

Docket Item #4 Development Special Use Permit # 2014-0002 John Adams Elementary School Parking Lot Expansion 5651 Rayburn Avenue

CONSENT AGENDA ITEM

If no one asks to speak about this case prior to the hearing, it will be approved without discussion as part of the Consent Agenda.

Application	General Data		
	PC Hearing:	September 4, 2014	
Project Name:	CC Hearing:	September 13, 2014	
John Adams Elementary	If approved,	September 13, 2017	
Parking Lot Expansion	DSUP Expiration:		
	Plan Acreage:	7.95 AC	
	Zone:	R-12	
Location:	Proposed Use:	Public Elementary School	
5651 Rayburn Avenue	Dwelling Units:	N/A	
	Gross Floor Area:	N/A	
Applicant:	Small Area Plan:	Alexandria West	
Alexandria City Public	Historic District:	N/A	
Schools	Green Building:	N/A	

Purpose of Application

The applicant requests approval of a Development Special Use Permit with Site Plan with modifications to construct 28 new parking spaces within the school's existing parking lot.

Special Use Permits and Modifications Requested:

- 1. Development Special Use Permit with Site Plan to construct 28 new parking spaces
- 2. Special Use Permit to expand an existing parking lot with parking spaces in excess of zoning ordinance requirement for a school
- 3. Modification to allow parking and drive aisle areas to exceed 50 percent of the required west and south side yards

Staff Recommendation: APPROVAL WITH CONDITIONS

Staff Reviewers:

Patricia Escher, AICP, Principal Planner; <u>patricia.escher@alexandriava.gov</u> Ryan Price, Urban Planner; <u>ryan.price@alexandriava.gov</u>

PLANNING COMMISSION ACTION, JUNE 3, 2014: The Planning Commission noted the deferral of the request.

<u>Reason:</u> The applicant requested the deferral.



I. SUMMARY

A. Recommendation & Summary of Issues

Staff recommends **approval** of the development special use permit application and all other requests and modifications to allow Alexandria City Public Schools to add 28 additional parking spaces to the existing parking lot at John Adams Elementary School. Staff believes the project will help alleviate some of the parking shortage and congestion issues associated with the site.

II. BACKGROUND

A. Site Context

Location

The project site is located on Rayburn Avenue, near the intersection with North Beauregard Street. The property is considered a "flag" lot, in that it is bound by other properties on all sides with the exception of an entrance driveway which connects the site to Rayburn Avenue. Flag lots do not have street frontage other than the width of the driveway. The school borders the Westridge townhome community to the south and west, and The Mark Center Office Park to the east. The northern edge of the property is bound by Chambliss Park and single family homes (Shirley Forest).



Enrollment at the School

Constructed in 1975, John Adams Elementary School serves residents in the northwest corner of the City. There are currently 874 students enrolled at the school in grades K-5, making it the largest elementary school in Alexandria. In addition to the K-5 enrollment, there are 107 students enrolled in the pre-kindergarten program at the school, also the largest in the City. John Adams Elementary is also home to the Headstart program, which brings in an additional 92 students to the facility during the school day.

B. Detailed Project Description

The applicant, Alexandria City Public Schools (ACPS), is proposing to construct 28 new parking spaces within the existing parking area. The new parking will include 14 tandem spaces, 10 standard spaces, and 4 parallel spaces. All of the new parking will be constructed using pervious materials. In terms of pedestrian related changes, two sidewalks will be relocated to lie adjacent to the new parking spaces, and the trail connecting the site to Chambliss Park will be realigned to connect with the existing path along the northern edge of the property next to the baseball diamond. These parking improvements are part of a series of recommendations that came out of an 2012 Transportation Study that was conducted for ACPS. The study in its entirety is provided in Attachment 2.



III. ZONING

Property Address:	5651 Rayburn Avenue	2		
Total Site Area:	7.95 AC			
Zone:	R-12			
Current Use:	Public Elementary Sch	nool		
Proposed Use:	Public Elementary School			
	Permitted/Required	Existing	Proposed	
FAR	N/A	N/A	N/A	
Buffer	N/A	N/A	N/A	
Setbacks	N/A	N/A	N/A	
Front	N/A	N/A	N/A	
Side	N/A	N/A	N/A	
Rear	N/A	N/A	N/A	
Parking	39	118	146	

IV. STAFF ANALYSIS

A. Parking

Parking Capacity Issues

Daytime parking at the school is well over capacity. There are currently 118 parking spaces on the school grounds to accommodate 130 full-time staff. This does not include additional staff for other programs that use the building during the school day such as Head Start (16 teachers), Child Find development disability screening (9 teachers), and hearing screenings (1 audiologist). Additionally, the Head Start program requires parents to walk their children into the building which is putting additional demand on parking capacity. ACPS implemented a later start time for the Head Start program (changed from 8am to 8:30am) in an effort to stagger incoming traffic to the site. While this alleviates some of the congestion, it does not address parking issues. By the time the program starts at 8:30am, there are no visitor parking spots available due to overflow employee parking; leaving parents no option but to park in the drive aisles. This creates vehicle circulation issues within the site, and poses safety risks by impacting emergency vehicle access.

The school system hired Kimley-Horn and Associates, Inc. to conduct a Transportation Study in 2012. Among the findings from that study, based on field-observations the designated parking areas are over capacity from 8:00am through 2:30pm. The field observers noted that during those hours, between 16 and 30 vehicles were parked in unmarked spaces. A by-product of this capacity problem has been the use of Chambliss Park for vehicle parking. The transportation study notes between 15 and 28 vehicles were parked on the grass areas of Chambliss Park during the school day. This vehicle usage of the park has damaged the lawn areas as shown below.

The Duke Realty property, which sits directly adjacent to John Adams Elementary School, has underutilized surface parking spaces that would be accessible to the school property. The Transportation Study identified these underutilized spaces as a potential near-term solution. However, ACPS efforts to negotiate a shared-parking arrangement with Duke Realty have proven unsuccessful.

In terms of transportation management efforts, ACPS employees are currently eligible for up to \$30 per month in transit benefits to put toward their commuting costs; however the exact breakdown of program participants by school is not available. A condition of this DSUP approval is the creation of a Transportation Demand Management (TDM) fund which will help reduce the number of single-occupancy vehicle trips to the school. The fund will cover things like additional transit benefits for employees, marketing and educational materials illustrating transit alternatives and safe pedestrian routes to school, and classroom competitions to incentivize public transit usage, biking, and walking. A detailed description of the TMP scope is provided in attachment 1.





On-Street Parking

Other elementary schools in the City also have parking capacity issues, however the situation at John Adams Elementary is more pronounced due to the lack of on-street parking options.

As noted earlier in the report, the school sits on a "flag" lot, so the only street frontage that exists is the driveway connecting the school to Rayburn Avenue which is approximately 36 feet; too narrow for on-street parking. By way of comparison, Polk Elementary School has approximately 1,200 feet of on-street parking in front of the school along Polk Avenue. There are a few streets north of the John Adams site which could possibly be used for employee parking (N. Shelley St., Forrestal Ave, and N. Chambliss St.), however they are very limited, and are not a feasible solution because they are on the rear side of the building. Table 1 provides a comparison of the parking situation at other city schools, and the overflow options available:

Elementary School	Employees	Existing Parking	Legal Overflow Options
John Adams	130 (Staff) 16 (Headstart)	118	None. Employees park on Chambliss Park grass
William Ramsay	95 (Staff) 0 (Headstart)	85	Unrestricted on-street parking along sections of adjacent Sanger Avenue (approximately 833 feet)
James K Polk	83 (Staff) 0 (Headstart)	33	Unrestricted on-street parking along sections of adjacent Polk Avenue (approximately 1,200 feet)

Table 1:	Elementary	School	Parking	Com	parison
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B. Special Use Permit Request

The City's zoning ordinance requires 1 parking space for every 25 classroom seats in elementary schools (Section 8-200-A-11). Based on this requirement, John Adams Elementary School is permitted to provide a maximum of 39 parking spaces. As noted in the previous section, the number of staff employed at the school far exceeds this parking requirement. Additionally, the existing parking spaces on the school grounds already exceed this requirement by 79 spaces. The applicant is requesting a Special Use Permit to expand parking over the required 39 spaces in the R-12 zone as permitted by the zoning ordinance (Section 3-203-E).

C. Open Space

The property lies within the R-12 residential zone which has setbacks requirements, but no open space percentage requirement. The site plan for this property was approved prior to the adoption of the 1992 Zoning Ordinance, thus the school is considered to be a legal non-complying structure, and is not required to meet yard setback requirements for the existing building footprint. For information purposes, approximately 45.9 percent of the site is currently used as open space. With the proposed parking spaces and sidewalks, the open space on the site will decline slightly to 44.6 percent. In terms of screening, the properties directly adjacent to the 14 new tandem parking spaces are already screened by existing trees which will mitigate any visual impacts of the new spaces. The remainder of the proposed parking spaces lie further into the John Adams Elementary property, and do not warrant additional screening.

D. Storm Water Management

John Adams Elementary School is located in the Holmes Run watershed. With the development, the change in land use results in higher storm water runoff from the site under post development or redevelopment is an integral component of storm water management for the site and vicinity areas, the impacts of generation of higher runoff under post development conditions shall be mitigated by providing on site storm water detention in permeable pavement sub base so as to provide flood protection by not releasing the storm water from the site at a higher rate than the predevelopment conditions in accordance with the requirements of the Alexandria Zoning Ordinance (AZO) Article XIII and the latest storm water regulations of the Virginia Department of Environmental Quality (VDEQ). Additionally, the storm water from the site shall be discharged to an adequate storm water outfall per the requirements of Article XI of AZO and Minimum Standard MS-19 of the Commonwealth of Virginia. The site shall also provide on-site Best Management Practices (BMP) and/or Low Impact Development (LID) techniques to treat storm water for phosphorous removal and water quality improvements per the requirements of the AZO Article XIII and Storm Water Regulations of VDEQ.

V. <u>COMMUNITY</u>

The applicant held two public meetings in the summer of 2012 as part of the Transportation Study. The scope of this proposed parking expansion was presented at those meetings along with other potential solutions that could be implemented in future phases, such as construction of a small parking structure and reprograming on-site recreation areas for parking use. Summaries of community input from those meetings are provided in Section 3 of the Transportation Study (Attachment 2). The applicant also held a community meeting at the school on August 11, 2014 and reached out to the Seminary West Civic Association.

VI. CONCLUSION

Staff recommends **approval** of the Development Special Use Permit with modifications subject to compliance with City codes, ordinances and staff recommendations below.

Staff:Karl Moritz, Deputy Director, Planning and Zoning
Robert Kerns, AICP, Chief, Development Division
Patricia Escher, AICP, Principal Planner
Ryan Price, Urban Planner

VII. <u>GRAPHICS</u>



VIII. STAFF RECOMMENDATIONS

1. The Final Site shall be in substantial conformance with the preliminary plan dated April 4, 2014 and comply with the following conditions of approval.

A. PEDESTRIAN/STREETSCAPE:

- 2. Provide the following pedestrian improvements to the satisfaction of the Directors of P&Z, RP&CA and T&ES:
 - a. Construct all concrete sidewalks to City standards. The minimum unobstructed width of newly constructed sidewalks shall be 6 feet in commercial, mixed-use or other high-density areas and 5 feet in single-family or other lower density areas.

B. OPEN SPACE/LANDSCAPING:

- 3. As part of the re-establishment of Chambliss Park, re-vegetate areas impacted by prior overflow parking.
- 4. Prior to Prior to release of Final Site Plan, the Applicant shall update the RP&CA-ACPS Joint Maintenance MOU to reflect the new site configuration. Development of the Project Plan shall guide execution of work.* (RP&CA)
- 5. The Maintenance MOU shall include scheduling and provision of all labor and materials for the following anticipated items:
 - a. Daily, weekly and seasonal facilities maintenance.
 - b. Specific information relating to winter operations and priorities of work.
 - c. Daily, weekly and seasonal grounds maintenance including litter/debris/solid waste and recycling removal and general policing of grounds. (RP&CA)
- 6. Any site work including construction staging impacting the field and or outside the limits of disturbance shall be restored to satisfaction of the Director of Recreation, Parks & Cultural Activities. (RP&CA)

C. TREE PROTECTION AND PRESERVATION:

- 7. A fine shall be paid by the applicant in an amount not to exceed \$10,000 for each tree that is destroyed and/or the City may request that replacement trees of similar caliper and species be provided for damaged trees if the approved tree protection methods have not been followed. The replacement trees shall be installed and if applicable the fine shall be paid prior to the issuance of the last certificate of occupancy permit. *** (P&Z)(RP&CA)
- 8. The area of the limits of disturbance and clearing for the site shall be limited to the areas as generally depicted on the preliminary site plan dated April 14, 2014 and reduced if possible to retain existing trees and grades. (P&Z)(RP&CA)

- 9. The applicant shall work with the City for recycling and/or reuse of the existing materials as part of the demolition process, including leftover, unused, and/or discarded materials. (T&ES)(P&Z)
- 10. Install a temporary informational sign on the site prior to the approval of the final site plan for the project. The sign shall be displayed until construction is complete or replaced with a contractor or real estate sign incorporating the required information; the sign shall notify the public of the nature of the upcoming project and shall provide a phone number for public questions regarding the project.* (P&Z)(T&ES)

D. PARKING:

- 11. The design and allocation of parking shall be subject to the following to the satisfaction of the directors of P&Z, T&ES, and Code Administration:
 - a. All parked vehicles shall be prohibited from encroaching on the proposed streets, pedestrian walkways, or emergency vehicle easements, and all purchasers shall be notified of this prohibition.

E. TRANSPORTATION DEMAND MANAGEMENT:

- 12. Transportation Demand Management goals and strategies must be established and implemented in order to encourage employees, parents and volunteers to take public transportation or share a ride to reduce the need for parking spaces. The details of the Plan are included in the TDM Attachment 1 to the general staff conditions. Below are the basic conditions from which other details originate. (T&ES)
- 13. A TDM Coordinator shall be designated for the school. The name, location, email and telephone number of the coordinator will be provided to the City at the time, as well as any changes occurring subsequently. This person will be responsible for implementing and managing all aspects of the TDM plan and the parking management program for the project. ** (T&ES)
- 14. The TDM goal is 30% usage of non-single occupancy vehicular modes by employees. The peak hour goal for all trips is a 0.5% reduction year-to-year. A TDM fund of \$14,200 shall be created in two annual installments of \$7,100 each, to be held and utilized by the applicant. The first payment is due in the account before December 31, 2014 and the second by December 31, 2015. The fund shall be used exclusively for the approved transportation activities detailed in the attachment.*** (T&ES)
- 15. The TDM Coordinator will submit annual reports, fund reports, transportation counts and modes of transportation surveys to the Transportation Planning Division as detailed in the Attachment. (T&ES)

F. SITE PLAN:

- 16. Per Section 11-418 of the Zoning Ordinance, the development special use permit shall expire and become null and void, unless substantial construction of the project is commenced within 36 months after initial approval and such construction is thereafter pursued with due diligence. The applicant shall provide a written status report to staff 18 months after initial approval to update the City Council on the project status. (P&Z)
- 17. Provide a lighting plan with the final site plan to verify that lighting meets City standards. The plan shall be to the satisfaction of the Directors of T&ES, P&Z, and/or RP&CA in consultation with the Chief of Police and shall include the following:
 - a. Clearly show location of all existing street lights and site lights with a photometric plan to include all existing light fixtures, shading back less relevant information.
 - b. If existing lighting does not meet minimum standards within the City right-of-way adjacent to the site, additional lighting must be provided so that the lighting meets City standards or to the satisfaction of the Director of T&ES.

In the event that the lighting does not meet the minimum standards, provide the following:

- c. Clearly show location of all existing and proposed street lights and site lights, shading back less relevant information.
- d. A lighting schedule that identifies each type and number of all fixtures, mounting height, and strength of fixture in Lumens or Watts
- e. Manufacturer's specifications and details for all proposed fixtures including site, landscape, pedestrian, sign(s) and security lighting.
- f. A photometric plan with lighting calculations that include all existing and proposed light fixtures, including any existing street lights located on the opposite side(s) of all adjacent streets. Photometric calculations must extend from proposed building face(s) to property line and from property line to the opposite side(s) of all adjacent streets and/or 20 feet beyond the property line on all adjacent properties and rights-of-way. Show existing and proposed street lights and site lights.
- g. Photometric site lighting plan shall be coordinated with architectural/building mounted lights, site lighting, street trees and street lights to minimize light spill into adjacent residential areas.
- h. Provide location of conduit routing between site lighting fixtures so as to avoid conflicts with street trees.
- i. Detail information indicating proposed light pole and footing in relationship to adjacent grade or pavement. All light pole foundations shall be concealed from view.
- j. The lighting for the areas not covered by the City of Alexandria' standards shall be designed to the satisfaction of Directors of T&ES and P&Z.

- k. Provide numeric summary for various areas (i.e., roadway, walkway/ sidewalk, alley, and parking lot, etc.) in the proposed development.
- 1. Full cut-off lighting shall be used at the development site to prevent light spill onto adjacent properties. (P&Z)(T&ES)(RP&CA)(Police)(BAR)

G. CONSTRUCTION MANAGEMENT:

- 18. Submit a construction phasing plan to the satisfaction of the Director of T&ES, for review, approval and partial release of Erosion and Sediment Control for the final site plan. In addition, building and construction permits required for site preconstruction shall be permitted prior to release of the final site plan to the satisfaction of the Director of T&ES. * (T&ES)
- 19. Submit a construction management plan for review and approval by the Directors of P&Z, T&ES and Code Administration prior to final site plan release. The plan shall:
 - a. Include a plan for temporary pedestrian and vehicular circulation;
 - b. Include analysis as to whether temporary street lighting is needed on the site and how it is to be installed.
 - c. Include the overall schedule for construction and the hauling route;
 - d. Copies of the plan shall be posted in the construction trailer and given to each subcontractor before they commence work;
 - e. If the plan is found to be violated during the course of construction, citations will be issued for each infraction and a correction notice will be forwarded to the applicant. If the violation is not corrected within five (5) calendar days, a "stop work order" will be issued, with construction halted until the violation has been corrected. * (P&Z)(T&ES)(Code)
- 20. Provide off-street parking for all construction workers without charge to the construction workers. Construction workers shall not be permitted to park onstreet. For the construction workers who use Metro, DASH, or another form of mass transit to the site, the applicant shall subsidize a minimum of 50% of the fees for mass transit. Compliance with this condition shall be a component of the construction management plan, which shall be submitted to the Department of P&Z and T&ES prior to final site plan release. This plan shall:
 - a. Establish the location of the parking to be provided at various stages of construction, how many spaces will be provided, how many construction workers will be assigned to the work site, and mechanisms which will be used to encourage the use of mass transit.
 - b. Provide for the location on the construction site at which information will be posted regarding Metro schedules and routes, bus schedules and routes.
 - c. If the plan is found to be violated during the course of construction, a correction notice will be issued to the developer. If the violation is not corrected within five (5) days, a "stop work order" will be issued, with construction halted until the violation has been corrected. * (P&Z)(T&ES)

- 21. The sidewalks shall remain open during construction or pedestrian access shall be maintained to the satisfaction of the Director of T&ES throughout the construction of the project. (T&ES)
- 22. No major construction staging shall be allowed within adjoining City Park property. The applicant shall meet with T&ES to discuss construction staging activities prior to release of any permits for ground disturbing activities. ** (T&ES)
- 23. A "Certified Land Disturber" (CLD) shall be named in a letter to the Division Chief of Construction Management & Inspection prior to any land disturbing activities. If the CLD changes during the project, that change must be noted in a letter to the Division Chief. A note to this effect shall be placed on the Phase I Erosion and Sediment Control sheets on the site plan. (T&ES)
- 24. Prior to commencing clearing and grading of the site, the applicant shall hold a meeting with notice to all adjoining property owners and civic associations to review the location of construction worker parking, plan for temporary pedestrian and vehicular circulation, and hours and overall schedule for construction. The Departments of P&Z and T&ES shall be notified of the date of the meeting before the permit is issued. (P&Z)(T&ES)
- 25. Identify a person who will serve as a liaison to the community throughout the duration of construction. The name and telephone number, including an emergency contact number, of this individual shall be provided in writing to residents, property managers and business owners whose property abuts the site and shall be placed on the project sign, to the satisfaction of the Directors of P&Z, and/or and T&ES. (P&Z)(T&ES)
- 26. Implement a waste and refuse control program during the construction phase of this development. This program shall control wastes such as discarded building materials, concrete truck washout, chemicals, litter or trash, trash generated by construction workers or mobile food vendor businesses serving them, and all sanitary waste at the construction site and prevent offsite migration that may cause adverse impacts to neighboring properties or to the environment to the satisfaction of Directors of T&ES and Code Administration. All wastes shall be properly disposed offsite in accordance with all applicable federal, state and local laws. (T&ES)
- 27. Temporary construction on-site trailer shall be permitted and be subject to the approval of the Director of P&Z. The trailer shall be removed upon completion of work. ***
- 28. Submit an as-built development site plan survey per the City's final as-built requirements upon project completion. *** (P&Z) (T&ES)

29. Contractors shall not cause or permit vehicles to idle for more than 10 minutes when parked. (T&ES)

H. STORMWATER:

30. In accordance with the Preliminary Plan, the Final Site Plan shall comply with all the storm water management regulatory requirements by the Commonwealth of Virginia and the City of Alexandria as applicable on or after July 1, 2014. (T&ES)

I. STREETS / TRAFFIC:

- 31. If the City's existing public infrastructure is damaged during construction, or patch work required for utility installation then the applicant shall be responsible for construction/ installation or repair of the same as per the City of Alexandria standards and specifications and to the satisfaction of Director, Transportation and Environmental Services. (T&ES)
- 32. A pre-construction walk/survey of the site shall occur with Transportation and Environmental Services Construction Management & Inspection staff to document existing conditions prior to any land disturbing activities. (T&ES)

J. UTILITIES:

33. Locate all private utilities without a franchise agreement outside of the public rightof-way and public utility easements. (T&ES)

K. WATERSHED, WETLANDS, & RPA's:

- 34. The project site lies within Four Mile Run Watershed thus stormwater quantity controls shall be designed to demonstrate that post development stormwater runoff does not exceed the existing runoff quantities for the 2-year, 10-year, and 100-year storm events. (T&ES)
- 35. The storm water collection system is located within the Four Mile Run watershed. All on-site storm water curb inlets and public curb inlets within 50 feet of the property line shall be duly marked using standard City markers, or to the satisfaction of the Director of T&ES. (T&ES)

L. BMP FACILITIES:

36. The City of Alexandria's storm water management regulations regarding water quality are two-fold: first, phosphorus removal requirement and second, water quality volume default. Compliance with the phosphorus requirement does not relieve the applicant from the water quality default requirement. The water quality volume determined by the site's proposed impervious area shall be treated in a Best Management Practice (BMP) facility. (T&ES)

- 37. Provide BMP narrative and complete pre and post development drainage maps that include areas outside that contribute surface runoff from beyond project boundaries to include adequate topographic information, locations of existing and proposed storm drainage systems affected by the development, all proposed BMPs and a completed Worksheet A or B and Worksheet C, as applicable. (T&ES)
- 38. The storm water Best Management Practices (BMPs) required for this project shall be constructed and installed under the direct supervision of the design professional or his designated representative. Prior to release of the performance bond, the design professional shall submit a written certification to the Director of T&ES that the BMPs are:
 - a. Constructed and installed as designed and in accordance with the approved Final Site Plan.
 - b. Clean and free of debris, soil, and litter by either having been installed or brought into service after the site was stabilized. **** (T&ES)
- 39. Submit two originals of the storm water quality BMP Maintenance Agreement with the City to be reviewed as part of the Final #2 Plan. The agreement must be executed and recorded with the Land Records Division of Alexandria Circuit Court prior to approval of the final site plan.* (T&ES)
- 40. The Applicant/Owner shall be responsible for installing and maintaining storm water Best Management Practices (BMPs). The Applicant/Owner shall execute a maintenance service contract with a qualified private contractor for a minimum of three years and develop an Owner's Operation and Maintenance Manual for all Best Management Practices (BMPs) on the project. The manual shall include at a minimum: an explanation of the functions and operations of the BMP(s); drawings and diagrams of the BMP(s) and any supporting utilities; catalog cuts on maintenance requirements including mechanical or electrical equipment; manufacturer contact names and phone numbers; a copy of the executed maintenance service contract; and a copy of the maintenance agreement with the City. A copy of the contract shall also be placed in the BMP Operation and Maintenance Manual. Prior toproject completion, a copy of the maintenance contract shall be submitted to the City. ****(T&ES)
- 41. Submit a copy of the Operation and Maintenance Manual to the Office of Environmental Quality on digital media prior to project completion. ****(T&ES)
- 42. Prior to project completion, the Applicant is required to submit a certification by a qualified professional to the satisfaction of the Director of T&ES that any existing storm water management facilities adjacent to the project and associated conveyance systems were not adversely affected by construction operations. If maintenance of the facility or systems were required in order to make this certification, provide a description of the maintenance measures performed. ****(T&ES)

M. CONTAMINATED LAND:

43. Indicate whether or not there is any known soil and groundwater contamination present as required with all preliminary submissions. Should any unanticipated contamination, underground storage tanks, drums or containers be encountered at the site, the Applicant must immediately notify the City of Alexandria Department of Transportation and Environmental Services, Office of Environmental Quality. (T&ES)

N. ARCHAEOLOGY:

- 44. Call Alexandria Archaeology immediately (703-746-4399) if any buried structural remains (wall foundations, wells, privies, cisterns, etc.) or concentrations of artifacts are discovered during development. Work must cease in the area of the discovery until a City archaeologist comes to the site and records the finds. The language noted above shall be included on all final site plan sheets involving any ground disturbing activities. (Archaeology)
- 45. The applicant shall not allow any metal detection and/or artifact collection to be conducted on the property, unless authorized by Alexandria Archaeology. Failure to comply shall result in project delays. The language noted above shall be included on all final site plan sheets involving any ground disturbing activities. (Archaeology)

CITY DEPARTMENT CODE COMMENTS

Legend: C - Code Requirement R - Recommendation S - Suggestion F - Finding

Planning and Zoning

C - 1 As-built documents for all landscape and irrigation installations are required to be submitted with the Site as-built and request forproject close-out. Refer to City of Alexandria Landscape Guidelines, Section III A & B. **** (P&Z) (T&ES)

Transportation and Environmental Services

- F 1. Sheet C-700 With the final site plan submission, consider revising the tandem parking sign to reflect that these spaces are "reserved", "permit only", or other similar language that indicates these spaces are not open to the general public. (T&ES- Transportation)
- F 2. Since the record drawings, maps, and other documents of the City of Alexandria, State, and Federal agencies show the true north pointing upwards, therefore, the Site Plan shall show the true north arrow pointing upward as is customary; however, for the sake of putting the plan together and/or ease of understanding, the project north arrow pointing upward, preferably east, or west may be shown provided it is consistently shown in the same direction on all the sheets with no exception at all. The north arrow shall show the source of meridian. The project north arrow pointing downward will not be acceptable even if, it is shown consistently on all the sheets. (T&ES)
- F 3. The Final Site Plan must be prepared per the requirements of Memorandum to Industry 02-09 dated December 3, 2009, Design Guidelines for Site Plan Preparation, which is available at the City's following web address:

http://alexandriava.gov/uploadedFiles/tes/info/Memo%20to%20Industry%20No.%2002-09%20December%203,%202009.pdf

- F-4. The plan shall show sanitary and storm sewer, and water line in plan and profile in the first final submission and cross reference the sheets on which the plan and profile is shown, if plan and profile is not shown on the same sheet. Clearly label the sanitary and storm sewer, or water line plans and profiles. Provide existing and proposed grade elevations along with the rim and invert elevations of all the existing and proposed sanitary and storm sewer at manholes, and water line piping at gate wells on the respective profiles. Use distinctive stationing for various sanitary and storm sewers (if applicable or required by the plan), and water line in plan and use the corresponding stationing in respective profiles. (T&ES)
- F 5. The Plan shall include a dimension plan with all proposed features fully dimensioned and the property line clearly shown. (T&ES)
- F 6. Include all symbols, abbreviations, and line types in the legend. (T&ES)

- F 7. Asphalt patches larger than 20% of the total asphalt surface, measured along the length of the road adjacent to the property frontage and extending to the centerline of the street, will require full curb to curb restoration (T&ES)
- F-8. All storm sewers shall be constructed to the City of Alexandria standards and specifications. Minimum diameter for storm sewers shall be 18" in the public Right of Way (ROW) and the minimum size storm sewer catch basin lead is 15". The acceptable pipe materials will be Reinforced Concrete Pipe (RCP) ASTM C-76 Class IV. Alternatively, AWWA C-151 (ANSI A21.51) Class 52 may be used if approved by the Director of T&ES. For roof drainage system, Polyvinyl Chloride (PVC) ASTM D-3034-77 SDR 26 and ASTM 1785-76 Schedule 40 pipes will be acceptable. The acceptable minimum and maximum velocities will be 2.0 fps and 15 fps, respectively. The storm sewers immediately upstream of the first manhole in the public Right of Way shall be owned and maintained privately (i.e., all storm drains not shown within an easement or in a public Right of Way shall be owned and maintained privately). (T&ES)
- F 9. Lateral Separation of Sewers and Water Mains: A horizontal separation of 10' (edge to edge) shall be provided between a storm or sanitary sewer and a water line; however, if this horizontal separation cannot be achieved then the sewer and water main shall be installed in separate trenches and the bottom of the water main shall be at least 18" above of the top of the sewer. If both the horizontal and vertical separations cannot be achieved then the sewer pipe material shall be Ductile Iron Pipe (DIP) AWWA C-151 (ANSI A21.51) Class 52 and pressure tested in place without leakage prior to installation.(T&ES)
- F 10. Crossing Water Main Over and Under a Sanitary or Storm Sewer: When a water main over crosses or under crosses a sanitary / storm sewer then the vertical separation between the bottom of one (i.e., sanitary / storm sewer or water main) to the top of the other (water main or sanitary / storm sewer) shall be at least 18" for sanitary sewer and 12" for storm sewer; however, if this cannot be achieved then both the water main and the sanitary / storm sewer shall be constructed of Ductile Iron Pipe (DIP) AWWA C-151 (ANSI A21.51) Class 52 with joints that are equivalent to water main standards for a distance of 10 feet on each side of the point of crossing. A section of water main pipe shall be centered at the point of crossing and the pipes shall be pressure tested in place without leakage prior to installation. Sewers crossing over the water main shall have adequate structural support (concrete pier support and/or concrete encasement) to prevent damage to the water main. Sanitary sewers under creeks and storm sewer pipe crossings with less than 6" clearance shall be encased in concrete. (T&ES)
- F 11. No water main pipe shall pass through or come in contact with any part of sanitary / storm sewer manhole. Manholes shall be placed at least 10 feet horizontally from the water main whenever possible. When local conditions prohibit this horizontal separation, the manhole shall be of watertight construction and tested in place. (T&ES)

- F 12. Crossing Existing or Proposed Utilities: Underground telephone, cable T.V., gas, and electrical duct banks shall be crossed maintaining a minimum of 12" of separation or clearance with water main, sanitary, or storm sewers. If this separation cannot be achieved then the sewer pipe material shall be Ductile Iron Pipe (DIP) AWWA C-151 (ANSI A21.51) Class 52 for a distance of 10 feet on each side of the point of crossing and pressure tested in place without leakage prior to installation. Sanitary / storm sewers and water main crossing over the utilities shall have adequate structural support (pier support and/or concrete encasement) to prevent damage to the utilities. (T&ES)
- F 13. Show the drainage divide areas on the grading plan or on a sheet showing reasonable information on topography along with the structures where each sub-area drains. (T&ES)
- F 14. Provide proposed elevations (contours and spot shots) in sufficient details on grading plan to clearly show the drainage patterns. (T&ES)
- F 15. All the existing and proposed public and private utilities and easements shall be shown on the plan and a descriptive narration of various utilities shall be provided. (T&ES)
- C 1 Per the requirements of the City of Alexandria Zoning Ordinance Article XI, the applicant shall complete a drainage study and adequate outfall analysis for the total drainage area to the receiving sewer that serves the site. If the existing storm system is determined to be inadequate then the applicant shall design and build on-site or off-site improvements to discharge to an adequate outfall; even if the post development storm water flow from the site is reduced from the pre-development flow. The Plan shall demonstrate to the satisfaction of the Director of T&ES that a non-erosive stormwater outfall is present. (T&ES)
- C 2 Per the requirements of the City of Alexandria Zoning Ordinance (AZO) Article XIII, the applicant shall comply with the peak flow requirements and prepare a Stormwater Management Plan so that from the site, the post-development peak runoff rate form a two-year storm and a ten-year storm, considered individually, shall not exceed their respective predevelopment rates. If combined uncontrolled and controlled stormwater outfall is proposed, the peak flow requirements of the Zoning Ordinance shall be met. If the project site lies within the Braddock-West watershed then the applicant shall provide an additional 10% storage of the pre-development flows in this watershed to meet detention requirements. (T&ES)
- C 3 Per the requirements of Article 13-113 (d) of the AZO, all stormwater designs that require analysis of pressure hydraulic systems, including but not limited to the design of flow control structures and storm water flow conveyance systems shall be signed and sealed by a professional engineer, registered in the Commonwealth of Virginia. The design of storm sewer shall include the adequate outfall, inlet, and hydraulic grade line (HGL) analyses that shall be completed to the satisfaction of the Director of T&ES. Provide appropriate reference and/or source used to complete these analyses. (T&ES)

- C 4 Location of customer utility services and installation of transmission, distribution and main lines in the public rights of way by any public service company shall be governed by franchise agreement with the City in accordance with Title 5, Chapter 3, Section 5-3-2 and Section 5-3-3, respectively. The transformers, switch gears, and boxes shall be located outside of the public right of way. (T&ES)
- C 5 (a) Per the requirements of Section 5-3-2, Article A, Chapter 3 of the City of Alexandria Code, all new customer utility services, extensions of existing customer utility services and existing overhead customer utility services supplied by any existing overhead facilities which are relocated underground shall, after October 15, 1971 be installed below the surface of the ground except otherwise exempted by the City Code and to the satisfaction of the Director, Department of Transportation and Environmental Services. (b) Per the requirements of Section 5-3-3, Article A, Chapter 3 of the City of Alexandria Code, all new installation or relocation of poles, towers, wires, lines, cables, conduits, pipes, mains, and appurtenances used or intended to be used to transmit or distribute any service such as electric current, telephone, telegraph, cable television, traffic control, fire alarm, police communication, gas, water, steam or petroleum, whether or not on the streets, alleys, or other public places of the City shall, after October 15, 1971, be installed below the surface of the ground or below the surface in the case of bridges and elevated highways except otherwise exempted by the City Code and to the satisfaction of Director, Department of Transportation and Environmental Services. (T&ES)
- C-6 Per the requirements of Title 4, Chapter 2, Article B, Section 4-2-21, Appendix A, Section A 106(6), Figure A 106.1 Minimum Standards for Emergency Vehicle Access: provide a total turning radius of 25 feet to the satisfaction of Directors of T&ES and Office of Building and Fire Code Administration and show turning movements of standard vehicles in the parking lot as per the latest AASHTO vehicular guidelines. (T&ES)
- C 7 The applicant shall provide required storage space for both trash and recycling materials containers as outlined in the City's "Solid Waste and Recyclable Materials Storage Space Guidelines", or to the satisfaction of the Director of Transportation & Environmental Services. The plan shall show the turning movements of the collection. The City's storage space guidelines and required Recycling Implementation Plan forms are available at: www.alexandriava.gov/solidwaste or contact the City's Solid Waste Division at 703-746-4410, or via email at commercialrecycling@alexandriava.gov, for information about completing this form. (T&ES)
- C 8 The applicants shall submit a Recycling Implementation Plan (RIP) form to the Solid Waste Division, as outlined in Article H of Title 5 (Ordinance Number 4438), which requires all commercial properties to recycle. Instructions for how to obtain a RIP form can be found at: <u>www.alexandriava.gov/solid</u>waste or by calling the Solid Waste Division at 703.746.4410 or by e-mailing <u>CommercialRecycling@alexandriava.gov</u>. (T&ES)

- C 9 All private streets and alleys shall comply with the City's Minimum Standards for Private Streets and Alleys. (T&ES)
- C 10 All easements and/or dedications must be recorded prior to release of the site plan.* (T&ES)
- C 11 Plans and profiles of utilities and roads in public easements and/or public Right of Way must be approved prior to release of the plan.* (T&ES)
- C 12 Provide a phased erosion and sediment control plan consistent with grading and construction plan. (T&ES)
- C 13 Per the Memorandum to Industry, dated July 20, 2005, the applicant is advised regarding a requirement that applicants provide as-built sewer data as part of the final as-built process. Upon consultation with engineering firms, it has been determined that initial site survey work and plans will need to be prepared using Virginia State Plane (North Zone) coordinates based on NAD 83 and NAVD 88. Control points/Benchmarks which were used to establish these coordinates should be referenced on the plans. To insure that this requirement is achieved, the applicant is requested to prepare plans in this format including initial site survey work if necessary. (T&ES)
- C 14 The thickness of sub-base, base, and wearing course shall be designed using "California Method" as set forth on page 3-76 of the second edition of a book entitled, "Data Book for Civil Engineers, Volume One, Design" written by Elwyn E. Seelye. Values of California Bearing Ratios used in the design shall be determined by field and/or laboratory tests. An alternate pavement section for Emergency Vehicle Easements (EVE) to support H-20 loading designed using California Bearing Ratio (CBR) determined through geotechnical investigation and using Virginia Department of Transportation (VDOT) method (Vaswani Method) and standard material specifications designed to the satisfaction of the Director of Transportation and Environmental Services (T&ES) will be acceptable. (T&ES)
- C 15 All pedestrian, traffic, and way finding signage shall be provided in accordance with the Manual of Uniform Traffic Control Devices (MUTCD), latest edition to the satisfaction of the Director of T&ES. (T&ES)
- C 16 All driveway entrances, curbing, etc. in the public ROW or abutting public ROW shall meet City design standards. (T&ES)
- C 17 All sanitary laterals and/or sewers not shown in the easements shall be owned and maintained privately. (T&ES)
- C 18 The applicant shall comply with the City of Alexandria's Noise Control Code, Title 11, Chapter 5, which sets the maximum permissible noise level as measured at the property line. (T&ES)

- C 19 The applicant shall comply with the Article XIII of the City of Alexandria Zoning Ordinance, which includes requirements for stormwater pollutant load reduction, treatment of the water quality volume default and stormwater quantity management. (T&ES)
- C 20 The applicant shall comply with the City of Alexandria, Erosion and Sediment Control Code, Section 5, Chapter 4. (T&ES)
- C 21 All required permits from Virginia Department of Environmental Quality, Environmental Protection Agency, Army Corps of Engineers, Virginia Marine Resources shall be in place for all project construction and mitigation work prior to release of the final site plan. This includes the state requirement for a VSMP permit for land disturbing activities greater than 2500 SF. * (T&ES)

Code Administration (Building Code):

F - 1. The review by Code Administration is a preliminary review only. Once the applicant has filed for a building permit, code requirements will be based upon the building permit plans. If there are any questions, the applicant may contact the Code Administration Office, Plan Review Supervisor at 703-746-4200.

Archaeology

- F 1. Civil War-era maps indicate that a farmstead once stood less than 100 ft. to the west from the current school property. Therefore, given the proximity, the subject property could contain significant archaeological evidence of mid-nineteenth-century Alexandria history. However, the proposed undertaking is limited in scope and therefore it is unlikely that this particular project will adversely impact the existing resources. As a precaution, the two archaeological conditions have been placed on the project.
- C 1. All required archaeological preservation measures shall be completed in compliance with Section 11-411 of the Zoning Ordinance.

Asterisks denote the following:

- * Condition must be fulfilled prior to release of the final site plan
- ** Condition must be fulfilled prior to release of the building permit
- *** Condition must be fulfilled prior to release of the certificate of occupancy
- **** Condition must be fulfilled prior to release of the bond

IX. ATTACHMENTS

Attachment 1:

Transportation Demand Management PlanJohnAdamsDSUP#2014-00002

Elementary

School

A Transportation Demand Management Plan is required to implement strategies to persuade employees to take public transportation or share a ride to lessen the need for parking spaces and reduce peak hour trips. The details of the Plan are included below. The TDM strategies address the following users of the site:

- Staff and Students at John Adams Elementary School
- Visitors at school or community events at John Adams Elementary School
- Other employees, visitors, or contractors

The Transportation Demand Management Plan for John Adams Elementary School consists of five parts:

- 1. Goal and Evaluation of the TDM Plan
- 2. Organization, Funding and Reporting
- 3. Transportation Demand Management Plan
- 4. Evaluation of the Effectiveness of the TDM Plan
- 5. Modifications

Goal and Evaluation of the TDM Plan

a. The achievement of a successful TDM Plan will be based on the activities conducted and financed by the TDM fund and the annual survey that are requirements of this development special use permit. The fund report and annual report should demonstrate that enough activities are being conducted to persuade employees to switch to transit or carpool as opposed to driving alone. The survey should progressively show that the strategies financed through the TDM fund are decreasing the number of peak hour single occupant vehicles to the site.

Organization, Funding and Reporting

- a. Alexandria City Public Schools (ACPS) shall designate a Transportation Demand Management Coordinator (the TDM Coordinator) to manage and implement the TDM strategies on behalf of the school. The Transportation Planning Division may assist the TDM Coordinator.
- b. An Annual Work Plan will be developed by the TDM Coordinator and approved by the Transportation Planning Division. This work plan will be due on June 1st of every year for the following school year.
- c. The TDM Plan will be funded by the applicant. Funds will be used exclusively for the following activities:
 - Annual survey and resulting zip code maps
 - Promotional materials

- Supplement to transit benefit provided by the City of Alexandria
- Quarterly mailers to school families
- Incentives and prizes
- Walk/bike to work subsidy program
- Any other TDM activities as may be proposed by the TDM Coordinator and approved by the Director of T&ES as meeting goals similar to those targeted by the required TDM measures.
- d. Any unencumbered funds remaining in the TDM account at the end of each reporting year may be reprogrammed for TDM activities during the ensuing year or may be paid to the City for use in transit or ridesharing programs and activities.
- e. The TDM Coordinator shall provide semi-annual fund reports to the Transportation Planning Division. These reports will provide a summary of the expenses and account balance and should be accompanied by supporting documentation. The first report will be due six months following the project's completion, with the following due on January 15 and June 1 of every year.
- f. The TDM Coordinator shall distribute an annual survey to all staff members. The survey will be supplied by the Transportation Planning Division. Survey results will be due on April 15 of every year. A 35% response rate is required as approved by the Transportation Planning Division.
- g. The TDM Coordinator shall arrange to conduct annual peak hour vehicular counts to determine the number of vehicles accessing the campus. The Coordinator will work with Transportation Planning to determine the count dates, times and methodology.

Transportation Demand Management Plan

The TDM program will consist of the provision of services and incentives designed to discourage the use of single occupant automobiles for transportation to and from the site.

School families and students

- Annually, prior to school starting, the TDM Coordinator will prepare and mail a letter to John Adams Elementary School families that urge them to carpool to school, take DASH, MetroBus, or walk/bike. The letter will introduce the TDM Coordinator and provide information on forming carpools.
- Incentives will be given at least once a month to students who traveled that day to school by an eligible mode (carpool, school bus, or walk/bike). No one will receive advanced notice of the day selected, thereby encouraging students and their families to engage in alternative transportation as often as possible. Examples of incentives to be offered: store gift certificates, electronic gadgets, movie tickets, or pizza lunch for their class.
- Send a quarterly mailer to students, parents, and staff that includes information on preferred travel routes to campus, information on daily student drop-off/pick-up practices, a reminder of the school's alternative transportation goals, information on bus/metro routes, walking and biking safety tips, and TDM Coordinator's contact information.

- Include a transportation section to student handbook describing applicable goals, policies, services, and incentives. Include a Multi-modal Access Guide which provides maps, directions and preferred circulation for each mode.
- Participate in Walk to School Day events
- Set up "Walking School Buses" and/or "Biking Trains" which are groups of students accompanied by adults that walk or bike a pre-planned route to school.
- The TDM Coordinator will identify safe walking routes to the school and provide these maps to parents at the beginning of the school year.
- The school will participate in walk/bike to school promotional activities.
- Provide school bus stops to all John Adams Elementary students.
- Provide rides home for students who participate in afterschool activities on school buses.

School employees

- Promotional materials related to the TDM program and alternative transportation subsidy will be provided quarterly, beginning at the start of each school year.
- The TDM Coordinator will provide staff with maps and addresses of staff members who may be willing to carpool.
- Register staff carpoolers and assign priority parking for registered carpoolers.
- Promote ride matching and the "Guaranteed Ride Home" program
- Informational bulletin board in a staff area including: sign-up sheet for those interested in carpools, TDM Coordinator contact information, availability of preferred parking and bike racks, local bus/metro information, and other promotional materials.
- Registration and enrollment in walk/bike to work subsidy program for staff.
- Provide bike racks, the number of which will be in accordance with the City of Alexandria requirements. Showers should also be provided on-site. Provide training on safe use of bicycles.

Currently, ACPS employees are eligible for up to \$30 per month in transit benefits to put toward their commuting costs. The program is funded and administered by the City of Alexandria. The benefit has two options: Smart Benefits for WMATA (MetroBus and MetroRail), DASH, VRE or vanpooling, or a monthly DASH pass.

At the time of this TMP SUP, the City of Alexandria provides a transit benefit to all ACPS employees for \$30 per month. This benefit is expected to continue; however, if it is no longer available to all ACPS employees, this TMP requires that a transit benefit be offered to employees of John Adams for an amount of at least 50% of the transit benefit provided to City of Alexandria employees.

- IncentivesTMP funds may be used to supplement the benefits outlined above that are administered by the City of Alexandria.
- Subsidize staff that chooses to walk, bike or take transit to work by establishing a parking cash-out policy that offers employees a cash allowance in lieu of a parking space.

Evaluation of the Effectiveness of the TDM Plan

- a. The annual survey will be used to continually determine whether the school is meeting these targets. Other methods may be used if approved by the Director of T&ES.
- b. The City of Alexandria, in conjunction with the TDM Coordinator, will identify performance standards and objectives to measure the cost effectiveness and develop methodologies to monitor the performance of each element of the TDM Plan. The performance of the development in meeting these objectives will be evaluated in the annual report prepared by the TDM Coordinator, and will be used in developing the work plan.
- c. This TDM Plan has been designed to be flexible and responsive to the inputs of these annual evaluations in prescribing TDM strategies and tactics to be implemented in the Annual Work Program. By linking evaluation to work planning, the standards of performance will also change throughout the development cycle as the "right" solutions are adjusted in response and anticipation of changes in transportation conditions.

Modifications

a. The Director of T&ES may approve modifications to agreed TDM activities and funds, provided that any changes are consistent with the goals of this plan.



JOHN ADAMS ELEMENTARY TRANSPORTATION STUDY

Traffic Circulation and Parking Issues







FINAL REPORT

John Adams Elementary School

Traffic Circulation and Parking Study

Prepared for:



November 2012



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Executive Summary

Alexandria City Public Schools (ACPS) has retained Kimley-Horn and Associates, Inc. to perform a study to address the existing circulation and parking issues with the John Adams Elementary School by collecting data, assessing existing conditions, coordinating with stakeholders, and developing recommendations. The goal of the project is to identify near-term solutions (low cost, that don't require regulatory approval) that can quickly be implemented as well as mid- to long-term solutions that ACPS can implement in the future as funding is identified and programmed. This report summarizes the existing conditions, stakeholder input process, identification of potential solutions, and recommendations.

Several meetings were held to engage the public and stakeholders in the study process. The project team had regular communication with representatives of the City Transportation and Environmental Services (T&ES), Department of Recreation, Parks, and Cultural Activities (RPCA), ACPS Administration, and ACPS Pupil Transportation. In addition to meeting and coordination with ACPS and City staff, two public meetings were held on June 28, 2012 and July 31, 2012. The public and stakeholder process provided valuable feedback on potential issues and assisted in narrowing the potential solutions into recommendations.

Based on the study results, the following recommendations are provided:

Short-Term Recommendations

Implement the following short-term solutions to have an immediate impact on the traffic circulation and parking issues at John Adams:

- 1. <u>Implement a Left-Turn Restriction for the Exiting Movement at School Driveway</u> During peak traffic demand periods before and after school, no left-turns out of the school driveway would be allowed. The implementation of this recommendation is in progress.
- <u>Develop a Transportation Management Program (TMP)</u> Designate a faculty/staff member or committee to coordinate with a potential school district-wide TMP coordinator to develop, implement, and maintain a TMP. Immediate activities recommended to begin this process are:
 - a. Establishing a parking permit program to better control parking within the campus.
 - b. Conduct surveys of parents and faculty/staff to identify their obstacles to using school buses, car pools, or public transit. The implementation of this recommendation is in progress.





- c. Utilize available City transportation demand management resources from Local Motion program. The implementation of this recommendation is in progress.
- <u>Share Parking with Duke Realty Property</u> All possible options to utilize the adjacent Duke Realty parking spaces either associated with ACPS Central Office or additional leased spaces should be explored. This existing underutilized parking lot is the only option to increase parking spaces for at least the next two school years.

Mid-Term and Long-Term Recommendations

In the mid-term, ACPS can add more parking within the John Adams site. Three small areas were identified as feasible locations and they could create at least 27 parking spaces with minimal impact and disruption due to construction. While these combined options do not create the targeted 40 spaces by ACPS, they would provide some relief. The additional parking spaces combined with using nearby on-street parking spaces and implementing a TMP could provide a balance between the parking demand and parking supply.

Other recommended improvements require redevelopment of the Duke Realty property (as part of the recommendations contained in the Beauregard Small Area Plan) and are therefore considered long-term. The long-term recommendations are:

- 1. Add a second site vehicle driveway to the future collector street to help disperse and organize school traffic more efficiently.
- Reorient the site to provide for more efficient organization of uses. Relocating the playground to the back of the school allows for connectivity with the public open space to the north and creates opportunities for a larger shared use. Construction of parking on the current playground/court area would combine all transportation uses on the south and east side of the school and make efficient use of the recommended second driveway.

ACPS should monitor and participate in the Duke Realty property future planning and site plan approval process as the Beauregard Small Area Plan is implemented.





1. Introduction

Alexandria City Public Schools (ACPS) has retained Kimley-Horn and Associates, Inc. to perform a study to address the existing circulation and parking issues with the John Adams Elementary School by collecting data, assessing existing conditions, coordinating with stakeholders, and developing recommendations. The goal of the project is to identify near-term solutions (low cost) that can quickly be implemented as well as mid- to long-term solutions that ACPS can implement in the future as funding is identified and programmed. The following sections of this report summarize the existing conditions, stakeholder input process, identification of potential solutions, and recommendations.

2. Existing Conditions

The John Adams School currently contains an elementary school, pre-Kindergarten, a City Head Start program, and a Child Find developmental disability screening center. The school site is located at 5651 Rayburn Avenue, along the north side of Rayburn Avenue and west of N. Beauregard Street in the City of Alexandria. The site is surrounded by residential land uses to the west, south, and northeast, City park property to the north (including the baseball/softball field and grass/gravel area currently being used for parking), and commercial uses to the east (owned by Duke Realty). There is an open space near the southwest corner of the John Adams site between the townhomes and the parking lot. This open space is not owned by ACPS and may contain utility easements. There is also a shopping center along the south side of Rayburn Avenue. One of the shopping center's driveways is opposite of the John Adams school driveway along Rayburn Avenue.

Figure 1 shows the overall layout for the John Adams Elementary School campus. Vehicle access is provided at a single driveway (one lane in and one lane out) along Rayburn Avenue. Currently, twelve (12) school buses access the school. The bus loading area occurs in a loop near the building front. The parent drop-off/pick-up area is located in the parking lot near the back of the building. Pedestrian access to the site is along the Rayburn Avenue driveway, a pedestrian gate at the north property boundary opposite N. Shelley Street, and a gravel path that connects to N. Chambliss Street to the northwest. A City crossing guard is present at the Rayburn Avenue driveway during the school arrival and dismissal times to assist children who walk across Rayburn Avenue.

In the 2012 school year, the elementary school supported the following:

- 697 students (Kindergarten 5th grade)
- 140 students (pre-Kindergarten without Head Start)
- 84 faculty
- 46 support staff (full time equivalents)





A City Head Start program currently operates within the building near the front entrance and bus loop. In the 2012 school year, the Head Start program supported 92 students and 15 staff personnel.

School hours are 8:00 AM – 2:35 PM with a midday dismissal at 11:10-11:30 AM. Head Start hours are 8:30 AM - 2:35 PM. It should be noted that the Head Start opening time was recently changed from 8:00 AM to 8:30 AM to separate the drop-off activities from the John Adams school bus and parent drop-off activities. Head Start parents are required to park and escort their child into the building to sign them in. Because there are no available parking spaces after 8 AM, parents of the Head Start students are forced to park along the drive aisle adjacent to the bus loop.

After school and related activities at the John Adams site currently include the following:

- Campagna Center (6 AM 6 PM)
- Adult Sports (Mon, Tue, & Fri nights)
- After School Program (2 PM 6 PM)
- Youth Volleyball/Basketball (Weeknights 6 PM, Weekends all day)
- Summer Program (6/25 8/31, 8:30 AM 6 PM)





Figure 1—John Adams Elementary School—Campus Layout





Kimley-Horn and Associates, Inc.


2.1. Data Collection and Analyses

Kimley-Horn performed field observations and collected data to establish the baseline existing traffic and parking conditions and to identify transportation issues at the site. The following sections summarize the field observations, traffic counts, and parking counts.

2.1.1. Field Observations

Field observations of a complete school day were performed by two Kimley-Horn staff on Thursday June 7, 2012 from 7:00 AM to 4:00 PM. These observations primarily focused on issues that contribute to the congestion during peak student pick-up and drop-off times. They also involved observing traffic patterns throughout the day, including Head Start drop off and pickup times, and mid-day pickup times.

2.1.2. Traffic Counts and Analyses

Turning movement counts were collected at key intersections adjacent to the John Adams site during peak school traffic hours (7:30-8:30 AM, 2:30-3:30 PM). A summary of the peak hour counts at these four intersections is included in the **Appendix:**

- 1. Beauregard Street at Rayburn Avenue
- 2. Beauregard Street at Reading Avenue
- 3. Seminary Road at Echols Avenue
- 4. Rayburn Avenue at John Adams driveway

Intersection capacity analyses were performed at these four intersections based on methodologies contained in the Highway Capacity Manual, 2000 Edition as well as traffic signal timings provided by the City Transportation and Environmental Services staff. The *Highway Capacity Manual* defines six levels of service, LOS A through F, with A being the best and F the worst. **Table 1** shows the levels of service and the ranges of delay per vehicle for signalized and unsignalized intersections.



Table 1 -	Levels of Service and	Ranges of Delay							
1.05	Delay per Vehicle (seconds per vehic								
L03	Signalized	Unsignalized							
А	≤ 10	≤ 10							
В	> 10 - 20	> 10 – 15							
С	> 20 - 35	> 15 – 25							
D	> 35 – 55	> 25 – 35							
E	> 55 – 80	> 35 – 50							
F	> 80	> 50							

The results of the overall intersection capacity analyses are summarized in **Table 2** for the four intersections based on the existing traffic volumes.

Table 2 - Intersection	Delay and	d Level of	Service		
Interception	AM Pea (7:30 – 8	ak Hour 3:30 AM)	PM Peak Hour (2:30 – 3:30 PM)		
Intersection	Delay (sec)	LOS	Delay (sec)	LOS	
Beauregard Street and Rayburn Avenue (signalized)	29.9	С	27.1	С	
Beauregard Street and Reading Avenue (signalized)	15.1	В	8.6	А	
Seminary Drive and Echols Drive (signalized)	11.4	В	13.9	В	
Rayburn Avenue and School Driveway (unsignalized)	70.8*	F	24.2*	С	

* Intersection is a 2-way stop-controlled intersection. Results are for the SB driveway approach only.

The results of the analyses show that the signalized intersections operate at acceptable levels of service. The problems at the school driveway approach to Rayburn Avenue are reflected in the results for the AM peak, but not in the PM peak. This is likely due to the fact that Synchro does not take into account the queue blockage of the driveway as a result of the queue spillback





from the Beauregard Street signal and the congestion within the site doesn't allow traffic to easily exit the driveway. The queue blockage and congestion were seen during the field observations and are described in more detail in the Site Circulation/Traffic Conflict Issues section.

The spillback and the associated delays on the eastbound approach of Rayburn Avenue at Beauregard Street are better reflected in the individual delay and queuing results for that approach shown in **Table 3.** Synchro estimates the average delays on this approach to be 3 ½ minutes in the AM peak and over 2 ½ minutes in the PM peak. The school driveway is approximately 275 feet away from the stop line at the Beauregard Street signal. The queuing results confirm that queues from the Beauregard Street signal routinely extend to the driveway intersection and beyond.

Table 3 - Delay/Level of Service and Queuing Results								
	Delay	/LOS	Queue Length (ft)					
	Delay (sec)	LOS	Average	95% Percentile				
AM Peak	210.9	F	337	466				
PM Peak	158.9	F	260	245				

2.1.3. Parking Counts

Parking counts were performed every 30 minutes throughout the day as part of the field observations to document the number of occupied parking spaces and the amount of overflow parking that routinely occurs in areas of the campus not designated for that use. Based on the parking counts, there are approximately 128 designated parking spots. Within the total number of spaces available, 6 are marked for visitors, 5 for administrative staff, 4 are handicap parking, and the remaining spaces for faculty/staff. Kimley-Horn divided the parking into 5 sections for data collection and analysis. These sections are illustrated in **Figure 2**.













Table 4 - Occupied parking spaces throughout the school day.

Lot	Total		Number of Parked Vehicles																	
(See Figure 2 for Locations)	Spaces	7:00 AM	7:30 AM	8:00 AM	8:30 AM	9:00 AM	9:30 AM	10:00 AM	10:30 AM	11:00 AM	11:30 AM	12:00 PM	12:30 PM	1:00 PM	1:30 PM	2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM
Location A 5 Administrative Only Spots & Bus Loop	5	3	5	5	13	5	5	5	5	5	5	5	4	5	5	7	7	11	4	5
Location B	6	0	5	6	6	6	6	6	6	5	6	5	6	6	6	6	6	3	4	2
6 Visitor Spaces/2 Handicap Spaces	2	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	0
Location C 50 Faculty Spots	50	15	39	52	53	52	52	49	51	52	54	53	52	53	53	52	50	44	27	21
Location D	63	2	41	62	63	62	60	61	63	62	63	63	62	61	61	63	60	43	23	24
63 Faculty Spaces/2 Handicap Spaces	2	0	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	0	0
Location E Additional Parking North of Lot D on Gravel/Dirt		0	0	20	20	18	17	16	16	15	15	15	15	14	14	20	28	16	8	8
Total	128	20	91	148	159	147	144	141	145	143	147	145	143	143	143	152	155	119	67	60
Total Site Parking Utilization	-	16%	71%	116%	124%	115%	113%	110%	113%	112%	115%	113%	112%	112%	112%	119%	121%	93%	52%	47%
Vehicles Observed in Unmarked Spaces	-	0	0	22	31	20	19	16	17	17	19	18	17	17	17	24	30	22	8	8

Count Date: Thursday, June 7, 2012

* Note: Some counts are higher than available parking spaces since vehicles were parked in unmarked locations.

**Handicap Parking counts are Italicized





2.1.4. Parking Utilization Summary

Table 4 shows the need for more parking at John Adams. During regular school hours of operation there was a maximum of 28 cars parked on the open space area around the ball field north of the school, Location E on **Figure 2**. The worst time of day for parking is at 8:00 AM and 2:30 PM right at the school start and dismissal times. At that time there were 31 cars standing (temporarily parked in unmarked locations such as driveways) during the morning and 30 cars in the afternoon. This does not include the additional 6 cars parked in the Visitors Parking spaces that appear to be faculty/staff vehicles since the same vehicles were observed throughout the day. These counts were conducted on a Thursday, however anecdotal evidence suggests that the parking demand on some days of the week are even higher. These results confirm that additional parking spaces for faculty members are necessary in order to welcome guest and provide designated visitor parking spots.

2.2. Site Circulation/Traffic Conflict Issues

Based on the on-site observations performed and data collection, there are several issues related to traffic flow that all collectively contribute to the congestion during peak traffic times of the day:

Drop off/pickup activity happening throughout the drive aisle.

Due to the inefficiency of the designated drop off/pickup area, students are getting in and out of vehicles while in the drive aisle instead of waiting until the end of the line.







Parents making a U-turn in the aisle and blocking traffic in both directions.

After dropping off or picking up students, parents are bypassing the relatively long wait in line through the designated drop off/pickup area in the back of the school and making a U-turn in the drive aisle. Depending on the size of the vehicle, this maneuver can take several tries to complete the turnaround.



Conflicts between exiting buses and vehicular traffic.

Buses exiting the bus loop conflict with two-way traffic when exiting the bus loop and turning left on the driveway. School staff directs traffic on the driveway at this conflict point to stop traffic and allow the buses to exit.







Vehicle queues on Rayburn Avenue waiting at the Beauregard Street traffic signal block traffic from exiting the school driveway.

The green signal phase for Rayburn Avenue only lasts for about 20 seconds every two minutes. For the remaining time, school traffic turns left from the school driveway onto Rayburn and quickly fills up the space between Beauregard and the driveway. Once that space is full, no school traffic can move until the next 2 minute cycle of the traffic signal. This problem is worse when all the buses leave simultaneously.



A limited drop off/pickup area.

In an effort to maximize parking spaces, the drop off/pickup area is only large enough for 3 to 4 vehicles.







2.3. Parking Issues

Based on the on-site observations performed and data collection, there are several issues related to parking at the John Adams Elementary School site:

Not enough parking spaces for all-day staff parking.

The current number of parking spaces cannot even accommodate school staff. Vehicles park in areas not designated as parking, including the unpaved area on the north end of the parking lot and around the ball field. Two or three vehicles also park along the fence in the southwest corner of the campus, which slows vehicles making the turn. Most of the visitor parking spaces appear to be occupied by staff and other longer term parkers.







Not enough visitor/short-term parking spaces for parents and visitors.

Because all long-term and visitor parking spaces are occupied continuously throughout the day, there are no available spaces for visitors, Head Start, and shortterm parent parking. Parents whose children go to the Head Start are required to walk their children into the building and other parents also walk their child into the building. These visitors typically park along the drive aisle near the bus loop in front of the building. This parking causes conflicts with other vehicles trying to get by, especially larger vehicles such as buses and delivery trucks. This can also create safety issues due to the impact on emergency vehicle access.







3. Public and Stakeholder Meetings

After the completion of the data collection and evaluation of the existing conditions, several meetings were held to engage the public and stakeholders in the study process. The project team had regular communication with representatives of the City Transportation and Environmental Services (T&ES), Department of Recreation, Parks, and Cultural Activities (RPCA), ACPS Facilities staff and school administrators, and ACPS Pupil Transportation. In addition to meeting and coordination with ACPS and City staff, two public meetings were held.

The first public meeting was held on June 28, 2012. The purpose of this meeting was to summarize the data collection and field observations and to obtain input from the public about the key issues and concerns. Also, as part of the meeting, the public was invited to suggest solutions or ideas. The presentation, copy of the sign in sheet, and a complete meeting summary is contained in the Appendix.

Some of the comments and concerns that were expressed at the meeting included:

- The parking counts used for this study were collected on a Thursday. Parking demand on other days of the week may be even higher.
- Future enrollment projections and the impact of the Beauregard Small Area Plan redevelopment should be taken into consideration.
- The homeowners in the neighborhood to the north of the school would not support using the north gate for vehicle access for drop-off activities. They indicated that streets are too narrow for bus traffic or increased auto traffic. However, some additional faculty parking on residential streets may be acceptable.
- Access and parking options within the adjacent Duke Realty site should be explored.
- Consider a shuttle bus from the Kenmore Avenue shopping center to reduce on-site drop-off traffic
- Various ideas for reconfiguring circulation within the site were discussed, including swapping the bus and drop-off/pick-up locations, creating a second drop off loop, and widening the exit driveway.

A second public meeting was held on July 31, 2012 as a follow-up to the first meeting. The objective was to present the potential traffic circulation and parking solutions and obtain feedback. The presentation, copy of the sign in sheet, and a complete meeting summary is contained in the Appendix.

Some of the additional comments and concerns that were expressed at the meeting included:

• Explore possibility of shifting schedule of Pre-K to reduce peak trips on site.





- There was general support for the Kimley-Horn recommendation to restrict left-turns out
 of the school driveway, but some concern about the potential for pedestrian conflicts
 along Rayburn and Reading Avenues. There was also concern about the increased
 traffic on Reading making it difficult to exit the shopping center at the south driveway.
 The restriction of the left turn movement out of the school driveway is described in detail
 in the Potential Solutions section of this report.
- Providing vehicle access to the north gate was not supported due to pedestrian conflict and neighborhood circulation concerns.
- There was general support for implementing a parking permit program for faculty and staff to better control the available parking spaces. Some concerns were expressed about the ability to enforce parking restrictions and the increased burden on school staff.
- Continued support for utilizing the Duke Realty parking spaces for faculty.
- More parking in the front of the school is needed, but the property with open space near the southwest corner of John Adams is undesirable due to its proximity to the townhomes.
- General support for maximizing parking near the visitor parking, even if some trees were removed.
- General support for tandem parking spaces wherever possible.





4. Potential Solutions

Potential traffic circulation and parking solutions were developed based on the evaluation of existing conditions and input received from the public and stakeholders. In general, the solutions were separated into two categories: 1) traffic circulation and 2) parking. Within those categories, the solutions range from low-cost, near-term implementation to higher cost, long-term implementation. These solutions could be combined and/or implemented over time based on available funding, resources, and design/approval/construction time.

Overall, this study assumes that the school population is at its capacity and the Head Start program will operate through the foreseeable future. Should these conditions change, then the solutions would need to be reconsidered. Discussions with ACPS indicate that future population changes that may occur as a result of the Beauregard Small Area Plan will likely reduce the student population, not increase it.

4.1. Traffic Circulation

There are two primary strategies to improve traffic circulation conditions during peak periods of school demand: 1) *transportation demand management* – reduce the number of vehicles that are on-site, and 2) *improve circulation efficiency* – reduce or eliminate the bottlenecks that cause delays for vehicles during peak pick-up and drop-off times.

Table 5 shows all traffic circulation solutions considered and a summary of the anticipated benefits, issues, implementation timeframe, and cost.





	Table 5 - Solutions Identified for Improving Traffic Circulation											
Potential Solution	Benefits	Potential Issues	Implementation Timeframe	Cost (Preliminary/Planning Level)*								
Short-Term Improvements												
Develop a transportation management program (TMP) to establish goals and strategies to reduce the number of parent drop- off/pick-up trips	Reduces and manages school vehicle trip demand	Changing parent travel patterns and tendencies may be challenging	Near-Term and Ongoing – as soon as a TMP can be developed	Relatively low cost, requires ACPS staff resources to develop and implement the TMP. Cost may also include incentives (such as vouchers) and materials.								
Establish a "shuttle" route between ACPS Central Office and John Adams. This shuttle could be one TMP strategy to help reduce parent vehicle or faculty/staff trip demand.	Reduces parent trip demand within school driveways and parking areas without physical site modifications	Coordination schedules with ACPS bus schedules, communicating with parents, and supervision at ACPS Central Office	Near-Term – as soon as shuttle bus logistics are developed.	Yearly operational and maintenance costs associated with the shuttle bus (assuming a City bus from the existing fleet can be utilized for this service) and additional ACPS staff time for the Central Office site for supervision.								
Reroute exiting left turn by parents onto Rayburn Avenue to instead turn right and use Reading Avenue to reach Beauregard Street.	Reduce congestion and stacking along Rayburn Avenue at Beauregard Street traffic signal	School driveway is only one lane (doesn't allow bypassing) and changing parent travel patterns may be challenging. Would likely require an officer directing traffic. Requires approval by the Traffic and Parking Board.	Near-Term – the implementation of this recommendation is in progress.	Staff cost for initial monitoring								
Long-Term Improvements												
 Provide a second vehicle access to the school. Access requires new internal roadway around school: Along existing sidewalk alignment on east side of school Behind school along north side 	Improves circulation, reduces congestion, and disperses traffic.	Connection to N. Shelley Street will create pedestrian/vehicle conflicts. Will require removal and relocation of the outdoor play areas and new equipment, and will introduce school traffic into a residential neighborhood. May also require minor signal timing modifications at Seminary Road/Echols Avenue.	Long-Term – implementation will require close coordination with surrounding neighborhood, development of design plans, and approval through City of Alexandria processes.	Dependent on which driveway alternative selected								
Plan for connection to future collector street as contained in the Beauregard Street Small Area Plan	Incorporating into a Small Area Plan will provide support and justification to assist in the negotiation for adding future access once redevelopment occurs	Redevelopment timing is market driven and ACPS does not control the timeline	Long-Term – implementation will depend on coordination with future redevelopment activity (no known pending applications).	Unknown, dependent upon redevelopment activities and timings								
Improvements Evaluated but Dropped fr	om Consideration											
Stagger school opening and closing times to "spread out" parent drop-off/pick-up activities	Should significantly reduce congestion within school driveways and parking areas without physical site modifications.	Operational challenges with programming, staff schedules, and bus schedules. Discussions with ACPS staff indicate that this was not feasible.	Near-Term – as quickly as ACPS can implement the changes.	ACPS staff resources to modify programming and staffing. Possible increased operational and transportation cost due to longer school days.								
Adjust traffic signal timings at the Beauregard Street/Rayburn Avenue intersection	Will help reduce stacking along Rayburn Avenue	Adjusting the timings will affect the signal progression along Beauregard Street. However, these timings could be implemented within a limited time period to minimize the impact. This was not pursued because ACPS decided to implement the exiting left turn restriction. This solution could be revisited later if needed.	Near-Term – prior to 2012 fall school opening (in coordination with City TE&S). As noted, this was not pursued.	Minimal, City staff time to implement signal timings								

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Further discussion about transportation demand management and long term traffic circulation improvements are provided below.

4.1.1. Transportation Demand Management (Short-term)

In general, transportation demand management (TDM) refers to strategies to make better use of the existing transportation facilities when adding capacity is not feasible. This includes encouraging the use of higher capacity transit vehicles or carpooling instead of encouraging single occupant vehicle use, shifting peak period trips to off peak times where capacity is available, and reducing parking on-site to encourage the reduction of the number of auto trips. All of these strategies are used on a regular basis throughout the region and in Alexandria. TDM is also consistent with the City's multimodal transportation policies and the City's Transportation Master Plan.

Some potential TDM strategies for John Adams are:

- Developing a Transportation Management Program (TMP) at John Adams.
- Designating a John Adams individual to work with a potential school district-wide TMP coordinator to develop, implement, and maintain a TMP for John Adams.
- Increasing transit usage to reduce traffic demand at John Adams. This comes in two forms: increased bus ridership for students and increased public transit usage by faculty and staff.
- Shifting peak period trips earlier or later to reduce the peak period traffic demand. The adjustment of the Head Start program start time from 8:00 to 8:30 AM is an example of this strategy.
- Implementing parking restrictions through a parking pass program.
- Implementing an off-site shuttle bus for student drop-off.
- Organizing and encouraging walking school buses to reduce parent drop-off trips.
- Continue utilizing resources available through the City's Local Motion program. More information can be found at their website, <u>http://alexandriava.gov/localmotion/</u>.



4.1.2. Traffic Circulation Improvements (Long-term)

In general the traffic circulation issues at John Adams are created by the single access point and limited space to circulate traffic within the internal driveways. Bus and automobile traffic utilize the same driveway and have to mix before exiting the site. Due to the existing built





environment adjacent to the site, there are two locations where a second driveway could potentially occur, 1) N. Shelley Street and 2) Duke Realty property.

N. Shelley Street Connection

One location where there appears to be easy access to a public street is along the north property line at N. Shelley Street. However, providing access to this location requires construction of a new driveway either across the north property line or along the east property line.



- North Driveway Option: a preliminary review of a driveway alignment across the north property line shows that the driveway will have to go onto the City RPCA property and will require the removal of trees and bleachers. These constraints may preclude the installation of sidewalks.
- East Driveway Option: a preliminary review of a driveway alignment across the east property line shows that the driveway will impact the existing playground areas

Both alternatives impact the existing courts and playgrounds and introduce vehicle pedestrian conflicts where none exist today. Either alternative could provide access for buses only to minimize the pedestrian and vehicle conflicts in this area. If buses were only permitted, the N.





Shelley Street access could have restricted access except for the limited time that buses would need to use it.

It should be noted that N. Shelley Street is within a residential community with narrow streets with on-street parking. Providing school vehicle access would create challenges for vehicle maneuverability, especially buses, to exit the neighborhood. Vehicles would likely have to travel on Forrestal Avenue, N. Stevens Street, and Echols Avenue to turn onto Seminary Road at a traffic signal.

Duke Realty Property Connection

The City Council recently approved the Beauregard Small Area Plan which includes a future collector street parallel to and west of Beauregard Street in the vicinity of the school. This future street could provide the opportunity to provide a second vehicle access for John Adams. The construction of the new street would likely only occur as part of the Duke Realty Property redevelopment. Such a redevelopment would be subject to the City's approval process; therefore it is recommended that ACPS play an active role in any future redevelopment planning processes.







4.2. Parking

ACPS has targeted to add 40 new parking spaces to the John Adams site. The need for this additional parking is validated by the parking counts that show a maximum number of parked vehicles of 159 on a site that contains only 128 parking spaces. While the overall deficiency shown by this count is 31 spaces, that does not include the 6 vehicles parked all day in the visitor spots and additional parking demand that can occur on certain days of the week.

Two strategies were utilized to identify parking solutions: 1) *manage parking demand* – reduce the number of new spaces needed, and 2) *add more parking capacity* - identify locations to add/build more parking spaces.

4.2.1. Short-Term Solutions

Adding parking capacity has budget implications and generally takes time since it typically requires time to prepare design plans, obtain City approval and permits, and construct the spaces. However, there are short-term solutions identified to improve parking without building new spaces.

- *Transportation Demand Management* Implement a parking permit system as part of a John Adams TMP to more effectively manage the available parking spaces.
 - Enforce parking restrictions on non-marked spaces and issue parking passes to faculty and staff.
 - Encourage carpooling by reserving the most desirable parking spaces for "Carpool Only" vehicles
 - Rotate on-site parking spaces monthly/quarterly, all other parking would be requried to find parking offsite or carpool as part of a parking permit program
 - on-street parking in the neighborhood to the north
 - tennis court parking lot to the west
- Share Parking with Duke Realty Kimley-Horn understands that ACPS recently
 attempted to enter into an agreement with Duke Realty to relocate the student drop-off
 onto the Duke Realty property but was not successful due to liabitlity concerns. As a
 result, the dialogue has ceased. However, discussions with ACPS staff indicate that
 faculty parking on the Duke Realty property was not considered previously. Therefore it
 is recommended that ACPS continue to explore options for utilizing the Duke Realty
 parking lot to the east of the school for faculty/staff parking, especially since ACPS is a
 tenent in one of the buildings. Some suggestions are:
 - Swap reserved parking spaces at ACPS Central Office (2000 N. Beauregard St.) with spaces in the northwest corner of the Duke Realty lot (adjacent to the playground
 - Faculty/staff could park at Central Office. A gate in the existing fence could be added. Another option is to provide a shuttle service between Central Office and the school
 - Lease additional parking spaces in the Duke Realty lot





4.2.2. Mid-Term and Long-Term Solutions

Mid-Term and Long-Term solutions identified were focused on adding more parking spaces. There is very little available open space within ACPS property. Kimley-Horn explored the possibility of adding parking spaces in several locations on-site and on adjacent property. **Figure 3** illustrates the areas evaluated for potential expansion locations.

Table 6 shows all parking solutions considered and a summary of the anticipated benefits, issues, implementation timeframe, and cost.







	Table 6 - Solu	tions Identified for Improving Parking		
Potential Solution	Benefits	Potential Issues	Implementation Timeframe	Cost (Preliminary/Planning Level)*
Short-Term Improvements				
Develop a transportation management program (TMP) to establish goals and strategies to reduce the parking demand for faculty and staff. Strategies could include carpooling and/or transit subsidies	Reduces and manages parking demand	Previous attempt to subsidize transit fares was not successful. Faculty/staff tend to arrive early which makes carpool match-ups challenging.	Near-Term and Ongoing – as soon as a TMP can be developed	Relatively low cost, requires ACPS staff resources to develop and implement the TMP
Establish faculty/staff permit parking and provide enforcement to manage parking spaces. This effort could be part of the TMP to manage on-site parking demand	Manages parking demand and provides enforcement	School would need to develop permit system through lottery or some other mechanism.	Near-Term - prior to 2012 fall school opening	Relatively low cost, requires ACPS staff resources to permit process and to implement enforcement
Encourage and communicate on-street parking availability on surrounding streets such as N. Chambliss Street and N. Shelley Street	Parking is immediately available, does not require construction or operational changes. Could be part of TMP and/or permit parking implementation.	Less convenient than the on-site parking spaces and previous attempts (without TMP or other established programs) were unsuccessful.	Near-Term - prior to 2012 fall school opening	None
Share parking with Duke Realty site adjacent to school	Adjacent to school property and shares underutilized parking spaces	Requires an agreement between ACPS and Duke Realty and provision of pedestrian access or shuttle to school property. Previous attempts to negotiate an agreement have been unsuccessful.	Near-Term or Mid-Term – Requires agreement with property owner.	Unknown, will be based on a negotiated agreement.
Mid-Term Improvements				
Add parking spaces in open space near visitor parking (Location C)	Adds parking capacity (approximately 10 spaces)	Minimal loss of open space. Layout shown preserved large mature trees and an existing memorial tree and plaque. Public input indicates a desire to use more of space on-site for parking.	Mid-Term - could be implemented within 1-2 years. Requires City to approve design plans	\$25,000 (construction only)
Add parallel parking spaces near Head Start area (Location D)	Adds parking capacity (approximately 4 spaces) that can be used for Head Start use and visitors.	Minimal loss of open space, requires sidewalk modifications, and circulation issues (no nearby turnaround location). More spaces could be provided by using angle parking or extending further to the west, but would require the removal of several mature trees.	Mid-Term - could be implemented within 1-2 years. Requires City to approve design plans	\$25,000 (construction only)
Add tandem parking spaces in the northwest corner of the existing parking lot (Location F)	Adds parking capacity (approximately 13 spaces)	Requires coordination among faculty/staff for tandem parking spaces. As shown, some spaces would be on City RPCA land and would require coordination and approval. Fewer spaces could be provided to stay within school property.	Mid-Term - could be implemented within 1-2 years. Requires City to approve design plans	\$25,000 (construction only)
Install mechanical lift parking within existing parking spaces near parent drop-off/pick-up area.	Lift structure can be installed within existing parking spaces. Does not remove open space from school property, only requires minimal construction to install power service and pavement support.	Vehicles on the lift have to remain until vehicle below leaves. Requires additional coordination and management of parking spaces. Installing lifts will require City regulatory approval. Neighbors also expressed concerns over aesthetics during the public meeting.	Mid-Term – could be implemented within 1-3 years. Requires City to approve design plans and ordering/installing equipment	Approximately \$6,500 per lift unit plus yearly maintenance

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	Table 6 - Solutions I	dentified for Improving Parking (Continued)		
Potential Solution	Benefits	Potential Issues	Implementation Timeframe	Cost (Preliminary/Planning Level)*
Long-Term Improvements				
Replace playground/court area with surface parking lot (Location E)	 Adds parking capacity (up to 113 spaces). The public open space to the north could potentially be used for some or all of the playground area, leaving additional parking spaces behind the school. This ultimate reconfiguration of the school site connects the playground and open space uses and puts all transportation uses on the south and east sides of the property. It also would allow for a new entrance/exit to the school from the potential new street along the east side of the property that is proposed in the Beauregard Small Area Plan. 	Removes recently installed playground and main outdoor play area for the school. No current vehicle access, requires the construction of an access driveway around school. If the existing playground were relocated to the current northwest parking lot, it would eliminate the existing 63 spaces for a net gain of 50 spaces.	Long-Term - could be implemented within 2-5 years. Requires achieving consensus with neighborhood and approval by City of design plans	\$450,000-\$600,000 (construction only), does not include cost for playground replacement/relocation
Build a parking structure on existing parking lot near parent drop-off/pick- up area	Adds parking capacity on school property and removes parking on RPCA property	Maintaining traffic circulation for parent drop- off/pick-up activities. Limited area for structure will be inefficient and expensive.	Long-Term - could be implemented within 2-5 years. Requires City to approve design plans	\$1,500,000 (construction only)
Improvements Evaluated but Dro	pped from Consideration			
Pave parking spaces near baseball/softball field (Location A)	Adds parking capacity (could add approximately 40 spaces) adjacent to school property, this area is currently used for parking so it's familiar to faculty/staff. Parking could be shared between the school and the baseball/softball field use	City RPCA owns property and desires to remove parking. Due to the Public Open Space designation, it is not feasible to pave this area so it was eliminated from consideration.	Mid-Term - could be implemented within 1-3 years. Requires an agreement with RPCA and City approving design plans	\$200,000 (construction only)
Add parking to land adjacent to townhomes (Location B)	Adds parking capacity (net increase of approximately 19 additional spaces) adjacent to school property.	ACPS does not own property and there are large, mature trees that would have to be removed. Also, the adjacent residents may object to the loss of property buffer. Due to the location, 12 existing spaces would be lost. Adds more internal circulation conflict points.	Mid-Term - could be implemented within 1-3 years. Requires agreement with property owner and City approving design plans	\$150,000 (construction only)

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5. Recommendations

Based on the results of the data collection, analyses, stakeholder input, and discussions with ACPS, the following recommendations are provided for the John Adams Elementary School site:

5.1. Short-Term Recommendations

Implement the following short-term solutions to have an immediate impact on the traffic circulation and parking issues at John Adams:

- Implement the Left-Turn Restriction at School Driveway Exiting Movement during peak traffic demand periods before and after school, restrict left-turns out of the school driveway onto Rayburn Avenue. The implementation of this recommendation is in progress.
- <u>Develop a Transportation Management Program (TMP)</u> Designate a faculty/staff member or committee to coordinate with a potential school district-wide TMP coordinator to develop, implement, and maintain a TMP. Immediate activities recommended to begin this process are:
 - a. Establish a parking permit program to better control parking within the campus.
 - Conduct surveys of parents and faculty/staff to identify their obstacles to using school buses or public transit. The implementation of this recommendation is in progress.
 - c. Utilize available City transportation demand management resources from Local Motion program. The implementation of this recommendation is in progress.
- <u>Share Parking with Duke Realty Property</u> All possible options to utilize the Duke Realty
 parking spaces either associated with ACPS Central Office or additional leased spaces
 should be explored. This existing underutilized parking lot is the only option to increase
 parking spaces for at least the next two school years.

5.2. Mid-Term and Long-Term Recommendations

In the mid-term, ACPS can add more parking within the John Adams site. Parking locations C, D, and F (shown on Figure 3) appear to be the most feasible locations and they could create at least 27 parking spaces with minimal impact and disruption due to construction. More spaces may be possible if additional green space and trees were eliminated in areas C and D. The exact layout would be determined during the detailed design process. While these combined options do not create the required 40 spaces, they would provide some relief. The additional parking spaces combined with using nearby on-street parking spaces and implementing a TMP





could provide a balance between the parking demand and supply if the TMP is enforced and updated on a regular basis.

Other recommended improvements require redevelopment of the Duke Realty property and are therefore considered long-term. The long-term recommendations are:

- 1. Add a second site vehicle driveway to the future collector street (recommended in the Beauregard Small Area Plan) to help disperse and organize school traffic more efficiently.
- Reorient the site to provide for more efficient organization of uses. Relocating the playground to the back of the school allows for connectivity with the public open space (compatible use) to the north and creates opportunities for a larger shared use. Construction of parking on the current playground/court area would combine all transportation uses on the south and east side of the school and make efficient use of the recommended second driveway.

ACPS should monitor and participate in the future planning and site plan approval process of the Duke Realty property as the Beauregard Small Area Plan is implemented.







APPENDIX





Planning, Design and Construction Office 4701 Seminary Road, Alexandria, VA 22304; Tel. 703.461.4168

- **To:** Eric Wagner, Chair of the Planning Commission
- CC: William Holley, Andrea Feniak, Tom Mulcahy, Kevin Vanhise, Patricia Escher, Ryan Price
- From: Laurel Hammig
- **Date:** 6/3/2014
- Re: John Adams Parking

ACPS would like to make an official request to pull the John Adams Parking project from the June 3, 2014 Planning Commission docket and defer until September 2014. This will allow ACPS time to conduct additional community outreach related to the project.

From: Robin Bectel <<u>rmbectel@gmail.com</u>> Sent: Monday, June 2, 2014 10:49 AM To: PlanComm Subject: John Adams parking

Hello -

For the Planning Commission's 6/13/14 agenda, I wanted to submit the following comments. Please send these to the Planning Commission and confirm receipt so I know these arrived.

Thanks Robin Bectel

Dear Planning Commission -

I understand you are discussing the parking situation at John Adams in June and wanted to add my comments. I am a parent of John Adams students and a resident of Seminary West/Dowden Terrace. I see from the plans that you are planning an asphalt sidewalk along the baseball field side of the parking lot. I worked with ACPS Facilities Dept and the City to get that sorry little asphalt sidewalk put in a few years ago. It has helped in that it connects the sad little walkway through Chambliss Park to the school's sidewalk. After several years of trudging up that hill in all sorts of weather with my two young children, not having to hop through snow, rain, puddles and mud to trek the last 100 feet to school has been a big help. At the time, the city put in the temporary asphalt sidewalk because no decision had been made on parking in the area behind the baseball field. While it has been nice, it apparently confuses drivers, who routinely park on it blocking our way. That forces us to walk around the vehicles either into the traffic lanes or back into the mud or snow. Neither is a great option. It would be highly preferable if this were a recognizable concrete sidewalk to avoid people parking on it and avoid the snow plow blocking it with snow in the winter. If that is not possible, it needs to be marked with signs that it is a no parking zone. That is a harder option because drives may think you mean the area behind the sidewalk next to the field.

Secondly, the parking lot needs a sidewalk that takes parkers to the front of the school, which is the only entrance for visitors. Without this, we are forced to walk from the parking lot in the traffic lanes, to reach the front of the school. This is crazy enough without pedestrians. The only other option is to walk 3/4 of the way around the school through the playground, which is really a long walk especially on rainy days.

Third - it would help visitors tremendously if the parking spaces in the front of the school closest to the visitors entrance were left for visitors and not staff. There are dozens of parent volunteers and visitors in the building every day and we can not use another entrance as the staff can do. This results in very long walks from the parking area, sometimes with heavy loads. Some of these could be timed for shorter visits. Right now, anyone just wanting to drop something off must either walk all the way from the back or double park on the fire lane, which is always the choice made.

Fourth - Regarding the parking behind the baseball field. I know the city counts this as green space, but in my opinion that is completely disingenuous. Its not at all usable

since it is not accessible by a road. Most people in the city or even the surrounding area dont even know its there and they would be forced to park in the school parking lot to use it, something that is not technically allowed for that purpose.

Given its shape and size and proximity to the ballfield and school, its not good for playing, picnicking, walking or any other activity. Right now its useful for walking the dog and that's about it. Given that we have two huge areas right beside this designated for dogs, this little stretch is completely unneeded and unworthy to be counted as "green space."

The city is cheating by counting this sliver as green space. Perhaps the city should include a real green space area in the Beauregard Plan. This could have a field that anyone could access (not just organized, paying ball players) or a park for children instead of dogs on this side of 395. The only one now is at the Ramsey rec center, which is in use a lot of the time between the school and the Rec center.

Finally, paving this sliver of grass behind the ballfield would really be the simplest and least expensive ways to solve the John Adams parking problem. Its unusable for anything else and it involves very little cost to pave it.

Please confirm your receipt of these comments. Thank you Robin Bectel From: Christine Coker <<u>christine@cpa-coker.com</u>> Sent: Tuesday, June 3, 2014 10:49 AM To: PlanComm Subject:

As a JA parent and former PTA officer, we have struggled with the inadequate parking for many years. I have 3 suggestions to add to your plan for improving the parking there:

- Go ahead and pave a portion of the Chambliss park behind the baseball fence people WILL continue to park there for overflow when events like back to school night occur. Extra parking here could be used by teachers and staff as well, when VISITING the school this is the ONLY place available – even with your planned extra spaces. The baseball folks could used this parking as well.
- 2. Add (10) MORE tandem spaces in front of the existing visitor parking which is always full. Please see the attached.
- 3. In conjunction with these additional spaces, add a paved with stone area in front of the parking for a couple of picnic tables, a seating area for teachers & students & parents to enjoy under the big trees (please don't remove any trees!)

Thanks much.

Christine Coker 3156 N Rosser Street, Alexandria, VA 22311 home: (703) 820-2956 cell: (703) 489-9273



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					ALEXA
	JO	HN A	DAN	IS EL	EMEN
					56
SITE TABULATIONS					VICINITY
 SITE LOCATION – AREA #1: / ADDRESS: 5651 RAYBURN AV SITE LOCATION – AREA #2: 	ALEXANDRIA CITY TAX 'E. ALEXANDRIA, VA 2 ALEXANDRIA CITY TAX	MAPS 019.0 2311 MAPS 010.	03-07-18		
 ADDRESS: 2500 N. SCOTT. ST ZONING OF SURROUNDING POS NORTHWEST: POS 	. ALEXANDRIA, VA 22 ROPERTIES: 5 (PUBLIC OPEN SPAC	311 E)			
NORTHEAST: R-& EAST CDD	B (SINGLE FAMILY ZON #4 (COORDINATED DE	IÉ) VELOPMENT	DISTRICT)		
4. SITE USE AREA#1: JOHN ADA 5. SITE USE AREA#2: CHAMBLIS	MS ELEMENTARY SCH S PARK (ZONING: POS	ie) OOL (ZONING S)	G: R-12)		
6. EXISTING POPULATION (2012/ (8) 7. DESIGN POPULATION: 958	2013 SCHOOL YEAR): 74 STUDENTS; 84 S (874 STUDENTS: 84	TAFF) F STAFF)			
8. <u>REQ</u> SIDE YARD 25'	UIRED YARDS: PI (1:1)	ROVIDED YAF 46.6'	RDS (MINIM	<u>JM):</u>	
FRONT YARD 25 FRONT YARD 3 9. SITE IS SERVED BY PUBLIC W	(1:1) 35' /ATER AND SEWER.	7.06 120.4	5'		
10. SITE IS NOT IN ANY RPA OR 11. SITE SURVEY WAS COMPLETED OCTOBER 18, 2013, MAY 09,	FLOOD PLAIN. D BY DOMINION SURVE 2011, MAY 25, 2011,	YORS ON: MARCH 2	9, 2010		
12. REQUIRED LOT FRONTAGE: 60 13. AVERAGE FINISHED GRADE OF)' – PROVIDED 73' SCHOOL: 242'	SCHOOL			
15. GROSS BUILDING AREA: 3.25 16. COMBINED AREAS #1, #2: 7.9	ACRES (141,364 SF) 99 ACRES (347,574 SI	F)			
17. APPROXIMATE DISTURBED ARE AREA #1	EA: 0.275 ACRES (11, AREA #2	975 SF)			
<u>EXISTING:</u> ZONING: R-12 USE: PUBLIC ELEMENTARY SCHOOL	EXISTING: ZONING: USE: CH/	- POS AMBLISS PAF	ĸ		ALEXANDR TO CONST
TOTAL LOT AREA = 7.95 AC (346 IMPERVIOUS AREA = 5.56 AC (24 RERVIOUS AREA = 2.39 AC (103)	2,235 SF) PROJECT	AREA = .03 US AREA =	37 AC (1,6 .005 AC (18 SF) 210 SF) 08 SE)	JOHN ADA EXISTING N REMOVED.
OPEN SPACE = 3.65 (158,993 SF <u>PROPOSED:</u>) OPEN SP PROPOSE	ACE = .034 <u>D:</u>	AC (1461	SF)	TANDEM S SOUTHEAS PARK IS 7
ZONING: R-12 USE: PUBLIC ELEMENTARY SCHOOI TOTAL LOT AREA = 7.95 AC (346	ZONING: USE: CHA 2.141 SF) PROJECT	POS AMBLISS PAF AREA = .03	RK 37 AC (1.6	18 SF)	
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TRIPCENERATION	SF) OPEN SP	ACE = .036	AC (1551		THERE AR TIDAL WET ASSOCIATE
ITE LAND USE CODE = 520 TRIP RATE = 1.29	PROJECT AREA	TOTAL AREA	EXISTING OPEN SPACE	PROPOSED OPEN SPACE	NO WETLA KNOWN UN THE SITE
EXISTING = 1127 PROPOSED: NO ADDITIONAL TRIPS	AREA # 1	7.95 AC	3.65 AC	3.54 AC	
PARKING TABULATION	AREA # 2	.037 AC	.034 AC	.036 AC	CONTAMIN AT THE SI
PARKING REQUIRED: 1 SPACE PER 25 DESIGN POPULATION: 958 (874 S	CLASS ROOM SEATS F TUDENTS; 84 STAFF)	REQUIRED			OR CONTA ENVIRONM
EXISTING PARKING CALCULATIONS (PAR ORDINANCE SECTION 8-200(A)(11))	KING REQUIRED BASE	ON CITY Z	ONING		ALL WELLS ACCORDAN
USE PARKING REQUIRED I SCHOOL 39 SPACES	PARKING EXISTING 118 SPACES	PARKING F 28 SPA	PROPOSED CES	TOTAL 146 SPACES	ALEXANDR ALL CONS
LOADING 7 SPACES NOTE: EXISTING PARKING COUNT (118 SP	2 SPACES ACES) DOES NOT INCLU	2 SPAC DE THE PARK	ES (ING (1 SPA	2 SPACES CE)	CHAPTER • MONDA • SATUR
NOTES					• NO CC
-TABULATIONS FOR THE SITE REFLECT TH (TAX MAP 019.01-01-48) AND A PA 010.03-07-18). THE LIMITS OF WORK	E FULL PARCEL OF JOH .RTIAL PARCEL OF CHAN < FOR THE PROJECT AR	IN ADAMS EL /IBLISS PARK E SHOWN ON	EMENTARY S (TAX MAP SHEET	SCHOOL	
C-100 - EXISTING CONDITIONS PLAN -MARINE CLAYS ARE KNOWN BY THE APP PROVIDED BY THE CITY OF ALEXAND	LICANT AS SHOWN IN T RIA. THESE AREAS ARE	HE MARINE O	LAY AREAS AS UNDER 1	MAP 0% SLOPE	
-NO EXISTING SITE CONTAMINATION KNOW	SINFER OF REC		CHITEC	т	ΤΔΥ
1. RECORDED OWNER: CITY OF ALEXANDRIA	3. ENGINEER	OF RECORD: KIM	LEY-HORN AND	ASSOCIATES, INC.	
301 KING STREET ALEXANDRIA, VA 22314 2. DEVELOPER: AI EXANDRIA CITY PUBLIC S	SCHOOLS	1140 RES	DU COMMERCE F STON, VA 20191	PARK DR., SUITE 400	TAX MA
2000 N. BEAUREGARD STRE ALEXANDRIA, VA 22311 703-461-4168	ET				

MINARY SITE PLAN SUBMISSION ANDRIA CITY PUBLIC SCHOOLS TARY SCHOOL - PARKING LOT IMPROVEMENT 51 RAYBURN AVE. - APRIL 04, 2014

MAP

SCALE: NTS



PROJECT DESCRIPTION NARRATIVE

RIA CITY PUBLIC SCHOOLS IS SEEKING APPROVAL OF A DEVELOPMENT SITE PLAN IN ORDER RUCT 28 NEW PARKING SPACES WITHIN THE EXISTING PARKING LOT AND DRIVE AISLES AT AMS ELEMENTARY SCHOOL FOR A TOTAL OF 146 SPACES. A PORTION (1 SPACE) OF THE NORTHWESTERN PARKING LOT EXTENDS INTO CHAMBLISS PARK. THIS AREA IS BEING THE ADDITIONAL PARKING SPACES WOULD BE LOCATED IN THREE LOCATIONS ON SITE; 14 SPACES TO THE NORTHWEST, 10 SPACES TO THE SOUTHWEST, AND 4 SPACES AT THE ST BUS LOOP / ENTRANCE. THE SCHOOL IS CURRENTLY ZONED AS R-12 WHILE CHAMBLISS ZONED POS.

ENVIRONMENTAL SITE ASSESSMENT:

RE NO TIDAL WETLANDS, TIDAL SHORES, TRIBUTARY STREAMS, FLOODPLAINS, CONNECTED TLANDS. ISOLATED WETLANDS. HIGHLY ERODIBLE / PERMEABLE SOILS OR BUFFER AREAS ED WITH SHORES. STREAMS OR WETLANDS LOCATED ON THIS SITE. FURTHER. THERE ARE AND PERMITS REQUIRED FOR THIS DEVELOPMENT PROJECT. ADDITIONALLY, THERE ARE NO NDERGROUND STORAGE TANKS OR AREAS OF SOIL OR GROUNDWATER CONTAMINATION OF

OF ALEXANDRIA. DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES. OF ENVIRONMENTAL QUALITY MUST BE NOTIFIED IF UNUSUAL OR UNANTICIPATED NATION OR UNDERGROUND STORAGE TANKS, DRUMS AND CONTAINERS ARE ENCOUNTERED ITE. IF THERE IS ANY DOUBT ABOUT PUBLIC SAFETY OR A RELEASE TO THE ENVIRONMENT, ANDRIA FIRE DEPARTMENT MUST BE CONTACTED IMMEDIATELY BY CALLING 911. THE TANK AINER'S REMOVAL, ITS CONTENTS, ANY SOIL CONTAMINATION, AND RELEASES TO THE IENT WILL BE HANDLED IN ACCORDANCE WITH FEDERAL, STATE AND CITY REGULATIONS.

S TO BE DEMOLISHED IN THIS PROJECT, INCLUDING MONITORING WELLS MUST BE CLOSED IN NCE WITH STATE WELL REGULATION. CONTACT JOE FIANDER AND COORDINATE WITH THE RIA HEALTH DEPARTMENT AT 703-838-4400 EXT 255.

TRUCTION ACTIVITIES MUST COMPLY WITH THE ALEXANDRIA NOISE CONTROL CODE TITLE 11, 5. WHICH PERMITS CONSTRUCTION ACTIVITIES TO OCCUR BETWEEN THE FOLLOWING HOURS: AY THROUGH FRIDAY FROM 7 AM TO 6 PM AND RDAYS FROM 9 AM TO 6 PM.

DNSTRUCTION ACTIVITIES ARE PERMITTED ON SUNDAYS.

MAP INFO

AP REFERENCE: 019.01-01-48 - JOHN ADAMS ELEMENTARY SCHOOL AP REFERENCE: 010.03-07-18 - CHAMBLISS PARK

THIS PROJECT IS DESIGNED TO COMPLY WITH THE PROPOSED REGULATIONS FROM THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) EXPECTED TO BE ADOPTED BY JULY 1, 2014. AS OF THIS PLAN DATE, THE CITY OF ALEXANDRIA HAS NOT PUBLISHED ANY ADDENDUMS TO THESE STATE REGULATIONS. THE FINAL VERSION OF THESE PLANS MAY NEED TO BE REVISED TO COMPLY WITH THE CURRENT CITY OF ALEXANDRIA STORMWATER REGULATIONS AFTER THE JULY 1, 2014 ADOPTION.

COMPLIANCE WITH ARTICLE XIII OF THE CITY OF ALEXANDRIA ZONING ORDINANCE IS ASSUMED BY MEETING THE NEW STATEWIDE REGULATIONS.

CITY OF ALEXANDRIA STANDARD WATER QUALITY WORKSHEETS A OR B AND C ARE NOT PROVIDED. THE VIRGINIA RUNOFF REDUCTION SPREADSHEET CALCULATIONS PROVIDED BY DEQ SHOW THE COMPLIANCE WITH THE NEW PHOSPHORUS REDUCTION REQUIREMENTS.

CITY STANDARD WATER QUALITY BLOCKS SHOWN ON THIS PAGE ARE FOR INFORMATION ONLY. ALL WATER QUALITY CALCULATIONS SHOULD BE TAKEN FROM THE RUNOFF REDUCTION CALCULATIONS ON SHEETS C - 400 - C - 430

ENVIRONMENTALLY SENSITIVE DESIGN STRATEGY

THE PROPOSED PARKING SPACES WILL BE PLACED ADJACENT TO EXISTING PARKING AREAS TO MINIMIZE THE AMOUNT OF EARTHWORK THAT WILL BE REQUIRED. ALL NEW PARKING SPACES WILL EMPLOY PERMEABLE PAVEMENT.

APPLICATIONS REQUESTED

- DEVELOPMENT SPECIAL USE PERMIT - STORMWATER MANAGEMENT BMP MASTER PLAN - MODIFICATION TO ZONING ORDINANCE FROM: - SUPPLEMENTAL YARD - SETBACK - FRONTAGE REQUIREMENTS - LANDSCAPE REQUIREMENTS FOR PARKING ISLANDS

SHEET INDEX

Sheet Number	Sheet Title
C-000	COVER SHEE
C-010	GENERAL NO
C-011	GENERAL NO
C-030	CONTEXTUA
C-040	ADJACENT P
C-100	EXISTING CC
C-110	DEMOLITION
C-200	SITE PLAN
C-210	OPEN SPACE
C-220	GIS DIMENSI
C-300	GRADING PL
C-310	EROSION AN
C-320	EROSION AN
C-330	EROSION AN
C-400	BMP TREATM
C-410	BMP CALCUL
C-420	RUNOFF RED
C-430	PERMEABLE
C-500	BMP TREATM
C-510	BMP MASTEF
C-600	LANDSCAPE
C-700	CONSTRUCT

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STORMWATER NARRATIVE

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ND SEDIMENT CONTROL PLAN - PHASE 1 ND SEDIMENT CONTROL PLAN - PHASE 2 ND SEDIMENT CONTROL PLAN - GENERAL NOTES MENT MAP - PARKING LOT IMPROVEMENTS LATIONS - PARKING LOT IMPROVEMENTS DUCTION CALCULATIONS - PARKING LOT **PAVEMENT CALCULATIONS - PARKING LOT** MENT MASTER PLAN - OVERALL CAMPUS R PLAN CALCULATIONS - OVERALL CAMPUS

PLAN

TION & LANDSCAPE DETAILS

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		UESIGN ENGINEER FIRM NAME: KIMLEY-HO	ADDRESS: 11400 COM	RESTON	PHONE NO: 703-674-13	PROJ. MANAGER: KEV				SCALE: N.T.S. (AT 24x36)		
	SEAL:	Mr Buly Z	C KYLE T. BOLLINGER ♥ Lic. No. 051017	2004/04/2014 E	AND TANO S		OWNER	CITY OF ALEXANDRIA 301 KING STREET	ALEXANDRIA, VA 22314	DEVELOPER ALEXANDRIA CITY	PUBLIC SCHOOLS CONTACT	ANDREA FENIAK, AIA (703) 461-4168
		DATE										
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	SION / AF	DATE										
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INSTRUMENT NO. DEED BOOK NO. PAGE NO.

C-000

SHEET NO:

(GENERAL PROJECT NOTES		Ef
	PROBLEMS ON ADJACENT PROPERTIES.	12.	ALL
2.	ALL STORM DRAINS NOT SHOWN WITHIN AN EASEMENT OR IN A PUBLIC RIGHT OF WAY SHALL BE OWNED AND MAINTAINED PRIVATELY.	13.	ALL OTH
3.	ALL SIDEWALKS SHALL REMAIN OPENED DURING CONSTRUCTION OR PEDESTRIAN ACCESS SHALL BE MAINTAINED TO THE SATISFACTION OF THE OWNER AND THE DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL SERVICES THROUGHOUT THE CONSTRUCTION OF THE PROJECT.	14. 15.	ALL DIS ⁻ DUF
4.	THE APPLICANT SHALL COMPLY WITH THE CHESAPEAKE BAY PRESERVATION ACT IN ACCORDANCE WITH ARTICLE XIII OF THE CITY'S ZONING ORDINANCE, WHICH INCLUDE THE REQUIREMENTS FOR STORMWATER POLLUTANT LOAD REDUCTIONS, TREATMENT OF WATER QUALITY VOLUME DEFAULT, AND STORMWATER QUANTITY MANAGEMENT ACCORDING TO ALEXANDRIA SUPPLEMENT TO THE NORTHERN VIRGINIA BMP HANDBOOK.	16.	THF AD\ THE
5.	ALL SANITARY SEWERS SHALL BE CONSTRUCTED TO THE CITY OF ALEXANDRIA STANDARDS AND SPECIFICATIONS. MINIMUM DIAMETER OF SANITARY SEWERS SHALL BE 10" IN THE PUBLIC RIGHT-OF-WAY AND SANITARY LATERALS SHALL BE 6" FOR ALL COMMERCIAL AND INSTITUTIONAL DEVELOPMENTS; HOWEVER, A 4" SANITARY LATERAL WILL BE ACCEPTABLE FOR SINGLE FAMILY RESIDENCES. THE ACCEPTABLE PIPE MATERIALS WILL BE POLYVINYL CHLORIDE (PVC) ASTM D-3034-77 SDR 26, ASTM 1785-76 SCHEDULE 40, DUCTILE IRON PIPE AWWA C-151 (ANSI A21.51) CLASS 52, OR	17.	RAII Con The Nec Ane
	REINFORCED CONCRETE PIPE ASTM C-76 CLASS IV (FOR 12" OR LARGER DIAMETERS). CLASS III MAY BE ACCEPTABLE ON PRIVATE PROPERTIES. THE ACCEPTABLE MINIMUM AND MAXIMUM VELOCITIES WILL BE 2.5 FPS AND 10 FPS, RESPECTIVELY. LATERALS SHALL BE CONNECTED TO THE SANITARY SEWER THROUGH A MANUFACTURED "Y" OR "T" OR APPROVED SEWER SADDLE. WHERE THE LATERALS ARE BEING CONNECTED TO EXISTING TERRACOTA PIPES, REPLACE THE SECTION OF MAIN AND PROVIDE MANUFACTURED "Y" OR 'T', OR ELSE INSTALL A MANHOLE.	18.	ANY SOE THE ERC
6.	ALL STORM SEWERS SHALL BE CONSTRUCTED TO THE CITY OF ALEXANDRIA STANDARDS AND SPECIFICATIONS. MINIMUM DIAMETER OF STORM SEWERS SHALL BE 18" IN THE PUBLIC RIGHT OF WAY AND MINIMUM SIZE STORM SEWER CATCH BASIN LEAD IS 15". THE ACCEPTABLE PIPE MATERIALS WILL BE AWWA C-151 (ANSI A21.51) CLASS 52 OR REINFORCED	19.	ALL ON
7	CONCRETE PIPE ASTM C-76 CLASS IV. THE ACCEPTABLE MINIMUM AND MAXIMUM VELOCITIES WILL BE 2.0 FPS AND 15 FPS, RESPECTIVELY.	20.	THE ENS RIG
1.	LATERAL SEPARATION OF SEWERS AND WATER MAINS: A HORIZONTAL SEPARATION OF 10' (EDGE TO EDGE) SHALL BE PROVIDED BETWEEN A STORM AND SANITARY SEWER AND A WATER LINE; HOWEVER, IF THIS HORIZONTAL SEPARATION CANNOT BE ACHIEVED THEN THE SEWER AND WATER MAIN SHALL BE INSTALLED IN SEPARATE TRENCHES AND THE BOTTOM OF THE WATER MAIN SHALL BE AT LEAST 18'' ABOVE OF THE TOP OF THE SANITARY/STORM SEWER. IF BOTH THE	21.	INS ⁻ SHA
	HORIZONTAL AND VERTICAL SEPARATIONS CANNOT BE ACHIEVED THEN THE SEWER PIPE MATERIAL SHALL BE DUCTILE IRON PIPE (DIP) AWWA C-151 (ANSI A21.51) CLASS 52 AND PRESSURE TESTED IN PLACE WITHOUT LEAKAGE PRIOR TO INSTALLATION.	22.	DUS
8.	CROSSING WATER MAIN OVER AND UNDER A SANITARY OR STORM SEWER: WHEN A WATER MAIN CROSSES OVER OR CROSSES UNDER A SANITARY/STORM SEWER THEN THE VERTICAL SEPARATION BETWEEN THE BOTTOM OF ONE (I.E., SANITARY / STORM SEWER OR WATER MAIN) TO THE TOP OF THE OTHER (WATER MAIN OR SANITARY/STORM SEWER)		SI
	SHALL BE AT LEAST 18" FOR SANITARY SEWER AND 12" FOR STORM SEWER; HOWEVER, IF THIS CANNOT BE ACHIEVED THEN BOTH THE WATER MAIN AND SANITARY / STORM SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AWWA C-151 (ANSI 21.51) CLASS 52 WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF	1	
	TO FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING AND THE PIPES SHALL BE PRESSURE TESTED IN PLACE WITHOUT LEAKAGE PRIOR TO INSTALLATION. SANITARY SEWERS UNDER CREEKS AND STORM SEWER PIPE CROSSINGS WITH LESS THAN 6" CLEARANCE SHALL BE ENCASED IN CONCRETE.	2.	EROS
9.	NO WATER MAIN PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF SANITARY/STORM SEWER MANHOLE. MANHOLES SHALL BE PLACED AT LEAST 10 FEET HORIZONTALLY FROM THE WATER MAIN WHENEVER ROSSIBLE. WHEN LOCAL CONDITIONS PROHIBIT THIS HORIZONTAL SEPARATION. THE MANHOLE SHALL BE WATERTIGHT	3.	PLAN. ALL V ARBO
10	CROSSING EXISTING OR PROPOSED LITILITIES' UNDERGROUND TELEPHONE CABLET V. GAS AND ELECTRICAL DUCT	4.	INSTA
10.	BANKS SHALL BE CROSSED MAINTAINING A MINIMUM OF 12" OF SEPARATION OR CLEARANCE WITH WATER MAIN, SANITARY, OR STORM SEWERS. IF THIS SEPARATION CANNOT BE ACHIEVED THEN THE SEWER PIPE MATERIAL SHALL BE DUCTILE IRON PIPE (DIP) AWWA C-151 (ANSI A21.51) CLASS 52 FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING AND PRESSURE TESTED IN PLACE WITHOUT LEAKAGE PRIOR TO INSTALLATION. SANITARY/STORM SEWERS	5. 6.	INSTA AND S
	AND WATER MAIN CROSSING OVER THE UTILITIES SHALL HAVE ADEQUATE STRUCTURAL SUPPORT (PIER SUPPORT AND/OR CONCRETE ENCASEMENT) TO PREVENT DAMAGE TO THE UTILITIES.	7.	AS CO CONT
11.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPLY FOR ANY NEEDED VPDES PERMIT. THE CONTRACTOR SHALL SUBMIT A COPY OF ANY APPLICABLE VPDES PERMITS WITH THE CITY.	8.	UPON STAB MEAS
			<u>U</u>
	EROSION AND SEDIMENT CONTROL NOTES	1.	UNDE DESC
1.	AN EROSION AND SEDIMENT CONTROL PLAN MUST BE APPROVED BY THE DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL SERVICES PRIOR TO ANY LAND DISTURBING ACTIVITY GREATER THAN 2,500 SQUARE FEET.	A	ADDI1 . ALL
2.	UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE CITY OF ALEXANDRIA AND VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH) AND VIRGINIA REGULATIONS 4VAC50-30 SEDIMENT AND CONTROL REGULATIONS.	B.	UNL ELE . ALL
3.	AN EROSION AND SEDIMENT CONTROL PLAN IS INCLUDED WITH THESE FINAL PLANS FOR APPROVAL BY THE DIRECTOR, TRANSPORTATION AND ENVIRONMENTAL SERVICES FOR REFERENCE BY THE EROSION AND SEDIMENT CONTROL PERMIT.	C.	DES . IT IS
4.	A "CERTIFIED LAND DISTURBER" (CLD) SHALL BE NAMED IN A LETTER TO THE DIVISION CHIEF OF CONSTRUCTION MANAGEMENT AND INSPECTION (CM&I), DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES PRIOR TO ANY LAND DISTURBING ACTIVITIES. IF THE CLD CHANGES DURING THE PROJECT, THAT CHANGE MUST BE NOTED IN A	D.	. NO
5.	LETTER TO THE DIVISION CHIEF. THE DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES, CONSTRUCTION MANAGEMENT AND INSPECTION (CM&I) DIVISION MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENTS OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION. THE	E. F.	EFF TRA OR
6.	ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED / CONSTRUCTED AS A FIRST STEP IN ANY LAND	G	. MAT ALE
7.	CONSTRUCTION SHALL BE SEQUENCED SUCH THAT GRADING OPERATION CAN BEGIN AND END AS QUICKLY AS POSSIBLE. AREAS NOT TO BE DISTURBED MUST BE CLEARLY MARKED OR FLAGGED	H.	. SHC RES COM
8.	AN INSPECTION BY THE CITY OF ALEXANDRIA IS REQUIRED AFTER INITIAL INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND BEFORE ANY CLEARING OR GRADING CAN BEGIN.	I.	RES
9.	A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.	J.	APF
10.	PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN THOSE INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE CITY OF ALEXANDRIA.	K.	. The Pre Env
11.	THE CONTRACTOR SHALL KEEP DENUDED AREAS TO A MINIMUM. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.	L.	A R DEA
	TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR. ANY STOCKPILED MATERIAL WHICH WILL REMAIN IN PLACE LONGER THAN 10 DAYS MUST BE SEEDED FOR TEMPORARY VEGETATION AND MULCHED WITH STRAW MULCH OR	М	. UTII SOI

OTHERWISE STABILIZED.

ROSION AND SEDIMENT CONTROL NOTES (CONT'D)

APPLICABLE EROSION AND SEDIMENT CONTROL MEASURES MUST BE EMPLOYED FOR STOCKPILE AREAS.

TEMPORARY EARTH BERMS, DIVERSIONS AND SEDIMENT CONTROL DAMS SHALL BE SEEDED AND MULCHED OR HERWISE STABILIZED AS SOON AS POSSIBLE BUT NO LATER THAN 48 HOURS AFTER GRADING.

DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND STURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

RING DEWATERING OPERATIONS. WATER SHALL BE PUMPED THROUGH AN APPROVED FILTERING DEVICE OR PASSED ROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT VERSELY IMPACT FLOWING STREAMS OR OFF-SITE PROPERTY.

E CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES DAILY AND AFTER EACH RUNOFF-PRODUCING INFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION NTROL DEVICES SHALL BE MADE IMMEDIATELY.

E CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES AS CESSARY TO PREVENT EROSION AND SEDIMENTATION AND AS DETERMINED BY THE DIRECTOR OF TRANSPORTATION ND ENVIRONMENTAL SERVICES (T&ES) OF THE CITY OF ALEXANDRIA.

CONTRICTION OF CONTRIBUTION OF CREATED BY THIS PLAN THAT EXCEED 2500 SQUARE FEET ARE TO BE (DDED AND PEGGED FOR STABILITY AND EROSION CONTROL. AT THE COMPLETION OF THE PROJECT AND PRIOR TO ERELEASE OF THE BOND. ALL DISTURBED AREAS SHALL BE STABILIZED PERMANENTLY AND ALL TEMPORARY SION AND SEDIMENT CONTROLS SHALL BE REMOVED.

VEHICLES SHALL BE CLEANED BEFORE ENTERING THE PUBLIC RIGHT OF WAY TO PREVENT TRACKING OF SEDIMENT I PUBLIC STREETS.

E WASH WATER FROM THE CONSTRUCTION ENTRANCE SHALL BE FILTERED THROUGH THE PROVIDED SILT FENCE TO SURE THAT NO SEDIMENT LADEN RUNOFF IS ALLOWED TO RUNOFF ON TO THE ADJACENT PROPERTY OR THE PUBLIC GHT OF WAY.

STALL SILT FENCE AND TREE PROTECTION, WHERE APPLICABLE. TO THE EXTENT POSSIBLE ALL TREE PROTECTION IALL BE INSTALLED AT THE DRIP LINE OF THE TREE(S).

JST CONTROL SHALL BE ACCOMPLISHED BY TEMPORARY VEGETATIVE COVER AND BY IRRIGATION AS NEEDED.

SEQUENCE OF CONSTRUCTION FOR INSTALLATION EROSION ND SEDIMENT CONTROL NOTES

TRACTOR SHALL REFERENCE EROSION CONTROL PLANS FOR SEQUENCE OF INSTALLATION AND REMOVAL OF SION AND SEDIMENT CONTROL MEASURES THROUGHOUT ALL PHASES OF CONSTRUCTION.

ALL PERIMETER EROSION AND SEDIMENT CONTROLS; AND STABILIZE CONSTRUCTION ENTRANCE AS SHOWN ON THIS

/EGETATION PRESERVATION AND PROTECTION METHODS SHALL BE APPROVED/VERIFIED IN FIELD BY THE CITY DRIST PRIOR TO COMMENCEMENT OF ANY GROUND DISTURBING ACTIVITY.

- ALL INLET PROTECTION AT EXISTING STORM DRAIN INLETS AS NECESSARY AND AS SHOWN ON THIS PLAN.
- ALL ADDITIONAL EROSION AND SEDIMENT CONTROL PRACTICES AS NECESSARY AND AS DIRECTED BY THE EROSION SEDIMENT CONTROL INSPECTOR.
- DUCT DEMOLITION AND CONSTRUCTION ACTIVITIES ACCORDING TO THE APPLICABLE PLANS.
- ONTRIBUTING DRAINAGE AREAS ARE STABILIZED AND WITH THE PERMISSION OF THE EROSION AND SEDIMENT TROL INSPECTOR, REMOVE INDIVIDUAL EROSION AND SEDIMENT CONTROL PRACTICES.

N COMPLETION OF DEMOLITION, CONSTRUCTION AND LAND DISTURBING ACTIVITIES; PROVIDE PERMANENT SILIZATION ACCORDING TO APPROVED METHODS AND REMOVE ALL REMAINING EROSION AND SEDIMENT CONTROL SURES WITH THE APPROVAL OF THE EROSION AND SEDIMENT CONTROL INSPECTOR.

JTILITY WORKS NOTES

ERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING MINIMUM STANDARDS CRIBED IN SECTION 4VAC50-30-40 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH) AND ITIONAL APPLICABLE PRACTICES FOLLOWED BY THE CITY OF ALEXANDRIA:

PRIVATE UTILITIES SHALL BE LOCATED OUTSIDE OF THE PUBLIC RIGHT OF WAY AND PUBLIC UTILITY EASEMENTS LESS THE UTILITY OWNERS HAVE A FRANCHISE AGREEMENT WITH THE CITY OF ALEXANDRIA: HOWEVER. NO ECTRIC TRANSFORMERS AND SWITCH GEARS/CONTROL BOXES SHALL BE PLACED IN THE PUBLIC RIGHT OF WAY.

THE EXISTING AND PROPOSED PUBLIC AND PRIVATE UTILITIES AND EASEMENTS SHALL BE SHOWN AND A SCRIPTIVE NARRATION OF VARIOUS UTILITIES SHALL BE PROVIDED ON THE PLAN.

IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN UTILITY SERVICES AT ALL TIMES DURING CONNECTION AND/OR INSTRUCTION.

MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

CAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.

FLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT APPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS R OFF-SITE PROPERTY.

TERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ACCORDANCE WITH THE CITY OF EXANDRIA STANDARDS AND SPECIFICATIONS TO MINIMIZE EROSION AND PROMOTE STABILIZATION.

OULD UTILITY CONSTRUCTION BE PERFORMED AFTER COMPLETING EARTHWORK, THE CONTRACTOR SHALL BE SPONSIBLE FOR ACHIEVING 98 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1551) MPACTION IN ALL TRENCH BACKFILL.

STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE VIRGINIA REGULATIONS 4VA50-30 EROSION AND DIMENT CONTROL REGULATIONS, VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH).

PLICABLE SAFETY REGULATIONS SHALL BE COMPILED WITH.

CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL CONTROL MEASURES AS NECESSARY TO EVENT EROSION AND SEDIMENTATION, AS DETERMINED BY THE DIRECTOR OF TRANSPORTATION AND /IRONMENTAL SERVICES, CITY OF ALEXANDRIA.

REMEDIATION PLAN SHALL BE SUBMITTED DETAILING HOW CONTAMINATED SOILS AND/OR GROUNDWATER WILL BE EALT WITH, INCLUDING PLANS TO REMEDIATE UTILITY CORRIDORS.

LITY CORRIDORS IN CONTAMINATED SOIL SHALL BE OVER EXCAVATED BY 2 FEET AND BACKFILLED WITH "CLEAN"

UTILITY WORKS NOTES (CONT'D)

N. GRADING CAN BE PERFORMED ON INSTALLATION OF UTILITIES.

Ο. EXCEED INDUSTRY STANDARDS. THE FOLLOWING ARE THE APWA COLOR CODES:

COLOR	CODES
RED	CAUTION BU
	LIGHTING CA
YELLOW	CAUTION GA
ORANGE	CAUTION CO
	CONDUITS
BLUE	CAUTION PO
PURPLE	CAUTION RE
GREEN	CAUTION SE

DEMOLITION NOTES

- CONTROL INSPECTOR OF THE DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES.
- SAFETY AND HEALTH (NIOSH).
- COMPANIES AND FOR THE IMPLEMENTATION OF REQUIRED UTILITY-RELATED WORK.

LANDSCAPE NOTES

- NURSERYMEN: WASHINGTON, DC.
- AND TRANSPORTATION AND ENVIRONMENTAL SERVICES.
- COLUMBIA, AND VIRGINIA; GAITHERSBURG MARYLAND.
- INSTALLATION PROCEDURES AND PROCESSES.
- LANDSCAPE GUIDELINES AND/OR AS CONDITIONED BY PROJECT APPROVAL.
- THE PROJECT'S LANDSCAPE ARCHITECT.
- SPECIFICATION OF ALL PROJECT ELEMENTS.

ALL NEW INSTALLATIONS AND/OR REINSTALLATION OF UTILITIES SUCH AS ELECTRICAL LINES, GAS PIPES, COMMUNICATION CABLES INCLUDING WATER AND SEWER LATERALS BOTH ON PRIVATE PROPERTY AND IN THE PUBLIC RIGHT OF WAY IN THE CITY OF ALEXANDRIA SHALL BE PROVIDED WITH 3" AND 6" WIDE 5 MIL OVERALL THICKNESS DETECTABLE UNDERGROUND WARNING TAPES (DUWT). THE DUWT SHALL BE WITH ALUMINUM BACKING OR SOLID ALUMINUM CORE LAMINATED WITH A PROTECTIVE CLEAR FILM ON BOTH SIDES, SEALING AND PROTECTING THE GRAPHICS FROM THE UNDERGROUND MOISTURE, ACIDS, ALKALIS, AND OTHER SOIL SUBSTANCES. ALL DUWT TAPES SHALL BE PRINTED IN BLACK INK ON AMERICAN PUBLIC WORKS ASSOCIATION (APWA) APPROVED COLORS TO MEET OR

> JRIED ELECTRIC POWER LINES, CABLES CONDUITS, AND ABLES S, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS DMMUNICATIONS, ALARM OR SIGNAL LINES, CABLES OR

TABLE WATER CLAIMED WATER, IRRIGATION AND SLURRY LINES WER. DRAIN LINES. AND FORCE MAIN

1. A SEPARATE PERMIT IS REQUIRED FOR DEMOLITION; HOWEVER, NO DEMOLITION SHALL BEGIN UNTIL ALL EROSION AND SEDIMENT AND TREE PROTECTION CONTROLS ARE IN PLACE AND ARE APPROVED BY AN EROSION AND SEDIMENT

2. ALL NON-FERROUS WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH THE MOST CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS, INCLUDING BUT NOT LIMITED. TO ENVIRONMENTAL PROTECTION AGENCY (EPA), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), VIRGINIA OCCUPATIONAL AND SAFETY HEALTH COMPLIANCE PROGRAM (VOSH ENFORCEMENT). VIRGINIA OVERHEAD HIGH VOLTAGE LINE SAFETY ACT. NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS), AND NATIONAL INSTITUTE OF OCCUPATIONAL

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF WORK WITH REPRESENTATIVE UTILITY

THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE UPON ENCOUNTERING ANY HAZARDOUS MATERIALS DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL DOCUMENT THE SAME TO THE OWNER'S REPRESENTATIVE AND OBTAIN DIRECTION AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.

DISCONNECTION OF SERVICES AND SYSTEMS SUPPLYING UTILITIES TO BE ABANDONED OR DEMOLISHED SHALL BE COMPLETED PRIOR TO OTHER SITE DEMOLITION IN FULL COMPLIANCE WITH APPLICABLE CODS, REGULATIONS, AND THE REQUIREMENTS OF THE UTILITY HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE UTILITY, PAYMENT OF ASSOCIATED FEES AND PROCUREMENT OF ALL NECESSARY PERMITS.

PRIOR TO REMOVAL OF MATERIALS OVER EXISTING UTILITY SYSTEMS, THE CONTRACTOR SHALL DOCUMENT EXISTING CONDITIONS AND, IF DIFFERENT FROM CONDITIONS AS REPRESENTED ON THE PLANS, NOTIFY THE OWNER'S REPRESENTATIVE AND OBTAIN DIRECTIONS AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.

7. THE CONTRACTOR SHALL BACKFILL EXCAVATED AREAS WITH APPROVED MATERIALS/CLEAN FILL AS PER THE REQUIREMENTS OF VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) STANDARD DETAIL PB-1.

THE CONTRACTOR SHALL PROTECT AND PREVENT DAMAGE TO EXISTING ON-SITE UTILITY DISTRIBUTION FACILITIES THAT ARE TO REMAIN. ACTIVE UTILITY DISTRIBUTION FACILITIES ENCOUNTERED DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES SHALL BE SHUT OFF AT THE SERVICE MAIN WITH THE APPROVAL OF THE OWNER'S REPRESENTATIVE.

9. DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE UPON ENCOUNTERING ANY EXISTING UTILITIES AND/OR UTILITY SYSTEM STRUCTURES NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL DOCUMENT THE SAME AND FORWARD THE INFORMATION TO THE RESIDENT ENGINEER / OWNER'S REPRESENTATIVE, AND OBTAIN DIRECTION AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.

10. THE CONTRACTOR OR APPLICANT SHALL WORK WITH THE CITY STAFF TO REUSE THE EXISTING, LEFTOVER, UNUSED AND/OR DISCARDED MATERIALS AS PART OF THE DEMOLITION PROCESS. CONSTRUCTION DEBRIS, INCLUDING DISCARDED MATERIALS GENERATED DURING THE DEMOLITION PROCESS, MUST BE REMOVED BY THE CONTRACTOR TO AN APPROVED LANDFILL WITH ADEQUATE FREQUENCY IN ACCORDANCE WITH THE VIRGINIA STATE LITTER CONTROL ACT.

1. ALL PROTECTION AND PRESERVATION MEASURES FOR EXISTING VEGETATION, INCLUDING MAINTENANCE SHALL BE APPROVED BY THE CITY ARBORIST IN-FIELD PRIOR TO COMMENCEMENT OF ANY SITE DISTURBING ACTIVITY.

2. SPECIFICATION FOR ALL PLANTINGS SHALL BE IN ACCORDANCE WITH THE CURRENT AND MOST UP TO DATE EDITION OF ANSI-Z60.1, THE AMERICAN STANDARD FOR NURSERY STOCK AS PRODUCED BY THE AMERICAN ASSOCIATION OF

3. THE APPLICANT HAS MADE SUITABLE ARRANGEMENTS FOR PRE-SELECTION TAGGING, PRE-CONTRACT GROWING, OR IS UNDERTAKING SPECIALIZED PLANTING STOCK DEVELOPMENT WITH A NURSERY OR GROWER THAT IS CONVENIENTLY LOCATED TO THE PROJECT SITE, OTHER PROCEDURES THAT WILL ENSURE AVAILABILITY OF SPECIFIED MATERIALS. IN THE EVENT THAT SHORTAGES AND/OR INABILITY TO OBTAIN SPECIFIED PLANTINGS OCCURS, REMEDIAL EFFORTS INCLUDING SPECIES CHANGES, ADDITIONAL PLANTINGS AND MODIFICATION TO THE LANDSCAPE PLAN SHALL BE UNDERTAKEN BY THE APPLICANT. ALL REMEDIAL EFFORTS SHALL, WITH PRIOR APPROVAL BY THE CITY, BE PERFORMED TO THE SATISFACTION OF THE DIRECTORS OF PLANNING AND ZONING, RECREATION, PARKS AND CULTURAL ACTIVITIES

4. IN LIEU OF MORE STRENUOUS SPECIFICATIONS, ALL LANDSCAPE RELATED WORK SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CURRENT AND MOST UP-TO-DATE EDITION (AT ANY TIME OF CONSTRUCTION) OF LANDSCAPE SPECIFICATION GUIDELINES AS PRODUCED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF MARYLAND, DISTRICT OF

PRIOR TO COMMENCEMENT OF LANDSCAPE INSTALLATION/PLANTING OPERATION, A PRE-INSTALLATION/CONSTRUCTION MEETING WITH BE SCHEDULED WITH THE CITY'S ARBORIST AND LANDSCAPE ARCHITECTS TO REVIEW THE SCOPE OF

6. MAINTENANCE FOR THIS PROJECT SHALL BE PERFORMED IN PERPETUITY, IN COMPLIANCE WITH THE CITY OF ALEXANDRIA

7. A CERTIFICATION LETTER FOR TREE WELLS, TREE TRENCHES AND PLANTING ABOVE STRUCTURE SHALL BE PROVIDED BY THE PROJECT'S LANDSCAPE ARCHITECT. THE LETTER SHALL CERTIFY THAT ALL BELOW GRADE CONSTRUCTION IS IN COMPLIANCE WITH APPROVED DRAWINGS AND SPECIFICATIONS. THE LETTER SHALL BE SUBMITTED TO THE CITY ARBORIST AND APPROVED PRIOR TO APPROVAL OF THE LAST AND FINAL CERTIFICATE OF OCCUPANCY FOR THE PROJECT. THE LETTER SHALL BE SUBMITTED BY THE OWNER/APPLICANT/SUCCESSOR AND SEALED AND DATED AS APPROVED BY

8. AS-BUILT DRAWINGS FOR THIS LANDSCAPE AND/OR IRRIGATION/WATER MANAGEMENT SYSTEM WILL BE PROVIDED IN COMPLIANCE WITH CITY OF ALEXANDRIA LANDSCAPE GUIDELINES. AS-BUILT DRAWINGS SHALL INCLUDE CLEAR IDENTIFICATION OF ALL VARIATION(S) AND CHANGES FROM APPROVED DRAWINGS INCLUDING LOCATION, QUANTITY, AND

MAINTENANCE OF ALL TREES AND LANDSCAPE MATERIALS SHALL CONFORM TO ACCEPTED INDUSTRY STANDARD SET FORTH BY THE LANDSCAPE CONTRACTORS ASSOCIATION, AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS, THE INTERNATIONAL SOCIETY OF ARBORICULTURE, AND THE AMERICAN NATIONAL STANDARDS INSTITUTE.

	UESIGN ENGINEEK AND LANDSCAPE AKCHITECT FIRM NAME: KIMLEY-HORN AND ASSOCIATES, INC.	ADDRESS: 11400 COMMERCE PARK DRIVE, SUITE 400	RESTON, VIRGINIA 20191	PHONE NO: 703-674-1300 FAX NO: 703-674-1350	PROJ. MANAGER: KEVIN VAN HISE	EMAIL: KEVIN.VANHISE@KIMLEY-HORN.COM		SCALE: N.T.S. (AT 24x36) DATE: 04/04/2014 DRAWN BY: ATR	Kimlev-Horn	and Associates, Inc.
SEAL:	N. Color I.	Lic. No. 051017	20C4/04/2014 E	ASSA THAOLOGY		OWNER CITY OF ALEXANDRIA	301 KING STREET ALEXANDRIA, VA 22314	DEVELOPER ALEXANDRIA CITY	PUBLIC SCHOOLS CONTACT	ANDREA FENIAK, AIA (703) 461-4168
REVISION / APPROVED BY	0. DESCRIPTION DATE REV. APPROVED DATE									
JOHN ADAMS SCHOOL		LAKKING LOI				PRELIMINARY SITE PLAN		CITY OF ALEXANDRIA, VIRGINIA	SHEET NAME:	GENERAL NOIES
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CONSTRUCTION NOTES

- THE EXISTING UNDERGROUND UTILITIES SHOWN HEREIN ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE THE CONTINUANCE OF SERVICE.
- 2. THE CONTRACTOR SHALL DIG TEST PITS FOLLOWING NOTIFICATION AND MARKING OF ALL EXISTING UTILITIES TO VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES TEST HOLES TO BE PERFORMED AT LEAST 30 DAYS PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE OWNER AND ENGINEER. REDESIGN AND APPROVAL BY REVIEWING AGENCY SHALL BE OBTAINED IF REQUIRED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER AND THE ENGINEER OF ANY CHANGES OR CONDITIONS ATTACHED TO PERMITS OBTAINED FROM ANY AUTHORITY ISSUING PERMITS.
- 4. THE CONTRACTOR SHALL VISIT THE SITE AND SHALL VERIFY EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION.
- 5. THE CONTRACTOR SHALL CLEAR THE SITE OF ALL TREES, BUILDINGS, FOUNDATIONS, ETC., WITHIN THE LIMITS OF CONSTRUCTION UNLESS OTHERWISE SPECIFIED, AND SHALL BE RESPONSIBLE FOR ENSURING THAT EXISTING UTILITIES ARE DISCONNECTED.
- ALL AREAS, ON OR OFF-SITE, WHICH ARE DISTURBED BY THIS CONSTRUCTION AND WHICH ARE NOT PAVED OR BUILT UPON, SHALL BE ADEQUATELY STABILIZED TO CONTROL EROSION AND SEDIMENTATION. THE MINIMUM ACCEPTABLE STABILIZATION SHALL CONSIST OF PERMANENT GRASS, SEED MIXTURE TO BE AS RECOMMENDED BY THE CITY AGENT. ALL SLOPES 3:1 AND GREATER SHALL BE SODDED AND PEGGED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY OF ALEXANDRIA.
- 7. ALL ABOVE GROUND UTILITIES SERVING THE SITE SHALL BE RELOCATED AS REQUIRED BY THE OWNING UTILITY COMPANIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL ARRANGEMENTS AND COORDINATING ALL WORK REQUIRED FOR THE NECESSARY RELOCATIONS.
- 8. PRIOR TO BEGINNING OF CONSTRUCTION, CONTRACTOR SHALL VERIFY FROM THE ARCHITECTURAL DRAWINGS ALL DIMENSIONS, DETAILS, AND TREATMENTS FOR THE PROPOSED BUILDINGS, WALKWAYS, AND OTHER PROPOSED CONSTRUCTION WHERE INDICATED ON THE PLANS.
- 9. THE CONTRACTOR SHALL VERIFY INVERT SIZE AND LOCATION OF BUILDING UTILITY CONNECTIONS PRIOR TO PLACEMENT OF UNDERGROUND UTILITIES.
- EXISTING BUILDING, FENCES, AND OTHER EXISTING PHYSICAL FEATURES ARE TO BE REMOVED AS REQUIRED BY THE CONTRACTOR.
- 11. EXISTING CONSTRUCTION SHALL BE REMOVED TO NEAREST JOINT. NEW CONSTRUCTION SHALL BE PROVIDED AS SHOWN AND ANY DAMAGED AREA SHALL BE REPAIRED TO MATCH CONDITIONS EXISTING PRIOR TO CONSTRUCTION OR TO THE SATISFACTION OF DIRECTOR, TRANSPORTATION AND ENVIRONMENTAL SERVICES.
- 12. ALL PRIVATE BUILDING CONNECTIONS ARE TO BE INSTALLED IN ACCORDANCE WITH THE CURRENT PLUMBING CODE.
- 13. TOPS OF EXISTING STRUCTURES WHICH REMAIN IN USE ARE TO BE ADJUSTED IN ACCORDANCE WITH THE GRADING PLAN. ALL PROPOSED STRUCTURE TOP ELEVATIONS ARE TO BE VERIFIED BY THE CONTRACTOR WITH THE SITE GRADING PLANS. IN CASE OF CONFLICT, THE GRADING PLAN SHALL SUPERSEDE PROFILE ELEVATIONS. MINOR ADJUSTMENT TO MEET FINISHED GRADE ELEVATION, IF REQUIRED, SHALL BE MADE IN THE FIELD WITH THE APPROVAL OF SITE INSPECTOR OF THE DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES.
- 14. THE CONSTRUCTION, FIELD PRACTICES AND METHODS SHALL CONFORM TO THE REQUIREMENTS SET FORTH BY THE CITY OF ALEXANDRIA AND ITS CURRENT ZONING ORDINANCE AND CONSTRUCTION STANDARDS MANUAL. FAILURE TO COMPLY WITH THE CODE, APPLICABLE MANUALS, AND PROVISIONS OF THE CONSTRUCTION AND ESCROW AGREEMENTS OR THE PERMITS SHALL BE DEEMED A VIOLATION.
- 15. THE APPROVAL OF THESE PLANS SHALL IN NO WAY RELIEVE THE OWNER/DEVELOPER OR HIS AGENT OF ANY LEGAL RESPONSIBILITIES WHICH MAY BE REQUIRED BY THE CODE OF VIRGINIA OR ANY ORDINANCE ENACTED BY THE CITY OF ALEXANDRIA.
- 16. CONSTRUCTION STAKEOUT SHALL BE UNDER THE DIRECT SUPERVISION OF A LICENSED LAND SURVEYOR IN THE COMMONWEALTH OF VIRGINIA.
- 17. THE CONTRACTOR IS REFERRED TO STRUCTURAL, GEOTECHNICAL, MECHANICAL, AND ARCHITECTURAL PLANS FOR FOUNDATION TREATMENT INCLUDING, BUT NOT LIMITED TO, SHEETING AND SHORING FOR BUILDING EXCAVATION, WATERPROOFING FOR FILL AGAINST BUILDINGS, LOCATION OF MECHANICAL EQUIPMENT, AND CONNECTIONS THE FACES OF BUILDINGS.
- 18. SMOOTH GRADE SHALL BE MAINTAINED FROM THE CENTERLINE OF THE EXISTING ROAD TO THE PROPOSED ENTRANCE AND/OR CURB & GUTTER TO PRECLUDE THE FORMING OF FALSE GUTTER AND/OR PONDING OF WATER ON THE ROADWAY
- 19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING A SMOOTH TRANSITION TO EXISTING CURB AND SIDEWALKS, IF APPLICABLE.
- 20. THE CALIFORNIA BEARING RATIO (CBR) VALUES ON IN-SITU MATERIALS SHALL BE DETERMINED BY FIELD AND/OR LABORATORY TESTS FOR ACTUAL DETERMINATION OF REQUIRED THICKNESS OF SURFACE, BASE, SUB-BASE, AND SUB GRADE MATERIALS. THE PAVEMENT SECTION SHALL BE DESIGNED BY A GEOTECHNICAL/LICENSED PROFESSIONAL ENGINEER TO THE SATISFACTION OF DIRECTOR. TRANSPORTATION AND ENVIRONMENTAL SERVICES FOR ALL PAVEMENTS INCLUDING EMERGENCY VEHICLE EASEMENT(EVE) TO SUPPORT H-20 LOADING. IN THE CASE OF PAVEMENT PATCHES, PAVEMENT SECTION MUST MEET OR EXCEED EXISTING SECTION.
- 21. EMERGENCY VEHICLE EASEMENTS (EVE) AND AMERICAN WITH DISABILITY (ADA) ACCESSIBLE PARKING SPACES MUST BE DELINEATED WITH PAVEMENT MARKINGS PER THE CITY OF ALEXANDRIA STANDARD SIGNAGE AND AMERICAN WITH DISABILITIES (ADA) REQUIREMENTS.
- 22. ALL STRIPING SHALL MEET THE REQUIREMENTS OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS (LATEST EDITION) AND SHALL BE THERMOPLASTIC UNLESS OTHERWISE SPECIFIED.
- 23. ALL EARTHWORK OPERATIONS ARE TO BE PERFORMED UNDER THE FULL TIME, ON-SITE SUPERVISION OF A REGISTERED GEOTECHNICAL ENGINEER WITH GEOTECHNICAL TESTING IN ACCORDANCE WITH CONSTRUCTION SPECIFICATIONS AND SOILS REPORT REQUIREMENTS.
- 24. THE CONTRACTORS SHALL NOT CAUSE OR PERMIT VEHICLES TO IDLE FOR MORE THAN 10 MINUTES WHEN PARKED.
- 25. DAMAGE TO ANY EXISTING ENTRANCES, CURB AND GUTTER, PAVEMENT OR OTHER EXISTING STRUCTURES NOT PROPOSED TO BE DISTURBED WITH THIS DEVELOPMENT, WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE REPAIRED TO THE SATISFACTION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION AND ANY ADJOINING OWNERS THAT MAY BE AFFECTED.
- 26. ALL CONSTRUCTION ACTIVITES SHALL CONFORM WITH LATEST EDITION OF OSHA REGULATIONS AND GUIDELINES.
- 27. IN THE EVENT THE PROPOSED DRAINAGE SYSTEM ADVERSELY IMPACTS AND/OR CREATES A NUISANCE ON THE PUBLIC OR PRIVATE PROPERTIES THEN THE APPLICANT SHALL BE RESPONSIBLE TO PROVIDE ADDITIONAL IMPROVEMENTS TO THE FIELD DRAINAGE SYSTEM AND/OR SUMP PUMP DISCHARGE TO THE SATISFACTION OF THE DIRECTOR, TRANSPORTATION AND ENVIRONMENTAL SERVICES (T&ES).
- 28. ALL GEOTECHNICAL AND CONCRETE TESTING AND INPECTIONS SHALL BE PROVIDED BY A CITY APPROVED, THIRD PARTY CONSULTANT. FEES FOR ALL THIRD PARTY CONSULTANT TESTING AND INSPECTIONS SHALL BE PAID BY THE CONTRACTOR AND INCLUDED IN THE CONTRACTOR'S BASE BID.
- 29. ALL COORDINATION WITH APPLICABLE PUBLIC UTILITIES INCLUDING BUT NOT LIMITED TO TIMING OF SERVICE DROPS. RECONNECTIONS, LOAD LETTERS, PRESSURE TESTS AND PERMITS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL SUCH WORK SHALL BE SCHEDULED AND PERFORMED IN A MANNER TIMELY TO COMPLETION OF THE PROJECT.

RESOURCE PROTECTION AREA NOTE

1. THE SUBJECT PROPERTY IS NOT LOCATED WITHIN A CITY OF ALEXANDRIA RESOURCE PROTECTION AREA (RPA)

FLOODPLAIN NOTE

1. THE SUBJECT PROPERTY IS NOT LOCATED WITHIN A 100-YEAR FLOOD PLAIN WATER SURFACE ELEVATION (WSE).

CEMETERY AND/OR BURIAL GROUNDS NOTE

 THERE IS NO OBSERVABLE, HISTORICAL, OR ARCHAEOLOGICAL EVIDENCE OF CEMETERIES OR BURIAL GROUNDS ON THIS PROPERTY.

RODENT ABATEMENT NOTE

- PRIOR TO THE ISSUANCE OF A DEMOLITION PERMIT A RODENT ABATEMENT PLAN SHALL BE SUBMITTED TO THE CITY OF ALEXANDRIA CODE ADMINISTRATION THAT WILL OUTLINE STEPS THAT WILL BE TAKEN TO PREVENT THE SPREAD OF RODENTS FROM THE CONSTRUCTION SITE TO THE SURROUNDING COMMUNITY AND SEWERS. THE CONTRACTOR CAN CONTACT THE ALEXANDRIA DEPARTMENT OF CODE ADMINISTRATION AT 703-746-4200 FOR ANY QUESTIONS OR ADDITIONAL INFORMATION. PLEASE BE ADVISED ONCE ANY DEMOLITION HAS BEEN COMPLETED ANY ABOVE GROUND BAIT BOXES MUST BE RELOCATED TO WITHIN 50 FEET OF A STRUCTURE IN KEEPING WITH EPA REGULATIONS. IF THIS IS NOT POSSIBLE, THEY SHALL BE REMOVED AND REGULAR INSPECTIONS OF THE SITED CONDUCTED BY A VIRGINIA LICENSED PEST EXTERMINATOR TO ENSURE THE SITE REMAINS RODENT FREE.
- 2. ALL NEW DAYLIGHTED DRAINAGE PIPE SHALL BE CONSTRUCTED WITH RODENT SCREENS.

ARCHAEOLOGY NOTE

- ALL REQUIRED ARCHAEOLOGICAL PRESERVATION MEASURES SHALL BE COMPLETED PRIOR TO GROUND-DISTURBING ACTIVITIES (SUCH AS CORING, GRADING, FILLING, VEGETATION REMOVAL, UNDERGROUNDING UTILITIES, PILE DRIVING, LANDSCAPING AND OTHER EXCAVATIONS AS DEFINED IN SECTION 2-151 OF THE ZONING ORDINANCE) OR A RESOURCE MANAGEMENT PLAN MUST BE IN PLACE TO PRESERVE AND/OR RECOVER SIGNIFICANT RESOURCES IN CONCERT WITH CONSTRUCTION ACTIVITIES. TO CONFIRM, CALL ALEXANDRIA ARCHAEOLOGY AT (703) 746-4399.
- THE CONTRACTOR SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS, WELLS, PRIVIES, CISTERNS, ETC.) OR CONCENTRATIONS OF ARTIFACTS ARE DISCOVERED DURING CONSTRUCTION. WORK MUST CEASE IN THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST COMES TO THE SITE AND RECORDS THE FINDS.

EXISTING CONDITIONS SURVEY NOTES

HORIZONTAL DATUM* NORTH AMERICAN DATUM OF 1983, NAD83 VERTICAL DATUM* NORTH AMERICAN DATUM OF 1988, NAVD88*

- 1. UTILITY INFORMATION, AS SHOWN ON THIS PLAN, IS TAKEN FROM THE RECORDS AND/OR FIELD SURVEY COMPLETED BY DOMINION SURVEYORS, DATED 10/18/2013, 05/09/2011, 05/25/2011, 03/29/2010 ; AND CANNOT BE GUARANTEED. FOR EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES, NOTIFY "MISS UTILITY" AT 1-800-257-7777 AND 811 72 HOURS BEFORE THE START OF ANY EXCAVATION OR CONSTRUCTION. CONTRACTOR IS ENCOURAGED TO VISIT DOMINION VIRGINIA POWER'S WEB SITE AT (KEYWORD "SAFETY") FOR ADDITIONAL SAFETY INSTRUCTIONS.
- 2. LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHOULD DIG TEST PITS BY HAND AT ALL UTILITY CROSSINGS TO VERIFY EXACT LOCATION.
- 3. THE BOUNDARY INFORMATION FOR THE SUBJECT SITE IS BASED ON A FIELD SURVEY BY RICE ASSOCIATES.

*PER MEMORANDUM TO INDUSTRY, JULY 20, 2005; THE PLAN SHALL BE PREPARED USING VIRGINIA STATE N PLANE (NORTH ZONE) COORDINATES BASED ON NAD83 AND NAVD88; HOWEVER, IF THE CURRENT DRAWINGS ARE PREPARED USING NORTH AMERICAN DATUM OF 1927 (NAD27) AND NORTH GEODETIC VERTICAL DATUM OF 1929 (NGVD29) THEN THE AS-BUILT DRAWINGS SHALL PROVIDE A CONVERSION TABLE OF SANITARY AND STORM SEWER DATA IN THE NAD83 AND NAVD88 DATUMS.

STORMWATER MANAGEMENT PLAN

- THE PLAN DEMONSTRATES THAT THE PROPOSED DEVELOPMENT OF THE SITE WILL INCREASE THE POST DEVELOPMENT PEAK RUNOFF RATE FROM THE PRE-DEVELOPMENT PEAK RUNOFF RATE FOR A TWO-YEAR AND TEN-YEAR STORM, CONSIDERED INDIVIDUALLY. THEREFORE, STORMWATER DETENTION IS PROVIDED PER THE REQUIREMENTS OF ARTICLE 13-109(F)(1) OF ALEXANDRIA ZONING ORDINANCE, NOT TO RELEASE STORMWATER FROM THE SITE AT A HIGHER RATE THAN PRE-DEVELOPMENT CONDITION. AN ADEQUATE OUTFALL ANALYSIS IS PROVIDED TO DEMONSTRATE THAT THE STORMWATER IS DISCHARGED INTO AN ADEQUATE OUTFALL PER THE REQUIREMENTS OF ARTICLE XI, SECTION 11-410 (N).
- THE PRE AND POST DEVELOPMENT PEAK RATES OF RUNOFF ARE COMPUTED BY THE RATIONAL METHOD USING THE CITY OF ALEXANDRIA RAINFALL DATA, DESIGN AND CONSTRUCTION STANDARDS, DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES, JULY 1989. ALL HYDROLOGIC ANALYSES RELATED TO PRE AND POST DEVELOPMENT ARE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT. RESPECTIVELY.

PARKING MANAGEMENT STRATEGY

PARKING MANAGEMENT STRATEGY JOHN ADAMS ELEMENTARY SCHOOL

5651 RAYBURN AVENUE, ALEXANDRIA, VA 22311

A PARKING MANAGEMENT STRATEGY WILL BE IMPLEMENTED TO PROVIDE DETAILS ON THE OPERATIONS OF THE TANDEM PARKING SPACES LOCATED AT THE NORTHWEST CORNER OF THE SITE. UNLIKE TRADITIONAL PARKING. THE FIRST VEHICLE PARKED IN TANDEM DOES NOT HAVE INDEPENDENT ACCESS AND THE SECOND VEHICLE MUST BE COMPLETELY MOVED IN ORDER TO PROVIDE ACCESS TO THE FIRST VEHICLE.

THE GOAL OF THE STRATEGY IS TO IMPLEMENT A PROCESS OF OPERATING 28 TANDEM PARKING SPACES.

- a. ALEXANDRIA CITY PUBLIC SCHOOLS (ACPS) SHALL DESIGNATE AN ASSISTANT PRINCIPAL TO SERVE AS THE PARKING MANAGEMENT COORDINATOR (PMC) TO MANAGE AND IMPLEMENT THE PARKING STRATEGY.
- b. THE PMC WILL REVIEW AND REVISE THE STRATEGY ANNUALLY, PRIOR TO THE BEGINNING OF SCHOOL. c. SIGNAGE AND STRIPING WILL BE PROVIDED TO INDICATE THAT THE TANDEM PARKING SPACES ARE RESERVED, EMPLOYEE ONLY SPACES.
- d. TANDEM PARKING SPACES WILL BE ASSIGNED TO 28 PARAPROFESSIONALS WHO WORK IN THE SCHOOL FROM 8:00AM-2:30PM. PARAPROFESSIONALS ARE BEST SUITED TO SHARING PARKING SPACES DUE TO THE SIMILARITY AND NON-VARIABILITY OF THEIR HOURS.
- e. AT THE START OF THE SCHOOL YEAR, THE PMC WILL ESTABLISH A DATABASE OF PARAPROFESSIONALS WITH CLASSROOM AND VEHICLE INFORMATION. THIS WILL BE AVAILABLE IN THE MAIN OFFICE FOR REFERENCE IF A PROBLEM ARISES.
- f. THE PMC WILL EDUCATE THE 28 PARAPROFESSIONALS BEFORE THE BEGINNING OF EACH SCHOOL YEAR TO EXPLAIN THE OPERATIONS OF THE TANDEM SPACES AND TO ASSIGN SPACES TO PAIRS BASED ON WORK ASSIGNMENT AND DAILY SCHEDULES. THIS WILL OPTIMIZE THE EFFICIENT USE OF THE TANDEM SPACES AND REDUCE POTENTIAL CONFLICTS.

BM	BENCH
۲	CLEAN
CONC	CONC
DB	DEED
$\sum_{\hat{\mathcal{F}}}$	FIRE HY
¢	LIGHT
N/F	NOW OR F
OHW	OVERHE A
OP	OPEN F
PG	PA
EP	EDGE OF F
EP S	EDGE OF F SANITARY
EP S	EDGE OF F SANITARY SIG
EP S stp	EDGE OF F SANITARY SIG STO
EP S STP	EDGE OF F SANITARY SIG STORM SEWE
EP S STP D C	EDGE OF F SANITARY SIG STORM SEWE UTILITY
EP S STP C STP C STP	EDGE OF F SANITARY SIG STORM SEWE UTILITY WATER



(X)

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CROSSWALKS (NUMBER
STANDARD
HIGH VISIBILITY
CURB RAMPS
SIDEWALKS (LF)
BICYCLE PARKING (NU SPACES)
PUBLIC/VISITO
PRIVATE/GARA
BICYCLE PATHS (LF)

PEDESTRIAN SIGNALS

LE BENCHMARK CLEAN OUT CONCRETE DEED BOOK FIRE HYDRANT LIGHT POLE W OR FORMERL WOR FORMERL OVERHEAD WIRE OPEN PORCH PAGE GE OF PAVEMEN NITARY MANHO SIGN STOOP				DESIGN ENGINEER AND LANDSCAPE ARCHITECT	ADDRESS: 11400 COMMERCE PARK DRIVE, SUITE 400	RESTON, VIRGINIA 20191 PHONE NO: 703-674-1300 FAX NO: 703-674-1350	PROJ. MANAGER: KEVIN VAN HISE EMAIL: KEVIN.VANHISE@KIMLEY-HORN.COM	SCALE: N.T.S. (AT 24x36) DATE: 04/04/2014 DRAWN BY: ATR	Kimley-Horn
M SEWER MANH UTILITY POLE WATER METER WATER VALVE PROPO ALEXA PROPO PARKI PROPO SIDEW PROPO SIDEW PROPO TRAIL NUMB TREE PROJE LIMITS EXISTI	DSED CONCRETE SIDE NDRIA STANDARD CS DSED PERVIOUS PAVE NG SPACE DSED PERVIOUS PAVE ALK DSED ASPHALT SIDEW CONNECTION ER OF ADDITIONAL PA REMOVAL CT BOUNDARIES OF DISTURBANCE	WALK PER SW-1 MENT FOR ALK AND ARKING SPACES	REVISION / APPROVED BY	NO. DESCRIPTION DATE BY APPROVED DATE ON ON TANK	Lic. No. 051017			301 KING STREET 301 KING STREET ALEXANDRIA, VA 22314 DEVELOPER	
AL ZON TE STR	NEW N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	ATIONS UPGRADED			PARKING LOI	IMPROVEMENTS	PRELIMINARY SITE PLAN	CITY OF ALEXANDRIA, VIRGINIA	SHEET NAME: GENERAL NOTES
/ISITOR /GARAGE [LF) ALS	N/A N/A N/A N/A		APF SPECIA DEPAR SERVIC SITE F CHAIRM DATE	PRO AL USE TMENT DIRE TMENT ES PLAN NO DIRE AN, PLAI RECORD	VED PERMI OF PL	T NO ANNING ANSPORT	& ZONIN — — — — — — — — — — — — — — — — — — —	G DATE ENVIRC DATE DATE PAGE	ONMENTAL

SITE CONTEXT:

THE PROPOSED PROJECT SITE LOCATION LIES WITHIN THE CITY OF ALEXANDRIA, VA. NO STREET FRONTAGE EXISTS. CHAMBLISS PARK CREATES THE JOHN ADAMS SCHOOL PROPERTY'S NORTH BOUNDARY, WHILE RESIDENTIAL AREAS CREATE THE EAST, WEST, AND SOUTH BOUNDARIES.

<u>BUS:</u> ALEXANDRIA'S DASH AND WMATA BUS SYSTEMS OPERATE MULTIPLE ROUTES WITHIN 1/4 MILE OF THE SITE:

STREETBUS LINESRAYBURN AVE. (DASH)AT1, AT2BEAUREGARD ST. (WMATA)7A, 7F, 7W, 7X

BUS ROUTES OPERATING WITHIN A 1/2 MILE RADIUS INCLUDE:

STREETBUS LINESBEAUREGARD ST. (WMATA)7BEAUREGARD ST. (DASH)AMARK CENTER DR. (WMATA)7SEMINARY AVE. (WMATA)1

7A, 7F, 7W, 7X AT1. AT2 7A, 7F, 7M, 7W, 7X, 8W 16L, 28F, 28G

LEGEND:

Θ	BUS STOP
	REFERENCE RADIUS
	PROPOSED PROJECT SITE







ADJACENT PROPERTIES

- A 2500 N SCOTT STREET CITY OF ALEXANDRIA LOT 2500 N SCOTT
- B 2460 N SHELLEY STREET RUSS, ROBERT W.
- LOT 11 BLK 3 SEC 2 SHIRLEY FOREST C 2459 N SHELLEY STREET JONES, SAMUEL P. OR SUSAN M.
- LOT 10 BLK 5 SEC 2 SHIRLEY FOREST D 5542 FORRESTAL AVENUE PAYOS, MANILENA
- LOT 9 BLK 5 SEC 2 SHIRLEY FOREST E 5536 FORRESTAL AVENUE LEWIS, WILLIAM MITCHEL II
- LOT 8 BLK 5 SEC 2 SHIRLEY FOREST F 1600 N BEAUREGARD STREET LAFAYETTE BUILDINGS LLC
- PARCEL B MARK CENTER II G 1500 N BEAUREGARD STREET LAFAYETTE BUILDINGS LLC PARCEL A - MARK CENTER I
- H 5653 RAYBURN AVENUE KANE LOLA D OR THOMAS R LOT 1 SEC 1 WESTRIDGE OF ALEXANDRIA
- 5655 RAYBURN AVE TOMPKINS JANICE E TR LOT 2 SEC 1 WESTRIDGE OF ALEXANDRIA
- J 5657 RAYBURN AVE RAUM H THOMAS OR NORA LOT 3 SEC 1 WESTRIDGE OF ALEXANDRIA
- K 5659 RAYBURN AVE OGBUOKIRI ROSELINE U, UMO ARCHIBONG A LOT 4 SEC 1 WESTRIDGE OF ALEXANDRIA
- L 5661 RAYBURN AVE SHIFFMAN J FRED OR JOELLEN M LOT 5 SEC 1 WESTRIDGE OF ALEXANDRIA
- M 5663 RAYBURN AVE SEARS GWENIVERE ELAINE TR LOT 6 SEC 1 WESTRIDGE OF ALEXANDRIA
- N 5665 RAYBURN AVE JOURDAN SHARON A TR LOT 7 SEC 1 WESTRIDGE OF ALEXANDRIA
- O 5667 RAYBURN AVE WALTERMAN JAMES LOT 8 SEC 1 WESTRIDGE OF ALEXANDRIA
- P 5669 RAYBURN AVE DIGREGORIO ELIZABETH LOUISE LOT 9 SEC 1 WESTRIDGE OF ALEXANDRIA
- Q 5671 RAYBURN AVE WOOTTEN JOHN T LOT 10 SEC 1 WESTRIDGE OF ALEXANDRIA
- R 5673 RAYBURN AVE DOSE DANIEL C AND MARY T TRS LOT 11 SEC 1 WESTRIDGE OF ALEXANDRIA
- S 5675 RAYBURN AVE COLLINS FELICIA D LOT 12 SEC 1 WESTRIDGE OF ALEXANDRIA
- 5677 RAYBURN AVE
 KING DANIEL M
 LOT 13 SEC 1 WESTRIDGE OF ALEXANDRIA
- U 5679 RAYBURN AVE HOFFMAN RICHARD R AND GAIL A LOT 14 SEC 1 WESTRIDGE OF ALEXANDRIA
- V 5681 RAYBURN AVE LAMBERT ASHLEIGH E. OR BRIAN C. LOT 15 SEC 1 WESTRIDGE OF ALEXANDRIA
- ₩ 5683 RAYBURN AVE SILINS INTS M OR ELIZABETH L
- LOT 16 SEC 1 WESTRIDGE OF ALEXANDRIA X 5685 RAYBURN AVE BAKRI ISWENI I AND MEUTIA AND ZULFAN
- LOT 17 SEC 2 WESTRIDGE OF ALEXANDRIA
- Y 5687 RAYBURN AVE ELYAHIAOUI ROSENBERG ASMAA OR ROSENBERG MICHAEL R LOT 18 SEC 2 WESTRIDGE OF ALEXANDRIA
 Z 5689 RAYBURN AVE
- KOERNER PHYLLIS B LOT 19 SEC 2 WESTRIDGE OF ALEXANDRIA
- AA 2399 N SIBLEY ST FIRST INVESTMENT CORP VIRGINIA PWR TAX DEPT 18 OJ PAR A SEC 2 WESTRIDGE OF ALEXANDRIA
- BB 2307 N SIBLEY ST SAYER MARCIA V LOT 32 SEC 2 WESTRIDGE OF ALEXANDRIA
- CC 2309 N SIBLEY ST DREW ALYSSA G
- LOT 33 SEC 2 WESTRIDGE OF ALEXANDRIA
 DD 2311 N SIBLEY ST
- BRHANE ABEBA SAMUEL OR ESTIFANOS AMLESET AND TSEGAYE EYOB LOT 34 SEC 2 WESTRIDGE OF ALEXANDRIA - AFFORDABLE HOUSING

- EE 2313 N SIBLEY ST PORTER PATRICK J LOT 35 SEC 2 WESTRIDGE OF ALEXANDRIA
- FF 2315 N SIBLEY ST BULL DAVID E TR OR BULL NANCY H TR LOT 36 SEC 2 WESTRIDGE OF ALEXANDRIA
- GG 2317 N SIBLEY ST KLOCEK KENNETH D LOT 37 SEC 2 WESTRIDGE OF ALEXANDRIA
- HH 2319 N SIBLEY ST BONFIGLIO NATHAN J OR SUNDI Y LOT 38 SEC 2 WESTRIDGE OF ALEXANDRIA
- 2321 N SIBLEY ST GEBRESELAISSIE GUENET LOT 39 SEC 2 WESTRIDGE OF ALEXANDRIA
- JJ 2323 N SIBLEY ST VINCENT REGINALD OR YOLANDE J LOT 40 SEC 2 WESTRIDGE OF ALEXANDRIA
- KK 2325 N SIBLEY ST ALI TONI M LOT 41 SEC 2 WESTRIDGE OF ALEXANDRIA
- LL 2327 N SIBLEY ST ALIAGA OSCAR F LOT 42 SEC 2 WESTRIDGE OF ALEXANDRIA







EXISTING ASPHALT AREAS EXISTING PLAY SURFACES

EXISTING CONCRETE SIDEWALKS

PROJECT BOUNDARIES

BENCHMARK
CLEAN OUT
CONCRETE
DEED BOOK
FIRE HYDRANT
LIGHT POLE
NOW OR FORMERLY
OVERHEAD WIRE
OPEN PORCH
PAGE
EDGE OF PAVEMENT
SANITARY MANHOLE
SIGN
STOOP
STORM SEWER MANHOLE
UTILITY POLE
WATER METER
WATER VALVE

<u>NOTES:</u>

1.	TOTAL PROJECT AREA #1 & #2:	347,759 S.F.
	AREA #1 –JOHN ADAMS ELEMENTARY: AREA #2 –CHAMBLISS PARK:	346,141 S.F 1,618 S.F.
2.	TOTAL IMPERVIOUS AREA:	233,807 S.F.
	AREA #1 PLAY SURFACES: ASPHALT SURFACES: CONCRETE SIDEWALKS: BUILDING FOOTPRINT:	233,598 S.F. 8,921 S.F. 84,647 S.F. 34,243 S.F. 105,787 S.F.
	AREA #2 ASPHALT PARKING: ASPHALT SIDEWALK:	209 S.F. 153 S.F. 56 S.F.
3.	PERVIOUS AREA:	113,952
	AREA #1: AREA #2:	112,543 S.F. 1,409 S.F.

- * PROJECT AREA # 1 INCLUDES THE ENTIRE JOHN ADAMS ELEMENTARY SCHOOL PROPERTY.
- ** PROJECT AREA # 2 INCLUDES ONLY A PORTION OF CHAMBLISS PARK. THIS AREA IS LABELED AS THE LIMITS OF DISTURBANCE ON CHAMBLISS PARK.


DEMOLITION LEGEND:



PAVEMENT DEMOLITION AREA

TREE REMOVAL

---- LIMIT OF PAVEMENT SAWCUT

CURB AND GUTTER REMOVAL ----- LIMIT OF DISTURBANCE

ВМ	BENCHMARK
٢	CLEAN OUT
CONC	CONCRETE
DB	DEED BOOK
کې پېژه	FIRE HYDRANT
¢	LIGHT POLE
N/F	NOW OR FORMERLY
OHW	OVERHEAD WIRE
OP	OPEN PORCH
PG	PAGE
EP	EDGE OF PAVEMENT
S	SANITARY MANHOLE
	SIGN
STP	STOOP
D	STORM SEWER MANHOLE
ပြ	UTILITY POLE
	WATER METER
X	WATER VALVE

<u>NOTES:</u>

- 1. CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL REQUIRED PLAN APPROVALS AND ALL CONSTRUCTION PERMITS HAVE BEEN RECEIVED.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS. PERMITS SHALL BE MAINTAINED ON SITE DURING CONSTRUCTION.
- 3. EXISTING TOPOGRAPHIC INFORMATION HAS BEEN PROVIDED BY DOMINION SURVEYORS. KIMLEY-HORN AND ASSOCIATES, INC. IS NOT RESPONSIBLE FOR ITS ACCURACY.
- 4. ALL WORK SHALL COMPLY WITH THE CITY OF ALEXANDRIA CONSTRUCTION SPECIFICATIONS.





SCALE: 1" = 20'

DETAILED DEMOLITION PLAN ENLARGEMENT SCALE: 1" = 20'

	DESIGN ENGINEER AND LANDSCAPE ARCHITECT FIRM NAME: KIMLEY-HORN AND ASSOCIATES, INC.	ADDRESS: 11400 COMMERCE PARK DRIVE, SUITE 400	RESTON, VIRGINIA 20191	PHONE NO: 703-674-1300 FAX NO: 703-674-1350	PROJ. MANAGER: KEVIN VAN HISE	EMAIL : KEVIN VANHISE@KIMI EY-HORN COM		SCALE: 1" = 20' (AT 24x36) DATE: 04/04/2014 DRAWN BY: KTB	Kimlev-Horn	and Associates, Inc.
SEAL:	The Sold State	Lic. No. 051017	2004/04/2014 E	ADAT TANOZET		OWNER	ULLY UF ALEXANDRIA 301 KING STREET AI FXANDRIA VA 22314	DEVELOPER ALEXANDRIA CITY	PUBLIC SCHOOLS CONTACT	ANDREA FENIAK, AIA (703) 461-4168
REVISION / APPROVED BY	NO. DESCRIPTION DATE REV. APPROVED DATE									
IOUHOS SMADA NHOL		FARKING LOI				DDEI IMINIADY SITE DI ANI		CITY OF ALEXANDRIA, VIRGINIA	SHEET NAME:	DEMOLITION PLAN
APH SPECIA DEPAR DEPAR SERVIC SITE P	PROV IL USE IMENT DIRE MENT ES LAN NO DIRE	/ E D PERM OF PL CTOR DF TR DF TR) ANNI ANSF	D ING 8 PORTA	x Z		ING D/ & EN DA	ATE IVIRON TE	•••••	TAL
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PROPOSED CONCRETE SIDEWALK PER ALEXANDRIA STANDARD CSSW-1

PROPOSED PERVIOUS PAVEMENT FOR PARKING SPACE

PROPOSED PERVIOUS PAVEMENT FOR SIDEWALK

PROPOSED ASPHALT SIDEWALK AND TRAIL CONNECTION

NUMBER OF ADDITIONAL PARKING SPACES

PROJECT BOUNDARIES

LIMIT OF DISTURBANCE

ВМ	BENCHMARK
	CLEAN OUT
CONC	CONCRETE
DB	DEED BOOK
کې ۶۲۵	FIRE HYDRANT
¢	LIGHT POLE
N/F	NOW OR FORMERLY
OHW	OVERHEAD WIRE
OP	OPEN PORCH
PG	PAGE
EP	EDGE OF PAVEMENT
S	SANITARY MANHOLE
_ 	SIGN
STP	STOOP
D	STORM SEWER MANHOLE
പ	UTILITY POLE
	WATER METER
X	WATER VALVE

PARKING TABULATIONS

EXISTING NUMBER OF PARKING SPACES	118
PROPOSED NUMBER OF PARKING SPACES TO BE ADDED	28
TOTAL NUMBER OF PARKING SPACES	146

NOTE: EXISTING PARKING COUNT DOES NOT INCLUDE THE (1) PARKING SPACE SCHEDULED TO BE REMOVED ON THE CHAMBLISS PARK PROPERTY

NOTES:

- 1. CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL REQUIRED PLAN APPROVALS AND ALL CONSTRUCTION PERMITS HAVE BEEN RECIEVED.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS. PERMITS SHALL BE MAINTAINED ON SITE DURING CONSTRUCTION.
- 3. EXISTING TOPOGRAPHIC INFORMATION HAS BEEN PROVIDED BY DOMINION SURVEYORS. KIMLEY-HORN AND ASSOCIATES, INC. IS NOT RESPONSIBLE FOR ITS ACCURACY.
- 4. ALL WORK SHALL COMPLY WITH THE CITY OF ALEXANDRIA CONSTRUCTION SPECIFICATIONS.
- 5. ALL CURB SHALL BE 6" COPING CURB PER ALEXANDRIA STANDARD DETAIL CSCG-1.
- 6. ALL SPOT ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD ADJUST AS NECESSARY TO ENSURE POSITIVE DRAINAGE AND TO TIE SMOOTHLY BACK INTO EXISTING.
- 7. BASED UPON THE PHASING OF CONSTRUCTION CHOSEN BY THE CONTRACTOR, THE CONTRACTOR SHALL ENSURE THAT SIGNAGE IS INSTALLED TO DIRECT PEDESTRIANS AWAY FROM SIDEWALK UNDER CONSTRUCTION. AT LEAST ONE ACCESSIBLE SIDEWALK PATH SHALL BE PROVIDED AT ALL TIMES.

Z	
4°41'00" W	TO WILET RÖAD
2 359.45	359.A5
CONNEC	
PROPOSED	ASPHALT SIDEWALK
PRO ARE ZONE: POS	#2 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
ZONE: RB N: 6,989,7	
ADD FO	URTEEN (14)
PARKING	S SPACES
	PROJECT
	AREA #1-
(DB	
624, PG 500)	CURB INLET TOP = 236.45 INV OUT = 232.52 TOP
	6 POWER (DB 65.
	8, PG 57)
	N: 6,989,310.68 E: 11,874,052.72 TO'SAN ZONE: RB
	BENCHMARK #2 TOP OF MAN HOLE ELEVATION = 232.36 BM



ВМ	BENCHMARK
٢	CLEAN OUT
CONC	CONCRETE
DB	DEED BOOK
کې مېر	FIRE HYDRANT
¢	LIGHT POLE
N/F	NOW OR FORMERLY
OHW	OVERHEAD WIRE
OP	OPEN PORCH
PG	PAGE
EP	EDGE OF PAVEMENT
S	SANITARY MANHOLE
_ 	SIGN
STP	STOOP
D	STORM SEWER MANHOLE
പ	UTILITY POLE
	WATER METER
X	WATER VALVE

OPEN SPACE TABULATIONS

PROJECT AREA	TOTAL AREA	EXISTING OPEN SPACE	PROPOSED OPEN SPACE
AREA # 1	7.95 AC	3.65 AC	3.54 AC
AREA # 1 REDUCTION	.11 AC		
AREA # 2	.037 AC	.034 AC	.036 AC
AREA # 2 INCREASE	.002 AC		

NOTES:

- 1. OPEN SPACE BASED ON THE CITY OF ALEXANDRIA ZONING CODE SECTION 2-180.
- 2. A REDUCTION IN OPEN SPACE IN AREA #1 OF .11 ACRES IS DUE TO THE PROPOSED PARKING SPACES
- AN INCREASE IN OPEN SPACE IN AREA #2 OF .002 ACRES IS DUE TO THE REMOVAL OF EXISTING PAVED PARKING AREAS ON CHAMBLISS PARK.

PROPOSED CONCRETE SIDEWALK PER ALEXANDRIA STANDARD CSSW–1

PROPOSED PERVIOUS PAVEMENT FOR PARKING SPACE

PROPOSED PERVIOUS PAVEMENT FOR SIDEWALK

PROPOSED ASPHALT SIDEWALK AND TRAIL CONNECTION

NUMBER OF ADDITIONAL PARKING SPACES

BM	BENCHMARK
۲	CLEAN OUT
CONC	CONCRETE
DB	DEED BOOK
Уу Уу Уу	FIRE HYDRANT
¢	LIGHT POLE
N/F	NOW OR FORMERLY
OHW	OVERHEAD WIRE
OP	OPEN PORCH
PG	PAGE
EP	EDGE OF PAVEMENT
S	SANITARY MANHOLE
	SIGN
STP	STOOP
D	STORM SEWER MANHOLE
ပ်	UTILITY POLE
\bigcirc	WATER METER
X₹	WATER VALVE

—— LOD ——

PROPOSED CONCRETE SIDEWALK PER ALEXANDRIA STANDARD CSSW-1

PROPOSED PERVIOUS PAVEMENT FOR PARKING SPACE

PROPOSED PERVIOUS PAVEMENT FOR SIDEWALK

NUMBER OF ADDITIONAL PARKING SPACES TREE REMOVAL

PROJECT BOUNDARIES

LIMIT OF DISTURBANCE

GRADING KEYNOTE EG: EXISTING GRADE TC: TOP OF CURB FL: FLOW LINE ME: MATCH EXISTING GRADE PV: PAVEMENT SW: SIDEWALK

ВМ	BENCHMARK
٢	CLEAN OUT
CONC	CONCRETE
DB	DEED BOOK
¢γ°	FIRE HYDRANT
¢	LIGHT POLE
N/F	NOW OR FORMERLY
OHW	OVERHEAD WIRE
OP	OPEN PORCH
PG	PAGE
EP	EDGE OF PAVEMENT
S	SANITARY MANHOLE
o	SIGN
STP	STOOP
D	STORM SEWER MANHOLE
ပ်	UTILITY POLE
	WATER METER
₹X	WATER VALVE

- 1. CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL REQUIRED PLAN APPROVALS AND ALL CONSTRUCTION PERMITS HAVE BEEN RECEIVED.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS. PERMITS SHALL BE MAINTAINED ON SITE DURING CONSTRUCTION.
- 3. EXISTING TOPOGRAPHIC INFORMATION HAS BEEN PROVIDED BY DOMINION SURVEYORS. KIMLEY-HORN AND ASSOCIATES, INC. IS NOT RESPONSIBLE FOR ITS ACCURACY.
- 4. ALL WORK SHALL COMPLY WITH THE CITY OF ALEXANDRIA CONSTRUCTION SPECIFICATIONS.
- 5. ALL CURB SHALL BE 6" COPING CURB PER ALEXANDRIA STANDARD DETAIL CSCG-1.
- 6. ALL SPOT ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD ADJUST AS NECESSARY TO ENSURE POSITIVE DRAINAGE AND TO TIE SMOOTHLY BACK INTO EXISTING.

	UESIGN ENGINEEK AND LANDSCAPE AKCHITECT FIRM NAME: KIMLEY-HORN AND ASSOCIATES, INC.	ADDRESS: 11400 COMMERCE PARK DRIVE, SUITE 400	RESTON, VIRGINIA 20191	PHONE NO: 703-674-1300 FAX NO: 703-674-1350	PROJ. MANAGER: KEVIN VAN HISE	EMAII · KEVIN VANHISE@KIMI EY-HORN COM		SCALE: 1" = 20' (AT 24x36) DATE: 04/04/2014 DRAWN BY: KTB	Kimlev-Horn	and Associates, Inc.
SEAL:	MAN Bolly - 2	Lic. No. 051017	20 CA/04/2014 ES	ADAT TRADE		OWNER CITY OF ALLYANDOLA	OLI T OF ALEXANDRIA 301 KING STREET ALEXANDRIA VA 22314	DEVELOPER ALEXANDRIA CITY	PUBLIC SCHOOLS CONTACT	ANDREA FENIAK, AIA (703) 461-4168
REVISION / APPROVED BY	0. DESCRIPTION DATE REV. APPROVED DATE									
JOHN ADAMS SCHOOL		LAKNING LOI						CITY OF ALEXANDRIA, VIRGINIA	SHEET NAME:	GRADING PLAN
APP SPECIAI DEPART DEPART SERVICE SITE PL	ROV MENT DIRE MENT S AN NO	/ED PERM OF PL CTOR DF TR DF TR) ANNI ANSF	D ING &	& Z ATIC 		ING D. & EN	ATE IVIRON ATE	NMEN	TAL
CHAIRMA DATE R INSTRUM SHEET	N, PLAN ECORD IENT NO NO:	INING (ED).		ED BO	оок Оок		D4	PAGE	NO.	

EROSION CONTROL LEGEND:

----- TP -----LOD -----

TREE PROTECTION LIMIT OF DISTURBANCE INLET PROTECTION

PERMANENT SEEDING

NOTES:

- CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL REQUIRED PLAN APPROVALS AND ALL CONSTRUCTION PERMITS HAVE BEEN RECEIVED.
- 2. CONTRACTOR SHALL MAINTAIN ACCESS TO CHAMBLISS PARK AT ALL TIMES DURING CONSTRUCTION.
- 3. CONTRACTOR SHALL MAINTAIN FULL ACCESS TO EXISTING DRIVE AISLES AND PARKING LOTS AT ALL TIMES DURING CONSTRUCTION.
- 4. CONTRACTOR SHALL RESTORE/REPAIR DAMAGED AREAS OUTSIDE OF LIMITS OF DISTURBANCE TO EXISTING CONDITIONS AFTER CONSTRUCTION IS COMPLETED.
- 5. SEE SHE

<u>SEQUENCE OF CONSTRUCTION - PHASE 1:</u>

- SCHEDULE A PRE-CONSTRUCTION CONFERENCE ONE (1) WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY.
- 2. CONTRACTOR IS TO OBTAIN ALL APPLICABLE PERMITS PRIOR TO COMMENCEMENT OF LAND DISTURBING ACTIVITIES. COPIES OF OBTAINED PERMITS ARE TO BE FILED WITH THE CITY OF ALEXANDRIA.
- 3. SECURE THE SITE WITH TEMPORARY SECURITY FENCING
- 4. INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS AS SHOWN ON THIS PLAN.
- 5. ALL VEGETATION PRESERVATION AND PROTECTION METHODS SHALL BE APPROVED/VERIFIED IN THE FIELD BY THE CITY ARBORIST PRIOR TO COMMENCEMENT OF LAND DISTURBING ACTIVITY.
- 6. INSTALL INLET PROTECTION AT EXISTING STORM DRAIN INLETS AS NECESSARY AND AS SHOWN ON THIS PLAN.
- 7. INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL PRACTICES AS NECESSARY AND AS DIRECTED BY THE EROSION AND SEDIMENT CONTROL INSPECTOR.
- 8. ANY DISTURBED AREAS WHICH WILL REMAIN DORMANT FOR 7 DAYS SHALL BE TEMPORARILY SEEDED.
- 9. WITH INSPECTOR'S APPROVAL, CONTINUE TO PHASE 2.

6,989,783.97-/ 1,874,011.81 N: 6,989,310.68¬ E: 11,874,052.72 BENCHMARK #2 TOP OF MAN HOLE ELEVATION = 232.36

EROSION CONTROL LEGEND:

----- TP -----LOD -----

TREE PROTECTION LIMIT OF DISTURBANCE

INLET PROTECTION

PERMANENT SEEDING

NOTES:

- 1. CONTRACTOR SHALL MAINTAIN ACCESS TO CHAMBLISS PARK AT ALL TIMES DURING CONSTRUCTION.
- 2. CONTRACTOR SHALL MAINTAIN FULL ACCESS TO EXISTING DRIVE AISLES AND PARKING LOTS AT ALL TIMES DURING CONSTRUCTION.
- 3. CONTRACTOR SHALL RESTORE/REPAIR DAMAGED AREAS OUTSIDE OF LIMITS OF DISTURBANCE TO EXISTING CONDITIONS AFTER CONSTRUCTION IS COMPLETED.
- CONTRACTOR SHALL REMOVE ALL EXCESS DIRT INCLUDING TOPSOIL FROM SITE AND DISPOSE OF IT AN AN APPROPRIATE DISPOSAL FACILITY. CONTRACTOR SHALL TEST EXCAVATION MATERIAL TO DETERMINE THE METHOD OF DISPOSAL.

<u>SEQUENCE OF CONSTRUCTION - PHASE 2:</u>

- 1. INSPECT AND MAINTAIN/REPLACE PHASE 1 SEDIMENT CONTROLS AS NECESSARY.
- 2. COMPLETE DEMOLITION ACCORDING TO THESE PLANS.
- 3. INSTALL PROPOSED PERMEABLE PAVEMENT, CURBS, AND SIDEWALKS AS SHOWN ON THESE PLANS.
- 4. AS CONTRIBUTORY DRAINAGE AREAS ARE STABILIZED AND WITH THE PERMISSION OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, REMOVE INDIVIDUAL EROSION AND SEDIMENT CONTROL MEASURES.
- 5. REMOVE TEMPORARY SECURITY FENCE.
- 6. UPON COMPLETION OF DEMOLITION, CONSTRUCTION AND LAND DISUTURBING ACTIVITIES PROVIDE PERMANENT STABILIZATION ACCORDING TO APPROVED METHODS AND REMOVE ALL REMAINING EROSION AND SEDIMENT CONTROL MEASURES WITH APPROVAL OF THE INSPECTOR.

SEEDING SCHEDULE

TEMPORARY				
Seeding Rates	Seeding Dates	Lime and Fertilizer	Seeding procedure	
50/50 Mix Annual Ryegrass (<u>Lolium multi-florum</u>) & Cereal (Winter) Rye (<u>Secale cereale</u>) - 50-100 LBS/Ac Annual Ryegrass (<u>Lolium multi-florum</u>) - 60-100 LBS/Ac	Sept. 1 – Feb. 15 Feb. 16 – Apr. 30	Contractor shall submit topsoil sample for analysis by an accredited soil lab and provide lime and/or fertilizer as recommended.	1. Seeding in fall for winter cover and during hot and dry summer months shall be mulched according to MULCHING, Std. & Spec. 3.35, except that hydromulches (fiber mulches) will not be considered adequate. Straw mulch should be used during these periods.	
German Millet (<u>Setaria italica</u>) — 50 LBS/Ac	May 1 — Aug. 31		2. Temporary seeding made under favorable soil and site conditions during optimum spring and fall seeding dates may not require mulch.	
PERMANENT SEEDING				
Seeding Rates		Lime and Fertilizer	Seeding Procedure	
-50/50 Mix Tall Fescue and Kentucky 31 Bluegrass -Seasonal Nurse Crop*	– 110 LBS/Ac – 20 LBS/Ac	Contractor shall submit topsoil sample for analysis by an accredited soil lab and provide lime and/or fertilizer as recommended.	Certified seed will be used for all permanent seeding. Certified seed must be inspected by the Virginia Crop Improvement Association or the Certifying agency in other states. Apply seed uniformly with a broadcast seeder, drill, culti-packer seeder, or hydroseeder on a firm, friable seedbed. Seeding depth should be 1/4 to 1/2 inch	1-1/2 to 2 t or 1500 LBS woo or 43,560 SF Ju or 4 to 6 tons 0 per acre
* Use seasonal nurse crop in accordance with seeding below: February, March through April May 1st through August September, October through November 15th November 16th through Japuary	g dates as stated Annual Rye Foxtail Millet Annual Rye Winter Rye			Mulch immedia Apply at a un the seeded ar
** May through October, used hulled seed. All other unhulled seed.	seeding periods, use		Iopsoil Import of topsoil is required for semi pe 1. Existing soil contains less than clay). 2. Existing soil porosity prevents 3. Existing soil contains concentro Composition of topsoil 1. 35% minimum of fine grained r 2. 1.5% minimum of organic mate Topsoil shall be placed at four (4) inch	rmanent, permar 25% fine graine adequate root pe ations of toxic e naterials rials depth minimum
NO-MOW GRASS SEEDING				
Seeding Rates		Lime and Fertilizer	Seeding Procedure	
Combat Extreme Transition Zone Seed Mix OR 33/33/33 Mix of Jamboree Turftype Fescue Grass Rhizing Star Turftype Fescue Grass Chanelle Star Turftype Fescue Grass	8-10 lbs/1000 SF 8-10 lbs/1000 SF	Contractor shall submit topsoil sample for analysis by accredited soil lab and provide lime, nitrogen and/or fertilizer as recommended.	Certified seed will be used for all permanent seeding. Certified seed must be inspected by the Virginia Crop Improvement Association or the Certifying agency in other states. Apply seed uniformly with a broadcast seeder, drill, culti-packer seeder, or bydroseeder on a firm fripple seedbed	1-1/2 to 2 t or 1500 LBS woo or 43,560 SF Ju or 4 to 6 tons t per acre
* Seeding should occur when soil temperatures are co degrees Fahrenheit in the spring, up until 6 weeks be	onsistently above 55 fore the first frost.		Seeding depth should be 1/4 to 1/2 inch	Mulch immedia Apply at a ur the seeded ar

TEMPORARY AND PERMANENT SEEDING SCHEDULE

3

Maintenance Repair, replace, and reseed as necessary to firmly establish healthy grass. Mulching Maintenance tons straw per acre Irrigate, repair, ood fiber per acre replace, and reseed as necessary to firmly ute mat per acre establish healthy grass. Corn Stalks or Wood chips ately after seeding is complete. iform rate completely covering area at a density of 50%-70% nent, and no-mow seeding if: ed materials (silt and penetration elements. Mulching Maintenance tons straw per acre Irrigate, repair, replace, and reseed as necessary ood fiber per acre to firmly establish healthy grass. ute mat per acre Only mow grass to a height of 2-1/2"-3"Corn Stalks or Wood chips ately after seeding is complete. niform rate completely covering area at a density of 50%-70%

PROJECT DESCRIPTION ALEXANDRIA CITY PUBLIC SCHOOLS IS SEEKING APPROVAL OF A DEVELOPMENT SITE PLAN IN ORDER TO CONSTRUCT 28 NEW PARKING SPACES WITHIN THE EXISTING PARKING LOT AND DRIVE AISLES AT JOHN ADAMS ELEMENTARY SCHOOL FOR A TOTAL OF 146 SPACES. A PORTION (1 SPACE) OF THE EXISTING NORTHWESTERN PARKING LOT EXTENDS INTO CHAMBLISS PARK. THIS SPACE IS BEING REMOVED. THE ADDITIONAL PARKING SPACES WOULD BE LOCATED IN THREE LOCATIONS ON SITE: 14 TANDEM SPACES TO THE NORTHWEST, 10 SPACES TO THE SOUTHWEST, AND 4 SPACES AT THE SOUTHEAST BUS LOOP / ENTRANCE. THE SCHOOL IS CURRENTLY ZONED AS R-12 WHILE CHAMBLISS PARK IS

ZONED POS. EXISTING SITE CONDITIONS THE EXISTING AREA IS PRIMARILY GRASSED AREAS ADJACENT TO ASPHALT PARKING AREAS. THE EXISTING SLOPES ARE GENERALLY BETWEEN 2.0% AND 5.0%. THE EXISTING PARKING AREAS DRAIN TO CURB INLETS ONSITE AND ULTIMATELY LEAVES THE PROPERTY AT THE SOUTHERN PROPERTY LINE. THE MAJORITY OF THE OVERALL SITE IS DEVELOPED SCHOOL BUILDINGS, ROADS, PARKING LOTS, AND PLAY AREAS.

ADJACENT PROPERTIES THIS PROJECT IS LOCATED ON THE EXISTING JOHN ADAMS ELEMENTARY SCHOOL CAMPUS. THE SURROUNDING AREA IS RESIDENTIAL. SEE SHEET C-040 FOR LOCATIONS AND NAMES OF ADJACENT PROPERTY OWNERS.

<u>OFF-SITE AREAS</u> NO OFF-SITE AREAS ARE PROPOSED WITHIN THESE PLANS.

<u>SOILS</u> A GEOTECHNICAL EXPLORATION WAS PREFORMED ON THE SITE BY GEO-TECHNOLOGY ASSOCIATES, INC. THE EXISTING SOIL ON SITE IS A MIXTURE OF LOAM AND SANDY LOAMS.

<u>CRITICAL EROSION AREAS</u> NO CRITICAL AREAS ARE LOCATED ON THIS SITE.

EROSION AND SEDIMENT CONTROL MEASURES 1. INLET PROTECTION WILL BE USED AT ALL EXISTING AND PROPOSED STORM SEWER INLETS TO REDUCE THE AMOUNT OF SEDIMENT CARRIED INTO THE STORM SEWER SYSTEM. 2. SILT FENCE WILL BE USED ALONG THE DOWNHILL SIDES OF

- THE PROJECT AREA.
- 3. ALL DISTURBED AREAS WILL BE STABILIZED WITH PERMANENT SEEDING.
- 4. TEMPORARY STABILIZATION WILL BE USED IN ACCORDANCE WITH THE SEEDING CHART SHOWN ON SHEET THIS SHEET. 5. SOIL STOCK PILES SHALL BE ENCIRCLED WITH SILT FENCE AND TEMPORARY SEEDING WILL BE PROVIDED IF NECESSARY.

CONSTRUCTION SCHEDULE A SEQUENCE OF CONSTRUCTION IS PROVIDED ON SHEETS C-310 TO C-320 WITH GENERAL NOTES.

MAINTENANCE SCHEDULE EROSION CONTROL MEASURES WILL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH)

PERMANENT STABILIZATION ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE STABILIZED IMMEDIATELY FOLLOWING FINISH GRADING. AREAS SHALL BE PERMANENTLY STABILIZED BY PAVEMENT OR PERMANENT SEEDING. SEE SEEDING SCHEDULE ON THIS SHEET. SEEDING SHALL BE DONE ACCORDING TO STANDARD AND SPECIFICATION 3.32, PERMANENT SEEDING, OF THE VESCH AND MULCH (STRAW OR FIBER) WILL BE APPLIED.

CONTRACTOR SHALL APPLY TOPSOIL AS REQUIRED BY THE PROJECT SPECIFICATIONS PRIOR TO PERMANENT SEEDING.

THE CLOSE OF EACH WORKDAY AND AFTER EACH SIGNIFICANT RAIN STORM. MAKE NECESSARY REPAIRS OR CLEAN UP IMMEDIATELY TO MAINTAIN THE EFFECTIVENESS OF THE MEASURES. THE SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.

STORAGE PROVIDED IN THE PERMEABLE PAVEMENT SUBBASE. THE POST-DEVELOPMENT PEAK RUNOFF RATES WILL COMPLY WITH THE ENERGY BALANCE CALCULATIONS DESCRIBED IN THE CALCULATIONS FOR THE PROJECT AND OVERALL CAMPUS CAN BE FOUND ON SHEETS C-400 - C-510.

NEW VIRGINIA STORMWATER REGULATIONS. ADDITIONAL

MAINTENANCE INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES AT

STORMWATER RUNOFF CONSIDERATIONS THE PEAK RUNOFF WILL BE CONTROLLED BY ADDITIONAL

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DATE

DATE

DIRECTOR

CHAIRMAN, PLANNING COMMISSION DATE RECORDED

DEED BOOK NO. PAGE NO. INSTRUMENT NO.

SHEET NO:

C-330

PROPOSED CONCRETE SIDEWALK PER ALEXANDRIA STANDARD CSSW-1

PROPOSED PERVIOUS PAVEMENT FOR PARKING SPACE

PROPOSED PERVIOUS PAVEMENT FOR SIDEWALK

NUMBER OF ADDITIONAL PARKING SPACES TREE REMOVAL

----- PROJECT DRAINAGE AREA

Existing Conditions (SF)						
Drainage Area	Pervious	Impervious	Total Area			
	Area (SF)	Area (SF)	(SF)			
DA-1	3200	1600	4800			
DA-2	2125	750	2875			
DA-3	1425	1575	3000			
Project Area	6750	3925	10675			

Existing Conditions (ac)								
	Pervious	Impervious	Total Area					
ramage Area	Area (ac)	Area (ac)	(ac)					
DA-1	0.073	0.037	0.110					
DA-2	0.049	0.017	0.066					
DA-3	0.033	0.036	0.069					
Project Area	0.155	0.090	0.245					

Proposed Conditions (SF)										
Drainage Area	Pervious Area (SF)	Impervious Area (SF)	Total Area (SF)	Permeable Pavers Area (SF)	Design Infiltration Rate (in/hr)					
DA-1	800	4000	4800	2365	1.0					
DA-2	275	2600	2875	1675	4.5					
DA-3	500	2500	3000	850	1.2					
Proiect Area	1575	9100	10675	4890						

	Proposed Conditions (ac)									
Drainage Area	Design Infiltration Rate (in/hr)									
DA-1	0.018	0.092	0.110	0.054	1.0					
DA-2	0.006	0.060	0.066	0.038	4.5					
DA-3	0.011	0.057	0.069	0.020	1.2					
Project Area	0.036	0.209	0.245	0.112						

NOTES:

- 1. CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL REQUIRED PLAN APPROVALS AND ALL CONSTRUCTION PERMITS HAVE BEEN RECIEVED.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS. PERMITS SHALL BE MAINTAINED ON SITE DURING CONSTRUCTION.
- 3. EXISTING TOPOGRAPHIC INFORMATION HAS BEEN PROVIDED BY DOMINION SURVEYORS. KIMLEY-HORN AND ASSOCIATES, INC. IS NOT RESPONSIBLE FOR ITS ACCURACY.
- 4. ALL WORK SHALL COMPLY WITH THE CITY OF ALEXANDRIA CONSTRUCTION SPECIFICATIONS.

PARKING LOT IN	MPROVEM	ENTS DR	AINAGE ARE	A SUMMAR	Y	
Virginia Runoff Reduction M Site Data	ethod Works	sheet Rev	ised 03/25/201	1 - Redevelop	ment	
Project Name: John Adams Elem	entary - Parking	Addition				
Date: 02/21/2014						
	data input cells calculation cells					
	constant values		_			
Constants	Land Cover	Informatio	'n			
	42	- 1				
Target Rainfall Event (inches)	1.00					
Target Phosphorus Target Load (lb/acre/yr)	0.41				[L] <u>1.00</u>	
Pre-Development Land Cover (acres)	0.30	l				
Fre-Development Land Cover (acres)	A soils	B Soils	C Soils	D Soils	Totals	
protected forest/open space (acres) undisturbed,	nd 0.00	0.00	0.00	0.00	0.00	
yards or other turf to be mowed/managed	0.00	0.00	0.17	0.00	0.17	
Impervious Cover (acres)	0.00	0.00	0.09	Total	0.09 0.26	
Post-Development Land Cover (acres)	A	D.Q. II.			--	
Forest/Open Space (acres) undisturbed,		B Solis	C Solis	D Solis		
Managed Turf (acres) – disturbed, graded for	nd 0.00	0.00	0.00	0.00	0.00	
yards or other turf to be mowed/managed Impervious Cover (acres)	0.00	0.00	0.05	0.00	0.05	
				Total	0.26	
Rv Coefficients	A soils	B Soils	C Soils	D Soils		
Forest/Open Space Managed Turf	0.02	0.03	0.04	0.05		
Impervious Cover	0.95	0.95	0.95	0.95		
Land Cover Summary Pre-Development			Land Cover Summa Post-Development	ry		
Forest/Open Space Cover (acres) Weighted Rv(forest)	0.00		Forest/Open Space C Weighted Rv(forest)	cover (acres)	0.00	
% Forest Managed Turf Cover (acres)	0% 0.17		% Forest Managed Turf Cover (a	acres)	0% 0.05	
Weighted Rv(turf) % Managed Turf	0.22 65%		Weighted Rv(turf) % Managed Turf		0.22 18%	
Impervious Cover (acres) Rv(impervious)	0.09		Impervious Cover (acr Rv(impervious)	es)	0.21 0.95	
% Impervious Total Site Area (acres)	35% 0.26		% Impervious Total Site Area (acr	es)	82% 0.26	
Site Rv	0.48		Site Rv		0.82	
Pre-Development Treatment Volume (acre-ft) Pre-Development Treatment Volume (cubic	0.0102		Post-Development Tre Post-Development Tre	eatment Volume (acre-featment Volume (cubic	(t) 0.0174	
feet) Pre-Development Load (TP) (lb/yr)	443 0.28		feet) Post-Development Lo	ad (TP) (lb/yr)	758 0.48	
		Maximum % F	Reduction Required Below	Pre-Development Load	10%	
			Total Load (TP) Red	uction Required (Ib/)	yr) 0.23	
		_				
Pre-Development Load (TN) (lb/yr)	1.99		Post-Development Lo	ad (TN) (lb/yr)	3.40	
						Note
						COMBINED TO DA-A
PLANNED BMP	MEASURE	S - PARK	ING LOT IMP	ROVEMENT	S	CALCULATIONS ON T
Drainage Area A Land Cover (acres)		0.0	D Solla	Totala		
Forest/Open Space (acres)		C 3011S				
space or reforested land	0.00 0.0	00 0.	.00 0.00	0.00		
graded for yards or other turf to be	0.00		04	0.01		
Impervious Cover (acres)	0.00 0.0 0.00 0.0	00000. 00000.	04 0.00 21 0.00	0.04		
			Total	0.25		
Apply Runoff Reduction Pra	ctices to Red	uce Treatn	nent Volume & P	ost-Developm	ent Load in Dr	ainage Area A

Credit	Unit	Description of Credit	Credit	Credit Area (acres)	Volume from Upstream RR Practice (cf)	Runoff Reduction (cf)	Remaining Runoff Volume (cf)	Phosphorus Efficiency (%)	Phosphorus Load from Upstream RR Practices (Ibs)	Untreated Phosphorus Load to Practice (Ibs.)	Phosphorus Removed By Practice (Ibs.)	Remaining Phosphorus Load (Ibs.)	Downstream Treatment to be Employed
3. Permeable Pavement													
3.a. Permeable Pavement #1 (Spec #7)	acres of permeable pavement + acres of "external" (upgradient) impervious pavement	45% runoff volume reduction	0.45	0.25	0	380	465	25	0.00	0.53	0.31	0.22	
3.b. Permeable Pavement #2 (Spec #7)	acres of permeable pavement	75% runoff volume reduction	0.75	0.00	0	0	0	25	0.00	0.00	0.00	0.00	

TOTAL PHOSPHOROUS REMOVAL REQUIRED ON SITE (lb/yr) 0.23 TOTAL RUNOFF REDUCTION IN D.A. A (cf) 380 PHOSPHORUS REMOVAL FROM RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr) 0.31

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

PARKING LOT COMPLIANCE RESULTS

Site Results Phosphorous

TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED (LB/YEAR)	0.23
RUNGEE REDUCTION (cf)	380
PHOSPHOROUS LOAD REDUCTION ACHIEVED (LB/YR)	0.31
ADJUSTED POST-DEVELOPMENT PHOSPHOROUS LOAD (TP) (Ib/yr)	0.16
]
REMAINING PHOSPHOROUS LOAD REDUCTION (LB/YR) NEEDED	CONGRATULATION

Nitrogen (for information purposes)

RUNOFF REDUCTION (cf)	380
NITROGEN LOAD REDUCTION ACHIEVED (LB/YR)	2.23
ADJUSTED POST-DEVELOPMENT NITROGEN LOAD (TP) (lb/yr)	1.18
ADJUSTED POST-DEVELOPMENT NITROGEN LOAD (TP) (lb/yr)	1.

STORMWATER NARRATIVE

THIS PROJECT IS DESIGNED TO COMPLY WITH THE CURRENT REGULATIONS FROM THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ). AS OF THIS PLAN DATE, THE CITY OF ALEXANDRIA HAS NOT PUBLISHED ANY ADDENDUMS TO THESE STATE REGULATIONS. BY COMPLYING WITH THE REGULATIONS, THIS PROJECT WILL COMPLY WITH ALL WATER QUALITY AND QUANTITY REGULATIONS. THE FINAL VERSION OF THESE PLANS MAY NEED TO BE REVISED TO COMPLY WITH THE CURRENT CITY OF ALEXANDRIA STORMWATER REGULATIONS AFTER THE JULY 1, 2014 ADOPTION.

COMPLIANCE WITH ARTICLE XIII OF THE CITY OF ALEXANDRIA ZONING ORDINANCE IS ASSUMED BY MEETING THE NEW STATEWIDE REGULATIONS.

CITY OF ALEXANDRIA STANDARD WATER QUALITY WORKSHEETS A OR B AND C ARE NOT PROVIDED, INSTEAD ARE SHOWN THROUGH THE VIRGINIA RUNOFF REDUCTION SPREADSHEET CALCULATIONS PROVIDED BY DEQ.

CITY STANDARD WATER QUALITY BLOCKS SHOWN ON THIS PAGE ARE FOR INFORMATION ONLY. ALL WATER QUALITY CALCULATIONS SHOULD BE TAKEN FROM THE RUNOFF REDUCTION CALCULATIONS ON SHEETS C-400 - C-430

DA-1, DA-2, AND DA-3 HAVE BEEN A FOR CALCULATION PURPOSES FOR CTION IN THE RUNOFF REDUCTION THIS PAGE.

Nitrogen Efficiency (%)	Nitrogen Load from Upstream RR Practices (Ibs)	Untreated Nitrogen Load to Practice (Ibs.)	Nitrogen Removed By Practice (Ibs.)	Remaining Nitrogen Load (Ibs.)
3. Permeable Pa	avement			
25 25	0.00	3.79 0.00	2.23	1.56 0.00

TOTAL RUNOFF REDUCTION IN D.A. A (cf) 380 NITROGEN REMOVAL FROM RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr) 2.23

NS!! YOU EXCEEDED THE TARGET REDUCTION BY 0.1 LB/YEAR!!

	DESIGN ENGINEEK AND LANDSCAPE AKCHITECT FIRM NAME: KIMLEY-HORN AND ASSOCIATES, INC.	ADDRESS: 11400 COMMERCE PARK DRIVE, SUITE 400	RESTON, VIRGINIA 20191	PHONE NO: 703-674-1300 FAX NO: 703-674-1350	PROJ. MANAGER: KEVIN VAN HISE	EMAIL: KEVIN.VANHISE@KIMLEY-HORN.COM		SCALE: N.T.S. (AT 24x36) DATE: 04/04/2014 DRAWN BY: KTB	Kimlev-Horn	and Associates, Inc.
SEAL:	The Self Self	Lic. No. 051017	20 Q4/04/2014	STONAL ENGL		OWNER CITY OF ALEXANDRIA 301 KING STREET	ALEXANDRIA, VA 22314	DEVELOPER ALEXANDRIA CITY	PUBLIC SCHOOLS CONTACT	ANDREA FENIAK, AIA (703) 461-4168
REVISION / APPROVED BY	NO. DESCRIPTION DATE REV. APPROVED DATE									
JOHN ADAMS SCHOOL						PRELIMINARY SITE PLAN		CITY OF ALEXANDRIA, VIRGINIA	SHEET NAME: BMP CALCULATIONS -	PARKING LOT IMPROVEMENTS
APP SPECIAI DEPART DEPART SERVICE	ROV MENT O DIREC MENT O	/ED PERMI DF PL CTOR DF TR) ANNI ANSF	D NG & PORTA	& Z \TIO	ONINC	G DA EN'	TE VIRO1		TAL

Kimley-Horn and Associates, Inc.

Project: John Adams Elementary - Parking Lot Improvements Project #: 110266001 LAND USE TYPE С Date: 4/4/2014 IMPERVIOUS 0.90 Locality: Loudoun MANAGED TURF 0.30 HSG: Type C Soils

FOREST/ OPEN SPACE 0.05 70 DRAINAGE AREA SUMMARY

DRAINAGE AREA	TOTAL AREA (AC.)	IMPERVIOUS AREA (AC.)	MANAGED TURF AREA (AC.)	FOREST/ OPEN SPACE AREA (AC.)	с	CN	TIME OF CONC. Tc (min)	TREATMEN VOLUME Tv (cu ft)
PRE	0.255	0.090	0.165	0.000	0.51	82.5	-	n/a
BMP 1	0.110	0.092	0.018	0.000	0.80	94.0	-	320
BMP 2	0.068	0.060	0.008	0.000	0.83	95.1	-	204
BMP 3	0.077	0.057	0.020	0.000	0.75	91.8	-	209
Untreated Areas	0.000	0.000	0.000	0.000	0.00	0.0	-	n/a
PRE TOTAL	0.255	0.090	0.165	0.000	0.51	82.5	5.0	-
POST TOTAL	0.255	0.209	0.046	0.000	0.79	93.6	5.0	-

CN

98

74

Project: John Adams Elementary - Parking Lot Improvements Rainfall Zone: Alexandria (City) Project #: 110266001 Date: 4/4/2014 Locality: Loudoun

SCS 24-h	ır R
Storm Event	Ρ
1 -year	
2 -year	
10 -year	
50 -year	
100 -vear	

BMP Summary: DA-1, DA-2, and DA-3

Runoff Curve Number (CN) Runoff Coefficient (c)

93.6 0.79 0.26 acres

<u>Routed to BMP #1 (DA-1)</u>

Drainage Area

Runoff Curve Number (CN) Runoff Coefficient (c) Drainage Area Runoff Reduction Credit

94.0 0.80 0.11 acres 45%

Routed to BMP #2 (DA-2)

Runoff Curve Number (CN) Runoff Coefficient (c) Drainage Area Runoff Reduction Credit

Routed to BMP #3 (DA-3)

Runoff Curve Number (CN) Runoff Coefficient (c) Drainage Area Runoff Reduction Credit

PERMEABLE PAVEMENT TYP. SECTION

N.T.S.

SCS Distribution: Type II

nfal	Depths	Rainfa	ll Intensity				
n)		i (in/hr)				
2.	57		4.60				
3.	11		5.30				
4.	78		7.00				
7.	04		8.70				
8.	24		9.10]			
	Storm E	evnt	Rainfall Depth P (in)	Runoff Depth Q (in)	Runoff Volume V (cu ft)	Unadjusted Peak Flow q (cfs)	Runoff Reduction R (cu ft)
	1	-year	2.57	5.72	1,766	0.93	330
	2	-year	3.11	7.27	2,246	1.07	330
	10	-year	4.78	12.16	3,757	1.41	330
	50	-year	7.04	18.86	5 <i>,</i> 827	1.76	330
	100	-year	8.24	22.43	6,931	1.84	330
	Storm Even		Rainfall Depth	Runoff Depth Q (in)	Runoff Volume V	Unadjusted Peak Flow	Runoff Reduction
-			P (in)	1.04	(cuft)	q (cfs)	R (cuft)
	1	-year	2.57	1.94	//5	0.41	144
	10	-year	3.11	2.46	983	0.47	144
	10	-year	4.78	4.09	1,030 3,521	0.62	144
	100	-year	7.04	752	2,551	0.77	144
L	100	-уеат	0.24	7.52	3,008	0.80	144
	Storm E	event	Rainfall Depth P (in)	Runoff Depth Q (in)	Runoff Volume V (cu ft)	Unadjusted Peak Flow q (cfs)	Runoff Reduction R (cu ft)
	1	-year	2.57	2.04	503	0.26	92
	2	-year	3.11	2.57	633	0.30	92
	10	-year	4.78	4.21	1,039	0.39	92
	50	-year	7.04	6.46	1,592	0.49	92
	100	-year	8.24	7.65	1,887	0.51	92
Storm E		Event	Rainfall Depth P (in)	Runoff Depth Q (in)	Runoff Volume V (cu ft)	Unadjusted Peak Flow g (cfs)	Runoff Reduction R (cu ft)
	1	-vear	2.57	1.74	489	0.27	94
	2	-vear	3.11	2.25	631	0.31	94
	10	-year	4.78	3.86	1,081	0.40	94
	50	-year	7.04	6.07	1,703	0.50	94

100 -year 8.24 7.26 2,036 0.52 94

10-year Storm

Project: John Adams Elementary - Parking Lot Improvements Rainfall Zone: Alexandria (City) Project #: 110266001 SCS Distribution: Type II Date: 4/4/2014

Flood Protection Compliance

Locality: Alexandria (City)

_____Q_post___<___Q_pre___ 1.29 < 0.91

FAIL **DETENTION REQ'D Channel Protection Compliance

Energy Balance Equation, 1-year Storm Improvement Factor 0.9

<u> Pre-Development - Summary</u> Runoff Curve Number (CN) Runoff Coefficient (c) Drainage Area

Post-Development - Summary Runoff Curve Number (CN)

Runoff Coefficient (c)

Drainage Area

82.5 0.51 0.255 acres

93.6

0.79

0.255 acres

		Pre	-Development	
		Rainfall	Runoff Donth	Runo
S	Storm Event	Depth		Volu
		P (in)	Q (III)	V (cu
	1 -year	2.57	1.08	99
	2 -year	3.11	1.50	1,38
	10 -year	4.78	2.93	2,71
	50 -year	7.04	5.01	4,64
	100 -year	8.24	6.14	5,69

Storm Event

1 -year

2 -year

10 -year

50 -year

100 -year

Post-Development											
		Unadj	usted Res	ults	A	Adjusted for Runoff Reduction Credit					
	Rainfall	Bunoff Donth	Runoff	Unadjusted	Adjusted	Adjusted	Adjusted	Adjusted	Adjusted		
Storm Event	Depth		Volume	Peak Flow	Volume A	Runoff	Curve	Runoff	Peak Flow		
	P (in)		V (cu ft)	q (cfs)	(cu ft)	Depth (in)	Number	Coefficient	q (cfs)		
1 -year	2.57	1.90	1,764	0.93	1,434	1.55	89.3	0.71	0.83		
2 -year	3.11	2.42	2,244	1.07	1,914	2.06	89.7	0.72	0.97		
10 -year	4.78	4.05	3,755	1.41	3,425	3.69	90.2	0.72	1.29		
50 -year	7.04	6.28	5,827	1.76	5,497	5.93	90.5	0.73	1.62		
100 -year	8.24	7.48	6,931	1.84	6,601	7.12	90.6	0.73	1.70		

NOTES:

- 1. REQUIRED DETENTION FOR CHANNEL PROTECTION AND FLOOD PROTECTION WILL BE PROVIDED IN THE PERMEABLE PAVEMENT SUBBASE. A TYPICAL DETAIL SHOWING DETENTION STORAGE IS SHOWN ON THIS PAGE.
- 2. DETENTION LAYER TO BE PROVIDED WITH FINAL DESIGN TO MEET VIRGINIA STORMWATER REGULATIONS EFFECTIVE JULY 1, 2014.
- 3. AN ADEQUATE STORM SEWER OUTFALL IS ASSUMED TO BE PROVIDED BY THE EXISTING ONSITE STORM NETWORK. THE PROPOSED IMPROVEMENTS WILL COMPLY WITH THE NEW STORMWATER REGULATIONS FOR CHANNEL PROTECTION AND FLOOD PROTECTION BY PROVIDING THE NECESSARY DETENTION FOR THE PARKING IMPROVEMENTS. THE STORMWATER DETENTION MEASURES WILL BE SIZED TO REDUCE THE POST DEVELOPMENT PEAK FLOWS TO MEET THE ENERGY BALANCE EQUATION OF THE NEW STORMWATER REGULATIONS.

Project Description			
<u>Project Description</u>			
Development or Re	development		
Drainage Area	Impervious	Pervious	Tot
Drainage Area	Impervious 5.637 ac	Pervious 2.309 ac	Tot a
Drainage Area Site Area On-Site Treated	Impervious 5.637 ac 0.209 ac	Pervious 2.309 ac 0.036 ac	Tot 7.946 0.245
Drainage Area Site Area On-Site Treated Off-Site Treated	Impervious 5.637 ac 0.209 ac 0.0 ac	Pervious 2.309 ac 0.036 ac 0.0 ac	Tot 7.946 0.245 0.0 a
Drainage Area Site Area On-Site Treated Off-Site Treated Total Treated	Impervious 5.637 ac 0.209 ac 0.0 ac 0.209 ac	Pervious 2.309 ac 0.036 ac 0.0 ac 0.036 ac	Tot 7.946 0.245 0.0 a 0.245
Drainage Area Site Area On-Site Treated Off-Site Treated Total Treated Any On-Site Disconnected by a Vegetated Buffer (25 ft)	Impervious 5.637 ac 0.209 ac 0.0 ac 0.209 ac 0.0 ac 0.209 ac	Pervious 2.309 ac 0.036 ac 0.0 ac 0.036 ac	Tot : 7.946 0.245 0.0 a 0.245

BMP Type Area treated by Impervious ar BMP (acres) treated by BM (acres) 0.245 ac Permeable Pvmt 0.209 ac

<u>Miscellaneous</u>

Total WQV treated: Detention on site:

Project discharges to which body of water? _____HOLMES RUN

83

SCS 24-	hr Rainfall Depths	Rainfall Intensity		
Event	P (in)	i (in/hr)		
1 -year	2.57	4.60		
2 -year	3.11	5.30		
0 -year	4.78	7.00		
0 -year	7.04	8.70		
0 -year	8.24	9.10		

ff ne ft)	Peak Flow q (cfs)	
	0.60	
9	0.69	
3	0.91	
1	1.14	
6	1.19	

rea IP	BMP efficiency (%)
	45%

$\left \right $						
INST SHE	CHAIF DATE	AP SPEC DEPA DEPA SERV SITE		REVISION / APPROVED BY	SEAL:	
RUM	rmai E R				A AO HILAN	
NC	N, F ECC					DESIGN ENGINEER AND LANDSCAPE ARCHITECT
NO):	PLAN DRDI	SE NT (DIREC IT (NO			ALL DAGY IN DAGY IN	FIRM NAME: KIMLEY-HORN AND ASSOCIATES, INC.
•	NING ED	PERM DF P CTOR DF TF 			Tie No 051017	ADDRESS: 11400 COMMERCE PARK DRIVE, SUITE 400
	СОММ	AIIT NG LANN RANSF			20004/04/2014 E	RESTON, VIRGINIA 20191
-4	ISSIOI	0 ING { PORT/			ADATE TRADA	PHONE NO: 703-674-1300 FAX NO: 703-674-1350
2	<u>N</u> -	& 2 ATI(PROJ. MANAGER: KEVIN VAN HISE
					OWNER	
J.	D	IING & E D			CITY OF ALEXANDRIA 301 KING STREET	EMAIL. KEVIN.VANHISE@NIMLET-HORN.COM
PA	ATE	DATE NVIR	CITY OF ALEXANDRIA. VIRGINIA		ALEXANDRIA, VA 22314 DEVELOPER	
GE		?ON			ALEXANDRIA CITY	SCALE: N.I.S. (AI 24X30) DAIE: 04/04/2014 DRAWN BY: KIB
NO.		IMEN ⁻	SHEET NAME: RUNOFF REDUCTION		PUBLIC SCHOOLS CONTACT	Kimley-Horn
		ΓAL	CALCULATIONS - PARKING LOT		ANDREA FENIAK, AIA (703) 461-4168	and Associates, Inc.

			DRAINAG	ΕA	REA DA-A	
Project:	John	Adams Eler	mentary Parking Add	liton	Date: <u>4/3/2014</u> Initials: <u>KTB</u>	Project:
Drainage Area:			DA-A			Drainage Area
Contributing Dra	inage A	rea Informa	ation:			Contributing D
Contributing Im	perviou	1s 4000	ft ² Incl. Perme	eable Area	Input Volue	Contributing
Contributing	Perviou	= IS	Pavement.	Area	input value	Contributir
5	Area	= 800	ft ²		Calculated Value	
Permeable P	avemer	nt 2365	ft ²			Permeable
А	(A _p	=			(A and a street)	
Runoff Coefficie	ent (Rv)	= 0.800	0.05 + 0.009*(1)		$d_p = \frac{\{(a_c \times K) + P - (I/2 \times I_f)\}}{V_r}$	Runoff Coeffic
Level	Design	= Level1		Where:	= The depth of the reservoir layer (ft.)	Lev
Treatment	t Volum	e 266.67	ft ³	đ	= The depth of month from the contributing drainage area (not including the	Treatme
Requir	red (Tv)	=			permeable paving surface) for the Treatment Volume (Tv/A_c) , or other desig storm (ft.)	Requ
Determine Dent	h of Sto	ne Reservo	ir Laver	R	$= A_c/A_p$ = The ratio of the contributing drainage area (A_c , not including the permeable paving surface) to the permeable pavement surface area (A_n)	Determine De
d_=	0.163	ft.	,		[NOTE: With reference to Table 7.3, the maximum value for the Level design is $R = 2$, (the external drainage area A_{r} is twice that of the permeable	d _c =
R =	0.691				pavement area A_p ; and for Level 2 design $R = 0$ (the drainage area is made u	R =
P =	1	inch		P	solely of permeable pavement A_p]. = The rainfall depth for the Treatment Volume (Level 1 = 1 inch; Level 2 = 1.	P =
<i>i</i> =	2.00	ft./day	1.0 in/hr	i	inch), or other design storm (ft.) = The field-verified infiltration rate for native soils (ft./day)	<i>i</i> =
$t_f =$	0.083	day		ty v	= The time to fill the reservoir layer (day) – typically 2 hours or 0.083 day = The word ratio for the reservoir layer (0.4)	$t_f =$
V _r =	0.4			y	- The vold ratio for the reservoir rayer (0.4)	V _r =
d _p =	2.57	ft.				d _p =
		(D	1		Equation 7.2	
i = i	Depth o 2	ft /dav	Layer		$d_{p-\max}^{*} = \frac{(i/2 \times t_{d})}{V}$	j =
, = V _r =	0.4	11.7 ady		Where:	r	, = V _r =
$t_{d} =$	1.25	dav(s)	(Tvp. 1-2 days)	r i	 The field-verified infiltration rate for the native soils (ft./day) 	$t_d =$
d _{n-max} =	3.13	ft.	(.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		V_r = The void ratio for reservoir layer (0.4 – see assumptions, below) V_d = The maximum allowable time to drain the reservoir layer, typically 1 to 2 days	d _{n-max} =
≁p-max					(days)	~p-max
Underdrain Requ	uired?	No]			Underdrain Re
Outflow through	Undera	drain Pine			Equation 7.3	Outflow throug
k =	100	ft./day			$q_{} = k \times m$	k =
m =	0.005	ft./ft.		Where:	a = Outflow through the underdrain (per outlet nine assumed blinch diameter)	m =
Number of	1				(ft./day) k = Hydraulic conductivity for the reservoir layer (ft./day)	Number of
U.D. pipes	_				m = Underdrain pipe slope (ft/ft.)	U.D. pipes
q _u =	N/A	ft./day				q _u =
Determine Dept	h of Res	ervoir Lave	r with Underdrain			Determine Der
d _c =	0.163	ft.			Equation 7.4	d _c =
R =	0.691				$d_{P} = \frac{\left\{ (d_{e} \times R) + P - (t/2 \times t_{f}) - (q_{u} \times t_{f}) \right\}}{V}$	R =
P =	1	inch		Whe	$d_n = \text{Depth of the reservoir layer (ft.)}$	P =
<i>i</i> =	2	ft./day			d_c = Depth of runoff from the contributing drainage area (not including the permeable payment surface) for the Treatment Volume (Tv/A) or other design	i =
$t_f =$	0.083	day			storm (ft.) $R = A_c A_n$ = The ratio of the contributing drainage area (A.) (not including the	$t_f =$
V _r =	0.4				permeable payment surface) to the permeable payment surface area (A_p) P = The rainfall depth for the Treatment Volume (Level 1 = 1 inch: Level 2 = 1.1	V _r =
q _u =	N/A	ft./day			inch), or other design storm (ft.) <i>i</i> = The field-verified infiltration rate for the native soils (ft/day)	q _u =
d _p =	N/A	ft.			t_f = The time to fill the reservoir layer (day) – typically 2 hours or 0.083 day V_r = The void ratio for the reservoir layer (0.4)	d _p =
Determine Maxi	mum Al	lowable Re	servior Depth		q_u = Outhow through Underdrain (ft/day)	Determine Ma
<i>i</i> =	2	ft./day	-		Equation 7.5	i =
V _r =	0.4				$d_{p-\max} = \frac{\left\{ \left(i/2 \times t_d \right) + \left(q_u \times t_d \right) \right\}}{2}$	V _r =
t _d =	1	day	(Typ. 1-2 days)	When	$V_r = V_r$	t _d =
$q_u =$	N/A	ft./day			d_{p-max} = The maximum depth of the reservoir layer (ft.) i = The field-verified infiltration rate for the native soils (ft /day)	q _u =
d _{p-max} =	N/A	ft.			V_r = The void ratio for the reservoir layer (0.4) t_d = The time to drain the reservoir layer (0.4) t_d = The time to drain the reservoir layer (day – typically 1 to 2 days) = The outflow through the underdrain (ff /day)	d _{p-max} =

DRAINAGE AREA DA-B

DA-C

2500 ft²

865 ft²

850 ft²

John A	dams Elei	mentary Parking Additor	n Date: 4/3/2014 Initials: KTB
a:		DA-B	
Drainago Arg	a Inform	ation	
Impervious	amonia	, Incl Permeabl	e
ze Area (A _c)=	2600	ft ² Pavement Are	a Input Value
ing Pervious		. 2	
Area =	360	ft	Calculated Value
e Pavement Area (A _p)=	1675	ft ²	
icient (Rv) =	0.841	0.05 + 0.009*(1)	$d_{p} = \frac{\{(d_{c} \times R) + P - (i/2 \times t_{f})\}}{V}$
vel Design =	level 1	W	Where:
ent Volume		2	d_p = The depth of the reservoir layer (ft.) d_p = The depth of runoff from the contributing drainage area (not including the
uired (Tv) =	182.12	ft ³	permeable paving surface) for the Treatment Volume (Tv/A _c), or other design storm (ft.)
enth of Stone	Reservo	irlaver	$R = A_c/A_p$ = The ratio of the contributing drainage area (A_c , not including the permeable paying surface) to the permeable payement surface area (A_p)
= 0 107	ft	u, c.	[NOTE: With reference to Table 7.3, the maximum value for the Level 1 design is $R = 2$ (the maximum value for the Level 1
= 0.557			design is $\kappa = 2$, (me external dramage area A_c is twice that of the permeable pavement area A_{p} ; and for Level 2 design $R = 0$ (the drainage area is made up
= 1	inch		solely of permeable pavement A_p].
= 9.00	ft./dav	4.5 in/hr	 inch, or other design storm (ft.)
= 0.083	dav		 t = The field-verified infiltration rate for native soils (ff/day) te = The time to fill the reservoir layer (day) - typically 2 hours or 0.083 day
= 0.4			V_r = The void ratio for the reservoir layer (0.4)
- 0.4	<i></i>		
= 1.84	π.		
ax Denth of I	Reservoir	Laver	Equation 7.2
= 9	ft./dav		$d_{p-\max} = \frac{(i/2 \times t_d)}{V_{e}}$
= 0.4	,		Where:
= 1	dav(s)	(Typ 1-2 days)	u_{p-max} = The maximum deput of the reservoir layer (n.) i = The field-verified infiltration rate for the native soils (ft/day)
= 11.25	ft.	(199. 1 2 0093)	V_r = The void ratio for reservoir layer (0.4 - see assumptions, below) t_d = The maximum allowable time to drain the reservoir layer, typically 1 to 2 days (days)
equired?	No]	
ugh Underdr	ain Pipe		Equation 7.3
= 100	ft./day		$q_u = k imes m$
= 0.005	ft./ft.		Where: a. = Outflow through the underdrain (ner outlet nine assumed 6 inch diameter)
of s			(ft./day) k = Hydraulic conductivity for the reservoir layer (ft./day – assume 100 ft./day) m = Underdrain pipe slope (ft./ft.)
= N/A	ft./day		
anth of Poso	nyoir Lava	r with Underdrain	
= 0.197	ft.		Equation 7.4
= 0.552			$d_p = \frac{\left\{ (d_s \times R) + P - (i/2 \times t_f) - (q_s \times t_f) \right\}}{r}$
= 1	inch		Where:
= 9	ft./dav		d_p = Depth of the reservoir layer (ft.) d_c = Depth of runoff from the contributing drainage area (not including the
= 0.083	, day		permeable payment surface) for the Treatment Volume (Tv/A_c) , or other design storm (ft.)
= 0.4			$R = A_c/A_p$ = The ratio of the contributing drainage area (A _c) (not including the permeable payment surface) to the permeable payment surface area (A _c)
= N/A	ft /day		P = The rainfall depth for the Treatment Volume (Level 1 = 1 inch; Level 2 = 1.1 inch) or other design storm (ft.)
- N/A	ft.		 The field-verified infiltration rate for the native soils (fl/day) The time to fill the reservoir layer (day) - typically 2 hours or 0.083 day
– IN/A	11.		V_r = The void ratio for the reservoir layer (0.4) q_u = Outflow through Underdrain (ft/day)
laximum Allo	wable Re	servior Depth	
= 9	ft./day		Equation 7.5
= 0.4			$d_{p-\max} = \frac{\{(i/2 \times t_d) + (q_u \times t_d)\}}{r}$
= 1	day	(Typ. 1-2 days)	Where:
= N/A	ft./day		d_{p-max} = The maximum depth of the reservoir layer (ft.) = The field sprifted infiltration rate for the pairies coile (ft./day)
= N/A	ft.		V_r = The void ratio for the reservoir layer (0.4)

- t_d = The time to drain the reservoir layer (day typically 1 to 2 days)
- q_{μ} = The outflow through the underdrain (ft/day)

De	

Project:

Drainage Area:

Contributing Impervious

Drainage Area (A_c)=

Contributing Pervious

Permeable Pavement

Contributing Drainage Area Information:

Area =

Level Design = Level 1

Treatment Volume 149.72 ft³

Determine Depth of Stone Reservoir Layer

P = 1 inch

t_f = 0.083 day

d_p = 2.69 ft.

Determine Max Depth of Reservoir Layer

i = 2.4 ft./day

i = 2.40 ft./day 1.2 in/hr

d_c = 0.091 ft.

R = 1.941

V_r = 0.4

V_r = 0.4

d_{p-max} = 3.00 ft.

Underdrain Required? No

Outflow through Underdrain Pipe

Number of U.D. pipes

k = 100 ft./day

q_u = N/A ft./day

d_c = 0.091 ft.

P = 1 inch

t_f = 0.083 day

i = 2.4 ft./day

q_u = N/A ft./day

d_p = N/A ft.

R = 1.941

V_r = 0.4

m = 0.005 ft./ft.

Required (Tv) =

Area (A_p)=

etermine Maximum Allowable Reservior Depth *i* = 2.4 ft./day V_r = 0.4 $t_d = 1$ day (Typ. 1-2 days) $q_u = N/A$ ft./day d_{p-max} = N/A ft.

84

SHEET NO:

C-430

Existing Conditions Summary (SF)				Existing Conditions Summary (ac)				
Drainage Area	Pervious	Impervious	Total Area	Drainage Area	Pervious	Impervious	Total Are	
	Area (SF)	Area (SF)	(SF)		Area (ac)	Area (ac)	(ac)	
Western BMP Drainage Area	18747	120155	138902	Western BMP Drainage Area	0.430	2.758	3.189	
Eastern BMP Drainage Area	76870	122080	198950	Eastern BMP Drainage Area	1.765	2.803	4.567	
Uncaptured BMP Drainage Area	8295	0	8295	Uncaptured BMP Drainage Area	0.190	0.000	0.190	
Project Area	103912	242235	346147	Project Area	2.385	5.561	7.946	

	Proposed Conditions Summary (SF)									
Drainage Area	Pervious Area (SF)	Impervious Area (SF)	Total Area (SF)	Increase In Impervious Area (SF)						
Western BMP Drainage Area	14497	124405	138902	4250						
Eastern BMP Drainage Area	77795	121155	198950	-925						
Uncaptured BMP Drainage Area	8295	0	8295	0						
Project Area	100587	245560	346147	3325						

Proposed Conditions Summary (ac)						
Drainage Area	Pervious Area (ac)	Impervious Area (ac)	Total Area (ac)	Increase In Impervious Area (SF)		
Western BMP Drainage Area	0.333	2.856	3.189	0.098		
Eastern BMP Drainage Area	1.786	2.781	4.567	-0.021		
Uncaptured BMP Drainage Area	0.190	0.000	0.190	0.000		
Project Area	2.309	5.637	7.946	0.076		

Western Campu	ıs Drainage Are	a BMP Sumamr	y (SF)		
	Pervious Area	Pervious Area Impervious T			
Drainage Area	(ac)	Area (ac)	(ac)		
Area Treated by	EDDE	2250	7675		
Permeable Pavement	5525	BMP Sumamry (SF) Impervious Total Area Area (ac) (ac) 2350 7675 61363 70535 63713 78210 60692 60692			
Area Treated by Sand	0170	61262	70525		
Filter	9172	20210	70555		
Total Area Treated by	14407	60710	79210		
BMP	14497	63713	78210		
Remaining Area	0	60602	60602		
Untreated by BMP	0	00092	00092		

Western Campus Drainage Area BMP Sumamry (ac)						
	Pervious Area	Impervious	Total Area			
Drainage Area	(ac)	Area (ac)	(ac)			
Area Treated by	0 122	0.054	0.170			
Permeable Pavement	0.122	0.054	imamry (ac) ious Total Area ac) (ac) 4 0.176 9 1.619 3 1.795 3 1.393			
Area Treated by Sand	0.211	1 400 1 610				
Filter	0.211	1.409	1.619			
Total Area Treated by	0 222	1 462	1 705			
BMP	0.335	1.403	1.795			
Remaining Area	0.000	1 202	1 202			
Untreated by BMP	0.000	1.393	1.393			

Eastern Campu	s Drainage Area	BMP Sumamry	/ (SF)			
	Pervious Area	Impervious	Total Area			
Drainage Area	(ac)	Area (ac)	(ac)			
Area Treated by	1425	1575	2000			
Permeable Pavement	1425	BMP Sumamry (SF)ImperviousTotal AreaArea (ac)(ac)1575300047615108468491901114687196587482				
Area Treated by Sand	60952	47615	100460			
Filter	60655	47615	108468			
Total Area Treated by	62270	40100	111/60			
BMP	02278	49190	111400			
Remaining Area	15517	71065	Q7/Q7			
Untreated by BMP	11221	1905	07402			

Eastern Campu	Eastern Campus Drainage Area BMP Sumamry (ac)						
Drainaga Araa	Pervious Area	Impervious	Total Area				
Drainage Area	(ac)	Area (ac)	(ac)				
Area Treated by Permeable Pavement	0.033	0.036	0.069				
Area Treated by Sand Filter	1.397	1.093	2.490				
otal Area Treated by BMP	1.430	1.129	2.559				
Remaining Area Untreated by BMP	0.356	1.652	2.008				

Project Description

Development or Re	edevelopment		
Drainage Area	Impervious	Pervious	Total
Site Area	5.637 ac	2.309 ac	7.946 ac
On-Site Treated	2.09 ac	0.21 ac	2.30 ac
Off-Site Treated	0.0 ac	0.0 ac	0.0 ac
Total Treated	2.09 ac	0.21 ac	2.09 ac
Any On-Site Disconnected by a Vegetated Buffer (25 ft)	0.0 ac		
Total On-Site Treated or Disconnected			2.09 ac

Water Treatment on site

BMP Type	Area treated by BMP (acres)	Impervious area treated by BMP (acres)	BMP efficiency (%)
Permeable Pvmt	0.245 ac	0.209 ac	45%
Sand Filter	1.845 ac	0.00 ac	60%

<u>Miscellaneous</u>

Total WQV treated: Detention on site:

yes no yes no

Project is within which watershed? HOLMES RUN

Project discharges to which body of water? HOLMES RUN

Virginia Runoff Reductio Site Data	n Method Workshee	et Revised	03/25/201	I - Redevelo	pment	Forest/Open Spa protected forest/o Managed Turf (ac yards or other tur Impervious Cover	ce (a pen s res) - f to b (acre
Project Name: John Adams E Date: 02/21/2014	lementary - Overall Cam	pus Developmer	nt			Post-Developme	ent La
Post-Development Proje	data input cells calculation cells constant values	ormation				Forest/Open Spa protected forest/o Managed Turf (ac yards or other tur Impervious Cover	ce (ac open s res) f to be (acres
Constants						Rv Coefficients	
Annual Rainfall (inches) Target Rainfall Event (inches) Phosphorus EMC (mg/L) Target Phosphorus Target Load (lb/acre Pj	43 1.00 0.26 0.41 0.90			Nitrogen EMC (n	ng/L) 1.86	Forest/Open Spa Managed Turf Impervious Cover Land Cover Sun Pre-Developmen Forest/Open Spa Weighted Rv(forest	nmar nt ce Cc st)
						Managed Turf Co Weighted Rv(turf)	ver (a
						Impervious Cover Rv(impervious)	(acre
PLA	NNED CAMPUS	BMP MEAS	SURES			% Impervious Total Site Area Site Rv	(acre
Drainage Area A Land Cover (acres	s)			_		Pre-Development	Treat
Forest/Open Space (acres)	A soils B Soils	C Soils	D Soils	Totals		Pre-Development feet) Pre-Development	Treat Load
space or reforested land Managed Turf (acres) disturbed,	0.00 0.00	0.00	0.00	0.00		. <u> </u>	
graded for yards or other turf to be mowed/managed Impervious Cover (acres)	0.00 0.00 0.00 0.00	0.33 2.86	0.00 0.00 Total	0.33 2.86 3.19		Pre-Development	Load
Apply Runoff Reduction	Practices to Reduce	Treatment V	olume & Po	ost-Develop	ment Load in I	Drainage Area	a A
Credit	Unit	Description	of Credit	Credit	Credit Area (acres)	Volume from Upstream RR Practice (cf)	Run
3. Permeable Pavement	acres of permeable pavement	+					1
3.a. Permeable Pavement #1 (Spec #7)	acres of "external" (upgradient impervious pavement	t) 45% runoff volu	me reduction	0.45	0.18	0	
					0.10	, v	
3.D. Permeable Pavement #2 (Spec #7)) acres of permeable pavement	PHOSPHO	me reduction TOT	0.75 AL PHOSPHOROU TC	0.00 JS REMOVAL REQUI DTAL RUNOFF REDU REDUCTION PRACTIC	0 RED ON SITE (Ib/yr) CTION IN D.A. A (cf) CES IN D.A. A (Ib/yr)	
Apply Practices that Ren	acres of permeable pavement	T5% runoff volue PHOSPHO Do Not Reduc Area (excluding areas treated by upstream	me reduction TOT RUS REMOVAL e Runoff V Phosphorus	0.75 AL PHOSPHOROU TC FROM RUNOFF F Olume Runoff from Upstream RR	0.00 JS REMOVAL REQUI DTAL RUNOFF REDU REDUCTION PRACTIC Phosphorus Load from Upstream RR	0 RED ON SITE (Ib/yr) CTION IN D.A. A (cf) CES IN D.A. A (Ib/yr) Untreated Phosphorus Load	Pho
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Apply Practices that Ren Practice 11 a Filtering Practice #1 (Spec #12)	Diacres of permeable pavement Nove Pollutants but Unit impervious acres draining to filter turf acres draining to filtor	T5% runoff volue PHOSPHO Do Not Reduc Area (excluding areas treated by upstream practices) 1.41 0.21	me reduction TOT RUS REMOVAL e Runoff V Phosphorus Efficiency (%)	0.75 AL PHOSPHOROU TC FROM RUNOFF F Olume Runoff from Upstream RR Practices (cf) 0.00	0.00 US REMOVAL REQUI DTAL RUNOFF REDU REDUCTION PRACTIC Phosphorus Load from Upstream RR Practices (Ibs) 0.00	0 RED ON SITE (lb/yr) CTION IN D.A. A (cf) CES IN D.A. A (lb/yr) Untreated Phosphorus Load to Practice (lbs.) 3.05	Pho Rem Prac
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NITROGEN REMOVAL BY PRACTICES THAT DO NOT REDUCE RUNOFF VOLUME IN D.A. B 1.55 TOTAL NITROGEN REMOVAL IN D.A. B (lb/yr) 2.17

								1 1 1		U U
er (acres)	A soils B	Soils	C Soils	D Soils	Totals	CAMPUS COMPLIANCE RESULTS				°, In K∃B
undisturbed, reforested land	0.00	0.00	0.00	0.00	0.00		EH2 .	E 400 4-1350		n BY:
d/managed	0.00	0.00	2.39	0.00	2.39	Site Results	E AR	, SUIT	WO	
				Total	7.95	TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED (LB/YEAR) 278	SCAP	NNO:	IORN.0	V-H
ver (acres)	A soils B	Soils	C Soils	D Soils	Totals	RUNOFF REDUCTION (cf) 380	AND:	PARK 20191 FA)	ILEY-H	DA/04/2
reforested land	0.00	0.00	0.00	0.00	0.00	PHOSPHOROUS LOAD REDUCTION ACHIEVED (LB/YR) 2.85	ND L	GINIA	VAN H ©KIN	
d/managed	0.00	0.00	2.31	0.00	2.31 5.64	ADJUSTED POST-DEVELOPMENT PHOSPHOROUS LOAD (TP) (Ib/yr) 10.52	ER A HORN	:OMME N, VIR		
				Total	7.95	REMAINING PHOSPHOROUS LOAD REDUCTION (LB/YR) NEEDED CONGRATULATIONS!! YOU EXCEEDED THE TARGET REDUCTION BY 0.1 LB/YEAR!!	GINE	1400 C ESTO 03-674	R: K	T 24x3
	A soils	B Soils	C Soils	D Soils		Nitrogen (for information purposes)		;;; [;] [;] [;]	KEV	S. (A
	0.02	0.03 0.20 0.95	0.04	0.05	-		ESIG M NAN	ORESS ONE N	AIL:	H.N.
	0.00	0.00	Land Cover Summ	nary		RUNOFF REDUCTION (cf) 380		ADI	PR(SCALE
es)	0.00 0.00		Forest/Open Space Weighted Rv(forest)	Cover (acres)	0.00	NITROGEN LOAD REDUCTION ACHIEVED (LB/YR) 8.29		*****		
	0% 2.39	-	% Forest Managed Turf Cover	(acres)	0% 2.31	ADJUSTED POST-DEVELOPMENT NITROGEN LOAD (TP) (Ib/yr) 87.38		017	IDRIA EET 22314	SITY DLS (, AIA 88
	0.22 30%	-	Weighted Rv(turf) % Managed Turf		0.22	NOTES: 1. OVERALL CAMPUS BMP MASTERPLAN IS FOR PHOSPHORUS REMOVAL	AO I	. 051	NER LEXAN S STRE IA, VA	DRIA C SCHOC TACT FENIAK 61-416
	0.95	-	Rv(impervious)		0.95	PURPOSES ONLY 2. ADDITIONAL DESIGN AND ANALYSIS WILL BE NECESSARY TO PROVIDE		74 / 0 I I I I	OF AL	CON CON DREA DREA 703) 4
	7.95 0.73	-	Total Site Area (ac Site Rv	cres)	7.95 0.74	COMPLIANCE WITH CHANNEL AND FLOOD PROTECTION REQUIREMENTS	COMMON HI	PRO	CITY 30 ALEX	AL AN AN
olume (acre-ft)	0.4840	-	Post-Development Ti	reatment Volume (acre-ft)	0.4886			····		
	21,082	-	Post-Development II feet) Post-Development I	reatment Volume (cubic	21,284		DATE			
5-1		Maximum % Redu	ction Required Below	w Pre-Development Load	20%					
		[Total Load (TP) Re	eduction Required (lb/yr) 2.78		BY ©VED			
/yr)	94.76		Post-Development Lo	.oad (TN) (lb/yr)	95.67		/ED			
	US DRAINAGE	AREA					ROV Băř			
Remaining	a	Phosphorus Load from	Untreated Phosphorus	Phosphorus Remair	ning	Nitrogen Load Nitrogen from Upstream Untreated Removed By				
Runoff Volu (cf) (cf)	me Phosphorus Efficiency (%)	Upstream RR Practices (Ibs)	Load to Practice (lbs.)	Removed By Phosph Practice (Ibs.) Load (II	orus Downstream bs.) be Employed	reatment to Efficiency (%) (Ibs) Nitrogen Load Practice Nitrogen to Practice (Ibs.) (Ibs.) Load (Ibs.)	DN /			
						3. Permeable Pavement	VISIO			
334	25	0.0	0 0.38	0.22	0.16	25 0.00 2.73 1.60 1.13	RE/			
0	25	0.0	0 0.00	0.00	0.00	25 0.00 0.00 0.00 0.00	DESCI			
						TOTAL RUNOFF REDUCTION IN D.A. A (cf) 273 NITROGEN REMOVAL FROM RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr) 1.60	o			
]								
s Remaining By Phosphorus	Downstream Treatment to		Nitrogen	Load from Nitroge	n Load tice Nitrogen Ren	oved By Remaining Nitrogen Load				S
os.) Load (lbs.)	be Employed	[Efficiency (%) 11. Filtering Pra	Practices (lbs) (lbs.)	Practice (lbs.	(lbs.)			_	NO
.83 1	.22		20	0.00	21.81	4.36 17.45	Q		AN	\TI
.06 0	.04		20	0.00	0.75	0.15 0.60		လ		
.00 0	.00		20 20	0.00	0.00	0.00 0.00 0.00 0.00	I 곳 F	5 5		
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								$ \geq $	A A A	
							17 y	S O	Ž	
										MP NP
	JS DRAINAGE A		Untreated			Nitrogen Load Nitrogen			С Ш С	, dh
Remainin Runoff Volu	g me Phosphorus	Load from Upstream RR	Phosphorus Load to Practice	Phosphorus Remain Removed By Phosph	ning Iorus Downstream	reatment to Nitrogen RR Practices Nitrogen Load Practice Nitrogen	\bigcirc			BV
(cf) (cf)	Efficiency (%)	Practices (lbs)	(lbs.)	Practice (lbs.) Load (l	bs.) be Employed	Efficiency (%) (lbs) to Practice (lbs.) (lbs.) Load (lbs.)				AME:
										ET N
131 0	25 25	0.0	0.00 0.00	5 0.09 0 0.00	0.06	25 0.00 1.07 0.63 0.44 25 0.00 0.00 0.00 0.00				SHE
							APPROV SPECIAL USE P	ED ermit no.		
						NITROGEN REMOVAL FROM RUNOFF REDUCTION PRACTICES IN D.A. B (lb/yr) 0.63	DEPARTMENT O	F PLANNING &	& ZONING	
]		Nitrogen Untrea	ted	NOTES:	DIRECT	OR TRANSPORTA	DATE TION & ENVI	RONMENTAL
s Remaining By Phosphorus	Downstream Treatment to		Nitrogen	Load from Nitroge Upstream RR to Prac	n Load tice Nitrogen Rer	oved By Remaining Nitrogen Load 1. A FLOW SPLITTER WILL NEED TO BE INSTALLED TO DIRECT AN (ha) FQUIVALENT OF 0.50 ACRES OF IMPERVIOUS TO THE PROPOSED SAND	SERVICES SITE PLAN NO.			
us.) Load (Ibs.)	be Employed		Eπiciency (%) 11. Filtering Pra	Practices (Ibs) (Ibs.) actices	Practice (lbs	FILTER. DESIGN OF THE FLOW SPLITTER WILL BE PROVIDED WITH FINAL SITE PLAN 1.	DIRECT	OR	DATE	
0.65	0.43	-	20	0.00	7.74	1.55 6.19 0.00 0.00				
0.00	0.00		20	0.00	0.00	0.00 0.00 THE FUTURE IF ADDITIONAL TREATMENT VOLUMES ARE REQUIRED BY DEVELOPMENT.	DATE RECORDE	D	u DATE	_
0.00	0.00		20	0.00	0.00	0.00	INSTRUMENT NO.	DEED B	DOK NO. P	AGE NO.
							SHEET NO:	<u>C-5</u>	10	
									I V	

/er (acres)									
undisturbed,	A soils B	Soils	C Soils	D Soils	Totals			220	S. K
r reforested land bed, graded for	0.00	0.00	0.00	0.00	0.00		C. CHI	574-13	ate
ed/managed	0.00	0.00	2.39 5.56	0.00	2.39 5.56	Site Results Phosphorous	PE AI E, SUI	703-(
				Total	7.95	TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED (LB/YEAR) 2.78	SCAF	X NO:	2014 y-F
over (acres)	A soils B	Soils	C Soils	D Soils	Totals	RUNOFF REDUCTION (cf) 380	AND: ASSC PARK 20191	SE LEY-H	
undisturbed, or reforested land	0.00	0.00	0.00	0.00	0.00	PHOSPHOROUS LOAD REDUCTION ACHIEVED (LB/YR) 2.85	AND L/ RCE F	AN HI ØKIM	
bed, graded for ed/managed	0.00	0.00	2.31	0.00	2.31	ADJUSTED POST-DEVELOPMENT PHOSPHOROUS LOAD (TP) (lb/yr) 10.52	R AN HORN VIRG	300 VIN V.	
l	0.00	0.00	5.64	0.00 Total	5.64 7.95	REMAINING PHOSPHOROUS LOAD REDUCTION (LB/YR) NEEDED CONGRATULATIONS!! YOU EXCEEDED THE TARGET REDUCTION BY 0.1 LB/YEAR!!	NEE LEY-F 31 ON, STON,	-674-1 KE	24x36)
			1				ENGI 1140 RES	GER:	(AT 2
	A soils 0.02	B Soils 0.03	C Soils	D Soils 0.05		Nitrogen (for information purposes)	AME: SS:		
	0.15 0.95	0.20 0.95	0.22	0.25			DES IRM N DDRE	HONE ROJ. MAIL:	z ü
			Land Cover Summ Post-Development	ary		RUNOFF REDUCTION (cf) 380 NITROGENI LOAD REDUCTION ACHIEVED (LR/XR) 8.29	⊑ <	ссш	SCAL
res)	0.00 0.00		Forest/Open Space (Weighted Rv(forest)	Cover (acres)	0.00	AD ILISTED POST-DEVEL OPMENT NITPOGEN L OAD (TP) (Ib/wr) 87.38		4	
	0% 2.39		% Forest Managed Turf Cover	(acres)	0% 2.31		A REAL AND A REAL	LIDRIA EET	₹ SITY DLS \$8 88
	0.22 30%		Weighted Rv(turf) % Managed Turf		0.22	NOTES: 1. OVERALL CAMPUS BMP MASTERPLAN IS FOR PHOSPHORUS REMOVAL	. 051 . 051	NER EXAN	-OPEI DRIA (SCHO SCHO SCHO SCHO SCHO SCHO
	5.56 0.95		Rv(impervious)	res)	5.64 0.95	PURPOSES ONLY 2. ADDITIONAL DESIGN AND ANALYSIS WILL BE NECESSARY TO PROVIDE			CON: CON: CON: CON: CON: CON: CON: CON:
	7.95		Total Site Area (ac	res)	71%	COMPLIANCE WITH CHANNEL AND FLOOD PROTECTION REQUIREMENTS		CITY 301 ALEX/	
(olume (acre ft)	0.73		Post Development Tr	reatment Volume (acre ft)	0.74				
olume (cubic	21 082		Post-Development Tr	reatment Volume (cubic	21 284		АТЕ		
b/yr)	13.25		Post-Development Lo	oad (TP) (lb/yr)	13.37				
		Maximum % Red	uction Required Belov	v Pre-Development Load	20%		G		
b/yr)	94 76		Total Load (TP) Re	duction Required (lb/yr)	2.78 95.67		BY BY		
	01110				00.01				
STERN CAMPL	IS DRAINAGE	AREA		[BY		
Remaining		Phosphorus Load from	Untreated Phosphorus	Phosphorus Remainin	ng	Nitrogen Load Nitrogen from Upstream Untreated Removed By	APF		
Runoff Volun (cf) (cf)	e Phosphorus Efficiency (%)	Upstream RR Practices (Ibs)	Load to Practice (Ibs.)	Removed By Phospho Practice (Ibs.) Load (Ibs	rus Downstream s.) be Employed	Treatment toNitrogenRR PracticesNitrogen LoadPracticeNitrogenEfficiency (%)(Ibs)to Practice (Ibs.)(Ibs.)Load (Ibs.)	DN /		
	_					3. Permeable Pavement			
334	25	0	00 0.38	0.22	0.16				
0	25	0.	00 0.00	0.00	0.00	25 0.00 0.00 0.00 0.00			
						NITROGEN REMOVAL FROM RUNOFF REDUCTION PRACTICES IN D.A. A (Ib/yr) 1.60	ÖŻ		
]		Nitrogen	d				
is Remaining By Phosphorus	Downstream Treatment to		Nitrogen	Load from Nitrogen	Load ce Nitrogen Ren	noved By Remaining Nitrogen Load			م
bs.) Load (lbs.)	be Employed		Efficiency (%)	Practices (lbs) (lbs.)	Practice (lbs.) (lbs.)			Z
1.83 1	22		20	0.00	21.81	4 36 17 45	ĪŌ	Z	ĬĻ
0.06 0.	04	-	20	0.00	0.75	0.15 0.60	lÕ (S E
0.00 0. 0.00 0.	00	-	20 20	0.00	0.00	0.00 0.00 0.00 0.00	$ \tilde{\mathbf{T}} \vdash \tilde{\mathbf{F}}$		
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SIERN CAMPU	S DRAINAGE								O L
Remaining		Phosphorus Load from	Untreated Phosphorus	Phosphorus Remaini	ng	Nitrogen Load Nitrogen from Upstream Untreated Removed By Remaining		Ц	M
cf) (cf)	Efficiency (%)	Practices (lbs)	(lbs.)	Practice (lbs.) Load (lb	s.) be Employed	Efficiency (%) (lbs) to Practice (lbs.) (lbs.) Load (lbs.)			ME:
						3. Permeable Pavement			T NAI
131	25	C	0.00 0.15	5 0.09	0.06	25 0.00 1.07 0.63 0.44			Ш Н
0	25	C	0.00	0.00	0.00	25 0.00 0.00 0.00 0.00	APPROVED		S
						TOTAL RUNOFF REDUCTION IN D.A. B (cf) 107	SPECIAL USE PERMIT N' DEPARTMENT OF PLANN	0 ING & 70NING	
						NITROGEN REMOVAL FROM RUNOFF REDUCTION PRACTICES IN D.A. B (lb/yr) 0.63			TF
				Nitrogen Untreate	d	NOTES:	DIRECTOR DEPARTMENT OF TRANSI	DA PORTATION & EN	VIRONMENTAL
us Remaining By Phosphorus	Downstream Treatment to		Nitrogen	Load from Nitrogen Upstream RR to Practi	Load ce Nitrogen Rer	noved By Remaining Nitrogen Load 1. A FLOW SPLITTER WILL NEED TO BE INSTALLED TO DIRECT AN	SITE PLAN NO		
ps.) Load (lbs.)	be Employed		Efficiency (%) 11. Filtering Pra	Practices (lbs) (lbs.)	Practice (lbs) (Ibs.) FILTER. DESIGN OF THE FLOW SPLITTER WILL BE PROVIDED WITH FINAL	DIRECTOR	 D A	TE
0.65 0	.43		20	0.00	7.74	1.55 6.19 2. THE POTENTIAL LOCATION OF THE SAND FILTER FOR DA-B IS LOCATED			
0.00 0	.00		20	0.00	0.00	0.00 0.00	CHAIRMAN, PLANNING COMM DATE RECORDED	ISSION DAT	TE
0.00 0	.00		20	0.00	0.00	0.00 0.00 DEVELOPMENT.		EED BOOK NO.	PAGE NO.
							SHEET NO:		
								-510	

oils B	Soils (Soils	D Soils	Totals		[С	CAMPUS	COMPLIAN	NCE RESULTS	6		CT				КТВ	, Inc
00	0.00	0.00	0.00	0.00									CHITE	E 400	4-1350		N BY:	ו ites
00	0.00	2.39 5.56	0.00	2.39 5.56	Site Res	sults							E AR	ES, INC	703-67	COM	DRAW	iorr ocia
	·		Total	7.95	тота	AL PHOSPHOROUS LOAD RED		RED (LB/YEAR)	2.78	1			SCAP	DCIATE	L NO.	HORN	2014	y-r SSC
oils B	Soils (C Soils	D Soils	Totals					380	-			LAND	D ASS(A 2019 ⁻ FA	MLEY-	04/04/	d A
00	0.00	0.00	0.00	0.00	ADJUST	ED POST-DEVELOPMENT PHO	SPHOROUS LO	DAD (TP) (Ib/yr)	10.52	2			AND	MERCE	IRGINI 00 N VAN	SE@K	DATE:	an B
00	0.00	5.64	0.00 0.00 Total	5.64 7.95	REM	AINING PHOSPHOROUS LOAD	REDUCTION (L	.B/YR) NEEDED	CONGRATULATION	NS!! YOU EXCEEDED THE	TARGET REDUCTION BY 0.1 LB/YE	AR!!	NEER	EY-HO 0 COM	TON, V 674-130 KFVII	VANHI	4x36)	
-110	D Coilo	C Coile	Desile										ENGI	.: KIML 1140	RES 703-	KEVIN	(AT 2	
02 15	0.03 0.20	0.04 0.22	0.05 0.25	-	Nitrogen	(for information purpose	s)						SIGN	NAME: RESS:	NE NO:		N.T.S.	
95	0.95	0.95 Land Cover Sumn	0.95 nary						200	л			DE	FIRM ADDF	PHON	EMAII	ALE:	
00	ז ק ע	Post-Development Forest/Open Space Weighted Ry/forest)	t cover (acres)	0.00		NITROGEN LOAD R	EDUCTION ACH	IEVED (LB/YR)	8.29			F		******	K a.		S	
% 39	c N	 Forest Managed Turf Cover 	r (acres)	0%	AD	JUSTED POST-DEVELOPMEN	T NITROGEN LO	OAD (TP) (Ib/yr)	87.38				AIRGI		A REAL	IDRIA EET 22314	SUCS	(, AIA 88
22 %		Veighted Rv(turf) <u>6 Managed Turf</u> mpenious Cover (a		0.22		NOTES: 1. OVERALL CAMPU	JS BMP MAS	TERPLAN IS	FOR PHOSPHO	ORUS REMOVAL			40 T	BOLLIN 051(4/20	INER LEXAN 3 STRE 81A, VA	LOPEF DRIA C SCHOC	ITACT FENIAK 461-416
0.95	- F c	Rv(impervious) % Impervious		0.95		2. ADDITIONAL DES	Y SIGN AND AN	IALYSIS WILL	L BE NECESSAR	RY TO PROVIDE			THE THE	HE T.		Y OF A 21 KINC XANDF	DEVE LEXAN UBLIC	CON JDREA (703) 4
95 73	1	Fotal Site Area (a Site Rv	cres)	7.95 0.74					DPROTECTION				EAL:	NOD (PEOF	CIT 3(ALE)	A PI	AN
840	F	Post-Development 7 Post-Development 7	Treatment Volume (acre-ft Treatment Volume (cubic) 0.4886									м N					
082 25	f	eet) Post-Development L	_oad (TP) (lb/yr)	21,284 13.37		1	1	I	I	1 1	,		DAT					
	Maximum % Reduc	ction Required Belo	w Pre-Development Load	20%	Ι								D L					
76	T	Fotal Load (TP) R Post-Development L	eduction Required (Ib/y _oad (TN) (Ib/yr)	r) 2.78 95.67									U BY					
	Phosphorus	Untreated						Nitrogen Loa	d	Nitrogen								
sphorus	Load from Upstream RR Practices (lbs)	Phosphorus Load to Practice (lbs.)	Phosphorus Remain Removed By Phosph Practice (lbs.) Load (l	ning Norus Downstre bs.) be Emplo	am Treatment to		Nitrogen Efficiency (%)	from Upstrea RR Practices (lbs)	M Untreated Nitrogen Load	Removed By Remain	ning n hs.)		N / A DATE					
			(<u>, , , , , , , , , , , , , , , , , , , </u>		3. Permeable P	Pavement										
25	0.00	0.38	3 0.22	0.16			25		0.00 2.7	73 1.60	1.13	Ĺ						
25	0.00	0.00	0.00	0.00			25		0.00 0.0	00 0.00	0.00		DESC					
						NITROGEN I	REMOVAL FROM	TOTA M RUNOFF RED	L RUNOFF REDUCT	FION IN D.A. A (cf) 27	'3 60		ġ					
	7	[1					F	2					
nstream		Nitrogen	Nitrogen Untrea Load from Nitroge	ted en Load stice Nitrogen	Removed By	Remaining Nitrogen Load											C	י ח
Employed		Efficiency (%)	Practices (lbs) (lbs.)	Practice	(lbs.)	(lbs.)										_		N O
		20	0.00	21.81	4.36	5 17.45							Q			A	F	
		20	0.00	0.75	0.15	0.60	·						\mathcal{Q}		လ		⊴ [JS JS
		20	0.00	0.00	0.00	0.00							古		5	ш		APL APL
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AINAGE	AREA	Untroated						Nitrogon Log	ad .	Nitrogon			Ī		\geq	Ш		<u>ר</u>
osphorus	Load from Upstream RR	Phosphorus Load to Practic	Phosphorus Remai e Removed By Phospl	ning norus Downstre	eam Treatment to		Nitrogen	from Upstrea RR Practices	an Untreated Nitrogen Load	Removed By Remain	ning en		0			d d		≥ Ω
ciency (%) Practices (Ibs)	(lbs.)	Practice (lbs.) Load (lbs.) be Emplo	byed		Efficiency (%) 3. Permeable	(lbs) Pavement	to Practice (Ib	os.) (Ibs.) Load (I	bs.)						AME.	
25	0.0	0 0 1	0.00	0.06			25		0.00	0.62	0.44						EET N	
25 25	0.0	0 0.0	00 0.00	0.00			25 25		0.00 0	0.00 0.00	0.00						SHI)
								ΤΟΤΑ	AL RUNOFF REDUCT	TION IN D.A. B (cf) 10)7	A S	APPRU Special US		T NO			
	_					NITROGEN	REMOVAL FROM	M RUNOFF RED	OUCTION PRACTICE	ES IN D.A. B (lb/yr) 0.6	63	_			Q		TF	_
vnstream			Nitrogen Untrea	ted en Load			NOT	TES:				Ds	EPARTMENT ERVICES	OF TRA	ANSPORTAT	ION & EN	VIRONME	ENTAL
atment to Employed	1	Nitrogen Efficiency (%)	Upstream RR to Practices (lbs) (lbs.)	ctice Nitrogen Practice	Removed By (lbs.)	Remaining Nitrogen Load (Ibs.)			NT OF 0.50 ACRE		TO THE PROPOSED SAND	S	SITE PLAN	NO				_
		11. Filtering Pr		7 74	1 5	5 6.40	2	SITE PLAN	1. NTIAL LOCATION	N OF THE SAND FILT	TER FOR DA-B IS LOCATED		DI	RECTOR		DA	TE	
		20	0.00	0.00	0.0	0 0.00		UNDER THE	E DRIVE AISLE A	AND COULD POTENT	IALLY BE EXPANDED IN UMES ARE REQUIRED BY	Ē	HAIRMAN, PL	ANNING C	OMMISSION	DA	TE	-
		20 20	0.00	0.00	0.0	0 0.00 0 0.00)	DEVELOPM	IENT.					NO.	DEED BOO	K NO.	PAGE NO	
												s	HEET NO:					
															U-0	U		

PROPOSED CONCRETE SIDEWALK PER ALEXANDRIA STANDARD CSSW-1

PROPOSED PERVIOUS PAVEMENT FOR PARKING SPACE

PROPOSED PERVIOUS PAVEMENT FOR SIDEWALK

PROPOSED ASPHALT SIDEWALK AND TRAIL CONNECTION

NUMBER OF ADDITIONAL PARKING SPACES TREE REMOVAL

PROJECT BOUNDARIES

EXISTING TREE

PROPOSED TREE ----- TP ----- TREE PROTECTION

ВМ	BENCHMARK
۲	CLEAN OUT
CONC	CONCRETE
DB	DEED BOOK
,	FIRE HYDRANT
¢	LIGHT POLE
N/F	NOW OR FORMERLY
OHW	OVERHEAD WIRE
OP	OPEN PORCH
PG	PAGE
EP	EDGE OF PAVEMENT
S	SANITARY MANHOLE
-0-	SIGN
STP	STOOP
D	STORM SEWER MANHOLE
പ	UTILITY POLE
	WATER METER
₩¥ X	WATER VALVE

LANDSCAPE NOTES

- ALL PROTECTION AND PRESERVATION MEASURES FOR EXISTING VEGETATION, 1 INCLUDING MAINTENANCE SHALL BE APPROVED BY THE CITY ARBORIST IN-FIELD PRIOR TO COMMENCEMENT OF ANY SITE DISTURBING ACTIVITY.
- 2. SPECIFICATION FOR ALL PLANTINGS SHALL BE IN ACCORDANCE WITH THE CURRENT AND MOST UP TO DATE EDITION OF ANSI-Z60.1, THE AMERICAN STANDARD FOR NURSERY STOCK AS PRODUCED BY THE AMERICAN ASSOCIATION OF NURSERYMEN; WASHINGTON, DC.
- 3. THE APPLICANT HAS MADE SUITABLE ARRANGEMENTS FOR PRE-SELECTION TAGGING, PRE-CONTRACT GROWING, OR IS UNDERTAKING SPECIALIZED PLANTING STOCK DEVELOPMENT WITH A NURSERY OR GROWER THAT IS CONVENIENTLY LOCATED TO THE PROJECT SITE, OTHER PROCEDURES THAT WILL ENSURE AVAILABILITY OF SPECIFIED MATERIALS. IN THE EVENT THAT SHORTAGES AND/OR INABILITY TO OBTAIN SPECIFIED PLANTINGS OCCURS, REMEDIAL EFFORTS INCLUDING SPECIES CHANGES, ADDITIONAL PLANTINGS AND MODIFICATION TO THE LANDSCAPE PLAN SHALL BE UNDERTAKEN BY THE APPLICANT. ALL REMEDIAL EFFORTS SHALL, WITH PRIOR APPROVAL BY THE CITY, BE PERFORMED TO THE SATISFACTION OF THE DIRECTORS OF PLANNING AND ZONING, RECREATION, PARKS AND CULTURAL ACTIVITIES AND TRANSPORTATION AND ENVIRONMENTAL SERVICES.
- 4. IN LIEU OF MORE STRENUOUS SPECIFICATIONS, ALL LANDSCAPE RELATED WORK SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CURRENT AND MOST UP-TO-DATE EDITION (AT ANY TIME OF CONSTRUCTION) OF LANDSCAPE SPECIFICATION GUIDELINES AS PRODUCED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF MARYLAND, DISTRICT OF COLUMBIA, AND VIRGINIA; GAITHERSBURG MARYLAND.
- PRIOR TO COMMENCEMENT OF LANDSCAPE INSTALLATION/PLANTING OPERATION, A 5. PRE-INSTALLATION/CONSTRUCTION MEETING WITH BE SCHEDULED WITH THE CITY'S ARBORIST AND LANDSCAPE ARCHITECTS TO REVIEW THE SCOPE OF INSTALLATION PROCEDURES AND PROCESSES.
- MAINTENANCE FOR THIS PROJECT SHALL BE PERFORMED IN PERPETUITY, IN 6. COMPLIANCE WITH THE CITY OF ALEXANDRIA LANDSCAPE GUIDELINES AND/OR AS CONDITIONED BY PROJECT APPROVAL.
- 7. A CERTIFICATION LETTER FOR TREE WELLS, TREE TRENCHES AND PLANTING ABOVE STRUCTURE SHALL BE PROVIDED BY THE PROJECT'S LANDSCAPE ARCHITECT. THE LETTER SHALL CERTIFY THAT ALL BELOW GRADE CONSTRUCTION IS IN COMPLIANCE WITH APPROVED DRAWINGS AND SPECIFICATIONS. THE LETTER SHALL BE SUBMITTED TO THE CITY ARBORIST AND APPROVED PRIOR TO APPROVAL OF THE LAST AND FINAL CERTIFICATE OF OCCUPANCY FOR THE PROJECT. THE LETTER SHALL BE SUBMITTED BY THE OWNER/APPLICANT/SUCCESSOR AND SEALED AND DATED AS APPROVED BY THE PROJECT'S LANDSCAPE ARCHITECT.
- AS-BUILT DRAWINGS FOR THIS LANDSCAPE AND/OR IRRIGATION/WATER MANAGEMENT 8. SYSTEM WILL BE PROVIDED IN COMPLIANCE WITH CITY OF ALEXANDRIA LANDSCAPE GUIDELINES. AS-BUILT DRAWINGS SHALL INCLUDE CLEAR IDENTIFICATION OF ALL VARIATION(S) AND CHANGES FROM APPROVED DRAWINGS INCLUDING LOCATION, QUANTITY, AND SPECIFICATION OF ALL PROJECT ELEMENTS.

TREE CROWN COVERAGE REQUIREMENT CALCULATIONS Existing Site Area (s.f.) 346,141 Crown Coverage Required (s.f.) 25% 25% Minimum as per City of Alexandria Zoning Code 11-410 CC (2). Crown Coverages 86,535 calculated in accordance with City of Alexandria's Landscape Guideline Manual.			5 REMOVABLE BOLLA	CURB	<u>CURB</u> (
EXISTING CROWN COVERAGE PROVIDED Existing Crown Coverage Pre-construction (not including street trees) (s.f.) 92,	369								
CROWN COVERAGE PROVIDED Existing Crown Coverage to Retain (not including street trees) (s.f.) 90,	836								
Existing Crown Coverage to Be Removed (s.f.) 1,	533					PLANT SCH	HEDULE		
Proposed Crown Coverage to Add (not including street trees) (s.f.) Total Tree Canopy Provided Post-construction (not including street trees) (s.f.) 26.50% 91.	750 Key	Qty.	Botanical Name	Common Name	Size (Min.)	Height at Planting	Mature Height	Stock Type	Comm
******Site exceeds City of Alexandria Crown Coverage Requirements******		3	Lagestroemia indica 'Natchez'	Crape Myrtle	2-3" Cal.	8'-10' Ht.	20' Ht.	B & B	Multi-stem, Min.
3 CANOPY COVERAGE			8 PLANT LIST						

