freeway, and major highway corridor areas, where ambient levels are such that application of a stricter guideline would be infeasible or inequitable. Significant activity interference will occur outdoors and indoors if windows are partially opened, but available evidence indicates hearing is adequately protected. Noise attenuation measures will be strongly recommended to attain this level.

[1] Building line as used here refers to habitable structures only. It does not include garages, sheds, or recreational accessory buildings.

According to Map 2-1, Shady Grove Station is located within the 65 dBA Ldn noise zone, indicating that noise levels in outdoor activity areas throughout the site should be maintained at 65 dBA Ldn. Any outdoor area exposed to future transportation noise levels above 65 dBA Ldn typically requires further analysis to determine the mitigation designs necessary to comply with this requirement.

When outdoor noise levels exceed 65 dBA Ldn, Montgomery County also requires an analysis of indoor noise levels in residential buildings. According to Sections 2.2.2 and 2.2.3 of the *Staff Guidelines*, any residential building impacted by noise levels above 65 dBA Ldn must be evaluated to certify that the building structure will be capable of maintaining indoor noise levels at 45 dBA Ldn.

SITE DESCRIPTION

The West Side property (shown in red in Figure 1) is bounded by Shady Grove Road to the north, a railway used by CSX freight trains and MARC and Amtrak passenger trains to the west, Crabbs Branch Way to the east, and the Metro Access Road to the south. In this region, Shady Grove Road is composed of two to three eastbound lanes and three westbound lanes. Crabbs Branch Way is composed of two northbound and two southbound lanes, and the Metro Access Road is composed of two westbound lanes which terminate at the Metro station parking garage. The railway is composed of two tracks traveling north and south along the western property line.

Figure 1: Existing site (as of October 12, 2012).

NOISE MEASUREMENTS

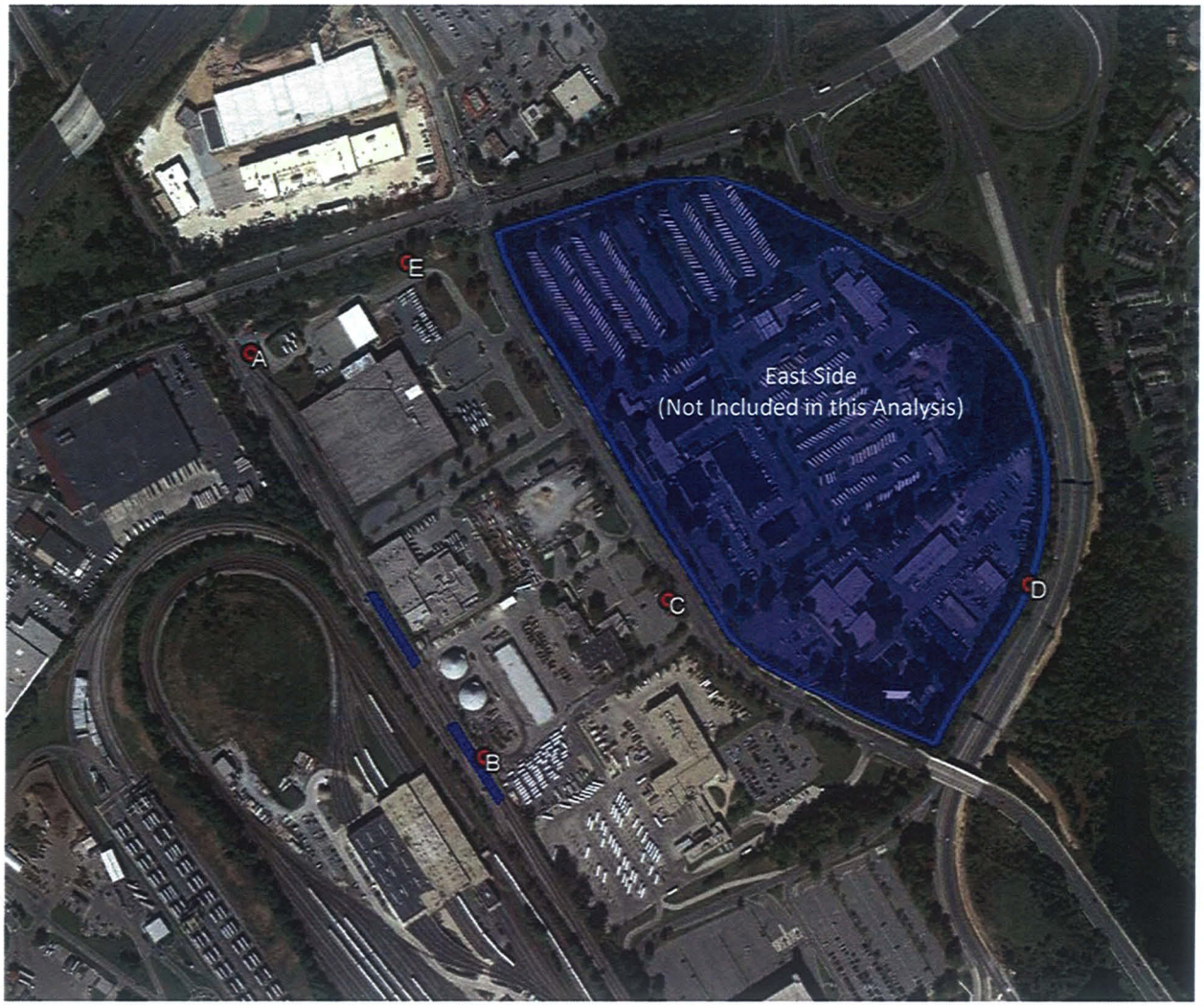
Phoenix Noise & Vibration conducted three on-site noise measurement surveys in March 2011 to determine the current impact on the site. This involved continuous noise level measurements and monitoring for three separate 24-hour periods. Measurements were made using Norsonics

Type 118 and Type 140 Precision Integrating Sound Level Meters. All meters were calibrated prior to the survey traceable to National Institute of Standards and Technology (NIST). Each meter meets the ANSI S1.4 standard for Type 1 sound level meters.

During the 24-hour measurements, noise levels were recorded and averaged over five minute time intervals. Noise measurements were then used to calculate the site's existing average noise level (or Leq) throughout the daytime and nighttime hours, as well as the 24-hour average (Ldn), which includes the 10 dBA penalty for noise levels measured during nighttime hours.

Noise level measurements were made at five points (shown in Figure 2) throughout the site. Points A and B measured railway noise and were located 25 feet above adjacent grade. Points C, D, and E each measured a separate roadway. Points C and D were elevated 5.5 feet above adjacent grade, while Point E was 25 feet above adjacent grade.

Figure 2: Long-term noise measurement locations.



Measurement locations were chosen such that only noise from each individual source would be measured; i.e. railway noise would not have a significant impact upon the measured values at

Point C, D, and E, and roadway noise would not have a significant impact upon the measured values at Points A and B. Point B was also located near one of the two railway switches (shown in blue in Figure 2) to determine its effect on each train's emitted noise level.

Since railway schedules (primarily freights) can be subject to inconsistency for one day to another, railway noise levels were measured for three nonconsecutive 24-hour periods to more accurately obtain the railway's average noise level. Conversely, roadway noise (during the week) is relatively consistent and does not vary significantly day to day; therefore the noise generated by each roadway was only measured for one continuous 24-hour period.

Results

Railway and roadway noise measurement results are presented in Tables 2 and 3, respectively. Figures 3 and 4 present the railway survey results graphically for Points A and B, respectively, while Figure 5 presents the roadway survey results. Each figure shows the noise level as measured in five minute increments over the 24-hour periods.

Table 2: Railway 24-hour noise measurement results.

		Measured Noise Level (dBA Ldn)	
	Measurement Location	**A**	**B[1]**
Measurement Date	March 15 – 16, 2011	77.2	84.2
	March 22 – 23, 2011	77.5	86.3
	March 28 – 29, 2011	78.8	87.4
	Average	**77.8**	**86.0**

1 – Point B was adjacent to the southernmost railway switch.

Table 3: Roadway 24-hour noise measurement results.

Measurement Location	Noise Source	Measurement Date	Measured Noise Level (dBA Ldn)
C	Crabbs Branch Way	March 28 – 29, 2011	74.1
D	Metro Access Road		70.9
E	Shady Grove Road	March 22 – 23, 2011	71.9

Figures 3, 4, and 5 indicate the actual measured values over the 24-hour period, as well as the noise level during nighttime hours with the 10 dBA penalty added when calculating the Ldn. The relatively high peaks shown on Figures 3 and 4 are due to trains passing by the site during that five minute interval.

Note that Figure 5 indicates the noise level from Shady Grove Road did not change between approximately 8:00 AM and 11:00 AM. During the survey, mechanical equipment near the measurement location generated noise levels higher than Shady Grove Road; therefore the roadway noise level shown was assumed when calculating the Ldn at Point E.

Figure 3: Five minute average railway noise levels recorded during 24-hour noise survey at Point A.

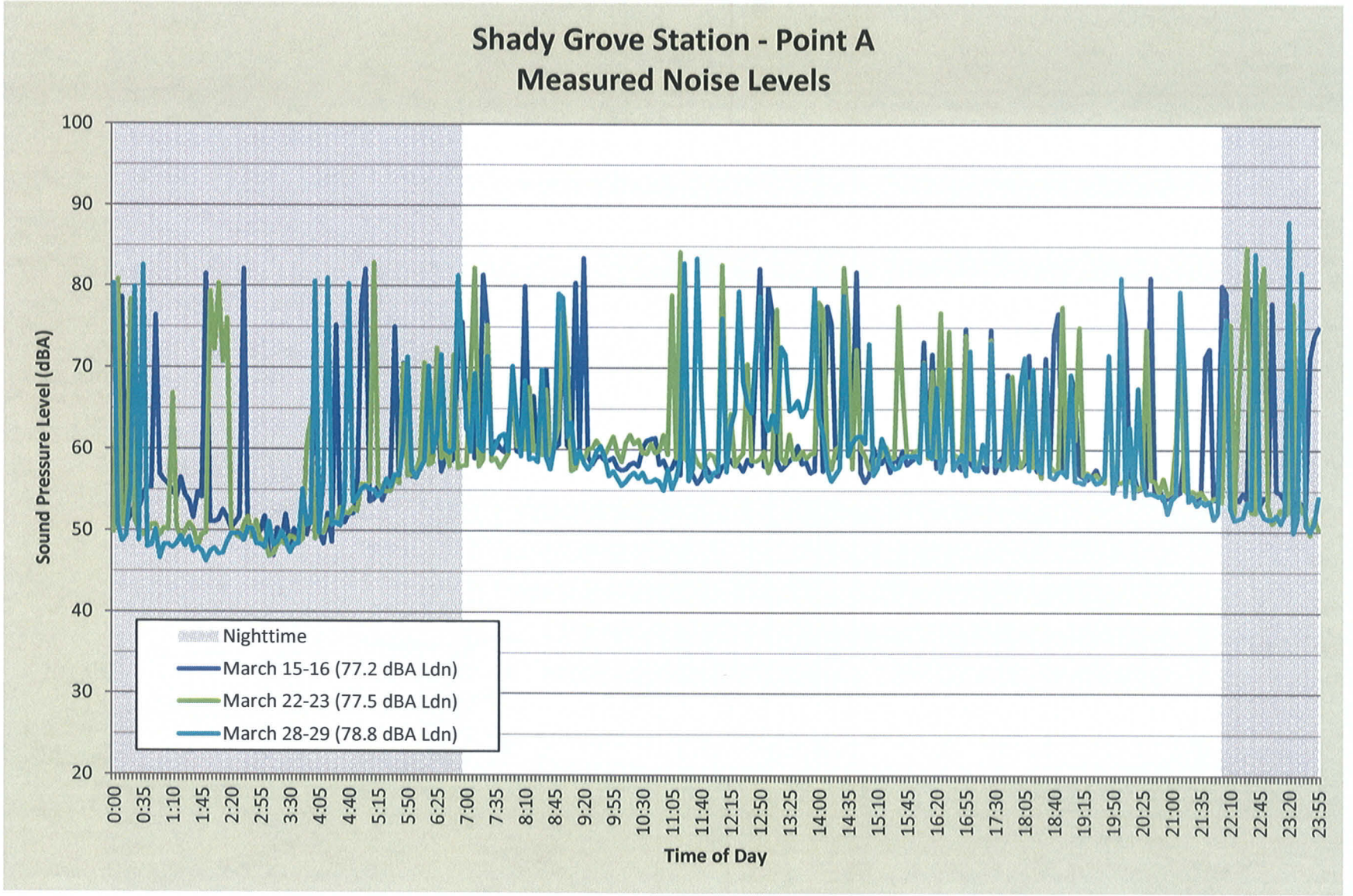


Figure 4: Five minute average railway noise levels recorded during 24-hour noise survey at Point B.

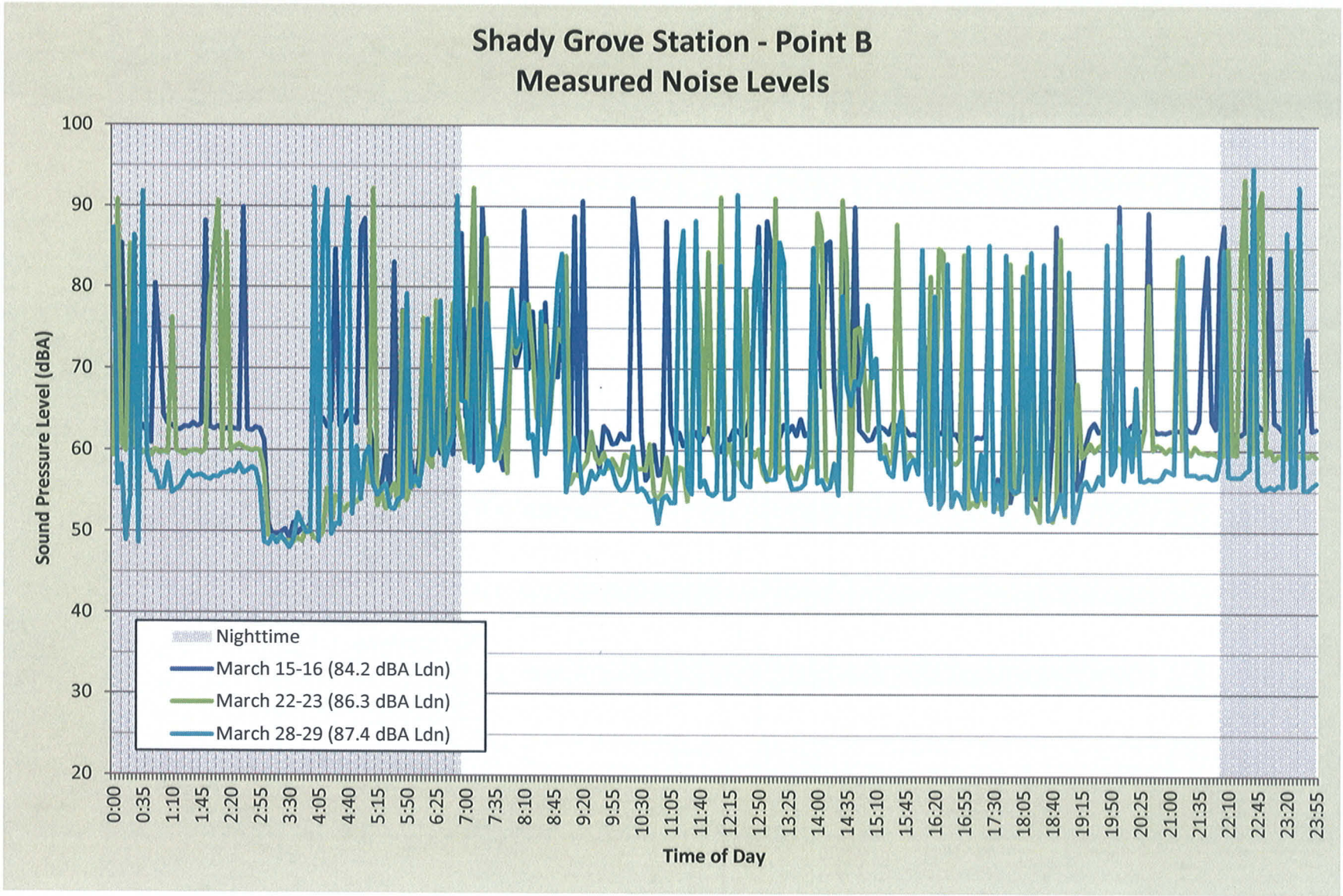
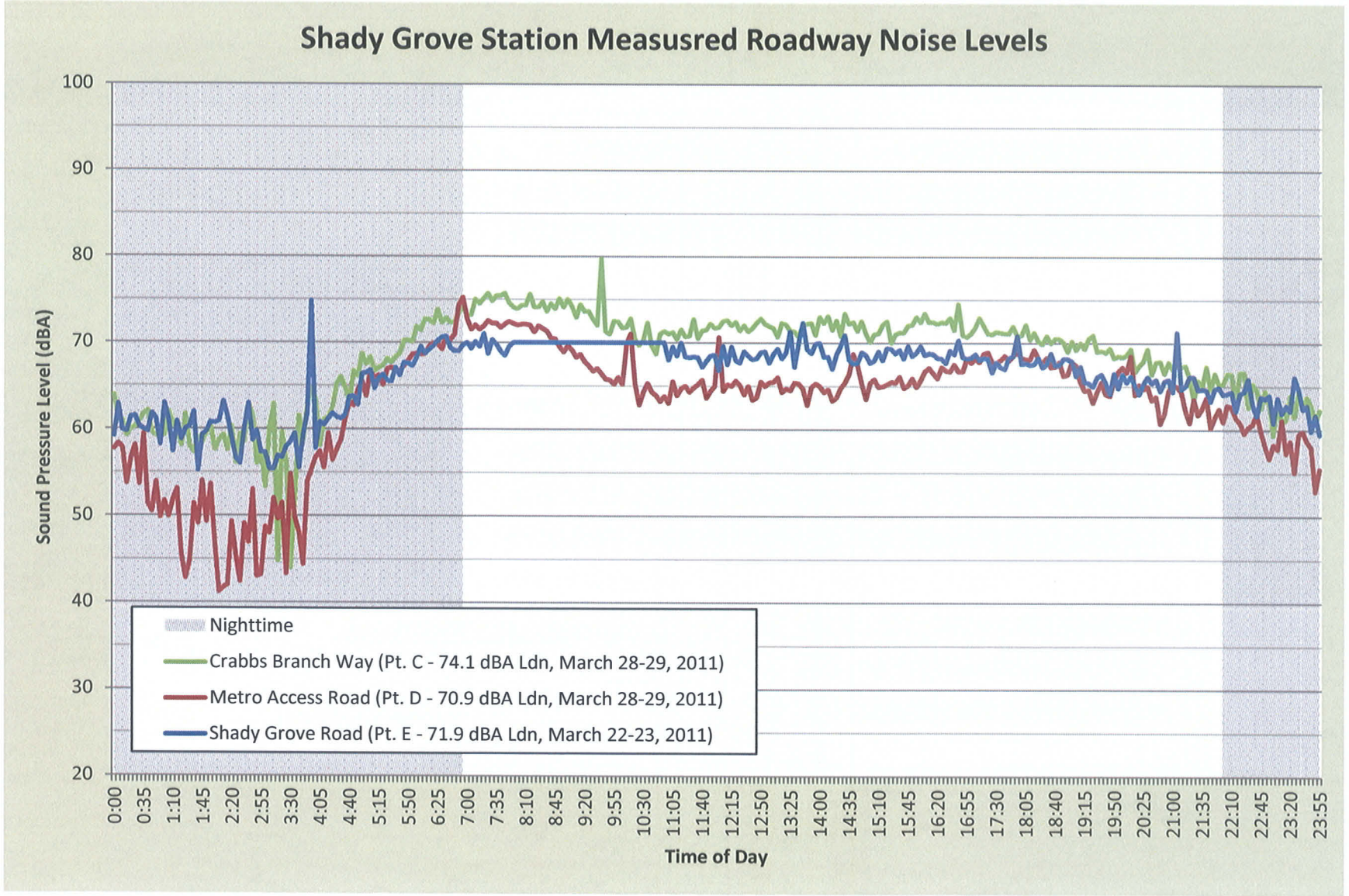


Figure 5: Five minute average roadway noise levels recorded during 24-hour noise surveys.



COMPUTER MODELING

The existing and future sites were computer modeled using the CadnaA software program, a three-dimensional noise propagation model capable of determining the noise level impact from multiple noise sources (roadway and railway) across vertical and horizontal surfaces while accounting for factors such as topography, ground absorption, reflections, and roadway/railway data such as traffic volumes, speeds, and vehicle percentages. Noise levels can be presented either in spot locations or as noise contours of equal value throughout a defined surface area.

Current Model

Information obtained from the current site plan (provided by VIKA Maryland) and aerial (Google Earth) images was used to develop the current model, inputting existing topography, buildings, and roadway and railway alignments. Roadway and railway noise levels were calibrated using the on-site noise measurements by adjusting the modeled input until the modeled noise level output matched the measured roadway and railway values.

Roadway traffic data (shown in Table 4) used in the computer model, including average daily traffic (ADT) volumes, was based on data provided by the Maryland State Highway Administration (MDSHA), a traffic study conducted by Wells + Associates, Inc. (dated September 29, 2011), and observations recorded during the 24-hour noise measurement.

Table 4: Roadway traffic data used in the computer models.

Traffic Data	Shady Grove Road	Crabbs Branch Way	Metro Access Road
2010 ADT	37,311	13,940	10,360
Future ADT[1]	40,220	13,900	10,360
Automobile %	95%	90%	96%[2]
Truck %	5%	10% (Existing) 2% (Future)	4%[2]
Nighttime %[2]	14%	25%	12%
Modeled Speed Limit[2]	45 mph	40 mph	35 - 50 mph

1 – Final site build out.

2 – Based on observations recorded during 24-hour noise measurements.

Future Model

A future model was developed by altering the calibrated current model to include the projected roadway data, future topography, future site buildings, and two proposed noise barriers along the railway. The first noise barrier, ranging in height from 22 to 26 feet, was designed to reduce noise impact upon the three story townhomes directly along the railway, while the second (25 feet in height) connects the Multifamily Building B and C parking garages to reduce noise impact upon these residential buildings (see "Noise Barrier Design" below).

Currently there are no plans to alter the alignments of Shady Grove Road or the Metro Access Road; therefore the existing roadway alignments were used in the future model, along with the future Crabbs Branch Way alignment. The railway data input in the current model was also used in the future model since future railway data is not typically forecasted.

The future model calculated the future "mitigated" ground and upper level noise impact throughout the site, as well as the impact across future multifamily building elevations (Blocks A through D). Mitigated noise levels are calculated in the presence of future site topography and roadway/railway alignments, and account for the noise reduction provided by the presence of future site buildings. Buildings along the roadway and railway act as noise barriers to buildings and building elevations further into the site, shielding these locations from noise exposure and reducing the impact and extent of mitigation required, if any, to comply with Montgomery County noise regulations.

Future Noise Impact

Future ground and upper level noise contours are presented on Drawings 1 and 2 of the Appendix, respectively. Mitigated noise contours represent the noise level throughout the site following the completion of all phases of development. Noise impact across building elevations is presented in Drawings 4, 5, 6, and 7. (Drawing 3 presents the viewpoints used for Drawings 4 through 7.) The colors shown on building facades indicate the noise level at that building elevation.

The site's mitigated noise level contours indicate impact above 65 dBA Ldn for all residences directly along the railway, Shady Grove Road, Crabbs Branch Way, and the Metro Access Road. Residential properties impacted by noise levels above 65 dBA Ldn require further analysis (see "Further Analysis" below) to determine the mitigation measures necessary to maintain indoor and outdoor noise levels at 45 and 65 dBA Ldn, respectively, in accordance with Montgomery County's residential noise standard.

A majority of buildings and outdoor activity areas located further into the site (past the first line of buildings along each noise source) are impacted by future transportation noise levels below 65 dBA Ldn. Furthermore, all units and outdoor activity areas located in the courtyards of Buildings A through D will be shielded from roadway/railway noise exposure and impacted by noise levels below 65 dBA Ldn. Residential units and outdoor activity areas impacted by future noise levels below 65 dBA Ldn require no further analysis or additional mitigation to comply with the County's residential noise standard.

Noise Barrier Design

Note that even with the noise barriers along the railway, the mitigated upper level impact (Drawing 2) indicates noise levels above 65 dBA Ldn for the three story townhomes and multifamily buildings closest to the railway. Recall that upper level noise contours are calculated at 25 feet above grade to represent the noise impact upon upper floors of residential

buildings. To begin offering any noise reduction, a noise barrier must be at least tall enough to block the line of the sight from the noise receiver (e.g. the third floor of a townhome) to the noise source (e.g. the railway).

The noise barriers are necessary to reduce noise impact upon the townhomes and multifamily buildings to a manageable level (below 75 dBA Ldn) when developing mitigation designs to maintain indoor noise levels at 45 dBA Ldn. The presence of the noise barrier does not eliminate the need for architectural modifications to these townhomes and multifamily buildings; however it makes these modifications much more feasible, as reducing exterior noise impact at levels of 80 dBA Ldn to an indoor level of 45 dBA Ldn is difficult to accomplish economically or structurally through reasonable modifications to standard building construction.

FURTHER ANALYSIS

According to Montgomery County's noise regulations for residential development, residential sites and buildings impacted by noise levels above 65 dBA Ldn (at any height) require further analysis to determine the mitigation measures necessary to maintain noise levels in outdoor activity areas and indoor living spaces at 65 and 45 dBA Ldn, respectively.

Outdoor Activity Areas

While ground level noise levels are above 65 dBA Ldn along Shady Grove Road and Crabbs Branch Way, residences directly facing these roadways will not have ground level outdoor activity areas (i.e. yards). The only outdoor activity areas located along Shady Grove Road and Crabbs Branch Way will be townhomes with rooftop terraces, which may be exposed to noise levels above 65 dBA Ldn at a rooftop height; however Montgomery County does not traditionally impose a transportation noise limit on such outdoor spaces (balconies, decks, etc.) as mitigation measures required to maintain an outdoor noise limit in these spaces (i.e. a noise barrier which would partially or completely enclose the space) are not feasible since they would significantly disrupt the intended function and use.

Noise levels in public and private outdoor areas located further into the site (at any height) will not be above 65 dBA Ldn. No additional mitigation is required for these outdoor areas.

Indoor Living Spaces

The mitigated noise contours (Drawings 1 and 2) and noise impact across multifamily building elevations (Drawings 4 through 7) show that all residences directly facing the railway and roadways will be impacted by noise levels between 65 and 75 dBA Ldn, indicating mitigation will be required. Furthermore, even with the proposed noise barrier, Drawing 2 indicates that townhomes along the railway will be impacted by noise levels above 65 dBA Ldn.

Any residential unit exposed to noise levels above 65 dBA Ldn requires further analysis to determine the mitigation measures necessary to meet the required indoor noise level. According to Montgomery County's residential noise standard, these units must be evaluated to determine whether the proposed building construction will be capable of maintaining indoor noise levels at or below 45 dBA Ldn. This "building shell analysis" calculates a room's indoor noise level based upon its exterior noise level, the Sound Transmission Class (STC)[1] ratings of its various building components, the amount of exposed exterior wall area, and the room's size and finish.

Windows and doors act as weak spots which allow higher noise transmission than what would otherwise pass through a homogenous wall partition. These are typically the weak link in a room's ability to block noise; consequently the STC ratings and exterior surface area percentages they occupy are significant issues. This information is recorded and tracked so that the STC ratings of exterior elements can be adjusted accordingly until the required indoor noise level is achieved.

Exact mitigation designs will depend on the specific level of noise impact at each residential unit and can only be determined using well developed architectural drawings. Once architectural drawings are available, STC ratings will be calculated individually for each impacted residential lot to ensure compliance with Montgomery County standards. Table 5 presents the STC rating requirements to be expected for residences exposed to future noise levels between 65 and 80 dBA Ldn.

Table 5: Preliminary STC rating requirements based upon exterior noise impact.

	STC Rating Requirements by Noise Impact[1]	
Building Element	**65 to 68 dBA Ldn**	**68 to 80 dBA Ldn**
Exterior Walls[2] (Exterior Finish)	39 STC (Vinyl Siding)	45 to 56 STC[3] (Hardie Panel Siding to Brick)
Windows & Doors	26 to 28 STC	28 to 40 STC

1 – STC rating requirements vary greatly depending upon the window/door percentage of the exterior wall.
2 – Exterior wall STC ratings are based upon the specific exterior finish in conjunction with a wall consisting of 2x4 wood studs, a minimum exterior layer of either ½" exterior grade drywall, OSB, or plywood with an indoor layer of drywall and 3 ½" of fiberglass batt in the cavity.
3 – Depending upon the exterior finish, resilient channel and/or multiple layers of drywall on indoor walls may also be necessary to meet wall STC rating requirements.

Please note: Table 5 is presented to provide a general understanding of the extent of mitigation to be expected throughout the site and **DOES NOT** forgo the requirement for a building shell analysis. A building shell analysis is required to determine the exact STC rating requirements for all residential units impacted by future noise levels above 65 dBA Ldn. The STC ratings presented in Table 5 cannot be simply applied to the noise impact throughout the site to establish the mitigation measures necessary for each impacted residence.

[1] The STC rating is a single number value which describes a building element's (wall, window, door, roof, etc.) ability to reduce noise transmission from one side of the partition to the other.

As of the date of this Transportation Noise Analysis and site plan application, well developed architectural drawings for the residential units throughout the site are not available; therefore an accurate building shell analysis cannot be conducted. Once architectural drawings are well developed, STC ratings for all impacted residential units can be calculated. Building shell analysis results will be completed prior to applications for building permits.

CONCLUSION

Shady Grove Station residences and outdoor activity areas located along the railway, Shady Grove Road, Crabbs Branch Way, and the Metro Access Road will be exposed to roadway/railway noise levels between 65 and 80 dBA Ldn. While this represents a relatively high level of noise impact, outdoor (if necessary) and indoor noise levels can be maintained at 65 and 45 dBA Ldn, respectively, through modifications to the site and the proposed standard building construction.

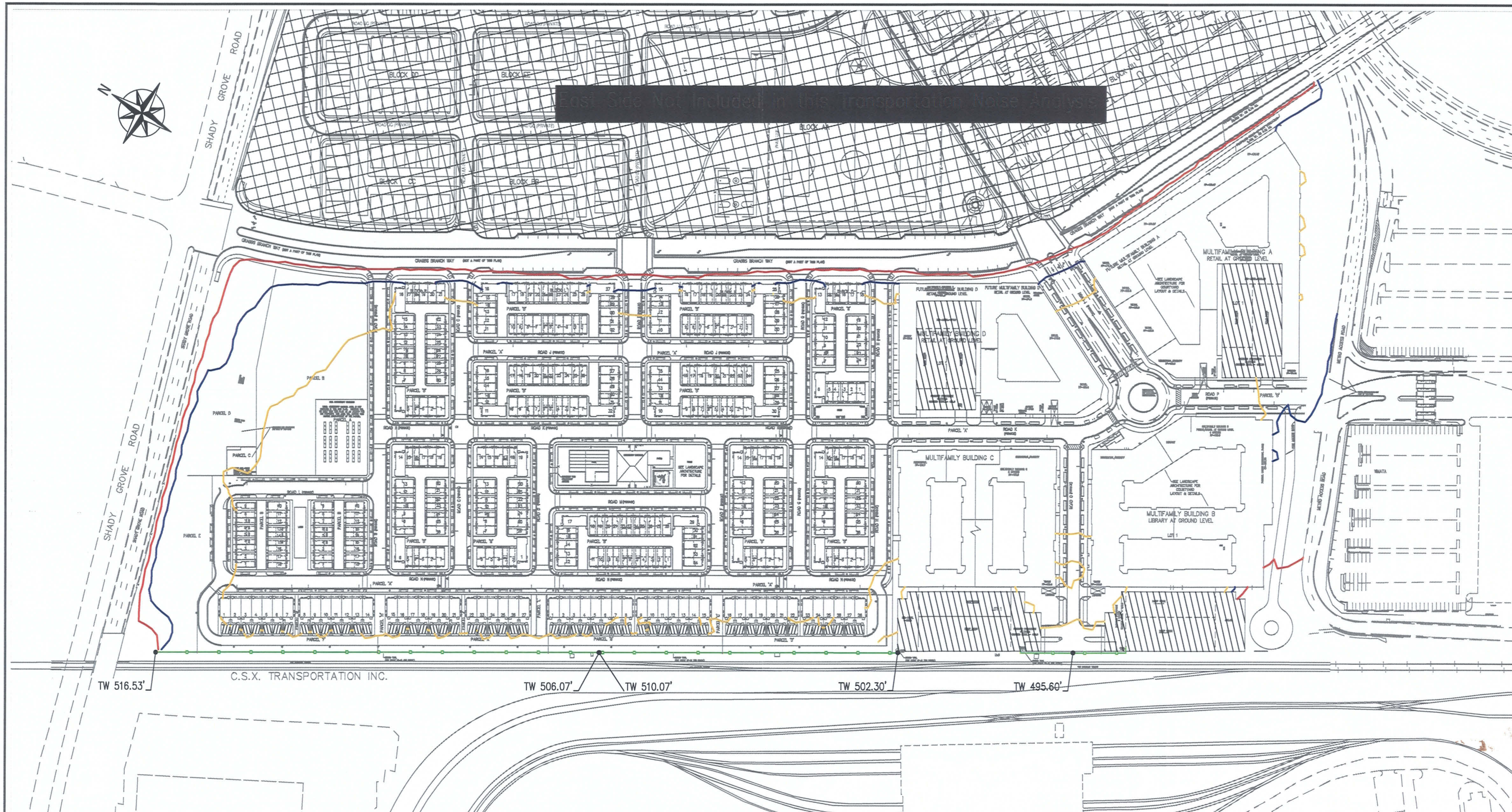
While ground level noise levels are above 65 dBA Ldn for residences along Shady Grove Road and Crabbs Branch Way, these residences will not have outdoor activity areas at this height. Mitigation to reduce ground level noise impact along Shady Grove Road and Crabbs Branch Way is not required.

Residences exposed to future noise levels above 65 dBA Ldn require further analysis and may require modifications to standard building construction. Depending upon the specific level of roadway/railway noise impact, modifications may include increased window/door STC ratings and adjustments to exterior wall construction. Further analysis is required to determine the exact mitigation designs necessary, which will be established prior to applications for building permits.

Outdoor activity areas and residences located on the interior of the site will not be exposed to noise levels above 65 dBA Ldn. These outdoor areas and residences require no further analysis or modifications to comply with Montgomery County's residential noise standard.

Please Note: *The results of this Transportation Noise Analysis have been based upon the site information made available at the time of this study, including existing and proposed topography, existing roadway/railway alignments, projected roadway traffic volumes, and the proposed building layout. Should any of this information be altered, including significant modifications to proposed topography or roadway/railway alignment and projected data, additional analysis will be required to determine if the results and recommendations presented herein are capable of reducing exterior and indoor noise levels to comply with Montgomery County's noise level requirements for residential development.*

APPENDIX



Future Mitigated Ground Level Noise Contours (5.5' above grade)

- 80 dBA Ldn
- 75 dBA Ldn
- 70 dBA Ldn
- 65 dBA Ldn
- Garage
- Proposed Noise Barrier

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Shady Grove Station West Side Mitigated Ground Level Noise Contours	
DWG. NO. 1	DATE 11 Sept. 2013
SCALE 1" = 200'	DRAWN BY JVC

East Side Not Included in this Transportation Noise Analysis

SHADY GROVE ROAD

CRABBS BRANCH WAY

BLOCK AA

BLOCK BB

BLOCK CC

BLOCK DD

BLOCK EE

MULTIFAMILY BUILDING A
RETAIL AT GROUND LEVEL

MULTIFAMILY BUILDING B
LIBRARY AT GROUND LEVEL

MULTIFAMILY BUILDING C

MULTIFAMILY BUILDING D
RETAIL AT GROUND LEVEL

FUTURE MULTIFAMILY BUILDING D
RETAIL AT GROUND LEVEL

FUTURE MULTIFAMILY BUILDING A
RETAIL AT GROUND LEVEL

PARCEL A

PARCEL B

PARCEL C

PARCEL D

PARCEL E

PARCEL F

PARCEL G

PARCEL H

PARCEL I

PARCEL J

ROAD J (PRIVATE)

ROAD K (PRIVATE)

ROAD M (PRIVATE)

ROAD O (PRIVATE)

ROAD P (PRIVATE)

C.S.X. TRANSPORTATION INC.

TW 516.53'

TW 506.07'

TW 510.07'

TW 502.30'

TW 495.60'

Future Mitigated Upper Level Noise Contours (25' above grade)

- 80 dBA Ldn
- 75 dBA Ldn
- 70 dBA Ldn
- 65 dBA Ldn

Garage

Proposed Noise Barrier

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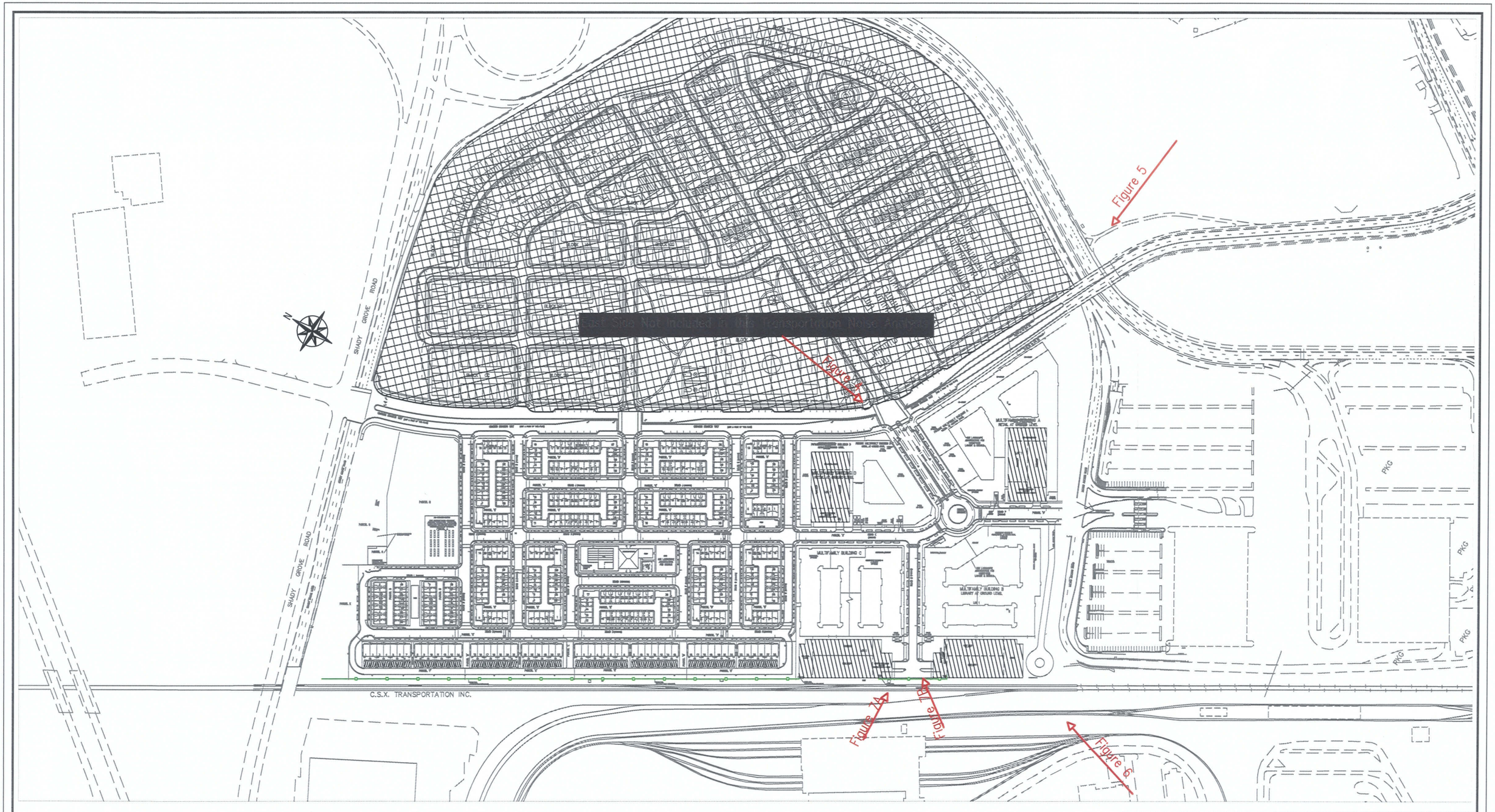
Shady Grove Station West Side Mitigated Upper Level Noise Contours

DWG. NO.	DATE
2	11 Sept. 2013
SCALE	DRAWN BY
1" = 200'	JVC



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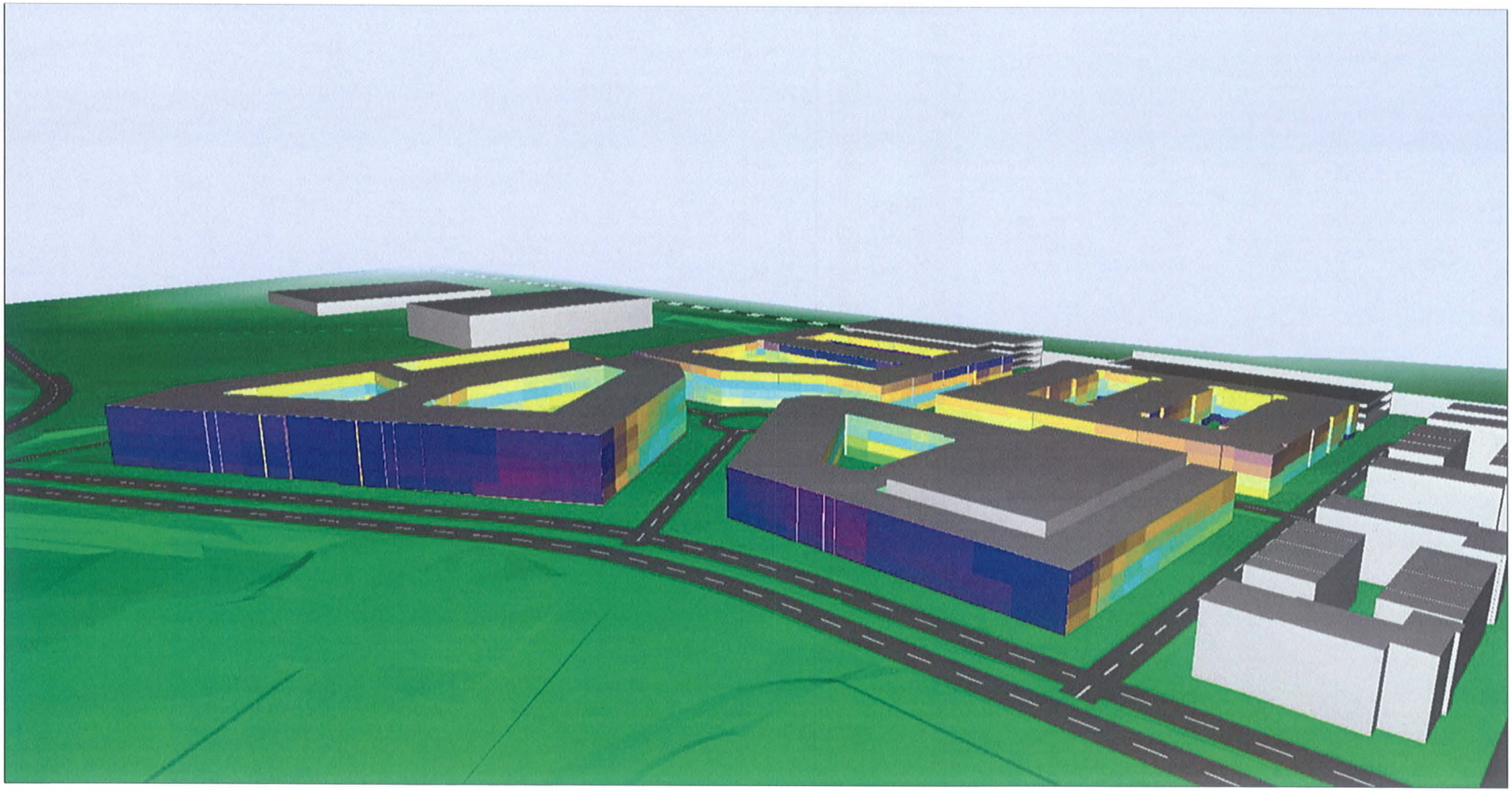
Shady Grove Station
3D Viewing Angles
(Drawings 4, 5, 6, & 7)

DWG. NO.	DATE
3	17 Sept. 2013
SCALE	DRAWN BY
1" = 300'	JVC



Future Mitigated Noise Level

	80 dBA Ldn		70 dBA Ldn		60 dBA Ldn		50 dBA Ldn
	75 dBA Ldn		65 dBA Ldn		55 dBA Ldn		45 dBA Ldn

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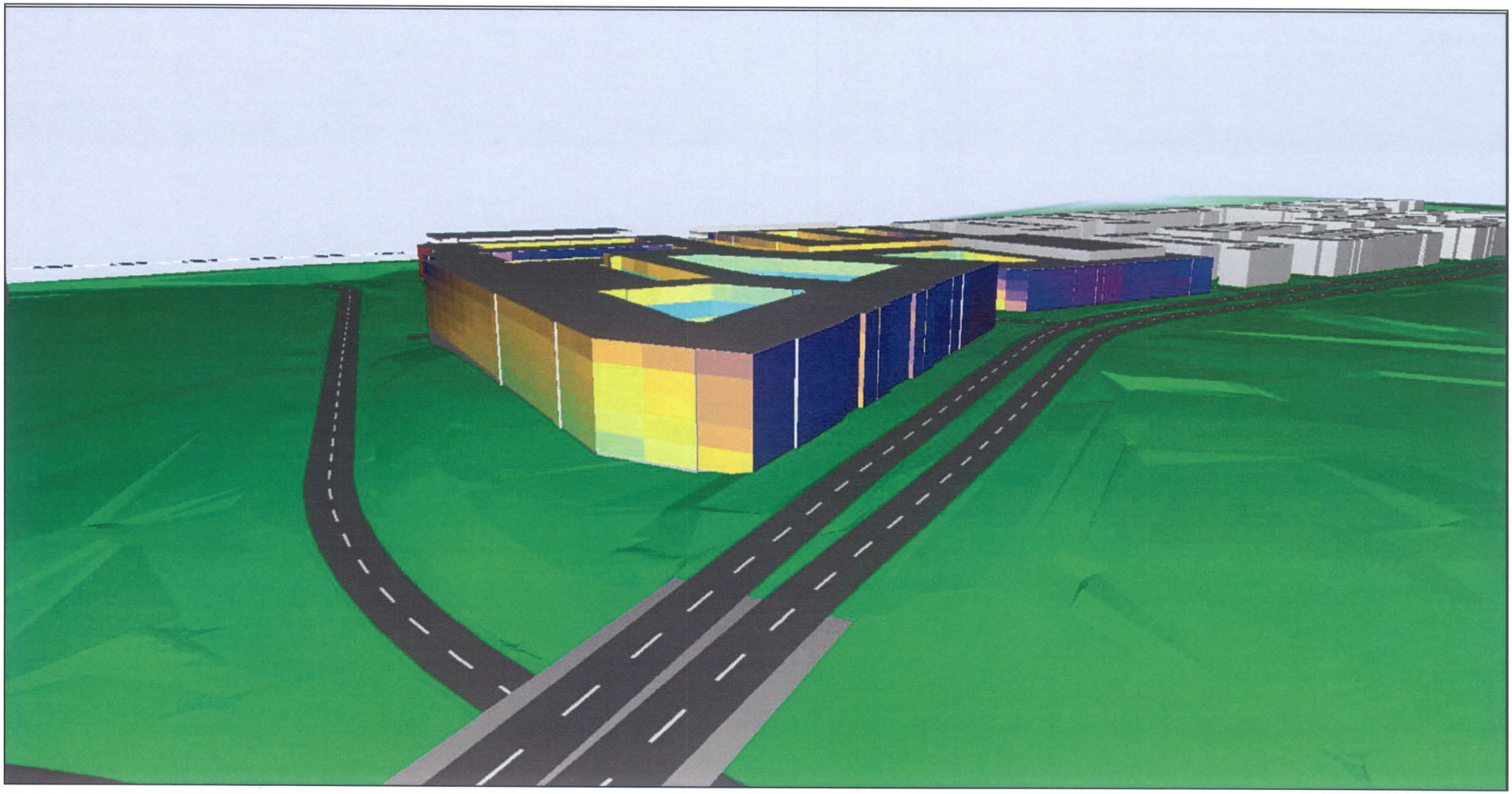
301-846-4227

Shady Grove Station West Side MF Bldg Noise Impact

DWG. NO.	DATE
4	17 Sept. 2013
SCALE	DRAWN BY
NTS	JVC



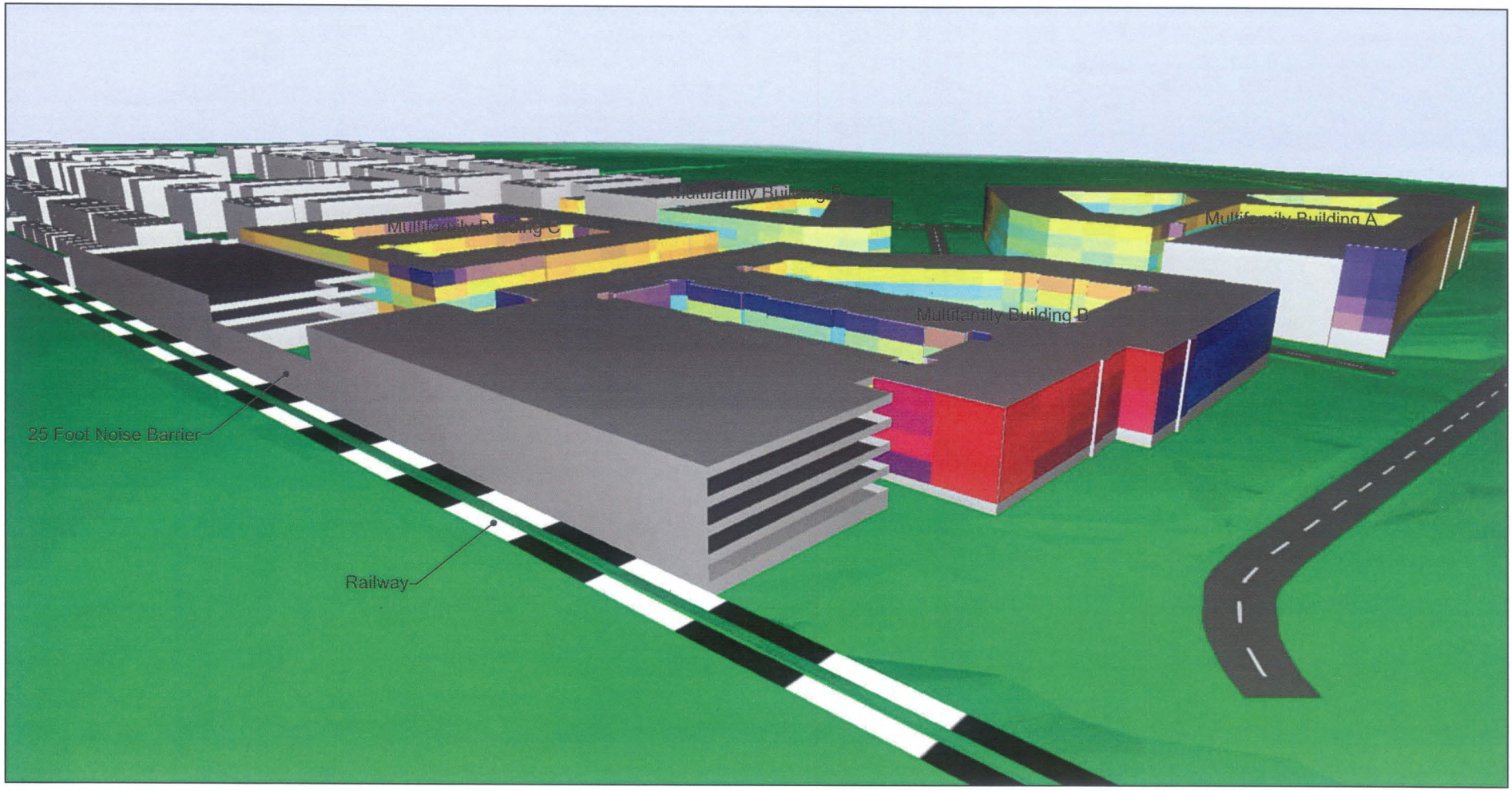
Future Mitigated Noise Level

80 dBA Ldn	70 dBA Ldn	60 dBA Ldn	50 dBA Ldn
75 dBA Ldn	65 dBA Ldn	55 dBA Ldn	45 dBA Ldn

PHOENIX noise & vibration
5216 Chairmans Court Suite 107
Frederick, MD 21703
301-846-4227

Shady Grove Station West Side MF Bldg Noise Impact

DWG. NO.	DATE
5	17 Sept. 2013
SCALE	DRAWN BY
NTS	JVC



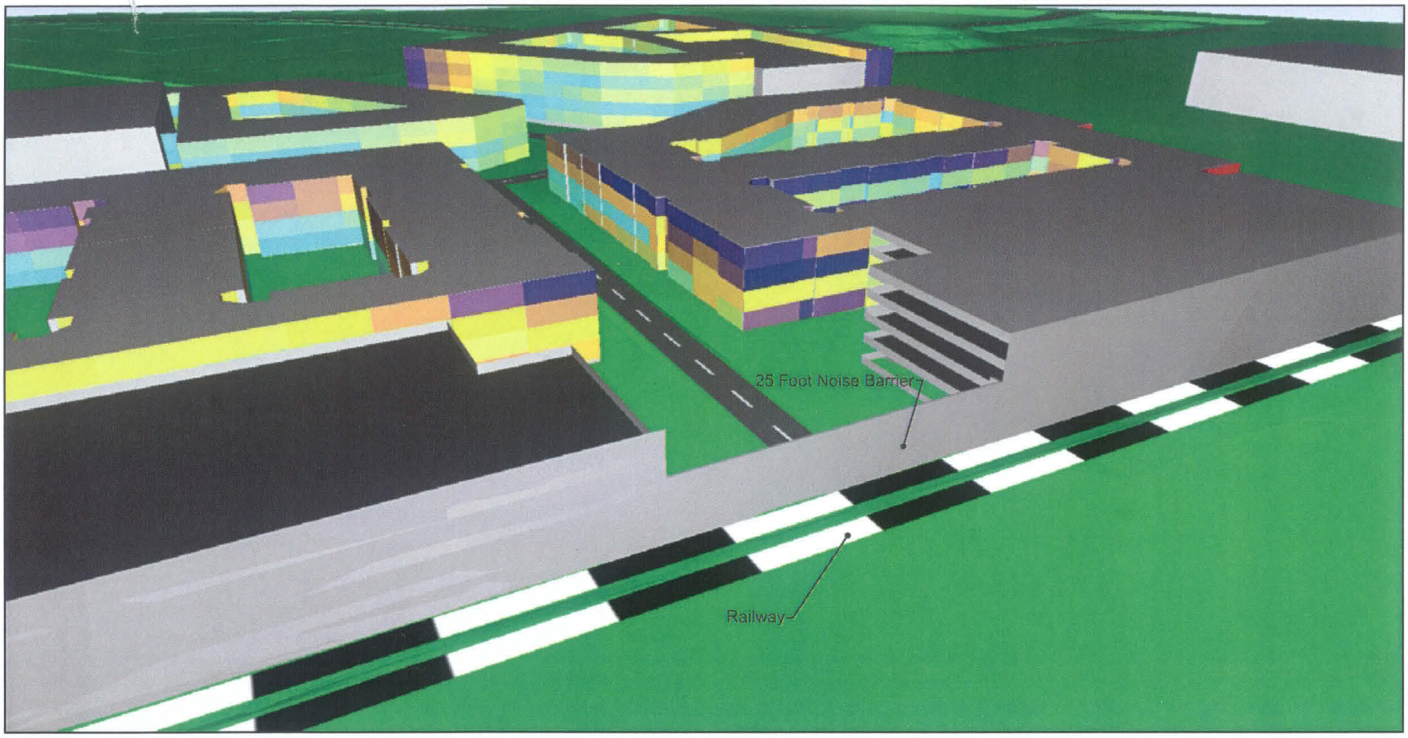
Future Mitigated Noise Level

80 dBA Ldn	70 dBA Ldn	60 dBA Ldn	50 dBA Ldn
75 dBA Ldn	65 dBA Ldn	55 dBA Ldn	45 dBA Ldn

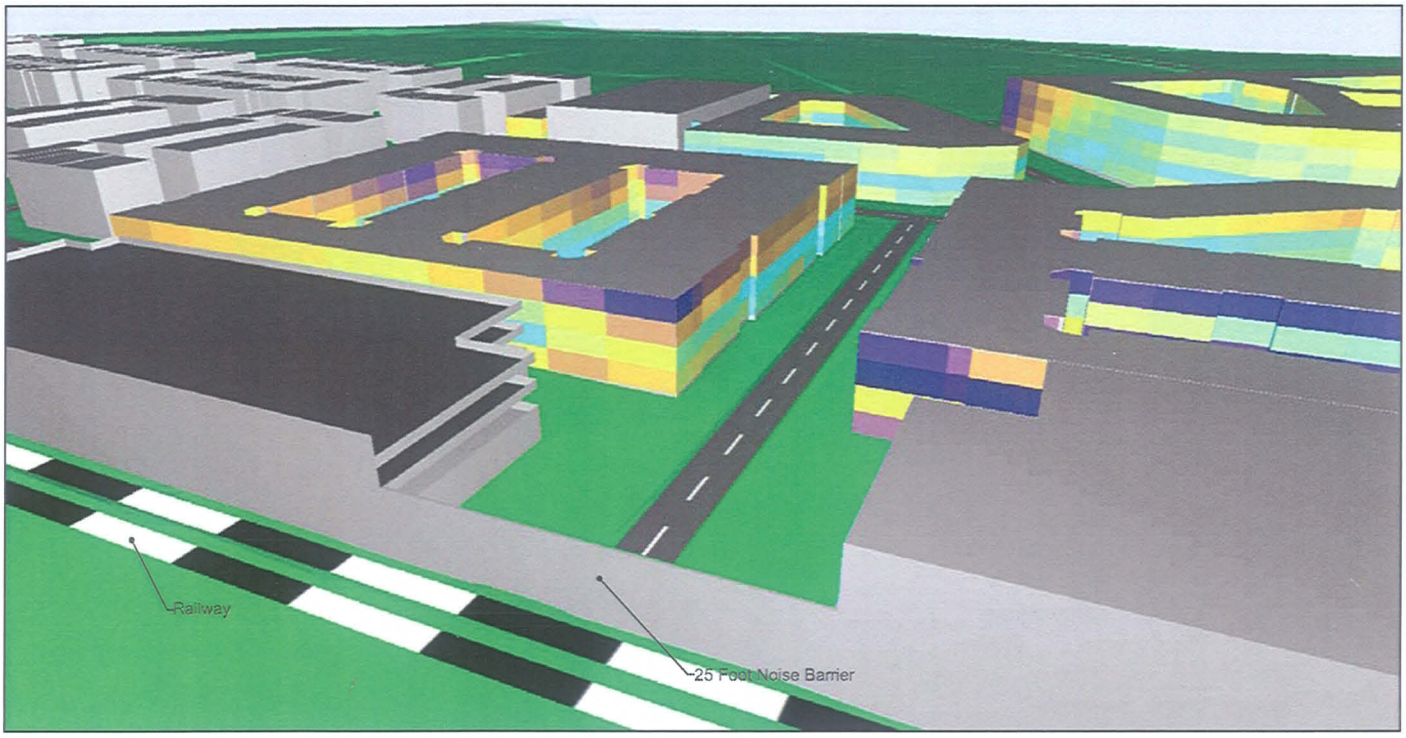
PHOENIX noise & vibration
5216 Chairmans Court Suite 107
Frederick, MD 21703
301-846-4227

Shady Grove Station West Side MF Bldg Noise Impact

DWG. NO.	DATE
6	17 Sept. 2013
SCALE	DRAWN BY
NTS	JVC



Drawing 7A



Drawing 7B

Future Mitigated Noise Level

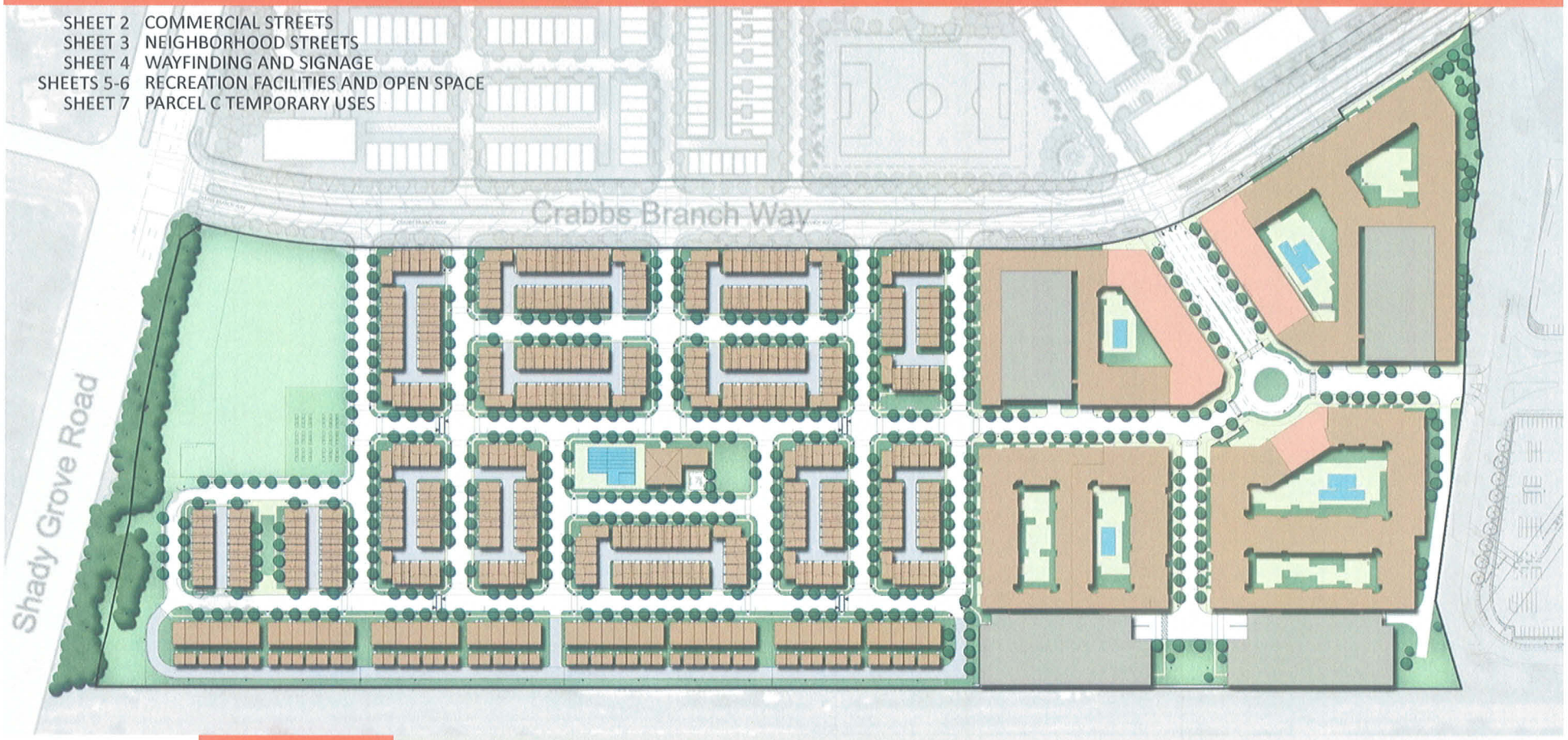
75 dBA Ldn	60 dBA Ldn
70 dBA Ldn	55 dBA Ldn
65 dBA Ldn	50 dBA Ldn

PHOENIX noise & vibration
5216 Chairmans Court Suite 107
Frederick, MD 21703
301-846-4227

Shady Grove Station Noise Impact Upon MF Buildings B & C

DWG. NO.	DATE
7	17 Sept. 2013
SCALE	DRAWN BY
NTS	JVC

PLACEMAKING & AMENITY PLAN-SHADY GROVE STATION



THE NEIGHBORHOODS OF EYA

Life within walking distance.

ARCHITECTS:
Lessard
KTGY

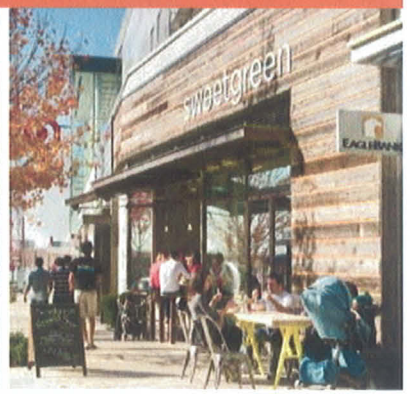
LANDSCAPE ARCHITECTS/PLANNERS/CIVIL ENGINEERS:
VIKA Maryland, llc

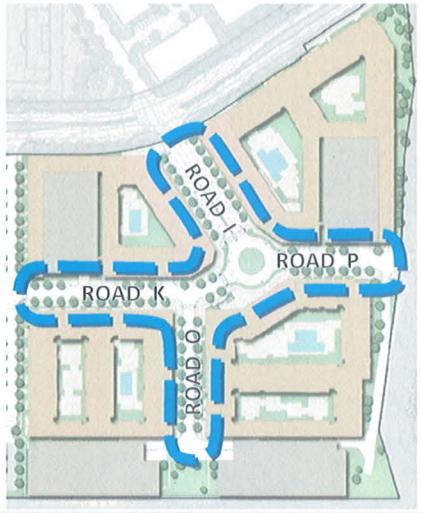
SHADY GROVE STATION

PLACEMAKING & AMENITY PLAN-SHADY GROVE STATION

COMMERCIAL STREETS

The applicant shall provide **accent paving** to visually highlight street crossings, gathering areas and entryways. The streets are to be lined with **ESD** /bio-retention features and **street trees** to manage rainwater, provide shade and canopy. Pedestrian scale double mounted **street lights** fit within the rhythm of the street trees and work in concert with the street furnishings. The applicant will provide 12 **bike racks** on Road I, 11 **bike racks** and 1 Bikeshare Station on Road K, and 4 **bike racks** on Road O. To activate and add vibrancy to the streets, the applicant will allow retail tenants to set up temporary **sidewalk displays** and sales. Café owners shall be permitted to set up **outdoor dining areas** with umbrellas, tables and chairs.





THE NEIGHBORHOODS OF EYA

Life within walking distance.

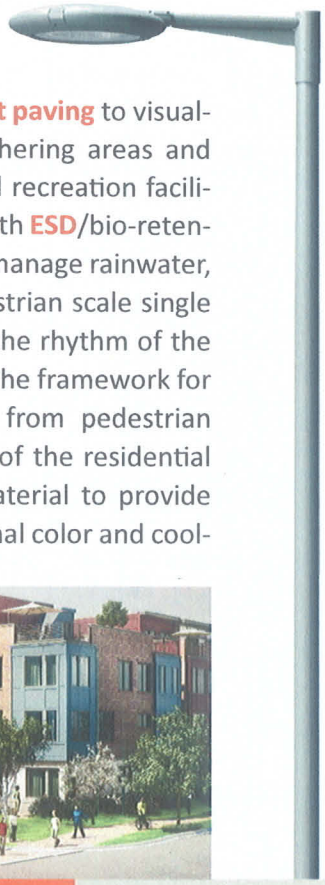
ARCHITECTS:
Lessard
KTGY

LANDSCAPE ARCHITECTS/PLANNERS/CIVIL ENGINEERS:
VIKA Maryland, llc

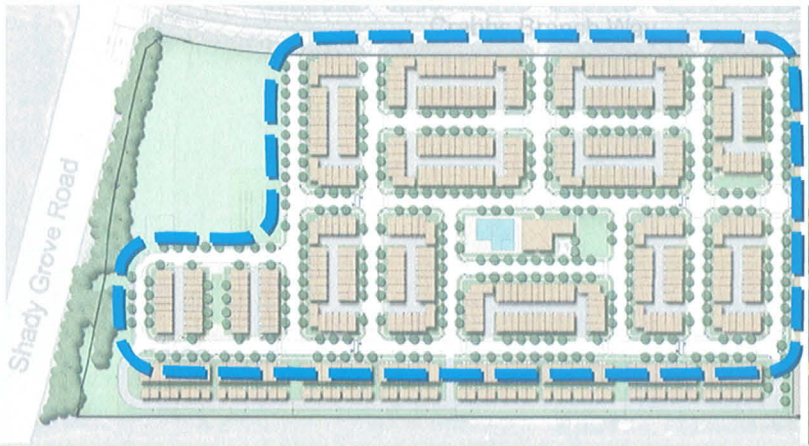
SHADY GROVE STATION

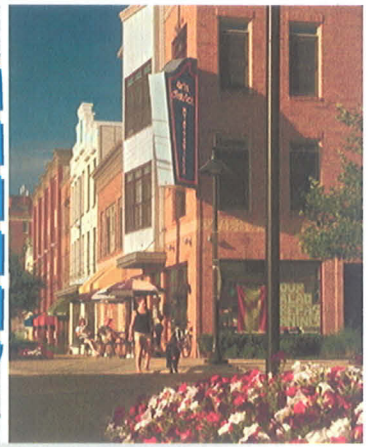
PLACEMAKING & AMENITY PLAN-SHADY GROVE STATION

NEIGHBORHOOD STREETS



The applicant shall provide **accent paving** to visually highlight street crossings, gathering areas and entryways to common space and recreation facilities. The streets are to be lined with **ESD**/bio-retention features and **street trees** to manage rainwater, provide shade and canopy. Pedestrian scale single mounted **street lights** fit within the rhythm of the street trees and further provide the framework for separating the street corridors from pedestrian corridors. Green spaces in front of the residential units provide room for plant material to provide separation, visual interest, seasonal color and cooling through evapotranspiration.





THE NEIGHBORHOODS OF EYA

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Lessard
KTGY

LANDSCAPE ARCHITECTS/PLANNERS/CIVIL ENGINEERS:
VIKA Maryland, llc

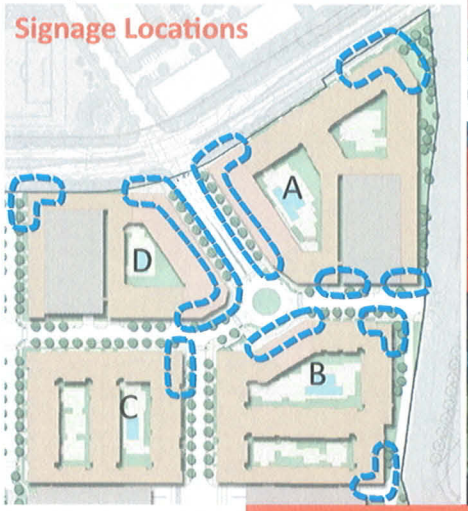
SHADY GROVE STATION

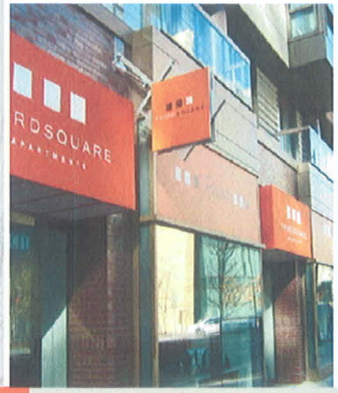
PLACEMAKING & AMENITY PLAN-SHADY GROVE STATION

WAYFINDING & SIGNAGE

Community identification, traffic control and wayfinding shall be orchestrated through **traffic control** signage, **directional signage**, paving patterns, architectural elements, **awnings**, clear **address markers** and overall vistas to enhance navigation and provide pedestrian scale character.

Signage Locations





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ARCHITECTS:
Lessard
KTGY

LANDSCAPE ARCHITECTS/PLANNERS/CIVIL ENGINEERS:
VIKA Maryland, llc

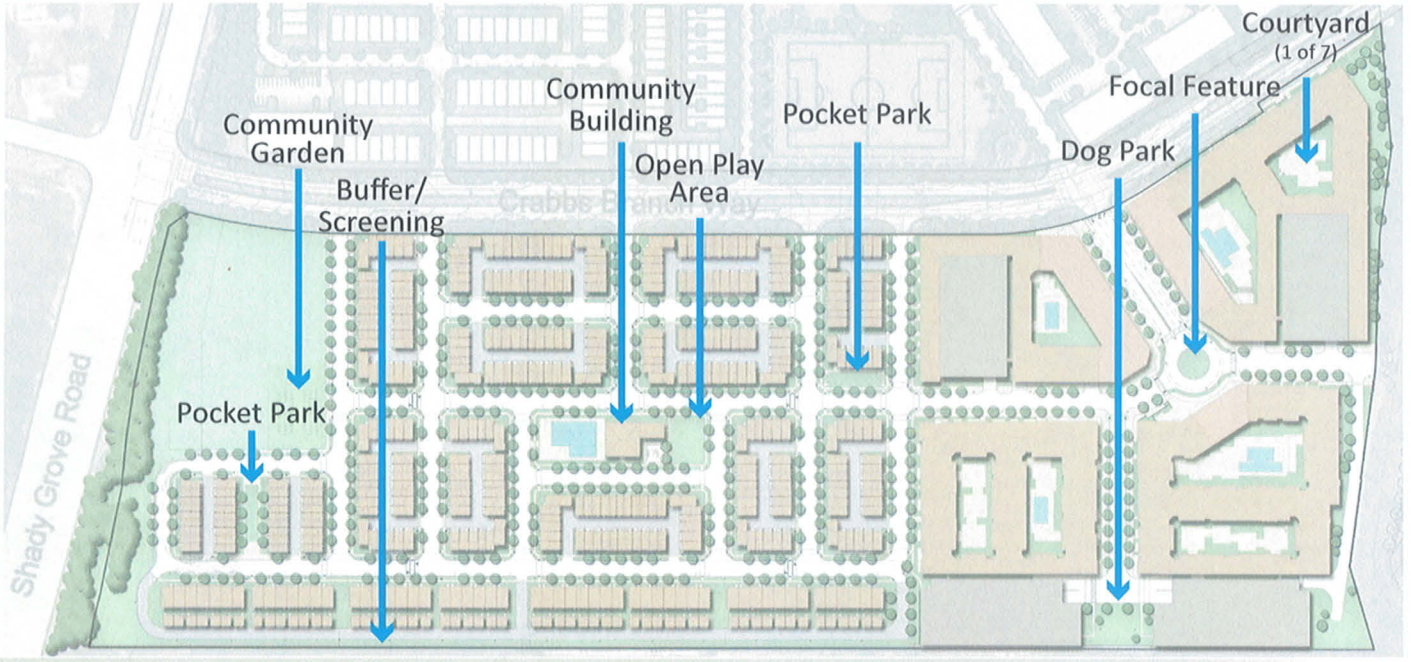
THE NEIGHBORHOODS OF EYA

SHADY GROVE STATION

PLACEMAKING & AMENITY PLAN-SHADY GROVE STATION

RECREATION FACILITIES & OPEN SPACE

The applicant will provide 7 **courtyards** within the 4 multifamily buildings. Each multifamily building will have a **swimming pool** and 2 of the courtyards will have 2 **benches**. The applicant will also provide a **community building** in the townhouse community with a **swimming pool**, 6 **benches**, 1 **waste receptacle**, 8 **bike racks**, a **patio area**, and a tot lot with **play equipment**. An area for a **community garden** and a **dog park**, for small and large dogs, will be provided



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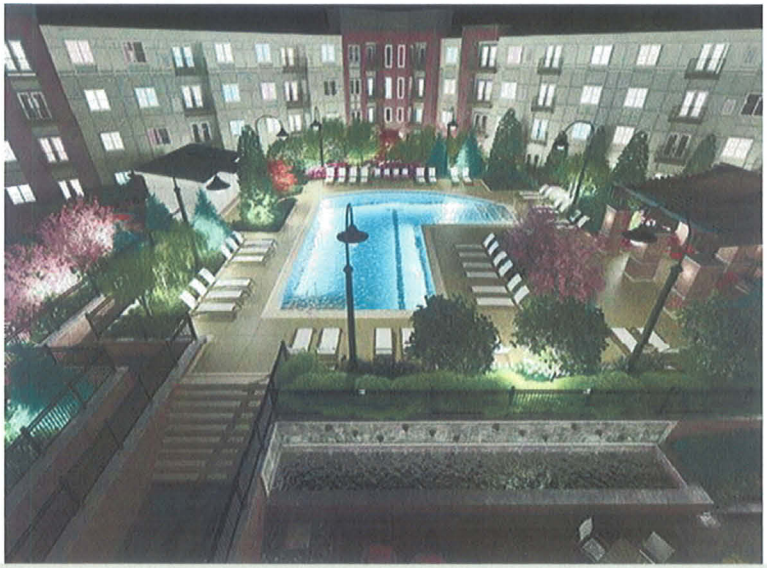
VIKA Maryland, llc

SHADY GROVE STATION

PLACEMAKING & AMENITY PLAN-SHADY GROVE STATION

RECREATION FACILITIES & OPEN SPACE

The applicant will provide a variety of open spaces including two **pocket parks** and an **open play area**. The pocket park near the commercial area will have 10 **benches**, 2 **waste receptacles,** 4 **bike racks** and an open lawn area. The open play area will be located adjacent to the community building in the townhouse community. The traffic circle in the commercial area is centrally located and will be a **focal feature** with land-scaping and/or public art.



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SHADY GROVE STATION

PLACEMAKING & AMENITY PLAN-SHADY GROVE STATION

PARCEL C TEMPORARY USES

Parcel C may be used for a variety of public events that activate the space and bring the community together. Popular farmers markets can bring locally grown produce and goods to the residents while supporting local businesses and farmers at the same time. Other opportunities for this space are holiday festivals, temporary seasonal sales, as well as providing a venue for live music, art shows and outdoor movies.

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SHADY GROVE STATION