



# FAIRFAX COUNTY PLANNING COMMISSION

April 1, 2015

## PUBLIC HEARING FOR PLANNING DETERMINATION

Pursuant to  
Va. Code Sec. 15.2 - 2232

**Public Hearing Date: April 15, 2015 at 8:15 p.m.**

Application Number: 2232-L14-8

Applicant: Verizon Wireless

Proposed Use: Telecommunication Facility – new monopole

Supervisor District: Lee District

Subject Property Tax Map ID: 0823 01 0020

Subject Property Address: 4700 Franconia Road, Alexandria, VA 22310

Area of Subject Property: Approximately 23.52 acres

Area of Proposed Facility: Approximately 2,625 square feet

Application Accepted: March 17, 2015

Application Amended: February 2, 2015, March 9, 2015, and March 17, 2015

Recommendation: In accordance with Va. Code Sec. 15.2-2232, as amended, staff recommends that the Planning Commission find that the proposal by Verizon Wireless, as amended, to construct a telecommunications facility at 4700 Franconia Road, Alexandria, VA 22310, **is substantially in accord** with provisions of the adopted Comprehensive Plan.

# PLANNING DETERMINATION

Section 15.2 -2232 of the Code of Virginia



Number: 2232-L14-8

Acreage: N/A

District: Lee

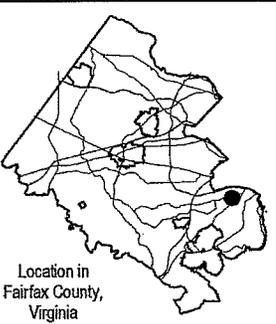
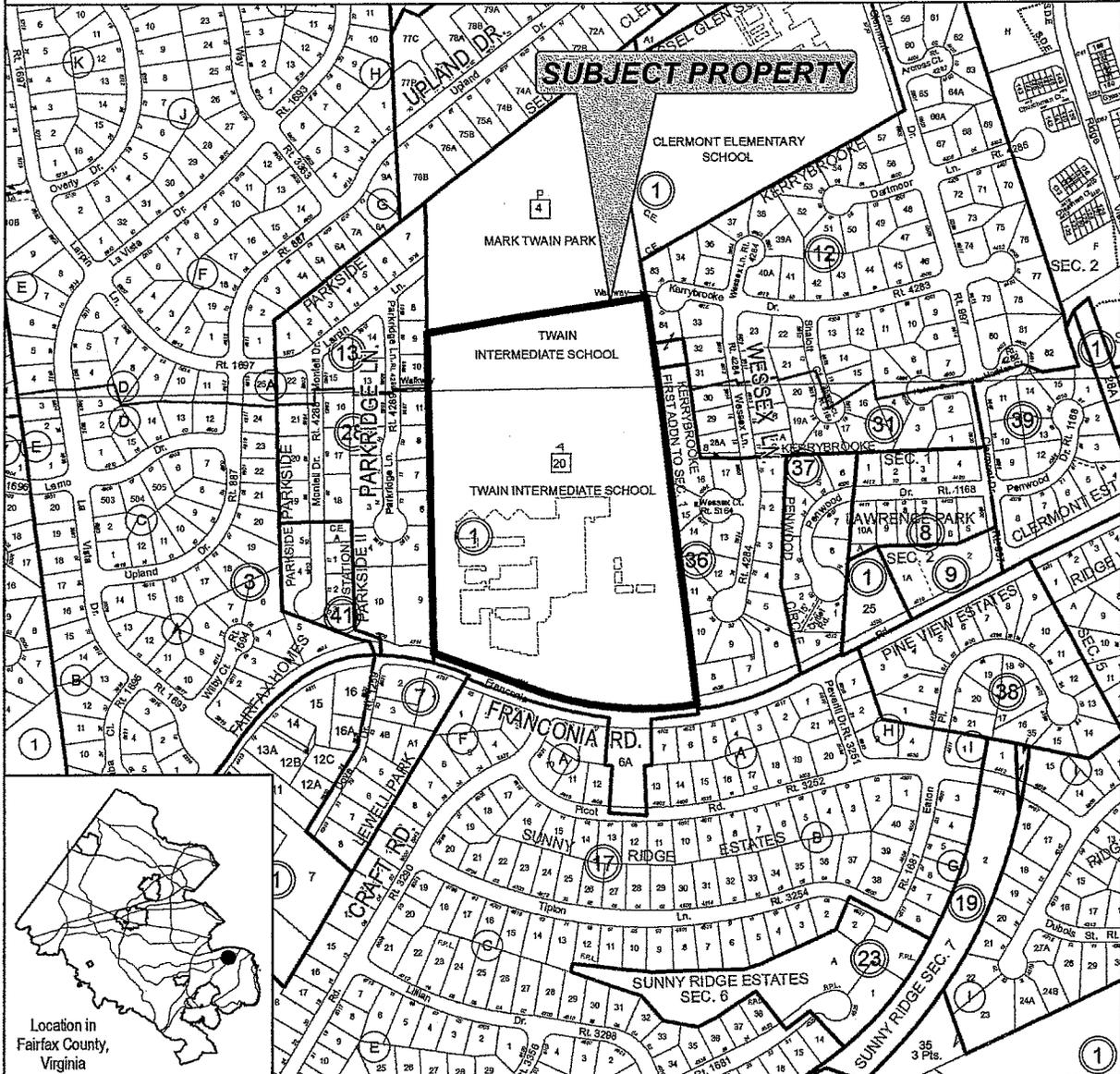
Tax Map ID Number: 82-3 ((1)) 20

Address: 4700 Franconia Road  
Alexandria, VA 22310

Planned Use: Public Facilities, Gov't. & Inst.

Applicant: Verizon Wireless

Proposed Use: Telecommunications Facility - New 128' Monopole



500 FEET

PREPARED BY THE DEPARTMENT OF PLANNING AND ZONING  
USING FAIRFAX COUNTY GIS



**APPLICATION*****Attachment A***

**Proposal:** Construct a new 115' monopole with 12 antenna and associated equipment  
**Proposed Use:** Telecommunication facility  
**Applicant:** Verizon Wireless  
**Subject Property:** 4700 Franconia Road, Alexandria, VA 22310; Tax map 0823 01 0020  
**Zoning District:** R-3  
**Existing conditions:** The site is majority located within an open recreational field on the site of a public middle school. A small portion of the site is located within an existing wooded area.

**Project Justification:** The applicant states that the proposed facility is needed to provide and improve wireless coverage along Franconia Road and the surrounding residential areas. The site will enhance in-building coverage to the residential communities in this area of the County, particularly those North of Franconia Road. Growing wireless use and traffic in this area limit the capacity of neighboring sites to deliver quality and reliable service. The propose site will provide some relief so that wireless service does not further degrade.

**Facility:** See application (*Attachment A*) for full description; all dimensions are approximate:

- **Structure** – 115' tall monopole designed to resemble a tree; painted brown and screened with artificial foliage on the structure. The applicant will install 12 panel antennas. Space for two additional carriers will be provided on the structure.
- **Location** – The monopole will be located in the central northern portion of a 23.5 acre public middle school property, and adjacent to a 10 acre wooded public park. The monopole will be located approximately 324' from the closest residential property line (at 4517 Kerrybrooke Drive), approximately 345' from the residential structure, and approximately 372' from the nearest roadway, Kerrybrooke Drive.
- **Antennas** – 12 total panel antennas; 4 measuring 96''H x 18.5''W, 4 measuring 48''H x 10''W, 2 measuring 96''H x 14.6''W, 2 measuring 69.1''H x 6.7''w; brown color; attached to the 115' monopole at 100' RAD centerline.
- **Equipment cabinets** – One shelter measuring 10'-5''H x 16'-10.5''W x 11'-6''D and one natural gas generator measuring 5'-6''H x 9'-6''W x 3'-4''D locate within a fenced compound.
- **Compound and Screening** – Monopole, equipment shelter, and associated generator to be screened by an 8' chain link fence w/black slats. A wooded park to the North is located adjacent to the compound.
- **Access/Parking** – Access from Franconia Road, through school parking lot, and then onto proposed permeable paver 10' access drive between parking lot and track. Single parking space on access drive at compound gate.
- **Operations** – unmanned; operates 24 hours/day; routine maintenance approximately once or twice per month.

**Off-Site Impacts:** The applicant states that proposed facility is a passive use and will not have employees or personnel on site (other than once or twice per month), or any impacts to traffic. The facility will not generate noise (except when generator is on), dust, odors, light or vibrations. The installation will not interfere with radio, television or telephone reception and the radio frequency emissions will comply with all applicable emission requirements.

**Alternate locations:** The applicant considered the following alternate locations:

1. Tax map 0823 01 0041E. A commercial shopping center located at Southwest section of the Franconia Road and Rose Hill Drive intersection and other smaller commercial properties to the West.
2. Tax map 0823 01 0006C. A major electrical transmission easement with support towers running East to West, South of Ridgeview Park crossing the library parcel and Rose Hill Drive.

In general, these sites are to the fringe of the service area and lack an optimum location for meeting technical requirements and offer no greater advantage for mitigating visual impacts. The commercial sites have similar characteristics and little available space for accommodation of a telecommunications facility.

### **DESCRIPTION OF SURROUNDING AREA**

#### **Adjacent and Nearby Land Uses:**

- Subject property – developed with a public middle school
- North – property immediately north is a public park with residential use beyond (single-family detached); I-95/495 further north
- East – residential use (single-family detached)
- South – residential use (single-family detached) across Franconia Road
- West – residential use (single-family detached)

### **COMPREHENSIVE PLAN PROVISIONS**

**Comprehensive Plan Map:** Subject property planned for Public Facilities, Governmental and Institutional Uses

**Planning Area, District, and Sector:** Area IV, Rose Hill Planning District, RH2 – Bush Hill Community Planning Sector, Land Unit E, Sub-unit E7

#### **Land Use Recommendations:**

Subject property – Plan Map: Public Facilities, Governmental and Institutional Uses, and Mixed Use.

- North – Public Parks (Plan Map)
- East – Residential use at 2-3 dwelling units per acre (du/ac) (Plan Map)
- South – Residential use at 2-3 dwelling units per acre (du/ac) (Plan Map)
- West – Residential use at 2-3 dwelling units per acre (du/ac) (Plan Map)

**COMPREHENSIVE PLAN CITATIONS:** An assessment of this proposal for substantial conformance with land use recommendations of the Comprehensive Plan (“the Plan”) is guided by the following citations from the Plan:

#### **Area Plan:**

Fairfax County Comprehensive Plan, 2013 Edition, Area IV, Rose Hill Planning District, as amended through 10-28-2014, RH2-Bush Hill Community Planning Sector, pages 38-39:

### Land Use

The Bush Hill Community Planning Sector is largely developed as stable residential neighborhoods. Infill development in these neighborhoods should be of a compatible use, type and intensity and in accordance with the guidance provided by the Policy Plan under Land Use Objectives 8 and 14.

Where substantial parcel consolidation is specified, it is intended that such consolidations will provide for projects that function in a well-designed, efficient manner and provide for the development of unconsolidated parcels in conformance with the Area Plan. Figure 16 indicates the geographic location of land use recommendations for this sector.

1. On the east side of South Van Dorn Street, north of Bent Willow Drive, are a series of publicly-owned parcels which were acquired to construct transportation improvements. Any unused portions of these properties should be retained as landscaped open space.
2. The parcels fronting on South Van Dorn Street between the Woodfield Estates and Willow Creek townhouse developments (Tax Map 81-4((1))37, 38, and 39) should be consolidated into the adjacent townhouse development so that adequate design coordination and circulation may be accomplished. With consolidation, development of townhouses of 5-8 dwelling units per acre is planned. If consolidation is not achieved, single-family attached dwellings of compatible design may be considered at a density not to exceed 3 dwelling units per acre. Access to South Van Dorn Street should be provided by means of a roadway connection from the intersection of Crown Royal Drive to the stub street at Woodfield Estates Drive in the lower eastern corner of Parcel 39. (See Figure 18)
3. Commercial development in the sector should be limited to the area planned for retail use on the north side of Franconia Road, between Brookland Road and Old Rolling Road, south of the townhouse development along Maplefield Place. Redevelopment of these parcels (Tax Map 81-4((1))67, 67A, 70, 71A, 71C, 71G, and 71H) should improve the overall character and function of the area in neighborhood commercial uses while ensuring the protection and preservation of the adjacent residential community. Parcel consolidation is strongly recommended to provide an improved opportunity for effective buffering, attractive landscaping and coordinated circulation and access. Access onto Franconia Road should be consolidated opposite Edison Drive and Gum Street. (See Figure 18)

To help ensure neighborhood preservation, any commercial development on Tax Map 81-4((1)) 71H should be effectively buffered and screened and nuisance impacts on the surrounding residential area should be effectively mitigated. If a drive thru window is proposed, mitigation measures should include acoustical barriers (internal and peripheral to the site); loudspeaker volume control; landscaping; and limits on the hours of drive-through window operation.

Medium density residential development at 8-12 dwelling units per acre is appropriate as a transition zone for Tax Map 81-4((39))A and 1-24. Any development, even at the low end of the recommended range, should provide a site design that achieves the following:

- Sensitivity to the adjacent commercial uses through the use of open space and building setbacks;
  - Effective buffering and screening for the single-family houses to the north; and
  - Access from Brookland Road. (See Figure 18)
4. Residential use at 3-4 dwelling units per acre is planned for Parcels 81-4((5))61-69, 69A and 81-4((1))63-65 at Franconia and Old Rolling Roads. To provide for compatible infill with existing development to the north and east, detached houses are appropriate. Development above the low end of the range will only be considered with substantial consolidation. Access should be provided from Forest Avenue and/or Sumner Road, rather than directly to Franconia Road.

**Policy Plan:**

Fairfax County Comprehensive Plan, 2013 Edition, Policy Plan, Public Facilities, as amended through 3-4-2014, Mobile and Land-Based Telecommunication Services, pages 37 – 40:

**“Objective 42: In order to provide for the mobile and land-based telecommunication network for wireless telecommunication systems licensed by the Federal Communications Commission, and to achieve opportunities for the co-location of related facilities and the reduction or elimination of their visual impact, locate the network’s necessary support facilities which include any antennas, support structures and equipment buildings or equipment boxes in accordance with the following policies.**

- Policy a. Avoid the construction of new structures by locating proposed telecommunication facilities on available existing structures such as rooftops, telecommunication and broadcast support structures, electrical utility poles and towers, and water storage facilities when the telecommunication facilities can be placed inconspicuously to blend with such existing structures. (See Figures 8, 9, 10.)
- Policy b. When existing structures are not available for co-location, or co-location is not appropriate because of adverse visual impacts or service needs, locate new structures that are required to support telecommunication antennas on properties that provide the greatest opportunity to conceal the telecommunication facilities and minimize their visual impact on surrounding areas.
- Policy c. When new structures or co-locations are required to serve residential neighborhoods, consider minimizing visual impacts on the surrounding area by utilizing camouflage structure design and/or micro-cell technologies or similar miniaturization technologies, such as distributed antenna systems (DAS), if feasible.
- Policy d. When multiple sites provide similar or equal opportunity to minimize impacts, public lands shall be the preferred location. [...]
- Policy g. Co-locate mobile and land-based telecommunication facilities operated by different service providers on single sites and/or structures whenever appropriate. Locate single-use structures on a property only when a co-location structure for multiple service providers is not desirable or feasible due to technological differences, site limitations or visual impact concerns.
- Policy h. Ensure that the height of the proposed telecommunication facility is no greater than necessary to allow for co-location on the telecommunication facility based

on its service area requirements while still mitigating the visual impact of the facility.

- Policy i. When new structures, co-locations and/or technologies (such as distributed antenna systems, micro-cell technology or miniaturization technology) are necessary to meet the service area requirements for the residential neighborhood(s), ensure that the height and mass of any appropriate co-location on the telecommunication facility is in character with the surrounding residential area and mitigates the visual impact of the facility on the surrounding residential area.
- Policy j. Design, site and/or landscape proposed telecommunication facilities to minimize impacts on the character of the property and surrounding areas. Demonstrate the appropriateness of the design through facility schematics and plans which detail the type, location, height, and material of the proposed structures and their relationship to other structures on the property and surrounding areas.
- Policy k. Demonstrate that the selected site for a new telecommunication facility provides the least visual impact on residential areas and the public way, as compared with alternate sites. Analyze the potential impacts from other vantage points in the area, especially from residential properties, to show how the selected site provides the best opportunity to minimize its visual impact on the area and on properties near the proposed site.
- Policy l. A key concept in assessing telecommunication facilities is mitigation which is defined as actions taken to reduce or eliminate negative visual impacts. Mitigate the visual impact of proposed telecommunication facilities and their equipment, by using effective design options appropriate to the site such as:
- Design, site and/or landscape the proposed facility to minimize impacts on the character of the area;
  - Locate proposed telecommunication facilities near or within areas of mature vegetation and trees that effectively screen or provide an appropriate setting for the proposed structure provided such location does not adversely impact sensitive resources or cause fragmentation of forested communities. When viewed in context, consider perspective views, relative topography and other factors, to mitigate the visual presence and prominence of the structure;
  - Blend proposed telecommunication facilities with an existing pattern of tall structures;
  - Obscure or block the views of proposed telecommunication facilities with other existing structures, vegetation, tree cover, or topographic features to the maximum extent feasible; and
  - Replace existing telecommunication facilities with taller structures or extend their overall height to reduce the need for another structure when such height increases or structure replacements are visually appropriate to the site, including the surrounding area and are consistent with the type, style and pattern of the existing structure.
- Policy m. Locate proposed telecommunication facilities to ensure the protection of historically significant landscapes and cultural resources. The views of and vistas from architecturally and/or historically significant structures should not be impaired or diminished by the placement of telecommunication facilities.

- Policy n. Site proposed telecommunication facilities to avoid areas of environmental sensitivity, such as steep slopes, floodplains, wetlands, environmental quality corridors, and resource protection areas.
- Policy o. Site proposed telecommunication facilities to allow for future expansion and with corresponding levels of screening to accommodate expansion. [...]
- Policy p. Design and site proposed telecommunication facilities to preserve areas necessary for future right-of-way dedication and ancillary easements for construction of road improvements.
- Policy q. Locate and construct antennas used for purposes other than mobile and land-based telecommunication services in accordance with the same guidelines established in this "Mobile and Land-Based Telecommunications Services" section.
- Objective 43: Design proposed telecommunication facilities to mitigate their visual presence and prominence, particularly when located in residential areas, by concealing their intended purpose in a way that is consistent with the character of the surrounding area. (See Figures 11 and 12.)**
- Policy a. Disguise or camouflage the appearance of proposed telecommunication facilities to resemble other man-made structures and natural features (such as flagpoles, bell towers, and trees) that are typically found in a similar context and belong to the setting where placed.
- Policy b. Design proposed telecommunication facilities that are disguised and camouflaged to be of a bulk, mass and height typical of and similar to the feature selected.
- Policy c. Use other new and existing structures and vegetation of comparable form and style to establish a grouping that complements a camouflaged telecommunication facility and supports its design, location and appearance."

**STAFF ANALYSIS:** See *Attachments B - K* for detailed discussion.

### **Fairfax County Department of Planning and Zoning**

- Balloon Test *Attachment B*  
A balloon test was held on November 4, 2014. Letters were sent to adjacent property owners notifying them of the test. Photographs of the balloon test from various locations are included as Attachment B.
- Zoning Administration Division – Ordinance Administration Branch *Attachment C*  
Subject property is zoned R-3. Discrepancies in the application and plan sheets have been addressed. Given the height of the proposed stealth monopole, a steady red marker light is required pursuant to Par. 3.H. of Sect. 2-514 of the Zoning Ordinance, unless such is waived by the Zoning Administrator at the request of the applicant. Applicant has submitted the waiver. Otherwise, the proposed monopole meets Par. 3 of Sect. 2-514 of the Zoning Ordinance.
- Planning Division – Historic Preservation *Attachment D*  
The subject parcel is not included within the boundaries of a Fairfax County Historic Overlay District, is not listed on the Fairfax County Inventory of Historic Sites or the National Register of

Historic Places or documented in the historic structures survey file. There are no properties in the immediate vicinity of the subject property that are within the boundaries of a Fairfax County Historic Overlay District, or listed in the Fairfax County Inventory of Historic Sites or the National Register that would be negatively impacted by the construction of the monopole designed to resemble a tree. There are three documented properties in the historic structures survey file in the immediate vicinity of the subject property of the application which may be impacted by the construction of the monopole designed to resemble a tree. It does not appear that the potential impact would be adverse. The applicant has complied with Section 106 of the National Historic Preservation Act of 1966. Staff finds the proposal in-keeping with the Policy Plan text cited above and finds that no known historic properties will be affected by the project.

- Planning Division – Environment and Development Review Branch *Attachment E*  
No environmental issues were identified with the proposed facility.

**Fairfax County Department of Public Works and Environmental Services** *Attachment F*

- Site Development and Inspections Division  
Comments noted in Attachment F will be addressed during site plan review.

- Urban Forest Management Division *Attachment G*  
The applicant requested and received a modification of the Transitional Screening and Barrier requirements for the northern, eastern, southern, and western property boundaries. The modification utilizes existing vegetation and barriers, and is subject to final approval during site plan review.

**Fairfax County Department of Transportation** *Attachment H*

- Transportation Planning Section  
Impacts are not anticipated on planned or existing roads and trails. This installation will not affect the long term operations of Fairfax Connector or Metrobus, but during installation there are possible impacts to Connector Route 310 which operates along Franconia Road. Installation of the monopole should minimize its impact on Route 310.

**Fairfax County Water Authority** *Attachment I*

- Planning and Engineering Division  
No water issues were identified with the proposed facility.

**Fairfax County Park Authority** *Attachment J*

- Park Planning Branch  
The parcels were subjected to cultural resources review, which indicated that the area of impact has a low probability to contain significant cultural resources and therefore no archaeological work is warranted unless otherwise instructed by the Virginia Department of Historic Resources.

**Fairfax County Public Schools** *Attachment K*

The request was reviewed and approved. The proposed monopole does not conflict with any existing or planned school building expansion or grounds use.

**Virginia Department of Transportation** *Attachment L*

VDOT has no objection to approval of the proposed monopole.

**CONFORMANCE WITH THE COMPREHENSIVE PLAN*****Attachment M***

Va. Code Sec. 15.2-2232, as amended, requires the Planning Commission to determine whether the general location or approximate location, character, and extent of the proposed facility, as amended, are substantially in accord with the adopted Comprehensive Plan.

**Location**

The proposed telecommunications facility is to be located on public property owned by Fairfax County Public Schools. A public middle school is located on the property, and the parcel is identified on the Comprehensive Plan Map as Public Facilities, Governmental and Institutional. The location of the proposed tree pole and compound area is in conformance with the Comprehensive Plan objective of locating telecommunication facilities on public land.

The proposed facility is to be located on the northern portion of 23.5 acres and away from school uses and all existing school buildings. The applicant states they have worked with Fairfax County Public Schools to ensure the proposed location of the tree pole will have no impact on the existing and future use of the property. This meets the Policy Plan guidance to ensure the use by telecommunication facilities will not interfere with existing or planned operational requirements of the public use of the property.

Alternative sites were explored by the applicant in order to be consistent with the Comprehensive Plan guidelines recommending the placement of telecommunication facilities on existing structures or rooftops. Within the search area, other than an electrical transmission corridor to the South which does not meet technical requirements, the applicant states there are no buildings or other structures with sufficient height to accommodate the collocation of a telecommunications facility. In order to meet the technical requirements for the service area, a new structure is required to be constructed.

**Character**

The Policy Plan states that the new structures should consider minimizing visual impacts on the surrounding area. The proposed location meets this objective because the proposed 115 feet tall tree pole will be adjacent to existing wooded parkland with mature vegetation that will complement, blend with, and serve to camouflage the proposed facility. The treepole design will assist with mitigating any adverse visual impacts. The equipment compound at the base will be enclosed and screened with an eight foot high chain link fence with black slats to conceal the shelters and cabinets.

While visible from some locations, most views of the tree pole from the surrounding properties will be mitigated by vegetation and distance. Vantage points and views of the structure will be limited or obscured by the existing trees, especially during months of foliage.

The proposed treepole meets the Policy Plan objective of using new structures and vegetation of comparable form and style to establish a grouping that complements a camouflaged facility. The tree pole design will consist of a brown and green painted monopole structure, with the antennas being screened by artificial foliage on the tree pole structure designed to resemble an evergreen tree. This design is more aesthetically pleasing to the surrounding area compared to the alternative of a standard galvanized steel monopole.

**Extent**

The Comprehensive Plan guidelines endorse locating telecommunication facilities operated by different service providers on single structures whenever possible. The proposed 115' tree pole will be able to accommodate a total of three carriers, Verizon Wireless and two additional future carriers. Verizon's twelve panel antennas will be located at 100' in height on the tree pole, with the two future carrier's antennas located at 90' and 80'. This meets the Comprehensive Plan objective of ensuring the proposed height is no greater than necessary to meet technical requirements, while also meeting the Comprehensive Plan guidelines of siting proposed telecommunication facilities to allow for future expansion.

The proposed tree pole will be located within a 2,625 square feet screened equipment compound. The compound will also contain a 10'-5" tall equipment shelter and a 5'-6" tall natural gas generator. To the immediate North and adjacent to the compound is a wooded park. Additional landscaping and vegetation will be added around the compound to conceal and mitigate the visual impacts of the telecommunications facility. This conforms to the Comprehensive Plan objectives of minimizing impacts on the character of the area.

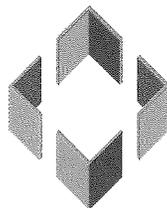
The proposed use meets Comprehensive Plan guidelines of not adversely impacting historically significant landscapes or views, or detracting from any architecturally or historically significant structure in the area.

Overall, the proposed structure and compound area is compatible with nearby land uses, and thus should have minimal impact on nearby properties. The proposal meets the Comprehensive Plan objectives of minimizing impacts on the character of the area and surrounding areas by using landscaping, screening, design, and architectural techniques.

**CONCLUSIONS AND RECOMMENDATIONS**

Staff concludes that the subject proposal by Verizon Wireless, to construct a 115' tall tree pole telecommunication facility at Mark Twain Middle School, 4700 Franconia Road, Alexandria, VA 22310, satisfies the criteria of location, character, and extent as specified in Va. Code Sec 15.2-2232. Therefore, staff recommends that the Planning Commission find the subject Application 2232-L14-8, substantially in accord with provisions of the adopted Comprehensive Plan.

ATTACHMENT A



DONOHUE & STEARNS, PLC

February 2, 2015

VIA E-MAIL AND USPS

Harvey Clark  
Department of Planning & Zoning  
County of Fairfax  
12055 Government Center Parkway  
Suite 730  
Fairfax, VA 22035-5509

Re: 2232-L14-8  
Verizon Wireless/Mark Twain Middle School

Dear Harvey

This is in response to your memorandum to the undersigned of January 5, 2015 concerning the above-referenced subject. The memorandum outlines comments you have received from other departments in Fairfax County. The responses are below.

Zoning Administration Division: The corrections have been made to the Special Exception Plan ("Plan") and transmitted to you electronically on January 29, 2015.

Urban Forrest Management Division: Landscape Plan is now included as an independent sheet on the Plan (Z-14) which was transmitted to you earlier. Additionally, the Applicant has requested modification to the screening and barrier requirements set forth in the Fairfax County Zoning Ordinance 13-303 and 13-304. A copy of that request is attached hereto. The Landscape Plan (Sheet 14) shows that the facility will be well-screened from the nearby single-family detached dwellings and the school building with existing vegetation supplemented with Eastern Red Cedar, Oriental Spruce and Green Giant Arborvitae. Sheet 14 also shows a Tree Preservation Plan in accordance with PFM 12-0509.

Site Development & Inspections Division: The Plan referenced above contains a Storm Water Management Sheet found at Z-13 and Z-14. This recites how the Applicant will address water quality measures, and where the disturbed areas and impervious areas are located. The

Harvey Clark  
February 2, 2015  
Page 2

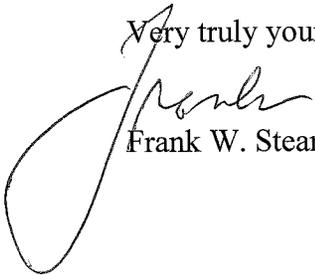
aforementioned Sheet also provides how the Applicant will meet the outfall requirements and the adequacy of the downstream drainage system.

Fairfax County Department of Transportation: The Applicant has worked in the past with the Virginia Department of Transportation and Fairfax County Department of Transportation to assure that during construction interruptions to traffic flow are minimized on adjacent streets and will do so here.

If you have any questions with regard to the above, please feel free to contact the undersigned.

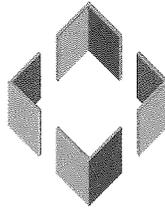
I remain,

Very truly yours,



Frank W. Stearns

cc: Cris Hernandez



DONOHUE & STEARNS, PLC

March 9, 2015

Harvey Clark  
Department of Planning & Zoning  
County of Fairfax  
12055 Government Center Parkway  
Suite 730  
Fairfax, VA 22035-5509

Re: 2232-L14-8, Verizon Wireless/Mark Twain Middle School

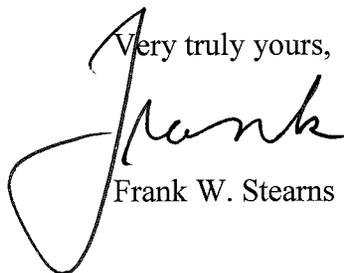
Dear Harvey:

As you know, the above-referenced matter is set for April 15 for public hearing. In connection with your Staff Report, enclosed are revised sims and propagation maps reflecting the new height of 115 feet. The propagation map showing coverage with "Bush Hill Neighbors Only" filed with the application is still viable. As you may recall, on February 2, 2015, we provided you with a new Site Plan showing the height of the proposed tree pole being reduced to 115 feet with Verizon Wireless antennas at a RAD center line of 100 feet. The enclosed reflect that reduction in height.

I also wish to inform you that the Applicant met with the Lee Land Use Committee on March 2, 2015, and received their unanimous endorsement.

If you have any questions with regard to the above, please feel free to contact the undersigned. I remain,

Very truly yours,



Frank W. Stearns

Enclosures

cc: Cris Hernandez (w/out encl.)



**COUNTY OF FAIRFAX, VIRGINIA  
APPLICATION FOR DETERMINATION  
PURSUANT TO VIRGINIA CODE SECTION 15.2-2232**

\*\*\* This area to be completed by staff \*\*\*

**APPLICATION NUMBER** 2232-L14-8

Date application received 7-3-14 by PD

Date(s) Revised 2-2-15, 3-17-15

Date application accepted 3-17-15 by HARVEY CLARK

(Please Type or Clearly Print)

**PART I: APPLICATION SUMMARY**

**LOCATION OF PROPOSED USE**

Address 4700 Franconia Road

City/Town Alexandria Zip Code 22310

Place Name (example: Dale High School) Mark Twain Middle School

Tax Map I.D. Number(s) 0823 01 00020

Fairfax County Supervisor District Lee

**APPLICANT(S)**

Name (Company or Agency) Verizon Wireless

Agent Name Frank W. Stearns

(Note: Failure to notify County of a change in agent may result in application processing delays)

Agent's Mailing Address 201 Liberty Street

City/Town Leesburg State VA Zip Code 20175

Telephone Number (703) 726-2547 Fax (703) 737-3793

E-mail fwstearns@donohuestearns.com

Secondary Contact Cristian Hernandez, Milestone

Telephone Number (703) 620-2555 E-mail cris@milestonecorp.com

**BRIEF DESCRIPTION OF PROPOSED USE**

Construction of a telecommunications monopole structure designed to resemble a tree ("tree pole") with an overall height of 110 feet above ground level and an associated 2,625 square feet equipment compound area. The tree pole and equipment compound are designed to accommodate a total of three telecommunication carriers. Verizon Wireless will be the initial carrier on the facility and up to two additional carriers will co-locate at the facility in the future.

Total Area of Subject Parcel(s) 23.52

Zoning District R-3

Applicant's previous Zoning Approvals for all uses on site (proffered conditions, special permits, special exceptions, variances, development plans)

None by applicant.

**PROPERTY OWNER(S) OF RECORD**

Owner School Board of Fairfax County

Street Address 8115 Gatehouse Road

City/Town Falls Church State VA Zip Code 22042

Has property owner been contacted about this proposed use?  YES  NO

**SIGNATURE**

**The undersigned acknowledges that additional Fairfax County land use review requirements may be identified during the review of this 2232 Review application and the fulfillment of such requirements is the responsibility of the applicant. The undersigned also acknowledges that all Fairfax County Zoning Ordinance requirements pertaining to this project shall be fulfilled.**

**In the event a new agent is assigned responsibility for this application, the applicant agrees to provide a letter to the Department of Planning and Zoning authorizing the transfer of responsibility for the application and providing all new contact information. In the event the applicant fails to notify County staff of a change in agent, the application may be subject to processing delays.**

Signature of Applicant or Agent \_\_\_\_\_

Date \_\_\_\_\_

**Submit completed application to:**

**Chris Caperton, Chief, Facilities Planning Branch  
Fairfax County Department of Planning and Zoning  
12055 Government Center Parkway, Suite 730  
Fairfax, Virginia 22035-5507  
(703) 324-1380**

**PART II: STATEMENT OF JUSTIFICATION**

Total Area of Subject Parcel(s) 23.52

Zoning District R-3

Applicant's previous Zoning Approvals for all uses on site (proffered conditions, special permits, special exceptions, variances, development plans)

None by applicant.

**PROPERTY OWNER(S) OF RECORD**

Owner School Board of Fairfax County

Street Address 8115 Gatehouse Road

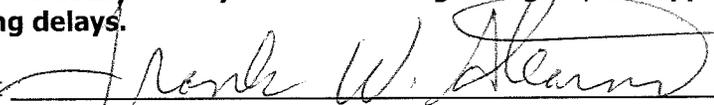
City/Town Falls Church State VA Zip Code 22042

Has property owner been contacted about this proposed use?  YES  NO

**SIGNATURE**

The undersigned acknowledges that additional Fairfax County land use review requirements may be identified during the review of this 2232 Review application and the fulfillment of such requirements is the responsibility of the applicant. The undersigned also acknowledges that all Fairfax County Zoning Ordinance requirements pertaining to this project shall be fulfilled.

In the event a new agent is assigned responsibility for this application, the applicant agrees to provide a letter to the Department of Planning and Zoning authorizing the transfer of responsibility for the application and providing all new contact information. In the event the applicant fails to notify County staff of a change in agent, the application may be subject to processing delays.

Signature of Applicant or Agent 

Date July 1, 2014

Submit completed application to:

**Chris Caperton, Chief, Facilities Planning Branch  
Fairfax County Department of Planning and Zoning  
12055 Government Center Parkway, Suite 730  
Fairfax, Virginia 22035-5507  
(703) 324-1380**

**PART II: STATEMENT OF JUSTIFICATION**

**PART IV: TELECOMMUNICATION USES**  
*(Do not submit for non-telecommunications public facility uses)*

**A. TYPE OF PROPOSED FACILITY** Check the appropriate box(es) and provide the required information

	<b>Yes</b>	<b>No</b>
New monopole* or tower	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Collocation on existing monopole or tower	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Collocation on building facade or rooftop	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Collocation on replacement light pole or utility pole	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Located in utility or transportation easement and/or right-of-way	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Modification to approved telecommunications facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Collocation on other structure _____	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*\*Including treepoles, flagpoles and other freestanding stealth structures.*

**B. CALCULATION OF FACILITY MODIFICATIONS** for modifications to an approved telecommunications facility, provide the following:

1. Application number(s) (456-, 2232-, FS-, FSA-) for all applicant's prior telecommunications uses on site:

NA

2. Calculate the surface area, in square inches (height x width **or** height x diameter), of the applicant's antennas organized in the following categories:

- a. approved \_\_\_\_\_
- b. existing \_\_\_\_\_
- c. proposed 2 @ 1,401.6 sq. in.; 4 @ 1,776 sq. in.; 2 @ 463 sq. in.; 4 @ 480 sq. in. = total 12,753 sq. in.

3. Calculate the volume (height x width x depth) of the applicant's equipment cabinets (in cubic inches) and/or shelter (in cubic feet) organized in the following categories:

- a. approved \_\_\_\_\_
- b. existing \_\_\_\_\_
- c. proposed 10.5' x 16.87' x 10.42' = 2,021.53 cubic feet

**C. ANTENNA(S)** Provide a separate page for each provider listed as part of the application

Provider Verizon Wireless

Model # or name	Type Panel, Dish, Omni	Quantity	Height	Width	Diameter	Location height on the structure
X7C-FRO-860	Panel	2	96"	14.6"		100' rad center
X7C-FRO-840	Panel	4	96"	18.5"		100' rad center
AXP19-60	Panel	2	69.1"	6.7"		100' rad center
AXP19-45	Panel	4	48.0"	10.0"		100'rad center

Existing structure color: Brown and green Antenna color: Brown

Is antenna painted to match existing structure? Yes  No

If No, please explain: \_\_\_\_\_

Will the antennas be screened? Yes  No  If Yes, describe the screening to be provided:  
Artificial foliage on a tree pole structure

Will the antennas be flush-mounted to the structure on which they are located? Yes  No

If No, please explain: Antennas will be screened from view.

Additional information:

**D. EQUIPMENT**

Model # or name	Type cabinet or shelter	Quantity	Height	Width	Depth	Location
Verizon	Shelter	1	10' 5"	16' 10.5"	11' 6"	Inside fenced compound
Natural Gas	Generator	1	5' 6"	9' 2"	3' 4"	Inside fenced compound

How will the equipment cabinet or shelter be screened? Chain link fence with black slats

Screen material: Steel chainlink w/ plastic insert slat Screen color: Black

Additional information:

**Application for Determination  
Pursuant to  
Section 15.2-2232, Code of Virginia**

**Part II: Statement of Justification**

**Applicant:**

Verizon Wireless  
9000 Junction Drive  
Annapolis Junction, Maryland 20701

**Site Location**

Mark Twain Middle School  
4700 Franconia Road  
Alexandria, Virginia 22310  
Parcel Number: 0823 01 0020  
Zoning District: R-3  
Planned Use: Public Facility, Governmental and Institutional  
Supervisor District: Lee

**Description of Proposed Use**

Pursuant to Section 15.2-2232 of the Code of Virginia, Verizon Wireless in conjunction with Milestone Communications (jointly “Applicant”) respectively requests that a proposed telecommunications facility with an overall height of 115 feet designed as an evergreen tree (“tree pole”) with a supporting equipment compound at the base be approved at the Mark Twain Middle School, 4700 Franconia Road, Alexandria, VA 22310.

Milestone Communications has an agreement with Fairfax County Public Schools (“County”) to establish telecommunication facilities on School grounds and to lease space on the proposed facility to Verizon and other wireless providers in the Fairfax County. The tree pole and compound will be located on the north central portion of the Middle School property between an existing baseball field on the school site and a Fairfax County public park to the north. The facility is designed for up to a total of three telecommunications carriers. Verizon Wireless will be located at the top position of 100 feet RAD center on the tree pole with space for four other carriers available at the lower levels of the structure. A detailed depiction of the telecommunications facility is provided on the Site Plan entitled “Mark Twain Middle School” prepared by Entrex Communications Services, Inc. dated June 26, 2014 and revised through January 22, 2015, included with the application package.

The Property is owned by the School Board of Fairfax County and consists of 23.52 acres. It is planned for Public Facilities Governmental and Institutional Use and is zoned R-3 (Residential at 3 units to the acre). The tree pole is designed to disguise the antennas and the telecommunications use and meet the Fairfax County Zoning Ordinance definition of

Woods” and “Rose Hill”, and the projected improvement anticipated after installation of the proposed telecommunications use at the Mark Twain Middle School site (labeled “Bush Hill”). The propagation maps illustrate the improved coverage that will result with the addition of the new telecommunications facility at the Mark Twain Middle School site.

Verizon Wireless’ objective for this site is to provide and improve wireless coverage along Franconia Road and the surrounding residential areas. The site will enhance in-building coverage to the residential communities in this area of the County, particularly those north of Franconia Road. Growing wireless use and traffic in this area limit the capacity of neighboring sites to deliver quality and reliable service. The proposed site will relieve some of this traffic so that service does not further degrade.

To achieve the desired coverage and capacity within the intended geographical area, each antenna facility must be strategically located so as to ensure maximum coverage and a minimum overlap with each other facility. Because of the low power of the system, the antennas are effective only within a limited geographical area. Thus, each facility site is subject to technical and geographical constraints in order to provide reliable and efficient service. The proposed facility is necessary to meet Verizon Wireless’ objectives for the area and will further satisfy similar needs of other wireless telecommunications carriers in the future. Moreover, the proposed height of the tree pole allows placement of the antennas at a sufficient height so as to permit radio signals to clear any obstructions such as trees and structures while simultaneously providing coverage to the intended service area and allowing for the collocation of up to two additional wireless carriers at the site.

The new site will resolve the need for adequate coverage in the area and ensure adequate overlapping coverage between and among existing Verizon Wireless sites. Ultimately, it will also allow residents and commuters to experience better quality and diminished dropped calls.

### **Anticipated Impacts On Adjoining Properties**

The tree pole will be located north central portion of a large public property totaling 23.5 acres and in close proximity to a 10 acre wooded park site owned by the Fairfax County Park Authority. To the immediate east of the public park property is the Clermont Elementary School located on a 13-acre parcel. The entire immediate area around the Mark Twain school site and the adjoining park and elementary school properties is developed and zoned for single family residential uses, R-3, and is planned for residential use at 2-3 dwelling units per acre. The nearest properties to the Mark Twain School site of a zoning classification other than R-3, is the Loftridge community developed with townhouse uses and zoned R-5 (cluster), approximately 1,500 feet to the east of the proposed tree pole location.

The proposed tree pole will be placed on the northern fringe of the school property adjacent to existing wooded parkland. Single-family residential areas border the school’s eastern property line along Wessex Lane and Kerrybrooke Drive and its western property line along Parkridge Lane. Franconia Road borders the schools southern property line. The nearest residential structure is 345 feet to the northeast of the proposed tree pole location. The nearest roadway is Kerrybrooke Drive, approximately 372 feet to the east. The tree pole structure will

“monopole”. Such structures are a permitted use on property owned by a governmental entity such as the subject Fairfax County Public School property.

All antennas on the proposed tree pole structure will be located behind artificial foliage and will not be visible. Verizon Wireless will have 12 panel antennas at a rad center of 100 feet above ground level. The types and sizes of the Verizon antennas are detailed on Page 7 of the application form and on the zoning drawings, Sheet Z-8, “Antenna Layout, Section, Details and Schedule.”

At the base of the proposed tree pole will be an equipment compound measuring 75’ long and 35’ wide with a total area of 2,625 square feet. An eight (8) foot high chain link fence with black slats to create a solid visual barrier will enclose the compound area and conceal the equipment from view. The tree pole will be located in the compound area along with Verizon’s equipment shelter and related equipment and that of all future carriers. The Verizon equipment will consist of an equipment shelter measuring 16 feet 10.5 inches wide by 11 feet 6 inches deep by 10 feet 5 inches high, a natural gas generator, and a MESA cabinet. Full details of the compound area are detailed on the zoning drawings, Sheet Z-3, “Compound Plan.” The dimensions of all Verizon equipment are detailed on Sheet Z-10, “Shelter Plans and Generator Details” and Sheet Z-11, “Shelter Elevations.” Shelter and generator dimensions are also found on page 7 of the 2232 Review application forms.

The proposed equipment structure and equipment cabinets will be unmanned and will operate around the clock 365 days per year. All facilities are monitored off site by the providers’ 24-hours a day 7-days a week in order to ensure that they are operating properly and that there is no unauthorized tampering with the facilities. Routine maintenance does occur for each of the equipment structures or cabinets once or twice a month as performed by a service technician driving a standard size vehicle to the site. There are no customers, employees or other personnel at the site.

The facility will operate as a cellular base station in the wireless telecommunications networks of Verizon and up to two additional providers. Attached to the application are Verizon’s propagation maps that show the area to be covered by the new facility and the existing network coverage.

The proposed use is benign and will not generate noise, lights, dust, glare, vibrations, fumes or odors. The traffic generated will be minimal. The proposed use does not present a threat to the public health, safety or welfare and will not impact radio, television or telephone reception. It will have no negative impact upon the air and water quality, nor will it impact any existing environmental features on the subject property.

### **Requirement of Proposed Use**

The area served by the proposed telecommunications use is depicted on Verizon Wireless’ radio frequency coverage (propagation) maps included in the application package. The maps show the area presently covered by Verizon Wireless’ other immediate sites in this vicinity, labeled as “Franconia Hills”, “Van Dorn”, “Duke Street”, “Alexandria Metro”, “Wilton

be 51 feet from the school's wooded rear (northern) property line, 324 feet from the eastern property line, 422 feet from the western property line, and 1154 feet to the southern property line along Franconia Road.

While the general surrounding area is planned, zoned and developed with residential uses, the trees on the park property will provide a visual backdrop for the proposed tree pole structure, providing context and mitigating views particularly to the north. Trees on the adjacent properties along the school property line as well as those throughout the adjacent residential communities will also provide visual mitigation. The location amongst a grouping of several large public properties will also serve to separate and buffer by distance many residences, particularly those to the north and northeast of the school property.

The proposed facility will have no impact on traffic or parking as the facility will be unmanned and does not generate vehicular traffic other than the once or twice a month for a technician to visit to ensure everything is in proper working order. The technician uses a standard vehicle and will have access to the structure and compound via the school parking lot adjacent to the compound area to the west. There is no perceptible noise generated by the facility and there will be no interference with electronic equipment for telephone, television, radio or other electronic uses.

### **Alternative Sites Considered for the Proposal**

The proposed tree pole will be located to fill an existing service void and address capacity issues, particularly areas to the north and east of the Mark Twain Middle School site between Franconia Road and Interstate 95/495. This overall area is characterized by existing low to medium single-family residential development and collocation on tall existing tall buildings or structures in the area is not an option.

Most of the non-residential use properties in the immediate search area are public sites. They include three parks, Mark Twain Park immediately to the north, Loftridge Park to the east/northeast, and Ridgeview Park to the southeast; and three school properties, Clermont Elementary School to the northeast, Rose Hill Elementary School to the southwest, and Bush Hill Elementary School to the west. In addition, the John Marshall Library is adjacent to and just north of the Rose Hill Elementary School. Other non-residential use sites in the area include a commercial shopping center, zoned C-6, located at the southwest section of the Franconia Road – Rose Hill Drive intersection and several adjoining smaller commercial parcels zoned C-3 just to the west. A major electrical transmission easement with support towers runs generally from east to west just south of the Ridgeview Park and crosses the library parcel and Rose Hill Drive.

The sites with the most advantageous location for serving the void area include the Mark Twain and Loftridge Park and the Clermont Elementary School. The two parks are generally undeveloped and a suitable location for a telecommunications use at these locations would potentially require extensive tree removal and may interfere with future site planning. The Clermont School Site portion of the Loftridge Park is developed with baseball diamonds and fronts on Franconia Road. A telecommunication facility at this site would be relatively close to Franconia Road and offers little advantage to mitigate visual impacts over the selected public

site. The Clermont Elementary School is located on a smaller 13-acre school site that offers little advantage for mitigating visual impacts when compared to the selected public site.

While in the general area, the other public sites are to the fringe of the service area and lack an optimum location for meeting technical requirements and also offer no greater advantage for mitigating visual impacts. The commercial sites have similar characteristics and little available space for accommodating a telecommunications facility.

### **Relationship of the Proposed Facility to the Comprehensive Plan**

The Mark Twain Middle School is located in the Rose Hill Planning District, Bush Hill Community Planning Sector, Planning Area IV. The Comprehensive Plan Map identifies the site for Public Facilities, Governmental and Institutional Use. The Mark Twain Middle School is identified on Page 13 of the Rose Hill Planning District, Figure 6, "Rose Hill Planning District Existing Public Facilities", although there are no specific Comprehensive Plan recommendations for the property.

Mobile and Land-Based Telecommunication Services provide for the wireless transmission of voice and data and include cellular and personal communications services (PCS), paging and wireless internet services and mobile radio. These services operate from wireless networks that are dependent on antenna devices and related equipment to transmit from a sender to one or more receivers. Such services are viewed as a public necessity that benefits the community and its economic growth and vitality.

The proposed facility is consistent with and furthers the goals of the Fairfax County Comprehensive Plan ("Comprehensive Plan"). The proposed camouflaged structure will be located on 23+ acre publicly owned property and be situated on the property to provide context for the tree pole design and to minimize visual impacts on the site and surrounding area. The facility will provide opportunities for co-location and accommodate up to three telecommunications provider.

The applicant submits that the proposed facility is consistent with the stated Objectives of the Policy Plan of the Fairfax County Comprehensive Plan concerning Mobile and Land-Based Telecommunication Services as described below.

### **General Guidelines**

**Objective 42: In order to provide for the mobile and land-based telecommunication network for wireless telecommunication systems licensed by the Federal Communications Commission, and to achieve opportunities for the collocation of related facilities and the reduction or elimination of their visual impact, locate the network's necessary support facilities which include antennas, support structures and equipment buildings or equipment boxes in accordance with the following policies.**

***Policy a. Avoid the construction of new structures by locating proposed telecommunication facilities on available existing structures such as rooftops, telecommunication and***

**broadcast support structures, electrical utility poles and towers, and water storage facilities when the telecommunication facilities can be placed inconspicuously to blend with such existing structures. (See Figures 8, 9, 10.)**

Within the search area the development pattern is comprised primarily of low to medium density residential and public uses. Other than an electrical transmission corridor that is located to the south near Eaton Place and does not meet technical requirements for the service area, there are no buildings or other structures with sufficient height to accommodate the collocation of a telecommunication use. To serve this area and meet the engineering and service requirements of the use, it is necessary to construct a new structure of the height proposed.

***Policy b.* When existing structures are not available for co-location, or co-location is not appropriate because of adverse visual impacts or service needs, locate new structures that are required to support telecommunication antennas on properties that provide the greatest opportunity to conceal the telecommunication facilities and minimize their visual impact on surrounding areas.**

The proposed facility will be located on a relatively large 23.5-acre publicly owned parcel on a portion of the site that is adjacent to a wooded public parkland on the extreme northern portion of the property away from the school uses and Franconia Road. The backdrop of mature hardwood trees in this area of the site will provide a natural setting for the proposed structure, reinforcing the camouflage design and providing a buffer to areas primarily to the north. This location also removes the structure from Franconia Road and from most residential properties. While the facility will be visible from some surrounding vantage points, the facility's design and context to the adjacent wooded setting will reduce its visibility and prominence. Mature trees in the overall area and distance will also conceal or mitigate most views.

There is ample space in this area of the property to locate the 2,625 square feet equipment compound. The location chosen is away from all existing school buildings. An eight (8) foot high chain link fence with black slat inserts will screen the compound area and all equipment.

***Policy c.* When new structures or co-locations are required to serve residential neighborhoods, consider minimizing visual impacts on the surrounding area by utilizing camouflage structure design and/or micro-cell technologies or similar miniaturization technologies, such as distributed antenna systems (DAS), if feasible.**

To minimize visual impacts, the structure will be camouflaged by using a tree pole design and located on the wooded edge of the school's property.

***Policy d.* When multiple sites provide similar or equal opportunity to minimize impacts, public lands shall be the preferred location.**

The subject property is publicly owned and operated by the Fairfax County Public School Board. The features of this public site provide an excellent opportunity

for screening and buffering and an appropriate setting for the proposed tree pole structure. Other available public sites in the area with an accessible location for a telecommunications facility provide no greater advantage for screening and locating the facility and providing compatibility with existing development.

***Policy e. Locate mobile and land based telecommunication facilities on public property only after a lease agreement between the County, or related board or authority, and service providers has been established.***

Milestone is the representative of the Fairfax County School Board and will enter into a lease agreement with Fairfax County Public Schools to construct and locate the proposed facility.

***Policy f. Ensure that the use of public property by mobile and land based telecommunication facilities does not interfere with the existing or planned operational requirements of the public use and complies with adopted policies and plans to protect natural resources.***

The applicants have worked closely with Fairfax County Public Schools to locate the proposed tree pole structure to ensure that there will be no impact on the existing and future public use of the subject property. The administrative office of the Fairfax County Public Schools has approved the location on site. The Fairfax County Public School's contact is Robert Cordova, Coordinator – Property Management, Office of Design and Construction, Department of Facilities and Transportation Services, ([Robert.Cordova@fcps.edu](mailto:Robert.Cordova@fcps.edu); 571-423-2303).

***Policy g. Co-locate mobile and land-based telecommunication facilities operated by different service providers on single sites and/or structures whenever appropriate. Locate single-use structures on a property only when a co-location structure for multiple service providers is not desirable or feasible due to technological differences, site limitations or visual impact concerns.***

The proposed tree pole will be designed to hold up to a total of three telecommunication carriers. Sufficient space and lease area is available for the compound area and all related equipment at the base of the tree pole.

***Policy h. Ensure that the height of the proposed telecommunication facility is no greater than necessary to allow for co-location on the telecommunication facility based on its service area requirements while still mitigating the visual impact of the facility.***

The 115 feet overall height of the proposed tree pole is the minimum required to meet the technical requirements of Verizon Wireless and to provide for the coverage objectives of additional carriers. The height and appearance of the tree pole is in context with the surrounding woodland and comparable to such natural features.

***Policy i.*** When new structures, co-locations and/or technologies (such as distributed antenna systems, micro-cell technology or miniaturization technology) are necessary to meet the service area requirements for the residential neighborhood(s), ensure that the height and mass of any appropriate co-location on the telecommunication facility is in character with the surrounding residential area and mitigates the visual impact of the facility on the surrounding residential area.

*Applicants' Response:* The height and mass of the proposed structure is in general context with existing trees in the area and the tree pole design will be of a character consistent with the adjacent woodland and the mature vegetation in the surrounding residential area. The structure can accommodate and conceal additional users without impacting the character of the surrounding residential area.

***Policy j:*** Design, site and/or landscape proposed telecommunication facilities to minimize impacts on the character of the property and surrounding areas. Demonstrate the appropriateness of the design through facility schematics and plans which detail the type, location, height, and material of the proposed structures and their relationship to other structures on the property and surrounding areas.

The proposed facility will be located on the north central portion of the school property adjacent to a wooded area along the property line. The Site Plan and related zoning drawings show the design of the tree pole and compound area and their relationship to the existing school property and nearby properties. Aerial photos and photo-simulations are also provided with the application to demonstrate the structure's relationship to adjacent and surrounding properties and uses. The stealth tree pole design will be compatible and consistent with the public school site. The proposed structure will not negatively impact the existing school use or the character of the surrounding residential properties. The tree pole will be located so as to blend and be in context with the wooded area to the immediate west of its location on the property. The equipment compound at the base will be enclosed with a chain link fence with slats to conceal the shelters and cabinets.

***Policy k:*** Demonstrate that the selected site for a new telecommunication facility provides the least visual impact on residential areas and the public way, as compared with alternate sites. Analyze the potential impacts from other vantage points in the area, especially from residential properties, to show how the selected site provides the best opportunity to minimize its visual impact on the area and on properties near the proposed site.

The photo simulations that are enclosed with the application demonstrate the appropriateness of utilizing the selected public site. The photo simulations include 14 vantage points and the appearance of the structure when constructed. The proposed tree pole will be in context with the adjacent wooded park area and, in general, views from most properties throughout the area will be mitigated by vegetation and distance. The most prominent views of the proposed structure will

be from the east along points of Kerrybrooke Drive and Wessex Lane and from the west along Parkridge Lane. In most instances, vantage points and views of the structure will be limited or obscured by existing trees and vegetation, particularly during months of tree foliage. The tree pole structure will also be directly visible from Franconia Road, in front of the school, and from Clermont Drive and Cassel Glen Court looking across the Clermont School property. Other views throughout the area as shown on the photosims will be directly through trees or mitigated by distance.

***Policy l:*** A key concept in assessing telecommunication facilities is mitigation which is defined as actions taken to reduce or eliminate negative visual impacts. Mitigate the visual impact of proposed telecommunication facilities and their equipment, by using effective design options appropriate to the site such as:

- **\_Design, site and/or landscape the proposed facility to minimize impacts on the character of the area;**
- **\_Locate proposed telecommunication facilities near or within areas of mature vegetation and trees that effectively screen or provide an appropriate setting for the proposed structure provided such location does not adversely impact sensitive resources or cause fragmentation of forested communities. When viewed in context, consider perspective views, relative topography and other factors, to mitigate the visual presence and prominence of the structure;**
- **\_Blend proposed telecommunication facilities with an existing pattern of tall structures;**
- **\_Obscure or block the views of proposed telecommunication facilities with other existing structures, vegetation, tree cover, or topographic features to the maximum extent feasible; and**
- **\_Replace existing telecommunication facilities with taller structures or extend their overall height to reduce the need for another structure when such height increases or structure replacements are visually appropriate to the site, including the surrounding area and are consistent with the type, style and pattern of the existing structure.**

The visual impact of the proposed 115 feet tall structure will be mitigated by the tree pole design and its location adjacent to wooded park that provides context and a natural backdrop and setting for the structure. While visible from some locations, most views of the structure will be largely mitigated or obscured by existing vegetation. The compound area will be screened from view with an eight-foot high chain link fence with black slats.

***Policy m:*** Locate telecommunication facilities to ensure the protection of historically significant landscapes and cultural resources. The views of and vistas from architecturally

**and/or historically significant structures should not be impaired or diminished by the placement of telecommunication facilities.**

The proposed use will not adversely impact historically significant landscapes or views or detract from any architecturally or historically significant structures in the area.

***Policy n.* Site proposed facilities to avoid areas of environmental sensitivity, such as steep slopes, floodplains, wetlands, environmental quality corridors, and resource protection areas.**

The proposed use will not impact any environmentally sensitive areas.

***Policy o.* Site proposed facilities to allow for future expansion and with corresponding levels of screening to accommodate expansion.**

The proposal structure and leased compound area on a 23+ acre public parcel will provide ample space for up to three telecommunication carriers while maintaining levels of screening and a natural setting for the use.

***Policy p.* Design and site proposed telecommunication facilities to preserve areas necessary for future right-of-way dedication and ancillary easements for construction of road improvements.**

The proposed location of the proposed use is not within a public road right-of-way and will not impact any future right-of-way expansion and easements for road improvements should they be necessary.

***Policy q.* Locate and construct antennas used for purposes other than mobile and land-based telecommunication services in accordance with the same guidelines established in this “Mobile and Land-Based Telecommunications Services” section.**

*Applicants’ Response:* The proposed tree pole is for mobile and land based purposes.

**Objective 43: Design proposed telecommunication facilities to mitigate their visual presence and prominence, particularly when located in residential areas, by concealing their intended purpose in a way that is consistent with the character of the surrounding area. (See Figures 11 and 12.)**

***Policy a.* Disguise or camouflage the appearance of proposed telecommunication facilities to resemble other man-made structures and natural features (such as flagpoles, bell towers, and trees) that are typically found in a similar context and belong to the setting where placed.**

The proposed use will be designed as a tree pole and located adjacent to a mature vegetated area to reduce its prominence and visual presence. The tree pole design

will disguise the appearance and actual use of the structure use and be in general context with the setting in which it is located.

***Policy b. Design proposed telecommunications facilities that are disguised and camouflaged to be of a bulk, mass and height typical of and similar to the feature selected.***

The design, bulk, mass, and height of the camouflaged structure is consistent with that of a tree and will appear in general context with the portion of the public school site on which it is located.

***Policy c: Use other new and existing structures and vegetation of comparable form and style to establish a grouping that complements a camouflaged telecommunication facility and supports its design, location and appearance.***

The tree pole will be adjacent to existing wooded parkland with mature vegetation that will complement, blend with and serve to obscure the proposed camouflaged facility. Other existing vegetation and the general tree cover throughout the surrounding residential areas, as well as distance from residential units, will serve to mitigate views of the proposed use.

### **Conclusions**

In light of the foregoing and the reasons stated, Verizon Wireless and Milestone Communications, Inc. submits that this proposal is in compliance with the Fairfax County Comprehensive Plan and Zoning Ordinance and respectfully requests that the 2232 Review Application be approved.

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Frank W. Stearns  
Donohue and Stearns, PLC  
Agent for Applicant





VICINITY MAP  
SCALE 1" = 200'

- SITE PLAN NOTES**
- 1) SITE NAME MARK TWIN MIDDLE SCHOOL
  - 2) THIS IS NOT A BOUNDARY SURVEY AND IS NOT TO BE USED FOR THE TRANSFER OF PROPERTY.
  - 3) THE SUBJECT PARCEL INFORMATION: OWNER: SCHOOL BOARD OF FAIRFAX COUNTY PREMISES ADDRESS: 4700 FRANCONIA RD ALEXANDRIA, VA 22310 MAILING ADDRESS: 8110 GATEHOUSE RD FALLS CHURCH, VA 22042 COUNTY: FAIRFAX COUNTY MAP # 0623 01 0070 DISTRICT NUMBER: 433-0000 ACCOUNT NUMBER: 433-0000-0000 ZONING: R-3 USE: PUBLIC SCHOOL
  - 4) THE RECORDED REFERENCES OF THE SUBJECT PARCEL ARE AS FOLLOWS: DEED 2010-0142, TOLC 0034 AREA: 73,9275 AC
  - 5) THE DATUM'S ARE NAD 83 AND NAD 83 AND THE BOUNDARY IS STATE GRID.
  - 6) NO UNDERGROUND UTILITIES HAVE BEEN LOCATED. THE PRESENCE OF ANY SUCH UTILITIES MUST BE CONFIRMED BY THE CONTRACTOR BEFORE CONSTRUCTION.
  - 7) NO ISLANDS HAVE BEEN DEFINED AND ANY AREAS SHOWN AS MARSH, PONDS OR OTHERS ARE OVER 50 FEET VISIBLE SURFACE FEATURES AND IN NO WAY CONSTITUTE A DEFINED AEA, AND
  - 8) THE FLOOD ZONE OF THE PROPOSED TREE POLE IS AS FOLLOWS: FLOOD ZONE & AREA OF RAINFALL FLOODING SOURCE: FEMA FLOOD MAP FOR FAIRFAX COUNTY, VA COMPLANITY PANEL NUMBER 23030 0100 REVISION: SEPTEMBER 12, 2010
  - 9) A TITLE REPORT HAS FURNISHED FOR THIS PROPERTY BY CANNON TITLE & SETTLEMENT COMPANY IN DECEMBER 14, 2013
  - 10) THE DATA COLLECTED AND SHOWN ON THIS DRAWING ARE FOR THE PURPOSES OF CONSTRUCTION OF A CELLULAR TREE POLE AND NECESSARY AUXILIARY EQUIPMENT AND ALL APPROPRIATE EASEMENTS.
  - 11) NO UNRECORDED EASEMENTS ARE SHOWN ON THIS SURVEY AND IT IS POSSIBLE THAT SUCH EASEMENTS' IMPACT THE SITE.
  - 12) THIS PROPERTY IS SUBJECT TO ALL MATTERS OF PUBLIC RECORD.
  - 13) THE LOCATION OF THE PROPOSED TREE POLE IS AS FOLLOWS: THE MARK TWIN SITE BELOF ARE WITHIN 50' HORIZONTAL AND 120' VERTICAL. LATITUDE N 28° 47' 32.400" LONGITUDE W 77° 06' 30.208" ELEVATION 243.8' MSL AT BASE.
  - 14) A NEW OFFICE CONSERVATION AREA ON THE PARK PROPERTY TO THE NORTH OF THE SITE TO OFFSET THE ENCROACHMENT INTO THE CONSERVATION AREA OR THE SCHOOL PROPERTY.



- LINE TYPES**
- BOUNDARY LINE - PARENT PARCEL
  - UNSURVEYED LINE - BOUNDARY OF ADJACERS
  - REF. LINE FOR DIMENSIONS
  - EASEMENT BOUNDARY
  - RIGHT OF WAY BOUNDARY
  - CENTER LINE
  - BUILDING SET BACK
  - INTERIOR LOT LINES
  - EDGE OF ASPHALT
  - EDGE OF GRAVEL
  - CURB
  - FENCE LINE - CHAIN
  - OVERHEAD UTILITY LINE
  - DRIVE - DRIVE - DRIVE - DRIVE
  - WEE OR VEGETATION LINE

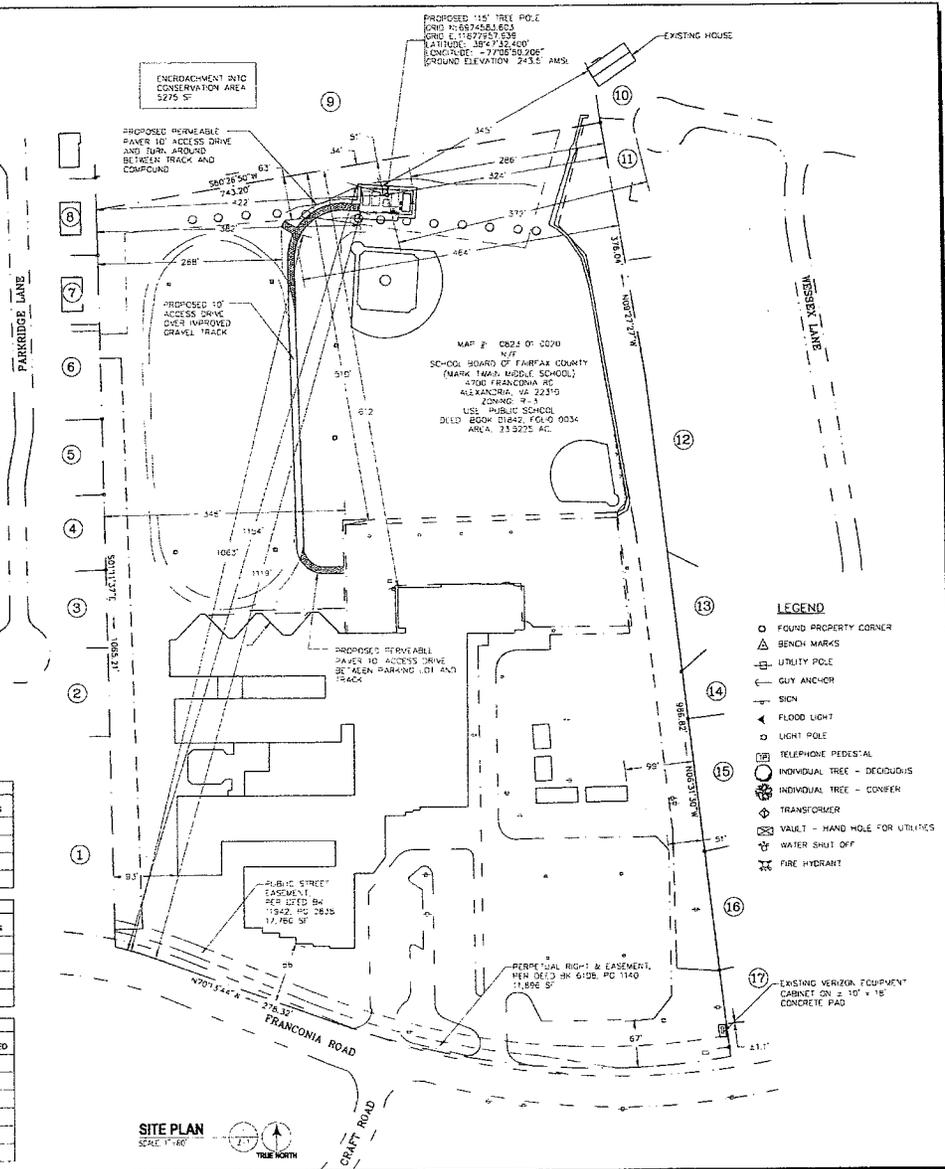
PARKING SETBACKS		
ZONING R-3	PROPOSED	EXISTING
FRONT YARD (SOUTH)	100'	67'
REAR YARD (NORTH)	63'	51'
SIDE YARD (EAST)	48'	51'
SIDE YARD (WEST)	28'	34'

STRUCTURE SETBACKS		
ZONING R-3	PROPOSED	EXISTING
FRONT YARD (SOUTH)	111'	66'
REAR YARD (NORTH)	34'	61'
SIDE YARD (EAST)	28'	59'
SIDE YARD (WEST)	38'	39'

TREE POLE SETBACKS		
ZONING R-3	PROPOSED	REQUIRED
FRONT YARD (SOUTH)	114'	37'
REAR YARD (NORTH)	51'	25'
SIDE YARD (EAST)	32'	10'
SIDE YARD (WEST)	42'	10'
CLOSEST OFF-SITE BUILDING	345'	N/A
CLOSEST ROAD	372'	N/A



- LEGEND**
- FOUND PROPERTY CORNER
  - △ BENCH MARKS
  - UTILITY POLE
  - ↑ GUY ANCHOR
  - ↑ SIGN
  - ▲ FLOOD LIGHT
  - LIGHT POLE
  - TELEPHONE PEDESTAL
  - INDIVIDUAL TREE - DECODOUS
  - INDIVIDUAL TREE - CONIFER
  - TRANSFORMER
  - VAULT - HAND HOLE FOR UTILITIES
  - WATER SHUT OFF
  - FIRE HYDRANT
  - EXISTING VERGEE EQUIPMENT CABINET ON ± 10' x 15' CONCRETE PAD

SITE PLAN  
SCALE 1" = 40'

**entrex**  
communication services, Inc.

8600 Rockledge Drive, Suite 660  
BETHESDA, MD 20817  
PHONE: (202)408-0960  
FAX: (202)408-0961

**SUBMITTALS**

DATE	DESCRIPTION	REV.
06-26-14	ZONING REVIEW	
06-27-14	ZONING	
07-22-15	COUNTY COMMENTS	



PROJECT NO: 14050157  
DESIGNER: R.E.  
ENGINEER: V.M.  
SCALE: 1" = 40'  
GRAPHIC SCALE IN INCHES

MARK TWIN  
MIDDLE SCHOOL  
4700 FRANCONIA ROAD  
ALEXANDRIA, VA 22310

**SITE PLAN**

SHEET NUMBER  
**Z-1**

**SUBJECT PARCEL**

MAP #0823 01 0020  
 N/Y  
 SCHOOL BOARD OF FAIRFAX COUNTY  
 PARCEL ADDRESS: 4700 FRANCONIA ROAD  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: 8115 GATCHOUSE ROAD  
 FALLS CHURCH, VA 22062  
 DEED BOOK 01842 PAGE 0034  
 USE: PUBLIC SCHOOLS  
 ZONING: R-3  
 AREA: 23,5225 AC

1

MAP #0823 26 0009  
 N/Y  
 TURCO, ANGELA  
 PARCEL ADDRESS: 4314 FRANCONIA ROAD  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 17686 PAGE 1435  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 34,054 SF

2

MAP #0823 26 0005  
 N/Y  
 MA, AARON  
 PARCEL ADDRESS: 5912 PARKRODGE LN  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 2274 PAGE 100  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 14,630 SF

3

MAP #0823 26 0006  
 N/Y  
 ACKERMAN, ERIK A  
 PARCEL ADDRESS: 5913 PARKRODGE LN  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 22314 PAGE 1746  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 11,076 SF

4

MAP #0823 26 0007  
 N/Y  
 GREY, DAND C & LOBRANE  
 PARCEL ADDRESS: 5913 PARKRODGE LN  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 05991 PAGE 0460  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 11,541 SF

5

MAP #0823 28 0008  
 N/Y  
 BOLL, SCOTT M  
 PARCEL ADDRESS: 6909 PARKRODGE LN  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 15839 PAGE 0112  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 10,879 SF

6

MAP #0823 28 0011  
 N/Y  
 DUNNINGHAM, CHARLES R TR  
 PARCEL ADDRESS: 5807 PARKRODGE LN  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 20296 PAGE 1982  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 10,554 SF

7

MAP #0823 13 0010  
 N/Y  
 SCHEFFER, JAMES E. & MAZZARELLA, JOANNE V  
 PARCEL ADDRESS: 5900 PARKRODGE LN  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 09214 PAGE 1706  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 10,623 SF

8

MAP #0823 13 0008  
 N/Y  
 ISLAN, MUKARAB  
 PARCEL ADDRESS: 3503 PARKRODGE LN  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 22545 PAGE 1825  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 10,701 SF

9

MAP #0823 01 0004  
 N/Y  
 FAIRFAX COUNTY PARK AUTHORITY  
 PARCEL ADDRESS: 5920 LARPIN LN  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: 12005 GOVT CENTER PKWY S# 521  
 FAIRFAX, VA 22033  
 DEED BOOK 02938 PAGE 0044  
 USE: RECREATION FAC, PARKS OUTDOOR  
 ZONING: R-3  
 AREA: 10,0207 AC

10

MAP #0823 12 0081  
 N/Y  
 DANESHMARI, LEILA F  
 PARCEL ADDRESS: 4516 HERRYBROOK DR  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 10383 PAGE 0115  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 11,569 SF

11

MAP #0823 12 0084  
 N/Y  
 ZONGER, JAMES EE  
 PARCEL ADDRESS: 4517 HERRYBROOK DR  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: 7423 CALAWO ST  
 SPRING LD, VA 22150  
 DEED BOOK 22265 PAGE 0936  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 20,713 SF

12

MAP #0823 36 0016  
 N/Y  
 MATHS, DAVID A & MATHS, BARBARA S  
 PARCEL ADDRESS: 4586 WESSEX CT  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 15743 PAGE 0983  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 16,701 SF

13

MAP #0823 26 0015  
 N/Y  
 WILDER, LODGE I & WILDER, DIANNE L TR  
 PARCEL ADDRESS: 4588 WESSEX CT  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 12946 PAGE 1678  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 10,504 SF

14

MAP #0823 36 0014  
 N/Y  
 HARTMILL, JANA C & CARTER, LINDA A  
 PARCEL ADDRESS: 4589 WESSEX CT  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: 5460 BOX 772  
 SMC AS 09128 0008  
 DEED BOOK 12983 PAGE 438  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 2,665 SF

15

MAP #0823 36 0011  
 N/Y  
 KAYTOR, DONALD G  
 PARCEL ADDRESS: 5928 WESSEX LN  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 23148 PAGE 1136  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 14,179 SF

16

MAP #0823 36 0010  
 N/Y  
 LYON, MEGHAN K  
 PARCEL ADDRESS: 5820 WESSEX LN  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 16924 PAGE 0556  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 15,808 SF

17

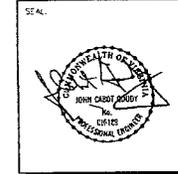
MAP #0823 36 0008  
 N/Y  
 VERA, VESSLA A  
 PARCEL ADDRESS: 4528 FRANCONIA RD  
 ALEXANDRIA, VA 22310  
 MAILING ADDRESS: SAME  
 DEED BOOK 08822 PAGE 0295  
 USE: SINGLE-FAMILY, DETACHED  
 ZONING: R-3  
 AREA: 14,884 SF



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 BETHESDA, MD 20817  
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 FAX: (202)408-0961

**SUBMITTALS**

DATE	DESCRIPTION	REV.
06-26-14	ZONING REVIEW	
06-27-14	ISSUING	
07-22-15	COUNTY COMMENTS	



PROJECT NO: 1050.157  
 DESIGNER: M.A.  
 ENGINEER: M.M.

SCALE:  
 0 1/2 1  
 GRAPHIC SCALE IN INCHES

**MARK TWAIN  
 MIDDLE SCHOOL**  
 4700 FRANCONIA ROAD  
 ALEXANDRIA, VA 22310

TITLE  
**PROPERTY  
 ADJOINERS**

SHEET NUMBER:  
**Z-1A**

LINE TYPES	
BOUNDARY LINE - PARENT PARCEL	---
RIGHT OF WAY BOUNDARY	---
EDGE OF ASPHALT	---
EDGE OF CONCRETE	---
FENCE LINE - CHAIN	---
1" CONTOUR LINE	---
5' CONTOUR LINE	---
LIMITS OF DISTURBANCE	---
LIMITS OF DISTURBANCE / SILT FENCE	---
TREE PROTECTION FENCE	---
TREE OR VEGETATION LINE	---

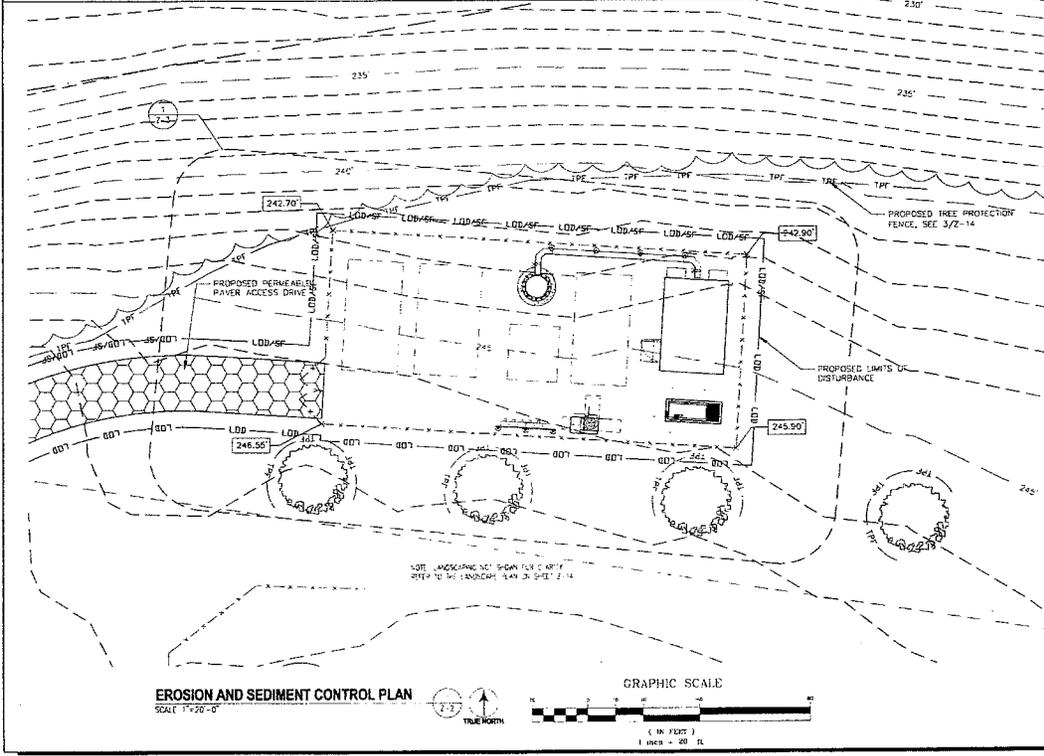
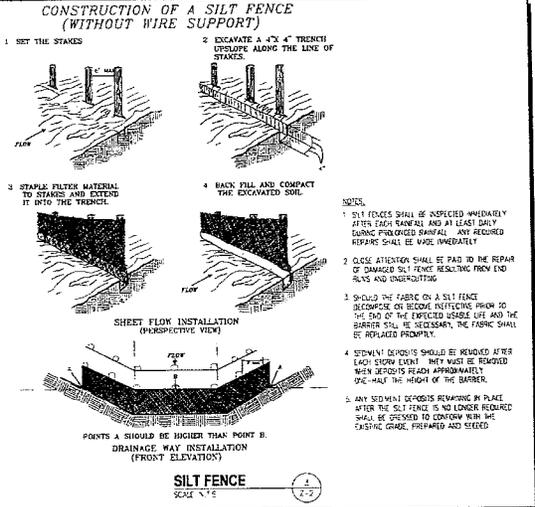
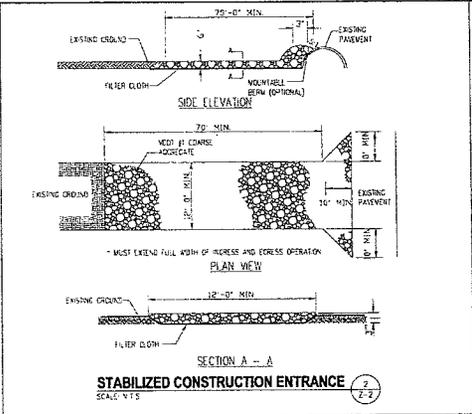
  

SWM NARRATIVE	
A SAW GRAYER IS REQUESTED.	

**LEGEND**

245.00' SPOT ELEVATION



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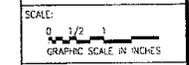
**SUBMITTALS**

DATE	DESCRIPTION	REV.
06-26-14	ISSUING REVISION	
06-27-14	ISSUING	
07-22-15	COUNTY COMMENTS	

SEAL:

**Milestone**  
COMMUNICATIONS

PROJECT NO.	1050.157
DESIGNER:	M.A.
ENGINEER:	M.M.

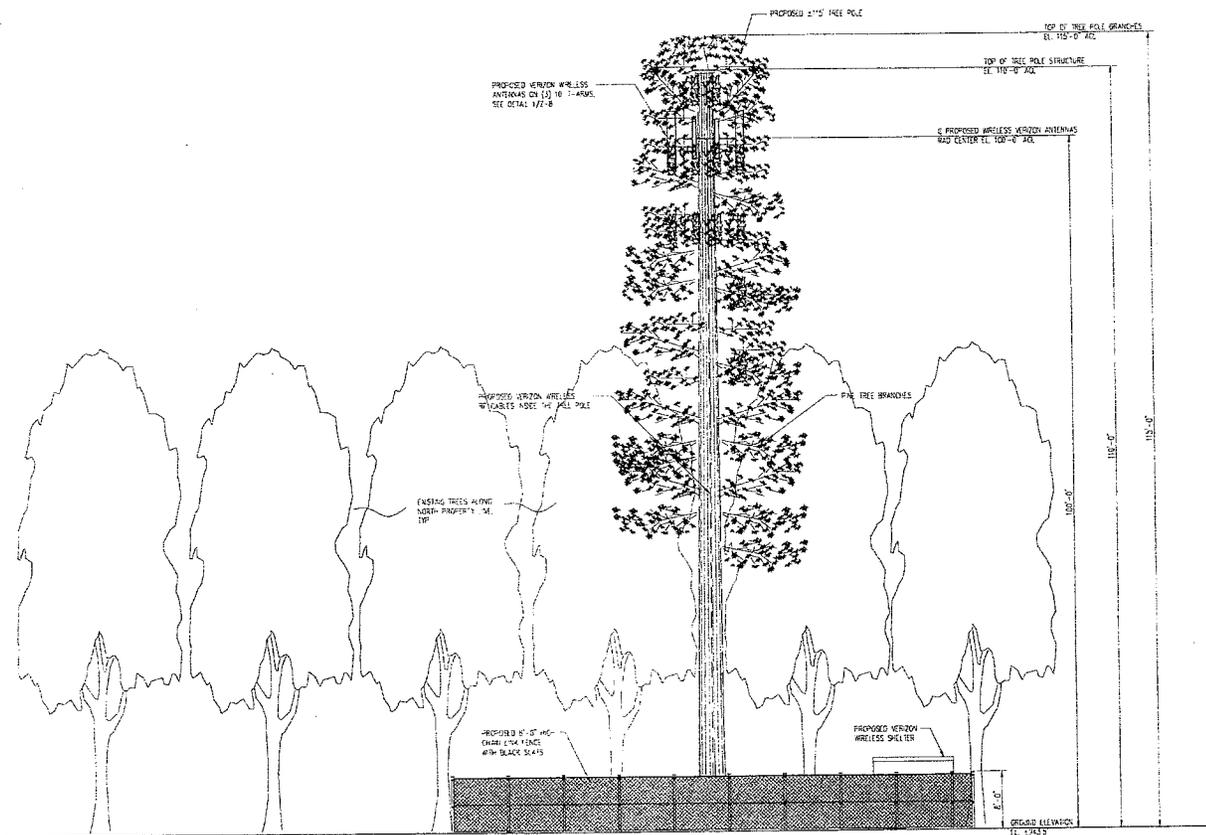


**MARK TWAIN  
MIDDLE SCHOOL**  
4700 FRANCONIA ROAD  
ALEXANDRIA, VA 22310

TITLE:  
**EROSION AND  
SEDIMENT CONTROL  
PLAN AND DETAILS**

SHEET NUMBER:  
**Z-2**





NOTE: ANCHORING AND JOINTS FOR CLEARLY  
 SHOWN IN THE LAYOUT PLAN ON SHEET Z-3A

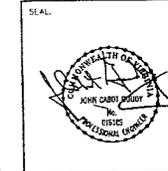
**TREE POLE ELEVATION**

SCALE: 1/4" = 1'-0"



6800 Rockledge Drive, Suite 650  
 BETHESDA, MD 20817  
 PHONE: (202)408-0960  
 FAX: (202)408-0961

SUBMITTALS		
DATE	DESCRIPTION	REV.
06-26-14	ZONING REVIEW	
06-27-14	ZONING	
07-22-15	COUNTY COMMENTS	



PROJECT NO: 1050.157  
 DESIGNER: M.A.  
 ENGINEER: M.M.

SCALE:  
 0 1/2 1  
 GRAPHIC SCALE IN INCHES

**MARK TWAIN  
 MIDDLE SCHOOL**  
 4700 FRANCONIA ROAD  
 ALEXANDRIA, VA 22310

TITLE:  
**TREE POLE  
 ELEVATION**

SHEET NUMBER:  
**Z-4**



6600 Rockledge Drive, Suite 550  
 BETHESDA, MD 20817  
 PHONE: (202)405-6960  
 FAX: (202)405-6961

SUBMITTALS		
DATE	DESCRIPTION	BY
06-26-14	ZONING REVIEW	
06-27-14	ZONING	
01-22-15	COUNTY COMMENTS	



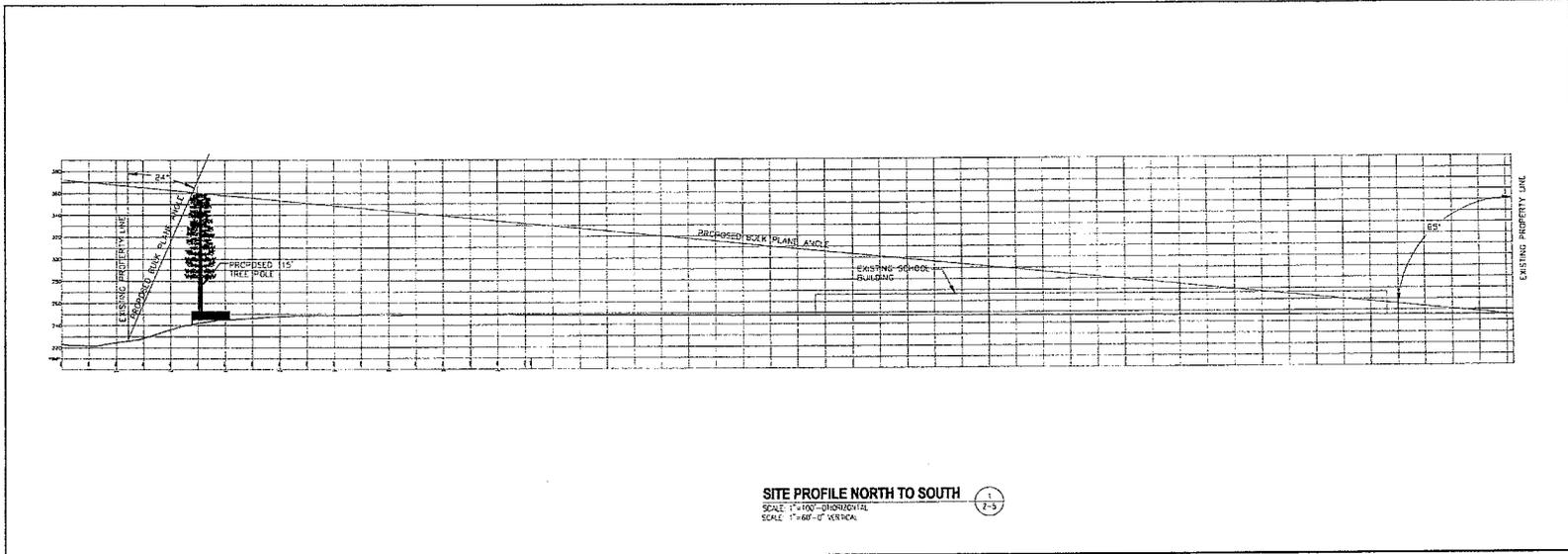
PROJECT NO: 1050157  
 DESIGNER: V.A.  
 ENGINEER: M.M.

SCALE  
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 GRAPHIC SCALE IN INCHES

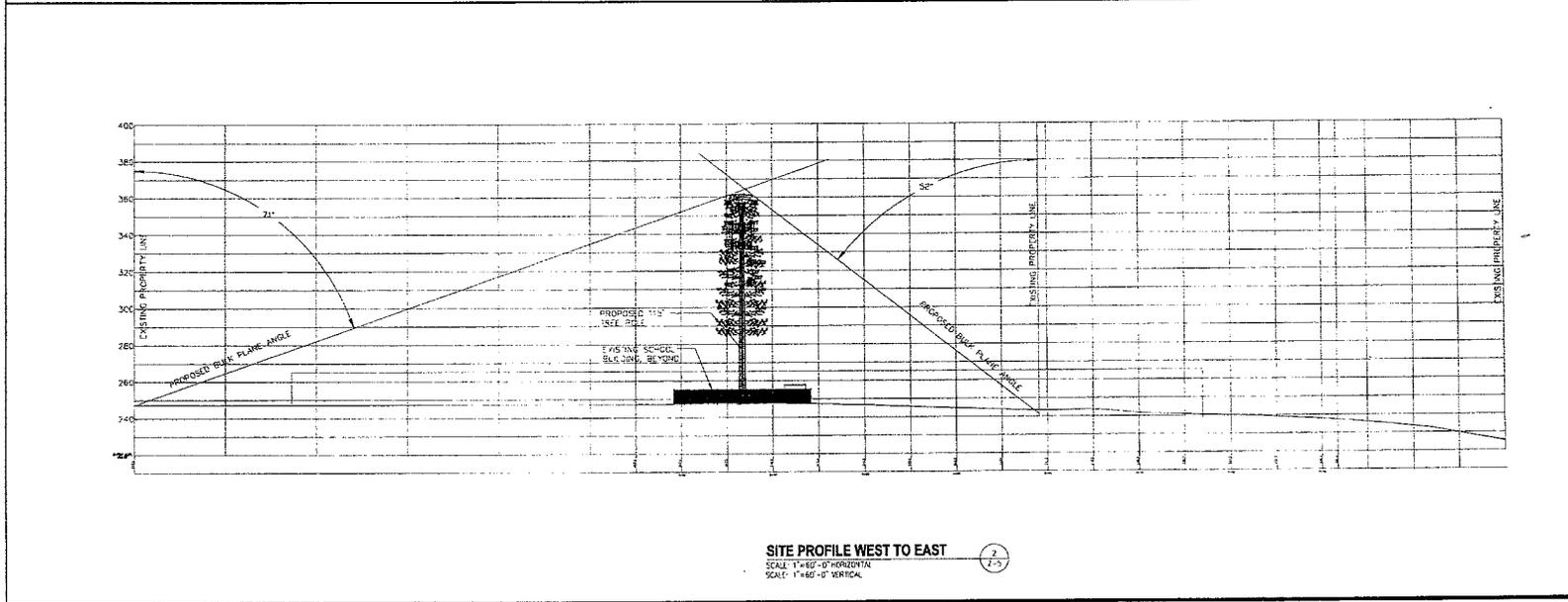
**MARK TWAIN  
 MIDDLE SCHOOL**  
 4700 FRANCONIA ROAD  
 ALEXANDRIA, VA 22310

TITLE:  
**SITE PROFILES**

SHEET NUMBER:  
**Z-5**

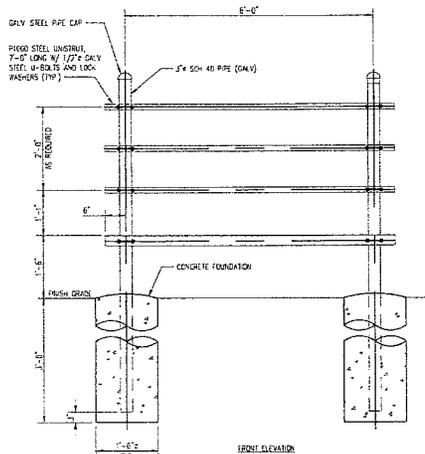


**SITE PROFILE NORTH TO SOUTH**  
 SCALE: 1"=100'-0" HORIZONTAL  
 SCALE: 1"=60'-0" VERTICAL

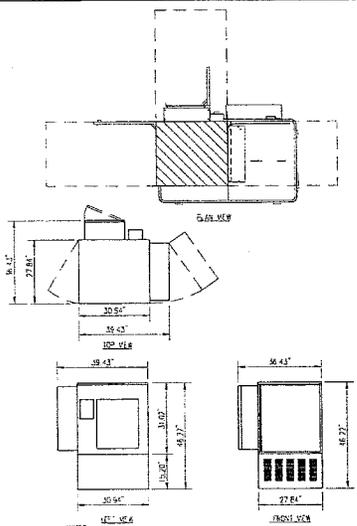


**SITE PROFILE WEST TO EAST**  
 SCALE: 1"=60'-0" HORIZONTAL  
 SCALE: 1"=60'-0" VERTICAL

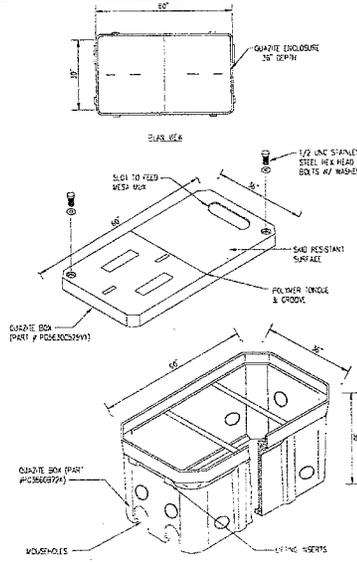




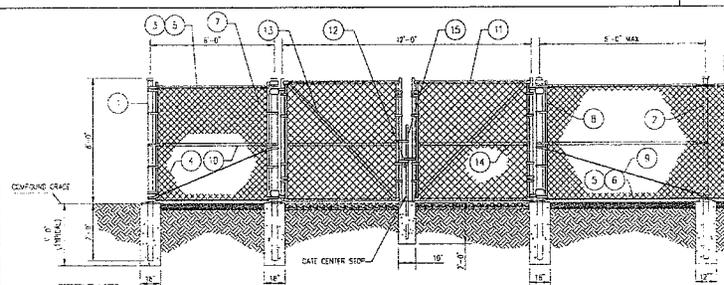
**ELECTRICAL SERVICE FRAME**  
SCALE: 3/8"=1'-0"



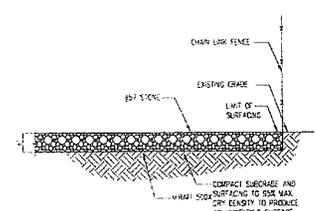
**MESA SPAN XL TELCO CABINET DETAILS**  
SCALE: 1/4"=1'-0"



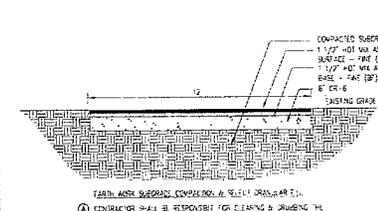
**HANDHOLE QUAZITE BOX**  
SCALE: N.T.S.



**GALVANIZED CHAIN LINK FENCE AND GATE WITH SLATS DETAIL**  
SCALE: N.T.S.



**COMPOUND SURFACING DETAIL**  
SCALE: N.T.S.



**ASPHALT DRIVEWAY DETAIL**  
SCALE: N.T.S.

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PHONE: (202)468-0960  
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**SUBMITTALS**

DATE	DESCRIPTION	REV.
08-26-14	ISSUE REVIEW	
09-27-14	ISSUE	
01-22-15	COUNTY COMMENTS	



PROJECT NO: 1050.157  
DESIGNER: M.A.  
ENGINEER: M.M.

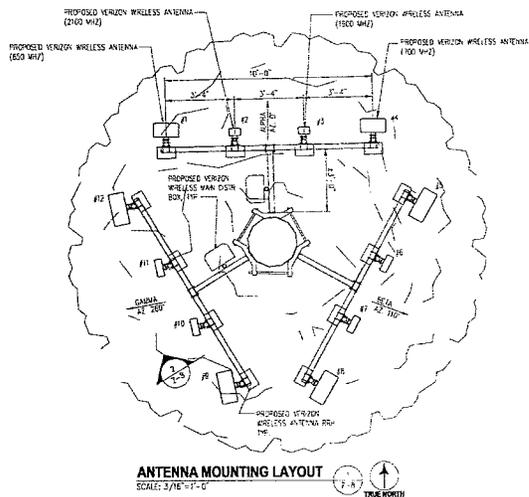
SCALE:  
0 1/2 1  
GRAPHIC SCALE IN INCHES

**MARK TWAIN  
MIDDLE SCHOOL  
4700 FRANCONIA ROAD  
ALEXANDRIA, VA 22310**

FILE:

**SITE DETAILS**

SHEET NUMBER:  
**Z-7**



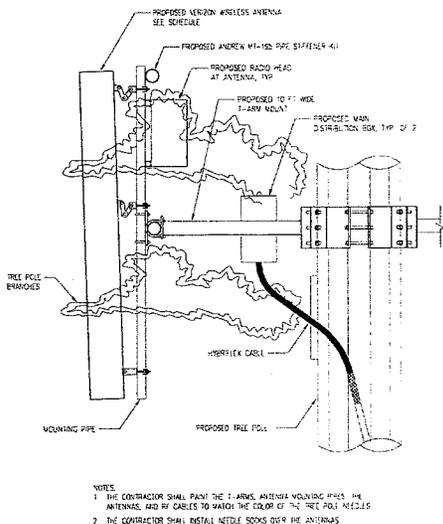
ANTENNA AND CABLE SCHEDULE									
ANTENNA SECTOR	ANTENNA MARK	TRAD CENTER	ANTENNA	MECHANICAL DATA 1'-1"	1/MG/TH	CABLE LENGTH	COAXIAL CABLE SIZE	COAX CODE	FREQ/MHZ
ALPHA	# 1	100'	XTC-FR0-800 (18.0" H x 14.6" W x 8.0" D)	SEE NOTE B	0'	130'	SHARED HYBRID CABLE	H	850 MHZ
	# 2	100'	AP19-50 (65.1" H x 8.7" W x 4.1" D)		0'	130'	(1) SH12 HYBRID CABLE	O/R/C	2100 MHZ
	# 3	100'	AP19-50 (65.1" H x 8.7" W x 4.1" D)		0'	130'	SHARED HYBRID CABLE	B/A/B	1500 MHZ
	# 4	100'	XTC-FR0-800 (18.0" H x 14.6" W x 8.0" D)		0'	130'	(1) SH12 HYBRID CABLE	O/R/C	2100 MHZ
BETA	# 5	100'	XTC-FR0-840 (18.0" H x 14.6" W x 8.0" D)		110'	110'	SHARED HYBRID CABLE	H	850 MHZ
	# 6	100'	AP19-45 (45.0" H x 10.0" W x 4.1" D)		110'	110'	SHARED HYBRID CABLE	O/R/C	2100 MHZ
	# 7	100'	AP19-45 (45.0" H x 10.0" W x 4.1" D)		110'	110'	SHARED HYBRID CABLE	B/A/B	1500 MHZ
GAMMA	# 8	100'	XTC-FR0-840 (18.0" H x 14.6" W x 8.0" D)		110'	110'	SHARED HYBRID CABLE	O/R/C	2100 MHZ
	# 9	100'	XTC-FR0-840 (18.0" H x 14.6" W x 8.0" D)		260'	260'	SHARED HYBRID CABLE	H	850 MHZ
	# 10	100'	AP19-45 (45.0" H x 10.0" W x 4.1" D)		260'	260'	SHARED HYBRID CABLE	O/R/C	2100 MHZ
	# 11	100'	AP19-45 (45.0" H x 10.0" W x 4.1" D)		260'	260'	SHARED HYBRID CABLE	B/A/B	1500 MHZ
GPS	# 12	100'	XTC-FR0-840 (18.0" H x 14.6" W x 8.0" D)		260'	260'	SHARED HYBRID CABLE	O/R/C	2100 MHZ
	# 13	100'	XTC-FR0-840 (18.0" H x 14.6" W x 8.0" D)		260'	260'	SHARED HYBRID CABLE	O/R/C	2100 MHZ
GPS	-	-	HYBRID GPS-TRC-100(MH/MHZ/13) REQUIRED		-	-	1/7"	-	-

**NOTES:**

- ALL ANTENNAS SHALL BE FURNISHED WITH DOWNLINE BRACKET. CONTRACTOR SHALL COORDINATE REQUIRED MECHANICAL DETAILS FOR EACH ANTENNA WITH AN ENGINEER. ANTENNA DOWNLINE SHALL BE SET AND VERIFIED BY A SWAYT LEVEL.
- ANTENNA CENTERLINE HEIGHT IS IN REFERENCE TO ELEVATION 0.0'
- FINAL CABLE LENGTHS SHALL BE DETERMINED AFTER INSTALLATION.
- COORDINATE THE ANTENNA CENTERLINE WITH THE STRUCTURE.
- THE CABLE LENGTHS SHOWN ARE THE ACTUAL COMPUTED LENGTHS WITH NO TOLERANCE AT DRAWING.
- REFER TO THE AEP FOR THE ANTENNA DOWNLINE REQUIREMENTS.

**CABLE MINIMUM BEND RADIUS**

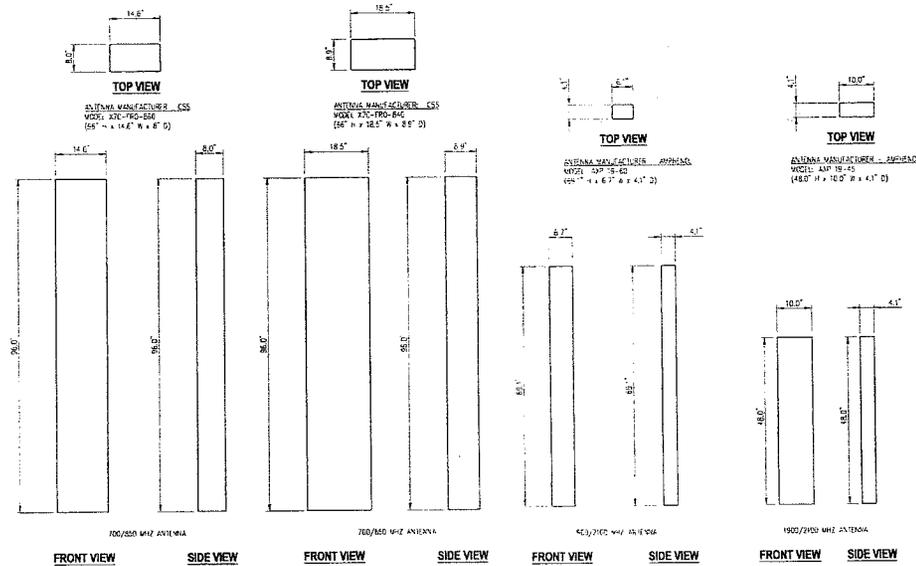
CABLE TYPE	1/2" BEND	1-1/4" BEND	1-5/8" BEND	2-1/4" BEND	3-1/4" BEND
1/2"	10"	15"	20"	22"	10"



- NOTES:**
- THE CONTRACTOR SHALL PAINT THE 1-ARM ANTENNA MOUNTING PIPES THE ANTENNAS, AND BY CABLES TO MATCH THE COLOR OF THE TREE POLE NEEDLES.
  - THE CONTRACTOR SHALL INSTALL NEEDLE SOCKS OVER THE ANTENNAS.

**ANTENNA MOUNTING SECTION**

SCALE: 3/4"=1'-0"



**ANTENNA DETAILS**

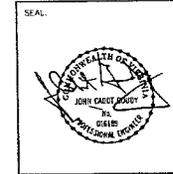
SCALE: 1/2"=1'-0"

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BETHESDA, MD 20817  
PHONE: (202)408-0966  
FAX: (202)408-0961

**SUBMITTALS**

DATE	DESCRIPTION	REV
08-26-14	NON-DC REVIEW	
08-27-14	ISSUING	
01-22-15	COUNTY COMMENTS	



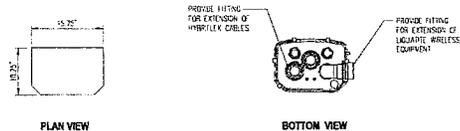
PROJECT NO. 1050.157  
DESIGNER: M. A.  
ENGINEER: M. M.

SCALE:  
0" = 1/2" = 1"  
GRAPHIC SCALE IN INCHES

MARK TWAIN  
MIDDLE SCHOOL  
4700 FRANCONIA ROAD  
ALEXANDRIA, VA 22310

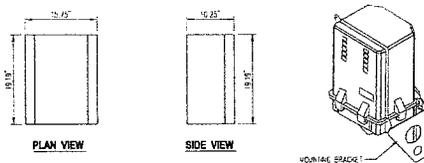
FILE:  
**ANTENNA LAYOUT,  
SECTION, DETAILS  
AND SCHEDULE**

SHEET NUMBER:  
**3-8**



PLAN VIEW

BOTTOM VIEW



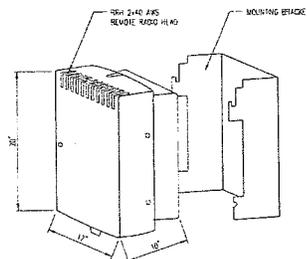
PLAN VIEW

SIDE VIEW

MOUNTING BRACKET

MANUFACTURER: RANCAP  
 DIMENSIONS: 12.25x15.25x19.37  
 WEIGHT: 21.4 LBS (SYSTEM)  
 22.1 LBS (W/BOX)  
 26.8 LBS (TOTAL)

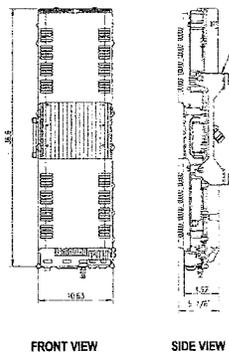
MAIN DISTRIBUTION BOX DETAILS  
 SCALE: 1/4" = 1'-0"



MANUFACTURER: ALCATEL-LUCENT  
 POWER SUPPLY: 48 VDC  
 DIMENSIONS: 10.25x11.75x12.5  
 WEIGHT: 31 LBS WITH MOUNTING HARDWARE

NOTE:  
 1. INSTALL PER MANUFACTURER RECOMMENDATION.  
 2. FEED, DC POWER AND GROUND CONNECTION NOT SHOWN.

700 MHz LTE RRH DETAIL  
 SCALE: 3/4" = 1'-0"

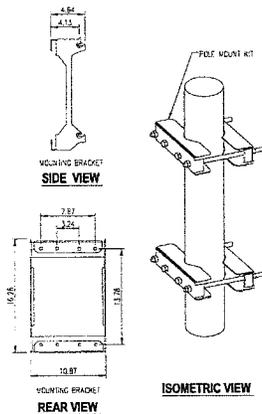


FRONT VIEW

SIDE VIEW

MANUFACTURER: ALCATEL-LUCENT  
 POWER SUPPLY: 48 VDC  
 DIMENSIONS: 12.25x11.75x12.5  
 WEIGHT: 60 LBS

2100 MHz AND FUTURE RRH DETAIL  
 SCALE: 1/4" = 1'-0"



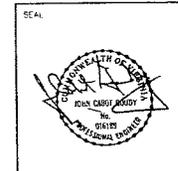
MOUNTING BRACKET  
 SIDE VIEW

MOUNTING BRACKET  
 REAR VIEW

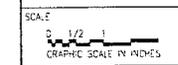
ISOMETRIC VIEW

6600 Rockledge Drive, Suite 560  
 Bethesda, MD 20817  
 PHONE: (202)408-0360  
 FAX: (202)408-0961

SUBMITTALS		
DATE	DESCRIPTION	REV.
06-28-14	ISSUE PERMITS	
06-27-14	ISSUE	
01-22-15	ISSUE	



PROJECT NO.	1050157
DESIGNER	M.A.
ENGINEER	M.M.



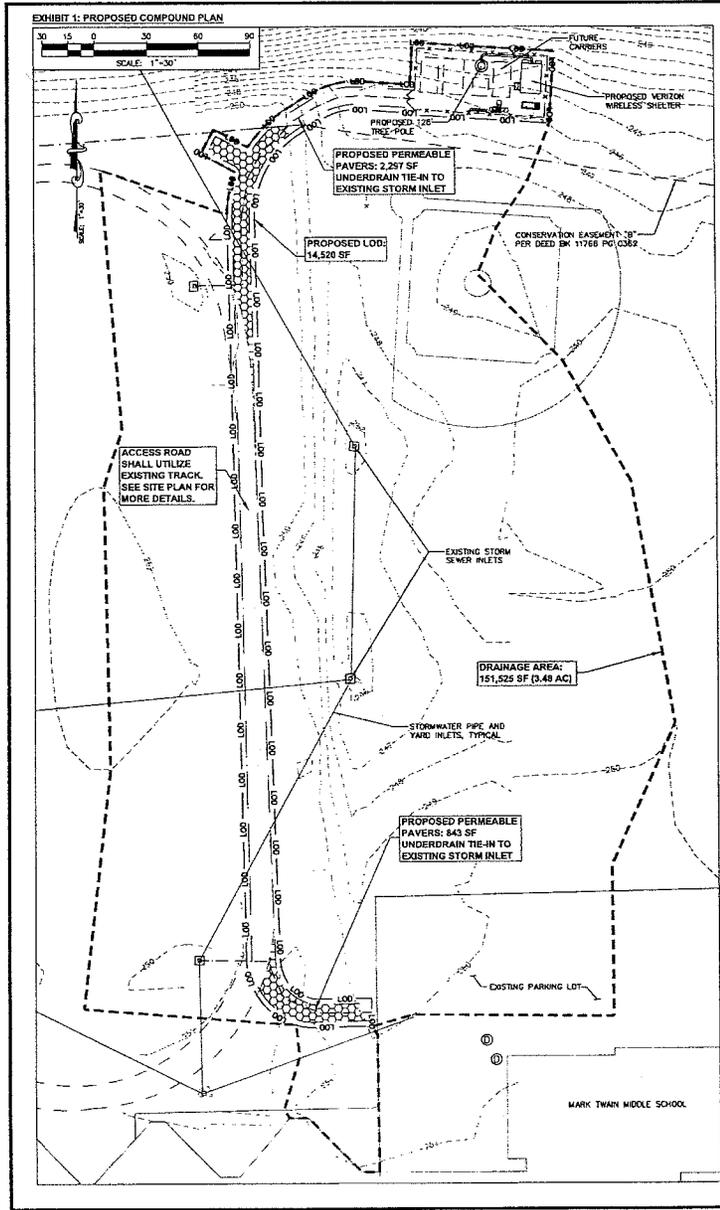
MARK TWAIN  
 MIDDLE SCHOOL  
 4700 FRANCONIA ROAD  
 ALEXANDRIA, VA 22310

RRH AND  
 DISTRIBUTION  
 BOX DETAILS

SHEET NUMBER  
 Z-9







**Stormwater Narrative**  
**I. Background**

The proposed wireless communication compound, hereafter referred to as the Site, will be located on the Mark Twain Middle School property at 4700 Franconia Road in Alexandria (refer to Z-1 for plan). The compound will be north of the existing baseball field and connected to the existing northeast parking lot via an access path (Exhibit 1). Mark Twain Middle School contains an existing stormwater pipe network that eventually drains into an existing unnamed tributary of Holmes Run; the proposed compound will maintain existing sheetflow down the northern wooded corridor into the same watercourse (Exhibit 2).

The proposed compound and a portion of the proposed access road are within an existing conservation easement (Exhibit 1). A swap agreement between Milestone and Mark Twain Middle School is underway to redesignate conservation easement area elsewhere on the property. Soils on site include two classifications: (95) Kingstons sandy clay loam and (95) Urban land. Both classifications belong to the Hydrologic Soil Group (HSG) D indicating low permeability.

The limits of disturbance (LOD) for future site construction encompasses 14,520 sf (0.33 ac), a disturbance which will allow for the erection of a monopole, several small buildings, and structures within a fenced compound, as well as a dedicated access from the existing parking lot. This proposed infrastructure will result in approximately 5,765 sf (0.13 ac) of new impervious area. The access path will utilize the existing crushed stone track to limit the amount of new impervious area. This is an "ultimate" condition as four of the five proposed telecommunication shelters will be added at a future date. The compound surface will be VDOT #57 stone, a well-graded gravel with little to no fines that is not prone to compaction that is overlaid on a compacted sub-grade. Though the gravel will retain more stormwater than a paved surface (as some would be held in the void spaces of the gravel, approximately 40%), it is assumed the compound area is "impervious" when performing stormwater calculations.

As modeled using the Virginia Runoff Reduction Method for Re-development (VRRM) (Exhibit 3) the newly proposed impervious areas will increase the Site's annual total phosphorus (TP) loading to 0.57 lb/yr, which represents an increase of 0.29 lb/yr TP relative to predevelopment conditions. The VRRM calculations require a reduction of at least 0.26 lb TP/yr.

To mitigate the modeled increase in TP loading under proposed conditions, stormwater best management practice (BMP) techniques will be utilized in accordance with the Virginia Department of Environmental Quality (DEQ) Stormwater Design BMP Clearinghouse. An explanation is provided below.

Stormwater runoff will exit the Site as overland sheet flow. The forested slope which drains the Site directs stormwater to an existing unnamed tributary of Holmes Run.

**II. Water Quality**

The existing site conditions include managed turf, a baseball field and a crushed stone track, 4,111 sf (0.09 ac) of which will be used as a portion of the proposed access path. Given the location and nature of the Site, the proposed project is classified as "development on prior developed lands" per Fairfax County Code, Section 124-1-5. Because the limits of disturbance are less than one acre, total phosphorus loading for the re-development area must be reduced by 10% (Fairfax County Code, Section 124-4-2(a)). Total phosphorus load reduction required for the re-development area equals 0.03 lb/yr, as shown in the completed VRRM Re-development Spreadsheet (Exhibit 3).

New impervious cover must meet maximum total phosphorus loading requirements of 0.41 lb/yr/acre (Fairfax County Code, Section 124-4-2-A-2). The proposed project will add 5,765 sf (0.13 ac) of new impervious cover, requiring a total phosphorus load reduction of 0.23 lb/yr (Exhibit 3).

Combined new and existing impervious area totals 9,876 sf (0.23 ac), approximately 68% of the 0.33 acre limits of disturbance. Total phosphorus load reduction required for both new and re-development areas equals 0.26 lb/yr, as shown in the completed VRRM Re-development Spreadsheet (Exhibit 3).

**A. BMP #1: Permeable Pavement**

This proposed BMP shall be employed for the new portions of the access road (i.e. those portions not including the existing crushed stone track), for an approximate length of 150 feet for the northern portion and 75 feet for the southern. Both areas will follow design criteria described in DEQ Stormwater Design BMP Specification #7, utilizing an interlocking permeable paving system (i.e. Grasscrete or approved equal) and underdrains, due to the existing HSG D soils. Four-inch perforated underdrains will be installed at a minimum 0.5% slope, encased in 6" of stone and will tie-in to existing storm cover tiles located near the northern and southern areas of the limits of disturbance (Exhibit 1). Together, these portions of permeable pavement provide 0.13 lb TP/yr as shown in VRRM except Exhibit 4. Permeable pavement typical section is provided as Exhibit 5.

**B. BMP #2: Offsite Compliance**

The remaining 0.13 lb TP/yr reduction required will be obtained through offsite compliance. Offsite compliance via the nonpoint nutrient offset program is permitted after Director approval per Fairfax County Code Section 124-4-5-B for instances where:

1. Less than five acres of land will be disturbed;
2. The post construction phosphorus control requirement is less than 10 lb/yr; or
3. Full compliance with the post-development nonpoint nutrient runoff compliance requirements cannot practicably be met on-site (Fairfax County Code Section 124-4-5-B).

Additional post-development quality requirements cannot practicably be met on-site. First, the limited size and space of the constructable area makes on-site BMPs including linear treatment such as grass channels or swales, or treatments with larger footprints such as bio-retention, unfeasible. Second, the existing HSG D soils cannot meet the minimum infiltration rate of 0.5 inches/hour required for infiltration BMP options. Finally, the downslope wooded corridor is already a conservation area, therefore, a conserved open space for sheetflow cannot be used for credit. The proposed wireless communication compound, therefore, meets all three criteria listed for offsite compliance via the nonpoint nutrient offset program listed above. A letter verifying availability is shown in Exhibit 6.

**III. Water Quantity**

Under existing conditions, water exits the Site as sheet flow, which is addressed in Fairfax County Code subsection 124-4-4-E. This sub-section states, "if all runoff from the site is sheet flow and the conditions of this subsection are met, no further water quantity controls are required". Areas immediately down gradient of the Site are forested with thick undergrowth (as shown in Exhibit 2) and drain to the unnamed tributary to Holmes Run. Maximum 2-year sheet flow velocities from the Site remain below 0.18 feet per second based on a hydrologic model which assessed the Site's steepness slope (0.29 ft/ft) with light woods land cover (0.40) on a 30 foot flowpath. The Virginia Erosion and Sediment Control Handbook (VESHCH) specifies in Tables 6-14 and 5-22 that velocities in grass channels and unlined earthen channels are required to remain below 2.5 feet per second in the worst case scenario (i.e., the least stable soil types).

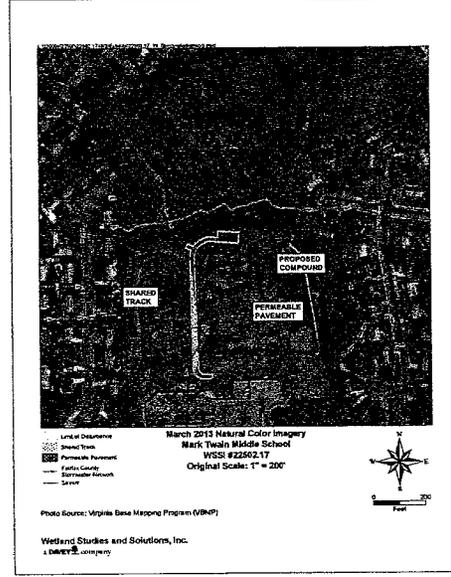
The calculated maximum sheet flow velocity on the Mark Twain site is well below all maximum permissible velocities specified in the VESHCH, therefore proposed conditions will not cause downstream erosion, sedimentation, or flooding of down gradient properties. The proposed plan therefore meets all provisions of subsection 124-4-4-E of the Fairfax County Code, precluding the need for further water quantity controls.

To verify that any increase in runoff from the entire proposed project is minimal, the 1-, 2- and 10-yr 24-hr storm discharges were calculated for both pre- and post-development conditions. This includes the entire drainage area to the site, equal to 151,525 sf (3.48 ac) as shown in Exhibit 1. The proposed limits of disturbance make up less than 10% of the total upstream drainage area. Utilizing the BMP strategies listed in the Water Quality section above, post-development discharge quantities for the 1-, 2- and 10-yr 24-hr storms are equal to pre-development of 5.19, 7.26, and 14.12 cfs, respectively (Exhibit 7).

**IV. Summary**

The proposed project aims to minimize new impervious cover as much as possible, including use of the existing crushed stone track as part of the access path. Water quality requirements to reduce pollutant loading to 0.26 lb TP/yr shall be met via permeable pavers in combination with the nonpoint nutrient offset program. Water quantity requirements are met according to the criteria of subsection 124-4-4-E of the Fairfax County Code. Additionally, calculations show no increase in runoff due to the proposed project.

**EXHIBIT 2: AERIAL PHOTO OF EXISTING SITE CONDITIONS**



14400 Lee Road, Suite 100  
 Fairfax, VA 22033  
 Phone: 703-978-5000  
 www.wetlandand.com

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Milestone at Mark Twain Middle School  
 Fairfax County, Virginia

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Stormwater Management Plan

---

1/23/2014  
 FRANK B. GARDNER  
 Director

---

REVISIONS		DATE	BY	APP. BY

---

Horizontal Datum: NAD 83  
 Vertical Datum: NAVD 83  
 Boundary and Top Source: Esri and Fairfax County Digital Data

Design	Draw	Approved
KLP	MAM	FRG

Sheet #  
**Z-12**

Customer File Name: \_\_\_\_\_

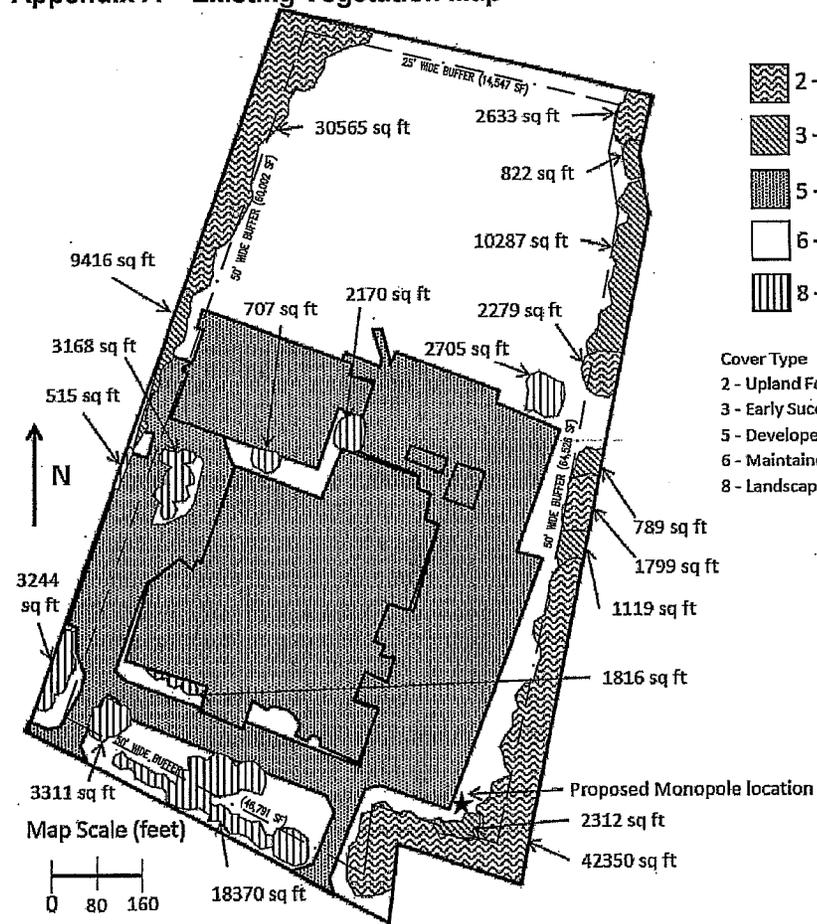




Existing Vegetation Map

February 23, 2015  
Page 3

Appendix A – Existing Vegetation Map



-  2 – Upland Forest
-  3 – Early Successional Forest Cover
-  5 – Developed Land
-  6 – Maintained Grassland
-  8 – Landscaped Tree Canopy

Cover Type	Canopy Area (sq. ft.)
2 - Upland Forest	77347
3 - Early Successional Forest Community	13636
5 - Developed Land	457888
6 - Maintained Grassland	424670
8 - Landscaped Tree Canopy	36006

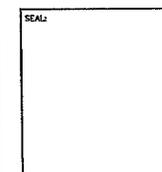
EXISTING VEGETATION INSIDE BUFFER

SIDE	BUFFER AREA	UPLAND FOREST (SF)	EARLY SUCCESSIONAL FOREST COVER (SF)	LANDSCAPE TREE CANOPY (SF)	TOTAL (SF)
NORTH	14,547 SF.	2,988 SF. (20.5%)	--	--	2,988 SF. (20.5%)
SOUTH	46,791 SF.	11,011 SF. (23.5%)	--	10,672 SF. (22.8%)	21,683 SF. (46.3%)
EAST	64,526 SF.	27,055 SF. (42%)	11,165 SF. (17.3%)	--	38,220 SF. (59.3%)
WEST	60,002 SF.	21,797 SF. (36%)	--	3,244 SF. (5.4%)	25,041 SF. (41.4%)

**entrex**  
communication services, inc.

8600 Rockledge Drive, Suite 600  
BETHESDA, MD 20817  
PHONE: (301)408-0880  
FAX: (301)408-0881

SUBMITTALS		
DATE	DESCRIPTION	REV.
03-10-15	PLAN REVIEW	



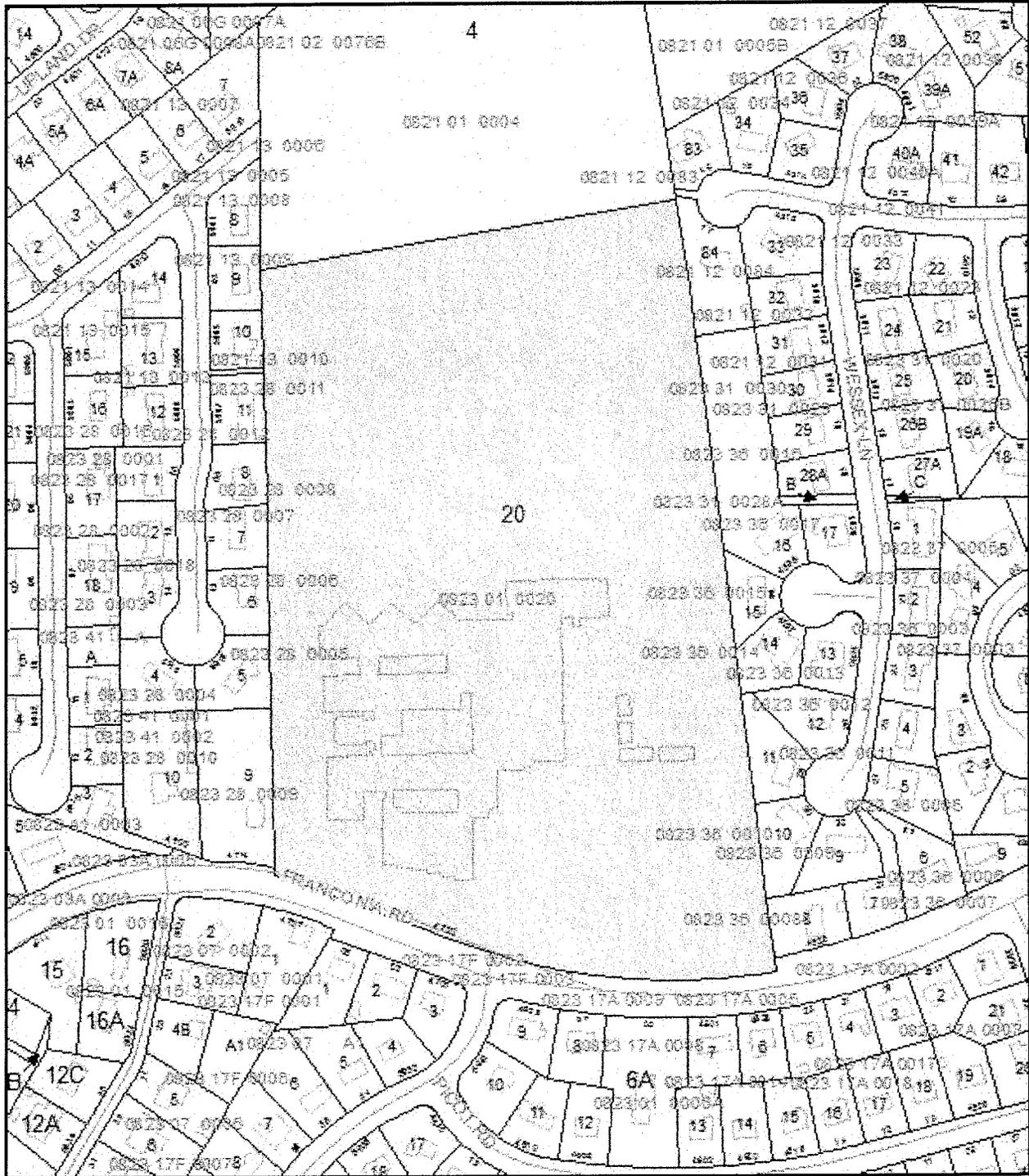
PROJECT NO: 1050.139  
DESIGNER: M.M.E.  
ENGINEER: M.M.

SCALE:  
0 1/2 1  
GRAPHIC SCALE IN INCHES

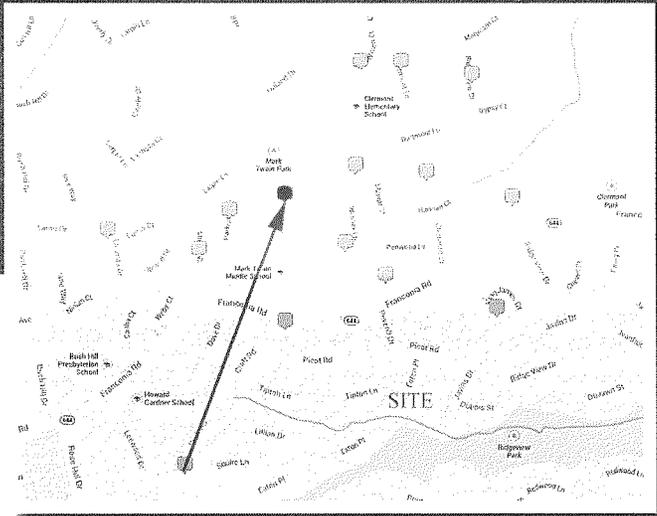
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**EXISTING VEGETATION MAP**

SHEET NUMBER:

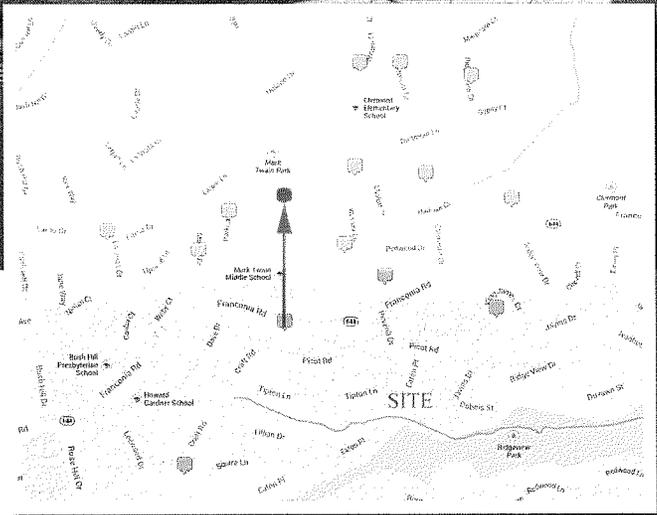




Aerial Imagery Copyright 2007 Commonwealth of Virginia

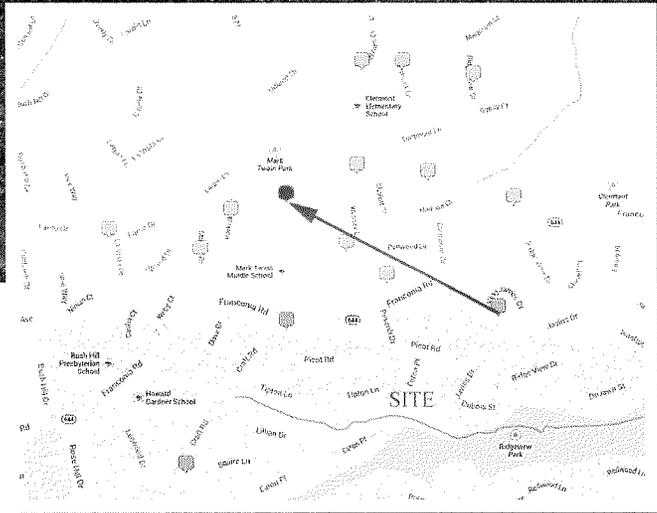


**MARK TWAIN  
MIDDLE SCHOOL  
PROPOSED MONOPINE**

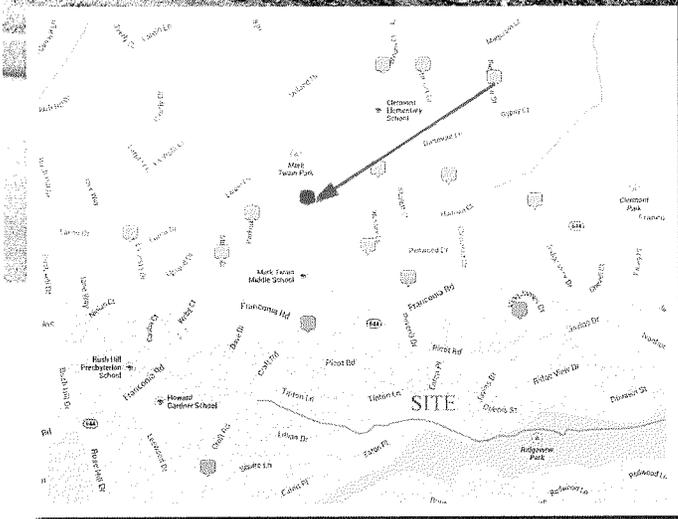


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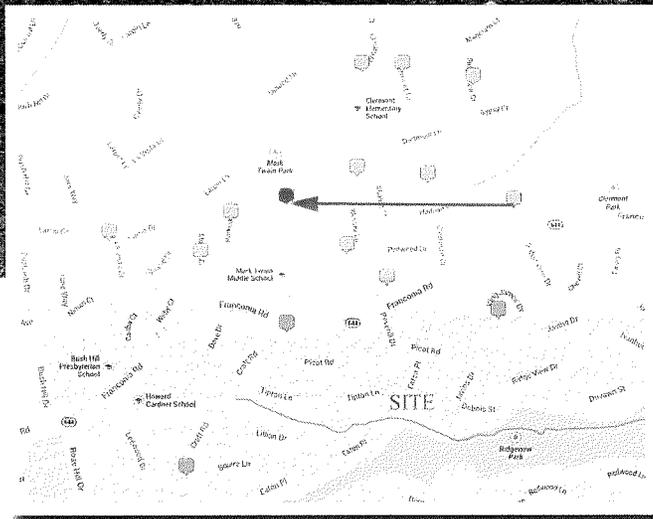
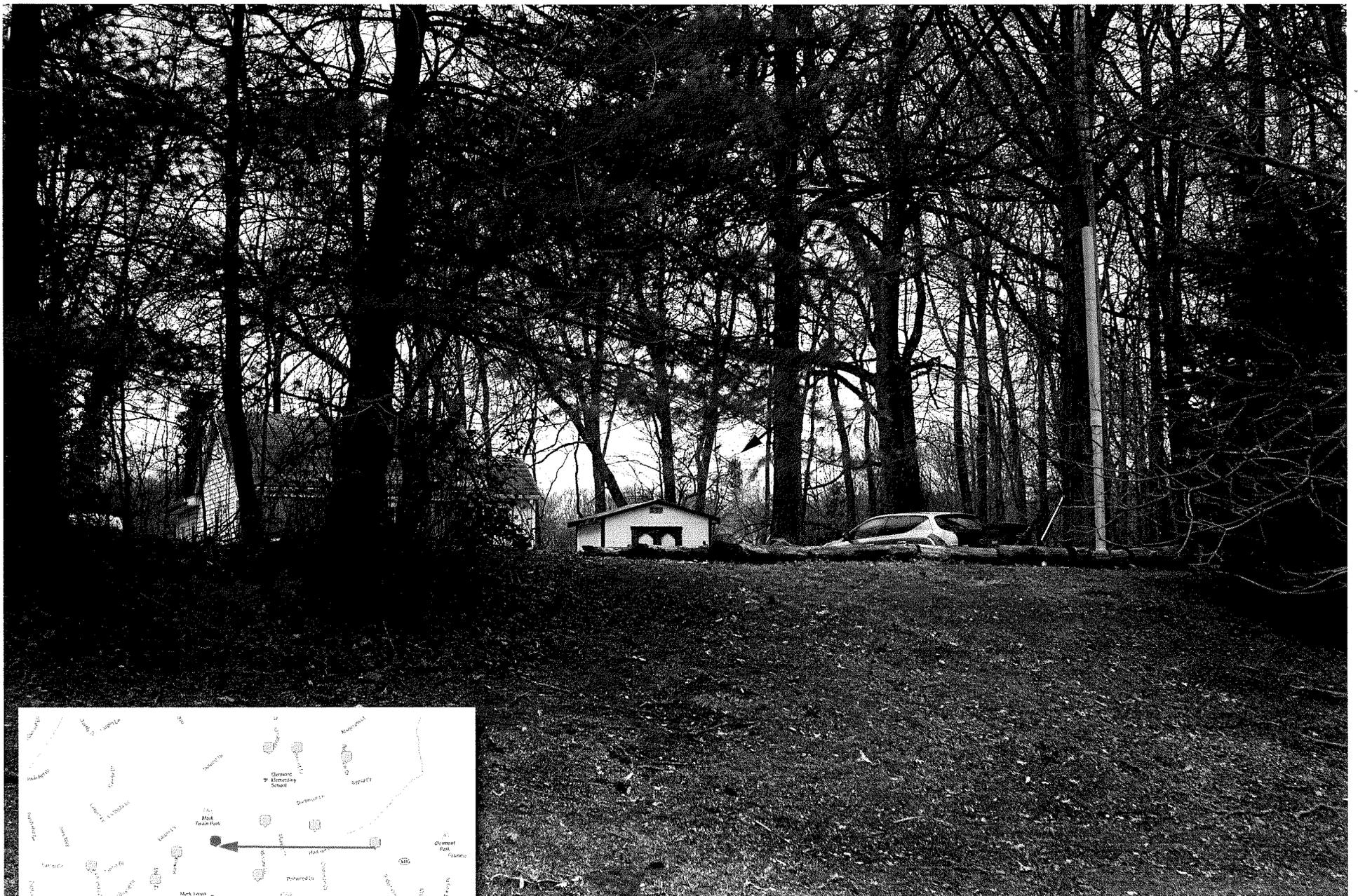
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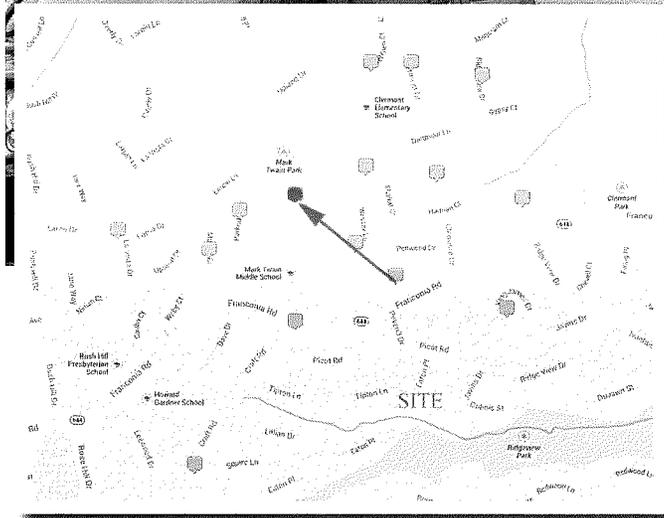
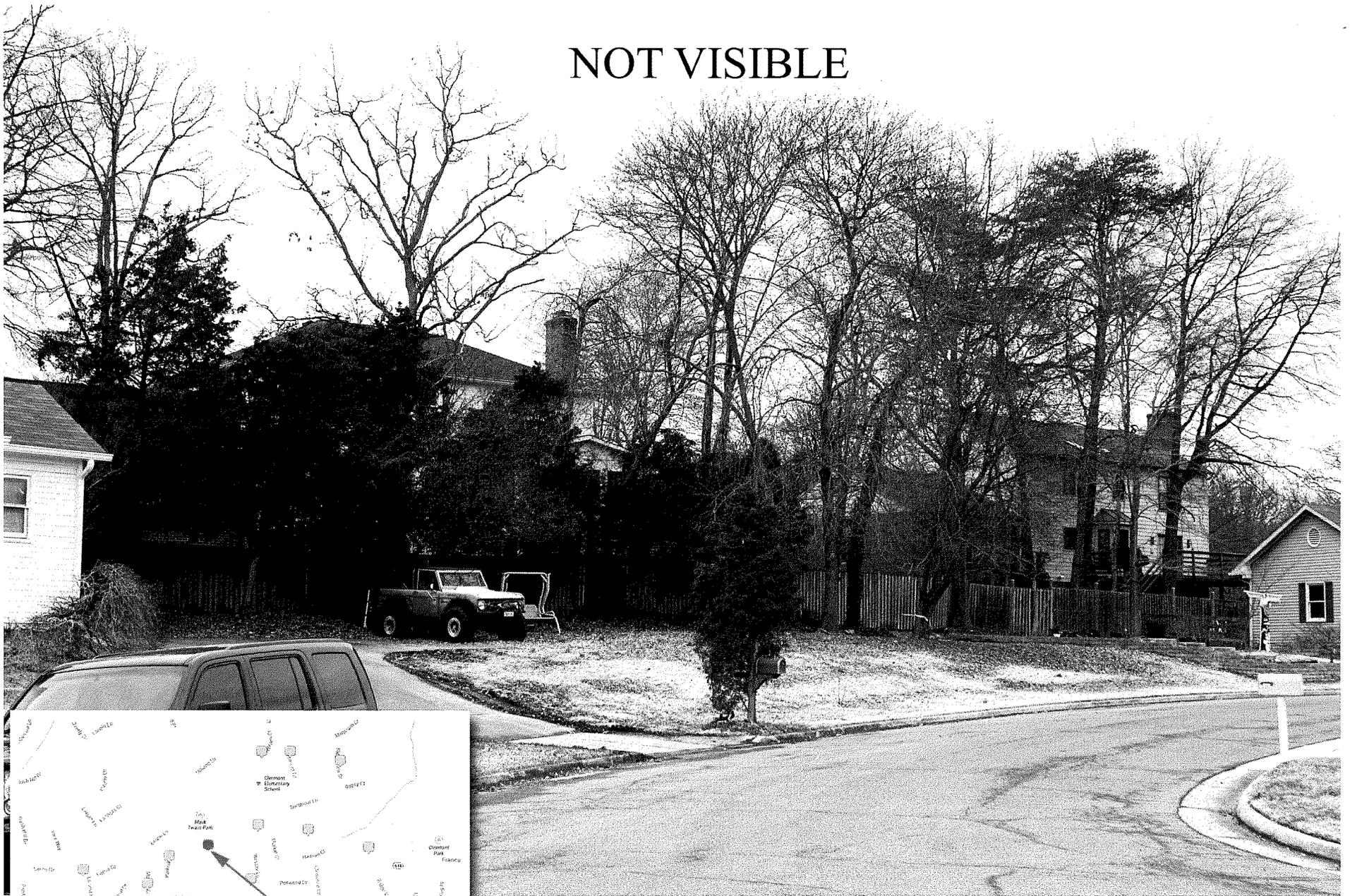


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MIDDLE SCHOOL  
PROPOSED MONOPINE**

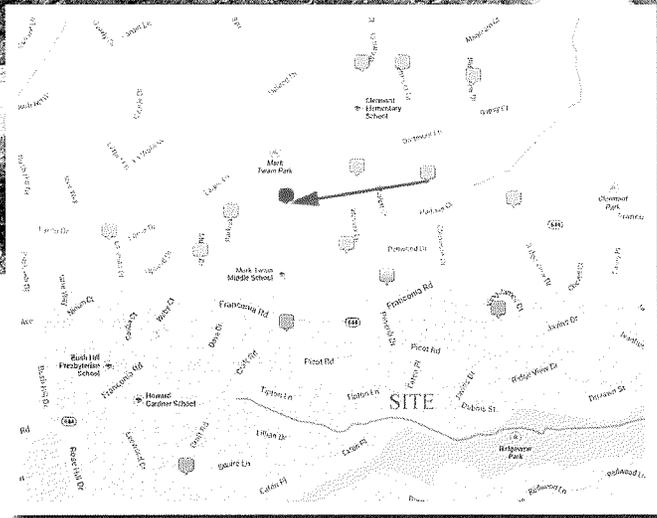


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MIDDLE SCHOOL  
PROPOSED MONOPINE**

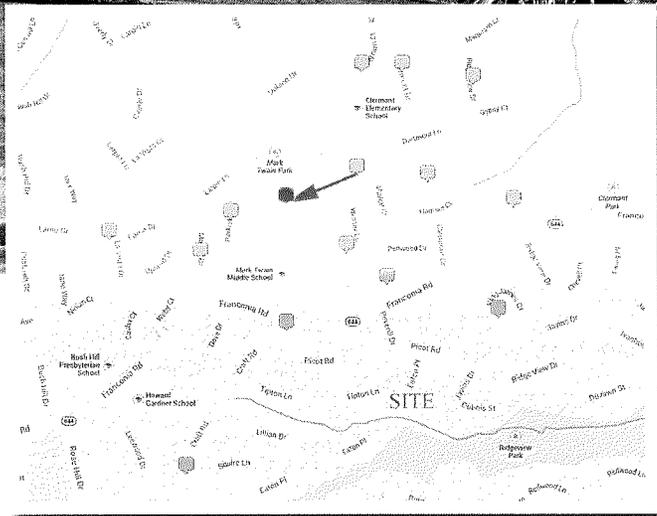
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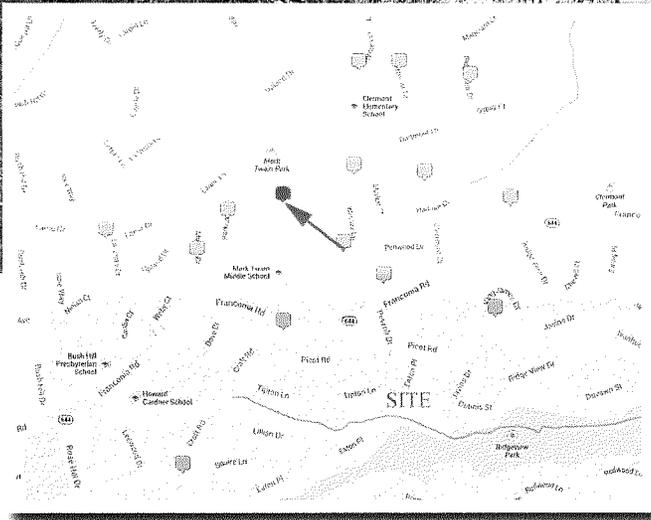
MARK TWAIN  
MIDDLE SCHOOL  
PROPOSED MONOPINE



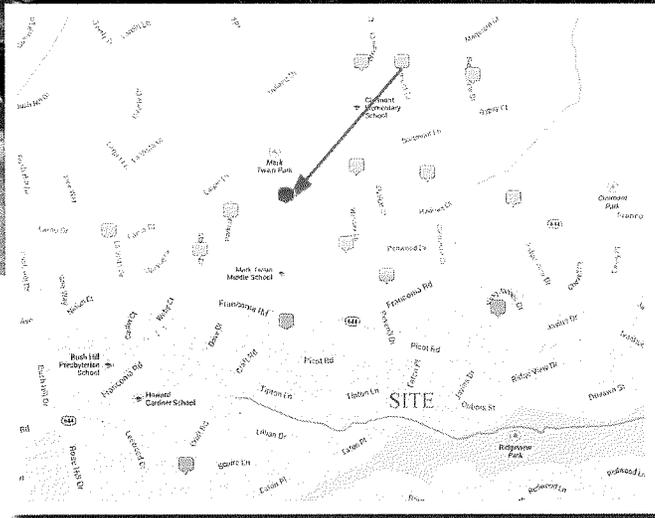
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MIDDLE SCHOOL  
PROPOSED MONOPINE**



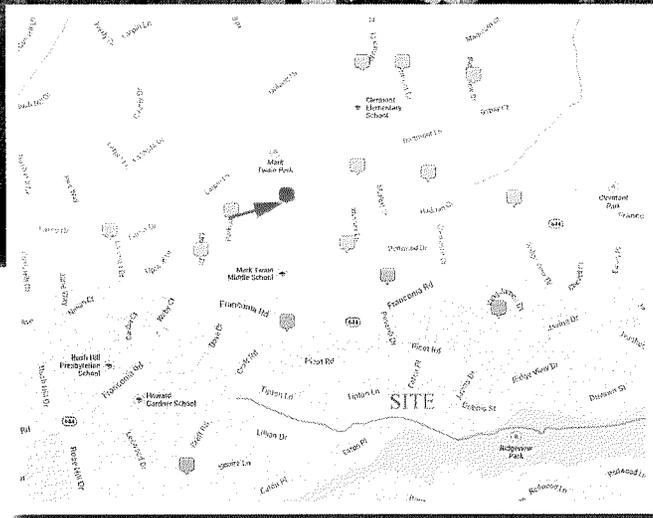
# MARK TWAIN MIDDLE SCHOOL PROPOSED MONOPINE



**MARK TWAIN  
MIDDLE SCHOOL  
PROPOSED MONOPINE**

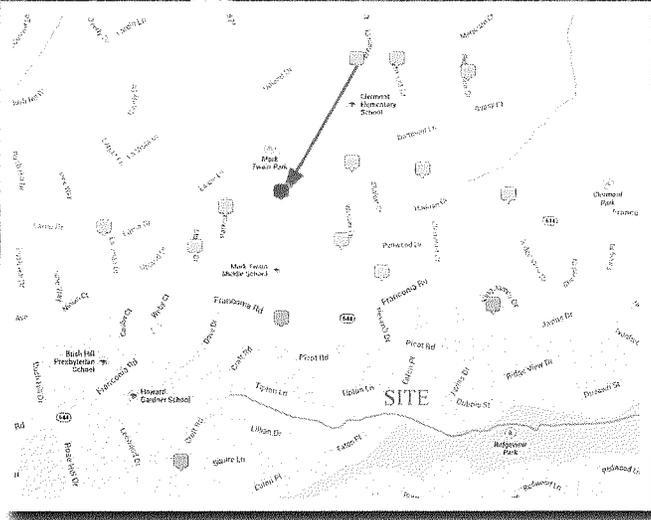


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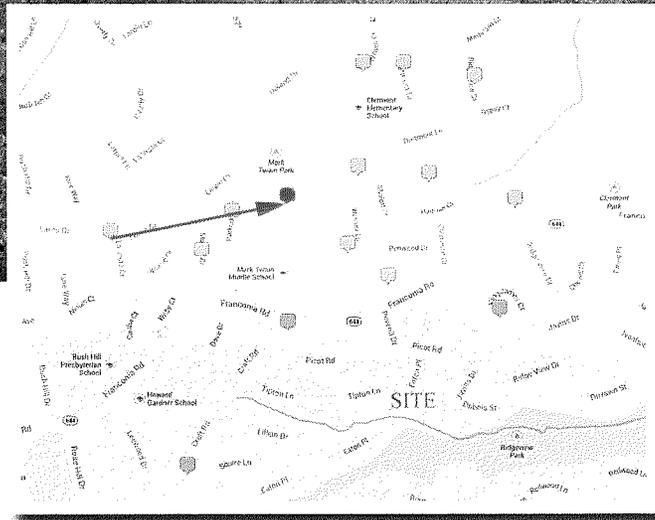


**MARK TWAIN  
MIDDLE SCHOOL  
PROPOSED MONOPINE**



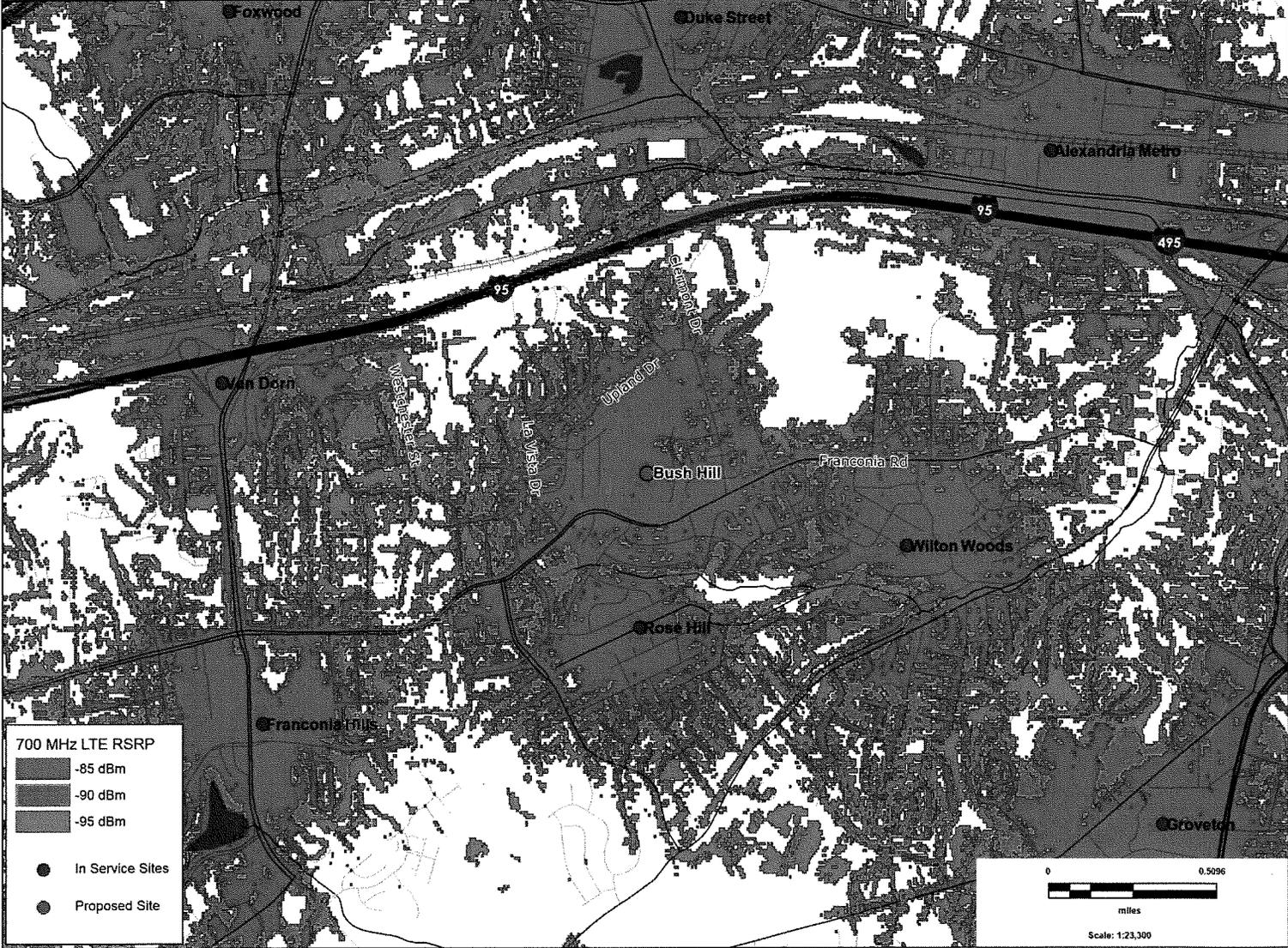


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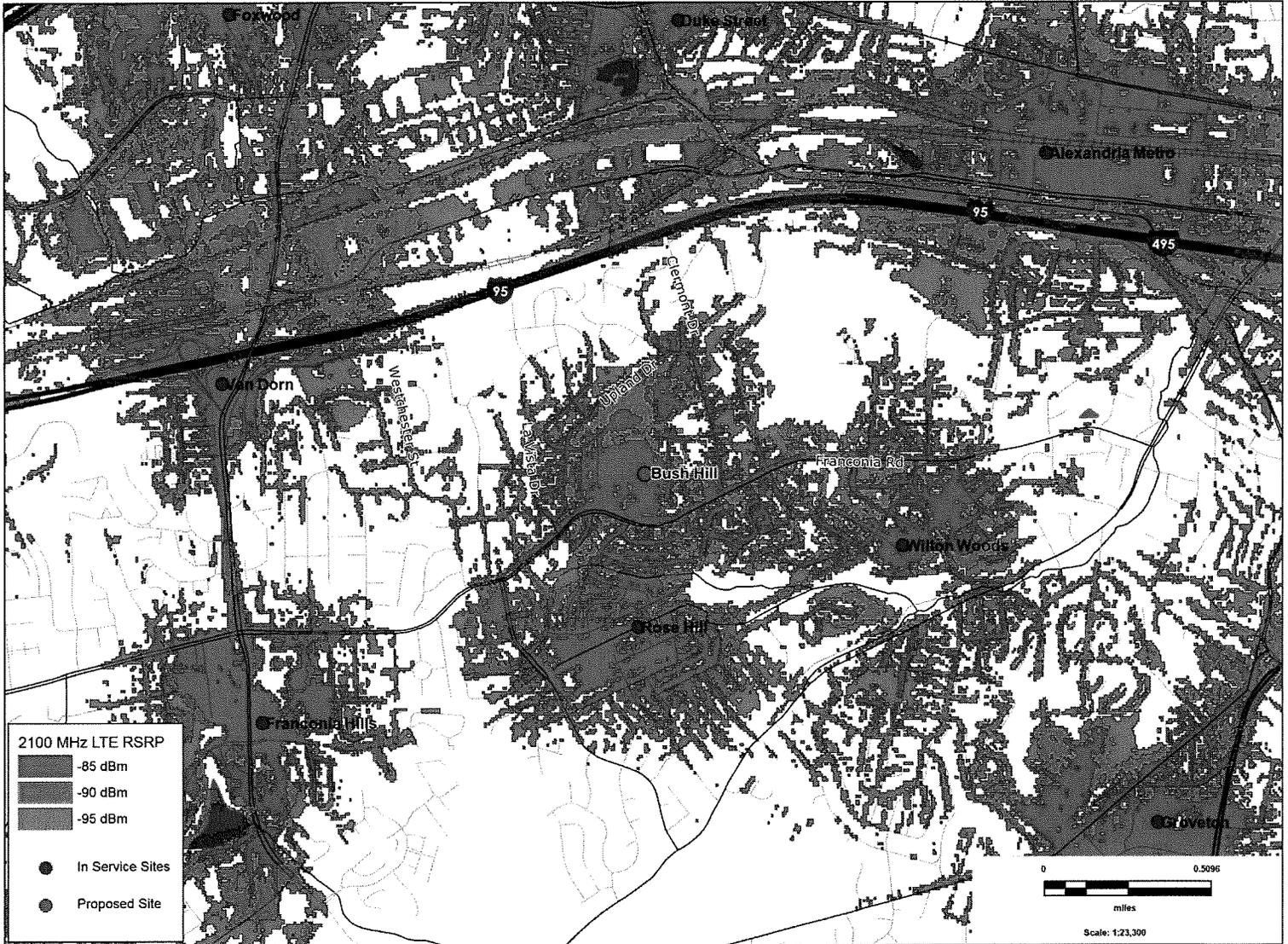


# MARK TWAIN MIDDLE SCHOOL PROPOSED MONOPINE

# Bush Hill with Neighbors - 100ft



# Bush Hill with Neighbors - 100ft





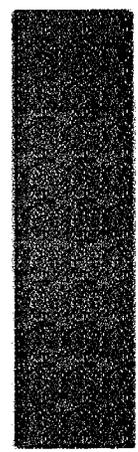
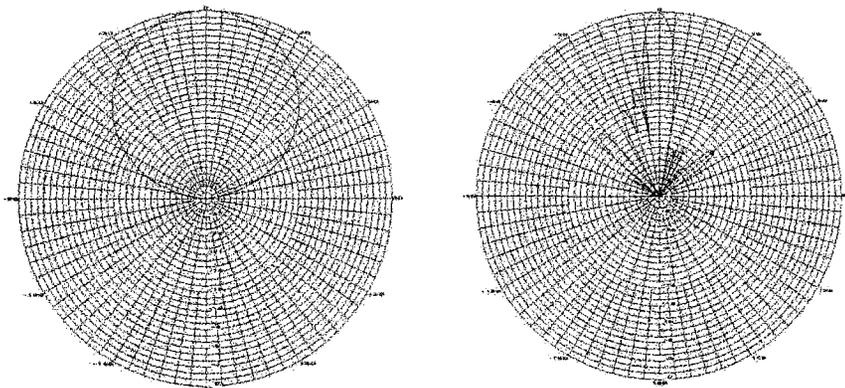
# X7C-FRO-860

## Xpol, 58° H-Beam

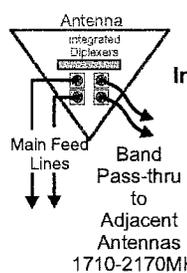
698-896 MHz

Electrical Specifications		Mechanical Specifications	
Frequency	698-896 MHz	Input Connector (female)	Back 7/16 DIN or w/bot. opt.
Polarization	Slant +/- 45	Antenna Dimensions (LxWxD)	96.0 x 14.6 x 8.0 in. (2438 x 372 x 203mm)
Gain @ 698 MHz	17.2 dBi	*Antenna Weight	43.4 lbs
Gain @ 782 MHz	17.7 dBi	Bracket Weight	18.2 lbs
Gain @ 896 MHz	18.3 dBi	RF Distribution	Printed Microstrip Substrate
Horizontal Beam (3dB Points)	58°	Radome	Ultra High-Strength Luran
Vertical Beam (3dB Points)	8°	Weatherability	UV Stabilized, ASTM D1925
Elect. Downtilt Range, 2° Increments	0-10°	Radome Water Absorption	ASTM D570, 0.45%
VSWR (2° thru 10° ET) / Return Loss	<1.40:1 / 15.6 dB	Environmental	MIL-STD-810E
VSWR @ 0° & / Return Loss	<1.50:1 / 14.0 dB	Wind Survival	150 mph
Front-to-Back at Horizon	>30 dB	Front Wind Load @100mph	288 lbf
Upper Side Lobe Suppression	<-18 dB	Equivalent Flat Plate @100mph	5.87 sq-ft. (c=2)
Impedance	50 Ohms	Mounting Brackets	Fits 3.5 inch Max. O.D. Pipe
Power Input Per Connector	500 CW at 800 MHz	Mechanical Downtilt Range	0-6°
Isolation	<-27 dB	Clamps/Bolts	Galvanized Steel/Stainless Steel
Intermodulation (2x20W)	<-150 dBc		

[Link to Mechanical Drawing](#)



Available with  
**Integrated Pass-Thru Diplexers**  
 to reduce mainline cables  
 and eliminate separate  
 external devices



**Integrated Pass-Thru Diplexers will work with TMA's**

Recommended Connector Coupling Torque  
 7/16 DIN: 220-265 lbf-in (25-30 N-m)

Return Loss at pass-thru port  
 into 50Ω load ≥17.7 dB

### Ordering Information & Options

- X7C-FRO-860-x      "-x" is a placeholder for the built-in fixed electrical downtilt in degrees, set to 0, 2, 4, 6, 8 or 10
- X7C-FRO-860-xip      "ip" option includes pass-thru integrated diplexer(s) which pass DC to the diplexer port(s)
- X7C-FRO-860-xip-bot      for bottom mounted connectors, add "-bot" (otherwise antenna comes standard with back mounted connectors)

\*Antenna Weight may vary slightly with options.



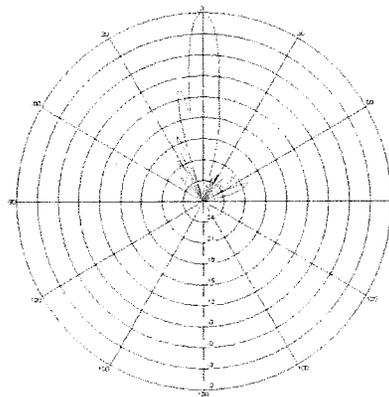
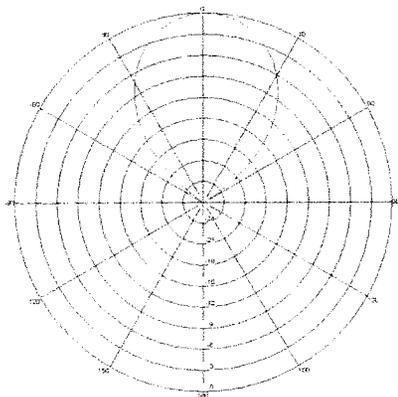
# X7C-FRO-840

## Xpol, 40° H-Beam

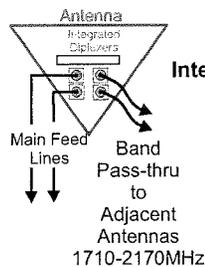
698-896 MHz

[Link to Mechanical Drawing](#)

Electrical Specifications		Mechanical Specifications	
Frequency	698-896 MHz	Input Connector (female)	Back 7/16 DIN or w/bot. opt.
Polarization	Slant +/- 45	Antenna Dimensions (LxWxD)	96.0 x 18.5 x 8.9 in. (2438 x 470 x 226mm)
Gain @ 698 MHz	18.4 dBi	*Antenna Weight	57.2 lbs
Gain @ 782 MHz	18.9 dBi	Bracket Weight	18.2 lbs
Gain @ 896 MHz	19.5 dBi	RF Distribution	Printed Microstrip Substrate
Horizontal Beam (3dB Points)	40°	Radome	Ultra High-Strength Luran
Vertical Beam (3dB Points)	8°	Weatherability	UV Stabilized, ASTM D1925
Elect. Downtilt Range, 2° Increments	0-10°	Radome Water Absorption	ASTM D570, 0.45%
VSWR / Return Loss	<1.45:1 / 14.7 dB	Environmental	MIL-STD-810E
VSWR / Return Loss w/ip	<1.50:1 / 14.0 dB	Wind Survival	135 mph
Front-to-Back at Horizon	>30 dB	Front Wind Load @100mph	312 lbf
Upper Side Lobe Suppression	<-18 dB	Equivalent Flat Plate @100mph	6.36 sq-ft. (c=2)
Impedance	50 Ohms	Mounting Brackets	Fits 3.5 Inch Max. O.D. Pipe
Power Input Per Connector	500 CW at 800 MHz	Mechanical Downtilt Range	0-6°
Isolation	<-28 dB	Clamps/Bolts	Galvanized Steel/Stainless Steel
Intermodulation (2x20W)	<-150 dBc		



Available with  
Integrated Pass-Thru Diplexers  
to reduce mainline cables  
and eliminate separate  
external devices



Integrated Pass-Thru Diplexers will work with TMA's

Recommended Connector Coupling Torque  
7/16 DIN: 220-265 lbf-in (25-30 N-m)

Return Loss at pass-thru port  
into 50Ω load ≥17.7 dB

### Ordering Information & Options

- X7C-FRO-840-x      "-x" is a placeholder for the built-in fixed electrical downtilt in degrees, set to 0, 2, 4, 6, 8 or 10
- X7C-FRO-840-xip      "'ip"' option includes pass-thru integrated diplexer(s) which pass DC to the diplexer port(s)
- X7C-FRO-840-xip-bot      for bottom mounted connectors, add "-bot" (otherwise antenna comes standard with back mounted connectors)

\*Antenna Weight may vary slightly with options.



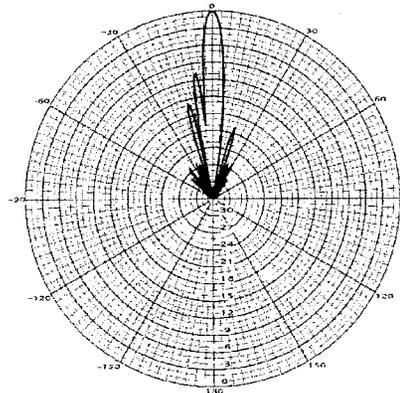
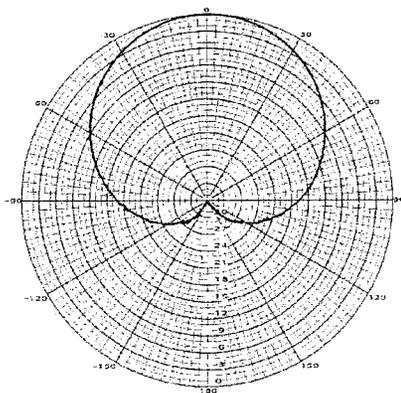


# AXP19-60

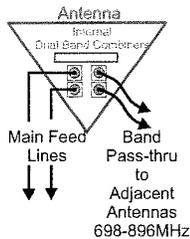
## Xpol, 60° H-Beams

1710-2170 MHz

Electrical Specifications		Mechanical Specifications		<a href="#">Link to Mechanical Drawing</a>
Frequency	1710-2170 MHz	Input Connector (female)	Back 7/16 DIN or w/bot. opt.	
Polarization	Slant +/- 45	Antenna Dimensions (LxWxD)	69.1 x 6.7 x 4.1 in. (1755 x 170 x 104mm)	
Gain @ 1710 MHz	19.0 dBi	Antenna Dimensions with Opt-"ip"	69.1 x 6.7 x 4.5 in. (1755 x 170 x 114mm)	
Gain @ 1920 MHz	19.3 dBi	*Antenna Weight	15.0 lbs	
Gain @ 2170 MHz	19.6 dBi	Bracket Weight	13.2 lbs	
Horizontal Beam (3dB Points)	60°	RF Distribution	Printed Microstrip Substrate	
Vertical Beam (3dB Points)	5°	Radome	Ultra High-Strength Luran	
Elect. Downtilt Range, 2° Increments	0-6°	Weatherability	UV Stabilized, ASTM D1925	
VSWR / Return Loss	<1.40:1 / 15.6 dB	Radome Water Absorption	ASTM D570, 0.45%	
VSWR / Return Loss w/ip	<1.50:1 / 14.0 dB	Environmental	MIL-STD-810E	
Front-to-Back at Horizon	>30 dB	Wind Survival	150 mph	
Upper Side Lobe Suppression	<-18 dB	Front Wind Load @100mph	105 lbf	
Impedance	50 Ohms	Equivalent Flat Plate @100mph	2.13 sq-ft. (c=2)	
Power Input Per Connector	250 CW at 1900 MHz	Mounting Brackets	Fits 3.5 Inch Max. O.D. Pipe	
Isolation	< -28 dB	Mechanical Downtilt Range	0-12°	
Intermodulation (2x20W)	typ -150 dBc	Clamps/Bolts	Galvanized Steel/Stainless Steel	



Available with Integrated Diplexers and back mounted connectors, bottom mounted connectors are not available with Integrated Diplexers



Integrated Pass-Thru Diplexers will work with TMA's

Recommended Connector Coupling Torque  
7/16 DIN: 220-265 lbf-in (25-30 N-m)

### Ordering Information & Options

- AXP19-60-x                    "-x" is a placeholder for the built-in fixed electrical downtilt in degrees, set to 0, 2, 4 or 6
- AXP19-60-xip                "ip" option includes pass-thu integrated diplexer(s) which pass DC to the diplexer port(s)
- AXP19-60-x-bot             for bottom mounted connectors, add "-bot" (otherwise antenna comes standard with back mounted connectors)

\*Antenna Weight may vary slightly with options.





# AXP19-45

## Xpol, 45° H-Beams

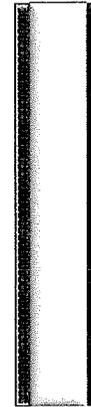
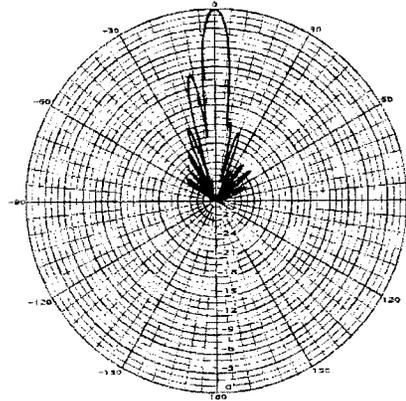
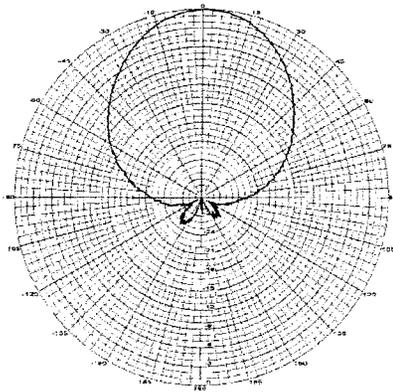
1710-2170 MHz

### Electrical Specifications

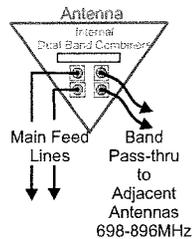
Frequency	1710-2170 MHz
Polarization	Slant +/- 45
Gain @ 1710 MHz	18.4 dBi
Gain @ 1920 MHz	18.7 dBi
Gain @ 2170 MHz	19.0 dBi
Horizontal Beam (3dB Points)	45°
Vertical Beam (3dB Points)	7°
Elect. Downtilt Range, 2° Increments	0-6°
VSWR / Return Loss	<1.40:1 / 15.6 dB
VSWR / Return Loss w/ip	<1.50:1 / 14.0 dB
Front-to-Back at Horizon	>30 dB
Upper Side Lobe Suppression	<-18 dB
Impedance	50 Ohms
Power Input Per Connector	250 CW at 1900 MHz
Isolation	< -28 dB
Intermodulation (2x20W)	typ -150 dBc

### Mechanical Specifications

Input Connector (female)	Back 7/16 DIN or w/bot. opt.
Antenna Dimensions (LxWxD)	48.0 x 10.0 x 4.1 in. (1219 x 254 x 104mm)
*Antenna Weight	10 lbs
Bracket Weight	13.2 lbs
RF Distribution	Printed Microstrip Substrate
Radome	Ultra High-Strength Luran
Weatherability	UV Stabilized, ASTM D1925
Radome Water Absorption	ASTM D570, 0.45%
Environmental	MIL-STD-810E
Wind Survival	150 mph
Front Wind Load @100mph	63.5 lbf
Equivalent Flat Plate @100mph	1.35 sq-ft. (c=2)
Mounting Brackets	Fits 3.5 Inch Max. O.D. Pipe
Mechanical Downtilt Range	0-12°
Clamps/Bolts	Galvanized Steel/Stainless Steel



Available with  
Integrated Diplexers to  
reduce mainline cables  
and eliminate separate  
external devices



Integrated Pass-Thru Diplexers will work with TMA's

Recommended Connector Coupling Torque  
7/16 DIN: 220-265 lbf-in (25-30 N-m)

### Ordering Information & Options

AXP19-45-x	"-x" is a placeholder for the built-in fixed electrical downtilt in degrees, set to 0, 2, 4 or 6
AXP19-45-xip	"ip" option includes pass-thru integrated diplexer(s) which pass DC to the diplexer port(s)
AXP19-45-x-bot	for bottom mounted connectors, add "-bot" (otherwise antenna comes standard with back mounted connectors)

\*Antenna Weight may vary slightly with options.

# GAS ENGINE-GENERATOR SET

## 40-GC6NLT1

40 kWe / 60 Hz / Standby  
208 - 600V



### SYSTEM RATINGS

#### Standby

Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas						
Ratings: Amps	167	167	139	120	60	48
Natural Gas						
Ratings: kW/kVA	40/40	40/40	40/50	40/50	40/50	40/50
LP Gas						
Ratings: Amps	167	167	139	120	60	48
LP Gas						
Ratings: kW/kVA	40/40	40/40	40/50	40/50	40/50	40/50
skVA@30%						
Voltage Dip	128	116	125	125	167	92
Generator Model*	362CSL1604	361CSL1612	284PSL1742	284PSL1742	284PSL1742	361PSL1632
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

\* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

\*\* UL 2200 Offered

### CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Power Rating**  
- Accepts Rated Load in One Step Per NFPA 110

// **UL 2200 / CSA - Optional**

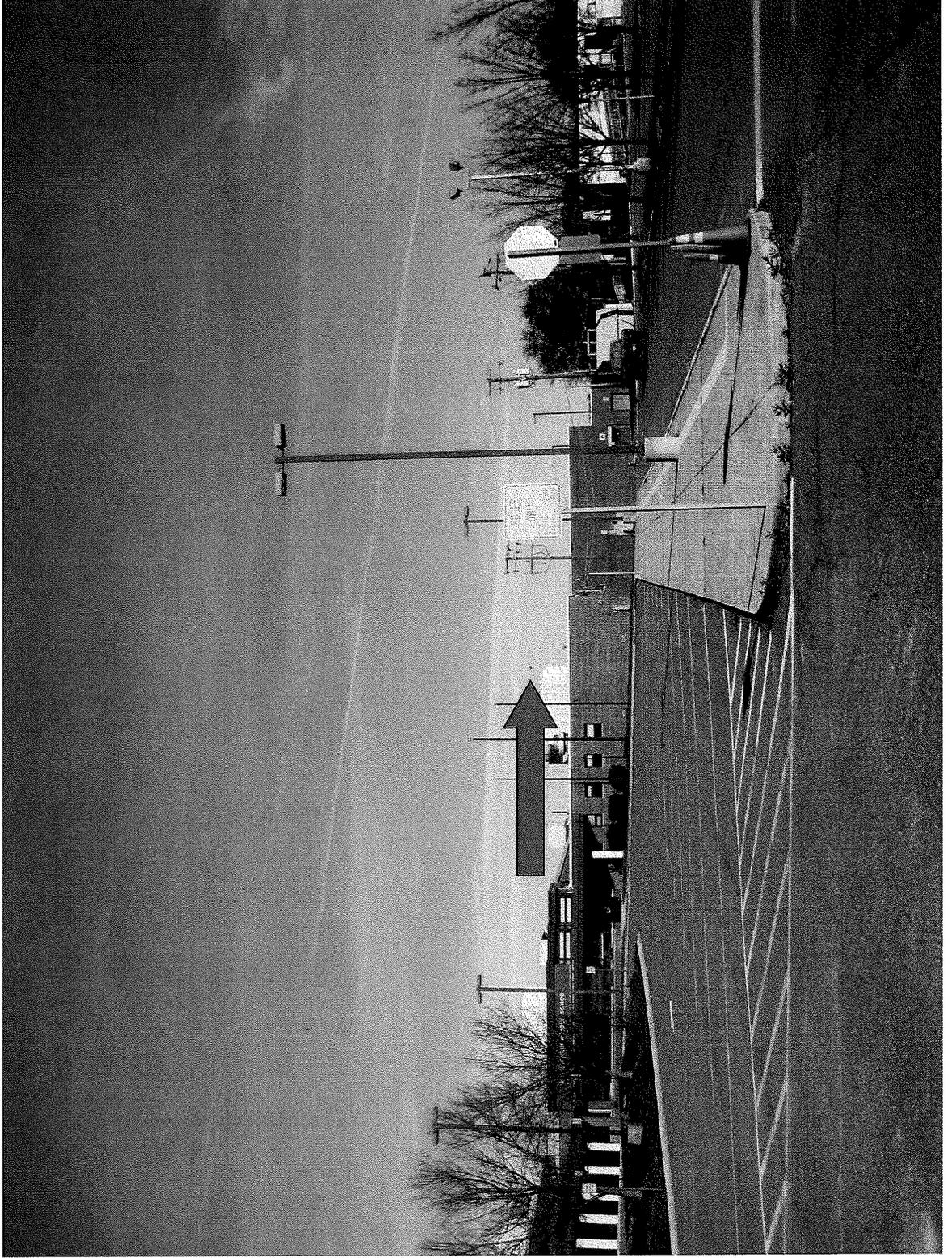
- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

**ATTACHMENT B**

# Franconia Road - South of School



# Dartmoor Lane - East of School



# Montell Drive - West of School



# Parkridge Lane - West of School



# Parkridge Lane - West of School



ATTACHMENT C

## Clark, Harvey

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**From:** Hushour, Andrew  
**Sent:** Wednesday, August 06, 2014 2:57 PM  
**To:** Clark, Harvey  
**Subject:** REVISED: 2232-L14-8; Verizon Wireless; 4700 Franconia Road

2232-L14-8

Verizon Wireless – New stealth monopole to include 12 panel antennas and associated equipment, with generator.  
4700 Franconia Road – Mark Twain Middle School

Tax Map Ref.: 82-3 ((1)) 20

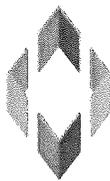
Zoning District: R-3

Comments: The proposed application generally meets those standards set forth in Par. 3 of Sect. 2-514 of the Zoning Ordinance. However:

- Given the height of the proposed stealth monopole, a steady red marker light is required pursuant to Par. 3.H. of Sect. 2-514 of the Zoning Ordinance, unless such is waived by the Zoning Administrator at the request of the applicant.
- There are two minor discrepancies between the application and plan sheets. First, the application states that the antennas will be located at a 100 foot rad center, whereas the plan sheets indicate a rad center of 120 feet. Second, the detail for Panel Antenna AXP19-60 incorrectly shows a width of 6.1 inches instead of 6.7 inches.

ZED: None applicable.

Prepared by: Andrew Hushour 8/6/2014



DONOHUE & STEARNS, PLC

September 12, 2014

Ms. Leslie Johnson, Zoning Administrator  
Zoning Administration Division  
Fairfax County Department of Planning and Zoning  
12055 Government Center Parkway, Suite 807  
Fairfax, Virginia 22035

Reference: Waiver Request of Steady Red Marker; Application 2232-L14-6

Dear Ms. Johnson:

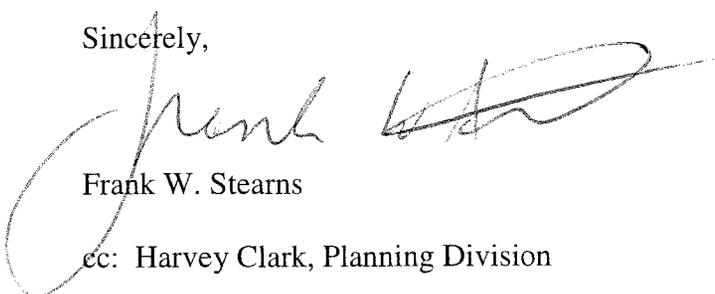
Pursuant to Section 2-514 of the Fairfax County Zoning Ordinance, Paragraph 3H, I am writing to request a waiver of the steady red marker requirement on a proposed 128 feet tall monopole telecommunications facility to be located at the following location:

Mark Twain Middle School  
4700 Franconia Road, Alexandria, Virginia, 22310  
Parcel 82-2 ((1)) 0020  
Latitude 38°47' 32.44"  
Longitude 77°06' 49.68"  
Ground Elevation 244' AMSL at base

It is our understanding that the Department of Planning and Zoning will contact the Police Department to confirm that the marker is not necessary for flight safety requirements for police and emergency helicopter operations.

This 2232 Review application was previously reviewed by Zoning Administration and determined to be in compliance with all Zoning Ordinance requirements. If you have any questions or need additional information, please let me know.

Sincerely,



Frank W. Stearns

cc: Harvey Clark, Planning Division

ATTACHMENT D



# County of Fairfax, Virginia

## MEMORANDUM

DATE: 18 August 2014

**TO:** Harvey Clark, Planner, Facilities Planning Branch

**FROM:** Linda Cornish Blank, Historic Preservation Planner *ACB*

**SUBJECT:** 2232-L14-8, 4700 Franconia Rd., Tax Map 082-3((1))20, to construct a 128' tall monopole designed to resemble a tree and associated equipment

**Policy Plan:** Fairfax County Comprehensive Plan, 2013 Edition, Policy Plan, Amended through 3-4-2014, Public Facilities, page 39:

“Policy m. Locate telecommunication facilities to ensure the protection of historically significant landscapes. The views of and vistas from architecturally and/or historically significant structures should not be impaired or diminished by the placement of telecommunication facilities.”

Background: This subject parcel is not included within the boundaries of a Fairfax County Historic Overlay District, is not listed in the Fairfax County Inventory of Historic Sites or the National Register of Historic Places or documented in the historic structures survey file. There are no properties in the immediate vicinity of the subject property of this application that are within the boundaries of a Fairfax County Historic Overlay District, or listed in the Fairfax County Inventory of Historic Sites or the National Register that would be negatively impacted by the construction of the monopole designed to resemble a tree. There are three documented properties in the historic structures survey file in the immediate vicinity of the subject property of this application which may be impacted by the construction of the monopole designed to resemble a tree. They are: 082-3((1))3; Ridgeview at 82-3 and 82-4; and Rose Hill Silos at 82-3((1))38. It does not appear that the potential impact would be adverse.

The applicant has complied with Section 106 of the National Historic Preservation Act of 1966. As a local government, Fairfax County was afforded an opportunity to provide comment as required under Section 106.

Findings:

1. Staff finds the proposal in-keeping with the Policy Plan text cited above and finds that no known historic properties will be affected by the project.
2. No action concerning heritage resources is required.

**ATTACHMENT E**

## Clark, Harvey

---

**From:** Dhavale, Maya  
**Sent:** Tuesday, July 22, 2014 4:49 PM  
**To:** Clark, Harvey  
**Cc:** Nee, Pamela  
**Subject:** 2232-L14-8 / Verizon Wireless tree pole / 4700 Franconia Rd

Hi Harvey,

I've reviewed the 2232 application for the Verizon tree pole at 4700 Franconia Rd (Mark Twain Middle School). There are no environmental concerns associated with the site, so we have no issues with the application.

Please let me know if you need any other information for this application.

Thanks!  
Maya

ATTACHMENT F

## Clark, Harvey

---

**From:** Bastakoti, Mohan  
**Sent:** Monday, July 14, 2014 3:59 PM  
**To:** Clark, Harvey  
**Cc:** Sistani, Bijan  
**Subject:** Application Number 2232-L 14-8\_Verizon Wireless

Hi Harvey,

We have reviewed the subject application and offer the following stormwater management comments.

Chesapeake Bay Preservation Ordinance (CBPO)

There are no Resource Protection Areas on the site.

Floodplain

There are no regulated floodplains on the site.

Downstream Drainage Complaints

There are no current downstream drainage complaints on file.

Stormwater Detention, Channel Protection and Flood Protection

Onsite Stormwater detention shall be required unless waived by the Director. SWMO 124-4-4(D). Channel protection and flood protection shall be achieved in accordance with Chapter 124-4-4.

Water Quality Control

Water quality control shall be required per Chapter 124-4-3. The submitted application does not mention anything about the proposed water quality measures, disturbed area or impervious areas.

Downstream Drainage System

No outfall narrative or detail have been provided to demonstrate how the PFM requirement of adequate outfall is met. The downstream drainage system shall be analyzed to demonstrate the adequacy of the system. PFM 6-0203.1

Please contact me at 703-324-1739 if you require additional information.

Thanks,

-Mohan

**Mohan Bastakoti** | Senior Engineer.III (Stormwater & Geotechnical) | DPWES-SDID  
Direct: 703-324-1739 | Main: 703 324 1720 | [Mohan.Bastakoti@fairfaxcounty.gov](mailto:Mohan.Bastakoti@fairfaxcounty.gov)

**ATTACHMENT G**



# County of Fairfax, Virginia

## MEMORANDUM

**DATE:** July 30, 2014

**TO:** Harvey Clark, Planner  
Department of Planning and Zoning

**FROM:** Samantha Wangsgard, Urban Forester II  
Forest Conservation Branch, DPWES *SW*

**SUBJECT:** Verizon Wireless-4700 Franconia Road, Alexandria, 22310  
2232-L14-8

**RE:** Request for Assistance dated July 10, 2014

This review is based on the 2232 Review Application stamped "Received July 3, 2014, Department of Planning and Zoning, Planning Division". A site visit was conducted on July 29, 2014.

**Site Description:** The site is occupied by Mark Twain Middle School of which Milestone Communications will lease space from Fairfax County Public Schools to establish a telecommunications facility to expand wireless coverage to the area. The site contains the school, parking lots, athletic fields and several trailers. The existing vegetation is primarily along the perimeter of the site and consists of mature hardwood trees with scattered pines. There are also scattered landscape trees including a row of red maple, ash and sycamore trees to the south of the proposed telecommunications facility.

1. **Comment:** With the proposed telecommunications facility, the school property is considered a light public utility and is subject to the transitional screening and barrier requirements for this use. It is unclear if the existing vegetation and barriers along the property boundaries meet the intent of the transitional screening type 2 and barrier D, E or F requirements of ZO 13-303 and ZO 13-304.

**Recommendation:** A landscape plan that identifies the transitional screening yards and barrier locations as well as transitional screening calculations identifying how requirements are being met should be provided for the property boundaries between the school and the single family detached dwellings to the south, east and west and between the school and the park, zoned R-3 to the north. Note: if transitional screening and barrier requirements do not meet the intent of ZO 13-303 and ZO 13-304 a Request to Waive/Modify the Transitional Screening and Barrier requirements will be required to be submitted under separate cover.

Department of Public Works and Environmental Services

Urban Forest Management Division

12055 Government Center Parkway, Suite 518

Fairfax, Virginia 22035-5503

Phone 703-324-1770, TTY: 711, Fax: 703-653-9550

[www.fairfaxcounty.gov/dpwes](http://www.fairfaxcounty.gov/dpwes)



Verizon Wireless-4700 Franconia Road, Alexandria, 22310  
2232-L14-8  
July 31, 2014  
Page 2 of 2

2. Comment: It is unclear how the telecommunications facility will be screened from the adjacent single family detached dwellings and the school buildings.

Recommendation: A landscape plan should be provided identifying how the facility will be screened from the adjacent single family detached dwellings and the school buildings. In addition to any existing vegetation, evergreen landscaping that is a minimum of 48 inches in height at planting and which reaches a height of at least eight feet at maturity should be provided.

3. Comment: A tree preservation plan has not been provided and it is unclear how the existing vegetation will be protected during construction.

Recommendation: A tree preservation plan should be provided in conformance with PFM 12-0509 that clearly identifies how the trees adjacent to the limits of disturbance will be preserved and protected during construction.

SW/

UFMDID #: 193840

cc: DPZ File





# County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

March 11, 2015

J. Cabot Goudy PE, Vice President  
6600 Rockledge Drive, Suite 550  
Bethesda, MD 20817

RE: Transitional Screening and Barrier Waiver/Modification No.: 9492-WTSW-001-1  
Project Name: Verizon Wireless Mark Twain Middle School  
Tax Map No.: 03-92 ((08)) 0002A; Lee District

Dear Mr. J. Cabot Goudy:

Your request for a modification of the Transitional Screening and Barrier requirements for the northern, eastern, southern and western property boundaries of the Mark Twain Middle School site has been carefully reviewed and your request has been approved.

The transitional screening and barrier requirements along the northern, eastern, southern and western property boundaries have been modified to utilize existing vegetation and barriers as shown on the Existing Vegetation Map submitted with the request and date stamped as received by the Urban Forest Management Division on March 11, 2015, with the following conditions:

- A copy of this approval letter and the Request for Waiver/Modification of the Provisions of Article 13 of the Zoning Ordinance including the cover letter and Attachment A submitted to the county on March 11, 2015, be included as part of the application, 2232-L14-8, Verizon Wireless Mark Twain Middle School and future development plans associated with this application.
- A revised Appendix A – Existing Vegetation Map be provided to the Urban Forest Management Division and to the Department of Planning and Zoning as part of the application, 2232-L14-8, Verizon Wireless Mark Twain Middle School. This revision shall identify the site as Mark Twain Middle School, 4700 Franconia Road, Alexandria, Virginia 22310, not Kilmer Middle School, 8100 Wolftrap Road, Vienna, VA 22182 as it is shown three times on Appendix A. This revised Appendix A shall also be included with any future development plans associated with this application.

This approval has been granted under the provisions of Paragraph 3, Section 13-305-3 of the Zoning Ordinance of Fairfax County, for a period of 24 months only, unless a site plan substantially in conformance with the plan submitted with this modification request has been

**Department of Public Works and Environmental Services  
Urban Forest Management Division**

12055 Government Center Parkway, Suite 518  
Fairfax, Virginia 22035-5503

Phone 703-324-1770, TTY: 711, Fax: 703-653-9550  
[www.fairfaxcounty.gov/dpwes](http://www.fairfaxcounty.gov/dpwes)

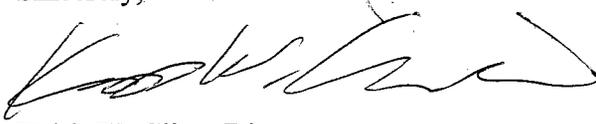


9492-WTSW-001-1  
Verizon Wireless Mark Twain Middle School  
March 13, 2015  
Page 2 of 2

approved by Fairfax County. This modification is subject to final approval of that site plan and does not run with the land.

If you have any questions or need additional information, please contact Samantha Wangsgard, Urban Forester II, Urban Forest Management Division (UFMD), at 703-324-1770.

Sincerely,



Keith W. Cline, Director  
Urban Forest Management Division  
DPWES

KWC/sw

ID#: 198720

**COPY**

# Letter of Transmittal



6600 Rockledge Drive, Suite 550 • Bethesda, MD 20817 • Tel: 202.408.0960 • Fax: 202.408.0961

**To:** Samantha Wangsgard      **Date:** Wednesday, March 11, 2015

**Company:** Urban Forest Management      **Project Name:** *Milestone-Mark Twain MS*

**Address:** 12055 Govt Center Pkwy Ste 518      **Project Number:** 1050.157

Fairfax, VA 22035      **Project Manager:** Marc A. Marzullo, PE

● We are sending the following via FedEx:

Qty.	Description	Disposition
4	Transitional Screening Waiver/Modification Request	As requested

Signed: Colleen Khan

RECEIVED

MAR 11 2015

Urban Forest Management Division  
Forest Conservation Branch  
DPWES

COPY

To: Department of Public Works and  
Environmental Services  
Office of Site Development Services  
Plan Control Section  
12055 Government Center Parkway  
Fairfax, Virginia 22035-5503

- FOR OSDS USE ONLY -	
Waiver # _____	Logged in by: _____
Page 1 of _____	Fee Amount _____
Paid on ____/____/____	Receipt # _____
Logged to UFB on _____	

**REQUEST FOR WAIVER/MODIFICATION OF THE PROVISIONS OF  
ARTICLE 13 OF THE FAIRFAX COUNTY ZONING ORDINANCE**

**COVER SHEET**

NOTE: a complete waiver/modification request must contain all of the following items:  
(4) copies of a complete application (this cover sheet and appropriate attachment)  
(4) sets of landscape plans with complete plant schedule and details  
(4) copies of the applicant's letter of justification

**WAIVER TYPE**

- transitional screening and/or barrier (USE ATTACHMENT A)
- tree cover (USE ATTACHMENT B)
- interior parking lot (USE ATTACHMENT C)

COPY

**SUBDIVISION PLANS ONLY:**

If tree cover waiver/modification request is for a subdivision plan, the notification requirements of County Code section 101-2-2(9) must be met. Include with this request (4) copies of the typical letter of notification that was sent to adjoining or affected property owners and include a list of the property owners notified. At a minimum the letter should include the County requirements and a description of the proposed waiver/modification to those requirements.

**1. APPLICATION INFORMATION (please print or type)**

PROJECT NAME Milestone at Mark Twain MS TAX MAP # 03 - 92 - ((08)) - ( ) - 0002  
SUPERVISORY DISTRICT ~~Providence~~ LEE  
PROPERTY OWNER OR DEVELOPER Milestone Communications PHONE 703-622-2555  
ADDRESS 12110 Sunset Hills Road, Suite 100, Reston, VA 20190  
AGENT FOR APPLICANT Colleen Khan PHONE 202-408-0960  
ADDRESS 6600 Rockledge Drive, Suite 550, Bethesda, MD 20817

2. PROPOSED USE: Light public utility use EXISTING USE: School ZONING: R-3

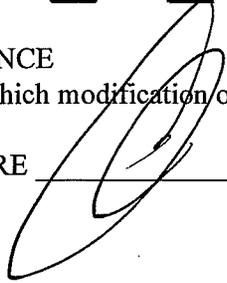
USE MATRIX CATEGORY NUMBER FOR PROPOSED USE: 14

SITE PLAN SUBMITTED: YES  NO  PLAN NUMBER (if applicable): 2232-L14-8

3. ZONING ORDINANCE REFERENCE

Section and paragraph under which modification or waiver is requested: 13-305 Par. 3 & 14

4. APPLICANT/AGENT SIGNATURE



DATE 3/10/15

**ATTACHMENT A: TRANSITIONAL SCREENING AND/OR BARRIER WAIVER**

NOTE: THIS FORM IS AN ATTACHMENT TO THE COVER SHEET

1. West PROPERTY LINE: Adjacent Use: Detached Dw SE OR SP Use? N Adjacent Zoning: R-3

SCREENING REQUIRED: None:   
Screening yard required: 3  
NO. OF TREES:      large evergreens      medium evergreens  
     large deciduous      small deciduous      evergreen shrubs  
SCREENING PROVIDED: None:  21,197 SF OF UPLAND FOREST, 3,244 SF OF LANDSCAPE TREE CANOPY  
Screening yard provided:       
NO. OF TREES:      large evergreens      medium evergreens  
     large deciduous      small deciduous      evergreen shrubs  
BARRIER TYPE: Existing:      Required: D, E, or F Provided: D

2. North PROPERTY LINE: Adjacent Use: Park SE OR SP Use? N Adjacent Zoning: R-3

SCREENING REQUIRED: None:   
Screening yard required: 1  
NO. OF TREES:      large evergreens      medium evergreens  
     large deciduous      small deciduous      evergreen shrubs  
SCREENING PROVIDED: None:  2,988 SF OF UPLAND FOREST,  
Screening yard provided:       
NO. OF TREES:      large evergreens      medium evergreens  
     large deciduous      small deciduous      evergreen shrubs  
BARRIER TYPE: Existing:      Required: D, E or F Provided: D

3. East PROPERTY LINE: Adjacent Use: Detached Dw SE OR SP Use? N Adjacent Zoning: R-3

SCREENING REQUIRED: None:   
Screening yard required: 3  
NO. OF TREES:      large evergreens      medium evergreens  
     large deciduous      small deciduous      evergreen shrubs  
SCREENING PROVIDED: None:  27,055 SF OF UPLAND FOREST, 11,165 SF OF EARLY SUCCESSIONAL FOREST COVER  
Screening yard provided:       
NO. OF TREES:      large evergreens      medium evergreens  
     large deciduous      small deciduous      evergreen shrubs  
BARRIER TYPE: Existing: D Required: D, E or F Provided: D

4. South PROPERTY LINE: Adjacent Use: Detached Dw SE OR SP Use? N Adjacent Zoning: R-3

SCREENING REQUIRED: None:   
Screening yard required: 3  
NO. OF TREES:      large evergreens      medium evergreens  
     large deciduous      small deciduous      evergreen shrubs  
SCREENING PROVIDED: None:  11,011 SF OF UPLAND FOREST, 10,572 SF OF LANDSCAPE CANOPY  
Screening yard provided:       
NO. OF TREES:      large evergreens      medium evergreens  
     large deciduous      small deciduous      evergreen shrubs  
BARRIER TYPE: Existing:      Required: D, E or F Provided: D

NOTE: Use additional copies of Attachment A as needed to describe every property line.



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6600 Rockledge Drive, Suite 550 • Bethesda, MD 20817 • Tel: 202.408.0960 • Fax: 202.408.0961

March 11, 2015

Mr. Kevin Cline, Director  
Fairfax County Urban Forest Management Division  
12055 Government Center Parkway  
Fairfax, VA 22053

**Re: Request for Waiver/Modification of the Provisions of Article 13  
2232-L14-8, Milestone Communications  
Mark Twain Middle School  
4700 Franconia Road  
Alexandria, VA 22310**

Dear Mr. Cline:

Milestone Communications is requesting the following waivers for transitional screening and or barrier. Milestone is proposing a new "tree pole" for antennas and a fenced equipment compound on the Mark Twain Middle School property. The subject site is considered "Light public utility use" (No. 14 on the matrix).

1. Properties to the West  
Use: Dwellings, Detached (No. 1 on the matrix)  
Zoning: R-3  
Transitional Screening Requirement: 3  
Barrier Requirement: D, E or F

**Transitional Screening Waiver Justification:**

**13-305 – 3. Transitional screening may be modified where the building, a barrier and/or the land between that building and the property line has been specifically designed to minimize adverse impact through a combination of architectural and landscaping techniques.**

**Note: There is an existing 40-foot wide conservation easement along the west property line. There is 21,797 sf of upland forest and 3,244 sf of landscape tree canopy in the existing transitional screening 50-foot buffer providing 41.4% of vegetation in the buffer.**

**Barrier Provided: D**

**Milestone proposes an 8' high chain link fence with black slats around their lease area. There is an existing 6' high chain link fence along the school's west property line.**

2. Property to the North  
Use: Community Uses (No. 5 on the matrix)  
Zoning: R-3  
Transitional Screening Requirement: 1  
Barrier Requirement: D, E or F

**Transitional Screening Waiver Justification:**

**13-305 – 3. Transitional screening may be modified where the building, a barrier and/or the land between that building and the property line has been specifically designed to minimize adverse impact through a combination of architectural and landscaping techniques.**

**Note: The property to the north is heavily wooded, county park property. The required 25' transitional screening buffer on the school property contains 2,988 sf of upland forest providing 20.5% of vegetation in the buffer.**

**Barrier Provided: D**

**Milestone proposes an 8' high chain link fence with black slats around their lease area. There is an existing 6' high chain link fence along the school's north property line.**

3. Properties to the East  
Use: Dwellings, Detached (No. 1 on the matrix)  
Zoning: R-3  
Transitional Screening Requirement: 3  
Barrier Requirement: D, E or F

**Transitional Screening Waiver Justification:**

**13-305 – 3. Transitional screening may be modified where the building, a barrier and/or the land between that building and the property line has been specifically designed to minimize adverse impact through a combination of architectural and landscaping techniques.**

**Note: There is an existing +/-60 feet wide conservation easement along the east property line. The topography slopes down and existing trees provide transitional screening. The required 50' transitional screening buffer on the school property contains 27,055 sf of upland forest and 11,165 sf of early successional forest cover providing 59.3% of vegetation in the buffer.**

**Barrier Provided: D**

**Milestone proposes an 8' high chain link fence with black slats around their lease area. There is an existing 6' high chain link fence along the school's East property line.**

4. Properties to the South  
Use: Dwellings, Detached (No. 1 on the matrix)  
Zoning: R1  
Transitional Screening Requirement: 3  
Barrier Requirement: D, E or F

**Transitional Screening Waiver Justification:**

**13-305 – 3. Transitional screening may be modified where the building, a barrier and/or the land between that building and the property line has been specifically designed to minimize adverse impact through a combination of architectural and landscaping techniques.**

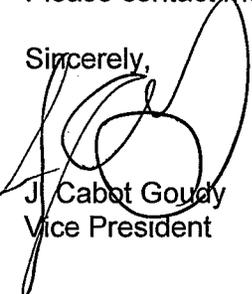
**Note: The proposed equipment compound is screened by the existing school building. The required 50' transitional screening barrier contains 11,011 sf of upland forest and 10,572 sf of landscape canopy providing 46.3% of vegetation in the buffer.**

**Barrier Provided: D**

**Milestone proposes an 8' high chain link fence with black slats around their lease area. The school property entrance is on this side and is improved with sidewalks, parking lots and landscaping.**

Please contact me if you have any questions.

Sincerely,



J. Cabot Goudy  
Vice President

ATTACHMENT H



# County of Fairfax, Virginia

## MEMORANDUM

**DATE:** Friday, July 25, 2014

**TO:** Chris Caperton, Chief  
Facilities Planning Branch, DPZ

**FROM:** Leonard Wolfenstein, Chief  
Transportation Planning Section  
Department of Transportation *SW*

**FILE:** 10-5

**SUBJECT:** Application for 15.2-2232 determination -2232-L14-8 for the installation of a 128 ft. monopole and a 2,625 sq. ft. equipment compound area at 4700 Franconia Road

The Fairfax County Department of Transportation (FCDOT) has reviewed the above 2232 application and does not anticipate any impacts on planned or existing roads and trails. This installation will not affect the long term operations of Fairfax Connector or Metrobus, but during installation there are possible impacts to Connector Route 310 which operates along Franconia Road. Installation of the monopole should minimize its impact on Route 310.

There appears to be no other significant traffic impacts resulting from the proposed use for the site. If you have any questions please feel free to contact Kristin Calkins (tel. 703-877-5710) [Kristin.Calkins@fairfaxcounty.gov](mailto:Kristin.Calkins@fairfaxcounty.gov).

**Cc:** Harvey Clark, DPZ  
Mike David, FCDOT  
Karyn Moreland, FCDOT  
Charlie Strunk, FCDOT  
Kristin Calkins, FCDOT  
Randy White, FCDOT  
Chris Wells, FCDOT

# ATTACHMENT I

# Fairfax Water

FAIRFAX COUNTY WATER AUTHORITY  
8560 Arlington Boulevard, Fairfax, Virginia 22031  
www.fairfaxwater.org

**PLANNING & ENGINEERING  
DIVISION**

Jamie Bain Hedges, P.E.  
Director  
(703) 289-6325  
Fax (703) 289-6382

July 22, 2014

Mr. Harvey Clark  
Fairfax County Department of Planning & Zoning  
12055 Government Center Parkway, Suite 730  
Fairfax, Virginia 22035

Re: Application No. 2232-L-14-8  
4700 Franconia Road – Mark Twain Middle  
School  
Tax Map: 82-3 ((1)) 20

Dear Mr. Clark:

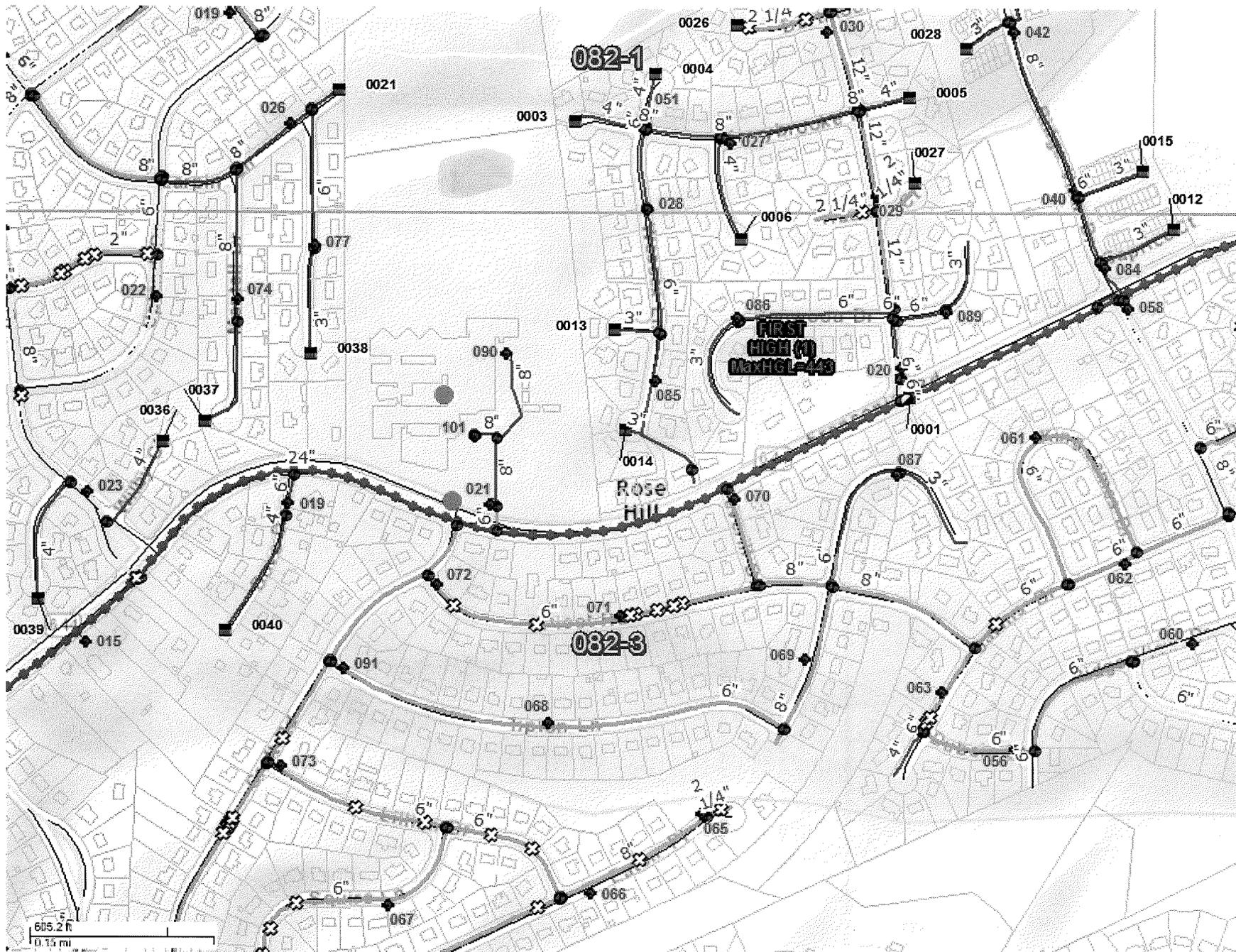
Fairfax Water has reviewed the above referenced application and has no comments.

If you have any questions regarding this information please contact Ross Stilling,  
P.E., Chief Site Plan Review at (703) 289-6385.

Sincerely,



Traci K. Goldberg, P.E.  
Manager, Planning



(note: scalebar is approximate)

**ATTACHMENT J**



# FAIRFAX COUNTY PARK AUTHORITY



## M E M O R A N D U M

**TO:** Chris B. Caperton, Chief  
Facilities Planning Branch, Planning Division  
Department of Planning and Zoning

**FROM:** Sandy Stallman, AICP, Manager *SS*  
Park Planning Branch, PDD

**DATE:** August 11, 2014

**SUBJECT:** 2232-L14-8, Verizon Wireless - Mark Twain Middle School  
Tax Map Number: 82-3((1))20

### **BACKGROUND**

The Park Authority has reviewed the above referenced 2232 application for a cellular telecommunications tower at Mark Twain Middle School, which is located directly adjacent to Mark Twain Park, owned by the Park Authority. Based on that review, staff provides the following comments.

### **COMPREHENSIVE PLAN GUIDANCE**

The County Comprehensive Plan includes both general and specific guidance regarding parks and resources. Resource protection is addressed in multiple objectives, focusing on protection, preservation, and sustainability of resources (Parks and Recreation, Objectives 2 and 5, p.5-7).

### **ANALYSIS AND RECOMMENDATIONS**

#### **Cultural Resources Impact:**

The parcels were subjected to cultural resources review, which indicated that the area of impact has a low probability to contain significant cultural resources and therefore no archaeological work is warranted unless otherwise instructed by the Virginia Department of Historic Resources (VDHR). All communications towers trigger Section 106 of the National Historic Preservation Act, and the applicant should contact the VDHR as soon as possible in order to initiate consultation. If VDHR requests any archaeological work, please forward reports to the Cultural Resource Management & Protection Branch of the Fairfax County Park Authority at 2855 Annandale Road, Falls Church, VA 20110 for review and concurrence. The Applicant should submit one hard copy report as well as a digital copy on disc. Artifact catalogues should be provided as a database in Access™ format, as well as digital photography, and architectural assessments, including line drawings.

FCPA Reviewer: Andy Galusha  
DPZ Coordinator: Harvey Clark

Copy: Cindy Walsh, Director, Resource Management Division  
Liz Crowell, Manager, Cultural Resource Management & Protection Section  
Harvey Clark, DPZ Coordinator  
File Copy

**ATTACHMENT K**



COMMONWEALTH of VIRGINIA  
DEPARTMENT OF TRANSPORTATION

CHARLES A. KILPATRICK, P.E.  
COMMISSIONER

4975 Alliance Drive  
Fairfax, VA 22030

July 29, 2014

Mr. Chris B. Caperton, Chief  
Facilities Planning Branch  
Planning Division  
Fairfax County Department of Planning and Zoning  
12055 Government Center Parkway, Suite 730  
Fairfax, Virginia 22035-5505

Re: **Verizon Wireless (AT&T) Monopole**  
**Mark Twain Middle School**  
4700 Franconia Road, Alexandria, VA 22310  
Fairfax County Plan No: **2232-L14-8**

Dear Mr. Hansen:

VDOT has reviewed the above referenced plan and has no objection to its approval.

Sincerely,

A handwritten signature in cursive script that reads "Paul J. Kraucunas".

Paul J. Kraucunas, P.E.  
Land Development Program Manager

cc: Fairfax Permits

ATTACHMENT L

## Clark, Harvey

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**From:** Cordova, Robert W. <RWCordova@fcps.edu>  
**Sent:** Friday, December 19, 2014 1:47 PM  
**To:** Clark, Harvey  
**Cc:** Casey, Tom  
**Subject:** Twain MS Proposed Cell Tower - Application #2232-L14-8

Harvey,

We have reviewed and approve the request (Application #: 2232-L14-8) to for a 128' monopole located at Twain Middle School, 4700 Franconia Road, Alexandria, VA 22310. The proposed monopole does not conflict with any existing or planned school building expansion or grounds use. Please let me know if you need any additional information. Thanks.



**Bob Cordova, FMP, CFM**  
Coordinator-Property Management  
Office of Design and Construction

Fairfax County Public Schools  
Department of Facilities & Transportation Services  
8115 Gatehouse Road, Suite 3200  
Falls Church, Virginia 22042

(B) 571-423-2303  
(C) 571-237-0316  
(F) 571-423-2307  
(E) [robert.cordova@fcps.edu](mailto:robert.cordova@fcps.edu)

## Clark, Harvey

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**From:** Casey, Tom <TECasey@fcps.edu>  
**Sent:** Wednesday, September 03, 2014 10:16 AM  
**To:** Clark, Harvey  
**Cc:** Cordova, Robert W.  
**Subject:** RE: Review of 2232-L14-8

Harvey - I have been working with Milestone (applicant) to reach a resolution about the conservation easement area which surrounds the school site. As you probably know, the current location exists in a conservation easement area near the very back part of the school site. When this has occurred at other FCPS sites, we have usually been able to redesign the easement area to maintain the same total area on site. It appears that this site is more challenging due to the limited space available for the redesign. Milestone is working with their engineers to provide us some alternative solutions. At this point, we are waiting to receive possible options for the easement relocation. We have requested their alternative proposals be received by FCPS no later than COD tomorrow. If we receive the possible options and find an acceptable solution, we could have your response by COB on Friday, 9/5. Thanks for your patience!

Tom Casey  
FCPS / Wireless Infrastructure Specialist  
(o) 571-423-2302  
(c) 571-294-7203

-----Original Message-----

**From:** Clark, Harvey [<mailto:Harvey.Clark@fairfaxcounty.gov>]  
**Sent:** Tuesday, September 02, 2014 10:32 AM  
**To:** Casey, Tom  
**Cc:** Cordova, Robert W.  
**Subject:** RE: Review of 2232-L14-8

Tom,

I know the previous weeks have been hectic, but do you think you will be able to send comments by the end of the week since school has now started? The applicant is asking questions and starting to push more heavily. Any information is appreciated.

Thanks,  
Harvey Clark, AICP  
Fairfax County Department of Planning and Zoning  
12055 Government Center Parkway, Suite 730 Fairfax, VA 22035

-----Original Message-----

**From:** Casey, Tom [<mailto:TECasey@fcps.edu>]  
**Sent:** Tuesday, August 19, 2014 1:01 PM  
**To:** Clark, Harvey  
**Cc:** Cordova, Robert W.  
**Subject:** Re: Review of 2232-L14-8

We hope to have that by tomorrow! I will be in touch tomorrow! Thanks for you patience! These last 2 weeks before start of school are very hectic around here!

Tom C

Sent from my iPhone

On Aug 18, 2014, at 8:44 AM, "Clark, Harvey"  
<[Harvey.Clark@fairfaxcounty.gov](mailto:Harvey.Clark@fairfaxcounty.gov)<<mailto:Harvey.Clark@fairfaxcounty.gov>>> wrote:

Tom,  
Can you give me an update on the engineer's review of the plans? Any information is appreciated. Thanks, Harvey

From: Clark, Harvey  
Sent: Wednesday, August 06, 2014 1:21 PM  
To: 'Casey, Tom'  
Cc: Cordova, Robert W.  
Subject: RE: Review of 2232-L14-8

Thanks for the update Tom. This doesn't present a problem. Just send the comments when you all have had a chance to review. Thanks again, Harvey

From: Casey, Tom [<mailto:TECasey@fcps.edu>]  
Sent: Wednesday, August 06, 2014 12:58 PM  
To: Clark, Harvey  
Cc: Cordova, Robert W.  
Subject: Review of 2232-L14-8

Harvey – just wanted to update you that we received the 2232 plans for the cell tower application at Twain MS. As the POC for FCPS, I receive these plans and review them with Bob Cordova, Property Management Coordinator. We have completed that step but we still need to get with our D&C engineer to review the plans with him. August is always a very busy month for the schools as projects are on the fast track for completion before school starts in less than a month. We hope to have an opportunity to review these plans with our engineer no later than early next week. We will respond with comments next week. Hopefully, that will not present a problem on your end!

Tom Casey  
FCPS / Wireless Infrastructure Specialist  
(o) 571-423-2302  
(c) 571-294-7203

## ATTACHMENT M

## § 15.2-2232. Legal status of plan.

A. Whenever a local planning commission recommends a comprehensive plan or part thereof for the locality and such plan has been approved and adopted by the governing body, it shall control the general or approximate location, character and extent of each feature shown on the plan. Thereafter, unless a feature is already shown on the adopted master plan or part thereof or is deemed so under subsection D, no street or connection to an existing street, park or other public area, public building or public structure, public utility facility or public service corporation facility other than a railroad facility or an underground natural gas or underground electric distribution facility of a public utility as defined in subdivision (b) of § 56-265.1 within its certificated service territory, whether publicly or privately owned, shall be constructed, established or authorized, unless and until the general location or approximate location, character, and extent thereof has been submitted to and approved by the commission as being substantially in accord with the adopted comprehensive plan or part thereof. In connection with any such determination, the commission may, and at the direction of the governing body shall, hold a public hearing, after notice as required by § 15.2-2204. Following the adoption of the Statewide Transportation Plan by the Commonwealth Transportation Board pursuant to § 33.1-23.03 and written notification to the affected local governments, each local government through which one or more of the designated corridors of statewide significance traverses, shall, at a minimum, note such corridor or corridors on the transportation plan map included in its comprehensive plan for information purposes at the next regular update of the transportation plan map. Prior to the next regular update of the transportation plan map, the local government shall acknowledge the existence of corridors of statewide significance within its boundaries.

B. The commission shall communicate its findings to the governing body, indicating its approval or disapproval with written reasons therefor. The governing body may overrule the action of the commission by a vote of a majority of its membership. Failure of the commission to act within 60 days of a submission, unless the time is extended by the governing body, shall be deemed approval. The owner or owners or their agents may appeal the decision of the commission to the governing body within 10 days after the decision of the commission. The appeal shall be by written petition to the governing body setting forth the reasons for the appeal. The appeal shall be heard and determined within 60 days from its filing. A majority vote of the governing body shall overrule the commission.

C. Widening, narrowing, extension, enlargement, vacation or change of use of streets or public areas shall likewise be submitted for approval, but paving, repair, reconstruction, improvement, drainage or similar work and normal service extensions of public utilities or public service corporations shall not require approval unless such work involves a change in location or extent of a street or public area.

D. Any public area, facility or use as set forth in subsection A which is identified within, but not the entire subject of, a submission under either § 15.2-2258 for subdivision or subdivision A 8 of § 15.2-2286 for development or both may be deemed a feature already shown on the adopted master plan, and, therefore, excepted from the requirement for submittal to and approval by the commission or the governing body; provided, that the governing body has by ordinance or resolution defined standards governing the construction, establishment or authorization of such public area, facility or use or has approved it through acceptance of a proffer made pursuant to § 15.2-2303.

E. Approval and funding of a public telecommunications facility on or before July 1, 2012, by the Virginia Public Broadcasting Board pursuant to Article 12 (§ 2.2-2426 et seq.) of Chapter 24 of Title 2.2 or after July 1, 2012, by the Board of Education pursuant to § 22.1-20.1 shall be deemed to satisfy the requirements of this section and local zoning ordinances with respect to such facility with the exception of television and radio towers and structures not necessary to house electronic apparatus. The exemption provided for in this subsection shall not apply to facilities existing or approved by the Virginia Public Telecommunications Board prior to July 1, 1990. The Board of Education shall notify the governing body of the locality in advance of any meeting where approval of any such facility shall be acted upon.

F. On any application for a telecommunications facility, the commission's decision shall comply with the requirements of the Federal Telecommunications Act of 1996. Failure of the commission to act on any such application for a telecommunications facility under subsection A submitted on or after July 1, 1998, within 90 days of such submission shall be deemed approval of the application by the commission unless the governing body has authorized an extension of time for consideration or the applicant has agreed to an extension of time. The governing body may extend the time required for action by the local commission by no more than 60 additional days. If the commission has not acted on the application by the end of the extension, or by the end of such longer period as may be agreed to by the applicant, the application is deemed approved by the commission.

(Code 1950, §§ 15-909, 15-923, 15-964.10; 1958, c. 389; 1960, c. 567; 1962, c. 4 7, § 15.1-456; 1964, c. 528; 1966, c. 596; 1968, c. 290; 1975, c. 641; 1976, c. 291; 1978, c. 584; 1982, c. 39; 1987, c. 312; 1989, c. 532; 1990, c. 633; 1997, cc. 587, 858; 1998, c. 683; 2007, c. 801; 2009, cc. 670, 690; 2012, cc. 803, 835.)