Meeting Date: 09/11/2023

Agenda Item: 6a.

MEMORANDUM

PARE FAC 1806

To: Chair Feather and Members of the

Planning Commission

From: Supriya Chewle, Planner II

Through: Jason D. Sutphin, Community Development Division Chief

Brooke Hardin, Director of Community Development and Planning

RE: Public hearing for redevelopment of 11006 Park Road

Meeting Date: September 11, 2023

The attached documents are inclusive of all materials for the Planning Commission public hearing on the above-referenced item. This memorandum serves to provide explanation of the purpose of this item. The applicant is requesting a Zoning Map Amendment (Rezoning) CR Commercial Retail to RT Residential Townhouse in the Architectural Control Overlay District (ACOD) with proffers; to allow development of 13 townhouses

, an appeal to a determination of the Subdivision Ordinance by the Zoning Administrator, waiver from the Public Facilities Manual and a major certificate of appropriateness

The following items do not require a review and recommendation from Planning Commission, but will be reviewed by City Council:

- Special Exceptions
- Appeal to a determination of the Subdivision Ordinance by the Zoning Administrator.
- Waivers from the Public Facilities Manual as listed in the General Development Plan; and
- Major Certificate of Appropriateness for architecture and landscaping



CITY OF FAIRFAX

Department of Community Development & Planning

Zoning Map Amendment Z-22-00093 Special Exceptions SE- 23-00133

PUBLIC HEARING DATE

September 11, 2023

APPLICANT

Caglayan Investment group Emre Zirekoglu 42713 Latrobe St, Chantilly Va, 20152

AGENT

Keith Martin 1077 Spring Hill Rd, McLean, VA 22102

PARCEL DATA

Street Address

♦ 11006 Park Rd

Zoning District

- ♦ CR- Commercial Retail
- ♦ Architectural Control Overlay District (ACOD)



APPLICATION SUMMARY

The applicant is requesting a Zoning Map Amendment (Rezoning) from CR Commercial Retail to RT Residential Townhouse in the Architectural Control Overlay District (ACOD) with proffers; to allow development of 13 townhouses. While the Planning Commission is not required to provide a recommendation to City Council regarding Special Exceptions, the Planning Commission should be aware that the applicant will be requesting the following Special Exception associated with this application:

- To City Code Section 110-6.17.1(B)(2) to allow an adjustment to minimum required yards;
- To City Code Section 110-6.17.1(B)(4) pertaining to sidewalk, street trees and 10-foot landscape strip along the private street.

In addition to the special exception requests, the applicant would also be requesting the following actions by City Council:

- Appeal to a determination of the Subdivision Ordinance by the Zoning Administrator.
- Waivers from the Public Facilities Manual
- Major Certificate of Appropriateness

STAFF RECOMMENDATION

Staff recommends the Planning Commission provide a recommendation for <u>approval</u> to the City Council of the request for a Zoning Map Amendment (rezoning).

BACKGROUND

The subject property is 1.16 acres located to the north of the Park Road and Holly St intersection. The subject site was developed with a single-family detached residential structure that had been expanded with two warehouse-style additions and occupied by commercial uses since 1968 including a press printing shop, roofing contractor, and an art composition studio. In 1998 the site was approved for a 9,024 sf building supplies sales office that included 4,000 sf of office space and 5,024 sf of storage space for the building supplies sales business. The building is currently vacant.

PROJECT HISTORY

- City Council conducted a pre-application briefing on June 4, 2019.
- Planning Commission conducted a pre-application briefing on June 24, 2019.
- Land Use Application was submitted on March 7, 2022.
- BAR application for a Certificate of Appropriateness was submitted on March 24, 2022.
- BAR conducted a work session on March 1, 2023.
- Planning Commission held a post-submission work session on March 27, 2023.
- City Council held a post-submission work session on April 11, 2023.

Post-Submission Work Sessions

On March 27, 2023, the Planning Commission held a work session to discuss the development of 13 townhouses. Planning Commission provided comments and questions that covered several issues such as:

- Inquired at what stage of the process are proffers provided.
- Inquired if any efforts to consolidate the two properties to the east of the subject site were made.
- Discussed potential height of the proposed house on lot 8.
- Discussed the height of the entire development in comparison to the existing neighborhood which is higher, but they also noted that the by-right height allowance is much higher.
- Discussed Stormwater Management to make sure the water run off doesn't affect the neighbors.
- Requested more details about fire department comments and assessments.

Despite the overall range of comments and questions, Planning Commission is supportive of the use which works as a transition between the single family residential and the commercial to the north.

On April 11, 2023, City Council held a work session to discuss the proposed rezoning and with special exceptions and waivers to allow thirteen townhouses. City Council provided comments and questions that covered several issues such as:

- Access for general public to the onsite park.
- The Council members had heard concerns regarding the design of the project.
- Encouraged holding neighborhood meetings to get neighbor input regarding the project.
- Restriction in HOA covenants to restrict garage use.
- The architecture is too modern for a traditional neighborhood.
- Inquired the typical width of a local street and if the development can meet those dimensions.

Despite the overall range of comments and questions, City Council is also supportive of the use which might be a great project to implement the Kamp Washington Small Area Plan.

ZONING

The subject property is zoned CR Commercial Retail and is within the Architectural Control Overlay District. Table 1 provides a summary of surrounding land uses.



Figure 2: Existing Zoning

	Existing Zoning	Existing Land Use	Future Land Use
Site	CR Commercial Retail/ACOD	Commercial – Office/Vacant	Activity Center
North	CR Commercial Retail/ACOD	Commercial - Retail	Activity Center
South	RH Residential High/ACOD	Residential - Single Detached	Single Family Detached Neighborhood
East	CR Commercial Retail/ACOD	Commercial – Office, Residential - Single Detached	Activity Center
West	CR Commercial Retail/ACOD	Commercial - Retail	Activity Center

Table 1: Surrounding Property Descriptions

COMPREHENSIVE PLAN

Land Use

The Comprehensive Plan provides a general plan and communicates a vision for future land use and development in the city, while the Zoning Ordinance provides the regulatory mechanism to ensure the new development and changes in land use are consistent with the vision.

The subject property is designated as Activity Center Place Type on the Comprehensive Plan Future Land Use Map as indicated in Figure 3.

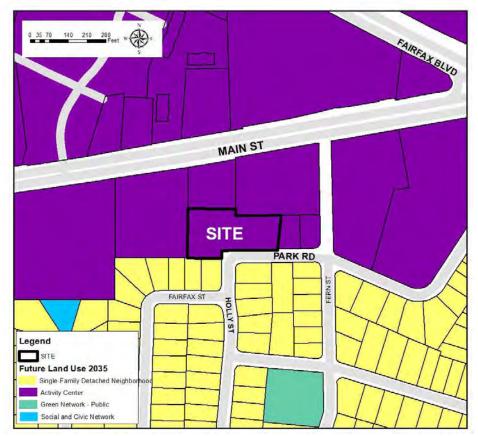


Figure 3: Future Land Use

The Activity Center Place Type, identified in purple on the Future Land Use Map, applies to locations in the City where pedestrian-oriented, mixed-use development is strongly encouraged. Uses should be integrated as a mix of commercial uses, multifamily housing, and townhouses, either in the same building (i.e., vertical mixed-use) or as a combination of single-use buildings featuring a range of complementary uses within the Activity Center (i.e., horizontal mixed-use) (2035 Comprehensive Plan, Pg. 32).

The Activity Center Place Type supports a density of a minimum FAR of 0.4; at least six townhouses or at least 12 multifamily dwelling units per acre; or any proportional combination of residential and commercial densities with building heights predominantly five stories or less, unless otherwise specified in an adopted Small Area Plan.

KAMP WASHINGTON SMALL AREA PLAN:

The recently adopted Kamp Washington Small Area Plan encourages multi-modal links.

Where vehicular streets terminate at study center edge, such as Fern Street and Holly Street, encourage bicycle and pedestrian connections with pathways connecting to US-29. (Kamp Washington Small Area Plan, Pg 20)

The Kamp Washington Small Area Plan is divided into three-character areas. The subject site is within the Fern Street Triangle. The Fern Street Triangle is a new community node focused on public open spaces and neighborhood-serving retail. Fern Street will extend from Fairfax Boulevard across US-29 to create a better retail main street that will aid in connecting the community.

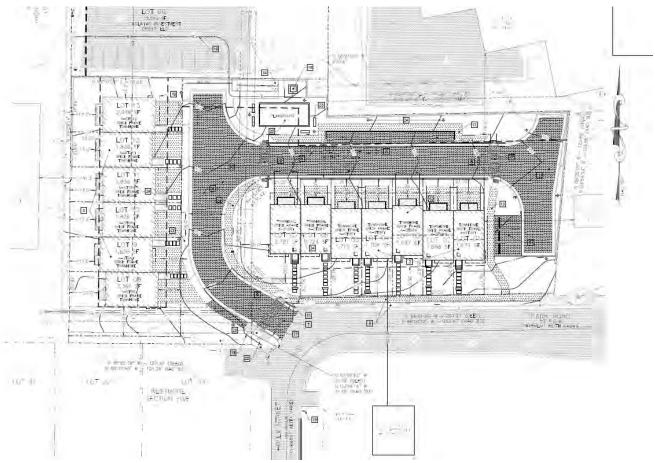


Fig 4: Kamp Washington Small Area Plan

PROPOSAL SUMMARY

The applicant proposes to replace the existing low-rise office building on subject site with 13 townhouses. The concept plan shows 7 townhouses with frontage along Park Rd and 6 townhouses with frontage on a private street. All lots would have a 2-car garage. The plan also shows a playground and 7 visitor parking spaces. The applicant has proposed an ADA accessible ramp to provide non-vehicular connection to Main St via property to the north of the subject site.

Single Family attached dwellings are not a permitted use within the CR Commercial Retail zoning district. The applicant proposes a rezoning from CR Commercial Retail to RT Residential Townhouse district. RT Residential Townhouse district proposes a maximum density of 12 units/acre. The applicant is proposing a density of 11.21 units/acre.

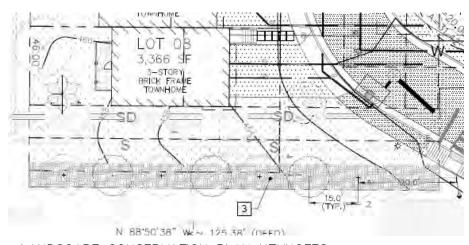


Site Development Standards:

The proposal presents a design that would comply with the site development standards of the Zoning Ordinance.

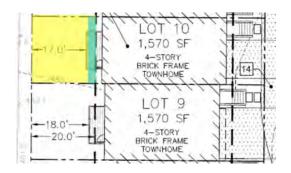
- The proposal can have a maximum height of 45 feet; but when adjacent to RL, RM or RH district the height is restricted to 35 feet. Lot 8 is adjacent to a residential zoning district and therefore the height of the townhouse located on lot 8 shall be restricted to 35 feet. Height for the townhouse on lot 8 is restricted to 35 feet.
- The RT zoning district requires 10 feet front yard and 20 feet rear yard. Lot 1-13 provide minimum 10 feet front yard and minimum 20 feet rear yard.
- The RT zoning district requires 20 feet street side yard. Lot 7 provides minimum 20 feet side yard, Lot 1 does not meet this requirement, a Special Exception has been applied.
- The proposal can have a maximum 80 % lot coverage and the remainder 20% should be pervious. The application proposes 67.66% lot coverage and would meet this requirement.
- The proposal can have a minimum lot size of 1,500 sf. The application provides a minimum lot size of 1,679 sf and would meet the requirement.
- The proposal is required to provide minimum 18 feet lot width. The application provides 21 feet minimum lot width and would meet the requirement.
- The proposal can have a maximum building coverage of 60%. The application provides a maximum building coverage of 42.53% and would meet the requirement.
- Townhouses require 2 parking spaces per unit. All lots can have additional parking on their driveways. Seven community guest parking spaces are provided 4 along the rear property line and 3 to the east of lot 1.

- Section 4.4.4. Sidewalks; Sidewalks shall be required on both sides of all arterial, collector and local streets. The application provides sidewalk along Park Rd and also along most of the private street, except along the driveways of Lots 1-7. Special Exception to the sidewalk requirement along a portion of the private road is requested.
- The proposal is required to meet the TY1 Transitional Yard requirements on the internal property lines abutting single family attached and detached uses. A TY1 Transitional Yard is provided along lot 8.
- The proposal is required to provide 15% tree canopy. The application proposes 15.31% tree canopy and would meet this requirement.
- Street trees are required along all streets at the rate of one canopy tree for every 40 linear feet and spaced a maximum of 50 feet apart along with a minimum ten-foot-wide landscaped strip. The application meets this requirement along Park Rd. A Special Exception to this requirement is requested along the private roads.



LANDSCAPE CONSERVATION PLAN KEYNOTES

- 3 7.5-FT WIDE TY-1 LANDSCAPE TRANSITION YARD ALONG ADJACENT R-M ZONED LOTS
 TOTAL LENGTH=125 LF
 6-FT TALL OPAQUE WOOD SCREENING FENCE ALONG PROPERTY LINE
 NO CANOPY TREES REQUIRED OR PROVIDED
 4 UNDERSTORY TREES REQUIRED PER 100 LF
 TOTAL UNDERSTORY TREES REQUIRED=5
 TOTAL UNDERSTORY TREES PROVIDED=7
- It is noted that the Zoning Ordinance will restrict the encroachments of decks in the rear yard. As shown below the deck provided to a townhouse can only encroach 3 feet (shown in green) within the required 20 feet rear yard (shown in yellow).



LAND USE REQUESTS

The applicant proposes the following land use requests:

Rezoning:

Rezoning from CR Commercial Retail zoning district to RT Residential Townhouse district zoning district.

Special Exceptions, Pursuant to City Code Section 110-6.17:

1. Section 3.6.1 pertaining to setbacks

Modify minimum side street yard.

The minimum side street yard is 20 feet, which shall be open and unobstructed above the general ground level of the graded lot. The applicant is requesting relief from the street side yard requirement for lot 1 from the private drive to provide 3 visitor parking spaces.

2. Section 4.5.6.B pertaining to Street trees and 10-foot landscape strip along the private street.

The applicant is requesting a special exception from this requirement due to site constraints. The applicant is providing all required street trees along Park Rd. The exception is to the private street on the site.

3. Section 4.4.4 pertaining to Sidewalks.

Sidewalks are required along all streets. The applicant is proposing a sidewalk along Park Rd and also along most of the private street, except along the driveways of Lots 1-7.

In addition to the special exception requests, the applicant would also be requesting the following actions by City Council:

• Subdivision Ordinance Appeal

<u>Appeal</u> to a determination of the Zoning Administrator to deny a variation or exception of Section 2.4.1.A.b of the Subdivision Ordinance.

Section 2.4.1.A of the Subdivision Ordinance reads:

Every lot shall have frontage either:

- a. On a public street which, once constructed and improved by the applicant will qualify for acceptance into the city's street system; or
- b. On a private street approved as part of a planned development.

The plan shows lots 1-7 fronting Park Rd but lots 8-13 front on a private street for which the interpretation is required.

The Zoning Administrator determined that private streets are permitted only in zoning districts designated as "Planned Development Districts" and is not authorized to grant variations or exceptions to the provision administratively.

• Waivers from the Public Facilities Manual

A waiver is requested for street width of the private street from the City of Fairfax Public Facilities Manual, including City of Fairfax standard detail 401.01 Typical Curb and Gutter Street Section. The required width for a residential street is 36 feet and the applicant is proposing 24 feet.

Major Certificate of Appropriateness, Pursuant to City Code Section 110-6.5.3.B

The Board of Architectural Review (BAR) held a work session for a Certificate of Appropriateness for architecture and landscaping on March 1, 2023. The contemporary elevation design was welcomed but the board suggested variation in elevation of the units. The board thought brick elevations would enhance the neighborhood and had questions about light spillage, water retention, solar roofs and green roofing systems.

RECOMMENDATION

Staff recommends the Planning Commission provide a recommendation for <u>approval</u> to the City Council of the request for a Zoning Map Amendment (rezoning).

ANALYSIS

Staff analysis of the compliance of this proposal with the Comprehensive Plan, Small Area Plan, Zoning Ordinance and other City goals and policy is provided in Attachment 1.

ATTACHMENTS

- 1. Analysis
- 2. Application
- 3. Summary of Zoning Districts
- 4. Statement of Justification
- 5. Proffers
- 6. General Development Plan
- 7. Traffic Impact Study
- 8. Fiscal Impact Analysis
- 9. Board of Architectural Review Package
- 10. Notifications
- 11. Motions
- 12. Ordinance

PREPARED BY:

Director, Community Development & Planning

Denle	00/07/0000	
	09/07/2023	
Supriya Chewle, AICP	DATE	
Planner II		
REVIEWED AND APPROVED:	09/07/2023	
Jason Sutphin	DATE	
	DMTE	
Community Development Division Chief		
B-4.		
6 1 '	09/07/2023	
Brooke Hardin, AICP	DATE	

ANALYSIS

Zoning Map Amendment Z-22-00093 Special Exceptions SE- 23-00133

This attachment contains staff analysis on the submitted proposal for the redevelopment of 11006 Park Rd. It is divided into three primary sections:

- A. Comprehensive Plan: Analysis of the conformance of the application with the Comprehensive Plan and the Future Land Use Map.
- B. City Policy: Analysis of the conformance of the application with general requirements of the Zoning Ordinance and other City goals and policy.
- C. Procedural Requirements and Review Criteria: Analysis of conformance of the plan with specific citations from the Zoning Ordinance.

PART A: CONSISTENCY WITH COMPREHENSIVE PLAN

The subject property is designated as Activity Center Place Type on the Comprehensive Plan Future Land Use Map. The site is currently developed with a vacant 9,024 square foot office building. The Activity Center Place Type applies to locations in the city where pedestrian-oriented, mixed-use development is strongly encouraged. Mixed-use development is pedestrian-oriented development that allows multiple activities to take place by layering compatible land uses, public amenities, active streets accommodating multimodal transportation, and community serving commercial (City of Fairfax 2035 Comprehensive Plan, page 32). Figure 1 illustrates the Activity Center Place Type for the subject property:

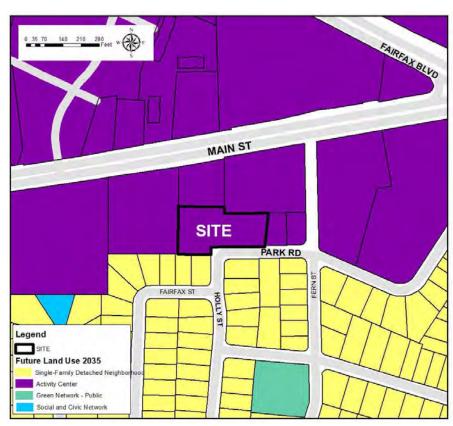


Figure 3: Future Land Use

Activity Center

The Activity Center Place Type, identified in purple on the Future Land Use Map, applies to locations in the City where pedestrian-oriented, mixed-use development is strongly encouraged. (Mixed-use development is pedestrian-oriented development that allows multiple activities to take place by layering compatible land uses, public amenities, and active streets accommodating multimodal transportation, and community-serving commercial.) Uses should be integrated as a mix of commercial uses, multifamily housing, and townhouses, either in the same building (i.e., vertical mixed-use) or as a combination of single-use buildings featuring a range of complementary uses within the Activity Center (i.e., horizontal mixed-use).

<u>Townhouse</u>: Residential townhouses should only be considered to serve as a transitional use to existing development outside of the Activity Center (2035 Comprehensive Plan, Pg. 33).

Residential Limitations:

Any unified development application within an Activity Center that contains a residential component should have a density of no more than 48 dwelling units per acre. Such developments must offer benefits that support the vision of the Comprehensive Plan for the Activity Center. Such benefits should include the following:

- 1. A mix of uses within the development site;
- 2. Contributions toward a connected street grid;
- 3. Usable open space, and;
- 4. High quality design.

Should a unified development application fail to offer these benefits, that development may contain no more than 20 dwelling units per acre (2035 Comprehensive Plan, Pg. 34).

Staff Analysis:

Staff recommends this development within the Activity Centers as it serves as a transitional use to the existing residential development as recommended by the Comprehensive Plan. The proposed development has a density of 11 dwelling units per acre which is less than as mentioned in the Residential Limitations within the Comprehensive Plan. Although the proposed development doesn't meet all the benefits listed above it contribute towards a connected street grid and provide through pedestrian connectivity along with high quality design and usable open space on site.

The proposed applications are reviewed based on consistency with the Comprehensive Plan as a whole. Descriptions of specific Comprehensive Plan strategies and other language that influence the staff recommendations are provided below.

<u>Housing</u>: The 2035 Comprehensive Plan provides guidance to the types of housing choices that are necessary to meet the needs and demands of current and future residents. The Comprehensive Plan has identified a shortage of multifamily and condominiums. Although significant single-family development is not anticipated as the city is primarily built-out, potential redevelopment and infill housing that keep up with modern expectations and meet demand are encouraged, provided they comply with the Zoning Ordinance (Comprehensive Plan, Page 54). Therefore, the Comprehensive Plan encourages redevelopment and infill housing to meet the demand for underrepresented types of housing in the City's housing stock.

Housing Goal 1
Support a wide range of housing.

Outcome H1.1

Continued development of housing types that are underrepresented in the City's existing stock of housing units.

Staff Analysis:

It is vital that a variety of high-quality, attractive housing choices continue to be available in the city to support differing needs and demands of residents. Housing needs and demands are reflective of the existing housing stock and fluctuating market trends, making them subject to change over time. Specific housing types are identified in the Land Use Strategies Section of the Comprehensive Plan. Current shortages could include multifamily rentals and condominiums, of which the majority of the City's stock was built in the 1960s, and townhouses, of which the city currently has a lower ratio than many surrounding communities in Fairfax County (Comprehensive Plan, pg. 54). According to the City of Fairfax Fact Book, townhouses make-up 13.5% (1,490 units) of the city's housing stock (City of Fairfax Fact Book, Figure 18: Housing Type — Existing and Approved, Page 18).

<u>Multimodal Transportation</u>: The intent of the Multimodal Transportation Plan is to recommend strategies that will improve the operation and safety of the City's transportation system to achieve the larger community objectives for a vital, vibrant, and livable city (Comprehensive Plan, Page 66).

Multimodal Transportation Goal 2

Provide viable and attractive mobility choices.

Outcome MM2.1: Pedestrian safety is improved.

Action MM2.1.2 Ensure the pedestrian network is accessible to all and meets the requirements of the Americans with Disabilities Act (ADA).

Action MM2.1.4 Improve pedestrian crosswalks. Crosswalks should be provided across all legs of all intersections.

Action MM2.1.5 Expand the sidewalk network. Sidewalks should be provided with any significant street maintenance, rehabilitation, or reconstruction project and may be constructed independent of a street project.

Staff Analysis:

The proposed development provides sidewalks along Park Rd and both sides of the private street except along the driveways of lots 1-7 and has also proposed an ADA accessible ramp to provide non-vehicular connection to Main St. via property to the north of the subject site. Although the applicant is requesting a special exception to the sidewalk requirement along the driveways of lots 1-7 these lots have sidewalk access along Park Rd. There is a good sidewalk network on site.

Goal 2 - Ensure availability of housing that is affordable.

Outcome H2.1: Affordable housing units have been added to the City's housing stock through redevelopment and strategic investments.

Action H2.1.2 Provide regulatory and financial incentives to increase the supply of affordable housing, including amending the City's Zoning Ordinance to include an Affordable Dwelling Unit ordinance.

Staff Analysis:

The proposed development is not subject to Section 3.9 (Affordable Dwelling Units) of the Zoning Ordinance, which states "the provision of affordable dwelling units shall apply to any site, or any portion thereof, at one location which is the subject of a complete Land Use Application submitted after the effective date of the city's Program, whenever such an application includes, upon approval, a total of 30 or more dwelling units." The proposed development is requesting approval for 13 Townhouses.

While the Comprehensive Plan advises the Activity Center's development at a high level, Small Area Plans provide more specific guidance for each Activity Center, including the desired mix of uses, residential density, building density, design aesthetic, street locations, multimodal connections infrastructure improvements, parking, and open space. As each Small Area Plan is completed and adopted, its recommendations will supersede the pre-existing guidance in the 2035 Comprehensive Plan for its respective Activity Center" (City of Fairfax,

https://www.fairfaxva.gov/government/community-development-planning/planning/current-studies-projects-plans/small-area-plans). The Kamp Washington Small Area Plan was adopted in 2022, which includes the subject site. For land use applications in an adopted Small Area Plan, specific recommendations on growth in each Activity Center will be determined by the guidance of the adopted Small Area Plan.

PART B: CONSISTENCY WITH SMALL AREA PLAN

The recently adopted Kamp Washington Small Area Plan encourages multi-modal links. Where vehicular streets terminate at study center edge, such as Fern Street and Holly Street, encourage bicycle and pedestrian connections with pathways connecting to US-29. (Kamp Washington Small Area Plan, Pg 20)

The Kamp Washington Small Area Plan is divided into three-character areas. The subject site is within the Fern Street Triangle. The Fern Street Triangle is a new community node focused on public open spaces and neighborhood-serving retail. Fern Street will extend from Fairfax Boulevard across US-29 to create a better retail main street that will aid in connecting the community

The Fern Street Triangle-South

Creating new vital connections to the Kamp Washington core while building sensitive transitions to adjacent residential neighborhoods.

Establish New Parks and Greenspaces

- Encourage a new community open space activated by mixed-use buildings.
- Encourage a green buffer between new development and neighborhood that provides a setback between commercial and residential properties. Development along Park Road should incorporate a greenspace along the street edge.
- Encourage balconies, porches, stoops, and small lawns at future residential developments that engage parks and open space, with appropriately-scaled frontages facing Park Road. (Kamp Washington Small Area Plan, Pg 20)

Staff Analysis:

The goal set for Fern Street Triangle-South is to build sensitive transitions to the adjacent residential neighborhoods. Staff believes the proposed development provides this transition between the retail along Main St and adjacent residential

ATTACHMENT 1

neighborhood. The proposed development also has provided balconies, porches with appropriately scaled frontages along Park Rd.

Foster Multi-Modal Links

- Where vehicular streets terminate at study center edge, such as Fern Street and Holly Street, encourage bicycle and pedestrian connections with pathways connecting to US-29.
- Include pedestrian and cyclist-friendly design details, such as intersection bulb-outs, changes in pavement, and appropriate signaling.

Staff Analysis:

The proposed development meets this recommendation with its proposal of an ADA accessible ramp for non-vehicular connection to Main St. via property to the north of the subject site. The applicant will record among the land of records public ingress/egress and emergency access easements for all streets and sidewalks located on the subject site.

Transition to Single Family



- Landscaped Buffer that preserves existing line of deciduous trees and incorporates sidewalks.
- Allow for low scale multifamily buildings with setbacks from Park Road to gradually transition building scale to the neighborhood. Plan recommends using topography to insert underground parking garages, as applicable, and place taller structures in areas away from Park Road, and where the terrain is lower. Retaining walls should be sensitively placed to have less of a visual impact.
- Consider architectural designs that sensitively mimic or are complimentary in scale, bulk, and facade treatment to residential

neighborhood to the south. Refer to the City's Design Guidelines for further guidance. (Kamp Washington Small Area Plan, Pg 20)

Staff Analysis:

Staff believes the proposed development provides this transition between the retail along Main St and adjacent residential neighborhood to the south of the subject site. The architectural design incorporates elements and materials from the commercial to the north as well as materials and elements from the residential neighborhood to the south to be a transitional buffer between the two uses. The applicant is unable to preserve the existing line of deciduous trees either due to the current condition or due to post development ailment.

Building Heights



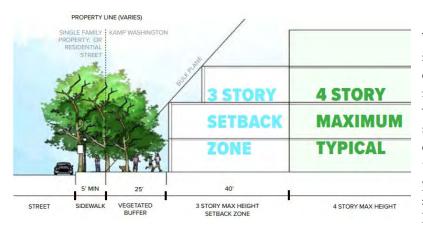
The goals of the Small Area Plan are to provide a transition from the nearby neighborhoods to the rest of the study area. The plan proposes areas near the existing single-family neighborhoods to be a

maximum of 4 stories in height. This allows a gradual taper from the 3-story maximum allowed in the neighborhoods now.

Staff Analysis:

Staff believes the proposed development meets this recommendation as the proposed Townhouses are 3-4 stories in height.

Residential Setbacks



Where along a residential street (as in the top section), it is encouraged to provide a 5-foot minimum sidewalk, planting strip with street trees, and pedestrian scale lighting where none is existing. In the vegetation zone, the plan strongly encourages providing stormwater facilities and sustainability-oriented landscape uses, including rain

gardens, water catchment, and native vegetation. After the 25-foot vegetated setback, built structures are only allowed up to 3 stories for the first 40 feet. A bulk plane as is required in the zoning ordinance for shared property lines between commercial and residential properties, and is also recommended where parcels are adjacent to an existing residential street. This residential setback zone is intended to allow a harmonious transition to the typically 3 story maximum buildings in adjacent single-family zone.

Staff Analysis:

The proposed development provides a 5 feet minimum side walk along Park Rd and a 25 feet vegetated buffer as recommended by the small area plan. The development proposes a 15 feet 3 story max height setback zone instead of 40 feet. Section 3.5.1.C.4 of the Zoning Ordinance restricts direct vehicular ingress and egress to a public street and Section 2.4.1.A.1 of the Subdivision Ordinance requires every lot to front a public street or a private street approved as part of a Planned development. Therefore, this development cannot move Lots 1-7 closer to the rear property line of the subject site. As the private road has to be north of Lots 1-7 the proposed development is unable to meet the 40 feet 3 story max height setback zone and the bulk plane. The applicant can move Lots1-7 10 feet north which will increase the setback zone from 15 feet to 25 feet but all the lots will lose driveway parking spaces. The applicant has considered numerous design alternatives to meet all the code requirements. Staff believes the proposed development substantially meets the intent of the Small Area Plan.

PART B: CITY POLICY

This section is divided into the following subjects:

- 1. Scale
- 2. Circulation (including vehicular circulation, pedestrian circulation and parking)
- 3. Architecture and Landscaping
- 4. Stormwater Management

- 5. Dry Utilities
- 6. Open Space
- 7. Tree Coverage
- 8. Fiscal Impact

Scale

<u>Density</u>: Residential uses are key to supporting new development in the Activity Centers, both of which are currently dominated by office space. New residential construction also provides diversification of residential product type since most of the City's existing residential inventory comprises older single-family homes and apartment complexes. Expanding residential choices to include new construction, including target market occupants, can help nurture a well-balanced sustainable community. Density is not prescribed on a parcel-by-parcel basis in the Kamp Washington Small Area Plan. However, the desired zoning district, RT Residential Townhouse has a maximum density requirement of 12 du/acre.

Staff believes that the proposed residential density is consistent with the general guidance by the Comprehensive Plan and Kamp Washington Small Area Plan for new development and in keeping with the surrounding density.

<u>Height</u>: The Comprehensive Plan within an Activity Center Place Type prescribes building height predominantly five stories or less. The Kamp Washington Small Area Plan recommends 3-4 story maximum height. The RT Residential Townhouse zoning district permits 4 stories or 45 feet maximum height. The current CR Commercial Zoning permits a height of 5 stories or 60 feet for a by-right use. The Kamp Washington Small Area Plan recommends 3 story max height setback zone and bulk plane to restrict height adjacent to existing residential neighborhood.

The applicant meets the recommended height within an Activity Center Place Type and the RT Residential Townhouse Zoning District but does not meet the 3-story max height setback zone and the bulk plane recommendations of the Kamp Washington Small Area Plan. The applicant has considered all design alternatives to meet all the code requirements. Staff believes the proposed development substantially meets the intent of the small area plan.

Circulation

<u>Vehicular Network:</u> The applicant proposes a new private street from Park Rd in a north-south direction that connects to a new east-west private street with a turnaround provided for emergency vehicles.

Based on the average trip generation rates taken from the Institute of Transportation Engineers, Trip Generation, 10th ed., the proposed 13 townhouses would generate a total of 58 daily trips. The subject site has a private two-way street. The private street would be 24 feet wide and maintained by a Homeowner's Association. The private street must be designated as a fire lane to be accepted as meeting the access requirement. The proposed 13 townhouses would generate 24 fewer trips daily than the existing office building if it was occupied.

				Land			,	Weekday M Peak Ho			Weekday M Peak Ho	ur	Weekday Average
Scenario	Proposed Land Use	ITE Land Use	Setting/Location	Use Code	Amount	Units	ln	Out	Total	in	Out	Total	Daily Trips
Existing Development	Commercial	Small Office Building	General Urban/Suburban	712	5,030	GSF	8	2	10	4	9	13	82
Proposed Development	Townhomes	Multifamily Housing (Low-Rise)	General Urban/Suburban	220	13	DU	2	5	7	6	4	10	58
-			Proposed Development vs Existing Development				(6)	3	(3)	2	(5)	(3)	(24)

<u>Pedestrian Network:</u> The proposed development provides a 5-foot sidewalk on Park Rd and sidewalks on both sides of the private road except along the driveways of Lots 1-7. It also proposes an ADA accessible ramp to provide non-vehicular connection to Main St. via property to the north of the subject site.

Staff Analysis:

Due to the layout of the proposed development and the proposed trips generated, staff believes there would be minimal impact to the vehicular traffic. Although the applicant is requesting a special exception to the sidewalk requirement along the driveways of lots 1-7 these lots have sidewalk access along Park Rd. There is a good sidewalk network on site.

<u>Parking:</u> The proposed development proposes a two-parking car garage for all 13 Townhouses and additional parking capabilities on the driveways. The development also proposes 7 visitor parking spaces.

Staff Analysis:

Staff believes the parking provided on the plan is consistent with Section 4.2 (Off-Street Parking and Loading) Zoning Ordinance.

Architecture and Landscaping:

The architecture of the townhouses has contemporary style, Material of the proposed townhomes would be a mixture of brick, brick soldier coursing, metal coping, standing seam metal roofing, metal railings, metal canopies, metal downspouts, hardie smooth plank lap siding, Andersen vinyl window system, overhead garage door, and exterior building lighting. Pole lighting is seen on the site plan sheet and includes an American Revolution Deluxe Full Cutoff LED.

Staff Analysis:

Staff believes that the proposed building design is consistent with the City's character and compatible with the surrounding area. The architecture would be reviewed by the Board of Architectural Review and City Council during their public hearings on Certificate of Appropriateness.

Section 4.5.6.B of the Zoning Ordinance requires a minimum of 10 feet wide landscaped strip and street trees along all streets. The plan shows street trees along Park Rd spaced every 40 lf and spaced a maximum of 50 feet part and a 10 feet wide landscape strip provided along West Dr. The applicant is unable to meet the above requirements along the private drive and has applied for a special exception.

A transition yard would be provided along all sides adjacent to properties zoned RH, Residential High zoning District. The transition yard would have a six foot fence and understory trees,

complying with the code requirements. The pocket park and the transition yard would be maintained by a Homeowner's Association. The development will also provide a 25 feet vegetated buffer along the frontage.

The site design of the houses, the street trees and the vegetated buffer would improve the appearance of the street.

Stormwater Management:

Even though stormwater management typically is not fully designed until administrative site plan review, the General Development Plan will be subject to the requirements of the state code and the City's stormwater management regulations.

Staff Analysis:

Staff recommends that the applicant provide a complete sanitary sewer capacity study at the site plan review along with any easements necessary.

Utilities:

Section 4.11 of the Zoning Ordinance requires all on-site above-ground utilities to be relocated underground for any development that will require site plan approval.

Staff Analysis:

The applicant proposes undergrounding all utilities on site. The applicant proposes moving a guy wire for a utility pole located at the intersection of Park Rd and Holly St with conformance with Dominion Power to accommodate the sidewalk ADA ramp.

Parks and Open Space:

A small private park has been designed within the development for the use of the residents of this development. The applicant is committing to provide to Parks and Recreation impacts funding of \$378 per dwelling unit. The proposal can have a maximum 80 % lot coverage and the remainder 20% should be pervious. The application proposes 67.66% lot coverage and 32.34% pervious surfaces.

Staff Analysis:

Staff believes that the proposed development meets all the Parks and Open Space requirements.

Tree Coverage:

The proposal is required to provide 15% tree canopy. The application proposed 15.31% tree canopy. The Urban Forester has reviewed the site and does not recommend any trees for preservation.

Staff Analysis:

The applicant has proposed a landscape plan with 46 trees, shrubs and groundcovers, perennials, and grasses.

Fiscal Impact:

Staff estimates that this proposal would bring a net fiscal benefit of between \$20,000 and \$51,000 annually.

PART B: PROCEDURAL REQUIREMENTS AND REVIEW CRITERIA

Following is an analysis of citations from the Zoning Ordinance related to procedural requirements and review criteria derived from the proposed rezoning request.

§6.4.9. Rezoning Review approval considerations

In determining whether to approve or disapprove a proposed rezoning to any district other than a rezoning requesting a planned development district, the planning commission and city council shall consider any proffers and the following:

A. Substantial conformance with the comprehensive plan;

Staff Analysis:

Staff believes the requested rezoning is in substantial conformance with the comprehensive plan. The future land use for the subject property is Activity Center Place Type supports a density of a minimum FAR of 0.4; at least six townhouses or at least 12 multifamily dwelling units per acre. The applicant is requesting 13 townhouses on 1.165 acres.

B. Any greater benefits the proposed planned development provides to the city than would a development carried out in accordance with the general zoning district regulations;

Staff Analysis:

The subject site is currently vacant and the architecture of the houses and the street trees would improve the appearance of the street.

C. Suitability of the subject property for the development and uses permitted by the general zoning district regulations versus the proposed district;

Staff Analysis:

The site is currently zoned CR, Commercial Retail which does not allow for townhouses. The Kamp Washington Small Area Plan recommends a transitional use on the subject site. The proposed RT Residential Townhouse zoning district allows development of townhouses which is considered a transitional use between the existing residential development and commercial uses to the north. The proposed use would be consistent with the current surrounding use.

D. Adequacy of existing or proposed public facilities such as public transportation facilities, public safety facilities, public school facilities, and public parks;

Staff Analysis:

Due to the size of the proposed development and the proposed trips generated, staff believes there would be minimal impact to the public transportation. The applicant is committing to contribute to the Parks and Recreation impacts funding of \$378 per dwelling unit. A development with 13 townhouses is estimated to add three students to the school system which would not burden the facility and City Schools did not recommend a contribution.

E. Adequacy of existing and proposed public utility infrastructure;

Staff Analysis:

This application has been reviewed by the appropriate departments within the City for impacts to public utility infrastructure. Any areas of concern have been addressed through plan modifications or are discussed in the appropriate section of this Analysis.

F. Compatibility of the proposed development with adjacent and nearby communities;

Staff Analysis:

As discussed above, the proposed use is complimentary to other uses within the block. The proposed use is also consistent with existing uses.

G. Consistency with the stated purpose of the proposed district.

Staff Analysis:

The proposed development meets the purpose statement for the RT, Residential Townhouse zoning district which allows 12 units per acre, the applicant is requesting 13 units on 1.165 acres.

4.114	Z-22-0009
Application No.	

CITY OF FAIRFAX

ZONING MAP AMENDMENT, PROFFER AMENDMENT, OR MASTER DEVELOPMENT PLAN AMENDMENTAPPLICATION

I/We adappead CAGLAYAN Investment Godge	ethe martin Agent
(Name of applicant)	(Authorized agent's name and relationship to applicant)
a corporation/general partnership/limited partnership is the	o / sole proprietorship/individual (circle one) which
property owner / contract purchaser / lessee (circle one)	
of Lots 151, 156 137A 138 Block	, Section of the
requests	(Sq. Ft.) on the premises known as that the property currently zoned CR be
in Deed Book 252	e land records of Fairfax County in the name of Page 194
(Name and address of subject property)	
I certify that I have read and understand my application to comp Application Requirements, which states:	bly with Zoning Ordinance Section 6.2.3.C
 An application shall be sufficient for processing when it contains all of or not the development as proposed will comply with the applicable reference. The burden of demonstrating that an application complies with applicant. The burden is not on the city or other parties to show that the standard particular case. Information needs tend to vary substantially from application as result of code amendments and review procedure changes. Standard requirements for each application and to waive requirements that are shall rely on the review official as to whether more or less information. 	icable review and approval criteria is on the e standards or criteria have not been met. hay be required according to the needs of the ication to application and to change over time off has the flexibility to specify submission
M	Acquest
(Signature of applicant or authorized agent)	(Title or relationship)
Address 1077 Sping HILL RO Mclenw, VA 2	2102 Phone 703 369 -1419
Email KCMArtinlaw, com	
STATE OF VIRGINIA to-wit:	
I, the undersigned, a Notary Public in and for the State afores	4404-200-200-200-200-200-200-200-200-200
the 30 h day of Apa 2024 do hereby se	said, whose commission as such will expire on
me in the State aforesaid Keith Martin (Name)	rtify that this day personally appeared before
whose name(s) is (are) signed to the foregoing and hereunto annexed ag	(Title)
of January, 2022, and acknowledged the same be	fore me
GIVEN under my hand and seal this 3 day of	Danuary 2029
	12000
	11 11 11 11 11 11 11 11 11 11 11
	Notary Public Registration #

THE FOLLOWING MUST BE COMPLETED BY THE PROPERTY OWNER Emre zirekoglu Caglayan investment group hereby certify that the applicant named above has the authority vested by me to make this application. (Title or relationship) (Signature of owner or authorized agent) Phone: 571-594-6353 Address 42713. latrobe st Chantilly VA 20152 STATE OF VIRGINIA to-wit: I, the undersigned, a Notary Public in and for the State aforesaid, whose commission as such will expire on day of JUNE, 2024, do hereby certify that this day personally appeared before VY NGOC THANH NGUYEN Notary Public of Virginia me in the State aforesaid ___ (Title) (Name) whose name(s) is (are) signed to the foregoing and hereunto annexed agreement bearing date of the 12 , 2022 , and acknowledged the same before me. GIVEN under my hand and seal this 12 2022 day of 7365413 VY NGOC THANH NGUYEN Notary Public Registration# ELECTRONIC NOTARY PUBLIC • REG. \$ 7365413 Commonwealth of Virginia FOR OFFICE USE ONLY Received by: Proposal filed: Receipt No. _ Fee Paid: Previous Cases: Current status of business license and fees: Treasurer:

Commissioner of Revenue:

AFFIDAVIT CITY OF FAIRFAX

Tunnan and Basel to A	(Name of applicant or agent)	and that to the best of my know
I am an applicant in A	11	and that to the best of my know
and belief, the following	ing information is true:	
1. (a) That the fo	ollowing is a list of names and addresses	of all applicants, title owners, co
purchasers, and lessee	es of the property described in the appli	cation, and if any of the foregoir
trustee, each benefic	iary having an interest in such land,	and all attorneys, real estate br
	planners, surveyors, and all other agents	
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any member of the City Council, M his or her immediate household partnership in which anyone of the	prior to the filing of this application, neither the Mayor no Jayor, Planning Commission, BZA, or BAR or any member and family, either directly or by way of a corporation or m is an officer, director, employee, agent, attorney, or invest antribution in excess of \$100 from any person or entity listed LOWS: (If none, so state).
MONE	
	4
WITNESS the following signature:	Applicant or Agent
	AND HAVE THEIR SIGNATURES NOTARIZED.
The above affidavit was subscribed day of January	and confirmed by oath or affirmation before me on this 2, 20 22, in the State of VIRGINA G
My commission expires: OH	- la au

Attachment

Law Office of Keith C. Martin PLLC 1077 Spring Hill Rd McLean, VA 22102 Attorney Keith C. Martin Managing Member

EQUITABLE OWNERSHIP DISCLOSURE STATEMENT

I. GENERAL DISCLOSURE REQUIREMENTS

In accordance with § 6.2.3.B of the Zoning Ordinance, any application for a change in zoning shall include as part of the application a statement on a form provided by the zoning administrator providing complete disclosure of the legal and equitable ownership in any real estate to be affected by the requested change in zoning.

In the case of corporate ownership of real estate, the disclosure shall include the names of stockholders, officers and directors and in any case the names and addresses of all the real parties in interest; provided, however, that the requirement of listing the names of stockholders, officers and directors shall not apply to a corporation whose stock is traded on a national or local stock exchange and having more than 500 shareholders. Such disclosure shall be sworn to under oath before a notary public or other official before whom oaths may be taken.

II.	IDENTIFICATION O	F REAL PROPERTY	Y AFFECTE	ED		
	Map Number , Pa	arcel Number Street	t Address	Current Owner of	Record.	
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	11004 11	ODIO PAPIL P	ha	J. Jones	74.10.	W
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	- to the					
IV.						
	The following individu	als have legal and ea	quitable own	nership in the real	estate to be aff	fected by the
	requested change in zo	ning. (Include name,	address and	telephone number)	
	EMRE ZIREK	1944 347	13 Lato		703	309-1419
	100.00	Chan	stilly!	14 2015Z		
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13		ission No. 332820				
	My Commiss	ion Expires 04/30/2024				

SUMMARY OF ZONING DISTRICTS AND OVERLAYS



GENERAL ZONING DISTRICTS: Unless within a planned development district, each property in the City belongs to one of the following zoning districts, which spells out permitted uses and types of development for all parcels within each district, as summarized below:

RL, RM & RH RESIDENTIAL DISTRICTS: Permits single-family detached housing and select types of supportive, complementary uses that create quiet and comfortable neighborhoods. Development must be consistent with the character of a residential neighborhood and fit within certain parameters, including:

- RL RESIDENTIAL LOW: 20,000 minimum lot size and 40' front setback from the street;
- RM RESIDENTIAL MEDIUM: 7,500 minimum lot size and 25' front setback from the street;
- RH RESIDENTIAL HIGH: 6,000 minimum lot size and 20' front setback from the street.

RT & RT-6 TOWNHOUSE DISTRICTS: Provides townhouses in both districts, as well as duplexes, single-family attached, and single-family detached housing in the RT district.

• RT-6: Limited to 6 units per acre; • RT: Limited to 12 units per acre.

RMF MULTIFAMILY DISTRICT: Provides for multifamily housing as well as townhouses, duplexes, single-family attached, and single-family detached housing. Buildings may be no taller than 3 stories and 35' or 4 stories and 45' (where not adjacent to a single-family detached district) with a density limited to 20 units per acre. Permitted uses also include nursing homes, assisted living facilities, congregate living facilities and select directly related, complementary uses.

CL COMMERCIAL LIMITED DISTRICT: Provides for limited, low intensity office development as a transitional use between residential and commercial areas with buildings limited to 3 stories and 35' in height that may not exceed 17,500 sq. ft. in floor area.

CO COMMERCIAL OFFICE DISTRICT: Provides for offices for business, governmental and professional uses, and uses accessory or complementary thereto. Buildings may be up to 5 stories and 60'.

CR COMMERCIAL RETAIL DISTRICT: Provides for office and general business and retail establishments, and uses accessory or complementary thereto. Buildings may be up to 5 stories and 60'.

CU COMMERCIAL URBAN DISTRICT: Provides an urban, mixed use development option for appropriate parts of the downtown area and sites in the general vicinity of the three key Fairfax Boulevard intersections: Main Street, Chain Bridge Road, and Old Lee Highway, or as may be more precisely specified by a current or future adopted plan. Buildings may be up to 5 stories and 60'.

CG COMMERCIAL GENERAL DISTRICT: Provides areas for office, general retail, automobile-related uses, and uses accessory or complementary thereto. Buildings may be up to 5 stories and 60'.

IL INDUSTRIAL LIGHT DISTRICT: Provides areas for light industrial uses. Buildings may be up to 3 stories and 35'.

IH INDUSTRIAL HEAVY DISTRICT: Provides areas for general industrial uses. Building may be up to 6 stories and 60'.

PLANNED DEVELOPMENT DISTRICTS AND ZONING OVERLAYS: Some

properties are included in planned development districts and/or are governed by regulations that exceed that of the underlying general zoning district through overlays and other development standards. These are summarized below:

PD-R, PD-M, PD-C & PD-I PLANNED DEVELOPMENT DISTRICTS: Provides for coordinated developments and communities with appropriate boundary transitional yards and recreation and open space. The districts provide additional flexibility not available in general zoning districts and allows for innovations and special features in site development that make the community better.

- <u>PD-R PLANNED DEVELOPMENT RESIDENTIAL</u>: Allows for permitted/special uses in the R districts;
- PD-M PLANNED DEVELOPMENT MIXED USE: Allows for permitted/special uses in the R and C districts;
- PD-C PLANNED DEVELOPMENT COMMERCIAL: Allows for permitted/special uses in the C districts;
- <u>PD-I PLANNED DEVELOPMENT INDUSTRIAL</u>: Allows for permitted/special uses in the CG, IL, and IH districts.

HISTORIC OVERLAY DISTRICTS: Provide additional protection to areas of historic interest in the City in order to ensure that development or building modifications do not alter or diminish the historic quality of the district:

- OLD TOWN FAIRFAX HISTORIC DISTRICT: Encourages a compatible mixture of residential, retail and office uses within the district.
- **FAIRFAX PUBLIC SCHOOL HISTORIC DISTRICT**: Includes the property containing the Fairfax Museum & Visitor Center; the district controls uses and structures built on the property.
- **BLENHEIM HISTORIC DISTRICT**: Includes the property at Historic Blenheim; the district preserves Blenheim mansion and controls uses and structures built on the property.

OLD TOWN FAIRFAX TRANSITION OVERLAY DISTRICT: Established to encourage a compatible mixture of residential, retail and office uses in areas close to the Old Town Fairfax Historic District. New development must complement the scale, siting and design of the Historic District.

ARCHITECTURAL CONTROL OVERLAY DISTRICT: Includes all land in the city which is located outside of an historic district and zoned and used for anything other than a single-family detached residence. This district seeks to encourage the construction of attractive buildings, to protect and promote the general welfare and to prevent deterioration of the appearance of the city, to make the city more attractive for the development of business and industry, and to protect land values.

RESOURCE PROTECTION AREA (RPA): Includes land within 100 feet of water bodies that have perennial flow, as well as other natural features such as wetlands and intermittent streams. The RPA seeks to protect these waters from significant degradation due to land disturbances.

RESOURCE MANAGEMENT AREA (RMA): Includes all land in the City that is not part of an RPA. Land disturbances in the RMA can have cause water quality degradation and diminish the functionality of RPA lands. Together, the RMA and RPA form the Chesapeake Bay Preservation Area, which encompasses all of the City.

100-YEAR FLOODPLAIN: Includes land subject to inundation by the "100-year flood" as on FEMA flood maps (a flood that has a 1% chance of occurring each year).



THE LAW OFFICE OF KEITH C. MARTIN PLLC

Phone: (703) 309-1419

Email: kcmartinlaw@gmail.com Website: kcmartinlaw.com 1077 SPRING HILL ROAD MCLEAN, Virginia 22102

April 20, 2023

To:Supriya Chewle Planning and Zoning City of Fairfax

Re: 11065 and 11085 Lee Hwy and 11004 and 11006 Park Road Rezoning CR to RT

Dear Ms. Chewle:

The Applicant, Caglayan Investment Group proposes an attractive enclave of 13 three story townhomes with a combination of 1 and 2 car garages on 1.18 acres north of the intersection of Holly Street and Park Road. Eleven of the townhomes will have 2-car garages and two townhouses will have 1-car garages. Two additional parking spaces shall be provided in the common area reserved specifically for lots with 1-car garages to satisfy the off-street parking requirements. An additional three guest parking spaces will also be provided in the common area.

This proposal is consistent with the City's Future Land Use Plan which recommends townhouses. The 13 townhouses propose a density of 11.21 units per acre which is below the permitted density of 12 units per acre in the RT District. The proposed development plan meets all the requirements of the RT District as to: use, density, minimum site area, minimum lot area, required yards (with one exception), minimum lot width, maximum building height height, lot coverage, off-street parking and transitional yard requirements.

Section 6.4.9 Approval Considerations

- A. Substantial conformance with the Comprehensive Plan:

 The proposal is consistent with the Comprehensive Plan which calls for townhouses.

 Furthermore, the recently adopted Kamp Washington Special Area Plan proposes the property to be rezoned as RT with townhouses. The RT District is compatible with townhouse recommendations at 12 units per acre.
- B. Any greater benefits the proposed rezoning provides to the City than would a development carried out in accordance with the current zoning district (Sec. 3.2), and otherwise applicable requirements of this chapter: The proposed rezoning provides greater benefits to the City than a retail development under the CR District. The property is located along



Park Rd with single family residential development (R-M zone) along adjacent Park Rd frontage to the east and south. There is existing commercial development to the west and north of the property, but access to these lots is off Lee Highway to the north. Providing townhome development will provide a smooth transition from single family development to commercial development and create a homogeneous frontage of residential development along the Park Rd frontage.

- C. Suitability of the subject property for the development and uses permitted by the current versus the proposed district:
 - The subject property is better suited for the proposed zoning in lieu of the existing zoning because it enables an attractive urban neighborhood as an alternative to retail abutting surrounding residential neighborhoods.
- D. Adequacy of existing or proposed public facilities such as public transportation facilities, public safety facilities, public school facilities, and public parks:

 Because the overall scale of the project is relatively small (13 townhouses)the impacts on existing public transportation facilities, public safety facilities, public school facilities, and public parks are negligible.
- E. Adequacy of existing and proposed public utility infrastructure:

 The existing water, sanitary sewer and storm sewer infrastructure have adequate capacity to support the proposed development. See sanitary sewer analysis on sheet 008 and adequate outfall analysis on sheet 015. The development will have a negligible impact on traffic along Park Rd per the approved TIS study prepared by Wells and Associates.
- F. Compatibility of the proposed development with adjacent and nearby communities: The proposed development is compatible with existing adjacent residential developments to the east and south as it provides additional single family residential lots. The development creates a smooth transition from single family detached developments to existing commercial developments to the west and north by increasing residential density in between the two uses.
- G. Consistency with the stated purpose of the proposed district:

 The purpose of the RT District is to "provide areas for townhouse residences". This is exactly what the development proposes.

The Applicant requests the following Special Exceptions: 1) to waive the requirement to provide a 10 foot landscape strip along both sides of the private street. 2) Reduction of the minimum side yard for Lot 01 with exception to provide more than 4 parking spaces in the rear yard setback and 3) exception for not providing a sidewalk along the frontage of Lots 01-07. It is submitted that the Special Exception request meets the criteria set forth in Section 6.17.7 as follows:

A. Ensure the same general level of land use compatibility as the otherwise applicable standards. The proposed rezoning shall be RT and the development proposes 13 townhomes which is a consistent use with the proposed rezoning. Furthermore, the recently adopted Kamp Washington Special Area Plan proposes the property to be rezoned as RT with townhomes. All other landscaping requirements are being met by the development and the partial exclusion of the landscape strip along the private street will still allow the same general level of land use compatibility.



- B. Not materially and adversely affect adjacent land uses and the physical character of uses in the immediate vicinity of the proposed development because of inadequate transitioning, screening, setbacks and other land use considerations. The property is surrounded on three sides by four CR zoned lots. The proposed private street is internal to the lot and only runs along the northern property line. The required 10 ft. landscape strip is provided along the northern side of the private street and provides screening between the the subject property and the adjacent CR lots. The eastern, southern, and western sides of the private street front the proposed townhome lots and do not materially or adversely affect these land uses.
- C. Be generally consistent with the purposes and intent of this chapter and the comprehensive plan. The comprehensive plan and Kamp Washington Small Area Plan both propose the property to be rezoned RT with attached townhomes. The proposed development will perfectly meet the goals of both plans. The partial exclusion of the landscape strip along the private street will not impact the purposes and intent of the comprehensive plan.
- D. Be based on the physical constraints and land uses specifics, rather than on economic hardship of the applicant. The request for a special exception from the requirement to provide a 10 ft. landscape strip along both sides of the proposed private street is not based on economic hardship of the applicant. The relief is requested due to the physical constraints of the site when considering all the development requirements of the Zoning Ordinance and PFM. The minimum lot size requirement of 1,500 SF and required 10 ft. landscape strip along Park Road prevent the applicant from providing the 10 ft. landscape strip along the southern side of the proposed private street. It was assumed that the City would prefer the 10 ft landscape strip e provided along Park Road rather than the internal private street if only one could be provided. The minimum lot area 1,500 SF and the need to provide an adequate emergency vehicle turn-around along the eastern property line limit the space along the eastern and western side of the private street to provide the 10 ft. landscape strip.

The Applicant also requests a Special Exception to waive the required minimum 20 ft. side yard setback for lot 01 to provide 3 visitor parking spaces and a concrete sidewalk to provide a path for pedestrian traffic through to Park Road. This is being done at the recommendation of City staff members, Supriya Chewle and Jason Sutphin.

The Applicant requests a PFM waiver to allow the proposed private street width to be 24 feet in lieu of the required 30 feet width.

The Applicant hereby appeals the determination by the Zoning Administrator, Michelle Coleman, that private streets are not allowed in the RT District.

Keith C. Martin

Keith Martin

PROFFERS

PARK ROAD TOWNHOUSES

Zoning Map Amendment Z-22-00093

August 25, 2023

A. General

- 1. Development Plan. The property identified on the City of Fairfax (the "City") Tax Map as Parcels 37-1-02-135, 57-1-02-136, 57-1-02-137A and 57-1-02-138B (the "Property") shall be developed in substantial conformance with the Development Plan Park Road Townhouses dated and revised through August, 2023, and prepared by Huska Consulting, LLC. Minor modifications to the Development Plan may be permitted, provided such changes otherwise are in substantial conformance with the Development Plan and pursuant to the City's Zoning Ordinance ("Zoning Ordinance").
- 2. Construction Management Plan. Prior to site plan approval, the applicant shall submit a construction management plan for approval by the City Manager, or designee, to be implemented during construction, and to ensure safe and efficient pedestrian and vehicle circulation at all times on the Subject Property and on the public roadways adjoining the Subject Property. The construction management plan shall provide information regarding the following:
 - A) Hours of construction;
 - B) Anticipated construction entrances, vehicle routes and staging areas;
 - C) Traffic control measures;
 - D) Location of parking areas for construction employees; and
- E) Fencing details, including specifications for an opaque screening fence around the construction site

Prior to commencement of construction, the Applicant shall identify a community liason that shall be available throughout the duration of construction on the Subject Property. The name and telephone number of the community liason shall be provided to the Department of Community Development & Planning and the adjacent homeowners association.

- 3. Maintenance and Access of Private Streets. The internal private street shall be constructed and maintained by the Applicant as a private street. The Applicant shall record among the land records public ingress/egress and emergency vehicle access easements, in forms approved by the City Attorney, over all streets and sidewalks located on the Application Property.
- 4. Lighting. All outdoor lighting provided on site will comply with the provisions of Section 4..8 of the Zoning Ordinance. At the time of Site Plan, the Applicant will submit a photometric plan demonstrating compliance with the requirements of Section 4.8 for review and approval by DPW.
- 5. Signs. The Applicant shall obtain a Minor Certificate of Appropriateness for signs on the subject Property that are visible from the public right-of-way.

- 6. Utilities. A) All new utilities installed on the Application Property will be located underground. With its first and all subsequent site plan submissions, the Applicant shall include a detailed utility undergrounding plan demonstrating compliance with this proffer for review and approval by DPW.
- B) During site construction, the Applicant shall move the guy wires as shown on the Development Plan.
- 7. Stormwater Management. Design and construction of stormwater management facilities shall comply with all applicable Virginia Stormwater Management Program (VSMP) Permit Regulations, as may be amended, or other relevant standards in place at the time of site plan submission.
- 8. Owners Association. The Applicant shall form an owners association (HOA) for the Application Property. The HOA shall be organized and governed in accordance with Virginia law. Maintenance obligations shall be assigned to the HOA. Maintenance obligations shall include, but are not limited to private streets and sidewalks, snow removal and on-site stormwater management facilities. The Applicant shall notify all prospective purchasers of the residential units, in writing and prior to entry into a contract of sale of the maintenance responsibilities and restrictions of the HOA.
- 9. Universal Design. All units on the Application Property shall be designed and constructed with a selection of universal design features and options as determined by the Applicant and at the sole cost of the purchaser. Said universal design features and options may include, but are not limited to, seat in master bath shower where possible, emphasis on lighting in stairs and entrances, lever door handles and front loading washers and dryers.
- 10. Restrictive Covenants. Restrictive covenants for the Application Property shall be included in the HOA documents and shall include, but not be limited to, the following:
- a. Conversion of townhouse garages that will preclude the parking of vehicles and the storage of trash and recycling containers within the garage shall be prohibited. This shall not preclude the use of said garage as sales office in the model home during marketing of the development, with the understanding the sales office will be converted back to a garage upon sale of the model.
- 11. Green Energy Features. All units shall be constructed with green energy saving lighting and appliances.
- 12. Successors and Assigns. These commitments shall bind and inure to the benefit of the Applicant and its successors and assigns.
- 13. Landcaping. Landscaping for the Proposed Development shall be provided generally as shown on Sheet of the General Development Plan, and as approved by the Board of Architectural Review as part of the Certificate of Appropriateness. Modifications to the Landscape Plan may be made during site plan review to allow for final engineering and design considerations, provided that such modifications are in substantial conformance with the quality and quantity of plantings and materials shown on the Master Development Plan. The Applicant shall coordinate phasing of landscaping and open space improvements with the Department of Public Works at time of site plan.
- 14. Parks and Recreation. At time of site plan, the Applicant shall contribute to the City the sum of \$378 per approved dwelling units to be used for improvements to nearby Parks and recreation facilities.

CAGLAYAN INVESTMENT GROUP

Name:

Emre zirekoglu Manager

Title:

GENERAL SITE CONSTRUCTION NOTES

- HUSKA CONSULTING, LLC IS NOT RESPONSIBLE FOR CONSTRUCTION SAFETY, ACCIDENTS, OR SUPERVISION; HUSKA CONSULTING, LLC IS NOT RESPONSIBLE FOR ANY CONSTRUCTION DAMAGE OR INJURY TO ANY PERSON, VEHICLE, EQUIPMENT, OR PROPERTY ON OR NEAR THE CONSTRUCTION SITE.
- 2. HUSKA CONSULTING, LLC IS NOT RESPONSIBLE FOR CONSTRUCTION SITE SECURITY. THE CONTRACTOR SHALL COORDINATE ALL TEMPORARY SITE SECURITY WITH THE OWNER AS REQUIRED AND APPROPRIATE.
- 3. THE PROJECT PROPERTY SHALL BE VERIFIED BY A LICENSED LAND SURVEYOR PRIOR TO CONSTRUCTION. IF ANY DISCREPANCIES ARE FOUND REGARDING THE PROJECT BOUNDARY NOTIFY HUSKA CONSULTING, LLC.
- 4. BEFORE COMMENCING CONSTRUCTION, CALL 'MISS UTILITY' TO FIELD MARK UNDERGROUND UTILITIES. FOLLOW MISS UTILITY REQUIREMENTS.
- 5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS WHICH ARE NOT PROVIDED WITH THE CONSTRUCTION DOCUMENTS. THIS INCLUDES ANCILLARY DESIGN, PERMIT PROCESSING, INSPECTIONS, AND CLOSEOUTS. ALL PERMITS MUST BE ONSITE. INCLUDING PUBLIC SPACE

EXCAVATION, OCCUPANCY, AND TRAFFIC CONTROL PLANS IF/AS REQUIRED.

- 6. THE EXTENT OF EXISTING STRUCTURES INCLUDING UNDERGROUND FEATURES MAY NOT BE DEPICTED ON THE PLANS.
- THE CONTRACTOR MUST NOTIFY THE FAIRFAX COUNTY INSPECTOR BEFORE MAKING ANY FIELD ADJUSTMENTS TO ACCOMMODATE EXISTING CONDITIONS.
- 8. ALL GENERAL NOTES ARE FOR TYPICAL CONSTRUCTION ACTIVITIES; THEY MAY INCLUDE INFORMATION THAT IS NOT APPLICABLE TO THE SCOPE OF THIS PROJECT.
- 9. THE VARIOUS CODES AND STANDARDS WHICH ARE SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY: THEY DO NOT NECESSARILY REPRESENT THE MOST CURRENT OR COMPLETE STANDARDS REQUIRED FOR THE CONSTRUCTION. THE CONTRACTOR MUST REFER TO THE CORRECT, APPLICABLE CODES AND STANDARDS.
- 10. ACCESS TO THE PROJECT PROPERTY AND ALL SURROUNDING AREAS MUST BE MAINTAINED FOR ALL EMERGENCY SERVICES, PEDESTRIANS, AND DELIVERIES IF REQUIRED AND AS APPROPRIATE. ACCESS TO FIRE HYDRANTS MUST NOT BE IMPAIRED
- 11. THE CONTRACTOR SHALL RESTORE OR REPLACE ANY ITEMS TO REMAIN THAT ARE DAMAGED DURING CONSTRUCTION.
- 12. THE CONTRACTOR MUST MAINTAIN A SET OF CONSTRUCTION PLANS WHICH HAVE BEEN MARKED UP TO ACCURATELY CONVEY CONSTRUCTION WHICH HAS DEVIATED FROM THE APPROVED CONSTRUCTION PLANS. THESE PLANS MUST BE PROVIDED TO THE CLIENT, THE CLIENT'S REPRESENTATIVE, OR HUSKA CONSULTING, LLC PRIOR TO THE PROJECT CLOSEOUT.

GENERAL PAVEMENT NOTES

- EXISTING PAVEMENT TO BE REPLACED SHALL AT MINIMUM MATCH THE EXISTING CROSS SECTION.
- 2. EXISTING CURB AND/OR GUTTER TO BE REPLACED SHALL MATCH EXISTING TYPE, MATERIAL, AND DIMENSIONS.
- 3. SAWCUT EXISTING ASPHALT PAVEMENT 1' FROM EDGE OF NEW CURB AND/OR **GUTER FOR REPLACEMENT.**
- 4. MILL AND OVERLAY EXISTING ASPHALT PAVEMENT 1' FROM EDGE OF NEW PAVEMENT TO PROVIDE SMOOTH TRANSITION.

GENERAL UTILITY NOTES

- THE CONSTRUCTION WORK SHALL BE COMPLETED IN SUCH A WAY AS TO MINIMIZE UTILITY OUTAGES. ALL UTILITY OUTAGES MUST BE COORDINATED WITH THE UTILITY OWNER AND AFFECTED PARTIES.
- 2. SOME EXISTING UTILITIES MAY NOT BE SHOWN ON THE PLANS. BEFORE BEGINNING CONSTRUCTION, VERIFY THERE ARE NO CONFLICTS WITH EXISTING UTILITIES. TEST PIT AS REQUIRED TO DETERMINE LOCATIONS AND DEPTHS OF EXISTING UTILITIES WITHIN THE CONSTRUCTION WORK AREA. IF ANY EXISTING UTILITIES ARE FOUND WHICH ARE NOT DEPICTED IN THE EXISTING CONDITIONS PLAN OR CONFLICT WITH THE PROPOSED WORK NOTIFY HUSKA CONSULTING.
- NOTIFY HUSKA CONSULTING, LLC IF COVER FOR ANY UTILITY IS REDUCED BELOW THE MINIMUM REQUIRED.
- 4. THE SITE CIVIL PLAN IS MEANT TO CONVEY 'WET' (SANITARY SEWER, STORM SEWER, AND WATER) UTILITY WORK, ALL 'DRY' (ELECTRIC, NATURAL GAS. TELECOMMUNICATIONS) UTILITY WORK SHOWN IS FOR INFORMATION AND REFERENCE ONLY. REFER TO THE DRY UTILITY AND/OR MEP PLANS FOR DRY UTILITY WORK.

5. REFER TO FAIRFAX WATER STANDARDS FOR ABANDONMENT OF EXISTING

- WATER LATERALS AND MAINS. NOTE THIS INVOLVES DISCONNECTING ALL LATERALS AT THE MAINS, PLUGGING AND SEALING THE MAINS, AND REMOVING ALL ABANDONED METERS, VALVES, AND APPURTENANCES. COORDINATE WITH THE FAIRFAX WATER INSPECTOR.
- REFER TO THE FAIRFAX CITY PUBLIC FACILITIES MANUAL FOR ABANDONMENT OF EXISTING SANITARY SEWER MAINS, STORM SEWER MAINS, AND LATERALS. NOTE THIS INVOLVES DISCONNECTING ALL LATERALS AT THE MAINS, PLUGGING AND SEALING THE MAINS, AND REMOVING ALL ABANDONED METERS, VALVES, AND APPURTENANCES. COORDINATE WITH THE FAIRFAX CITY INSPECTOR.
- 7. ALL WYE CONNECTIONS TO EXISTING SEWER LINES SHALL MATCH THE EXISTING SIZE AND MATERIAL
- 8. REMOVE ABANDONED UTILITIES AS REQUIRED.
- 9. ADJUST EXISTING STRUCTURE TOPS AND MANHOLES TO REMAIN WITHIN THE LIMITS OF DISTURBANCE TO MATCH FINAL GRADE AS REQUIRED. INSTALL ADDITIONAL STEPS WITHIN MANHOLES AS REQUIRED.

GENERAL GRADING NOTES

- 1. THE SITE MUST BE GRADED AND PAVED SO THAT NO NEW LOW POINTS WITHOUT PROPER DRAINAGE ARE CREATED; NO PONDING SHALL OCCUR ONSITE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE STORMWATER MANAGEMENT PLANS WITHIN BMP FACILITIES OR ON THE SEDIMENT CONTROL PLAN WITHIN SEDIMENT TRAPS OR BASINS.
- 2. ALL PAVED SURFACES SHALL BE AT A 0.5% MINIMUM SLOPE. ALL GRASSED AND LANDSCAPED AREAS SHALL BE AT A 1% MINIMUM SLOPE. EXCEPTIONS MAY BE MADE ONLY IF APPROVED BY HUSKA CONSULTING, LLC.
- 3. SPOT ELEVATIONS SHOWN AT TIE-IN POINTS WITH EXISTING SURFACES ARE SHOWN APPROXIMATE, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR. PROPOSED ELEVATIONS MAY BE MODIFIED WITH APPROVAL FROM HUSKA CONSULTING, LLC TO MATCH EXISTING GRADE.
- 4. SITE CONSTRUCTION MUST BE ADA COMPLIANT UNLESS SPECIFICALLY NOTED OTHERWISE. ADA ROUTES MUST HAVE LONGITUDINAL SLOPES LESS THAN 5%, AND CROSS SLOPES LESS THAN 2%. ADA RAMPS MUST HAVE A LONGITUDINAL SLOPE LESS THAN 12 H: 1V AND HAVE A LENGTH NO MORE THAN 30'. PROVIDE ADA HANDRAILS, GUARDRAILS, AND LANDINGS WHERE APPROPRIATE. ADA PARKING SPACES MUST HAVE A SLOPE LESS THAN 2% IN ANY DIRECTION.
- 5. ANY UNSUITABLE IN SITU SOIL OR MATERIAL MUST BE REMOVED OR REMEDIATED PER DIRECTION FROM THE GEOTECHNICAL ENGINEER.
- REFER TO THE SITE NOTES AND DETAILS FOR ADDITIONAL INFORMATION.

GENERAL SITE DEMOLITION NOTES

- REFER TO THE ARCHITECTURAL PLANS FOR SELECTIVE DEMOLITION RELATED TO INTERIOR RENOVATIONS. COORDINATE WITH THE DESIGN TEAM, INCLUDING THE STRUCTURAL ENGINEER, IN REGARDS TO THE STABILITY OF EXISTING STRUCTURES TO REMAIN.
- 2. THE APPROXIMATE SCALE OF ABANDONMENT AND DEMOLITION OF SITE FEATURES AND UTILITIES ARE DEPICTED BOLD OR HATCHED ON THE DEMOLITION PLAN.
- DEMOLITION OF SITE FEATURES AND UTILITIES TO REPLACE ITEMS IN KIND ARE NOT NECESSARILY SHOWN BUT ARE WITHIN THE SCOPE OF WORK.
- 4. SAWCUT EXISTING PAVEMENT TO BE REMOVED WHERE ADJACENT TO EXISTING PAVEMENT TO REMAIN. FOR CONCRETE AND GRANITE, SAWCUT AT THE NEAREST JOINT.
- ALL DEMOLITION DEBRIS MUST BE DISPOSED PER APPLICABLE LAW; DEMOLITION DEBRIS MAY ONLY BE USED FOR BACKFILL IF EXPRESS KNOWLEDGE AND PERMISSION IS GRANTED FROM THE STRUCTURAL AND GEOTECHNICAL ENGINEERS.
- 6. REFER TO THE DEMOLITION NOTES AND DETAILS FOR ADDITIONAL INFORMATION.

GENERAL SEDIMENT CONTROL NOTES

- 1. THE CONTRACTOR MUST NOTIFY THE FAIRFAX COUNTY INSPECTOR BEFORE MAKING ANY ADJUSTMENTS IN REGARDS TO THE LIMITS OF DISTURBANCE AND SEDIMENT CONTROL MEASURES TO PERFORM THE WORK AND ACCOMMODATE FIELD CONDITIONS.
- 2. WHERE NO STABILIZED CONSTRUCTION IS PROVIDED CONTRACTOR SHALL DESIGNATE VEHICLES THAT SHALL ENTER THE SITE. ALL VEHICLES LEAVING THE SITE MUST HAVE THEIR TIRES/TREADS WASHED PRIOR TO ENTERING ANY PUBLIC STREETS. WASH WATER MUST NOT BE ALLOWED TO LEAVE THE SITE.
- 3. THE LIMITS OF DISTURBANCE AND SEDIMENT CONTROL MEASURES ARE SHOWN APPROXIMATELY: PRESENTATION ON THE PLANS MAY DEVIATE SLIGHTLY FROM THE ACTUAL DESIGN INTENT FOR GRAPHICAL CLARITY.
- TEMPORARY SOIL STOCKPILES SHOULD BE PLACED AS NEEDED ON THE SITE IN COORDINATION WITH THE FAIRFAX COUNTY. INSTALL SILT FENCE AROUND THE PERIMETER OF ALL STOCKPILES AND COVER WITH A TARP OR OTHER APPROVED IMPERMEABLE SURFACE PRIOR TO RAIN EVENTS.
- 5. THE CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ALL CATCH BASINS, CURB INLETS, DRAINS, AND RISER STRUCTURES ON OR ADJACENT TO THE LIMITS OF DISTURBANCE. ANY SEWER WHICH BECOMES CLOGGED DUE TO CONSTRUCTION MUST BE PROMPTLY CLEANED AND CLEARED.
- 6. ANY AND ALL SITE STORM RUNOFF FROM DISTURBED AREAS MUST BE FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT PRIOR TO LEAVING THE SITE. SEDIMENT MUST BE PLACED IN AN APPROVED AREA AND STABILIZED. SEDIMENT MUST NOT BE PLACED IN A FLOODPLAIN, WETLAND, WITHIN THE CRITICAL ROOT ZONE OF AN EXISTING TREE TO REMAIN, OR RPA.
- 7. NO EXISTING TREES ARE TO BE REMOVED AS PART OF THIS PROJECT. EXISTING TREES SHALL BE PROTECTED AS NEEDED AND REQUIRED BY FAIRFAX COUNTY WITH TREE PROTECTION FENCE. SEE FAIRFAX COUNTY PLATE 6-12 ON SHEET
- 8. MINIMIZE DUST GENERATION DURING CONSTRUCTION
- 9. REFER TO THE SEDIMENT CONTROL NOTES AND DETAILS FOR ADDITIONAL INFORMATION.

ADDDEVIATIONS

ABBREVI	<u>ATIONS</u>		
ABND AD	ABANDONED AREA DRAIN	MH MIN	MANHOLE MINIMUM
ADA	AMERICANS WITH	MS	MINIMUM STANDARD
	DISABILITIES ACT	NRCS	NATURAL RESOURCES
APPROX	APPROXIMATE		CONSERVATION SERVICE
BFP	BACKFLOW PREVENTER	OC	ON CENTER
BLDG	BUILDING	PFM	PUBLIC FACILITIES
BRL	BUILDING RESTRICTION		MANUAL
	LINE	PL	PROPERTY LINE
BSMT	BASEMENT	PROP	PROPOSED
BW	BOTTOM OF WALL	RPA	RESOURCE PROTECTION
CI	CAST IRON		AREA
CO	CLEANOUT	SAN	SANITARY
CS	COMBINED SEWER	SCH	SCHEDULE
DEQ	VIRGINIA DEPARTMENT OF	STM	STORM
	ENVIRONMENTAL QUALITY	SWR	SEWER
ELEV	ELEVATION	TC	TOP OF CURB
EX	EXISTING	TW	TOP OF WALL
FFE	FIRST FLOOR ELEVATION	VB	VERTICAL BEND
HB	HORIZONTAL BEND	VCP	VITRIFIED CLAY PIPE
HSG	HYDROLOGIC SOIL GROUP	W/	WITH
MAX	MAXIMUM	W/M	WATERMAIN
MEP	MECHANICAL ELECTRICAL/PLUMBING	WW	WINDOW WELL

WETLANDS PERMIT CERTIFICATION:

I HEREBY CERTIFY THAT ALL WETLANDS PERMITS REQUIRED BY LAW WILL BE OBTAINED PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES. EMRE EIREKOGU SIGNATURE: EMRE ZIREKOGLU Manager OWNER/DEVELOPER:

RESPONSIBLE LAND DISTURBER:

CERT. NO.:

LOT AREA

EXISTING ZONING:

PROPOSED USE

WATERSHED:

DISTURBANCE

SEWER:

WATER:

PROPOSED ZONING

MAXIMUM DENSITY (RT)

PROPOSED DENSITY

PROPOSED SPACES

STREET

STREET

SETBACK.

OPEN SPACE REQ.

OPEN SPACE PROVIDED

TYPE OF CONSTRUCTION

WIDTH

PROPOSED TOWNHOME UNITS

OFF-STREET PARKING REQ. (RT)

LAND USE ACTIONS/GRANTED **ZONING INTERPRETATION -**

TOWNHOMES TO FRONT PRIVATE

SPECIAL EXCEPTION - NO 10-FT LANDSCAPE STRIP ALONG PRIVATE

PARKING SPACES IN REAR YARD

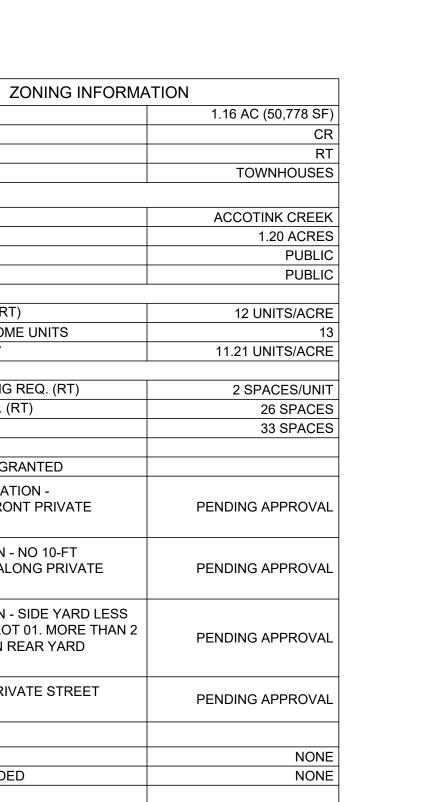
PFM WAIVER - 24' PRIVATE STREET

SPECIAL EXCEPTION - SIDE YARD LESS THAN 20' MIN. FOR LOT 01. MORE THAN 2

TOTAL SPACES REQ. (RT)

PHONE NO.: ADDRESS:

USDA-NRCS SOIL MAP



PENDING

APPROVAL

03/04/2022

08/25/2022

12/16/2022

08/29/2022

PARK RD TOWNHOUSE **REZONING PLANS**

LOCATION OF SITE 11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 D.B. 27365, P.G. 1623 SQUARE 02 LOT 002

SHEET TITLE	SHEET#
COVER SHEET	000
EXISTING CONDITIONS	001
SITE PLAN	002
GRADING PLAN	003
FIRE PLAN	004
SITE DETAILS	005
FAIRFAX CITY DPW DETAILS	006
UTILITY PLAN	007
SANITARY SEWER CAPACITY ANALYSIS	800
FAIRFAX WATER DETAILS	009
UTILITY DETAILS	010
STORM MAIN CROSS SECTIONS	011
STORMWATER MANAGEMENT PLAN	012
STORMWATER MANAGEMENT CALCULATIONS	013
BAYFILTER DETAILS	014
DETENTION PIPE DETAILS	015
DRAINAGE PLAN	016
DRAINAGE PLAN CALCULATIONS	017
TREE SURVEY	018
LANDSCAPE PLAN	019
LANDSCAPE DETAILS	020

VICINITY MAP

Warren Woods

SCALE 1:100



Web Boll Survey National Cooperative Boll Survey

Map Unit Legend

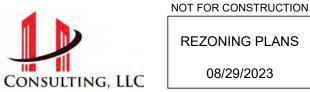
Wheaton - Meadowville complex, 2 to 7 percent

Map Unit Symbol Map Unit Name Acres in AOI Percent of AOI 6.2% Hattontown-Ha∨market complex, 2 to 7 percent Urban land 42.7% 18.3% Wheaton - Glenelg complex, to 7 percent slopes Wheaton - Glenelg complex, 21.8% to 15 percent slopes

Totals for Area of Interest

107B

REVISIONS INITIAL SUBMISSION SECOND SUBMISSION THIRD SUBMISSION HUSKA CONSULTING, LLC FINAL SUBMISSION



7.0

11.0%

100.0%

ATTACHMENT -6

11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

CLIENT EMRE ZIREKOGLU CAGLAYAN INVESTMENT GROUP 32713 LATROBE ST CHANTILLY, VA 20152 571.594.6363

CONTRACTOR

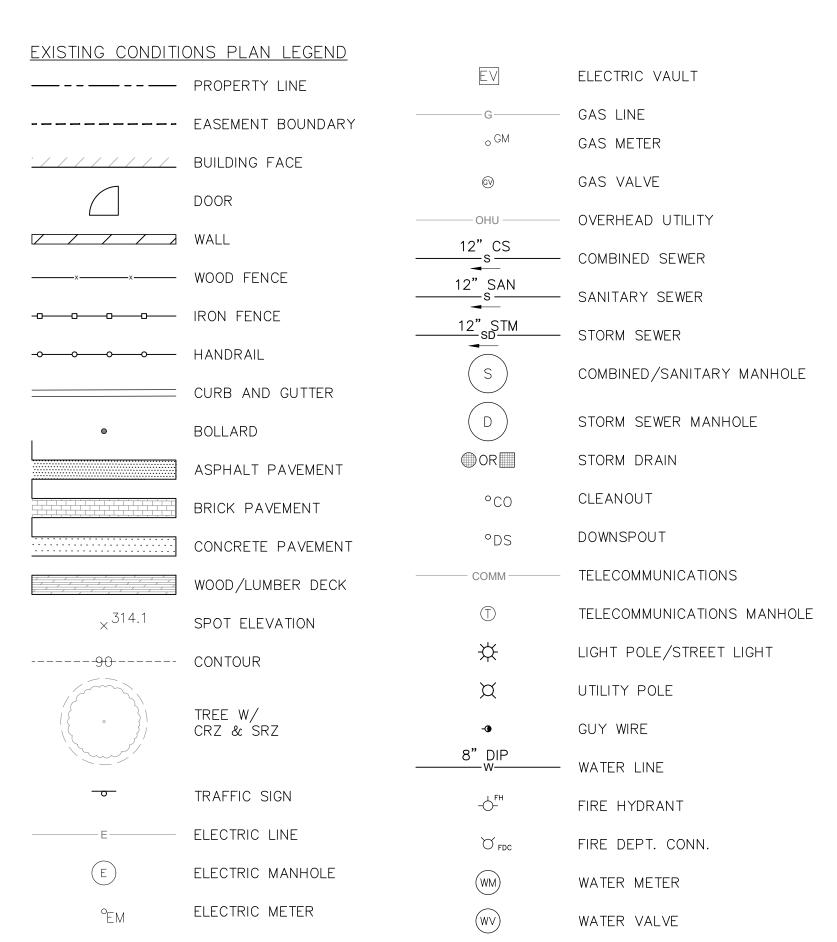
CIVIL ENGINEER PATRICK HORGAN HUSKA CONSULTING, LLC 1050 30TH STREET, NW WASHINGTON, DC 20007 703.425.3862

LAND SURVEYOR DOMINION SURVEYS, INC. 8808-H PEAR TREE VILLAGE COURT ALEXANDRIA, VA 22309 703.619.6555

> Patrick Horgan PATRICK JOSEPH Lic. No. 061930

COVER SHEET

DRAWING TITLE



	EAS	SEMENT INF	FORMATION TABLE	
EASEMENT#	TYPE	WIDTH (FT)	METES & BOUNDS OF CENTERLINE	DB & PG. #
1	STORM SEWER	10	N 89°30'46" W ~ 125.38'	DB 6827, PG 1808
2	SANITARY SEWER & WATER LINE	15	N 89°30'46" W ~ 125.38'	DB 1192, PG 94
3	SANITARY SEWER	10	N 01°00'00" W ~ 203.62'	DB 2765, PG1623
4	SANITARY SEWER	15	S 81°03'02" W ~ 18.93' N 06°40'40" W ~ 3.37'	DB 2765, PG1623
5	SANITARY SEWER	20	S 81°03'02" W ~ 18.93'	DB 3808, PG 269
6	SIDEWALK	6.5		DB 6550, PG 1184
7	STORM SEWER	10	S 88°47'52"E	DB 6550, PG 1190

SANITARY SEWER STRUCTURES

STORM SEWER STRUCTURES

- TOP= 451.18 INV.OUT= 438.64 TO SOUTH INV.IN= 439.48 FROM B
- TOP=462.95 INV.OUT=450.36 TO E TOP=466.32 INV.OUT=454.67 TO E INV.IN=454.91 FROM NORTH
- TOP=452.21 INV.OUT=443.51 TO F INV.IN=443.56 FROM C INV.IN.=443.90 FROM D

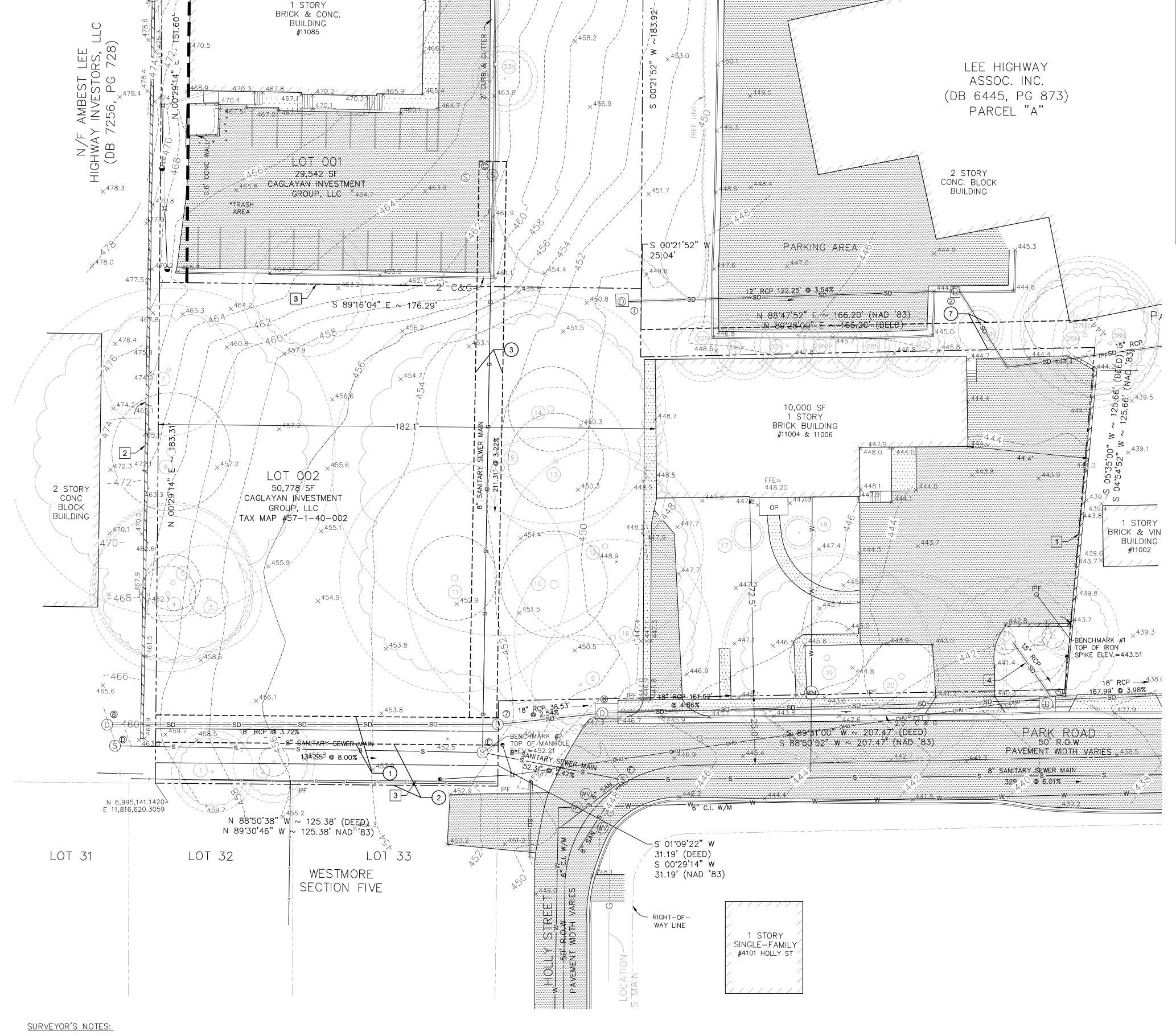
- TOP=448.02 INV.OUT=441.67 TO G INV.IN= 441.82 FROM SOUTHEAST INV.IN= 442.37 FROM SOUTHEAST INV.IN= 442.22 FROM E
- TOP=448.82 INV. OUT=443.14 TO 2 TOP=466.61 INV.OUT=450.72 TO 7
- TOP=436.45 INV. OUT=433.04 TO SOUTH INV. IN=433.14 FROM 2 INV. IN=433.15 FROM NORTH
- TOP=439.44 INV.OUT=435.42 INV.IN=435.23 FROM 6 INV.IN=435.16 FROM NORTHWEST

TOP=452.59 INV.OUT=444.40 TO 6 INV.IN=445.40 FROM WEST

- TOP=447.61 INV.OUT=443.08 TO 5 INV.IN=443.42 FROM 7

EXISTING CONDITIONS PLAN KEYNOTES 1 EXISTING 1-FT WIDE CONCRETE WALL MAXIMUM HEIGHT: 4'=0"

- 2 EXISTING 1-FT WIDE CONCRETE WALL MAXIMUM HEIGHT: 10'=0"
- 3 WOOD FENCE HEIGHT: 6'-0"
- 4 UPSTREAM CONNECTION UNKNOWN. 15" RCP STORM MAIN IS ASSUMED TO COLLECT RUNOFF FROM THE EXISTING BUILDING ON LOT 002 AND THE ADJACENT PARKING LOT. CONTRACTOR TO FIELD VERIFY PRIOR TO DEMOLITION.



- 1. THE PROPERTIES DELINEATED HERON IS SHOWN ON TAX MAP 57-1-02-135, 57-1-02-135, 57-1-02-136, 57-1-02-137A &57-1-02-138B AND ARE ZONED C-2 COMMERCIAL.
- 2. OWNER: CAGLAYAN INVESTMENT GROUP, LLC CHANTILLY VIRGINIA 20152 DB. 25288, PG 1940, DB. 25288, PG. 1942 AND DB. 26229, PG. 2180
- 3. NO TITLE REPORT FURNISHED.
- 4. THESE PROPERTIES ARE SUBJECT TO RESTRICTIONS OF RECORD.
- 5. HORIZONTAL DATUM IS REFERENCED TO NAD '83. VERTICAL DATUM IS REFERENCED TO NGVD '29.
- 6. THESE PROPERTIES ARE NOT LOCATED WITHIN A RESOURCE PROTECTION AREA.
- 7. FENCES ARE CHAIN LINK UNLESS NOTED.
- 8. TOTAL AREA= 81,154 SQUARE FEET.

FLOODPLAIN CERTIFICATE

I HEREBY CERTIFY THAT THE PROPERTY IS NOT WITHIN 500 FEET OF A DELINEATED OR KNOWN FLOODPLAIN PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD MAP #51059C0040E.

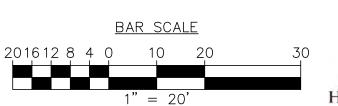
DATE

PATRICK HORGAN, P.E. LICNESE NO. 061930

APPROVAL DATE **REVISIONS** 03/04/2022 INITIAL SUBMISSION 08/25/2022 SECOND SUBMISSION 12/16/2022 THIRD SUBMISSION 08/29/2022 FINAL SUBMISSION

EXISTING CONDITIONS PLAN NOTES

- 1. THIS EXISTING CONDITIONS PLAN IS BASED ON A SURVEY AND AUTOCAD FILES PERFORMED AND PROVIDED BY DOMINION ENGINEERS, INC.
- 2. THE EXISTING CONDITIONS LEGEND IS APPLICABLE TO THIS SHEET ONLY. THE EXISTING CONDITIONS MAY BE DEPICTED DIFFERENTLY (GRAY SCALED) OR NOT FULLY DEPICTED ON OTHER SHEETS.
- 3. THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES ARE APPROXIMATE AND BASED ON AVAILABLE RECORDS AND, WHERE INFORMATION IS NOT AVAILABLE, ASSUMPTIONS. CONTRACTOR SHALL LOCATE AND CONFIRM ALL UTILITIES WITHIN THE BOUNDS OF CONSTRUCTION PRIOR TO UNDERTAKING ANY DEMOLITION OR EXCAVATION.





NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023

PATRICK HOSEPH -686E**MORGAN**.. Lic. No. 061930 8/29/2023

11004 & 11006 PARK RD

FAIRFAX, VA 22306 TAX MAP #57-1-40-002

SQUARE 02, LOT 002

EMRE ZIREKOGLU

32713 LATROBE ST

571.594.6363

CONTRACTOR

CIVIL ENGINEER PATRICK HORGAN

703.425.3862

703.619.6555

LAND SURVEYOR

HUSKA CONSULTING, LLC

1050 30TH STREET, NW

WASHINGTON, DC 20007

DOMINION SURVEYS, INC.

ALEXANDRIA, VA 22309

8808-H PEAR TREE VILLAGE COURT

CHANTILLY, VA 20152

CAGLAYAN INVESTMENT GROUP

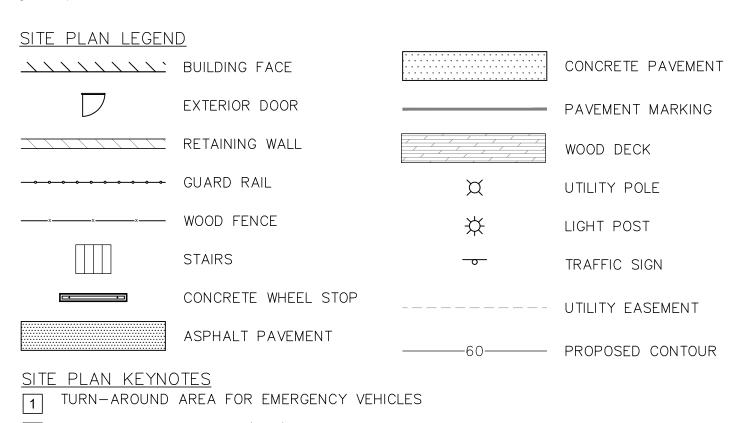
CLIENT

EXISTING CONDITIONS

DRAWING TITLE

DRAWING NO.

001



- 2 LOTS 01-07 TO HAVE 21'X34' TOWNHOMES WITH TWO CAR GARAGE
- 3 LOTS 08-13 TO HAVE 24'X36' TOWNHOMES WITH TWO CAR GARAGE
- FOUR 8'X22' PARALLEL PARKING SPACES TO BE USED AS VISITOR PARKING
- PRIVATE ROADS, SIDEWALKS, PLAYGROUND, PARKING AREA, STORM UTILITIES, AND STORMWATER MANAGEMENT FACILITIES TO BE OWNED AND MAINTAINED BY FUTURE HOMEOWNERS ASSOCIATION.
- 5-FT CONCRETE SIDEWALK TO BE PROVIDED ADJACENT TO PARK RD ALONG PROPERTY FRONTAGE SETBACK 3-FT FROM CURB (DWP STD. 404.01). PROVIDE 3-FT WIDE GRASS STRIP BETWEEN SIDEWALK AND CURB
- 7 24-FT WIDE COMMERICAL ENTRANCE LOCATED IN HOLLY ST AND PARK RD INTERSECTION (DWP STD. 404.06)
- 8 24-FT WIDE PRIVATE ASPHALT ROAD (DWP STD. 401.01) REQUIRES VARIANCE TO MINIMUM WIDTH. 2-FT WIDE CONCRETE CURB AND GUTTER (VDOT STD. 201.03)
- 9 ADA COMPLIANT CONCRETE CURB RAMP (DWP STD. 404.04), TYPICAL FLARE SLOPE: 1:10 MAX (H:V)
- OVERHEAD BAY WINDOW PROJECTION NOT TO EXCEED 3-FT, TYPICAL
- 11 NEW STREET SIGN DENOTING PRIVATE STREET, NAME PENDING
- TRASH AND RECYCLING CONTAINERS TO BE STORED IN GARAGES, TYPICAL FOR ALL LOTS
- 13 ADA COMPLIANT 5-FT CONCRETE SIDEWALK BUILT AGAINST BACK OF CURB (DWP STD. 404.01) TO BE PROVIDED ON BOTH SIDES OF PROPOSED PRIVATE STREET EXCEPT FOR FRONTAGE ACROSS LOT 01-07. CROSS SLOPE NOT TO EXCEED 2.0%
- ADA COMPLIANT CONCRETE RAMP TO PROVIDE ACCESS TO LOT 01 AND FUTURE ACCESS TO LEE HIGHWAY. 42" ACCESSIBLE WIDTH
 - MAX. LONGITUDINAL SLOPE: 1:12 (H: V) CROSS SLOPE: 0.0%
- GUARDRAIL/HANDRAIL TO BE PROVIDED ON BOTH SIDES

EQUIPMENT FROM PARK RD AND ADJACENT LOT 01

- PROPOSED LOCATION OF NEW DOMINION TRANSFORMER 6'X6' CONCRETE PAD WITH SURROUNDING WOOD FENCE AND DENSE HEDGE. WOOD FENCE AND HEDGE HEIGHT TO BE TALL ENOUGH TO SCREEN THE
- PROPOSED NEW POWER FED TO SITE FROM EXISTING UTILITY POLE ON ADJACENT LOT 001 (SAME OWNER AS LOT 002)
- EXACT ALIGNMENT AND DESIGN TO BE COMPLETED DURING SITE PLAN REVIEW
- 6' WIDE ADA COMPLIANT CROSS WALK WITH MARKINGS
- MUTCD STOP SIGN (RT-1 30"X30") FOR SOUTHBOUND TRAFFIC ON PRIVATE ROAD AT PARK RD AND HOLLY ST INTERSECTION. SET BACK MINIMUM 4' FROM PROPOSED CROSSWALK, FINAL PLACEMENT AND DESIGN TO BE PROVIDED DURING SITE PLAN REVIEW.
- NEW REFLECTIVE ROAD SIGN FOR NORTHBOUND TRAFFIC ON HOLLY ST: "WARNING PARK RD THRU TRAFFIC DOES NOT STOP"
- FINAL PLACEMENT AND DESIGN TO BE PROVIDED DURING SITE PLAN REVIEW. 20 AREA RESERVED FOR NEW PLAYGROUND/TOT LOT, FINAL DESIGN TO BE DETERMINED DURING SITE PLAN REVIEW.
- THREE 9'X18' STANDARD PARKING SPACES TO BE USED AS VISITOR PARKING
- EXISTING GUY WIRE SUPPORTING DOMINION UTILITY POLE TO BE RELOCATED TO ALLOW FOR NEW COMMERCIAL ENTRANCE, CONCRETE SIDEWALK, AND ADA CONCRETE RAMP. GUY WIRE SHALL BE RELOCATED PER CURRENT DOMINION POWER STANDARDS AND SPECIFICATIONS. EXISTING OVERHEAD UTILITIES ALONG PROPERTY FRONTAGE SHALL BE PLACED UNDERGROUND. IF ADDITIONAL R.O.W. DEDICATION OR EASEMENT IS REQUIRED IT SHALL BE PROVIDED. FINAL DESIGN AND LOCATION TO BE DETERMINED DURING SITE PLAN REVIEW.
- 6-FT LONG BLACK POWDER-COATED STEEL BENCHES NEAR PROPOSED PLAYGROUND/TOT-LOT
- CUTOFF COLONIAL LUMINAIRE FIXED UPON SMOOTH ROUND TAPERED COMPOSITE POST, COLOR BLACK FIXTURE HEIGHT: 12-FT
- TYPICAL THROUGHOUT SITE 24 LIMITS OF 4TH-STORY
- ADA COMPLIANT PARALLEL CURB RAMP (VDOT STD. 204.03)
- 5'X5' BOTTOM LANDING WITH 2'X5' DETECTABLE WARNING SURFACE 5' WIDE CONCRETE RAMP FROM LANDING TO PROPOSED CONCRETE SIDEWALK MAXIMUM LONGITUDINAL SLOPE: 1:12 (H: V)

	QUIREMENTS: RE TOWNHOUSE (RT)	
ZONING STANDARD	ALLOWED	PROPOSED
MINIMUM LOT SIZE	1,500 SF	1,679 SF
SITE AREA (ACRE)	0.4 ACRE OR 17,424 SF	1.16 ACRE OR 50,778 SF
MAXIMUM LOT COVERAGE	80%	67.66 %
MAXIMUM BUILDING COVERAGE	60%	42.53%
MAXIMUM BUILDING HEIGHT		
ADJACENT TO RESIDENTIAL USE	35-FT/3-STORY	35-FT/3-STORY
ADJACENT TO COMMERCIAL USE	45-FT/4-STORY	45-FT/4-STORY
SETBACKS		
FRONT:	10 FEET	10 FEET (MIN.)
SIDE:	20 FEET TO STREET 0 FEET INTERIOR	20 FEET 0 FEET
REAR:	20 FEET	20 FEET (MIN.)
DENSITY	12 UNIT/ACRE	11.20 UNIT/ACRE
MINIMUM LOT WIDTH	18 FEET	21.00 FEET (MIN

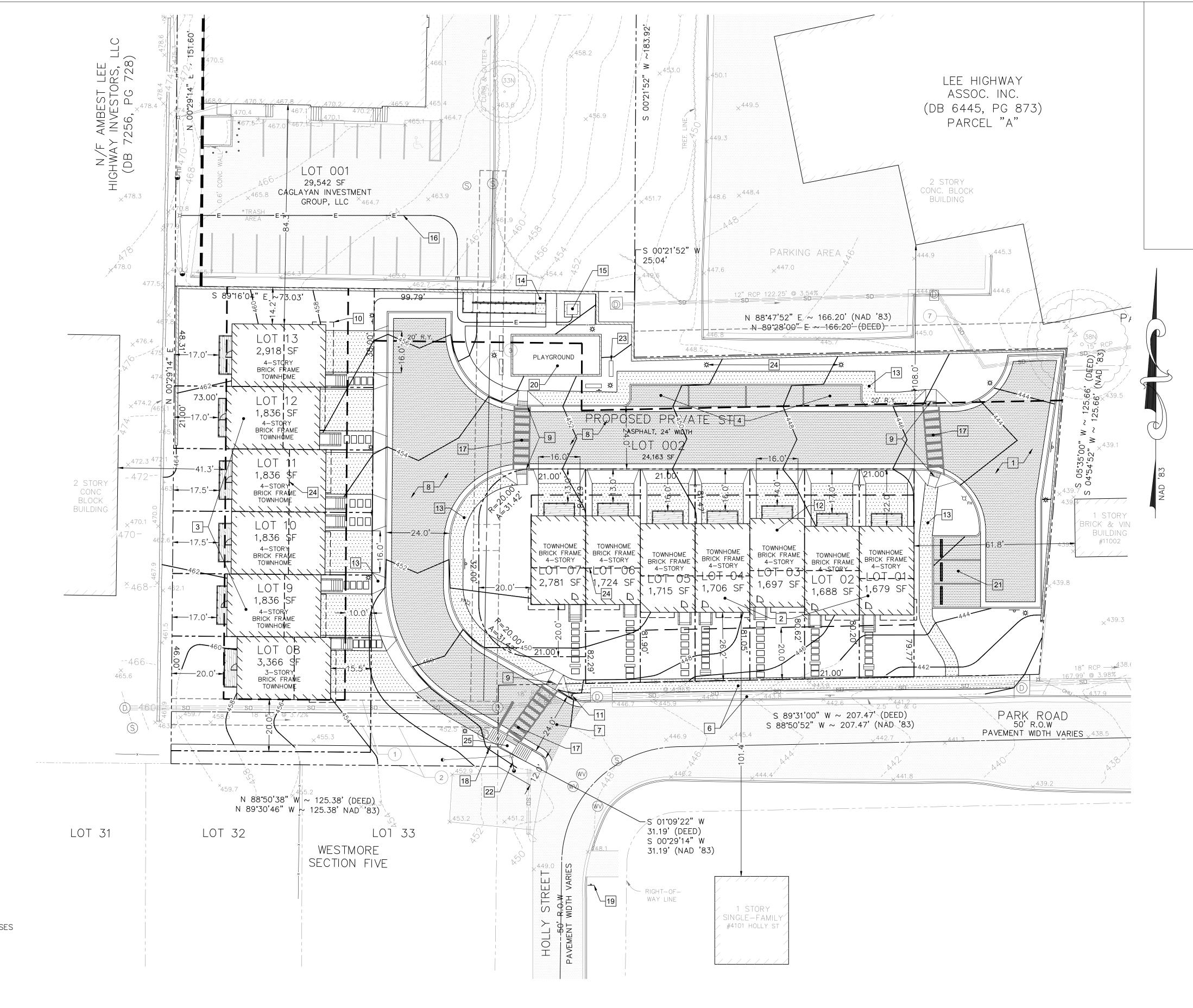
OFF-STREET PARKING CALCULATIONS

OIT STREET FARTHER	<u>ILOOL/IIIOIIO</u>	
USE:	RESIDENTIAL,	TOWNHOUSE
OFF-STREET PARKING REQUIRED:	2.0/UNIT	
PROPOSED UNITS:	13	
TOTAL OFF—STREET SPACES REQUIRED:	26	
TOTAL OFF—STREET SPACES PROVIDED:	33*	

*16-FT WIDE DRIVEWAYS CONNECT TO A 2-CAR GARAGE

REFUSE DISPOSAL NOTE

REFUSE AND RECYCLING SHALL BE STORED ON EACH INDIVIDUAL LOT AND COLLECTED WEEKLY BY PRIVATE REFUSE DISPOSAL COMPANY.



APPROVAL

DATE

03/04/2022

08/25/2022

12/16/2022

08/29/2022

REVISIONS

INITIAL SUBMISSION

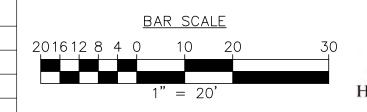
THIRD SUBMISSION

FINAL SUBMISSION

SECOND SUBMISSION

SITE PLAN NOTES

- 1. ALL EXISTING FEATURES ARE NOT NECESSARILY SHOWN ON THIS PLAN. SEE EXISTING CONDITIONS PLAN.
- 2. THIS PLAN IS TO DEPICT WORK ON PRIVATE PROPERTY ONLY. NO WORK IS PROPOSED IN PUBLIC SPACE.
- 3. SPOT SHOTS ARE SHOWN PURPOSEFULLY OFFSET 0.5' FROM THE SPOT DESCRIBED FOR VISUAL CLARITY. MOREOVER. SPOTS ARE ROUNDED TO THE NEAREST 5 HUNDREDTHS.
- 4. REFER TO THE CIVIL COVER SHEET FOR ADDITIONAL INFORMATION.





NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023

SITE PLAN

Patrick Horgan

PATRICK JOSEPH HORGAN

Lic. No. 061930

8/29/2023

11004 & 11006 PARK RD

FAIRFAX, VA 22306 TAX MAP #57-1-40-002

SQUARE 02, LOT 002

EMRE ZIREKOGLU

32713 LATROBE ST

571.594.6363

CONTRACTOR

CIVIL ENGINEER

703.425.3862

703.619.6555

PATRICK HORGAN

LAND SURVEYOR

HUSKA CONSULTING, LLC

DOMINION SURVEYS, INC.

ALEXANDRIA, VA 22309

8808-H PEAR TREE VILLAGE COURT

1050 30TH STREET, NW WASHINGTON, DC 20007

CHANTILLY, VA 20152

CAGLAYAN INVESTMENT GROUP

CLIENT

DRAWING TITLE

002 DRAWING NO.

HUSKA CONSULTING, LLC

DocuSign Envelope ID: AD16A1BD-3653-44D2-9E94-A52567A4D13A

<u>SITE DISTANCE LEGEND</u>

SIGHT DISTANCE/TRAVEL EYE OF VEHICLE ENTERING INTERSECTION OBJ. O

OBJECT ALONG PATH OF TRAVEL

INTERSECTION SIGHT DISTANCE

The following table shows intersection sight distance requirements for various speeds along major roads: *

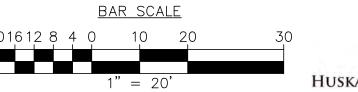
Height of Eye 3.5'								ŀ	leigh	t of O	bject	3.5
Design Speed (mph)*	*	20	25	30	35	40	45	50	55	60	65	70
SDL=SDR: 2 Lane Major Road		225	280	335	390	445	500	555	610	665	720	775
SDR: 4 Lane Major Road (Undivided) or 3 Lane		250	315	375	440	500	565	625	690	750	815	875
SDL: 4 Lane Major Road (Undivided) or 3 Lane		240	295	355	415	475	530	590	650	710	765	825
SDR: 4 Lane Major Road (Divided – 18' Median)		275	340	410	480	545	615	680	750	820	885	955
SDL: 4 Lane Major Road (Divided – 18' Median)	Feet	240	295	355	415	475	530	590	650	710	765	825
SDR: 5 Lane Major Road (continuous two-way turn- lane)	In Fe		335	400	465	530	600	665	730	800	860	930
SDL: 5 Lane Major Road (continuous two-way turn- lane)		250	315	375	440	500	565	625	690	750	815	875
SDR: 6 Lane Major Road (Divided – 18' Median)		290	360	430	505	575	645	720	790	860	935	1005
SDL: 6 Lane Major Road (Divided – 18' Median)		250	315	375	440	500	565	625	690	750	815	875
SDL: (Where left turns are physically restricted)		210	260	310	365	415	465	515	566	620	670	725

TABLE A1-3 INTERSECTION SIGHT DISTANCE Source: 2018 AASHTO Green Book, Chapter 9, Section 9.5.3, page 9-37 thru 9-52, Table 9-6 thru 9-17

**For all tables, use design speed if available, if not use legal speed.

BUILDING #11002 TOWNHOME TOWNHOME BRICK FRAME TOWNHOME BRICK FRAME BRICK FRAME BRICK FRAME BRICK FRAME BRICK FRAME BRICK FRAME 4-STORY 4-STORY 4-STORY 4-STORY 4-STORY TOTO 05 LOT 04 LOT 03 LA-STORY A LOT 02 -- -- 01 4 ×^{439.3} \$ 89°31'00" W ~ 207.47" (NAD '83) _~455.3 125.38' (DEED) 3 125.38' NAD 83) -S 01°09'22" W L01 33 31.19' (DEED) S 00°29'14" W WESTMORE 31.19' (NAD '83) SECTION FIVE - RIGHT-OF-WAY LINE

PPROVAL	DATE	REVISIONS	
	03/04/2022	INITIAL SUBMISSION	2016
	08/25/2022	SECOND SUBMISSION	2010
	12/16/2022	THIRD SUBMISSION	
	08/29/2022	FINAL SUBMISSION	



BRICK & VI



NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023

11004 & 11006 PARK RD

FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

EMRE ZIREKOGLU

32713 LATROBE ST

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CONTRACTOR

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DOMINION SURVEYS, INC.

ALEXANDRIA, VA 22309

8808-H PEAR TREE VILLAGE COURT

CHANTILLY, VA 20152

CAGLAYAN INVESTMENT GROUP

CLIENT

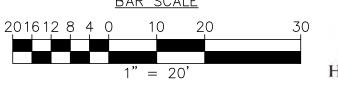
SITE DISTANCE **EXHIBIT**

DRAWING TITLE

GRADING PLAN NOTES

- 1. ALL EXISTING FEATURES ARE NOT NECESSARILY SHOWN ON THIS PLAN. SEE EXISTING CONDITIONS PLAN.
- 2. SPOT SHOTS ARE SHOWN PURPOSEFULLY OFFSET 0.5' FROM THE SPOT DESCRIBED FOR VISUAL CLARITY. MOREOVER, SPOTS ARE ROUNDED TO THE NEAREST 5 HUNDREDTHS.
- 3. REFER TO THE CIVIL COVER SHEET FOR ADDITIONAL INFORMATION.

APPROVAL 03/04/2022 INITIAL SUBMISSION 08/25/2022 SECOND SUBMISSION 12/16/2022 THIRD SUBMISSION 08/29/2022 FINAL SUBMISSION





NOT FOR CONSTRUCTION **REZONING PLANS**

GRADING PLAN

PATRICK JOSEPH

8/29/2023

— 686E/**14/POPROCHATN** Lic. No. 061930

11004 & 11006 PARK RD

FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

EMRE ZIREKOGLU

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CAGLAYAN INVESTMENT GROUP

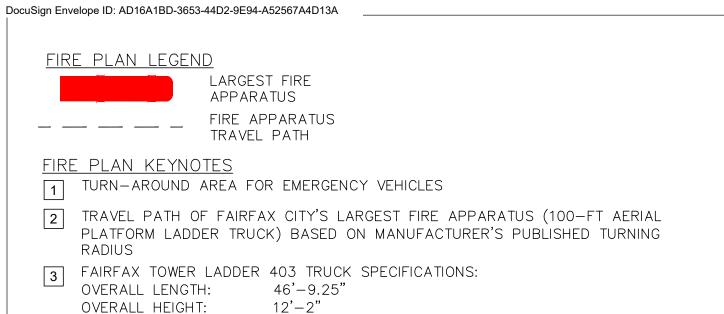
CLIENT

DRAWING TITLE

003

REVISIONS BAR SCALE

08/29/2023

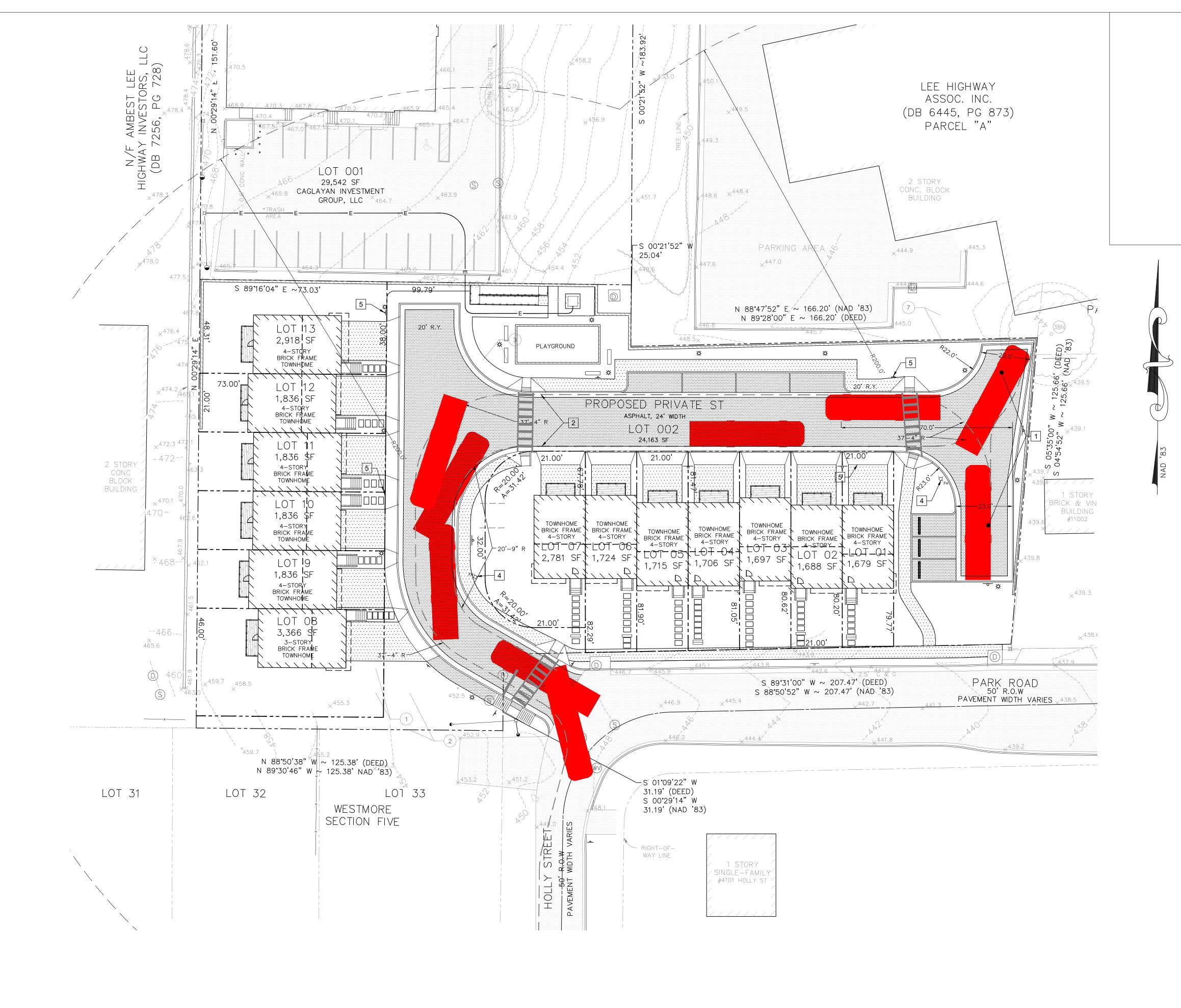


82.92" CHASSIS OVERHANG: 78" BUMPER OVERHANG: 26" TWO NEW FIRE HYDRANTS TO SERVE ALL 13 TOWNHOMES WITHIN 200-FT RADIUS

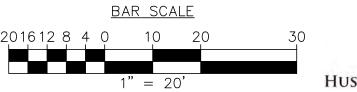
10'-2"

20'-9"

"FIRE LANE NO PARKING" SIGNS TO BE PLACED THROUGHOUT DEVELOPMENT ALONG PRIVATE ROAD (TYP.). FINAL LOCATION TO BE DETERMINED DURING SITE PLAN REVIEW.



APPROVAL **REVISIONS** 03/04/2022 INITIAL SUBMISSION 08/25/2022 SECOND SUBMISSION 12/16/2022 THIRD SUBMISSION 08/29/2022 FINAL SUBMISSION





NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023

FIRE PLAN DRAWING TITLE

Patrick Horgan PATRICK JOSEPH -886HORGAN Lic. No. 061930

11004 & 11006 PARK RD

FAIRFAX, VA 22306 TAX MAP #57-1-40-002

SQUARE 02, LOT 002

EMRE ZIREKOGLU

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WASHINGTON, DC 20007

DOMINION SURVEYS, INC.

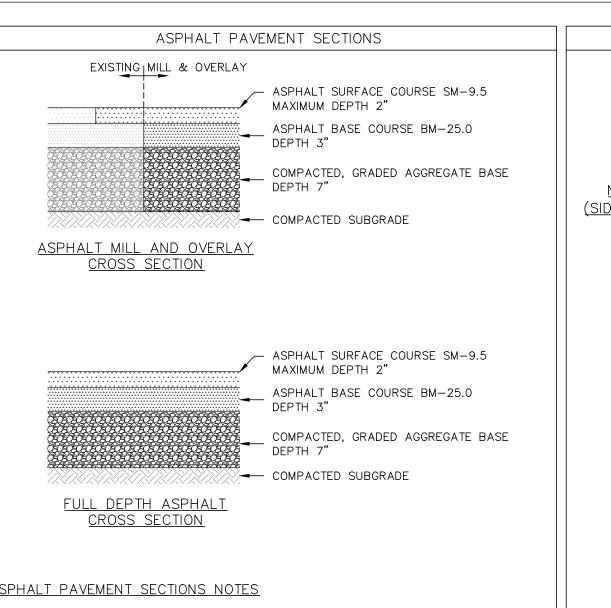
ALEXANDRIA, VA 22309

8808-H PEAR TREE VILLAGE COURT

CHANTILLY, VA 20152

CAGLAYAN INVESTMENT GROUP

CLIENT



- ASPHALT PAVEMENT SECTIONS NOTES
- MILL AND OVERLAY AS REQUIRED TO ATTAIN ADA ACCESSIBLE GRADES AND SLOPES AS REQUIRED.
- . MINIMUM ASPHALT MILLING DEPTH IS 1".

All dimensions are inches (millimeters) unless otherwise noted.

American Electric Lighting

- . UTILIZE A VERTICAL SAWCUT AT THE INTERFACE BETWEEN EXISTING ASPHALT PAVEMENT
- 4. TACK COAT TO BE INSTALLED AT INTERFACE BETWEEN SURFACE AND BASE COURSE,

CONCRETE PAVEMENT SECTIONS 5" 3500 PSI CLASS F CONCRETE WITH 6"x6" W2.9xW2.9 STEEL WWF PLACED AT LEAST 2" FROM TOP AND BOTTOM ← 4" GRADED AGGREGATE BASE, COMPACTED COMPACTED SUBGRADE NON VEHICLE-LOADED CONCRETE (SIDEWALK) AND HVAC EQUIPMENT PAD 8" 3500 PSI CLASS E CONCRETE WITH 6"x6" W4xW4 STEEL WWF AT LEAST 2" FROM TOP AND BOTTOM 8" GRADED AGGREGATE BASE, COMPACTED - COMPACTED SUBGRADE VEHICLE-LOADED CONCRETE (DRIVEWAY) AND GARAGE SLAB CROSS SECTION

- CONCRETE PAVEMENT SECTIONS NOTES
- CONTRACTOR TO REFER TO THE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL & THE VIRGINIA CONSTRUCTION CODE FOR CONSTRUCTION METHODS AND MATERIALS.
- CONCRETE REINFORCEMENT MUST BE PLACED AT LEAST 2" FROM CONCRETE SURFACES
- AND EDGES. UTILIZE REINFORCEMENT STANDS IF REQUIRED.
- PROVIDE A LIGHT BROOM FINISH ON THE CONCRETE SURFACE.

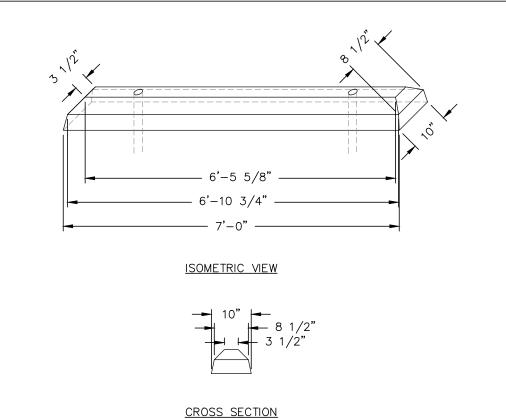
CONCRETE JOINTS CONTROL JOINT MUST BE AT LEAST 1/4" WIDE AND THE MINIMUM DEPTH IS 1/4" OF THE CONCRETE LAYER IN QUESTION CONCRETE CONTROL JOINT 1/4" CHAMFER OR FILLET 4.6 VEHICLE-LOADED CONCRETE EXPANSION JOINT CROSS SECTION



CONTROL JOINTS SHOULD BE SPACED EQUAL TO THE WIDTH OF THE PAVEMENT IN QUESTION TO FORM SQUARES. HOWEVER, CONTROL JOINTS SHOULD BE PLACED NO MORE

EXPANSION JOINTS SHOULD BE PLACED NO MORE THAN 30' APART AND BE 1/2" WIDE.

- EXPANSION JOINTS SHOULD BE PLACED WHERE CONCRETE PAVEMENT ABUTS A STRUCTURE, WALL, COLUMN, FOOTING, OR CURB.
- EXPANSION JOINTS SHOULD CONSIST OF SEALED CORK, ASPHALT IMPREGNATED FIBER SHEETING, ISO STRIP OFF, OR APPROVED EQUIVALENT.
- DOWELS SHOULD BE GRADE 60 STEEL, AT LEAST 16" LONG, 34" MINIMUM DIAMETER, AND MAXIMUM 12" SPACING ON CENTER. EDGE OF DOWEL MUST BE AT LEAST 2" FROM CONCRETE SURFACE AND EDGES.

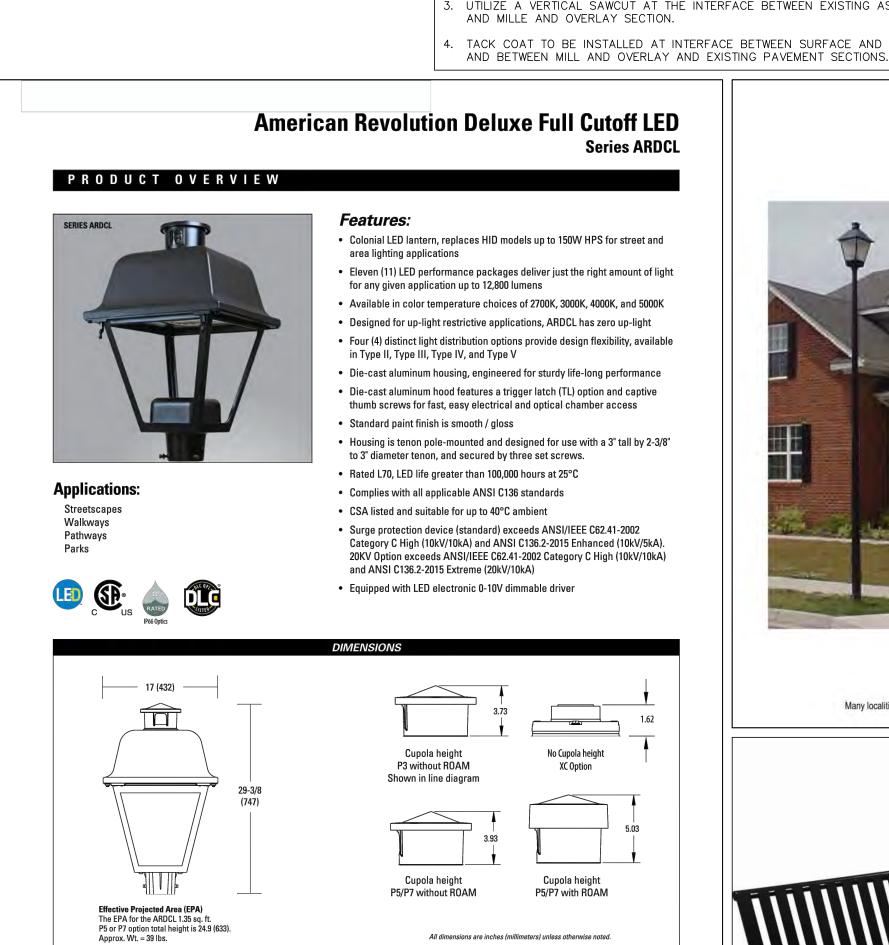


CONCRETE WHEEL STOP

CONCRETE WHEEL STOP NOTES

- THE DIMENSION BETWEEN THE LONG EDGE OF THE CONCRETE WHEEL STOP CLOSEST TO THE END OF THE PARKING SPACE AND THE END OF THE PARKING SPACE IS 2.5'.
- 2. THE CONCRETE WHEEL STOP SHALL BE PLACED CENTERED RELATIVE TO THE WIDTH AXIS OF THE PARKING SPACE.
- 3. EACH CONCRETE WHEEL STOP MUST BE SECURED WITH TWO #7 REBAR ANCHORAGE PINS WITH A MINIMUM EMBEDMENT DEPTH OF 15".
- THE STEEL REINFORCEMENT IN THE CONCRETE WHEEL STOPS (EXCLUDING THE ANCHORAGE PINS) MUST BE #3 REBAR AND AT LEAST 2" FROM ALL FINISHED

SURFACES.



Note: Specifications subject to change without notice.

American Revolution Deluxe Full Cutoff LED Series - ARDCL



Outdoor Lighting Pole Specifications Smooth Round Tapered Composite for Post Top Luminaires

Smooth round tapered composite poles constructed of heavy duty fiberglass reinforced pigmented polyester resin for single pole top luminaires. Poles are directly embedded for use with underground supplied conductors only.

Light fixtures that match well with this pole include:

- All LED Acorn styles
- All LED Colonial styles
- Premium LED Cutoff styles
- Premium LED Lantern styles

POLE SPECIFICATIONS

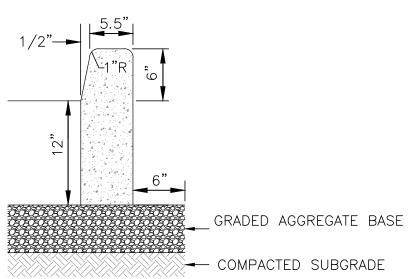
FIXTURE MOUNTING HEIGHT (ft)	TOTAL POLE LENGTH (ft)	BUTT DIAMETER (in)	GROUNDLINE DIAMETER (in)	EMBED or ANCHOR BASE	FINISH COLOR	WMIS CU	POLE ONLY STOCK #
8.0	11.0	5.2	4.7	Embed	Black RAL-9017	PF11	50499800
10.0	13.0	5.6	5.0	Embed	Black RAL-9017	PF13	50500000
12.0	16.0	6.3	5.4	Embed	Black RAL-9017	PF16	42124132
14.0	18.0	6.7	5.8	Embed	Black RAL-9017	PF18	50501000

Many localities have restrictions on light distribution and placement of outdoor lighting equipment. Consult with your local government before selecting outdoor lighting equipment.



6-FT BLACK POWDER COATED STEEL BENCH

CONCRETE HEADER CURB DETAILS



CONCRETE HEADER CURB / CURB & GUTTER (PRIVATE PROPERTY)

- MATERIALS AND CONSTRUCTION METHODS SHALL BE CONSISTENT WITH THE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL. CONCREIE SHALL BE 3500 PSI CLASS E CONCRETE.
- CONSTRUCT EXPANSION JOINTS AT MAX 15' INTERVALS, AT BEGINNING AND ENDS OF ALL CURVE P.O.T'S, AT STRUCTURES, AND AT MID POINT OF ALL CURB RETURNS. INSTALL 1/2" PRE-FORMED EXPANSION JOINT FILLER, NON-EXTRUDING.
- INSTALL 1/2" EXPANSION JOINT AT BACK OF CURB WHERE ADJACENT TO CONCRETE SIDEWALK.
- INSTALL BITUMINOUS SEALANT AGAINST FACE OF GUTTER ADJACENT TO ASPHALT PAVEMENT.
- WHENEVER NEW CONCRETE CURB (AND GUTTER) MEETS EXISTING CONCRETE CURB (AND GUTTER), ASSURE CURBS ARE ON LINE AND ON GRADE.
- TRANSITION CURBS SHALL BE USED WHENEVER A DIFFERENT TYPE OF CURB IS CALLED OUT. TRANSITIONS MUST BE 10' LONG (MIN.) UNLESS NOTED

03/04/2022

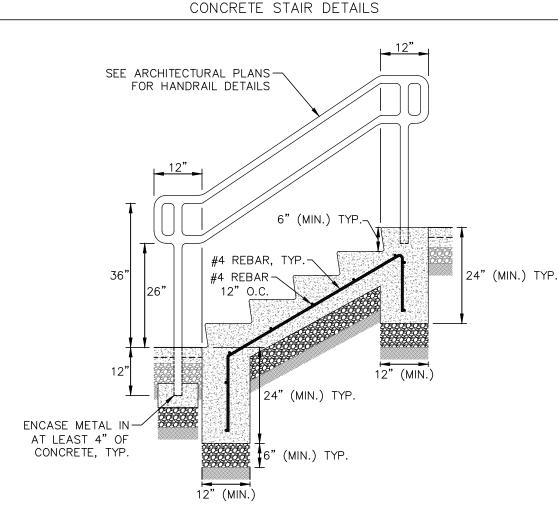
08/25/2022

12/16/2022

08/29/2022

FINAL SUBMISSION

APPROVAL



CONCRETE STAIR DETAILS NOTES

- STAIR TREAD WIDTH IS 12" WITH A 1" RECESS. STAIR HEIGHT IS 6". REFER TO SITE PLAN FOR NUMBER OF STAIRS.
- 2. ALL CONCRETE CORNERS AND EDGES SHOULD HAVE A FILLET OF 1/2".
- CONCRETE MUST HAVE A COMPRESSIVE STRENGTH OF 3500 PSI WITH NO BLACK PIGMENT ADDITIVE AND WITH A LIGHT BROOM FINISH.
- 4. SUBGRADE MUST BE COMPACTED TO 95% PROCTOR DENSITY.
- 5. HANDRAILS SHALL BE PAINTED MATTE BLACK.

11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

CLIENT EMRE ZIREKOGLU CAGLAYAN INVESTMENT GROUP 32713 LATROBE ST CHANTILLY, VA 20152

CONTRACTOR

571.594.6363

CIVIL ENGINEER PATRICK HORGAN HUSKA CONSULTING, LLC 1050 30TH STREET, NW WASHINGTON, DC 20007 703.425.3862

LAND SURVEYOR DOMINION SURVEYS, INC. 8808-H PEAR TREE VILLAGE COURT ALEXANDRIA, VA 22309 703.619.6555

> Patrick Horgan PATRICK JOSEPH -686**F165F263AN**F. Lic. No. 061930

SITE DETAILS

NOT FOR CONSTRUCTION

DRAWING TITLE

005 DRAWING NO.

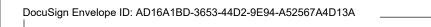
REVISIONS INITIAL SUBMISSION SECOND SUBMISSION THIRD SUBMISSION

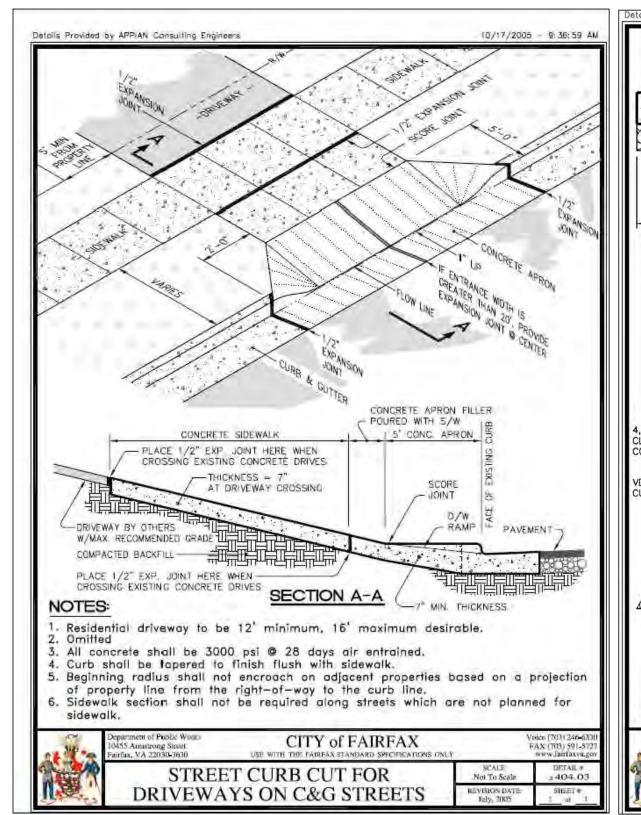
SITE DETAILS NOTES

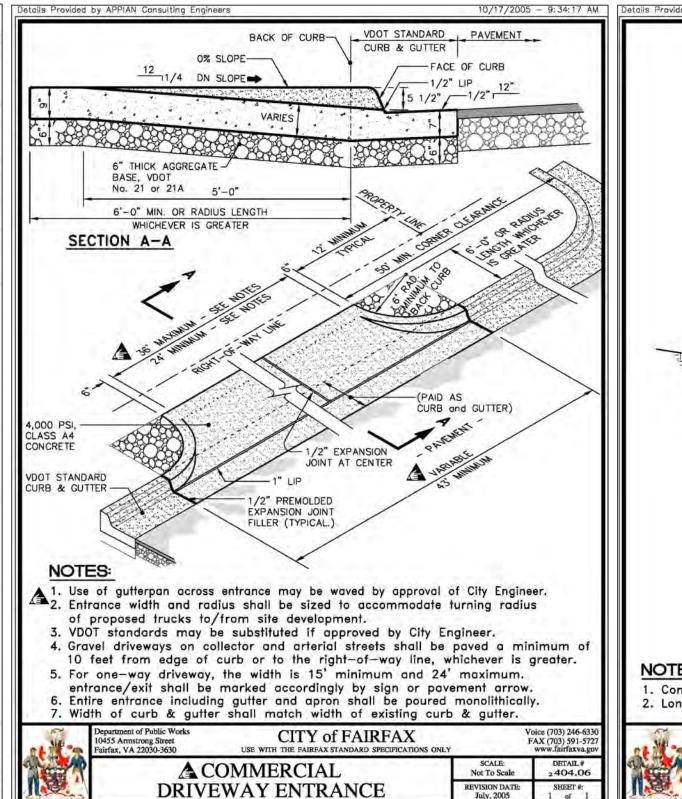
1. REFER TO THE CIVIL COVER SHEET FOR ADDITIONAL NOTES.

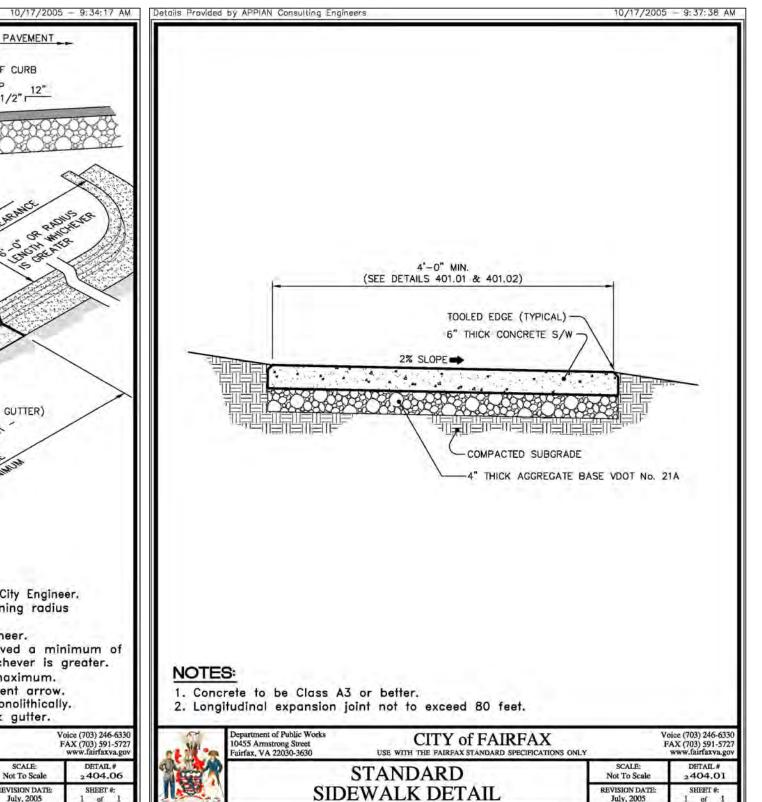
HUSKA CONSULTING, LLC

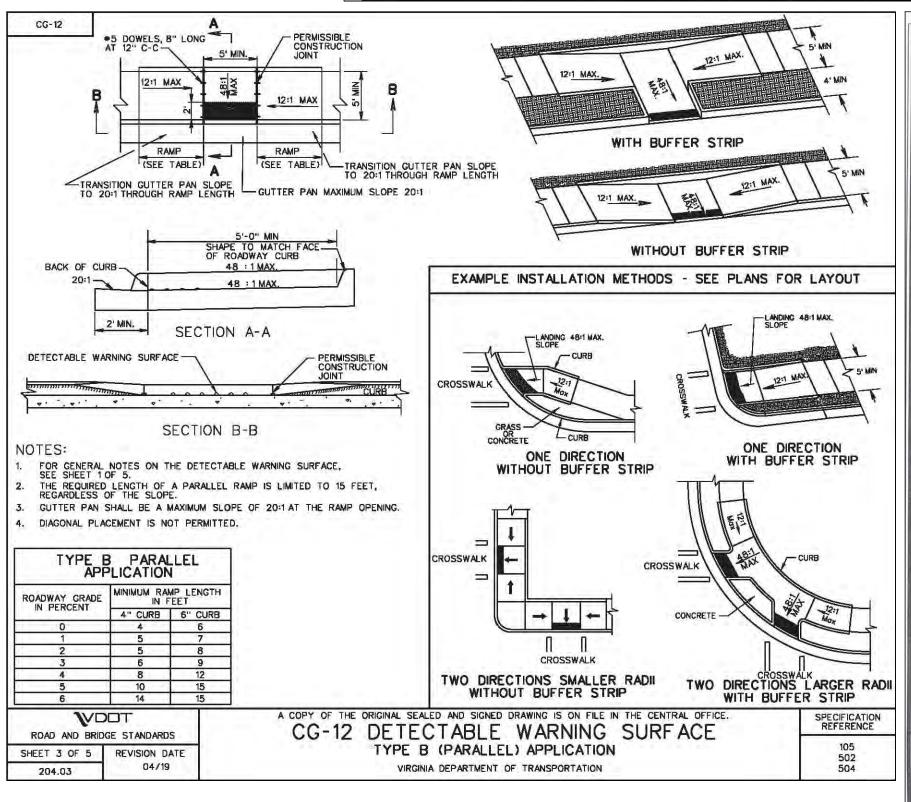
REZONING PLANS 08/29/2023

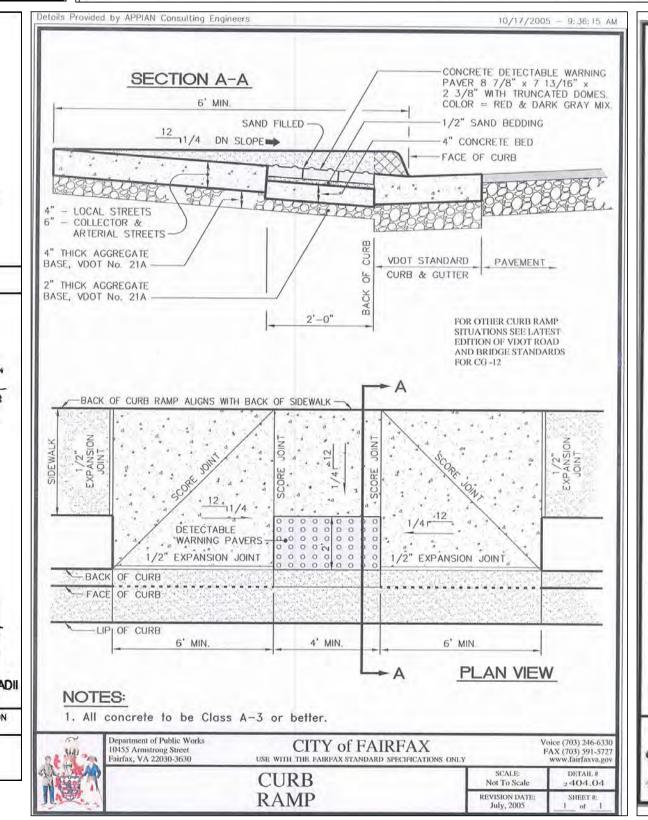












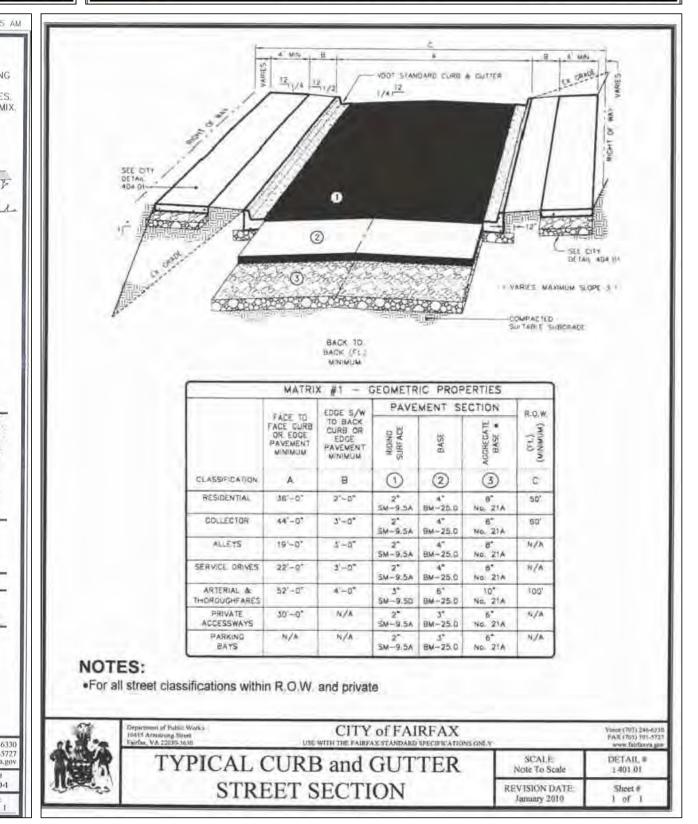
APPROVAL

03/04/2022

08/25/2022

12/16/2022

08/29/2022



SITE DETAILS NOTES

REVISIONS

INITIAL SUBMISSION

THIRD SUBMISSION

FINAL SUBMISSION

SECOND SUBMISSION

1. REFER TO THE CIVIL COVER SHEET FOR ADDITIONAL NOTES.

11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

CLIENT EMRE ZIREKOGLU CAGLAYAN INVESTMENT GROUP 32713 LATROBE ST CHANTILLY, VA 20152 571.594.6363

CONTRACTOR TBD

CIVIL ENGINEER PATRICK HORGAN HUSKA CONSULTING, LLC 1050 30TH STREET, NW WASHINGTON, DC 20007 703.425.3862

LAND SURVEYOR DOMINION SURVEYS, INC. 8808-H PEAR TREE VILLAGE COURT ALEXANDRIA, VA 22309 703.619.6555

> Patrick Horgan PATRICK JOSEPH 686**5AN** Lic. No. 061930

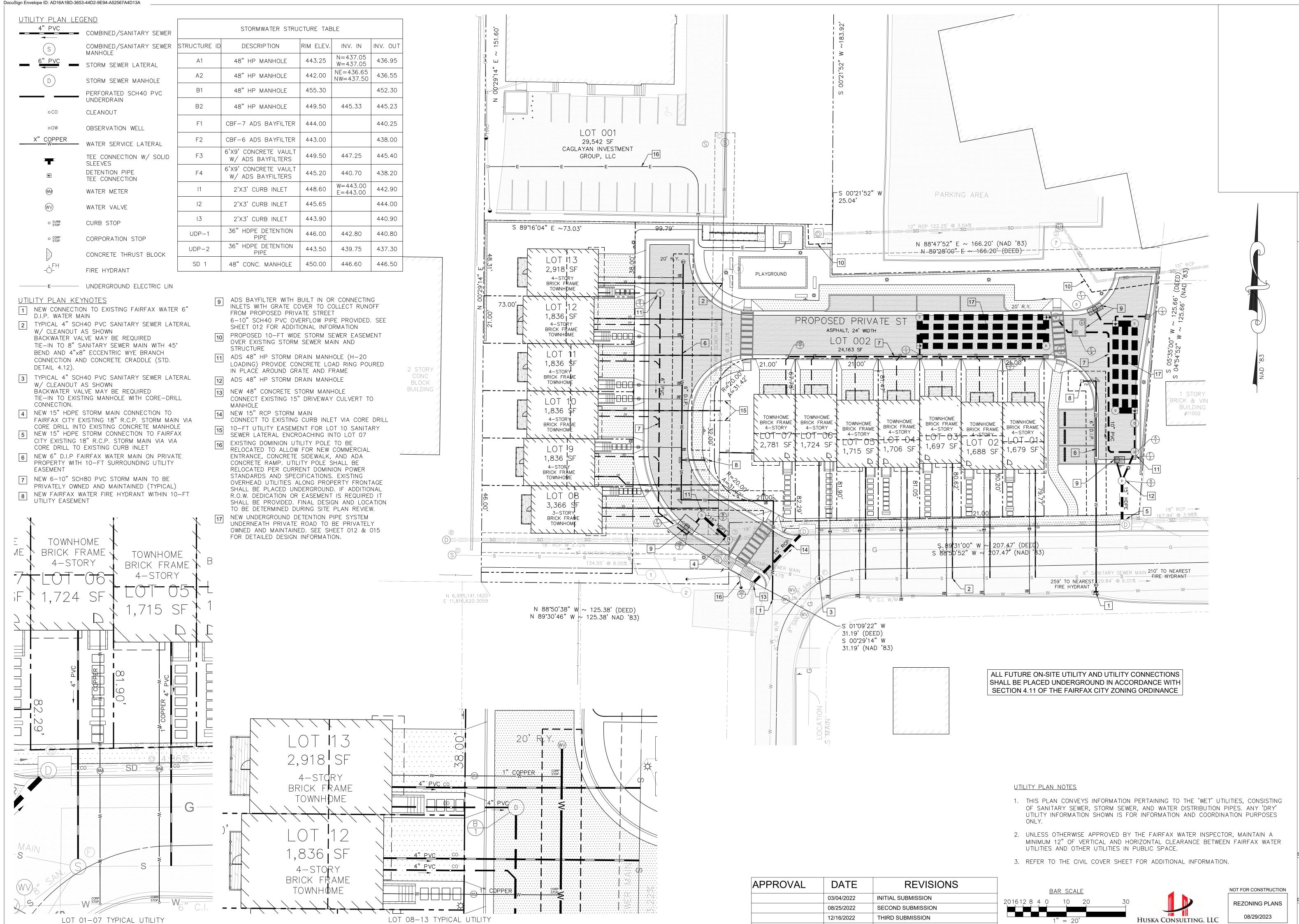
FAIRFAX CITY DPW **DETAILS**

DRAWING TITLE

HUSKA CONSULTING, LLC

NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023

CONNECTION LAYOUT



08/29/2022

FINAL SUBMISSION

CONNECTION LAYOUT

11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

CLIENT EMRE ZIREKOGLU CAGLAYAN INVESTMENT GROUP 32713 LATROBE ST CHANTILLY, VA 20152 571.594.6363

CONTRACTOR

CIVIL ENGINEER PATRICK HORGAN HUSKA CONSULTING, LLC 1050 30TH STREET, NW WASHINGTON, DC 20007 703.425.3862

LAND SURVEYOR DOMINION SURVEYS, INC. 8808-H PEAR TREE VILLAGE COURT ALEXANDRIA, VA 22309 703.619.6555

UTILITY PLAN

Patrick Horgan PATRICK JOSEPH

865A4578°GZAN

Lic. No. 061930 8/29/2023

DRAWING TITLE

Sanitary Sewer Capacity Analysis

New Development Flow

Daily Flowrate per Person 100.0 GPD Number of Proposed Bedrooms per Townhome Dwelling Max. Number of Persons per Bedroom Four Bedroom Townhome Dwellings Daily Flowrate, q_{DW} Number of Four Bedroom Townhome Dwellings Submain Sewer Peak Flow Factor, PF Proposed Design Flow, Q_{New.} 41,600 GDP

Existing Development Flow Daily Flowrate per Person

Average Number of Bedrooms per Dwelling Max. Number of Persons per Bedroom Dwellings Daily Flowrate, q_{DW}

> Shopping Centers Flowrate, q_{SC} 250.0 GPD/1,000 GFA Service Stations Flowrate, q_{SS}

0.064 CFS

0.442 CFS

Existing Dwellings Exisitng Shopping Centers GFA 161576 SF Service Station Daily Vehicles 576.00 Vehicles

Submain Sewer Peak Flow Factor, PF 4.00 Existing Design Flow, QEx. 285,416 GDP

Exisitng + Proposed Design Flow, Q_{Prop.} **0.506 CFS**

Park Rd Townhomes 4/17/2023

Sewer Conveyance - Hydrology and Hydraulic Calculations

					ŀ	Hydraulio	cs										Circ	cular Cha	annel Ra	tios ³			Flow Type
	Pipe Iı	nverts			Pipe	e Parame	eters						Additio	nal Flow	Velo	ocity	Flow	rate	Flow	Area	Hydrauli	c Radius	
Upst	ream	Down	stream	Length	Diam.	Mat'l	n	Slope	V	Q	R	Α	$Q_{add'l}^{1}$	Q _{add'Lus} ²	V/V _{full}	V_{full}	Q/Q _{full}	Q_{full}	A/A _{full}	A_{full}	R/R _{full}	R_{full}	
ID	Invert	ID	Invert	(ft)	(in)			(ft/ft)	(fps)	(cfs)	(ft)	(sf)	(cfs)	(cfs)		(fps)		(cfs)		(sf)		(ft)	
S-G	421.70	DS	413.58	406.1	8	CONC.	0.013	2.00%	4.22	0.506	0.13	0.11	0.00	0.00	0.86	4.90	0.30	1.71	0.32	0.35	0.79	0.17	CHANNEL

Hydrology and Hydraulic Calculations Methodology

Note all sewer conveyance calculations shown here are for the 10 year storm event

 S_{fr} , friction slope = 0.453 $Q^2n^2/A^2R^{4/3}$ H_{fr} , friction loss = L* S_{fr} V_0 , velocity out

n, Manning's roughness coefficient I, rainfall intensity V, veloc Q, flowrate R, hydraulic radius

At the engineer's option, an additional flowrate may be added which will propagate downstream in the system. This flowrate is not affected by time of concentration.

The sum of the additional flowrates added to the system upstream of the run in question.

Circular channel ratios are tabulated in the reference tab and have nested if statements that hinge on the flow type for the pipe run in question

Park Rd Townhomes

voa - Hydraulic Gradelina Calculation

Sewer Cor	nveyance -	- Hydraulic	Gradeline	Calculation	าร																				
From	То	WSE _{down} 1	D	A _{full}	Q	L	R _{full}	n	S _{fr}	H _{fr}	V _{out}	H _o ²	V _{in} ³	H _i ⁴	Angle⁵	К	H _{bend} ⁶	Plunging ⁷	IS-1 ⁸	H _{str} ⁹	H _{total}	WSE _{up}	Top El ¹⁰	Top - WSE _{up}	Remarks
		(ft)	(in)	(sf)	(cfs)	(ft)	(ft)		(ft/ft)	(ft)	(fps)	(ft)	(fps)	(ft)	(degrees)		(ft)			(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
DS	S-G	414.11	8	0.35	0.51	406.10	0.17	0.013	0.18%	0.71	4.22	0.08	4.22	0.10	0	0.00	0.00	NO	ОИ	0.18	0.89	421.94	433.14	11.20	ADEQUATE

g,gravity=32.2 V_i,velocity in

H_i,structure inlet loss=0.35*V_i²/2g

Hydraulic Gradeline Calculations Methodology

 H_{Δ} , structure bend loss= $K^*V_i^2/2g$ H_{str} , structure loss = $H_o + H_i + H_\Delta$ H_{total} , total head loss = $H_{fr} + H_{str}$

Water surface elevation in bottom structure of pipe run. For the first (most downstream) run of HGL analysis per VDOT standards use the greater of the tailwater elevation (if known) or 80% full depth. Expansion loss for upper structure of pipe run. If the upstream structure is a wye, the expansion losses are taken as zero.

Velocity of water entering pipe run. If pipe run is at the top of the system, set this to the velocity out of the pipe run. Otherwise, use upstream pipe's velocity. If multiple pipes feed in, use the inlet velocity with the greatest momentum (QxV)

 H_{D} , structure outlet loss=0.25(0.3 if top pipe)* $V_0^2/2g$

Contraction loss for upper structure of pipe run. If the upstream structure is a wye, the expansion losses are taken as zero.

Angle of deflection in the horizontal plane between the upper structure of the pipe run in question and the next upstream pipe. If multiple pipes in, this is the angle of the pipe which creates the most headloss. If no pipes in, set to zero.

Bend loss for upper structure of pipe run. By default this formula uses the listed inlet velocity. However, if multiple pipes feed into this run bend losses must be calculated for all inflowing pipes and the maximum chosen.

If 20%+ of the total flow is coming from a curb/grate inlet, or if there's an inlet pipe with an invert greater than the crown of the outlet pipe, plunging losses apply.

The engineer may specify IS-1 inlet shaping for a structure which allows the inlet head losses to be reduced by 50%.

Structure loss (sum of expansion, contraction, and bend loses) for the upstream structure of the pipe run.

Top elevation of upper structure of pipe run.



APPROVAL

DATE

03/04/2022

08/25/2022

12/16/2022

08/29/2022

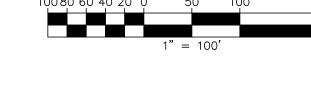
REVISIONS

INITIAL SUBMISSION

THIRD SUBMISSION

FINAL SUBMISSION

SECOND SUBMISSION



11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

CLIENT EMRE ZIREKOGLU CAGLAYAN INVESTMENT GROUP 32713 LATROBE ST CHANTILLY, VA 20152 571.594.6363

CONTRACTOR

CIVIL ENGINEER PATRICK HORGAN HUSKA CONSULTING, LLC 1050 30TH STREET, NW WASHINGTON, DC 20007 703.425.3862

LAND SURVEYOR DOMINION SURVEYS, INC. 8808-H PEAR TREE VILLAGE COURT ALEXANDRIA, VA 22309 703.619.6555

Patrick Horgan PATRICK JOSEPH Lic. No. 061930

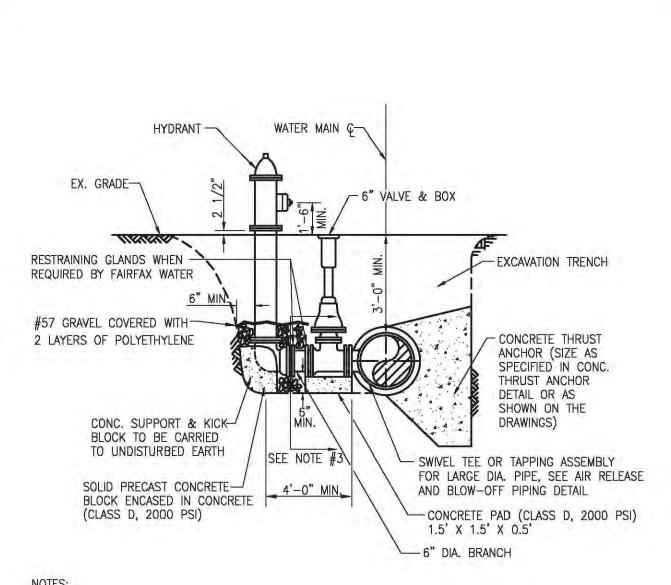
SANITARY SEWER CAPACITY ANALYSIS DRAWING TITLE

NOT FOR CONSTRUCTION REZONING PLANS

08/29/2023 HUSKA CONSULTING, LLC

800

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1. IF SWIVEL TEE IS NOT USED, VALVE MUST BE RESTRAINED TO TEE WITH RESTRAINING GLANDS BY

CONTRACTOR. 2. HYDRANTS SHALL HAVE SHOP-APPLIED COATINGS AS FOLLOWS:

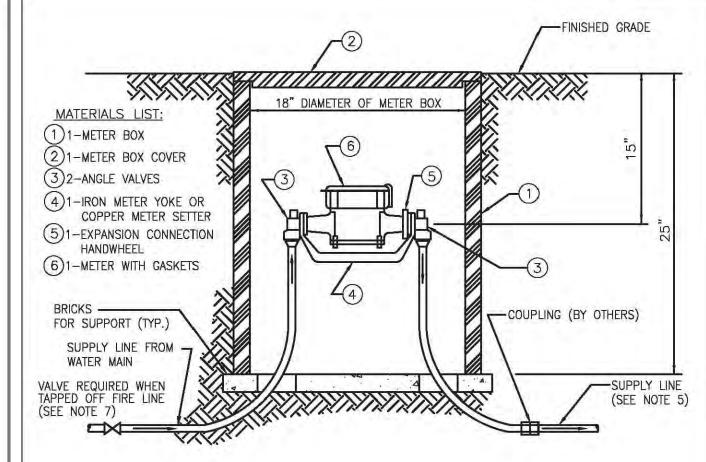
 HYDRANT BARREL: KENNEDY SAFETY RED OR MUELLER RED #10 • TOPS AND CAPS: KENNEDY SILVER OR MUELLER SILVER #18

• WHERE INDICATED BY FAIRFAX WATER, THE TOP SHALL BE SHOP-COATED RED AND THE BARREL AND CAPS SHALL BE SHOP-COATED SILVER IN LIEU OF THE ABOVE.

3. POLYETHYLENE ENCASEMENT TO BE INSTALLED UP TO 6-INCHES BELOW PROPOSED GRADE. ENCASEMENT SHALL BE INSTALLED SO AS NOT TO PREVENT DISCHARGE OF WATER THROUGH HYDRANT DRAIN HOLES.

4. FOR HYDRANT LOCATION IN REGARD TO FACE OF CURB, SEE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL.

W	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
₩	STANDARD HYDRANT INSTALLATION	DRAWING NO.:
DATE: 7/17		30



1. THE WATER METER BOX SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION IN A GREEN SPACE AND SO AS NOT TO BE A TRIP HAZARD.

2. WATER METER TO BE INSTALLED BY FAIRFAX WATER AS SHOWN IN THE DIAGRAM ABOVE. METER TO BE INSTALLED BY CUSTOMER WHEN TAPPED OFF FIRE LINE.

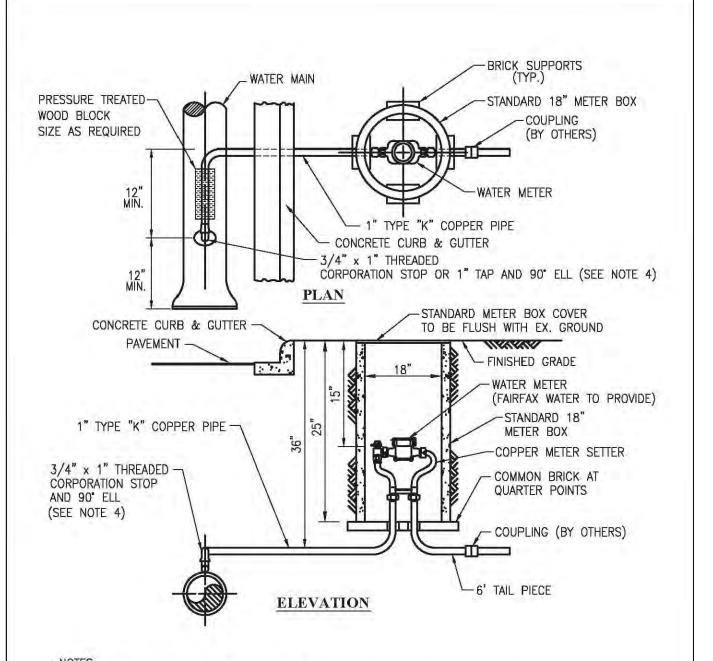
3. THE METER INSTALLATION WILL BE INSPECTED AND APPROVED BY FAIRFAX WATER. CALL 703-289-6402 FOR INSPECTION PRIOR TO PLACING LINE IN SERVICE. 4. FAIRFAX WATER TO SUPPLY ITEMS SHOWN IN MATERIALS LIST. ALL OTHER MATERIALS TO BE SUPPLIED BY

THE CUSTOMER. 5. BACKFLOW PREVENTION WILL BE REQUIRED IN ACCORDANCE WITH FAIRFAX COUNTY REGULATIONS.

6. FAIRFAX WATER MAINTAINS THE SUPPLY LINE BETWEEN THE METER AND THE MAIN, METER, METER BOX, AND METER BOX COVER ONLY. FAIRFAX WATER WILL NOT MAINTAIN SUPPLY LINE WHEN TAPPED OFF FIRE LINE. 7. A 3" MINIMUM GATE VALVE WITH A 2" OPERATING NUT MUST BE INSTALLED ON THE SERVICE LINE WHEN TAPPED

OFF THE FIRE LINE. 8. NO STRUCTURES, POLES, SIGN POSTS, TREES OR SHRUBS TO BE INSTALLED WITHIN FOUR FEET OF METER CROCK.

W	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
-	EXTERIOR METER INSTALLATION 5/8" THROUGH 1" METER SIZES	DRAWING NO.:
DATE: 7/17	5/6 INKOUGH I MEIER SIZES	0



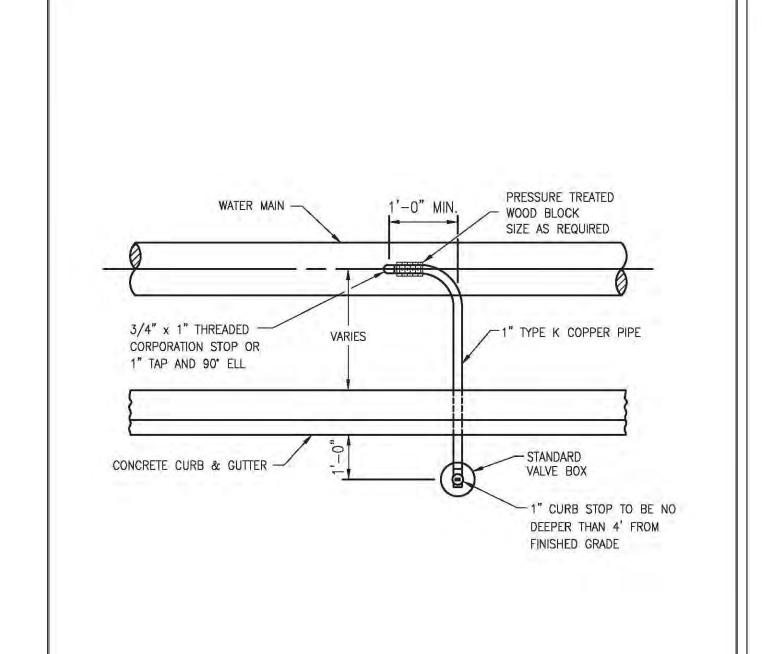
NOTES:

1. NO PLASTIC TUBING TO BE USED INSIDE METER BOX. 2. METER BOX, METER BOX COVER AND COPPER METER SETTER TO BE FAIRFAX WATER STANDARD TYPE. 3. THREADED SERVICE CLAMP TO BE USED ON 3" AND 20" & LARGER WATER MAINS.

4. COAT WITH PETROLATUM TAPE PER SECTION 13110 CATHODIC PROTECTION. 5. NO STRUCTURES, POLES, SIGN POSTS, TREES OR SHRUBS TO BE INSTALLED WITHIN FOUR FEET OF

METER CROCK.

W	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
<u> </u>	1" SERVICE CONNECTION WITH 1" METER	DRAWING NO.:
DATE: 7/17	WITH I METER	1A



WHERE CURB BOX IS LOCATED IN PAVEMENT, USE VALVE BOX INSTEAD OF CURB BOX.

W	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
DATE: 7/17	1" SERVICE CONNECTION WITH CURB STOP	DRAWING NO.:

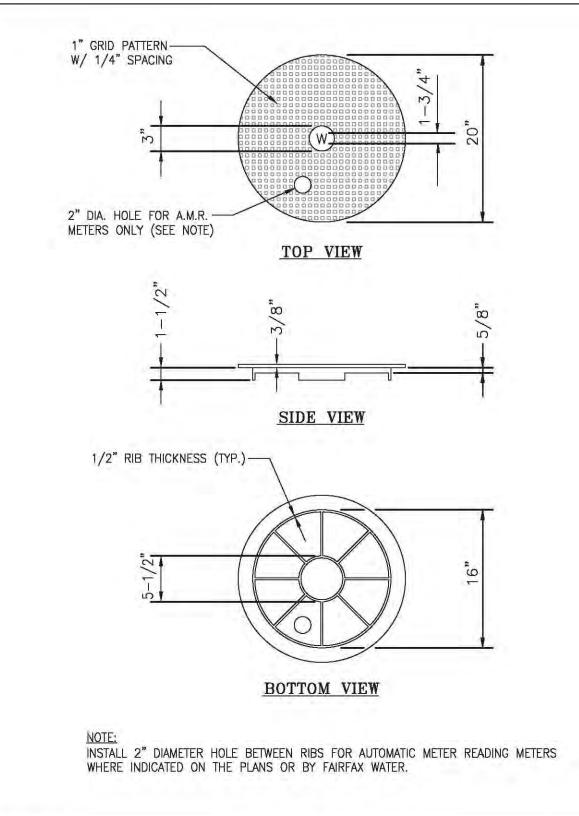
APPROVAL

03/04/2022

08/25/2022

12/16/2022

08/29/2022



FAIRFAX WATER STANDARD DETAILS

CAST IRON METER BOX COVER

UTILITY DETAILS NOTES

DATE: 7/17

REVISIONS

INITIAL SUBMISSION

THIRD SUBMISSION

FINAL SUBMISSION

SECOND SUBMISSION

1. REFER TO THE CIVIL COVER SHEET FOR ADDITIONAL NOTES.



SCALE:

NOT TO SCALE

DRAWING NO .:

REZONING PLANS 08/29/2023

FAIRFAX WATER **DETAILS**

Patrick Horgan PATRICK JOSEPH -686E**HORGAN**.. Lic. No. 061930

DRAWING TITLE

11004 & 11006 PARK RD

FAIRFAX, VA 22306

TAX MAP #57-1-40-002

SQUARE 02, LOT 002

EMRE ZIREKOGLU

32713 LATROBE ST

571.594.6363

TBD

CONTRACTOR

CIVIL ENGINEER

703.425.3862

703.619.6555

PATRICK HORGAN

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HUSKA CONSULTING, LLC

1050 30TH STREET, NW

WASHINGTON, DC 20007

DOMINION SURVEYS, INC.

ALEXANDRIA, VA 22309

8808-H PEAR TREE VILLAGE COURT

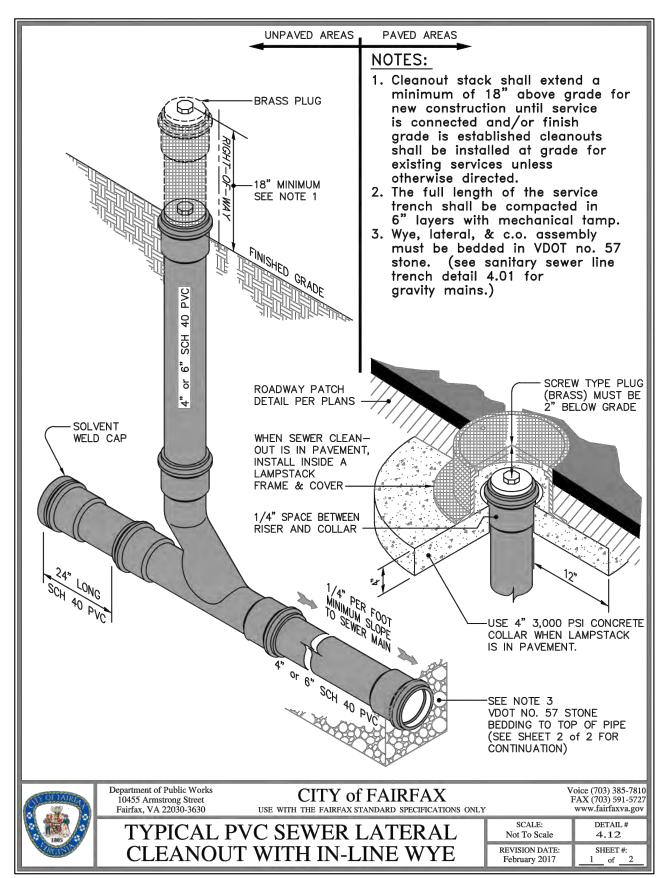
CHANTILLY, VA 20152

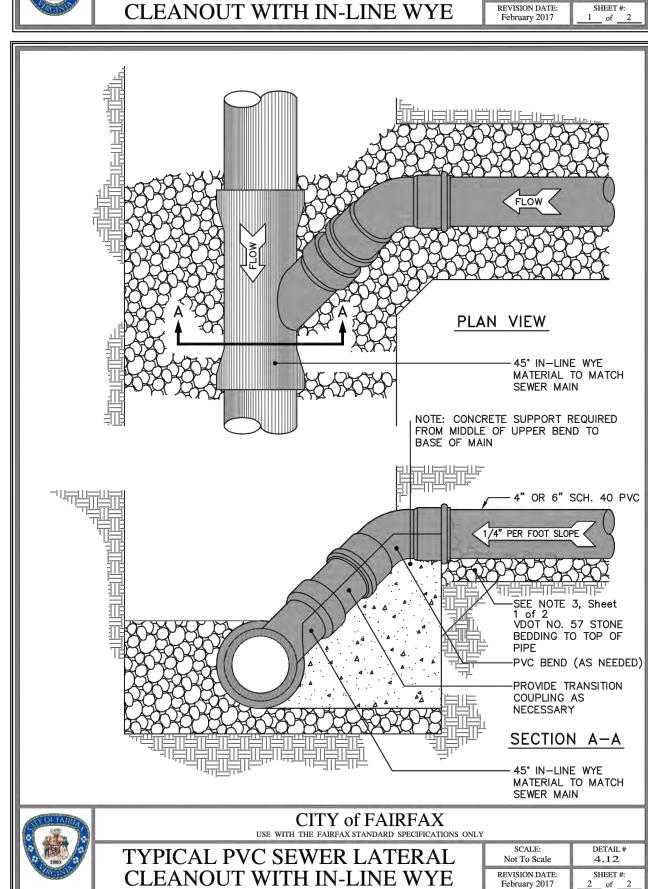
CAGLAYAN INVESTMENT GROUP

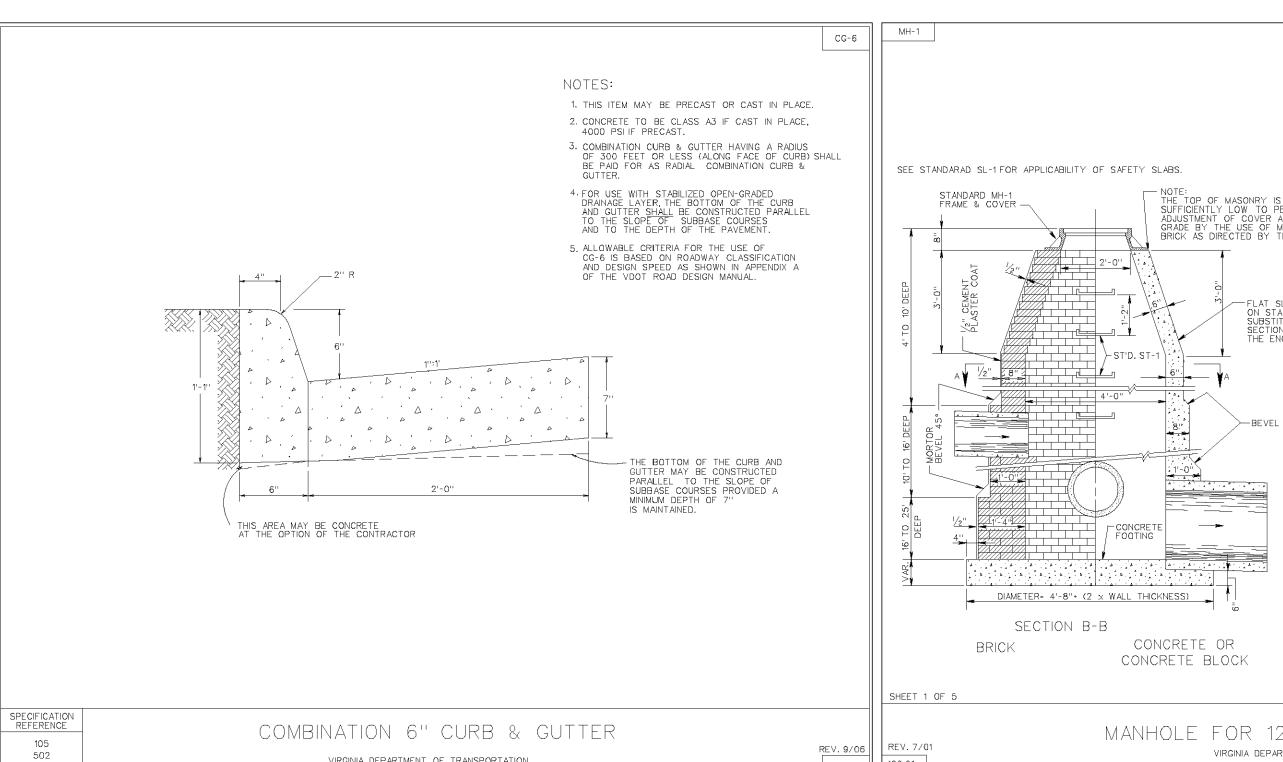
CLIENT

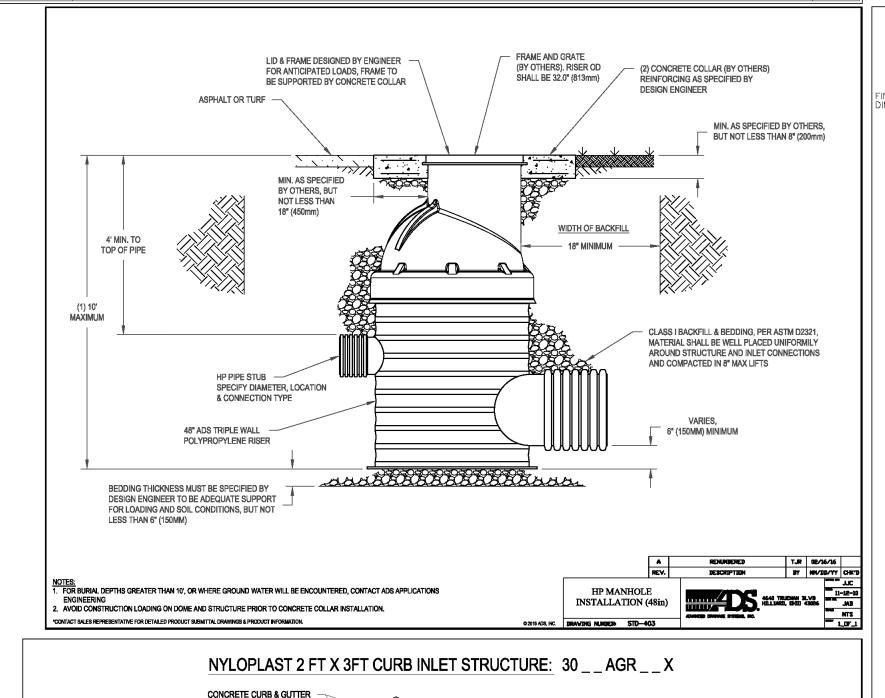
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NOT FOR CONSTRUCTION

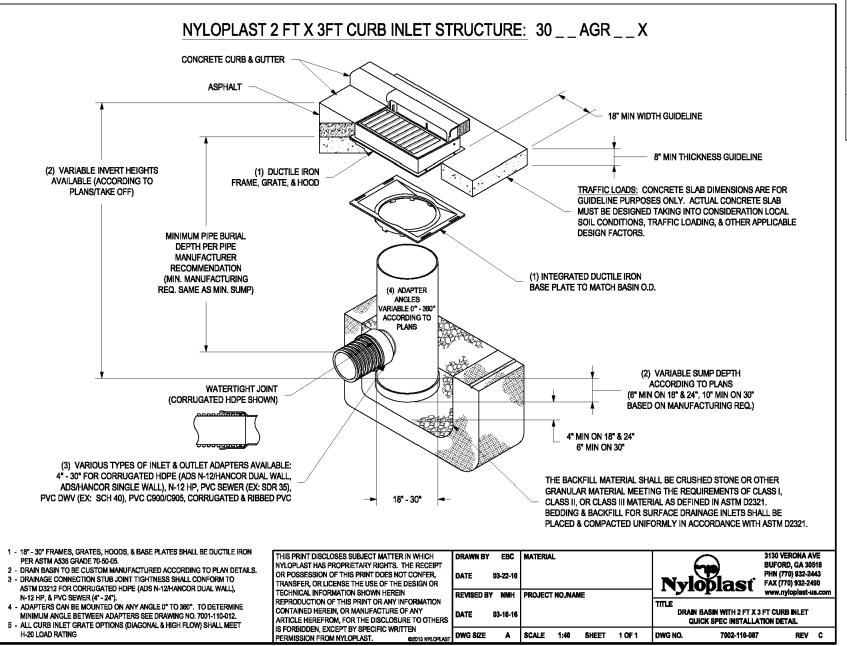




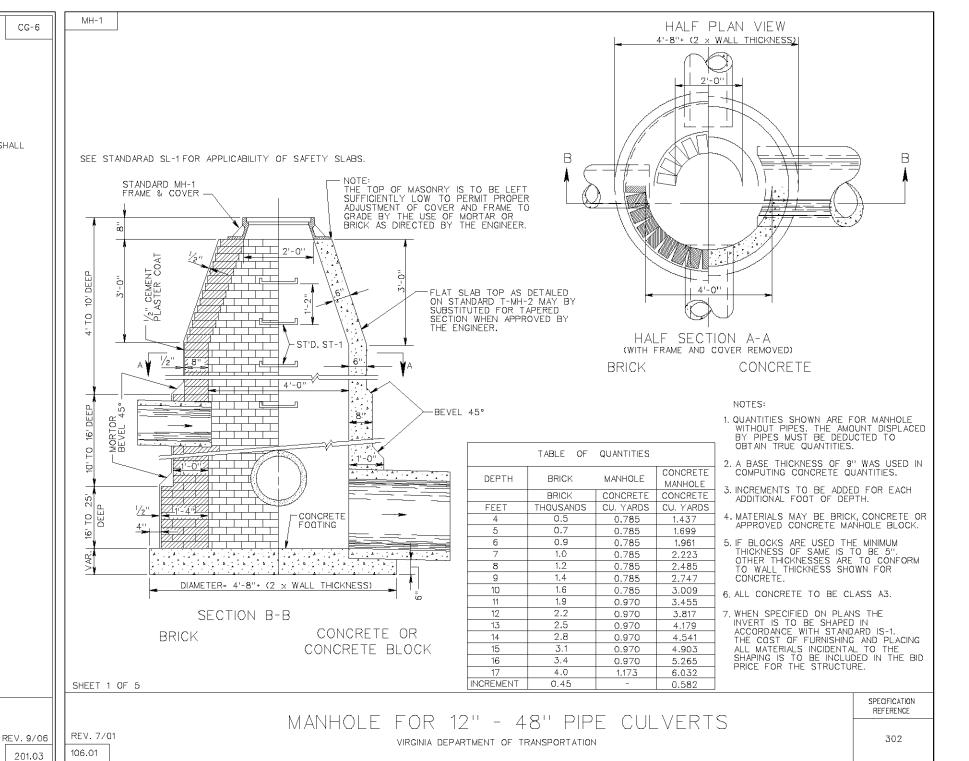


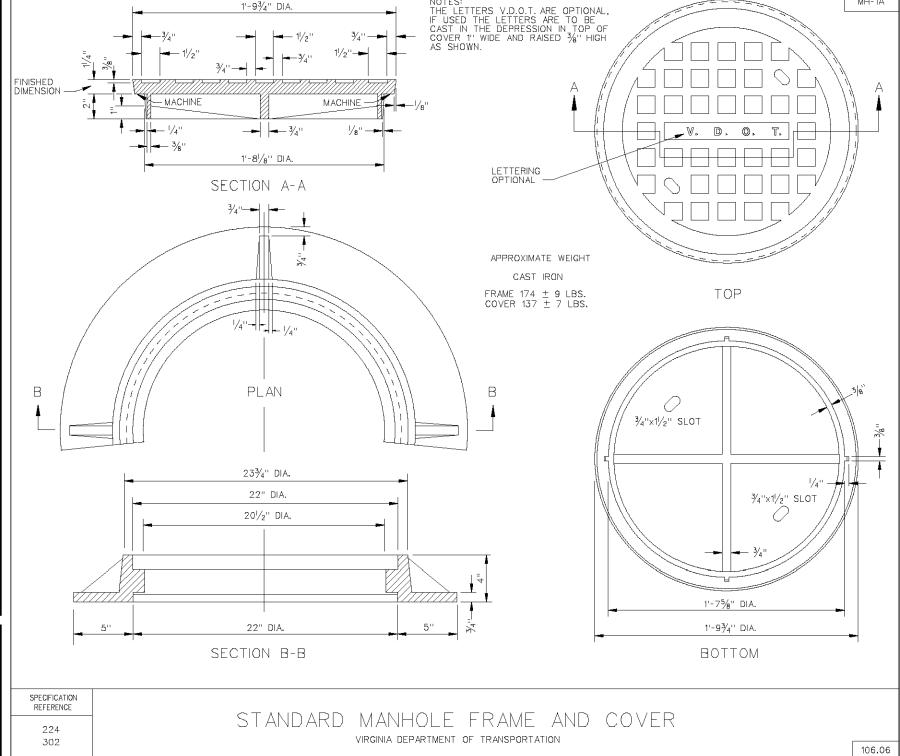


VIRGINIA DEPARTMENT OF TRANSPORTATION



APPROVAL





11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

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> Patrick Horgan PATRICK JOSEPH 686E**ATOTRESATE**... Lic. No. 061930

1. REFER TO THE CIVIL COVER SHEET FOR ADDITIONAL NOTES.

UTILITY DETAILS NOTES



NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023

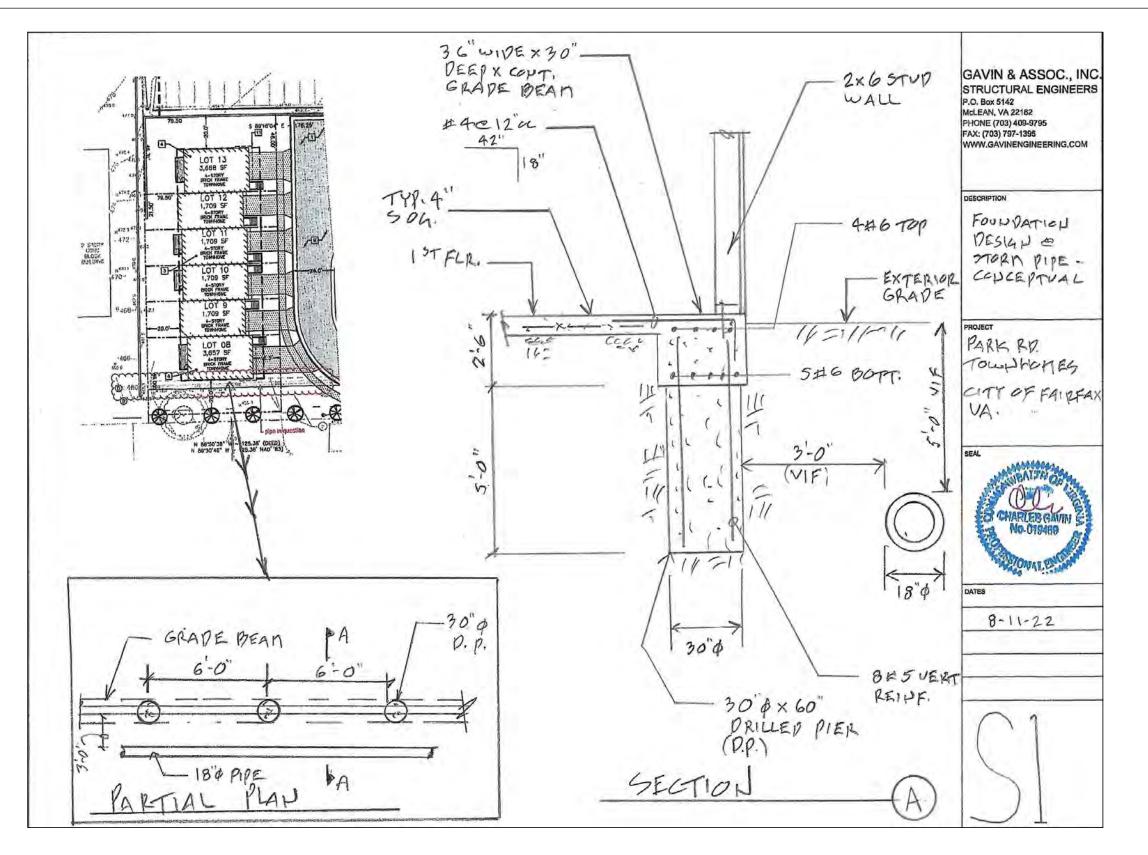
UTILITY DETAILS

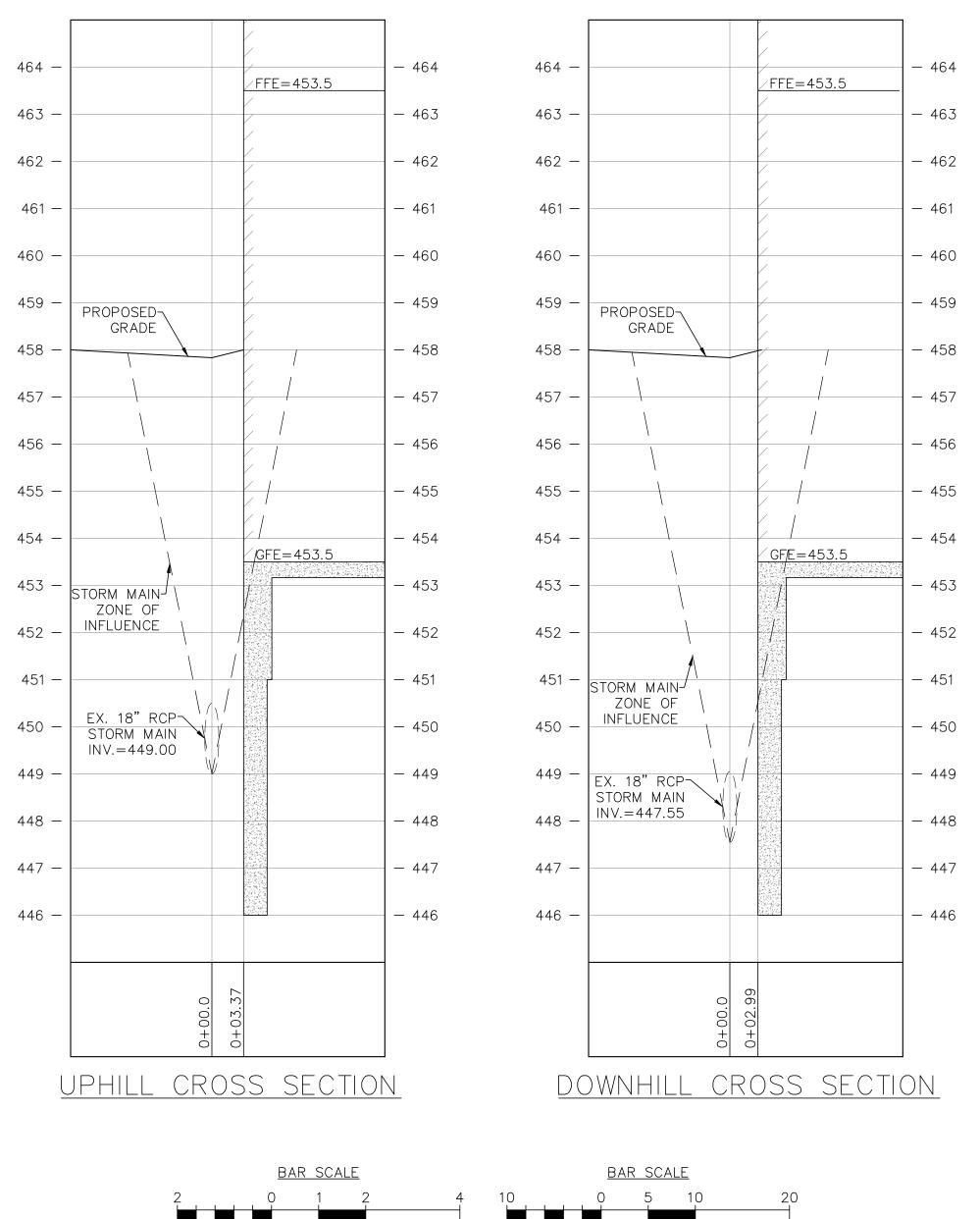
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REVISIONS 03/04/2022 INITIAL SUBMISSION 08/25/2022 SECOND SUBMISSION 12/16/2022 THIRD SUBMISSION 08/29/2022 FINAL SUBMISSION

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11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

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HÖRIZONTAL VERTICAL

UTILITY PROFILES NOTES

- 1. THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES SHOWN IN THE PROFILES ARE SHOWN APPROXIMATELY, ARE BASED ON AVAILABLE INFORMATION PROVIDED BY THE SURVEYOR, CONTRACTOR, MISS UTILITY, AND ASSUMPTIONS FROM THE ENGINEER. CONTRACTOR TO VERIFY.
- 2. THE CONTRACTOR MUST DETERMINE THE LOCATIONS AND ELEVATIONS OF THE VARIOUS EXISTING UTILITIES, BY HAND EXCAVATION IF NECESSARY, PRIOR TO COMMENCING CONSTRUCTION. DISCREPANCIES FOUND BETWEEN FIELD CONDITIONS AND PROFILES SHALL BE REPORTED TO THE ENGINEER; PROPOSED UTILITY LOCATIONS AND ELEVATIONS MAY NEED TO BE ADJUSTED DEPENDING ON THE DISCREPANCIES, AND CONSULTATION FROM THE ENGINEER IS RECOMMENDED.
- 3. THE EXISTING AND PROPOSED GRADES ARE SHOWN APPROXIMATELY ON THE UTILITY PROFILES.
- 4. UNLESS OTHERWISE APPROVED BY THE FAIRFAX WATER INSPECTOR, MAINTAIN A MINIMUM 12" OF SEPARATION BETWEEN FAIRFAX WATER UTILITIES AND OTHER UTILITIES IN PUBLIC SPACE.
- 5. REFER TO THE CIVIL COVER SHEET FOR ADDITIONAL INFORMATION.

APPROVAL	DATE	REVISIONS
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	08/25/2022	SECOND SUBMISSION
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	08/29/2022	FINAL SUBMISSION



NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023



STORM MAIN **CROSS SECTIONS**

DRAWING TITLE

STORMWATER MANAGEMENT PLAN LEGEND

---- DRAINAGE DIVIDE

STORMWATER MANAGEMENT PLAN KEYNOTES

- CBF-7 PRECAST HP VAULT WITH GRATE INLET (F-1)
 ADS BAYFILTER CARTRIDGE MODEL: 645 (ENHANCED)
 NUMBER OF CARTRIDGES: 2
- 8" SCH80 PVC OUTLET PIPE TO TIE INTO UDP-2

 CBF-6 PRECAST HP VAULT WITH GRATE INLET (F-2)

 ADS BAYFILTER CARTRIDGE MODEL: 645 (ENHANCED)

 NUMBER OF CARTRIDGES: 1
- 8" SCH80 PVC OUTLET PIPE TO TIE INTO A2 AND CITY STORM SEWER SYSTEM

 6'X9' PRECAST CONCRETE VAULT WITH GRATE INLET (F-3)
- ADS BAYFILTER CARTRIDGE MODEL: 645 (ENHANCED)

 NUMBER OF CARTRIDGES: 4

 10" SCH80 PVC PIPE TO TIE INTO B2 AND CITY STORM SEWER SYSTEMATICS.
- 10" SCH80 PVC PIPE TO TIE INTO B2 AND CITY STORM SEWER SYSTEM

 6'X9' PRECAST CONCRETE VAULT WITH SOLID COVER (F-4)

 ADS BAYFILTER CARTRIDGE MODEL: 645 (ENHANCED)
- NUMBER OF CARTRIDGES: 4

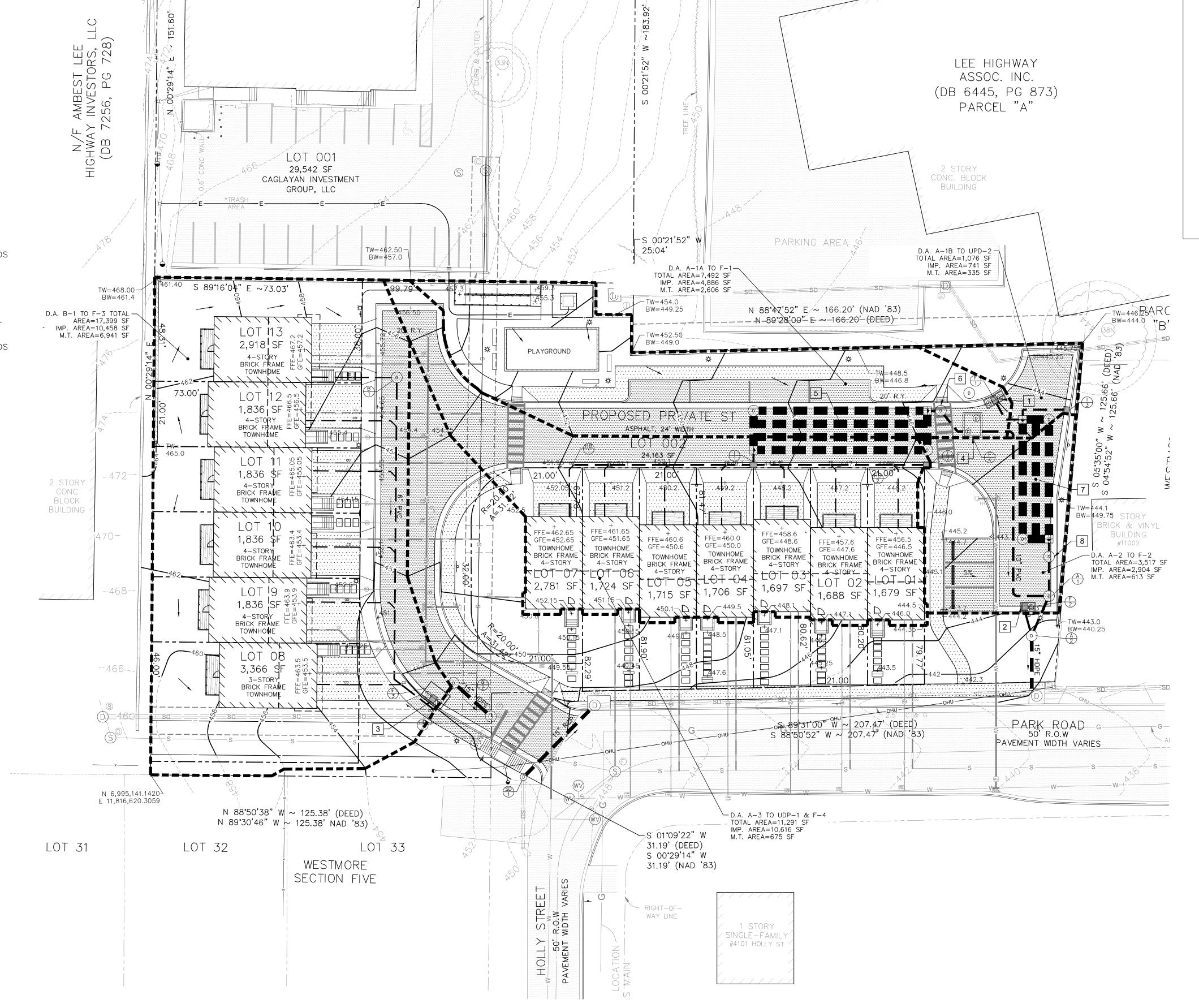
 10" SCH80 PVC PIPE TO TIE INTO A1 AND CITY STORM SEWER SYSTEM
- FOUR ROWS OF 64 LF OF 36" HDPE DETENTION PIPE (UDP-1), 292 LF TOTAL EQUIVALENT LENGTH. TO DETAIN RUNOFF FROM CONNECTING ROOFTOPS AND PRIVATE ROAD SIZED TO DETAIN THE 10-YR, 2HR STORM.

 PRETEATMENT: ALL CONTRIBUTING GUTTERS SHALL BE FITTED WITH LEAFGUARDS PROVIDE 24" RISER FOR MAINTENANCE ACCESS

 SEE CROSS SECTION SHEET 015
- 6 48" NYOPLAST DRAINAGE BASIN WITH SOLID COVER PROVIDE INTERNAL WEIR PLATE WITH 1" ORIFICE 10" SCH40 PVC OUTLET PIPE TO TIE INTO F-4
- THREE ROWS OF 44 LF OF 36" HDPE DETENTION PIPE (UDP-2), 159 LF TOTAL EQUIVALENT LENGTH. TO DETAIN RUNOFF FROM CONNECTING ROOFTOPS AND PRIVATE ROAD SIZED TO DETAIN THE 10-YR, 2HR STORM.

 PRETEATMENT: ALL CONTRIBUTING GUTTERS SHALL BE FITTED WITH LEAFGUARDS PROVIDE 24" RISER FOR MAINTENANCE ACCESS
 SEE CROSS SECTION SHEET 015
- 8 48" NYOPLAST DRAINAGE BASIN WITH SOLID COVER PROVIDE INTERNAL WEIR PLATE WITH 1" ORIFICE 8" SCH40 PVC OUTLET PIPE TO TIE INTO A1

PRO-RATA SHARE ASSES	SSMENT INF	ORMATION				
COVER TYPE	EXISTING (SF)	PROPOSED (SF)	INCREASE (SF)			
LOT AREA	50,778					
IMPERVIOUS	14,154	32,649	18,495			
BUILDINGS	5,090	10,769	5,679			
DRIVEWAYS	454	3,374	2,920			
MISCELLANEOUS	8,610	18,506	9,896			
MANAGED TURF	36624	18129	-18,495			



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8808-H PEAR TREE VILLAGE COURT
ALEXANDRIA, VA 22309
703.619.6555

Eic. No. 061930 8/29/2023

STORMWATER MANAGEMENT PLAN NOTES

1. REFER TO THE CIVIL COVER SHEET FOR ADDITIONAL INFORMATION.

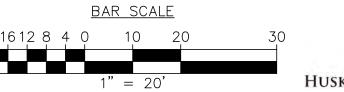
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NOT FOR CONSTRUCTION

REZONING PLANS

08/29/2023

STORMWATER MANAGEMENT PLAN

Patrick Horgan PATRICK JOSEPH

DRAWING TITLE

DRAWING NO.

012

DocuSign Envelope ID: AD16A1BD-3653-44D2-9E94-A52567A4D13A Project Name: Park Rd Townhomes 4/20/2023 Linear Development Project? Site Information Post-Development Project (Treatment Volume and Loads) Pre-ReDevelopment Land Cover (acres) Forest/Open Space (acres) -- undisturbed forest/open space Managed Turf (acres) -- disturbed, graded for yards or other turf to be Impervious Cover (acres) Post-Development Land Cover (acres) Drainage Area A Drainage Area A Land Cover (acres) A Soils Forest/Open Space (acres) Managed Turf (acres) Impervious Cover (acres) Drainage Area B Drainage Area A Land Cover (acres) Stormwater Best Management Practices (RR = Runoff Reduction)

Required Number of Cartridges

CLEAR ALL

data input cells constant values calculation cells final results

Enter Total Disturbed Area (acres) → 1.16 Maximum reduction required: 20% The site's net increase in impervious cover (acres) is: 0.424586777

Check: BMP Design Specifications List: 2013 Draft Stds & Specs

Linear project? No Land cover areas entered correctly? Total disturbed area entered?

Post-Development TP Load Reduction for Site (lb/yr): 0.93

B Soils C Soils Totals 0.00 0.84 0.84 0.32 1.17

A Soils B Soils C Soils D Soils

Forest/Open Space (acres) undisturbed, protected forest/open space or reforested					0.00
Managed Turf (acres) disturbed, graded for yards or other turf to be			0.42		0.42
Impervious Cover (acres)			0.75		0.75
Area Check	OK.	OK.	OK.	OK.	1.17

Totals Land Cover Rv **B** Soils C Soils D Soils 0.00 0.00 0.09 0.22 0.09 0.42 0.95 0.42 Total 0.51

Total Phosphorus Available for Removal in D.A. A (lb/yr) Post Development Treatment Volume in D.A. A (ft³) 1,529

CLEAR BMP AREAS

mwater Best Managem	ent Practic	es (RR = F	Runoff Redu	ction)					Select from dropdow

Storiliwater best ividilageir	ient Practic	res (uu - u	unon keut	iction									Select from dropdown lists
Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft ³)	Runoff Reduction (ft ³)	Remaining Runoff Volume (ft ³)	Total BMP Treatment Volume (ft ³)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (Ib)	Downstream Practice to be Employed
14. Manufactured Treatment Devices (no RR)												
14.a. Manufactured Treatment Device- Hydrodynamic	0			0	0	0	0	20	0.00	0.00	0.00	0.00	
14.b. Manufactured Treatment Device-Filtering	0	0.09	0.42	0	0	1,529	1,529	64	0.00	0.96	0.61	0.35	

Nitrogen Removal Efficiency (%)	Nitrogen Load from Upstream Practices (lbs)	Untreated Nitrogen Load to Practice (lbs)	Nitrogen Removed By Practice (Ibs)	Remaining Nitrogen Load (Ibs)
	14. Manufactur	ed BMP (no RR)		
0	0.00	0.00	0.00	0.00
0	0.00	6.86	0.00	6.86

Runoff Volume and CN Calculations

	1-year storm	2-year storm	10-year storm			
Target Rainfall Event (in)	2.60	3.14	4.83			
Drainage Areas	RV & CN	Drainage Area A	Drainage Area B	Drainage Area C	Drainage Area D	Drainage Area E
CN		94	88	0	0	0
RR (ft ³)		0	0	0	0	0
	RV wo RR (ws-in)	1.97	1.47	0.00	0.00	0.00
1-year return period	RV w RR (ws-in)	1.97	1.47	0.00	0.00	0.00
	CN adjusted	94	88	0	0	0
	RV wo RR (ws-in)	2.49	1.94	0.00	0.00	0.00
2-year return period	RV w RR (ws-in)	2.49	1.94	0.00	0.00	0.00
	CN adjusted	94	88	0	0	0
	RV wo RR (ws-in)	4.14	3.51	0.00	0.00	0.00
10-year return period	RV w RR (ws-in)	4.14	3.51	0.00	0.00	0.00

94

CN adjusted

88

11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

CLIENT EMRE ZIREKOGLU CAGLAYAN INVESTMENT GROUP 32713 LATROBE ST CHANTILLY, VA 20152 571.594.6363

CONTRACTOR

CIVIL ENGINEER PATRICK HORGAN HUSKA CONSULTING, LLC 1050 30TH STREET, NW WASHINGTON, DC 20007 703.425.3862

LAND SURVEYOR DOMINION SURVEYS, INC. 8808-H PEAR TREE VILLAGE COURT ALEXANDRIA, VA 22309 703.619.6555

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover I
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)			0.16		0.16	0.22
Impervious Cover (acres)			0.24		0.24	0.95
				Total	0.40	

otal Phosphorus Available for Removal in D.A. B (lb/yr) 0.60 Post Development Treatment Volume in D.A. B (ft³) 955

Treatment Volume 2500.0 CF

Required Number of Cartridges 4

Convert to CFS 0.10 CFS

CLEAR BMP AREAS

Stormwater Best Managem	ent Practi	ces (RR = I	Runoff Re	duction)									-Select from dropdown lis
Practice	Runoff Reduction Credit (%)		Cover Credit	Volume from Upstream Practice (ft ³)	Runoff Reduction (ft ³)	Remaining Runoff Volume (ft ³)	Total BMP Treatment Volume (ft ³)	Efficiency	Phosphorus Load from Upstream Practices (lb)	Phosphorus Load to	Removed By	Phosphorus	Downstream Practice to b Employed
4. Manufactured Treatment Devices (no RR)												
14.a. Manufactured Treatment Device- Hydrodynamic	0			0	0	0	0	20	0.00	0.00	0.00	0.00	
4.b. Manufactured Treatment Device-Filtering	0	0.16	0.24	0	0	955	955	64	0.00	0.60	0.38	0.22	

Practice	Reduction Credit (%)	La reconstruction of the contract of	Area (acres)	Practice (ft ³)	(ft ³)	Volume (ft ³)	Volume (ft ³)	Efficiency (%)	Upstream Practices (lb)	Load to Practice (lb)	Practice (lb)	Load (lb)	Employed	
red Treatment Devices (n	no RR)													
ctured Treatment Device- Hydrodynamic	0			0	0	0	0	20	0.00	0.00	0.00	0.00		
ed Treatment Device-Filtering	0	0.16	0.24	0	0	955	955	64	0.00	0.60	0.38	0.22		
Bayfilter ((F-1)			Bay	yfilter (F-2)				Bayfilter (F-3)				Bayfilter (F-4)	
Runoff Reduc	tion 0%			Runoff	Reduction	0%			Runoff Reduction	0%			Runoff Reduction	0%
Totla Phosphorous Rem	oval 50%			Totla Phosphorou	us Removal	50%		Totla Phos	phorous Removal	50%		Totla Ph	osphorous Removal	50%

Runoff Reduction	0%						
Totla Phosphorous Removal	50%						
Define Drainage Area		Define Drainage Area		Define Drainage Area		Define Drainage Area	
Total Drainage Area (A) =	7,492 SF	Total Drainage Area (A) =	3,517 SF	Total Drainage Area (A) =	17,399 SF	Total Drainage Area (A) =	11,291 SF
Total Impervious Area (A _I) =	4,886 SF	Total Impervious Area (A _I) =	2,904 SF	Total Impervious Area (A _I) =	10,458 SF	Total Impervious Area (A _I) =	10,616 SF
Managed Turf Area (A _C) =	2,606 SF	Managed Turf Area (A_C) =	613 SF	Managed Turf Area (A_c) =	6,941 SF	Managed Turf Area (A_C) =	675 SF
Forested Area (A _N) =	0 SF	Forested Area $(A_N) =$	0 SF	Forested Area $(A_N) =$	0 SF	Forested Area $(A_N) =$	0 SF
HSG	С	HSG	С	HSG	С	HSG	С
Drainage Area R _v	0.68	Drainage Area R _v	0.79	Drainage Area R _v	0.65	Drainage Area R _v	0.86
<u>Calculate Peak Discharge</u>		<u>Calculate Peak Discharge</u>		<u>Calculate Peak Discharge</u>		Calculate Peak Discharge	
Total Treatment Volume (Tv)	425 CF	Total Treatment Volume (Tv)	232 CF	Total Treatment Volume (Tv)	941 CF	Total Treatment Volume (Tv)	811 CF
Runoff Volume, Qa	0.68 IN	Runoff Volume, Qa	0.79 IN	Runoff Volume, Qa	0.65 IN	Runoff Volume, Qa	0.86 IN
CN	89.65	CN	93.82	CN	88.43	CN	96.57
Time of Concentration, Tc	6.00 MIN						
Initial abstraction, Ia	0.247	Initial abstraction, I_a	0.151	Initial abstraction, I_a	0.273	Initial abstraction, I_a	0.083
I _a / P	0.247	I_a/P	0.151	I_a/P	0.273	I_a/P	0.083
Unit Peak Discharge, qu	950	Unit Peak Discharge, q _u	950	Unit Peak Discharge, q _u	950	Unit Peak Discharge, q _u	1000
Peak discharge, q _{pTv}	0.17 CFS	Peak discharge, q _{p™}	0.09 CFS	Peak discharge, q _{pTv}	0.38 CFS	Peak discharge, q _{pTv}	0.35 CFS
		10-yr Runoff	4.83 IN	10-yr Runoff	4.83 IN	Peak discharge from DP-1	0.03 CFS
Filtering Device Sizing		10-yr Bypass Discharge	0.58 CFS	10-yr Bypass Discharge	2.86 CFS	10-yr Runoff	4.83 IN
Manufacturer	ADS					10-yr Bypass Discharge	1.96 CFS
Filtering Device	Bayfilter	Filtering Device Sizing		Filtering Device Sizing			
Cartridge Model	645	Manufacturer	ADS	Manufacturer	ADS	Filtering Device Sizing	
Treatment Flowrate	45.00 GPM	Filtering Device B	ayfilter	Filtering Device E	Bayfilter	Manufacturer	ADS
Treatment Volume	2500.0 CF	Cartridge Model	645	Cartridge Model	645	Filtering Device E	3ayfilter
Convert to CFS	0.10 CFS	Treatment Flowrate	45.00 GPM	Treatment Flowrate	45.00 GPM	Cartridge Model	645

Treatment Volume 2500.0 CF

Required Number of Cartridges 1

Convert to CFS 0.10 CFS

Nitrogen Removal Efficiency (%)	Nitrogen Load from Upstream Practices (Ibs)	Untreated Nitrogen Load to Practice (Ibs)	Nitrogen Removed By Practice (Ibs)	Remaining Nitrogen Load (lbs)	
	14. Manufactur	ed BMP (no RR)			
0	0.00	0.00	0.00	0.00	
0	0.00	4.29	0.00	4.29	

APPROVAL

DATE

03/04/2022

08/25/2022

12/16/2022

08/29/2022

REVISIONS

INITIAL SUBMISSION

THIRD SUBMISSION

FINAL SUBMISSION

SECOND SUBMISSION

Site Results (Water Quality Compliance)

D.A. B

0.00

0.24

0.24

0.16

0.16

OK.

0.60

0.38

NITROGEN LOAD REDUCTION ACHIEVED (lb/yr) 0.00 0.00 0.00 0.00 0.00 0.00

D.A. A D.A. B

D.A. C

0.00

0.00

0.00

0.00

0.00

OK.

D.A. C

0

0.00

0.00

D.A. D

0.00

0.00

0.00

0.00

0.00

OK.

D.A. D

0

0.00

0.00

0.22 0.00 0.00 0.00 0.56

D.A. E

0.00

0.00

0.00

0.00

0.00

0

0.00

0.00

D.A. E TOTAL

AREA CHECK

OK.

OK.

OK.

OK.

OK.

0

1.56

1.00

D.A. A

0.00

0.42

0.42

0.09

0.09

0.61

0.93

1.00

0.00

** TARGET TP REDUCTION EXCEEDED BY 0.07 LB/YEAR **

0.35

OK.

Area Checks

AREA CHECK

Site Treatment Volume (ft³) 2,917

FOREST/OPEN SPACE (a

IMPERVIOUS COVER TREATED (ac) MANAGED TURF AREA (ac

MANAGED TURF AREA TREATED (ad

RUNOFF REDUCTION VOLUME ACHIEVED (ft3)

TP LOAD AVAILABLE FOR REMOVAL (lb/yr)

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)

Total Nitrogen (For Information Purposes)

NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)

REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr) 13.11

TP LOAD REDUCTION REQUIRED (lb/yr)

TP LOAD REDUCTION ACHIEVED (lb/yr)

REMAINING TP LOAD REDUCTION REQUIRED (lb/yr): 0.00

TP LOAD REDUCTION ACHIEVED (lb/yr)

TP LOAD REMAINING (lb/yr)

Total Phosphorus

TP LOAD REMAINING (lb/yr): 0.84

POST-DEVELOPMENT LOAD (lb/yr) 13.11

Runoff Reduction Volume and TP By Drainage Area

IMPERVIOUS COVER (ac

I _a taken from Table 4-1 of the NRCS TR-55	5		
$q_{pTv} = q_u x A x Q_a$		A is in squa	re miles
HSG	R_{I}	R_{MT}	R_F
A	0.9	0.20	0.12
В	0.9	0.23	0.16
C	0.9	0.27	0.19
D	0.9	0.29	0.24
CN Values (from Table 2-2a USDA TR-55	& VRRM Spre	eadsheet)	
Cover Type	CN		
Impervious	98.0)	
Managed Turf, HSG C	74.0)	
Residential Disctricts 1/4 acre, HSG C	75.0)	
Woods, fair condition, HSG C	70.0)	

MTD - Filter Devices Methodology

 $R_v = (A_1 \times Rv_1) + (A_2 \times Rv_2) + ...(A_n \times Rv_n)$

 $T_v = (R_v \times A) / 12$

Treatment Flowrate 45.00 GPM

Convert to CFS 0.10 CFS

Treatment Volume 2500.0 CF

Required Number of Cartridges 4

STORMWATER CALCULATIONS NOTES

1. REFER TO THE CIVIL COVER SHEET FOR ADDITIONAL INFORMATION.



NOT FOR CONSTRUCTION REZONING PLANS

STORMWATER **MANAGEMENT** CALCULATIONS
DRAWING TITLE

DRAWING NO.

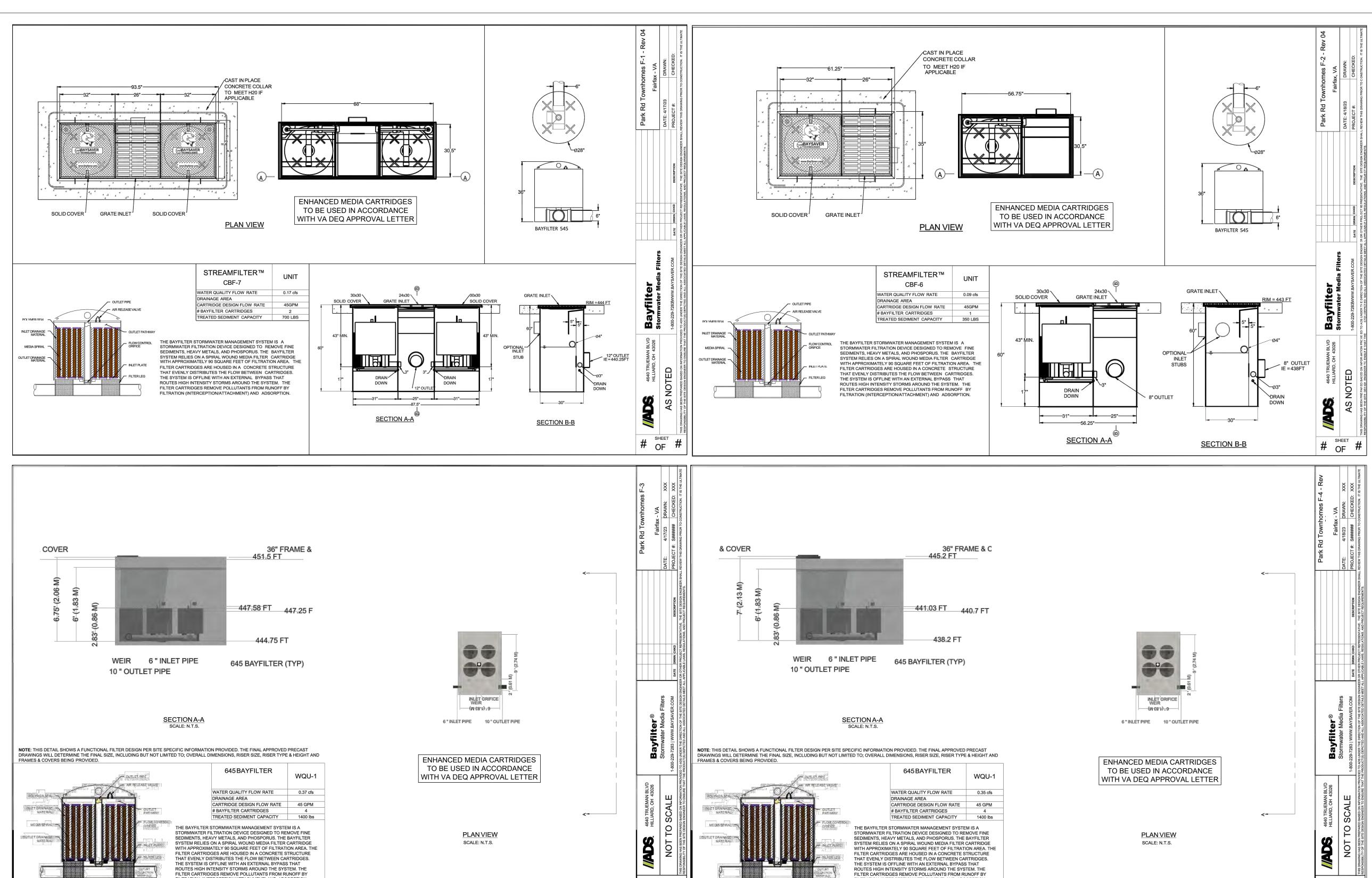
Patrick Horgan PATRICK JOSEPH

Lic. No. 061930

08/29/2023

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FILTRATION (INTERCEPTION/ATTACHMENT) AND ADSORPTION.



APPROVAL **REVISIONS** 03/04/2022 INITIAL SUBMISSION 08/25/2022 SECOND SUBMISSION 12/16/2022 THIRD SUBMISSION 08/29/2022 FINAL SUBMISSION



NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023

FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

11004 & 11006 PARK RD

CLIENT EMRE ZIREKOGLU CAGLAYAN INVESTMENT GROUP 32713 LATROBE ST CHANTILLY, VA 20152 571.594.6363

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> Patrick Horgan PATRICK JOSEPH 686FHORGAN Lic. No. 061930

BAYFILTER **DETAILS**

DRAWING TITLE

UNDERGROUND PIPE DETENTION (UPD) - GENERAL NOTES:

- 1. AN UNDERGROUND PIPE DETENTION FACILITY (UPD THIS DESIGN SHEET) MAY BE PROPOSED IF THE ENTIRE FACILITY IS TO BE MORE THAN 10 FEET FROM THE RESIDENTIAL STRUCTURE.
- 2. THIS UPD DESIGN DOES NOT QUALIFY FOR BMP CREDIT; AND NO UPD FACILITY CAN RECEIVE DISCHARGE FROM ANY OTHER SWM/BMP FACILITY, FOR THIS DESIGN.
- 5. A PROPOSED UPD FACILITY IS PRESUMED TO BE BELOW GROUNDWATER, UNLESS DEMONSTRATED OTHERWISE, AND WATER-TIGHT JOINTS AND ANCHORAGE TO PREVENT FLOTATION ARE REQUIRED. CERTIFIED SITE-SPECIFIC/LOCATION-SPECIFIC FIELD TESTING (PER PFM 4-700) TO SHOW THAT THE SEASONAL HIGH WATER TABLE IS AT LEAST 2 FEET BELOW THE FACILITY'S FLOW CONTROL ELEVATION IS REQUIRED TO ELIMINATE THIS REQUIREMENT. A PROPOSED ANCHORAGE DESIGN MUST BE PROVIDED IN THE PLANS IF GROUNDWATER TESTING RESULTS ARE NOT PROVIDED OR ACCEPTABLE. GROUNDWATER TABLE AT THE GROUND SURFACE MUST BE ASSUMED IF NOT DEMONSTRATED OTHERWISE.
- THE ALLOWED UPD FACILITY PIPE SIZES ARE LIMITED TO INSIDE DIAMETERS OF 24", 30" & 36"; THE ALLOWED PIPE MATERIALS ARE LIMITED TO HIGH-DENSITY POLYETHYLENE (HDPE), POLYPROPYLENE (PP), AND CORRUGATED ALUMINUM (CAP); ONLY ONE PIPE SIZE AND MATERIAL COMBINATION CAN BE INSTALLED IN AN INDIVIDUAL FACILITY; AND AN UNDERGROUND FACILITY MUST HAVE A SMOOTH BOTTOM THROUGHOUT IN ORDER TO FACILITATE MAINTENANCE AND STORAGE VOLUME RECOVERY.
- ALLOWED UPD FACILITY CONFIGURATIONS ARE LIMITED TO 1) DOUBLE-MANIFOLD PIPE SYSTEMS, WHERE EACH UNIFORM-LENGTH PIPE ROW OF THE SYSTEM IS CONNECTED TO A MANIFOLD OR HEADER PIPE AT EACH END, AND 2) SINGLE PIPELINES, WHERE STRAIGHT, L-SHAPED (WITH ONE BEND OR CORNER), AND C-SHAPED/Z-SHAPED (WITH TWO BENDS OR CORNERS) ALIGNMENTS ARE PERMITTED (SEE THE TYPICAL UPD GENERALIZED PLANVIEW, THIS SHEET). DEAD-END PIPE SEGMENTS ARE NOT ALLOWED.
- THE FLOW CONTROL ORIFICE MUST BE LOCATED THROUGH A WEIR PLATE/WALL ATTACHED TO THE INTERIOR OF A MIN. 24" DIA. YARD DRAINAGE STRUCTURE (HAVING A SOLID, LOCKABLE [AND LOCKED] LID) AS DEPICTED IN UPD GENERALIZED SECTION B-B (THIS SHEET), AND AT THE DESIGN CONTROL INVERT ELEVATION SPECIFIED IN THE DESIGN DATA TABLES (THIS SHEET). MANUFACTURED CONTROL STRUCTURES THAT ADHERE TO THE PREVIOUS DESCRIPTION ARE ALLOWED, BUT THE ASSOCIATED PLANS MUST CONTAIN ENOUGH DETAIL FOR THE PROPOSED CONTROL STRUCTURE TO BE PROPERLY INSTALLED AND MAINTAINED.
- THE MINIMUM PERMITTED SIZE FOR INLET & OUTLET PIPES IS 4" DIA., AND ALL SUCH CONVEYANCE PIPES MUST HAVE SMOOTH INTERIORS. SPECIFIC PIPE SIZES REQUIRED TO ACCOMMODATE EXPECTED UPD FACILITY FLOWS ARE PROVIDED ON THE PRETREATMENT/OUTLET PROTECTION DETAILS SHEET.
- 10. THE UPD OUTLET PIPE MUST DISCHARGE TO AN EXISTING ADEQUATE CONVEYANCE FACILITY, A DRY WELL OUTLET, OR THE EROSION-PROTECTED SURFACE OF ADJACENT OR FARTHER DOWNGRADIENT GROUND (AS LONG AS THE FLOW CONTROL ELEVATION AT THE DISCHARGE LOCATION IS AT LEAST 6" BELOW THE FACILITY'S FLOW CONTROL ORIFICE INVERT). THE OUTLET DISCHARGE POINT MUST BE AT LEAST 10 FEET FROM THE BUILDING, 10 FEET FROM THE PROPERTY LINE OF DOWNGRADIENT PROPERTY, AND 5 FEET FROM ALL OTHER PROPERTY LINES. SEE THE PRETREATMENT/OUTLET PROTECTION DETAILS SHEET.
- 14. THE CONTRACTOR IS TO ENSURE THE SPECIFIC GUTTERS, DOWNSPOUTS, AND PIPES DISCHARGE INTO THE SPECIFIC UPD FACILITIES, AS DESIGNATED ON THE APPROVED PLAN. THE COUNTY SITE INSPECTOR MUST BE NOTIFIED IMMEDIATELY IF IT BECOMES APPARENT THIS REQUIREMENT CANNOT BE MET. THE <u>PROPERTY OWNER/DEVELOPER AND DESIGN ENGINEER</u> SHALL THEN BE RESPONSIBLE FOR PROPERLY REVISING THE APPROVED PLAN TO RESOLVE THE APPARENT DESIGN DISCREPANCIES.
- 15. ALL UPD INSTALLATIONS AND ALLOWED MATERIALS MUST MEET THE REQUIREMENTS AND SPECIFICATIONS OF THE PFM, INCLUDING THE REQUIREMENTS OF PFM PLATE 61-6 FOR HDPE AND PP FACILITY INSTALLATIONS, AND VDOT ROAD AND BRIDGE STANDARD DWG. 107.01 FOR CAP FACILITY INSTALLATIONS. HOWEVER, FACILITY BACKFILL MATERIAL REQUIREMENTS MAY BE PER THE MANUFACTURER IF THE PROPOSED SITE-SPECIFIC FACILITY LAYOUT IS PROVIDED BY OR IS OTHERWISE CERTIFIED IN WRITING BY THE MANUFACTURER.

- 1. SEE THE "PRETREATMENT/OUTLET PROTECTION DETAILS" SHEET FOR THE SPECIFICATIONS AND DETAILS FOR THE PRETREATMENT PRACTICES SELECTED FOR EACH PROPOSED UPD FACILITY IN THE DESIGN DATA TABLES (THIS SHEET) INCLUDING:
- 2. GUTTER SCREEN MUST BE INSTALLED ALONG THE ENTIRE SECTION OF ANY ROOF THAT IS TO DRAIN TO A UPD FACILITY, IN ORDER TO HELP MAINTAIN THE CAPACITY OF THE CONTRIBUTING GUTTERS AND DOWNSPOUTS.
- AN IN-LINE LEAF STRAINER MUST BE INSTALLED ON EACH CONTRIBUTING DOWNSPOUT, IN ORDER TO HELP MAINTAIN PIPE CAPACITY.
- 4. A DEBRIS TRAP IS REQUIRED ON ANY INFLOW PIPELINE THAT CONVEYS STORMWATER FROM ANY NON-ROOF IMPERVIOUS AREA, IN ORDER TO HELP MAINTAIN PIPE CAPACITY.

STRUCTURE AND FOUNDATION NOTES:

- 1. MEANS AND METHODS OF ANY PROPOSED STRUCTURAL SUPPORT OR COMPONENT FOR THE UPD FACILITY ARE THE RESPONSIBILITY OF THE
- DESIGN ENGINEER AND ARE NOT REPRESENTED BY ANY FAIRFAX CITY DETAIL.

2. THE DESIGN OF ANY PROPOSED UPD FACILITY STRUCTURAL COMPONENT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER. **MAINTENANCE NOTES FOR UPD FACILITIES:**

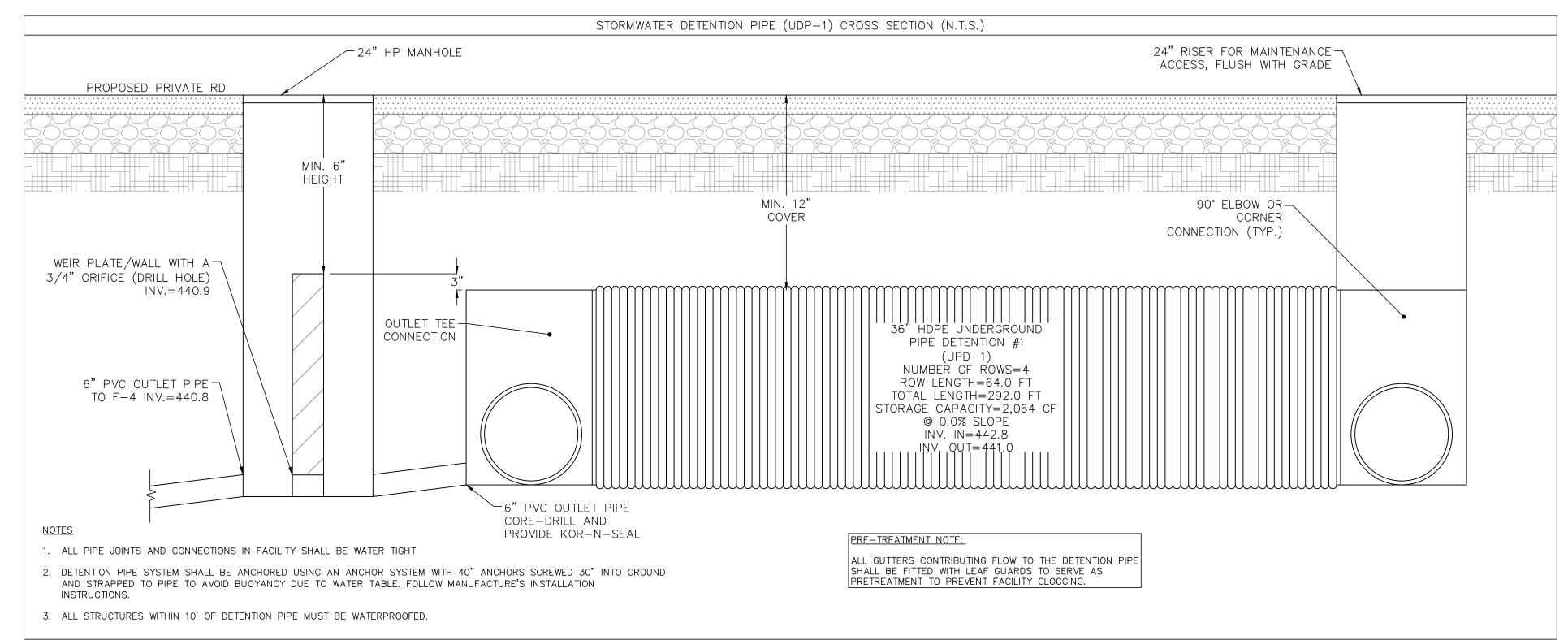
- 1. A PRIVATE MAINTENANCE AGREEMENT (PMA) IS REQUIRED BEFORE PLAN APPROVAL.
- 2. A UPD FACILITY MUST BE LOCATED WITHIN 100' OF A PAVED PARKING OR DRIVING SURFACE TO ALLOW REASONABLE ACCESS FOR JET/VAC MAINTENANCE EQUIPMENT.
- 3. FACILITY ACCESS RISERS WITH SOLID, LOCKABLE (AND LOCKED) LIDS SHALL BE 24" (MIN.) DIA., AND MUST BE PROVIDED AT ALL FACILITY CORNERS EXCEPT AT INLETS & OUTLETS: OR ACCESS RISERS SHALL BE PER MFG RECOMMENDATIONS FOR EFFECTIVE MAINTENANCE, IF LAYOUT DETAILS ARE PROVIDED BY MFG. THE 24" DIAMETER FLOW CONTROL STRUCTURE MUST INCLUDE THE
- LARGEST ALLOWED SOLID, LOCKABLE (AND LOCKED) LID TO PROVIDE MAX. ACCESS FOR CLEANING CONTROL ORIFICE. 4. A 6" DIA. CLEANOUT PORTAL WITH SOLID. LOCKABLE (AND LOCKED) CAP MUST BE INSTALLED AT EACH INLET. AND ALSO AT

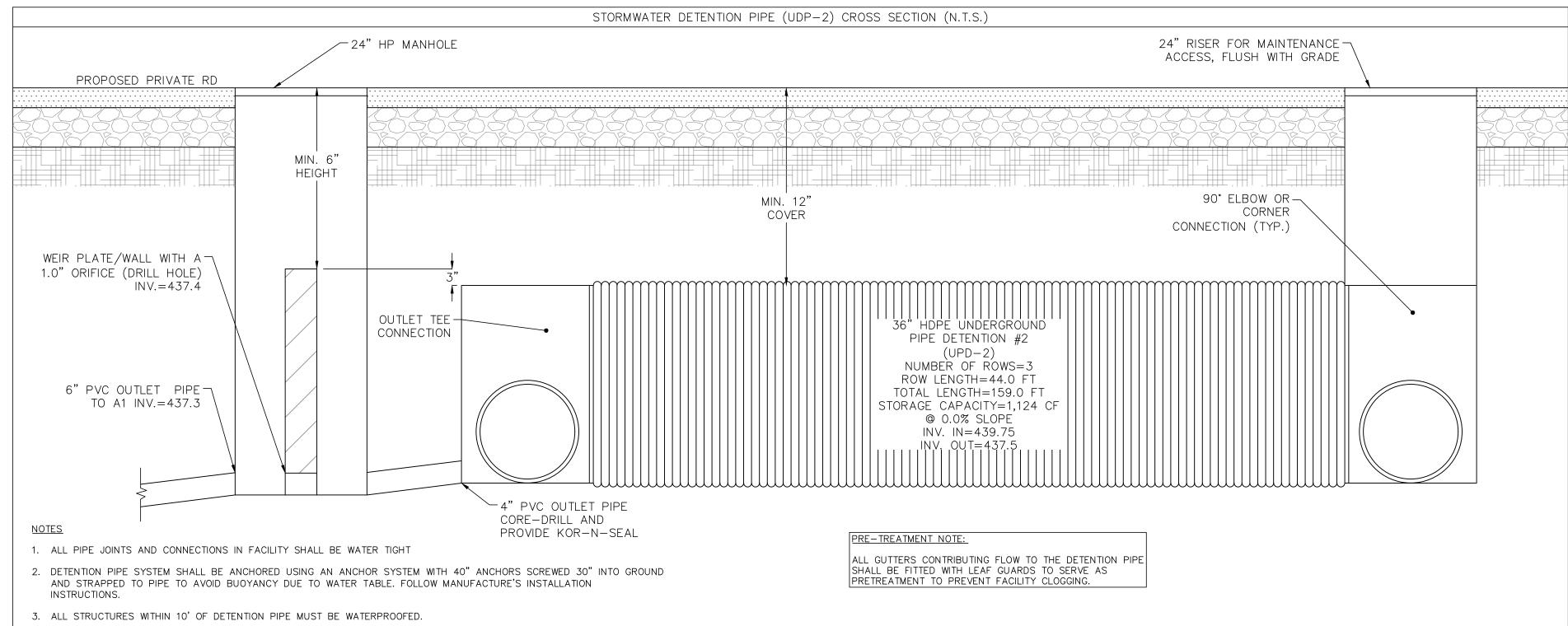
PIPE/DISCHARGE POINT, DRY WELLS, AND POP-UP EMITTERS FOR BLOCKAGES OR CLOGS, AND FOR EROSION ISSUES.

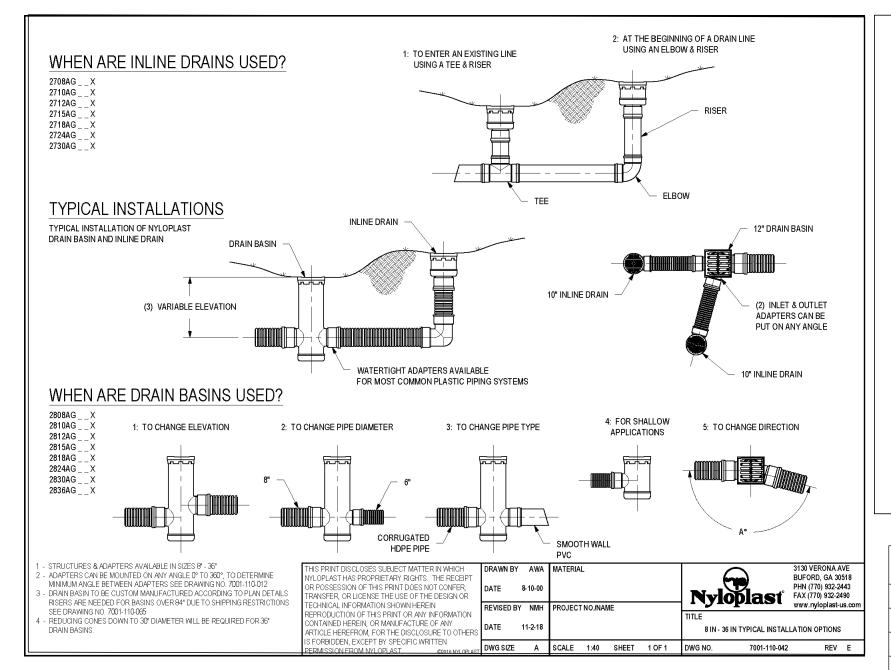
EACH PIPE ROW NOT CONNECTED TO A CORNER THAT HAS AN ACCESS RISER. 5. FOLLOWING SIGNIFICANT STORMS, AND AT LEAST TWICE ANNUALLY (SPRING AND FALL), INSPECT INLETS, GUTTERS, DOWNSPOUTS, INLET PIPES & DEBRIS TRAPS, OVERFLOW & CHIMNEY PIPES, THE FLOW CONTROL STRUCTURE & OUTLET

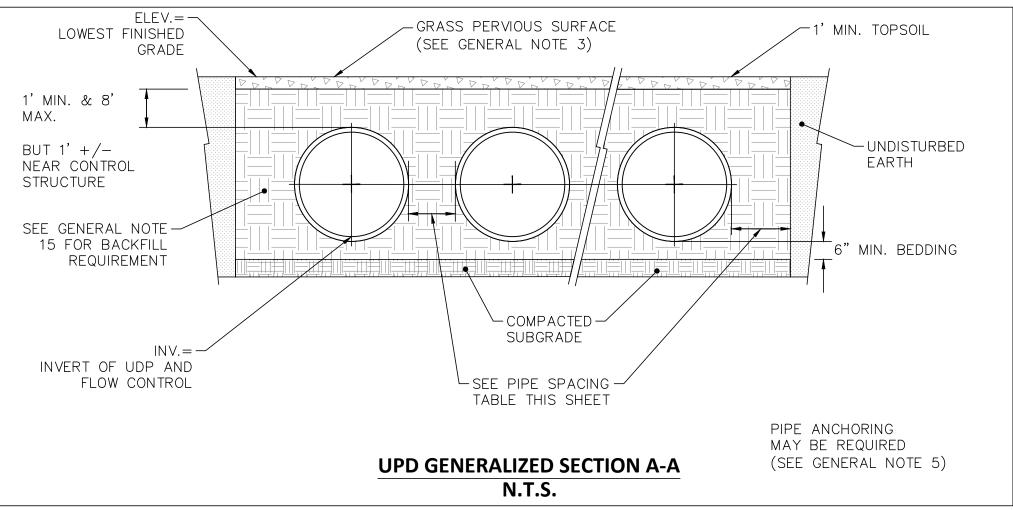
CONSTRUCTION NOTE FOR UPD FACILITIES:

ALL UPD SYSTEM CONSTRUCTION MUST CONFORM, WHERE APPLICABLE, TO THE CURRENT VDOT ROAD AND BRIDGE SPECIFICATIONS, PFM, AND MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS, WITH THE MOST STRINGENT CRITERIA **GOVERNING FOR ANY PARTICULAR REQUIREMENT.**



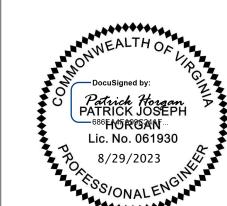






APPROVAL	DATE	REVISIONS
	03/04/2022	INITIAL SUBMISSION
	08/25/2022	SECOND SUBMISSION
	12/16/2022	THIRD SUBMISSION
	08/29/2022	FINAL SUBMISSION

PIPE SPACING TABLE					
PIPE DIA. PIPE-TO-PIPE PIPE-TO-WALL					
24"	14"	12"			
30"	18"	18"			
36"	18"				
OR PER MFG IF LAYOUT PER MFG					



11004 & 11006 PARK RD

FAIRFAX, VA 22306

TAX MAP #57-1-40-002

SQUARE 02, LOT 002

EMRE ZIREKOGLU

32713 LATROBE ST

571.594.6363

CONTRACTOR

CIVIL ENGINEER

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703.619.6555

PATRICK HORGAN

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WASHINGTON, DC 20007

DOMINION SURVEYS, INC.

ALEXANDRIA, VA 22309

8808-H PEAR TREE VILLAGE COURT

TBD

CHANTILLY, VA 20152

CAGLAYAN INVESTMENT GROUP

CLIENT

DETENTION PIPE DETAILS

DRAWING NO.

NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023 HUSKA CONSULTING, LLC

DRAWING TITLE

DRAINAGE PLAN LEGEND ---- DRAINAGE DIVIDE

> OVERLAND SHEET FLOW 100-YR OVERLAND RELIEF FLOW BOUNDARY

City of Fairfax Web N IMP. AREA=6.629 SF D.A. A-1A TO F-1 TOTAL AREA=7,492 SF IMP. AREA=4,886 SF M.T. AREA=2,606 SF TOTAL AREA=1,076 SF D.A. B-1A TO F-OTAL AREA=17,399 S IMP. AREA=5,131 M.T. AREA=6,941 D.A. B-1B TO B-1 TOTAL AREA=5,327 SIMP. AREA=5,327 SF D.A. 1-A TO EXISTING STORM MH #7 TOTAL AREA=83,452 SF - D.A. A-2 TO F-2 COMMERCIAL & BUSINESS=83,452 SF TOTAL AREA=3,517 S IMP. AREA=2,904 SF M.T. AREA=613 SF D.A. 2 SHEET FLOW TO TOTAL AREA=493 SF IMP. AREA=8 SF M.T. AREA=485 SF — D.A. 1 TO SITE OUTFALL #1 18" RCP STORM MAIN TOTAL AREA=147,680 SF IMP. AREA=38,101 SF M.T. AREA=26,127 SF C&B AREA=83,452 SF −D.A. A−3C TO 12 -D.A. A-5 TO STORM MH #5_ _TOTAL AREA=4,265 SF __ TOTAL AREA=7,367 SF IMP. AREA=3,987 SF IMP. AREA=3.521 SF M.T. AREA=278 SF M.T. AREA=3,846 SF D.A. B-3 TO STORM MH #6 TOTAL AREA=9,906 SF IMP. AREA=4,975 SF M.T. AREA=4,931 SF

 \square D.A. B-2 TO STORM MH #6 TOTAL AREA=6.181 SF M.T. AREA=6,181 SF

ADEQUATE OUTFALL ANALYSIS

THE SUBJECT PROPERTY CONSIST OF TWO DRAINAGE AREAS, 1 & 2, THAT IS BROKEN DOWN INTO THREE DRAINAGE AREAS (1-A, A, & B) FOR THE PURPOSES OF HYDRAULIC ANALYSIS OF THE EXISTING AND PROPOSED STORM DRAIN SYSTEM. THE THREE DRAINAGE AREAS ARE FURTHER BROKEN DOWN INTO DRAINAGE AREAS FOR EACH INDIVIDUAL STORM SEWER STRUCTURE ON THE ABOVE PLAN. THE SITE IS LOCATED IN THE ACCOTINK WATERSHED WITH A TOTAL DRAINAGE AREA 51.0 SQ. MI. (32,640 ACRES).

DRAINAGE AREA 1-A IS 83,452 SF (1.9158 ACRES) AND CONSIST ENTIRELY OF THE COMMERCIALLY ZONED LOT 0140 WEST OF THE SUBJECT PROPERTY. THE RUNOFF IN THE DRAINAGE AREA IS COLLECTED VIA AN ON SITE DRAINAGE SYSTEM AND CONNECTED TO AN EXISTING 18" RCP STORM MAIN THAT RUNS ALONG THE SOUTHERN BORDER OF THE SUBJECT PROPERTY. THE FLOW CONTINUES IN THE CITY STORM DRAIN SYSTEM EAST TO THE SITE OUTFALL, AN EXISTING 18" RCP STORM MAIN IN THE PARK RD R.O.W.

DRAINAGE AREA A IS 30,742 SF (0.7057 ACRES) AND CONSIST OF THE EASTERN PORTION OF THE SUBJECT PROPERTY. THE DRAINAGE AREA IS BROKEN DOWN INTO FIVE SUB-DRAINAGE AREAS FOR THE PURPOSES OF ÁNALYSIS. THE RUNOFF SHALL BE COLLECTED VIA A PROPOSED ON SITE DRAINAGE SYSTEM AND CONNECTED TO THE SITE OUTFALL VIA A NEW CORE DRILL CONNECTION TO AN EXISTING CURB INLET NEAR THE SOUTHEASTERN CORNER OF THE SUBJECT PROPERTY.

DRAINAGE AREA B IS 33,486 SF (0.7687 ACRES) AND CONSIST OF THE WESTERN PORTION OF THE SUBJECT PROPERTY. THE DRAINAGE AREA IS BROKEN DOWN INTO THREE SUB-DRAINAGE AREAS FOR THE PURPOSES OF ANALYSIS. THE RUNOFF SHALL BE COLLECTED VIA A PROPOSED ON SITE DRAINAGE SYSTEM AND CONNECTED TO THE SITE OUTFALL VIA A NEW CORE DRILL CONNECTION TO AN EXISTING MANOLE NEAR THE HOLLY DR AND PARK RD INTERSECTION.

THE LIMIT OF ANALYSIS FOR CHANNEL PROTECTION AND FLOOD PROTECTION IS THE SITE OUTFALL BECAUSE THE SITE'S CONTRIBUTING DRAINAGE AREA IS LESS THAN 1.0% OF THE TOTAL WATERSHED AREA 9VAC25-870-66.B.4.a). NATURAL DRAINAGE DIVIDES ARE HONORED IN THE POST-DEVELOPMENT CONDITION FOR BOTH CONCENTRATED AND NON-CONCENTRATED FLOW.

(1.9158+0.7057+0.7687)/32,640=0.010%

THE POST DEVELOPMENT PEAK FLOW FOR THE 2-YR STORM EVENT IS 5.86 CFS. THE EXISTING 18" RCP STORM MAIN IN THE PARK RD R.O.W HAS ADEQUATE CAPACITY TO CONVEY THE 2-YR PEAK FLOW, SEE CALCULATIONS SHEET 016 (FAIRFAX COUNTY CODE SECTION 124-4-4.B.1.a).

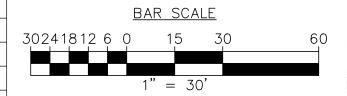
THE POST DEVELOPMENT PEAK FLOW RATE FROM THE 10-YR STORM EVENT IS 10.19 CFS, 0.57 CFS LESS THAN THE PRE-DEVELOPMENT CONDITION. THE EXISTING STORMWATER CONVEYANCE SYSTEM CURRENTLY EXPERIENCES LOCALIZED FLOODING DOWNSTREAM OF THE SITE OUTFALL. THE EXISTING 18" RCP STORM MAIN IN THE PARK RD R.O.W HAS ADEQUATE CAPACITY TO CONVEY THE 10-YR PEAK FLOW, SEE CALCULATIONS SHEET 016 (9VAC25-870-66.C.1).

ON-SITE DETENTION IS REQUIRED TO REDUCE THE POST-DEVELOPMENT FLOW RATE FOR THE 2-YR AND 10-YR STORM EVENTS BELOW THAT OF THE PRE-DEVELOPMENT CONDITIONS. TWO UNDERGROUND DETENTION PIPE SYSTEMS (UDP-1 & UDP-2) CONSISTING OF A 36" HDPE PIPE WITH A TOTAL EQUIVALENT LENGTH OF 451 LF ARE PROPOSED. THE UNDERGROUND DETENTION PIPE SYSTEMS PROVIDE 3,188 CF OF STORAGE AND WILL RELEASE RUNOFF VIA A 1.0" DIAMETER ORIFICE SUCH THAT THE POST-DEVELOPMENT FLOW RATE IS LESS THAN THE PRE-DEVELOPMENT FLOW RATE, SEE CALCULATIONS SHEET 017.

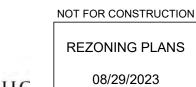
DRAINAGE AREA 2 IS 493 SF (0.0113 ACRES). THE DRAINAGE AREA SHEET FLOWS WEST TO EAST AND LEAVES THE SUBJECT PROPERTY AS SHEET FLOW. THE TOTAL IMPERVIOUS AREA IS REDUCED IN THE POST DEVELOPMENT CONDITION. THEREFORE, THE PEAK FLOW RATE IN THE POST DEVELOPMENT CONDITION IS LESS THAN THAT OF THE PRE DEVELOPMENT CONDITION, SEE CALCULATIONS SHEET 016 (9VAC25-870-66.D). NATURAL DRAINAGE DIVIDES ARE HONORED IN THE POST-DEVELOPMENT CONDITION FOR BOTH CONCENTRATED AND NON-CONCENTRATED FLOW.

IT IS THE OPINION OF THE ENGINEER THAT REQUIREMENTS FOR THE ADEQUACY OF THE DOWNSTREAM DRAINAGE SYSTEM HAVE BEEN MET; AND IT IS THE ENGINEER'S PROFESSIONAL OPINION THAT NO ADJACENT OR DOWNSTREAM PROPERTIES WILL SUFFER ADVERSE IMPACTS DUE TO THIS PROPOSED DEVELOPMENT ACTIVITY.

APPROVAL	DATE	REVISIONS	
	03/04/2022	INITIAL SUBMISSION	30
	08/25/2022	SECOND SUBMISSION	
	12/16/2022	THIRD SUBMISSION	
	08/29/2022	FINAL SUBMISSION	







DRAINAGE PLAN

PATRICK TOSEPH

Lic. No. 061930

11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

CLIENT

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ALEXANDRIA, VA 22309

8808-H PEAR TREE VILLAGE COURT

1050 30TH STREET, NW WASHINGTON, DC 20007

CAGLAYAN INVESTMENT GROUP

DRAWING NO.

DRAWING TITLE

TR-55 Calculations - Water Quantity Compliance 1-year 24-hr rainfall depth, P1 = 2.60 IN	D.A. 2 Sheet Flow to Lot 10 Water Quantity Compliance Methodology Total Area 493 SF Rainfall depths per the Virginia Stormwater Management Handbook Vol. II	Underground Detention Pipe, UDP-1 10-yr, 2hr Storm Runoff Volume 2.56 I	Underground Detention Pipe, UDP-2 Water Detention Sizing Methodology CN Values (from Table 2-2a USDA TR-55 & VRRM Spreadsheet)
2-year 24-hr rainfall depth, P2 = 3.14 IN 10-year 24-hr rainfall depth, P10 = 4.83 IN	Pre Dev. Managed Turf, A _{MT} = 351 SF Initial abstraction, Ia = 0.2 x S		DA A to Detention Pipe Cover Type CN
D.A. 1 to Site Outfall #1	Thus, $Q = ((P - 0.2 \times S)^2) / (P + 0.8 \times S)$ Pre Dev. Impervious Cover, $A_{IMP} = 142 \text{ SF}$ Post Dev. Impervious Cover, $A_{IMP} = 8 \text{ SF}$ Potential max. retention, $S = 1000/\text{CN} - 10$	DA A to Detention Pipe Total Area 11,291 S	Total Area 8,568 SF Impervious 98.0 SF Impervious Area 741 SF Managed Turf, HSG C 74.0
Total Area 147,581 SF	Pre Dev. Curve Number, CN _{pre} = 80.9 Unit peak discharge, qu = 575	Impervious Area 10,616 S Managed Turf Area 675 S	
Pre Dev. M.T. , A _{MT} = 45,833 SF Post Dev. M.T. , A _{MT} = 21,965 SF	Post Dev. Curve Number, CN _{post} = 74.4 Drainage area (mi^2), Am = (Aexcom + Aeximp) / (660) Pre Dev. Potential Max. Abstraction, Spre = 2.36 IN Peak discharge, q = qu x Am x Q x Fp	Curve Number, CN = 96.6	M.T. Area Overflow from F-1 2,606 SF
Pre Dev. Imp. Cover, A _{IMP} = 18,296 SF Post Dev. Imp. Cover, A _{IMP} = 22,305 SF	Post Dev. Potential Max. Abstraction, Spost = 3.44 IN Pre Dev. 1-yr Adj. Runoff, Q1pre = 1.01 IN CN Values (from Table 2-2a USDA TR-55 & VRRM Spreadsheet)	Potential Max. Abstraction, S = 0.36 I 10-yr Adj. Runoff, Q10 = 2.18 I	
Commerical & Business Area, A _{C&B} 83,452 SF SWM Detention Imp. Area, A _{SWMIMP} 16,243 SF	Post Dev. 1-yr Adj. Runoff, Q1post = 0.68 IN Cover Type CN Pre Dev. 2-yr Adj. Runoff, Q2pre = 1.42 IN Impossions	10-yr, 2-hr RV 2,049 (
SWM Detention M.T. Area, A _{SWMM1} 3,616 SF Pre Dev. Curve Number, CN _{pre} = 88.3	Post Dev. 2-yr Adj. Runoff, Q2pre = 1.42 IN Impervious 98.0 Post Dev. 2-yr Adj. Runoff, Q2post = 1.02 IN Managed Turf, HSG C 74.0 Pre Dev. 10-yr Adj. Runoff, Q10pre = 2.83 IN	Calculate Storage Volume Required	10-yr, 2-hr RV 1,118 CF acceleration due to gravity (g) = $32.2 \text{ ft}^2/\text{sec}$ Average Hydraulic Head, $H_{avg} = d/2$
Post Dev. Curve Number, CN _{post} = 91.3	Post Dev. 10-yr Adj. Runoff, Q10post = 2.26 IN Woods, fair condition, HSG C 70.0	Pipe Diameter 36.00 I Pipe Row Length 64.0 F	
Pre Dev. Potential Max. Abstraction, Spre = 1.33 IN Post Dev. Potential Max. Abstraction, Spost = 0.96 IN	Post Dev. 1-yr Peak Runoff Flowrate, q1pre = 0.01 CFS Post Dev. 1-yr Peak Runoff Flowrate, q1post = 0.01 CFS	Number of Rows 4	Pipe Row Length 44.0 FT
Pre Dev. 1-yr Adj. Runoff, Q1pre = 1.49 IN Post Dev. 1-yr Adj. Runoff, Q1post = 1.72 IN	Pre Dev. 2-yr Peak Runoff Flowrate, q2pre = 0.01 CFS Post Dev. 2-yr Peak Runoff Flowrate, q2post = 0.01 CFS	Bend and Tee Equivalent Length 36.0 L Total Equivalent Length 292.0 L	
Pre Dev. 2-yr Adj. Runoff, Q2pre = 1.97 IN Post Dev. 2-yr Adj. Runoff, Q2post = 2.23 IN	Pre Dev. 10-yr Peak Runoff Flowrate, q10pre = 0.03 CFS Post Dev. 10-yr Peak Runoff Flowrate, q10post = 0.02 CFS	Pipe Invert 292.00 Orifice Invert 291.90 F	
Pre Dev. 10-yr Adj. Runoff, Q10pre = 3.54 IN Post Dev. 10-yr Adj. Runoff, Q10post = 3.84 IN	Δ 1-yr Peak Runoff, $Q_{1\Delta}$ 0.00 CFS	10-yr, 2-hr Runoff 2049 (CF Orifice Invert 291.90 FT
UDP-1 & UDP-2 Orifice Peak Flowrate, Qu 0.06 CFS	Δ 2-yr Peak Runoff, $Q_{2\Delta}$ 0.00 CFS	Storage Volume Provided, V _{det} 2064 (CF 10-yr, 2-hr Runoff 1118 CF Storage Volume Provided, V _{det} 1124 CF
Pre Dev. 1-yr Peak Runoff Flowrate, q1pre = 3.94 CFS Post Dev. 1-yr Peak Runoff Flowrate, q1post = 3.95 CFS	Δ 10-yr Peak Runoff, $Q_{10\Delta}$ -0.01 CFS	Calculate Orifice Flowrate Orifice Diameter 1.000	IN Calculate Orifice Flowrate
Pre Dev. 2-yr Peak Runoff Flowrate, q2pre = 5.99 CFS Post Dev. 2-yr Peak Runoff Flowrate, q2post = 5.86 CFS		Orifice Area 0.005 S	SF Orifice Diameter 1.000 IN
Pre Dev. 10-yr Peak Runoff Flowrate, q10pre = 10.76 CFS Post Dev. 10-yr Peak Runoff Flowrate, q10post = 10.19 CFS		Orifice Peak Flowrate, Q _U 0.032 0	CFS Orifice Area 0.005 SF Orifice Peak Flowrate, Qu 0.032 CFS
Δ 1-yr Peak Runoff, Q _{1Δ} 0.01 CFS			
Δ 2-yr Peak Runoff, Q _{2Δ} - 0.12 CFS Δ 10-yr Peak Runoff, Q _{10Δ} - 0.57 CFS			
Park Rd Townhomes 8/29/2023			ark Rd Townhomes 8/29/2023
Sewer Conveyance - Hydrology and Hydraulic Calculations Hydraulics	Hydrology	Circular Channel Ratios ⁸ Flow Type	ewer Conveyance - Hydraulic Gradeline Calculations From To WSE _{down} D A _{full} Q L R _{full} n S _{fr} H _{fr} V _{out} H _o V _{in} H _i Angle K H _{bend} Plunging IS-1 ⁸ H _{str} H _{total} WSE _{up} Top El ¹⁰ Top - WSE _{up} Remarks
Pipe Inverts Upstream Downstream Downstream Diam. Mat'l n Slope I ₂	Flow Parameters Drainage Area Time of Concentration Additional Flow Velocity V Q R A Imp. M.T. B&C CN S Runoff Peak Q ΣQ _{DA} T _C US _{dr} T _C DS _{sys} T _C DS	Flowrate	SD 6 SD 1 444.93 15 1.23 0.11 32.12 0.31 0.012 0.00% 0.00 2.81 0.04 2.81 0.00 0.00 0.00 YES NO 0.05 0.05 446.56 450.00 3.44 ADEQUATE
ID Invert ID Invert (ft) (in) (ft/ft) (in/ft) F1 440.25 UDP-2 439.75 11.48 8 PVC 0.011 4.36% 3.	r) (fps) (cfs) (ft) (sf) (SF) (SF) (SF) (SF) (in) (in) (cfs) (cfs) (min) (sec) (min) (min) (cfs) (cfs) (fps) (14 5.21 0.28 0.08 0.05 4836 2606 0 89.65 1.15 2.08 0.28 0.28 5.0 2 5.0 5.0 0.00 0.00 0.61 8.54	(cfs) (sf) (ft) — 0.09 2.98 0.14 0.35 0.49 0.17 CHANNEL —	SD 4 SD 5 429.93 18 1.77 6.05 167.99 0.38 0.013 0.33% 0.56 10.13 0.40 10.22 0.00 90 0.70 0.63 NO NO 1.03 1.58 435.96 439.44 3.48 ADEQUATE
UDP-2 437.30 A1 437.05 10.50 8 PVC 0.011 2.38% 3. A1 436.95 A2 436.65 11.92 10 PVC 0.011 2.52% 3.	14 4.37 0.32 0.10 0.07 0 0 0 0.00 0.00 0.00 0.00 0.32 6.0 2 6.1 6.1 0.00 0.00 0.69 6.31 14 5.95 0.88 0.15 0.15 0 0 0.00 0.00 0.00 0.00 0.08 5.0 2 6.7 6.7 0.00 0.00 0.79 7.53	0.15 2.20 0.19 0.35 0.58 0.17 CHANNEL — 0.21 4.11 0.27 0.55 0.70 0.21 CHANNEL —	SD 5 SD 6 436.98 18 1.77 4.78 161.62 0.38 0.013 0.21% 0.34 10.22 0.41 8.30 0.00 45 0.47 0.06 NO NO 0.46 0.80 443.53 447.61 4.08 ADEQUATE SD 6 SD 7 444.45 18 1.77 4.35 33.80 0.38 0.013 0.17% 0.06 8.30 0.27 4.51 0.00 45 0.47 0.15 YES NO 0.54 0.60 444.90 452.59 7.69 ADEQUATE SD 7 SD
A2 436.55 SD 5 435.52 17.91 15 HDPE 0.011 5.75% 3.	14 7.61 1.03 0.11 0.11 0 0 0.00 0.00 0.00 0.00 1.03 5.0 2 6.7 6.7 0.00 0.00 0.51 14.92	0.06 18.31 0.09 1.23 0.36 0.31 CHANNEL	SD 7 B2 445.55 15 1.23 0.63 17.67 0.31 0.011 0.01% 0.00 4.51 0.08 5.50 0.00 45 0.47 0.22 NO NO 0.30 0.30 445.55 449.50 3.95 ADEQUATE B2 F3 445.85 10 0.55 0.63 2.50 0.21 0.011 0.06% 0.00 5.50 0.12 4.92 0.00 45 0.47 0.17 YES YES 0.19 0.19 445.85 449.50 3.65 ADEQUATE B3 447.63 8 0.35 0.38 1.33 0.17 0.011 0.04% 0.00 4.92 0.09 4.93 0.09 90 0.70 0.36 NO YES 0.18 0.18 447.63 455.30 7.67 ADEQUATE
HB1 445.40 I1 442.50 64.83 8 PVC 0.011 4.47% 3. I1 442.40 UDP-1 442.30 3.00 8 PVC 0.011 3.33% 3.	14 4.41 0.15 0.06 0.03 2968 0 0 98.00 0.20 2.91 0.15 0.15 4.0 15 4.2 4.0 0.00 0.00 0.51 8.65 14 5.90 0.56 0.12 0.09 3661 396 0 95.66 0.45 2.65 0.19 0.56 4.0 1 6.3 6.3 0.00 0.00 0.79 7.47	0.05 3.02 0.09 0.35 0.36 0.17 CHANNEL -	F3 HB3 447.63 8 0.35 0.28 1.33 0.17 0.011 0.04% 0.00 4.92 0.09 4.93 0.00 90 0.70 0.26 NO YES 0.18 0.18 447.63 455.30 7.67 ADEQUATE HB3 B1 447.81 8 0.35 0.28 127.92 0.17 0.011 0.04% 0.05 4.93 0.09 4.93 0.00 0 0.00 YES YES 0.06 0.11 452.43 455.30 2.87 ADEQUATE
UDP-1 440.80 F4 440.70 9.80 10 PVC 0.011 1.02% 3. F4 438.20 A1 437.05 83.10 10 PVC 0.011 1.38% 3.	14 3.79 0.56 0.15 0.15 0 0 0 0.00 0.00 0.00 0.00 0.56 5.0 3 6.3 6.3 0.00 0.00 0.79 4.80 14 4.20 0.56 0.14 0.13 0 0 0.00 0.00 0.00 0.00 0.56 6.0 20 6.7 6.3 0.00 0.00 0.75 5.58	0.21 2.62 0.27 0.55 0.70 0.21 CHANNEL 0.18 3.05 0.24 0.55 0.65 0.21 CHANNEL	A2 F2 437.83 8 0.35 0.16 7.70 0.17 0.011 0.01% 0.00 5.11 0.10 5.11 0.14 0 0.00 NO YES 0.12 0.12 438.09 443.00 4.91 ADEQUATE
12 443.70 11 442.50 61.24 6 PVC 0.011 1.96% 3.	14 3.78 0.21 0.09 0.05 3987 278 0 96.44 0.37 2.74 0.21 0.21 6.0 16 6.3 6.0 0.00 0.00 0.80 4.73	0.23 0.93 0.28 0.20 0.71 0.13 CHANNEL	UDP-2 13 439.97 6 0.20 0.04 17.12 0.13 0.011 0.00% 0.00 3.50 0.05 3.50 0.07 0 0.00 0.00 NO YES 0.06 0.06 440.95 443.90 2.95 ADEQUATE
13 440.90 UDP-2 439.75 17.12 6 PVC 0.011 6.72% 3.	14 3.50 0.04 0.03 0.01 741 335 0 90.53 1.05 2.16 0.04 0.04 6.0 5 6.1 6.0 0.00 0.00 0.40 8.75	0.02 1.72 0.05 0.20 0.25 0.13 CHANNEL	11 12 443.23 6 0.20 0.21 61.24 0.13 0.011 0.10% 0.06 3.78 0.06 3.78 0.08 0 0.00 0.00 YES YES 0.09 0.15 443.86 445.65 1.79 ADEQUATE
F2 438.00 A2 437.50 7.70 8 PVC 0.011 6.49% 3.	14 5.11 0.16 0.06 0.03 2904 613 0 93.82 0.66 2.47 0.16 0.16 6.0 2 6.0 6.0 0.00 0.00 0.49 10.43	- 0.041 3.641 0.081 0.351 0.331 0.17[CHANNEL I	A1 F4 437.58 10 0.55 0.56 83.10 0.21 0.011 0.05% 0.04 4.20 0.07 3.79 0.08 0 0.00 0.00 YES NO 0.19 0.23 438.44 445.20 6.76 ADEQUATE F4 UDP-1 441.26 10 0.55 0.56 9.80 0.21 0.011 0.05% 0.00 3.79 0.06 5.90 0.19 90 0.70 0.38 YES NO 0.81 0.82 441.26 445.65 4.39 ADEQUATE
B1 452.30 HB3 447.30 127.92 8 PVC 0.011 3.91% 3.		0.10 2.82 0.14 0.35 0.49 0.17 CHANNEL	UDP-1 I1 442.75 8 0.35 0.56 3.00 0.17 0.011 0.15% 0.00 5.90 0.14 3.78 0.08 90 0.70 0.16 YES NO 0.48 0.48 442.75 448.60 5.85 ADEQUATE I1 HB1 443.23 8 0.35 0.15 64.83 0.17 0.011 0.01% 0.01 4.41 0.08 4.41 0.11 0 0.00 YES NO 0.24 0.24 445.50 452.00 6.50 ADEQUATE
HB3 447.30 F3 447.25 1.33 8 PVC 0.011 3.76% 3. F3 445.40 B2 445.33 2.50 10 PVC 0.011 2.80% 3.	14 4.92 0.28 0.08 0.06 0 0 0 0.00 0.00 0.00 0.00 0.00 0.28 5.0 0 5.4 5.4 0.00 0.00 0.62 7.93 14 5.50 0.63 0.12 0.10 5131 6941 0 84.20 1.88 1.65 0.36 0.63 5.0 0 5.4 5.4 0.00 0.00 0.69 7.94	0.10 2.77 0.16 0.35 0.50 0.17 CHANNEL 0.15 4.33 0.19 0.55 0.58 0.21 CHANNEL	SD 5 A2 436.98 15 1.23 1.03 17.91 0.31 0.011 0.02% 0.00 7.61 0.22 5.95 0.19 45 0.47 0.26 NO YES 0.34 0.34 436.99 442.00 5.01 ADEQUATE
B2 445.23 SD 7 444.90 17.67 15 HDPE 0.011 1.87% 3. SD 7 444.40 SD 6 443.42 33.80 18 RCP 0.013 2.90% 3.	14 4.51 0.63 0.12 0.12 0 0 0 0.00 0.00 0.00 0.00 0.63 5.0 4 5.5 5.4 0.00 0.00 0.53 8.50 14 8.30 4.35 0.27 0.52 0 0 83452 94.00 0.64 2.49 3.72 4.35 6.0 4 6.1 6.0 0.00 0.00 0.82 10.12	0.24 17.89 0.29 1.77 0.73 0.38 CHANNEL	A2 A1 437.32 10 0.55 0.88 11.92 0.21 0.011 0.12% 0.01 5.95 0.14 4.20 0.10 90 0.70 0.19 NO YES 0.21 0.23 437.34 443.25 5.91 ADEQUATE A1 UDP-2 437.55 8 0.35 0.32 10.50 0.17 0.011 0.05% 0.01 4.37 0.07 5.21 0.15 90 0.70 0.13 YES YES 0.23 0.24 437.56 443.40 5.84 ADEQUATE
SD 6 443.08 SD 5 435.23 161.62 18 RCP 0.013 4.86% 3. SD 5 435.42 SD 4 428.73 167.99 18 RCP 0.013 3.98% 3.	14 10.22 4.78 0.26 0.46 4975 4931 0 86.05 1.62 1.79 0.32 4.78 5.0 16 7.5 7.2 0.00 0.00 0.78 13.10 14 10.13 6.05 0.29 0.55 3521 3846 0 85.47 1.70 1.74 0.23 6.05 5.0 17 7.7 7.5 0.00 0.00 0.85 11.86	0.21 23.15 0.26 1.77 0.69 0.38 CHANNEL 0.29 20.96 0.31 1.77 0.78 0.38 CHANNEL	UDP-2 F1 440.13 8 0.35 0.28 11.48 0.17 0.011 0.04% 0.00 5.21 0.11 5.21 0.15 0 0.00 YES NO 0.33 0.33 440.38 444.00 3.62 ADEQUATE
SD 1 446.50 SD 6 444.55 32.12 15 RCP 0.012 6.07% 3.			ydraulic Gradeline Calculations Methodology (a friction slope = $0.453Q^2n^2/A^2R^{4/3}$ H _{fr} friction loss = L*S _{fr} V ₀ , velocity out H _o , structure outlet loss= $0.25(0.3 \text{ if top pipe})*V_0^2/2g$ g, gravity=32.2 V ₀ , velocity in H ₀ structure inlet loss= $0.35*V_t^2/2g$
Hydrology and Hydraulic Calculations Methodology Note all sewer conveyance calculations shown here are for the 2 year storm ever			$_{tr}$, friction slope = 0.453Q*n*/A*R** $_{tr}$ $_{tr}$ $_{tr}$ friction loss = L*S _{fr} $_{tr}$ $_{$
n, Manning's roughness coefficient I, rainfall intensity V, velocity TR-55 CN values are 98.00 for impervious areas and are	Q, flowrate R, hydraulic radius A, flow area Imp., impervious Com., compacted 74 for managed turf, HSG C 94 for business & commercial, HSG C Design Storm is 100-yr, 24-hr: 3.14 in	2	Water surface elevation in bottom structure of pipe run. For the first (most downstream) run of HGL analysis per VDOT standards use the greater of the tailwater elevation (if known) or 80% full depth. Expansion loss for upper structure of pipe run. If the upstream structure is a wye, the expansion losses are taken as zero.
Time of concentration of flow to upstream structure of run by direct, ov Flow time in pipe from upstream structure in run to downstream structure.	erland flow if an inlet. Else take as 5 minutes. If not 5 minutes, provide separate Tc calculation justification Ire in run	3 4	Velocity of water entering pipe run. If pipe run is at the top of the system, set this to the velocity out of the pipe run. Otherwise, use upstream pipe's velocity. If multiple pipes feed in, use the inlet velocity with the greatest momentum (QxV) Contraction loss for upper structure of pipe run. If the upstream structure is a wye, the expansion losses are taken as zero.
Time of concentration of flow to downstream structure via storm sewer Controlling time of concentration of flow to upstream structure	system	5 6	Angle of deflection in the horizontal plane between the upper structure of the pipe run in question and the next upstream pipe. If multiple pipes in, this is the angle of the pipe which creates the most headloss. If no pipes in, set to zero. Bend loss for upper structure of pipe run. By default this formula uses the listed inlet velocity. However, if multiple pipes feed into this run bend losses must be calculated for all inflowing pipes and the maximum chosen.
	Il propagate downstream in the system. This flowrate is not affected by time of concentration.	7	If 20%+ of the total flow is coming from a curb/grate inlet, or if there's an inlet pipe with an invert greater than the crown of the outlet pipe, plunging losses apply.
8 Circular channel ratios are tabulated in the reference tab and have nest	ed if statements that hinge on the flow type for the pipe run in question	9	The engineer may specify IS-1 inlet shaping for a structure which allows the inlet head losses to be reduced by 50%. Structure loss (sum of expansion, contraction, and bend loses) for the upstream structure of the pipe run.
For BMP overflows manually enter the adjust curve number from the VI Park Rd Townhomes 8/29/2023	RM worksheet	Pa	Top elevation of upper structure of pipe run. ark Rd Townhomes 8/29/2023
Sewer Conveyance - Hydrology and Hydraulic Calculations Hydraulics	Hydrology	Se	ewer Conveyance - Hydraulic Gradeline Calculations From To WSE _{down} D A _{full} Q L R _{full} n S _{fr} H _{fr} V _{out} H _o ² V _{in} H _i Angle K H _{bend} Plunging IS-1 ⁸ H _{str} H _{total} WSE _{up} Top El ¹⁰ Top - WSE _{up} Remarks
Pipe Inverts Pipe Parameters Upstream Downstream Length Diam. Mat'l n Slope Inc.	Flow Parameters Drainage Area Time of Concentration Additional Flow Velocity	Flowrate Flow Area Hydraulic Radius	SD 6 SD 1 445.10 15 1.23 0.25 32.12 0.31 0.012 0.00% 0.00 5.62 0.15 5.62 0.00 0 0.00 0.00 YES NO 0.19 0.19 446.63 450.00 3.38 ADEQUATE
ID Invert ID Invert (ft) (in) (ft/ft) (in/ft)	r) (fps) (cfs) (ft) (sf) (SF) (SF) (SF) (SF) (in) (in) (cfs) (cfs) (min) (sec) (min) (min) (cfs) (cfs) (fps)	(cfs) (sf) (ft) —	SD 4 SD 5 429.93 18 1.77 10.30 167.99 0.38 0.013 0.96% 1.62 11.79 0.54 12.05 0.00 90 0.70 0.90 NO NO 1.44 3.06 436.16 439.44 3.28 ADEQUATE
F1 440.25 UDP-2 439.75 11.48 8 PVC 0.011 4.36% 4. UDP-2 437.30 A1 437.05 10.50 8 PVC 0.011 2.38% 4. A1 436.95 A2 436.65 11.92 10 PVC 0.011 2.52% 4.	83 5.24 0.57 0.12 0.10 0 0 0 0.00 0.00 0.00 0.00 0.57 6.0 2 6.1 6.1 0.00 0.00 0.83 6.31	0.26 2.20 0.30 0.35 0.74 0.17 CHANNEL 0.36 4.11 0.40 0.55 0.88 0.21 CHANNEL	SD 5 SD 6 437.60 18 1.77 8.15 161.62 0.38 0.013 0.60% 0.97 12.05 0.56 9.51 0.00 45 0.47 0.23 NO NO 0.79 1.77 443.71 447.61 3.90 ADEQUATE SD 6 SD 7 444.61 18 1.77 7.31 33.80 0.38 0.013 0.49% 0.16 9.51 0.35 5.27 0.00 45 0.47 0.20 YES NO 0.72 0.88 445.06 452.59 7.53 ADEQUATE
A1 436.95 A2 436.65 11.92 10 PVC 0.011 2.52% 4. A2 436.55 SD 5 435.52 17.91 15 HDPE 0.011 5.75% 4.		0.09 18.31 0.14 1.23 0.49 0.31 CHANNEL	SD 7 B2 445.78 15 1.23 1.12 17.67 0.31 0.011 0.02% 0.00 5.27 0.11 6.59 0.00 45 0.47 0.31 NO NO 0.42 0.43 445.78 449.50 3.72 ADEQUATE B2 F3 446.20 10 0.55 1.12 2.50 0.21 0.011 0.19% 0.00 6.59 0.17 5.63 0.00 45 0.47 0.23 YES YES 0.26 0.26 446.21 449.50 3.29 ADEQUATE
HB1 445.40 I1 442.50 64.83 8 PVC 0.011 4.47% 4. I1 442.40 UDP-1 442.30 3.00 8 PVC 0.011 3.33% 4.		0.08 3.02 0.13 0.35 0.46 0.17 CHANNEL 0.34 2.61 0.38 0.35 0.86 0.17 CHANNEL	F3 HB3 447.67 8 0.35 0.44 1.33 0.17 0.011 0.09% 0.00 5.63 0.12 5.74 0.00 90 0.70 0.36 NO YES 0.24 0.24 447.67 455.30 7.63 ADEQUATE HB3 B1 447.91 8 0.35 0.44 127.92 0.17 0.011 0.09% 0.12 5.74 0.13 5.74 0.00 0 0.00 VES YES 0.08 0.20 452.47 455.30 2.83 ADEQUATE
UDP-1 440.80 F4 440.70 9.80 10 PVC 0.011 1.02% 4. F4 438.20 A1 437.05 83.10 10 PVC 0.011 1.38% 4.	83 4.36 0.90 0.18 0.21 0 0 0 0.00 0.00 0.00 0.00 0.90 5.0 2 6.3 6.2 0.00 0.00 0.91 4.80	0.34 2.62 0.38 0.55 0.86 0.21 CHANNEL	A2 F2 438.07 8 0.35 0.26 7.70 0.17 0.011 0.03% 0.00 5.94 0.14 5.94 0.19 0 0.00 0.00 NO YES 0.16 0.17 438.12 443.00 4.88 ADEQUATE
12 443.70 11 442.50 61.24 6 PVC 0.011 1.96% 4.			UDP-2 I3 440.00 6 0.20 0.07 17.12 0.13 0.011 0.01% 0.00 4.29 0.07 4.29 0.10 0 0.00 NO YES 0.09 0.09 440.97 443.90 2.93 ADEQUATE
13 440.90 UDP-2 439.75 17.12 6 PVC 0.011 6.72% 4.			11 12 443.46 6 0.20 0.34 61.24 0.13 0.011 0.26% 0.16 4.37 0.07 4.37 0.10 0 0.00 YES YES 0.12 0.27 443.91 445.65 1.74 ADEQUATE
F2 438.00 A2 437.50 7.70 8 PVC 0.011 6.49% 4.		0.07 3.64 0.12 0.35 0.41 0.17 CHANNEL	A1 F4 438.39 10 0.55 0.90 83.10 0.21 0.011 0.12% 0.10 4.81 0.09 4.36 0.10 0 0.00 VES NO 0.25 0.35 438.50 445.20 6.70 ADEQUATE F4 UDP-1 441.33 10 0.55 0.90 9.80 0.21 0.011 0.12% 0.01 4.36 0.07 6.80 0.25 90 0.70 0.50 VES NO 1.08 1.09 441.35 445.65 4.30 ADEQUATE
B1 452.30 HB3 447.30 127.92 8 PVC 0.011 3.91% 4.		0.16 2.82 0.20 0.35 0.60 0.17 CHANNEL	UDP-1 I1 442.81 8 0.35 0.90 3.00 0.17 0.011 0.39% 0.01 6.80 0.18 4.37 0.10 90 0.70 0.21 YES NO 0.64 0.65 442.82 448.60 5.78 ADEQUATE II HB1 443.46 8 0.35 0.24 64.83 0.17 0.011 0.03% 0.02 5.11 0.10 5.11 0.14 0 0.00 YES NO 0.32 0.33 445.53 452.00 6.47 ADEQUATE
HB3 447.30 F3 447.25 1.33 8 PVC 0.011 3.76% 4. F3 445.40 B2 445.33 2.50 10 PVC 0.011 2.80% 4.	83 5.63 0.44 0.10 0.07 0 0 0 0.00 0.00 0.00 0.00 0.44 5.0 0 5.4 5.4 0.00 0.00	0.16 2.77 0.20 0.35 0.60 0.17 CHANNEL 0.26 4.33 0.30 0.55 0.74 0.21 CHANNEL	SD 5 A2 437.60 15 1.23 1.72 17.91 0.31 0.01 0.05% 0.01 9.10 0.32 6.93 0.26 45 0.47 0.35 NO YES 0.46 0.47 437.61 442.00 4.39 ADEQUATE
B2 445.23 SD 7 444.90 17.67 15 HDPE 0.011 1.87% 4. SD 7 444.40 SD 6 443.42 33.80 18 RCP 0.013 2.90% 4.	83 9.51 7.31 0.34 0.74 0 0 83452 94.00 0.64 4.14 6.20 7.31 6.0 4 6.1 6.0 0.00 0.00 0.94 10.12	0.11 10.43 0.16 1.23 0.50 0.31 CHANNEL 0.41 17.89 0.42 1.77 0.91 0.38 CHANNEL	A2 A1 438.07 10 0.55 1.46 11.92 0.21 0.011 0.32% 0.04 6.93 0.19 4.81 0.13 90 0.70 0.25 NO YES 0.28 0.32 438.11 443.25 5.14 ADEQUATE A1 UDP-2 438.39 8 0.35 0.57 10.50 0.17 0.011 0.16% 0.02 5.24 0.11 6.18 0.21 90 0.70 0.20 YES YES 0.33 0.35 438.41 443.40 4.99 ADEQUATE
SD 6 443.08 SD 5 435.23 161.62 18 RCP 0.013 4.86% 4. SD 5 435.42 SD 4 428.73 167.99 18 RCP 0.013 3.98% 4.		0.35 23.15 0.40 1.77 0.88 0.38 CHANNEL	UDP-2 F1 440.17 8 0.35 0.49 11.48 0.17 0.011 0.12% 0.01 6.18 0.15 6.18 0.21 0 0.00 0.00 YES NO 0.46 0.48 440.43 444.00 3.57 ADEQUATE
SD 1 446.50 SD 6 444.55 32.12 15 RCP 0.012 6.07% 4.	83 5.62 0.25 0.08 0.06 0 6181 0 74.00 3.51 2.23 0.25 0.25 7.0 6 7.1 7.0 0.00 0.00 0.40 14.05		ydraulic Gradeline Calculations Methodology
Hydrology and Hydraulic Calculations Methodology Note all sewer conveyance calculations shown here are for the 10 year storm eve	38101 26127 83452 nt		$_{ir}$ friction slope = 0.453Q 2 n 2 /A 2 R $^{4/3}$ H_{fr} friction loss = L*S $_{fr}$ V_0 , velocity out H_{or} structure outlet loss=0.25(0.3 if top pipe)* V_0^2 /2g g, gravity=32.2 V_0 velocity in H_o structure inlet loss=0.35* V_i^2 /2g A_0 structure bend loss= A_0 structure bend loss= A_0
n, Manning's roughness coefficient I, rainfall intensity V, velocity 1 TR-55 CN values are 98.00 for impervious areas and are	Q, flowrate R, hydraulic radius A, flow area Imp., impervious Com., compacted	1 2	Water surface elevation in bottom structure of pipe run. For the first (most downstream) run of HGL analysis per VDOT standards use the greater of the tailwater elevation (if known) or 80% full depth. Expansion loss for upper structure of pipe run. If the upstream structure is a wye, the expansion losses are taken as zero.
	erland flow if an inlet. Else take as 5 minutes. If not 5 minutes, provide separate Tc calculation justification	3 4	Velocity of water entering pipe run. If pipe run is at the top of the system, set this to the velocity out of the pipe run. Otherwise, use upstream pipe's velocity. If multiple pipes feed in, use the inlet velocity with the greatest momentum (QxV) Contraction loss for upper structure of pipe run. If the upstream structure is a wye, the expansion losses are taken as zero.
Time of concentration of flow to downstream structure via storm sewer		5	Angle of deflection in the horizontal plane between the upper structure of the pipe run in question and the next upstream pipe. If multiple pipes in, this is the angle of the pipe which creates the most headloss. If no pipes in, set to zero.
Controlling time of concentration of flow to upstream structure At the engineer's option, an additional flowrate may be added which w	Il propagate downstream in the system. This flowrate is not affected by time of concentration.	6 7	Bend loss for upper structure of pipe run. By default this formula uses the listed inlet velocity. However, if multiple pipes feed into this run bend losses must be calculated for all inflowing pipes and the maximum chosen. If 20%+ of the total flow is coming from a curb/grate inlet, or if there's an inlet pipe with an invert greater than the crown of the outlet pipe, plunging losses apply.
 The sum of the additional flowrates added to the system upstream of the Circular channel ratios are tabulated in the reference tab and have nest 	·	8 9	The engineer may specify IS-1 inlet shaping for a structure which allows the inlet head losses to be reduced by 50%. Structure loss (sum of expansion, contraction, and bend loses) for the upstream structure of the pipe run.
For BMP overflows manually enter the adjust curve number from the VI	RRM worksheet	10	Top elevation of upper structure of pipe run.
			ADDDOVAL DATE DEVISIONS

APPROVAL

DATE

03/04/2022

08/25/2022

12/16/2022 08/29/2022 **REVISIONS**

INITIAL SUBMISSION

THIRD SUBMISSION

FINAL SUBMISSION

SECOND SUBMISSION

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HUSKA CONSULTING, LLC

NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023

DRAINAGE PLAN CALCULATIONS DRAWING TITLE

11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

CLIENT

EMRE ZIREKOGLU

32713 LATROBE ST

571.594.6363

CONTRACTOR

CIVIL ENGINEER PATRICK HORGAN

703.425.3862

703.619.6555

LAND SURVEYOR

HUSKA CONSULTING, LLC 1050 30TH STREET, NW WASHINGTON, DC 20007

DOMINION SURVEYS, INC.

ALEXANDRIA, VA 22309

8808-H PEAR TREE VILLAGE COURT

TBD

CHANTILLY, VA 20152

CAGLAYAN INVESTMENT GROUP

017 DRAWING NO.

Patrick Horgan PATRICK JOSEPH 686EHFORGAN Lic. No. 061930

Tree List for 11004Park Rd. Fairfax City, VA

Prepared by Bill Becker, ISA Certified Arborist # MA-0216A November 18, 2021 Lot size = 50,788 s. f. Existing canopy = 25,200 s. f. Preserved canopy = 0 s. f.

** denotes written permission to be obtained before removal.

N denotes neighbor's tree, R denotes City ROW tree.

Tree	Common Name	DBH	Condition	Life	Preservation Measures	Canopy
#	Botanical name	Hgt.	<u> </u>	Exp.		Sq. Ft.
1	Black Locust Robinia pseudoacacia	10"	Fair	>10	Remove – within limits of disturbance.	N/A
2	Black Locust	10"	Fair	>10	Remove – within limits of	N/A
_	Robinia pseudoacacia	10	.i. 9800		disturbance.	14,21
3	Black Locust	13"	Fair	>10	Remove – within limits of	N/A
3	Robinia pseudoacacia	13	1 441	10	disturbance.	14/21
4	Tulip Poplar	19"	Dead	0	Remove – within limits of	N/A
22.00	Liriodendron tulipifera		Bout		disturbance.	
5	Tulip Poplar	19"	Dead	0	Remove – within limits of	N/A
	Liriodendron tulipifera				disturbance.	
6	Pin Oak	40"	Fair	>7	Remove – within limits of	N/A
	Quercus palustris	100000	30,0000	*****	disturbance.	30439.93
7	Black Locust	16"	Dead	0	Remove – within limits of	N/A
	Robinia pseudoacacia				disturbance.	
8	Bradford Pear	16"	Fair	>10	Remove – within limits of	N/A
	Pyrus calleryana				disturbance.	
9	Black Locust	12"	Poor	<3	Remove – within limits of	N/A
	Robinia pseudoacacia				disturbance.	
10	Wild Cherry	36"	Poor	<3	Remove – within limits of	N/A
	Prunus serotina				disturbance.	
11	Tulip Poplar	28"	Fair	>10	Remove – within limits of	N/A
	Liriodendron tulipifera				disturbance.	
12	Tulip Poplar	24"	Fair	>10	Remove – within limits of	N/A
	Liriodendron tulipifera				disturbance.	
13	White Ash	18"	Fair	>10	Remove – within limits of	N/A
	Fraxinus americana				disturbance.	
14	Red Maple	28"	Fair	>10	Remove – within limits of	N/A
	Acer rubrum				disturbance.	
15	Tulip Poplar	41"	Fair	>10	Remove – within limits of	N/A
	Liriodendron tulipifera				disturbance.	
16	Tulip Poplar	24"	Fair	>10	Remove – within limits of	N/A
	Liriodendron tulipifera				disturbance.	
17	Sugar Maple	4"	Good	>10	Remove – within limits of	N/A
20000	Acer saccharum	10000		+350	disturbance.	p doe o
18	Sugar Maple	4"	Good	>10	Remove – within limits of	N/A
121121	Acer saccharum	90000		N 19-1124	disturbance.	
19	Tulip Poplar	25"	Good	>10	Remove – within limits of	N/A
	Liriodendron tulipifera		H		disturbance.	₩ 1₩1000
20	Pin Oak	25"	Good	>10	Remove – within limits of	N/A
	Quercus palustris			100 menos	disturbance.	******
21	Eastern Redcedar	16"	Good	>10	Remove – within limits of	N/A
	Juniperus virginiana				disturbance.	

22	Eastern Redcedar	9"	Good	>10	Remove – within limits of	N/A
	Juniperus virginiana				disturbance.	
23	Eastern Redcedar	16"	Good	>10	Remove – within limits of	N/A
	Juniperus virginiana				disturbance.	
24	Wild Cherry	4"	Poor	<3	Remove – within limits of	N/A
	Prunus serotina				disturbance.	
25N	White Pine	18"	Dead	0	Remove with permission – close to	N/A
	Pinus strobus				limits of disturbance. **	
26N	Leyland Cypress	6"	Good	>10	Remove with permission – close to	N/A
	Cupressocyparis leylandii				limits of disturbance. **	
27N	Leyland Cypress	8"	Good	>10	Remove with permission – close to	N/A
	Cupressocyparis leylandii				limits of disturbance. **	
28N	Leyland Cypress	8"	Good	>10	Remove with permission – close to	N/A
	Cupressocyparis leylandii				limits of disturbance. **	
29N	Leyland Cypress	8"	Good	>10	Remove with permission – close to	N/A
	Cupressocyparis leylandii				limits of disturbance. **	
30N	Leyland Cypress	8"	Good	>10	Remove with permission – close to	N/A
	Cupressocyparis leylandii				limits of disturbance. **	
31N	Leyland Cypress	8"	Good	>10	Remove with permission – close to	N/A
	Cupressocyparis leylandii				limits of disturbance. **	
32N	Leyland Cypress	8"	Fair	>10	Remove with permission – close to	N/A
	Cupressocyparis leylandii				limits of disturbance. **	
33N	Black Locust	8"	Fair	>10	Save – install protective fence.	N/A
	Robinia pseudoacacia					
34N	Black Walnut	8"	Fair	>10	Save – install protective fence.	N/A
	Juglans Nigra					
35N	White Mulberry	8"	Fair	>10	Save – install protective fence.	N/A
	Morus alba					
36N	Black Walnut	16"	Fair	>10	Save – install protective fence.	N/A
	Juglans Nigra					
37N	White Pine	17"	Fair	>7	Remove with permission – close to	N/A
Nation National States	Pinus strobus	**************************************	(0.2		limits of disturbance. **	switchester w
38N	Black Walnut	14"	Good	>10	Save – install protective fence.	N/A
	Juglans nigra					

Becker Landscaping & Tree Service 10698 Moore Dr. Manassas, Va. 20111 703-330-5204

> Narrative of Tree Preservation 11004 Park Rd., Fairfax City, Va.

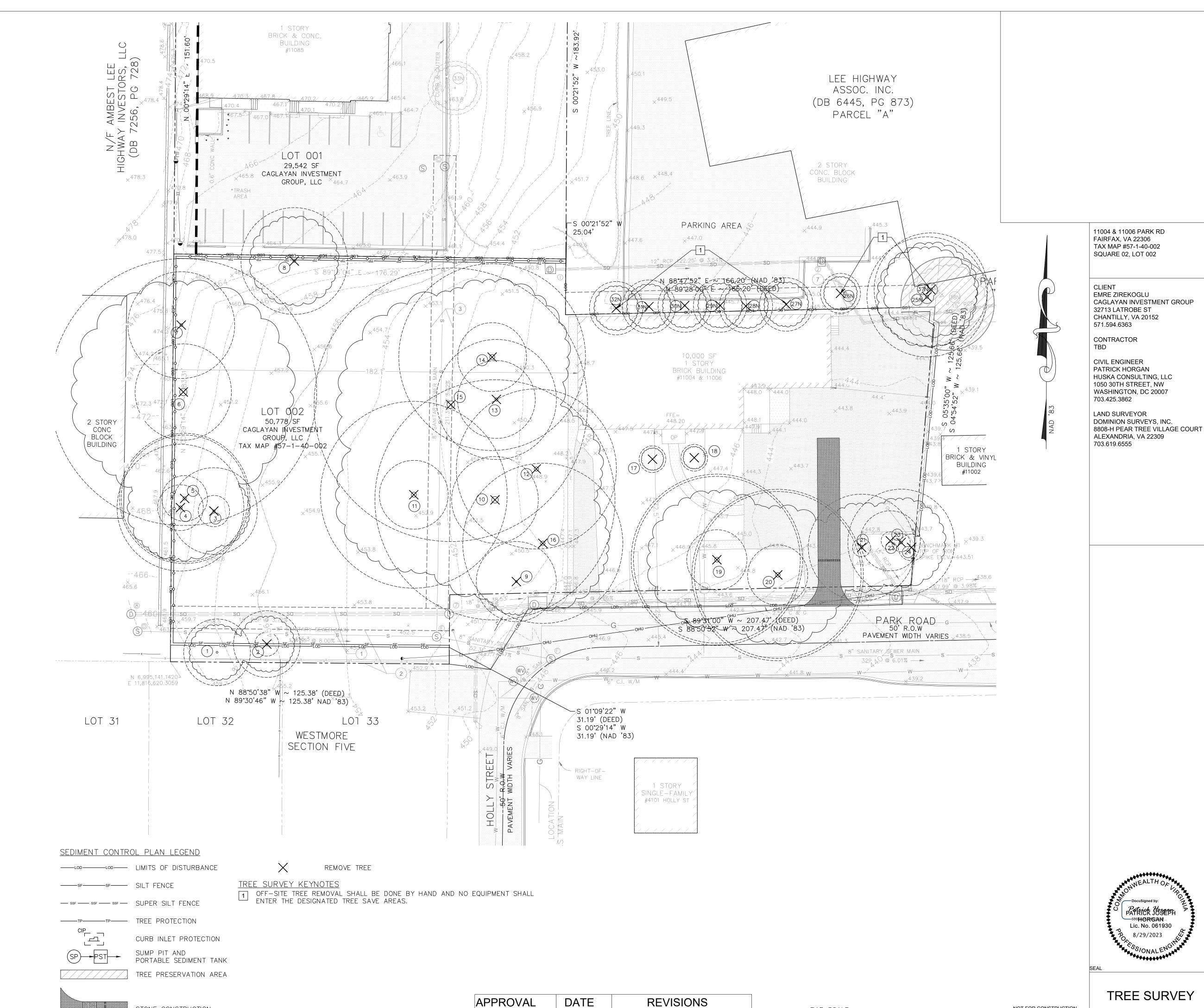
- All tree preservation activities shall be done according to the Fairfax City Erosion and Sediment Control Manual dated April, 2014 and meet industry standards as specified by the International Society of Arboriculture and the American National Standards Institute. Any treatments or activities specified not meeting these standards will be as specified and approved by the Fairfax City Urban Forester.
- Excavation and demolition shall occur. Prior to excavation super silt fence which will also function as tree protective fence shall be installed. Signs shall be placed every 50' indicating the tree protection areas. No activity, materials or equipment shall go beyond the tree protective fence which shall remain in place until completion of construction except as noted in item # 5.
- The existing trees on the lot are predominately Upland Forest with some Landscaped Tree Canopy in fair to poor condition. Many trees are covered in vines. Several are dead.
- The canopy coverage requirements will be met through the planting of trees. Trees # 25N-32N and 37N will be removed after written permission is obtained. These are outside the LOD and will be removed by hand.

STONE CONSTRUCTION ENTRANCE

- There are no "Heritage", "Specimen", "Memorial" or "Street" trees on this lot or
- 7. There are no proffered conditions, development plans, conceptual/final development plans, special permits, special exceptions or variance approvals.

Bill Becker

ISA Certified Arborist # MA – 0216A November 18, 2021



03/04/2022

08/25/2022

12/16/2022

08/29/2022

INITIAL SUBMISSION

THIRD SUBMISSION

FINAL SUBMISSION

SECOND SUBMISSION

HUSKA CONSULTING, LLC

BAR SCALE

NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023

TREE SURVEY DRAWING TITLE

018 DRAWING NO.

Patrick Hoseph

-686FAORGAN...

Lic. No. 061930

3,366 dF 3-STORY

BRICK FRAME TOWNHOM

N 88°50'38" W ~ 125.38' (DEED)

N 89°30'46" W \sim 125.38' NAD $^{\times}$ '83)

WESTMORE

SECTION FIVE

465.6

LOT 31

N 6,995,141.1420 E 11,816,620.3059

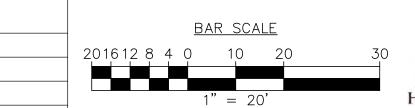
LOT 32

Key	Common Name	004 Park Rd. Subdivision Botanical Name	Qty.	Size Cal.	Туре	Canopy s. f.	Subtotal s. f.	Comments
A	Star Magnolia	Magnolia stellatta	1	3"	В+В	125	125	
В	Yellow Buckeye	Aesculus flava	5	3"	В+В	175	875	
C	Redbud	Cercis canadensis	3	3"	В+В	125	375	
D	Japanese Snowbell	Styrax japonicus	2	3"	B+B	125	250	
Е	Willow Oak	Quercus phellos	6	3"	В+В	250	1,500	Street tree.
F	Japanese Stewartia	Stewartia pseudocamellia	1	3"	В+В	125	125	
G	Fringetree	Chionanthus virginieus	2	3"	B+B	125	250	
Н	Sassafras	Sassafras albidum	2	3"	В+В	125	250	
I	Thornless Honeylocust	Gleditsia triacanthos	2	3"	В+В	175	350	
J	Kousa Dogwood	Cornus kousa	4	3"	B+B	125	500	
K	Carolina Silverbell	Halesia carolina	6	3"	B+B	125	750	
L	Eastern Hophornbeam	Ostrya virginiana	1	3"	В+В	125	125	
M	Red Maple	Racer rubrum	6	3"	В+В	250	1,500	Street tree
N	White Oak	Quercus alba	1	3"	B+B	250	250	
O	Japanese Maple	Acer palmatum	1	3"	B+B	125	125	
P	Downey Serviceberry	Amelanchier arborea	1.	3"	В+В	125	125	
Q	Kwanzan Cherry	Prunus kwanzan	1	3"	B+B	175	175	
R	Allegheney Serviceberry	Amelanchier laevis	1	3"	В+В	125	125	
	■ Annual moureur Profession Communication (#1)	Total number of trees	46		Tota	al canopy s. f.	7,775	

LANDSCAPE CONSERVATION PLAN KEYNOTES

- 10-FT WIDE LANDSCAPE BUFFER ALONG PARK RD R.O.W.
- TOTAL LENGTH=188-FT 1 TREE REQUIRED PER 40 LF
- TOTAL TREES REQUIRED=5
- TOTAL TREES PROVIDED=5 PLANT 5 NEW TREES
- 10-FT WIDE LANDSCAPE BUFFER ALONG NORTH SIDE OF PRIVATE RD TOTAL LENGTH=163-FT
- 1 TREE REQUIRED PER 40 LF
- TOTAL TREES REQUIRED=5 TOTAL TREES PROVIDED=5
- PLANT 5 NEW TREES
- 3 7.5-FT WIDE TY-1 LANDSCAPE TRANSITION YARD ALONG ADJACENT R-M ZONED
 - TOTAL LENGTH=125 LF
 - 6-FT TALL OPAQUE WOOD SCREENING FENCE ALONG PROPERTY LINE NO CANOPY TREES REQUIRED OR PROVIDED 4 UNDERSTORY TREES REQUIRED PER 100 LF
 - TOTAL UNDERSTORY TREES REQUIRED=5 TOTAL UNDERSTORY TREES PROVIDED=7
- TREE PLANTING'S LOCATION SHOWN CONCEPTUALLY AND SUBJECT TO CHANGE PER OWNER'S REQUEST AND FAIRFAX CITY ARBORIST APPROVAL. PLANTING LOCATION'S SHALL ADHERE TO THE REQUIREMENTS OF THE FAIRFAX CITY PUBLIC FACILITIES MANUAL (TYPICAL).
- DENSE HEDGES ALONG THREE SIDE OF PROPOSED DOMINION TRANSFORMER TO PROVIDE SCREENING FROM PARK RD AND LOT 01. SPECIES TO BE DETERMINED DURING SITE PLAN TO ENSURE MATURE HEIGHT WILL BE TALL ENOUGH TO SCREEN EQUIPMENT.

APPROVAL REVISIONS 03/04/2022 INITIAL SUBMISSION 08/25/2022 SECOND SUBMISSION 12/16/2022



207.47 (DE

S 88'50'52" W ~ 207.47' (NAD '

−S 01°09'22" W

31.19' (DEED) S 00°29'14" W

RIGHT-OF-

08/29/2022

WAY LINE

31.19' (NAD '83)

1 STORY

SINGLE-FAMIL'

#4101 HOLLY ST

THIRD SUBMISSION

FINAL SUBMISSION



1 STORY

BRICK & VIN BUILDING

#11002

×439.3

PARĶ ROAD G

AVEMENT WIDTH VARIES 438.5

50' R.O.W

NOT FOR CONSTRUCTION REZONING PLANS 08/29/2023

LANDSCAPE PLAN

11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

CLIENT

EMRE ZIREKOGLU

32713 LATROBE ST

571.594.6363

CONTRACTOR

CIVIL ENGINEER

703.425.3862

703.619.6555

PATRICK HORGAN

LAND SURVEYOR

HUSKA CONSULTING, LLC

1050 30TH STREET, NW

WASHINGTON, DC 20007

DOMINION SURVEYS, INC.

ALEXANDRIA, VA 22309

8808-H PEAR TREE VILLAGE COURT

CHANTILLY, VA 20152

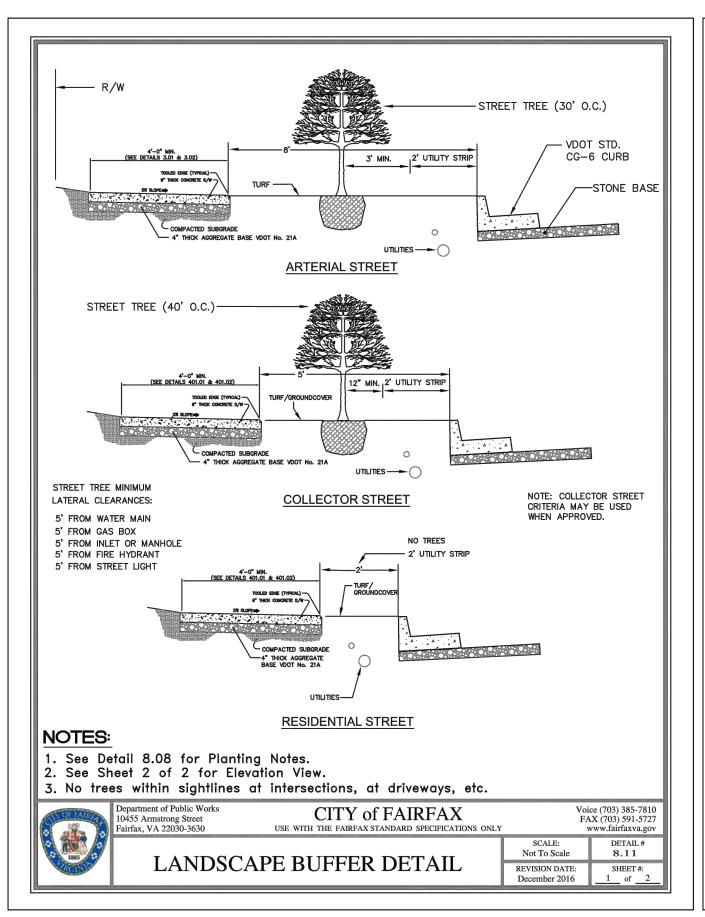
CAGLAYAN INVESTMENT GROUP

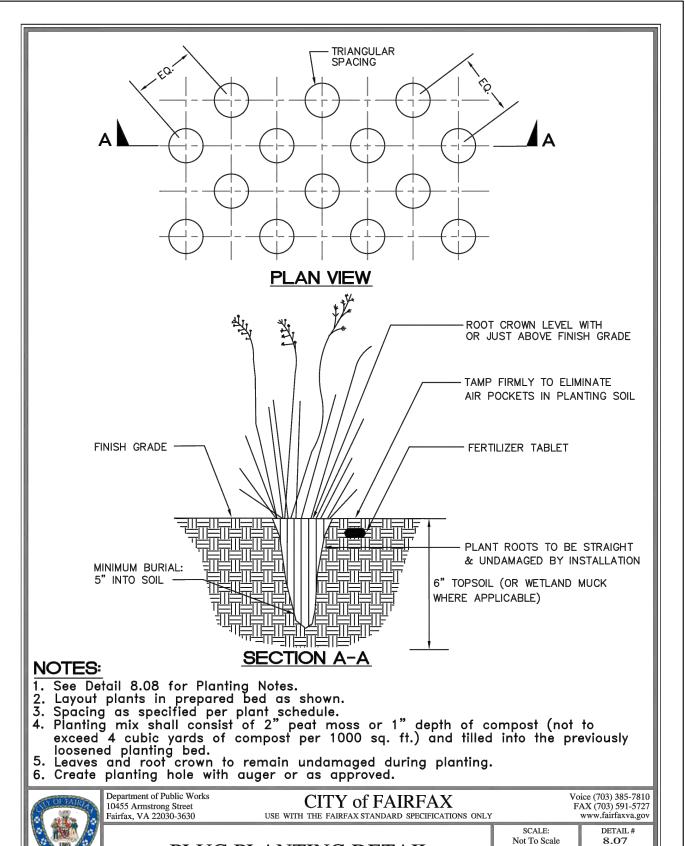
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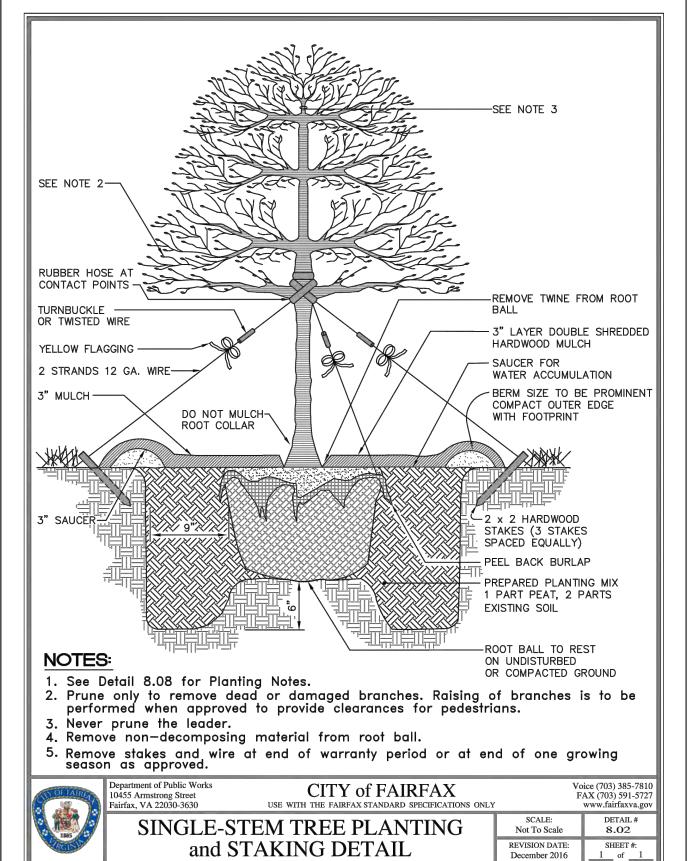
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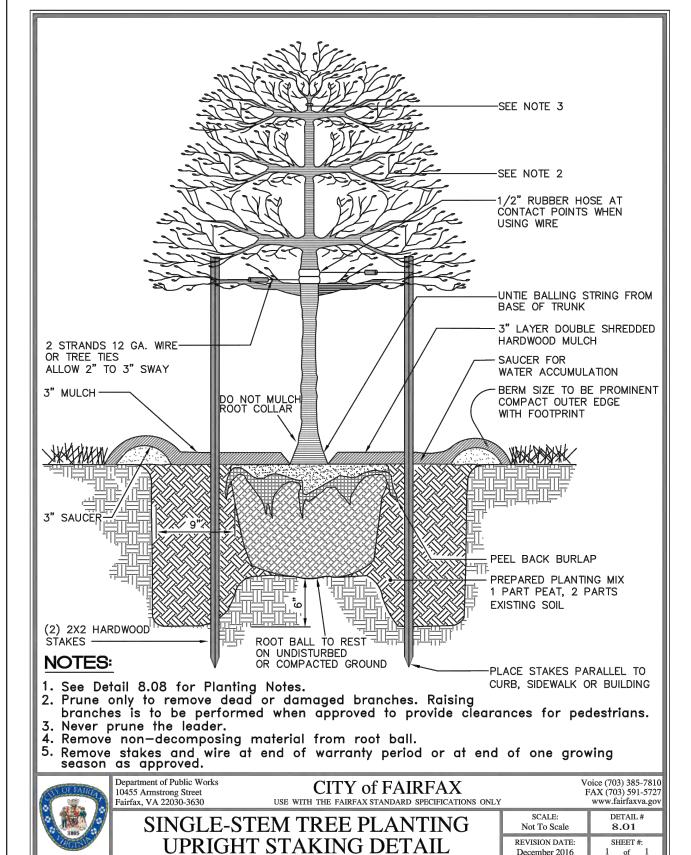
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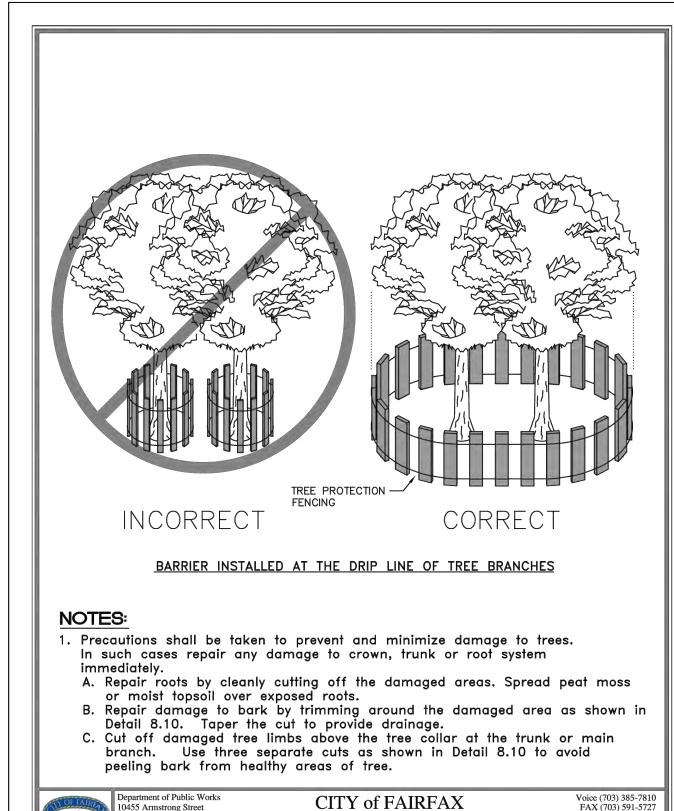
11004 & 11006 PARK RD FAIRFAX, VA 22306 TAX MAP #57-1-40-002 SQUARE 02, LOT 002

CLIENT EMRE ZIREKOGLU CAGLAYAN INVESTMENT GROUP 32713 LATROBE ST CHANTILLY, VA 20152 571.594.6363

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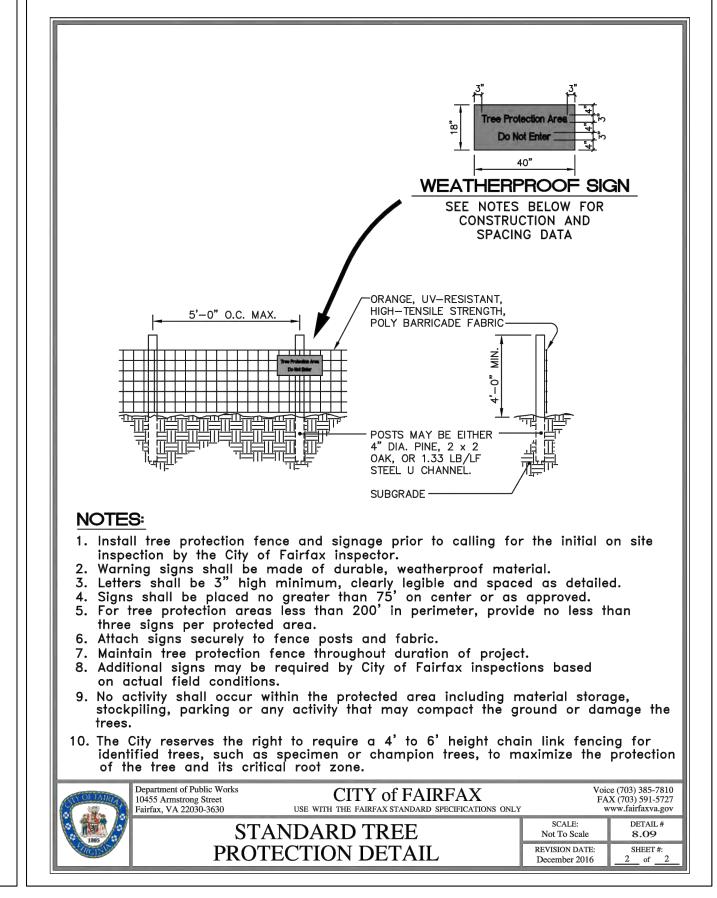
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PROTECTION DETAIL

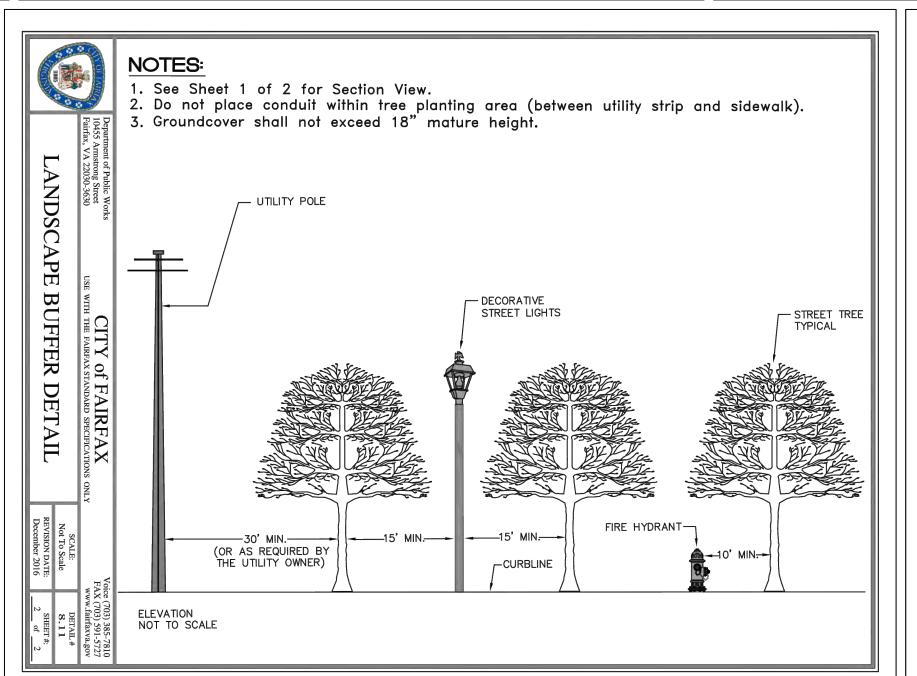
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REVISION DATE: December 2016

DETAIL# 8.09



PLUG PLANTING DETAIL



APPROVAL

DATE

03/04/2022

08/25/2022

12/16/2022

08/29/2022

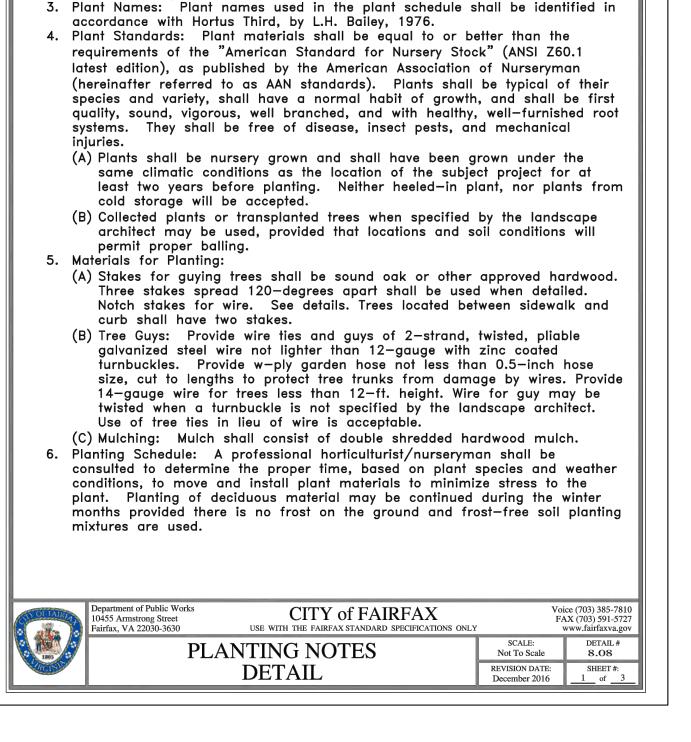
REVISIONS

INITIAL SUBMISSION

THIRD SUBMISSION

FINAL SUBMISSION

SECOND SUBMISSION



1. Landscape Specifications: Landscape specifications shall be as outlined

2. Plant Materials: The Landscape Contractor shall furnish and install and/or dig, ball, burlap, and transplant plant materials called for on the drawings and/or listed in the plant schedule. The City reserves the right to inspect plant material at the nursery source, before off-loading at the project site,

below. Any item or procedure not mentioned below shall be as specified in

the Landscape specification guidelines published by the Landscape Contractors

Patrick Horgan
PATRICK JOSEPH HORGAN Lic. No. 061930

LANDSCAPE **DETAILS**

08/29/2023

NOT FOR CONSTRUCTION REZONING PLANS

DRAWING TITLE

DRAWING NO.

020

HUSKA CONSULTING, LLC

PARK ROAD PROPERTY

Traffic Impact Study City of Fairfax, Virginia

RECEIVED

3/7/2022

Community Dev & Planning

March 3, 2022

Prepared by:

Wells + Associates

William F. Johnson, P.E., PTOE Andrew C. Buntua, P.E., PTOE

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Α	Conceptual Development Plan
В	VDOT Scope of Work Meeting Form
С	Count Data
D	Existing Conditions Synchro Reports
E	Descriptions of Levels of Service
F	Future Levels of Service and Queues without Development
G	Future Levels of Service and Queues with Development

Section 1 INTRODUCTION

This report presents the results of a traffic impact study conducted in support of a proposed new residential project to be developed in the City of Fairfax, Virginia. The Property is located at 11004 and 11006 Park Road, oriented south of Lee Highway (Route 29) and west of Chestnut Street, as shown on Figure 1-1.

The properties that comprise the subject application are currently zoned CR (Commercial Retail) and are developed with a commercial structure totaling approximately 5,030 gross square feet (GSF). This existing building is currently vacant.

The Applicant proposes to rezone the properties to the RT (Residential Townhouse) district in order to raze and redevelop the property with 13 townhouse dwelling units. A full-sized copy of the site plan is included in Appendix A.

The redevelopment plan, as proposed, is consistent with the City's vision for a "Townhouse/Single-Family Attached Neighborhood" as outlined in the City's Comprehensive Plan. A reduction of the redevelopment plan is shown on Figure 1-2.

In 2006, the Virginia General Assembly approved legislation (Senate Bill 699, Chapter 527 of the 2006 Acts of Assembly) to enhance the coordination of land use and transportation planning within the Commonwealth. Subsection 15.2-2222.1 was added to expand VDOT's role in the land planning and development review process. In 2011, Chapter 870 of the 2011 Acts of Assembly directed VDOT to review and adopt appropriate revisions to the regulations.

Under the regulations, all development proposals which meet certain specific trip generation thresholds are subject to <u>VDOT's Updated Administrative Guidelines for the Traffic Impact Analysis Regulations</u> dated December 2018 (the "Administrative Guidelines"). A development proposal is generally considered to substantially impact the transportation network if it generates more than 5,000 daily vehicle trips. Based on the trips anticipated to be generated by the proposed new uses, the development <u>would not constitute a substantial impact</u>.

Although a traffic impact analysis is not required per *24VAC30-155*, the City of Fairfax requires the submission of a Traffic Impact Study (TIS) in conjunction with any development application. The basis of this traffic impact assessment then includes a field reconnaissance of the area to determine access opportunities and constraints, acquisition of baseline traffic volumes at key intersections in the site vicinity, a review of the City's Comprehensive Plan, as well as coordination with City staff to ascertain planned transportation improvements/enhancements, and information from the applicant including preliminary site concepts.

This traffic assessment was completed in accordance with the City of Fairfax policies and guidelines and is intended to address the following:



R:\PROJECTS\8748 PARK ROAD PROPERTY\GRAPHICS\8748 RPT GRAPHICS.DWG



Figure 1-1
Site Location

NORTH
Park Road Property
City of Fairfax, Virginia

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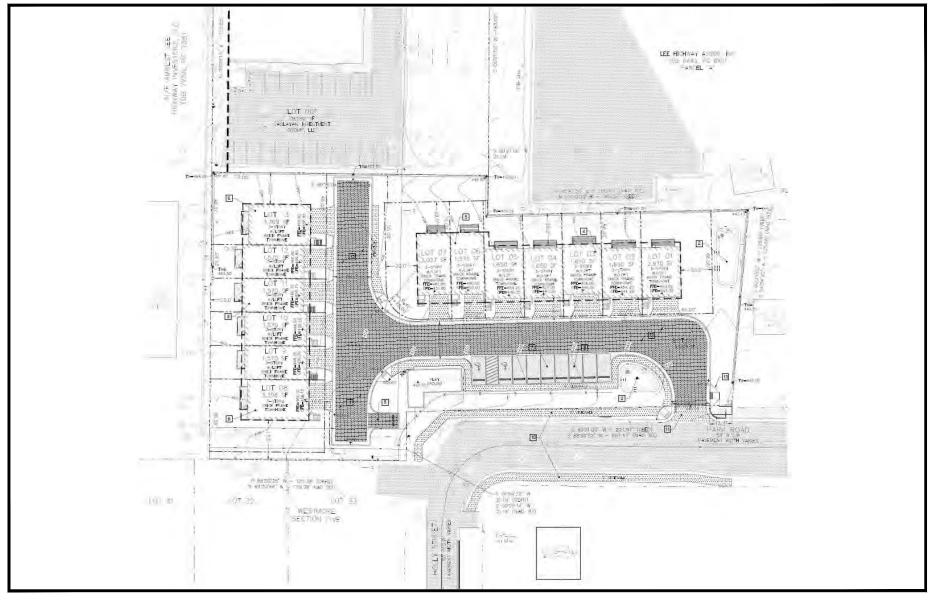


Figure 1-2 Site Layout



- 1. Estimation of the total vehicle trip ends generated by the planned land uses during the weekday peak hours.
- 2. Determination of the effects of the development proposal on the surrounding local roadway network.
- 3. Identification of potential road and/or operational improvements necessary to mitigate the impacts of the developer's proposal.

The specific traffic study parameters were scoped in coordination with City staff. The resulting traffic study scoping form is provided in Appendix B. Tasks undertaken in the course of this study included the following:

- 1. A review of the Applicant's conceptual plans for the subject site.
- 2. A field reconnaissance of the subject site in order to determine existing roadway and intersection geometrics and traffic controls, access opportunities and/or constraints, and general traffic conditions.
- 3. Peak hour turning movement and pedestrian counts were obtained at the following study intersections:
 - a. Holly Street/Fairfax Street
 - b. Park Road/Fern Street

Counts were conducted at the key study intersections listed above on Thursday, February 24, 2022.

- 4. Calculation of existing weekday AM and PM peak hour intersection levels of service at the study intersections.
- 5. Identification of the number of peak hour trips that would be generated by the proposed mixed-use development based on standard Institute of Transportation Engineers (ITE) 10th edition <u>Trip Generation Manual</u> rates/equations.
- 6. Determination of future background traffic forecasts based on estimates of traffic that the by-right site uses would generate.
- 7. Calculation of future levels of service both with and without the proposed development at the key study intersections and all proposed site entrances for an anticipated build-out year of 2025.

Sources of data for this analysis included traffic counts conducted by Wells + Associates Inc, information obtained from the City of Fairfax, the Institute of Transportation Engineers (ITE), the



Highway Capacity Manual 2000 (Synchro software, version 10.3), Caglayan Investment Group, and the files and library of Wells + Associates.

CONCLUSIONS

Based on the results of this traffic impact study, the following may be concluded:

- 1. The redevelopment plan proposed by the Applicant is consistent with the City and community's long term vision as reflected in the 2035 Comprehensive Plan.
- 2. All turning movements at the unsignalized intersections within the study area currently operate at level of service (LOS) "A".
- 3. Under future 2025 traffic conditions, without the development of the subject site, delays at study intersections would remain generally consistent with existing conditions.
- 4. The Park Road Property redevelopment project is forecasted to generate 7 weekday AM peak hour (2 inbound and 5 outbound), 10 weekday PM peak hour (6 inbound and 4 outbound), and 58 weekday average daily trips upon completion and full occupancy by 2025. Considering the existing commercial building on the site, the proposal represents a reduction of 3 weekday AM peak hour, 3 weekday PM peak hour, and 24 weekday average daily trips compared with what the vacant commercial building could generate.
- 5. Under future 2025 traffic conditions, with the development of the subject site, delays at study intersections would remain generally consistent with background conditions (without the development of the subject site).
- 6. The proposed residential development project would result in no appreciable impact on the surrounding roadway network.



Section 2 COMPREHENSIVE PLAN

LOCATION AND SURROUNDING USES

The site is located within the western limits of the City of Fairfax and is currently developed with a 5,030 GSF commercial building; however, this building is currently vacant. Low-scale commercial uses generally surround the property to the north along Lee Highway (Route 29) and residential uses are found to the east, west, and south along Park Road, Fairfax Street, and Holly Street.

COMPREHENSIVE PLAN LAND USE RECOMMENDATIONS

The subject site is located proximate to the Kamp Washington Activity Center as defined in the City's 2035 Comprehensive Plan (see Figure 2-1). The properties are designated as "Townhouse/Single-Family Attached Neighborhood". The proposed redevelopment is in harmony with the 2035 Comprehensive Plan.

EXISTING TRANSPORTATION NETWORK

<u>Existing Road Network</u>. The following is a description of the roadways surrounding the proposed residential development. Figure 2-2 depicts existing lane use and traffic controls in the vicinity of the subject site:

<u>Park Road</u>. Park Road is a two-lane, undivided, local street with an assumed speed limit of 25 mph that runs along the southern property boundary. On-street parking is permitted along Park Road, proximate to the site. To the west of the site, Park Road becomes Holly Street.

<u>Holly Street</u>. Holly Street is a two-lane, undivided, local street with an assumed speed limit of 25 mph. On-street parking is permitted along Holly Street.

<u>Fern Street</u>. Fern Street is a two-lane, undivided, local street with an assumed speed limit of 25 mph. On-street parking is permitted along Fern Street. Fern Street intersects with Park Road to the east of the site.

<u>Fairfax Street</u>. Fairfax Street is a two-lane, undivided, local street with an assumed speed limit of 25 mph. On-street parking is permitted along Fairfax Street.

<u>Pedestrian Facilities.</u> A sidewalk provided along the site boundary on the northern side of Park Road runs east from the site to the intersection with Chestnut Street. As shown on Figure 2-3,



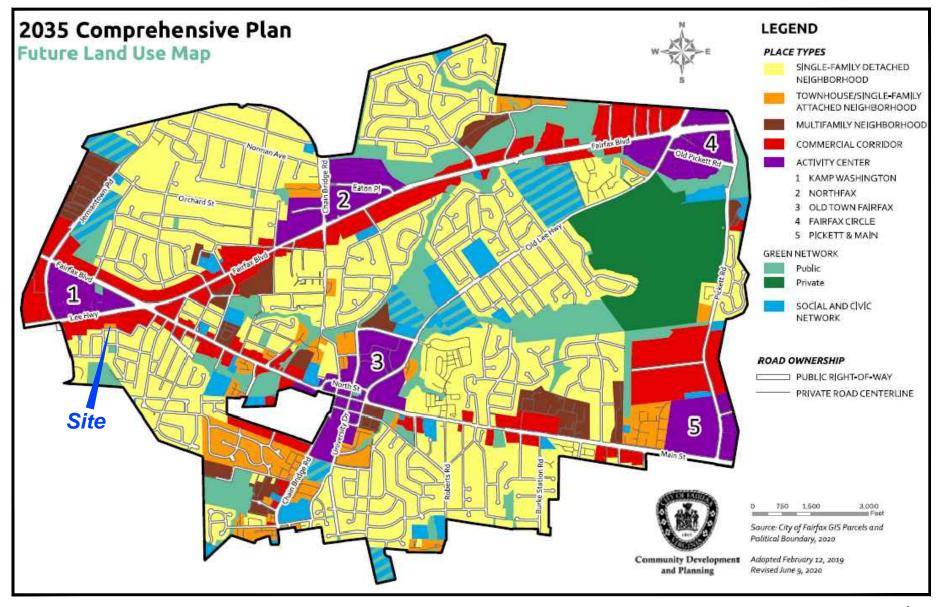


Figure 2-1
Future Land Use Map



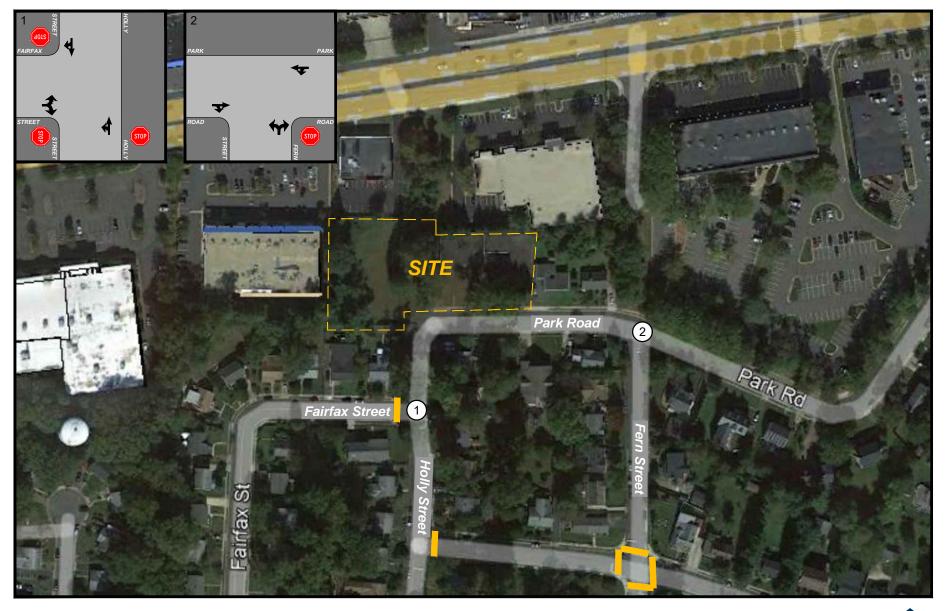


Figure 2-2
Existing Lane Use and Traffic Controls

Represents One Travel Lane
Stop Sign





Figure 2-3
Pedestrian Facilities

Concrete Sidewalk
Crosswalk

NORTH
Park Road Property
City of Fairfax, Virginia

sidewalks are generally provided on both sides of local streets serving the surrounding neighborhoods, with exceptions.

Section 3 STUDY SCOPE AND ANALYSIS PARAMETERS

OVERVIEW

The primary objective of this study is to assess the impacts associated with the proposed development plan for the Park Road Property on the surrounding street system.

The specific study parameters were scoped and agreed upon in coordination with project team representatives and City staff. The scoping document is provided in Appendix B.

STUDY AREA

The study area was determined based on the intersections and roadways that potentially would be affected by implementation of the proposed development plan. The following intersections were selected for analysis and evaluation:

- 1. Holly Street/Fairfax Street
- 2. Park Road/Fern Street

STUDY METHODOLOGY

Traffic (or site) impact studies are generally required by jurisdictions to assess the level of impact proposed changes in land use or development could have on a community's transportation system. Traffic impact studies focus on access to/from a property and those off-site local intersections that would potentially be impacted by traffic from the proposed development or land use change. Utilizing a four-step process, intersections are evaluated in terms of levels of service and then appropriate mitigation measures are identified to remediate sub-standard levels of service. The four-step planning process consists of trip generation, trip distribution, a determination of mode split, and traffic assignment.

As recommended by the City, trip generation estimates were developed based on standard Institute of Transportation Engineers (ITE), 10th edition, <u>Trip Generation Manual</u> rates/equations. Directional distributions and traffic assignments were developed based on a review of existing travel patterns, data from other traffic studies, local knowledge and experience, and engineering judgment and agreed to among the parties.

Levels of service and vehicle queues were estimated using established <u>Highway Capacity Manual 2000</u> methodologies as reported by Synchro software, version 10.3. Synchro is a macroscopic analysis tool and has the advantage of analyzing not only individual intersection performance but also how the performance measures of the intersection relate to other intersections in the same



network. Important roadway network parameters, such as signal coordination/offsets and vehicle progression, are included in the Synchro analysis.

ASSUMED SITE DEVELOPMENT PROGRAM

For purposes of this analysis, the following level of development was analyzed:

13 townhouse dwelling units.

For purposes of this assessment, buildout of the project is anticipated to occur in a single phase by the year 2025.

ANALYSIS STUDY PERIODS

As requested by City staff, the intersections within the study area were analyzed under weekday AM and PM peak hour conditions.

REGIONAL GROWTH

Through conversations/discussions with City staff, no growth was assumed within the study area given its location within a neighborhood served exclusively via local streets.

OTHER APPROVED/PLANNED DEVELOPMENTS

No other approved but undeveloped projects (i.e., "pipeline" developments) were identified in the immediate vicinity.

EXISTING TRAFFIC VOLUMES

Existing weekday AM and PM peak hour turning movement and pedestrian counts were conducted on Thursday, February 24, 2022 at the following intersections from 6:00 AM to 9:00 AM and from 4:00 PM to 7:00 PM:

- Holly Street/Fairfax Street
- Park Road/Fern Street

The existing vehicle traffic volumes used in the analysis are provided on Figure 3-1. Existing pedestrian counts are provided on Figure 3-2. All count data is included in Appendix C.



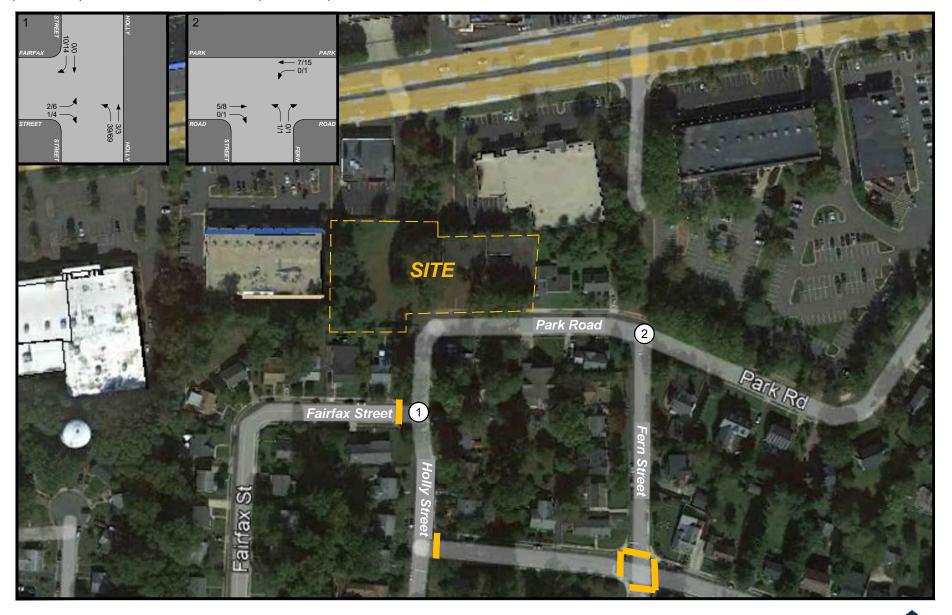
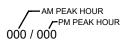


Figure 3-1
Existing Traffic Volumes





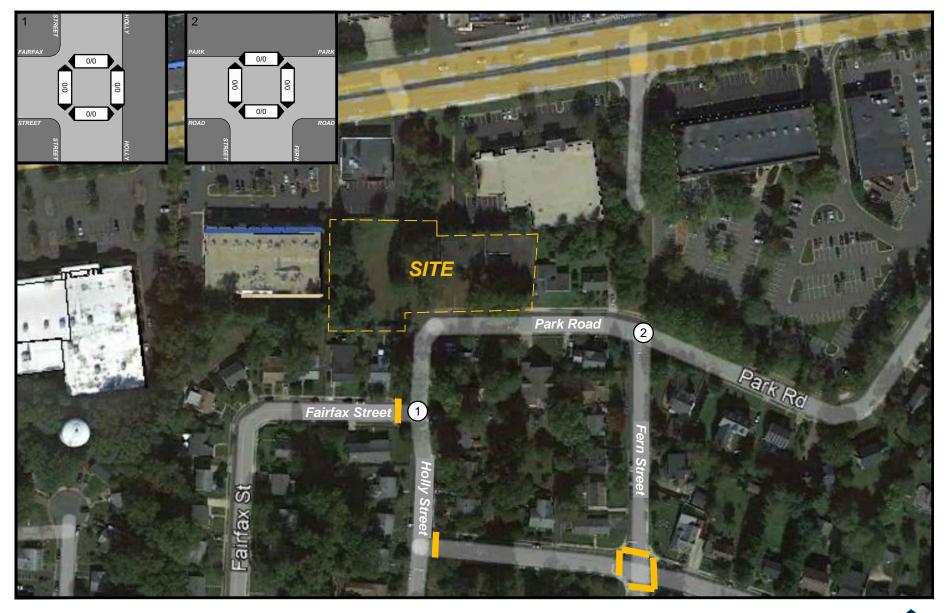
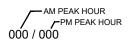


Figure 3-2
Pedestrian Volumes





Section 4 EXISTING CONDITIONS ANALYSIS

EXISTING INTERSECTION LEVELS OF SERVICE

Peak hour levels of service were calculated for the study intersections based on the existing lane use and traffic controls shown on Figure 2-2, the existing traffic volumes shown on Figure 3-1, and the 2000 <u>Highway Capacity Manual</u> (HCM) analysis procedures for unsignalized intersections. The results are presented in Appendix D and summarized on Table 4-1 and Figure 4-1. Descriptions of levels of service are provided as Appendix E.

As reflected in Table 4-1, turning movements at the study intersections currently operate at overall level of service (LOS) "A" or better, based on the analysis results.

EXISTING INTERSECTION QUEUING

As requested by staff, an analysis of intersection 95th-percentile queues was performed at key locations. The results of the queuing analysis, as reported by Synchro, are summarized in Table 4-2.

As shown in the table, 95th-percentile queues at the STOP-controlled movements are relatively low within the study network, with the longest queue being 8 feet at the EBLR movement of the Fairfax Street/Holly Street intersection during the PM peak hour.



Table 4-1
Park Road Property
Existing Level of Service Summary (1)(2)

Intersection	Operating Condition	Street Name	Approach/ Movement	Existin AM	g 2022 PM
1 Holly Street /Fairfax Street	STOP	Fairfax Street Holly Street Holly Street	EBLR NBLT SBTR	A [7.0] A [7.4] A [6.4]	A [7.1] A [7.6] A [6.5]
2 Park Road/ Fern Street	STOP	Park Road Park Road Fern Street	EBTR WBLT NBLR	A [0.0] A [0.0] A [8.6]	A [0.0] A [0.4] A [8.5]

Notes (1) Numbers in brackets [] represent delay at unsignalized intersections in seconds per vehicle.

(2) Roadway names in bold are considered north/south for purposes of this analysis

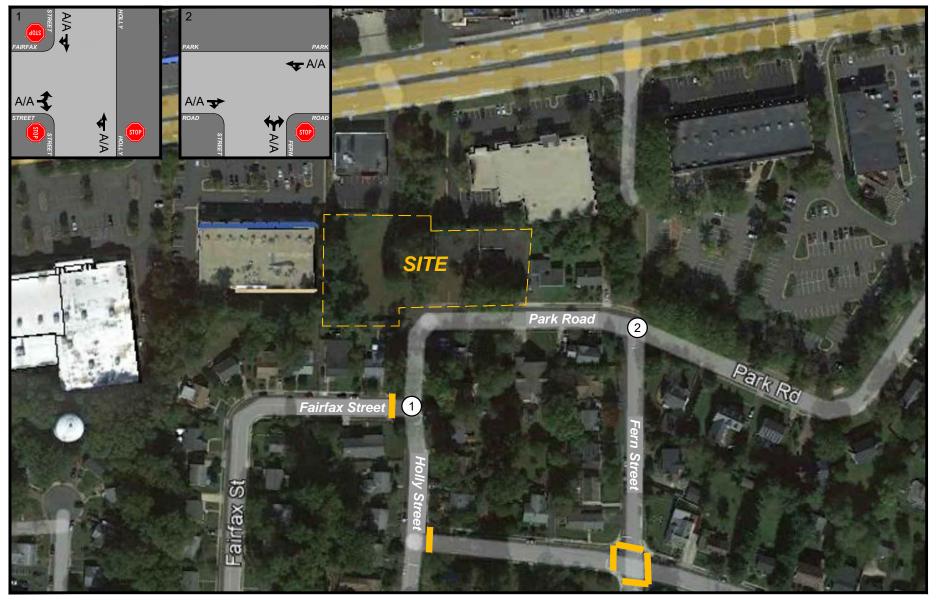


Figure 4-1
Existing Levels of Service



Table 4-2
Park Road Property
Existing Queuing Summary (1)(2)

Intersection	Operating Condition	Street Name	Approach/ Movement	Existin AM	g 2022 PM
1 Holly Street/Fairfax Street	STOP	Fairfax Street Holly Street Holly Street	EBLR NBLT SBTR	5 0 0	8 0 0
2 Park Road/ Fern Street	STOP	Park Road Park Road Fern Street	EBTR WBLT NBLR	0 0 0	0 0 0

Notes (1) Turning movement queue length is based on the 95th percentile queue as reported by Synchro, Version 10.

(2) Roadway names in bold are considered north/south for purposes of this analysis



Section 5

ANALYSIS OF FUTURE CONDITIONS WITHOUT PROPOSED DEVELOPMENT (YEAR 2025)

OVERVIEW

Forecasts for traffic conditions <u>without the redevelopment of the subject properties</u> were estimated at key study intersections based on a composite of existing traffic and the by-right development trips as described in Section 3 of this report. Future levels of service and queues under these forecasted conditions were evaluated at the key study intersections.

REGIONAL TRAFFIC GROWTH

For purposes of this traffic assessment, a study horizon year of 2025 was assumed for the anticipated build-out of the subject development. Through conversations/discussions with City staff, no growth was assumed within the study area given its location within a neighborhood served exclusively via local streets.

TRAFFIC FROM OTHER APPROVED/PENDING DEVELOPMENTS

No other approved but undeveloped projects (i.e., "pipeline" developments) were identified in the immediate vicinity.

BY-RIGHT DEVELOPMENT TRIPS

Trips generated by the full occupancy of the existing (by-right) commercial uses were estimated using Institute of Transportation Engineers (ITE) trip generation rates/equations, as published in the 10th edition. The rates/equations used for the analysis were for "Small Office Building" (Land Use Code 712). The trip generation analysis is presented in Table 5-1. As shown on Table 5-1, the site would generate, upon full occupancy, 10 weekday AM (8 inbound and 2 outbound) and 13 weekday PM (4 inbound and 9 outbound) net peak hour vehicle trips, and 82 weekday average daily trips. These trips were assigned to the public street network and are summarized on Figure 5-1.

BACKGROUND TRAFFIC FORECASTS

The existing traffic forecasts depicted on Figure 3-1 and the by-right development trip assignments shown on Figure 5-1 were added together to yield the background future traffic forecasts shown on Figure 5-2 for the study intersections.



Table 5-1
Park Road Property
By-Right Trip Generation Analysis - 10th Edition (1)

					Land				Weekday M Peak Ho	<u>ur</u>	<u>P</u>	Weekday M Peak Ho		Weekday Average
9	cenario	Proposed Land Use	ITE Land Use	Setting/Location	Use Code	Amount	Units	In	Out	Total	In	Out	Total	Daily Trips
E	ixisting Development (By-Right)	Commercial	Small Office Building	General Urban/Suburban	712	5,030	GSF	8	2	10	4	9	13	82

Note(s):

(1) Trip generation based on the Institute of Transportation Engineers' (ITE) <u>Trip Generation Manual</u>, 10th Edition.





Figure 5-1
By-Right Development Trips

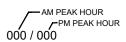






Figure 5-2 2025 Background Traffic Forecasts





BACKGROUND FUTURE LEVELS OF SERVICE

Capacity analyses of 2025 future traffic conditions without the proposed redevelopment are provided in Appendix F and summarized in Table 5-2. The forecasted levels of service are also depicted graphically on Figure 5-3.

As shown on Table 5-2, under future 2025 traffic conditions, without the development of the subject site, delays at study intersections would remain generally consistent with existing conditions.

BACKGROUND FUTURE QUEUING

As requested by staff, an analysis of intersection queues was performed at key locations under background future traffic conditions. The results of the queuing analysis are summarized on Table 5-3.

As shown in the table, under background future conditions, 95th-percentile queues would remain generally consistent with existing conditions.



Table 5-2
Park Road Property
Background Level of Service Summary (1)(2)

Intersection	Operating Condition	Street Name	Approach/ Movement	Existir AM	ng 2022 PM	Backgrou AM	und 2025 PM
1 Holly Street/Fairfax Street	Н	airfax Street Iolly Street Iolly Street	EBLR NBLT SBTR	A [7.0] A [7.4] A [6.4]	A [7.1] A [7.6] A [6.5]	A [7.0] A [7.4] A [6.5]	A [7.1] A [7.6] A [6.6]
2 Park Road/ Fern Street	Р	ark Road ark Road ern Street	EBTR WBLT NBLR	A [0.0] A [0.0] A [8.6]	A [0.0] A [0.4] A [8.5]	A [0.0] A [0.0] A [8.6]	A [0.0] A [0.3] A [8.6]
3 Park Road/ Site Entrance	Р	ark Road ark Road ite Entrance	EBLT WBTR SBLR	N/A N/A N/A	N/A N/A N/A	A [0.8] A [0.0] A [8.5]	A [0.7] A [0.0] A [8.6]

Notes (1) Numbers in brackets [] represent delay at unsignalized intersections in seconds per vehicle.

(2) Roadway names in bold are considered north/south for purposes of this analysis

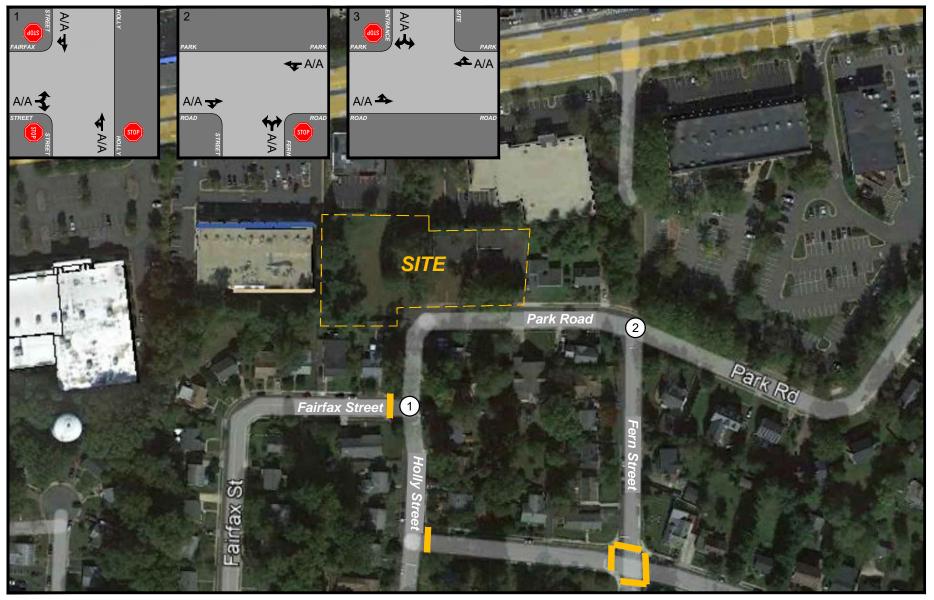


Figure 5-3
2025 Background Levels of Service

X/X Lane Group Level of Service

(X/X) Overall Level of Service

← Represents One Travel Lane

(5) Stop Sign



Table 5-3
Park Road Property
Background Queuing Summary (1)(2)

Intersection	Operating Condition		proach/ ovement	Existing AM	2022 PM	Backgrou AM	nd 2025 PM
1 Holly Street/Fairfax Street	STOP	Holly Street	EBLR NBLT SBTR	5 0 0	8 0 0	5 0 0	8 0 3
2 Park Road/ Fern Street	STOP	Park Road	EBTR WBLT NBLR	0 0 0	0 0 0	0 0 0	0 0 0
3 Park Road/Site Entrance	STOP	Park Road	EBLT WBTR SBLR	N/A N/A N/A	N/A N/A N/A	0 0 0	0 0 1

Notes (1) Turning movement queue length is based on the 95th percentile queue as reported by Synchro, Version 10.

⁽²⁾ Roadway names in bold are considered north/south for purposes of this analysis

Section 6 TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

OVERVIEW

As part of the four-step process described previously, trips anticipated to be generated by the proposed redevelopment plan were forecasted and then assigned to the surrounding roadway network based on a trip distribution. The generation, distribution, and assignment of site trips were based on the proposed development plan and program as well as the locations of future site entrances in relation to the surrounding roadway network.

PROPOSED SITE ACCESS

A reduction of the proposed redevelopment plan is provided on Figure 1-2. As shown, the plan depicts a single, full-movement entrance on Park Road at the general location of the existing curb cut serving the properties. The analysis of this site access point is detailed in Section 7 of this report.

TRIP GENERATION

<u>Overview.</u> Trip generation estimates for the weekday AM and PM peak hours, as well as the weekday average daily traffic (ADT), were derived from the standard Institute of Transportation Engineers (ITE) trip generation rates/equations, as published in the 10th edition. The rates/equations used for the analysis were for "Multifamily Housing (Low-Rise)" (Land Use Code 220). The trip generation analysis is presented in Table 6-1.

Net Site Trips. The net vehicle trips that would be generated by the proposed redevelopment plan are summarized in Table 6-1. As shown, the site would generate, upon completion and full occupancy, 7 weekday AM (2 inbound and 5 outbound) and 10 weekday PM (6 inbound and 4 outbound) net peak hour vehicle trips, and 58 weekday average daily trips. This proposed redevelopment represents a reduction of 3 weekday AM peak hour, 3 weekday PM peak hour, and 24 weekday average daily trips when compared to trips generated by the existing (by-right) commercial uses.

SITE TRIP DISTRIBUTION

The distribution of the anticipated trips generated by the completion of the proposed redevelopment was based on an examination of existing traffic counts and local knowledge. As agreed to with City staff, existing travel patterns indicate the following distribution is appropriate in the forecasting of future site traffic:



Table 6-1
Park Road Property
Site Trip Generation (1)

				Land			<u> </u>	Weekday AM Peak Ho			Weekday M Peak Ho		Weekday Average
Scenario	Proposed Land Use	ITE Land Use	Setting/Location	Use Code	Amount	Units	ln	Out	Total	In	Out	Total	Daily Trips
Existing Development	Commercial	Small Office Building	General Urban/Suburban	712	5,030	GSF	8	2	10	4	9	13	82
Proposed Development	Townhomes	Multifamily Housing (Low-Rise)	General Urban/Suburban	220	13	DU	2	5	7	6	4	10	58
			Proposed Develo	pment vs I	Existing Dev	velopment	(6)	3	(3)	2	(5)	(3)	(24)

Note(s):

(1) Trip generation based on the Institute of Transportation Engineers' (ITE) <u>Trip Generation Manual</u>, 10th Edition.



- To/from the east on Park Road: 70%
- To/from the south on Holly Street: 30%

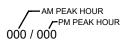
SITE TRIP ASSIGNMENTS

The assignment of the net vehicle trips generated upon the future build-out of the Park Road Property redevelopment project was based on the above distribution. These trip assignments are depicted on Figure 6-1.





Figure 6-1
Site Trip Assignments





Section 7

ANALYSIS OF FUTURE CONDITIONS WITH PROPOSED DEVELOPMENT (YEAR 2025)

TOTAL FUTURE TRAFFIC FORECASTS

The 2025 total future traffic forecasts shown on Figure 7-1 were estimated by adding the site trip assignments (Figure 6-4) to the existing traffic volumes (Figure 3-1).

TOTAL FUTURE LEVELS OF SERVICE WITH PROPOSED DEVELOPMENT PLAN

Future levels of service with the proposed redevelopment plan were estimated at key study intersections based on the future traffic volumes shown on Figure 7-1 and the 2000 HCM methodologies for unsignalized intersections. The results of these analyses are provided in Appendix G and presented in Table 7-1. Total future levels of service are also presented graphically on Figure 7-2.

As shown in Table 7-1, levels of service under future site development conditions would remain generally consistent with future background conditions (i.e., without site development).

TOTAL FUTURE QUEUING

Total future queues were forecasted using Synchro software. The results of the queuing analysis are summarized in Table 7-2. As shown, forecasted queues with the proposed development would remain generally consistent with queues forecasted under background future conditions.





Figure 7-1
2025 Total Future Traffic Forecasts

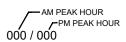




Table 7-1
Park Road Property
Total Future Level of Service Summary (1)(2)

Intersection	Operating Condition	Street Name	Approach/ Movement	Existin AM	g 2022 PM	Backgrou AM	ınd 2025 PM	Total Fut AM	ure 2025 PM
1 Holly Street/Fairfax Street	STOP	Fairfax Street Holly Street Holly Street	EBLR NBLT SBTR	A [7.0] A [7.4] A [6.4]	A [7.1] A [7.6] A [6.5]	A [7.0] A [7.4] A [6.5]	A [7.1] A [7.6] A [6.6]	A [7.0] A [7.4] A [6.5]	A [7.1] A [7.6] A [6.5]
2 Park Road/ Fern Street	STOP	Park Road Park Road Fern Street	EBTR WBLT NBLR	A [0.0] A [0.0] A [8.6]	A [0.0] A [0.4] A [8.5]	A [0.0] A [0.0] A [8.6]	A [0.0] A [0.3] A [8.6]	A [0.0] A [0.0] A [8.6]	A [0.0] A [0.3] A [8.5]
3 Park Road/Site Entrance	STOP	Park Road Park Road Site Entrance	EBLT WBTR SBLR	N/A N/A N/A	N/A N/A N/A	A [0.8] A [0.0] A [8.5]	A [0.7] A [0.0] A [8.6]	A [0.4] A [0.0] A [8.6]	A [1.2] A [0.0] A [8.6]

Notes (1) Numbers in brackets [] represent delay at unsignalized intersections in seconds per vehicle.

⁽²⁾ Roadway names in bold are considered north/south for purposes of this analysis

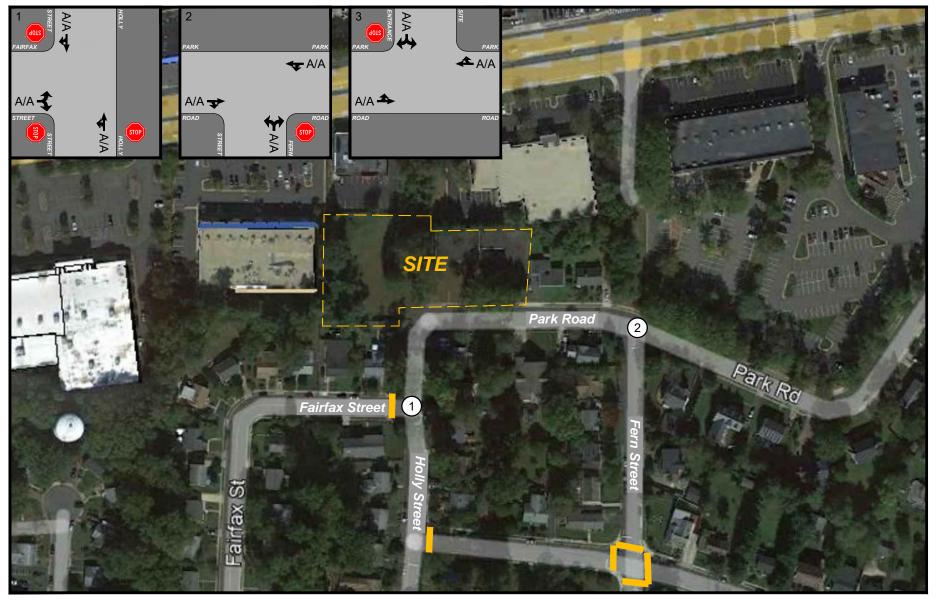


Figure 7-2 2025 Total Future Levels of Service

X/X Lane Group Level of Service

XX Overall Level of Service

★ Represents One Travel Lane

Stop Sign

NORTH
Park Road Property
City of Fairfax, Virginia

Table 7-2
Park Road Property
Total Future Queuing Summary (1)(2)

Intersection	Operating Condition	Street Name	Approach/ Movement	Existin AM	g 2022 PM	Backgro AM	und 2025 PM	Total Fut AM	ture 2025 PM
1 Holly Street/Fairfax Street	STOP	Fairfax Street Holly Street Holly Street	EBLR NBLT SBTR	5 0 0	8 0 0	5 0 0	8 0 3	5 0 0	8 0 0
2 Park Road/ Fern Street	STOP	Park Road Park Road Fern Street	EBTR WBLT NBLR	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
3 Park Road/ Site Entrance	STOP	Park Road Park Road Site Entrance	EBLT WBTR SBLR	N/A N/A N/A	N/A N/A N/A	0 0 0	0 0 1	0 0 0	0 0 0

Notes (1) Turning movement queue length is based on the 95th percentile queue as reported by Synchro, Version 10.

⁽²⁾ Roadway names in bold are considered north/south for purposes of this analysis

Section 8 CONCLUSIONS

Based on the results of this traffic impact study, the following may be concluded:

- 1. The redevelopment plan proposed by the Applicant is consistent with the City and community's long term vision as reflected in the 2035 Comprehensive Plan.
- 2. All turning movements at the unsignalized intersections within the study area currently operate at level of service (LOS) "A".
- 3. Under future 2025 traffic conditions, without the development of the subject site, delays at study intersections would remain generally consistent with existing conditions.
- 4. The Park Road Property redevelopment project is forecasted to generate 7 weekday AM peak hour (2 inbound and 5 outbound), 10 weekday PM peak hour (6 inbound and 4 outbound), and 58 weekday average daily trips upon completion and full occupancy by 2025. Considering the existing commercial building on the site, the proposal represents a reduction of 3 weekday AM peak hour, 3 weekday PM peak hour, and 24 weekday average daily trips compared with what the vacant commercial building could generate.
- 5. Under future 2025 traffic conditions, with the development of the subject site, delays at study intersections would remain generally consistent with background conditions (without the development of the subject site).
- 6. The proposed residential development project would result in no appreciable impact on the surrounding roadway network.



Fiscal Impact Estimate - Park Rd. Townhouses SUMMARY

	Potential Redevelopment	Potential Redevelopment
	LOW	HIGH
RESIDENTIAL REVENUES		
Real Estate Tax	\$110,000	\$121,000
BPOL (Rental Tax)	\$0	\$0
Personal Property Tax	\$9,000	\$11,000
Retail Sales Tax (1%)	\$1,000	\$1,000
Restaurant Tax (1% + 4%)	\$2,000	\$2,000
TOTAL	\$122,000	\$135,000
RESIDENTIAL EXPENSES		
Education	\$48,000	\$58,000
Police/Fire	\$13,000	\$16,000
Misc. Gov't	\$23,000	\$28,000
TOTAL	\$84,000	\$102,000
COMMERCIAL REVENUES		
Real Estate Tax	\$0	\$0
BPOL (Rental Tax)	\$0	\$0
Retail Sales Tax (1%)	\$0	\$0
Restaurant Tax (4%)	\$0	\$0
(Less 1/8 resident spending)	\$0	\$0
Retail/Restaurant BPOL/BPP	\$0	\$0
Office BPOL/BPP	\$0	\$0
TOTAL	\$0	\$0
COMMERCIAL EXPENSES		
Police/Fire	\$0	\$0
Misc. Gov't	\$0	\$0
TOTAL	\$0	\$0
BALANCE	\$20,000	\$51,000



PARK ROAD TOWNHOMES

ATTACHMENT - 9 CITY OF FAIRFAX, VA

BOARD OF ARCHITECTURAL REVIEW (BAR) APPLICATION

CASE NUMBER: BAR-22-00224

SITE LOCATION:

11004 & 11006 Park Rd Fairfax, VA 22306 Square 02 Lot 002

DEVELOPER / APPLICANT:

Caglayan Investment Group 32713 Latrobe St Chantilly, VA 20152

ARCHITECT:

Axis Architects 105a W Edmonston Dr Rockville, MD 20852

PROJECT DESCRIPTION:

The site for this project is uniquely located between the Lee Highway commercial corridor and a single-family residential neighborhood. Consisting of thirteen 4-story townhomes, this development will act as an appropriate transition from the lower residential density to larger commercial and retail scaled context. The site is currently located within the CR zone, but rezoning plans have recently been submitted to change the zone to RT. Per the Zoning Ordinance, townhomes have been positioned in such a way that no more than two of any 10 abutting units have the same front yard setback and that varying setbacks are not less than two feet.

The project's design is a response to the Architectural Control Overlay District guidelines. A more contemporary aesthetic was chosen for the townhomes using a three-part design, differentiating the base, middle, and top. Stoops and canopies articulate individual entrances helping to create a human scale. A consistent architectural language and subtle color palette ties the development together producing a sense of place, while the use of both traditional and modern high-quality materials, such as brick and cementitious siding, relate the project to the adjacent neighborhood. The top floor is set back from the front to create outdoor terraces and the use of a sloped mansard roof reduces the 4-story scale of the townhomes as well as screens the rooftop mechanical equipment behind. Per the guideless, a combination of trees, landscape walls, and green buffers all help to define the property and screen parking.

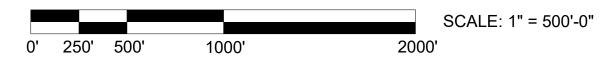
SHEET INDEX

SH	HEET	NAME
00		Cover
01		Context Map
02		Site Photos
03		Illlustrative Site Plan
04		Rendered Perspective
05		Building Elevations
06		Building Elevations
07		Enlarged Elevation and Materials
08		Stoop and Deck Details
09		Sightline Section Diagram





CONTEXT MAP





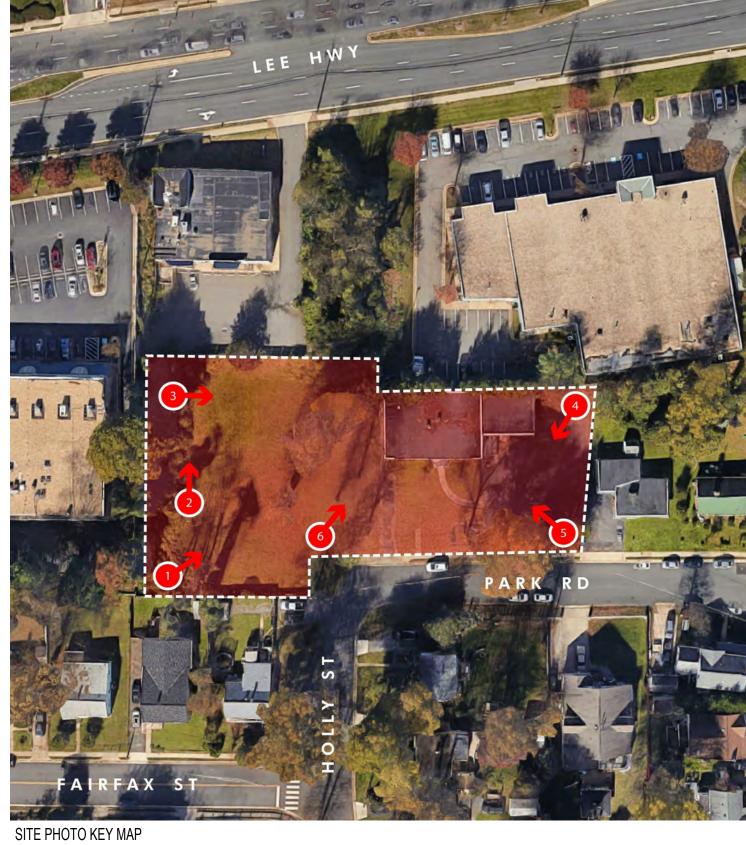


















RENDERED PERSPECTIVE - VIEW LOOKING NORTHWEST FROM PARK ROAD

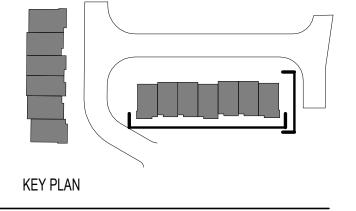




SOUTH ELEVATION EAST SIDE ELEVATION



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





PARK ROAD TOWNHOMES

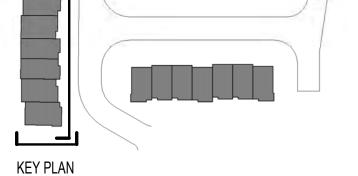
CITY OF FAIRFAX, VA





CITY OF FAIRFAX, VA

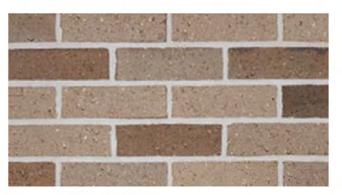
SCALE: 1/16" = 1'-0"



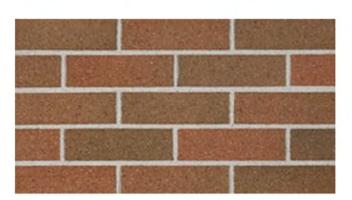


PARK ROAD TOWNHOMES

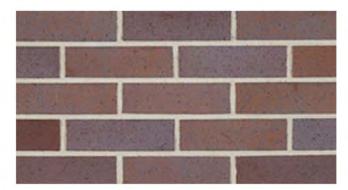
MATERIAL EXAMPLES



BRICK BLEND A



BRICK BLEND B



BRICK BLEND C



HARDIE PLANK LAP SIDING (dark gray)



HARDIE PLANK LAP SIDING (light gray)



STANDING SEAM METAL ROOF



ANDERSEN 100 SERIES VINYL WINDOW (black)



OVERHEAD THERMACORE GARAGE DOOR



HORIZONTAL METAL RAILING



MATERIAL LEGEND

- 1 Face brick (blend varies)
- 2 Brick soldier course (warm gray blend)
- 3 Brick rowlock (warm gray blend)
- 4 Metal coping (dark gray)
- 5 Standing seam metal roof (black)
- 6 Horizontal metal railing (dark gray)
- 7 Metal canopy (dark gray)
- 8 Metal scupper and downspout (dark gray)
- 9 Hardie Smooth 4" plank lap siding (dark gray)
- 10 Hardie Smooth 6" plank lap siding (light gray)
- 11 Hardie trim board (match window color)
- 12 Andersen 100 Series vinyl window system (black)
- 13 Overhead Thermacore garage door (black)
- 14 Exterior Building Downlight (black)

Note:

Applicant request the flexibility to vary the final selection of the exterior materials within the color ranges and material types (maintaining the same general level of quality) proposed, based on availability at the time of construction and further project design.



METAL CANOPY



EXTERIOR BUILDING DOWNLIGHT



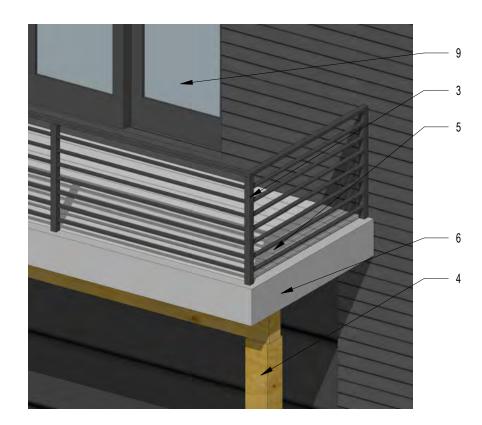
SCALE: 1/8" = 1'-0"



FRONT STOOP DETAIL

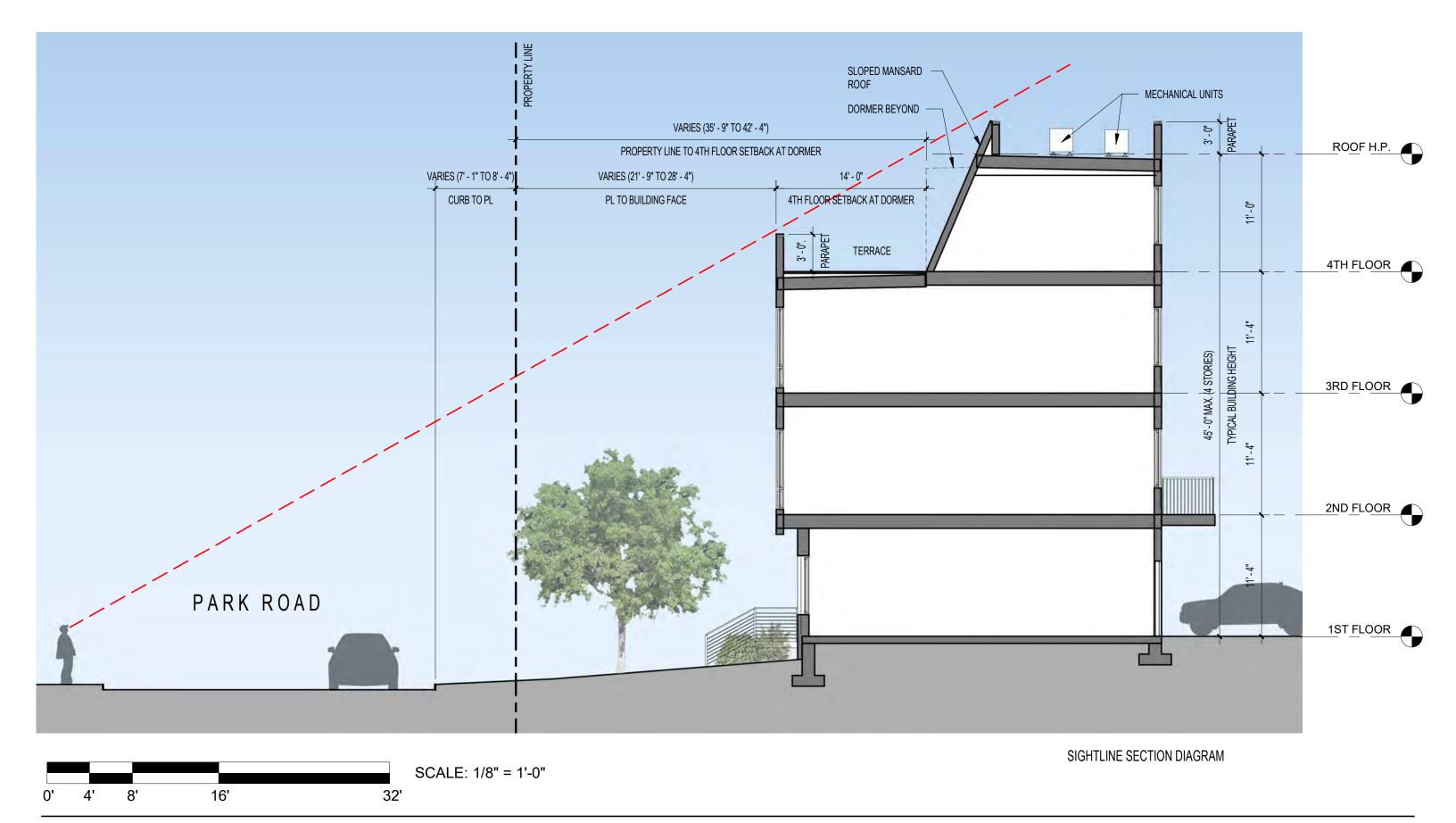
MATERIAL LEGEND

- Concrete steps
- Face brick
- Horizontal metal railing (dark gray)
 Pressure treated wood structure
- Composite decking system (gray)
 Composite fascia (gray)
 Metal canopy (dark gray)
 Exterior building downlight (black)
 Vinyl and glass door system 5
- 6
- 8



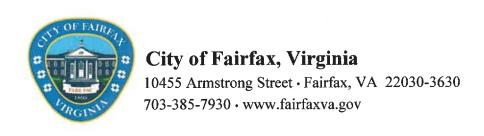
REAR DECK DETAIL







PARK ROAD TOWNHOMES
CITY OF FAIRFAX, VA



September 1, 2023

VIA CERTIFIED MAIL

Re: Public Hearing/Z-22-00093

Dear Property Owner:

Current City real estate records indicate that you are the owner of land near or adjacent to the property which is the subject of the above-referenced application. Pursuant to City Code Section 110-6.2.5.B.2, you are hereby notified the Planning Commission of the City of Fairfax, Virginia will hold a public hearing on Monday, September 11, 2023 at 7 p.m. in City Hall Annex, Room 100, 10455 Armstrong Street, Fairfax, Virginia, 22030, to consider the following:

Z-22-00093

Request from Caglayan Investment Group, applicant, by Keith Martin, agent, for consideration of a Zoning Map Amendment (Rezoning) from CR Commercial Retail zoning district to RT Residential Townhouse zoning district in the Architectural Control Overlay District (ACOD) with proffers pursuant to City Code Section 110-6.4, and special exceptions to allow development of 13 Townhomes on the premises known as 11006 Park Rd and more particularly described as Tax Map Parcel 57-1-40-002.

All interested parties are invited to attend the public hearing and express their views. Staff reports will be available five (5) days prior to the meeting date in the Office of Community Development & Planning, Annex Room 207, City Hall, 10455 Armstrong Street, and on the City of Fairfax webpage at www.fairfaxva.gov. The City will make reasonable accommodations for the disabled upon request received at least five days prior to the meeting; please call 703-385-7930, (TTY 711) for assistance.

Sincerely,

Supriya Chewle Planner II

September 1, 2023

VIA CERTIFIED MAIL AND EMAIL TO: tracy.strunk@fairfaxcounty.gov VIA EMAIL: dpzmail@fairfaxcounty.gov , kelly.atkinson@fairfaxcounty.gov

Tracy Strunk, Director Department of Planning and Development 12055 Government Center Parkway, Suite 1048 Fairfax, Virginia 22035

Re: Public Hearing/ Z-22-00093

Pursuant to Section 15.2-2204 (amended) of the Code of Virginia, enclosed is the legal notification for the above-referenced application(s). For additional information, please call the Department of Community Development and Planning at 703-385-7930.

Sincerely,

Supriya Chewle Planner II

Enclosure

NOTICE OF PUBLIC HEARING CITY OF FAIRFAX, VIRGINIA

Notice is hereby given that the Planning Commission of the City of Fairfax at its meeting on Monday, September 11, 2023, at 7 p.m. in City Hall Annex, Room 100, 10455 Armstrong Street, Fairfax, Virginia, 22030, will hold a public hearing to consider the following:

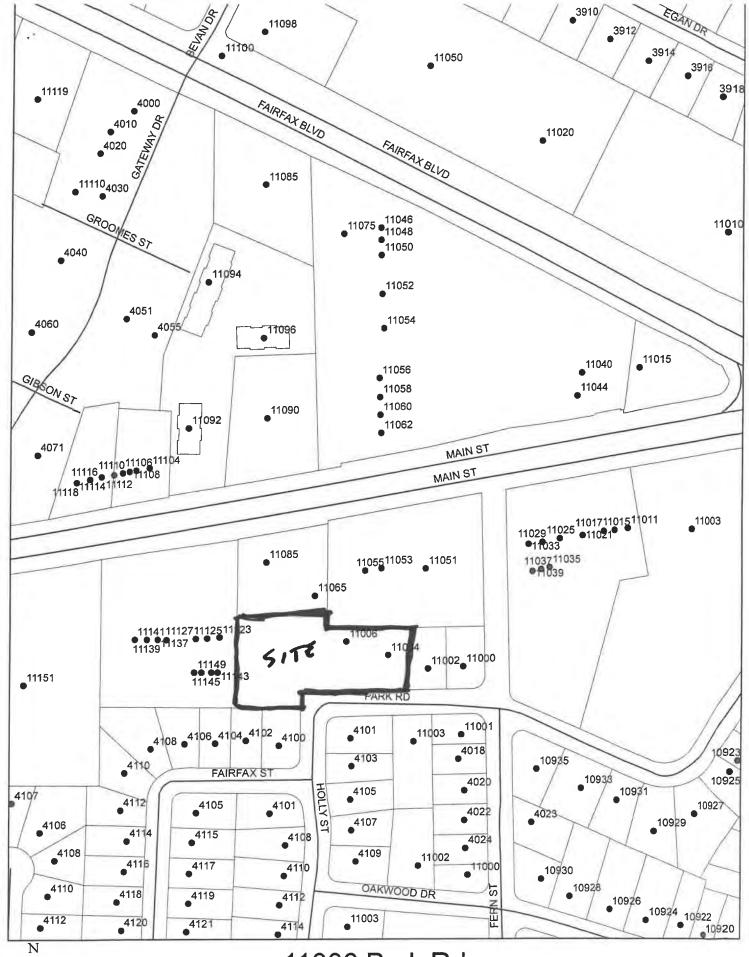
Z-22-00093

Request from Caglayan Investment Group, applicant, by Keith Martin, agent, for consideration of a Zoning Map Amendment (Rezoning) from CR Commercial Retail zoning district to RT Residential Townhouse zoning district in the Architectural Control Overlay District (ACOD) with proffers pursuant to City Code Section 110-6.4, and special exceptions to allow development of 13 Townhomes on the premises known as 11006 Park Rd and more particularly described as Tax Map Parcel 57-1-40-002.

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Tina Gillian, Clerk

September 1, 2023 September 8, 2023



11006 Park Rd







Lynda Burke 4100 Fairfax Street Fairfax, VA 22030 TRACY STRUNK, DIRECTOR
DEPT. OF PLANNING & DEVELOPMENT
12055 GOVERNMENT CENTER PARKWAY, SUITE 1048
FAIRFAX, VA 22035

Matthew Collins Lyndsey Fitfield 4102 Fairfax Street Fairfax, VA 22030 Nick Caine VIA EMAIL
Director of Market Research
McWilliams/Ballard
1029 North Royal Street, Suite 301
Alexandria, VA 22314

William (Sr) & Theresa Tuohy 4104 Fairfax Street Fairfax, VA 22030 USRP I LLC c/o Property Tax Dept P.O. Box 790830 San Antonio, TX 78279-0830

Carlos and Vanessa Aliste 4101 Holly Street Fairfax, VA 22030 Fairfax Heights Civic Association Mr. John Norce 10809 Second Street Fairfax, VA 22030

Jose Rodrigues 11003 Park Road Fairfax, VA 22030 Fairchester Woods Civic Association Mr. Cory McConnell 3826 Hill Street Fairfax, VA 22030

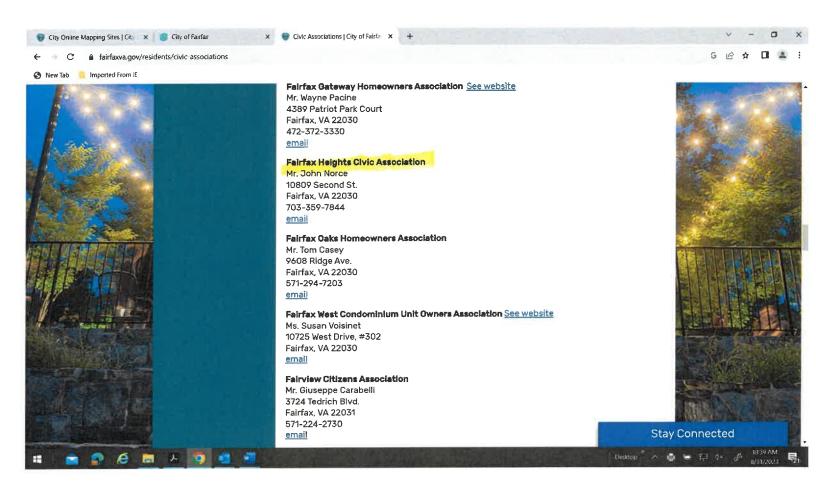
Ok Lan Chung c/o Art Tech Dental Lab 16013 S Desert Foothills Pkwy Unit 2108 Phoenix, AZ 85048 Westmore Citizens Association Ms. Beth lannetta 10916 Berry Street Fairfax, VA 22030

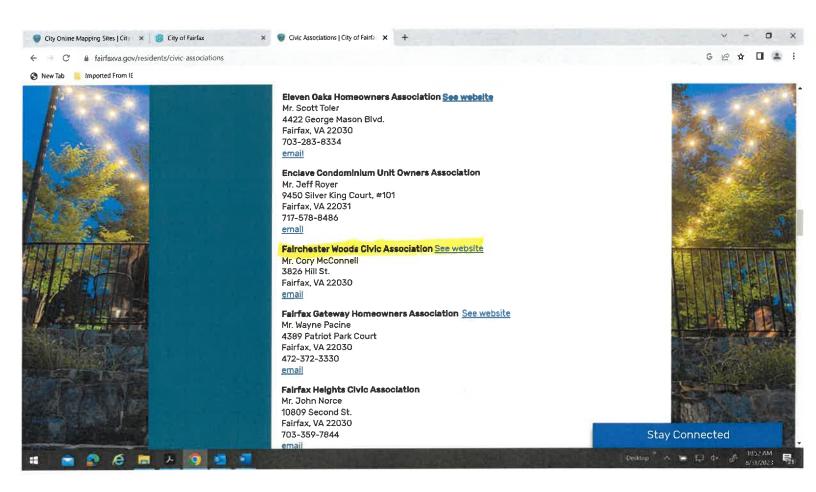
Caglayan Investment Group, LLC 42713 Latrobe Street Chantilly, VA 20152

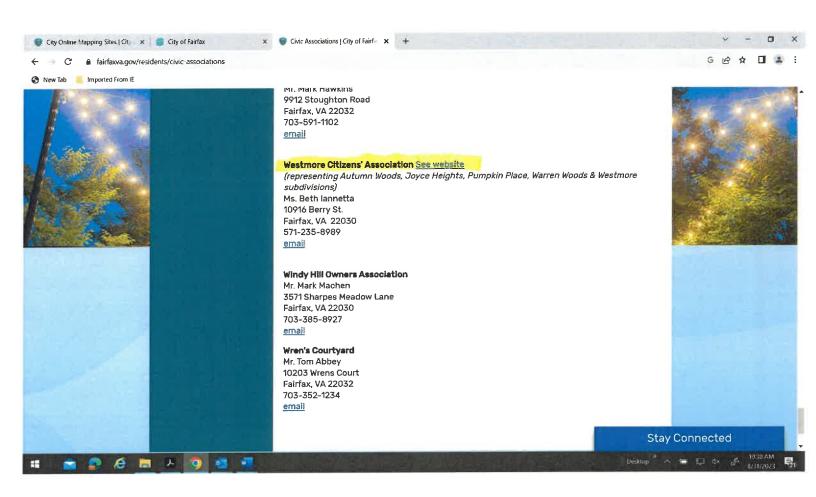
Federal Realty Partners L.P. 909 Rose Avenue Ste 200 North Bethesda. MD 20852

Ambest Lee Highway Investors LLC Wildwood Ambest LLC 909 Rose Avenue Ste 1000 North Bethesda, MD 20852

11090 Lee Highway, LLC Petroleum Marketing Group Inc 2900 Telestar Court Falls Church, VA 22042







From: Gillian, Tina

DPZ Mail for PD; Beth lannetta; Norce, John; McConnell, Cory B.; ncaine@mcwilliamsballard.com To:

Subject: Public Hearing Notice / Z-22-00093 / Park Road Townhomes

Date: Friday, September 01, 2023 11:01:00 AM

Attachments: image001.png

image002.png image003.png image004.png image005.png image006.png

PC Park Rd Townhomes 11006 Park Rd Sept 11.pdf

Hello.

This email is being sent to you for one of the following reasons:

- You requested to be notified of upcoming public hearings.
- You were initially notified when this application was first received by the City of Fairfax as part of the notification process.
- You are an HOA or Civic Association or Management representative.

Please find attached a copy of the notification letter sent to property owners regarding a public hearing set for property located at 11006 Park Road. A map is included for your reference. If you have any questions regarding the public hearing please feel free to contact the City of Fairfax. Thank you,



Tina Gillian

Administrative Assistant IV Fairfax Renaissance Housing Corporation Community Development and Planning

City of Fairfax

10455 Armstrong St. • Fairfax, VA 22030-3630

703-385-2494 **O** TTY:711









FOIA Disclaimer

You are hereby advised that, pursuant to the Virginia Freedom of Information Act, written correspondence (including, but not limited to, letters, e-mails and faxes) from and to the City of Fairfax and its officials and employees, and others acting on its behalf, may be subject to disclosure as being a public record. This includes the e-mail address(es) and other contact and identifying information for parties involved in the correspondence.

From: Gillian, Tina

To: tracy.strunk@fairfaxcounty.gov; DPZ Mail for PD; Atkinson, Kelly

Subject: Public Hearing Notice / Z-22-00093

Date: Priday, September 01, 2023 10:37:00 AM

Attachments: PC NotificationCityofFairfax Park Rd Townhomes Sept 11.pdf

image001.png image002.png image003.png image004.png image005.png image006.png

Hello,

Please find attached the legal notification for the application referenced above.

Thank you,



Tina Gillian

Administrative Assistant IV
Fairfax Renaissance Housing Corporation
Community Development and Planning

City of Fairfax

10455 Armstrong St. • Fairfax, VA 22030-3630

703-385-2494 **O TTY:711** *www.fairfaxva.gov*





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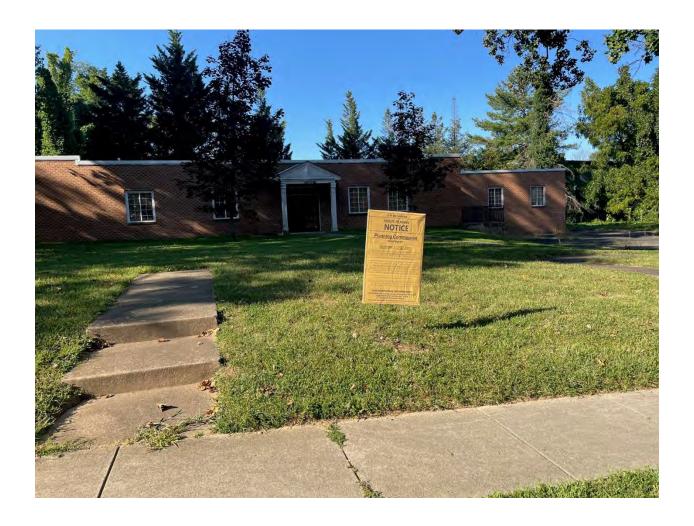
Associated Case #

AFFIDAVIT FOR POSTED NOTICE (SIGN)

I, Emre zirekoglu	hereby affirm that I have received, read, understand and	
Applicant/Agent Name agree to abide by the 'Posted Notice Instructions placement given to me on September 1, 2023 6.2.5.B.3. Date	s to the Applicant' and location map depicting sign as required by City Code, Chapter 110, Article	
	securely with <u>One</u> sign, from <u>Friday, September 1, 2023</u> date of the public hearing as given on the sign(s).	
- · · · · · · · · · · · · · · · · · · ·	or traffic control signs or elsewhere in the public right-of- than <u>Friday</u> , <u>September 22</u> , <u>2023</u> , <u>no more than 10 days</u>	
A photo confirmation of the "Posted Notice" (s date of placement.	sign) placement will be provided to the Zoning Office on	
emre zirekoglu (Sep 5, 2023 10:56 EDT) Applicant/Agent Signature	Sep 5, 2023 Date	
APPLICANT/AGENT MUST SIGN AND HAVE THEIR SIGNATURES NOTARIZED		
The above affidavit was subscribed and confirmed	ed by oath or affirmation before me on this <u>5th</u>	
day of September , 20 23 ,	in the State of Virginia.	
Notary Public of Chesterfield County, Virg My commission expires 06/30/2024		
Completed via Remote Online Nota	Notary Public/Registration NoLauren N Fridley Commission 7699515 rization using two-way Audio/Video technology	
OFFICE USE ONLY		
Receipt # Date Paid	Fee Paid	

Staff Initials _____

POSTED NOTICE



ATTACHMENTS: [If the Planning Commission agrees with the staff recommendation, then Motion A is appropriate]

- 11A. Motion to approve the Zoning Map Amendment (rezoning). 11B. Motion to deny of the Zoning Map Amendment (rezoning).

ATTACHMENT 11A

Motion - A

Rezoning (Z-22-00093)

APPROVAL

BASED ON THE PUBLIC CONVENIENCE, WELFARE AND GOOD ZONING PRACTICE, WITH RESPECT TO REZONING APPLICATION Z-22-00093, WHICH HAS BEEN FILED FOR THE LAND IDENTIFIED AS 11006 PARK RD AND MORE PARTICULARLY DESCRIBED AS TAX MAP PARCEL 57-1-40-002, I MOVE THAT THE PLANNING COMMISSION RECOMMEND APPROVAL OF REZONING APPLICATION Z-22-00093 TO REZONE THE SUBJECT PROPERTY FROM CR COMMERCIAL RETAIL TO RT RESIDENTIAL TOWNHOUSE ZONING DISTRICT IN THE ARCHITECTURAL CONTROL OVERLAY DISTRICT (ACOD) AND APPROVAL OF THE GENERAL DEVELOPMENT PLAN WITH PROFFERS, WHICH HAS BEEN PREPARED AND SUBMITTED BY THE APPLICANT.

ATTACHMENT 11B

Motion - B

<u>Rezoning</u> (Z-22-00093)

DENIAL

BASED ON THE PUBLIC CONVENIENCE, WELFARE AND GOOD ZONING PRACTICE, WITH RESPECT TO REZONING APPLICATION Z-22-00093, WHICH HAS BEEN FILED FOR THE LAND IDENTIFIED AS 11006 PARK RD AND MORE PARTICULARLY DESCRIBED AS TAX MAP PARCEL 57-1-40-002, I MOVE THAT THE PLANNING COMMISSION RECOMMEND DENIAL OF REZONING APPLICATION Z-22-00093 TO REZONE THE SUBJECT PROPERTY FROM CR COMMERCIAL RETAIL TO RT RESIDENTIAL TOWNHOUSE ZONING DISTRICT IN THE ARCHITECTURAL CONTROL OVERLAY DISTRICT (ACOD) FOR THE FOLLOWING REASONS:

(Planning Commission may choose one or more grounds from the following sample reasons or may craft additional reasons supporting denial)

- The applicant's proposal, as set forth in the General Development Plan, is not in conformance with the Comprehensive Plan and other adopted City goals and policies;
- The applicant's proposal, as set forth in the General Development Plan, will adversely impact the safety and movement of vehicular traffic upon adjacent streets;
- The density of the applicant's proposal, as set forth the General Development Plan, is incompatible with and will adversely impact adjacent properties and the surrounding neighborhood;
- The applicant's proposal, as set forth in the General Development Plan, will adversely impact the health, safety and welfare of residents living in the vicinity of the subject property.

AN ORDINANCE TO AMEND THE ZONING MAP OF THE CITY OF FAIRFAX, VIRGINIA TO REZONE CR COMMERCIAL RETAIL ZONING DISTRICT TO RT RESIDENTIAL TOWNHOUSE ZONING DISTRICT IN THE ARCHITECTURAL CONTROL OVERLAY DISTRICT (ACOD) WITH PROFFERS; ON THE LAND MORE PARTICULARLY DESCRIBED AS AND IDENTIFIED AS 11006 PARK RD (TAX MAP 57-1-40-002).

WHEREAS, Caglayan Investment Group, applicant, by Keith Martin, agent, submitted application No. Z-22-00093 requesting a change in the zoning classification from CR Commercial Retail zoning district to RT Residential Townhouse zoning district in the Architectural Control Overlay District, for the parcels identified above, and more specifically described as:

Beginning at a point in the northerly line of Park Road, a corner common to Lot 10, Section Four, Westmore; thence with the northerly line of Park Road S 88° 50' 52" W 207.47' to a point in the westerly line of Holly Street; thence with the westerly line of Holly Street S 00° 29' 14" W 31.19 to a point, a corner common to Lot 33, Section Five, Westmore; thence with Lots 33 and 32, Section Five, Westmore N 89° 30' 46" W 125.38' to a point, corner common to Ambest Lee Highway Investors, LLC (Now or Formerly); thence with the easterly line of Ambest Lee Highway, LLC (Now or Formerly) N 00° 29' 14" E 183.31 ' to a point; thence through Caglayan Investment Group, LLC S 89° 16' 04" E 176.29 to a point in the westerly line of Lee Highway Associates, Inc. (Now or Formerly); thence with the westerly and southerly lines of Lee Highway Associates, Inc. (Now or Formerly) S 00° 21' 52" W 25.04' and N 88° 47' 52" E 166.20' to a point, a corner common to Lot 10, Section Four, Westmore; thence with Lot 10 S 04° 54' 52" W 125.66 to the point of beginning containing 50,778 square feet of land.

WHEREAS, the City Council has carefully considered the application, the submitted General Development Plan, the recommendation of the Planning Commission, the recommendation of staff, and the testimony received at public hearing; and

WHEREAS, the City Council has determined that the proposed rezoning is proper and in accordance with the Comprehensive Plan as well as with the pertinent provisions set forth in the Code of Virginia and the Code of the City of Fairfax, Virginia;

NOW, THEREFORE BE IT ORDAINED that the above-described property be rezoned from CR Commercial Retail zoning district to RT Residential Townhouse zoning district in the Architectural Control Overlay District, subject to the General Development Plan dated August 29, 2023 and Proffers dated August 25, 2023;

BE IT FURTHER ORDAINED, that the above application package, General Development Plan with proffers be approved;

The Zoning Administrator of the City is hereby directed to modify the Zoning Map to show the changes in the zoning of these premises, and the Clerk of the Council is directed to transmit duly certified copies of this ordinance to the applicant, Zoning Administrator, and to the Planning Commission of this City as soon as possible.

Planning Commission hearing: September 11, 2023 City Council hearing: Adopted: Mayor Date ATTEST: City Clerk The motion to adopt the ordinance was approved	
Date ATTEST: City Clerk	
ATTEST: City Clerk	
City Clerk	
The motion to adopt the ordinance was approved	
Vote	
Councilmember Bates	
Councilmember Doyle Feingold	
Councilmember Greenfield Councilmember Lim	
Councilmember Ross	
Councilmember Stehle	