COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION

Stephen C. Brich, P.E.
Commissioner

1401 East Broad Street
Richmond, Virginia 23219

(804) 482-5818

December 19, 2024

The Honorable Jennifer B. Boysko
Chair, Senate Committee on Transportation
P.O. Box 247
Herndon, Virginia 20172

The Honorable Karrie K. Delaney
Chair, House Committee on Transportation
P.O. Box 231023
Centreville, Virginia 20120

The Honorable L. Louise Lucas
Chair, Senate Committee on Finance and Appropriations
P.O. Box 700
Portsmouth, Virginia 23705-0700

The Honorable Luke E. Torian
Chair, House Committee on Appropriations
4222 Fortuna Plaza
Suite 659
Dumfries, Virginia 22025

Dear Chairs Boysko, Lucas, Delaney, and Torian:

Item 458 N. of Chapter 1 of the 2023 Special Session I Acts of Assembly (Item 458 N.) directed the Virginia Department of Transportation (Department), in coordination with the Secretary of Commerce and Trade (the Secretary), to review the economic development, transportation, and safety benefits of expanding Van Buren Road, North Extension in Prince William County. Item 458 N. required that the review include representatives from Prince William County, the Northern Virginia Transportation Authority, and any private sector interests, required/needed to aid in the completion of this review. In addition to assessing the economic benefits of the expansion, the Department and the Secretary were directed to determine and communicate any additional benefits, potential financing, and timetable option(s) for this project with findings to be reported to the Chairs of the House Transportation, Senate Transportation, House Appropriations, and Senate Finance and Appropriations Committees.

In accord with Item 458 N., I am submitting the attached report to you regarding the expansion of Van Buren Road. If you have any questions, please do not hesitate to contact Ben Mannell (Transportation Mobility Planning Division) at 804-786-2971, or me.

Sincerely,

Stephen C. Brich

Stephen C. Brich, P.E.
Commissioner of Highways

cc: The Honorable W. Sheppard Miller, III
The Honorable Caren Merrick

Attachment

Van Buren Road North Extension

Prince William County, Virginia

Date: December 2024

Executive Summary: Van Buren Road North Extension Study

The Virginia General Assembly, pursuant to Item 458.N. of Chapter 1 of the 2023 Acts of Assembly (Special Session I), provides that: "The Virginia Department of Transportation (VDOT) in coordination with the Secretary of Commerce and Trade (the Secretary) shall review the economic development, transportation, and safety benefits of expanding Van Buren Road, North Extension in Prince William County. The review shall include representatives from Prince William County, the Northern Virginia Transportation Authority, and any private sector interests required to aid in the completion of this review. In addition to assessing the economic benefits of the expansion, VDOT and the Secretary shall determine and communicate any additional benefits, potential financing, and time table option for this project. VDOT and the Secretary shall report its findings to the Chairs of the House Transportation, Senate Transportation, House Appropriations, and Senate Finance and Appropriations Committees on or before November 1, 2024." This report is offered in response to Item 458.N.

The study team was comprised of representatives from VDOT, Prince William County, the Virginia Economic Development Partnership, and private sector interests.

Background

In accordance with the 2040 Prince William County Comprehensive Plan (PWCCP) and Revised (2022) Countywide Transportation Plan (CTP), the Prince William County (PWC) Department of Transportation is proposing to extend Van Buren Road on new alignment from its existing termini at the intersection with Dumfries Road (Route 234) north for approximately 2.5 miles to a portion of existing Van Buren Road directly south of Cardinal Drive. Based on previous cost estimates produced by Prince William County, the project is expected to cost $207 million and has been submitted for SMART SCALE funding multiple times. An Environmental Assessment was released in January 2024, followed by a public hearing to gather community input.

Study Focus

The analysis performed for this document concentrated on three key benefit areas: economic development, transportation, and safety. Key findings include:

1. **Economic Development:** The project is projected to enhance the accessibility of adjacent vacant lands, leading to the development of approximately 715,000 square feet of industrial space, generating an estimated 1,100 jobs and increasing the assessed value of properties by 950%.
2. **Transportation Benefits:** The extension aims to reduce congestion, improve travel time reliability, and enhance accessibility. Although the project has previously scored similarly in SMART SCALE applications, it has been estimated that value engineering options could reduce

the project's estimated cost by approximately $17.6 million, which could improve its score in this funding program.

3. **Safety Improvements:** An expected decrease in overall crashes by 81 and a reduction in fatal and injury crashes underscores the project's potential to enhance roadway safety.

Funding Considerations

To advance the project, the study suggests incorporating value engineering strategies to lower costs and exploring alternative funding sources, including county bonds, contributions from the Northern Virginia Transportation Authority, and federal grants.

This study did not consider special tax districts as a revenue source. Special tax districts were not considered because the majority land use on the corridor was industrial and unsuitable for generating significant tax revenue.

Conclusion

The Van Buren Road North Extension project can improve connectivity and local economic development in Prince William County. However, achieving funding through SMART SCALE may continue to prove challenging without cost reductions and leveraging of alternative funding sources effectively.

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Van Buren Road North Extension Study

The Virginia General Assembly, pursuant to Item 458.N. of Chapter 1 of the 2023 Acts of Assembly (Special Session I)[1], directed that: "The Virginia Department of Transportation (VDOT) in coordination with the Secretary of Commerce and Trade (the Secretary) shall review the economic development, transportation, and safety benefits of expanding Van Buren Road, North Extension in Prince William County. The review shall include representatives from Prince William County, the Northern Virginia Transportation Authority, and any private sector interests required to aid in the completion of this review. In addition to assessing the economic benefits of the expansion, VDOT and the Secretary shall determine and communicate any additional benefits, potential financing, and time table option for this project. VDOT and the Secretary shall report its findings to the Chairs of the House Transportation, Senate Transportation, House Appropriations, and Senate Finance and Appropriations Committees on or before November 1, 2024." This report is offered in response to Item 458.N.

The study team was comprised of representatives from the Virginia Department of Transportation, Prince William County, the Virginia Economic Development Partnership, and private sector interests.

Background

In accordance with the 2040 Prince William County Comprehensive Plan (PWCCP)[2] and Revised (2022) Countywide Transportation Plan (CTP), the Prince William County (PWC) Department of Transportation is proposing to extend Van Buren Road on new alignment from its existing termini at the intersection with Dumfries Road (Route 234) north for approximately 2.5 miles to a portion of existing Van Buren Road directly south of Cardinal Drive. The purpose of the Van Buren Road North Extension is to create a north-south alternative route for I-95 and Route 1, to enhance mobility within the area, provide safe access for non-motorized transportation, and improve overall network safety.

An environmental study[3] was initiated by PWC in 2021 to identify a preferred project alignment. The study was revised with the issuance of an Environmental Assessment in January 2024. PWC held a Location Public Hearing on March 14, 2024, to support this EA and gather public input. The project's proposed alignment is shown in **Figure 1**.

The proposed project, currently estimated to cost $207 million, was submitted by PWC through SMART SCALE[4] for funding prioritization on four occasions. Minor changes to the project concept/design were made with each submission, and the most recent two submissions leveraged funding from the Northern Virginia Transportation Authority (NVTA).

[1] https://budget.lis.virginia.gov/get/budget/4779/HB6001/
[2] https://www.pwcva.gov/department/planning-office/prince-william-county-comprehensive-plan
[3] https://www.pwcva.gov/assets/2024-02/Van%20Buren%202024%20NEPA%20Environmental%20Assessment.pdf
[4] https://smartportal.virginiahb2.org/#/forms/ss/2024/full/F42-0000009605-R01/

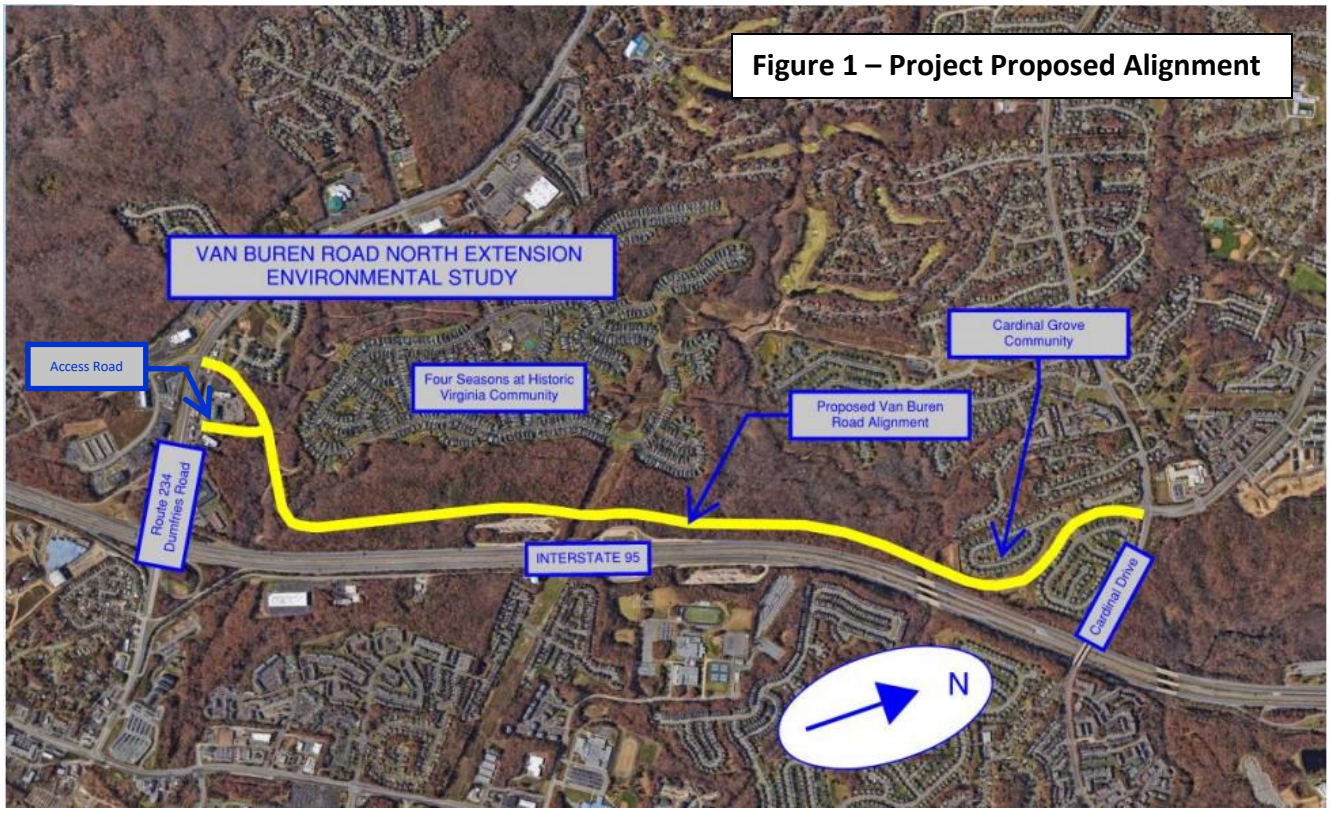


Figure 1 – Project Proposed Alignment

Study Approach

As directed by the General Assembly, this study looked at four specific benefit areas related to the proposed Van Buren Road North Extension:

- Economic Development
- Transportation
- Safety
- Value Engineering

The study team conducted an economic development impact analysis, evaluated transportation benefits (including congestion benefits, travel time reliability and accessibility to employment afforded by the proposed project as well as potential cost savings that could be realized by changes to the project scope) and conducted an updated safety analysis. The study also performed a value engineering analysis to determine ways to decrease costs while retaining benefits, with the goal of improving the project's SMART SCALE score.

Economic Development Analysis

The development impact analysis (**Appendix A - Van Buren Road Economic Development Impact Analysis**) considered a six-mile radius from the subject property as well as the entire County and determined the magnitude of the economic development opportunity from the proposed road segment/site. Employment in the six-mile radius area, since 2014, has grown faster when compared

to the overall rate for the entire County, and is projected to grow through 2034, though at a slower pace.

Roughly 74.4 of the subject property's 135.5 acres are deemed developable and are currently zoned M2 (Light Industrial Zone) with light industrial uses permissible. According to PWC's zoning ordinance, these areas are "intended to provide areas for research and development centers, light industrial manufacturing, warehousing, wholesaling and related office and institutional uses." After considering the employment trend and possible land uses, the development program analysis was comprised of 560,000 SF of warehouse/distribution space and 155,000 SF of industrial/flex space, totaling 715,000 square feet. At a projected build-out in 2031, the total assessed value would peak at $73.4 million. Given the current assessed value of the 135.5 acres at $7.7 million, the projected build out would result in a 953% increase in value of the subject properties.

The number of jobs projected is estimated at 1,100 by the end of 2032 once all building space is constructed and occupied. In that year, wages will reach their peak at $73.8 million.

Based on assessed value projections, development in the vicinity of the proposed Van Buren Road extension project should generate roughly $730,000 in annual tax revenues at build-out in year 7 (2031). Over the first ten years, it will generate approximately $5.3 million in real estate tax revenues for the County. Estimated income taxes paid will peak at $3.96 million at build-out in 2031 and $22.1 million over the first ten years. During the first ten years of development, total tax revenues are projected to exceed $27.8 million, with the peak year occurring in 2032 when revenues top $4.7 million.

Updated Transportation and Safety Analysis

Information from PWC's Van Buren Road North Extension Environmental Assessment document, as well as previous project funding applications for SMART SCALE were used as a basis for evaluating transportation and safety benefits of the proposed project. Prior to conducting an updated transportation and safety analysis, the study team conducted a value engineering assessment of the proposed project to identify means of reducing the project's cost (see **Appendix B - Cost Optimization Summary**). It resulted in nine options, five of which are recommended for consideration by PWC and listed in order of potential cost savings:

- Adjust the profile to better balance the required earthwork
- Construct a half section of the roadway (i.e. 2 lanes) in the near-term, while not precluding a future full section (i.e. 4 lanes)
- Remove the sidewalk from the concept between Access Road and Fledgling Circle
- Remove the retaining walls from the concept
- Decrease the sidewalk buffer

Incorporating those recommendations would result in an estimated project cost savings of $17.6 million, which is a decrease in the project cost of 8.5%.

SMART SCALE analysis methodology was used for congestion, travel time reliability (one of SMART SCALE's economic development measures), accessibility and safety analyses as the measures used are typical performance measures applied to projects. The proposed extension project has been submitted through SMART SCALE on four occasions and has not been selected for funding. SMART SCALE, however, does provide anticipated transportation benefit measures. The project was evaluated for travel time reliability, accessibility and safety as each of these areas contributes to the overall project benefit and SMART SCALE score that determines whether the project is recommended for funding under SMART SCALE. The results are shared in terms of measure value and weighting scale for the Northern Virginia area, as summarized in **Table 1**. For a complete description of the SMART SCALE scoring process, including all factors and related measures, please refer to the latest SMART SCALE Technical Guide.

Congestion analysis looks at person throughput and delay savings for travel associated with the project. The resulting measure value was similar to the previous round of SMART SCALE, with 43 additional person throughput and 15 anticipated hours of delay reduction. This is expected as the project provides some connectivity between Route 234 and Dale Boulevard. However, access to developable land will be a primary outcome of the project, resulting in additional access points and reductions in travel speeds along the corridor. Within the Northern Virginia area, congestion benefits account for a majority (45%) of the project's score in SMART SCALE. Each of the two measures (person throughput and hours of delay reduction) account for 50% of the congestion benefit, or 22.5% of the total score.

Travel time reliability analysis looks at the impact and frequency of incidents as well as weather events on the travel time along the proposed project. The measure is intended to evaluate whether the project will improve the reliability of travel along the corridor. Improving travel time reliability is good for residents and consumers accessing the businesses along the study area as it leads to more predictable trips. Travel time reliability accounts for 20% of a project's Economic Development score which, in Northern Virginia, accounts for 5% of the project's total score. Combined, travel time reliability represents 1% of the project's total SMART SCALE score. The evaluation resulted in a travel time reliability measure value of 1.62, which is about the average score that projects receive in Northern Virginia. See **Appendix C - Travel Time Reliability Analysis – SMART SCALE Methodology** for additional information.

Accessibility analysis is another area considered in SMART SCALE , and in Northern Virginia accounts for 25% of the project score. The analysis compared 2024 results against the previous round (2022) and indicated very minimal increases in the accessibility values for automobile access to jobs, automobile access to jobs for eligible disadvantaged populations (EDP) and access to multimodal options. The resulting value for the access to jobs measure is 39.44, which accounts for 60% of the accessibility factor, or 15% of the total score. For access to jobs EDP, the measure value is 46.53, accounting for 20% of the accessibility score and 5% of the total score. For access to multimodal options, the measure value is 28.21, accounting for 20% of the accessibility score and 5% of the total score. See **Appendix D - Accessibility Analysis** for additional information.

The safety factor in Northern Virginia accounts for 15% of the project score in SMART SCALE and considers the total change (crashes on new roadway minus the reduction in crashes on parallel facilities) in Equivalent Property Damage Only (EPDO) as a result of the change in fatal and injury crashes. The analysis indicated that total fatal and injury crashes are expected to decrease by 2 over five years, resulting in an EPDO measure value of 81, which account for 70% of the safety factor and 10.5% of the total score. These results are generally consistent with results from the previous round (2022). See **Appendix E - Safety Analysis** for additional information.

Table 1 – SMART SCALE Factors

SMART SCALE Factors	Congestion		Safety	Accessibility			Economic Development
Factor Weight (Northern Virginia, Rd 6)	45%		15%	25%			5%
Measure	Additional Person Throughput	Delay Reduction	EPDO	Access to Jobs	Access to Jobs EDP	Access to Multimodal	Travel Time Reliability
Measure Value	43	15	81	39.44	46.53	28.21	1.62
Measure Weight (Rd 6)	50%	50%	70%	60%	20%	20%	20%
% Total Score	22.5%	22.5%	10.5%	15.0%	5.0%	5.0%	1.0%

Given the results of the updated transportation and safety analysis, the project is expected to score similarly under SMART SCALE round six as it has in previous rounds. Therefore, to improve the possibility of the project receiving funding through SMART SCALE, the overall project cost and/or the amount of funding requested through SMART SCALE should be reduced. This can be done by incorporating the recommended value engineering concepts and/or increasing the funding that comes from outside sources (i.e. leveraged funding). Possible funding sources for leveraged funding would include, but not be limited to:

- County bonds
- Northern Virginia Transportation Authority
- Federal discretionary grant programs
- Federal or state earmarks

Project Timeline

A potential project timeline with estimated durations follows:

- FY20-FY24 Prince William County expends $8.5M for Planning and NEPA Document
- FY24 - Prince William County Receives NVTA Grant of $2.5M
- FY25 - Selection of Design Consultant by Prince William County (6 months)

- FY25-FY27 Development of Design/Preliminary Engineering (2 years)
- FY26-FY27 Seek and Submit for Grant Funding (1 year)
- FY28 Begin Construction (construction duration 2 years)

The potential project timeline assumptions were vetted with PWC.

Public Engagement

VDOT conducted an economic development community survey of the proposed Van Buren North extension from August 15, 2024, through August 29, 2024, using the website Publicinput.com. Over 900 people participated in the survey, providing ratings to questions and 653 written comments. The survey's primary purpose was to seek the public's opinion on the economic impacts of the proposed road extension. The details of the survey results are provided in **Appendix F - Public Engagement Summary**.

The most favorable responses were for the road to reduce commute time and create an alternative to I-95. Attracting jobs with the road extension received neutral responses. Written responses were overwhelmingly (75%) in favor of the road extension, particularly for its ability to reduce cut-through traffic on the Montclair local streets.

The majority of the survey respondents lived in or immediately adjacent to the study area, and their responses revealed that restaurants and retail were the most desired land uses and that respondents had concerns about the loss of natural habitat.

Conclusion

The proposed Van Buren Road North Extension project provides benefits in terms of the following:

- Connectivity within the local community
- An alternative to Route 1
- Improvements to accessibility, safety and travel time
- An increase to the tax base for Prince William County

The project will facilitate access to currently landlocked parcels that can be developed to their highest and best use as identified in the County Comprehensive Plan and Zoning plan. Despite these benefits, the project has not succeeded in securing funding through SMART SCALE over previous rounds. The same outcome is anticipated for the current round, as the benefits were consistently lower in relation to other projects submitted within the Northern Virginia area.

To increase the overall SMART SCALE score, which is derived from a ratio of the calculated benefits and the total project cost, the study team has evaluated possible project scope changes that should be considered to help lower the cost. These strategies, as well as alternative funding programs that can either cover the project cost or serve as leveraged funds, are recommended for consideration to advance the project.

1. Appendix A - Van Buren Road Economic Development Impact Analysis

This section first reviews the current uses surrounding the Van Buren Road site to determine how future developments can integrate with existing neighborhoods and make the best use of available lands. It analyzes past employment and development trends to identify key industries driving economic growth and assess future demand for the site. Additionally, the section evaluates real estate market conditions across different sectors to study the market feasibility of various future uses. Finally, this section discusses projected development phasing and estimates the tax revenue impact in evaluating the economic and fiscal effects of the proposed project on the County.

1.1. Project Location

VDOT, in cooperation with Prince William County, Virginia, is investigating the feasibility of constructing a new transportation corridor known as Van Buren Road. The project would extend Van Buren Road on a new alignment from its existing termini at the intersection with Dumfries Road (Route 234) north for approximately 2.5 miles to an existing portion of Van Buren Road directly south of Cardinal Drive (**Figure 1-1**).

The following are transportation-related project objectives:

- Provide an additional north-south travel corridor and reduce local congestion;
- Provide direct access to the parcels and proposed developments within the project corridor;
- Improve emergency and state maintenance vehicle access and response time; and
- Improve community access to local schools and adjacent commercial centers.

In addition, Prince William County views the project as an important economic development opportunity, which would attract new business to the County.

The project site is located west of the I-95 corridor and is approximately 31 miles south of the U.S. Capitol Mall, approximately 17 miles east of the City of Manassas, Virginia, and only 7.5 miles north of Marine Corps Base Quantico, a major economic driver in the region.

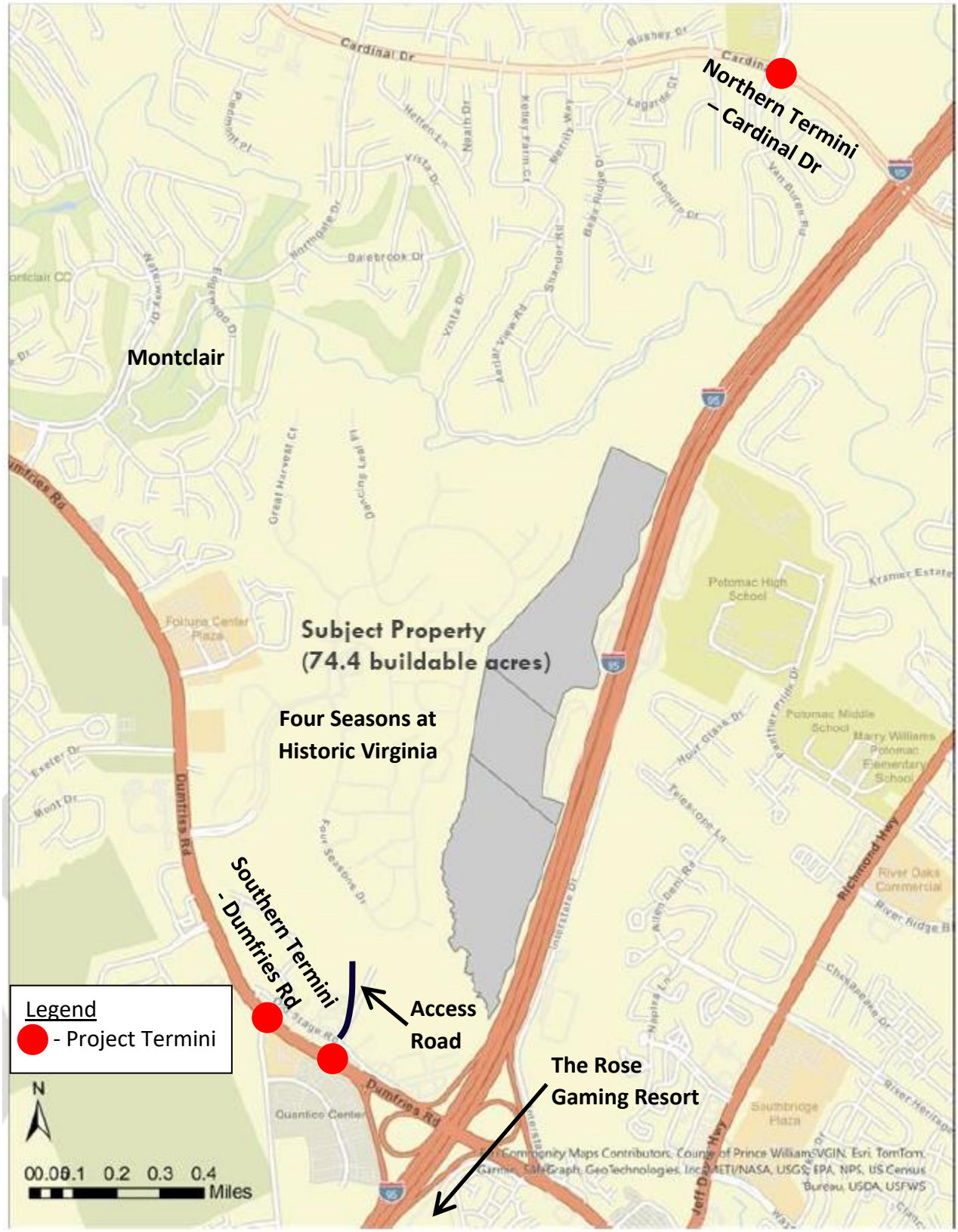


Figure 1-1 – Site Location Map

1.2. Project Site and Surrounding Land Use Context

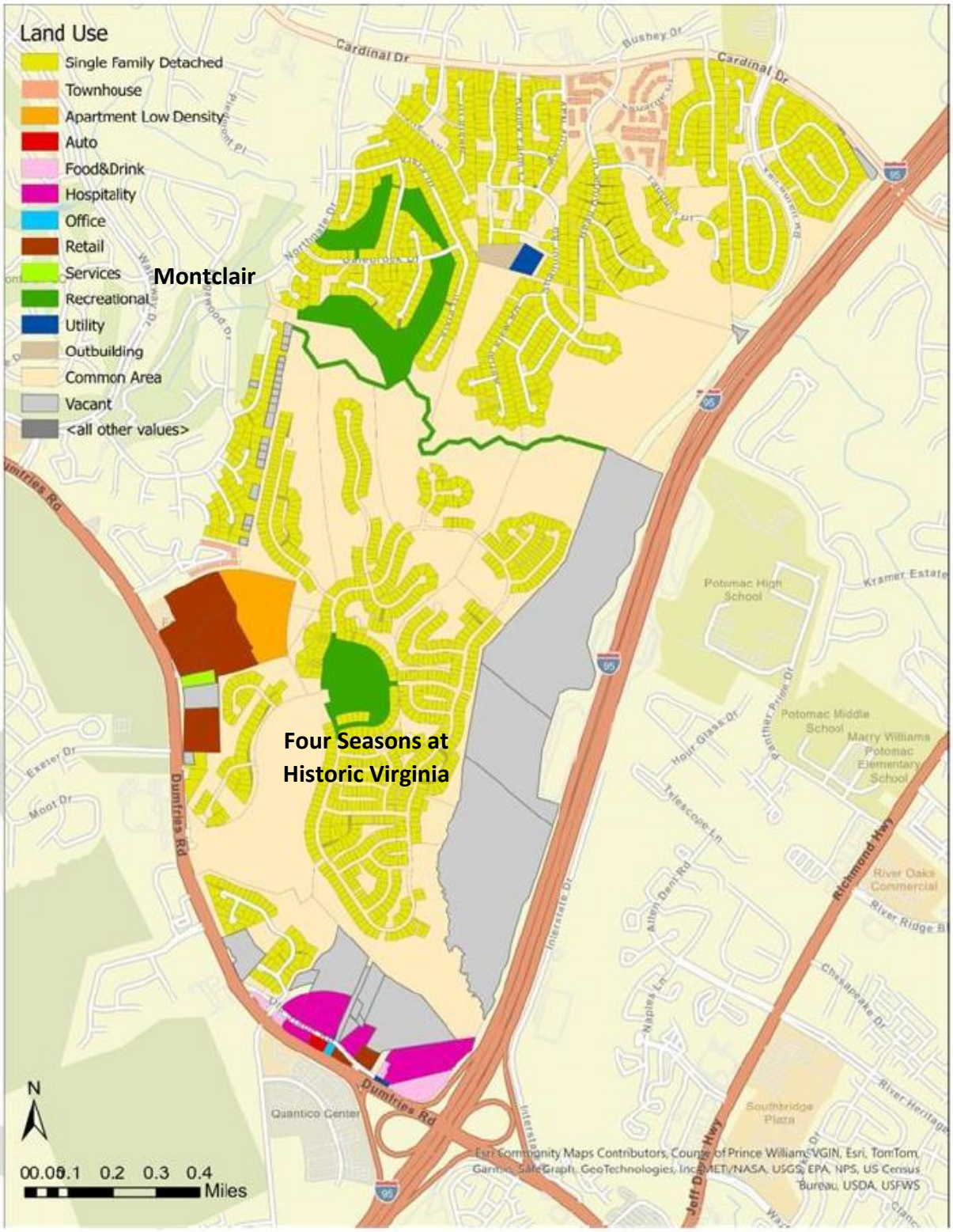
The project site consists of three parcels of land totaling 135.5 acres; of which roughly only 74.4 acres are thought to be developable due to the steep slopes, resource protection areas, wetlands, and other constraints (**Table 1-1**). According to the Prince William County Real Estate Assessments Office, the total assessed value of these properties is estimated at $7.7 million as undeveloped land or $57,052/acre. The properties are zoned M2 (Industrial General) with light industrial uses permissible, or locations for industries which may require larger spaces or more intensive operations but is generally wide-ranging and available for numerous uses.

The subject properties are bound on the eastern edge by the Interstate 95 corridor, which runs north and south. A cluster of businesses along Route 234 southwest of the site primarily consists of medical offices, national flag hotels/motels, chain restaurants, and other businesses. Of note, a new entertainment development called The Rose Gaming Resort is nearing completion across Interstate 95 on the east side of I-95 in Dumfries and will open for business in 2024 (**Figure 1-1**). The $460 million phase one development will include 1,650 historical horse racing machines, a 102-room hotel, 8 restaurants, and a 2,500-space parking garage.

Directly adjacent to the subject properties are mostly residential land uses with a combination of apartments, single-family homes, townhomes, and a 55+ age-restricted community that abuts the site. The Four Seasons at Historic Virginia is a 465-acre community comprised of 801 homes and roughly 1400+ residents who live in a resort-style setting for active adults ages 55 and above (**Figure 1-1** and **Figure 1-2**). There are several large areas of open space that create a buffer between the residential neighborhoods and the interstate and to a lesser degree, the subject properties.

Table 1-1 – Summary of Site and Surrounding Land Use

Category	Information
No. of Parcels	3
Acreage	135.5
Zoning	M2 (Light Industrial)
Current Land Use	Vacant Land
Total Assessed Land Value	$7,730,600
Owners	• Atlantic Funding LTD • Southgate Business Center LLC



Source: Prince William County, Real Estate Assessor's Office and RKG Associates, Inc., 2024

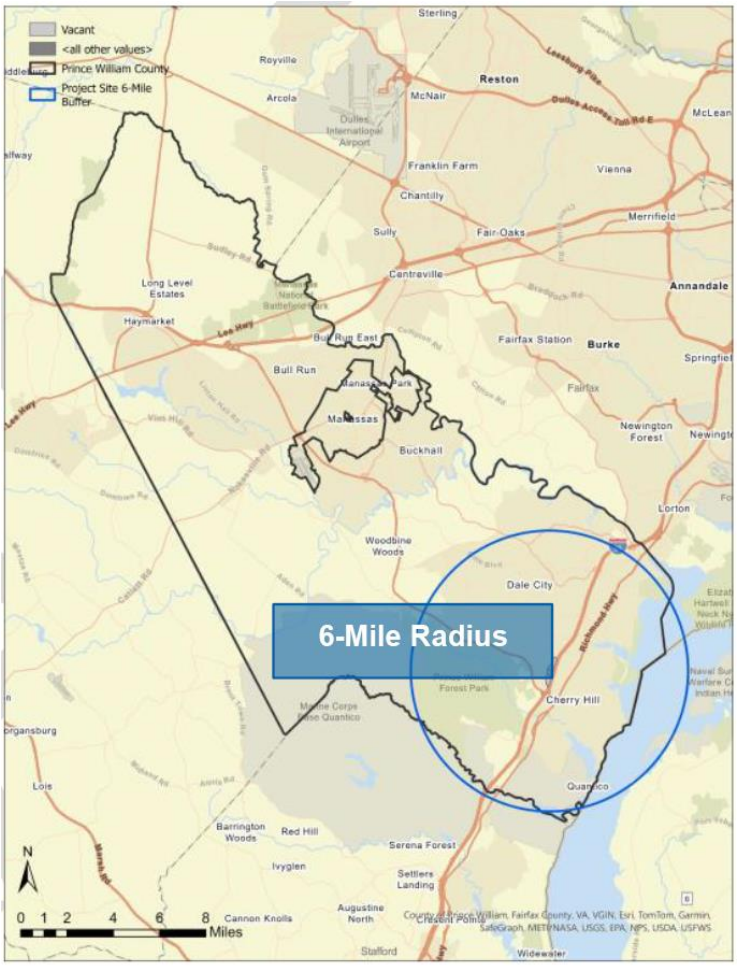
Figure 1-2 – Adjacent Land Use Pattern

1.3. Market Context For Development

The greater market context for the Van Buren Road corridor is primarily highway commercial, which consists of businesses that benefit from the access to Interstate 95, and many of the crossroads that intersect with the highway, such as Route 234 (Dumfries Road). The predominant businesses in this part of the County include destination retail (e.g., Potomac Mills), business park development (e.g., Quantico Corporate Center), medical office space, manufacturing, and scattered businesses and restaurants throughout the corridor.

1.4. Economic Development Trends (2014-2034)

The economic development trend study was conducted for both the six-mile radius area of the project site, and the entire Prince William County as the six-mile radius covers the stretch of the I-95 corridor within Prince William County from Quantico up to the County border line in the north. Both the six-mile radius and the County were used to compare how the I-95 corridor, where the subject property is located, differs from county-level economic trends (**Figure 1-3**).



Source: RKG Associates, Inc., 2024

Figure 1-3 – Economic Trend Study Areas

1.4.1. Six-Mile Radius Area Employment Trends

Employment in the six-mile radius area from the project site grew by 20% between 2014 and 2024, a pace faster than in Prince William County (18%) during the same period, and it is projected to grow slower at 11% between 2024 and 2034. The total employment level of the six-mile radius area stands at 45,799 in 2024 (2024 Q2 data as of July 2024) (**Figure 1-4**).

The largest employment industry in the six-mile radius area in 2024 is Local Government, followed by Federal Government, Food Services/Drinking Places, Ambulatory Health Care Services, and Specialty Trade Contractors. Six out of the top 10 largest employment industries pay above $75,000 annually per job on average (Local Government, Federal Government, Ambulatory Health Care Services, Specialty Trade Contractors, Professional, Scientific, and Technical Services, Motor Vehicle and Parts Dealers) (**Figure 1-5**). The top five largest employment industries are also among the fastest-growing industries between 2014 and 2024. Other fast-growing and high-paying industries between 2014 and 2024 are Hospitals and Construction. Government, Ambulatory Health Care Services, Hospitals, and Professional/ Scientific/Technical services, which are current high-paying industries with earnings

above $75,000 annually per job on average in 2024, will contribute 64% of future job growth by between 2024 and 2034 within the six-mile radius area.

Professional/Scientific/Technical Services and Specialty Trade Contractors may have a demand for more industrial/warehouses and flex spaces, posing an opportunity for the project site (**Figure 1-6, Figure 1-7**). Flex space is a type of commercial real estate that combines office, warehouse, and retail space in one building.

Figure 1-4 – Employment Trend 2014-2034

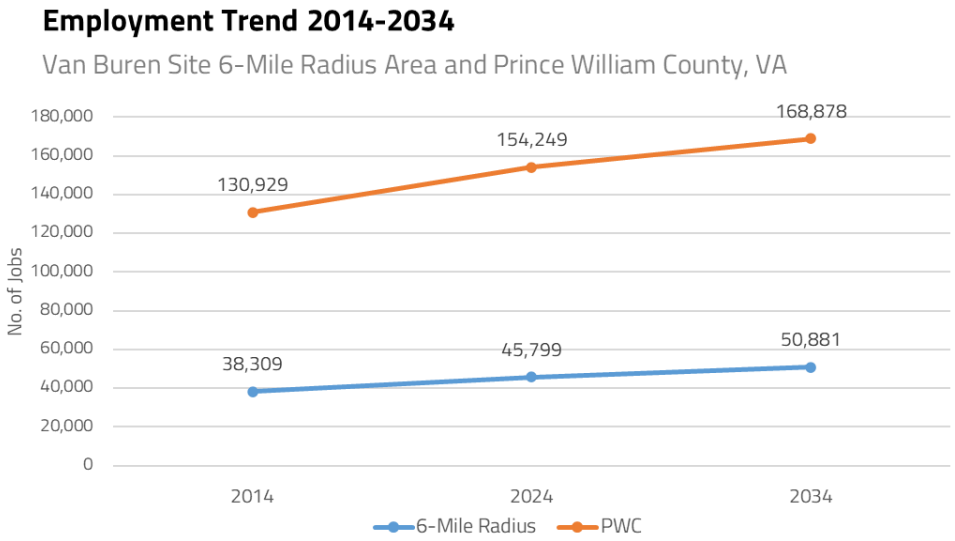


Figure 1-5 – Top Ten Growth Employment Industries, 2014-2024

Top Ten Growth Employment Industries, 2014-2024
6-Mile Radius Zip Code Areas of Project Site, VA

Industry Sector	2014-2024 Job Growth	2024 Avg. Earning Per Job
Ambulatory Health Care Services	1,582	$78,345
Federal Government	1,058	$126,548
Local Government	949	$89,701
Food Services and Drinking Places	465	$27,367
Specialty Trade Contractors	422	$85,180
Nursing and Residential Care Facilities	330	$57,342
Administrative and Support Services	303	$55,521
Hospitals	280	$106,188
Food and Beverage Stores	276	$41,575
Construction of Buildings	271	$100,813

Source: Lightcast/EMSI, 2024

Figure 1-6 – Top Ten Largest Employment Industries, 2024

Top Ten Largest Employment Industries, 2024
6-Mile Radius Zip Code Areas of Project Site, VA

Industry Sector	2024 Job	2024 Avg. Earning Per Job
Local Government	6,938	$89,701
Federal Government	6,359	$126,548
Food Services and Drinking Places	4,457	$27,367
Ambulatory Health Care Services	4,062	$78,345
Specialty Trade Contractors	2,141	$85,180
Professional, Scientific, and Technical Services	1,815	$110,315
Food and Beverage Stores	1,424	$41,575
Social Assistance	1,271	$36,685
Motor Vehicle and Parts Dealers	1,229	$82,581
Nursing and Residential Care Facilities	1,142	$57,342

Source: Lightcast/EMSI, 2024

Figure 1-7 – Top Ten Future Growth Employment Industries, 2024-2034

Top Ten Future Growth Employment Industries, 2024-2034
6-Mile Radius Zip Code Areas of Project Site, VA

Industry Sector	2024 - 2034 Job Growth	2024 Avg. Earning Per Job
Ambulatory Health Care Services	1,192	$78,345
Federal Government	1,060	$126,548
Local Government	536	$89,701
Hospitals	318	$106,188
Nursing and Residential Care Facilities	285	$57,342
Food Services and Drinking Places	236	$27,367
Professional, Scientific, and Technical Services	155	$110,315
Educational Services	140	$47,773
Religious, Grantmaking, Civic, Professional, and Similar Organizations	139	$42,199
Administrative and Support Services	121	$55,521

Source: Lightcast/EMSI, 2024

1.4.2. Prince William County Employment Trends

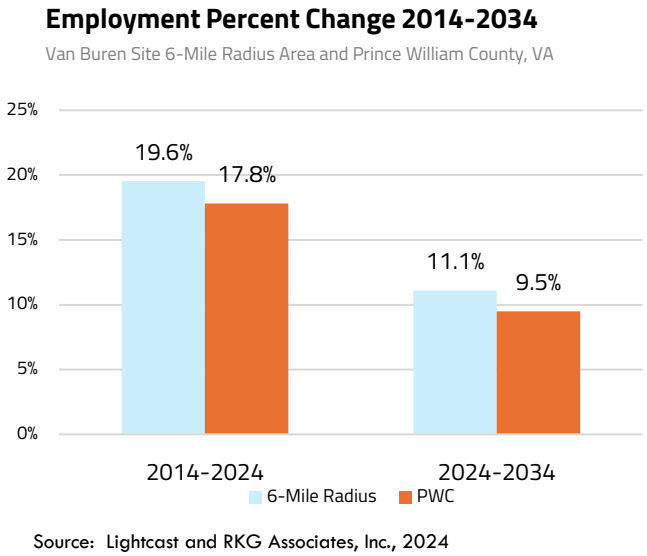
The total employment in Prince William County grew by 18% between 2014 and 2024, but at a pace slower than the six-mile study area and is projected to experience slower growth (9%) between 2024 and 2034. Five out of the top ten largest employment industries in Prince William County pay above $75,000 annually per job on average, which may present a promising trend for future development at the project site (**Figure 1-8, Figure 1-9**).

Eight out of the top ten fastest-growing industries in Prince William County between 2014 and 2024 are also among the top ten largest industries in 2024. Other top growth industries between 2014 and 2024 in the County are Construction and Heavy and Civil Engineering Construction, both of which pay at or above $90,000 annually per job on average.

Government, Ambulatory Health Care Services, Hospitals, and Professional, Scientific, and Technical Services are projected to contribute 57% of future job growth by 2034 in Prince William County, with

an average per job earning above $75,000 annually. Professional, Scientific, Technical Services, Specialty Trade Contractors, and Heavy/Civil Engineering Construction may also demand more industrial/warehouse and flex spaces in the region, which the project site could potentially address (**Figure 1-10** and **Figure 1-11**).

Figure 1-8 – Employment Percent Change 2014-2024 & 2024-2034 (Projected)



Source: Lightcast and RKG Associates, Inc., 2024

Figure 1-9 – Top Ten Largest Employment Industries, 2024

Top Ten Largest Employment Industries, 2024
Prince William County, VA

Industry Sector	2024 Job	2024 Avg. Earning Per Job
Local Government	20,039	$89,166
Federal Government	17,158	$115,256
Food Services and Drinking Places	13,693	$27,692
Professional, Scientific, and Technical Services	10,773	$118,782
Specialty Trade Contractors	10,732	$85,865
Ambulatory Health Care Services	9,299	$78,273
Administrative and Support Services	7,040	$56,668
General Merchandise Retailers	4,861	$38,332
Food and Beverage Stores	4,112	$41,397
Social Assistance	3,484	$36,806

Source: Lightcast/EMSI, 2024

Figure 1-10 – Top Ten Growth Employment Industries, 2014-2024

Top Ten Growth Employment Industries, 2014-2024
Prince William County, VA

Industry Sector	2014-2024 Job Growth	2024 Avg. Earning Per Job
Ambulatory Health Care Services	4,055	$78,273
Federal Government	2,917	$115,256
Local Government	2,346	$89,166
Professional, Scientific, and Technical Services	2,056	$118,782
Administrative and Support Services	1,799	$56,668
Specialty Trade Contractors	1,430	$85,865
Food Services and Drinking Places	1,276	$27,692
Construction of Buildings	1,188	$97,952
Heavy and Civil Engineering Construction	961	$92,139
Food and Beverage Stores	765	$41,397

Source: Lightcast/EMSI, 2024

Figure 1-11 – Projected Top Ten Future Growth Employment Industries, 2024-2034

Top Ten Future Growth Employment Industries, 2024-2034
Prince William County, VA

Industry Sector	2024 - 2034 Job Growth	2024 Avg. Earning Per Job
Federal Government	2,852	$115,256
Ambulatory Health Care Services	2,670	$78,273
Local Government	1,457	$89,166
Professional, Scientific, and Technical Services	867	$118,782
Administrative and Support Services	774	$56,668
Food Services and Drinking Places	675	$27,692
Nursing and Residential Care Facilities	516	$56,287
Social Assistance	503	$36,806
Hospitals	482	$106,509
Educational Services	459	$47,809

Source: Lightcast/EMSI, 2024

1.5. Real Estate Development Trends Analysis

Past non-residential development trends were analyzed for a 0.5-mile radius of the portion of I-95 within Prince William County and a 0.5-to-1-mile radius of the portion of I-95 corridor within the County (**Figure 1-12**). Data was obtained from Prince William County 2023 real estate property assessment and GIS data.

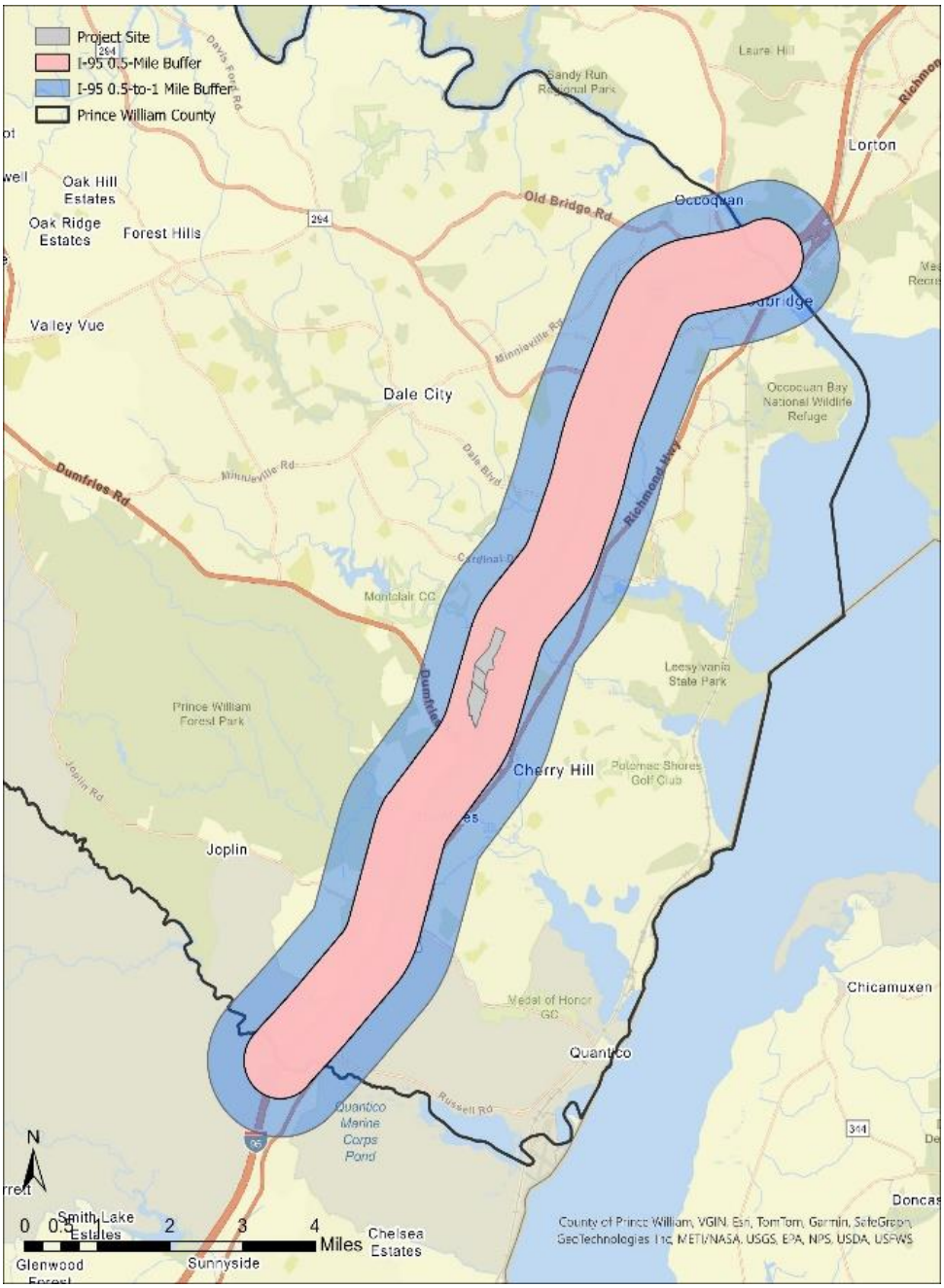


Figure 1-12 – Development Trend Study Areas

1.5.1. Non-Residential Development Trends

Non-residential developments (i.e., commercial, industrial, etc.) in both the 0.5 mile and 0.5 to 1-mile radius areas are primarily older with most built before 2000, but development densities have been increasing in both areas. While more commercial spaces have been recently built in the 0.5-mile radius area than the 0.5-to-1-mile radius area, its development pace has been slowing and average assessed improvement values have been fluctuating. In comparison, the development pace in the 0.5-to-1-mile radius area has increased since 2020 with higher development densities and higher average assessed improvement values. Thus, the Van Buren development will likely have to compete with non-residential development in the 0.5-to-1-mile radius area along I-95 in PWC (**Figure 1-13** to **Figure 1-14**).

Figure 1-13 – Non-Residential Development Trends - 0.5-Mile radius

More Commercial Spaces and Most Built Before 2000

The 0.5-mile radius area has 10.58 million SF of commercial spaces, and 64.2% were built before 2000. Developments in recent decades are mostly for warehouses, hospitality, industrial, and retail

Development Pace Slowing Down

Commercial SF delivered decreased from 2,381,472 SF (22.5% of total SF) 2000-2009 to 1,068,140 SF (10.1%) 2010-2019. 335,726 SF (3.2%) have been built since 2020

Development Densities Increasing

The Floor to Area Ratio (FAR) rose from 0.103 for properties built before 2000 to 0.332 for those built since 2020. Hospitality properties have the highest FAR, followed by warehouses and hospitals

Average Assessed Improvement Value Fluctuating

The average assessed improvement value per SF increased from $122/SF before 2000 to $168/SF 2000-2009, then down to $140/SF 2010-2019 and $120/SF since 2020. Hospitals have the highest assessed improvement value/SF at $266/SF, followed by educational properties ($190/SF) and warehouses ($130/SF)

Figure 1-14 – Non-Residential Development Trends - 0.5-to-1-Mile

Less Commercial Spaces and Most Built Before 2000

The 0.5-to-1-mile radius area has 6.58 million SF of commercial spaces, and 65.1% were built before 2000. Developments in recent decades are mostly for offices, retail, warehouses, and hospitality

Development Pace Slowing Down But Picked Up Since 2020

Commercial SQFT delivered decreased from 1.26 million SF (19.2% of total SQFT) 2000-2009 to 289,114 SF (4.4%) 2010-2019 while 746,601 SF (11.3%) have been built since 2020

Higher Development Densities and Increasing

The Floor to Area Ratio (FAR) rose from 0.179 for properties built before 2000 to 0.620 for those built since 2020. Offices have the highest FAR, followed by warehouses and hospitality

Average Assessed Improvement Value Trending Up

The average assessed improvement value per SQFT increased from $90/SF before 2000 to $160/SF 2010-2019, then down to $117/SF since 2020. Educational properties have the highest assessed improvement value/SF at $163/SF, followed by food/drink ($152/SF) and warehouses ($133/SF)

1.6. REAL ESTATE MARKET TRENDS ANALYSIS

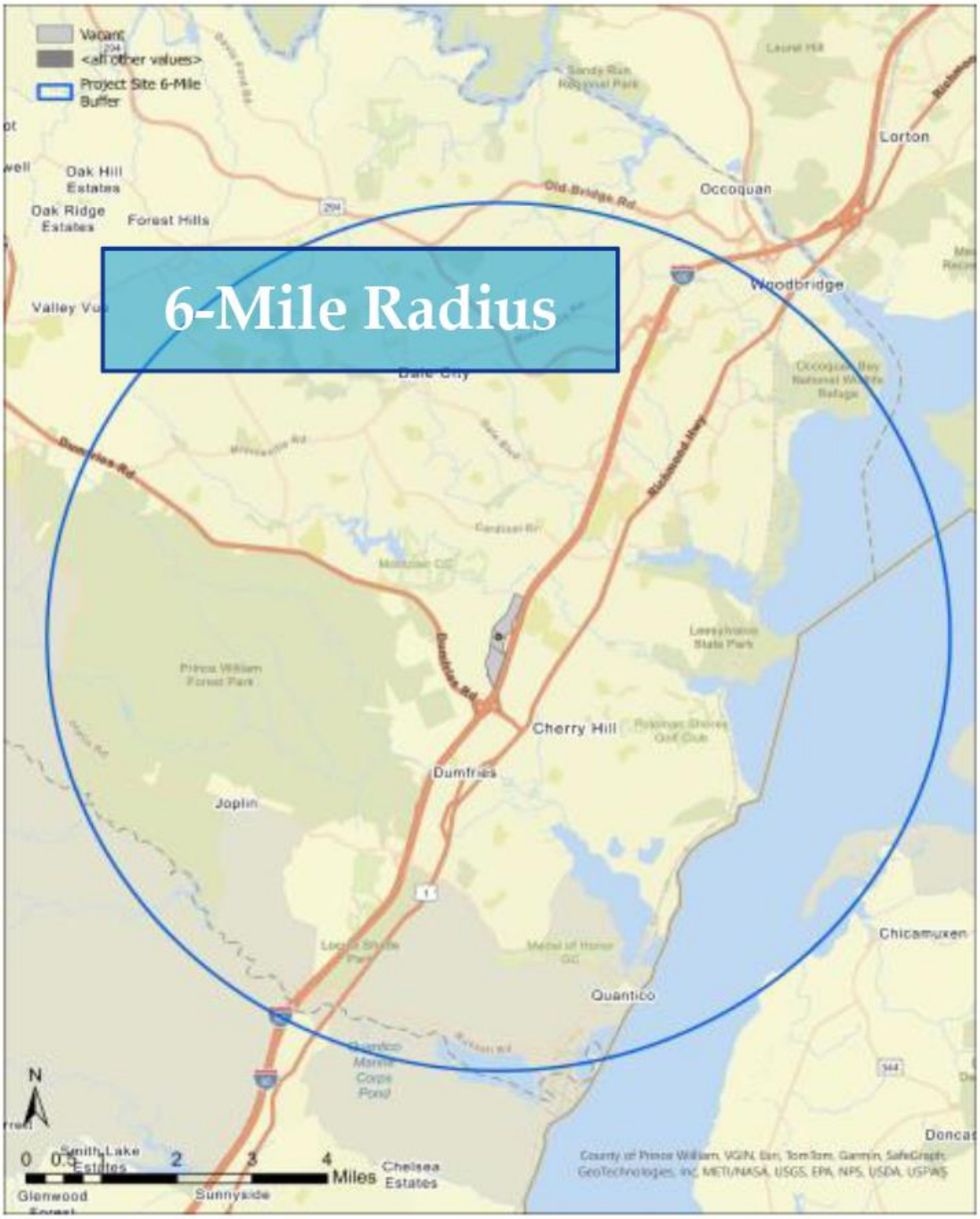
Broader real estate market conditions were examined for the six-mile radius from the project site for the industrial, flex space, office, and hospitality market sectors. Trend data between 2014 and 2024 was obtained from CoStar, a Washington, DC-based provider of real estate market data in the United States, Canada, the United Kingdom, France, Germany, and Spain (**Figure 1-15**). Market indicators including inventory[5], net absorption[6], overall vacancy rates, rent levels, and leasing activities were examined for the six mile radius area to assess the market performances of different sectors.

In general, the industrial, flex space, and office market sectors have shown mixed performance during the past decade. Some opportunities exist for the six-mile radius area of the project site especially in the industrial and flex space market sectors, as the project site adds new products with higher quality. The hospitality sector has exhibited generally positive performance since 2014, suggesting potential room for future growth, especially with additional demand spurred by newer industrial and flex space developments.

[5] In particular, inventory levels reflect development interest.

[6] Net absorption is the sum of square feet that became physically occupied, minus the sum of square feet that became physically vacant during a specific period. Positive net absorption indicates a healthy market with growing demand. Negative net absorption indicates a decline in demand.

Figure 1-15 – Real Estate Market Radius



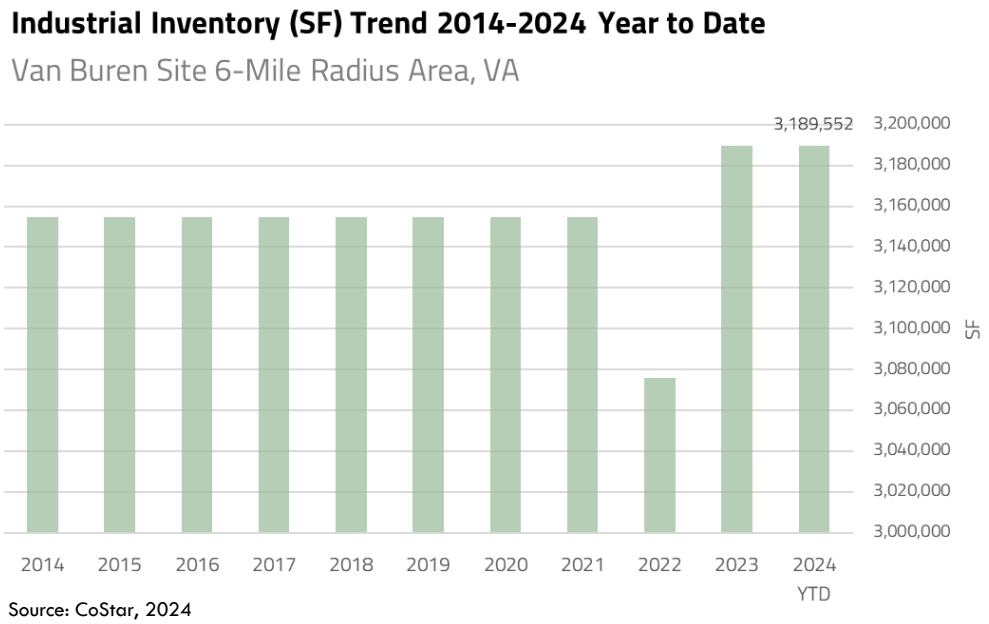
Source: RKG Associates, Inc., 2024

1.7. Industrial Market Trends

In the past decade, the industrial market within the six-mile radius area has shown new development interest since 2023, mostly positive net absorption since 2019, and downward vacancy trends, which indicate positive market performances. However, leasing activities have been fluctuating since 2022 and rent growth has been slightly stagnant since around the same time, likely showing some challenges in recent years despite some recovery in 2023 (**Figure 1-16** to **Figure 1-22**).

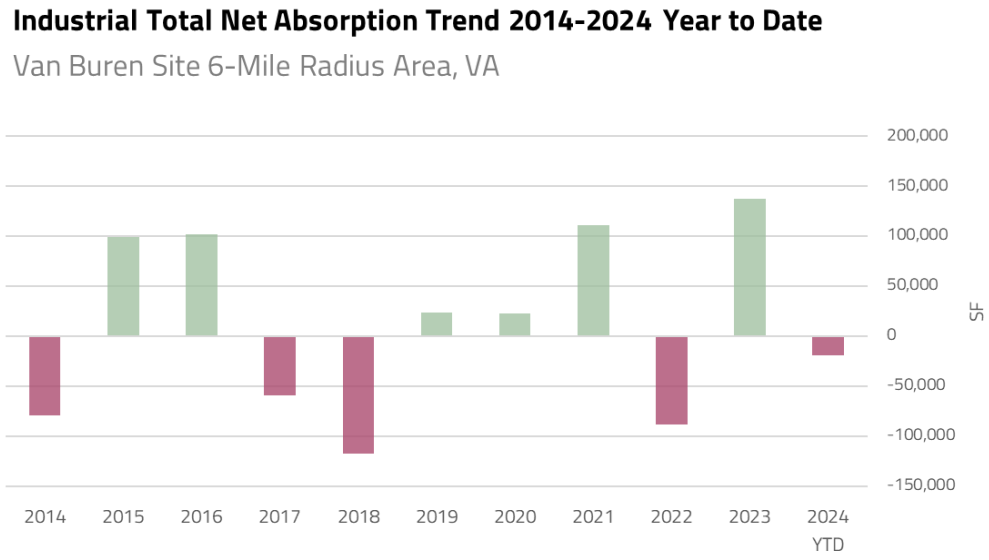
Figure 1-16 – Industrial Market Indicators within 6-Mile radius

Figure 1-17 – Industrial Inventory (SF) Trend 2014-2024 Year to Date



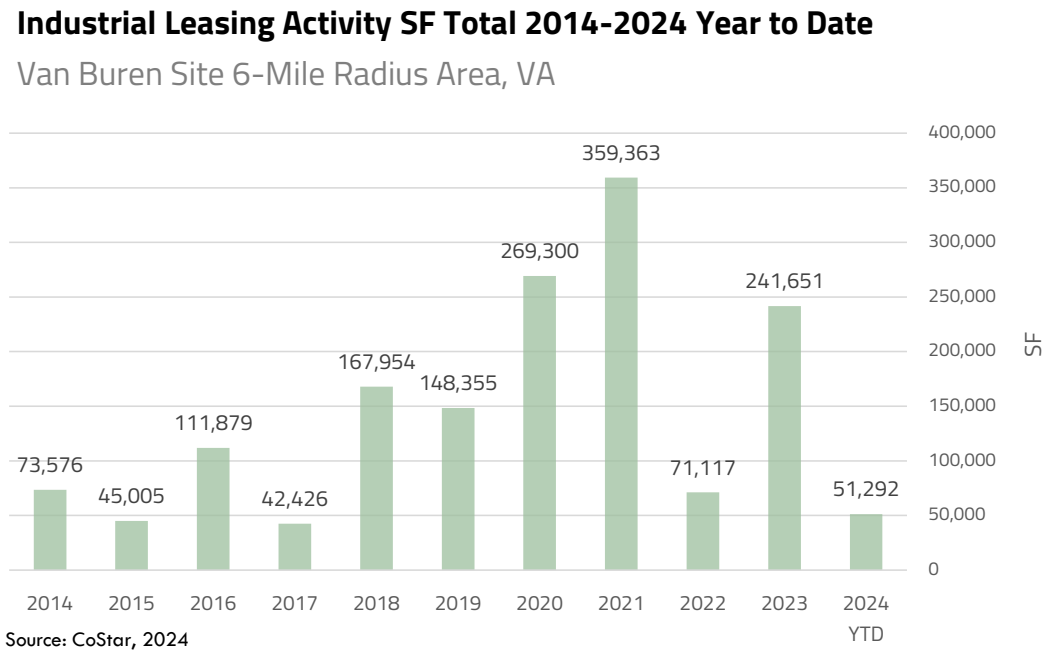
Source: CoStar, 2024

Figure 1-18 – Industrial Total Net Absorption Trend 2014-2024 Year to Date



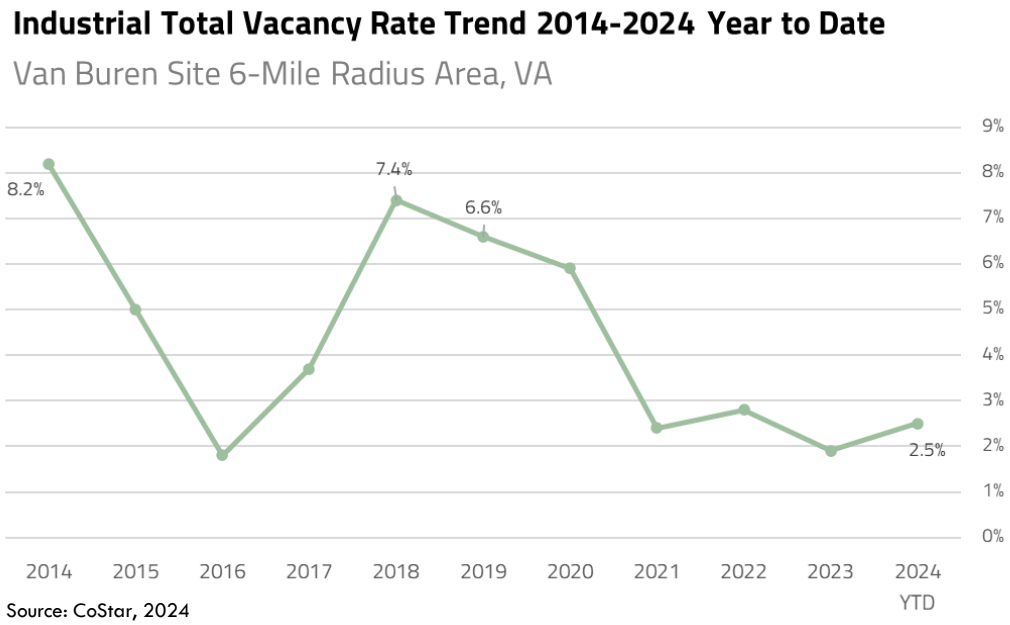
Source: CoStar, 2024

Figure 1-19 – Industrial Leasing Activity SF Total 2014-2024 Year to Date



Source: CoStar, 2024

Figure 1-20 – Industrial Total Vacancy Rate Trend 2014-2024 Year to Date



Source: CoStar, 2024

Figure 1-21 – Industrial Overall All Service[7] Type Rent Per SF Trend 2014-2024 Year to Date

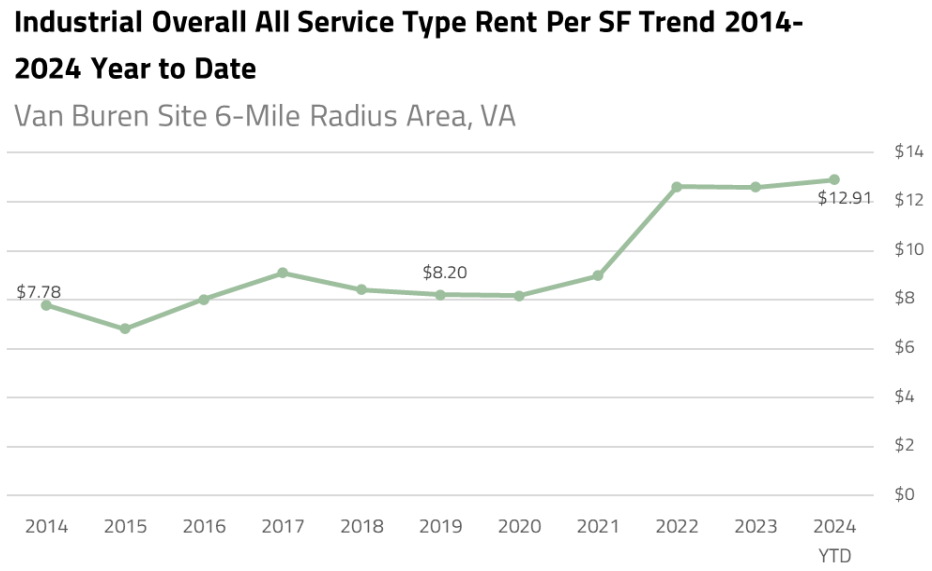
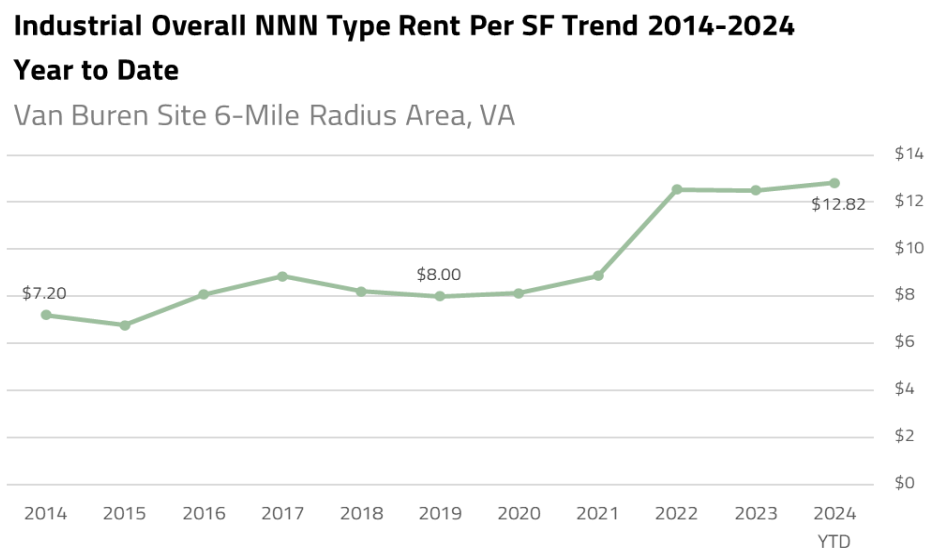


Figure 1-22 – Industrial Overall NNN[8] Type Rent Per SF Trend 2014-2024 Year to Date



[7] All-service type rent is a type of commercial real estate lease that includes base rent and all other expenses (i.e., property taxes, utilities, maintenance, etc.) in a single rental rate.

[8] Triple net lease (NNN) is a commercial lease structure where the tenant is responsible for paying three types of property expenses, including property insurance, maintenance/operating expenses, and property taxes in addition to paying rent and utilities.

1.7.1. Industrial/Flex Market Trends

The flex space market within the six-mile radius area of the project site has seen stagnant inventory, and fluctuating vacancy rates and leasing activities. However, it has also seen mostly positive net absorptions since 2014 and rising rent levels, suggesting some opportunities in this sector (**Figure 1-23** to **Figure 1-29**).

Figure 1-23 – Industrial/Flex Market Indicators within 6-Mile radius

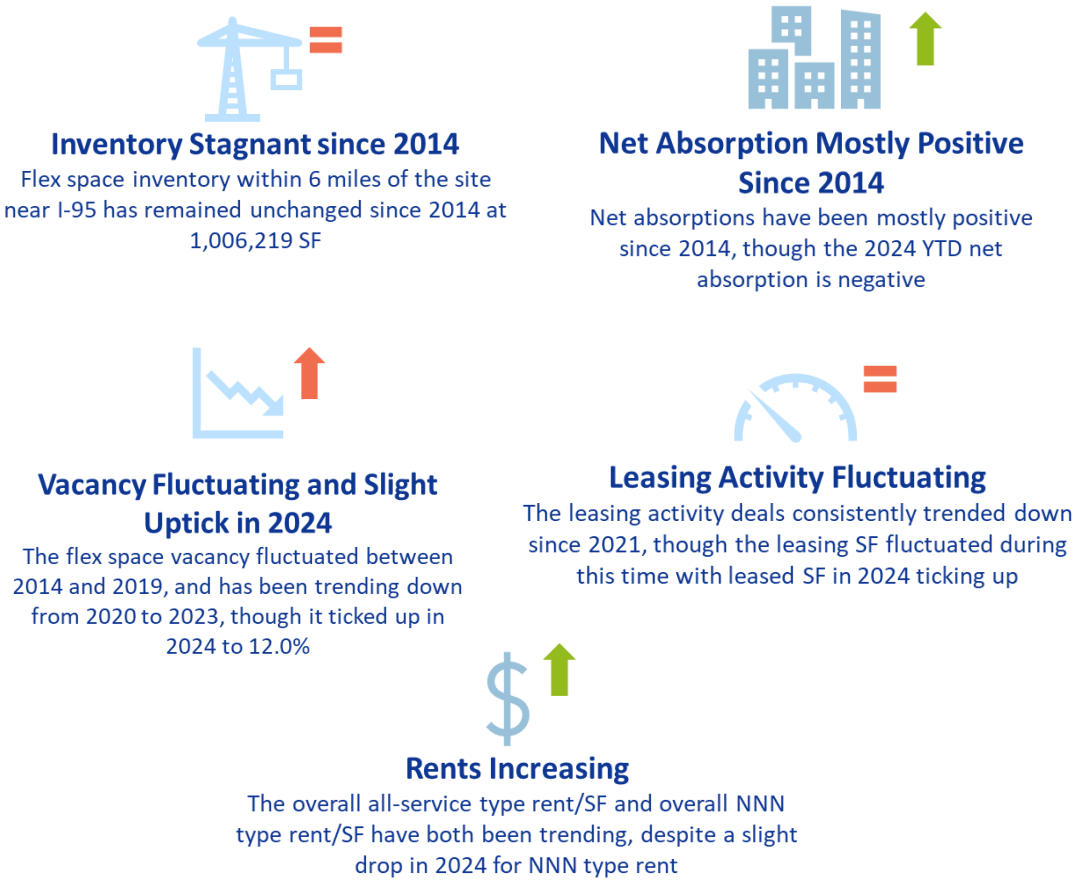
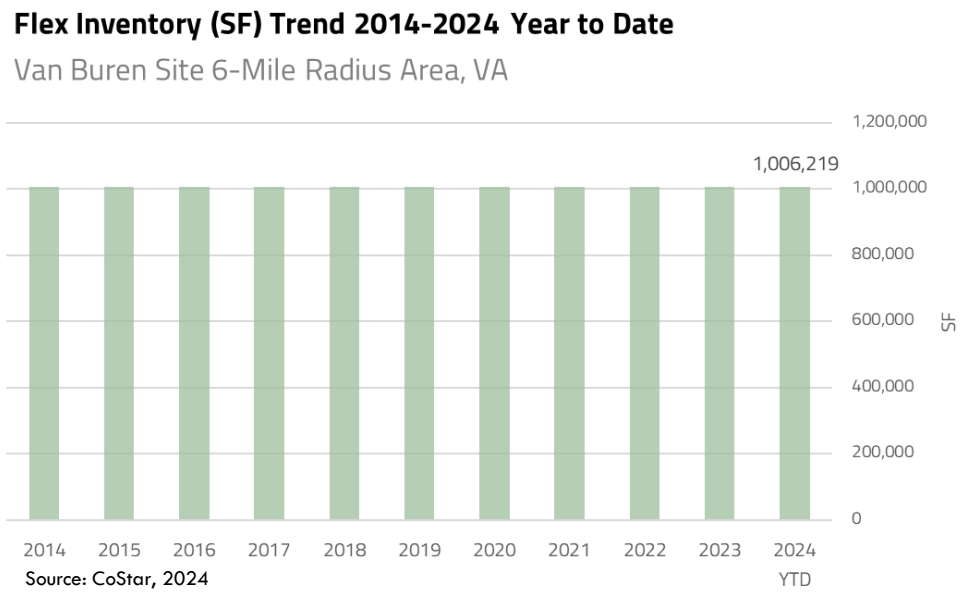
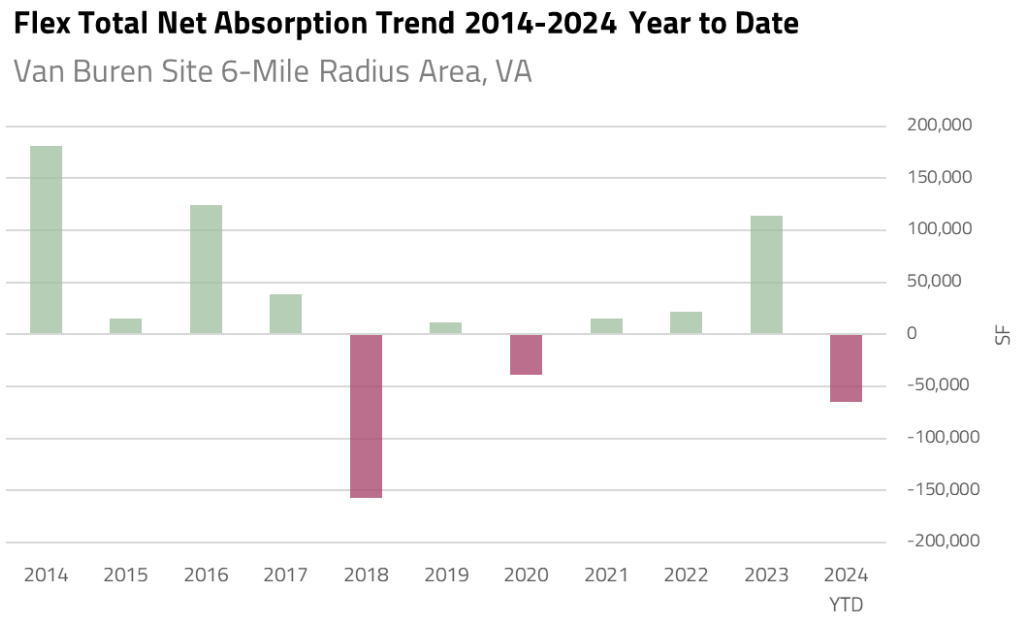


Figure 1-24 – Flex Inventory (SQFT) Trend 2014-2024 Year to Date



Source: CoStar, 2024

Figure 1-25 – Flex Total Net Absorption Trend 2014-2024 Year to Date



Source: CoStar, 2024

Figure 1-26 – Flex Total Vacancy Rate Trend 2014-2024 Year to Date

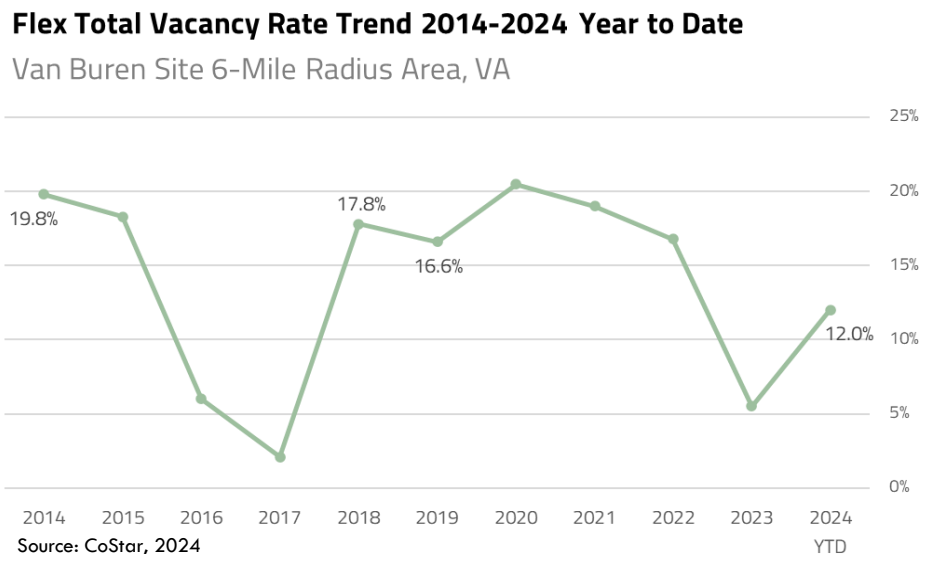


Figure 1-27 – Flex Leasing Activity SF Total 2014-2024 Year to Date

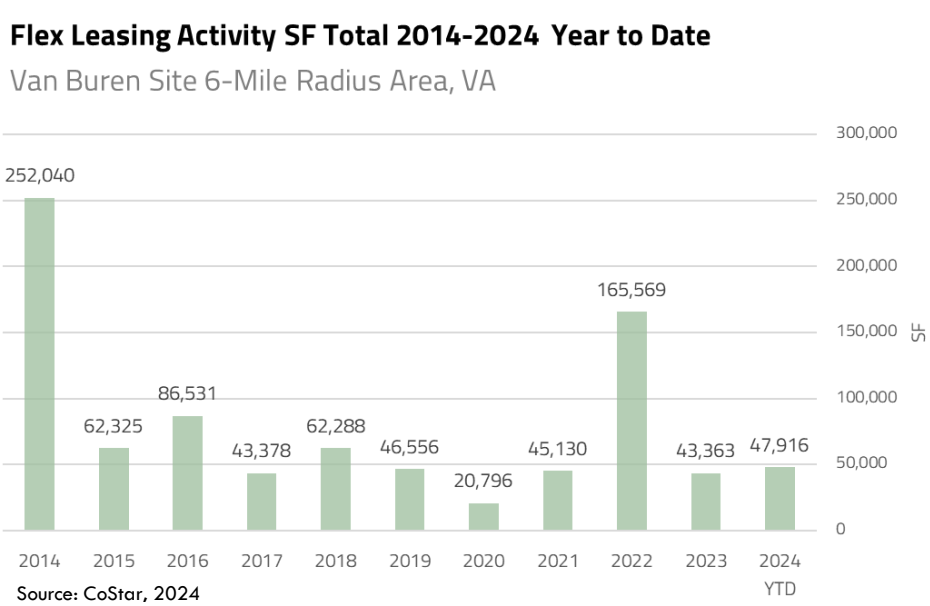


Figure 1-28 – Flex Overall All Service Type Rent Per SF Trend 2014-2024

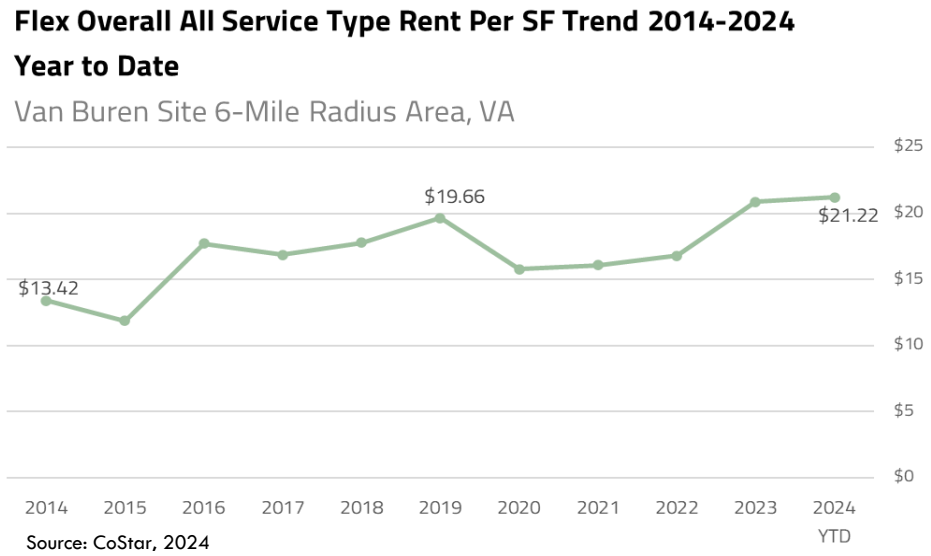
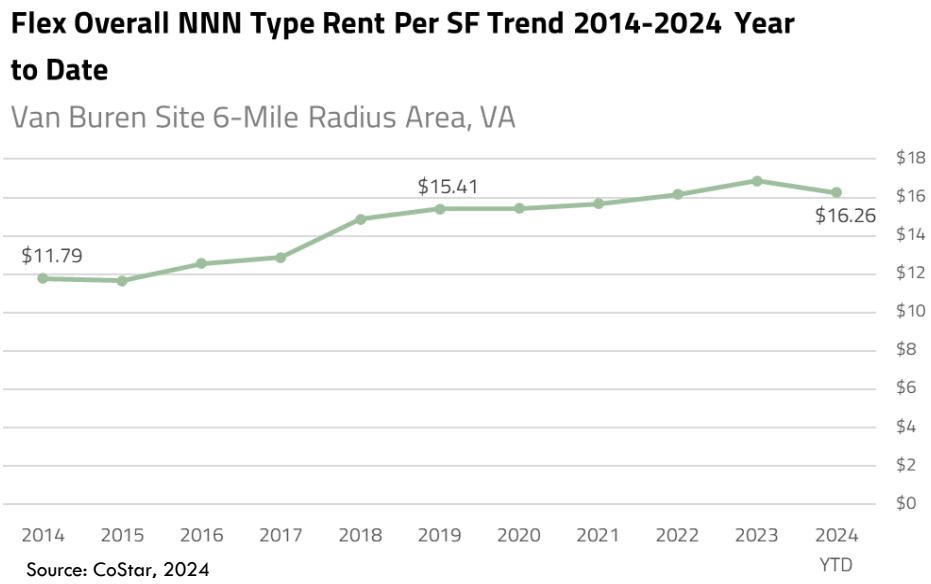


Figure 1-29 – Flex Overall NNN Type Rent Per SF Trend 2014-2024 Year to Date



1.7.3. Office Market Trends

Since 2014, the office market condition within the six-mile radius of the project site has been mixed. The office market has seen stagnant inventory, mixed net absorption, and fluctuating leasing activities in recent years. However, the office market has also experienced stabilizing vacancy rates and rising rent levels, suggesting that the market is still recovering from COVID-19 impacts (**Figure 1-30** to **Figure 1-34**). While there may be office development potential at the subject properties, national and regional office indicators are not strong, and the persistence of "remote work" conditions is reducing occupancy levels and putting downward pressure on existing office performance metrics. These conditions will keep new construction on hold until conditions start to change regionally and nationally.

Figure 1-30 – Office Market Indicators within 6-Mile radius

Figure 1-31 – Office Inventory (SF) Trend 2014-2024 Year to Date

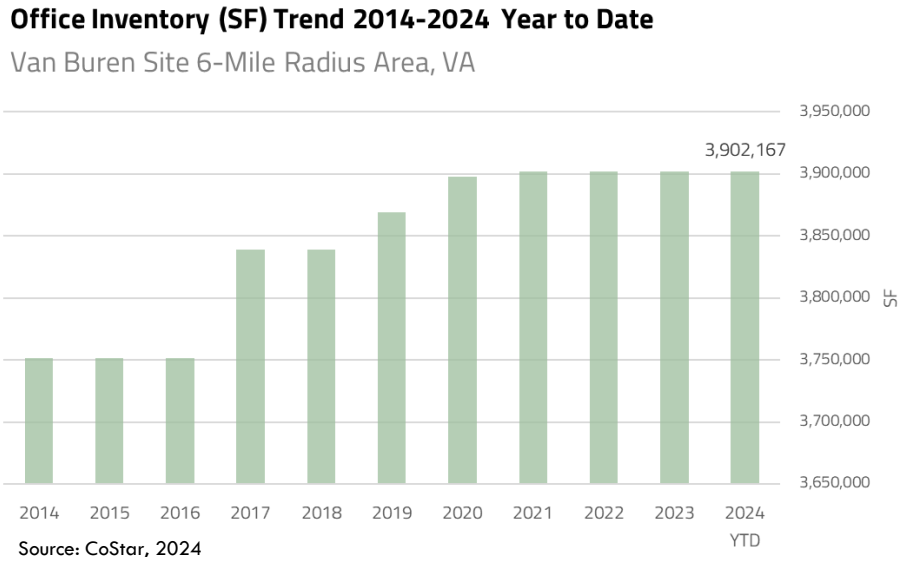


Figure 1-32 – Office Total Net Absorption Trend 2014-2024 Year to Date

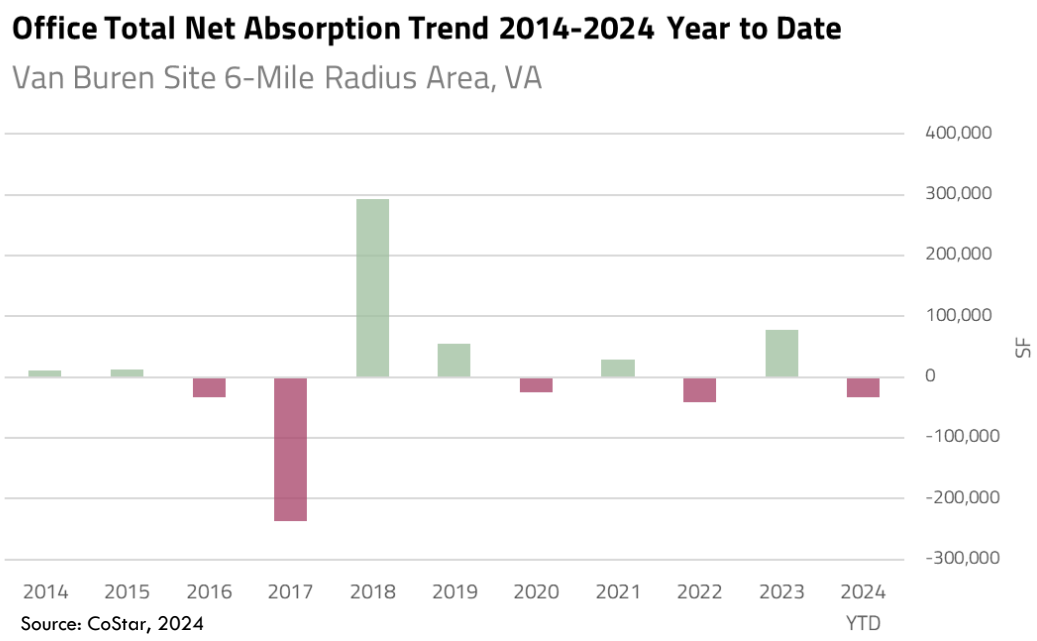
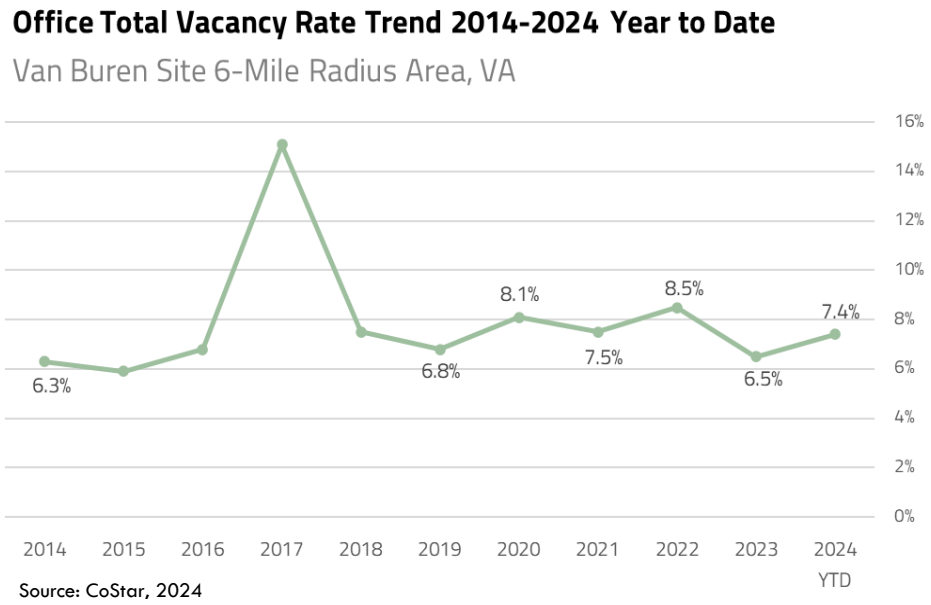
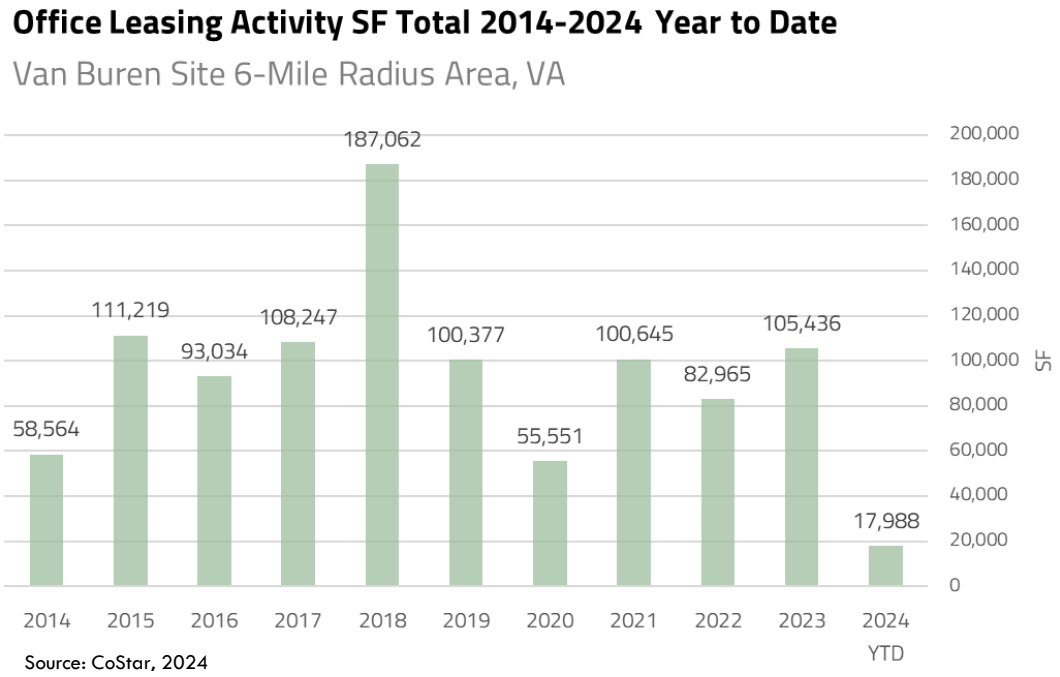


Figure 1-33 – Office Total Vacancy Rate Trend 2014-2024 Year to Date



Source: CoStar, 2024

Figure 1-34 – Office Leasing Activity SF Total 2014-2024 Year to Date



Source: CoStar, 2024

1.7.4. Hospitality Market Trends

The hospitality market condition has been mostly positive since 2014 within the six-mile radius area of the project site, though the current market conditions are slightly weak to support additional hotels in the area (as a 65% occupancy rate is generally the minimum threshold for new hotels to enter a market). However, over time this could change with new development at the project site, bringing in additional hospitality demand (**Figure 1-35** to **Figure 1-39**). While a new hotel might be needed in the future, a better location would be closer to the I-95/Route 234 intersection, where it would be easily accessible to highway travelers with other support facilities nearby (e.g., restaurants). In addition, with the completion of The Rose Gaming facility, a new 100+ room hotel will be opening in 2024, which will reduce the need for new hotel rooms in the near future. Finally, two hotels/motels on Dewey Boulevard off Dumfries Road appear to be struggling to attract hotel guests and are now providing temporary housing for people in need. If these hotels are repositioned or redeveloped in the future, there may be an opportunity for new hotel rooms at this location on Dewey Boulevard.

Figure 1-35 – Hospitality Market Indicators within 6-Mile radius

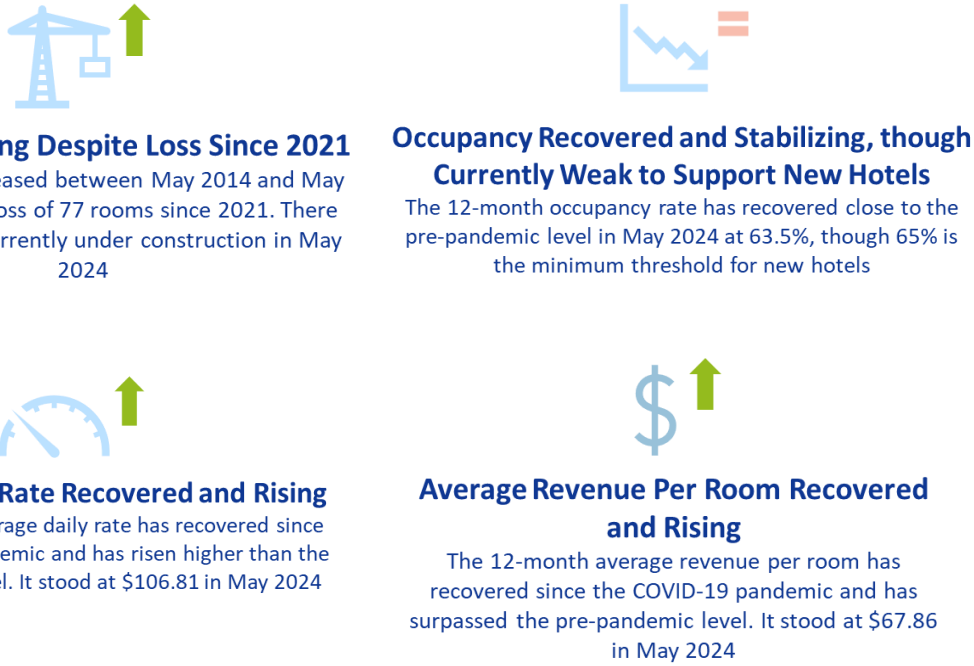


Figure 1-36 – Hotel Inventory (Rooms) Trend May 2014-May 2024

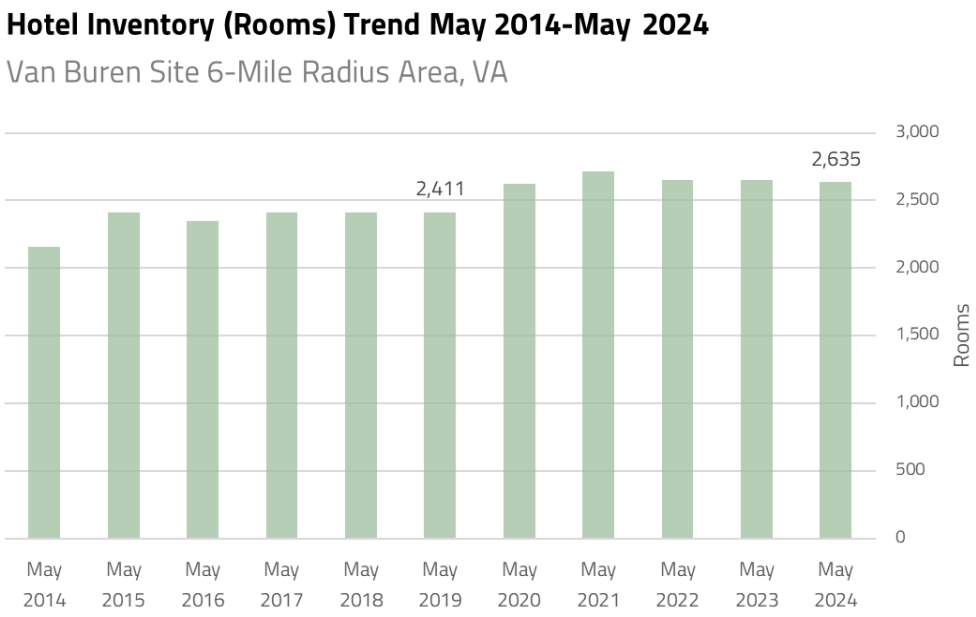


Figure 1-37 – Hotel 12 Month Occupancy Rate Trend May 2014-May 2024

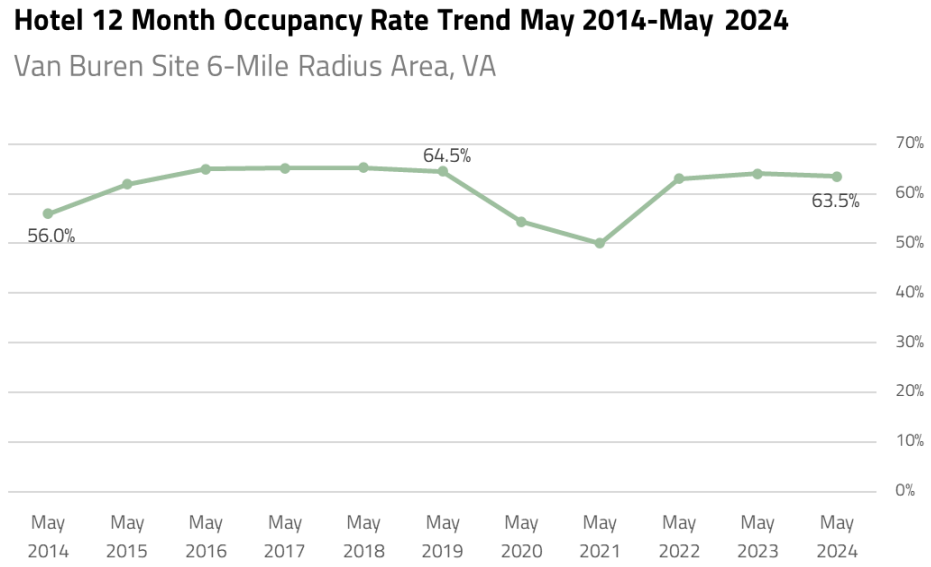


Figure 1-38 – Hotel 12 Month Average Daily Rate Trend May 2014-May 2024

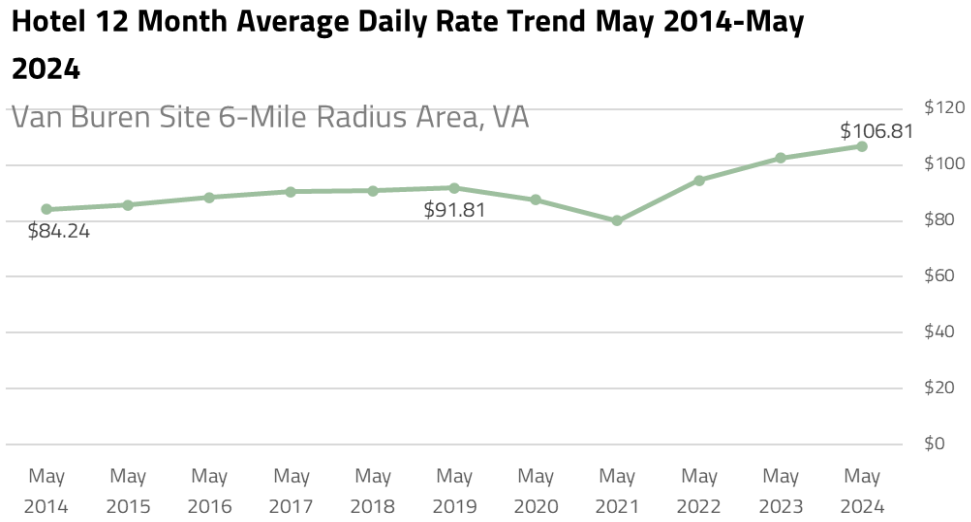
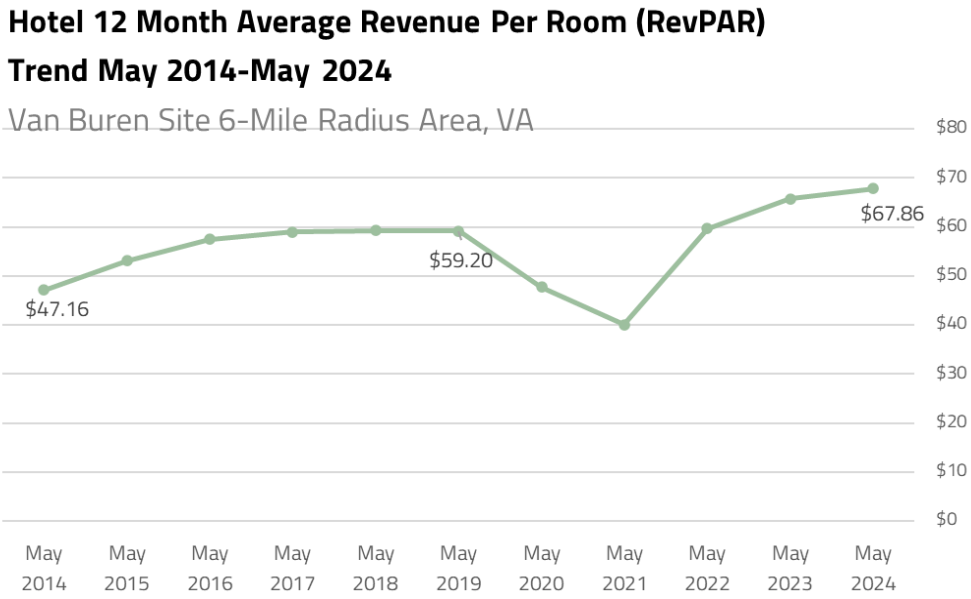


Figure 1-39 – Hotel 12 Month Average Revenue Per Room (RevPAR) Trend May 2014-May 2024



1.8. VAN BUREN ROAD DEVELOPMENT IMPACT ANALYSIS

The following section examines the potential employment, wage and tax revenue impacts associated with the proposed Van Buren Road development site. At this early stage, the analysis is considered conceptual and based on a site and market assessment of the subject properties.

Given the attributes of the subject properties and their potential for larger scale job creation, certain uses were not considered primary development options, such as multi-family, retail, or hospitality.

While there may be some potential for these uses in the future, there are better locations, particularly for retail, services, and hospitality, along Dumfries Road (Route 234), south of the subject properties. The Dumfries Road locations are more visible to passing traffic and located along a busy commuter route serving Prince William County. The Van Buren Road development site is likely to be obscured by trees along Interstate 95 and not visible to passing vehicles.

It should be noted that there is additional information that could supplement this study. For example, based on conversations with the Virginia Economic Development Partnership (VDEP), other interested uses and opportunities not captured by current market data, such as those from CoStar have come to VDEP's attention. However, the identities of those prospecting firms are confidential and were not available to the study team at the time of this study.

1.8.1. Proposed Development Program

The conceptual development program included in this analysis is comprised of 560,000 SF of warehouse/distribution space and 155,000 SF of industrial/flex space, totaling 715,000 SF. According to the County's Economic Development Department, as many as four inquiries per year are made by companies, real estate brokers and state economic development officials regarding the availability of land for warehouse/distribution space along the I-95 corridor in Prince William County. The County offers a convenient and attractive location for companies trying to better serve the Greater Washington, DC market.

Warehouse/Distribution

While there have been documented land and building sales along the interstate corridor in recent years, mostly in Stafford County and Manassas, Virginia economic development professionals believe there is pent up demand for additional space in Prince William County with Interstate 95 access. Because the County has not been able to market developable building sites at this location, interested companies have had to seek other sites, mostly south of Van Buren Road or in Manassas with access to Interstate 66.

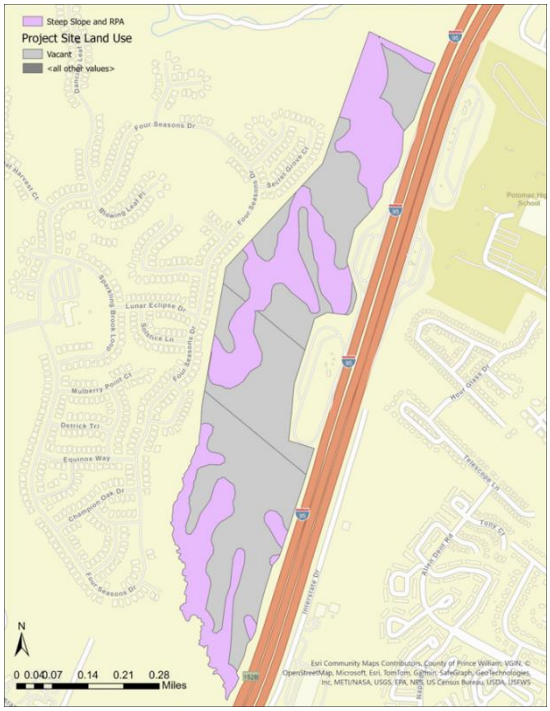
According to economic development officials, the type of distribution users interested in the Van Buren Road site are likely to be looking to construct facilities in the 200,000 SF to 300,000 SF range, rather than the larger 500,000 SF to 1 million SF range, which tend to attract larger regional fulfillment centers. Based on the consultant's research and experience such users tend to demand a large amount of land and produce low floor-area-ratios (FARs) of 10% to 20%. Depending on the end user and site characteristics, higher FARs are possible but access roads, truck loading/unloading areas, and employee and truck parking areas can consume tens of acres of land. [9]

In addition, the impact of environmentally sensitive areas in the Van Buren Road North Extension project area has the potential to reduce the total developable acreage from roughly 135 acres to 74.4

[9] Floor Area Ratio is a measure of development density comparing the relationship between building square footage (SF) and land square footage. For example, an 10,000 SF building located on a 40,000 SF lot would have an FAR of .25, where the building area equals .25% of the total land area.

acres due to the presence of: (1) flood hazard areas, (2) steep slope areas (>= 15%) and (3) Resource Protection Areas near streams (**Figure 1-40**). If these site constraints bear out, then the site's ability to accommodate large end users at low FARs will be limited. In order to accommodate the environmental contingency, the study team has assumed three to four mid-size distribution uses in the 150,000 SF to 200,000 SF range at a FAR of 0.20.

Figure 1-40 – Potential Environmental Constraints



Source: RKG Associates, Inc., 2024

Industrial/Flex Space

Regarding the demand for industrial/flex space, also commonly called warehouse/flex or office/flex, these uses typically combine several operations within one building, including office, retail/showroom, light assembly, Research & Development, shop space and warehousing uses with loading docks. The buildings look like other industrial buildings, but they typically have lower ceiling heights under 22 feet and have a smaller footprint. According to CoStar, there are 32 flex buildings located within a 6-mile radius of the subject properties, totaling just over 1 million SF of building space. The average size of these buildings is approximately 31,444 SF and buildings range in size from 1,300 SF to 155,000 SF. Most of this space is in Woodbridge and the Town of Dumfries.

The current vacancy rate is 5.2%, or roughly 54,000 SF, which consists of vacant buildings that are being marketed for lease.

Before the COVID-19 pandemic in 2019, the annual net absorption (the total amount of space that has been leased minus the amount of space that has been vacated during a specific amount of time) was 11,195 SF. However, since 2020, volatility in the flex market resulted in increased vacancies and net absorption was reduced to an average of 9,367 SF per year. Since 2023, the average net absorption has increased to nearly 25,000 SF per year and the flex market is still recovering.

Flex units can range from 1,500 SF to 30,000 SF, which mostly accommodate smaller companies. Because of the wide range of user functions, these spaces tend to be located in or near industrial zones or industrial parks. As such, they can be difficult to site because such zones are not plentiful in every community and some residents are resistant to having industrial type uses and truck traffic near residential areas.

In Prince William County, there are a few properties in the Woodbridge area listed for lease, but most of this building space is clustered near the City of Manassas and Interstate 66. The study team has projected 155,000 SF of warehouse/flex space at an FAR of 0.35 at the subject properties.

General Redevelopment Potential

There are several commercial properties at the northern side of Dumfries Road, west of Interstate 95 in what is known as the Dumfries Road /I-95 Activity Center. This commercial district is called out in Prince William County's comprehensive plan as an important economic district. There are some properties in this area that are currently showing signs of decline and disinvestment. In particular, two hotel/motel properties appear to be providing alternative housing options for lower-income households. Additional new development at the Van Buren Road site could spur redevelopment and attract other types of development to the activity center such as new hotels, service/retail businesses, convenience stores and gas stations over time.

1.8.2. Zoning Designation

The subject properties' current zoning designation is M-2 (Light Industrial Zoning). According to the Prince William County, Virginia - Code of Ordinances Chapter 32 – Zoning, the M-2 District is intended to implement the flexible use employment center land use classification of the Comprehensive Plan. It is also intended to implement the industrial employment center land use classification as a transition to the flexible use employment center land use classification. The purpose of this district is to also promote employment opportunities and to enhance the tax base of Prince William County. It is designed to provide areas for research and development centers, light industrial manufacturing, warehousing, wholesaling and related office and institutional uses, and not for retail and service uses except in support of the uses primarily intended. No more than 20 percent of the gross floor area devoted to any use may be used for accessory retail sales of products made or stored on the premises. The square footage devoted to such accessory retail sales shall be included in calculating the limit on secondary uses permitted.

According to Prince William County's zoning ordinance[10], the following standards shall apply in all M-2 Districts:

a) There shall be no minimum lot size.

b) The maximum lot coverage shall be 80 percent, with a required minimum open space area of 20 percent.

c) The maximum floor area ratio (FAR) shall be 0.50 except as permitted pursuant to section 32-400.04.

d) The maximum height for all structures shall be 60 feet; except as permitted pursuant to section 32-400.03.

e) Outdoor storage shall be subject to the standards specified in Sec. 400.12 of this part. No more than 40 percent of the total lot area may be devoted to outdoor storage, provided that all outdoor storage is screened, according to Section 802.49 of the Design and Construction Standards Manual, from adjacent properties and abutting streets.

1.8.3. Development Phasing

The development phasing assumptions for the Van Buren Road Impact Model assumes that construction will not begin until 2027, and the next three and one-half years will be spent on project approval, site clearance, and building and infrastructure construction. While it might take longer for construction to begin, this study has not adjusted future assessed values and financial impacts for inflation. All values are expressed in 2024 dollars for simplification purposes.

Assuming a 2027 construction start, VDOT projects that it could take three years to build-out the 560,000 SF of proposed warehouse/distribution space due to years of pent-up demand for an I-95 development site. In conversation with Prince William County economic development officials, many companies have inquired over the years about available land and buildings for sale and lease within the I-95 corridor. However, without the proposed Van Buren Road development site, these companies have been forces to find alternative sites.

The development phasing plan shows that hiring could begin in 2028 as the first building is delivered to the market and is occupied. As for the industrial/flex space, it is projected to take five years for 155,000 SF to be absorbed, given that it will be leased and occupied by many different small companies, perhaps a couple dozen. By the end of 2031, all building space and land is projected to be delivered to the market and occupied (**Table 1-2**).

[10]https://library.municode.com/va/prince_william_county/codes/code_of_ordinances?nodeId=CH32ZO_ARTIVCOOFINDI_PT403INDI_S32-403.20LIINZODIPUIN

Table 1-2 – Annual Construction and Land Demand Projections

Annual Construction and Land Demand Projections
Van Buren Road Development Site

Project Construction & Land Demand	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029	Year 6 2030	Year 7 2031	Year 8 2032	Year 9 2033	Year 10 2034	Total Bldg SF Occupied
Annual Building Construction											
Distribution/Fulfillment Center	-	-	200,000	200,000	160,000	-	-	-	-	-	560,000
Industrial Flex	-	-	30,000	30,000	30,000	30,000	35,000	-	-	-	155,000
Cumulative Building SF Constructed	-	-	230,000	460,000	650,000	-	-	-	-	-	-
Annual Land Demand											**Acres**
Land Acres - Developed	-	-	24.9	49.8	70.2	72.2	74.4	74.4	74.4	74.4	74.4
Land Acres - Undeveloped	74.4	74.4	49.5	24.6	4.3	2.3	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Total Developable Acres	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4

Source: RKG Associates, Inc., 2024

1.8.4. Real Estate Assessed Value Projections

Real estate values at the Van Buren Road development are projected to continue to rise as land is converted from undeveloped land with no infrastructure to developed land with infrastructure (e.g., roads, water, sewer, electric, internet, etc.). The current assessed value of the 135.5 acres is $7.7 million, according to the Prince William County Real Estate Assessments office, or an average of $57,052 per acre. Because only an estimated 55% of the land (74.4 acres) may be developable, the study team has calculated the assessed value per acre at an equivalent of $103,906 per buildable acre. The undevelopable acres likely will be protected as environmentally sensitive or open space set-aside (**Table 1-3**).

At projected build-out in 2031, the study team estimates the total assessed value of the developed real estate will reach its peak at $73.4 million; with the buildings accounting for $54.7 million (75%) and the land accounting for $18.6 million (25%). On an assessed value basis, the value of the subject properties is projected to increase from $7.7 million as raw land to $73.4 million at build-out for a value increase of 953% over five years.

Table 1-3 – Cumulative Real Estate Value Projections (in 2024 dollars)

Cumulative Real Estate Value Projections (in 2024 dollars)
Van Buren Road Development Site

Real Estate Assessed Value	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029	Year 6 2030	Year 7 2031	Year 8 2032	Year 9 2033	Year 10 2034	Total Bldg. Value
Annual Building Values											
Distribution/Fulfillment Center	$ -	$ -	$16,250,000	$32,500,000	$45,500,000	$45,500,000	$45,500,000	$45,500,000	$45,500,000	$45,500,000	$ 45,500,000
Industrial Flex	$ -	$ -	$ 1,797,000	$ 3,594,000	$ 5,391,000	$ 7,188,000	$ 9,284,500	$ 9,284,500	$ 9,284,500	$ 9,284,500	$ 9,284,500
Cumulative Building Assessed Value	$ -	$ -	$18,047,000	$36,094,000	$50,891,000	$52,688,000	$54,784,500	$54,784,500	$54,784,500	$54,784,500	$ 54,784,500
Annual Land Assessed Value											**Tot. Land Value**
Assessed Land Value - Developed	$ -	$ -	$ 6,242,857	$12,485,714	$17,578,571	$18,071,429	$18,646,429	$18,646,429	$18,646,429	$18,646,429	$ 18,646,429
Assessed Land Value - Undeveloped	$7,735,354	$7,735,354	$ 5,145,544	$ 2,555,734	$ 442,994	$ 238,535	$ (0)	$ (0)	$ (0)	$ (0)	$ (0)
Cumulative Land Assessed Value	$7,735,354	$7,735,354	$11,388,401	$15,041,448	$18,021,565	$18,309,964	$18,646,429	$18,646,429	$18,646,429	$18,646,429	$ 18,646,429
Total Development Assessed Value	$7,735,354	$7,735,354	$29,435,401	$51,135,448	$68,912,565	$70,997,964	$73,430,929	$73,430,929	$73,430,929	$73,430,929	$ 73,430,929

Source: RKG Associates, Inc., 2024

1.8.5. Employment and Wage Projections

The number of jobs created by the proposed Van Buren Road development is estimated at 1,083 by the end of 2032 once all building space is constructed and occupied (**Table 1-4**). It is projected that roughly 640 jobs, or 59%, will be created by the warehouse/distribution uses and the remainder by the industrial/flex space. In the year following building construction, new employees would be hired to staff the facilities or new businesses would lease space once it is completed. The amount of building space utilized by each employee would differ based on the industry standards for warehousing/distribution uses (875 SF per employee) and the industrial/flex uses (350 SF per employee). On a per square foot basis, industrial/flex generates more employees per 1,000 SF (2.9 jobs) of building space than warehouse/distribution (1.1 jobs).

Data obtained from the Virginia Works Department of Workforce Development and Advancement, Quarterly Census of Employment and Wages (2023) provided average weekly wages by industry for the Washington-Arlington-Alexandria, DC-VA-MD-WV Metropolitan Statistical Area. The data is reported at the industry level for the types of businesses envisioned at the Van Buren Road development.

As reflected in **Table 1-4**, it is projected that annual wages will increase as the number of employees grows each year until the development reaches build-out and operating stabilization in 2032, when wages will reach their peak at $73.8 million. Projections are that over the entire ten-year projection period (2025-2034), roughly $411.6 million in wages will be paid to the local workforce. At full employment in 2032, the average annual wages paid is projected to be $68,104 in 2024 dollars.

Table 1-4 – Cumulative Annual Employment and Wage Projections (2025-2034)

Cumulative Annual Employment and Wage Projections (2025-2034)
Van Buren Road Development Site

Cumulative Annual Employment	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029	Year 6 2030	Year 7 2031	Year 8 2032	Year 9 2033	Year 10 2034	Total Employ Year 10
Annual Building Construction											
Distribution/Fulfillment Center	-	-	-	229	457	640	640	640	640	640	640
Industrial Flex	-	-	-	86	171	257	343	443	443	443	443
Cumulative Annual Employment	-	-	-	314	629	897	983	1,083	1,083	1,083	1,083
Cumulative Annual Wages											**Cum Wages (Yrs 1-10)**
Distribution/Fulfillment Center	$ -	$ -	$ -	$ 14,964,114	$ 29,928,229	$ 41,899,520	$ 41,899,520	$ 41,899,520	$ 41,899,520	$ 41,899,520	$254,389,943
Industrial Flex - Office	$ -	$ -	$ -	$ 793,149	$ 1,586,297	$ 2,379,446	$ 3,172,594	$ 4,097,934	$ 4,097,934	$ 4,097,934	$ 20,225,289
Industrial Flex - Product Assembly	$ -	$ -	$ -	$ 2,567,314	$ 5,134,629	$ 7,701,943	$ 10,269,257	$ 13,264,457	$ 13,264,457	$ 13,264,457	$ 65,466,514
Industrail Flex - Warehousing	$ -	$ -	$ -	$ 2,805,343	$ 5,610,686	$ 8,416,029	$ 11,221,371	$ 14,494,271	$ 14,494,271	$ 14,494,271	$ 71,536,243
Total Cumulative Wages	$ -	$ -	$ -	$ 21,129,920	$ 42,259,840	$ 60,396,937	$ 66,562,743	$ 73,756,183	$ 73,756,183	$ 73,756,183	$411,617,989

Source: RKG Associates, Inc., 2024
[1] - Virginia Works Department of Workforce Development and Advancement, Quarterly Census of Employment and Wages (2023)

1.9. VAN BUREN ROAD DEVELOPMENT TAX REVENUE PROJECTIONS

1.9.1. Real Estate Tax Revenues

Based on the consultant's assessed value projections and Prince William County's current real property tax rate of $0.995 per $100 in assessed value, the proposed Van Buren Road development should generate roughly $730,271 in annual tax revenues at build-out in Year 7 (2031) (**Table 1-5**). That assumes the tax rate will include the base real estate tax levy of $0.92/$100 of assessed value, plus $0.072/$100 for the fire & rescue levy and $0.003/$100 for mosquito/forest management levy. Over the first ten years of the project, it is projected that the project will generate approximately $5.3 million in real estate tax revenues for the County.

Table 1-5 – Cumulative Real Estate Tax Revenue Projections

Cumulative Real Estate Tax Revenue Projections
Van Buren Road Development Site

Real Estate Tax Revenue	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029	Year 6 2030	Year 7 2031	Year 8 2032	Year 9 2033	Year 10 2034	Tax Revenues Years 1-10
Building Value Revenue											
Distribution/Fulfillment Center	$ -	$ -	$ 161,606	$ 323,213	$ 452,498	$ 452,498	$ 452,498	$ 452,498	$ 452,498	$ 452,498	$ 3,199,804
Industrial Flex	$ -	$ -	$ 17,871	$ 35,742	$ 53,613	$ 71,485	$ 92,334	$ 92,334	$ 92,334	$ 92,334	$ 548,049
Total Building Tax Revenues	$ -	$ -	$ 179,477	$ 358,955	$ 506,111	$ 523,982	$ 544,832	$ 544,832	$ 544,832	$ 544,832	$ 3,747,853
Land Value Revenues											
Assessed Land Value - Developed	$ -	$ -	$ 62,085	$ 124,170	$ 174,819	$ 179,720	$ 185,439	$ 185,439	$ 185,439	$ 185,439	$ 1,282,550
Assessed Land Value - Undeveloped	$ 76,928	$ 76,928	$ 51,172	$ 25,417	$ 4,406	$ 2,372	$ (0)	$ (0)	$ (0)	$ (0)	$ 237,223
Total Land Tax Revenue	$ 76,928	$ 76,928	$ 113,258	$ 149,587	$ 179,224	$ 182,093	$ 185,439	$ 185,439	$ 185,439	$ 185,439	$ 1,519,773
Total Building and Land Tax Revenues	$ 76,928	$ 76,928	$ 292,735	$ 508,542	$ 685,335	$ 706,075	$ 730,271	$ 730,271	$ 730,271	$ 730,271	$ 5,267,626

Source: RKG Associates, Inc., 2024
[1] - Prince William County, Virginia Department of Finance Tax Rates (2024)

1.9.2. Business Tangible Personal Property Tax Revenues

Businesses in Prince William County must pay taxes each year on tangible personal property. The business tangible personal property tax is levied on all general office furniture and equipment, machinery and tools, equipment used for research and development, heavy construction equipment, computer equipment, and peripherals located in the County on January 1 of each year.

Each business must file annually a Business Tangible Personal Property Return declaring a summary of property cost values by purchase year. Generally, an item is assessed at 85% percent of its original cost in the year acquired; thereafter, the percentage decreases by 10% percent increments. After eight years, the item's assessed value remains constant at 10% percent of the original cost. Computer equipment and peripherals are valued at 50% percent of cost in the first year, 35% percent the second year, 20% percent the third year, 10% percent the fourth year, and 5% percent the fifth and all subsequent years.

For purposes of this analysis, VDOT estimated business personal property tax revenues as a percentage of total personal property taxes, both residential and business uses. Based on a report prepared for the Prince William County Board of Supervisors in 2021, total personal property taxes, as a percentage of real property taxes, equal roughly 30% in Prince William County, and business tangible personal property equals 25% of total personal property taxes. Based on this revenue relationship, VDOT estimates that total annual business tangible personal property taxes will equal $54,770 at build-out in 2031 and nearly $400,000 over the first ten years of the project (**Table 1-6**).

Table 1-6 – Cumulative Business Personal Property Revenue Projections

Cumulative Business Personal Property Tax Revenue Projections
Van Buren Road Development Site

Real Property Tax Revenue Projections	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029	Year 6 2030	Year 7 2031	Year 8 2032	Year 9 2033	Year 10 2034	Cum. Tax Revenues Years 1-10
Building Value	$ -	$ -	$ 179,477	$ 358,955	$ 506,111	$ 523,982	$ 544,832	$ 544,832	$ 544,832	$ 544,832	$ 3,747,853
Land Value	$ 76,928	$ 76,928	$ 113,258	$ 149,587	$ 179,224	$ 182,093	$ 185,439	$ 185,439	$ 185,439	$ 185,439	$ 1,519,773
Total Real Property Value	$ 76,928	$ 76,928	$ 292,735	$ 508,542	$ 685,335	$ 706,075	$ 730,271	$ 730,271	$ 730,271	$ 730,271	$ 5,267,626
Tangible Personal Property Tax Revenue											
Total Personal Personal Prop Tax Rev [1]	$ 23,078	$ 23,078	$ 87,821	$ 152,563	$ 205,601	$ 211,822	$ 219,081	$ 219,081	$ 219,081	$ 219,081	$ 1,580,288
Business Tangible Personal Prop Tax Rev	$ 5,770	$ 5,770	$ 21,955	$ 38,141	$ 51,400	$ 52,956	$ 54,770	$ 54,770	$ 54,770	$ 54,770	$ 395,072

Source: Prince William County, Virginia Department of Finance, Estimates of General Revenue Proposed FY 2023-2027, (2022).
Note: [1] Annual Personal Property Tax Revenues typically equal 30% of Real Estate Tax Revenues
[2] 25% of Personal Property Tax Revenues are generated by business tangible personal property tax revenues

1.9.3. State of Virginia Employee Income Tax Revenues

The largest tax revenue impacts will be generated by the payment of employee income taxes to the Commonwealth of Virginia based on the taxes paid by Van Buren Road employers. The income taxes paid will vary based on the salaries of Van Buren Road employees. The estimated income taxes paid are projected to peak at $3.96 million at build-out in 2031 and $22.1 million over the first ten years of the project (**Table 1-7**).

Table 1-7 – Virginia Income Tax Revenue Projections (Year 1-10)

Virginia Income Tax Revenue Projections (Year 1-10)
Van Buren Road Development Site

Income Tax Thresholds	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029	Year 6 2030	Year 7 2031	Year 8 2032	Year 9 2033	Year 10 2034	Cum Inc. Tax Rev (Yrs 1-10)
Under $3,000											
$3,000 to $5,000											
$5,000 to $17,000											
Amount Over $17,000											
Industry Employment											
Distribution/Fulfillment Center	$ -	$ -	$ -	$ 801,579	$1,603,159	$2,244,422	$2,244,422	$2,244,422	$2,244,422	$2,244,422	$13,626,850
Industrial Flex - Office/Management	$ -	$ -	$ -	$ 44,502	$ 89,005	$ 133,507	$ 178,010	$ 229,929	$ 229,929	$ 229,929	$ 1,134,813
Industrial Flex - Product Assembly	$ -	$ -	$ -	$ 137,688	$ 275,377	$ 413,065	$ 550,754	$ 711,390	$ 711,390	$ 711,390	$ 3,511,055
Industrail Flex - Warehousing	$ -	$ -	$ -	$ 150,272	$ 300,543	$ 450,815	$ 601,086	$ 776,403	$ 776,403	$ 776,403	$ 3,831,923
	$ -	$ -	$ -	$1,134,042	$2,268,084	$3,241,810	$3,574,272	$3,962,145	$3,962,145	$3,962,145	$22,104,641

Source: RKG Associates, Inc., 2024 and Virginia Tax Rate Schedule, 2024.

1.9.4. Total Projected Tax Revenues (Local and State)

During the first ten years of the Van Buren Road development, it is projected that total tax revenues could exceed $27.8 million, with the peak year occurring in 2032 when revenues top $4.7 million. The largest tax revenue source will be employee income taxes paid to the state, which will account for 80% ($22.1 million) of the total (**Table 1-8**). While there will be other minor tax revenues generated from this project, the County does not impose a machinery and equipment tax or a business, professional and occupancy tax on warehouse/distribution and industrial flex operations. Nor does the County levy taxes on warehouse inventories.

Table 1-8 – Total Local and State Tax Revenue Projections (Year 1-10)

Total Local and State Tax Revenue Projections (Year 1-10)
Van Buren Road Development Site

Annual Tax Revenue Projections	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028	Year 5 2029	Year 6 2030	Year 7 2031	Year 8 2032	Year 9 2033	Year 10 2034	Cum Inc. Tax Rev (Yrs 1-
Prince William County, Virginia											
Real Estate Tax Revenues	$76,928	$76,928	$292,735	$ 508,542	$ 685,335	$ 706,075	$ 730,271	$ 730,271	$ 730,271	$ 730,271	$ 5,267,626
Business Tangible Personal Property Tax	$ 5,770	$ 5,770	$ 21,955	$ 38,141	$ 51,400	$ 52,956	$ 54,770	$ 54,770	$ 54,770	$ 54,770	$ 395,072
Total Local Tax Revenues	$82,698	$82,698	$314,690	$ 546,683	$ 736,736	$ 759,030	$ 785,041	$ 785,041	$ 785,041	$ 785,041	$ 5,662,698
Commonwealth of Virginia											
Income Tax Revenues	$ -	$ -	$ -	$1,134,042	$2,268,084	$3,241,810	$3,574,272	$3,962,145	$3,962,145	$3,962,145	$22,104,641
Total State Tax Revenues											
Total Local and State Tax Revenues	$82,698	$82,698	$314,690	$1,680,725	$3,004,819	$4,000,840	$4,359,313	$4,747,186	$4,747,186	$4,747,186	$27,767,339

Source: RKG Associates, Inc., 2024

1.9.5. Project Impact Conclusions

During the first ten years of the Van Buren Road development, it is projected that total tax revenues could exceed $27.8 million, with the peak year occurring in 2032. The total assessed value of the subject properties is projected to increase from $7.7 million as undeveloped land to over $77 million at final build-out. Resulting development from the road project could result in the creation of 1,083 jobs in the warehouse/distribution and industrial flex market segments. While other potential land uses could be attracted to this location, the proposed industrial development concept is most responsive to past development interest in the site.

2. Appendix B - Cost Optimization Summary

2.1. Introduction & Background

A key component of this review of the proposed Van Buren Road North Extension in Prince William County was a value engineering study of the existing concept to identify cost-saving solutions. The value engineering analysis was performed to decrease costs while retaining benefits with the goal of improving the project's benefit score. A full copy of the cost optimization study is provided in **Appendix G – Profile Adjustments**, which includes detailed drawings. The recommendations and cost savings in this chapter are based on the alignment being advanced by Prince William County.

The proposed concept consists of an alignment of Van Buren Road that extends approximately 2.5 miles from the existing intersection at Dumfries Road (Route 234) to the north, paralleling I-95, and tying into the existing intersection at Cardinal Drive. The purpose of this project is to create a north-south alternative route for I-95 and Route 1 to enhance mobility within the area, provide safe access for non-motorized transportation, and improve overall network safety. See the study area in **Figure 2-1**.

Figure 2-1 – Van Buren Road North Extension

The conceptual design has been previously submitted in SMART SCALE Rounds for funding. The latest application was submitted in calendar Year 2024 (Round 6). The fiscal Year 2024 application (Round 5) benefit score was 4.12; the project cost was $207,817,011, and the score-to-cost ratio was 0.20. The project was not funded in Round 5; it was ranked 382 out of 394 state projects.

The following sections detail design alternatives to reduce the project's cost.

2.2. Existing Conditions and Design Criteria

Van Buren Road is listed under the Prince William County Comprehensive Plan as a 40-mph urban collector. The conceptual design consists of a 4-lane divided roadway with a shared use path along the west side and a 5-ft sidewalk along the east side. The typical section of the conceptual design is provided in **Figure 2-2**. The conceptual design also features three retaining walls and a bridge over Powells Creek.

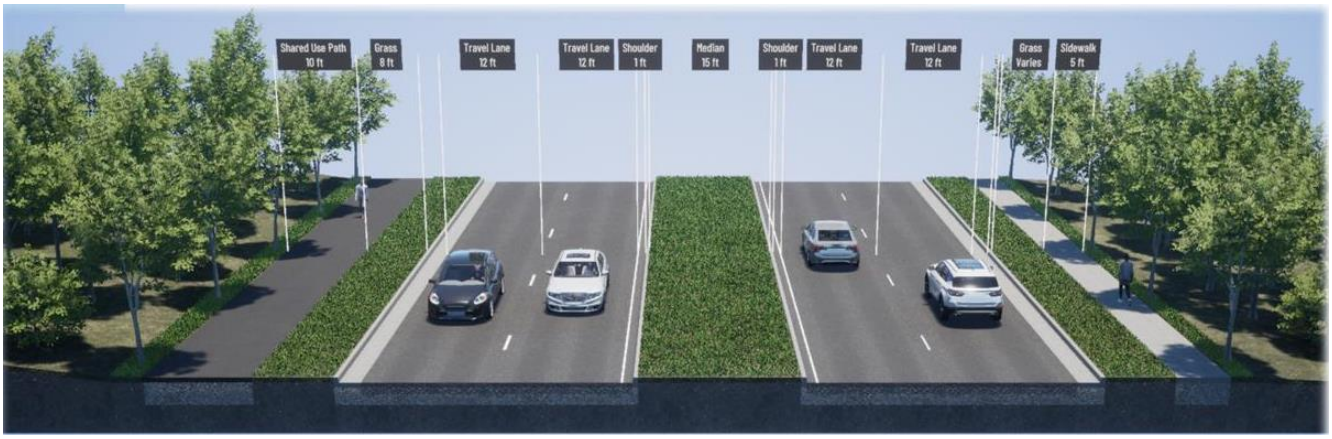


Figure 2-2 – Van Buren Road Typical Section

2.3. Cost Saving Alternatives

When evaluating the concept design for features that could lead to cost savings, the major cost contributors were identified as earthwork and structures. The profile and typical section were evaluated to determine ways to reduce the project's footprint. Additionally, the retaining walls and bridge were also evaluated for cost savings. The proposed Van Buren Road Extension horizontal alignment was not evaluated due to the understanding that it has been extensively studied and is in its approved location.

The following roadway feature adjustments were considered for project cost savings.

1. Reduced Sidewalk Buffer Width
2. Eliminated entire Sidewalk from Concept
3. Eliminated Retaining Walls from Concept
4. Adjusted Profile
5. Realigned Access Road
6. Construct Half Section
7. Eliminated Access Road from Concept
8. Change Intersection to Roundabout
9. Bridge over Powells Creek

2.3.1. Reduced Sidewalk Buffer Width

The sidewalk buffer width was evaluated to reduce the project's overall cost. The buffer width on the Van Buren Road Extension concept was identified as 7-feet. The sidewalk buffer width on the east side of the Access Road concept was identified as 5-feet. According to the VDOT Road Design Manual, Appendix A(1) Page A(1)-81, the minimum buffer width required is four feet for posted speeds greater than 25 mph. By reducing the buffer width, the limits of construction, amount of Right-of-Way, and earthwork required to construct the roadway would decrease.

The reduction of the buffer width would decrease the proposed right-of-way takes by 0.26 acres. The cost per square foot was determined by evaluating current tax records of the impacted parcels. Using the current tax value assessments, the right-of-way cost would decrease by approximately $27,527. See **Table 2-1** for the cost breakdown.

Table 2-1 – Reduced Buffer Width Right of Way Savings

Parcel No.	Difference in Right of Way with Reduced buffer width (Acre)	Land Value ($/Acre)	Cost Savings
010	0.0422	$305,213	$(12,880)
015	0.0142	$77,465	$(1,100)
017	0.0639	$65,258	$(4,170)
018	0.0935	$82,353	$(7,700)
019	0.0033	$63,636	$(210)
020	0.0481	$30,561	$(1,470)
Total	**0.26**		**$(27,530)**

The earthwork saved from the reduced buffer width would amount to a cost savings of approximately $317,950. Based on the information given, two concept level models for the original concept design and the design with the reduced buffer width were created and compared to find the earthwork volume savings. See the cost breakdown in **Table 2-2**. The unit cost was obtained from the VDOT 3-Month District Averages from January 2024 through April 2024.

Table 2-2 – Reduced Buffer Width Earthwork Savings

	Quantity (CY*)	Unit Cost	Total Cost
Regular Excavation	7,400	$45	$(333,000)
Borrow Excavation	430	$35	$15,050
		Total	**$(317,950)**

*CY – Cubic Yards

Reducing the sidewalk buffer width results in a total cost savings of $345,480.

2.3.2. Eliminate Sidewalk from Concept

The need for the proposed sidewalk on the east side of Van Buren Road was also evaluated for purposes of reducing project costs. If this option is considered, a reduction in the buffer width throughout the whole corridor, as described in Section 2.3.1, would not be required. There are 2.33 miles between the connecting roads on the right side – the proposed access road, located 1,300 feet north of the intersection of Dumfries Road (Rte. 234) and Van Buren Road (Sta. 120+25) and Fledgling Circle, located 1,000 feet south of the intersection of Cardinal Drive and Van Buren Road (Sta. 243+50). Considering the distance between the two, the sidewalk on the east side may not be warranted since there is a proposed 10-ft shared use path on the west side and no new development planned on the right. By removing the sidewalk on the east side, the scope of the project would decrease, lowering the total project cost.

Eliminating the sidewalk between the proposed Access Road and Fledgling Circle would save 6,900 square yards of concrete sidewalk. The suggested typical section on the eastern side features a 10.5-foot buffer space at 1.5% and ties into existing at a 3:1 slope. This could potentially result in a savings of $3,179,000 in material and grading costs, as shown in **Table 2-3**. The unit costs were determined using the VDOT 3-Month District Averages from January 2024 through April 2024.

On July 16, 2024, the Prince William County Board of Supervisors endorsed the project with the five-foot sidewalk included as a part of the resolution (Res. No. 24-534). Therefore, eliminating the sidewalk would require an amended Board action. Moreover, removing the sidewalk would create inconsistencies with the adopted objectives in the Comprehensive Plan and Strategic Plan, which would need to be addressed.

Table 2-3 – Sidewalk Cost Savings

	Quantity*	Unit Cost	Total Cost
Concrete Sidewalk	6,900 SY	$110	$(759,000)
Regular Excavation	32,000 CY	$45	$(1,440,000)
Borrow Excavation	28,000 CY	$35	$(980,000)
		Total	**$(3,179,000)**

*SY – Square Yard, CY – Cubic Yard

2.3.3. Eliminate Retaining Walls from Concept

There are three retaining walls in the concept plan that were evaluated for potential project cost savings. Retaining Wall 1 is 130 feet long and is located on the west side of Van Buren Road between Dumfries Road and Old Stage Road. The purpose of this wall is to reduce impacts to the parking lot of a local business along the corridor. It was determined that this wall should remain to allow enough space for the parking lot.

Retaining Wall 2 is 250 feet long and is located on the west side of Van Buren Road and it begins after the intersection of Van Buren Road and Copper Mill Drive. The purpose of the wall is to reduce grading limits in this area. After review, it was decided that this wall could be eliminated with no profile adjustments, as the extended grading limits would not impact known utilities or any other existing structures. Although not having the wall would result in additional grading and easement costs, the overall cost savings of eliminating the retaining wall would be $673,100. See **Table 2-4** for the cost savings breakdown from eliminating the retaining wall from the concept plan.

Table 2-4 – Cost Savings from Eliminating Retaining Wall 2 from Concept

	Quantity*	Unit Cost	Total Cost
Eliminate Retaining Wall	240 CY	$3,000	$(720,000)
Temporary Construction Easement	1,360 SY	$15	$20,400
Regular Excavation	1,600 CY	$45	$72,000
Borrow Excavation	1,300 CY	$35	$(45,500)
		Total Saved	**$(673,100)**

*SY – Square Yard, CY – Cubic Yard

Retaining Wall 3 is 175 feet long, located on the west side of Van Buren Road, and begins 2,000 feet south of the intersection of Van Buren Road and Fledgling Circle. The purpose of this wall was to eliminate impacts to the adjacent properties (eliminate the need to acquire ROW). By raising the Van Buren profile at this location by approximately three feet, the grading limits no longer impact the parcel, thus eliminating the need for the retaining wall. Eliminating Retaining Wall 3 would result in a project savings of $210,650. See **Table 2-5** for the cost savings breakdown.

Table 2-5 – Cost Savings from Eliminating Retaining Wall 3 from Concept

	Quantity*	Unit Cost	Total Cost
Eliminate Retaining Wall	73 CY	$3,000	$(219,000)
Temporary Construction Easement	270 SY	$15	$4,050
Regular Excavation	150 CY	$45	$6,750
Borrow Excavation	70 CY	$35	$(2,450)
		Total Saved	**$(210,650)**

*SY – Square Yard, CY – Cubic Yard

The approximate cost savings from eliminating Retaining Wall 2 and 3 from the concept is **$883,750**. The cost/cost saving was developed using the concept plan retaining wall profiles to find the average volume. It was assumed that both walls would be designed as VDOT Standard RW-2 (concrete gravity retaining wall with level backfill) and have a unit cost of $3,000 per cubic yard based on the VDOT 1-year District Averages from February 2022 through March 2024.

2.3.4. Adjust Profile

Van Buren Road's profile was also evaluated to lower the overall project cost. In addition to raising the profile by three feet along Retaining Wall 3, as discussed in the previous section, a few other areas were identified that would result in potential cost savings. See **Table 2-6** for those locations and **Appendix G – Profile Adjustments** for the recommended profile sheets.

Table 2-6 – Profile Adjustment Locations

Location	Description/ Benefit
3,200-feet along Van Buren Rd, beginning 575-feet north of Dumfries Rd (Sta. 113+00 to Sta. 145+00)	Lowered the profile closer to existing to decrease the amount of fill where the access road connects to Van Buren.
1,650-feet along Van Buren Rd, beginning 3,775-feet north of Dumfries Rd(Sta. 145+00 to 161+50)	Raised profile to follow more closely to the existing ground.
4,050-feet along Van Buren Rd, beginning 5,425-feet north of Dumfries Rd(Sta. 161+50 to 202+00)	Lowered profile to follow more closely to the existing ground.
3,050-feet along Van Buren Rd, beginning 9,475-feet north of Dumfries Rd (Sta. 211+00 to 241+50)	Raised the profile 3 feet in order to eliminate the retaining wall from concept. (See Section 2.3.3).
300-feet along the Access Road, beginning at the intersection at Van Buren Rd (Sta. 10+00 to 13+00)	Lowered profile to tie into Van Buren for profile adjustments detailed above.

The adjustments above resulted in an earthwork cost savings of $10.63 million. The adjustments balanced the earthwork, so there was a substantial decrease in fill material, and the excavation quantity increased slightly. See **Table 2-7** for the cost breakdown. The cost savings below are only for earthwork. Retaining Wall 3 would also be eliminated and the cost savings that would result are set out in the previous section (*Eliminate Retaining Walls from Concept*.

Table 2-7 – Profile Adjustment Cost Savings

Item	Quantity (CY)	Unit Cost	Total Cost
Regular Excavation	48,000	$45	$2,160,000
Borrow Excavation	365,400	$35	$(12,789,000)
		Total	**$(10,629,000)**

2.3.5. Realign Access Road

Another roadway feature analyzed for potential adjustment was the Access Road alignment. The conceptual design requires a large amount of fill material at the proposed intersection of Van Buren Road and the Access Road. The existing contours were analyzed to find a more ideal location for the intersection. However, the area around the proposed Access Road is relatively steep at a 20% slope as it connects with the mainline, which doesn't leave an ideal location for the alignment. It was determined that the alignment is already in the best location given existing right-of-way and existing contours. However, lowering the Access Road profile referenced in Section 2.3.4 should result in more balanced earthwork with a cost savings of $243,575. See **Table 2-8** for the cost breakdown. The profile adjustment is included in **Table 2-7**. This earthwork cost is also included in the overall cost of the profile adjustments in **Table 2-7**.

Table 2-8 – Access Road Profile Adjustment Cost Savings

	Quantity (CY)	Unit Cost	Total Cost
Regular Excavation	1,483	$45	$66,735
Borrow Excavation	8,866	$35	$(310,310)
		Total	**$(243,575)**

2.3.6. Construct Half Section

The conceptual design includes a four-lane road with two lanes in each direction. Constructing a half section of Van Buren would reduce the northbound and southbound side by a travel lane each, greatly reducing the amount of earthwork and pavement required. The recommended typical section would include a 2-lane road with 16-foot lanes. The recommended shared use path is shown as remaining in the original concept's horizontal location, which would allow it to stay in the same position when the ultimate design is built. The sidewalk on the right side would be built in the ultimate design but graded out to the width required. The half section design of Van Buren would reduce the total project cost by $4,927,300, as shown in **Table 2-9**.

The bridge cost savings were determined using the VDOT Parametric Cost Estimate Tool and reducing the width from 96 feet to 80 feet. Based on the traffic forecasts developed by the County, the directional volumes during the peak hour do show that a single lane of capacity should operate within acceptable levels of service for many years. It was assumed that right-of-way acquisition would be for a 4-lane section and would not reduce the cost.

Table 2-9 – Half Section Total Project Cost Savings

Item	Quantity	Unit*	Unit Cost	Total Cost
Regular Excavation	2,000	CY	$45	$(90,000)
Borrow Excavation	11,760	CY	$35	$(411,600)
Full Depth Pavement	23,400	SY	$120	$(2,808,000)
Concrete Sidewalk	6,900 SY	SY	$110	$(759,000)
Bridge Cost	1	LS	$858,689	$(858,700)
			Total	**$(4,927,300)**

*SY – Square Yard, CY – Cubic Yard, LS – Lump Sum

2.3.7. Eliminate Access Road

The concept design Access Road is approximately 1.4 miles long, connecting Old Stage Road to the proposed Van Buren Road. The proposed road consists of two lanes with a five-foot sidewalk on the west side and two entrances connecting to future development, which is zoned as B-1 General Business. The existing land is owned and maintained by VRAJ Limited Liability Co. and used as a gravel maintenance road.

By eliminating the Access Road from the conceptual design, the overall project cost would be reduced by approximately $2,212,900. The cost breakdown is shown in **Table 2-10** and **Table 2-101**. The right-of-way cost savings were developed by using the current parcel land value. The overall cost was determined by tabulating the known construction costs for the roadway and hydraulic items using the VDOT 3-Month District Averages from January 2024 through April 2024. Costs for utilities, traffic, and erosion and sediment control were assumed to be 2.5% of the construction cost for each item.

Eliminating the Access Road is not recommended since the access road would provide access to future businesses and would provide a left turn onto Van Buren Road from Old Stage Road. The intersection of Van Buren Road and Old Stage Road is partial access and limited to right-in and right-out.

Table 2-10 – Right of Way Cost Savings for Eliminating Access Road

Parcel No.	Difference in Right of Way (Acre)	Land Value ($/Acre)	Cost Savings
010	1.2077	$305,600	$(369,100)
011	0.1633	$74,600	$(12,000)
Total	**1.3710**		**$(381,100)**

Table 2-11 – Project Cost Savings for Eliminating Access Road

Item	Quantity	Unit*	Unit Cost	Total Cost
Mobilization	1	LS	$134,000	**$(134,000)**
ROADWAY				
Clearing & Grubbing	1.72	ACRE	$51,000	$(87,720)
Regular Excavation	1,425	CY	$45	$(64,125)
Borrow Excavation	25,400	CY	$35	$(889,000)
Hydr. Cement Conc. Sidewalk 4"	465	SY	$110	$(51,150)
Full Depth Pavement	2,652	SY	$120	$(318,240)
Shoulder Pavement	322	SY	$120	$(38,640)
Entrance Gutter, St'd. CG-9D	91	SY	$150	$(13,650)
Standard Combined Curb & Gutter CG-6	986	LF	$30	$(29,580)
				$(1,464,205)
HYDRAULICS				
EC-3	520	SY	$4.50	$(2,340)
Storm Sewer Pipe 15"	580	LF	$140	$(81,200)
Drop Inlet DI-3B, L=8'	6	EA	$10,000	$(60,000)
End Section ES-1 or 2	2	EA	$2,000	$(4,000)
				$(147,540)
Utility Costs (2.5%)	1	LS	$50,000	**$(50,000)**
Traffic Costs (2.5%)	1	LS	$50,000	**$(50,000)**
Erosion & Sediment Control (2.5%)	1	LS	$50,000	**$(50,000)**
Right-of-Way Acquisition	1	LS	$381,100	**$381,100**
			Total	**$(2,212,900)**

*SY – Square Yard, CY – Cubic Yard, LS – Lump Sum, EA – Each, LF – Linear Foot

2.3.8. Bridge over Powells Creek

The next roadway feature evaluated for adjustment was the bridge over Powells Creek. The concept design bridge consists of two– 113-foot spans. The creek was evaluated to determine if a culvert could replace the bridge. However, due to the constraints of the location in a FEMA (Federal Emergency Management Agency) floodplain with a floodway and the proximity of downstream bridges, a culvert is not feasible nor recommended.

2.3.9. Convert Intersection to Roundabout

The last roadway feature evaluated was replacing a full-access intersection with a roundabout. A roundabout would increase the safety score for future rounds of funding. Per the VDOT Road Design Manual, Appendix F, a collector road with a design speed of 40 mph requires 440 feet between the inscribed circle and the adjacent intersection centerline. The concept plan intersections do not have the minimum space required. Therefore, a roundabout is not recommended.

2.3.10. Summary

Based on the analysis above, there are several features that would reduce the overall project cost. The most significant cost savings would result from adjusting the profile closer to the existing ground. Other cost savings in descending order of magnitude would result from building a half section of Van Buren, removing the sidewalk from the concept, removing the retaining walls from the scope, and lastly decreasing the sidewalk buffer. See **Table 2-12** below for a summary of the cost savings associated with each project adjustment.

Table 2-12 – Project Cost Evaluation Summary

Roadway Feature	Description	Project Cost Saved
Adjust Concept Profile	Realigned the profile to balance earthwork	$(10,629,000)
Remove Sidewalk from Concept	Removed sidewalk between the Access Road and Fledgling Circle	$(3,179,000)
Remove Retaining Walls from Concept	Eliminated Retaining Walls 2 and 3 from concept	$(883,750)
Decrease sidewalk buffer	Changed sidewalk buffer from 7-feet to 4-feet	$(345,480)
Construct a half section	Build a half section of Van Buren	$(4,927,300)
Total		($19,964,530)

2.3.11. Recommendations

Implementation of the following cost-saving design adjustments is recommended for consideration by Prince William County to reduce the overall project cost:

1. Adjust the profile (Section 2.3.4)
2. Remove the sidewalk from the concept between Access Road and Fledgling Circle (Section 2.3.2)
3. Remove the retaining walls from the concept (Section 2.3.3)
4. Decrease the sidewalk buffer (Section 2.3.1)

5. Build a half section first (Section 2.3.6)

Incorporating those recommendations would result in a project cost savings of $17,639,980, which is an 8.5% decrease in the project cost (see **Table 2-13**). The total cost savings is roughly 12% less than the sum total of the component cost savings shown in **Table 2-12** because of the element overlap. The cost savings were determined by using the Half Section Typical (building two of the four lanes - **Figure 2-3; Figure 2-4** displays typical section for reference purposes) on the recommended profile (see **Table 2-13**). The sidewalk is still recommended before the Access Road and after the intersection at Fledgling Circle with a buffer width of 19.5', which allows for future expansion to the ultimate design. The unit costs were determined using the VDOT 3-Month District Averages from January 2024 through April 2024. The bridge cost savings was determined using the VDOT Parametric Cost Estimate Tool and reducing the width from 96 feet to 80 feet.

Table 2-13 – Cost Saving Summary

Item	Quantity	Unit	Unit Cost	Total Cost
Mobilization	1	LS	$134,000	**$(1,150,000)**
ROADWAY				
Regular Excavation	(46,000)	CY	$45	**$2,070,000**
Borrow Excavation	377,800	CY	$35	**$(13,223,000)**
Hydr. Cement Conc. Sidewalk 4"	6,900	SY	$110	**$(759,000)**
Full Depth Pavement	23,400	SY	$120	**$(2,808,000)**
				$(14,720,000)
Bridge	1	LS	$858,700	**$(858,700)**
Retaining Walls	1	LS	$883,750	**$(883,750)**
Right-of-Way Acquisition	1	LS	$27,530	**$(27,530)**
			Total	**$(17,639,980)**

*SY – Square Yard, CY – Cubic Yard, LS – Lump Sum

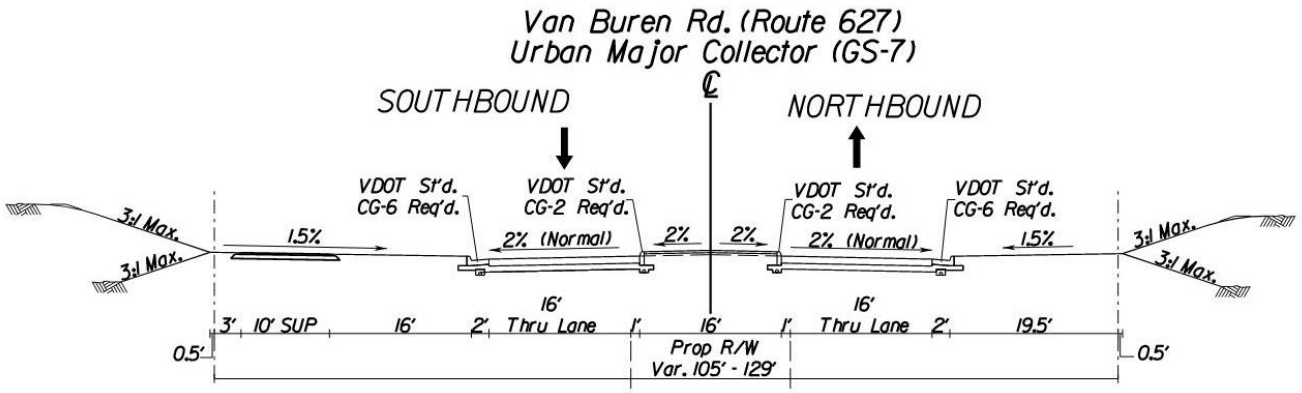


Figure 2-3 – Van Buren Road Half Section

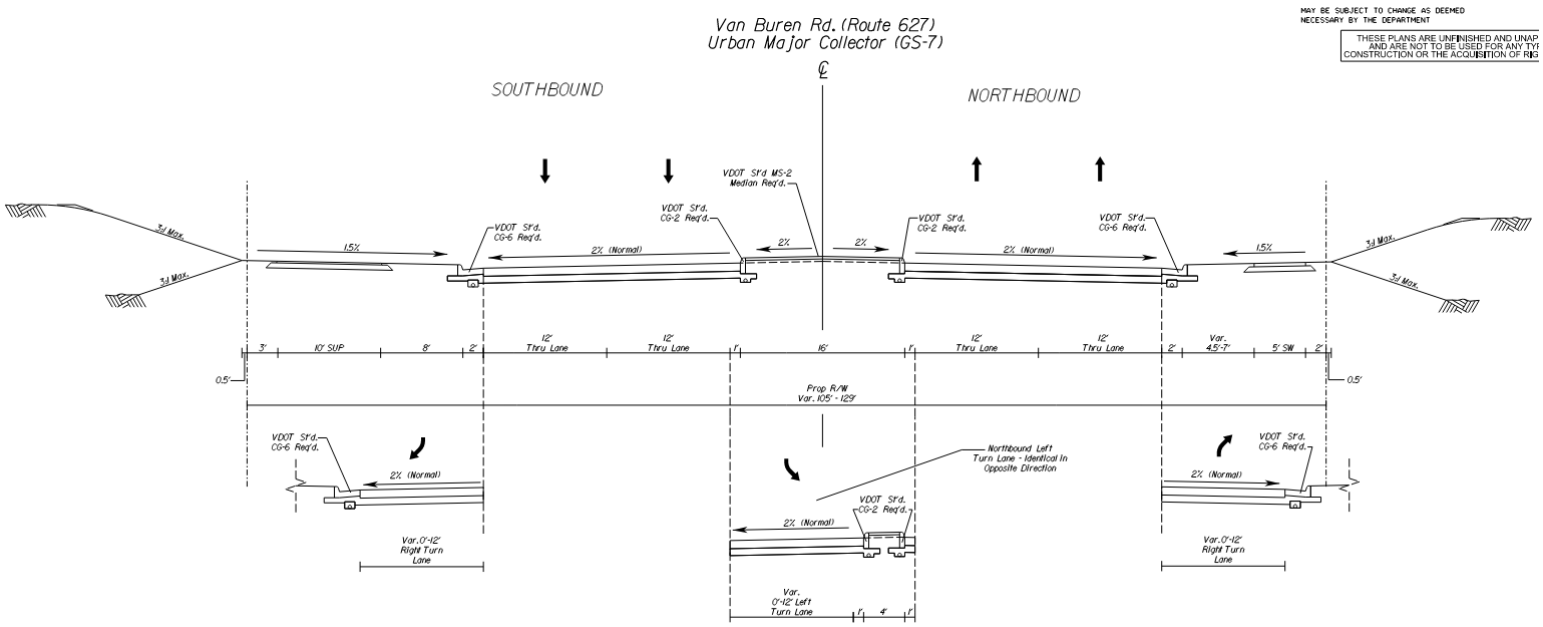


Figure 2-4 – Van Buren Road Typical Section

3. Appendix C - Travel Time Reliability Analysis – SMART SCALE Methodology

The following explains the results of the SMART SCALE Travel Time Reliability Analysis using the current methodology (Round 5 / Round 6), completed by VDOT in July 2024.

Using SMART SCALE methodology for the analysis of this project results in the project receiving a measure value of 1.62 for the Travel Time Reliability section of the score, which accounts for 20% of the Economic Development score and 1% of the overall score. This is about the average score that projects receive in the Travel Time Reliability score.

Each part of the score was as follows:

- Buffer Time Index - 0.16
- EPDO frequency - 4
- Weather frequency - 1
- Safety Score - 2
- Weather Score - 2.1

The formula for the final score is

BTI*((EPDO * Safety) + (Weather Frequency * Weather Score)).

EPDO stands for Equivalent Property Damage Only. It is a metric in which injury crashes are converted to property damage-only crashes using ratios dependent on the severity of the crash (i.e., a minor injury crash = 10 property damage only crashes).

The BTI for this project is on the lower end of projects analyzed in the past. Generally, the Buffer Time Indexes are about 0.25.

The EPDO and Weather Frequency scores are derived from the number of Property Damage Crashes and the amount of precipitation in inches at the location using a year's worth of data. The EPDO score can range from 0 to 5, and the weather frequency ranges from 0 to 2.

The Safety and Weather Scores are given based on the proposed improvements of the project, and their ability to impact the outcomes of the network when impacted by weather or to better avoid non-recurrent congestion through safety. Since this project was adding a new roadway and a bridge, it received the above scores. These scores are between 0 and 2.9, but generally fall around 2.1 to 2.3.

4. Appendix D - Accessibility Analysis

The accessibility analysis addressed access to employment as a result of the proposed project. Accessibility analysis is a specific part of the SMART SCALE scoring process and accounts for 25% of the total score. The accessibility analysis was reanalyzed by VDOT to see if any improvements may increase the SMART SCALE score, thereby increasing the potential for the project to get funded through the SMART SCALE program. A geospatial accessibility tool was used to measure the average change in access to employment opportunities as a result of project implementation. Measure values are determined by the project's weighted average Potential for Accessibility Improvement (PAI) within a buffer distance of the project limits.

The accessibility analysis utilized the following metrics (portion of accessibility score) : Auto Access to Jobs (60%), Auto Access to Jobs EDP (Eligible Disadvantaged Population) (20%), and Access to Multimodal Options (20%). They account for 15%, 5% and 5% of the total score, respectively. These metrics are calculated for each SMART SCALE application and compared against one another.

Table 4-1 presents the final analysis results for the Van Buren Road Improvements from Route 234 to Cardinal Drive, compared to the results from the last round of Smart Scale analysis. The slight inconsistencies between the two analyses are due to manual coding of the network and minor rounding errors. The differences observed between the 2022 and 2024 results are minimal and can be attributed to the manual adjustments made during network coding. Despite these minor variations, the core outcomes remain consistent, reinforcing the reliability of the analysis.

Table 4-1 – Van Buren Road Improvements: Route 234 to Cardinal Dr

	Auto Access to Jobs	Access to Multimodal Options	Auto Access to Jobs EDP
2022 (Last round Result)	38.99	28.21	45.99
2024 (New Result)	**39.44**	**28.21**	**46.53**

5. Appendix E - Safety Analysis

The safety analysis employed the same methodology used for the SMART SCALE prioritization process[11], which evaluates the effectiveness of a project in addressing transportation safety concerns through implementation of crash reduction strategies. Safety accounts for 15% of the SMART SCALE score. The EPDO measure accounts for 70% of the safety score, or 10.5% of the total.

Utilizing the latest five years of available crash data (2019-2023), fatal (F) and injury (I) crashes on the existing network are weighted by severity using an equivalent property damage only (EPDO) crash value scale. This weighting allows for comparison of both severity types, giving more weight to crashes that result in a fatality. As this project includes a new roadway, a crash modification factor (CMF) is calculated based on the ratio of the traffic volume projected on the new roadway and the current roadway volume. A percent expected crash reduction (PECR) is then determined based on the volume-based CMF. To estimate the number of EPDO crashes expected to be reduced, the average annual EPDO crash frequency is the multiplied by PECR.

The next step in the analysis is to calculate the number of crashes projected to be added to the network on the new roadway using safety performance functions (SPFs) produced by VDOT and volume projections from the regional travel demand model. Using VDOT crash severity proportion data based on intersection and roadway types, the projected crash total is then converted to an EPDO value.

The crashes predicted for the existing network are added to the crashes predicted for the new facility to determine projected change in EPDO crash frequency.

The crash analysis estimated both the change in the number of EPDO crashes and the change in the number of fatal and injury (FI) crashes. As summarized in **Table 5-1**, the change in both EPDO and FI crashes are projected to be negative, meaning that the net result of the analysis is a reduction in crash severity and a reduction in the frequency of severe crashes. While crashes are expected to occur on the new roadway, those are a result of traffic being diverted from the existing network which will see a reduction in severe crashes.

All assumptions are consistent with the SMART SCALE Round 6 methodology as of July 1, 2024.[12]

[11] https://smartscale.virginia.gov

[12] SMART SCALE analysis methodologies are subject to revision by the Office of Intermodal Planning and Investment (OIPI)

Table 5-1 – Safety Analysis Summary Table

Project Element	Change in EPDO Crashes (5 Years)	Change in FI Crashes (5 Years)
Nearby roadways	-1,202	-34
New/modified intersections	+574	+18
New roadway	+547	+14
Total	**-81**	**-2**

For more information regarding the SMART SCALE safety analysis methodology, see the 2024 Revised SMART SCALE Technical Guide.[13]

[13] https://smartscale.virginia.gov/media/smartscale/documents/508_R6_Technical-Guide_FINAL_FINAL_acc043024_PM.pdf

6. Appendix F - Public Engagement Summary

VDOT conducted an economic development community survey of the proposed Van Buren North extension from 8/15/24 through 8/29/24 using the website Publicinput.com. A total of 908 people participated, providing ratings to questions and 653 written comments. The survey's primary purpose was to seek the public's opinion on the economic impacts of the proposed road extension.

A series of questions/statements were asked, and respondents ranked the questions/statements on a sliding scale from 1 to 5, with 1 being the least preferred and 5 being the most preferred. The ranking questions/statements were then converted to percentages (a ranking of 5 would be 100%). Example: an average of 55/100 is 55% favorable.

6.1. Economic Development Questions

The first set of questions asked related to economic development. The survey stated - The central purpose of the Van Buren Corridor project is to encourage new economic development in the eastern part of Prince William County.

Then the survey asked - Which of the following project objectives do you believe are the most important to achieve? **Table 6-1** summarizes the results of the economic development questions.

Table 6-1 – Economic Development Questions Summary

Survey Question	% Favorable Rating	Number of Responses
Question/Statement #1 - Attract new employers that will bring quality jobs to Prince William County.	55%	746
Question/Statement #2 - Attract employers that need direct interstate access to serve their markets.	53%	730
Question/Statement #3 - Reduce the daily commuting time/distance for Prince William County residents.	78%	816
Question/Statement #4 - To increase the number of new jobs for local residents in this part of the county.	56%	702
Question/Statement #5 - To create a north/south alternative route parallel with I-95 to better manage traffic congestion.	80%	810

The end of the first section of the survey on economic development ended with an open question for written responses – Please share a different project objective not listed. A total of 227 written responses were provided to this question. Of the written comments, approximately 75% viewed the project favorably, and 25% were opposed to the project. The most common written comment was that the project would help reduce cut-through traffic in the Montclair communities, with 92 people mentioning this benefit. A related comment was that the project would offer an alternative route for cut-through traffic and alternatives to I-95 and Route 1; 36 people mentioned the benefits of the

alternative route. Forty-seven (47) people wrote in opposition to the project. Safety was also a frequently mentioned written comment, with approximately 35 people mentioning that the project would offer safety benefits, mainly because it would reduce cut-through traffic.

6.2. Business Types Questions

The second set of questions related to the types of businesses that would best fit along the proposed alignment. The second set of questions began with this statement/question - Given what you know about this part of the County and the project's location, which of the following business types do you believe would be the best fit for this location? **Table 6-2** summarizes types of businesses that survey respondents desire along the proposed road alignment.

Table 6-2 – Business Types Questions Summary

Survey Question	% Favorable Rating	Number of Responses
Question/Statement #6 - Light industrial/manufacturing businesses	31%	634
Question/Statement #7 - Warehouse/distribution businesses	29%	637
Question/Statement #8 - Hotels	45%	634
Question/Statement #9 - Retail/shops/services	63%	675
Question/Statement #10 - Restaurants	69%	663
Question/Statement #11- Gasoline/convenience stores	49%	635
Question/Statement #12- Office space (medical office, business park, etc.)	53%	642

The survey then asked an open-ended question for written comments - Please share a different business type not listed. A total of 104 written responses were provided to this question. The most common written response was that no businesses were needed, which was mentioned in 36 comments. A park was mentioned 11 times. All the other written comments were generally for a wide range of businesses, including grocery stores, retail stores, restaurants, medical facilities, etc.

6.3. Concerns Questions

The third set of survey questions was about the public's concerns with the project. The survey questions for this section asked the following question - If you have concerns about this project, how would you rate the following concerns? **Table 6-3** summarizes the results of the concerns citizens have about the project.

Table 6-3 – Concerns Questions Summary

Survey Question	% Favorable Rating	Number of Responses
Question/Statement #13 - Potential for increased traffic at this location.	43%	669
Question/Statement #14 - Business proximity to nearby residential neighborhoods.	45%	646
Question/Statement #15 - Potential noise and light impacts to nearby residential neighborhoods from I-95 traffic.	43%	654
Question/Statement #16 - Potential environmental impacts due to new development in this area.	47%	646
Question/Statement #17 - Increased competition for existing businesses in this part of the county.	34%	599
Question/Statement #18 - The loss of forest, green space and wildlife habitat in this location.	52%	650
Question/Statement #19 - Don't believe there's demand for new businesses at this location.	45%	611

The survey then asked an open-ended question for written comments - Please share other concerns not listed. A total of 108 written responses were provided to this question. A wide variety of responses were given to this question. A majority (approximately 60%) of the written responses supported the project because they felt it was needed to relieve traffic congestion by providing alternate routes, diverting cut-through traffic from the adjacent local streets, and making them safer. Approximately 16 people expressed concern for the environment and preferred as much open space as possible, often desiring no development along the road or the desire for the road not to be built.

6.4. Survey Demographics

The final section of survey questions was demographic questions about the respondents.

Question #20 - What is your home zip code?

A total of 426 responded to this question. The top three zip codes listed below were all adjacent (within 0.5 miles of the proposed alignment) to the proposed alignment.

- 22025 – 310 (73%)
- 22193 – 40 (9%)
- 22026 – 31 (7%)

Question #21 - What is your work zip code?

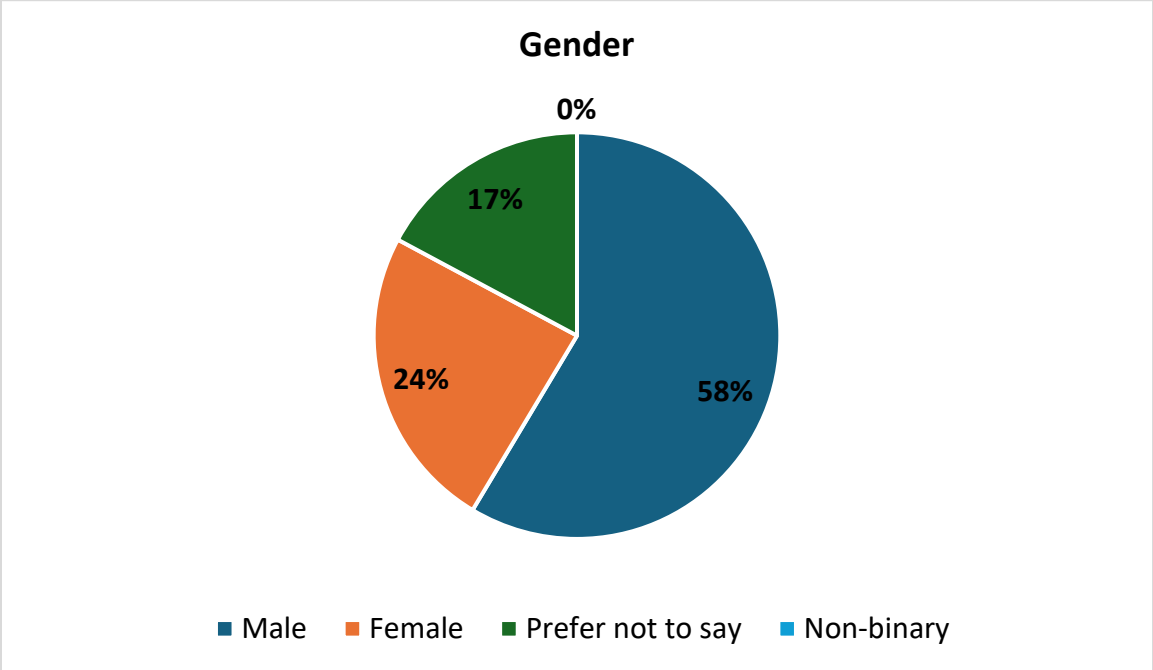
A total of 356 responded to this question. The top three zip codes listed below were all adjacent (within 0.5 miles of the proposed alignment) to the proposed alignment.

- 22025 – 126 (35%)
- 22193 – 28 (8%)
- 22026 – 15 (4%)

A majority of the remaining work zip codes were to the north of the project location, stretching towards the District of Columbia.

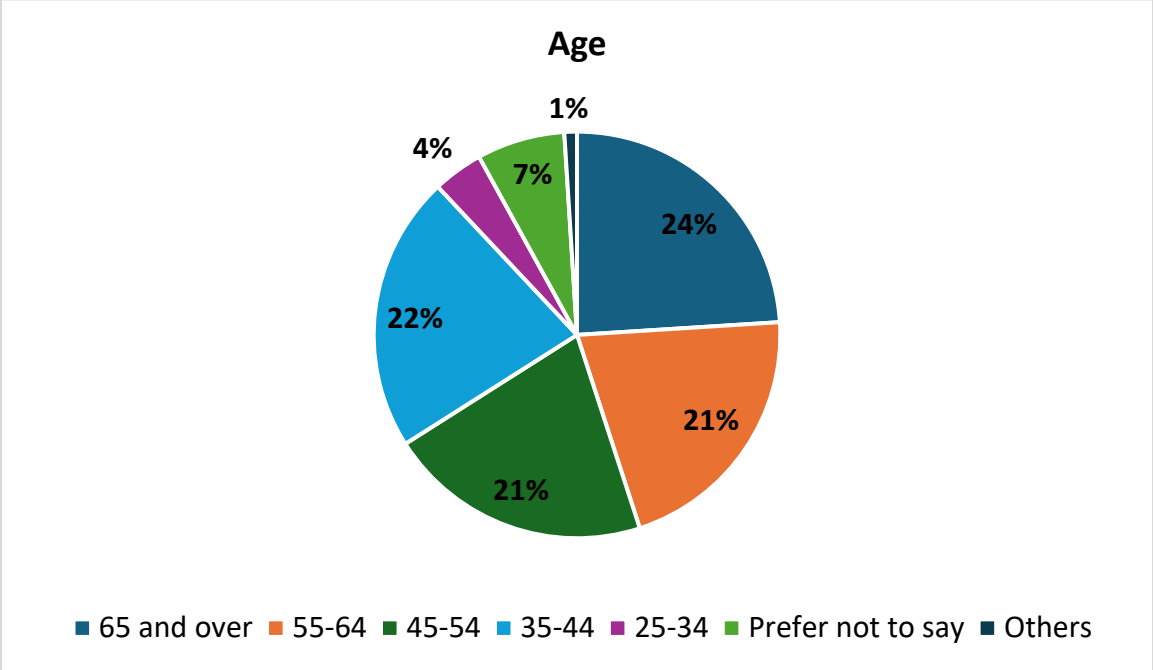
The gender makeup of the survey respondents is provided in **Figure 6-1** (472 people responded to this question).

Figure 6-1 – Survey Gender Summary



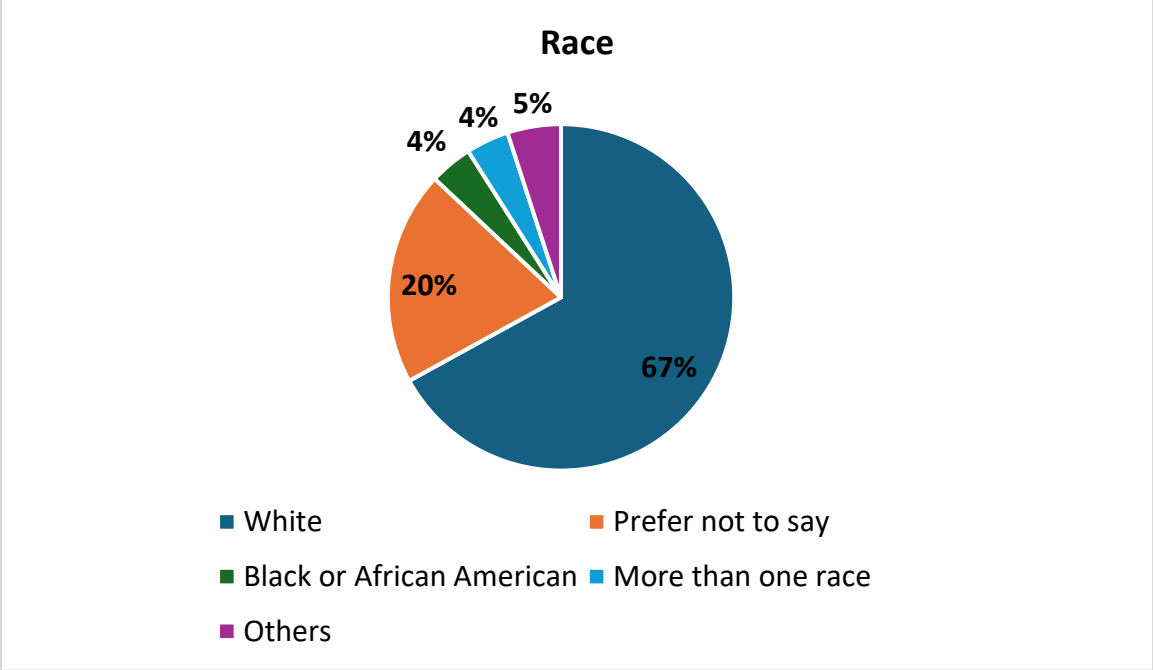
The age of the survey respondents is provided in **Figure 6-2** (669 people responded to this question).

Figure 6-2 – Survey Age Summary



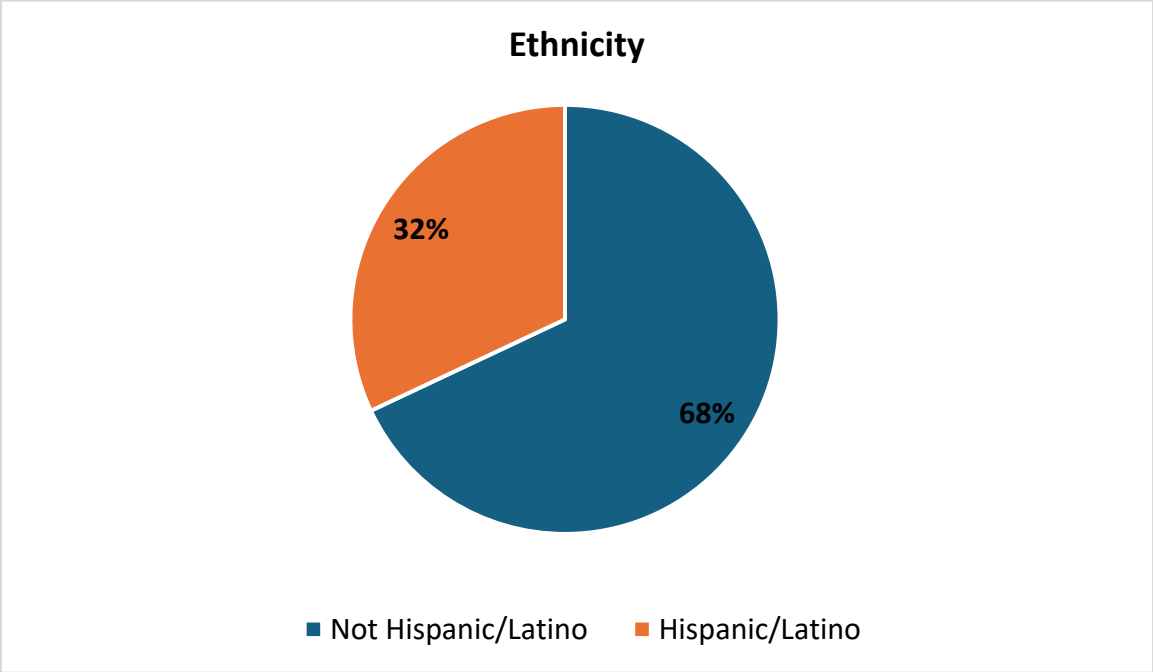
The race of the survey respondents is provided in **Figure 6-3** (646 people responded to this question).

Figure 6-3 – Survey Race Summary



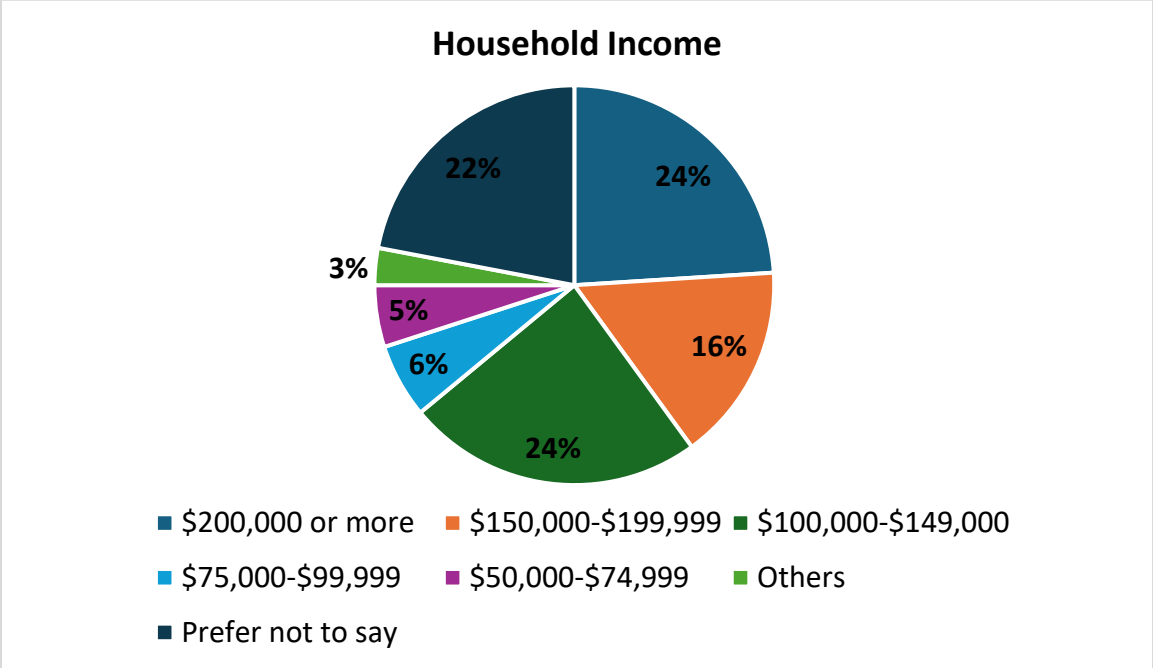
The ethnicity of the survey respondents is provided in **Figure 6-4** (169 people responded to this question).

Figure 6-4 – Survey Ethnicity Summary



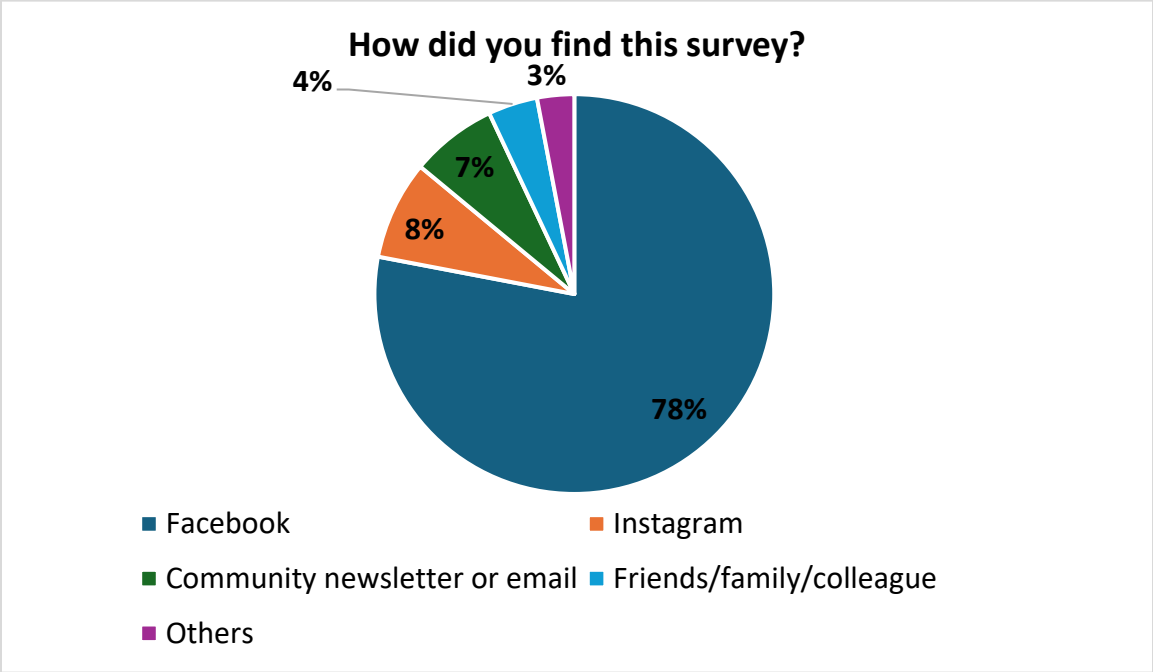
The household income of the survey respondents is provided in **Figure 6-5** (625 people responded to this question).

Figure 6-5 – Survey Household Income Summary



The survey respondents were asked – How did you find this survey? **Figure 6-6** summarizes the results of this question. 687 people responded to this question.

Figure 6-6 – How Did You Find This Survey Summary



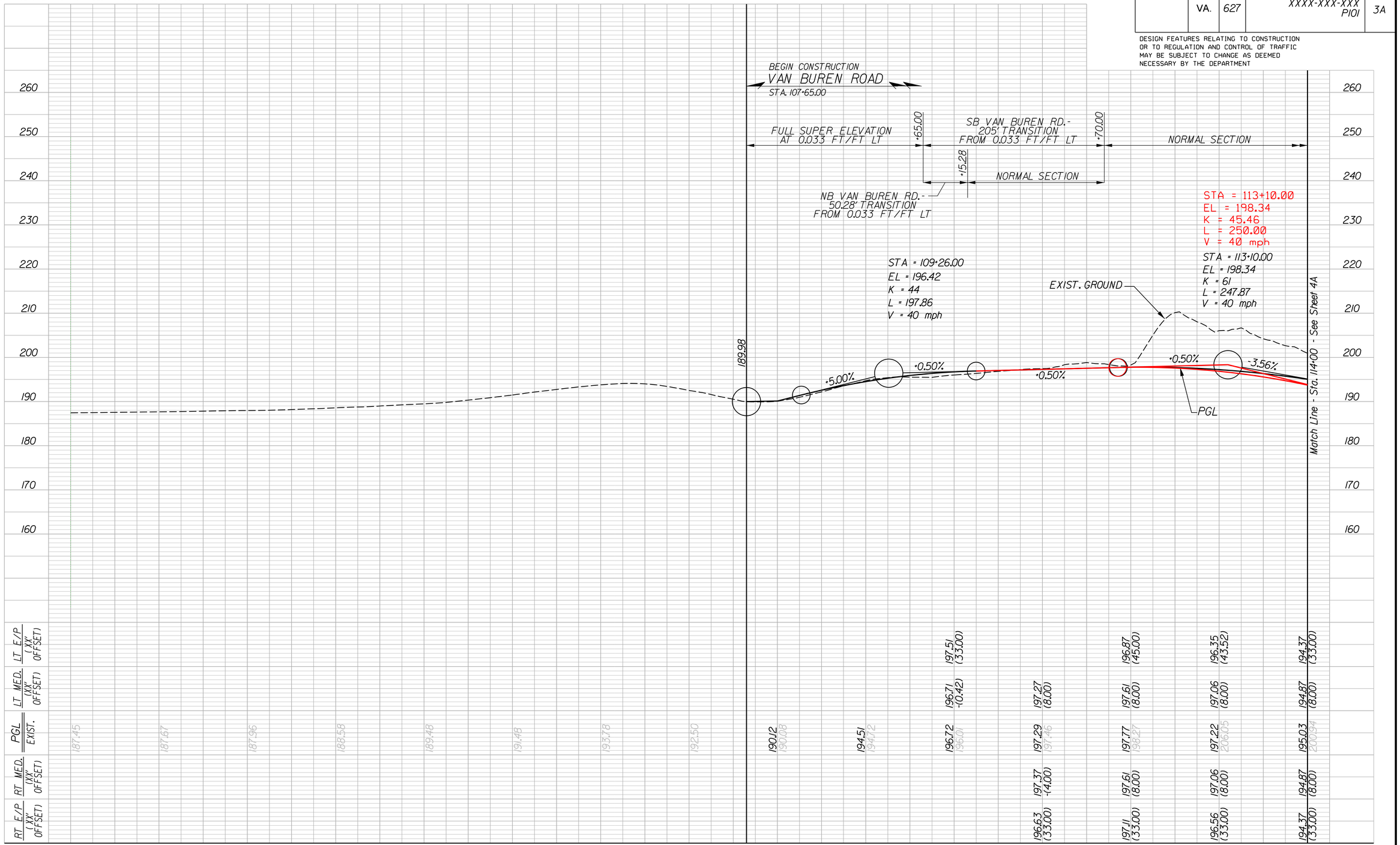
Finally, the survey asked an open-ended question – Please provide any other comments you may have on the study area. 86 people responded to this question. Approximately 44 of the comments showed support for the project and wanted it constructed. Of those, 11 made reference to its mitigation of unsafe cut-through traffic. Nineteen (19) respondents were opposed to the proposed road extension. Seven (7) people specifically mentioned that they were opposed to development along the proposed road.

7. Appendix G – Profile Adjustments

PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	3A

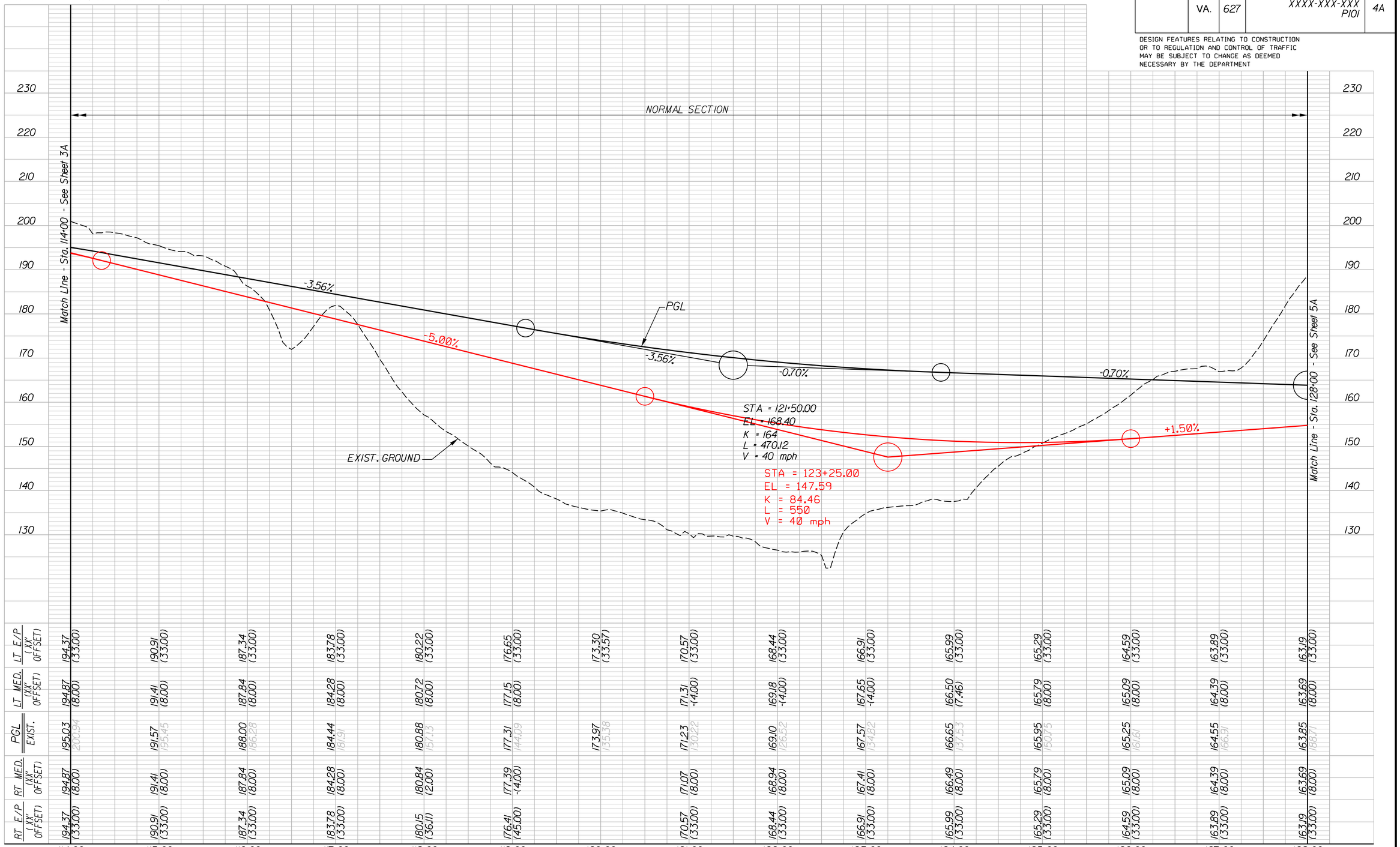
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	4A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



	114+00	115+00	116+00	117+00	118+00	119+00	120+00	121+00	122+00	123+00	124+00	125+00	126+00	127+00	128+00
RT E/P (XX' OFFSET)	194.37 (33.00)	190.91 (33.00)	187.34 (33.00)	183.78 (33.00)	180.15 (36.11)	176.41 (45.00)		170.57 (33.00)	168.44 (33.00)	166.91 (33.00)	165.99 (33.00)	165.29 (33.00)	164.59 (33.00)	163.89 (33.00)	163.19 (33.00)
RT MED. (XX' OFFSET)	194.87 (8.00)	191.41 (8.00)	187.84 (8.00)	184.28 (8.00)	180.84 (2.00)	177.39 -14.00)		171.07 (8.00)	168.94 (8.00)	167.41 (8.00)	166.49 (8.00)	165.79 (8.00)	165.09 (8.00)	164.39 (8.00)	163.69 (8.00)
PGL EXIST.	195.03 200.94	191.57 196.45	188.00 186.28	184.44 181.91	180.88 177.13	177.31 144.09	173.97 135.38	171.23 130.22	169.0 126.52	167.57 134.22	166.65 137.53	165.95 150.75	165.25 161.61	164.55 166.91	163.85 168.71
LT MED. (XX' OFFSET)	194.87 (8.00)	191.41 (8.00)	187.84 (8.00)	184.28 (8.00)	180.72 (8.00)	177.15 (8.00)		171.31 -14.00)	169.18 -14.00)	167.65 -14.00)	166.50 (7.46)	165.79 (8.00)	165.09 (8.00)	164.39 (8.00)	163.69 (8.00)
LT E/P (XX' OFFSET)	194.37 (33.00)	190.91 (33.00)	187.34 (33.00)	183.78 (33.00)	180.22 (33.00)	176.65 (33.00)	173.30 (33.57)	170.57 (33.00)	168.44 (33.00)	166.91 (33.00)	165.99 (33.00)	165.29 (33.00)	164.59 (33.00)	163.89 (33.00)	163.19 (33.00)

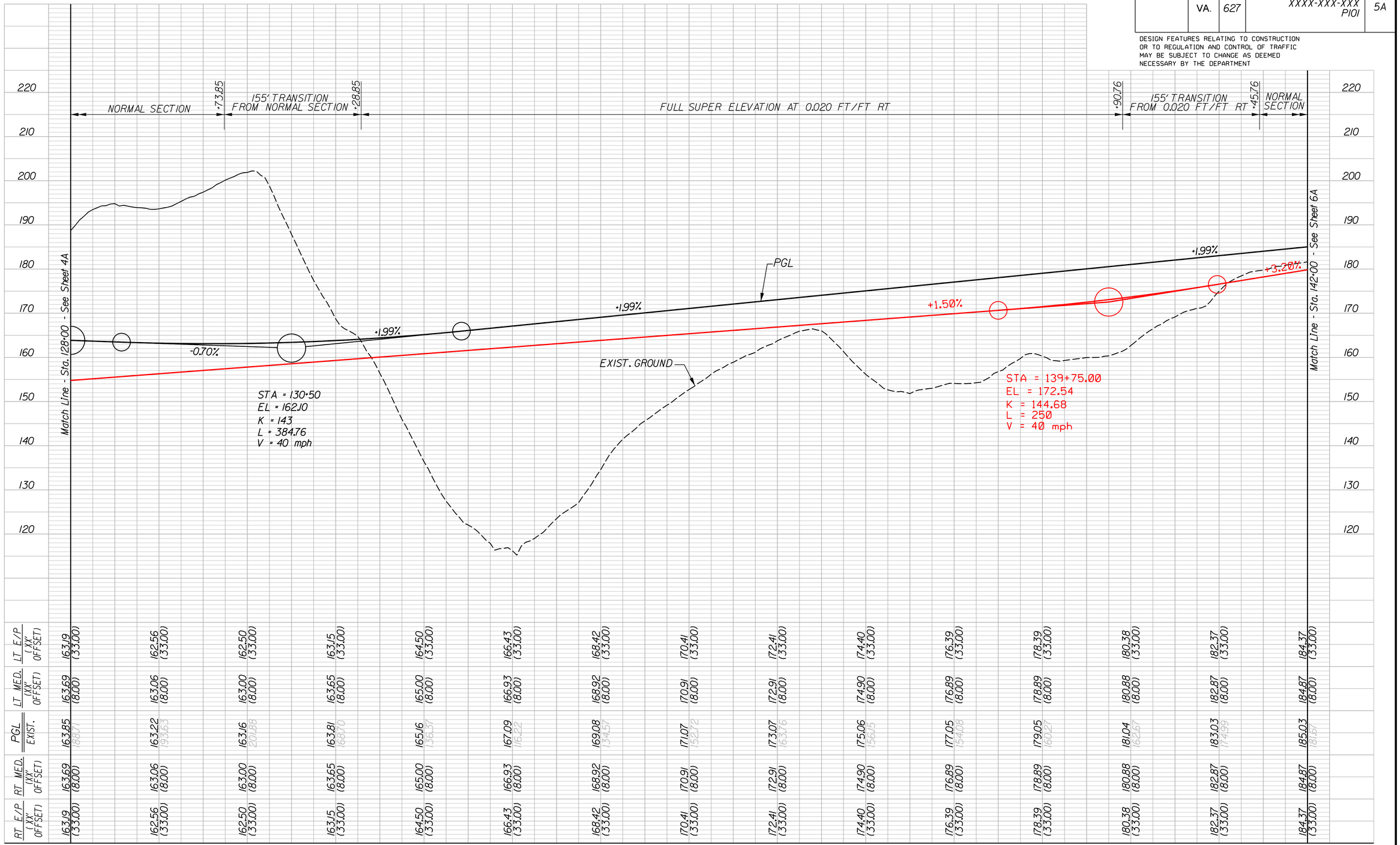
VAN BUREN ROAD

HORIZ. 0 50' 100' / VERT. 0 10' 20'	PROJECT	SHEET NO.
	XXXX-XXX-XXX	4A

PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	5A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



RT E/P (XX' OFFSET)	RT MED. (XX' OFFSET)	PGL EXIST.	LT MED. (XX' OFFSET)	LT E/P (XX' OFFSET)
163.19 (33.00)	163.69 (8.00)	163.85 188.71	163.69 (8.00)	163.19 (33.00)
162.56 (33.00)	163.06 (8.00)	163.22 193.65	163.06 (8.00)	162.56 (33.00)
162.50 (33.00)	163.00 (8.00)	163.16 201.88	163.00 (8.00)	162.50 (33.00)
163.15 (33.00)	163.65 (8.00)	163.81 168.70	163.65 (8.00)	163.15 (33.00)
164.50 (33.00)	165.00 (8.00)	165.16 136.37	165.00 (8.00)	164.50 (33.00)
166.43 (33.00)	166.93 (8.00)	167.09 116.22	166.93 (8.00)	166.43 (33.00)
168.42 (33.00)	168.92 (8.00)	169.08 134.57	168.92 (8.00)	168.42 (33.00)
170.41 (33.00)	170.91 (8.00)	171.07 152.72	170.91 (8.00)	170.41 (33.00)
172.41 (33.00)	172.91 (8.00)	173.07 163.76	172.91 (8.00)	172.41 (33.00)
174.40 (33.00)	174.90 (8.00)	175.06 156.15	174.90 (8.00)	174.40 (33.00)
176.39 (33.00)	176.89 (8.00)	177.05 154.08	176.89 (8.00)	176.39 (33.00)
178.39 (33.00)	178.89 (8.00)	179.05 160.27	178.89 (8.00)	178.39 (33.00)
180.38 (33.00)	180.88 (8.00)	181.04 168.67	180.88 (8.00)	180.38 (33.00)
182.37 (33.00)	182.87 (8.00)	183.03 174.99	182.87 (8.00)	182.37 (33.00)
184.37 (33.00)	184.87 (8.00)	185.03 181.67	184.87 (8.00)	184.37 (33.00)

VAN BUREN ROAD

HORIZ. 0 50' 100'
VERT. 0 10' 20'

PROJECT XXXX-XXX-XXX

SHEET NO. 5A

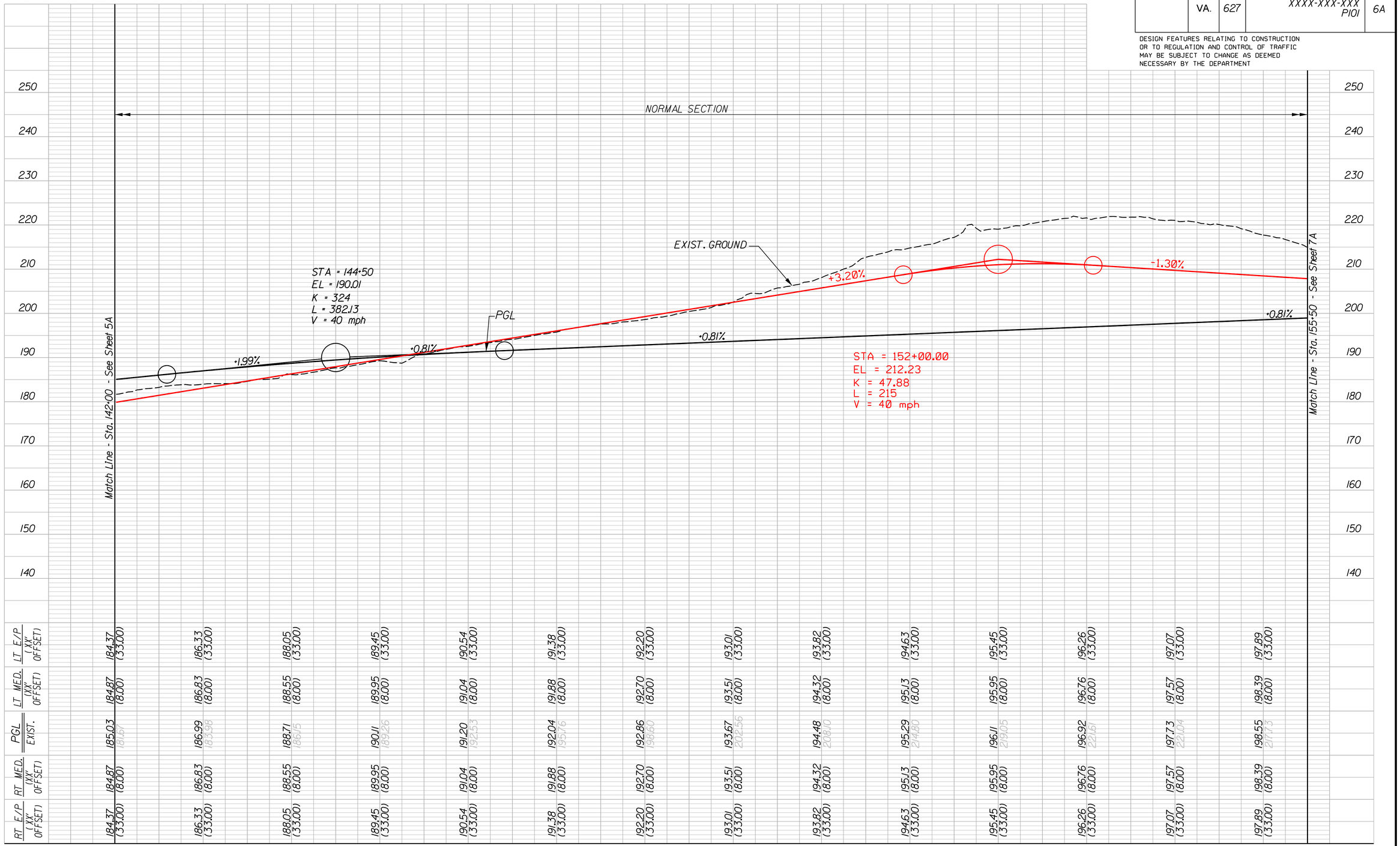
7/1/2024
8:04:05 AM

dVB_50-06Adgn
Plotted By: amaly

PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	6A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



RT E/P (XX' OFFSET)	RT MED. (XX' OFFSET)	PGL EXIST.	LT MED. (XX' OFFSET)	LT E/P (XX' OFFSET)
184.37 (33.00)	184.87 (8.00)	185.03 184.67	184.87 (8.00)	184.37 (33.00)
186.33 (33.00)	186.83 (8.00)	186.99 183.98	186.83 (8.00)	186.33 (33.00)
188.05 (33.00)	188.55 (8.00)	188.71 186.15	188.55 (8.00)	188.05 (33.00)
189.45 (33.00)	189.95 (8.00)	190.11 189.26	189.95 (8.00)	189.45 (33.00)
190.54 (33.00)	191.04 (8.00)	191.20 192.53	191.04 (8.00)	190.54 (33.00)
191.38 (33.00)	191.88 (8.00)	192.04 195.76	191.88 (8.00)	191.38 (33.00)
192.20 (33.00)	192.70 (8.00)	192.86 196.60	192.70 (8.00)	192.20 (33.00)
193.01 (33.00)	193.51 (8.00)	193.67 202.56	193.51 (8.00)	193.01 (33.00)
193.82 (33.00)	194.32 (8.00)	194.48 206.10	194.32 (8.00)	193.82 (33.00)
194.63 (33.00)	195.13 (8.00)	195.29 214.80	195.13 (8.00)	194.63 (33.00)
195.45 (33.00)	195.95 (8.00)	196.11 219.05	195.95 (8.00)	195.45 (33.00)
196.26 (33.00)	196.76 (8.00)	196.92 221.67	196.76 (8.00)	196.26 (33.00)
197.07 (33.00)	197.57 (8.00)	197.73 221.04	197.57 (8.00)	197.07 (33.00)
197.89 (33.00)	198.39 (8.00)	198.55 217.73	198.39 (8.00)	197.89 (33.00)

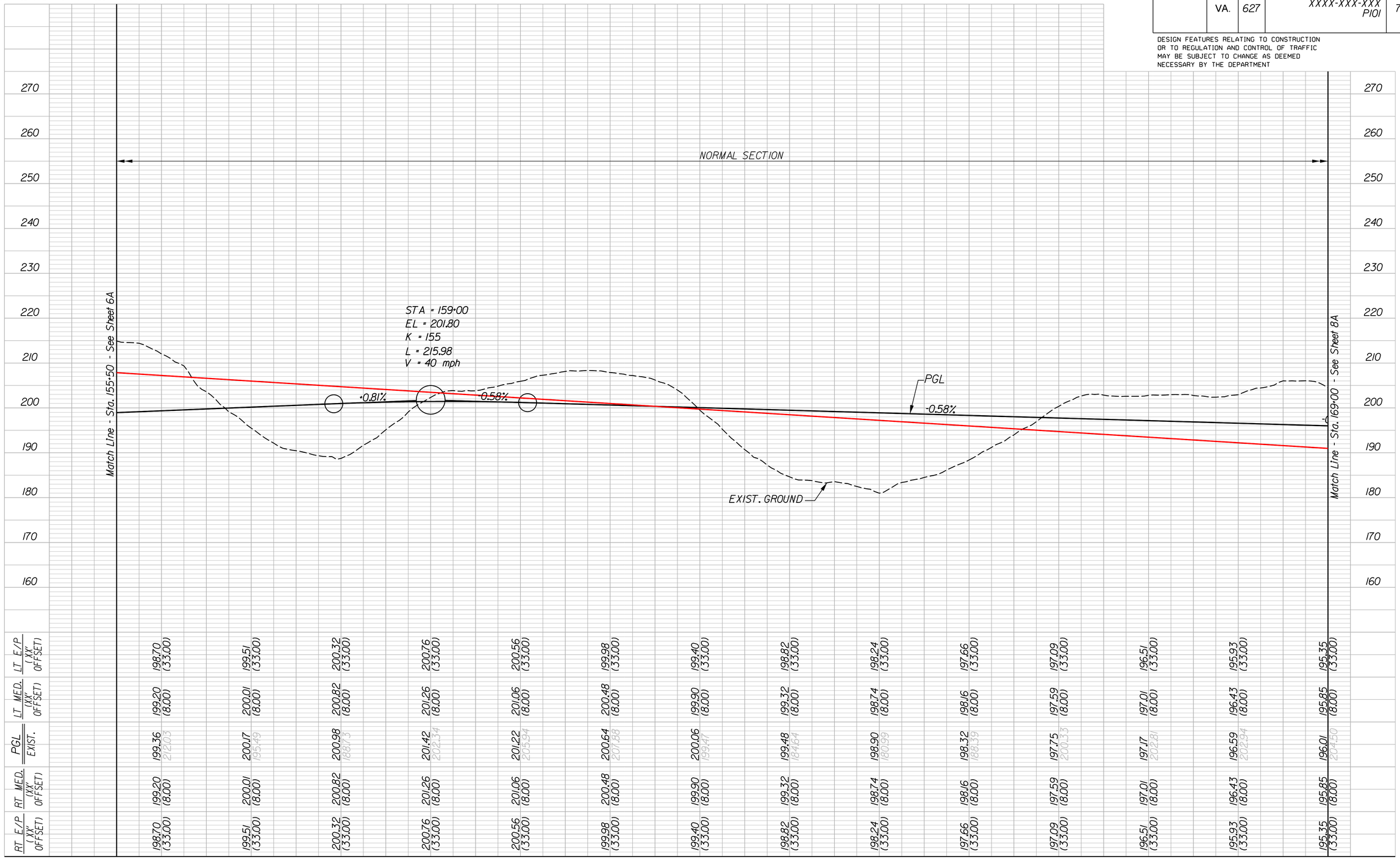
VAN BUREN ROAD

HORIZ.	VERT.	PROJECT	SHEET NO.
0 50' 100'	0 10' 20'	XXXX-XXX-XXX	6A

PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	7A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



	RT E/P (XX' OFFSET)	RT MED. (XX' OFFSET)	PGL EXIST.	LT MED. (XX' OFFSET)	LT E/P (XX' OFFSET)
156+00	198.70 (33.00)	199.20 (8.00)	199.36 24205	199.20 (8.00)	198.70 (33.00)
157+00	199.51 (33.00)	200.01 (8.00)	200.17 195.49	200.01 (8.00)	199.51 (33.00)
158+00	200.32 (33.00)	200.82 (8.00)	200.98 186.75	200.82 (8.00)	200.32 (33.00)
159+00	200.76 (33.00)	201.26 (8.00)	201.42 202.34	201.26 (8.00)	200.76 (33.00)
160+00	200.56 (33.00)	201.06 (8.00)	201.22 205.94	201.06 (8.00)	200.56 (33.00)
161+00	199.98 (33.00)	200.48 (8.00)	200.64 207.88	200.48 (8.00)	199.98 (33.00)
162+00	199.40 (33.00)	199.90 (8.00)	200.06 199.47	199.90 (8.00)	199.40 (33.00)
163+00	198.82 (33.00)	199.32 (8.00)	199.48 184.61	199.32 (8.00)	198.82 (33.00)
164+00	198.24 (33.00)	198.74 (8.00)	198.90 180.99	198.74 (8.00)	198.24 (33.00)
165+00	197.66 (33.00)	198.16 (8.00)	198.32 188.39	198.16 (8.00)	197.66 (33.00)
166+00	197.09 (33.00)	197.59 (8.00)	197.75 200.33	197.59 (8.00)	197.09 (33.00)
167+00	196.51 (33.00)	197.01 (8.00)	197.17 202.81	197.01 (8.00)	196.51 (33.00)
168+00	195.93 (33.00)	196.43 (8.00)	196.59 202.94	196.43 (8.00)	195.93 (33.00)
169+00	195.35 (33.00)	195.85 (8.00)	196.01 203.50	195.85 (8.00)	195.35 (33.00)

VAN BUREN ROAD

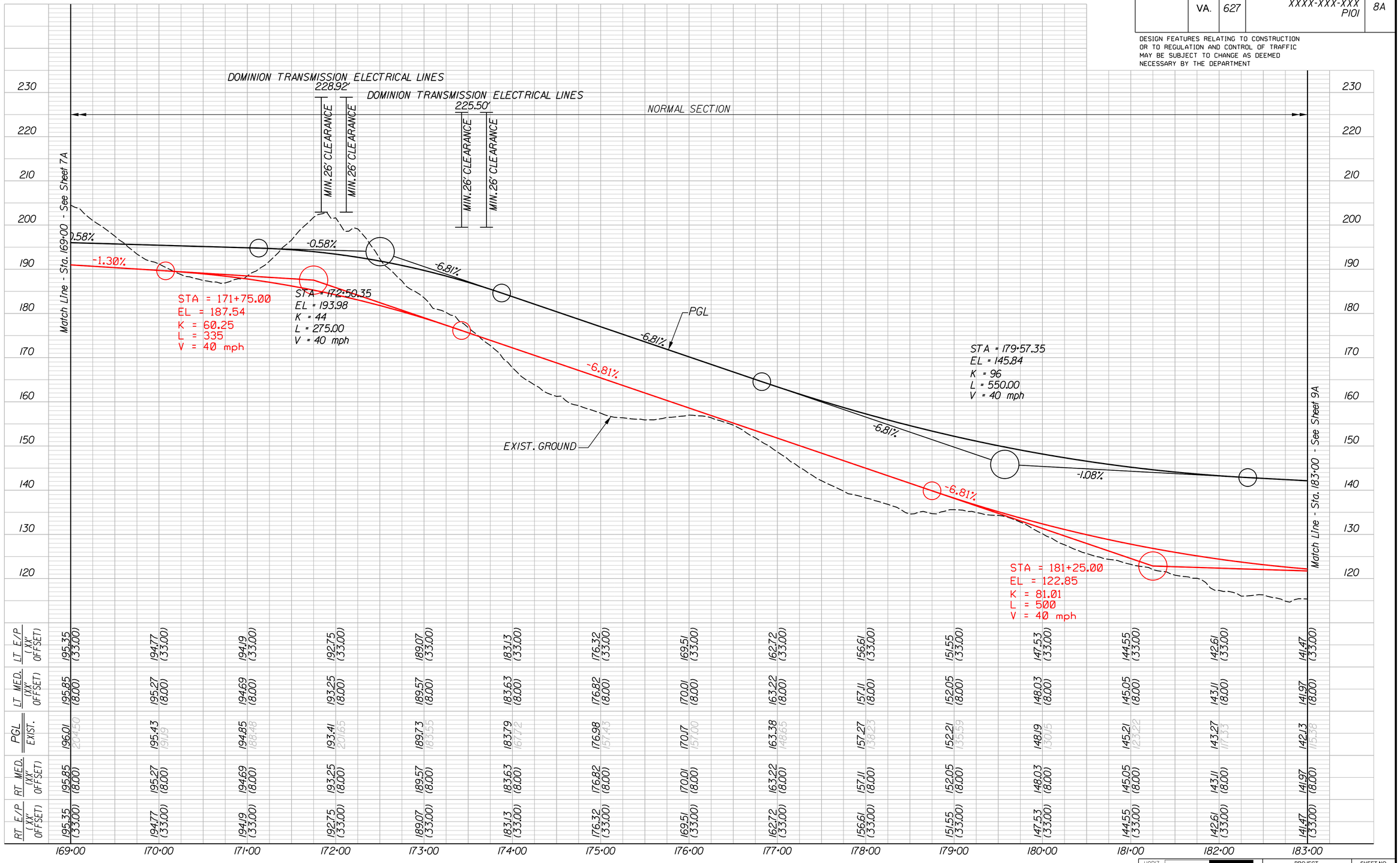
HORIZ. 0 50' 100'
VERT. 0 10' 20'

PROJECT	SHEET NO.
XXXX-XXX-XXX	7A

PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	8A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



	169+00	170+00	171+00	172+00	173+00	174+00	175+00	176+00	177+00	178+00	179+00	180+00	181+00	182+00	183+00
RT E/P (XX' OFFSET)	195.35 (33.00)	194.77 (33.00)	194.19 (33.00)	192.75 (33.00)	189.07 (33.00)	183.13 (33.00)	176.32 (33.00)	169.51 (33.00)	162.72 (33.00)	156.61 (33.00)	151.55 (33.00)	147.53 (33.00)	144.55 (33.00)	142.61 (33.00)	141.47 (33.00)
RT MED. (XX' OFFSET)	195.85 (8.00)	195.27 (8.00)	194.69 (8.00)	193.25 (8.00)	189.57 (8.00)	183.63 (8.00)	176.82 (8.00)	170.01 (8.00)	163.22 (8.00)	157.11 (8.00)	152.05 (8.00)	148.03 (8.00)	145.05 (8.00)	143.11 (8.00)	141.97 (8.00)
PGL EXIST.	196.01 20450	195.43 19109	194.85 18848	193.41 20165	189.73 18355	183.79 16772	176.98 15743	170.17 15700	163.38 14865	157.27 13823	152.21 13559	148.19 13015	145.21 12322	143.27 11733	142.13 11558
LT MED. (XX' OFFSET)	195.85 (8.00)	195.27 (8.00)	194.69 (8.00)	193.25 (8.00)	189.57 (8.00)	183.63 (8.00)	176.82 (8.00)	170.01 (8.00)	163.22 (8.00)	157.11 (8.00)	152.05 (8.00)	148.03 (8.00)	145.05 (8.00)	143.11 (8.00)	141.97 (8.00)
LT E/P (XX' OFFSET)	195.35 (33.00)	194.77 (33.00)	194.19 (33.00)	192.75 (33.00)	189.07 (33.00)	183.13 (33.00)	176.32 (33.00)	169.51 (33.00)	162.72 (33.00)	156.61 (33.00)	151.55 (33.00)	147.53 (33.00)	144.55 (33.00)	142.61 (33.00)	141.47 (33.00)

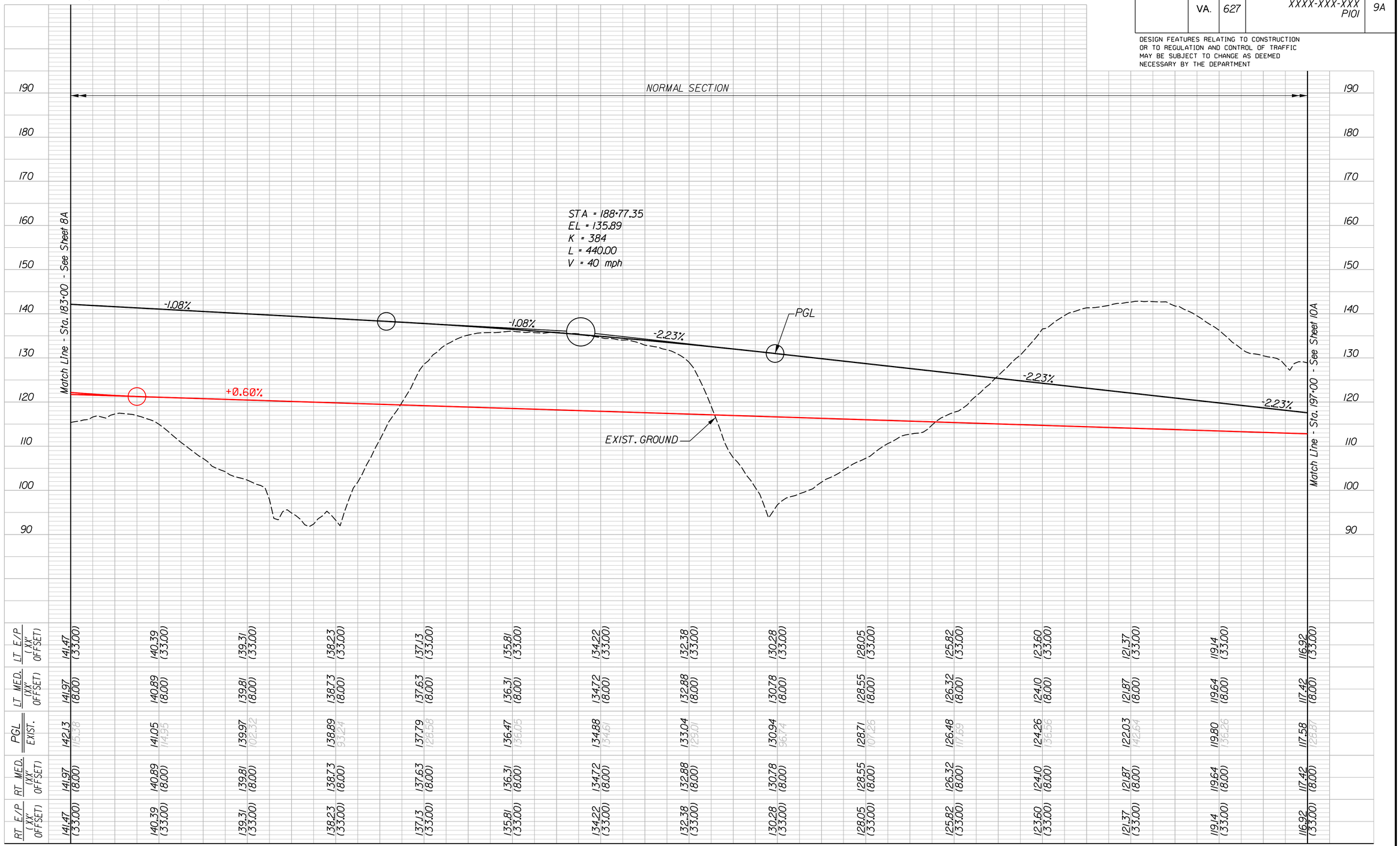
VAN BUREN ROAD

HORIZ.	VERT.	PROJECT	SHEET NO.
0 50' 100'	0 10' 20'	XXXX-XXX-XXX	8A

PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	9A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



	RT E/P (XX OFFSET)	RT MED. (XX OFFSET)	PGL EXIST.	LT MED. (XX OFFSET)	LT E/P (XX OFFSET)
183+00	141.47 (33.00)	141.97 (8.00)	142.13 115.38	141.97 (8.00)	141.47 (33.00)
184+00	140.39 (33.00)	140.89 (8.00)	141.05 114.55	140.89 (8.00)	140.39 (33.00)
185+00	139.31 (33.00)	139.81 (8.00)	139.97 102.32	139.81 (8.00)	139.31 (33.00)
186+00	138.23 (33.00)	138.73 (8.00)	138.89 93.24	138.73 (8.00)	138.23 (33.00)
187+00	137.13 (33.00)	137.63 (8.00)	137.79 128.58	137.63 (8.00)	137.13 (33.00)
188+00	135.81 (33.00)	136.31 (8.00)	136.47 136.05	136.31 (8.00)	135.81 (33.00)
189+00	134.22 (33.00)	134.72 (8.00)	134.88 134.61	134.72 (8.00)	134.22 (33.00)
190+00	132.38 (33.00)	132.88 (8.00)	133.04 129.01	132.88 (8.00)	132.38 (33.00)
191+00	130.28 (33.00)	130.78 (8.00)	130.94 96.74	130.78 (8.00)	130.28 (33.00)
192+00	128.05 (33.00)	128.55 (8.00)	128.71 107.26	128.55 (8.00)	128.05 (33.00)
193+00	125.82 (33.00)	126.32 (8.00)	126.48 117.69	126.32 (8.00)	125.82 (33.00)
194+00	123.60 (33.00)	124.10 (8.00)	124.26 136.56	124.10 (8.00)	123.60 (33.00)
195+00	121.37 (33.00)	121.87 (8.00)	122.03 142.64	121.87 (8.00)	121.37 (33.00)
196+00	119.14 (33.00)	119.64 (8.00)	119.80 136.26	119.64 (8.00)	119.14 (33.00)
197+00	116.92 (33.00)	117.42 (8.00)	117.58 128.87	117.42 (8.00)	116.92 (33.00)

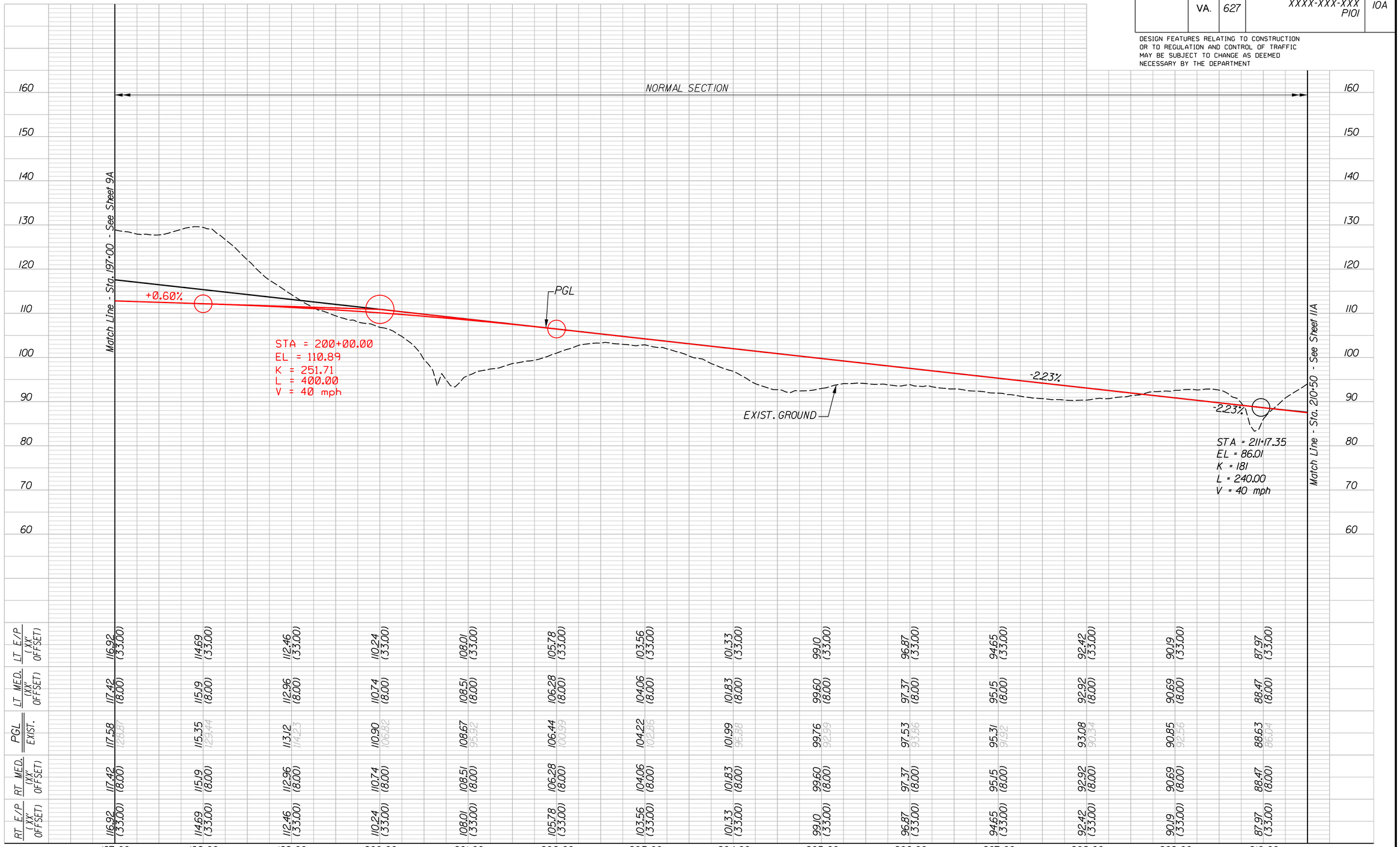
VAN BUREN ROAD

HORIZ.	VERT.	PROJECT	SHEET NO.
0 50' 100'	0 10' 20'	XXXX-XXX-XXX	9A

PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	10A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



	RT E/P (XX' OFFSET)	RT MED. (XX' OFFSET)	PGL EXIST.	LT MED. (XX' OFFSET)	LT E/P (XX' OFFSET)
197+00	116.92 (33.00)	117.42 (8.00)	117.58 120.87	117.42 (8.00)	116.92 (33.00)
198+00	114.69 (33.00)	115.19 (8.00)	115.35 119.44	115.19 (8.00)	114.69 (33.00)
199+00	112.46 (33.00)	112.96 (8.00)	113.12 114.23	112.96 (8.00)	112.46 (33.00)
200+00	110.24 (33.00)	110.74 (8.00)	110.90 106.82	110.74 (8.00)	110.24 (33.00)
201+00	108.01 (33.00)	108.51 (8.00)	108.67 95.92	108.51 (8.00)	108.01 (33.00)
202+00	105.78 (33.00)	106.28 (8.00)	106.44 100.99	106.28 (8.00)	105.78 (33.00)
203+00	103.56 (33.00)	104.06 (8.00)	104.22 102.86	104.06 (8.00)	103.56 (33.00)
204+00	101.33 (33.00)	101.83 (8.00)	101.99 96.88	101.83 (8.00)	101.33 (33.00)
205+00	99.10 (33.00)	99.60 (8.00)	99.76 92.59	99.60 (8.00)	99.10 (33.00)
206+00	96.87 (33.00)	97.37 (8.00)	97.53 93.86	97.37 (8.00)	96.87 (33.00)
207+00	94.65 (33.00)	95.15 (8.00)	95.31 94.52	95.15 (8.00)	94.65 (33.00)
208+00	92.42 (33.00)	92.92 (8.00)	93.08 90.34	92.92 (8.00)	92.42 (33.00)
209+00	90.19 (33.00)	90.69 (8.00)	90.85 92.56	90.69 (8.00)	90.19 (33.00)
210+00	87.97 (33.00)	88.47 (8.00)	88.63 86.04	88.47 (8.00)	87.97 (33.00)

VAN BUREN ROAD

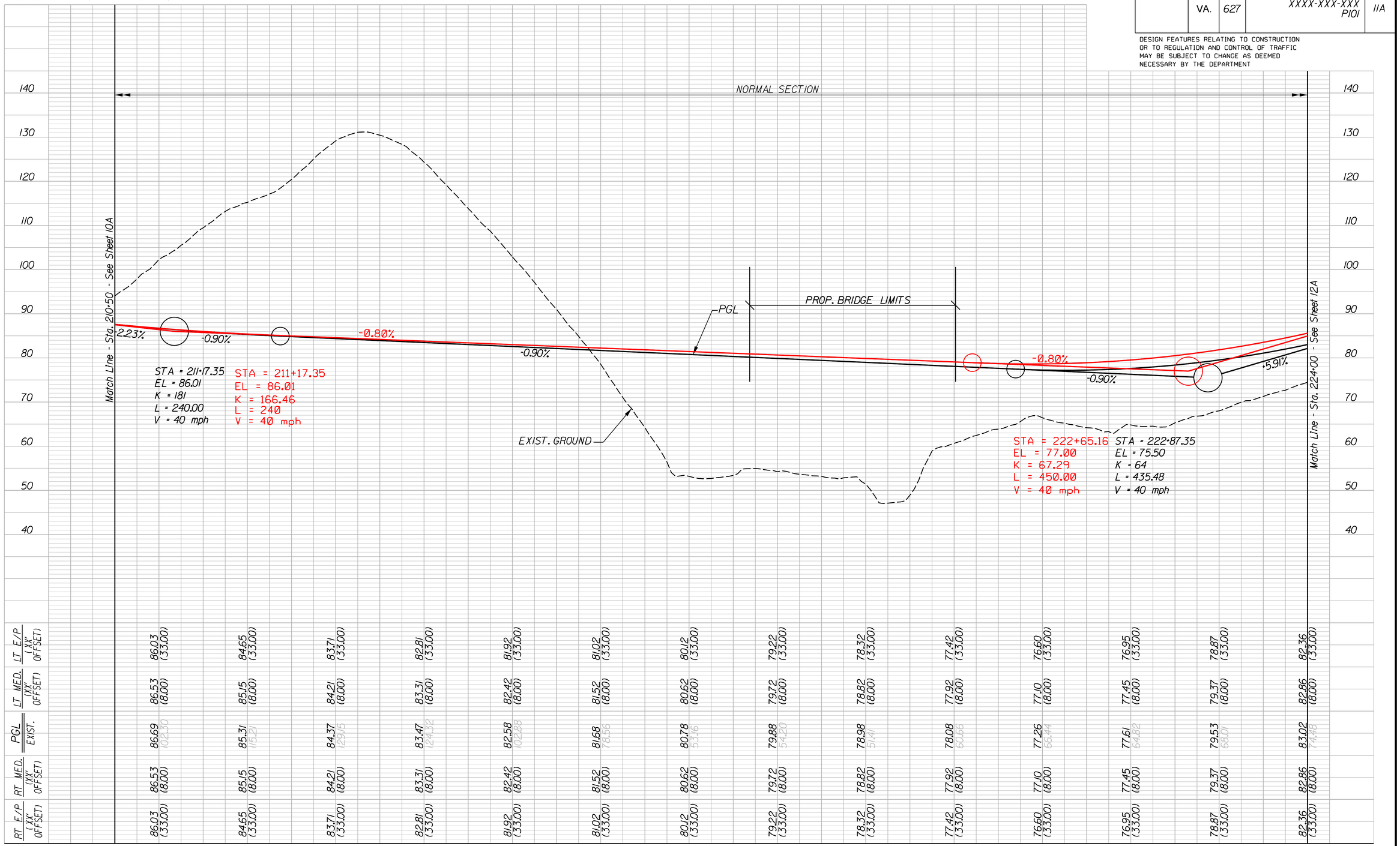
HORIZ. 0 50' 100'
VERT. 0 10' 20'

PROJECT	SHEET NO.
XXXX-XXX-XXX	10A

PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	IIA

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



RT E/P (XX' OFFSET)	RT MED. (XX' OFFSET)	PGL EXIST.	LT MED. (XX' OFFSET)	LT E/P (XX' OFFSET)
86.03 (33.00)	86.53 (8.00)	86.69 102.50	86.53 (8.00)	86.03 (33.00)
84.65 (33.00)	85.15 (8.00)	85.31 115.27	85.15 (8.00)	84.65 (33.00)
83.71 (33.00)	84.21 (8.00)	84.37 129.15	84.21 (8.00)	83.71 (33.00)
82.81 (33.00)	83.31 (8.00)	83.47 124.32	83.31 (8.00)	82.81 (33.00)
81.92 (33.00)	82.42 (8.00)	82.58 102.88	82.42 (8.00)	81.92 (33.00)
81.02 (33.00)	81.52 (8.00)	81.68 78.56	81.52 (8.00)	81.02 (33.00)
80.12 (33.00)	80.62 (8.00)	80.78 53.16	80.62 (8.00)	80.12 (33.00)
79.22 (33.00)	79.72 (8.00)	79.88 54.20	79.72 (8.00)	79.22 (33.00)
78.32 (33.00)	78.82 (8.00)	78.98 57.41	78.82 (8.00)	78.32 (33.00)
77.42 (33.00)	77.92 (8.00)	78.08 60.66	77.92 (8.00)	77.42 (33.00)
76.60 (33.00)	77.10 (8.00)	77.26 66.44	77.10 (8.00)	76.60 (33.00)
76.95 (33.00)	77.45 (8.00)	77.61 64.82	77.45 (8.00)	76.95 (33.00)
78.87 (33.00)	79.37 (8.00)	79.53 68.07	79.37 (8.00)	78.87 (33.00)
82.36 (33.00)	82.86 (8.00)	83.02 74.98	82.86 (8.00)	82.36 (33.00)

VAN BUREN ROAD

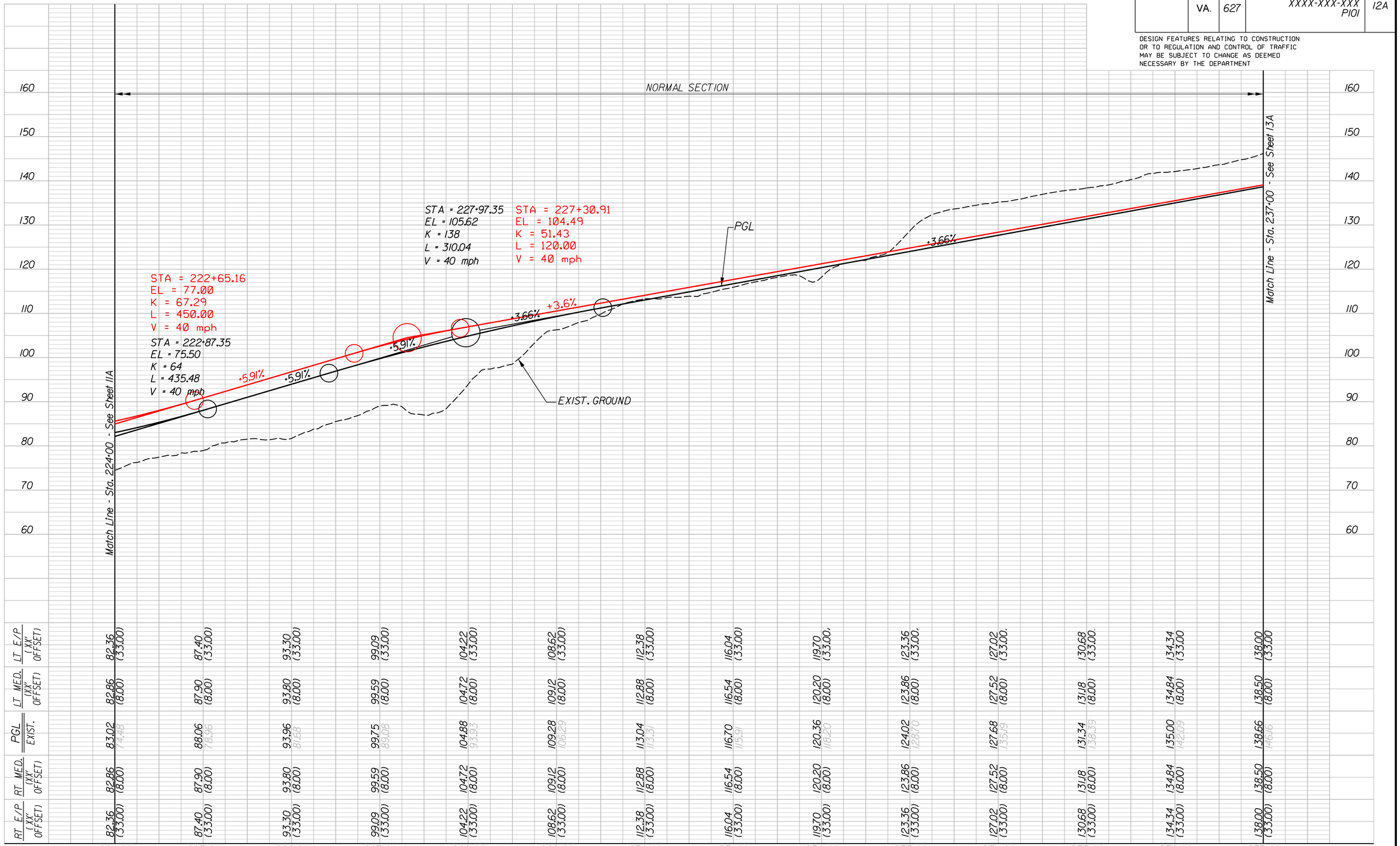
HORIZ. 0 50' 100'
VERT. 0 10' 20'

PROJECT	SHEET NO.
XXXX-XXX-XXX	IIA

PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	12A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



RT E/P (XX' OFFSET)	RT MED. (XX' OFFSET)	PGL EXIST.	PGL	LT MED. (XX' OFFSET)	LT E/P (XX' OFFSET)
82.36 (33.00)	82.86 (8.00)	83.02	14.48	82.86 (8.00)	82.36 (33.00)
87.40 (33.00)	87.90 (8.00)	88.06	78.96	87.90 (8.00)	87.40 (33.00)
93.30 (33.00)	93.80 (8.00)	93.96	81.88	93.80 (8.00)	93.30 (33.00)
99.09 (33.00)	99.59 (8.00)	99.75	89.08	99.59 (8.00)	99.09 (33.00)
104.22 (33.00)	104.72 (8.00)	104.88	93.53	104.72 (8.00)	104.22 (33.00)
108.62 (33.00)	109.12 (8.00)	109.28	106.29	109.12 (8.00)	108.62 (33.00)
112.38 (33.00)	112.88 (8.00)	113.04	115.51	112.88 (8.00)	112.38 (33.00)
116.04 (33.00)	116.54 (8.00)	116.70	115.91	116.54 (8.00)	116.04 (33.00)
119.70 (33.00)	120.20 (8.00)	120.36	116.20	120.20 (8.00)	119.70 (33.00)
123.36 (33.00)	123.86 (8.00)	124.02	128.70	123.86 (8.00)	123.36 (33.00)
127.02 (33.00)	127.52 (8.00)	127.68	135.19	127.52 (8.00)	127.02 (33.00)
130.68 (33.00)	131.18 (8.00)	131.34	138.39	131.18 (8.00)	130.68 (33.00)
134.34 (33.00)	134.84 (8.00)	135.00	142.09	134.84 (8.00)	134.34 (33.00)
138.00 (33.00)	138.50 (8.00)	138.66	146.16	138.50 (8.00)	138.00 (33.00)

VAN BUREN ROAD

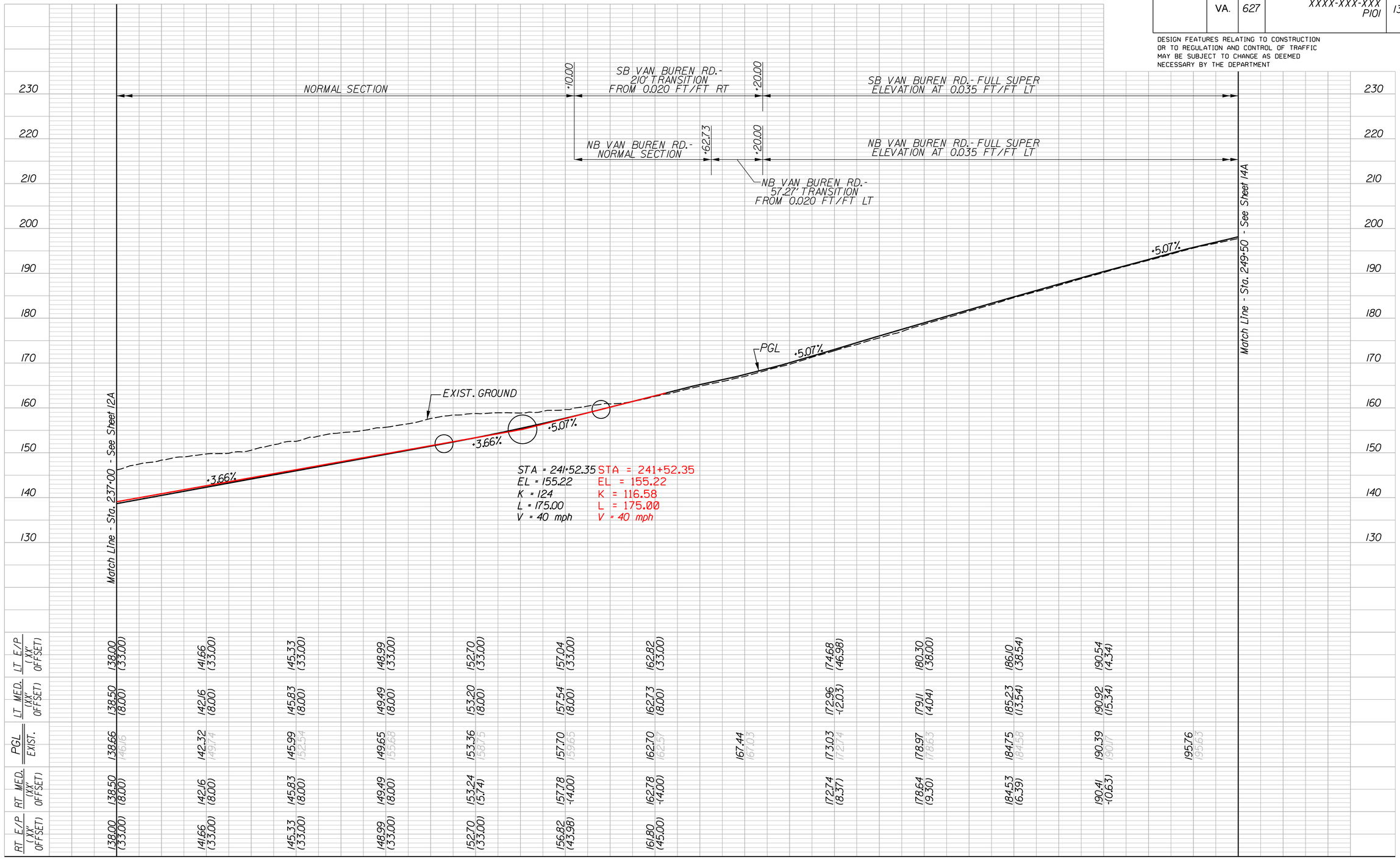
HORIZ. 0 50' 100'
VERT. 0 10' 20'

PROJECT	SHEET NO.
XXXX-XXX-XXX	12A

PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	13A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



	237+00	238+00	239+00	240+00	241+00	242+00	243+00	244+00	245+00	246+00	247+00	248+00	249+00
RT E/P (XX' OFFSET)	138.00 (33.00)	141.66 (33.00)	145.33 (33.00)	148.99 (33.00)	152.70 (33.00)	156.82 (43.98)	161.80 (45.00)						
RT MED. (XX' OFFSET)	138.50 (8.00)	142.16 (8.00)	145.83 (8.00)	149.49 (8.00)	153.24 (5.74)	157.78 -(4.00)	162.78 -(4.00)		172.74 (8.37)	178.64 (9.30)	184.53 (6.39)	190.41 -(0.63)	
PGL / EXIST.	138.66 / 146.18	142.32 / 149.74	145.99 / 152.54	149.65 / 155.68	153.36 / 158.75	157.70 / 159.65	162.70 / 162.57	167.44 / 167.03	173.03 / 172.74	178.97 / 178.63	184.75 / 184.58	190.39 / 190.17	195.76 / 195.65
LT MED. (XX' OFFSET)	138.50 (8.00)	142.16 (8.00)	145.83 (8.00)	149.49 (8.00)	153.20 (8.00)	157.54 (8.00)	162.73 (8.00)		172.96 -(2.03)	179.11 (4.04)	185.23 (13.54)	190.92 (15.34)	
LT E/P (XX' OFFSET)	138.00 (33.00)	141.66 (33.00)	145.33 (33.00)	148.99 (33.00)	152.70 (33.00)	157.04 (33.00)	162.82 (33.00)		174.68 (46.98)	180.30 (38.00)	186.10 (38.54)	190.54 (4.34)	

VAN BUREN ROAD

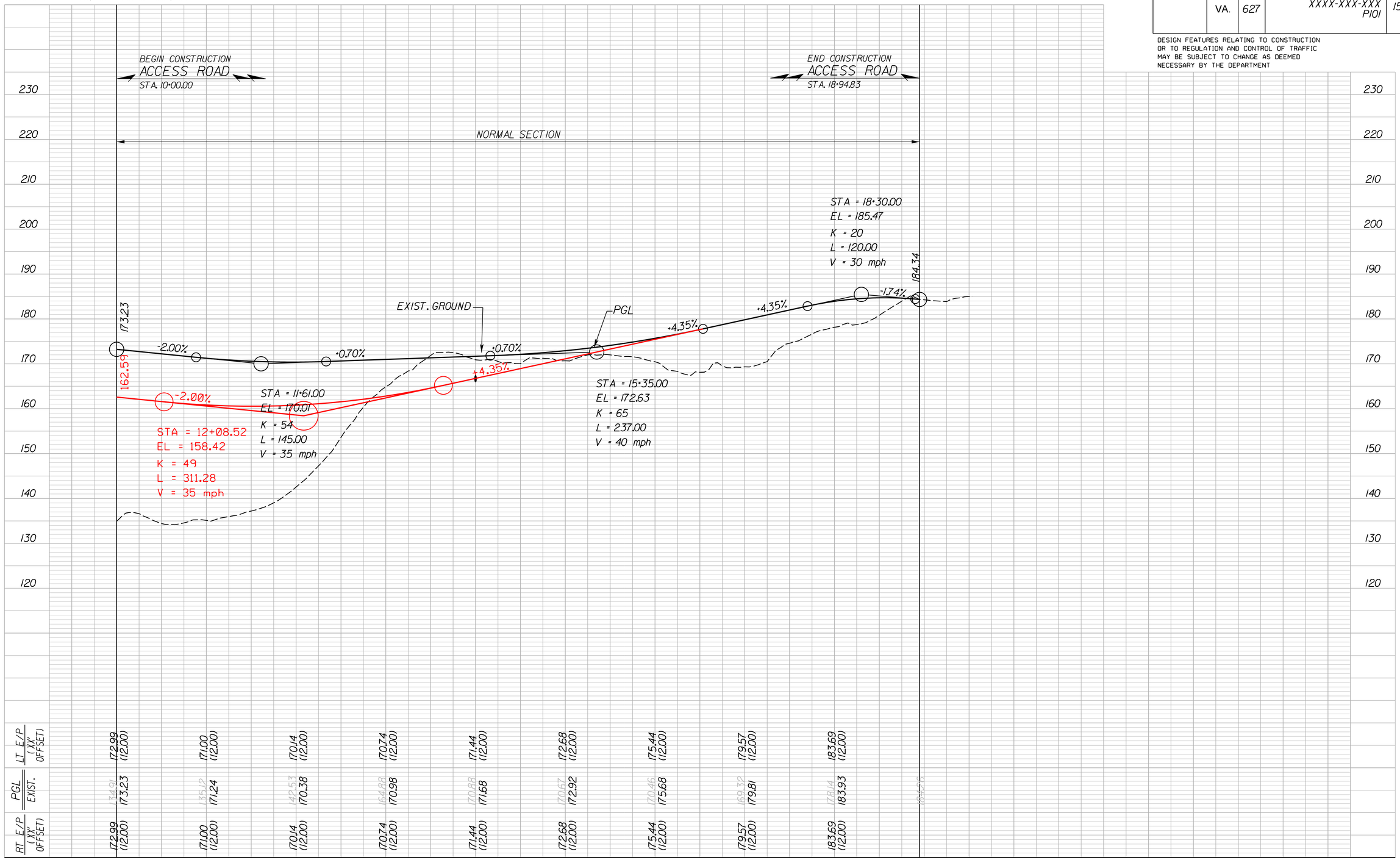
HORIZ. 0 50' 100'
VERT. 0 10' 20'

PROJECT	SHEET NO.
XXXX-XXX-XXX	13A

PROJECT DESIGN MANAGER: Mr. Mark Brewer, PE (Dewberry) - (703) 849-0622
SURVEYED BY: Quantum Spatial - (703) 471-4510, 11/20
DESIGNED BY: Dewberry Engineers Inc. - (703) 208-1757
SUBSURFACE UTILITY BY: SAM, LLC - (703) 361-6005, 03/21

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
-	VA.	627	XXXX-XXX-XXX P101	15A

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



ACCESS ROAD

HORIZ. 0 50' 100' / VERT. 0 10' 20'	PROJECT	SHEET NO.
	XXXX-XXX-XXX	15A