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

MCPB
Item No. 5B
Date: 01-26-17

Seneca Valley High School, Mandatory Referral, MR2016010

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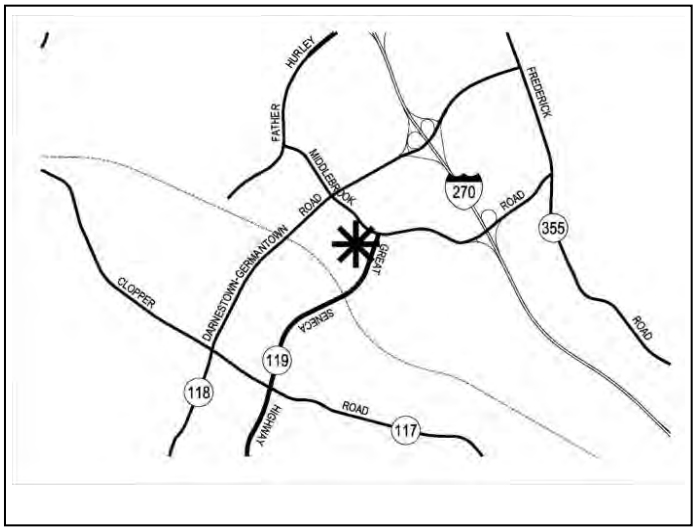
Completed: 01-13-17

Description

- 19401 Crystal Rock Drive, Germantown
- 29.32 acres, R-200 zone
- 2009 Germantown Employment Area Sector Plan
- Applicant: Montgomery County Public Schools
- Submitted: November 5, 2015

Item 7- Part B. Mandatory Referral (MR2016): Modernization of Seneca Valley High School located at 19401 Crystal Rock Drive, Germantown; 29.32 acres; R-200 Zone; Germantown Employment Area Sector Plan (2009);

Staff Recommendation: Approval to transmit comments to Montgomery County Public Schools



Summary

- Complies with the Germantown Employment Area Sector Plan (2009)
- Proposes to rebuild Seneca Valley High School onsite with flexible classroom design and features that invite community interaction.
- The review of this Mandatory Referral is in two parts:
  Part A - Preliminary Forest Conservation Plan MR2016023, discussed in a separate staff report, and
  Part B - Mandatory Referral MR2016023.

Staff recommends **approval** to transmit the following comments to the Montgomery County Public Schools:

1. Ensure adequate sight distance and clear visibility of exiting vehicles from the proposed school site.

2. Ensure that the on-site parent drop-off and pick-up loops do not queue vehicles onto the adjacent streets by implementing a traffic operations program that accounts for all modes of access and large events operations.

3. Dedicate and show on the record plat dedication for the master-planned 150-foot-wide Middlebrook Road M-85 from the opposite right-of-way line (varies) along the subject property frontage. The amount of dedication will vary along the property line due to prior dedications or platting. Buildings must not be constructed in the dedicated area.

4. Dedicate and show on the record plat dedication for the master-planned 100-foot-wide Wisteria Drive A-74 from the opposite right-of-way line (varies) along the subject property frontage. The amount of dedication will vary along the property line due to prior dedications or platting. Buildings must not be constructed in the dedicated area.

5. Construct the master-planned shared use path along the subject property frontage of Crystal Rock Drive for the planned dual bikeway DB-34.

6. For safe off-site pedestrian circulation, provide an analysis of pedestrian crossing times at each of the studied signalized intersections (including those adjacent to, and those not adjacent to the school site) to the Montgomery County Department of Transportation (MCDOT) prior to occupancy of the new school.

7. If bicycle use is determined by the school principal to be an appropriate access means for students, plans for the locations of additional bicycle parking beyond that which is proposed will be needed and should be coordinated with M-NCPPC and DOT.

8. Provide an adequate number of vehicular parking spaces on the site.

INTRODUCTION

Site Description

The Seneca Valley High School site is bounded by Crystal Rock Drive, Middlebrook Road, Wisteria Drive, and Great Seneca Highway, and consists of 29.32 acres, Parcel 085 at 19401 Crystal Rock Drive ("Site") and zoned R-200. The Site slopes steeply from a high point at Crystal Rock Drive and Middlebrook Road to a low point at Middlebrook Road and Great Seneca Highway; the elevation on this frontage drops by about 60 feet. To a lesser extent, the Site also has a cross slope from the high point, near the center of the Site, down toward Wisteria Drive and Great Seneca Highway, dropping about 30 feet.

The neighboring properties include a mix of uses. To the north, across Middlebrook Road, is Olde Seneca Woods, a townhouse community. To the east, across Great Seneca Highway, there are two wooded open space properties and a local shopping center which includes restaurants patronized by Seneca Valley students. To the south, across Wisteria Drive, is Rolling Hills, a low-rise apartment complex. To the west and northwest, there is a post office, a daycare center, and an office building. At four stories, the office building is the tallest building in the vicinity.

The Site is within the boundaries of the 2009 Germantown Employment Area Sector Plan and is part of the Sector Plan's Gateway District.

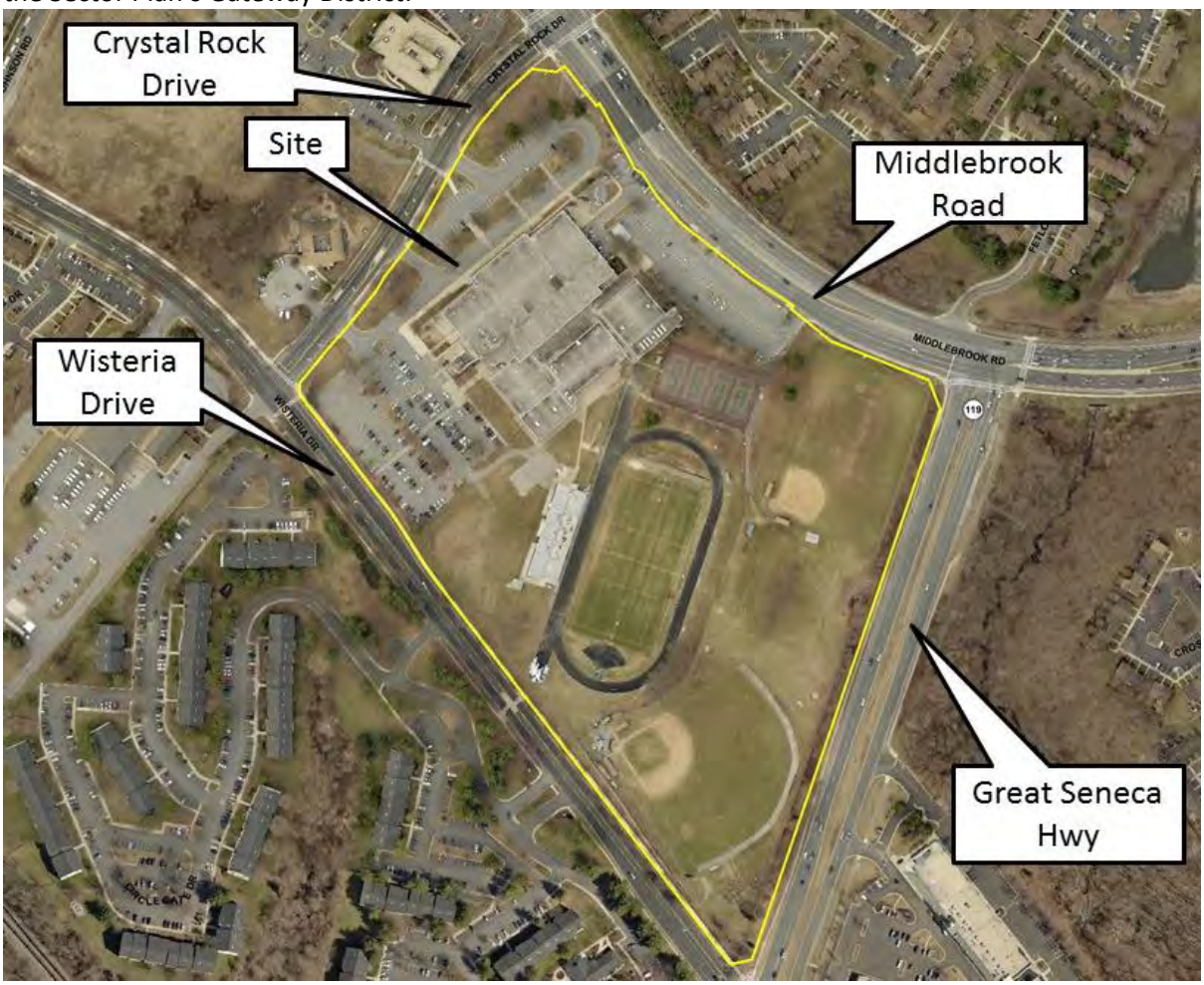


Figure 1: Aerial Photograph of Site

Project Description

The project will completely rebuild and expand the capacity of Seneca Valley High School. Based on the condition of the existing school building and the cost to bring the school into compliance with code requirements, the most cost effective solution is to construct a replacement facility adjacent to the existing school while continuing to utilize the existing school. The capacity of the new school will increase from1,374 students to 2,423 students with a core capacity for 2,400 students. The increased capacity provides the opportunity to address projected overutilization of nearby Clarksburg and Northwest high schools through student reassignments in the future.

The flexible building design for the school will accommodate current and future high school programs and delivery models. A philosophy of adaptable classrooms will facilitate various presentation formats and learning activities. Multipurpose and flexible spaces will be designed that can be used by both staff and students to collaborate on projects. Furniture that is easily reconfigurable will be provided to maximize the flexibility in the school.

The replacement building will predominantly occupy the center and southwest portion of the Site. Once the existing school building is demolished, new athletic fields will be terraced along Middlebrook Road and Great Seneca Highway. Staff, student, and visitor parking along with a student drop-off loop will be accessed from Crystal Rock Drive and will provide convenient, Americans with Disabilities Act compliant access to the main entrance to the building. Two additional parking areas, each with access from Wisteria Drive, are proposed along the southwest side of the school.

Building Design

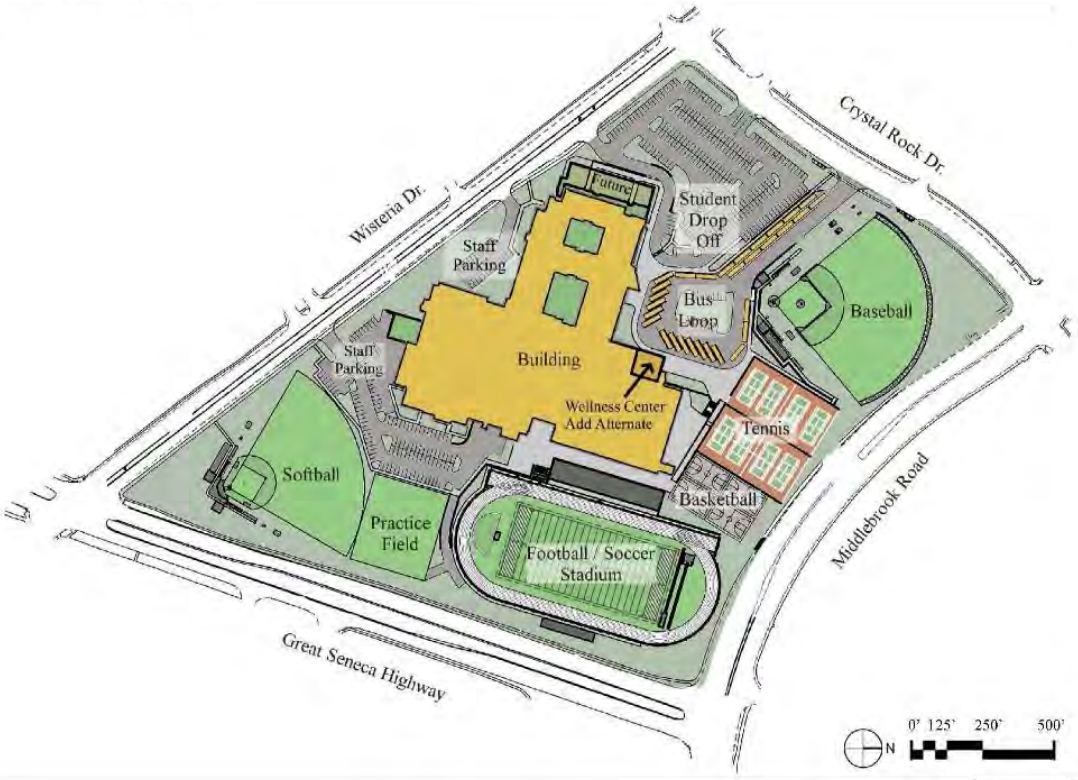
The new facility will provide approximately 110 classrooms and 36 support and core facility areas within the 436,378 square foot complex. Adaptable classrooms will achieve flexibility for varied-size groups of students, presentation formats, and access to alternative media and resources. The building and site design will include the following:

- A well-defined and welcoming main entrance with access control and supervision;
- Clear internal circulation with simple way finding;
- A comfortable, naturally lit, and energy efficient environment;
- After-hours community use of the gymnasiums, cafeteria, auditorium, and library media center that can be secured from the rest of the
- building;
- A building layout that is easy to supervise;
- Two courtyards that provide natural daylight into the building as well as outdoor instructional areas and seating areas; and
- Safe separation of vehicular and pedestrian traffic on site.

Site Design

The Site topography is defined by three terraced levels, stepping downgrade from Wisteria Drive to Great Seneca Highway. The replacement building will predominantly occupy the middle terrace. The new athletic fields will be on the lowest terrace along Middlebrook Road and Great Seneca Highway. The top or highest terrace near the corner of Wisteria Dr. and Crystal Rock Dr. will contain the main parking lot and bus loop.

Proposed Site Plan



Seneca Valley High School – Revitalization/Expansion
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Page 5A

Sections and Elevations

The proposed building exterior features a contrasting brick veneer pattern that articulates and reduces the apparent massing and identifies the functional spaces of the interior. Well-placed window openings establish the façade rhythm, broken by larger expanses of glass block at the stairwells that serve to bring natural lighting into the internal circulation areas.

Proposed Elevations

NORTH ELEVATION

WEST ELEVATION

SOUTH ELEVATION

EAST ELEVATION

0' 50' 100' 200'

Seneca Valley High School – Revitalization/Expansion Page 7A

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Energy Efficiency

A. The project is registered with the United States Green Building Council Leadership in Energy and Environmental Design under the LEED for Schools v2009 rating system. Upon completion of the project, the project will be evaluated for compliance and certified at that time. Included in this submittal is a project checklist which identifies the credits that the project is currently expected to meet. Owner project requirement is a minimum of a silver rating. In alignment with the MCPS Environmental Sustainability Management Plan, this project is registered and will be certified for silver or higher rating in conformance with Leadership in Energy and Environmental Design (LEED) certification through the United States Green Building Council. The complete LEED Project Checklist can be found in Attachment J.

Sustainable aspects of the project include but not limited to the following:

Encouraging alternative transportation to the school by providing conveniently located bike racks and preferred parking for low emitting/fuel efficient vehicles and carpools;

- Preserving a high percentage of vegetated open space to protect the surrounding ecosystem;
- Managing storm water to reduce runoff quantity and improve quality;

- Using highly-reflective roof surfaces combined with a vegetative roof portion to reduce heat island effect and heat gain to the building;
- Installing water conserving, low-flow plumbing fixtures;
- Optimizing the energy performance of the building by providing a highly energy-efficient building envelope, lighting system and
- heating, ventilation and air conditioning (HVAC) system utilizing a water source heat pump system coupled with a dedicated energy
- recovery outdoor air system;
- Optimizing equipment selection, installation, and operation of HVAC equipment through enhanced commissioning of the building
- energy systems;
- Diverting construction "waste" from landfills that can instead be salvaged for reuse or recycled;
- Adhering to construction indoor air quality management plans and using low-emitting building materials to safeguard occupant health;
- Providing a high level of occupant control over individual lighting and thermal comfort to promote enhanced indoor environment;
- Promoting user education to increase awareness of the green features and to utilize the school as a teaching tool for environmental and
- sustainability topics;
- Using construction materials that are recycled and regionally manufactured;
- Implementing a Green Housekeeping plan;
- Maximizing daylight in classrooms; and
- Minimizing background noise level from HVAC systems in classrooms and other core learning spaces and control reverberation time with sufficient sound absorptive materials.

Landscape and Lighting

The submitted Landscape Plan (Attachment G) proposes tree and ornamental shrub plantings throughout the Site, ornamental trees bounding the storm water filtration areas, and foundation planting along the building line. Shade trees and ornamental trees are proposed for the surface parking areas. The lighting plan proposes a mixture of lighting types including fixtures on 14- and 25-foot high poles and various wall mounted lighting. The lighting plan (Attachment H) shows no light spill at the Site boundaries; however, it is recommended that the lighting fixtures near the right-of-way at the entrance be equipped with cut-off shields to limit spill beyond the Site boundaries.

The exterior lighting of the revitalized/expanded school will be designed to shield adjacent residences from intrusive light glare while maintaining light levels for safety and security. The light fixtures will be 100% down-lighting, dark sky compliant, to minimize light pollution into the night sky. The exterior light fixtures at canopies, building, security and parking lots will be light emitting-diode type fixtures that are long lasting and energy efficient.

Operating Hours

The school's hours of operation vary and comply with the standard MCPS school schedule. The school also has a year-round program, and is operated throughout the summer as well as the general school year. On typical school days, students begin arriving at 6:30 am and leave by 4:00pm.

Parking

Staff, student, and visitor parking along with a student drop-off loop will be accessed from Crystal Rock Drive and will provide convenient, Americans with Disabilities Act-compliant access to the main entrance of the building. Two additional parking areas, each with access from Wisteria Drive, are proposed along the southwest side of the school. The proposed site design provides on-site staging areas for 30 buses, 421 parking spaces, and on-site student drop-off queuing for 30 cars. The total amount of parking has decreased from the current 452 to the proposed 421 or a total of 31 spaces. There are no standard parking rates for high schools and final determination of parking adequacy is at the discretion of MCPS. The proposed parking, while adequate for faculty and staff, may cause very limited student and visitor parking.

Right-of-way Impacts

Middlebrook Road (M-85) located along the north side of the subject property is recommended as a major highway with a 150-foot wide right-of-way ("ROW") in the sector plan, the existing ROW varies from approximately 115 to 130 feet along the frontage of the Site. It is recommended that the Applicant dedicate and show on the record plat dedication for the master-planned 150-foot-wide Middlebrook Road from the opposite ROW line (varies) along the Subject Property frontage. The amount of dedication will vary along the property line due to prior dedications or platting. Buildings must not cross property lines or be constructed in the dedicated area.

Initially MCPS had several conflicts between structures and other site elements that were to be located within the 150-foot wide ROW as recommended in the sector plan. Working with Staff to delineate the proposed right-of-way and looking for design changes, MCPS redesigned some elements of the Site and removed all structural impacts from the proposed ROW. However, there are still some minor, non-structural, impacts from stormwater management and grading for a corner of the baseball field within the dedication area. Staff believes that the nonstructural impacts within the ROW would not limit future improvements to Middlebrook Road, if necessary, and could be incorporated or resolved at the time of those future improvements. Additionally, this section of Middlebrook Road (M-85) is being studied as part of the current MARC Rail Communities Plan for possible ROW reductions to improve pedestrian conditions.

Retaining Walls

The unique topography of the Site, the programmatic elements of a high school and the need to keep the existing school open during construction has required technical solutions to accommodate the grading and slopes. The proposed building was designed to pick up as much slope as possible in the center terrace or section of the Site while the remaining areas and grades needed to be addressed with retaining walls of varying types due to the tight constraints of the Site. The retaining walls are in many forms including standalone walls. When possible the Applicant tried to incorporate a retaining wall into another use or structure. For example, the stadium seating, which normally would be open bleachers, has been incorporated into the design and uses the rear of the seating structure as a retaining wall to help with some of the grade onsite. Additionally, retaining walls have been incorporated into the sides of the basketball courts, tennis courts, and baseball fields, which picks up grade while helping to provide clearly defined spaces for each activity.

The standalone retaining walls vary in height and are spread evenly across the Site. Staff has reviewed all the retaining walls and has worked with MCPS over the design evolution of the Site to reduce and minimize the usage of retaining walls to the extent possible while maintaining the core programmatic elements. A complete exhibit of retaining walls and heights can be found in Attachment B.

ANALYSIS

Neighborhood Compatibility

The Site is currently occupied by the existing Seneca Valley High School and will be replaced with the same use at a slightly larger scale. The new facility fits the recommendations of Sector Plan, discussed below, by adding additional flexible classroom space and adding additional flexible programmatic space, which provides additional educational opportunities for students, staff, and the community. The character of the proposed building will create an attractive and inviting school building for the community. The visual impact of any large expanse of masonry will be reduced with articulation, window fenestrations, shifting building volumes, and by varying ` exterior finishes. Varying brick colors, ground-face block, pre-cast concrete accents, and small metal roof canopies also will be used to break up the mass of the building.

Master Plan Conformance

The Seneca Valley High School Site is located within the Gateway District of the 2009 Germantown Employment Area Sector Plan. The Site is specifically referenced as GA-4. The only specific recommendation to this property is to rebuild Seneca Valley High School (GA-4) on-site with innovative academic, recreational, and environmental features that invite community interaction.

The flexible building design will accommodate current and future high school programs and delivery models. A philosophy of adaptable classrooms will facilitate various presentation formats and learning activities. Multipurpose and flexible spaces will be designed that can be used by both staff and students to collaborate on projects. Furniture that is easily reconfigurable will be provided to maximize the flexibility in the school. The instructional media center, athletic facilities, and auditorium will be available for after-hours use, while the remainder of the building remains secured.

The complete concept and design incorporates the Sector Plan recommendation to rebuild Seneca Valley High school as an innovative academic, recreational, and environmentally friendly school that invites community interaction.

The Sector Plan also contains non-site specific recommendations in regards to transportation elements within the Gateway District, which include:

- Provide streetscape improvements in accordance with the streetscape plan.
- Consolidate driveways to minimize curb cuts and turning movements.
- Provide safe pedestrian crossings at Wisteria Drive and Great Seneca Highway and at Crystal Rock Drive and Middlebrook Road.
- Rebuild Wisteria Drive as a four-lane divided roadway with landscaping and a pedestrian refuge in the median (p. 58).

These transportation elements are discussed in further detail in the Transportation Analysis portion below.

TRANSPORTATION ANALYSIS

Master-Planned Roadways

In accordance with the 2009 approved and adopted Germantown Employment Area Sector Plan and the 2005 adopted Countywide Bikeways Functional Master Plan, the master-planned roadways and bikeways are as follows:

Middlebrook Road (M-85) is recommended as a major highway along the Site with a 150-foot wide right-of-way. Staff recommends the Applicant dedicate and show on the record plat dedication for the master-planned 150-foot-wide Middlebrook Road from the opposite right-of-way line (varies) along the Site's frontage. The amount of dedication will vary due to prior dedications or platting. In any event, buildings must not be constructed across a property line or in the dedicated area recommended by the Sector Plan.

Great Seneca Highway (CM-90) is recommended as a controlled major highway along the Site frontage with a 150-foot-wide right-of-way. Additional dedication is not required for this roadway as there is currently 150-feet of right-of-way.

Wisteria Drive (A-74) is recommended as an arterial road along the Site's frontage with a 100-foot-wide right-of-way in the 2009 *Germantown Master Plan.* Staff recommends that the applicant dedicate and show on the record plat dedication for the master-planned 100-foot-wide Wisteria Drive from the opposite right-of-way line (varies) along the Site frontage. The amount of dedication will vary due to prior dedications or platting. In any event, buildings must not be constructed across a property line or in the dedicated area recommended by the Sector Plan. Crystal Rock Drive (B-1) is recommended as a business street along the Site frontage with a 80-foot-wide right-of-way. Staff recommends that the applicant dedicate and show on the record plat dedication for the master-planned 80-foot-wide Crystal Rock Drive from the opposite right-of-way line (varies) along the Site frontage. The amount of dedication will vary due to prior dedications or platting. In any event, buildings must not be constructed across a property line or in the dedicated area recommended by the Sector Plan.

Master Planned and Existing Pedestrian and Bicycle Facilities and Circulation

The school design plans include master-planned pedestrian and bicycle facilities recommended on the adjacent roadways as follows:

- Middlebrook Road. There is an existing shared-use path (SR-71) on south side along Site's frontage.
- Great Seneca Highway. There is an existing five-foot-wide sidewalk on west side along Site's frontage.
- Wisteria Drive. There is an existing shared-use path DB-33 on north side.

- Crystal Rock Drive. There is an existing five-foot-wide sidewalk.
- Crystal Rock Drive. There is a master planned dual bikeway (shared use path and signed roadway DB-34) that is recommended in the 2009 Plan. This facility has not been designed or funded for construction. It is recommended that the applicant construct the master planned shared use path along the Site's frontage of Crystal Rock Drive. The shared use path would best serve the school if it was constructed on the school side of the road.
- Other off-site master planned bicycle and pedestrian facilities include Great Seneca Highway, where there is an existing master-planned shared use path SP-63 on the east side.

Internal Circulation and Bike Parking

The proposed internal circulation separates pedestrian and vehicular movements. ADA-compliant marked pedestrian crosswalks and handicap ramps exist at all the major intersections surrounding the proposed school, (see Attachment F for full pedestrian circulation plan). Staff recommends that the Applicant provide an analysis of pedestrian crossing times at each of the studied signalized intersections (including those adjacent to and those not adjacent to the school site) to MCDOT prior to occupancy of the new school.

The proposal shows numerous bicycle parking locations that appear to be sufficient for ancillary bicycle parking needs. However, decisions about the use of bicycles for student access to the school is up to the school principal. If additional bicycle facilities are necessary, there appears to be sufficient space for more bike racks.

Vehicular and Bus Access to Student Drop-Off and Bus-Boarding Areas

. There are currently three driveway locations for the school on Crystal Rock Drive. Under this redevelopment, access to the main entrance of the new school will be primarily from two driveway locations on Crystal Rock Drive; one for buses and the other d only for passenger vehicles. The two proposed access driveway locations appear to be adequate and reduce the number of access points on Crystal Rock Drive from three to two. The southernmost of these two access driveways will be aligned directly across from the Chesterbrook Academy Preschool driveway entrance.

There are currently no driveway locations for the existing school on Wisteria Drive. Under this redevelopment, there will be two new driveway locations on Wisteria Drive to provide access to the new recreational facilities and vehicle parking areas, including ADA accessible parking. Of these two access driveways, the easternmost will be aligned directly across from Circle Gate Drive which serves as the main entrance to an adjacent townhouse development.

Transportation staff supports the proposed driveway locations on Crystal Rock Drive and Wisteria Drive. The driveways will provide access for student drop-off, bus boarding, and standard vehicle parking spaces at appropriate and safe locations. There are 452 existing parking spaces on the Site currently; redevelopment results in 14 additional spaces, for a total of 466 spaces including sixteen accessible and six van-accessible spaces. The submitted plans show handicapped parking spaces and delineated ADA accessible paths and crosswalks to the school's entrances.

Traffic Signal at Wisteria Drive and Crystal Rock Drive

A traffic signal warrant analysis (Attachment D) was requested by MCDOT (letter dated July 26, 2016) for the intersection of Crystal Rock Drive and Wisteria Drive. MCDOT has also indicated in meetings with staff that they are contemplating a redesign of Wisteria Drive. Since the MCDOT request, the applicant evaluated the traffic conditions based on existing conditions (without the proposed Wisteria Road reconfiguration) but with added trip generation for the new school (total traffic conditions). The applicant has concluded that it would be *unlikely* that signalization would be warranted in the absence of the MCDOT redesign of Wisteria Drive. It is recommended that the applicant work with MCDOT on the reconfiguration of Wisteria Drive and any possible traffic signal warrant analysis.

Public Transit Service

Public transit service is available on Ride On Route 74, which operates on Great Seneca Highway, Middlebrook Road, and Crystal Rock Road (north of Middlebrook Road), and connects to Germantown Center. Ride-On Route 97 operates on Wisteria Drive and Middlebrook Road. Bus stops are located on Great Seneca Highway, Middlebrook Road and Wisteria Drive.

Local Area Transportation Review (LATR)

A traffic study to satisfy the LATR test was prepared because the number of peak-hour trips is 30 or more total trips. The total number of trips generated by the 2,400-student middle school would be 1,351 during the morning peak hours of 6:30 a.m. to 9:00 a.m. and 602 peak-hour vehicle trips within the school peak hour period of 2:00 to 3:00 p.m. The afternoon school peak hour is before the start of the weekday p.m. peak hour (4 p.m. to 7 p.m.). This represents 280 additional peak hour (2:00 to 3:00 p.m. timeframe) vehicle trips generated by the increase of 1,123 students. An additional 144 peak hour trips are estimated for the weekday p.m. peak hours of 4:00 p.m. to 7:00 p.m. The remaining peak hour evening trips will exit between 2 p.m. and 3 p.m. and after 7:00 p.m. timeframes.

The LATR test is a capacity test to compare analyzed levels of intersection congestion against the standards for the Germantown West Policy Area and Germantown Town Center Policy Area. The Seneca Valley High School Service Area was obtained by the applicant from the MCPS web site and utilized to determine trip distribution for the school site. The fifteen (15) intersections to be analyzed in the traffic study were determined based on the criterion in the *Local Area Transportation Review and Transportation Policy Area Review Guidelines* and after the identification of the cluster boundary.

To derive the number of peak-hour trips generated by the new high school, the applicant's transportation consultant utilized existing driveway data volume at Seneca Valley High School to determine an empirical peak-hour trip rate that is specific to the school. Trips from the existing traffic and 17 background development projects were combined with peak-hour traffic volume, and additional site-generated school trips to derive the total traffic volumes. For the background traffic, trip generation rates were obtained from the *Local Area Transportation Review and Transportation Policy Area Review Guidelines* (the Guidelines) of the department, and the Institute of Transportation Engineers (ITE) publication *Trip Generation, 9th Addition*.

To determine the traffic associated with the increase in student population, ITE rates were utilized as requested by staff for the typical peak hours of the roads from 6:30 a.m. to 9:30 a.m., and 4:00 p.m. to 7:00 p.m., and school peak hours of 2:00 to 3:00 p.m. were included (discussed below)

Distribution of the background and site-generated trips were shown to be reasonable. Distribution for background development projects were derived through a review of the trip distribution for the Germantown/Clarksburg Super District, and traffic analysis prepared for the Black Hills Mixed-Use TOD. The highest actual site-generated diversions are to the west on Middlebrook Road (25%).

There were no planned agency road improvements in the regional study area that would significantly affect the overall analysis.

The critical lane volumes for the fifteen studied intersections are below the applicable thresholds of 1,425 for the Germantown West Policy Area and 1,600 for the Germantown Town Center Policy Area (see Table 6).

TABLE 6

RESULTS OF CAPACITY ANALYSIS

TOTAL TRAFFIC CONDITIONS

INTERSECTION	AM PEAK HOUR	PM PEAK HOUR	THRESHOLD
MD 119@ Middlebrook Rd	1168	1012	1425
MD 119 @ Wisteria Dr	892	857	1425
Middlebrook Rd @ Waring Station Rd	975	1069	1425
Middlebrook Road @ Crystal Rock Dr	974	886	1600
MD 118 @ Crystal Rock Dr	1254	1395	1600
MD 118 @ Middlebrook Rd	1107	1158	1600
MD 118 @ Wisteria Dr	877	1185	1600
MD 118 @ Dawson Farm Rd	694	667	1425
Middlebrook Rd @ Century Blvd	755	817	1600
MD 118 @ Aircraft Rd	1427	1406	1600
Father Hurley Blvd @ Wisteria Dr	1039	754	1600
Wisteria Dr @ Crystal Rock Dr	553	602	1600
MD 119 @ Dawson Farm Rd	631	884	1425
MD 119 @ MD 117	1151	1311	1425
Wisteria Dr @ Caledonia Ct	800	644	1425

X(0000) - Level of Service (Critical Lane Volume)

1. Existing: The current traffic condition with traffic counts collected on March-April 2015. Turning movement counts at school driveways were collected in 2013.

2. Background: The existing condition plus the trips generated from approved but un-built nearby developments.

3. Total: The background condition plus the additional site-generated trips based on the proposal.

The results of the capacity analysis of total traffic conditions during the 2:00 p.m. to 3:00 p.m. are shown below in Table 7.

TABLE 7
RESULTS OF CAPACITY ANALYSIS
TOTAL TRAFFIC CONDITIONS
2:00- 3:00 PM

INTERSECTION	AM PEAK HOUR	PM PEAK HOUR	THRESHOLD
MD 119@ Middlebrook Rd	NA	613	1425
MD 119 @ Wisteria Dr	NA	553	1425
Middlebrook Rd @ Waring Station Rd	NA	694	1425
Middlebrook Road @ Crystal Rock Dr	NA	619	1600
MD 118 @ Crystal Rock Dr	NA	748	1600
MD 118 @ Middlebrook Rd	NA	706	1600
MD 118 @ Wisteria Dr	NA	620	1600
MD 118 @ Dawson Farm Rd	NA	337	1425
Middlebrook Rd @ Century Blvd	NA	627	1600
MD 118 @ Aircraft Rd	NA	651	1600
Father Hurley Blvd @ Wisteria Dr	NA	630	1600
Wisteria Dr @ Crystal Rock Dr	NA	486	1600
MD 119 @ Dawson Farm Rd	NA	356	1425
MD 119 @ MD 117	NA	524	1425
Wisteria Dr @ Caledonia Ct	NA	398	1425

No LATR improvements or mitigation is required because the traffic impact study indicates that the proposed expansion of the school will not generate traffic that exceeds the applicable congestion standard of 1,425 for the Germantown West Policy Area and 1,600 for the Germantown Town Center Policy Area.

Transportation Policy Area Review (TPAR)

Under the 2012-2016 Subdivision Staging Policy, the public schools are not explicitly exempt from the TPAR test and are subject to the transportation impact tax equaling 25% of the development impact tax. However, the Montgomery County Office of the County Executive, County Register does not require the development impact tax for public schools.

ENVIRONMENT

Environmental Guidelines

The Application meets the requirements of the Environmental Guidelines. The Site does not contain any environmental buffers, streams, and other sensitive features. The Site is within the Middle Great Seneca Creek watershed, a USE I-P designation. The Countywide Stream Protection Strategy (CSPS) rates the water quality in this watershed as in good condition.

Development of the project requires no forest removal, no impacts to the Stream Valley Buffer (SVB), and no impacts to a 100-Year-Floodplain. See the Forest Conservation staff report (Part A) for a complete analysis.

Forest Conservation

The Application meets the requirements of Chapter 22A of the Montgomery County Forest Conservation Law. See the Forest Conservation staff report (Part A) for a complete analysis.

COMMUNITY OUTREACH AND NOTIFICATION

Representatives from Moseley Architects and Montgomery County Public Schools held public meetings in 2013 on October 2, October 15, October 29, December 4, and December 17 at Seneca Valley High School to discuss the impact of the project with the surrounding community. The minutes of these meetings are attached. There was also a presentation to the public and the PTSA on February 24, 2014.

CONCLUSION

Based on information provided by the Applicant and the analysis contained in this report, Staff concludes that the proposed Mandatory Referral for the Seneca Valley High School will be compatible within its Site context and meets the applicable standards and guidelines for the environment.

Staff recommends approval of the Mandatory Referral with comments listed at the front of this report to be transmitted to the Montgomery County Public Schools.

Attachments:

A. Proposed site plans
B. Retaining Wall Exhibit
C. Traffic Study
D. Signal Warrant Analysis
E. Vehicular Circulation Plan
F. Pedestrian Circulation Plan
G. Landscape Plans
H. Photometric Plan
I. Stormwater Management Concept
J. LEED Project Checklist

Preliminary Plans Presentation

Seneca Valley High School
Revitalization/Expansion

Prepared for
Montgomery County Board of Education

January 2015

MOSELEY ARCHITECTS

Preliminary Plans Presentation

Seneca Valley High School

Revitalization/Expansion

19401 Crystal Rock Drive
Germantown, Maryland 20874

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Mr. James C. Song	Director, Department of Facilities Management
Mr. R. Craig Shuman	Director, Division of Construction
Mr. Michael P. Shpur	Architect, Division of Construction
Mr. James R. Tokar	Project Manager, Division of Construction
Ms. Deborah S. Szyfer	Facility Planner, Division of Long-range Planning

Facility Advisory Process Involvement

Participation

The preliminary plans for the Seneca Valley High School revitalization/expansion project were developed based on the educational specifications prepared by Montgomery County Public Schools (MCPS). Through a series of public meetings, several design alternatives were developed and evaluated. The proposed plans presented herein were reviewed and subsequently modified in accordance with recommendations and suggestions received during the schematic design meetings.

Participants in Facility Advisory Process

Mr. Marc Cohen	Principal	Seneca Valley High School
Ms. Angela Ackerson	Staff	Seneca Valley High School
Mr. Deysi Aguilar	Parent	Seneca Valley High School
Ms. Elizabeth Al-Atrash	Staff	Seneca Valley High School
Mr. Ivan J. Aranha	Assistant Principal	Seneca Valley High School
Ms. Jeannie Awono	Staff	Seneca Valley High School
Mr. Thomas Ayala	Staff	Seneca Valley High School
Mr. Jeff Baker	Staff	Seneca Valley High School
Mr. Charles Barnhart	Staff	Seneca Valley High School
Mrs. Justine Beachley	Parent	Seneca Valley High School
Mr. Michael Beachley	Parent	Seneca Valley High School
Mr. Brian Beubien	Assistant Principal	Seneca Valley High School
Mrs. Betsey Bell	Staff	Seneca Valley High School
Ms. Shelby Bidwell	Parent	Seneca Valley High School
Mr. Darren Black	Staff	Seneca Valley High School
Mrs. Anissa Black	Staff	Seneca Valley High School
Ms. Karen Bryant	Assistant Principal	Seneca Valley High School
Mr. Andrew Canavan	Neighbor	Community
Mrs. Nova Cobble	Staff	Seneca Valley High School
Miss Rayana Cooke	Student	Seneca Valley High School
Mr. Tom Costa	Parent	Seneca Valley High School
Mr. Adam Creuziger	Parent	Seneca Valley High School
Mrs. Jeri Crisi	Parent	Seneca Valley High School
Ms. Sarah Cummings	Construction Manager	Dustin Construction

Participants in Facility Advisory Process (continued)

Ms. Beth Cunningham	Parent	Seneca Valley High School
Mr. Kevin David	Parent	Seneca Valley High School
Miss Haley David	Student	Seneca Valley High School
Ms. Jo-Ann Davies	Staff	Seneca Valley High School
Mr. Michael Dempsey	Staff	Seneca Valley High School
Ms. Genny Dorsainvil	Parent	Seneca Valley High School
Mr. Richard Dorsey	Staff	Seneca Valley High School
Ms. Natasha Ezerski	Staff	Seneca Valley High School
Mrs. Leila Fahrner	Staff	Seneca Valley High School
Mrs. Ellen Ganz	Parent	Seneca Valley High School
Mr. Jim Ganz	Parent	Seneca Valley High School
Mr. Derrick C. Gilliam	Staff	Seneca Valley High School
Ms. Suzan Hernandez	Staff	Seneca Valley High School
Ms. Kari Hill	Parent	Seneca Valley High School
Ms. Monica Hill	Parent	Seneca Valley High School
Mrs. Suzanne Hsu	Parent	Seneca Valley High School
Miss Carmin Huynh	Student	Seneca Valley High School
Ms. Jan Ingram	Parent	Seneca Valley High School
Mr. Jesse Irvin	Staff	Seneca Valley High School
Ms. Amy Jackson	Neighbor	Community
Ms. Tammy Jarman	Staff	Seneca Valley High School
Mr. Mike Johnson	Staff	Seneca Valley High School
Mr. David Joseph	Parent	Seneca Valley High School
Ms. Allison Kapetanovic	Parent	Seneca Valley High School
Mr. Fred Kim	Staff	Seneca Valley High School
Mr. Robert Lee	Staff	Seneca Valley High School
Ms. Nicole Little-Cook	Staff	Seneca Valley High School
Ms. Julie Lucas	Parent	Seneca Valley High School
Mr. Bradley Lucas	Parent	Seneca Valley High School
Mr. John Maher	Staff	Seneca Valley High School
Ms. Mary Sue Martin	Parent	Seneca Valley High School
Miss Carolyn Majane	Student	Seneca Valley High School

Facility Advisory Process Involvement

Participants in Facility Advisory Process (continued)

Mr. Mathew McCaye	Parent	Seneca Valley High School
Ms. Vicki Moses	Parent	Seneca Valley High School
Mr. Martin Mulhern	Staff	Seneca Valley High School
Ms. Lisa Murdock	Parent	Seneca Valley High School
Ms. Katia Nascimento	Parent	Seneca Valley High School
Ms. Jean Nodine	Staff	Seneca Valley High School
Ms. Oralia Pearson	Staff	Seneca Valley High School
Ms. Maria Penafaustino	Staff	Seneca Valley High School
Ms. Penny Perlroth	Parent	Seneca Valley High School
Ms. Nicole Quiroga	Parent	Seneca Valley High School
Mr. Ronnie Raimerz	Neighbor	Community
Mr. Christopher Regan	Parent	Seneca Valley High School
Mrs. Melissa Regan	Parent	Seneca Valley High School
Mrs. Monique Riddick	Staff	Seneca Valley High School
Mrs. Susie Rosenbaum	Parent	Seneca Valley High School
Mr. T.R. Rothert	Staff	Seneca Valley High School
Mr. Mike Rutland	Staff	Seneca Valley High School
Mr. Richard Schrock	Parent	Seneca Valley High School
Ms. Michelle Searle	Staff	Seneca Valley High School
Mr. Michael Shpur	Architect	Division of Construction, MCPS
Mr. Mark Singleton	Staff	Seneca Valley High School
Ms. Sheila Sinicrope	Staff	Seneca Valley High School
Mr. Scott Smith	Staff	Seneca Valley High School
Mrs. Beth Sokoloff	Parent	Seneca Valley High School
Mr. Eddie Staskal	Parent	Seneca Valley High School
Mrs. Pam Bruce-Staskal	Parent	Seneca Valley High School
Mr. Rob Staskal	Student	Seneca Valley High School
Mrs. Meaghan Stuckey	Staff	Seneca Valley High School
Ms. Deborah Sullivan	Staff	Seneca Valley High School
Mrs. Rebecca Sutton	Staff	Seneca Valley High School
Ms. Deborah Szyfer	Facility Planner	Division of Long-range Planning, MCPS
Mrs. Katherine Thomas	Staff	Seneca Valley High School

Facility Advisory Process Involvement

Participants in Facility Advisory Process (continued)

Ms. Catherine Thompson	Staff	Seneca Valley High School
Mr. James Tokar	Project Manager	Division of Construction, MCPS
Ms. Debra Veith	Staff	Seneca Valley High School
Mr. Bob Walko	Staff	Seneca Valley High School
Ms. Anita Weinstein	Staff	Seneca Valley High School
Ms. Vonetta Wideman	Staff	Seneca Valley High School
Ms. JoAnn Wilson	Staff	Seneca Valley High School
Mrs. LeeAnn Wolfe	Staff	Seneca Valley High School
Ms. Chantel Wright	Parent	Seneca Valley High School
Mr. Andrew Ziolkowski	Parent	Seneca Valley High School
Mr. Morris Zwick	Parent	Seneca Valley High School

Project Information

Background/History

Location: 19401 Crystal Rock Drive, Germantown, MD 20874

Cluster: Seneca Valley High School

History and Square footage of Existing Building:

1974	Construction of Original School	217,878 SF
1977	Addition	33,400 SF
TOTAL		251,278 SF

Site Size: 29.32 Acres

Current and Projected School Capacity and Student Enrollment

	Actual	Projections					
	2014-2015	**2015-2016**	**2016-2017**	**2017-2018**	**2018-2019**	**2019-2020**	**2020-2021**
Program Capacity	1374	1374	1374	1374	2400	2400	2400
Enrollment	1281	1237	1258	1285	1309	1350	1395
Space Available/Deficit	*93*	*137*	*116*	*89*	*1091*	*1050*	*1005*

Number of Relocatable Classrooms: 1

Current Parking Spaces: 374

Program and Planning Objectives

The purpose of this project is to revitalize/expand Seneca Valley High School. Based on the condition of the existing facility and the cost to bring the school into compliance with code requirements, the most cost effective solution is to construct a replacement facility adjacent to the existing school. The capacity of the school will increase from 1,374 students to 2,423 students with a core capacity for 2,400 students. The increased capacity to Seneca Valley High School provides the opportunity to address projected overutilization of nearby Clarksburg and Northwest high schools through student reassignments in the future. A School-based Wellness Center (SBWC) that was recently approved by the County Council in May 2014 will be designed as an add-alternate. Funding for the SBWC is included in the Department of Health and Human Services Capital Improvements Program.

The flexible building design for the school will accommodate current and future high school programs and delivery models. A philosophy of adaptable classrooms will facilitate various presentation formats and learning activities. Multipurpose and flexible spaces will be designed that can be used by both staff and students to collaborate on projects. Furniture that is easily reconfigurable will be provided to maximize the flexibility in the school.

The building and site design will include the following:

- A well-defined and welcoming main entrance with access control and supervision;
- Clear internal circulation with simple way finding;
- A comfortable, naturally lit, and energy efficient environment;
- After-hours community use of the gymnasiums, cafeteria, auditorium, and library media center that can be secured from the rest of the building;
- A building layout that is easy to supervise;
- Two courtyards that provide natural daylight into the building as well as outdoor instructional areas and seating areas; and
- Safe separation of vehicular and pedestrian traffic on site.

Teaching Stations and Spaces Provided When Completed:

(Number of teaching stations used to calculate the capacity of the school is indicated within parentheses)

Summary of Classrooms:

Applied Engineering Laboratory	1	(1)
Academy of Information Technology (AOIT) Laboratory	1	(1)
Art Room	4	(4)
Auto Technology Laboratory	1	(1)
Career Child Development Laboratory	1	(1)
College, Career, Research and Development (CCRD) Classroom	1	(1)
Choral Room	1	(1)
College Institute Classroom	2	(2)
Computer Laboratory	3	(3)
Dance Studio	1	(1)
Drama Classroom	1	(1)
Development Reading	1	(1)
Digital Art Laboratory	1	(1)
Foundation of Technology Laboratory	3	(3)
Health Classroom	2	(2)
Health Professions Laboratory	1	(1)
International Baccalaureate (IB) Film Classroom	1	(1)
International Baccalaureate (IB) Seminar Classroom	1	(1)
Instrumental Room	1	(1)
Learning for Independence (LFI) Classroom	4	(4)
Multipurpose Laboratory	1	(1)
Naval Junior Reserves Officer Training Corp (NJROTC) Classroom	2	(2)
School Community-based (SCB) Classroom	2	(2)
Science Laboratory	16	(16)
Small Ensemble/Keyboard Laboratory	1	(1)
Standard Classroom	54	(54)
Weight Room	1	(1)
Wrestling Room	1	(1)

Summary of Support Rooms:

Adaptive Program Center	1
College Institute Student Lounge	1
Community Career Resource Room	1
Dark Room	1
English for Students of Other Languages (ESOL) Student Resource	1
Greenhouse	1
Journalism Staff Room	1
Kiln Room	1
Life Skills Resource Room	1
Literary Magazine Staff Room	1
Music Practice Rooms	4
NJROTC Armory	1
NJROTC Fitness Room	1
Occupational Therapy (OT)/Physical Training (PT) Room	1
Physical Education Locker Room	2
Physical Education Training Room	1
Physical Education Team Room	7
Project/Collaboration Room	6
Science Preparation Room	6
Special Education Resource	2
Speech and Language	2
Student Council Suite	1
Yearbook Staff Room	1

Project Information (continued)

Teaching Stations and Spaces Provided When Completed (continued):

Core Facilities:		
Administration Suite	1	
Auditorium	1	
Counseling Suite	1	
Instructional Media Center	1	
Health Suite	1	
Main Gymnasium	1	(2)
Second Gymnasium	1	(2)
Security Suite	1	
Staff Dining Room	1	
Staff Offices	7	
Staff Room	2	
Staff Workrooms	3	
Student Dining/Kitchen	1	
Total teaching stations		**(114)**

Project Information (continued)

Site Design

Site Features:
Seneca Valley High School is situated on a 29.32 acre parcel of land located at 19401 Crystal Rock Drive, Germantown, Maryland. The site is bound on the northeast by Middlebrook Road, the southeast by Great Seneca Highway (Maryland Route 119), the southwest by Wisteria Drive, and on the northwest by Crystal Rock Drive. The site topography is defined by three terraced levels, stepping downgrade from Wisteria Drive to Great Seneca Highway. The existing school, staff and student parking, bus access, and student drop-off occupy the majority of the uppermost terrace. The basketball and tennis courts, stadium, running track, and baseball, softball, and soccer fields are located on the middle and lower terraces.

The replacement building will predominantly occupy the middle terrace. New athletic fields will be terraced along Middlebrook Road and Great Seneca Highway. Staff, student, and visitor parking along with a student drop-off loop will be accessed from Crystal Rock Drive and will provide convenient, *Americans with Disabilities Act* compliant access to the main entrance to the building. Two additional parking areas, each with access from Wisteria Drive, are proposed along the southwest side of the school. The proposed site design provides on-site staging areas for 30 buses, 439 parking spaces, and on-site student drop-off queuing for 30 cars.

Stormwater Management System:
A stormwater management system will be provided using environmental site design features and facilities that provides both stormwater runoff quality treatment and quantity attenuation. The stormwater management system for the proposed site will feature numerous micro-scale bio-retention facilities, bio-swales, infiltration practice, and other low-impact development facilities. Stormwater outfalls will discharge to the existing public storm drainage system in and along Great Seneca Highway.

Utilities:
All existing utility services and connections, including water, sewer, gas, electric, telephone and telecommunications, will be upgraded to support the needs of the replacement building. The new water service will be sized to supply the required on-site fire hydrants and to meet the building's fire protection and domestic supply needs. All upgraded and new service connections will be made to the existing utilities in roadways adjacent to the site.

Building Design

General Description:
The proposed replacement building, designed to meet MCPS educational specifications, will be a steel-framed structure with brick veneer and masonry interior walls. The building will be designed in two main sections: a three-story classroom wing and a two-story public wing. The public wing houses the auditorium, athletic facilities, and the student dining room. The instructional media center, athletic facilities, and auditorium will be available for after-hours use, while the remainder of the building remains secured. The administrative suite located at the main entrance to the building, incorporates a securable glass vestibule that requires all visitors to check-in at the main office before entering the school. The main entrance to the school will be visible from Middlebrook Road and Crystal Rock Drive. The academic wing will be organized around two large courtyards that will provide natural light to interior classrooms and provide efficient, conveniently monitored interior circulation. A three-story master -planned 17-classroom addition will be included in the design to accommodate future growth. A School-Based Wellness Center (SBWC) will be designed as an add-alternate. Funding for the SBWC is included in the Montgomery County Department of Health and Human Services Capital Improvements Program.

The character of the proposed building will create an attractive and inviting school building for the community. The visual impact of large expanses of masonry will be reduced with window fenestrations, shifting building volumes, and by varying architectural exterior finishes. Varying brick colors, ground-face block, pre-cast concrete accents, and small metal roof canopies will be used to break up the mass of the building.

Classroom Technology:
Classrooms will be designed with wireless network access and interactive whiteboard systems to support the interactive and mobile technologies that allow students to participate in technology enriched learning. The mobile technology will support flexibility to reconfigure classrooms and learning throughout the instructional day. Full building wireless technologies will enable schools to access digital content, curricular, and instructional resources with greater flexibility and efficiency.

Code Compliance/Accessibility:
All areas will be designed to meet the most current national and local building codes including fire, life-safety, and health standards. The facility will be in full compliance with the *Americans with Disabilities Act (ADA)*.

Exterior Lighting:
The exterior lighting of the revitalized/expanded school will be designed to shield adjacent residences from intrusive light glare while maintaining light levels for safety and security. The light fixtures will be 100% down-lighting, dark sky compliant, to minimize light pollution into the night sky. The exterior light fixtures at canopies, building, security and parking lots will be light emitting-diode (LED) type fixtures that are long lasting and energy efficient.

Project Information (continued)

Building Design (continued)

Sustainable Design:
In alignment with the MCPS Environmental Sustainability Management Plan, this project is registered and will be certified for silver or higher rating in conformance with *Leadership in Energy and Environmental Design (LEED)* certification through the United States Green Building Council. Sustainable aspects of the project include but not limited to the following:

- Encouraging alternative transportation to the school by providing conveniently located bike racks and preferred parking for low emitting/fuel efficient vehicles and carpools;
- Preserving a high percentage of vegetated open space to protect the surrounding eco system;
- Managing storm water to reduce runoff quantity and improve quality;
- Using highly-reflective roof surfaces combined with a vegetative roof portion to reduce heat island effect and heat gain to the building;
- Installing water conserving, low-flow plumbing fixtures;
- Optimizing the energy performance of the building by providing a highly energy-efficient building envelope, lighting system and heating, ventilation and air conditioning (HVAC) system utilizing a water source heat pump system coupled with a dedicated energy recovery outdoor air system;
- Optimizing equipment selection, installation, and operation of HVAC equipment through enhanced commissioning of the building energy systems;
- Diverting construction "waste" from landfills that can instead be salvaged for reuse or recycled;
- Adhering to construction indoor air quality management plans and using low-emitting building materials to safeguard occupant health;
- Providing a high level of occupant control over individual lighting and thermal comfort to promote enhanced indoor environment;
- Promoting user education to increase awareness of the green features and to utilize the school as a teaching tool for environmental and sustainability topics;
- Using construction materials that are recycled and regionally manufactured;
- Implementing a Green Housekeeping plan;
- Maximizing daylight in classrooms; and
- Minimizing background noise level from HVAC systems in classrooms and other core learning spaces and control reverberation time with sufficient sound absorptive materials.

Project Information (continued)

Building Design (continued)

Mechanical Systems:

Heating, Ventilation and Air-Conditioning System:
The replacement building will be heated and cooled by a two-pipe Water Source Heat Pump (WSHP) system. The WSHP system will consist of individual, vertical water-cooled units for each classroom. The WSHPs will be tied to a loop that also contains a boiler plant and an open cooling tower to add or remove heat to the loop as required. Ventilation for the classrooms will be provided by a Dedicated Outdoor Air System (DOAS). The DOAS will be rooftop-mounted WSHP units with enthalpy wheel style energy-recovery. Offices will be served by Variable Refrigerant Flow Systems.

Plumbing System:
Plumbing fixtures will comply with the ADA requirements. The balance of the sanitary sewer and domestic water systems will be provided in accordance with the latest *Washington Suburban Sanitary Commission (WSSC) Plumbing and Fuel Gas Code* and regulations. Water-conserving plumbing fixtures will be used.

Fire Protection System:
The school will be fully sprinklered with a wet-pipe system in accordance with the *National Fire Protection Association Code (NFPA-13 and 14)* and will be provided with a voice-annunciated fire alarm system.

Energy Management System:
A primary design factor will be conservation of energy. The importance and consideration placed on energy conservation will be reflected in the configuration and orientation of the building, the selection of materials, and the mechanical/electrical systems utilized. In addition, a direct digital automatic temperature control system will be provided to monitor and control all new HVAC equipment from a central building management system. The new school will be designed to exceed *ASHRAE 90.1-2007* energy requirements and the *International Building Code (IBC)* basic energy conservation codes, as well as Montgomery County energy conservation codes. The design will incorporate the *ANSI/ASHRAE/IES Energy Efficient Design* for new buildings.

Building Design (continued)

Electrical Systems:

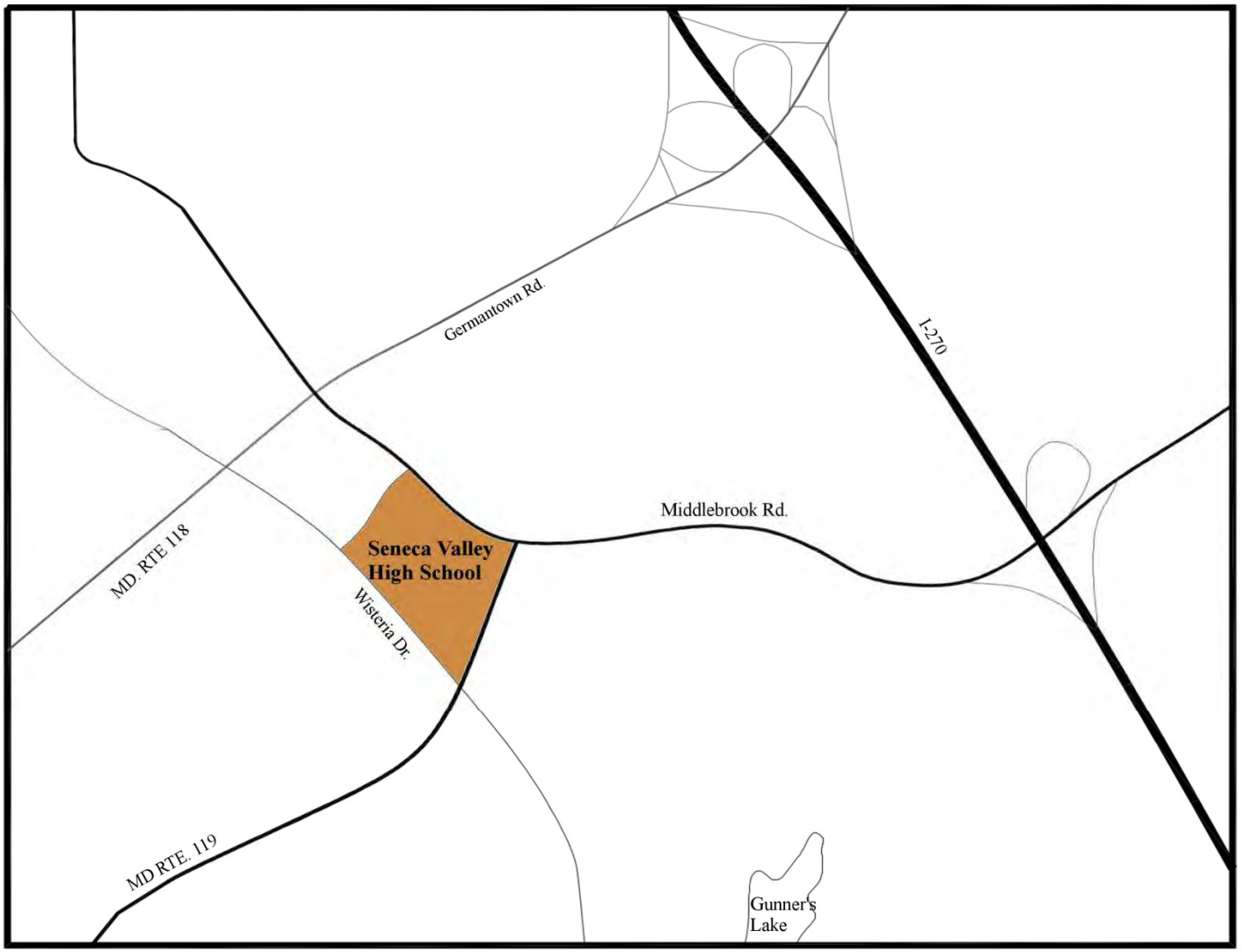
Power distribution:
The proposed school will receive two new 277/480-volt, 3-phase, 4-wire electrical services. A utility company pad-mounted transformer will provide the 277/480-volt power to the building. It also will have emergency power by a natural gas-fueled modular generator to handle fire alarm, emergency lighting, telecommunications, kitchen freezer and cooler, as well as the energy recovery units that provide freeze protection. Lighting will be MCPS standard energy-efficient, pendant-mounted direct/indirect fluorescent fixtures in the classrooms. Parabolic and lensed-type recessed type fluorescent fixtures will be used in offices, corridors, kitchen, and other spaces with lay–in ceilings.

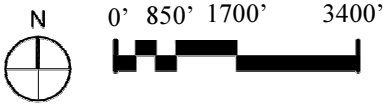
Public Address System:
A new public address system will be provided to serve the new facility. Each classroom will have a call back switch and speakers. The corridors and restrooms will have speakers only.

Security System:
The building will include a visitor management system that will provide office staff with the ability to monitor and control visitor access to the school building. The visitor management system will include a computer-based visitor sign-in system that will monitor and track all visitors to the school building. The new school also will have a new building security system consisting of motion and contact sensors at all exterior doors that will be monitored by the MCPS Department of Safety and Security. In addition, a secure entry vestibule will direct all visitors to check in at the front desk before entering the school with a second set of doors always locked during school hours.

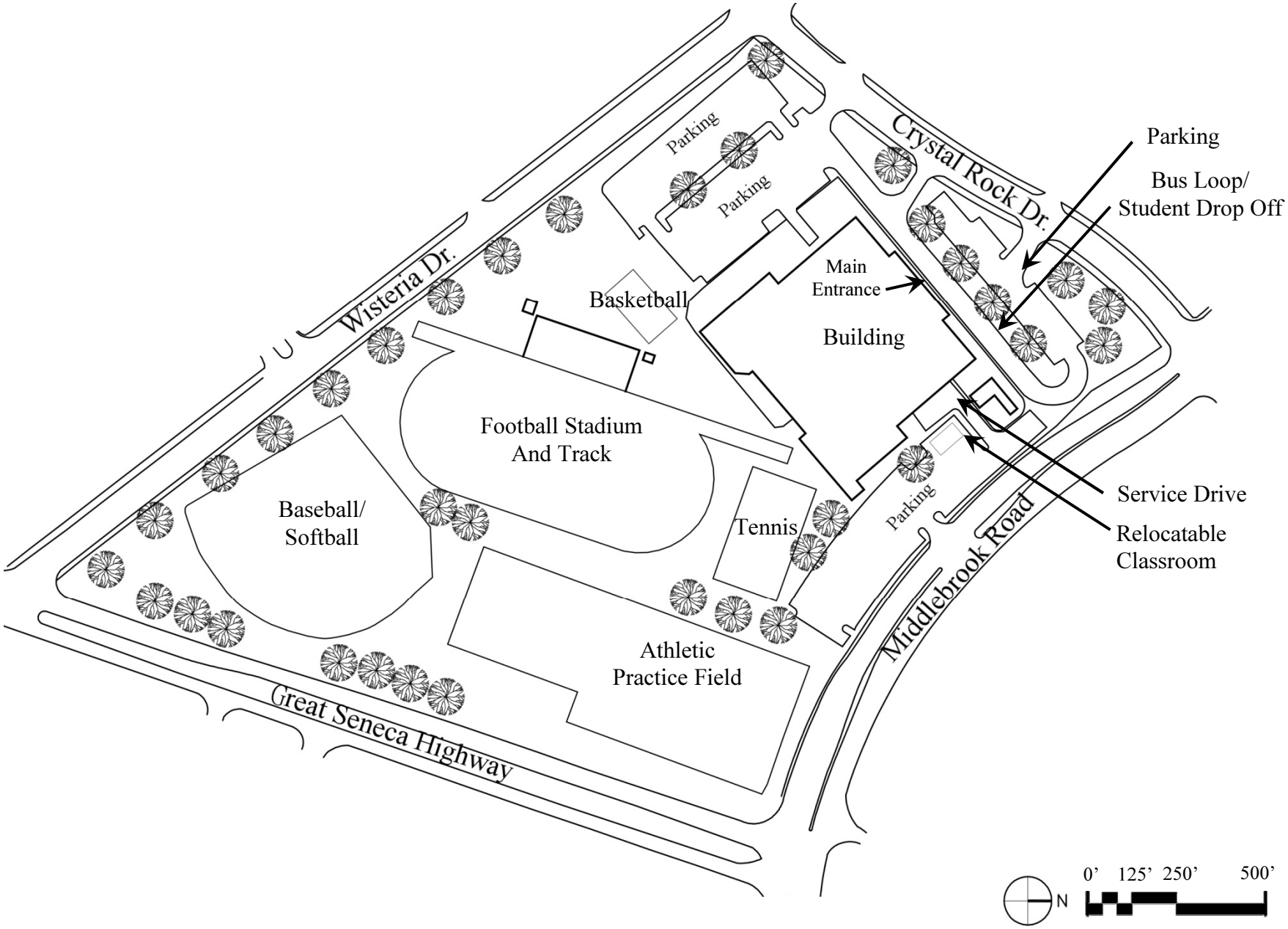
Technology Infrastructure:
The building will be equipped with data/voice/video over internet protocol (VoIP), video and wireless systems. The network system design will include outlet boxes, conduits, surface raceways, conduit sleeves, and properly-sized telecommunications closets for the low voltage systems. The infrastructure system will consist of a fiber-optic backbone cable system with category 5E UTP cable for station drop connectivity, supporting switched 10/100/1000 Mbps ethernet. With the improved switching systems, these systems have the capability of providing a gigabyte ethernet system with provisions to accommodate future changes in technology. For video distribution, a 1,000 Mhz bi-directional, broadband distribution system with coax trunk cable and RG-6 quad-shielded coax drop cable will be utilized. The system allows full video cable spectrum to every part of the building with five dedicated channels: one channel for school distribution from the studio, two channels for school distribution or two-way video from any point in the building and two spare channels available for future use.

Vicinity Map

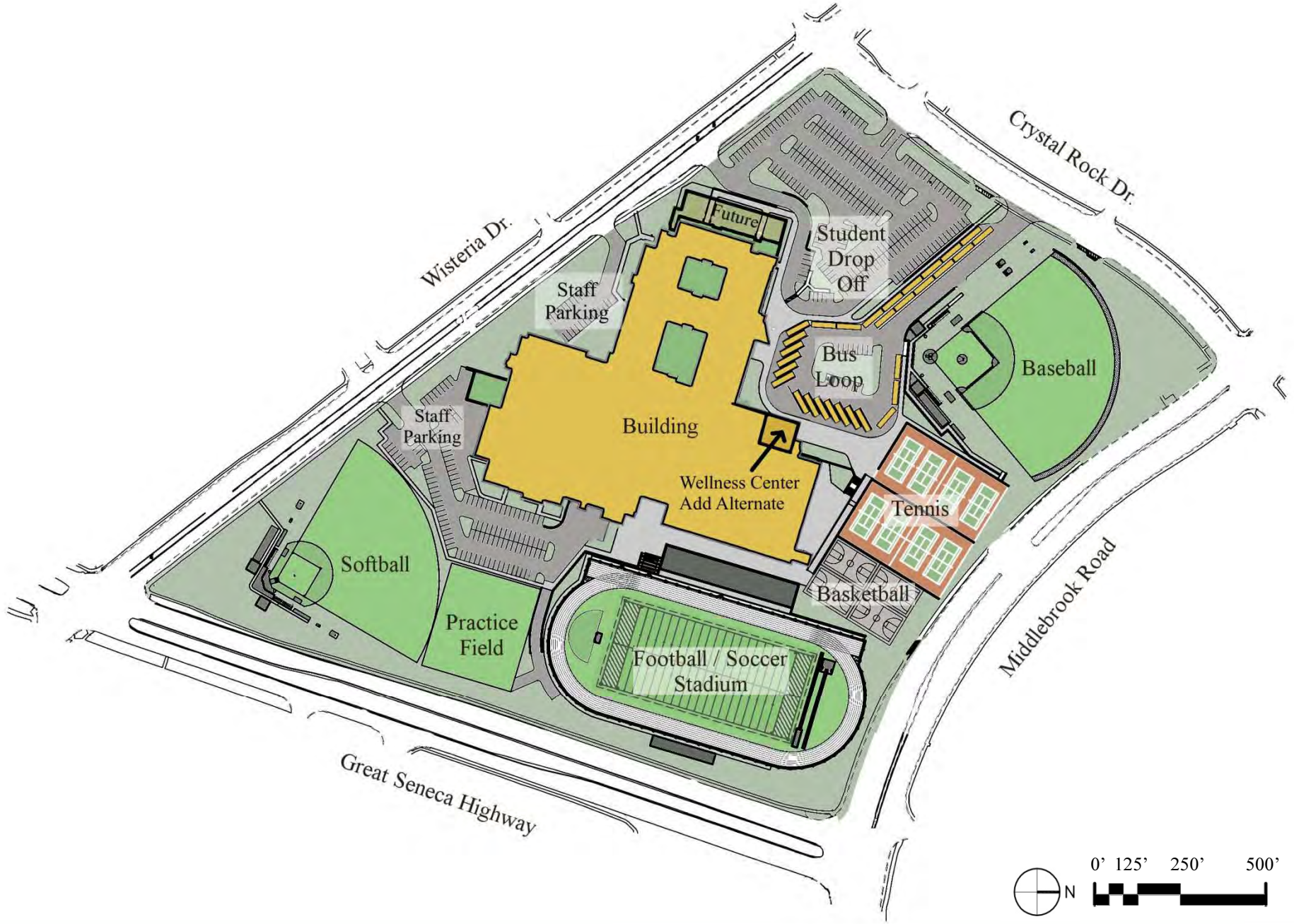




Existing Site Plan



Proposed Site Plan



Existing Ground Floor Plan

PROJECT SPACE LEGEND

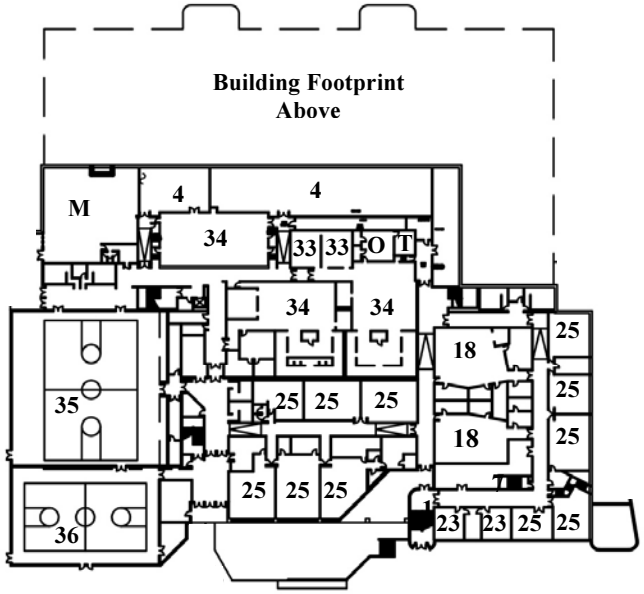
1 Applied Engineering Laboratory
2 Academy of Information Technology (AOIT) Laboratory
3 Art Room
4 Auto Technology Laboratory
5 Career Child Development Laboratory
6 College, Career, Reseach and Development (CCRD) Classroom
7 Choral Room
8 College Institute
9 Student Activities
10 Dance Room

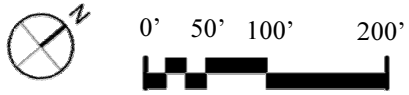
11 Drama Classroom
12 Development Reading
13 Digital Art Laboratory
14 Foundation of Technology Laboratory
15 Health Classroom
16 Health Professions Laboratory
17 International Baccalaureate (IB)
18 Instrumental Room
19 Learning for Independence (LFI)
20 Multipurpose Laboratory

21 Naval Junior Reserves Officer Training Corp (NJROTC)
22 School Community-based (SCB)
23 Science Laboratory
24 Small Ensemble/Keyboard Laboratory
25 Standard Classroom
26 Special Education
27 Weight Room
28 Wrestling
29 Administration Suite
30 Auditorium

31 Counseling Suite
32 Instructional Media Center
33 Health Suite
34 Physical Education
35 Main Gymnasium
36 Second Gymnasium
37 Security Suite
38 Staff Dining Room
39 Adaptive Program Center
40 Staff Room

41 Staff Workroom
42 Student Dining
43 Project/Collaboration Room
44 Kitchen
45 Wrestling
46 Wellness Center
T Toilet
M Mechanical Room
O Office
S Storage





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37 Security Suite
38 Staff Dining Room
39 Adaptive Program Center
40 Staff Room

41 Staff Workroom
42 Student Dining
43 Project/Collaboration Room
44 Kitchen
45 Wrestling
46 Wellness Center

CS Concession Stand
DR Dressing Room
LR Locker Room
M Mechanical Room
MU Make-Up
O Office
R Receiving
RF Refrigerator/Freezer
S Storage
SC Set Construction
T Toilet
TC Trash Compactor
TR Team Room

Existing First Floor Plan

PROJECT SPACE LEGEND

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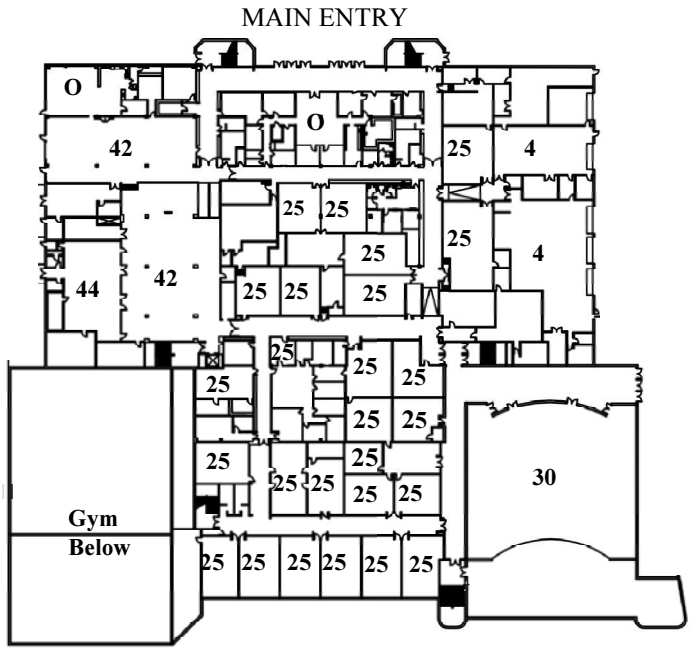

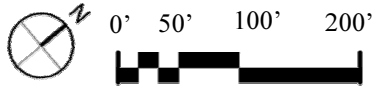

Proposed First Floor Plan

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39 Adaptive Program Center
40 Staff Room

41 Staff Workroom
42 Student Dining
43 Project/Collaboration Room
44 Kitchen
45 Wrestling
46 Wellness Center
T Toilet
M Mechanical Room
O Office
S Storage

PROJECT COLOR LEGEND

- CLASSROOMS
- SUPPORT SPACES
- CORE FACILITIES
- BUILDING SERVICES / MECHANICAL / ELECTRICAL
- ADD ALTERNATE

N

0’ 50’ 100’ 200’

Existing Second Floor Plan

PROJECT SPACE LEGEND

1 Applied Engineering Laboratory
2 Academy of Information Technology (AOIT) Laboratory
3 Art Room
4 Auto Technology Laboratory
5 Career Child Development Laboratory
6 College, Career, Reseach and Development (CCRD) Classroom
7 Choral Room
8 College Institute
9 Student Activities
10 Dance Room

11 Drama Classroom
12 Development Reading
13 Digital Art Laboratory
14 Foundation of Technology Laboratory
15 Health Classroom
16 Health Professions Laboratory
17 International Baccalaureate (IB)
18 Instrumental Room
19 Learning for Independence (LFI)
20 Multipurpose Laboratory

21 Naval Junior Reserves Officer Training Corp (NJROTC)
22 School Community-based (SCB)
23 Science Laboratory
24 Small Ensemble/Keyboard Laboratory
25 Standard Classroom
26 Special Education
27 Weight Room
28 Wrestling
29 Administration Suite
30 Auditorium

31 Counseling Suite
32 Instructional Media Center
33 Health Suite
34 Physical Education
35 Main Gymnasium
36 Second Gymnasium
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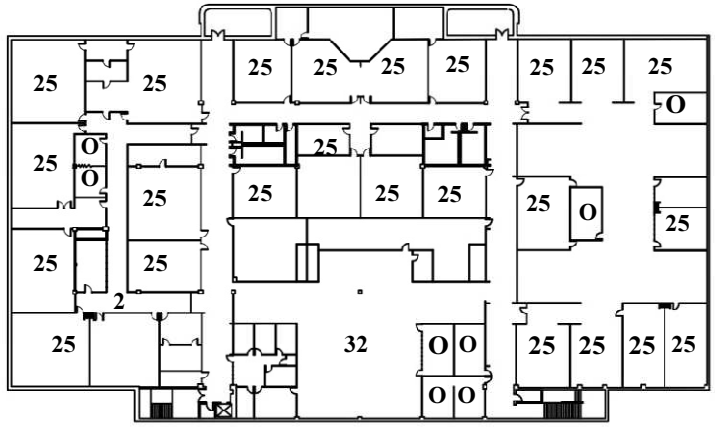

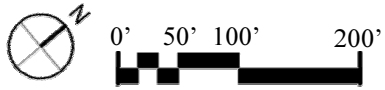

Proposed Second Floor Plan

PROJECT SPACE LEGEND

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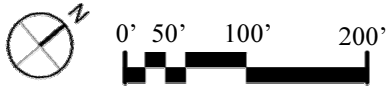
PROJECT COLOR LEGEND

- CLASSROOMS
- SUPPORT SPACES
- CORE FACILITIES
- BUILDING SERVICES / MECHANICAL / ELECTRICAL
- ADD ALTERNATE



(No Existing Third Floor)

Proposed Third Floor Plan

PROJECT SPACE LEGEND

1 Applied Engineering Laboratory
2 Academy of Information Technology (AOIT) Laboratory
3 Art Room
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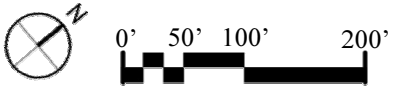
S Storage

PROJECT COLOR LEGEND

CLASSROOMS
SUPPORT SPACES
CORE FACILITIES
BUILDING SERVICES / MECHANICAL / ELECTRICAL
ADD ALTERNATE



(No Existing Fourth Floor)

Proposed Fourth Floor Plan Area To Accommodate 2400 Student Capacity

PROJECT SPACE LEGEND

1 Applied Engineering Laboratory
2 Academy of Information Technology (AOIT) Laboratory
3 Art Room
4 Auto Technology Laboratory
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6 College, Career, Reseach and Development (CCRD) Classroom
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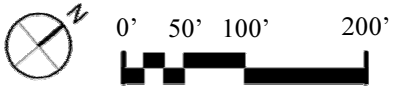
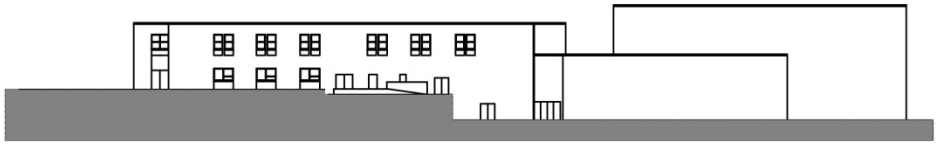
PROJECT COLOR LEGEND

- CLASSROOMS
- SUPPORT SPACES
- CORE FACILITIES
- BUILDING SERVICES / MECHANICAL / ELECTRICAL
- ADD ALTERNATE



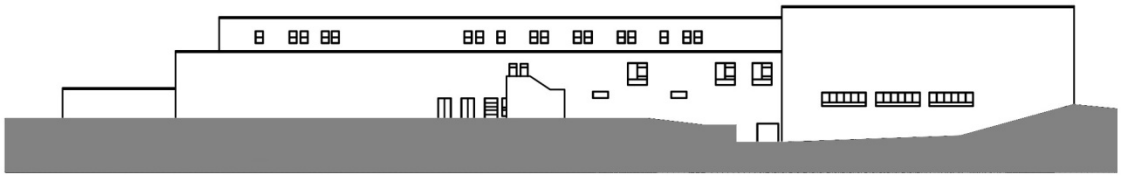
Existing Elevations

NORTH ELEVATION



WEST ELEVATION

SOUTH ELEVATION



EAST ELEVATION

0’ 45’ 90’ 180’

Proposed Elevations

NORTH ELEVATION

WEST ELEVATION

SOUTH ELEVATION

EAST ELEVATION

0’ 50’ 100’ 200’

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Design Team Members

Architect:	Moseley Architects
Civil Engineer:	Adtek Engineers, Inc.
Structural Engineer:	Moseley Architects
Mechanical, Electrical & Plumbing Engineers:	Strickler Associates, LTD
Kitchen Consultants:	Nyikos Associates, Inc.
Theater and Acoustical Consultants	Polysonics Corporation

Project Schedule

Preliminary Plans Presentation:	January 2015
Construction Documents Completed:	April 2016
Award Constructions Contract:	July 2016
Building Completed	August 2018
Site Completed:	August 2019

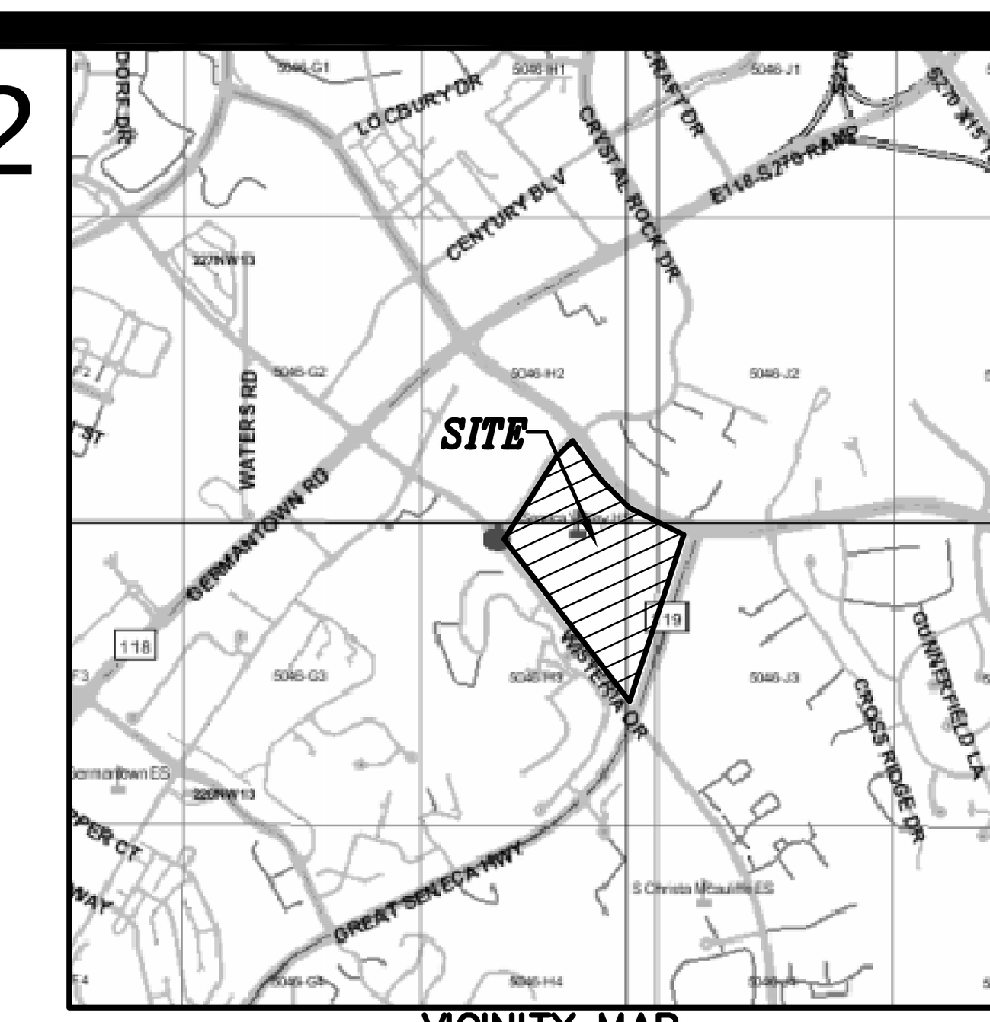
Estimated Construction Costs

	2,000 Capacity	**2,400 Capacity**
Existing Building:	251,278 square feet	251,278 square feet
Demolition:	(251,278) square feet	(251,278) square feet
New Construction:	371,395 square feet	436,378 square feet
Total	371,395 square feet	436,378 square feet
Construction Cost Estimate for Building and Site:	$116,594,000	$ 130,000,000

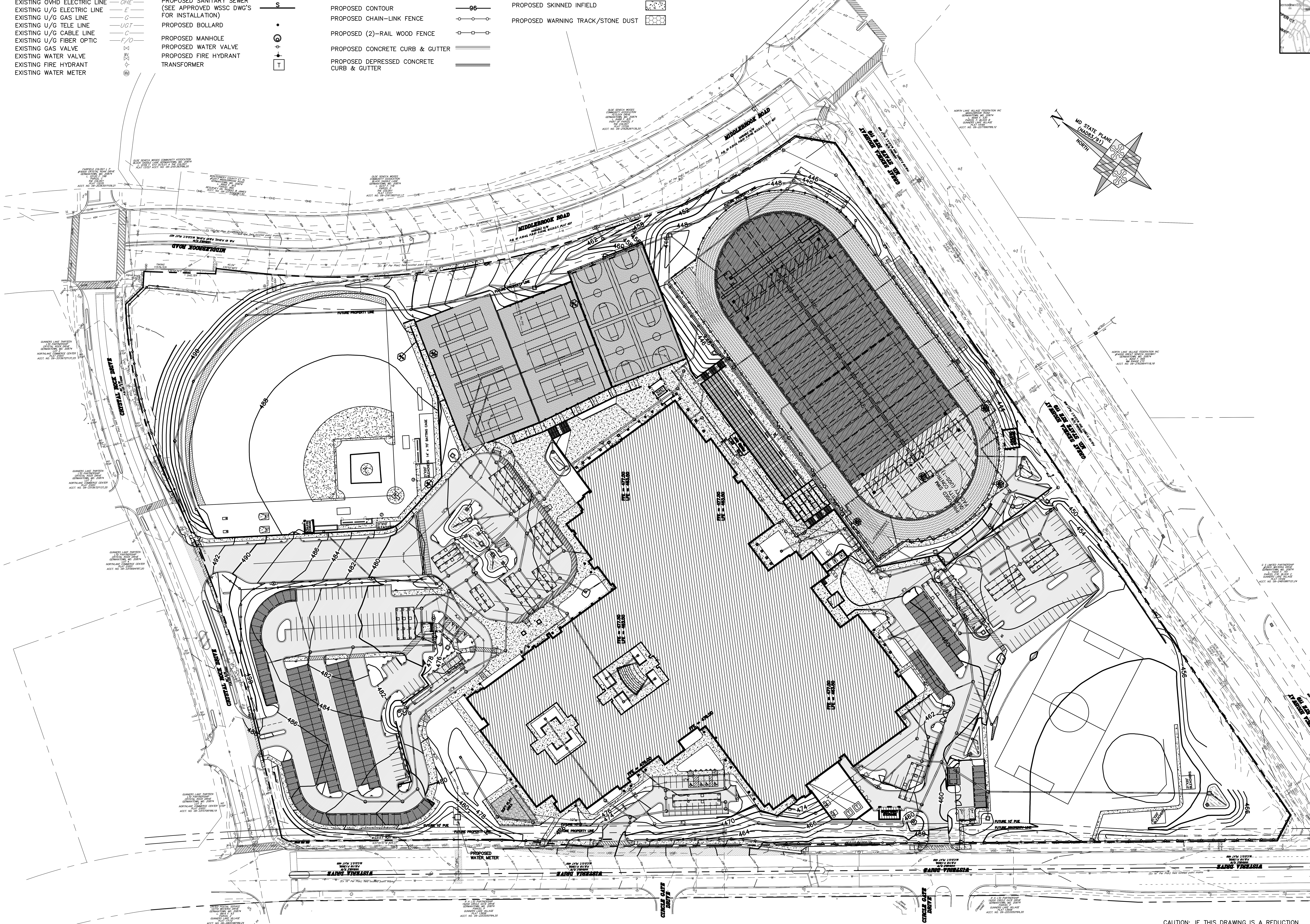
Attachment A-2

LEGEND

- EXISTING BOUNDARY LINE
- EXISTING PROPERTY LINE
- EXISTING CONTOUR
- EXISTING BENCHMARK
- EXISTING SEWER MANHOLE
- EXISTING WATER MANHOLE
- EXISTING STORM MANHOLE
- EXISTING TELEPHONE MANHOLE
- EXISTING ELECTRIC MANHOLE
- EXISTING GAS MANHOLE
- EXISTING SANITARY SEWER
- EXISTING WATER LINE
- EXISTING STORM DRAIN
- EXISTING UTILITY POLE
- EXISTING OVHD ELECTRIC LINE
- EXISTING U/G ELECTRIC LINE
- EXISTING U/G GAS LINE
- EXISTING U/G TELE LINE
- EXISTING U/G CABLE LINE
- EXISTING U/G FIBER OPTIC
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING LIGHT
- EXISTING SIGN
- EXISTING BOLLARD
- EXISTING RIPRAP
- EXISTING CHAIN LINK FENCE
- EXISTING TREE LINE
- EXISTING TREE
- EXISTING BORING LOCATION
- PROPOSED PROPERTY LINE
- PROPOSED STORM DRAIN
- PROPOSED WATERLINE (SEE APPROVED WSSC DWG'S FOR INSTALLATION)
- PROPOSED SANITARY SEWER (SEE APPROVED WSSC DWG'S FOR INSTALLATION)
- PROPOSED BOLLARD
- PROPOSED MANHOLE
- PROPOSED WATER VALVE
- PROPOSED FIRE HYDRANT
- TRANSFORMER
- PROPOSED ELECTRIC LINE (APPROX LOCATION, SEE MEP DWG'S FOR EXACT LOCATION)
- PROPOSED TELEPHONE LINE (APPROX LOCATION, SEE MEP DWG'S FOR EXACT LOCATION)
- PROPOSED CABLE/TV LINE (APPROX LOCATION, SEE MEP DWG'S FOR EXACT LOCATION)
- PROPOSED LIGHT POLE (APPROX LOCATION, SEE MEP DWG'S FOR EXACT LOCATION)
- PROPOSED TRANSFORMER (SEE MEP DWG'S FOR DETAILS)
- PROPOSED GENERATOR (SEE MEP DWG'S FOR DETAILS)
- PROPOSED CONTOUR
- PROPOSED CHAIN-LINK FENCE
- PROPOSED (2)-RAIL WOOD FENCE
- PROPOSED CONCRETE CURB & GUTTER
- PROPOSED DEPRESSED CONCRETE CURB & GUTTER
- PROPOSED BUILDING (SEE ARCH DWG'S)
- PROPOSED CONCRETE SIDEWALK
- PROPOSED HEAVY DUTY CONCRETE
- PROPOSED LIGHT DUTY ASPHALT
- PROPOSED REGULAR DUTY ASPHALT
- PROPOSED 2"MILL & OVERLAY (MIN 5' OUTSIDE SAW CUT)
- PROPOSED SYNTHETIC TURF
- PROPOSED SKINNED INFIELD
- PROPOSED WARNING TRACK/STONE DUST
- PROPOSED PERVIOUS CONCRETE
- PROPOSED MULCHED PLAY AREA
- PROPOSED BIOFILTER/SAND FILTER SEE STORMWATER DETAILS



VICINITY MAP
SCALE: 1" = 2,000'±
(WSSC GRID: 227 NW 13)
MONTGOMERY COUNTY



BUILDING COVERAGE

SITE AREA = 1,277,215 SF
LIMITS OF DISTURBANCE = 1,257,243 SF
EXISTING BUILDING = 118,482 SF
PROPOSED BUILDING = 211,554 SF
PROPOSED HEIGHT =
PROPOSED BUILDING COVERAGE = 16.56%

EXISTING PARKING TABULATION

STANDARD SPACES (9'x 18')........................442
ACCESSIBLE SPACES (8'x 18')........................10
TOTAL EXISTING 452

PROPOSED PARKING TABULATION

STANDARD SPACES (9'x 18')........................398
ACCESSIBLE SPACES (8'x 18')........................13
VAN ACCESSIBLE SPACES 10
TOTAL PROPOSED 421

CAUTION: IF THIS DRAWING IS A REDUCTION, GRAPHIC SCALE MUST BE USED (ORIGINAL SIZE = 30"x 42")

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

OWNER/APPLICANT
MONTGOMERY COUNTY PUBLIC SCHOOLS
45 WEST GUDE DRIVE, SUITE 4300
ROCKVILLE, MARYLAND 20850-4038
ATTN: JAMES TOKAR, PE
James_R_Tokar@mcpsmd.org
TEL: 240.314.1008 FAX: 240.279.3003

MOSELEYARCHITECTS
8001 BRADDOCK ROAD, SUITE 400, SPRINGFIELD, VA 22151
PHONE (703) 426-9057 FAX (703) 426-9280
MOSELEYARCHITECTS.COM

KEY MAP

SENECA VALLEY HIGH SCHOOL MODERNIZATION

MONTGOMERY COUNTY PUBLIC SCHOOLS
19401 CRYSTAL ROCK DRIVE , GERMANTOWN, MD 20874
TAX MAP: EU41 PARCEL: P085 LIBER: 3866 , F: 255

PROJECT NO:	DATE: Issue Date
REVISIONS	
DATE	DESCRIPTION
12/22/16	MR SUBMISSION

OVERALL MANDATORY REFERRAL SITE PLAN

C-MR

Attachment B

Attachment C

Street Traffic Studies, Ltd.

TRAFFIC IMPACT ANALYSIS
SENECA VALLEY HIGH SCHOOL
MONTGOMERY COUNTY, MARYLAND

Prepared For:
Montgomery County Public Schools

Date: April 10, 2015
Project Manager: Carl F. Starkey, P.E., PTOE
STS Job No.: 6343

400 Crain Highway, N.W. • Glen Burnie, Maryland 21061
Telephone 410.590.5500 • FAX 410.590.6637

CONTENTS

PAGE

EXHIBITS

APPENDICES

INTRODUCTION

Montgomery County Public Schools (MCPS) proposes to modernize the existing Seneca Valley High School via a reconstruction project. The proposal is to increase the enrollment to a total student population of 2400 students, with 275 staff. The property is bound by Middlebrook Road to the north, Crystal Rock Drive to the west, Great Seneca Highway to the east, and Wisteria Drive to the south. Access to the site will be form Crystal Rock Drive, with a secondary access via Wisteria Drive. In addition, there will be a new Bus Loop along Wisteria Drive as well. It is envisioned that the existing structure will remain in use as the new construction takes place. The general location of the site is shown in Exhibit 1.

The trips generated by the existing use exceed the 30 trip threshold set forth in the *Local Area Transportation Review and Transportation Policy Area Review Guidelines* (LATR) and (TPAR) that would permit preparation of a simple traffic statement. Thus, it was understood that a full traffic study would be required. To establish the parameters of this study, the staff in the Transportation Planning Division of the Maryland National Capital Park & Planning Commission (MNCPPC) were contacted. The results of this exchange is included in Appendix A.

Based on the parameters of the traffic impact study set forth in Appendix A, the applicant retained Street Traffic Studies, Ltd. to prepare a traffic study as set forth in the *Local Area Transportation Review and Transportation Policy Area Review Guidelines.* In summary, the scope included the procurement of current traffic data at several intersections, the addition of trips that can be generated by approved, but unbuilt developments in the general vicinity of the site, and lastly, the addition of trips expected to be generated by the subject property. Each of these steps included an analysis of the relationships between the level of traffic use and the capacity of each of the intersections specified for evaluation.

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EXHIBIT 1 SITE LOCATION

Attachment C

The following pages present the results of the analysis. In brief, the study demonstrates that the proposed expansion can be accommodated by the existing roadway system in the vicinity of the site, without adversely impacting traffic operations on the existing roadway network. It should noted that the following analysis includes a review of the typical street peak periods; i.e., 6:30 -9:30 AM and 4:00 -7:00 PM, as well as the school peak hour 2:00 -3:00 PM as requested by MNCPPC staff.

EXISTING CONDITIONS

The purpose of this section is to describe the roadway system elements that will provide access to the subject site and the results of the traffic counts that were undertaken in accordance with the agreed upon scope of the study.

Existing Roadway Network

Seneca Valley High School is served regionally by MD 118 and MD 119. Locally it is served by Middlebrook Road, Wisteria Drive, and Crystal Rock Drive. The characteristics of these roads are described below.

Germantown Road (MD 118) is a master-planned major highway in the County highway system, M-61. Its limits are Frederick Road (MD 355) to the north and Darnestown Road (MD 28) to the south. It is a six-lane divided roadway with a posted speed limit of 40 miles per hour (mph).

Great Seneca Highway (MD 119) is also classified as a major highway in the County highway system, CM-90. It also begins at Middlebrook Road and continues southward to its terminus at Darnestown Road. Goshen Road currently has a four-lane divided cross-section and serves as a commuter route for this area of the County. The posted speed limit in the vicinity of the site is 50 mph.

Middlebrook Road is a master planned major highway, M-65, which follows an east - west orientation between Father Hurley Boulevard on the west, and Mid County Highway[1] to the east. In the vicinity of the school, it has a six-lane divided cross section, and a posted speed limit of 40 mph.

---

[1] There is an existing short section of Mid County Highway at the terminus of Middlebrook Road.

Wisteria Drive is designated as an arterial roadway in the County highway system, A-74. It has an east-west orientation and a posted speed limit of 30 mph. Wisteria Drive forms the southern boundary of the school. Currently there is no access to the school from Wisteria Drive. However, as part of the modernization project, there will be three new access points.

Crystal Rock Drive in the vicinity of the site is designated as a business street, B-1. It has a generally north-south orientation. It currently serves as the primary access for the school, and will remain the primary access for School Buses. Crystal Rock Drive has a posted speed limit of 30 mph.

Based on the road network described above, and the scoping agreement with staff, the following intersections were determined to be critical to the analysis of the proposed modernization project:

- Great Seneca Highway (MD 119) at Middlebrook Road
- Great Seneca Highway (MD 119) at Wisteria Drive
- Middlebrook Road at Waring Station Road
- Middlebrook Road at Crystal Rock Drive
- Germantown Road (MD 118) at Crystal Rock Drive
- Germantown Road (MD 118) at Middlebrook Road
- Germantown Road (MD 118) at Wisteria Drive
- Germantown Road (MD 118) at Dawson Farm Road
- Middlebrook Road at Century Boulevard

The approach lanes at the study intersections that were analyzed are shown in Exhibit 2.

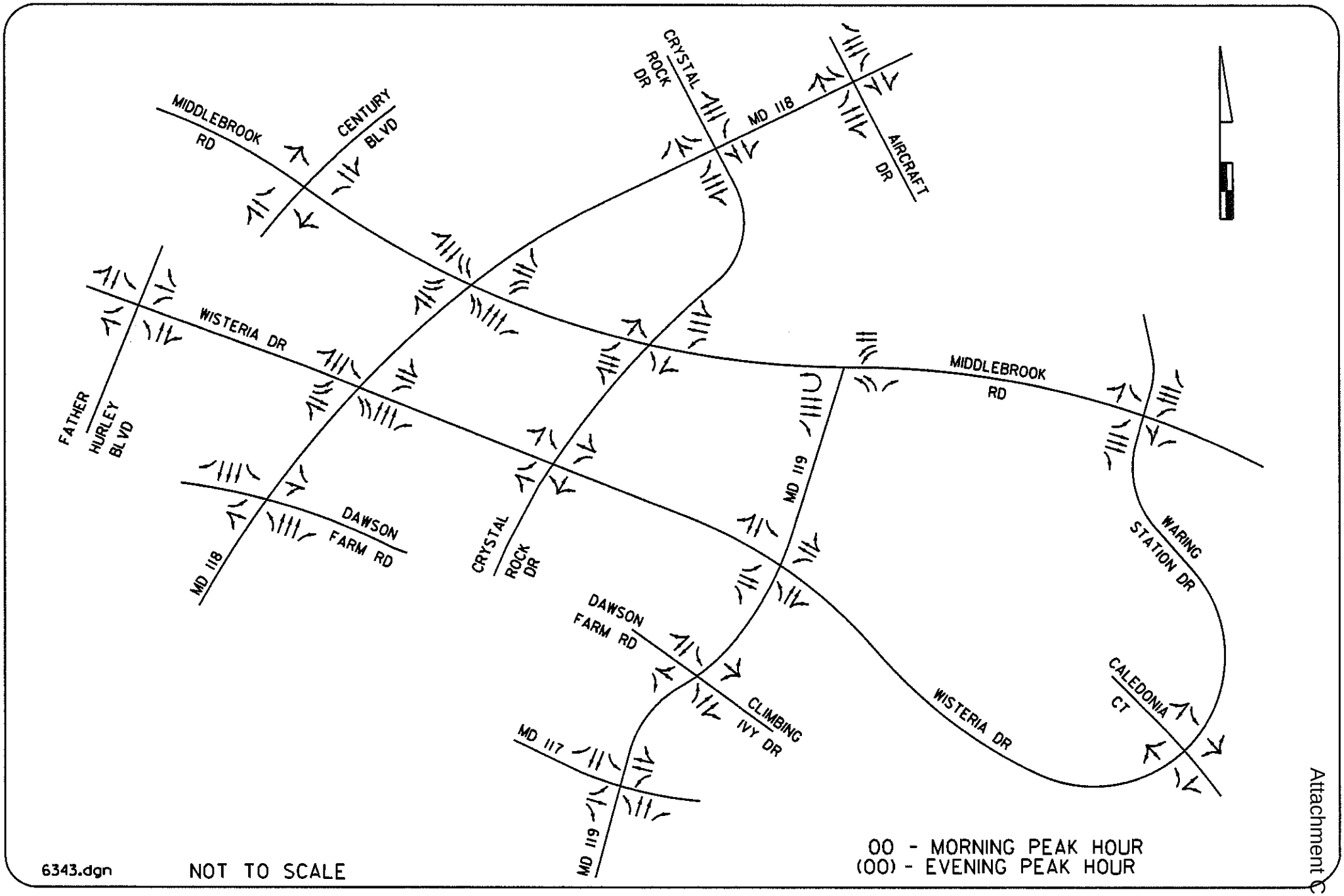

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EXHIBIT 2 EXISTING LANE USE

Attachment C

Existing Traffic Volumes

Manual turning movement traffic counts were conducted by Street Traffic Studies, Ltd. on Tuesday, March 3, Wednesday, March 4, Wednesday, March 11, Tuesday, March 17, Wednesday, March 18, Thursday, March 19, Wednesday, March 25, Thursday, March 26, Tuesday March 31, Wednesday, April 1, and Thursday, April 2, 2015, between the hours of 6:30 - 9:30 AM and 2:00 - 7:00 PM at the fifteen (15) critical study intersections. The summarized data for these locations is included in Appendix B and the peak one hour flows are shown in Exhibits 3 and 3A.

In addition, turning movement counts were also conducted at the school driveways to determine the vehicular volume entering and exiting the school during peak arrival and departure times. These counts were performed on Tuesday, November 19, 2013 between the hours of 6:30 - 9:30 AM and 2:00 - 6:00 PM. This data is also contained in Appendix B.

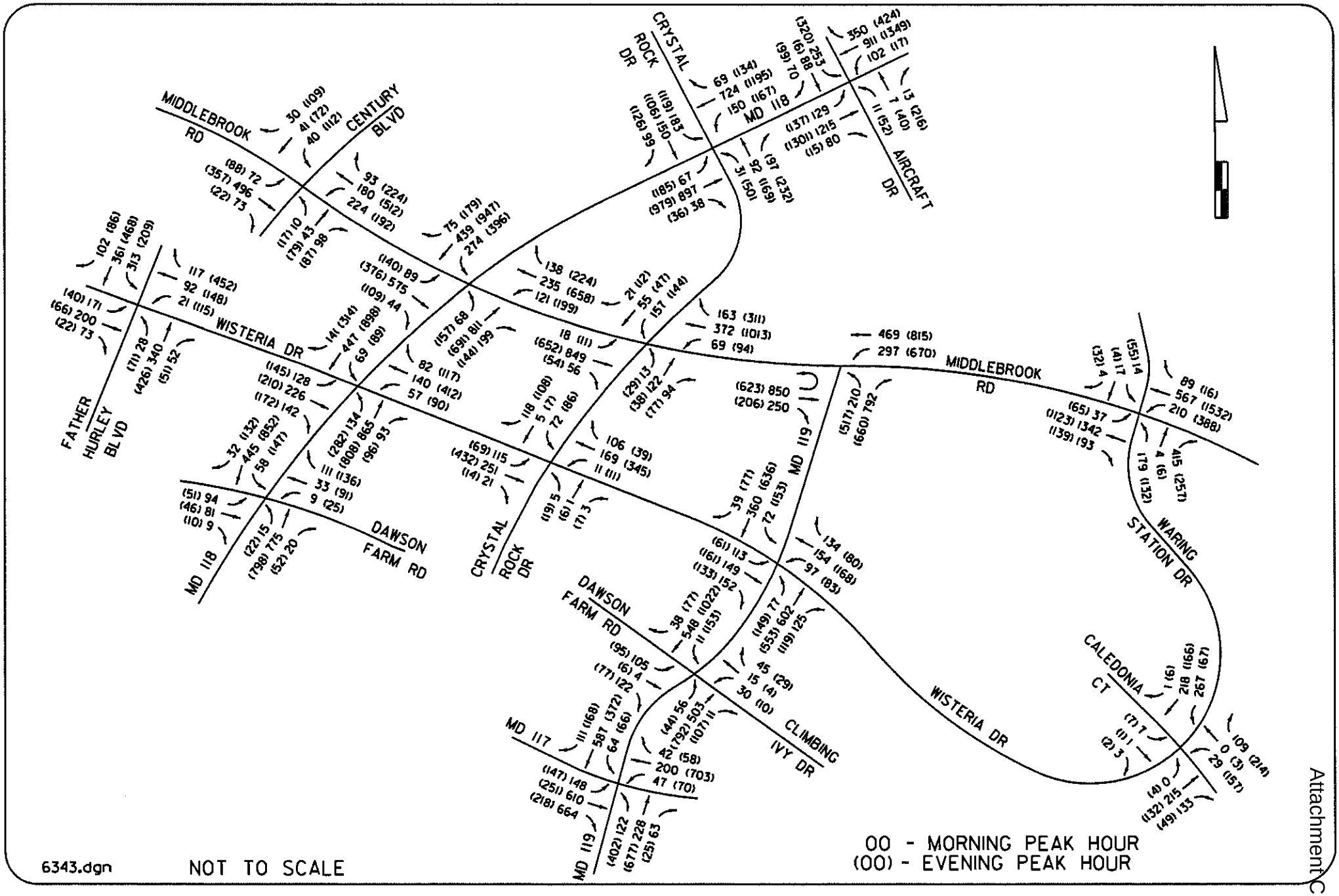

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EXHIBIT 3 EXISTING TRAFFIC VOLUMES

Attachment C

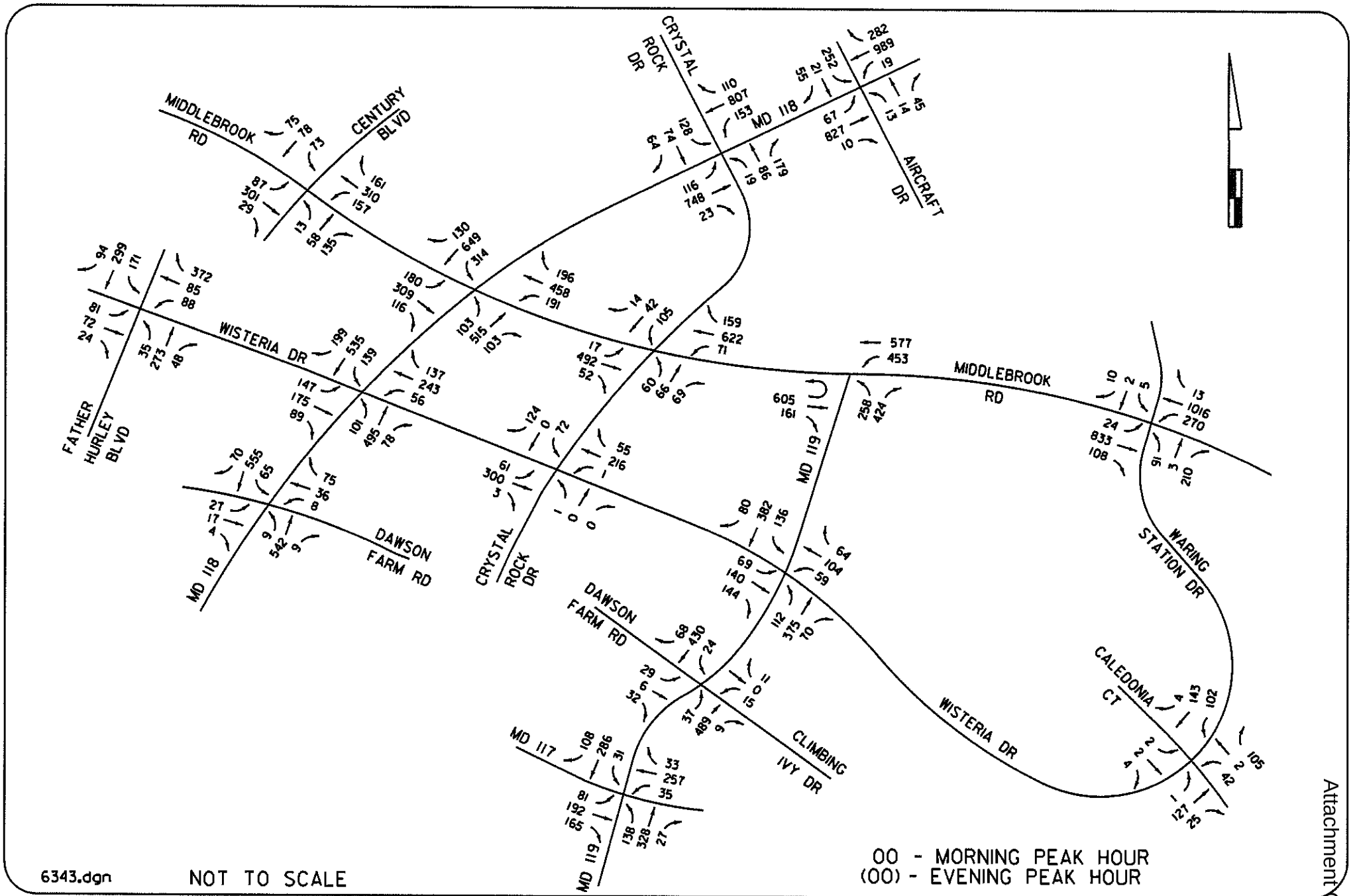

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EXHIBIT 3A EXISTING TRAFFIC VOLUMES - 2-3 PM

Attachment C

Analysis of Existing Traffic Conditions

The peak hour traffic volumes shown in Exhibits 3 and 3A were subjected to a capacity analysis procedure using the critical lane methodology as specified in the LATR. The results of the analysis are set forth in Tables 1 and 1A. The worksheets from which they are derived are included in Appendix C.

TABLE 1
RESULTS OF CAPACITY ANALYSIS
EXISTING TRAFFIC CONDITIONS

INTERSECTION	AM PEAK HOUR	PM PEAK HOUR	THRESHOLD
MD 119@ Middlebrook Rd	1107	860	1425
MD 119 @ Wisteria Dr	723	719	1425
Middlebrook Rd @ Waring Station Rd	926	997	1425
Middlebrook Road @ Crystal Rock Dr	777	767	1600
MD 118 @ Crystal Rock Dr	842	1035	1600
MD 118 @ Middlebrook Rd	837	923	1600
MD 118 @ Wisteria Dr			1600
MD 118 @ Dawson Farm Rd	492	609	1425
Middlebrook Rd @ Century Blvd	705	788	1600
MD 118 @ Aircraft Rd	815	1043	1600
Father Hurley Blvd @ Wisteria Dr	815	723	1600
Wisteria Dr @ Crystal Rock Dr	518	591	1600
MD 119 @ Dawson Farm Rd	562	757	1425
MD 119 @ MD 117	1090	1187	1425
Wisteria Dr @ Caledonia Ct	731	476	1425

X(0000) - Level of Service (Critical Lane Volume)

TABLE 1A

RESULTS OF CAPACITY ANALYSIS

EXISTING TRAFFIC CONDITIONS

2:00 -3:00 PM

INTERSECTION	AM PEAK HOUR	PM PEAK HOUR	THRESHOLD
MD 119@ Middlebrook Rd	NA	601	1425
MD 119 @ Wisteria Dr	NA	530	1425
Middlebrook Rd @ Waring Station Rd	NA	681	1425
Middlebrook Road @ Crystal Rock Dr	NA	546	1600
MD 118 @ Crystal Rock Dr	NA	713	1600
MD 118 @ Middlebrook Rd	NA	695	1600
MD 118 @ Wisteria Dr	NA	604	1600
MD 118 @ Dawson Farm Rd	NA	337	1425
Middlebrook Rd @ Century Blvd	NA	616	1600
MD 118 @ Aircraft Rd	NA	645	1600
Father Hurley Blvd @ Wisteria Dr	NA	609	1600
Wisteria Dr @ Crystal Rock Dr	NA	457	1600
MD 119 @ Dawson Farm Rd	NA	356	1425
MD 119 @ MD 117	NA	524	1425
Wisteria Dr @ Caledonia Ct	NA	364	1425

X(0000) - Level of Service (Critical Lane Volume)

NA - Not Applicable

As shown in Tables 1 and 1A, each of the intersections that were studied currently operates below the Congestion Standard for the location as stated in the guidelines.

BACKGROUND TRAFFIC ANALYSIS

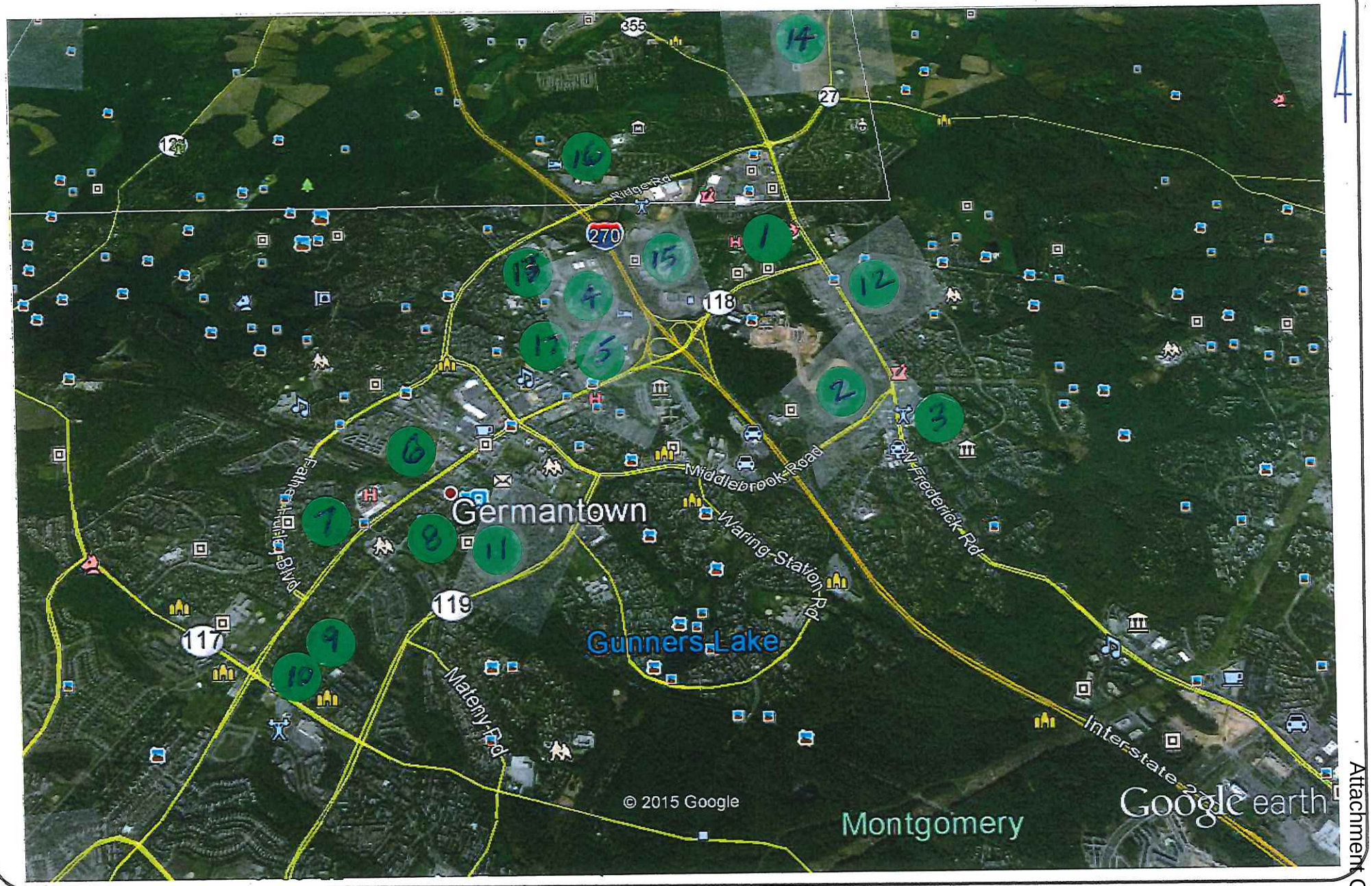
In accordance with procedures established by MNCPPC, the analysis of the traffic impact of the Seneca Valley High School modernization must include planned roadway improvements, and increases in traffic generated by other planned developments in the vicinity of the site. Information concerning these two factors is discussed below.

Planned Road Improvements

STS LTD reviewed the Montgomery County Department of Transportation (MCDOT) Capital Improvements Program (CIP) for Fiscal Years 2013 - 2018 as well as the Maryland State Highway Administration's Consolidated Transportation Program (CTP) Fiscal years 2013 -2018. Based on this review there are no relevant projects in the regional study area.

Planned Developments

The projects to be included in the analysis of background traffic were provided by the staff at MNCPPC. There are seventeen (17) planned projects which will have an impact on the study area. The relative location of the site is shown in Exhibit 4, and the listing of these developments are presented in Table 2.



4

Attachment C

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EXHIBIT 4 LOCATION OF PLANNED DEVELOPMENT

TABLE 2
PLANNED DEVELOPMENTS

DEVELOPMENT	LAND USE	DENSITY
1) The Towns of Boland Farm	Townhouse	22 units
2) Montgomery College Germantown	Office	80,000 sf
3) ISG Building	Religious	3,800 sf
4) Century Technology Campus	Office	168,202 sf
5) Century XXI	Office	235,000 sf
6) Village West at Germantown Town Center	Retail	14,425 sf
7) Qiagen-Germantown Business Park	Office	58,500 sf
8) Chesnut Ridge	Office	16,300 sf
9) Liberty Mill	Single Family	3 units
10) Germantown Estates	Office	15,600 sf
11) Mateny Hill Road Property	Townhouse	44 units
12) Centra Care Middlebrook (aka Chevy Chase Bank)	Drive-In Bank	5,300 sf
13) Black Hills/Crystal Rock	Office Retail Hotel Multi Family Assisted Living	1,097,800 sf 91,400 sf (all internal) 350 rms 1,087 units 102 units
14) Clarksburg Village	Retail Single Family Multi Family	6,000 sf 290 units 168 units
15) Seneca Meadows Corporate Ctr	Office Retail	143,356 sf 168,400 sf
16) Milestone Industrial	Office Multi Family	230,000 sf 373 units
17) Symmetry at Cloverleaf	Light Industrial	518,166 sf

Trip Generation

To determine the traffic associated with each of the background developments, trip generation rates were obtained from the *Local Area Transportation Review and Transportation Policy Area Review Guidelines* of the Montgomery County branch of the Maryland National Capital Park and Planning Commission, and the Institute of Transportation Engineers (ITE) publication *Trip Generation, 9th Edition*. The generation rates are shown in Table 3, and the resulting generated trips are shown in Table 4.

TABLE 3
TRIP GENERATION

LAND USE	MORNING PEAK HOUR IN	MORNING PEAK HOUR OUT	MORNING PEAK HOUR TOTAL	EVENING PEAK HOUR IN	EVENING PEAK HOUR OUT	EVENING PEAK HOUR TOTAL
Generation Rate						
Drive In Bank (ITE Code 912)						
Trips1,000 sf	T = 12.085(X)			T = 24.30(X)		
	57%/43%			50%/50%		
Church (ITE Code 560)						
Trips/1,000 sf	T = 0.56(X)			T = 0.55(X)		
	62%/38%			48%/52%		
Office						
Trips/1,000 sf[2]	T = 1.38(X)			T = 2,24(X)		
	87%/13%			17%/83%		
Office						
Trips/1,000 sf[3]	T = 1.70(X) -8			T = 1.44(X) +20		
	87%/13%			17%/83%		
Retail						
Trips/1,000 sf	T = 3.09(X)			T = 12.36(X)		
	52%/48%			52%/48%		
Townhouse						
Trips/unit	T = 0.48(Y)			T = 0.83(Y)		
	17%/83%			67%/33%		
Single Family						
Trips/unit	T = 0.95(Y)			T = 1.11(Y)		
	25%/75%			64%/36%		
Hotel (ITE Code 310)						
Trips/rm	T = 0.56(Z)			T = 0.59(Z)		
	61%/39%			53%/47%		
Assisted Living Facility						
Trips/bed	T = 0.03(A)			T = 0.06(A)		
	35%/65%			61%/39%		
Light Industrial (ITE Code 110)						
Trips/1,000 sf	T = 0.92(X)			T = 0.97(X)		
	88%/12%			12%/88%		

[2] Less than 25,000 sf

[3] 25,000 sf and over

TABLE 4
TRIP GENERATION

LAND USE	MORNING PEAK HOUR IN	OUT	TOTAL	EVENING PEAK HOUR IN	OUT	TOTAL
Generated Trips						
1) The Towns of Boland Farm						
Trips/22 units	2	9	11	12	6	18
2) Montgomery College Germantown						
Trips/80,000 sf	111	17	128	23	112	135
3) ISG Building						
Trips/3,800 sf	0	0	0	0	0	0
4) Century Technology Campus						
Trips/168,202 sf	242	36	278	45	217	262
5) Century XXI						
Trips/235,000 sf	341	51	392	61	297	358
6) Village West at Germantown Town Center						
Trips/14,425 sf	14	12	26	54	49	103
Less Pass By	8	7	15	35	32	67
Net New	6	5	11	19	17	36
7) Qiagen-Germantown Business Park						
Trips/58,500 sf	80	11	91	18	86	104
8) Chesnut Ridge						
Trips/16,300 sf	20	2	22	6	31	37
9) Liberty Mill						
Trips/3 units	1	2	3	2	1	3
10) Germantown Estates						
Trips/15,600 sf	20	2	22	6	29	35
11) Mateny Hill Road Property						
Trips/44 units	4	17	21	24	13	37
12) Centra Care Middlebrook (aka Chevy Chase Bank)						
Trips/5,300 sf	37	27	64	64	65	129
Less Pass By				30	30	60
Net new				34	35	69

TABLE 4 (CONT.)
TRIP GENERATION

LAND USE	MORNING PEAK HOUR			EVENING PEAK HOUR		
	IN	OUT	TOTAL	IN	OUT	TOTAL
13) Black Hills/Crystal Rock						
Trips/1,097,800 sf	1616	242	1858	272	1329	1601
Trips/350 rms	120	76	196	110	97	207
Trips/102 beds	2	1	3	3	3	6
Trips/440 units	36	143	179	137	71	208
Trips/647 units	52	210	262	201	104	305
Total Trips	1826	672	2498	723	1604	2327
14) Clarksburg Village						
Trips/290 units	51	154	205	166	93	259
Trips/168 units	15	59	74	53	28	81
Trips/6,000 sf	6	5	11	22	20	42
Less Pass By	3	3	6	14	13	27
Net new	3	2	5	8	7	15
15) Seneca Meadows Corporate Ctr						
Trips/143,356 sf	205	31	236	38	188	226
Trips/168,400 sf	195	180	375	779	719	1498
Less Pass By	62	58	120	265	244	509
Net New	133	122	255	514	475	989
16) Milestone Industrial						
Trips/373 units	30	122	152	116	60	176
Trips/230,000 sf	333	50	383	60	291	351
17) Symmetry at Cloverleaf						
Trips/518,166 sf	420	57	477	60	443	503

Trip Distribution

The trip distribution for the planned projects was derived through a review of the trip distribution for the Germantown/Clarksburg Super District, and the traffic analysis prepared for the Black Hills Mixed-Use TOD as discussed with Transportation Staff. The specific distribution for each site is contained in the assignments located in Appendix D.

The total trips generated by the planned developments are shown in Exhibit 5. These trips were combined with the existing traffic volumes to derive the background traffic volumes shown in Exhibit 6.

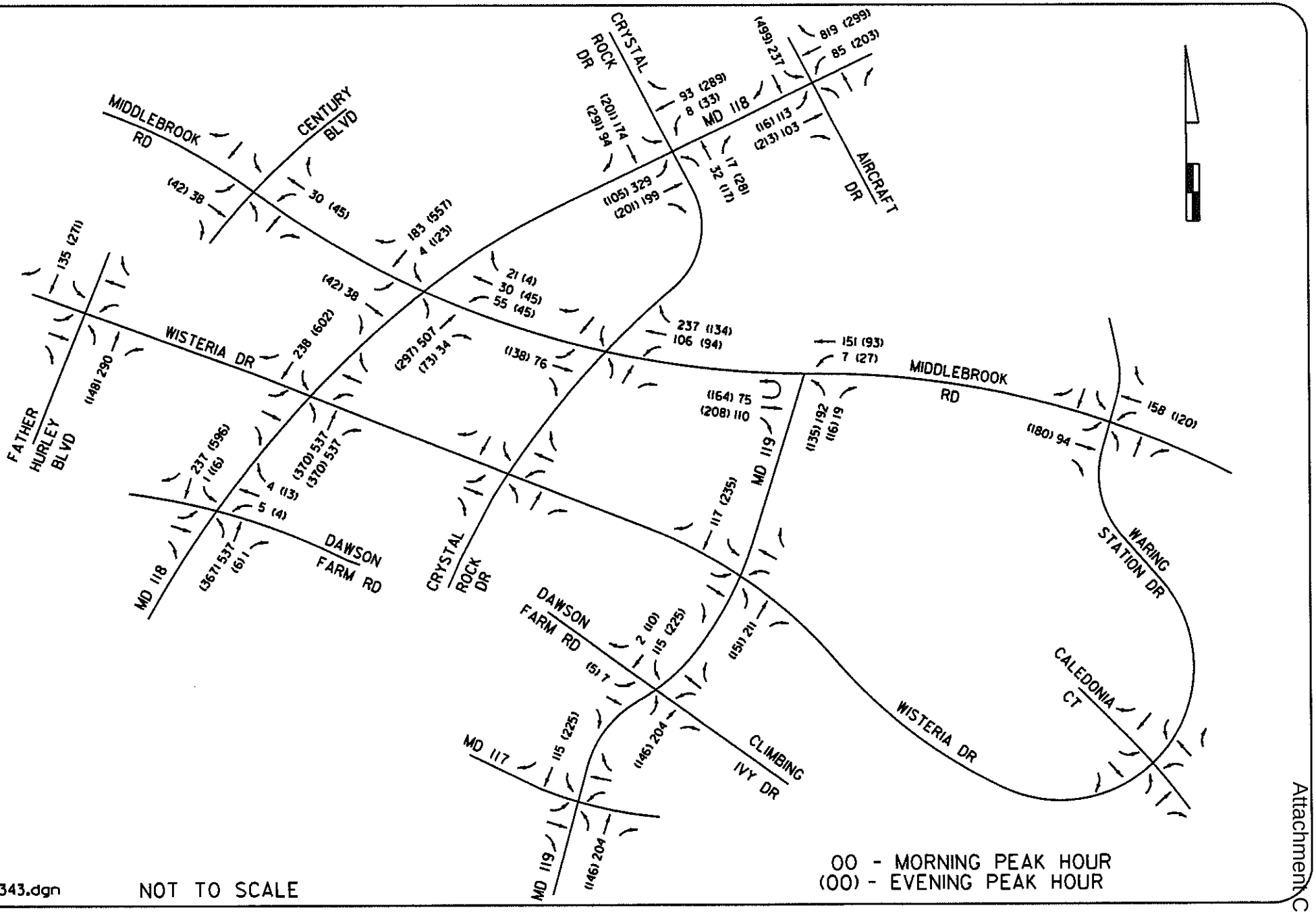

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EXHIBIT 5 TRIPS GENERATED BY BACKGROUND SITES

Attachment C

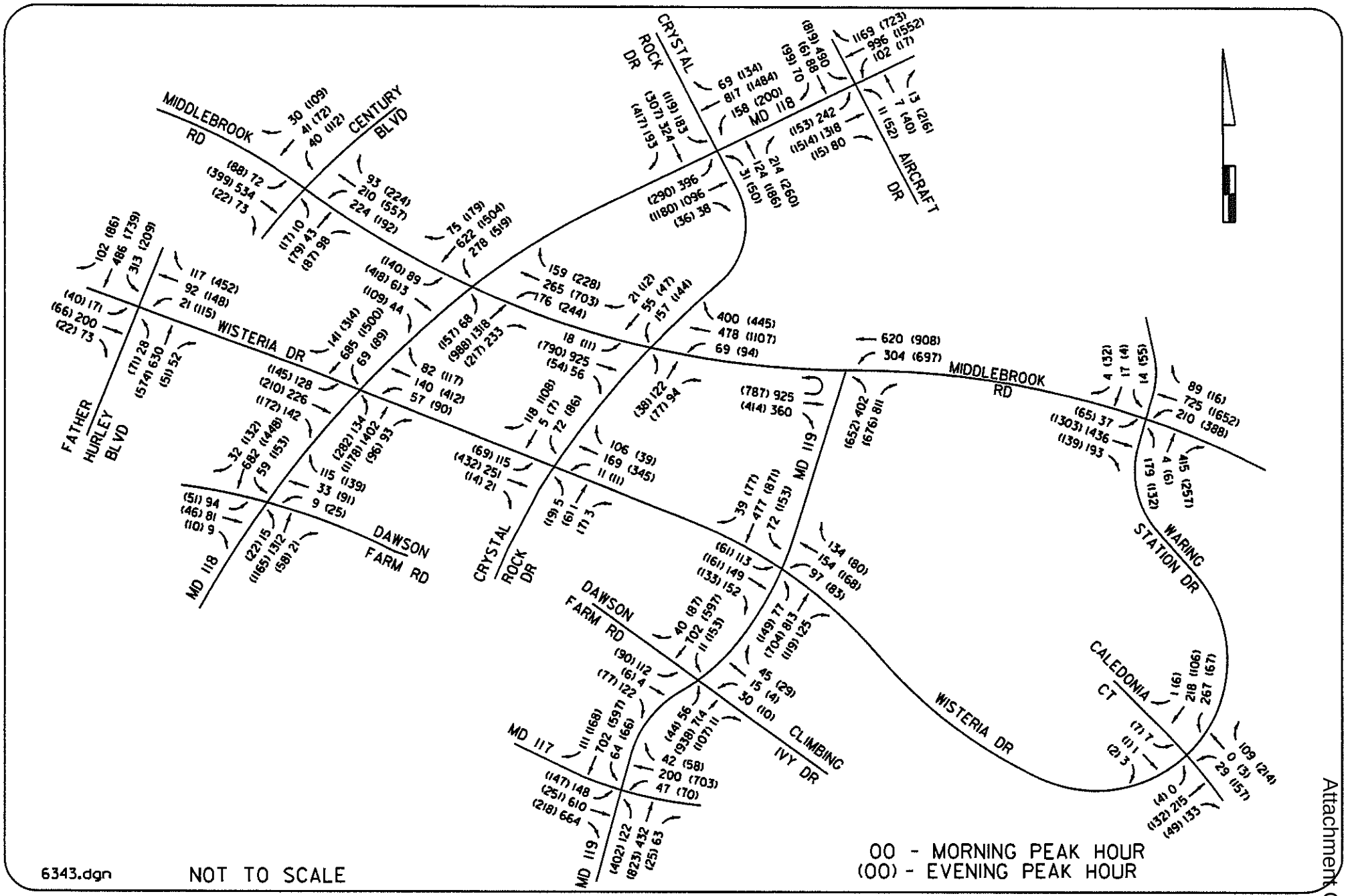

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EXHIBIT 6 BACKGROUND TRAFFIC VOLUMES

Attachment C

Analysis of Background Traffic Conditions

Capacity analyses were performed, applying the critical lane technique to the background traffic volumes. It should be noted that the analyses focused on the school afternoon peak hour. The results of the analyses are presented in Table 4.

TABLE 4
RESULTS OF CAPACITY ANALYSIS
BACKGROUND TRAFFIC CONDITIONS

INTERSECTION	AM PEAK HOUR	PM PEAK HOUR	THRESHOLD
MD 119@ Middlebrook Rd	1153	1006	1425
MD 119 @ Wisteria Dr	835	844	1425
Middlebrook Rd @ Waring Station Rd	960	1063	1425
Middlebrook Road @ Crystal Rock Dr	805	851	1600
MD 118 @ Crystal Rock Dr	1188	1377	1600
MD 118 @ Middlebrook Rd	1076	1153	1600
MD 118 @ Wisteria Dr	840	1178	1600
MD 118 @ Dawson Farm Rd	694	751	1425
Middlebrook Rd @ Century Blvd	725	812	1600
MD 118 @ Aircraft Rd	1427	1402	1600
Father Hurley Blvd @ Wisteria Dr	968	743	1600
Wisteria Dr @ Crystal Rock Dr	518	591	1600
MD 119 @ Dawson Farm Rd	631	884	1425
MD 119 @ MD 117	1151	1307	1425
Wisteria Dr @ Caledonia Ct	762	629	1425

X(0000) - Level of Service (Critical Lane Volume)

As shown in Table 4, all the critical intersections are projected to operate at acceptable levels of service under background conditions. The capacity calculations are contained in Appendix E.

SITE TRAFFIC ANALYSIS

Montgomery County Public Schools proposes to modernize the existing Seneca Valley High School via a reconstruction project. The proposal is to increase the enrollment to a total student population of 2400 students, with 275 staff. The property is bound by Middlebrook Road to the north, Crystal Rock Drive to the west, Great Seneca Highway to the east, and Wisteria Drive to the south. Access to the site will be form both Crystal Rock Drive, and Wisteria Drive. The School Bus Loop will remain along Crystal Rock Drive.

Trip Generation

To determine the traffic associated with expansion of the Seneca Valley High School, STS LTD utilized the driveway volume data to derive a trip generation rate for the existing school. By conducting counts at the existing driveways, an empirical trip rate was determined which is specific to the school. The count data used to derive the trip rates is contained in Appendix B. The trip generation rates and the resulting trips are shown in Table 5. It should noted that the trip rates in in Table 5 include rates from the Institute of Transportation Engineers (ITE) publication *Trip Generation Manual, 9th Edition.* The ITE rates have been included here as requested by MNCPPC staff. MNCPPC requested analyses of the typical street peaks (6:30 -9:30AM, and 4:00 - 7:00PM), as well as the school peak hour 2:00 -3:00PM.

TABLE 5

SENECA VALLEY HIGH SCHOOL TRIP GENERATION

DEVELOPMENT	MORNING PEAK HOUR			EVENING PEAK HOUR		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Trips Observed						
6:45 - 7:45 AM	496	226	722			
2:00 - 3:00 PM				127	195	322
Generation Rate						
Trips/1277 Students	0.38	0.18	0.56	0.06	0.07	0.13[4]
2:00 -3:00 PM				0.10	0.15	0.25
Generated Trips						
Trips/1123 Students	427	202	629	67	77	144
2:00 -3:00 PM				112	168	280

Trip Distribution

The last factor that is required to convert the trips generated by the activity on the site to traffic on the adjacent roads is the distribution of trips. The Seneca Valley High School Service Area was obtained from the MCPS web site and utilized to determine trip distribution for the subject site. The assumed distribution is shown on the following page.

[4] Source: ITE Land Use Code #530.

TRIP DISTRIBUTION
SENECA VALLEY HIGH SCHOOL

DIRECTION (TO AND FROM)	PERCENTAGE
East on Middlebrook Road	20%
North on Germantown Road	15%
West on Middlebrook Road[5]	25%
West on Wisteria Drive	5%
Northwest on Crystal Rock Drive	15%
East on Wisteria Drive	20%

The site generated trips were assigned to the road network and are illustrated in Exhibits 7 and 7A. These trips were combined with the Background Traffic Volumes to derive the Total Traffic Volumes shown in Exhibits 8 and 8A.

[5] Includes trips destined to Father Hurley Boulevard

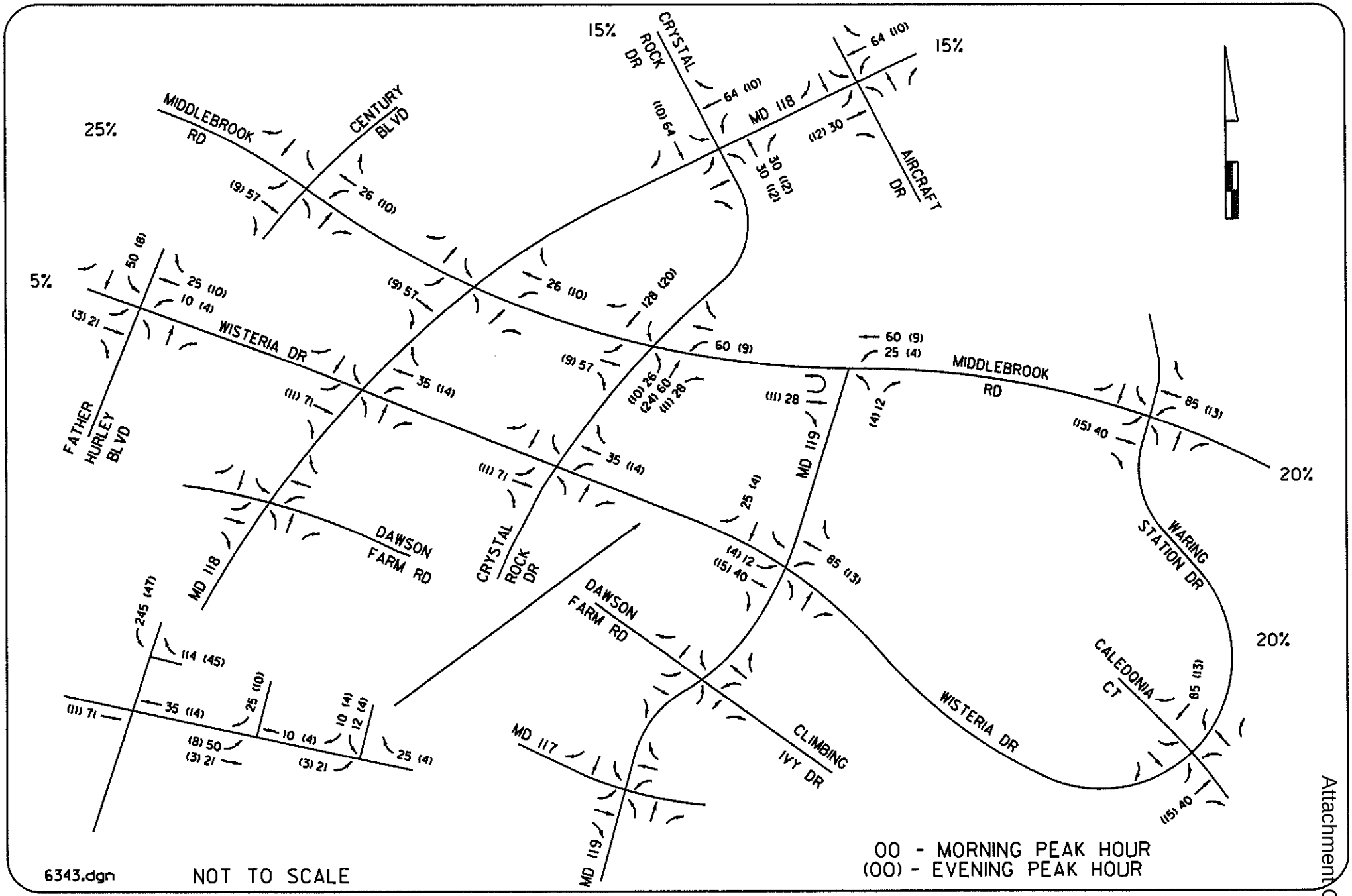

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EXHIBIT 7

SITE GENERATED TRIPS

Attachment C

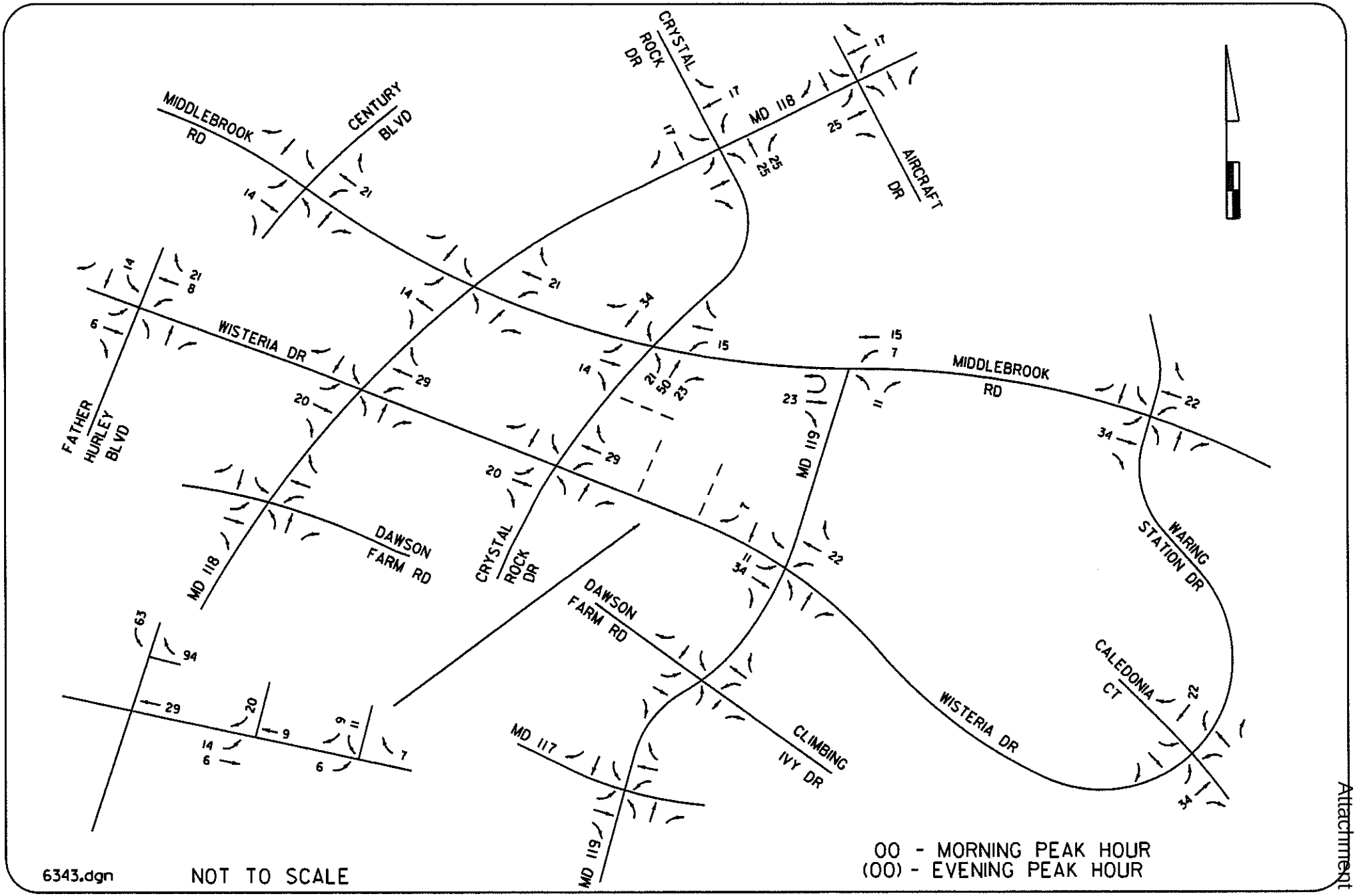

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EXHIBIT 7A SITE GENERATED TRIPS - 2-3 PM

Attachment C

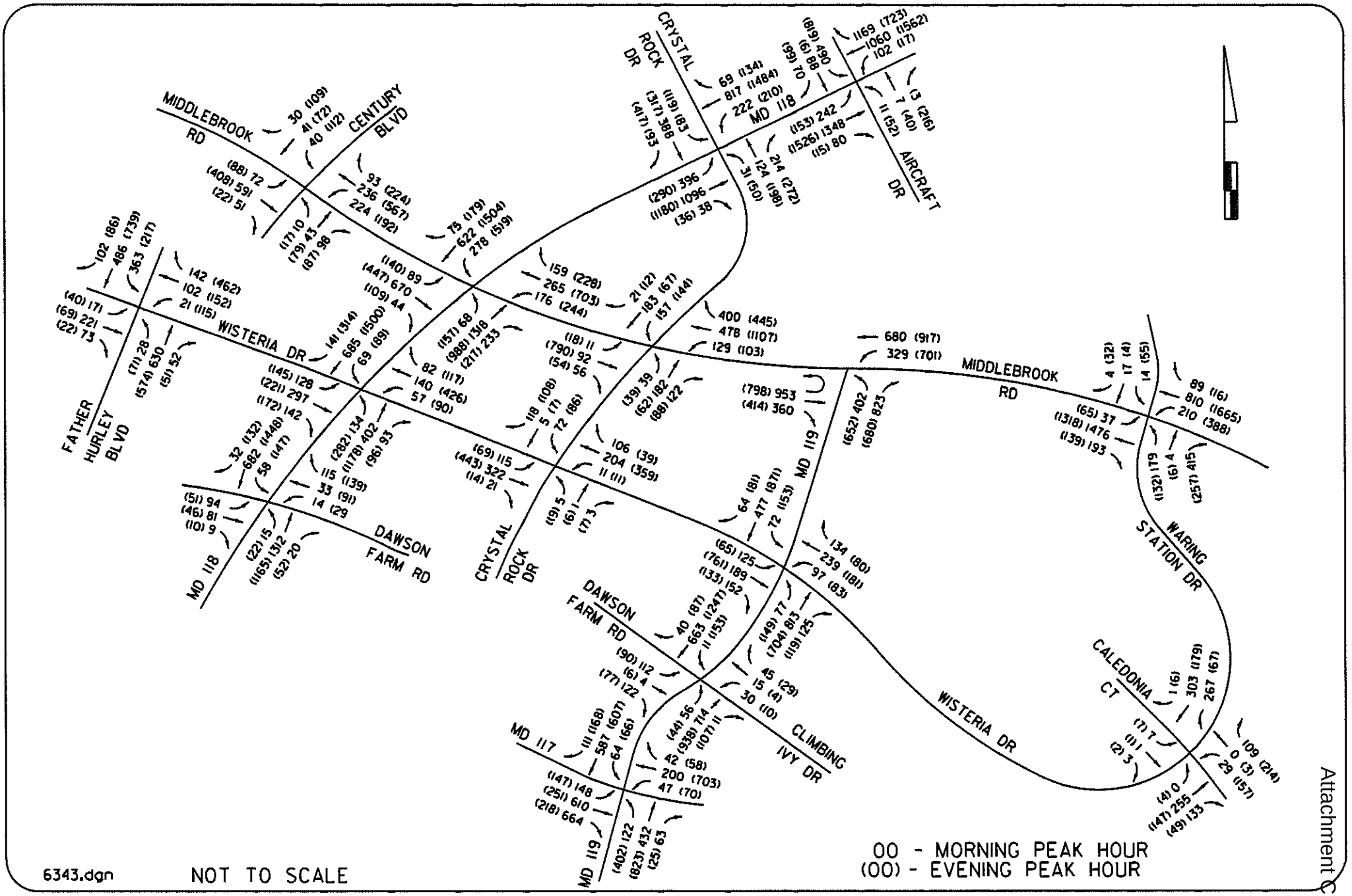

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EXHIBIT 8

TOTAL TRAFFIC VOLUMES

Attachment C

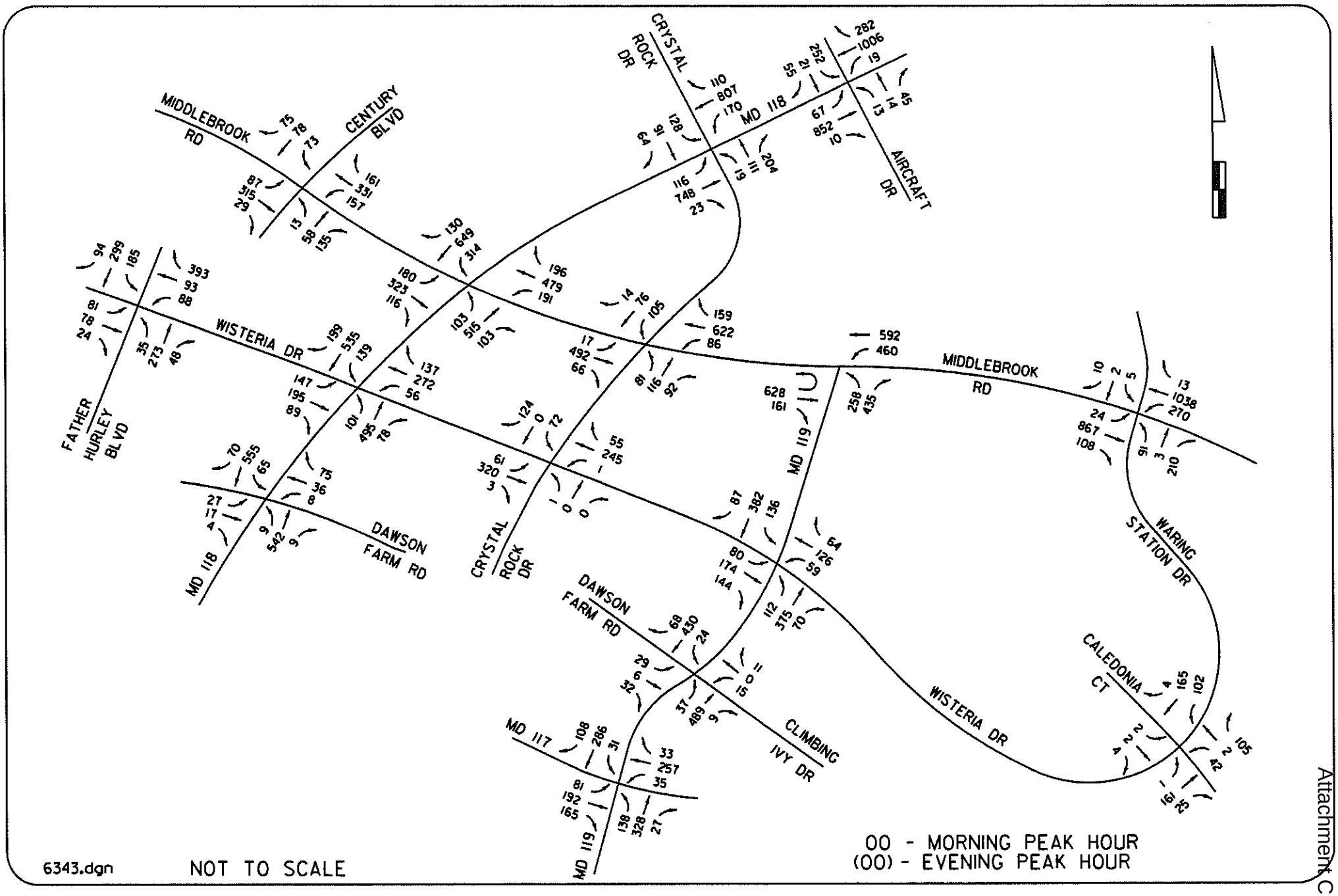

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EXHIBIT 8A TOTAL TRAFFIC VOLUMES - 2-3 PM

Attachment C

Analysis of Total Traffic Conditions

STS LTD performed capacity analyses, applying the critical lane technique to the total projected volumes to determine the impact of the development. The results of the analyses are summarized in Tables 6 and 7. The capacity analysis worksheets are contained in Appendix F.

TABLE 6
RESULTS OF CAPACITY ANALYSIS
TOTAL TRAFFIC CONDITIONS

INTERSECTION	AM PEAK HOUR	PM PEAK HOUR	THRESHOLD
MD 119@ Middlebrook Rd	1168	1012	1425
MD 119 @ Wisteria Dr	892	857	1425
Middlebrook Rd @ Waring Station Rd	975	1069	1425
Middlebrook Road @ Crystal Rock Dr	974	886	1600
MD 118 @ Crystal Rock Dr	1254	1395	1600
MD 118 @ Middlebrook Rd	1107	1158	1600
MD 118 @ Wisteria Dr	877	1185	1600
MD 118 @ Dawson Farm Rd	694	667	1425
Middlebrook Rd @ Century Blvd	755	817	1600
MD 118 @ Aircraft Rd	1427	1406	1600
Father Hurley Blvd @ Wisteria Dr	1039	754	1600
Wisteria Dr @ Crystal Rock Dr	553	602	1600
MD 119 @ Dawson Farm Rd	631	884	1425
MD 119 @ MD 117	1151	1311	1425
Wisteria Dr @ Caledonia Ct	800	644	1425

X(0000) - Level of Service (Critical Lane Volume)

TABLE 7

RESULTS OF CAPACITY ANALYSIS

TOTAL TRAFFIC CONDITIONS

2:00- 3:00 PM

INTERSECTION	AM PEAK HOUR	PM PEAK HOUR	THRESHOLD
MD 119@ Middlebrook Rd	NA	613	1425
MD 119 @ Wisteria Dr	NA	553	1425
Middlebrook Rd @ Waring Station Rd	NA	694	1425
Middlebrook Road @ Crystal Rock Dr	NA	619	1600
MD 118 @ Crystal Rock Dr	NA	748	1600
MD 118 @ Middlebrook Rd	NA	706	1600
MD 118 @ Wisteria Dr	NA	620	1600
MD 118 @ Dawson Farm Rd	NA	337	1425
Middlebrook Rd @ Century Blvd	NA	627	1600
MD 118 @ Aircraft Rd	NA	651	1600
Father Hurley Blvd @ Wisteria Dr	NA	630	1600
Wisteria Dr @ Crystal Rock Dr	NA	486	1600
MD 119 @ Dawson Farm Rd	NA	356	1425
MD 119 @ MD 117	NA	524	1425
Wisteria Dr @ Caledonia Ct	NA	398	1425

X(0000) - Level of Service (Critical Lane Volume)

NA - Not Applicable

As shown in Tables 6 and 7, the intersections under study are projected to operate below the allowable CLV threshold for each location under Total Traffic Conditions.

Site Circulation

STS LTD conducted field observations on Tuesday, November 19, 2013, during the school dismissal to assess the pedestrian activity on the school grounds. School security staff provided aid in ensuring an orderly progression of students exiting the building and utilizing the existing sidewalk and path structure on the school grounds for exiting. Overall, the pedestrian activity was safe and efficient and occurred over a fifteen minute period. Parents picked-up some students in an orderly, safe fashion, with no notifiable incidents.

The proposed sidewalk/path system also provides a safe, efficient network with direct access to Middlebrook Road, Crystal Rock Drive, and three new connections to Wisteria Drive.

PEDESTRIAN AND TRANSIT CONSIDERATIONS

In accordance with the *Local Area Traffic Review and Transportation Policy Area Review Guidelines* the results of the pedestrian counts that were conducted as part of the base data collection process at the study intersections are included in Appendix B. While pedestrian counts were conducted at all fifteen locations, with the highest concentration of pedestrians occurring at the intersection of Germantown Road and Crystal Rock Drive with a total of 390 pedestrian movements over the entire eight (8) hour peak period (199 pedestrian movements across the west leg of Germantown Road during the same eight hours), the focus of this discussion are the four corners surrounding the site; namely, Middlebrook Road at Crystal Rock Road and MD 119, as well as Wisteria Drive at Crystal Rock Road and MD 119. For all four locations the peak concentration of pedestrians occurred during the school peak departure period 2:00 -3:00 PM. The lowest level of pedestrian of pedestrian activity occurred at the intersection of MD 119 and Wisteria Drive, while the highest occurred at the intersection of Middlebrook Road and Crystal Rock Drive. This is consistent with observations conducted in November 2013.

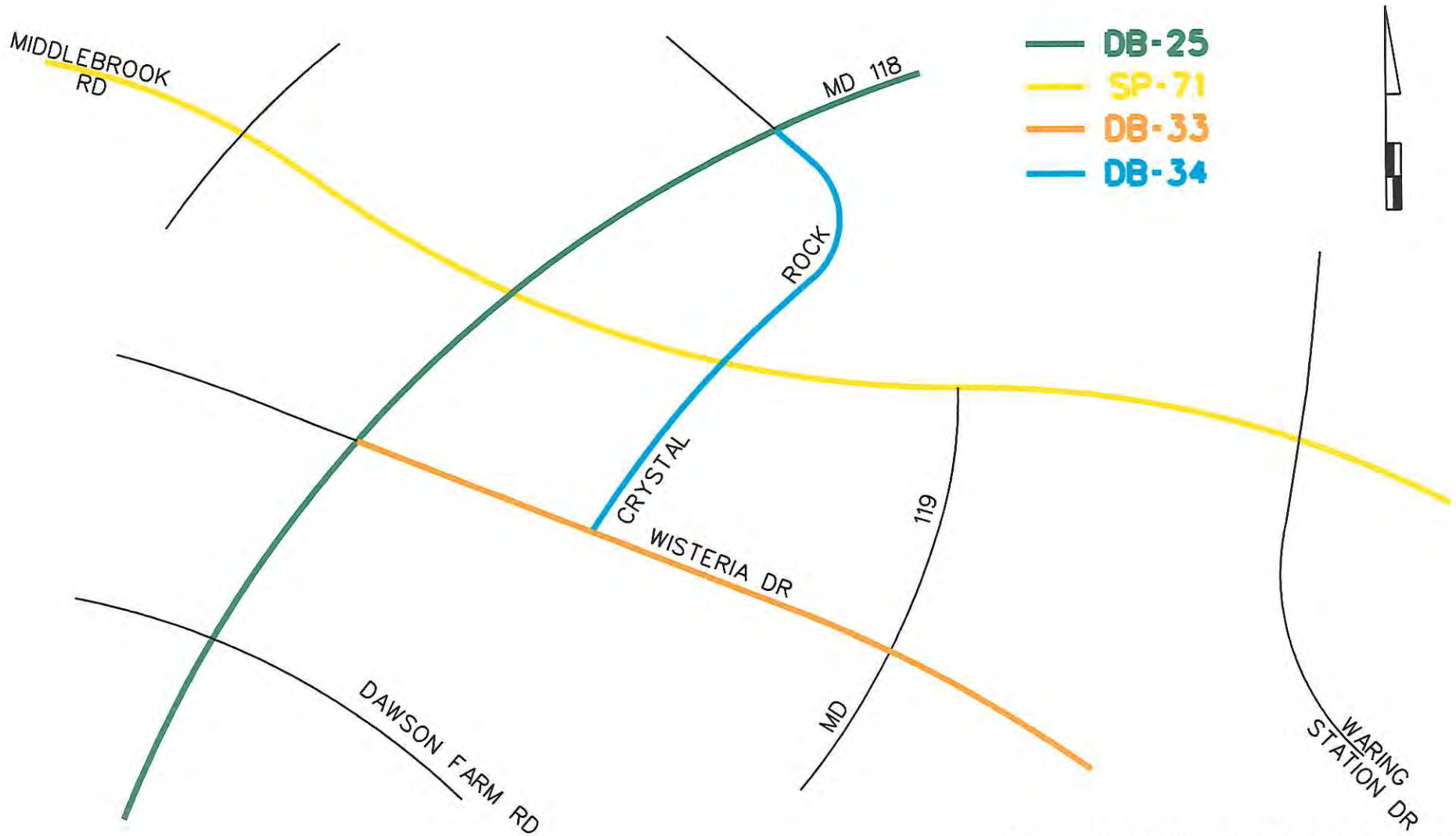
It should be noted that an additional pedestrian count was conducted along Wisteria Drive, midway between Crystal Rock Drive and Great Seneca Drive at a marked crosswalk, which has a raised median treatment. This count was conducted on Tuesday, November 19, 2013, between the hours of 6:30 - 9:30 AM. During the observation period, it became apparent that this crossing was used solely for RideOn bus passengers. RideOn Bus Stops are located immediately adjacent to the crosswalk. During the three hour count period, a total of 5 pedestrians were observed to use the crosswalk, and all were observed to enter or exit a RideOn Bus.

The intersections of MD 118 with Dawson Farm Road, Wisteria Drive and Middlebrook Road have pedestrian crossings on all four legs of the intersection with pedestrian signal heads. The intersections of MD 118 with Aircraft Drive and Crystal Rock Drive have pedestrian crossings on the south, east and west legs of the intersection, also with pedestrian signal heads. The intersections of Middlebrook

Road with Century Boulevard and Crystal Rock Drive have pedestrian crossings on all four legs of the intersection with pedestrian signal heads. At Middlebrook Road and Great Seneca highway, there are pedestrian crossings on the east and south legs of the intersection. The Waring Station Road/Middlebrook Road intersection has pedestrian crossings on the west, south and north legs of the interaction. With the appropriate pedestrian signal heads. The intersection of Father Hurley Boulevard and Wisteria Drive has pedestrian crossings on all four legs of the intersection with pedestrian signal heads. The unsignalized intersection of Wisteria drive and Crystal Rock Drive has crossings on the north and east legs of the location. The intersections of Great Seneca Highway with Wisteria Drive and MD 117 have pedestrian crossings on all four legs of the intersection, with appropriate signal heads. The intersection of Great Seneca Highway and Dawson Farm Road has crossings on the north and west legs, also with signal heads.

There is an existing Shared-Use Path SP-71 on the south side of Middlebrook Road, which runs its entire length between Father Hurley boulevard and Mid County Highway. SP-71 is designated as a Dual Use Shared-Use Path/Off- Road (Class 1) in the Bikeway Master Plan. The north side of Middlebrook road has a five foot sidewalk to serve pedestrians. Along the east side of Great Seneca Highway, there is another Dual Use Shared-Use Path/Off- Road (Class 1); namely, SP-63. The limits of this existing path are Middlebrook Road to the north and Darnestown Road to the south. On the west side there is an existing five foot sidewalk. In addition, Germantown Road has a proposed Dual Bikeway/Shared Use Path and Signed Shared roadway, in the general vicinity of the site, DB-25. Wisteria Drive has an eight (8) foot path along the north side, DB-33, and a five (5) sidewalk along the south side along the school frontage. The north side was converted from asphalt to concrete during the week of November 18th 2013. Crystal Rock Drive has a proposed Dual Bikeway/Shared-Use Path, DB-34, between Wisteria Drive and Germantown Road. Each of these paths are illustrated in Exhibit 9.

The proposed development plan has been prepared in accordance with the current design practice to ensure safe and efficient accommodation of pedestrians. A sidewalk system is proposed which will encompass the entire building structure ensuring adequate pedestrian access around the building.



NOT TO SCALE

00 - MORNING PEAK HOUR
(00) - EVENING PEAK HOUR

6212.dgn

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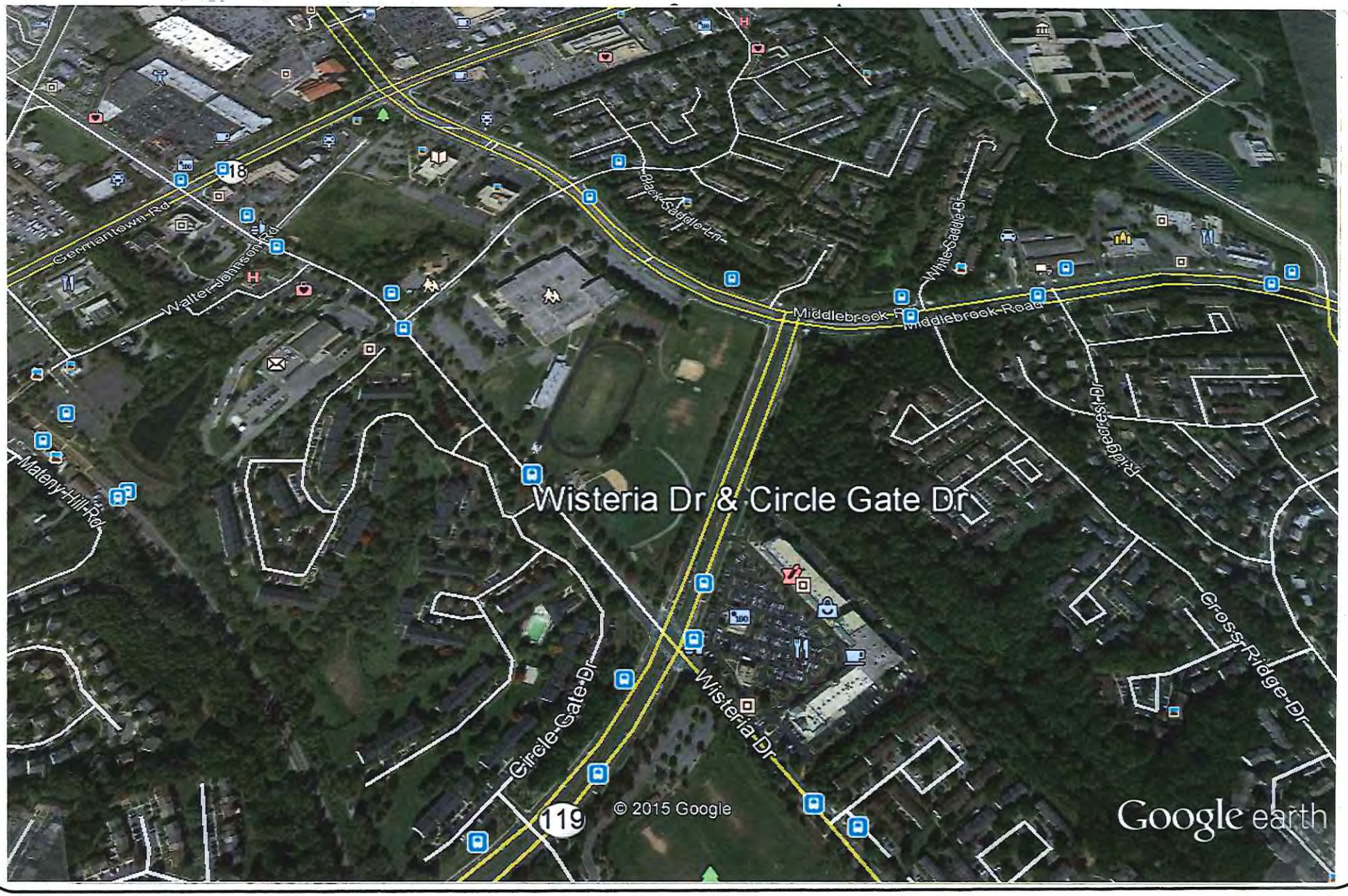
EXHIBIT 9

BIKEWAY PLAN

Attachment C

The proposed use will have a very minimal impact on pedestrian and bicycle safety within the study area.

Within the study area transit service is provided by the Montgomery County RideOn Bus System. RideOn operates five different routes within the study area. Route 61 operates along MD 118 between Shady Grove Road Metro Station and the Germantown Transit Center. It operates with 6 to 7 minute headways in the peak hours. Route 74 also operates between Shady Grove Road Metro Station and the Germantown Transit Center. In the vicinity of te school it travels along Great Seneca Highway, Middlebrook Road and Crystal rock Drive. It has headways of approximately 6 minutes during the peak hours. RideOn Route 83 operates between the Milestone Park -N-Ride lot and the Germantown Transit Center. It also has certain trips which continue to the Germantown MARC station. It has headways of approximately five minutes during the morning and evening peak hours. Route 97 operates between the Germantown Transit Center and the Sugarloaf Shopping Center. In the study area it travels mainly along Middlebrook Road, Wisteria Drive, and Crystal Rock Drive. Lastly RideOn operates Route 98 along Wynnfield Drive, Wisteria Drive, Middlebrook Road and Century Boulevard. Its termini are the Kingsview Park-N-Ride lot and the Germantown Transit Center. This route has headways in the range of 4 to 7 minutes during the morning and evening peak hours. This route operates along New Hampshire Avenue with headways of approximately 30 minutes. Exhibit 10 was prepared to identify the location of Bus Stops within the immediate vicinity of the school. Information pertaining to the Bikeway Master Plan and Transit Schedules is contained in Appendix G.



4

Attachment C

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EXHIBIT 10 LOCATION OF BUS STOPS

TRANSPORTATION POLICY AREA REVIEW

The Seneca Valley High School modernization project is subject to the Mandatory Referral process, however, it is not subject to TPAR legislation. Therefore, it is not ,required to make a payment of 25% of the development impact tax to meet the TPAR requirement for the Germantown West and/or Germantown Town Center Policy Area as outlined in the *Local Area Transportation Review and Transportation Policy Area Review Guidelines*

CONCLUSION

A traffic impact study was performed in accordance with the *Local Area Transportation Review and Transportation Policy Area Review Guidelines* for the modernization of the Seneca Valley High School located in Germantown, Montgomery County, Maryland. The results of the analysis indicate that the proposed expansion of the school can be accomplished without adversely impacting traffic operations on the surrounding road network. All fifteen critical intersections analyzed as part of the study are projected to operate below the acceptable threshold for the identified Policy Area as outlined in the Guidelines. Therefore, the LATR aspect of the Guidelines is satisfied.

In addition the project is not subject to TPAR as part of the Mandatory Referral process; therefore, this aspect of the Guidelines is also satisfied with submission of this report.

Street Traffic Studies, Ltd.

December 27, 2016

Joshua Penn
Planner Coordinator
M-NCPPC
8787 Georgia Avenue
Silver Spring, Maryland 20910-3760

RE: Seneca Valley High School
STS No.: 6343

Dear Mr. Penn:

This is in response to the County's concern over the Crystal Rock Drive/Wisteria Drive intersection and the potential need for signalization at this intersection once the Seneca Valley High School expansion/renovation is complete. We have provided the following to address these concerns.

Existing Conditions: The Crystal Rock Drive/Wisteria Drive intersection is a four legged intersection controlled with Stop signs on the Crystal Rock Drive-Post Office Driveway approaches. Wisteria Drive is the major roadway, with a 30 MPH speed limit. It has two marked approach lanes at the intersection, a shared thru/right turn lane and exclusive left turn lanes. Crystal Rock Drive, the minor roadway, has a 30 MPH speed limit and is marked with two approach lanes, a shared thru/right turn lane and an exclusive left turn lane. The Post Office driveway is marked as a single lane of approach.

Typically, auxiliary lanes on the major roadway are not considered as full lanes and consequently Wisteria Drive was analyzed as having a single lane of approach. Auxiliary lanes on the minor roads are however considered and consequently the Crystal Rock Drive approach was analyzed as having two approach lanes. The Post Office driveway is marked as a single lane and was analyzed as such.

Peak period turning movement counts were conducted at the intersection on Tuesday, November 19, 2013 between the hours of 6:30 to 9:30 AM and 2:00 to 7:00 PM. Based on the existing traffic volumes no hour was satisfied under Warrant 1 Condition A and three (3) hours were satisfied under Warrant 2 Condition B. None of the other full volume warrants were satisfied and no hour of the Four Hour Volume Warrant was satisfied. The warrant worksheets are enclosed.

Using the driveway counts conducted at the school driveways, trip generation rates were calculated for each hour counted. At the time the counts were conducted, Seneca Valley High School had an enrollment of 1,277 students. Therefore the trips generated per student per hour were calculated and are shown in Table 1.

TABLE 1
TRIP GENERATION RATES

HOUR	VOLUMES			RATE		
	IN	OUT	TOTAL	IN	OUT	TOTAL
6:30-7:30 AM	497	222	719	0.39	0.17	0.56
7:30-8:30	56	46	102	0.04	0.04	0.08
8:30-9:30	32	28	60	0.03	0.02	0.05
2-3 PM	127	195	322	0.10	0.15	0.25
3-4	49	91	140	0.04	0.07	0.11
4-5	65	86	151	0.05	0.07	0.12
5-6	45	42	87	0.04	0.03	0.07

The proposed expansion/renovation will increase the student population to 2,400 students or an increase of 1,123 students. Table 2 shows the projected increase in trips due to the additional students.

TABLE 2
TRIP GENERATION

HOUR	VOLUMES		
	IN	OUT	TOTAL
6:30-9:30 AM	438	191	629
7:30-8:30	45	45	90
8:30-9:30	34	22	56
2-3 PM	112	169	281
3-4	45	79	124
4-5	56	79	135
5-6	45	34	79

These trips were assigned to the Wisteria Drive/Crystal Rock Drive using the same trip distributions used in the LATR study and the results are shown in Exhibit 1. These trips to the existing traffic volumes and the projected volumes were then analyzed using the same signal warrants.

The results of the analyses show that two (2) hours of Warrant 1 Condition A are satisfied and two (2) hours[1] of Warrant 1 Condition B are satisfied. One (1) hour of the Four Hour Volume warrant would be satisfied under total traffic conditions.

In conclusion, it is unlikely that signalization would be justified under total traffic conditions based on the existing assumptions. This could change if the school boundaries change. Additionally the County is contemplating changes to Wisteria Drive which could influence operations at this intersection. At our meeting it was unclear as yet what these changes would consist of; however once the changes are defined another analyses may be required.

Please review the above and let me know if you have any questions or comments.

Sincerely,

Mike Nalepa
Senior Traffic Engineer

cc. Gregory Leck
Mark Terry
Kamal Hamud
Joe Pospisil
Dennis Cross
Jason Fritz

[1] It is noted that the driveway counts were only conducted between the hours of 2:00 to 6:00 PM during the afternoon period, while the turning movement count at the intersection included the 6:00 to 7:00 PM hour. This hour was satisfied under existing conditions and would continue to be warranted under total volumes therefore three (3) hours of Warrant 1 Condition B would be satisfied under total traffic volumes.

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Crystal Rock Dr
and: Wisteria Dr
Counted by: MK/SB

Location : Montgomery County
Date : 04/02/15 Day: Thursday
Weather : Clear
Entered by: SN

STREET TRAFFIC STUDIES LTD

TIME	TRAFFIC FROM NORTH on: Crystal Rock Dr				TRAFFIC FROM SOUTH on: Post Office				TRAFFIC FROM EAST on: Wisteria Dr				TRAFFIC FROM WEST on: Wisteria Dr				TOTAL N + S + E + W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
AM																	
06:30-45	10	1	12	23	0	2	0	2	12	14	0	26	13	21	1	35	86
45-00	9	3	13	25	0	0	0	0	20	31	0	51	15	27	2	44	120
07:00-15	39	1	23	63	5	1	0	6	46	25	0	71	49	52	2	103	243
15-30	51	2	29	82	0	0	1	1	36	57	2	95	44	72	2	118	296
30-45	16	0	9	25	0	0	1	1	8	47	1	56	11	60	6	77	159
45-00	12	2	11	25	0	0	1	1	16	40	8	64	11	67	11	89	179
08:00-15	17	4	15	36	1	1	0	2	11	42	1	54	11	74	1	86	178
15-30	17	2	10	29	0	0	1	1	12	40	0	52	12	63	0	75	157
30-45	13	1	9	23	3	0	0	3	10	55	3	68	12	62	3	77	171
45-00	17	3	4	24	1	0	0	1	22	73	0	95	11	42	1	54	174
09:00-15	20	0	11	31	0	1	0	1	11	48	0	59	14	50	0	64	155
15-30	27	1	9	37	3	0	3	6	10	55	0	65	18	57	2	77	185
AM 3 HOUR TOTALS	248	20	155	423	13	5	7	25	214	527	15	756	221	647	31	899	2103
1 HOUR TOTALS																	
630-730	109	7	77	193	5	3	1	9	114	127	2	243	121	172	7	300	745
645-745	115	6	74	195	5	1	2	8	110	160	3	273	119	211	12	342	818
07-08	118	5	72	195	5	1	3	9	106	169	11	286	115	251	21	387	877
715-815	96	8	64	168	1	1	3	5	71	186	12	269	77	273	20	370	812
730-830	62	8	45	115	1	1	3	5	47	169	10	226	45	264	18	327	673
745-845	59	9	45	113	4	1	2	7	49	177	12	238	46	266	15	327	685
08-09	64	10	38	112	5	1	1	7	55	210	4	269	46	241	5	292	680
815-915	67	6	34	107	4	1	1	6	55	216	3	274	49	217	4	270	657
830-930	77	5	33	115	7	1	3	11	53	231	3	287	55	211	6	272	685
PEAK HOUR																	
07-08	118	5	72	195	5	1	3	9	106	169	11	286	115	251	21	387	877

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Crystal Rock Dr
and: Wisteria Dr
Counted by: MK/SB

Location : Montgomery County
Date : 04/02/15
Weather : Clear
Entered by SN

Day: Thursday

STREET TRAFFIC STUDIES LTD

TIME	TRAFFIC FROM NORTH on: Crystal Rock Dr				TRAFFIC FROM SOUTH on: Post Office				TRAFFIC FROM EAST on: Wisteria Dr				TRAFFIC FROM WEST on: Wisteria Dr				TOTAL N + S + E + W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
PM																	
02:00-15	27	0	15	42	0	0	0	0	18	52	1	71	17	71	0	88	201
15-30	54	0	21	75	0	0	0	0	13	47	0	60	18	68	2	88	223
30-45	22	0	20	42	1	0	0	1	15	46	0	61	14	81	0	95	199
45-00	21	0	16	37	0	0	0	0	9	71	0	80	12	80	1	93	210
03:00-15	19	0	19	38	1	0	0	1	10	76	1	87	20	81	0	101	227
15-30	25	0	18	43	1	0	0	1	12	75	1	88	16	75	2	93	225
30-45	17	0	13	30	1	1	1	3	9	84	1	94	14	61	1	76	203
45-00	25	1	17	43	1	0	0	1	11	81	1	93	17	82	4	103	240
04:00-15	24	0	15	39	1	2	0	3	23	90	1	114	17	67	4	88	244
15-30	23	1	18	42	0	0	4	4	8	95	1	104	26	116	1	143	293
30-45	30	2	25	57	9	2	1	12	11	96	3	110	19	82	3	104	283
45-00	30	0	24	54	0	2	0	2	8	72	4	84	19	117	3	139	279
05:00-15	28	3	20	51	3	1	2	6	11	67	2	80	11	110	6	127	264
15-30	20	2	17	39	7	1	4	12	9	110	2	121	20	123	2	145	317
30-45	17	1	10	28	1	0	2	3	8	90	4	102	13	95	1	109	242
45-00	22	0	24	46	5	1	3	9	15	96	1	112	26	100	1	127	294
06:00-15	24	1	15	40	1	2	3	6	10	102	0	112	11	90	1	102	260
15-30	22	0	14	36	0	1	1	2	14	87	0	101	16	110	0	126	265
30-45	23	3	20	46	1	1	0	2	14	92	0	106	8	98	1	107	261
45-00	20	2	21	43	1	0	0	1	9	67	0	76	17	75	1	93	213
PM 5 HOUR TOTALS	493	16	362	871	34	14	21	69	237	1596	23	1856	331	1782	34	2147	4943
1 HOUR TOTALS																	
02-03	124	0	72	196	1	0	0	1	55	216	1	272	61	300	3	364	833
215-315	116	0	76	192	2	0	0	2	47	240	1	288	64	310	3	377	859
230-330	87	0	73	160	3	0	0	3	46	268	2	316	62	317	3	382	861
245-345	82	0	66	148	3	1	1	5	40	306	3	349	62	297	4	363	865
03-04	86	1	67	154	4	1	1	6	42	316	4	362	67	299	7	373	895
315-415	91	1	63	155	4	3	1	8	55	330	4	389	64	285	11	360	912
330-430	89	2	63	154	3	3	5	11	51	350	4	405	74	326	10	410	980
345-445	102	4	75	181	11	4	5	20	53	362	6	421	79	347	12	438	1060
04-05	107	3	82	192	10	6	5	21	50	353	9	412	81	382	11	474	1099
415-515	111	6	87	204	12	5	7	24	38	330	10	378	75	425	13	513	1119
430-530	108	7	86	201	19	6	7	32	39	345	11	395	69	432	14	515	1143
445-545	95	6	71	172	11	4	8	23	36	339	12	387	63	445	12	520	1102
05-06	87	6	71	164	16	3	11	30	43	363	9	415	70	428	10	508	1117
515-615	83	4	66	153	14	4	12	30	42	398	7	447	70	408	5	483	1113
530-630	85	2	63	150	7	4	9	20	47	375	5	427	66	395	3	464	1061
545-645	91	4	73	168	7	5	7	19	53	377	1	431	61	398	3	462	1080
06-07	89	6	70	165	3	4	4	11	47	348	0	395	52	373	3	428	999
PEAK HOUR																	
430-530	108	7	86	201	19	6	7	32	39	345	11	395	69	432	14	515	1143

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*** TRAFFIC SIGNAL WARRANT WORK SHEET ***

MAJOR ROAD: Crystal Rock Dr — CONDITION: Existing Traffic Volumes

MINOR CROSS ROAD: Wisteria Dr — DAY Thursday — DATE 04/02/15

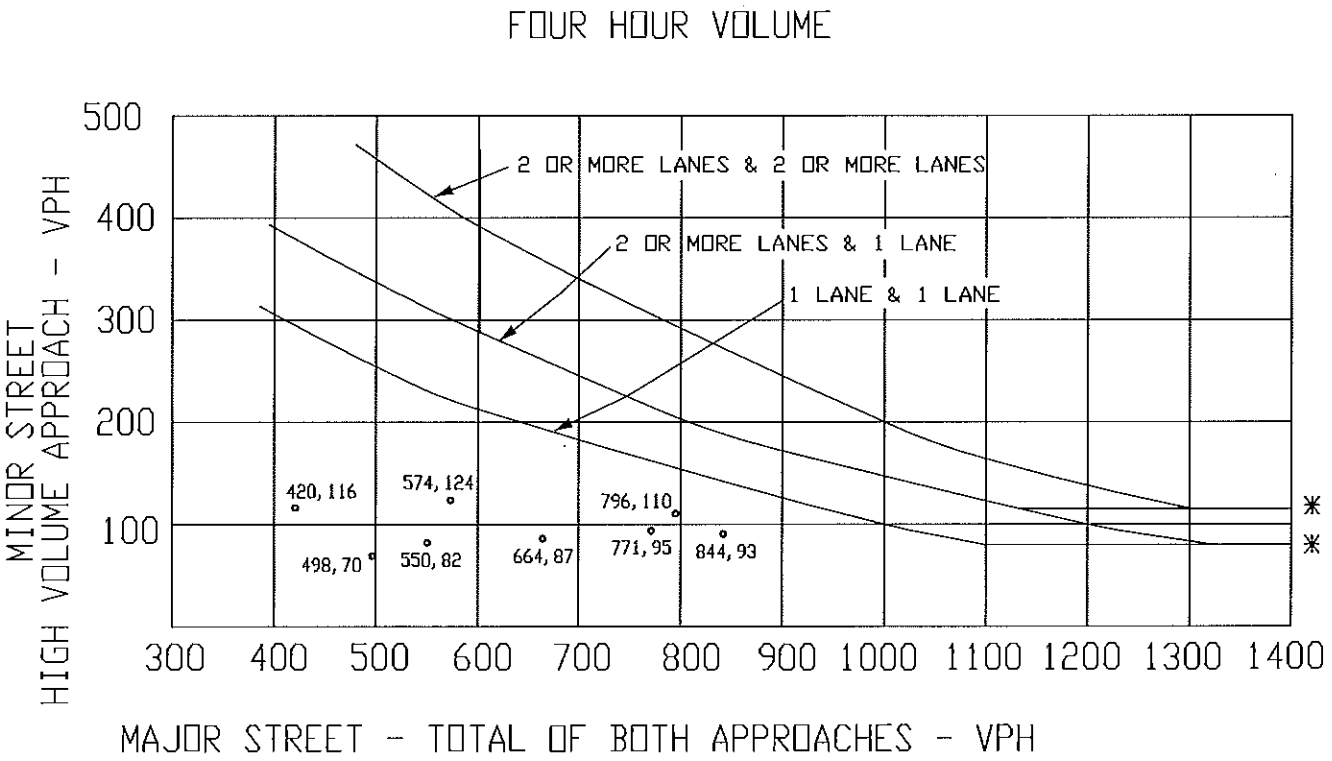
	---VOLUMES COUNTED---- (per hour)			WARRANT #1 CONDITION A		WARRANT #1 CONDITION B		REDUCED WARRANTS 70% Speeds > 40 mph				REDUCED WARRANTS 80% Combination			
								CONDITION A		CONDITION B		CONDITION A		CONDITION B	
One lane/ two+ lanes	MAJOR ROAD (TOTAL BOTH APPROACHES) 1 Lanes	MINOR ROAD (MAXIMUM VOLUME APPROACH) 1 Lanes	CROSSWALK (MAXIMUM PEDESTRIAN VOLUME)	maj. 500 600	min. 150 200	maj. 750 900	min. 75 100	maj.	min.	maj.	min.	maj.	min.	maj.	min.
												400	120	600	60
TIME															
630-730	420	116										✓			✓
730-830	498	70										✓			✓
830-930	550	82		✓			✓					✓			✓
7–8															
8–9															
9–10															
10–11															
11–12															
12–1															
1–2															
2–3	574	124		✓			✓					✓	✓		✓
3–4	664	87		✓			✓					✓		✓	✓
4–5	796	110		✓		✓	✓					✓		✓	✓
5–6	844	93		✓		✓	✓					✓		✓	✓
6–7	771	95		✓		✓	✓					✓		✓	✓
7–8															
NUMBER OF HOURS EXCEEDED:				0		3						1		4	
SIGNAL WARRANTED? (8 hours or more exceeded)				No		No						No			

Attachment D

Crystal Rock Dr @ Wisteria Dr

EXISTING TRAFFIC VOLUMES

1 Lane Approach



* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Seneca Valley HS Driveway
and: Middlebrook Drive
Counted by: MV

Location : Montgomery County
Date : 11/19/13 Day: Tuesday
Weather : Clear
Entered by: CFS

STREET TRAFFIC STUDIES LTD

TIME	TRAFFIC FROM NORTH on:				TRAFFIC FROM SOUTH on: Seneca Valley DW				TRAFFIC FROM WEST on: Middlebrook Rd				TRAFFIC FROM EAST on:				TOTAL N + S + E + W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
AM																	
06:30-45	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
45-00	0	0	0	0	0	0	11	11	34	0	0	34	0	0	0	0	45
07:00-15	0	0	0	0	0	0	38	38	55	0	0	55	0	0	0	0	93
15-30	0	1	0	1	0	0	71	0	66	0	0	66	0	0	0	0	67
30-45	0	0	0	0	0	0	5	0	2	0	0	2	0	0	0	71	73
45-00	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	5	8
08:00-15	0	0	0	0	0	0	2	0	2	0	0	2	0	0	0	0	2
15-30	0	0	0	0	0	0	2	0	1	0	0	1	0	0	0	2	3
30-45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
45-00	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
09:00-15	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
15-30	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	2
AM 3 HOUR TOTALS	0	1	0	1	0	0	130	50	167	0	0	167	0	0	0	80	298
1 HOUR TOTALS																	
630-730	0	1	0	1	0	0	49	49	156	0	0	156	0	0	0	0	206
645-745	0	1	0	1	0	0	49	49	157	0	0	157	0	0	0	71	278
07-08	0	1	0	1	0	0	109	38	126	0	0	126	0	0	0	76	241
715-815	0	1	0	1	0	0	76	0	73	0	0	73	0	0	0	78	150
730-830	0	0	0	0	0	0	5	0	8	0	0	8	0	0	0	78	86
745-845	0	0	0	0	0	0	2	0	6	0	0	6	0	0	0	9	15
08-09	0	0	0	0	0	0	4	0	4	0	0	4	0	0	0	4	8
815-915	0	0	0	0	0	0	2	0	3	0	0	3	0	0	0	4	7
830-930	0	0	0	0	0	0	0	1	3	0	0	3	0	0	0	2	6
PEAK HOUR 07-08	0	1	0	1	0	0	109	38	126	0	0	126	0	0	0	76	241

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Middlebrook Road
and: Seneca Valley HS Diveway
Counted by: MV

Location : Montgomery County
Date : 11/19/13
Weather : Clear
Entered by CFS

Day: Tuesday

STREET TRAFFIC STUDIES LTD

TIME	TRAFFIC FROM NORTH on:				TRAFFIC FROM SOUTH on: Seneca Valley HS DW				TRAFFIC FROM WEST on: Middlebrook Rd				TRAFFIC FROM EAST on:				TOTAL N + S + E + W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
PM																	
02:00-15	0	0	0	0	0	0	12	12	21	0	0	21	0	0	0	0	33
15-30	0	0	0	0	0	0	30	30	15	0	0	15	0	0	0	0	45
30-45	0	0	0	0	0	0	9	9	7	0	0	7	0	0	0	0	16
45-00	0	0	0	0	0	0	8	8	2	0	0	2	0	0	0	0	10
03:00-15	0	0	0	0	0	0	6	6	2	0	0	2	0	0	0	0	8
15-30	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	4
30-45	0	0	0	0	0	0	7	7	2	0	0	2	0	0	0	0	9
45-00	0	0	0	0	0	0	6	6	2	0	0	2	0	0	0	0	8
04:00-15	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	2
15-30	0	0	0	0	0	0	6	6	2	0	0	2	0	0	0	0	8
30-45	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
45-00	0	0	0	0	0	0	4	4	3	0	0	3	0	0	0	0	7
05:00-15	0	0	0	0	0	0	2	2	4	0	0	4	0	0	0	0	6
15-30	0	0	0	0	0	0	4	4	3	0	0	3	0	0	0	0	7
30-45	0	0	0	0	0	0	3	3	3	0	0	3	0	0	0	0	6
45-00	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	2
PM 4 HOUR TOTALS	0	0	0	0	0	0	104	104	68	0	0	68	0	0	0	0	172
1 HOUR TOTALS																	
02-03	0	0	0	0	0	0	59	59	45	0	0	45	0	0	0	0	104
215-315	0	0	0	0	0	0	53	53	26	0	0	26	0	0	0	0	79
230-330	0	0	0	0	0	0	27	27	11	0	0	11	0	0	0	0	38
245-345	0	0	0	0	0	0	25	25	6	0	0	6	0	0	0	0	31
03-04	0	0	0	0	0	0	23	23	6	0	0	6	0	0	0	0	29
315-415	0	0	0	0	0	0	18	18	5	0	0	5	0	0	0	0	23
330-430	0	0	0	0	0	0	20	20	7	0	0	7	0	0	0	0	27
345-445	0	0	0	0	0	0	14	14	5	0	0	5	0	0	0	0	19
04-05	0	0	0	0	0	0	12	12	6	0	0	6	0	0	0	0	18
415-515	0	0	0	0	0	0	13	13	9	0	0	9	0	0	0	0	22
430-530	0	0	0	0	0	0	11	11	10	0	0	10	0	0	0	0	21
445-545	0	0	0	0	0	0	13	13	13	0	0	13	0	0	0	0	26
05-06	0	0	0	0	0	0	10	10	11	0	0	11	0	0	0	0	21
PEAK HOUR	0	0	0	0	0	0	59	59	45	0	0	45	0	0	0	0	104

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Crystal Rock Drive
and: Seneca Valley High School North DW
Counted by: MN

Location : Montgomery Co
Date : 11/19/13 Day: Tuesday
Weather : Clear
Entered by: MN

STREET TRAFFIC STUDIES LTD

TIME	TRAFFIC FROM NORTH on: Crystal Rock Dr				TRAFFIC FROM SOUTH on: Crystal Rock Dr				TRAFFIC FROM WEST on:				TRAFFIC FROM EAST on: School DW				TOTAL N+S + E+W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
AM																	
06:30-45	0	0	3	3	0	0	1	1	0	0	0	0	0	0	4	4	8
45-00	0	0	14	14	0	0	7	7	0	0	0	0	0	0	5	5	26
07:00-15	0	0	13	13	0	0	4	4	0	0	0	0	10	0	17	27	44
15-30	0	0	5	5	0	0	0	0	0	0	0	0	8	3	13	24	29
30-45	0	0	2	2	0	0	0	0	0	0	0	0	10	0	4	14	16
45-00	0	0	3	3	0	0	0	0	0	0	0	0	3	0	4	7	10
08:00-15	0	0	0	0	0	0	1	1	0	0	0	0	3	0	1	4	5
15-30	0	0	1	1	0	0	0	0	0	0	0	0	3	0	4	7	8
30-45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	7	7
45-00	0	0	1	1	0	0	1	1	0	0	0	0	0	0	1	1	3
09:00-15	0	0	1	1	0	0	0	0	0	0	0	0	1	0	2	3	4
15-30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	5	6	6
AM 3 HOUR TOTALS	0	0	43	43	0	0	14	14	0	0	0	0	40	3	66	109	166
1 HOUR TOTALS																	
630-730	0	0	35	35	0	0	12	12	0	0	0	0	18	3	39	60	107
645-745	0	0	34	34	0	0	11	11	0	0	0	0	28	3	39	70	115
07-08	0	0	23	23	0	0	4	4	0	0	0	0	31	3	38	72	99
715-815	0	0	10	10	0	0	1	1	0	0	0	0	24	3	22	49	60
730-830	0	0	6	6	0	0	1	1	0	0	0	0	19	0	13	32	39
745-845	0	0	4	4	0	0	1	1	0	0	0	0	10	0	15	25	30
08-09	0	0	2	2	0	0	2	2	0	0	0	0	7	0	12	19	23
815-915	0	0	3	3	0	0	1	1	0	0	0	0	5	0	13	18	22
830-930	0	0	2	2	0	0	1	1	0	0	0	0	3	0	14	17	20
PEAK HOUR																	
645-745	0	0	34	34	0	0	1	11	0	0	0	0	28	3	39	70	115

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Crystal Rock Drive
and: Seneca Valley High School North DW
Counted by: MN

Location : Montgomery County
Date : 11/19/13
Weather : Clear
Entered by MN

Day: Tuesday

STREET TRAFFIC STUDIES LTD

TIME	TRAFFIC FROM NORTH on: Crystal Rock Dr				TRAFFIC FROM SOUTH on: Crystal Rock Dr				TRAFFIC FROM WEST on:				TRAFFIC FROM EAST on: School DW				TOTAL N + S + E + W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
PM																	
02:00-15	0	0	2	2	0	0	0	0	0	0	0	0	1	0	4	5	7
15-30	0	0	1	1	0	0	2	2	0	0	0	0	13	0	17	30	33
30-45	0	0	1	1	0	0	0	0	0	0	0	0	3	0	4	7	8
45-00	0	0	0	0	0	0	1	1	0	0	0	0	4	0	7	11	12
03:00-15	0	0	1	1	0	0	2	2	0	0	0	0	0	0	6	6	9
15-30	0	0	2	2	0	0	2	2	0	0	0	0	5	1	11	17	21
30-45	0	0	2	2	0	0	0	0	0	0	0	0	0	0	18	18	20
45-00	0	0	1	1	0	0	0	0	0	0	0	0	1	0	2	3	4
04:00-15	0	0	1	1	0	0	0	0	0	0	0	0	2	0	6	8	9
15-30	0	0	1	1	0	0	1	1	0	0	0	0	1	0	6	7	9
30-45	0	0	1	1	0	0	0	0	0	0	0	0	2	0	3	5	6
45-00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3	3
05:00-15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	4	4
15-30	0	0	2	2	0	0	0	0	0	0	0	0	2	0	3	5	7
30-45	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	2	3
45-00	0	0	1	1	0	0	0	0	0	0	0	0	1	0	2	3	4
PM 4 HOUR TOTALS	0	0	17	17	0	0	8	8	0	0	0	0	37	1	96	134	159
1 HOUR TOTALS																	
02-03	0	0	4	4	0	0	3	3	0	0	0	0	21	0	32	53	60
215-315	0	0	3	3	0	0	5	5	0	0	0	0	20	0	34	54	62
230-330	0	0	4	4	0	0	5	5	0	0	0	0	12	1	28	41	50
245-345	0	0	5	5	0	0	5	5	0	0	0	0	9	1	42	52	62
03-04	0	0	6	6	0	0	4	4	0	0	0	0	6	1	37	44	54
315-415	0	0	6	6	0	0	2	2	0	0	0	0	8	1	37	46	54
330-430	0	0	5	5	0	0	1	1	0	0	0	0	4	0	32	36	42
345-445	0	0	4	4	0	0	1	1	0	0	0	0	6	0	17	23	28
04-05	0	0	3	3	0	0	1	1	0	0	0	0	6	0	17	23	27
415-515	0	0	2	2	0	0	1	1	0	0	0	0	5	0	14	19	22
430-530	0	0	3	3	0	0	0	0	0	0	0	0	6	0	11	17	20
445-545	0	0	3	3	0	0	0	0	0	0	0	0	4	0	10	14	17
05-06	0	0	4	4	0	0	0	0	0	0	0	0	4	0	10	14	18
PEAK HOUR 215-315	0	0	3	3	0	0	5	5	0	0	0	0	20	0	34	54	62

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Crystal Rock Drive | Location : Montgomery Co | STREET TRAFFIC STUDIES LTD

and: Seneca Valley High School Middle DW | Date : 11/19/13 | Day: Tuesday

Counted by: MN | Weather : Clear

Entered by: MN

TIME	TRAFFIC FROM NORTH on: Crystal Rock Dr				TRAFFIC FROM SOUTH on: Crystal Rock Dr				TRAFFIC FROM WEST on:				TRAFFIC FROM EAST on: School DW				TOTAL N + S + E + W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
AM																	
06:30-45	0	0	2	2	0	0	1	1	0	0	0	0	0	0	0	0	3
45-00	0	0	1	1	0	0	6	6	0	0	0	0	0	0	0	0	7
07:00-15	0	0	11	11	0	0	7	7	0	0	0	0	0	0	0	0	18
15-30	0	0	8	8	0	0	8	8	0	0	0	0	0	0	0	0	16
30-45	0	0	3	3	0	0	7	7	0	0	0	0	0	0	0	0	10
45-00	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	4
08:00-15	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	5
15-30	0	0	2	2	0	0	2	2	0	0	0	0	0	0	0	0	4
30-45	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
45-00	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
09:00-15	0	0	3	3	0	0	1	1	0	0	0	0	0	0	0	0	4
15-30	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
AM 3 HOUR TOTALS	0	0	32	32	0	0	43	43	0	0	0	0	0	0	0	0	75
1 HOUR TOTALS																	
630-730	0	0	22	22	0	0	22	22	0	0	0	0	0	0	0	0	44
645-745	0	0	23	23	0	0	28	28	0	0	0	0	0	0	0	0	51
07-08	0	0	22	22	0	0	26	26	0	0	0	0	0	0	0	0	48
715-815	0	0	11	11	0	0	24	24	0	0	0	0	0	0	0	0	35
730-830	0	0	5	5	0	0	18	18	0	0	0	0	0	0	0	0	23
745-845	0	0	2	2	0	0	12	12	0	0	0	0	0	0	0	0	14
08-09	0	0	2	2	0	0	9	9	0	0	0	0	0	0	0	0	11
815-915	0	0	5	5	0	0	5	5	0	0	0	0	0	0	0	0	10
830-930	0	0	5	5	0	0	3	3	0	0	0	0	0	0	0	0	8
PEAK HOUR 645-745	0	0	23	23	0	0	28	28	0	0	0	0	0	0	0	0	51

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Crystal Rock Drive
and: Seneca Valley High School Middle DW
Counted by: MN

Location : Montgomery County
Date : 11/19/13
Weather : Clear
Entered by MN

Day: Tuesday

STREET TRAFFIC STUDIES LTD

TIME	TRAFFIC FROM NORTH on: Crystal Rock Dr				TRAFFIC FROM SOUTH on: Crystal Rock Dr				TRAFFIC FROM WEST on:				TRAFFIC FROM EAST on: School DW				TOTAL N+S + E+W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
PM																	
02:00-15	0	0	8	8	0	0	1	1	0	0	0	0	0	0	0	0	9
15-30	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	4
30-45	0	0	2	2	0	0	2	2	0	0	0	0	0	0	0	0	4
45-00	0	0	4	4	0	0	2	2	0	0	0	0	0	0	0	0	6
03:00-15	0	0	2	2	0	0	3	3	0	0	0	0	0	0	0	0	5
15-30	0	0	4	4	0	0	1	1	0	0	0	0	0	0	0	0	5
30-45	0	0	4	4	0	0	1	1	0	0	0	0	0	0	0	0	5
45-00	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	4
04:00-15	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0	3
15-30	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
30-45	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
45-00	0	0	2	2	0	0	1	1	0	0	0	0	0	0	0	0	3
05:00-15	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
15-30	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
30-45	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
45-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4 HOUR TOTALS	0	0	38	38	0	0	15	15	0	0	0	0	0	0	0	0	53
1 HOUR TOTALS																	
02-03	0	0	18	18	0	0	5	5	0	0	0	0	0	0	0	0	23
215-315	0	0	12	12	0	0	7	7	0	0	0	0	0	0	0	0	19
230-330	0	0	12	12	0	0	8	8	0	0	0	0	0	0	0	0	20
245-345	0	0	14	14	0	0	7	7	0	0	0	0	0	0	0	0	21
03-04	0	0	14	14	0	0	5	5	0	0	0	0	0	0	0	0	19
315-415	0	0	13	13	0	0	4	4	0	0	0	0	0	0	0	0	17
330-430	0	0	9	9	0	0	4	4	0	0	0	0	0	0	0	0	13
345-445	0	0	5	5	0	0	4	4	0	0	0	0	0	0	0	0	9
04-05	0	0	3	3	0	0	5	5	0	0	0	0	0	0	0	0	8
415-515	0	0	3	3	0	0	3	3	0	0	0	0	0	0	0	0	6
430-530	0	0	4	4	0	0	2	2	0	0	0	0	0	0	0	0	6
445-545	0	0	5	5	0	0	1	1	0	0	0	0	0	0	0	0	6
05-06	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	3
PEAK HOUR 02-03	0	0	18	18	0	0	5	5	0	0	0	0	0	0	0	0	23

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Crystal Rock Drive
and: Seneca Valley High School South DW
Counted by: GW

Location : Montgomery Co
Date : 11/19/13 Day: Tuesday
Weather : Clear
Entered by: MN

STREET TRAFFIC STUDIES LTD

TIME	TRAFFIC FROM NORTH on: Crystal Rock Dr				TRAFFIC FROM SOUTH on: Crystal Rock Dr				TRAFFIC FROM WEST on:				TRAFFIC FROM EAST on: School DW				TOTAL N + S + E + W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
AM																	
06:30-45	0	0	4	4	0	0	11	11	0	0	0	0	0	0	4	4	19
45-00	0	0	16	16	0	0	22	22	0	0	0	0	4	0	6	10	48
07:00-15	0	0	46	46	0	0	45	45	0	0	0	0	22	0	30	52	143
15-30	0	0	39	39	0	0	67	67	0	0	0	0	30	0	17	47	153
30-45	0	0	2	2	0	0	6	6	0	0	0	0	1	0	0	1	9
45-00	0	0	0	0	0	0	2	2	0	0	0	0	1	0	1	2	4
08:00-15	0	0	2	2	0	0	4	4	0	0	0	0	0	0	0	0	6
15-30	0	0	1	1	0	0	1	1	0	0	0	0	2	0	1	3	5
30-45	0	0	1	1	0	0	6	6	0	0	0	0	2	0	1	3	10
45-00	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	3
09:00-15	0	0	4	4	0	0	1	1	0	0	0	0	1	0	1	2	7
15-30	0	0	0	0	0	0	3	3	0	0	0	0	1	0	4	5	8
AM 3 HOUR TOTALS	0	0	115	115	0	0	171	171	0	0	0	0	64	0	65	129	415
1 HOUR TOTALS																	
630-730	0	0	105	105	0	0	145	145	0	0	0	0	56	0	57	113	363
645-745	0	0	103	103	0	0	140	140	0	0	0	0	57	0	53	110	353
07-08	0	0	87	87	0	0	120	120	0	0	0	0	54	0	48	102	309
715-815	0	0	43	43	0	0	79	79	0	0	0	0	32	0	18	50	172
730-830	0	0	5	5	0	0	13	13	0	0	0	0	4	0	2	6	24
745-845	0	0	4	4	0	0	13	13	0	0	0	0	5	0	3	8	25
08-09	0	0	4	4	0	0	14	14	0	0	0	0	4	0	2	6	24
815-915	0	0	6	6	0	0	11	11	0	0	0	0	5	0	3	8	25
830-930	0	0	5	5	0	0	13	13	0	0	0	0	4	0	6	10	28
PEAK HOUR 630-730	0	0	105	105	0	0	145	145	0	0	0	0	56	0	57	113	363

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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

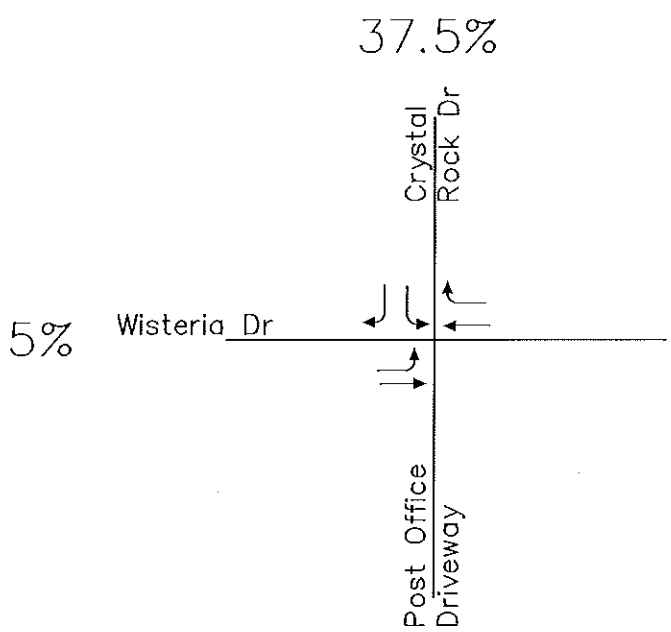
Intersection of: Crystal Rock Drive
and: Seneca Valley High School South DW
Counted by: GW

Location : Montgomery County
Date : 11/19/13
Weather : Clear
Entered by MN

Day: Tuesday

STREET TRAFFIC STUDIES LTD

TIME	TRAFFIC FROM NORTH on: Crystal Rock Dr				TRAFFIC FROM SOUTH on: Crystal Rock Dr				TRAFFIC FROM WEST on:				TRAFFIC FROM EAST on: School DW				TOTAL N+S + E+W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
PM																	
02:00-15	0	0	13	13	0	0	15	15	0	0	0	0	5	0	4	9	37
15-30	0	0	7	7	0	0	10	10	0	0	0	0	30	0	25	55	72
30-45	0	0	1	1	0	0	1	1	0	0	0	0	7	0	5	12	14
45-00	0	0	2	2	0	0	3	3	0	0	0	0	5	0	2	7	12
03:00-15	0	0	1	1	0	0	2	2	0	0	0	0	2	0	3	5	8
15-30	0	0	1	1	0	0	4	4	0	0	0	0	5	0	4	9	14
30-45	0	0	1	1	0	0	1	1	0	0	0	0	3	0	4	7	9
45-00	0	0	1	1	0	0	3	3	0	0	0	0	2	0	1	3	7
04:00-15	0	0	1	1	0	0	1	1	0	0	0	0	6	0	4	10	12
15-30	0	0	4	4	0	0	3	3	0	0	0	0	2	0	4	6	13
30-45	0	0	15	15	0	0	9	9	0	0	0	0	8	0	12	20	44
45-00	0	0	7	7	0	0	7	7	0	0	0	0	6	0	9	15	29
05:00-15	0	0	7	7	0	0	2	2	0	0	0	0	4	0	4	8	17
15-30	0	0	7	7	0	0	5	5	0	0	0	0	3	0	3	6	18
30-45	0	0	2	2	0	0	1	1	0	0	0	0	0	0	2	2	5
45-00	0	0	2	2	0	0	1	1	0	0	0	0	0	0	2	2	5
PM 4 HOUR TOTALS	0	0	72	72	0	0	68	68	0	0	0	0	88	0	88	176	316
1 HOUR TOTALS																	
02-03	0	0	23	23	0	0	29	29	0	0	0	0	47	0	36	83	135
215-315	0	0	11	11	0	0	16	16	0	0	0	0	44	0	35	79	106
230-330	0	0	5	5	0	0	10	10	0	0	0	0	19	0	14	33	48
245-345	0	0	5	5	0	0	10	10	0	0	0	0	15	0	13	28	43
03-04	0	0	4	4	0	0	10	10	0	0	0	0	12	0	12	24	38
315-415	0	0	4	4	0	0	9	9	0	0	0	0	16	0	13	29	42
330-430	0	0	7	7	0	0	8	8	0	0	0	0	13	0	13	26	41
345-445	0	0	21	21	0	0	16	16	0	0	0	0	18	0	21	39	76
04-05	0	0	27	27	0	0	20	20	0	0	0	0	22	0	29	51	98
415-515	0	0	33	33	0	0	21	21	0	0	0	0	20	0	29	49	103
430-530	0	0	36	36	0	0	23	23	0	0	0	0	21	0	28	49	108
445-545	0	0	23	23	0	0	15	15	0	0	0	0	13	0	18	31	69
05-06	0	0	18	18	0	0	9	9	0	0	0	0	7	0	11	18	45
PEAK HOUR 02-03	0	0	23	23	0	0	29	29	0	0	0	0	47	0	36	83	135



HOUR	NEW TRIPS	
	IN	OUT
6:30–7:30 AM	438	191
7:30–8:30	45	45
8:30–9:30	34	22
2–3 PM	112	169
3–4	45	79
4–5	56	79
5–6	45	34

HOUR	MOVEMENT					
	↓	↳	↰	←	↲	→
6:30–7:30 AM	5	164	72	5	11	11
7:30–8:30	1	17	17	1	1	1
8:30–9:30	0	13	8	1	1	1
2–3 PM	4	42	63	4	3	3
3–4	2	17	30	2	1	1
4–5	2	21	30	2	1	2
5–6	1	17	13	1	1	1

NO SCALE

EXHIBIT 1

TRIPS GENERATED BY 1123 STUDENTS

*** TRAFFIC SIGNAL WARRANT WORK SHEET ***

MAJOR ROAD: Crystal Rock Dr CONDITION: Total Traffic Volumes

MINOR CROSS ROAD: Wisteria Dr DAY NA DATE NA

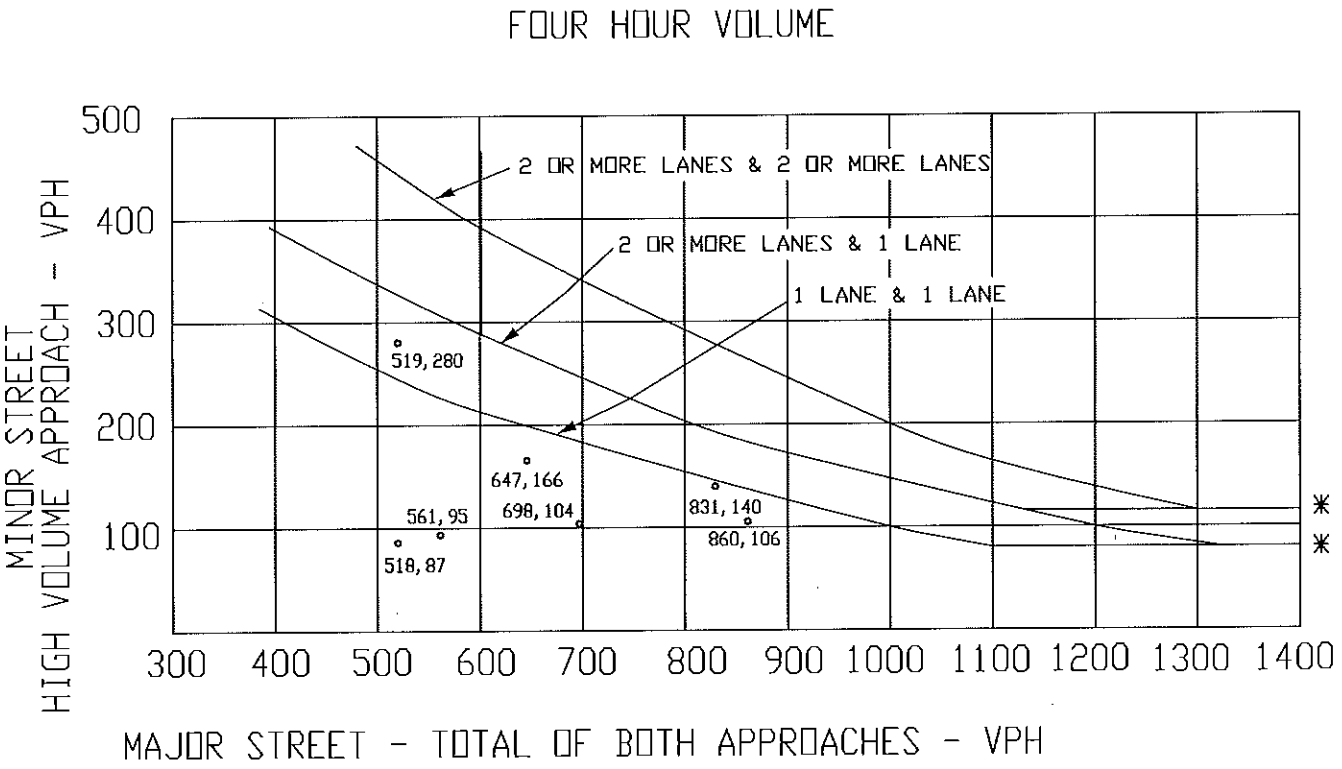
	---VOLUMES COUNTED---- (per hour)			WARRANT #1 CONDITION A		WARRANT #1 CONDITION B		REDUCED WARRANTS 70% Speeds > 40 mph				REDUCED WARRANTS 80% Combination			
								CONDITION A		CONDITION B		CONDITION A		CONDITION B	
One lane/ two+ lanes	MAJOR ROAD (TOTAL BOTH APPROACHES) 1 Lanes	MINOR ROAD (MAXIMUM VOLUME APPROACH) 1 Lanes	CROSSWALK (MAXIMUM PEDESTRIAN VOLUME)	maj. (500) 600	min. (150) 200	maj. (750) 900	min. (75) 100	maj.	min.	maj.	min.	maj. 400	min. 120	maj. 600	min. 60
TIME															
630–730	519	280		✓	✓		✓					✓	✓		✓
730–830	518	87		✓			✓					✓			✓
830–930	561	95		✓			✓					✓			✓
2–3	647	166		✓	✓		✓					✓	✓	✓	✓
3–4	698	104		✓			✓					✓		✓	✓
4–5	831	140		✓		✓	✓					✓	✓	✓	✓
5–6	860	106		✓		✓	✓					✓		✓	✓
NUMBER OF HOURS EXCEEDED:				2		2						3		4	
SIGNAL WARRANTED? (8 hours or more exceeded)				No		No						No			

Attachment D

Crystal Rock Dr @ Wisteria Dr

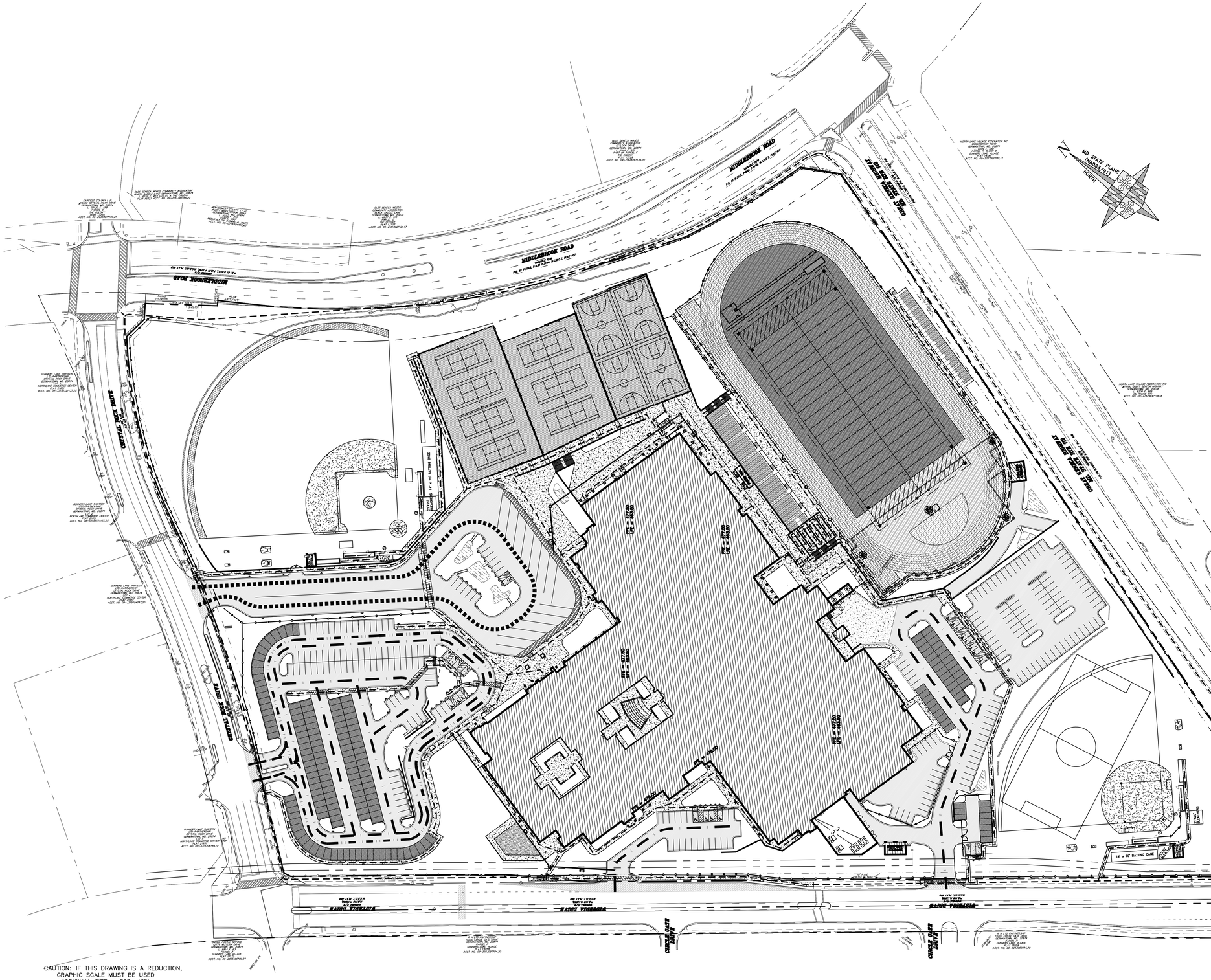
Total Traffic Volumes

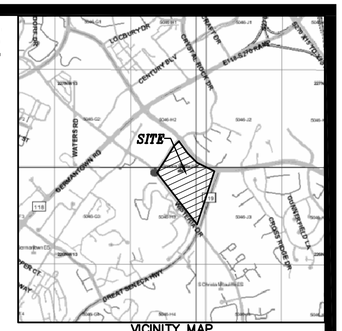
1 Lane Approach



* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

Attachment E





VICINITY MAP
SCALE: 1" = 2,000'±
(WSSC GRID: 227 NW 13)
MONTGOMERY COUNTY

LEGEND

- BUS CIRCULATION
- STUDENT DROP-OFF CIRCULATION
- PEDESTRIAN CIRCULATION
- STAFF/VISITOR PARKING CIRCULATION

CAUTION: IF THIS DRAWING IS A REDUCTION, GRAPHIC SCALE MUST BE USED (ORIGINAL SIZE = 30"x 42")

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

OWNER/APPLICANT
MONTGOMERY COUNTY PUBLIC SCHOOLS
45 WEST GUDE DRIVE, SUITE 4300
ROCKVILLE, MARYLAND 20850-4038
ATTN: JAMES TOKAR, PE
James_R_Tokar@mcpsmd.org
TEL: 240.314.1008 FAX: 240.279.3003

MOSELEYARCHITECTS
8001 BRADDOCK ROAD, SUITE 400, SPRINGFIELD, VA 22151
PHONE (703) 426-8057 FAX (703) 426-9280
MOSELEYARCHITECTS.COM

KEY MAP

SENECA VALLEY HIGH SCHOOL MODERNIZATION

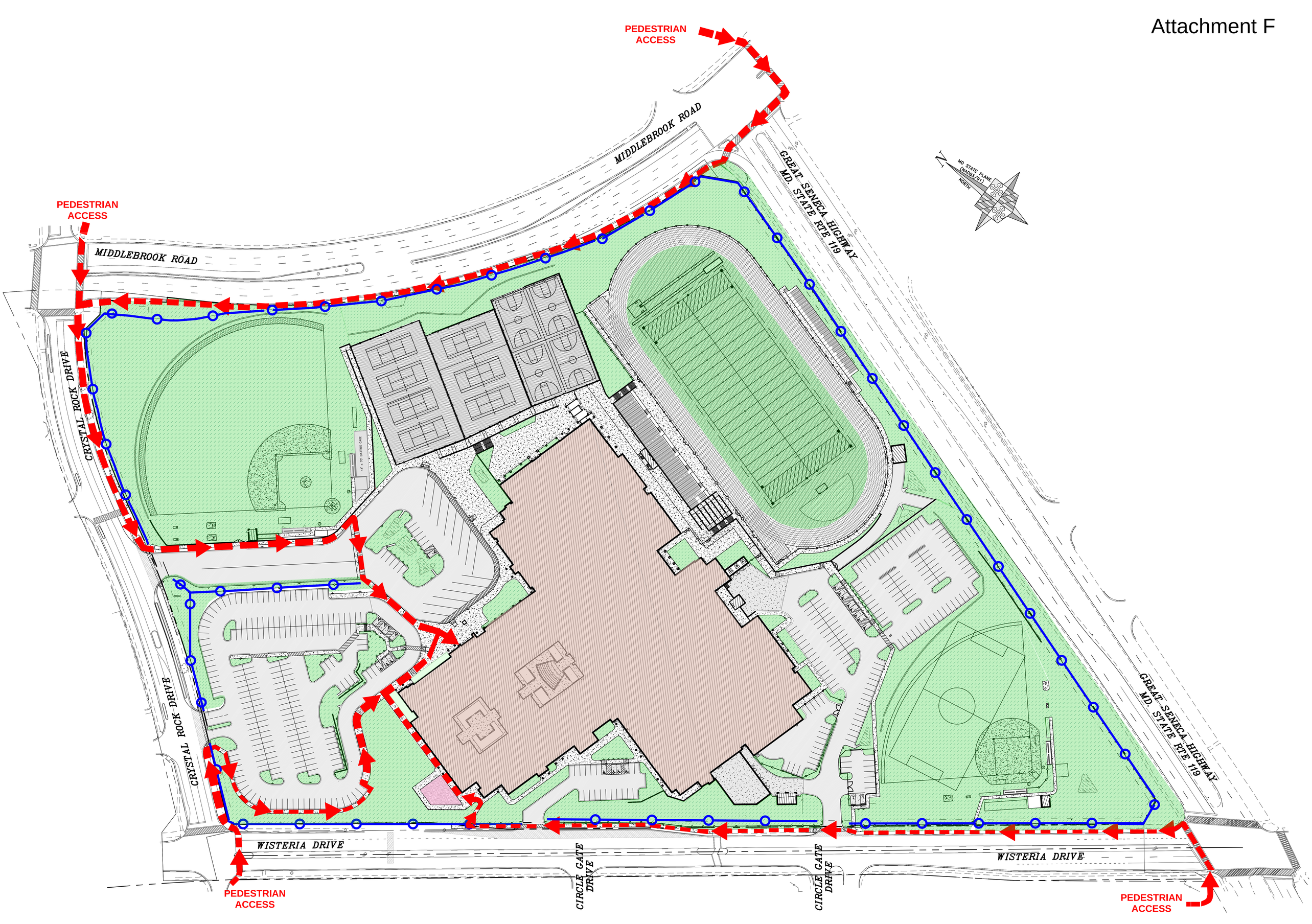
MONTGOMERY COUNTY PUBLIC SCHOOLS
19401 CRYSTAL ROCK DRIVE , GERMANTOWN, MD 20874
TAX MAP: EU41 PARCEL: P085 LIBER: 3866 , F: 255

PROJECT NO:	DATE: Issue Date
REVISIONS	
DATE	DESCRIPTION
12/22/16	MR SUBMISSION

OVERALL SITE CIRCULATION PLAN

C-CP

Attachment F



Attachment G

LEGEND

Symbol	Description
14"RED OAK	EXISTING TREE <24"DBH
#1 26"RED OAK	EXISTING SIGNIFICANT TREE >24" AND <30"DBH WITH TAG NUMBER
#2 32"RED OAK	EXISTING SPECIMEN TREE >30"DBH WITH TAG NUMBER
	PROPERTY BOUNDARY
	SCRUB AREA
	STREAM
SB SB	STREAM BUFFER
SURVEY TOPO / MNCPPC TOPO	LIMITS OF SURVEY
14"RED OAK	EXISTING TREE
	PROPERTY BOUNDARY
	LIMITS OF DISTURBANCE
	PROPOSED CANOPY TREE
	PROPOSED ORNAMENTAL TREE
	PROPOSED EVERGREEN TREE
	PROPOSED SHRUB
X / X	PLANT TYPE AND QUANTITY
	SOD

NOTE:
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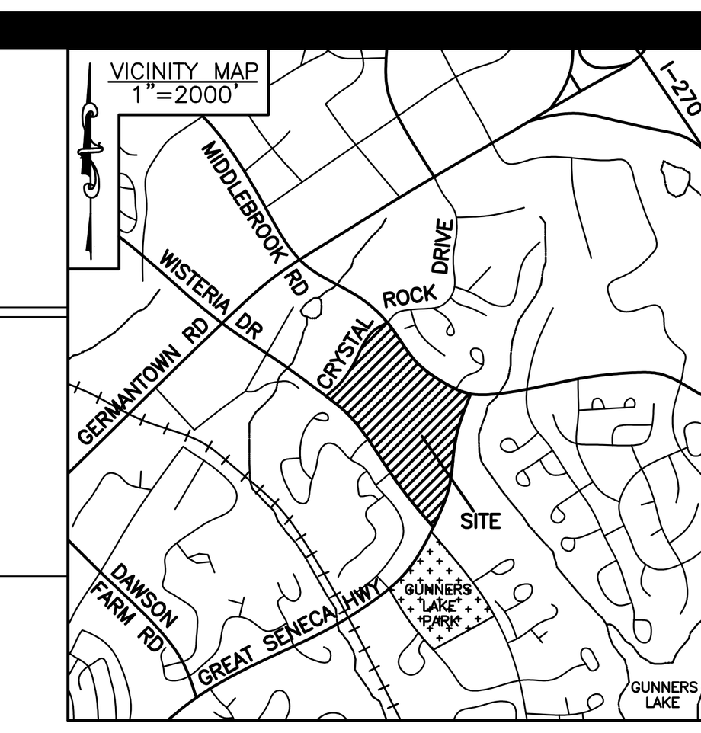
SHT 1 OF 4 | SHT 2 OF 4 | SHT 4 OF 4 | SHT 3 OF 4



MATCHLINE SHEET L–2.2

MATCHLINE SHEET L–2.4

OWNER/APPLICANT
MONTGOMERY COUNTY PUBLIC SCHOOLS
45 WEST GUDE DRIVE, SUITE 4300
ROCKVILLE, MARYLAND 20850–4038
ATTN: JAMES TOKAR, PE
James_R_Tokar@mcpsmd.org
TEL: 240.314.1008 FAX: 240.279.3003

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

MISS UTILITY

CALL "MISS UTILITY AT 1–800–257–7777, 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION. BEFORE EXCAVATION THE CONTRACTOR IS RESPONSIBLE FOR CALLING TICKET CHECK AT 1–866–821–4226 TO VERIFY THAT ALL UTILITIES HAVE BEEN MARKED, 48 HOURS AFTER CALLING MISS UTILITY. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE.

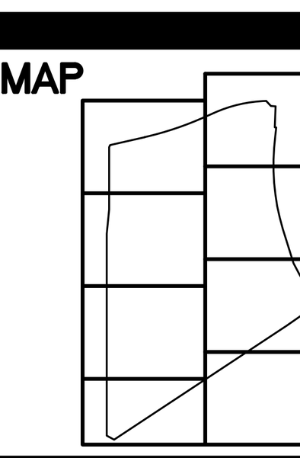
NORTON LAND DESIGN
LANDSCAPE ARCHITECTURE + ENVIRONMENTAL PLANNING
17830 NEW HAMPSHIRE AVENUE, SUITE 101 ASHTON, MD 20861
P.240.342.2329 F.240.342.2632 WWW.NORTONLANDDESIGN.COM

WATER CLASS USE I	WATERSHED GREAT SENECA CREEK	FEMA FLOODPLAIN MAP PANEL # 24031C 0170D
TRIBUTARY TRIB. TO GUNNERS BR.		
TAX MAP EU561/EU341/EU342	200 SHEET 226NW12/226NW13/227NW13	ADC MAP PAGE 18 E-3 GRID F-3

MOSELEYARCHITECTS
8001 BRADDOCK ROAD, SUITE 400, SPRINGFIELD, VA 22151
PHONE (703) 426-9057 FAX (703) 426-9280
MOSELEYARCHITECTS.COM

LANDSCAPE ARCHITECT 3310 STATE OF MARYLAND 1.4.17

KEY MAP



SENECA VALLEY HIGH SCHOOL MODERNIZATION

MONTGOMERY COUNTY PUBLIC SCHOOLS
19401 CRYSTAL ROCK DRIVE , GERMANTOWN, MD 20874
TAX MAP: EU41 PARCEL: P085 LIBER: 3866 , F: 255

PROJECT NO:	DATE: Issue Date
REVISIONS	
DATE	DESCRIPTION
01/06/17	MANDATORY REFERRAL

LANDSCAPE PLAN

L-2.1

K:\HLD PROJECTS\10-056\DRAWINGS\10-056 LS.dwg PLOTTED Jan 04, 2017

Attachment G

MATCHLINE SHEET L-0.1

MATCHLINE SHEET L-2.3

MIDDLEBROOK ROAD
VARIABLE R/W
P.B. 81 P.#7143 P.B.61 P.346 M.C.D.O.T. PLAT 407

GREAT SENECA HIGHWAY
MD. STATE RTE 119
VARIABLE R/W
P.B.118 P.13901 SHA M.S.H.O.T. PLAT 198

NORTH LAKE VILLAGE FEDERATION INC
MIDDLEBROOK ROAD
GERMANTOWN, MD. 20874
L. 6699 F. 530
PARCEL F, BLOCK B
GUNNERS LAKE VILLAGE
PLAT 14185
ACCT. NO. 09-2272990789,12

NORTH LAKE VILLAGE FEDERATION INC
#14000 GREAT SENECA HIGHWAY
GERMANTOWN, MD. 20874
L. 8200 F. 656
VM RANGE ETC.
ACCT. NO. 09-2762964*1118,18

PROPOSED SWM QUALITY CONTROL FACILITY (UGS-1)

ACCESS MANHOLE

ACCESS MANHOLE

AR QC QP LS

LEGEND

- 14"RED OAK — EXISTING TREE <24"DBH
- #1 26"RED OAK — EXISTING SIGNIFICANT TREE >24" AND <30"DBH WITH TAG NUMBER
- #2 32"RED OAK — EXISTING SPECIMEN TREE ≥30"DBH WITH TAG NUMBER
- PROPERTY BOUNDARY
- SCRUB AREA
- STREAM
- SB SB — STREAM BUFFER
- SURVEY TOPO / MNCPPC TOPO — LIMITS OF SURVEY

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- PROPOSED SHRUB
- X X — PLANT TYPE AND QUANTITY
- SOD

NOTE:
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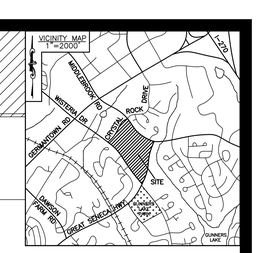
VICINITY MAP
1" = 2000'

SHT 1 OF 4 | SHT 2 OF 4 | SHT 4 OF 4 | SHT 3 OF 4



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TEL: 240.314.1008 FAX: 240.279.3003

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

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MOSELEYARCHITECTS
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PHONE (703) 426-9057 FAX (703) 426-9280
MOSELEYARCHITECTS.COM

LANDSCAPE ARCHITECT 3370 STATE OF MARYLAND AARON MICHAEL MOSELEY
1.4.17

KEY MAP

SENECA VALLEY HIGH SCHOOL MODERNIZATION

MONTGOMERY COUNTY PUBLIC SCHOOLS
19401 CRYSTAL ROCK DRIVE , GERMANTOWN, MD 20874
TAX MAP: EU41 PARCEL: P085 LIBER: 3886 , F: 255

PROJECT NO:	DATE: Issue Date
REVISIONS	
DATE	DESCRIPTION
01/06/17	MANDATORY REFERRAL

NORTON LAND DESIGN
LANDSCAPE ARCHITECTURE + ENVIRONMENTAL PLANNING
17830 NEW HAMPSHIRE AVENUE, SUITE 101 ASHTON, MD 20861
P.240.342.2329 F.240.342.2632 WWW.NORTONLANDDESIGN.COM

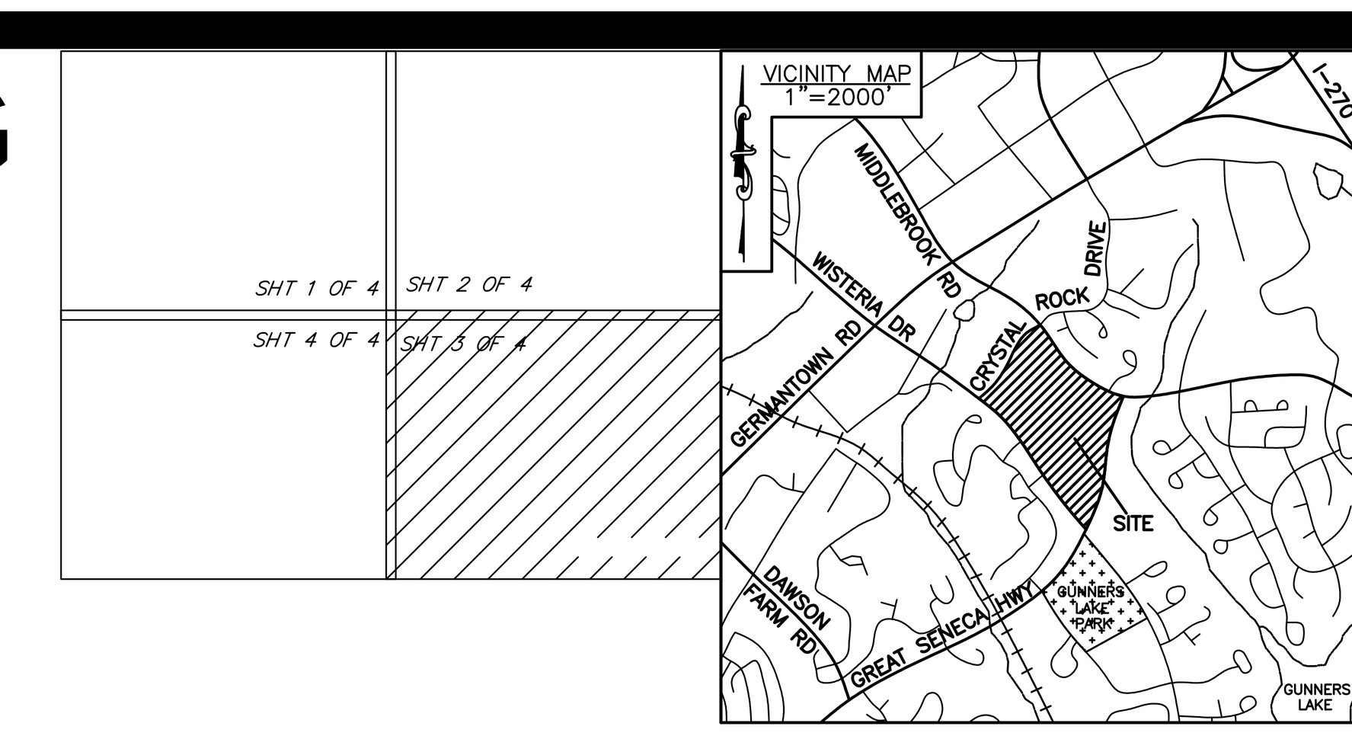
WATER CLASS USE I	WATERSHED GREAT SENECA CREEK	FEMA FLOODPLAIN MAP PANEL # 24031C 0170D	
TRIBUTARY TRIB. TO GUNNERS BR.			
TAX MAP EU561/EU341/EU342	200' SHEET 226NW12/ 226NW13/227NW13	ADC MAP PAGE 18	GRID F-3 F-3

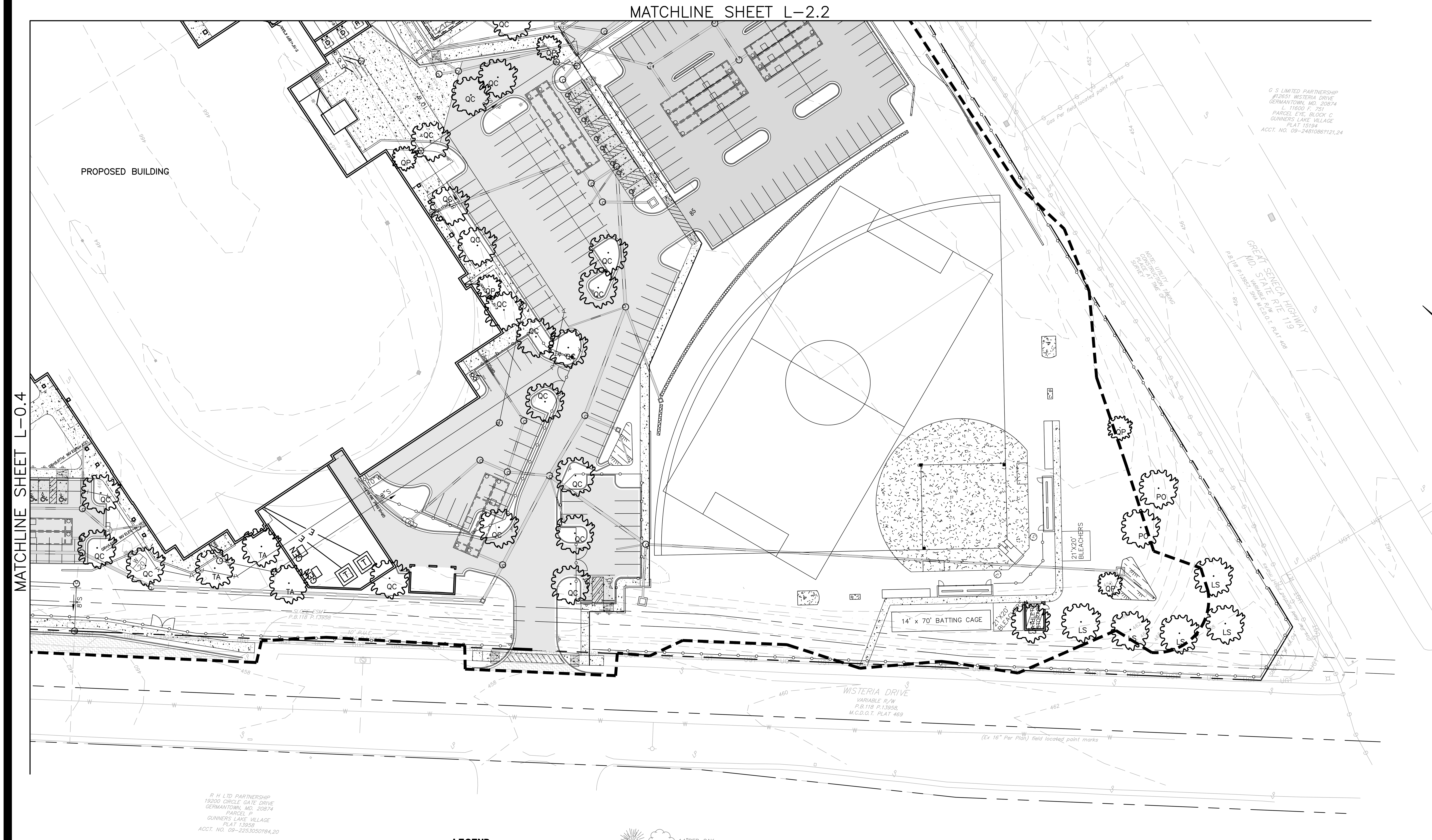
LANDSCAPE PLAN

L-2.2

K:\VLD PROJECTS\10-056\DRAWINGS\10-056 LS.dwg PLOTTED Jan 04, 2017

Attachment G





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MOSELEYARCHITECTS.COM

1.4.17

KEY MAP

OWNER/APPLICANT
MONTGOMERY COUNTY PUBLIC SCHOOLS
45 WEST GUDE DRIVE, SUITE 4300
ROCKVILLE, MARYLAND 20850-4038
ATTN: JAMES TOKAR, PE
James_R_Tokar@mcpsmd.org
TEL: 240.314.1008 FAX: 240.279.3003

LEGEND

- 14"RED OAK — EXISTING TREE <24"DBH
- #1 26"RED OAK — EXISTING SIGNIFICANT TREE ≥24" AND <30"DBH WITH TAG NUMBER
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- LIMITS OF DISTURBANCE
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- PROPOSED EVERGREEN TREE
- PROPOSED SHRUB
- X/X — PLANT TYPE AND QUANTITY
- SOD

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GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

MISS UTILITY

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WATER CLASS USE I	WATERSHED GREAT SENECA CREEK	FEMA FLOODPLAIN MAP PANEL # 24031C 0170D
TRIBUTARY TRIB. TO GUNNERS BR.		
TAX MAP EU561/EU341/EU342	200 SHEET 226NW12/ 226NW13/227NW13	ADC MAP PAGE 18 E-3 GRID F-3

SENECA VALLEY HIGH SCHOOL MODERNIZATION

MONTGOMERY COUNTY PUBLIC SCHOOLS
19401 CRYSTAL ROCK DRIVE , GERMANTOWN, MD 20874
TAX MAP: EU41 PARCEL: P085 LIBER: 3866 , F: 255

PROJECT NO:	DATE: Issue Date
REVISIONS	
DATE	DESCRIPTION
01/06/17	MANDATORY REFERRAL

LANDSCAPE PLAN

L-2.3

K:\HLD PROJECTS\10-056\DRAWINGS\10-056 LS.dwg PLOTTED Jan 04, 2017

Attachment G

MATCHLINE SHEET L-2.1

MATCHLINE SHEET L-2.3

PROPOSED BUILDING

NOTE:
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SHT 1 OF 4 | SHT 2 OF 4 | SHT 4 OF 4 | SHT 3 OF 4

VICINITY MAP
1" = 2000'

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

OWNER/APPLICANT
MONTGOMERY COUNTY PUBLIC SCHOOLS
45 WEST GUDE DRIVE, SUITE 4300
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- X / X — PLANT TYPE AND QUANTITY
- SOD

KEY MAP

MOSELEY ARCHITECTS
8001 BRADDOCK ROAD, SUITE 400, SPRINGFIELD, VA 22151
PHONE (703) 426-9057 FAX (703) 426-9280
MOSELEYARCHITECTS.COM

LANDSCAPE ARCHITECT
3370
STATE OF MARYLAND
1.4.17

SENECA VALLEY HIGH SCHOOL MODERNIZATION

MONTGOMERY COUNTY PUBLIC SCHOOLS
19401 CRYSTAL ROCK DRIVE , GERMANTOWN, MD 20874
TAX MAP: EU41 PARCEL: P085 LIBER: 3866 , F: 255

PROJECT NO:	DATE: Issue Date
REVISIONS	
DATE	DESCRIPTION
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17830 NEW HAMPSHIRE AVENUE, SUITE 101 ASHTON, MD 20861
P.240.342.2329 F.240.342.2632 WWW.NORTONLANDDESIGN.COM

WATER CLASS USE I	WATERSHED GREAT SENECA CREEK	FEMA FLOODPLAIN MAP PANEL # 24031C 0170D
TRIBUTARY TRIB. TO GUNNERS BR.		
TAX MAP EU551/EU341/EU342	ZOO SHEET 226NW12/ 226NW13/227NW13	ADC MAP PAGE 18 GRID F-3 F-3

LANDSCAPE PLAN

L-2.4

K:\MLD PROJECTS\10-056\DRAWINGS\10-056 LS.dwg PLOTTED Jan 04, 2017

PLANTING SPECIFICATIONS

SCOPE : Consists of supplying the planting trees, shrubs and herbaceous materials (groundcovers) including the staking of trees as specified herein and the supplying of materials, labor, equipment and work related services necessary for same as specified herein.

The work of this section includes, but is not limited to:

mulching	fertilizing
watering	wrapping
soil preparation	staking
planting	plant materials
maintenance	replacement

MATERIALS: Wherever the following items appear in the specifications, they shall be as follows:

Topsoil The Contractor shall provide required natural, friable, fertile, fine sandy loam possessing the characteristics of representative topsoil in the vicinity which produce heavy growths of vegetation. The topsoil shall be free from subsoil, noxious weeds, stones, lime, cement, ashes, slag or other deleterious matter. Topsoil shall be well drained in its original condition and free of toxic quantities of acid or alkaline elements. It shall contain sand and clay in approximately equal proportions, and shall have an organic content by weight of not less than 2% nor more than 20% as determined by laboratory tests. The pH shall be between 6 and 7.

Water Shall be furnished by the Contractor for the execution of all work specified in this contract. The Contractor shall verify that the water available is suitable for irrigation and free from ingredients harmful to plant life.

Peat Shall be only moss (sphagnum) peat; brown acid reaction approximately 4 to 5 pH; of standard commercial quality delivered to the site in bags or other convenient containers, in air dry condition. Peat shall be fully warranted by the producer.

Brace Stakes: Wood brace stakes shall be common lumber or the sizes in the following table:

Tree Size	Brace Stakes
1"–12" or < 8' tall	2"x2"x96"
12"–3" or > 8' tall	2"x2"x24",2"x2"x30" for conifers

Wire shall be good commercial quality of galvanized wire. Wire used to stake trees shall be No. 11 gauge minimum.

Hose Collars: Hose collars shall be new two ply fabric bearing garden hose not less than 2 inch inside diameter.

PLANT MATERIAL STANDARDS :

Association of Nurserymen, Inc., as published in the "American Standard for Nursery Stocks", latest edition. No substitutions of size or grade shall be permitted without written permission from the Landscape Designer. Each bundle of plants and all separate plants shall be properly identified with the legible waterproof tags securely fastened to each plant or bundle of plants. They shall remain on the plants until final inspection.

Health All plants including their roots shall be free from disease, insects, or other injurious qualities. All local, state, and federal laws pertaining to the inspection, sale, and shipment of plant materials shall be complied with. The trunk bark of all trees shall be sound, trees shall have no large wounds, and any small wounds shall have a satisfactory callus roll formed or forming over them. Plants shall show good annual growth. Buds shall be plump and well filled for the species. Evergreen foliage shall be of good intense color.

Quality : All plants shall be true to type; they shall have normal, well–developed branch systems, and a vigorous fibrous root system; they shall be sound, healthy, vigorous plants free from defects, disfiguring knots, sunscald injuries, abrasions of the bark, plant diseases, insect eggs, borers, and all forms of infestation. All new plants shall be nursery grown.

Ball and Burlap : All balled and burlapped plants shall conform to the "American Standard for Nursery Stock", latest edition. All balls shall be of natural earth in which the plant has been growing. No manufactured or artificially produced or mudded–balls shall be accepted. Balls shall be firm and unbroken, and of large enough size to adequately enclose the plant's fibrous root system.

Plant List The list of plants furnished with the specifications is for the information of the Contractor. The height and caliper of trees, the height or spread of shrubs, the diameter of the balls of roots are the minimum dimensions required. Plants indicated "B&B" are to be dug with a ball of earth and wrapped in burlap.

Measurements : Shall conform to those specified on the plant list except as follows:

Oversize plants may be used only after approval by the designer.

Use of such plants shall not increase the contract price.

Height and spread dimensions indicated refer to the main body of the plant and not from branch tip to branch tip. All trees and shrubs shall be measured when their branches are in normal position. Trees shall have straight trunks with the leader intact, undamaged and uncut.

Inspection The Planting Contractor shall be responsible for all inspection and approval of the plant material that may be required by state, federal and other authorities, and he shall secure any permits and certificates that may be required.

All plants shall be subject to inspection, and approval at place of growth before digging, or upon delivery, for quality, size and variety; such approval shall not impair the right of rejection at the project site during progress of the work, for size, condition of balls, roots, latent defects or injuries. Rejected plants shall be removed immediately from the project site

DIGGING AND HANDLING :

Protection from extremes in exposure and rough handling shall be provided all plant materials during transport and storage.

All plant materials shall be assembled in one location on the job site to permit inspection and approval by the designer. The Contractor shall notify the designer five (5) working days prior to planting so that a mutually agreeable time may be arranged for inspection. Stock with broken root balls or loose containers, and stock which shows evidence of being root–bound, over–grown, or recently canned, or in the opinion of the designer is damaged or improperly cared for, shall be removed from the site immediately and replaced at the Contractor's expense with another plant meeting the original specifications. Plants shall not be pruned prior to approval by the designer.

PROCEDURE :

Tree Planting

Layout All trees shall be located as designated in the field by the planting plan. Where below ground or overhead obstructions are encountered, the trees shall be relocated by the designer.

Planting Pits : Shall be a diameter two (2) feet greater than the diameter of the ball of the tree. The depth of the pit shall be enough to accommodate the ball or roots of the tree when the tree is set to finish grade, allowing for six inches of compacted topsoil below the roots of the plant. Prior to installing the 6" of topsoil to the pit, 3" of existing soil shall be mixed with the topsoil at a 1:1 ratio to reduce puddling beneath plantings. Planting islands within the parking lot shall be brought to final grade with 6" of planting soil.

Planting Soil Preparation: Mix then one part peat moss with five parts topsoil.
Mix all components thoroughly before backfilling.

Setting of Trees : Before setting the trees, pits shall be backfilled with topsoil to a depth of 6", thoroughly tamped and watered. All plants shall be placed at such a level that, after settlement, the natural relationship between the original grade at which the plant grew, the ball shall be 1/8 higher than the finish grading. Trees shall be planted plumb, oriented for desired effect as directed by the designer. Topsoil shall be tamped under and around the base of each ball to fill all voids and shall be placed in 6 to 8 inch layers, each thoroughly tamped and puddled. Burlap shall be removed from the sides and top of balls and from under the balls. When planting bare root trees, care shall be taken to work topsoil in around the roots and to spread them in a natural position before backfilling. Shallow basin or saucers a little larger than the diameter of the ball shall be formed around all trees to hold additional water.

Mulch Shall be applied to all tree pits to a depth of 2–3".

Pruning: All trees shall be neatly pruned after planting in accordance with the best standard practices and as directed by the designer. The tree shall be pruned to preserve its natural form and character and in a manner appropriate to its particular requirements. In general, at least one third of the deciduous trees shall be removed by thinning or shortening of branches but no leaders shall be cut. All pruning shall be done with clean, sharp tools.

Shrub and Herbaceous Materials: (groundcover)

Layout Herbaceous planting beds and shrub pit locations shall be designated by the designer in accordance with the plant list and the tentative locations shown on the planting plan. The general form of the planting bed shall be staked out and excavations performed within the stakes.

Preparation of Herbaceous Planting Beds The ground shall be thoroughly broken to a depth of 12 inches. The top 4 inches shall be worked by the contractor until the soil is completely fined and in a mellow condition to finish grade. All organic material shall either be worked into the soil or removed from the site. Clumps shall be removed from the site. All shall be performed perpendicular to the direction of surface drainage. All holes, depressions and rivulets shall be filled and brought to a smooth grade.

Shrub Planting Pits : Shall have vertical sides. The diameter of the pits shall be two times greater than the diameter of the ball of the shrub. The depth of the pit shall be enough to accommodate the ball or roots of the shrub when the shrub is set to finish grade compacted allowing for six inches topsoil below the roots of the plant. Prior to installing the 6" of topsoil to the pit, 3" of existing soil shall be mixed with the topsoil at a 1:1 ratio to reduce puddling beneath plantings.

Shrub Planting Soil: Mix one part peat moss with five parts topsoil. Mix all components thoroughly before backfilling.

Setting of Shrubs: All materials shall be planted 2" higher in relation to the finish grade as they had before transplanting. The depth of the holes, as hereafter specified, shall be understood to be the depth below finish grade. Balled and burlapped plants shall have topsoil tamped under the balls. All burlap, ropes, staves, etc., shall be taken off the tops of the balls and removed from the ball before backfilling. Roots of bare root plants shall not be left matted together, but shall be arranged in natural positions and shall have topsoil worked in among them. All broken and frayed roots shall be properly removed by trimming.

The Backfill of Topsoil Shall be tamped in successive 8" layers. When the hole has been 2/3 backfilled, water shall be poured in filling the hole, and allowed to soak away so that all voids or air pockets under or around the roots are eliminated. After the water has soaked away, the hole shall be completely backfilled with "topsoil". After the backfill settles, additional soil shall be filled in, to the level of the finish grade. A shallow saucer of soil shall be formed around the edge of each hole to hold additional water.

Pruning: All shrubs shall be neatly pruned or thinned immediately after planting in accordance with best standard practices and as directed by the designer. Broken or bruised branches shall be removed with a clean cut. Each shrub shall be pruned to preserve its natural form or character and in a manner appropriate to its particular requirements. All pruning and thinning shall be done with sharp, clean tools.

Mulch: Shall be applied to all shrub beds and pits to a depth of 3" and to all herbaceous planting beds to a depth of 2" & evenly around the sides of the tree, outside of the ball.
All stakes shall be oriented to a line parallel with the normal prevailing winds, or as directed by the designer. See planting details for staking locations.

TEMPORARY STORAGE AND HEELING–IN:

No heel–in plant material will be accepted, nor will any temporary heeling–in storage be permitted.

Plant material unloaded and accepted by the inspector shall be immediately transported to the planting site and planted. Material left out of ground overnight or left with its roots bare to the sun, or otherwise unprotected during transit, unloading or storage shall be rejected by the designer, if in his judgment such lack of protection has caused damage to the roots of the plant or in any other way injured the plant material.

MAINTENANCE :
The planting contractor shall be required to make periodic checks on the total project to make certain that the materials are properly cared for and that the sum of all conditions are contributing to the satisfactory progress of the materials, until such time as the work is approved by the designer.

INSPECTION AND ACCEPTANCE :

Inspection of this work will be made by the designer at the conclusion of the planting period upon written notice by the Contractor at least five (5) days prior to anticipated date. Condition of all plant materials will be noted and recorded for reference.

After inspection, the planting contractor will be notified in writing by the designer if there are any deficiencies of the requirements for acceptance of the work.

GUARANTEE AND REPLACEMENT:

Trees and shrubs shall be guaranteed for a maximum of one full year of growing seasons after installation and shall be alive and in satisfactory condition at the end of the guarantee period. Such guarantee excludes vandalism.

DEFINITION FOR FURNISHED AND INSTALLING PLANT MATERIAL

The unit price contained in the bid proposal for furnished and installing plant and shrub material shall be defined to include furnishing and installing material, all planting soils (if applicable), staking and a guarantee for two years or growing seasons (excluding vandalism).

PUBLIC UTILITIES:

1. Care shall be exercised in excavation near utilities. If at any time Contractor damages the utilities in place through negligence or carelessness, Contractor shall pay for the full cost of repairing such damages. Contractor shall notify the appropriate person in the office of any utility whose lines may be affected.
2. The locations of utilities shown on the plans are approximates only and do not necessarily indicate all the utilities that may be encountered during construction. The failure of a utility to be shown on the plans does not relieve Contractor of the responsibility for any injuries he may inflict on the utility, and in case of injury, it shall be repaired at the expense of the Contractor.
3. Whenever other utilities are encountered whose present grade would conflict with the new construction, Contractor shall notify landscape architect, who shall arrange revisions without unreasonable delay. Trenching or tunneling under existing utilities, culverts, etc., and providing temporary support shall be done at no additional expense to Owner.

GUARANTEE AND REPLACEMENT: The Contractor will guarantee survival of plants (each species) after one year. If at this time the total number of plants has fallen below this threshold, the Contractor will make a one–time replacement to bring plant numbers to the 100% levels for each species. Care shall be taken such that the activities involved in replacement planting do not cause damage or detrimental effect to the surviving flora. Any plants damaged by these activities will also be replaced by the Contractor to the 100% threshold.

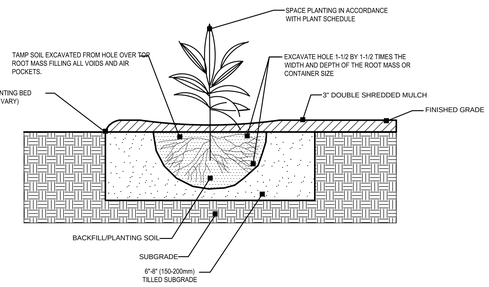
Trees, shrubs and ground covers shall be guaranteed for 1 year after installation and shall be alive and in satisfactory condition at the end of the guarantee period. Such guarantee excludes vandalism.

DEFINITION FOR FURNISHED AND INSTALLING PLANT MATERIAL: The unit price contained in the bid proposal for furnished and installing plant and shrub material shall be defined to include furnishing and installing material, all planting soils (if applicable), staking and a guarantee for 18 months (excluding vandalism).

PROTECTION OF PRIVATE PROPERTY: Contractor shall repair or replace all fences, concrete walls, concrete curbs, gravel and asphalt driveways, signs, culverts, and all other miscellaneous improvements, at no additional expense to owner, damaged by Contractor due to his operations on the project, to a condition equal to or better than their condition before construction.

JOB CONDITIONS:

1. Examine and evaluate grades, soils and water levels, observe the conditions under which work is to be performed, and notify the Landscape Architect of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.
2. Utilities: Review underground utilities location maps and plans provided by owner; demonstrate an awareness of utility locations, and certify acceptance of liability for the protection of utilities during course of work. Contractor shall be responsible for any damage to utilities or property.
3. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Landscape Architect before planting.



GROUNDCOVER PLANTING DETAIL
N.T.S.

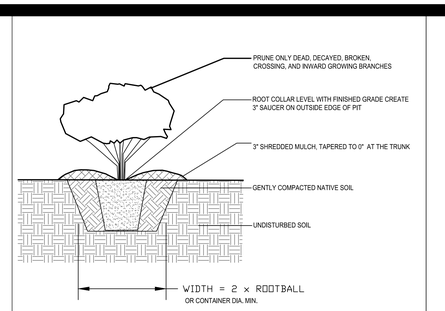
SITE LANDSCAPE PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE	FORM	SPACING	QUANTITY	COMMENTS
	TREES						
AR	ACER RUBRUM	RED MAPLE	3" CAL	B&B	SHOWN	32	
LS	LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA'	FRUITLESS SWEET GUM	3" CAL	B&B	SHOWN	24	
PO	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	3" CAL	B&B	SHOWN	4	
QC	QUERCUS COCCINEA	SCARLET OAK	3" CAL	B&B	SHOWN	45	
QP	QUERCUS PHELLOS	WILLOW OAK	3" CAL	B&B	SHOWN	31	
TA	TILLIA AMERICANA 'REDMOND'	AMERICAN LINDEN	3" CAL	B&B	SHOWN	7	
	SEED MIXES						
SOD	SOD – TALL FESCUE/KENTUCKY BLUGRASS		SOD	SOD	SQUARE YARD	46,114	STABILIZATION

* FERTILIZER PER SPECS AND SOIL SAMPLE RESULTS
*\ COVER WITH STRAW MULCH
*** PLANTS TO BE GUARANTEED FOR ONE YEAR

SITE STABILIZATION NOTE:
- ALL DISTURBED AREAS ARE TO BE STABILIZED WITH LAWN SEED MIX FOR SLOPES LESS THAN 4:1 UNLESS NOTED
- ALL DISTURBED AREAS ARE TO BE STABILIZED WITH MD CERTIFIED SOD FOR SLOPES EQUAL TO 4:1 OR STEEPER

NOTE: FOR ALL DISTURBED AREAS NOT SHOWN OR COVERED ON THE LANDSCAPE PLAN, SEE PERMANENT SEEDING REQUIREMENTS ON EROSION & SEDIMENT CONTROL DRAWINGS

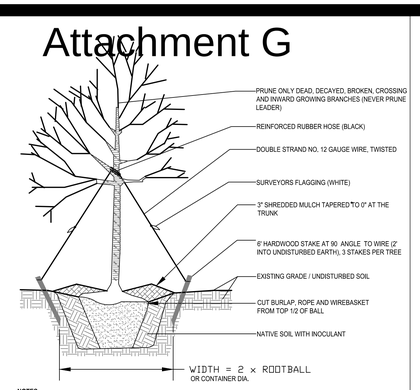


SECTION
N.T.S.

NOTES:
1. REMOVE ALL POTS AND WIRE AND CUT CONTAINER CLEANLY WAY FROM ROOTS.
2. REMOVE BURLAP FROM TOP HALF OF ROOT BALL.
3. CONTAINER PLANTINGS MAKE 4 TO 5 VERTICAL CUTS TO THE ROOT BALL BEFORE SETTING IN PLACE.
4. PRUNE ALL DAMAGED, DISEASED, OR WEAK LIMBS AND ROOTS.
5. CLEANLY PRUNE ALL DAMAGED ROOT ENDS TEASE ROOTS OF CONTAINER GROWN STOCK.
6. DO NOT ALLOW ROOTS TO DRY OUT DURING INSTALLATION PROCESS.
7. DEEP WATER AFTER PLANTING.

LANDSCAPE SHRUB
The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
Detail No.
SEPTEMBER 2008

Attachment G



NOTES:
1. STAKES AND WIRES MUST BE REMOVED NO LATER THAN 12 MONTHS AFTER PLANTING.
2. PLANTING HOLE SHALL BE DUG BY A BACKHOE OR OTHER MACHINE AND FINISHED BY HAND.
3. IF SURROUNDING SOIL IS COMPACTED AS DETERMINED BY M-NCPPC PLANNING DEPT INSPECTOR OR PARKS DEPT FOREST ECOLOGIST, AN AREA UP TO 5 TIMES THE DIA. OF THE ROOT MASS SHALL BE EXCAVATED OR ROTOTILLED TO A 1' DEPTH AND THE SOIL SHALL BE AMENDED.
4. DO NOT DAMAGE OR CUT LEADER.
5. ROOT FLAIR EVEN WITH LEVEL OF UNDISTURBED GROUND.

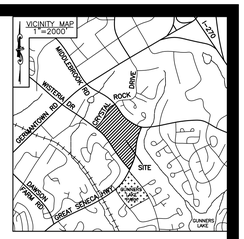
DECIDUOUS PLANTS - (2" Caliper or Larger)
The Maryland-National Capital Park and Planning Commission
Montgomery County Department of Parks
Detail No.
SEPTEMBER 2008

PLANTING SCHEDULE

TASKS	MONTHS: JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
TRANSPLANT OF 2" DBH OR GREATER	▨	▨	▨						▨	▨	▨	
PLANTING SEEDINGS, WHIPS	▧	▧	▧						▩	▩	▩	
MINIMUM MONITORING	*				*						*	
FERTILIZER * (IF NEEDED)								▭	▭	▭	▭	
WATER **	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	▩	
PRUNING	▭	▭	▭		▭						▭	

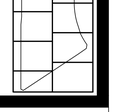
KEY
* ACTIVITIES DURING THESE MONTHS ARE DEPENDENT UPON GROUND CONDITIONS
▨ GREATLY RECOMMENDED
▧ RECOMMENDED WITH ADDITIONAL CARE
▭ RECOMMENDED
* DEPENDENT UPON SITE CONDITIONS
*\ DEPENDENT UPON SITE CONDITIONS; WEEKLY WATERING IS GREATLY RECOMMENDED FROM MAY THROUGH OCTOBER UNLESS WEEKLY RAINFALL EQUALS 1"

NOTES:
The planting and care of trees is most successful when coordinated with the local climatic conditions. This calendar summarizes some of the recommended time frames for basic reforestation and stress reduction activities.



NOTE:
- TREES AND SHRUBS TO BE PLANTED OUTSIDE OF L.O.D. ARE TO BE DUG WITH HAND EQUIPMENT ONLY. NO MACHINERY IS TO GO OUTSIDE OF L.O.D. PLANTS ARE TO BE INSTALLED AND STABILIZED SAME DAY.
- THE SIZE OF PLANTING PITS ARE TO BE MINIMIZED WHEN PLANTED WITHIN THE CRZ OF EXISTING TREES TO BE SAVED. THE LOCATIONS OF PLANTING PITS ARE TO BE SHIFTED IF ROOTS ARE ENCOUNTERED DURING INSTALLATION.

KEY MAP



OWNER/APPLICANT
MONTGOMERY COUNTY PUBLIC SCHOOLS
45 WEST GUDE DRIVE, SUITE 4300
ROCKVILLE, MARYLAND 20850–4038
ATTN: JAMES TOKAR, PE
James_R_Tokar@mcpsmd.org
TEL: 240.314.1008 FAX: 240.279.3003

MISS UTILITY

CALL "MISS UTILITY AT 1–800–257–7777, 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION. BEFORE EXCAVATION THE CONTRACTOR IS RESPONSIBLE FOR CALLING TICKET CHECK AT 1–866–821–4226 TO VERIFY THAT ALL UTILITIES HAVE BEEN MARKED, 48 HOURS AFTER CALLING MISS UTILITY. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE.

MOSELEY ARCHITECTS
8001 BRADDOCK ROAD, SUITE 400, SPRINGFIELD, VA 22151
PHONE (703) 426-9057 FAX (703) 426-9280
MOSELEYARCHITECTS.COM

LANDSCAPE ARCHITECT 3370 STATE OF MARYLAND JAMES R. AARON TOKAR 1.4.17

SENECA VALLEY HIGH SCHOOL MODERNIZATION

MONTGOMERY COUNTY PUBLIC SCHOOLS
19401 CRYSTAL ROCK DRIVE , GERMANTOWN, MD 20874
TAX MAP: EU41 PARCEL: P085 LIBER: 3866 , F: 235

PROJECT NO:	DATE: Issue Date
REVISIONS	
DATE	DESCRIPTION
01/06/17	MANDATORY REFERRAL

NORTON LAND DESIGN
LANDSCAPE ARCHITECTURE + ENVIRONMENTAL PLANNING
17830 NEW HAMPSHIRE AVENUE, SUITE 101 ASHTON, MD 20861
P.240.342.2329 F.240.342.2632 WWW.NORTONLANDDESIGN.COM

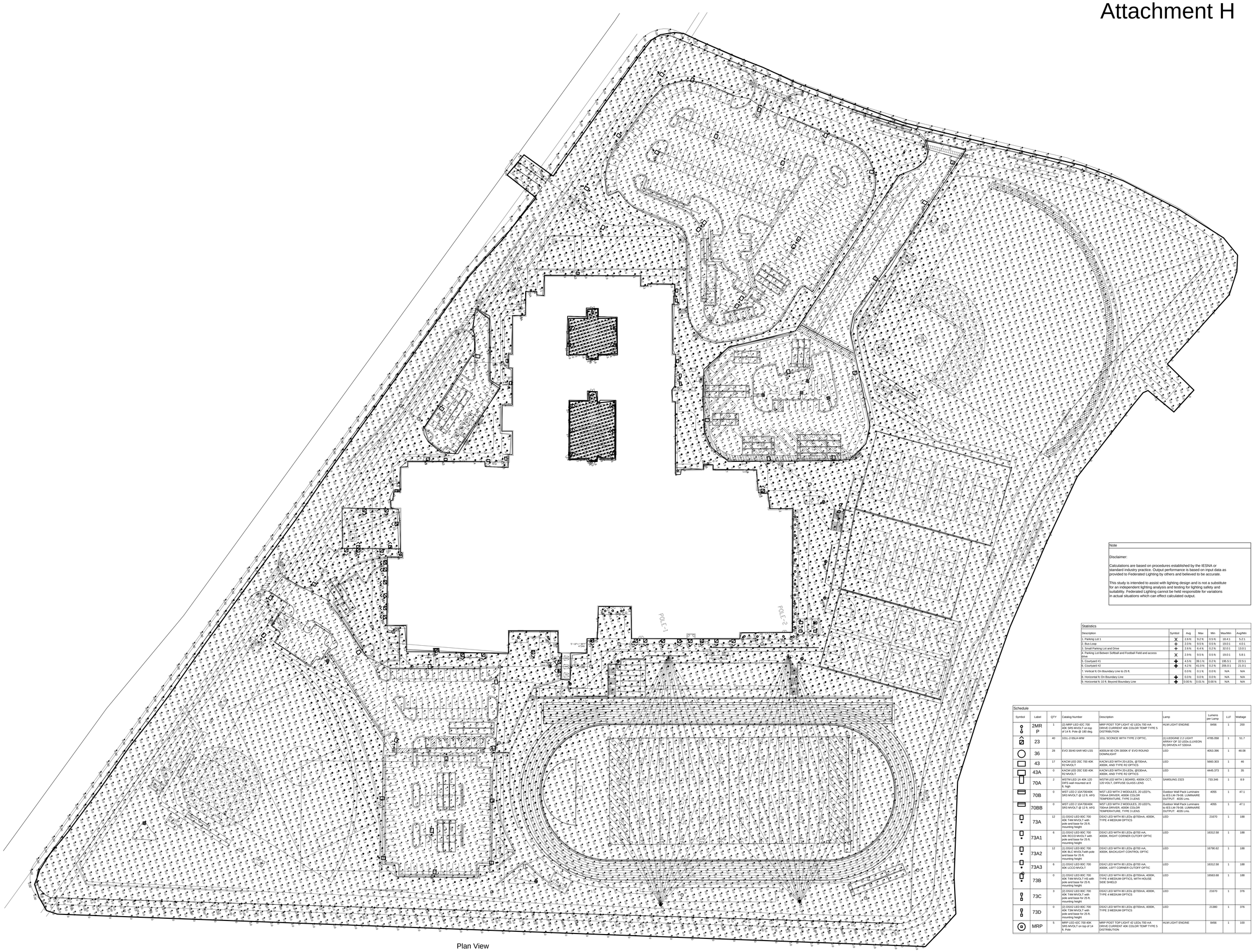
WATER CLASS USE I	WATERSHED GREAT SENECA CREEK	FEMA FLOODPLAIN MAP PANEL # 24031C 0170D
TRIBUTARY TRIB. TO GUNNERS BR.		
TAX MAP EU561/EU341/EU342	200 SHEET 226NW12/ 226NW13/227NW13	ADC MAP PAGE 18 GRID E-3 F-3

LANDSCAPE NOTES & DETAILS

L-2.5

K:\MLD PROJECTS\10-056\DRAWINGS\10-056 LS.dwg PLOTTED Jan 04, 2017

Attachment H



Plan View
Scale - 1" = 50'

Note

Disclaimer:

Calculations are based on procedures established by the IESNA or standard industry practice. Output performance is based on input data as provided to Federated Lighting by others and believed to be accurate.

This study is intended to assist with lighting design and is not a substitute for an independent lighting analysis and testing for lighting safety and suitability. Federated Lighting cannot be held responsible for variations in actual situations which can effect calculated output.

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
1. Parking Lot 1	X	2.6 fc	9.2 fc	0.5 fc	18.4:1	5.2:1
2. Bus Loop	+	2.0 fc	9.5 fc	0.5 fc	19.0:1	4.0:1
3. Small Parking Lot and Drive	+	2.6 fc	6.4 fc	0.2 fc	32.0:1	13.0:1
4. Parking Lot Between Softball and Football Field and access drive	X	2.9 fc	9.5 fc	0.5 fc	19.0:1	5.8:1
5. Courtyard #1	+	4.5 fc	39.1 fc	0.2 fc	195.5:1	22.5:1
6. Courtyard #2	+	4.2 fc	41.0 fc	0.2 fc	205.0:1	21.0:1
7. Vertical fc On Boundary Line to 25 ft.		0.0 fc	0.1 fc	0.0 fc	N/A	N/A
8. Horizontal fc On Boundary Line	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
9. Horizontal fc 10 ft. Beyond Boundary Line	+	0.00 fc	0.01 fc	0.00 fc	N/A	N/A

Schedule

Symbol	Label	QTY	Catalog Number	Description	Lamp	Lumens per Lamp	LLF	Wattage
	2MRP	1	(2) MRP LED 42C 700 40K SR5 MVOLT on top of 14 ft. Pole @ 180 deg.	MRP POST TOP LIGHT 42 LEDs 700 mA DRIVE CURRENT 40K COLOR TEMP TYPE 5 DISTRIBUTION	HLM LIGHT ENGINE	8456	1	200
	23	40	101L-2-55LA-WW	101L SCONCE WITH TYPE 2 OPTIC.	(1) LEDGINE 2.2 LIGHT ARRAY OF 32 LEDs (LUXEON W) DRIVEN AT 530mA.	4785.058	1	51.7
	36	28	EVO 30/40 6AR MD LSS	4000LM 80 CRI 3000K 6" EVO ROUND DOWNLIGHT	LED	4053.396	1	48.08
	43	17	KACM LED 20C 700 40K R2 MVOLT	KACM LED WITH 20-LEDs, @700mA, 4000K, AND TYPE R2 OPTICS	LED	5660.303	1	46
	43A	0	KACM LED 20C 530 40K R2 MVOLT	KACM LED WITH 20-LEDs, @530mA, 4000K, AND TYPE R2 OPTICS	LED	4445.373	1	35
	70A	2	WSTM LED 1A 40K 120 OPS wall mounted at 8 ft. high	WSTM LED WITH 1 BOARD, 4000K CCT, 120 VOLT, DIFFUSE GLASS LENS	SAMSUNG 2323	733.346	1	8.9
	70B	0	WST LED 2 10A700/40K SR3 MVOLT @ 12 ft. AFG	WST LED WITH 2 MODULES, 20 LED'S, 700mA DRIVER, 4000K COLOR TEMPERATURE, TYPE 3 LENS	Outdoor Wall Pack Luminaire to IES LM-79-08. LUMINAIRE OUTPUT: 4035 Lms.	4055	1	47.1
	70BB	0	WST LED 2 10A700/40K SR3 MVOLT @ 12 ft. AFG	WST LED WITH 2 MODULES, 20 LED'S, 700mA DRIVER, 4000K COLOR TEMPERATURE, TYPE 3 LENS	Outdoor Wall Pack Luminaire to IES LM-79-08. LUMINAIRE OUTPUT: 4035 Lms.	4055	1	47.1
	73A	12	(1) DSX2 LED 80C 700 40K T4M MVOLT with pole and base for 25 ft. mounting height	DSX2 LED WITH 80 LEDs @700mA, 4000K, TYPE 4 MEDIUM OPTICS	LED	21670	1	188
	73A1	6	(1) DSX2 LED 80C 700 40K BLC MVOLT with pole and base for 25 ft. mounting height	DSX2 LED WITH 80 LEDs @700 mA, 4000K, RIGHT CORNER CUTOFF OPTIC	LED	16312.58	1	188
	73A2	12	(1) DSX2 LED 80C 700 40K BLC MVOLT with pole and base for 25 ft. mounting height	DSX2 LED WITH 80 LEDs @700 mA, 4000K, BACKLIGHT CONTROL OPTIC	LED	16790.62	1	188
	73A3	6	(1) DSX2 LED 80C 700 40K LCCO MVOLT	DSX2 LED WITH 80 LEDs @700 mA, 4000K, LEFT CORNER CUTOFF OPTIC	LED	16312.58	1	188
	73B	0	(1) DSX2 LED 80C 700 40K T4M MVOLT HS with pole and base for 25 ft. mounting height	DSX2 LED WITH 80 LEDs @700mA, 4000K, TYPE 4 MEDIUM OPTICS, WITH HOUSE SIDE SHIELD	LED	16563.68	1	188
	73C	3	(2) DSX2 LED 80C 700 40K T4M MVOLT with pole and base for 25 ft. mounting height	DSX2 LED WITH 80 LEDs @700mA, 4000K, TYPE 4 MEDIUM OPTICS	LED	21670	1	376
	73D	0	(2) DSX2 LED 80C 700 40K T3M MVOLT with pole and base for 25 ft. mounting height	DSX2 LED WITH 80 LEDs @700mA, 4000K, TYPE 3 MEDIUM OPTICS	LED	21380	1	376
	MRP	5	MRP LED 42C 700 40K SR5 MVOLT on top of 14 ft. Pole	MRP POST TOP LIGHT 42 LEDs 700 mA DRIVE CURRENT 40K COLOR TEMP TYPE 5 DISTRIBUTION	HLM LIGHT ENGINE	8456	1	100

Visual Lighting Software Study
Seneca Valley High School Revised as Directed
Sports Lighting is not included in this study. It is by others

Designer

Date
1/5/2017
Scale
As Marked
Drawing No.

Summary

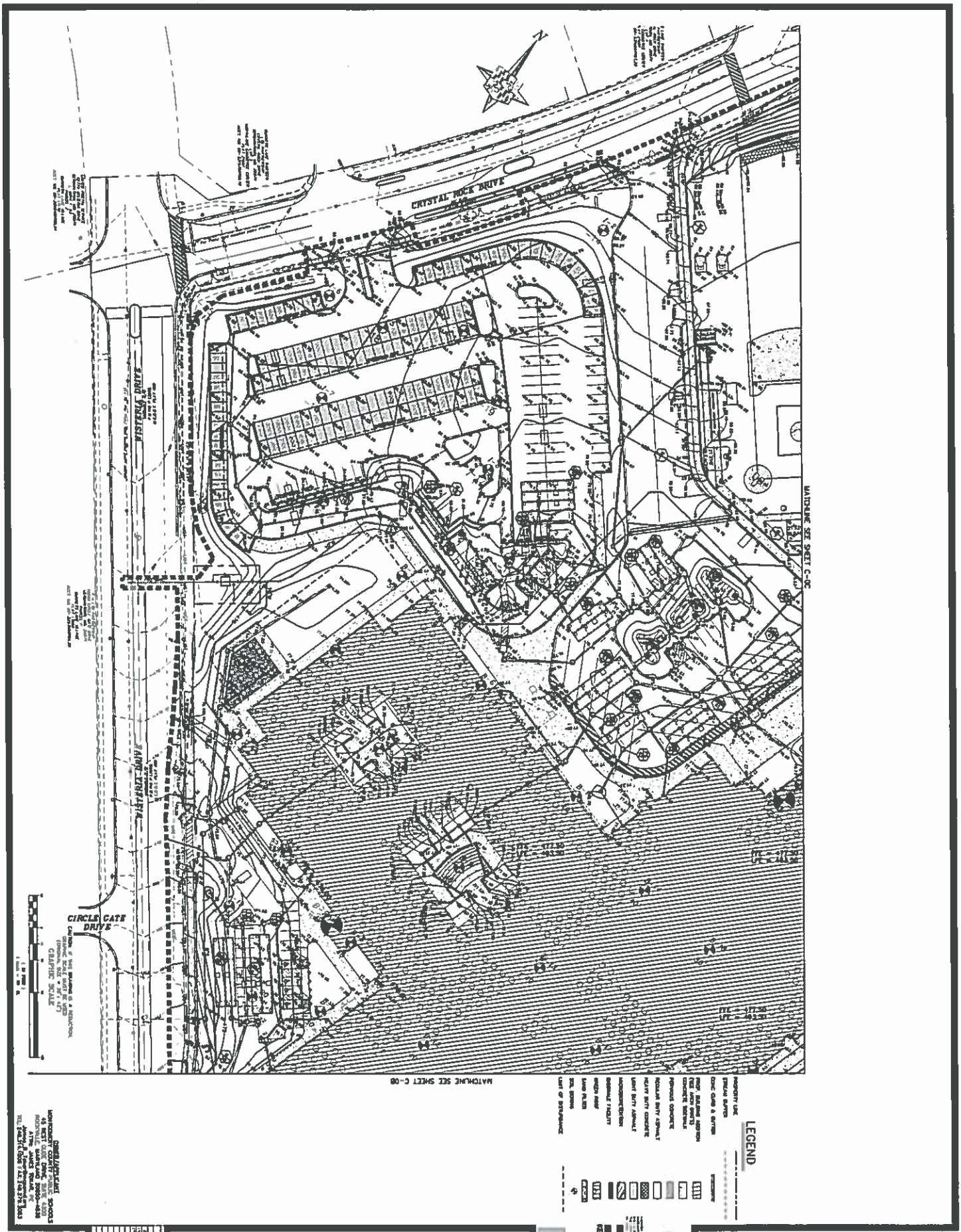
MOSELEY ARCHITECTS

SENECA VALLEY HIGH SCHOOL MODERNIZATION

MONTGOMERY COUNTY PUBLIC SCHOOLS
19401 CRYSTAL ROCK DRIVE, GERMANTOWN, MD 20874
TAX MAP: EU41 PARCEL: P660 LIBER: 3866, FOLIO: 71

OVERALL STORMWATER MANAGEMENT CONCEPT PLAN

C-0



SENECA VALLEY HIGH SCHOOL MODERNIZATION

MONTGOMERY COUNTY PUBLIC SCHOOLS

19401 CRYSTAL ROCK DRIVE , GERMANTOWN, MD 20874

TAX MAP: EU41 PARCEL: P965 LIBER: 3656 FI: 255

STORM WATER MANAGEMENT CONCEPT PLAN

C-0A

MOSELEYARCHITECTS

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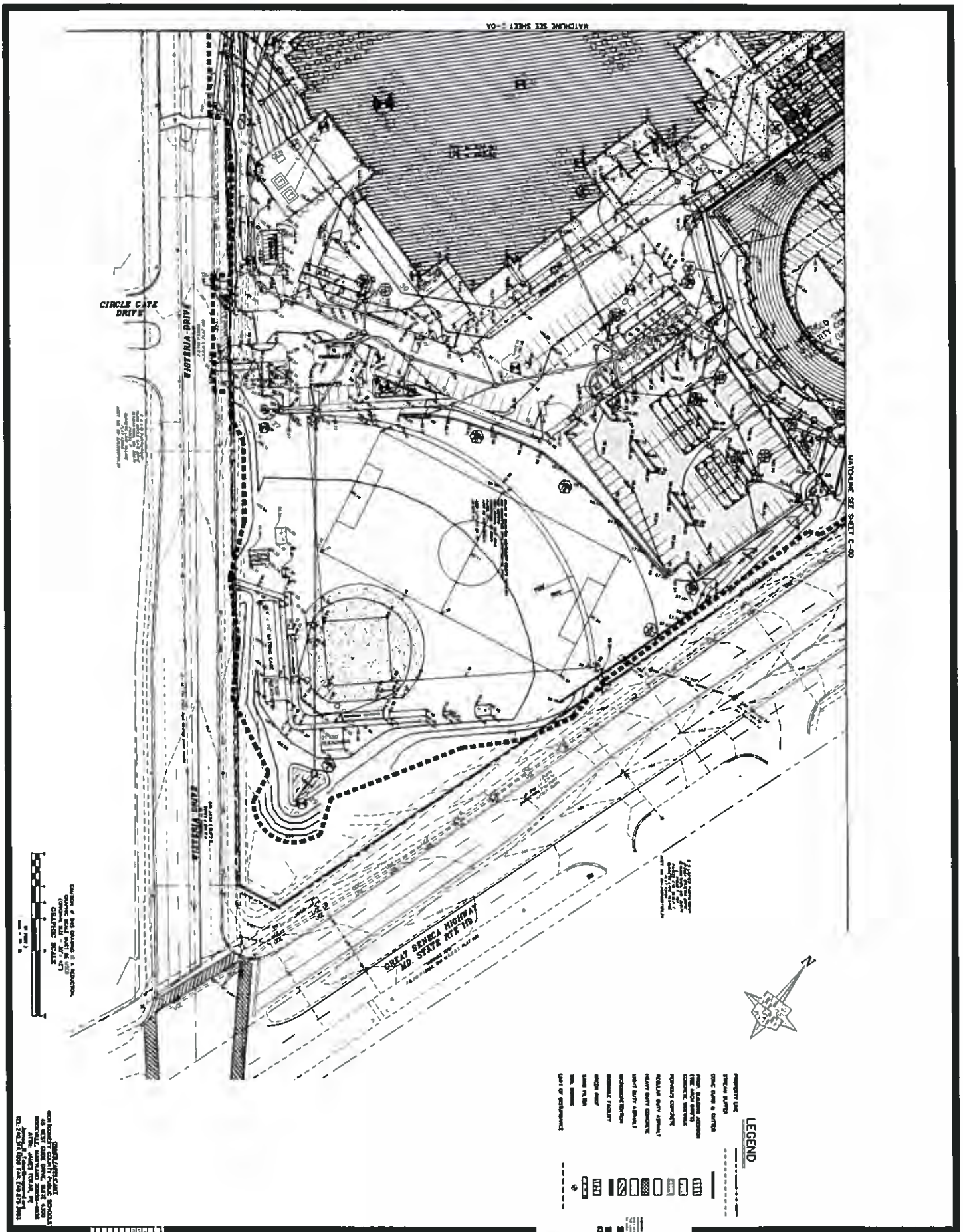


SENECA VALLEY HIGH SCHOOL MODERNIZATION

MONTGOMERY COUNTY PUBLIC SCHOOLS

19401 CRYSTAL ROCK DRIVE , GERMANTOWN, MD 20874

TAX MAP- EU41 PARCEL: P665 LIBER: 3066 , F: 258

STORM WATER MANAGEMENT CONCEPT PLAN

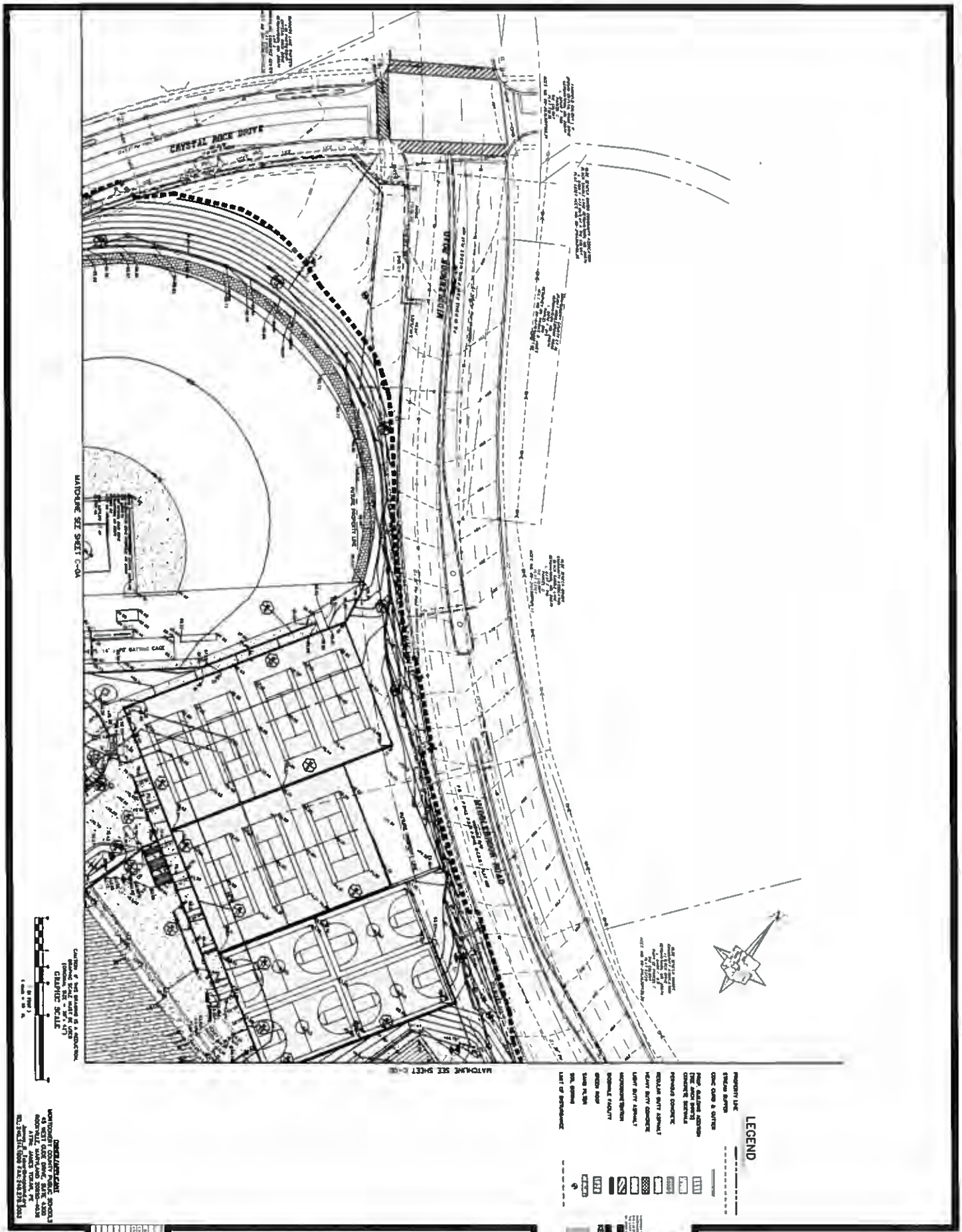
C-0B

MOSELEYARCHITECTS

9601 BRADDOCK ROAD, SUITE 400 SPRINGFIELD VA 22151

PHONE: (703) 426-0057 FAX: (703) 426-0291

MOSELEYARCHITECTS.COM



SENECA VALLEY HIGH SCHOOL MODERNIZATION

MONTGOMERY COUNTY PUBLIC SCHOOLS

19401 CRYSTAL ROCK DRIVE , GERMANTOWN, MD 20874

TAX MAP: EU41 PARCEL: P665 LIBER: 3966 , F: 258

STORM WATER MANAGEMENT CONCEPT PLAN

C-0C

KEY MAP

MOSELEY ARCHITECTS

8551 BRADDOCK ROAD, SUITE 400, SPRINGFIELD, VA 22151
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KEY MAP

SENECA VALLEY HIGH SCHOOL MODERNIZATION

MONTGOMERY COUNTY PUBLIC SCHOOLS
19401 CRYSTAL ROCK DRIVE, GERMANTOWN, MD 20874
TAX MAP: EU41 PARCEL: P693 LIBER: 3666 FOLIO: 153

STORM WATER MANAGEMENT CONCEPT PLAN

C-0D

LEGEND
PROPERTY LINE
STREAM BUFFER
CONC CURB & GUTTER
PROP. BUILDING MODIFICATION (SEE ARCH SHEET)
PERVIOUS CONCRETE
UNTREATED AREA
MICRORETENTION
BIORETENTION FACILITY
GREEN ROOF
SAND FILTER
SOIL SCRIMS
LIMIT OF DISTURBANCE
DRAINAGE AREA FOR
SWM SUMMARY TABLE (STRUCTURAL FACILITIES)
SWM SUMMARY TABLE (ESDv FACILITIES)
UNTREATED AREA
VICINITY MAP
KEY MAP
GRAPHIC SCALE
OWNER/APPLICANT
MOSELEY ARCHITECTS
SENECA VALLEY HIGH SCHOOL MODERNIZATION
MONTGOMERY COUNTY PUBLIC SCHOOLS
19401 CRYSTAL ROCK DRIVE, GERMANTOWN, MD 20874
OVERALL DRAINAGE AREA MAP
C-00

Attachment J

LEED 2009 for Schools New Construction and Major Renovations
Project Checklist

Seneca Valley High School
Updated: 12/21/2016

Responsible
= Regional priority credits (20874)
= Design Documentation - incomplete
= Design ocumentation - complete

few days prior to submission: alert GBCI that MCPS projects are supposed to go to review team H

Project Information Forms

Y	?	N	D/C				Notes:
Y			D	PI f1	Minimum Program Requirements	Required	
Y			D	PI f2	Project Summary Details	Required	Current school ~250,000 SF, new school 434,006 SF (3,657 addition is add alternate); 2016.7.5 - C to provide SF of parking areas and all hardscape, and confirm total parking count
Y			D	PI f3	Occupant Usage Details	Required	2,400 students, 175 full time faculty/staff, 25 part time faculty/staff, and 10 peak visitors 2016.12.21 - A to complete space usage table
Y			D	PI f4	Schedule and Overview Documents	Required	2016.7.5 - L to upload final documents; M and E to provide brief mechanical and electrical narratives; 2016.7.5 - C to provide final site plan with LEED boundary once approved

Sustainable Sites — Possible Points: 24

20	2	2

Y	?	N					Notes:
Y			C	Prereq 1	Construction Activity Pollution Prevention	Required	will follow MD requirements
Y			D	Prereq 2	Environmental Site Assessment	Required	2010 Phase I ESA
1			D	Credit 1	Site Selection	1	Not impacting wetlands or other natural receptors
4			D	Credit 2	Development Density and Community Connectivity	4	High Density Residential - townhouses across Middlebrook road, and condos across Wisteria Drive; sidewalks present 2015.12.16 - 10 basic services entered into LEED Online form; C to upload map
1			C	Credit 3	Brownfield Redevelopment	1	Owner to provide asbestos documentation during demolition of existing building; Phase I indicates removed USTs and no soil contamination; deferred
4			D	Credit 4.1	Alternative Transportation--Public Transportation Access	4	Many bus stops on the streets bordering the school 2015.12.16 - C or L to upload site plan showing walking paths and distances to stops
1			D	Credit 4.2	Alternative Transportation--Bicycle Storage and Changing Rooms	1	2014.4.8 sent Karen note about number of showers (at least 1 per gender) and bike racks (130) needed Locker rooms provide 4 student showers for each gender, and one staff shower for each gender (10 showers total); exhibit uploaded 2015.12.16 - Form drafted; Civil will add bike racks to site plan and upload exhibit
2			D	Credit 4.3	Alternative Transportation--Low-Emitting and Fuel-Efficient Vehicles	2	At current parking capacity (450, or lower, pending per Civil) would require 23 LE/FE spaces and preferred dropoff 2015.12.16 - Form drafted, C to upload exhibit
2			D	Credit 4.4	Alternative Transportation--Parking Capacity	2	school board exempt from zoning so follow option 3; ITE (3rd Gen) says .26 spaces/student which would translate to LEED compliance at .195 spaces/student. At core capacity of 2400 students, that's 468 spaces 2015.12.16 - Calculations uploaded, will be complete with updated site plan
		1	C	Credit 5.1	Site Development--Protect or Restore Habitat	1	too much program on the site to be able to do this
1			D	Credit 5.2	Site Development--Maximize Open Space	1	follow case 3, believe we will also earn exemplary performance, Owner has initialed 2015.12.16 - C to document
1			D	Credit 6.1	Stormwater Design--Quantity Control	1	Follow option 1 case 1 path 1 - MD requirements typically deliver this May 2014-Will have a significant amount of vegetated roof (75-80% of roof) to meet stormwater requirements 2015.7.30 - C will attempt via stormwater management narrative 2016.11.23 - O considering blue roof technology.
1			D	Credit 6.2	Stormwater Design--Quality Control	1	MD requirements typically deliver this 2015.7.30 - Civil confirms, to document
		1	C	Credit 7.1	Heat Island Effect--Non-roof	1	Combination of shade trees, concrete pavement, and PV shading would be expensive
1			D	Credit 7.2	Heat Island Effect--Roof	1	White membrane and approximately 85,000 SF of vegetated roof 2016.11.23 - O considering blue roof technology in lieu of vegetated roof.
	1		D	Credit 8	Light Pollution Reduction	1	TDG section 16530 states that DarkSky 100% cutoff fixtures to be used Light trespass will be the limiting factor; consider site LZ3 which means all site and sports lights must meet 0.01 fc 15 feet beyond boundary; All other requirements can be met. 2015.8.3 - E waiting on revised site photometrics
	1		D	Credit 9	Site Master Plan	1	Potential future classroom addition area reserved C to evaluate site credits considering addition
1			D	Credit 10	Joint Use of Facilities	1	option 1 or School Based Wellness Center (SBWC) that would count as a health clinic under option 2 2016.12.21 - credit documented in LEED Online.

Water Efficiency — Possible Points: 11

6	0	5

Y	?	N					Notes:
Y			D	Prereq 1	Water Use Reduction--20% Reduction		See notes under WEc3
4			D	Credit 1	Water Efficient Landscaping	2 to 4	no irrigation - synthetic turf football field as alternate 2015.12.16 - C to document with final landscaping plans
					50% Reduction	2	
				x	No Potable Water Use or Irrigation	4	
		2	D	Credit 2	Innovative Wastewater Technologies	2	2013.12: Karen Anderson confirmed no rainwater reuse
2		2	D	Credit 3	Water Use Reduction	2 to 4	TDG section 15000- low flow plumbing fixtures 2014.2.19 metering faucets at student lavs; non-metering faucets at faculty/staff restrooms; 0.125 GPM urinals;no urinals in faculty/staff men's rooms; 1.28 GPF toilets; 1.5 GPM showers
				x	30% Reduction	2	2016.7.26- P (Bob Evans) sent fixture schedule and urinal usage factor; returned some questions about fixture usage rates
					35% Reduction	3	
					40% Reduction	4	
		1	D	Credit 3	Process Water Use Reduction	1	2015.8 - Per Jay Garcia, there is not enough qualifying equipment (only ice machines, no diswasher, pre-rinse spray, or steamer)

Energy and Atmosphere — Possible Points: 33

15	0	18

Y	?	N					Notes:
Y			C	Prereq 1	Fundamental Commissioning of Building Energy Systems	Required	Lutz Engineering will serve as CxA (Bob Lutz) the TDG will serve as project's OPR
Y			D	Prereq 2	Minimum Energy Performance	Required	See notes under EAc1
Y			D	Prereq 3	Fundamental Refrigerant Management	Required	
10		9	D	Credit 1	Optimize Energy Performance	1 to 19	TDG section 15001 states that both NC and modernizations must get 30% energy use reduction and use EnergyStar Target Finder for a minimum score of 75. MCPS has set a target EUI of 35 for this project PEPCO did not say if Sefaira modeling counts for their incentive program Envelope MCPS has glass standards project must meet (clear IGUs)
					Improve by 12% for New Buildings or 8% for Existing Building Renovations	1	Full air barrier system, spray foam insulation, R-30 roof insulation
					Improve by 14% for New Buildings or 10% for Existing Building Renovations	2	
					Improve by 16% for New Buildings or 12% for Existing Building Renovations	3	HVAC
					Improve by 18% for New Buildings or 14% for Existing Building Renovations	4	Four-pipe fan coil system; can use enthalpy wheels in DOAS units
					Improve by 20% for New Buildings or 16% for Existing Building Renovations	5	direct exchange energy recovery 90% efficient gas boilers for heating, air-cooled chillers for cooling
					Improve by 22% for New Buildings or 18% for Existing Building Renovations	6	VRF in select areas (such as offices and locker rooms)
					Improve by 24% for New Buildings or 20% for Existing Building Renovations	7	
					Improve by 26% for New Buildings or 22% for Existing Building Renovations	8	Hot Water
					Improve by 28% for New Buildings or 24% for Existing Building Renovations	9	TDG section 15200 states 94% efficient gas fired hot water Solar hot water - minor impact on energy but educational value
				x	Improve by 30% for New Buildings or 26% for Existing Building Renovations	10	2015.8.3 - Per M, had several conversations but doesn't appear to be going anywhere at this point
					Improve by 32% for New Buildings or 28% for Existing Building Renovations	11	
					Improve by 34% for New Buildings or 30% for Existing Building Renovations	12	Lighting
					Improve by 36% for New Buildings or 32% for Existing Building Renovations	13	interior and exterior lights LED
					Improve by 38% for New Buildings or 34% for Existing Building Renovations	14	
					Improve by 40% for New Buildings or 36% for Existing Building Renovations	15	2014.7.18 Strickler DD Energy Study resulted in predicted EUI of 28.5 2014.7.17 Moseley Sefaira conceptual energy model resulted in predicted EUI of 45.9 (26% savings)
					Improve by 42% for New Buildings or 38% for Existing Building Renovations	16	2015.8.3 - per M, count on 18% for now, will work more on energy model after owner review of 65% set, won't complete until 100% CDs
					Improve by 44% for New Buildings or 40% for Existing Building Renovations	17	2016.7.26 - Current model in the vicinity of 30% reduction; M to finalize

							Improve by 46% for New Buildings or 42% for Existing Building Renovations	18	
							Improve by 48%+ for New Buildings or 44%+ for Existing Building Renovations	19	
E			7	D	Credit 2		On-Site Renewable Energy	1 to 7	2014.2.26 interested in pursuing solar water preheat; not sure if it will get us to 1%
							1% Renewable Energy	1	2015.8.3 - Per M, solar hot water not likely
							3% Renewable Energy	2	2015.12.17 - PV and BIPV being researched; O to provide info. on sale to grid, sRECs, and grant program eligibility
CxA	2			C	Credit 3		Enhanced Commissioning	2	PEPCO incentive is available to help defray costs TDG section 15000 states that this credit is to be pursued Mid-CDs design review completed (65%)
M			1	D	Credit 4		Enhanced Refrigerant Management	1	TDG section 15000 states that this credit is to be pursued 2016.7.26 - M evaluated with specified equipment and we do not meet; can revisit during construction with actual equipment
M	1		1	C	Credit 5		Measurement and Verification	2	other MCPS projects are pursuing 1 point option for data sharing 2013: provided summary of proposed metering approach, which was not accepted at this time. Pursue 1 point option for data sharing. 2014.3.27 Karen said MCPS does not want to submeter building wide for HVAC, plug, lighting loads, etc.. However, if there are specific areas that are easy to break out, they would be interested in that. 2015.3.4 - Team did not identify any submetering strategies that would provide useful data. Will proceed with whole building metering (2 services but not a logical division).
O	2			C	Credit 6		Green Power	2	TDG section 15000 states that this credit is to be pursued 2015.8.3 - L inquired to confirm this is still active program

Y	?	N							
6	0	7	**Materials and Resources**				**Possible Points:**	**13**	
									Notes:
A	Y			D	Prereq 1		Storage and Collection of Recyclables	**Required**	Trash room and dumpster enclosure in receiving; MCPS recycling plan
A			2	C	Credit 1.1		Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 2	
							Reuse 75%	1	
							Reuse 95%	2	
A			1	C	Credit 1.2		Building Reuse—Maintain 50% of Interior Non-Structural Elements	1	
GC	2			C	Credit 2		Construction Waste Management	1 to 2	Section 01524 of MCPS technical requirements stipulates 75% diversion (note: spec includes landscape debris, LEED does not)
							50% Recycled or Salvaged	1	
						x	75% Recycled or Salvaged	2	
GC			2	C	Credit 3		Materials Reuse	1 to 2	Not likely to earn the credit, however if salvaging any of the current building materials is possible it is good practice
							5% Reuse	1	
							10% Reuse	2	
GC	2			C	Credit 4		Recycled Content	1 to 2	Specify 20%
							10% of Content	1	
						x	20% of Content	2	
GC	2			C	Credit 5		Regional Materials	1 to 2	Specify 20%
							10% of Materials	1	
						x	20% of Materials	2	
GC			1	C	Credit 6		Rapidly Renewable Materials	1	
GC			1	C	Credit 7		Certified Wood	1	2014.2.26 concerned it will be too expensive--do not pursue

Y	?	N							
8	1	10	**Indoor Environmental Quality**				**Possible Points:**	**19**	
									Notes:
M	Y			D	Prereq 1		Minimum Indoor Air Quality Performance	**Required**	
O	Y			D	Prereq 2		Environmental Tobacco Smoke (ETS) Control	**Required**	Requires building signage conveying smoking policy (per MCPS, no smoking in building or grounds); MCPS approved signage sent to A and C; C will locate at driveway entrances
A	Y			D	Prereq 3		Minimum Acoustical Performance	**Required**	Refer to MSDE's 2006 Classroom Acoustic Guidelines and ANSI S12.60-2002 for guidance on classroom acoustics TDG section 15002 requires maximum background noise from HVAC equipment at 45 dBA All walls will go to deck; specify NRC 0.7 ceilings for core learning spaces Note that health clinic has privacy and confidentiality concerns 2015.8.3 - Polysonics (Steve B., Chris K.) to start documentation and coordinate with M on background noise (note fan coil units) 2016.9.1 - Per Dennis Cross, we will implement the acoustics recommendations of Polysonics
M			1	D	Credit 1		Outdoor Air Delivery Monitoring	1	2014.2.19 CO2 sensors not desired in classroom spaces, but ok in other high density spaces like gyms, cafeteria, media center...
M			1	D	Credit 2		Increased Ventilation	1	
GC	1			C	Credit 3.1		Construction IAQ Management Plan—During Construction	1	TDG section 15000 states this credit to be pursued MCPS has a CIAQM spec that needs minor updating (section 01811 in technical guidelines)
GC	1			C	Credit 3.2		Construction IAQ Management Plan—Before Occupancy	1	TDG section 15000 states this credit to be pursued 2014.2.26 MCPS prefers IAQ testing method. Construction team must get this done before school occupied.
GC	4			C	Credit 4		Low-Emitting Materials	1 to 4	Will be specified
						x	4.1 - Adhesives & Sealants	1	
						x	4.2 - Paints & Coatings	1	
						x	4.3 - Flooring Systems	1	
						x	4.4 - Composite Wood & Agrifiber Products	1	
							4.5 - Furniture & Furnishings	1	
							4.6 - Ceiling & Wall Systems	1	
M			1	D	Credit 5		Indoor Chemical and Pollutant Source Control	1	2014.2.26 MCPS does not use MERV13 filters (too expensive) 2015.3.4 - Will have physical separation and door closers for chemical storage rooms, and walkoff mats (MCPS standard is roll-out)
E	1			D	Credit 6.1		Controllability of Systems—Lighting	1	Classrooms will have 1 switch at entrance and 1 on teaching wall for 50% of lights, target 50 fc for classrooms
M	1			D	Credit 6.2		Controllability of Systems—Thermal Comfort	1	TDG section 15000 states this credit to be pursued; requires controls for all classrooms and for 50% of workstations Per M, classrooms will have thermostat with adjustment (can also be overridden by BAS)
M			1	D	Credit 7.1		Thermal Comfort—Design	1	TDG section 15000 states this credit to be pursued; however MCPS standard is still no A/C in gym 2014.2.26 Karen Anderson states this credit has been approved in the past but not sure if by MCPS's review team. Consider a weak maybe for now. 2016.7.26 Per M based on recent reviews we cannot earn this.
M			1	D	Credit 7.2		Thermal Comfort—Verification	1	TDG section 15000 states this credit to be pursued; will not be earned if EQc7.1 is not earned; post-occ survey can be conducted regardless
A			3	D	Credit 8.1		Daylight and Views—Daylight	1 to 3	4-story building will make this difficult
							75% of classrooms	1	Using clear glass and clerestories in corridors and cafeteria
							90% of classrooms	2	No light shelves or exterior sun shades
							75% of other spaces	2 to 3	Mini blinds MCPS standard but considering mecho shades
A			1	D	Credit 8.2		Daylight and Views—Views	1	Views for 90% of regularly occupied spaces 2015.4.15 - Preliminary analysis at ~70%, not likely to get to 90%
A			1	D	Credit 9		Enhanced Acoustical Performance	1	TDG section 09500 refers to this credit specifically 2015.8 - Per Polysonics, not meeting enhanced requirements, although do have best practices (full height partitions, etc.)
M		1		C	Credit 10		Mold Prevention	1	depends on achievement of EQc7.1 and EQc7.2

Y	?	N							
5	1	0	**Innovation and Design Process**				**Possible Points:**	**6**	
									Notes: Registered for pilot credits 16 (rainwater mgmt-not pursuing), 22 (backup), 69 (pursuing), and 78 (pursuing)
1				D	Credit 1.1		Innovation in Design: Green Cleaning Plan	1	Current policy received
1				D	Credit 1.2		Innovation in Design: EQpc78 Design for Active Occupants	1	Need to comply with prereq and 7 of 11 optional items 2013.12 - preliminary analysis and call with USGBC indicate can probably earn this 2015.8.3 - Compliance matrix revised with plan changes, and we appear to meet requirements
1				C	Credit 1.3		Innovation in Design: MRpc69 Construction and Demolition Waste Management (Option 1 Path 2)	1	MRpc69: per Jan Sadowski: We should be able to achieve Option 1, Path 1 or 2.

1			C	Credit 1.4	Innovation in Design: Low Mercury Lighting	1	Follow LI5500 Possible Backup - EQpc22 Interior Lighting Quality - team can meet; owner would be responsible for this one requirement: "If furniture is included in the scope of work, select furniture finishes to meet the following thresholds for area-weighted average surface reflectance: 45% for work surfaces, and 50% for movable partitions"
1			C	Credit 2	LEED Accredited Professional	1	Bryna Dunn, Carrie Webster
	1		C	Credit 3	The School as a Teaching Tool	1	2014.5 - Will attempt with benchmarking project and not through standard requirement path.

Y	?	N					
2	0	2	**Regional Priority Credits**		**Possible Points:**	**4**	
							Notes:
1			D	Credit 1.1	Regional Priority: SSc6.1 Stormwater Quantity	1	
1			C	Credit 1.2	Regional Priority: MRc2 Construction Waste Management	1	
		1		Credit 1.3	Regional Priority: Specific Credit	1	
		1		Credit 1.4	Regional Priority: Specific Credit	1	

62	4	44	**Total**		**Possible Points:**	**110**	

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

O = Owner; A = Architect; C = Civil; M = Mechanical; E = Electrical; P = Plumbing; CxA = Commissioning Agent; GC/CM = General Contractor/Construction Manager; K = Kitchen Consultant; I = Interiors; L = LEED AP