PD-184
APPROVED BY COUNTY
COUNCIL 1/31/23
FINAL VERSION
CONDITIONS INCORPORATED

Development Guidelines
For
Elms Glen

Charleston County, South Carolina

Approved January 31, 2023
(This PD Guideline document supersedes the previous edition)

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No person shall erect any building, structure, or sign within the Planned Development except in conformance with the Zoning Ordinance and these Development Guidelines. With the exception of the Commercial/Industrial area, all items not specifically addressed pertaining to Single Family Attached lots will follow current ZLDR Ar. 4.14 – UR development standards and all items pertaining to Single Family Detached lots will follow current ZLDR Ar. 4.12 - R-4 development standards. The UR development standards shall not apply to the existing 5.45-acre Commercial/Industrial area located on parcel ID no. 388-00-00-223 and labeled as the 'EquipmentShare' property on Exhibit A of this PD amendment. The Commercial/Industrial area will continue to conform to the use and development standards as outlined in the US Highway 78 Business Park, case no. PD-70.

1. Planned Development Name

Elms Glen (formerly called US Highway 78 Business Park)

2. Statement of Objectives:

It is the purpose of these guidelines to set forth the objectives and design standards for the U.S. Highway 78 Business Park and The Elms Glen community. The following guidelines are being amended to direct the existing Planned Development of 28.67 acres, to incorporate an additional 15.49 acres and to redefine the land uses. This planned development is to be developed as a mixed-use development offering single-family detached and attached homes as well as maintaining a Commercial/Industrial land use.

The planned development is located at the corner of Highway 78 and Von Ohsen Road in Charleston County, South Carolina and is made up by ten (10) parcels of land equaling 44.16 Acres, where 42.30 acres are Highland, 1.86 acres are existing Wetland subject to applicable jurisdictional regulatory agency authority and there are no saltwater wetlands. The existing parcels are a mix of zoning consisting of the existing PD (388-00-00-223 – 5.45 Ac., 388-00-00-443 -6.03 Ac. & 388-00-00-163 – 17.18 Ac.), Low Density Residential (R-4) (388-00-00-178 – 0.33 Ac., 388-00-00-177 – 0.33 Ac., 388-00-00-139 – 0.33 Ac., 388-00-00-118 – 1.22 Ac., 388-00-00-119 – 4.43 Ac. & 388-00-00-140 – 4.31 Ac.) and Neighborhood Commercial (CN) (388-00-00-116 – 4.55 Ac.). The PD proposes a mixed-use development that will consist of residential and Commercial/Industrial uses. The residential land use will cover 38.71 acres proposing a maximum of 290 dwelling units with a mix of Single-Family attached and detached homes. The blended maximum density will not exceed 8 units/acre. Density is based off highland acreage only and does not include fresh water or saltwater wetlands. Under the current zoning 59 units could be developed as the existing PD does not allow for residential development. The minimum required open space for the residential land use will be 0.05 acres per lot plus 10% of nonresidential acreage for a total of 16 acres. (approximately 14.5 acres for the residential land use portion and .54 for the commercial/industrial land use area.) The Commercial/Industrial land use will be reduced to 5.45 acres (located on parcel ID no. 388-00-00-223 as shown on Exhibit A) and will adhere to US Highway 78 Business Park PD-70 adopted in August 1998, revised in October 1998, and as re-stated within these guidelines. The proposed residential development areas, as outlined within this PD, shall not impact the existing or future land uses and development standards within the 5.45-acre Commercial/Industrial area. The Commercial/Industrial area shall continue to operate and develop in accordance with the original PD-70 case.

Two community workshops were held in order to give the community a chance to voice their thoughts and / or opinions of the project as well as to allow the community to ask questions about the project.

The first was held virtually on 4/27/21. There was approximately 10 people who attended that virtual meeting and there was not any specific feedback related to the proposed development, rather there was general concerns of traffic in the area and inquiries about the proposal.

The second community workshop was held on December 13th, 2022, from 6PM to 8PM at First Church of God (10383 US-78, Summerville, SC 29483). We printed 500 flyers and hand delivered them to residents in the immediate area. We also sent out an email to the "North Area Interested Parties" list and contacted several local church leaders so that they may inform their congregations. We did not have anyone attend the community workshop.

3. Intent and Results of Proposed PD:

The proposed mixed-use development meets and exceed the objectives contained in Zoning and Land Development Regulations (ZLDR) Section 4.23.4, by proposing multiple land uses providing character and quality for this new community as well as the surrounding neighborhoods. This will be done by preserving natural areas, and grand trees where possible and maintaining scenic features of the site within proposed common open space system and buffers.

The PD is also consistent with the intent and goals of the Comprehensive Plan adopted October 9, 2018. The following is a summary listing of how they are met within the proposed PD Master Plan:

Land Use Element Goal – "Accommodate growth that respects the unique character of the county, promotes economic opportunity, respects private property rights, and is coordinated with the provision of community facilities, but protects cultural and natural resources."

The existing properties are a mix of Commercial/Industrial, institutional, and residential uses. The amendment of the existing PD guidelines will allow for the disparate parcels to come together and create a neighborhood that has the ability to accommodate growth that respects the unique character of the County. This will be done by creating a walkable community featuring tree lined streets, and community open spaces that promote interaction of friends and neighbors. Reducing lot sizes and setbacks accommodates growth and creates a compact and walkable community. The amended PD will maintain an existing Commercial/Industrial use that is located along Highway 78 frontage to promote economic opportunities.

Economic Development Element Goal – "Charleston County will be an integral part of a strong, diverse, and growing regional economy, providing economic opportunities for its citizens and fostering fiscal health for County government services and facilities."

The amended PD is preserving a portion of the existing Commercial/Industrial land use area that is fronting onto Highway 78. This land use will allow for economic development, create employment opportunities for the existing and future residents of the area while providing services to the residents.

Natural Resources Element Goal – "To preserve, enhance, and revitalize natural resources, such as rivers, creeks, wetlands, aquatic and wildlife habitat, beaches and dunes, groundwater, forests, farmland soils, and air quality, and take actions to mitigate potential negative impacts of growth and development."

The proposed PD development will be required to obtain approvals of all site improvement plans from applicable jurisdictional agencies including but not limited to South Carolina Department of Health and Environmental Control (SCDHEC), Office of Coastal Resource Management (OCRM), SCDHEC Bureau of Water and Charleston County. Any wetland impacts are subject to review, approval, and permitting by applicable jurisdictional agencies.

The PD design is proposing to accommodate the existing topography of the site as well as the existing features on site, like drainage ditches, to create appropriate drainage storage without creating negative impact upon existing drainage rights-of-way. Development will be created around existing grand trees and areas immediately surrounding the trees will be incorporated into common open space areas whenever feasible. Existing trees combined with newly planted landscape buffers, open spaces and street trees will be incorporated into the required guidelines to create an aesthetically pleasing design and visual buffer that is environmentally sensitive to the site and the existing vegetation.

Cultural Resources Element Goal – "Cultural, historic and archeological resources, unique settlement patterns of traditional Lowcountry communities (such as historically African-American communities and family settlements), and traditional activities (such as Sweetgrass Basket Making) should be preserved and protected from potential negative impacts of growth and development."

There are no cultural, historic, and archeological sites found on site or in close proximity to the site. However, the design of the Planned Development will be sensitive to the surroundings though creating aesthetically pleasing neighborhood with visual buffers and large common open space system.

Population Element Goal – "A socioeconomically diverse and growing population will be accommodated by Charleston County in an environmentally and fiscally sustainable manner with particular attention to low to moderate income residents."

Elms Glen will provide an array of the housing products to accommodate the growing County population. The various home options will provide the opportunity to create a socioeconomically diverse neighborhood in line with the Comprehensive Plan goal.

Housing Element Goal – "Quality housing that is affordable will be encouraged for people of all ages, incomes and physical abilities."

Elms Glen will provide array of house product ranging in prices while providing a high-quality development. The intent is to develop a portion of the PD with a mix of single-family attached and detached homes. The community can attract a population of all ages and incomes and ADA accessible sidewalks and amenities will attract a population of all abilities.

Transportation Element Goal – "A transportation system that is coordinated with land use patterns and community character. The level of service should support economic development and a high-quality life."

Elms Glen will provide a network of public and/or private roads and trails to support the community's multimodal transportation needs. In addition, a traffic study has been completed for the development and it indicates that mitigation measures on Highway 78 and Von Ohsen Road will likely be necessary. These mitigation measure have the potential to help alleviate localized traffic congestion.

Community Facilities Element Goal – "Community facilities and services will be provided in a fiscally responsible manner with adequate levels of service and will be coordinated with surrounding jurisdictions and linked to land use planning and development decisions to ensure capacity for expected growth."

This site design received support from public services and facilities in form of coordination letters stating that there are an appropriate size facilities and services level in place to fulfill demand in adequate manner. The coordination letters are enclosed in Appendix section of this document.

Priority Investment, Implementation, and Coordination Element Goal – "Public infrastructure and planning projects will be prioritized through coordination with adjacent and relevant jurisdictions and agencies."
This site design received support from public infrastructure and utilities providers in form of coordination letters stating that there is an appropriate infrastructure in place to fulfill demand for utilities in adequate manner. The coordination letters are enclosed in Appendix section of this document.

Energy Element Goal – "Promote use of alternative energy sources and energy conservation measures that benefit our community."

The PD site is within the Urban Growth Boundary, and under the urban/suburban designation which allows for the proposed higher intensity infill development with homes, businesses, and industries. This site is contiguous to existing developments and compact in design which helps to prevent premature and costly over extension of the public services and infrastructure, such as water and sewer utilities. A denser mixed-use community within the Urban Growth Boundary allows other activities like recreation, open space, and agriculture to happen outside the Urban Growth Boundary which begins to create a sustainable development pattern. Elms Glen also encourages alternative forms of transportation, like walking and biking.

4. Site Information:

Total Site Acreage:

TMS #'s	Highland Acreage	Wetland Acreage	Total Acreage	Existing Zoning	Max. Units Allowed Under Ex. Zoning***	Max. Units Allowed under PD***
388-00-00-223*	5.45 Ac.	0 Ac.	5.45 Ac.	PD	0	0
388-00-00-443*	6.03 Ac.	0 Ac.	6.03 Ac.	PD	0	48
388-00-00-163*	15.41 Ac.	1.77 Ac.	17.18 Ac.	PD	0	123
388-00-00-116	4.55 Ac.	0 Ac.	4.55 Ac.	CN	18	36
388-00-00-178	0.33 Ac.	0 Ac.	0.33 Ac.	R-4	1	2
388-00-00-177	0.33 Ac.	0 Ac.	0.33 Ac.	R-4	1	2
388-00-00-139	0.33 Ac.	0 Ac.	0.33 Ac.	R-4	1	2
388-00-00-118	1.22 Ac.	0 Ac.	1.22 Ac.	R-4	4	9
388-00-00-119	4.34 Ac.	0.09 Ac.	4.43 Ac.	R-4	17	34
388-00-00-140	4.31 Ac.	0 Ac.	4.31 Ac.	R-4	17	34
Totals	**42.30 Acres**	**1.86 Acres****	**44.16 Acres**		**59**	**290**

*The Highway 78 Business Park PD parcel was all under TMS# 388-00-00-163, but it has been subdivided into three separate parcels.

**The existing wetlands acreages are subject to the authority of applicable jurisdictional agencies. No wetland impacts are allowed without prior approval of jurisdictional agencies.

***Density was calculated using Highland Acreage only.

5. Land Uses and Density/Intensity and Dimensional Standards:

Elms Glen shall follow Charleston County ZLDR Chapter 6 Use Regulations except as listed below. The residential land use areas within Elms Glen shall allow by right, single-family dwelling units both attached and detached. The commercial/industrial land use area shall be allowed uses as defined in PD-70.

Notes:

1. The below calculations/quantities for density and minimum lot area do not include freshwater wetland acreage.
2. The Single Family Attached units may or may not be subdivided into fee simple lots.
3. Accessory uses and structures shall be allowed pursuant to Charleston County ZLDR Article 6.5.3.
4. Special events for private lots and HOA areas shall be allowed pursuant Charleston County's ZLDR Article 6.7 and further defined in the HOA guidelines for Elms Glen.
5. Temporary uses and structures shall be allowed pursuant to Charleston County's ZLDR Article 6.6 and further defined in the HOA guidelines for Elms Glen.
6. Short term rental is allowed pursuant to Charleston County's ZLDR Article 6.8 under R-4 guidelines and further defined in the HOA guidelines for Elms Glen.
7. Utility uses in Elms Glen are allowed pursuant to Charleston County's ZLDR Table 6.1 under R-4 zoning.
8. See Section 21 of this document for additional information pertaining to non-residential uses.

Elms Glen Density/Intensity and Dimensional Standards							
ZONING PRIOR TO PD APPROAL **ELMS GLEN LAND USES**	**R-4 Standards Prior to PD Approval**	**CN Standards Prior to PD Approval**	**UR Standards Prior to PD Approval**	**SINGLE FAMILY ATTACHED RESIDENTIAL (SFA)**	**SINGLE FAMILY DETACHED RESIDENTIAL (SFD)**	**US Hwy. 78 Business Park (TMS # 388-00-00-223)**	
						Commercial/ Office	**Industrial/ Warehouse**
MAXIMUM ALLOWED DENSITY	4 Units/Acre	4 Units/Acre	16 Units/Acre	4 Units/Acre	4 Units/Acre	n/a	n/a
MAXIMUM PROPOSED DENSITY	-	-	-	8 units/Acre	8 units/Acre	n/a	n/a
MAXIMUM TOTAL ACREAGE	-	-	-	16.76 Acres	21.95 Acres	5.45 Acres	
MAXIMUM ALLOWABLE UNITS	44 D.U.	18 D.U.	-	134 D.U.	175 D.U.	n/a	n/a
MINIMUM LOT AREA	5,000 sf	4,000 sf	-	1,000 sf	3.000 sf	10,000 sf	20,000 sf
MINIMUM LOT WIDTH	50 feet	15 feet	12 feet	16 feet	40 feet	50 feet	16 feet
MINIMUM SETBACKS*							
Along US Hwy. 78				N/A	N/A	100 feet	100 feet
Front	20 feet	20 feet	15 feet	10 feet / 20 feet****	10 feet / 20 feet****	20 feet	20 feet
Interior Side	5 feet	5 feet	0/5 feet***	5 feet (End units)	5 feet	10 feet	10 feet
Corner Lot Side	-	-	-	10 feet / 20 feet****	10 feet / 20 feet****	-	-
Rear**	10 feet	10 feet	10 feet	10 feet / 20 feet****	10 feet / 20 feet****	20 feet	20 feet
Accessory Structures are allowed and subject to Charleston County ZLDR Section 6.5.8							
MAXIMUM BUILDING COVER	30%	30%	50%	70%	50%	40%	60%
MAXIMUM HEIGHT	35 feet	35 feet	4 stories / Max. 50 feet	4 stories/Max. 50 feet feet*****	3 stories/Max. 40 feet*****	35 feet	35 feet

Notes:
1. See Exhibit C for which areas are residential and non-residential.

* The following list represents allowable covered encroachments into setbacks at a maximum of 5 ft. in addition to encroachments allowed in ZLDR Sec. 4.2.3.A. The primary objective for these encroachments is to allow homes facing greenspaces to engage the area helping to create an engaged community feeling. These encroachments will not be allowed in any Right-of-way or easements.
- Porches, balconies, and steps
- Roof overhangs
- Patios
- Decks

** Rear setbacks of perimeter lots must match those of the adjacent zoning district. See Exhibit C in the appendix section of this document for adjacent zoning designations and their respective rear setbacks.

*** Zero lot line homes may be built with no setbacks on one side of the property, but must have at least 10 feet of separation between buildings as per note 1 of Charleston County's ZLDR Table 4.14.3.

**** 20-foot setback will apply to the side of the lot where it is accessed from (where the driveway is).

***** The height shall be either stories or feet – whichever is less.

6. Maximum Density:

Density in Elms Glen will be calculated using high ground only. Freshwater wetlands and OCRM Critical Line acreages shall not count as high ground.

Maximum density allowed within Urban/Suburban Area Mixed Use area is eight (8) dwelling units per acre as per Charleston County ZLDR Section 4.25.5 – Development Standards.

There is a maximum proposed total of 309 residential lots (attached and detached) which is contingent upon providing 0.05 acres of open space per dwelling unit. Additional information regarding Open Space can be found in section *27. Common Open Space*, of this document.

7. Affordable / Workforce Dwelling Units:

No affordable / workforce housing is proposed within this PD.

8. Impact Assessment / Analysis:

The proposed community will be designed to incorporate public road systems (complying with all processes and requirements for such offering). All lots within the community will have access from internal roads only. The amended PD's existing access point from U.S. Hwy 78 will remain and there will be another community access from Von Ohsen.

The water service will be provided by the Charleston Water Systems. The project will connect into the adjacent water mains and create a loop to maintain adequate pressure within the localized system. Elms Glen will work with CWS to ensure compliance.

The sewer service will be provided by the North Charleston Sewer District. The community will tie into existing adjacent gravity sewer mains for the most efficient utility layout. Elms Glen will work with NCSD to ensure compliance.

The PD shall comply with all current Charleston County Stormwater Ordinances and SCDHEC Regulatory requirements.

9. Traffic Impact Study:

A Traffic Impact Assessment (TIA) has been prepared by Kimley-Horn and is provided in the appendix section of this document. The traffic study was conducted in compliance with the Article 9.6 of the Charleston County ZLDR. The TIA has been reviewed and approved by SCDOT and recommends the following mitigation:
-Left hand turn lane into the development from HWY 78.
-Right hand turn lane into the development from HWY 78.

The recommended improvements are currently under permitting with SCDOT as part of a separate development.

10. Development Schedule:

Elms Glen will be developed in multiple phases.

11. Open Space:

The open space area shall be recorded with the Final Plat as per Article 8.5.2 of the Zoning and Land Development Ordinance, or separate instrument. Open space shall comply with regulations set forth in ZLDR Art. 4.25.6. The proposed location of the Common Open space is shown on the PD Open Space Exhibit enclosed within Appendix section of this document.

Additional information regarding Open Space can be found in section *27. Common Open Space*, of this document.

12. Streets:

The proposed community is designed to have public rights-of-way, which will be offered to the County for acceptance into the public road systems (complying with all processes and requirements for such offering). All roads, alleys, driveways, and parking shall be to Charleston County standards. Roads and alleys will either be publicly dedicated pursuant to Charleston County's requirements and processes or dedicated to the HOA which shall maintain any roads not accepted into the public road system. Off-street parking and driveways outside of the right-of-way shall be owned and maintained by an HOA.

13. Stormwater:

a. The planned development shall comply with all Charleston County Stormwater Ordinances and South Carolina Department of Health and Environmental Control (SCDHEC) Regulatory requirements. For site locations within sensitive drainage basins, additional stormwater design and construction requirements may be required by the

Director of Public Works prior to Stormwater permit approval and issuance. Sensitive drainage basins may include but are not limited to areas which incur flooding conditions, are designated as Special Protection Areas, discharge to water bodies with restrictive Water Quality conditions, and/or are governed by other restrictive Water Quantity and Water Quality conditions. Where possible and allowed by permit, the proposed site may connect its stormwater system with existing conveyances. Best Management Practices (BMP's) shall be utilized, installed, and maintained in compliance with applicable approved permits throughout all phases including, but not limited to, site development, construction, and post construction.

b. Applicant shall comply with Charleston County Stormwater Ordinances and SCDHEC Regulatory requirements for pre and post construction water quality and quantity. Stormwater design, construction, and maintenance shall be in compliance with applicable approved Charleston County Stormwater Permits. Comprehensive Master Drainage Plan must be provided for proposed site and incorporate all development phasing, future development, existing drainage systems and conveyances, and proposed drainage systems and conveyances. The Comprehensive Stormwater Master Plan shall also include discharge management plans for specialized activities within the development including but not limited to micro farming and urban agriculture activities. Utilization of approved and permitted Low Impact Design elements is encouraged within a comprehensive site Master Drainage Plan.

c. The maintenance of all stormwater devices, structures, and facilities will be the responsibility of the Developer and/or Home Owner's Association. A Covenants for Permanent Maintenance of Stormwater Facilities shall be established by responsible party and recorded at the Registrar of Deeds office.

d. The applicant shall coordinate with US Army Corps of Engineers (USACOE), South Carolina Department of Health and Environmental Control (SCDHEC), and Charleston County Public Works regarding any and all wetland areas.

14. Compliance with the ZLDR:

a. With the exception of the Commercial/Industrial area, all items not specifically addressed pertaining to Single Family Attached lots will follow current ZLDR Ar. 4.14 – UR development standards and all items pertaining to Single Family Detached lots will follow current ZLDR Ar. 4.12 - R-4 development standards. The UR development standards shall not apply to the existing 5.45-acre Commercial/Industrial area located on parcel ID no. 388-00-00-223 and labeled as the 'EquipmentShare' property on Exhibit A of this PD. The Commercial/Industrial area will continue to conform to the use and development standards as outlined in the US Highway 78 Business Park, case no. PD-70.

b. The owner/developer shall proceed with proposed development in accordance with the provisions of The Charleston County zoning regulations, applicable provisions of the Charleston County Comprehensive Plan, and with such conditions as may be attached to any zoning to the applicable PD district.

c. The provisions of Article 4.25.10, Variance, of Charleston County Ordinance shall apply to the Planned Development, including those for major and minor modifications. Tree variances may be granted in accordance with this Article and all other sections of this Ordinance.

d. The proposed development complies with the approval criteria contained in Section 4.25.8.J as stated below:

- *"The PD Development Plan complies with the standards contained in this Article."*

  The Planned Development complies with the standards set in the Article 4 of the ZLDR.

- *"The development is consistent with the intent of the Comprehensive Plan and other adopted policy documents."*

  The proposed development is consistent with intent of the Charleston County Comprehensive Plan and other adopted policy documents through preservation of natural resources, such as large trees and associated buffers, and provision for the expansion and growth of Charleston County in areas specifically designated such as this area.

- *"The County and other agencies will be able to provide necessary public services, facilities, and programs to serve the Development proposed, at the time the property is developed."*

  Charleston County and other agenesis will be able to provide necessary public services, facilities, and programs to serve the proposed development at the time the property is developed. The confirming letters of coordination are enclosed within Appendix section of this document.

15. Historic and Archeological Survey:

The site does not contain any historical or architectural sites or structures. The GIS map of the site from the South Carolina Historic Preservation is enclosed within Appendix section of this document.

There are a number of historic structures within the area surrounding the site. However, these are not directly connected to the site and due to the proximity to the site, the site development will not adversely affect the historical structures.

16. Letters of Coordination:

Letters of coordination from all agencies for which the development will be obtaining permits, services and/or facilities are included in the appendix of this document.

17. Dimensional Standards:

See Section 5 of this document for dimensional standards table. There are no waterfront lots within Elms Glen.

18. Architectural Guidelines:

The Architectural Guidelines of ZLDR Article 9.5 shall apply to this PD.

19. Lots to Abut Common Open Space:

The proposed development was designed to ensure maximum residential accessibility to HOA Common Open Space. Most of the lots are immediately adjacent to the open space, where the lots are not adjacent to the open space, the maximum distance to the open space is approximately 150'. Access to the open space is provided through either street or walkway in a minimum 20' easement. See attached plan exhibits.

20. Access:

a. The master plan proposes a connection point for adjacent streets that are able to handle additional capacity.
b. Where drainage pond or utility maintenance is needed an easement to allow service access will be provided between any structures or on private land.
c. The primary access to the Commercial/Industrial land use will be internal from the existing driveway off US Highway 78.

21. Commercial Areas and Industrial Areas:

The primary business park land uses noted are office warehouse, warehouse distribution, and compatible trade service uses of a non-nuisance nature, which include but are not limited to Commercial/Industrial uses, machinery and equipment rental, constructions tools and equipment rental, heavy duty truck or commercial vehicle rental or leasing, and other comparable commercial and industrial uses as outlined in the US Highway 78 business park case no. PD-70. The Commercial/Industrial areas will utilize any applicable uses under the communication, utilities, transportation, trade, services, culture, entertainment, and recreation categories, except for sewage treatment plants, waste disposal facilities, chemical operations, junk or salvage yards, airports/airstrips, logging camps, sawmills, sexually oriented businesses, and outdoor gun ranges. The 5.45-acre tract at the front will be committed to more of an emphasis on business and trade services. Due to the US Highway 78 visibility and accessibility, the Commercial/Industrial areas can utilize part of this tract for office or commercial retail uses. Access to the Commercial/Industrial use will be provided from Highway 78 thorough the existing access road. The Commercial/Industrial area will be directly connected through the community's sidewalks, trails, and infrastructure system. Notwithstanding any provisions within this PD, the permitted land uses and development standards applicable to the 5.45-acre Commercial/Industrial property shall remain unchanged and shall continue to conform with the approvals set forth in the US Highway 78 business park, case no. PD-70.

22. Areas Designated for Future Use:

All areas designated for future improvements or not intended for immediate improvement or development shall remain in a natural state until such time as development permits are approved. Roads and associated utility infrastructure may be completed at any time during the development process with the appropriate permits from those authorities having jurisdiction.

23. Signs:

One multi-tenant sign will be allowed at the entrance at US Hwy. 78, as shown on the plans. Interior lot signage will adhere to guidelines set forth in the Charleston County Zoning Ordinance Article 9.8 Signs.

One residential monument sign will be allowed at the entrance at Von Oshen Road and shall be located as shown on the plans. All residential neighborhood signs must be on premises, off-premise signs shall not be allowed.

All signage shall be minimal and unobtrusive in scale, color, and material, and will comply with the requirements of the ZLDR Article 9.8, Signs.

The Commercial/Industrial land use area may utilize façade signage as defined in the current ZLDR Section 9.8.5 – Wall/Façade Signs.

24. Parking:

The Parking Guidelines of ZLDR Article 9.3 shall apply to this PD.

25. Tree Protection:

The Planned Development shall comply with all provisions of Article 9.2 Tree Protection and Preservation, of the ZLDR.

26. Resource Areas:

The proposed development shall protect natural resources such as mature trees, and buffer areas. The proposed development will meet the standards and guidelines set forth in ZLDR Article 9.2, Tree Protection and Preservation and other relevant policies set to protect natural resources.

The site does not contain any agricultural soils and/or active farmland, water access or shoreline buffers, or habitat of species designated as of federal, state, and local concern. There are no scenic views within or toward the site.

Large areas of open space will be located on site to preserve as many of protected trees as possible.

27. Common Open Space:

The open space shall be planned and design as per Section 4.25.6 Common Open Space of the Zoning and Land Development Ordinance. Common Open Space will be offering passive and active areas to allow for use by all demographics within the development and encourage outdoor activities to promote healthy community.

The open space for this development is designed as a chain of large parks, linear parks and trails that tie all the development together and offer a number of outdoor activities. It will consist of ponds, drainage ditches, and HOA green spaces, including an amenity area. It will provide sufficient area for quality time outdoors without need for leaving neighborhood. Additionally, linear parks will provide visual separation and neighborhood congregation to the rear loaded lots. See the Open Space Exhibit within the Appendix of this document.

The following are approved Common Open Space uses within Elms Glen:

- Recreational Structures
- Swimming Pool
- Playground
- Walking / Biking Paths and Boardwalks
- Community Gardens
- Landscaped Areas
- Recreational Sports Facilities
- Picnic and Outdoor Eating Areas
- Dog Park
- Fishing Docks / Piers
- Other uses as specified in Charleston County's ZLDR Section 4.25.6.

Common Open Space – Minimum Requirement	
Proposed Residential Lots	290 D.U.
0.05 Acres of Open Space required per dwelling unit + 10% of nonresidential acreage	0.05 Ac. x 290 = 14.5 5.45 x 10% = 0.545 14.5 + 0.545 = **15.05 Acres Minimum of Open Space Required***

**Only 30% of the open space can be a combined acreage of the freshwater wetlands, detention ponds, and buffer areas. This calculation shall apply to the total acreage of open space including both nonresidential and residential areas.*

The land designated as common open spaces shall not be occupied by streets, drives, parking areas or structures, other than recreational structures. Plantings in open space shall be planted to create visual barrier between properties and together with street frontage, wetland buffers and streetscape create pleasant landscape throughout the site.

All property owners in the PD shall have access to the open space by means of a public or private street or walkway within a 20' min. easement. A sufficient amount of common open space shall be provided within each phase of the PD development, in order to serve the expected population of that phase.
The common open space area shall be recorded with the Final Plat as per Article 8.5 of the Zoning and Land Development Ordinance, or separate instrument. Open space shall be conveyed prior to recording of final Plat, in accordance with one of methods listed in Section 4.25.6.C.2 of Zoning and Land Development Regulations.

Common open space will be owned and maintained by the HOA and shall comply with ZLDR Article 4.25.6. The location of the Common Open space is shown on the PD Open Space Exhibit and PD Concept Plan enclosed within Appendix section of this document.

28. Landscape and Buffer Requirements:

All landscape buffering shall follow the Charleston County standards unless otherwise noted. Refer to Section 9.4.4 of Zoning and Land Development Regulations.

Landscape Buffers	
US Hwy 78 Right-of-way	20' vegetated Type 'C' Buffer from the right-of-way into the property
Von Oshen Road	20' vegetated Type 'C' Buffer from the right-of-way into the property
Residential against Commercial/Industrial land use	40' vegetated Type 'F' Buffer from the shared property line into the Commercial/Industrial land use*
Commercial/Industrial against an interior right-of-way	10' Type 'A' Buffer from the right-of-way into the land use**
Perimeter	10' Type 'A' Buffer from the property line into the site

**The buffer and screening plantings shall be provided within residential land use and properly maintained at all times by the HOA.*
***All buffers between the right-of-way line and Commercial/Industrial land use within PD shall be landscaped with trees and plantings except where access drive cuts through.*

Parking lot interior landscaping for Commercial / Industrial shall comply with Section 9.4.3.B. of Zoning and Land Development Regulations.

Townhomes within Elms Glen shall not need to buffer along newly created or existing internal access easements/rights-of-way.

Tree Protection shall be per Charleston County Standards.

29. Home Owner's Association (HOA)

A Homeowner's Association (HOA) Board of Directors will be created to own, manage, and maintain the residential roads and sidewalks, the drainage system and common open space. The HOA will be managed by the developer collecting all fees and handling HOA responsibilities until all lots within the residential development are sold, at which time duties will be turned over to a successor chosen by the HOA.

The HOA will be responsible for taking ownership and maintaining all common areas, parks, ponds, associated furnishings, pathways, and improvements. They will also fund any private lighting repairs, landscaping, and buffers maintenance.

The HOA shall fund, own, operate, and maintain the stormwater system components and structures ensuring the system operates to permitted standards. Any modification to permitted ponds will require Comprehensive Master Stormwater Plan (Stormwater Master Plan) revision, review, and approval by applicable jurisdictional and permitting agencies. The maintenance of all stormwater devices, structures, and facilities will be the responsibility of the Developer and/or Home Owner's

Association. A Covenants for Permanent Maintenance of Stormwater Facilities shall be established by responsible party and recorded at the Registrar of Deeds office.

The HOA will own/maintain any streets, alleys that are not accepted by Charleston County into the public road system.

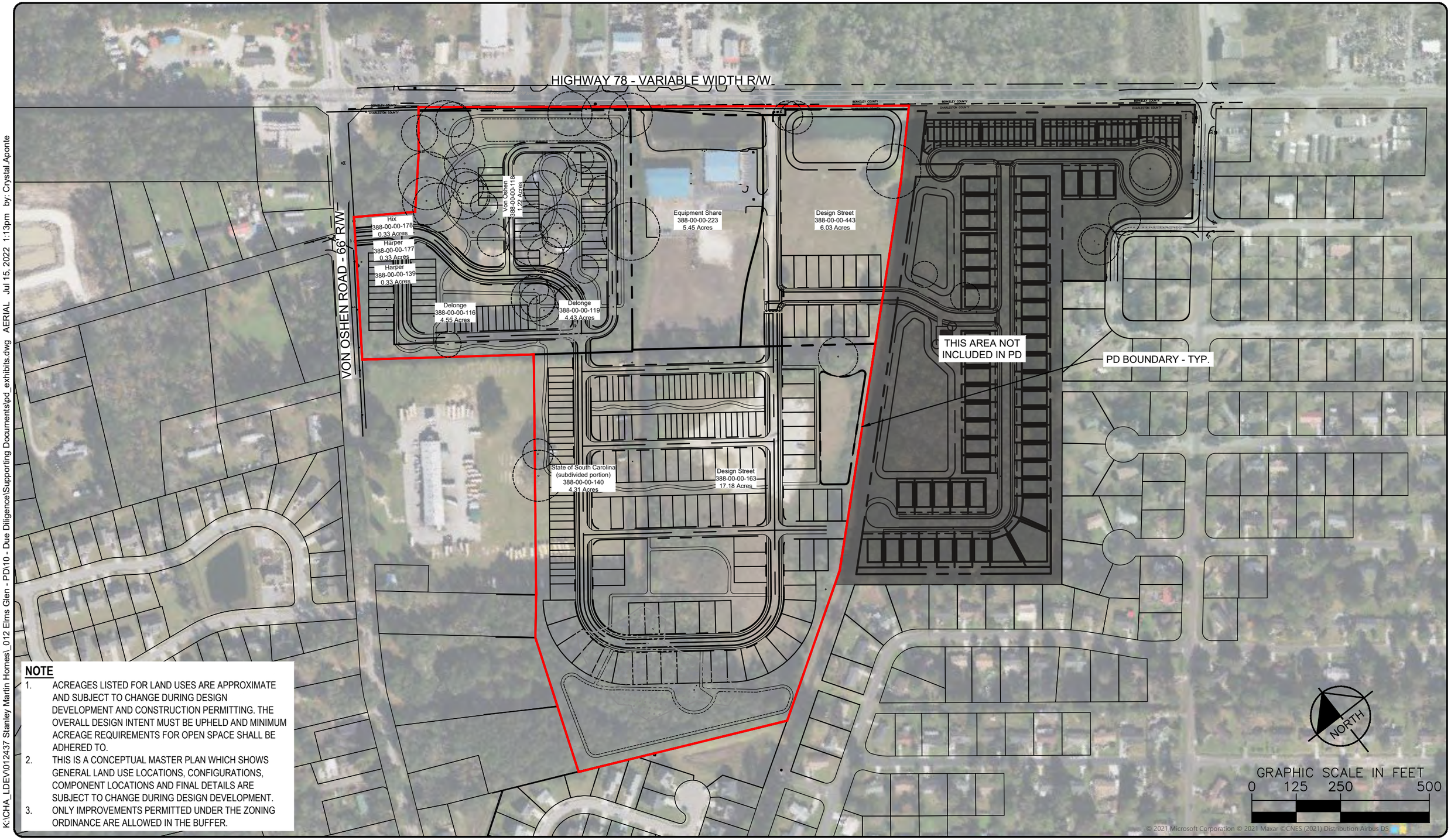
The HOA will own/maintain any areas that are not accepted by Charleston County.

HOA approval is not required prior to submittal of applications for zoning permits.

The Commercial/Industrial part of PD will be maintained and manage by business owner in collaboration with HOA on land used in share manner.

30. Appendix Items

- Exhibit A – Aerial and Site Layout
- Exhibit B – Existing Conditions
- Exhibit C – Land Use
- Exhibit D – Open Space
- Exhibit E – Road Layout
- Exhibit F – Utilities
- Exhibit G – Signage
- Architectural Elevations
- Original PD-70 Document
- Traffic Impact Study
- SCDAH / SCIAA Arch Site Map
- SCDOT Letter of Coordination
- School District Letter of Coordination – Charleston County School District
- Water Service Letter of Coordination – Charleston Water System
- Sewer Service Letter of Coordination – North Charleston Sewer District
- Electricity Service Letter of Coordination – Dominion Energy
- United States Postal Service (USPS) Letter of Coordination
- Fire District Letter of Coordination – C & B Fire Department
- Charleston County Public Works Letter of Coordination
- CARTA Letter of Coordination
- Community Workshop Notice



NOTE

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2. THIS IS A CONCEPTUAL MASTER PLAN WHICH SHOWS GENERAL LAND USE LOCATIONS, CONFIGURATIONS, COMPONENT LOCATIONS AND FINAL DETAILS ARE SUBJECT TO CHANGE DURING DESIGN DEVELOPMENT.
3. ONLY IMPROVEMENTS PERMITTED UNDER THE ZONING ORDINANCE ARE ALLOWED IN THE BUFFER.

Kimley»Horn
115 FAIRCHILD STREET, SUITE 250 CHARLESTON, SC 29492
PHONE: (843) 737-6390 I www.kimley-horn.com

TITLE: *AERIAL AND SITE LAYOUT*

PROJECT: *ELMS GLEN - PD*

CLIENT: *STANLEY MARTIN HOMES*

JOB NUMBER:	012437012
SCALE:	1" = 250'
DATE:	6/7/2022
SHEET:	EXHIBIT A

LEGEND

- PD BOUNDARY
- PROPERTY LINE
- EDGE OF WOODS
- GRAND TREE
- CONCRETE PAVEMENT
- ASHPALT PAVEMENT
- GRAVEL PAVEMENT
- WETLANDS
- POST W/LIGHT & OUTLET
- MONITORING WELL
- EXISTING SPOT ELEVATION
- TEMPORARY BENCHMARK
- MAIL BOX
- AT&T PEDESTAL
- GAS VALVE
- WATER VALVE
- FIRE HYDRANT
- CABLE BOX
- WATER METER
- POWER POLE
- UTILITY POLE

NOTES

1. TMS NO.S 388-00-00-116, 118, 119, 193, 443 AND TMS NO.S 388-02-00-131 & 132.
2. AREAS DETERMINED BY COORDINATE METHOD.
3. NO UNDERGROUND EXPLORATION PERFORMED FOR THIS SURVEY.
4. PROPERTIES ARE LOCATED IN FLOOD ZONE X, AS PER FEMA MAP NUMBER 45019C0120K, COMMUINITY PANEL 455413 0120 K. EFFECTIVE DATE JANUARY 29, 2012.

REFERENCES

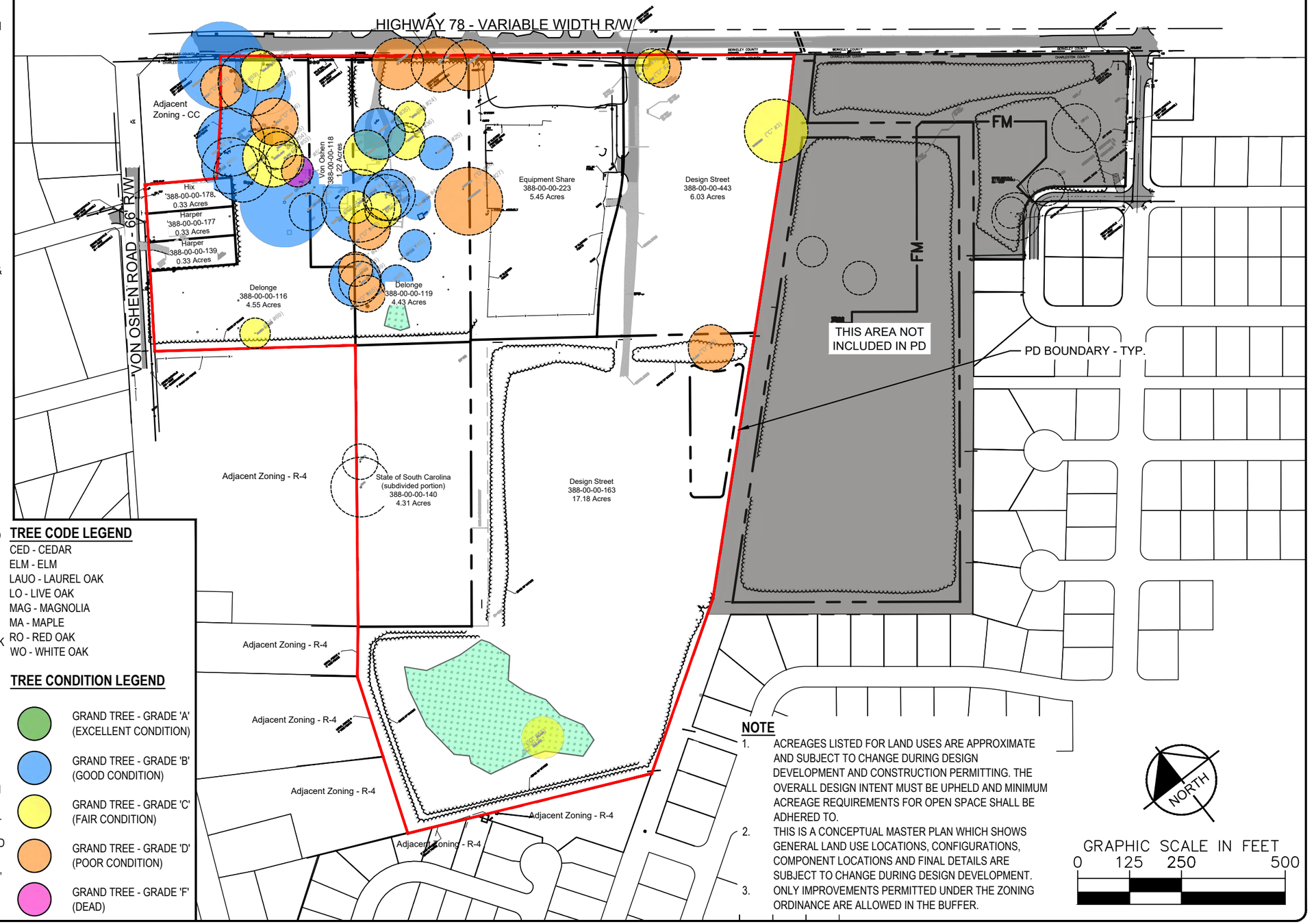
1. PLAT BY R. RAVENAL DATED JANUARY, 1927. RECORDED IN PLAT BOOK F, PAGE 94. CHARLESTON COUNTY ROD.
2. PLAT BY R. B. CUTHBERT, DATED AUGUST 23, 1952. RECORDED IN PLAT BOOK J, PAGE 11. CHARLESTON COUNTY ROD.
3. PLAT BY W. H. MATHENY, DATED JANUARY 22, 1964. RECORDED IN PLAT BOOK R, PAGE 54. CHARLESTON COUNTY ROD.
4. PLAT BY E. M. SEABROOK, DATED MARCH 24, 1964. RECORDED IN PLAT BOOK B, PAGE 64. CHARLESTON COUNTY ROD.
5. PLAT BY E. M. SEABROOK, JR., INC. DATED SEPTEMBER 9, 1970. RECORDED IN PLAT BOOK N, PAGE 135. CHARLESTON COUNTY ROD.
6. PLAT BY E. M. SEABROOK, JR., INC. DATED AUGUST 31, 1971. RECORDED IN PLAT BOOK P, PAGE 001. CHARLESTON COUNTY ROD.
7. PLAT BY E. M. SEABROOK, JR., INC. DATED SEPTEMBER 1, 1971. RECORDED IN PLAT BOOK P, PAGE 002. CHARLESTON COUNTY ROD.
8. PLAT BY E. M. SEABROOK, JR., INC. DATED NOVEMBER 30, 1972. RECORDED IN PLAT BOOK AB, PAGE 93. CHARLESTON COUNTY ROD.
9. PLAT BY W. MICHAEL LINES & COMPANY, DATED JANUARY, 1976. RECORDED IN PLAT BOOK W, PAGE 116. CHARLESTON COUNTY ROD.
10. PLAT BY W. MICHAEL LINES JANUARY 19, 1978. RECORDED IN PLAT BOOK S PAGE 100. CHARLESTON COUNTY ROD.
11. PLAT BY JMS LAND PLANNING & SURVEYING, DATED FEBRUARY 8, 1980. RECORDED IN PLAT BOOK AP, PAGE 45. CHARLESTON COUNTY ROD.
12. PLAT BY E. M. SEABROOK, JR., INC. DATED FEBRUARY 9, 1981. RECORDED IN PLAT BOOK AS, PAGE 22. CHARLESTON COUNTY ROD.
13. PLAT BY CORNERSTONE SURVEYING AND ENGINEERING, INC., DATED FEBRUARY 4, 1992. RECORDED IN PLAT BOOK CG, PAGE 78. CHARLESTON COUNTY ROD.
14. PLAT BY HOFFMAN LESTER ASSOCIATES, DATED MAY 15, 1998. RECORDED IN PLAT BOOK EC, PAGE 624. CHARLESTON COUNTY ROD.
15. PLAT BY ROBERT J. SAMPLE DATED SEPTEMBER 10, 2004. RECORDED IN PLAT BOOK DE, PAGE 323. CHARLESTON COUNTY ROD.
16. PLAT BY HEG ENGINEERING CONSULTANTS, DATED DECEMBER 25, 2006. RECORDED IN PLAT BOOK L10, PAGE 0143. CHARLESTON COUNTY ROD.
17. PLAT BY SINCLAIR & ASSOCIATES, INC., DATED APRIL 1, 2011. RECORDED IN PLAT BOOK L13, PAGE 0362. CHARLESTON COUNTY ROD.
18. PLAT BY HLA, INC., DATED APRIL 28, 2011. RECORDED IN PLAT BOOK L11, PAGE 0225. CHARLESTON COUNTY ROD.

TREE CODE LEGEND

CED - CEDAR
ELM - ELM
LAUO - LAUREL OAK
LO - LIVE OAK
MAG - MAGNOLIA
MA - MAPLE
RO - RED OAK
WO - WHITE OAK

TREE CONDITION LEGEND

- GRAND TREE - GRADE 'A' (EXCELLENT CONDITION)
- GRAND TREE - GRADE 'B' (GOOD CONDITION)
- GRAND TREE - GRADE 'C' (FAIR CONDITION)
- GRAND TREE - GRADE 'D' (POOR CONDITION)
- GRAND TREE - GRADE 'F' (DEAD)



NOTE

1. ACREAGES LISTED FOR LAND USES ARE APPROXIMATE AND SUBJECT TO CHANGE DURING DESIGN DEVELOPMENT AND CONSTRUCTION PERMITTING. THE OVERALL DESIGN INTENT MUST BE UPHELD AND MINIMUM ACREAGE REQUIREMENTS FOR OPEN SPACE SHALL BE ADHERED TO.
2. THIS IS A CONCEPTUAL MASTER PLAN WHICH SHOWS GENERAL LAND USE LOCATIONS, CONFIGURATIONS, COMPONENT LOCATIONS AND FINAL DETAILS ARE SUBJECT TO CHANGE DURING DESIGN DEVELOPMENT.
3. ONLY IMPROVEMENTS PERMITTED UNDER THE ZONING ORDINANCE ARE ALLOWED IN THE BUFFER.

NORTH

GRAPHIC SCALE IN FEET
0 125 250 500

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Kimley»Horn
115 FAIRCHILD STREET, SUITE 250 CHARLESTON, SC 29492
PHONE: (843) 737-6390 | www.kimley-horn.com

TITLE: *EXISTING CONDITIONS*

PROJECT: *ELMS GLEN - PD*

CLIENT: *STANLEY MARTIN HOMES*

JOB NUMBER:	012437012
SCALE:	1" = 250'
DATE:	6/7/2022
SHEET:	EXHIBIT B

LEGEND

- PD BOUNDARY
- PROPERTY LINE
- EDGE OF WOODS
- GRAND TREE
- SINGLE-FAMILY ATTACHED (16.76 AC)
- SINGLE-FAMILY DETACHED (21.99 AC)
- COMMERCIAL/INDUSTRIAL DISTRICT (5.45 AC)
- POND
- WETLANDS (1.9 AC)
- PROPOSED ROAD
- ENTRANCE POINTS

SETBACK NOTES

ELMS GLEN LOTS THAT ABUT CC ZONING SHALL HAVE A REAR SETBACK OF 15'.

ELMS GLEN LOTS THAT ABUT R-4 ZONING SHALL HAVE A REAR SETBACK OF 10'.

NOTE

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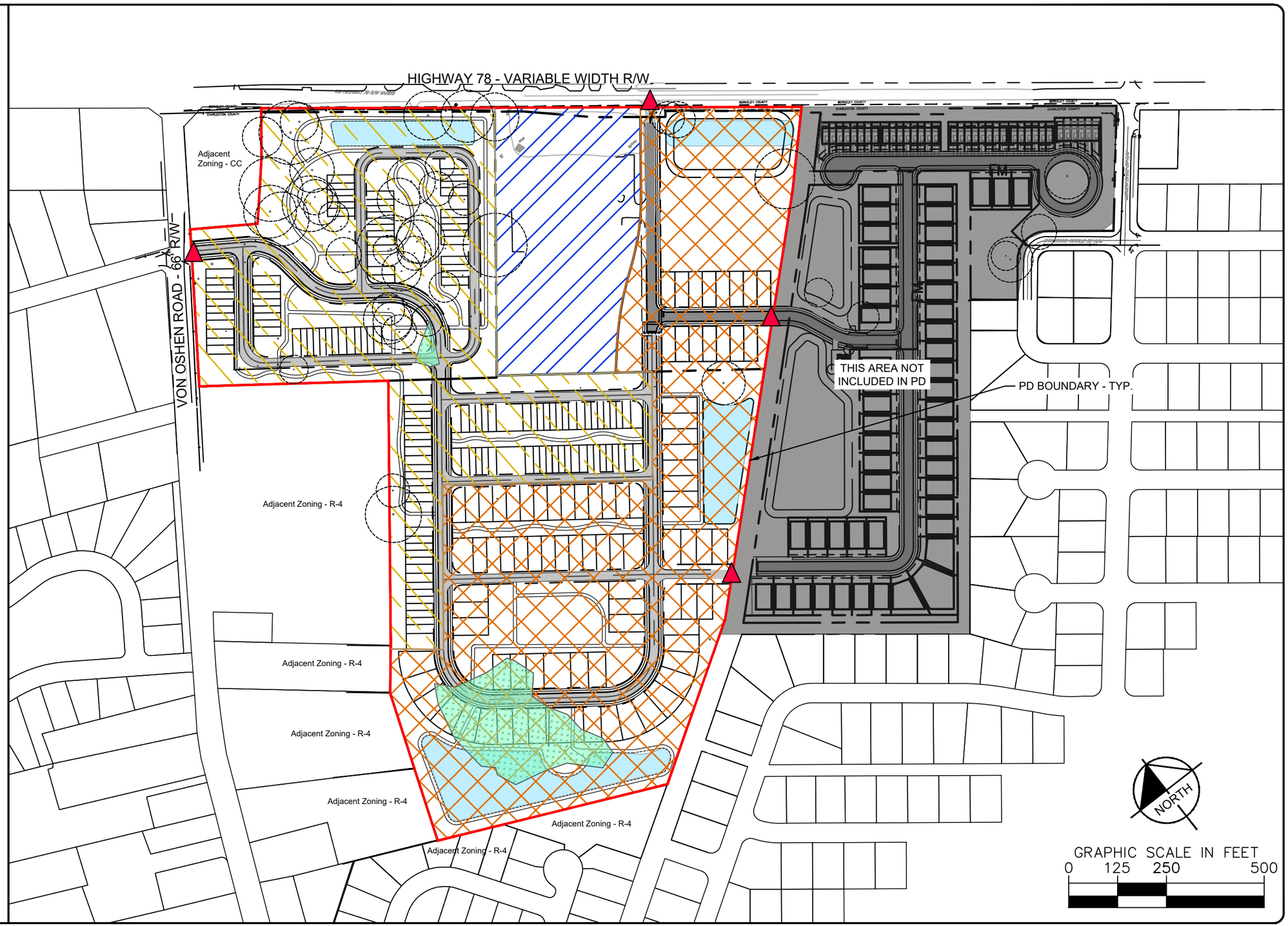
3. ONLY IMPROVEMENTS PERMITTED UNDER THE ZONING ORDINANCE ARE ALLOWED IN THE BUFFER.



Kimley»Horn
115 FAIRCHILD STREET, SUITE 250 CHARLESTON, SC 29492
PHONE: (843) 737-6390 | www.kimley-horn.com

TITLE:	LAND USE
PROJECT:	ELMS GLEN - PD
CLIENT:	STANLEY MARTIN HOMES
JOB NUMBER:	012437012
SCALE:	1" = 250'
DATE:	6/7/2022
SHEET:	EXHIBIT C

LEGEND

- PD BOUNDARY
- PROPERTY LINE
- EDGE OF WOODS
- GRAND TREE
- OPEN SPACE
- BUFFER SPACE
- TRAIL
- POND
- WETLANDS
- PROPOSED ROAD
- ENTRANCE POINTS

PD OPEN SPACE REQUIREMENTS

REQUIRED OPEN SPACE: 0.05 AC PER DWELLING UNIT + 10% OF THE LAND AREA DESIGNATED FOR OFFICE, COMMERCIAL, AND/OR INDUSTRIAL USES

RESIDENTIAL: 290 DU X 0.05 AC = 14.5 AC

COMMERCIAL: 5.45 AC OF COM USE X 10% = 0.55 AC

APPROXIMATE OPEN SPACE REQUIRED: 15 AC

NOTE

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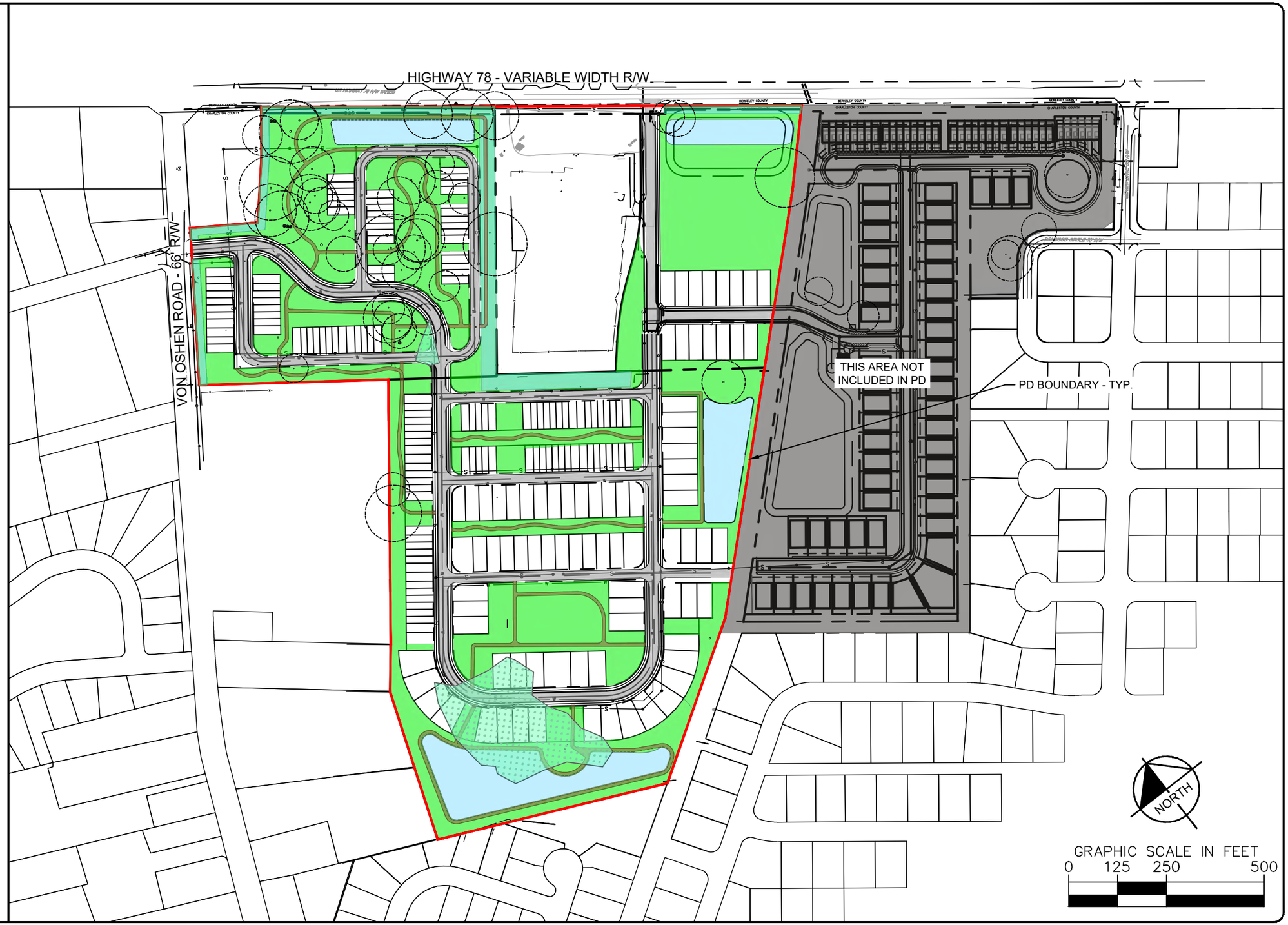
2. THIS IS A CONCEPTUAL MASTER PLAN WHICH SHOWS GENERAL LAND USE LOCATIONS, CONFIGURATIONS, COMPONENT LOCATIONS AND FINAL DETAILS ARE SUBJECT TO CHANGE DURING DESIGN DEVELOPMENT.
3. THE OPEN SPACE IS TO BE MAINTAINED BY THE HOA OR THE PROPERTY OWNER.
4. ONLY IMPROVEMENTS PERMITTED UNDER THE ZONING ORDINANCE ARE ALLOWED IN THE BUFFER.
5. PARKING SHALL NOT BE ALLOWED WITHIN BUFFERS OF OPEN SPACE AREAS.



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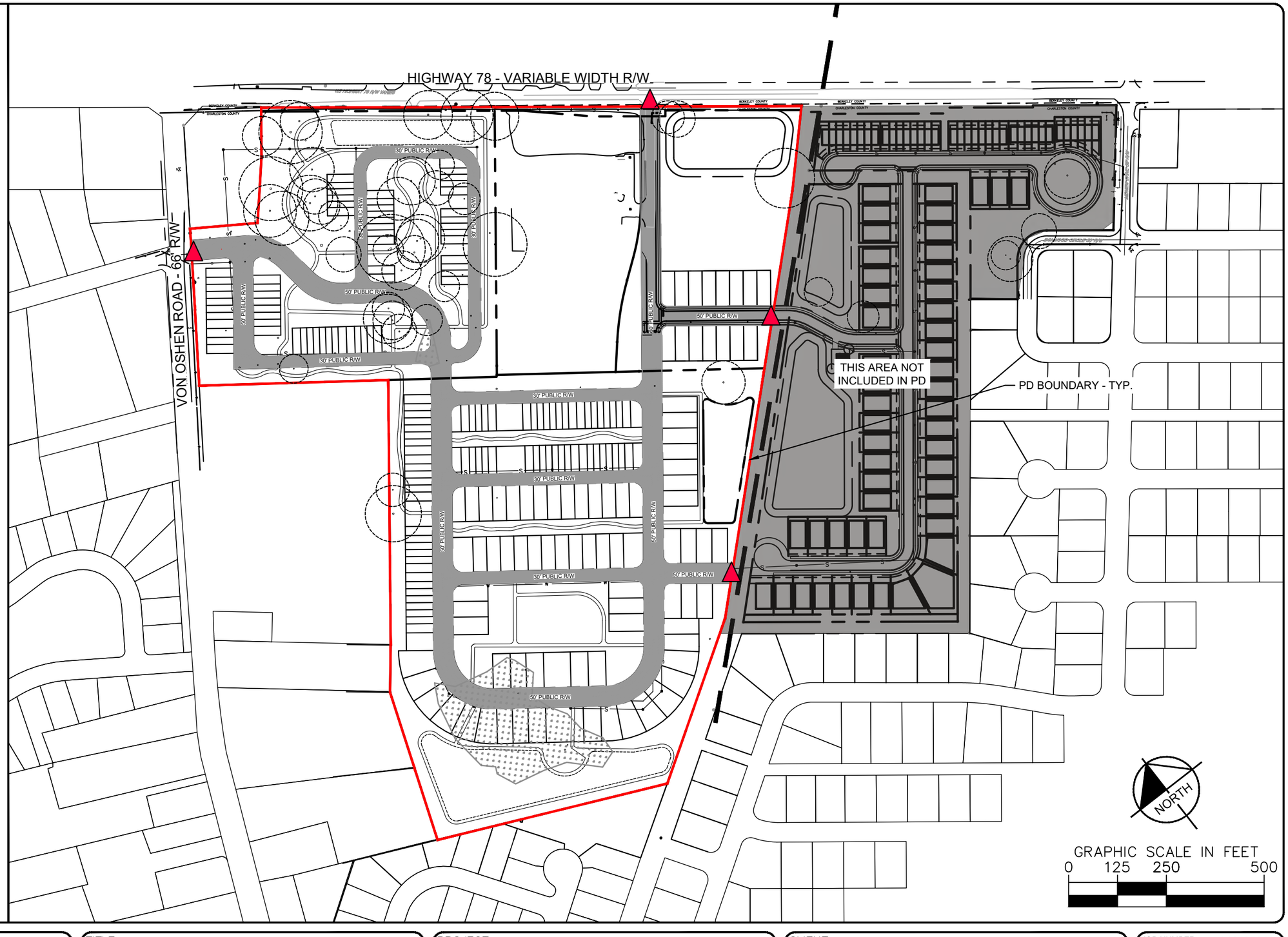
Kimley»Horn
115 FAIRCHILD STREET, SUITE 250 CHARLESTON, SC 29492
PHONE: (843) 737-6390 | www.kimley-horn.com

TITLE:	OPEN SPACE
PROJECT:	ELMS GLEN - PD
CLIENT:	STANLEY MARTIN HOMES
JOB NUMBER:	012437012
SCALE:	1" = 250'
DATE:	6/7/2022
SHEET:	EXHIBIT D

LEGEND

- PD BOUNDARY
- PROPERTY LINE
- EDGE OF WOODS
- GRAND TREE
- PROPOSED RIGHT OF WAY
- ENTRANCE POINTS



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K:\CHA_LDEV\012437 Stanley Martin Homes_012 Elms Glen - PD\10 - Due Diligence\Supporting Documents\pd_exhibits.dwg ROAD LAYOUT Jul 15, 2022 1:13pm by: Crystal Aponte

Kimley»Horn
115 FAIRCHILD STREET, SUITE 250 CHARLESTON, SC 29492
PHONE: (843) 737-6390 I www.kimley-horn.com

TITLE: *ROAD LAYOUT*

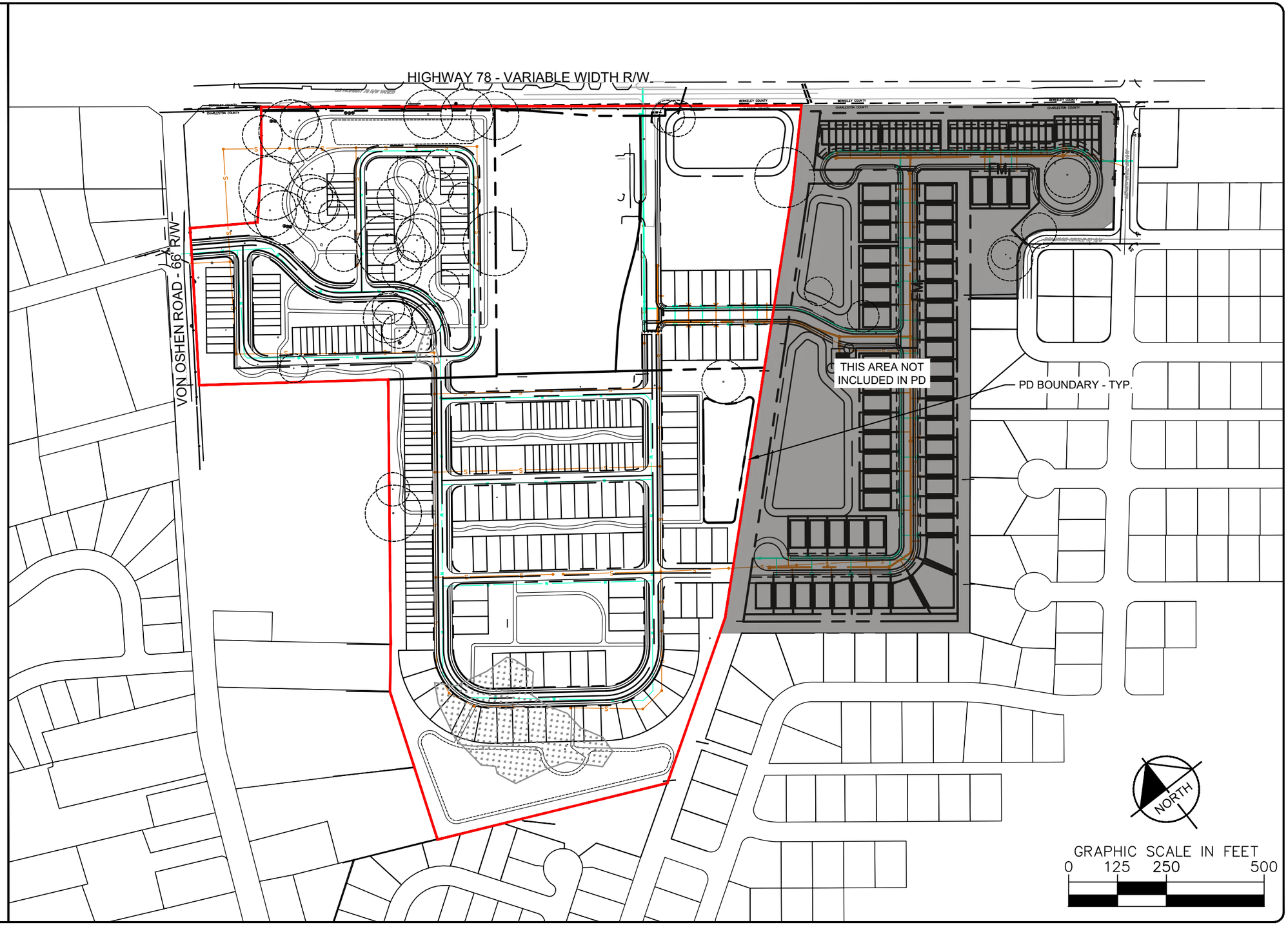
PROJECT: *ELMS GLEN - PD*

CLIENT: *STANLEY MARTIN HOMES*

JOB NUMBER:	012437012
SCALE:	1" = 250'
DATE:	6/7/2022
SHEET:	EXHIBIT E

LEGEND

- PD BOUNDARY
- PROPERTY LINE
- EDGE OF WOODS
- GRAND TREE
- PROPOSED SEWER
- PROPOSED WATER



NOTE

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K:\CHA_LDEV\012437 Stanley Martin Homes_012 Elms Glen - PD\10 - Due Diligence\Supporting Documents\pd_exhibits.dwg UTILITIES Jul 15, 2022 1:13pm by: Crystal.Aponte

Kimley»Horn
115 FAIRCHILD STREET, SUITE 250 CHARLESTON, SC 29492
PHONE: (843) 737-6390 | www.kimley-horn.com

TITLE: *UTILITIES*

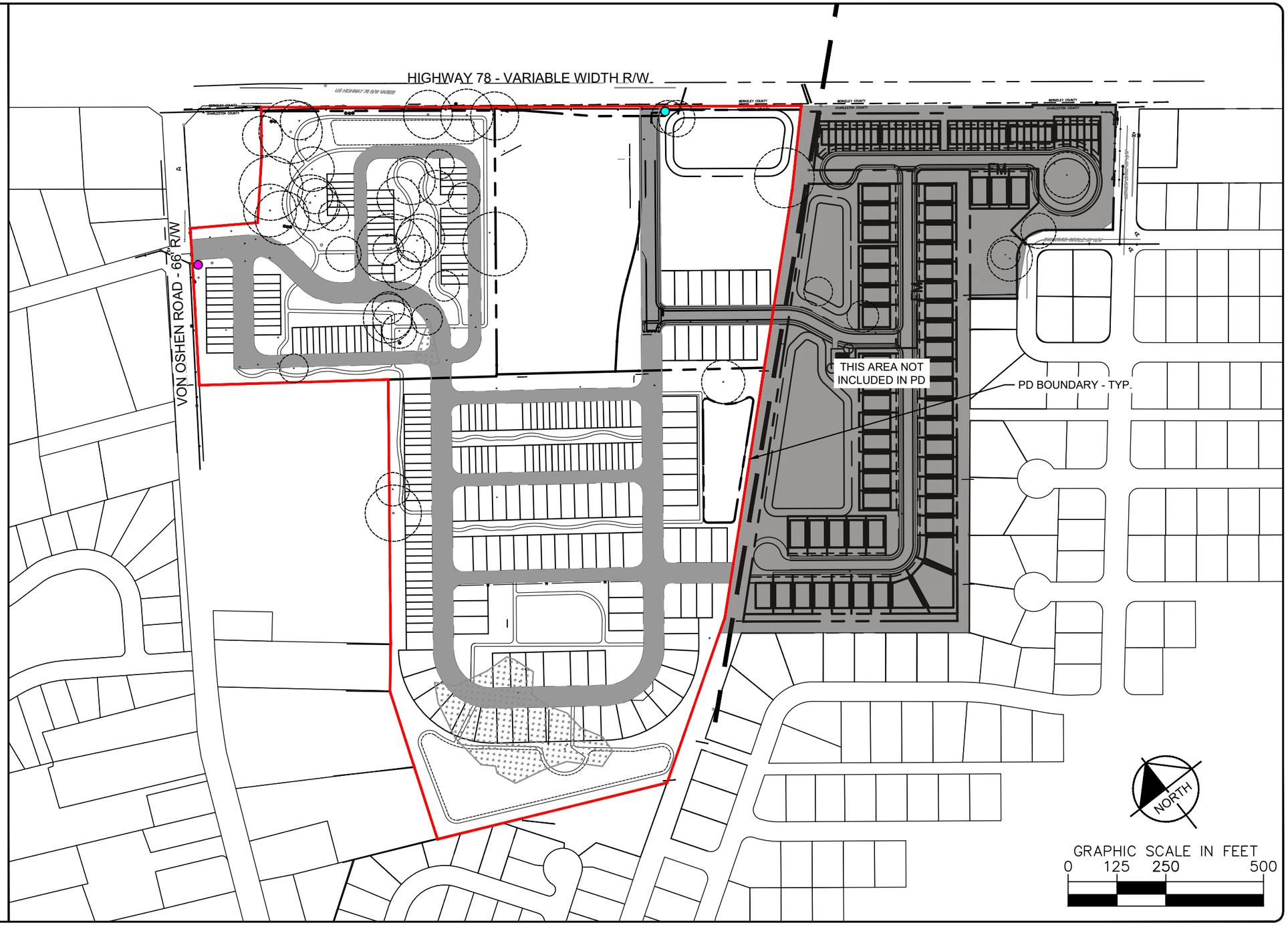
PROJECT: *ELMS GLEN - PD*

CLIENT: *STANLEY MARTIN HOMES*

JOB NUMBER:	012437012
SCALE:	1" = 250'
DATE:	6/7/2022
SHEET:	EXHIBIT F

LEGEND

- PD BOUNDARY
- PROPERTY LINE
- EDGE OF WOODS
- GRAND TREE
- PROPOSED ROAD
- MULTI-TENANT SIGN
- RESIDENTIAL MONUMENT SIGN



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Kimley»Horn
115 FAIRCHILD STREET, SUITE 250 CHARLESTON, SC 29492
PHONE: (843) 737-6390 | www.kimley-horn.com

TITLE:	*SIGNAGE*
PROJECT:	*ELMS GLEN - PD*
CLIENT:	*STANLEY MARTIN HOMES*
JOB NUMBER:	012437012
SCALE:	1" = 250'
DATE:	*6/7/2022*
SHEET:	*EXHIBIT G*

Detached Single-Family

Attached Single-Family

Architectural Elevations

CHARLESTON COUNTY COUNCIL
O.T. WALLACE COUNTY OFFICE BUILDING
2 COURTHOUSE SQUARE
CHARLESTON, SOUTH CAROLINA
29401

2845-C

US HIGHWAY 78 BUSINESS PARK PLANNED DEVELOPMENT (PD-70)

The following items, when combined with the Development Guidelines will govern the zoning requirements for the **US Highway 78 Business Park Planned Development** designated as **PD-70**.

1. The project to be called the US Highway 78 Business Park Planned Development is being proposed to develop the site as a business park over an approximate 10 year period.

2. All roads and drainage systems will be public and will be constructed to County standards in accordance with the Charleston County Road Code.

3. Wetland areas cannot be filled without obtaining permits from appropriate governmental authorities.

4. If the granting of permits by other governmental entities requires the redesign of this property, an amendment to this Planned Development will be required.

5. Utilities and services shall be provided in accordance with the Development Guidelines for the US Highway 78 Business Park Planned Development. Conditional Use Permits for same shall not be required.

6. Building setback lines, number of off-street parking spaces, lot areas and widths, and building heights shall be as stated in the Development Guidelines for the US Highway 78 Business Park Planned Development.

7. The Charleston County Zoning Ordinance shall apply to all areas of this Planned Development where not covered by these Regulations and Guidelines.

8. Property owners agreements, deed restrictions, and covenants shall be submitted to the County Attorney (copy to Subdivision Administrator) for their review and approval prior to conditional or final plat submittal whichever comes first) prior to consideration by the Planning Board. Thereafter, copies of these restrictions, covenants, and agreements must be recorded in the Register of Deeds (ROD) Office for Charleston County prior to occupancy.

9. A deceleration lane on US Highway 78 as required by County Planning Department and permitted by SC DOT shall be provided.

10. This agreement shall become effective January 20, 1999.

BARRETT LAWRIMORE, CHAIRMAN
CHARLESTON COUNTY COUNCIL

BEVERLY T. CRAVEN, CLERK
CHARLESTON COUNTY COUNCIL

1/19/99
DATE ADOPTED

HLA, INC.
LAND PLANNING • CIVIL ENGINEERING • LANDSCAPE ARCHITECTURE
WETLAND CONSULTING • LAND SURVEYING

US HIGHWAY 78 BUSINESS PARK

PLANNED DEVELOPMENT DISTRICT GUIDELINES

AUGUST 1998

REVISED OCTOBER 20, 1998

29 LEINBACH DRIVE, BLDG. A-2
CHARLESTON, SC 29407-6988

TELEPHONE (803) 763-1166
FAX (803) 763-1909

HLA, INC.

US HIGHWAY 78 BUSINESS PARK
PLANNED DEVELOPMENT GUIDELINES
August 24, 1998
Revised October 20, 1998

I. PURPOSE, INTENT AND OBJECTIVES

The following guidelines have been created to direct the proposed Planned Development of 28.67 acres along the west side of US Highway 78 in Charleston County (TMS #388-00-00-163). This parcel is to be developed as a business park over a 10 year period.

The area was noted for these uses through an economic development study conducted by HLA for the county in 1995. HLA have performed research, surveying and site design to enable preparation of a preliminary site plan in conjunction with these Planned Development District Guidelines.

II. EXISTING SITE INFORMATION

- Existing Owner - Ms. Norma C. Hall
  c/o The Bill Hall Company
  4940 Dorchester Road
  North Charleston, SC 29418
- Existing zoning - AR
- Site Soils
  Portsmouth (Po), Hockley (Ho), Rains (Ra), Rutledge (Rg), Quitman (Qu), Wargram (wgb).
- Water - A 24" CPW water main exists along US Hwy. 78 and will be extended into the site.
- Sewer - An 8" gravity main in US Hwy. 78 will be utilized after a gravity sewer main, pump station and force main system are installed on the site.
- Property is located in Flood Zone L as per Community Panel No. 4554130080F dated April 17, 1987.
- Existing topography is mildly sloped toward US Highway 78 with elevations ranging from 51-58. Existing drainage basins and site ditches define some of the existing drainage pattern.

III. LAND USE/SITE DEVELOPMENT CONCEPT

The attached preliminary site plan indicates a primary access road that will provide access throughout the park. Water and sewer mains will be extended along the primary road infrastructure. A pump station will be located on the site. The final size and configuration of the noted lots will be market driven, therefore we request flexibility as to final tract sizes.

The primary business park land uses noted are office warehouse, warehouse distribution, and compatible trade service uses of a non-nuisance nature. We request the right to utilize any applicable uses under the communication, utilities, transportation, trade, services, culture,

entertainment and recreation categories, except for sewage treatment plants, waste disposal facilities, chemical operations, junk or salvage yards, airports/airstrips, logging camps, sawmills, sexually oriented businesses and outdoor gun ranges. The 11 acre tract at the front will be committed to more of an emphasis on business and trade services. Because of the US Highway 78 visibility and accessibility we request the flexibility to utilize part of this tract for office or commercial retail uses. We are promoting the acceptability of this option by requiring non-metal/bare block facade to the buildings facing Highway 78 and improvement of the ponds as aesthetic water features. We also recommend landscape requirements that would enhance, not block, views. A signature entrance area with multi- tenant ground signage is intended with lighted aerator fountains. We also have coordinated appropriate buffers for the rest of the adjacent offsite uses which include bus parking yards, filled sewage treatment lagoons, major drainage easements and a few homes. Please review the following guidelines for more information.

IV. SETBACK/LOT/HEIGHT/COVERAGE CRITERIA

A. The entire property shall comply with setback requirements as set forth in the Charleston County Zoning Ordinance except where noted. All buildings within the development shall fall within the following setbacks:

	(11 Acres)	Rear Area-17.67 Acres
Front Portion		
Front yard: Internal Road	20 feet	20 feet
Rear yard:	20 feet	20 feet
Side yard:	10 feet	10 feet
US Highway 78	100 feet	

B. Building heights shall meet the county requirements (35' maximum).

C. Maximum building coverage will be 40% for commercial retail and office uses and up to 60% for warehouse or light industrial uses.

D. Minimum lot width of 50' for office or commercial retail uses and 100' for warehouse or light industrial uses. Minimum lot size of 10,000 SF for office or commercial retail uses and 20,000 SF for warehouse or light industrial uses.

V. OFF STREET PARKING

A. Parking Required
Commercial Retail: 1 space/200sq. ft.
Office: 1 space/300sq. ft.
Storage, Warehouse, Distribution: 1 space/2 employees
All other parking will meet requirements of the Charleston County Zoning Code.

B. Parking lots shall not have more than 10 consecutive parking spaces without a landscape island.

VI. SCREENING AREAS/LANDSCAPE REQUIREMENTS

A. All landscape buffering shall follow the Charleston County standards unless other wise noted.

B. Perimeter landscape buffers shall be predominantly 20'. Some areas of 10' buffers are indicated on the preliminary site plan. In areas where utility or drainage easements

exist next to property lines , a 10' planting strip shall occur adjacent to the property line pending county approval. Planting requirements shall match county requirements for 20' and 10' buffers respectively. There will be a 10' landscape buffer against the proposed internal roadway with a requirement for an evergreen hedge and canopy trees every 40'.

C. There will be a 5' buffer along internal property lines with an evergreen buffer hedge requirement along subdivided tracts in the rear portion of the site unless 2 lots share joint circulation.

D. Interior Landscaping:
In parking areas, there shall be one (1) canopy tree planted per 10 parking spaces.

E. Tree Protection shall be per Charleston County Standards.

VII. **SIGNAGE**

A. One multi-tenant sign will be allowed at the entrance at US Hwy. 78, as shown on the plans. Interior lot signage will adhere to guidelines set forth in the Charleston County Zoning Ordinance Section 30.80.0631. See Attached memo on signage

VIII. **STREET/STORM DRAINAGE**

A. There shall be one (1) curb cut along US Hwy. 78, located as shown on the site plan.

B. Paving of entry drive, parking and interior drives shall be to Charleston County standards.

C. Storm drainage must be approved by the Charleston County Public Works Department and constructed to exceed their specifications. Water runoff from buildings, drives and parking areas shall be directed to meet the necessary agency approvals. The existing drainage basins at US Highway 78 and the drainage ditches throughout the site will be utilized as part of a drainage improvement system that will manage and treat stormwater runoff. Each individual lot or parcel developed is required to provide for its own stormwater detention/retention facility and comply with Charleston County Public Works and DHEC-OCRM stormwater requirements.

Office of Ocean and Coastal Resource Management

1362 McMillan Avenue, Suite 400
Charleston, SC 29405

(843) 744-5838 FAX (843) 744-5847

September 8, 1998

Mr. John Lester
HLA, Inc.
29 Leinbach Drive, Bldg. A-2
Charleston, SC 29407-6988

Re: McLaura Bluff and
Highway 78 Business Park
Charleston County
Proof of Coordination

Dear Mr. Lester:

The above referenced project will need several permits and certifications from DHEC-OCRM. However, the submitted plan appears amendable to the existing DHEC-OCRM regulatory constraints. If the site contains wetlands, a wetland delineation may be required. Also, DHEC-OCRM must issue a Stormwater Management and Sediment Control permit prior to any land disturbing activity on the site.

I am available to review more detailed plans of the project as it progresses. Presently, it appears you are aware of the various requirements relating to DHEC-OCRM approval of the project.

Sincerely,

Barbara Neale for

Joseph Fersner, P. E.
Manager, Engineering
and State Certification

BN/POC/jk

cc: Mr. Christopher L. Brooks
Mr. H. Stephen Snyder

SCDOT
South Carolina
Department of Transportation

6355 Fain Street, Building C
North Charleston, SC 29406

August 31, 1998

Mr. John Lester, PE, RLS
HLA, Inc.
29 Leinbach Drive, Bldg. A-2
Charleston, SC 29406-4989

Re: Proof of Coordination for McLaura Bluff Community (SC-61) and Business Park (US 78)

Dear Mr. Lester:

We have reviewed the preliminary plans for the McLaura Bluff Community development and concur with the placement of the subdivision entrance. Turn lanes will not be required for this development. When more detailed plans showing entrance and drainage details are available, we will be glad to review for permitting. Please design the entrance roadway to minimize stormwater runoff to the right-of-way and provide complete drainage analysis and summary with the encroachment permit application.

We have also reviewed plans for Business Park on US 78. It appears the entrance has been placed in accordance to SCDOT spacing standards. However, turn lanes may be required for this development. This issue as well as drainage will need to be thoroughly reviewed by the appropriate permitting office before encroachment permits can be released. If you have any questions, please call Brad Morrison or myself at 740-1655.

Sincerely,

Kirk M. Edmonds, P.E.
Resident Maintenance Engineer
Charleston County

cc: Brad Morrison, CEII

KME/bsm

To: Doug Rucker

Fax: 571-7599

From: Andrea Pietras

Date: 10/16/08

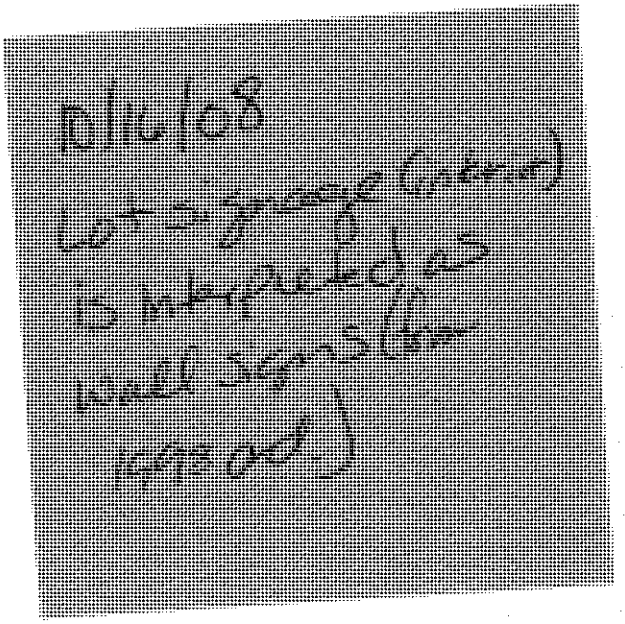
Phone: 843-202-7200

Fax: 843-202-7212

Message:
Attachment includes:

- Page from approved Planned Development guidelines regarding signs, which allows for 1 multi-tenant sign at the entrance at US Hwy 78 and interior lot signage (wall signs); and
- The 1998 Zoning Ordinance sign section with the applicable wall signage sections that apply.

Please let me know if you have any questions. If you'd like to discuss an amendment to this approved planned development, please contact our front desk at 202-7200 and ask for a rezoning pre-application conference.



Sec. 30.80.0631. Signs

This section provides comprehensive regulations for signage in Charleston County designed to promote public safety and welfare by reducing visual clutter along highways, facilitating the efficient transfer of information, and thus enhancing both traffic flow and the ability to locate needed goods and services.

I. General Provisions

A. Administration and Enforcement

1. Non-Commercial Copy Any sign authorized in this section is allowed to contain noncommercial copy in lieu of any other copy. Noncommercial on-premise signs are permitted in any zoning district provided that such signs comply with the regulations of that district.

2. Standards All permanent signs must meet the structural and installation standards of the Standard Building Code and electrical standards of the National Electrical Code as enforced by the Charleston County Building Inspection Services Department.

3. Permit required No signs, except real estate signs shall be erected in Charleston County unless a sign permit has been granted by the Zoning Administrator and the required fee has been paid.

4. Fees An applicant for a sign permit shall pay such fees as determined necessary for application processing. These fees are due upon submission of an application and shall be determined by County Council.

5. Permits A permanent tag shall be attached to every installed sign. The tag shall remain the property of Charleston County and shall not be removed without the Zoning Administrator's approval.

6. Documentation of Signs Upon request, the owner of any existing sign shall provide the Charleston County Zoning Administrator with evidence which documents the size, location and date of construction of existing signs.

7. Appeals Appeals for variances from the provisions of this section may be filed in accordance with the provisions of Section 96.60.10.

B. Prohibited Signs

1. Flashing Sign
2. Pennants, Streamers, and other Moving Devices
3. Signs Imitating Traffic Devices (Signal)

4. Signs Imitating Traffic Signs
5. Signs in Marshes
6. Signs in Right-of-Way
7. Snipe Signs
8. Vehicle Sign

C. House Numbers

All permanent free-standing On-Premise signs shall contain house numbers in four (4) inch numbers. This area shall not be included in the calculation of maximum sign area.

D. Illumination

1. No sign advertising a home occupation shall be illuminated.

2. All lighted On-Premise signs shall be placed no less than one hundred (l00') from property in an AR or R zoning district.

3. Indirectly illuminated Off-Premise Signs shall be placed no less than two-hundred (200) feet from property in an AR or R District.

4. Directly illuminated Off-Premise Signs shall be placed no less than four-hundred (400) feet from property in an AR or R District.

E. Signs In Disrepair

Signs in disrepair shall be repaired, renovated, or removed from the premises within sixty (60) days following notice by Zoning Administrator.

F. Signs Interfering with Vehicular Vision

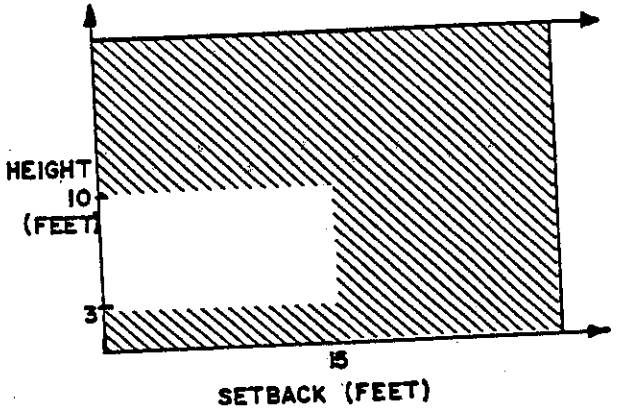
a. In the area near the entrance of a driveway, no sign shall obscure the travel vision from three (3) to ten (10) feet above ground level in triangular areas formed by measuring from the point of intersection of any front lot line and driveway, a distance of fifteen (15) feet along the front lot line and driveway and connecting the points to form a triangle. (See Exhibit A).

b. No sign or structure shall be erected so as to interfere with the vision of vehicles operated along any highway, street, road or driveway, or at any intersection of any street, highway or road with a railroad track. Signs determined by the Zoning Administrator to be in violation shall be removed or relocated immediately upon notice.

EXHIBIT I

ILLUSTRATION A

VISION WINDOW



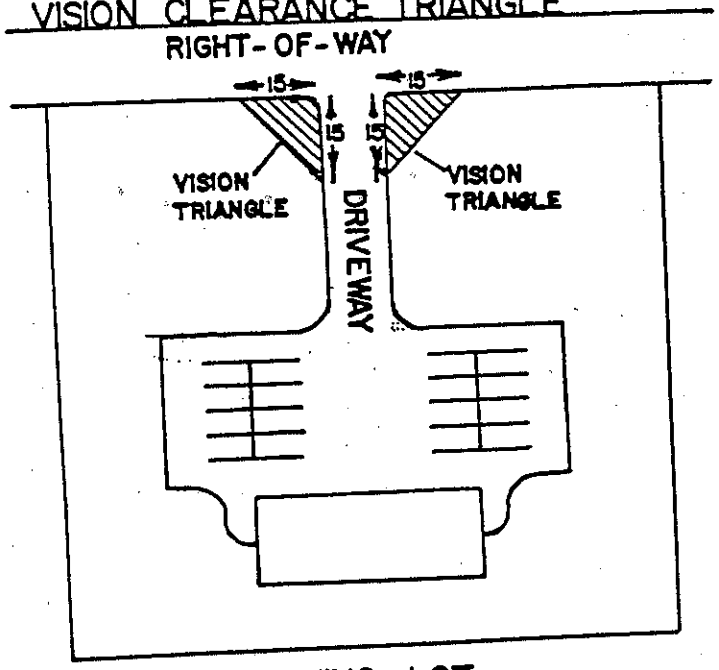
SIGNAGE ALLOWED

NO SIGNAGE ALLOWED

(TO SCALE) 1/2"= 5'

ILLUSTRATION B

VISION CLEARANCE TRIANGLE



SIGNAGE ALLOWED
(AS IN ILLUSTRATION A)

(NOT TO SCALE)

c. Where minimum setback and height requirements listed elsewhere in this section conflict with the vision clearance standards above, the more restrictive of the two shall apply.

II. On-Premise Signs

A. Free Standing Signs

1. Maximum size, height, width, length, number of sign faces, number of signs per establishment and required minimum height and setbacks are based upon establishment size and shall conform with Table A.

2. Readerboards must be attached to permanent free-standing signs and shall be authorized under the following conditions:

a. One (1) readerboard per zoning lot for single or multi-tenant structures containing office, commercial, or industrial uses;

b. five (5) square feet of readerboard may be provided for each separate business located in a multi-tenant structure;

c. total readerboard square footage shall not exceed one hundred (100) square feet;

d. freestanding signs utilizing readerboards shall not exceed a maximum of two hundred and fifty (250) square feet in area.

B. Wall/Facade Signs

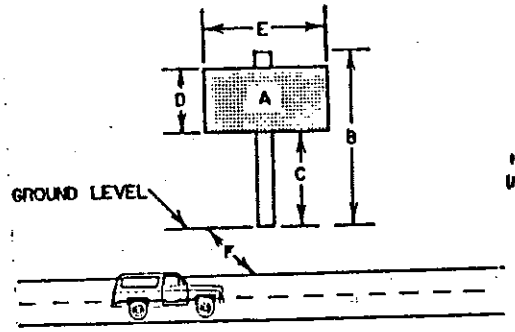
1. Two (2) signs shall be allowed per wall or facade but no more than four (4) per establishment. Total area of all signs shall not exceed square footage allowed in Table B.

2. Maximum size of wall/facade signs is dependent upon building frontage and setback and shall conform with Table B.

TABLE A
FREE STANDING ON-PREMISE SIGNS

REQUIREMENT	ZONING DISTRICT: AGRICULTURAL	RESIDENTIAL	OTHER
A Max. Size (sq. ft.)	10 32* *with c.u.p	Home Occupation: 4 sq. ft. All others: 10 sq. ft.	Gross Bldg. Size = Sign Size 0 - 2500 = 50 s.f. 2,500 - 25,000 = 100 s.f. 25,000 - 100,000 = 150 s.f. 100,000+ = 200 s.f.
B Max. Height (ft.)	14	5	20 with minimum setback. Up to 30 with additional setback (Sliding Scale: see below)
C Min. Height (ft.)	None	None	None
D Max. Width (Height of sign with face)	N/A	5	Ratio -- longest side: shortest side 5:1
E Max. Length (ft.)	N/A	5	Ratio -- longest side: shortest side 5:1
F Setback(s) (Front/Interior (ft.)	10/10	10/10	5/10
# Maximum Sign Faces	2 per sign	2 per sign	2 per sign
# of Signs Per Business	1 per frontage	1 per frontage	1 sign per 1000 ft/frontage Maximum: 3 per project Minimum: 1 per project

FREESTANDING SIGNS



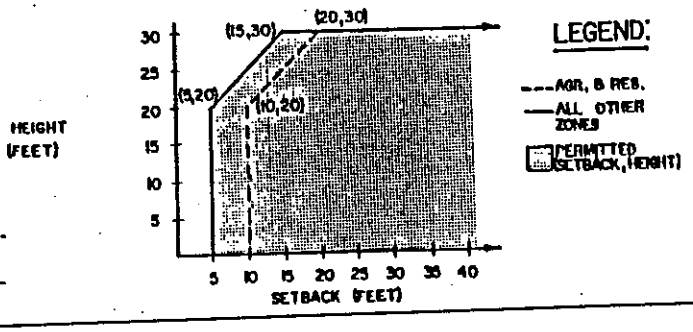


TABLE B

Wall/Facade Signs

Building Length Facing Street*	Setback**	Maximum Size (sq. ft.)
Building frontage of 50 ft. or less	0 - 99 ft. 100 - 399 ft. 400 or more ft.	50 100 150

Building Length Facing Street*	Setback**	Maximum Size* (sq. ft.)
Building frontage of more than 50 ft.	0 - 99 ft. 100 - 399 ft. 400 or more ft.	Bldg. Frontage x 1 15% Bldg. Frontage x 2 OR of Bldg. Frontage x 3 facade

*Use smaller of two sizes
**Setback measured from midpoint of structure facing street or driveway.

C. Special Signs

1. Maximum size, number, and height of special signs shall conform with Table C.

2. Temporary Signs

   a. Maximum size, number and height of temporary signs shall conform with Table C and the provisions below.

   b. Types: Commercial and non-commercial temporary signs of the following varieties are permitted:

      1. Banners

      2. Portable signs: Permitted in accordance with standards of the National Electrical Code and anchoring provisions of the Standard Building Code as enforced by the Charleston County Building Inspection Services Department.

c. Duration:

1. Non-Commercial-A maximum of thirty (30) days per event.

2. Commercial-A maximum of thirty (30) days, coinciding with the opening of a business.

3. Real Estate Signs

a. Maximum size, number and height of real estate signs shall conform with Table C.

b. Signs shall face a maximum of two directions, and may be mounted back-to-back or V'ed.

c. Where signs are V'ed, the space between panels shall not exceed three (3) feet at the point at which panels are closest, and the interior angle formed by signs shall not exceed sixty (60°) degrees. For purposes of these requirements, V'ed signs shall be counted as one (1) sign.

d. Where signs face two directions, whether back-to-back or V'ed, both signs must be the same standard size.

4. Flags used as Signs

a. Permit required: A permit shall be required for the installation of all flag poles or flag display devices erected on lots zoned or in multi-family, office, commercial, or industrial use.

b. Location/Engineering Review: Applicant must submit with the permit application a scaled site plan giving the location of flag pole(s) and complete dimensional and installation engineering data.

c. Clearance Certification: Applicant must provide documentation of minimum clearance from electric, telephone or cable TV lines as certified by the proper utility prior to issuance of permit, or installation.

d. Maximum size and number of flags used as signs, and height of flag poles shall conform with Table C.**

e. The American flags and the flag of the State of South Carolina are exempt from the provisions for maximum size of flags and maximum size of flagpoles in Table C, and no permit shall be required for the installation of said flags and flagpoles.

TABLE C

SPECIAL SIGNS			
TYPE	**MAXIMUM SIZE**	**MAXIMUM NUMBER**	**MINIMUM SETBACK MAXIMUM HEIGHT**
Real Estate	'For Sale' (Residential) 8 sq. ft. Other (Non-Residential) 48 sq. ft.	'For Sale' (Residential) 2 1 per frontage Other (Non-Residential) 1 per 1000 ft. Frontage Maximum: 3 per lot	'For Sale' 6 ft. (Residential) Other (Non-Residential) (see text) Max. Height: 15 ft.
Subdivision/Multi-Family I.D. Signs	32 sq. ft.	2 per entrance	Minimum setback: 5 ft. Maximum height: 15 ft.
Directional	3 sq. ft.	Unlimited	4 ft.
Temporary	40 sq. ft.	1 per lot per event	Minimum setback: 5 ft. Maximum height: 15 ft.
Flags	60 sq. ft.	3 per zoning lot	35 ft. or 15 ft. above highest point of roof

D. Amortization

1. All legally existing non-conforming permanent On-Premise signs shall be removed, altered or otherwise made to conform to the provisions of this ordinance. In order to allow a gradual, orderly transfer of signage which will preserve public perceptions of business identities and locations and not unduly burden business

owners with short-term transfer costs, the period for conformance shall be within seven (7) years of the date of adoption of this amendment.

2. All other On-Premise signs shall be removed, altered, or brought into compliance with the provisions of this Ordinance within six (6) months of ratification of this amendment.

III. Off-Premise Signs

A. All Off-Premise Signs shall be constructed in compliance with Outdoor Advertising of America Standards as allowed in Section 6-2, 6-3, 6-4, and 6-5.

B. Location and Setbacks

1. Off-Premise Signs may be installed as permitted in Article l0, Table I.

2. Permitted sizes, maximum height, minimum setbacks and location criteria shall be as listed in Table D.

C. Orientation

1. Signs shall face a maximum of two directions, and may be mounted back-to-back or V'ed.

2. Where signs are V'ed, the space between panels shall not exceed three (3) feet at the point at which panels are closest, and the interior angle formed by signs shall not exceed ninety degrees (90°).

D. Compatible Size Signs

Where signs face two directions, whether back-to-back or V'ed, both signs must be the same standard size.

E. Amortization

1. All legally existing non-conforming Off-Premise signs shall be removed, altered or otherwise made to conform to the provisions of this ordinance within five (5) years of the date of adoption of this amendment. (11/l9/91)

2. All other Off-premise signs shall be removed, altered, or brought into compliance with the provisions of this Ordinance within six (6) months of ratification of this amendment. (5/l9/87)

TABLE D

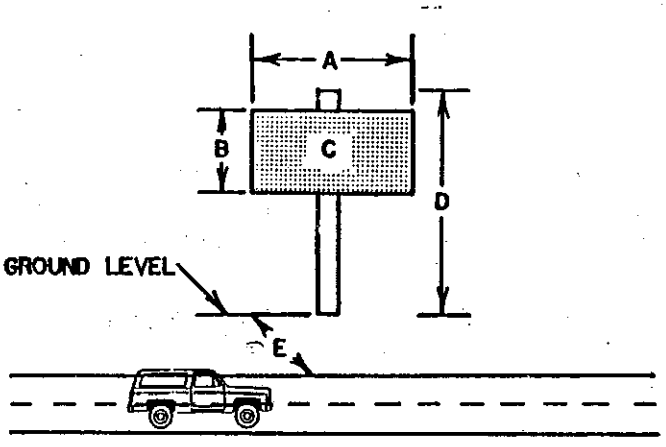
OFF-PREMISE SIGNS				
Permitted Sizes*				
A. Length (ft.)	48	36	24	14
B. Width (ft.)	14	10 ½	12	6
C. Area (sq. ft.)	672	378	288	84
D. Maximum Height(ft.)**	40			
E. Minimum Setback (ft.) (front/side)	25/20			
F. Location Criteria*** Distance from closest off-premise sign Distance from closest on-premise sign	1000 500			

NOTES

*All Off-Premise signs are permitted a ten (10) inch allowance in size in addition to permitted sizes.
Extensions to the basic rectangular Off-Premise outdoor advertising sign copy area may be a maximum of five (5) feet on the top; two (2) feet on the sides; and one (1) foot on the bottom.

**Adjacent to an elevated highway, signs shall not exceed twenty-five (25) feet in height above the road bed.

***Applies to signs on same side of road and is measured along the center line of the road from which sign is to be viewed.



REFERENCES

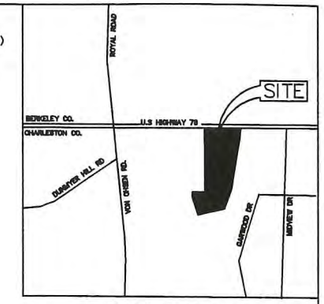
1. TMS NO. 388-00-00-163
2. PLAT BY WM. LINES DATED JANUARY, 1978. RECORDED IN PLAT BOOK S, PAGE 100. CHAS. CO. RMC
3. PLAT BY JAMES F. BENNETT DATED SEPTEMBER 5, 1979. RECORDED IN PLAT BOOK U, PAGE 127. CHAS. CO. RMC
4. PLAT BY E.M. SEABROOK DATED FEBUARY 9, 1981. RECORDED IN PLAT BOOK AC, PAGE 22. CHAS. CO. RMC
5. PLAT BY W.M LINES DATED OCTBER 14, 1985. RECORDED IN PLAT BOOK BE, PAGE 11. CHAS. CO. RMC

NOTES

1. PROPERTY IS LOCATED IN FLOOD ZONE C AS PER COMMUNITY PANEL NO 455413 0080 F DATED JAPRIL 17,1987.
2. AREA IS DETERMINED BY COORDINATE METHOD
3. ELEVATIONS BASED ON USGS DISC 10 347. LOCATED NEAR FIRST CHURCH OF GOD APPROX 41' SOUTH WEST OF PP#326284 ON U.S HIGHWAY 78. ELEVATION = 65.58' (NGVD 29)

LEGEND

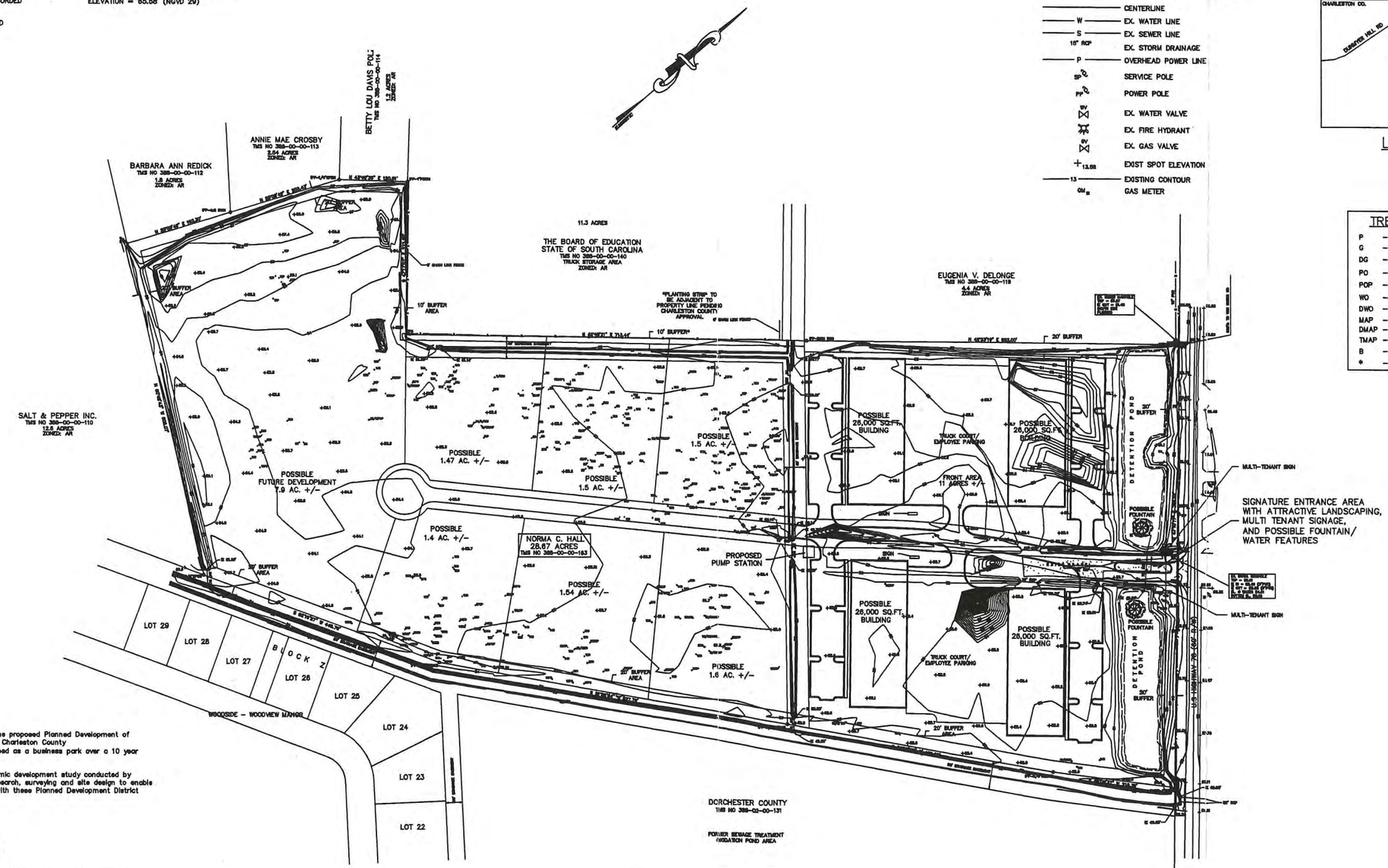
- BOUNDARY LINE & CORNER FOUND (AS DESCRIBED)
- BOUNDARY LINE & CORNER SET (5/8" REBAR)
- ADJACENT BOUNDARY LINE
- RIGHT OF WAY LINE
- EASEMENT LINE (AS DESCRIBED)
- CENTERLINE
- W — EX. WATER LINE
- S — EX. SEWER LINE
- 18" RCP — EX. STORM DRAINAGE
- P — OVERHEAD POWER LINE
- SP — SERVICE POLE
- PP — POWER POLE
- EX. WATER VALVE
- EX. FIRE HYDRANT
- EX. GAS VALVE
- +13.88 — EXIST SPOT ELEVATION
- 13 — EXISTING CONTOUR
- GM — GAS METER



LOCATION MAP
NOT TO SCALE

TREE LEGEND

P	–	PINE
G	–	GUM
DG	–	DOUBLE GUM
PO	–	PIN OAK
POP	–	POPLAR
WO	–	WATER OAK
DWO	–	DOUBLE WATER OAK
MAP	–	MAPLE
DMAP	–	DOUBLE MAPLE
TMAP	–	TRIPLE MAPLE
B	–	BEECH
*	–	DAMAGED



US HIGHWAY 78 BUSINESS PARK
PLANNED DEVELOPMENT GUIDELINES

August 14, 1998

I. PURPOSE, INTENT AND OBJECTIVES

The following guidelines have been created to direct the proposed Planned Development of 28.67 acres along the west side of US Highway 78 in Charleston County (TMS #388-00-00-163). This parcel is to be developed as a business park over a 10 year period.

The area was noted for these uses through an economic development study conducted by HLA for the county in 1995. HLA have performed research, surveying and site design to enable preparation of a preliminary site plan in conjunction with these Planned Development District Guidelines.

II. EXISTING SITE INFORMATION

- Existing Owner – Ms. Norma C. Hall
  c/o The BH Hall Company
  4940 Dorchester Road
  North Charleston, SC 29418
- Existing zoning – AR
- Site Soils
  Portsmouth (Po), Hockley (Ho), Rains (Ra), Rutledge (Rg), Quitman (Qu), Wargram (wgb).
- Water – A 24" CPW water main exists along US Hwy. 78 and will be extended into the site.
- Sewer – An 8" gravity main in US Hwy. 78 will be utilized after a gravity sewer main, pump station and force main system are installed on the site.
- Property is located in Flood Zone L as per Community Panel No. 45541300B0F dated April 17, 1987.
- Existing topography is mildly sloped toward US Highway 78 with elevations ranging from 51-58. Existing drainage basins and site ditches define some of the existing drainage pattern.

III. LAND USE/SITE DEVELOPMENT CONCEPT

The attached preliminary site plan indicates a primary access road that will provide access throughout the park. Water and sewer mains will be extended along the primary road infrastructure. A pump station will be located on the site. The final size and configuration of the noted lots will be market driven, therefore we request flexibility as to final tract sizes.

The primary business park land uses noted are office warehouse, warehouse distribution, and compatible trade service uses of a non-nuisance nature. We request the right to utilize any applicable uses under the industrial, communication, utilities, transportation, trade, services, culture, entertainment and recreation categories. The 11 acre tract at the front will be committed to more of an emphasis on business and trade services. Because of the US Highway 78 visibility and accessibility we request the flexibility to utilize part of this tract for office or commercial retail uses. We are promoting the acceptability of this option by requiring non-metal/bare block facade to the buildings facing Highway 78 and improvement of the ponds as aesthetic water features. We also recommend landscape requirements that would enhance, not block, views. A signature entrance area with multi- tenant ground signage is intended with lighted aerator fountains. We also have coordinated appropriate buffers for the rest of the adjacent offsite uses which include bus parking yards, filled sewage treatment lagoons, major drainage easements and a few homes. Please review the following guidelines for more information.

IV. SETBACK/LOT/HEIGHT/COVERAGE CRITERIA

A. The entire property shall comply with setback requirements as set forth in the Charleston County Zoning Ordinance except where noted. All buildings within the development shall fall within the following setbacks:

	(11 Acres)	Rear Area (Acres)
Front yard:	20 feet	20 feet
Rear yard:	20 feet	10 feet
Side yard:	10 feet	10 feet

B. Building heights shall meet the county requirements (35' maximum).
C. Maximum building coverage will be 40% for commercial retail and office uses and up to 60% for warehouse or light industrial uses.
D. Minimum lot width of 50' for office or commercial retail uses and 100' for warehouse or light industrial uses. Minimum lot size of 10,000 SF for office or commercial retail uses and 20,000 SF for warehouse or light industrial uses.V. OFF STREET PARKING

V. OFFSTREET PARKING

A. Parking Required
Commercial Retail: 1 space/200sq. ft.
Office: 1 space/300sq. ft.
Storage, Warehouse, Distribution: 1 space/2 employees
All other parking will meet requirements of the Charleston County Code.
B. Parking lots shall not have more than 10 consecutive parking spaces without a landscape island.

VI. SCREENING AREAS/LANDSCAPE REQUIREMENTS

A. All landscape buffering shall follow the Charleston County standards unless other wise noted.
B. Perimeter landscape buffers shall be predominantly 20'. Some areas of 10' buffers are indicated on the preliminary site plan. In areas where utility or drainage easements exist next to property lines , a 10' planting strip shall occur adjacent to the property line pending county approval. Planting requirements shall match county requirements for 20' and 10' buffers respectively. There will be a 10' landscape buffer against the proposed internal roadway with a requirement for an evergreen hedge and canopy trees every 40'.
C. There will be a 5' buffer along internal property lines with an evergreen buffer hedge requirement unless 2 lots share joint circulation.
D. Interior Landscaping:
In parking areas, there shall be one (1) canopy tree planted per 10 parking spaces.
E. Tree Protection shall be per Charleston County Standards.

VII. SIGNAGE

A. Two multi-tenant signs will be allowed at the entrance at US Hwy. 78, as shown on the plans, where interior lot signage will adhere to guidelines set forth in the Charleston County Zoning Ordinance Section 30.80.0631.

VIII. STREET/STORM DRAINAGE

A. There shall be one (1) curb cut along US Hwy. 78, loonted as shown on the site plan.
B. Paving of entry drive, parking and interior drives shall be asphalt and must be constructed per county standards.
C. Storm drainage must be approved by the Charleston County Public Works Department and constructed with their guidelines. Water runoff from buildings, drives and parking areas shall be directed to meet the necessary agency approvals. The existing drainage basins at US Highway 78 and the drainage ditches throughout the site will be utilized as part of a drainage improvement system that will manage and treat stormwater runoff.

GRAPHIC SCALE

100 0 100 200 400

(IN FEET)
1 inch = 100 ft.

HLA HOFFMAN LESTER ASSOCIATES, INC.
Land Planning • Civil Engineering • Landscape Architecture
Wetland Consulting • Land Surveying
29 LEINBACH DRIVE • CHARLESTON, S.C. • 29407 • (803) 763-1166

PRELIMINARY SITE PLAN

U.S HWY 78 BUSINESS PARK
CHARLESTON COUNTY, SOUTH CAROLINA

PROJECT 98080.00

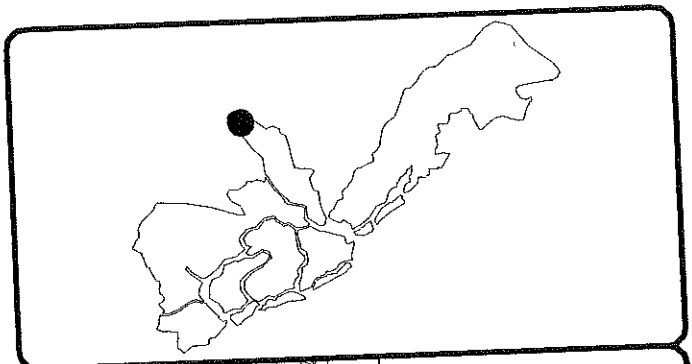
DATE:6-19-98
SCALE:1"=100'
DESIGN:
DRAWN: ADB
CHECK:

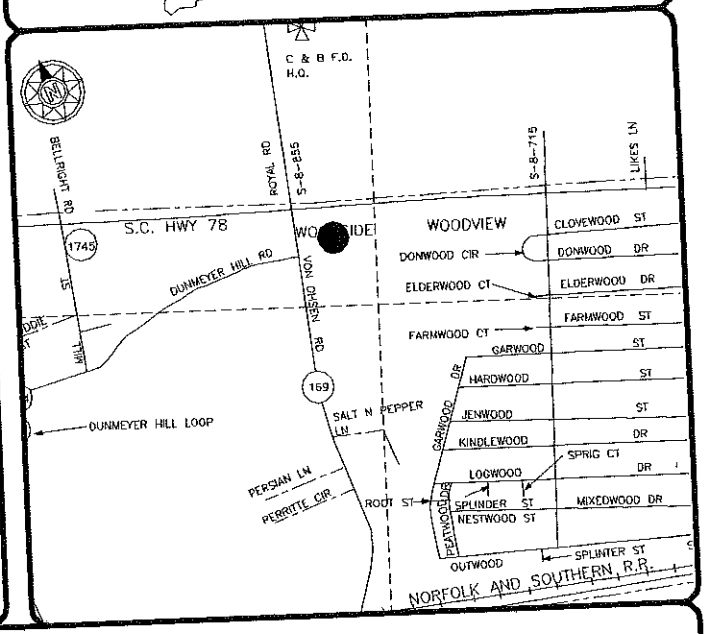
REVISIONS
REVISED: 8-3-98 BUFFERS AND ENTRANCE CHANGES ADB
REVISED: 8-17-98 ADDED SUMMARY ADB

SHEET 1 of 1

ZONING CASE 2845-C

DATE REC.: 10/23/98 **PLNG. BRD.:** 11/9/98
PUB. HEARING: 12/1/98 **COMM:** 12/10/98





EXISTING ZONING: Agricultural General (AG)

REQUESTED CHANGE: Planned Development (PD-70)

LOCATION: North Area; 10175 Highway 78

TAX MAP NO.: 388-00-00-163

PARCEL SIZE: 28.67

APPLICANT: Stan Hall
4940 Dorchester Road
North Charleston, SC 29418

OWNER: Norma C. Hall

2845-C

Existing Land Use

The subject property is comprised of 28.67 acres and has access to US Highway 78. Located along the entire eastern property line is a 50' drainage right-of-way. To the east of this right-of-way is a vacant 4.7 acre parcel zoned General Commercial (CG). Woodside Manor Subdivision and a vacant 11.9 acre former oxidation pond are located to the south of this commercial parcel and are zoned Single-Family Residential (RS-8). Just to the west of the subject property is a 4.4 acre undeveloped parcel zoned Agricultural Residential (AR). Occupying the two parcels to the west of this are a single-family residence, a tack shop (Carousel Tack Shop), and a horse riding school on properties zoned Agricultural Residential (AR). On the corner of US Highway 78 and Von Oshen Road is vacant commercial building zoned Community Commercial (CC). To the south of this parcel are several mobile homes zoned Agricultural Residential (AR). Also, located on an 11.3 acre tract to the west on a parcel zoned AR is the Summerville School Bus Maintenance Facility. There area a number of automotive repair businesses along with vacant undeveloped properties and one single-family residence located to the north across US Highway 78 that are in Berkeley County. This section of US Highway 78 is characterized mainly by commercial uses interspersed with single-family residential development along with undeveloped properties.

2845-C

Staff Analysis

1. The applicant is requesting that the subject property be rezoned from the Agricultural General (AG) District to a Planned Development (PD-70) District in order to develop the site as a business park over an approximate 10 year period. The primary business park land uses will be office warehouse, warehouse distribution, and compatible trade services of a non-nuisance nature. An approximate 11 acre portion having frontage on US Highway 78 and indicated on the site plan will be committed to more of an emphasis on business and trade services. Because of the high visibility and accessibility to US Highway 78, the applicant would like to utilize part of this area for office and commercial uses. For this portion of the development the applicant is requiring non-metal/bare block facade to the buildings facing US Highway 78 and will be making improvements to the ponds as aesthetic water features. The preliminary site plan indicates a primary access road that will provide access throughout the park. The final size and configuration of the proposed lots will be market driven, therefore the applicant is requesting flexibility as to the final tract sizes.

2. In 1995, Charleston County assembled an economic development study titled, "Comprehensive Development Sites Inventory". The document recommended two sites located on US Highway 78 in close proximity to the subject parcel for development as industrial, light industrial, manufacturing, warehouse, or service/distribution uses. The Suitability Analysis stated that these locations were prime for such development due to their proximity to rail service, interstate highways (I-26 & I-95) and the Charleston International Airport. In addition to access, the sites are also easily serviceable by all utilities and the soils and topography are suitable for such development.

3. The development guidelines for this proposed planned development limit the uses to eliminate any possible uses that may contain nuisances such as sewage treatment plants, waste disposal facilities, chemical operations, junk or salvage yards, airports/airstrips, logging camps, sawmills, sexually oriented businesses and outdoor gun ranges. The planned development district offers control over future development at this location. Because of this control over the uses along with the suggestions of the "Comprehensive Development Sites Inventory", the proposed project is suitable for this site and should not have a negative impact on the surrounding properties.

Recommendation:

APPROVAL

NOTE: If approved, a deceleration lane on US Highway 78 as required by County Planning Department and permitted by SC DOT shall be provided.

Rezoning Information Sheet

The top portion of this sheet must be completed and signed by the applicant and a zoning inspector prior to submitting the application.

Current Information

Tax Map Number(s) 388-00-00-163

Address WEST SIDE OF US HWY 78 NORTH OF LADSON

Existing Zoning District AR

Proposed Use(s) BUSINESS SERVICE AND LIGHT INDUSTRIAL

Land Use Code(s) 4000,5500, 3100,4100,5000,5100,5200,5300,5400,5600,5700,6000,6100,6200

District(s) Allowing Proposed Use(s) IH, IL, CG, CC, CH, P, OG

To the best of my knowledge, the above information is accurate.

Applicant's Signature 8/28/98 Date

Zoning Signature Date

For office use only:

Prior History

Has this property been cited for a zoning violation? ☐ Yes ☑ No

Date _____ Type _____

Have rezoning applications been submitted previously for this property? ☐ Yes ☐ No

1. Request Number _____ Date _____ Decision(App/Dis) _____
2. Request Number _____ Date _____ Decision(App/Dis) _____
3. Request Number _____ Date _____ Decision(App/Dis) _____

Application Number _____

Date Submitted _____

Amount Received _____ ☐ **Cash** ☐ **Check**

Receipt Number _____

10-22-98

Planner's Signature **Date**

Revised April 1997

Kimley»Horn

February 21, 2022

To: Josh Johnson, P.E., PTOE
District Traffic Engineer
SCDOT District 6

From: Dillon Turner, PE, PTOE
Kimley-Horn

Elms Glen Residential Development Traffic Impact Analysis
Response to SCDOT Comments

Josh:

Kimley-Horn submitted the ***Elms Glen Residential Development Traffic Impact Analysis*** to the South Carolina Department of Transportation (SCDOT) via email on Thursday, December 23, 2021.

You had the following comments sent to Kimley-Horn via email on Wednesday, December 29, 2021:

1. The right-turn lane analysis worksheet is missing for site access 2.
2. Were signal timings also optimized in the 'no build' condition? The TIA can't take credit for optimizing in the 'build' condition unless timings are also optimized in the 'no build' condition. Additionally, to use signal timing changes as a solution, we will need to review the signal timing reports from Synchro to ensure reasonable splits and other timing parameters are used (Synchro tends to use unreasonably short cycles and splits).
3. No left-turn lane is recommended at site access 2, but the chart shows the plotted point where it may be warranted. Combined with the queueing information from the analysis which could back up traffic through this intersection (and thus block the ability for a left turn from the southbound through lane), it appears a left-turn lane at this site access may be needed.

Our responses to the above comments were submitted via email on Monday January 31, 2022 and approved via email on Thursday, February 3, 2022. Our responses to comments are as follows:

1. The right-turn lane analysis worksheet is missing for site access 2.
    - The right-turn lane analysis worksheet is attached to this memorandum.
2. Were signal timings also optimized in the 'no build' condition? The TIA can't take credit for optimizing in the 'build' condition unless timings are also optimized in the 'no build' condition. Additionally, to use signal timing changes as a solution, we will need to review the signal timing reports from Synchro to ensure reasonable splits and other timing parameters are used (Synchro tends to use unreasonably short cycles and splits).
    - In the TIA, the timings were not optimized in the no build. However, we did a supplemental analysis with the no build (with optimized splits) and build with optimized splits. The Synchro files and table (Attachment 2) are attached.
    - The build operates better than then background even with more traffic volume.
        i. As we explored this, there is something with the southbound left-turn volume affecting the eastbound right-turn delay.
            1. In the AM no-build condition, the southbound left-turn volume is 177 vehicles and the eastbound right-turn delay is 109.2 seconds

2. In the AM build condition, the southbound left-turn volume is 179 vehicles and the eastbound right-turn delay is 84.2 seconds, in the same build file, if we drop the volume back down to no-build (177), the eastbound right-turn lane increases to 115.4 seconds.

3. No left-turn lane is recommended at site access 2, but the chart shows the plotted point where it may be warranted. Combined with the queueing information from the analysis which could back up traffic through this intersection (and thus block the ability for a left turn from the southbound through lane), it appears a left-turn lane at this site access may be needed.

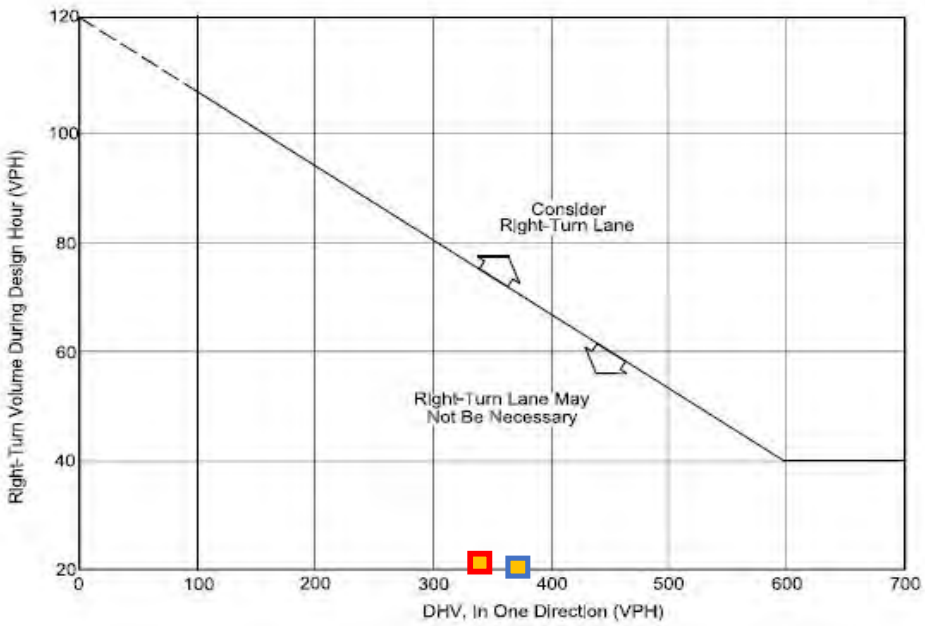
   - We mistakenly left-out the SimTraffic files (attached to this email in Attachment 3). The SimTraffic files show that the 95th percentile southbound left-turn queue at Site Access #2 was 86' in the AM peak hour and 71' in the PM peak hour (so just over 3 cars). For SimTraffic we allowed for the NBT traffic on Von Ohsen Road to block the access to be mimic what would happen in the field.
   - Also, the left-turn lane was not warranted in the AM peak hour (by a significant margin) and just at the warrant line in the PM peak hour
     i. *Therefore, Kimley-Horn does not think the southbound left-turn lane into Site Access #2 is necessary.*

Attachments:

Attachment 1 – Site Access #2 Right-Turn Lane Analysis Worksheet

Attachment 2 – Synchro Summary Table for Von Ohsen Road/Royale Road at US 78 with Updated Traffic Signal Splits

Attachment 3 – SimTraffic Queues for Build-Out Conditions



Note: For highways with a design speed below 50 miles per hour with a DHV < 300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given:	Design Speed	=	35 miles per hour
	DHV	=	250 vehicles per hour
	Right Turns	=	100 vehicles per hour

Problem: Determine if a right-turn lane is necessary.

Solution: To read the vertical axis, use 100 – 20 = 80 vehicles per hour. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A

Von Ohsen Road at Site Access #2

Northbound	Right	DHV	RTs
	2028 Build AM	389	3
	2028 Build PM	343	15

Von Ohsen Road/Royle Road at US 78 LOS (Delay) Signal Timing Mitigation										
Condition	Measure	EB (US 78)		WB (US 78)		NB (Von Ohsen Road)		SB (Royle Road)		Intersection
		EBL	EBTR	WBL	WBTR	NBL	NBTR	SBL	NBTR	
AM Peak Hour										
2028 No-Build	LOS (Delay)	F (93.7)		D (39.0)		F (99.8)		D (46.5)		E (73.4)
	Synchro 95th Q	134'	#1071'	66'	468'	44'	#595'	#215'	290'	
2028 Build	LOS (Delay)	F (73.2)		D (36.4)		F (107.3)		D (47.0)		E (66.7)
	Synchro 95th Q	#153'	#1094'	68'	#550'	57'	#623'	#220'	293'	
PM Peak Hour										
2028 No-Build	LOS (Delay)	F (112.5)		F (162.8)		C (32.7)		D (51.2)		F (106.2)
	Synchro 95th Q	#247'	#833'	#306'	#1085'	63'	341'	112'	414'	
2028 Build	LOS (Delay)	F (115.1)		F (147.4)		C (31.7)		D (51.5)		F (101.2)
	Synchro 95th Q	#246'	#917'	#318'	#1127'	75'	#362'	117'	423'	
	Existing Storage	125'		250'		250'		150'		

Notes:

1. Delay represented in sec/veh
2. # - 95th percentile volume exceeds capacity, queue may be longer.

Intersection: 1: Equipment Share & US 78

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	36	89
Average Queue (ft)	9	37
95th Queue (ft)	31	74
Link Distance (ft)		882
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Von Ohsen Road & Dunmeyer Hill Road/Site Access #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	234	125	200	140
Average Queue (ft)	86	45	49	16
95th Queue (ft)	235	104	151	86
Link Distance (ft)	946	598	1826	310
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Von Ohsen Road/Royle Road & US 78

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	250	1811	275	638	250	395	285	499
Average Queue (ft)	193	1726	117	333	101	357	162	237
95th Queue (ft)	324	2032	284	569	265	432	290	553
Link Distance (ft)		1756		1144		310		1106
Upstream Blk Time (%)		72				40		1
Queuing Penalty (veh)		0				191		0
Storage Bay Dist (ft)	150		175		150		200	
Storage Blk Time (%)	10	59	0	34	0	69	18	7
Queuing Penalty (veh)	82	112	0	30	0	36	68	12

Intersection: 1: Equipment Share & US 78

Movement	EB	EB	WB	WB	NB
Directions Served	T	R	L	T	LR
Maximum Queue (ft)	2	2	174	1018	626
Average Queue (ft)	0	0	83	452	244
95th Queue (ft)	2	2	210	1115	664
Link Distance (ft)	1144			1207	882
Upstream Blk Time (%)				1	3
Queuing Penalty (veh)				11	0
Storage Bay Dist (ft)		150	150		
Storage Blk Time (%)			0	39	
Queuing Penalty (veh)			0	26	

Intersection: 2: Von Ohsen Road & Dunmeyer Hill Road/Site Access #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	100	44	66	114
Average Queue (ft)	37	18	3	17
95th Queue (ft)	78	44	33	71
Link Distance (ft)	946	598	1826	310
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Von Ohsen Road/Royle Road & US 78

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	250	1749	275	1159	249	365	299	516
Average Queue (ft)	198	1057	218	1112	78	207	106	252
95th Queue (ft)	319	1951	358	1295	199	334	239	421
Link Distance (ft)		1756		1144		310		1106
Upstream Blk Time (%)		20		21		3		
Queuing Penalty (veh)		0		177		14		
Storage Bay Dist (ft)	150		175		150		200	
Storage Blk Time (%)	10	60	6	62	6	23	0	15
Queuing Penalty (veh)	62	103	43	145	19	14	1	21

Elms Glen Residential Development

Traffic Impact Analysis

Ladson, South Carolina

Prepared for

Stanley Martin Homes, LLC

Prepared by

Kimley»Horn

December 2021

Elms Glen Residential Development

Traffic Impact Analysis

Ladson, South Carolina

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December 2021

115 Fairchild Street, Suite 250
Charleston, South Carolina, 29492

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1 Executive Summary

The proposed Elms Glen Residential Development is located on the southeast corner of US 78 at Von Ohsen Road in Charleston County, SC. The proposed residential development is planned to consist of 141 single family houses and 167 town houses. Based on the preliminary site plan, it is assumed that the project will provide access via two access points:

- One proposed full-movement driveway along Von Ohsen Road to form a fourth leg at the intersection with Dunmeyer Hill Road
- One existing full-movement driveway along US 78 that serves the EquipmentShare development.

It was assumed that the development will be built and fully occupied by 2028. This TIA summarizes the results of traffic operations under 2021 Existing, 2028 No-Build, and 2028 Build conditions during the AM and PM peak hours at the following three study intersections:

1) EquipmentShare Access/Site Driveway #1at US 78 – Unsignalized, full-movement
2) Von Ohsen Road at Dunmeyer Hill Road/Site Access #2 – Unsignalized, full-movement
3) Von Ohsen Road/Royle Road at US 78 – Signalized

Kimley-Horn was retained to determine the potential traffic impacts of this development and identify transportation improvements that may be required to accommodate these impacts in accordance with the guidelines set forth in the South Carolina Department of Transportation (SCDOT) Access and Roadside Management Standards (ARMS) Manual and SCDOT Roadway Design Manual. This report presents trip generation, trip distribution, capacity analyses, and recommendations for transportation improvements required to mitigate anticipated traffic demands produced by the subject development.

Based on the capacity analyses performed at each of the identified study intersections, along with review of the auxiliary turn-lane warrants contained herein, the following improvements have been identified to mitigate the impact of the proposed development on the adjacent street network under 2028 Build Conditions. Recommended lane geometry improvements can be seen in **Figure 1**.

EquipmentShare Access/Site Access #1 at US 78

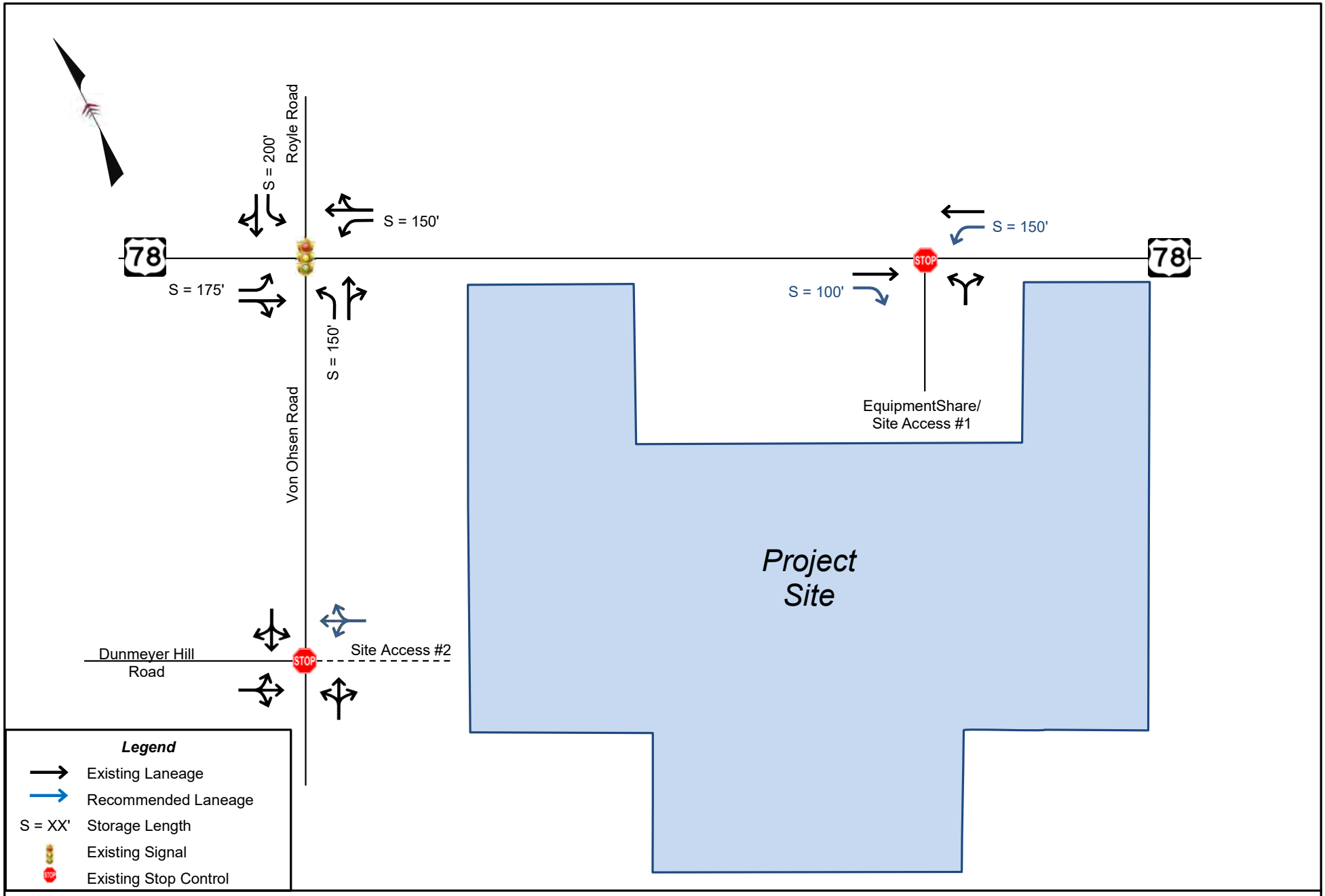
- Construct a westbound left-turn lane along US 78. The westbound left-turn lane should be designed per SCDOT guidelines.
- Construct an eastbound right-turn lane along US 78. The eastbound right-turn lane should be designed per SCDOT Guidelines. The eastbound right-turn lane is an accordance with the Planned Unit Development (PUD) agreement.

Von Ohsen Road at Dunmeyer Hill Road/Site Access #2

- Construct the site access with one egress lane and one ingress lane.

Von Ohsen Road/Royle Road at US 78

- Optimize the traffic signal splits during the AM and PM peak hours.



Kimley»Horn

Elms Glen Residential Development TIA

Figure 1 - 2028 Build Recommended Geometry

2 Introduction

The proposed Elms Glen Residential Development is located on the southeast corner of US 78 at Von Ohsen Road in Charleston County, SC. The proposed residential development is planned to consist of 141 single family houses and 167 town houses. Based on the preliminary site plan, it is assumed that the project will provide access via two access points:

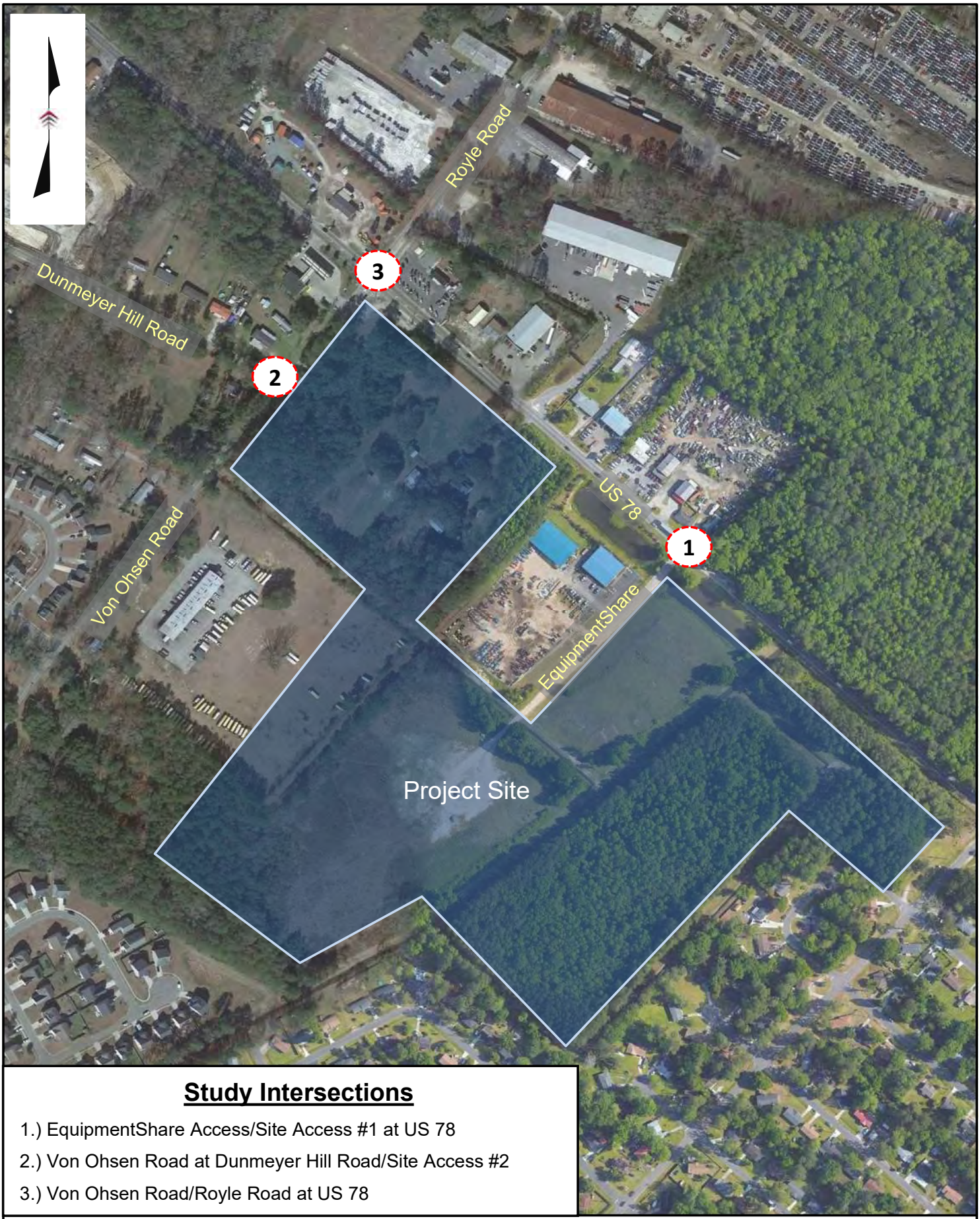
- One proposed full-movement driveway along Von Ohsen Road to form a fourth leg at the intersection with Dunmeyer Hill Road
- One existing full-movement driveway along US 78 that serves the EquipmentShare development.

The location of the proposed development and current site plan are provided in **Figure 2** and **Appendix A**, respectively.

It was assumed that the development will be built and fully occupied by 2028. This TIA summarizes the results of traffic operations under 2021 Existing, 2028 No-Build, and 2028 Build conditions during the AM and PM peak hours at the following three study intersections:

1) EquipmentShare Access/Site Driveway #1at US 78 – Unsignalized, full-movement
2) Von Ohsen Road at Dunmeyer Hill Road/Site Access #2 – Unsignalized, full-movement
3) Von Ohsen Road/Royle Road at US 78 – Signalized

Kimley-Horn was retained to determine the potential traffic impacts of this development and identify transportation improvements that may be required to accommodate these impacts in accordance with the guidelines set forth in the South Carolina Department of Transportation (SCDOT) Access and Roadside Management Standards (ARMS) Manual and SCDOT Roadway Design Manual. This report presents trip generation, trip distribution, capacity analyses, and recommendations for transportation improvements required to mitigate anticipated traffic demands produced by the subject development.



Study Intersections

1.) EquipmentShare Access/Site Access #1 at US 78

2.) Von Ohsen Road at Dunmeyer Hill Road/Site Access #2

3.) Von Ohsen Road/Royle Road at US 78

Kimley»Horn

Elms Glen Residential Development TIA

Figure 2 - Site Location and Study Area Map

3 Existing and Future No-Build Conditions

Key characteristics of each of the major roadways within the project study area are described below.

Von Ohsen Road is a two-lane, undivided, urban major collector with a posted speed limit of 35 miles per hour (mph). Based upon SCDOT annual average daily traffic (AADT) data, 5,700 vehicles per day traveled along Von Ohsen Road in 2019 at count station 10-055 located southwest of the Dunmeyer Hill Road intersection.

US 78 is a two-lane, undivided, urban principal arterial with a posted speed limit of 45 mph. Based upon SCDOT AADT data, 15,500 vehicles per day traveled along US 78 in 2019 at count station 10-0182 located southeast of the Von Ohsen intersection.

The existing geometry and traffic control for the study area intersections is illustrated in **Figure 3**.

3.1 2021 Existing Traffic Volume Development

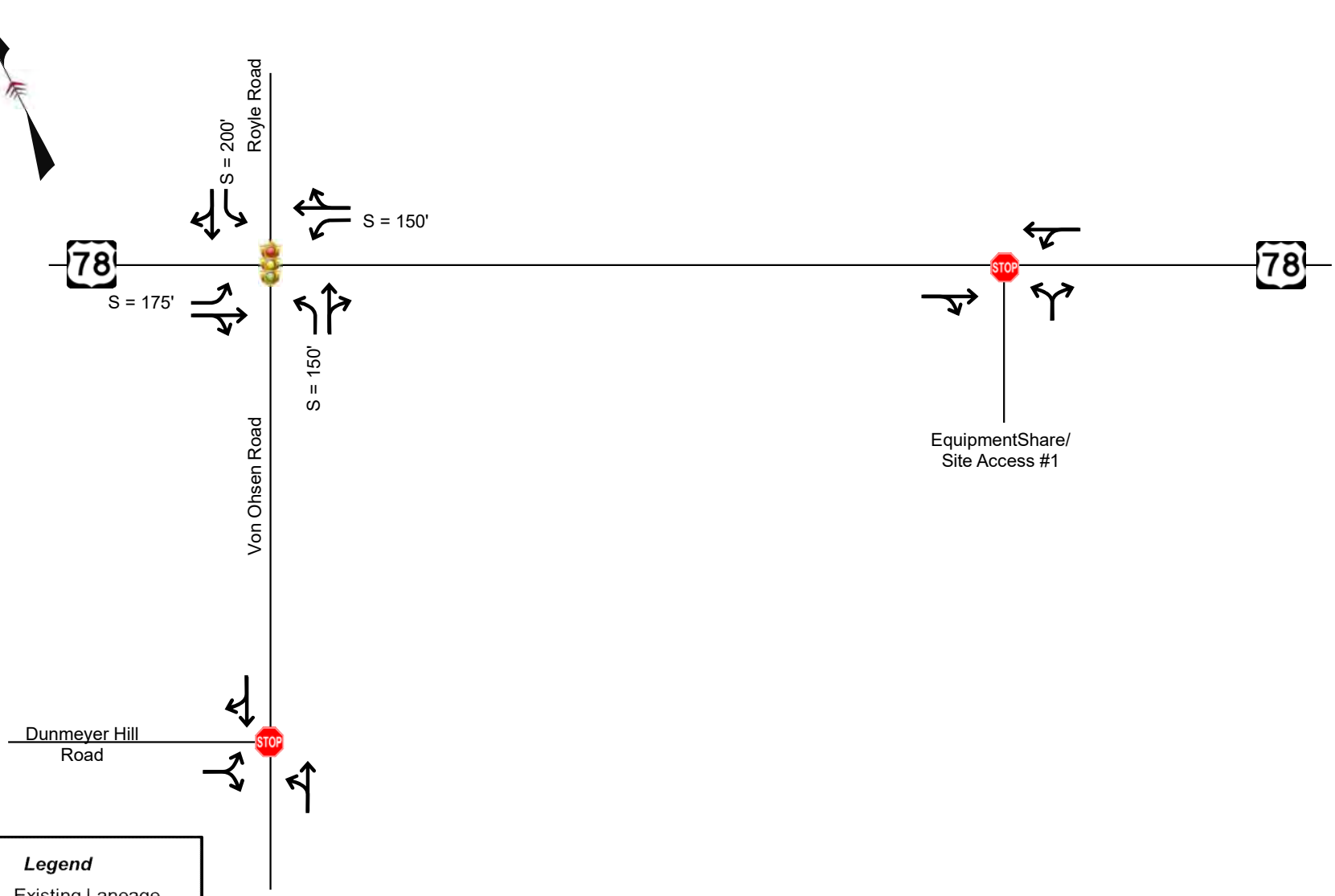
Traffic data was not collected for the TIA. Instead, peak hour intersection turning movement counts from 2019 were obtained through SCDOT for the intersection of Von Ohsen Road/Royle Road at US 78. A growth rate was developed by using historic AADT data provided through SCDOT along Von Ohsen Road and US 78. Based on the results, a growth rate of 3.0% was determined, and used to grow the 2019 turning movement counts to the 2021 Existing AM and PM peak hour traffic volumes.

Peak hour intersection turning movement counts for the intersections of EquipmentShare Access at US 78 and Von Ohsen Road at Dunmeyer Road were obtained from the ***Elms Glen Traffic Impact Analysis*** (Bihl Engineering, May 2021).

Due to the ongoing COVID-19 pandemic, the 2021 traffic volumes were factored by 15% during the AM peak hour and 2% during the PM peak hour in accordance with SCDOT District 6 guidelines. These 2021 Existing peak hour traffic volumes can be seen in **Figure 4**. The growth rate calculations and existing traffic data used for this study are provided in **Appendix A**.

3.2 2028 No-Build Traffic Volume Development

It was assumed that the development will be built and fully occupied by 2028. Therefore, future traffic volumes were developed for the year 2028. 2021 Existing traffic volumes were adjusted by a growth rate of 3% per year for seven years to obtain 2028 No-Build traffic volumes. No approved, committed developments were identified within the study area. **Figure 5** illustrates the 2028 No-Build condition traffic volumes for the AM and PM peak hours.



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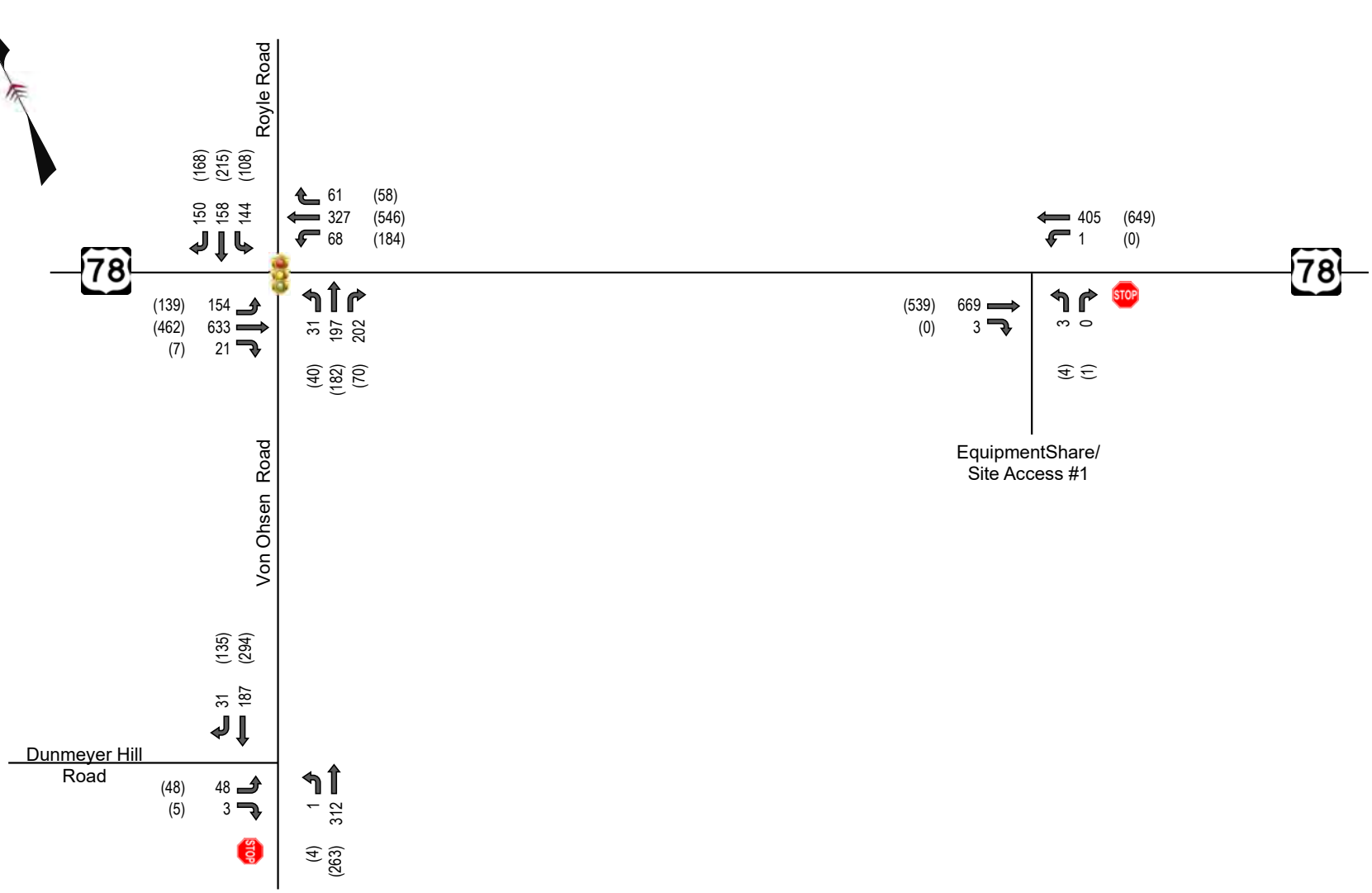
Elms Glen Residential Development TIA

Figure 3 - Existing Lane Geometry and Traffic Control



Legend

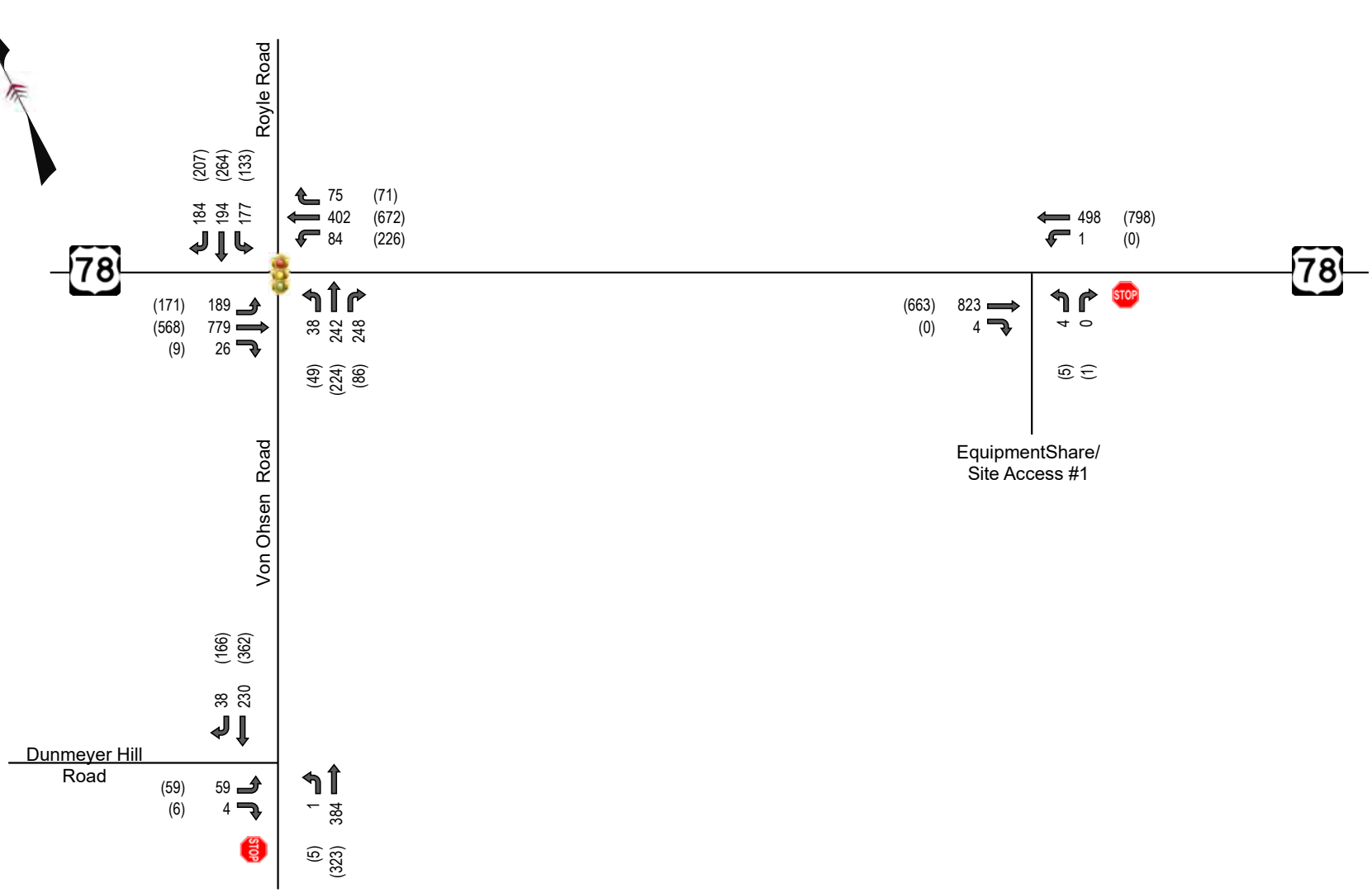
xx AM Peak-Hour Traffic Volumes

(xx) PM Peak-Hour Traffic Volumes

Kimley»Horn

Elms Glen Residential Development TIA

Figure 4 - 2021 Existing Peak-Hour Traffic Volumes



Legend

xx AM Peak-Hour Traffic Volumes

(xx) PM Peak-Hour Traffic Volumes

Kimley»Horn

Elms Glen Residential Development TIA

Figure 5 - 2028 No-Build Peak-Hour Traffic Volumes

4 Project Traffic

4.1 Trip Generation

The trip generation rates and equations published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition* were used to estimate the trip generation potential for the development. The analysis was performed using the information provided for the following land use codes (LUCs):

- LUC 210 – Single-Family Detached Housing
- LUC 220 – Multifamily Housing (Low-Rise)

Due to the residential, single-land-use nature of the development, internal capture and pass-by trip reductions were not considered in the trip generation analysis.

The estimated trip generation for the Elms Glen Residential Development is summarized in **Table 1**, which indicates that the development is anticipated to generate 183 trips (44 in/139 out) during the AM peak hour and 234 trips (148 in/86 out) during the PM peak hour.

Table 1 – Trip Generation Summary

Trip Generation									
Land Use	Intensity	Units	Daily	AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out
Residential Land Uses			2,648	183	44	139	234	148	86
210 - Single-Family Detached Housing	141	DU	1,426	105	26	79	141	89	52
220 - Multifamily Housing (Low-Rise)	167	DU	1,222	78	18	60	93	59	34
Subtotal			2,648	183	44	139	234	148	86
Internal Capture			0	0	0	0	0	0	0
Pass-By			0	0	0	0	0	0	0
Total Net New External Trips			2,648	183	44	139	234	148	86

Note: Trip generation was calculated using the following data:

Daily Traffic Generation

Residential Land Uses

210 - Single-Family Detached Housing	ITE 210	=	LN (T) = 0.92 * LN (X) + (2.71); (50 % In; 50 % Out)
220 - Multifamily Housing (Low-Rise)	ITE 220	=	T = 7.56 * (X) + (-40.86); (50 % In; 50 % Out)

AM Peak-Hour Traffic Generation

Residential Land Uses

210 - Single-Family Detached Housing	ITE 210	=	T = 0.71 * (X) + (4.8); (25 % In; 75 % Out)
220 - Multifamily Housing (Low-Rise)	ITE 220	=	LN (T) = 0.95 * LN (X) + (-0.51); (23 % In; 77 % Out)

PM Peak-Hour Traffic Generation

Residential Land Uses

210 - Single-Family Detached Housing	ITE 210	=	LN (T) = 0.96 * LN (X) + (0.2); (63 % In; 37 % Out)
220 - Multifamily Housing (Low-Rise)	ITE 220	=	LN (T) = 0.89 * LN (X) + (-0.02); (63 % In; 37 % Out)

4.2 Trip Distribution & Assignment

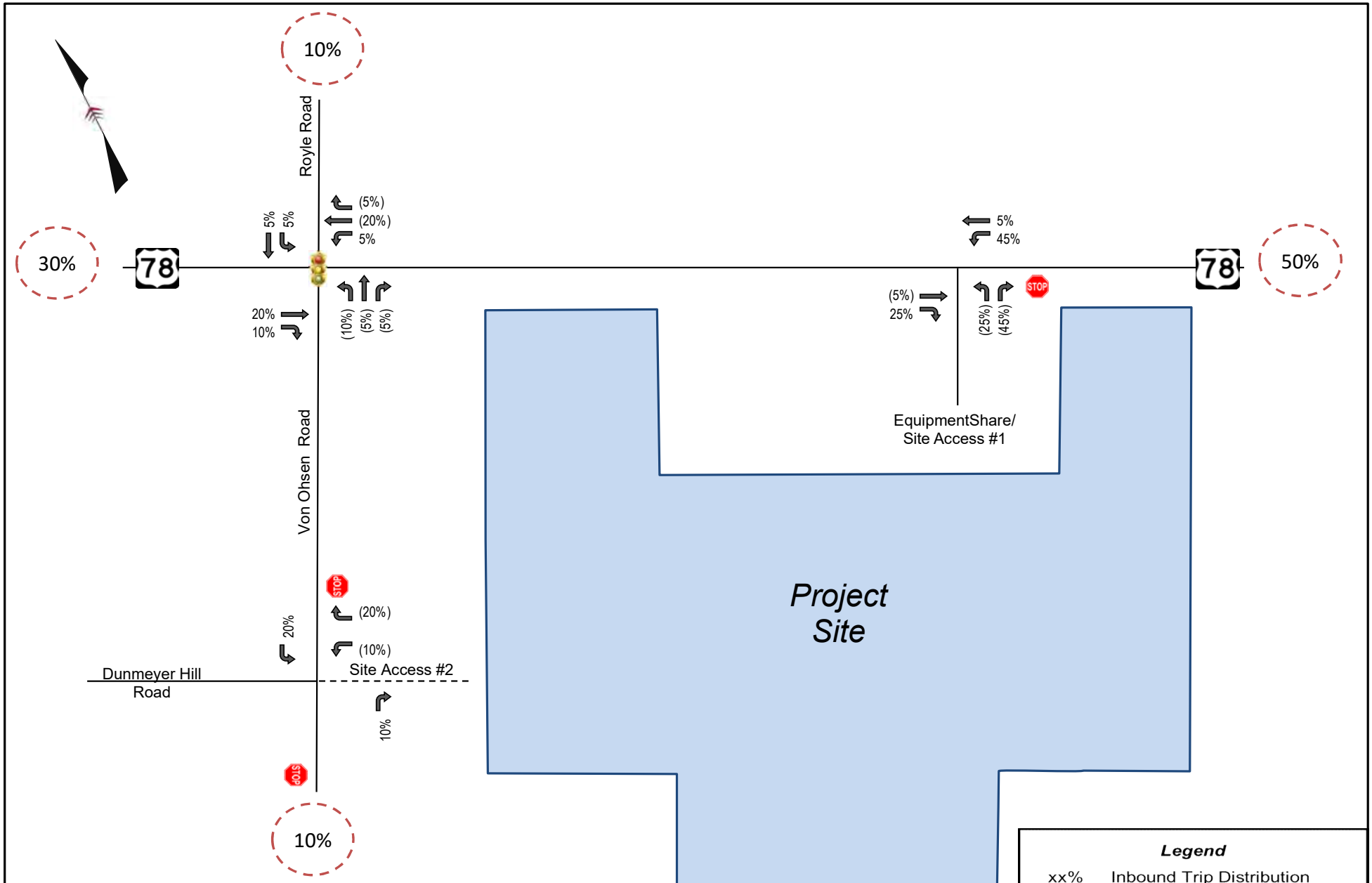
New external trips generated by the proposed development were distributed and assigned to the surrounding roadway network based on existing travel patterns, surrounding land uses, and the proposed site layout. The trip distribution percentages used in this analysis are as follows.

- 30% to/from the West via US 78
- 50% to/from the East via US 78
- 10% to/from the North via Royle Road
- 10% to/from the South via Von Ohsen Road

The site trip distribution and proposed new external project trips are illustrated in **Figure 6** and **Figure 7,** respectively.

4.3 2028 Build Traffic Development

The Elms Glen Residential Development project traffic volumes were added to the 2028 No-Build traffic volumes to develop the 2028 Build traffic volumes. **Figure 8** illustrates the 2028 Build traffic volumes for the AM and PM peak hours.



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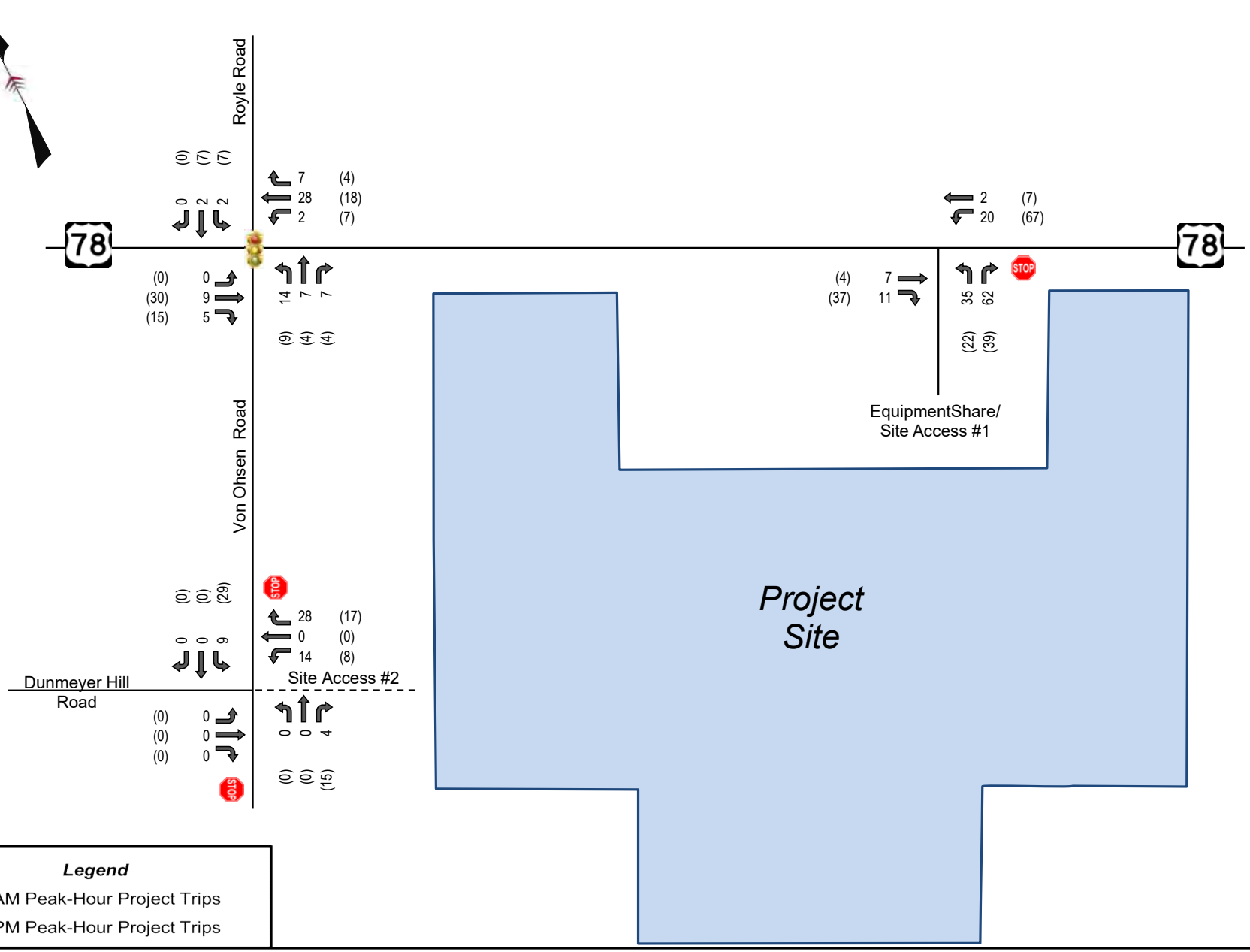
Elms Glen Residential Development TIA

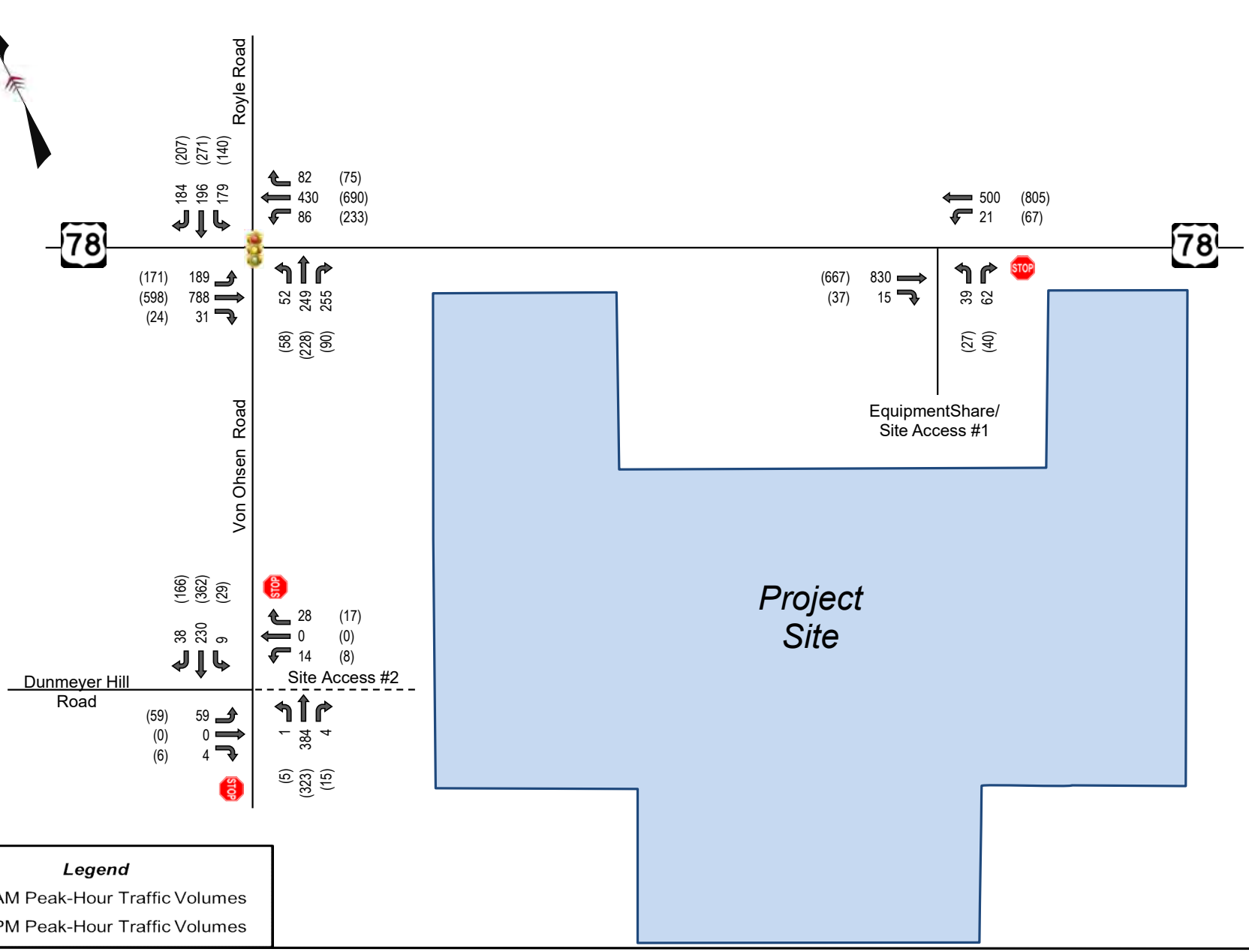
Figure 6 - Project Trip Distribution and Assignment



Kimley»Horn

Elms Glen Residential Development TIA

Figure 7 - 2028 Build Project Trips



Legend

xx AM Peak-Hour Traffic Volumes

(xx) PM Peak-Hour Traffic Volumes

Kimley»Horn

Elms Glen Residential Development TIA

Figure 8 - 2028 Build Peak-Hour Traffic Volumes

5 Capacity Analysis

Capacity/level-of-Service (LOS) analyses were conducted using *Highway Capacity Manual*, *6th Edition* (HCM6) methodologies in Synchro Version 11 traffic analysis software. Capacity analyses were conducted for the AM and PM peak hours under 2021 Existing, 2028 No-Build, and 2028 Build conditions.

As defined by HCM6, intersection level of service (LOS) grades range from LOS A to LOS F, which are directly related to the level of control delay at the intersection and characterize the operational conditions of the intersection traffic flow. LOS A operations typically represent ideal, free-flow conditions where vehicles experience little to no delays, and LOS F operations typically represent poor, gridlocked conditions with high vehicular delays, and are generally considered undesirable. **Table 2** lists the LOS control delay thresholds published *in HCM6* for signalized and unsignalized intersections.

Table 2 – *HCM* Level of Service Criteria

LOS	Control Delay per Vehicle (sec/veh)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

As part of the intersection analysis, SCDOT's default Synchro parameters were utilized. Existing peak-hour factors (PHFs) were utilized for the existing scenarios and the PHFs for the future-year scenarios were adjusted to a minimum of 0.90 and maximum of 0.95. Existing heavy vehicle percentages were utilized for all scenarios, with a minimum of 2% considered.

The following sections outline the results of the capacity analysis for each of the study intersections. The capacity analysis worksheets are included in **Appendix D**.

5.1 EquipmentShare Access/Site Driveway #1 at US 78

The capacity analysis results for the EquipmentShare Access/Site Driveway #1 at US 78 intersection are summarized in **Table 3** below.

Table 3 – EquipmentShare Access/Site Driveway #1 at US 78 Analysis Results

EquipmentShare Access/Site Driveway #1 LOS (Delay)				
Condition	Measure	EB (US 78)	WB (US 78)	NB (EquipmentShare)
		EBTR	WBLT	NBLR
AM Peak Hour				
2021 Existing	LOS (Delay)	A (0.0)	A (9.2)[2]	C (22.9)
	HCM6 95th Q	0'	0'	3'
2028 No-Build	LOS (Delay)	A (0.0)	A (9.9)[2]	D (31.8)
	HCM6 95th Q	0'	0'	3'
2028 Build	LOS (Delay)	A (0.0)	B (10.1)[2]	E (45.0)
	HCM6 95th Q	0'	3'	78'
PM Peak Hour				
2021 Existing	LOS (Delay)	A (0.0)	A (0.0)[2]	C (21.7)
	HCM6 95th Q	0'	0'	3'
2028 No-Build	LOS (Delay)	A (0.0)	A (0.0)[2]	D (30.6)
	HCM6 95th Q	0'	0'	3'
2028 Build	LOS (Delay)	A (0.0)	A (9.5)[2]	E (41.6)
	HCM6 95th Q	0'	8'	48'
	Existing Storage			

Notes:
1. Delay represented in sec/veh
2. Left-Turn Delay Reported

Based on the results in the **Table 3** above, the northbound approach is expected to operate at LOS D under 2028 No-Build conditions during the AM and PM peak hours. With the addition of project traffic, this northbound approach is expected to operate at LOS E.

Recommendation

Based on the agreements for the Planned Unit Development, an eastbound right-turn lane should be constructed at this intersection. The eastbound right-turn lane should be designed per SCDOT Guidelines. A left-turn lane warrant analysis was conducted using SCDOT Guidelines. Based on the results of the auxiliary turn-lane warrant analysis, a westbound left-turn lane should be constructed and designed per SCDOT Guidelines. The auxiliary turn-lane warrant analysis are attached in **Appendix E**.

5.2 Von Ohsen Road at Dunmeyer Hill Road/Site Access #2

The capacity analysis results for the Von Ohsen Road/Royle Road at US 78 intersection are summarized in **Table 4** below. As part of this development, Site Access #2 will be developed at this intersection as the westbound approach. This approach is planned to consist of one ingress and one egress lane and is proposed to be full-movement.

Table 4 – Von Ohsen Road at Dunmeyer Hill Road/Site Access #2 Analysis Results

Von Ohsen Road at Dunmeyer Hill Road/Site Access #2 LOS (Delay)					
Condition	Measure	EB (Dunmeyer Hill Road)	WB (Site Access #2)	NB (Von Ohsen Road)	SB (Von Ohsen Road)
		EBLTR	WBLTR	NBLTR	SBLTR
AM Peak Hour					
2021 Existing	LOS (Delay)	B (13.2)	-	A (7.7)[2]	A (0.0)
	HCM6 95th Q	10'	-	0'	0'
2028 No-Build	LOS (Delay)	C (15.3)	-	A (7.9)[2]	A (0.0)
	HCM6 95th Q	15'	-	0'	0'
2028 Build	LOS (Delay)	C (19.0)	B (13.2)	A (7.9)[2]	A (8.2)[2]
	HCM6 95th Q	20'	8'	0'	0'
PM Peak Hour					
2021 Existing	LOS (Delay)	C (15.7)	-	A (8.4)[2]	A (0.0)
	HCM6 95th Q	13'	-	0'	0'
2028 No-Build	LOS (Delay)	C (19.9)	-	A (8.8)[2]	A (0.0)
	HCM6 95th Q	23'	-	0'	0'
2028 Build	LOS (Delay)	D (29.7)	B (14.8)	A (8.8)[2]	A (8.2)[2]
	HCM6 95th Q	38'	5'	0'	3'
	Existing Storage				

Notes:
1. Delay represented in sec/veh
2. Left-Turn Delay Reported

Based on the results presented in Table 4 all approaches at this intersection are expected to operate at an acceptable LOS during the AM and PM peak hours under 2028 No-Build and 2028 Build conditions. However, the eastbound approach is expected to drop from LOS C conditions to LOS D conditions when comparing 2028 No-Build results to 2028 Build results during the PM peak hour.

Recommendation

Based on the results of the capacity analysis, the additional traffic generated by this development is expected to have minimal impact on this intersection. The site access is recommended to be constructed with one egress lane and one ingress lane.

5.3 Von Ohsen Road/ Royle Road at US 78

The capacity analysis results for the Von Ohsen Road/Royle Road at US 78 intersection are summarized in **Table 5** on the next page.

Based on the results presented in **Table 5**, this intersection is expected to operate at a LOS E and LOS F under the 2028 No-Build condition during the AM and PM peak hours, respectively. Under the 2028 Build condition, this intersection is expected to operate at a LOS F during both the AM and PM peak hours without signal timing improvements. With the recommended signal timing improvements the intersection is anticipated to operate at LOS E and LOS F during the AM and PM peak hours, respectively.

Recommendation

Based on the analysis, this intersection experiences long delays and queueing under the 2028 No-Build conditions. The addition of project is expected to generate 3.4% of the total traffic at this intersection during the peak hours. Based on the project traffic being a small percentage of the total traffic volumes affecting this intersection, signal timing optimization is recommended based on Build traffic conditions. After optimizing signal timing, the intersection operates with less control delay under 2028 Build Improved conditions than under 2028 No-Build conditions. The results of this analysis can be seen in **Table 5**.

Table 5 – Von Ohsen Road/Royle Road at US 78 Analysis Results

Von Ohsen Road/Royle Road at US 78 LOS (Delay)										
Condition	Measure	EB (US 78)		WB (US 78)		NB (Von Ohsen Road)		SB (Royle Road)		Intersection
		EBL	EBTR	WBL	WBTR	NBL	NBTR	SBL	NBTR	
AM Peak Hour										
2021 Existing	LOS (Delay)	D (39.2)		C (30.1)		E (65.0)		D (41.2)		D (42.9)
	Synchro 95th Q	117'	#864'	58'	#410'	35'	#429'	111'	211'	
2028 No-Build	LOS (Delay)	F (109.8)		D (43.8)		F (99.8)		D (43.6)		E (79.9)
	Synchro 95th Q	#173'	#1144'	69'	#585'	41'	#595'	#178'	273'	
2028 Build	LOS (Delay)	F (119.6)		D (48.8)		F (107.3)		D (44.0)		F (86.0)
	Synchro 95th Q	#200'	#1169'	71'	#651'	53'	#623'	#184'	275'	
2028 Build Improved	LOS (Delay)	E (73.2)		D (36.4)		F (107.3)		D (47.0)		E (66.7)
	Synchro 95th Q	#153'	#1094'	68'	#550'	57'	#623'	#220'	293'	
PM Peak Hour										
2021 Existing	LOS (Delay)	C (34.7)		D (41.6)		C (34.8)		D (49.0)		D (40.4)
	Synchro 95th Q	116'	#628'	140'	#887'	51'	271'	96'	321'	
2028 No-Build	LOS (Delay)	F (103.2)		F (173.8)		C (32.6)		D (51.7)		F (107.6)
	Synchro 95th Q	#208'	#835'	#315'	#1149'	63'	330'	110'	408'	
2028 Build	LOS (Delay)	F (147.7)		F (205.4)		C (31.5)		D (42.4)		F (131.5)
	Synchro 95th Q	#207'	#919'	#326'	#1190'	75'	341'	115'	417'	
2028 Build Improved	LOS (Delay)	F (115.1)		F (147.4)		C (31.7)		D (51.5)		F (101.2)
	Synchro 95th Q	#246'	#917'	#318'	#1127'	75'	#362'	117'	423'	
	Existing Storage	125'		250'		250'		150'		

Notes:
1. Delay represented in sec/veh
2. # - 95th percentile volume exceeds capacity, queue may be longer.

6 Conclusion

The proposed Elms Glen Residential Development is located on the southeast corner of US 78 at Von Ohsen Road in Charleston County, SC. The proposed residential development is planned to consist of 141 single family houses and 167 town houses. Based on the preliminary site plan, it is assumed that the project will provide access via two access points:

- One proposed full-movement driveway along Von Ohsen Road to form a fourth leg at the intersection with Dunmeyer Hill Road
- One existing full-movement driveway along US 78 that serves the EquipmentShare development.

It was assumed that the development will be built and fully occupied by 2028. This TIA summarizes the results of traffic operations under 2021 Existing, 2028 No-Build, and 2028 Build conditions during the AM and PM peak hours at the following three study intersections:

1) EquipmentShare Access/Site Driveway #1at US 78 – Unsignalized, full-movement
2) Von Ohsen Road at Dunmeyer Hill Road/Site Access #2 – Unsignalized, full-movement
3) Von Ohsen Road/Royle Road at US 78 – Signalized

Kimley-Horn was retained to determine the potential traffic impacts of this development and identify transportation improvements that may be required to accommodate these impacts in accordance with the guidelines set forth in the South Carolina Department of Transportation (SCDOT) Access and Roadside Management Standards (ARMS) Manual and SCDOT Roadway Design Manual. This report presents trip generation, trip distribution, capacity analyses, and recommendations for transportation improvements required to mitigate anticipated traffic demands produced by the subject development.

Based on the capacity analyses performed at each of the identified study intersections, along with review of the auxiliary turn-lane warrants contained herein, the following improvements have been identified to mitigate the impact of the proposed development on the adjacent street network under 2028 Build Conditions. Recommended lane geometry improvements can be seen in **Figure 9.**

EquipmentShare Access/Site Access #1 at US 78

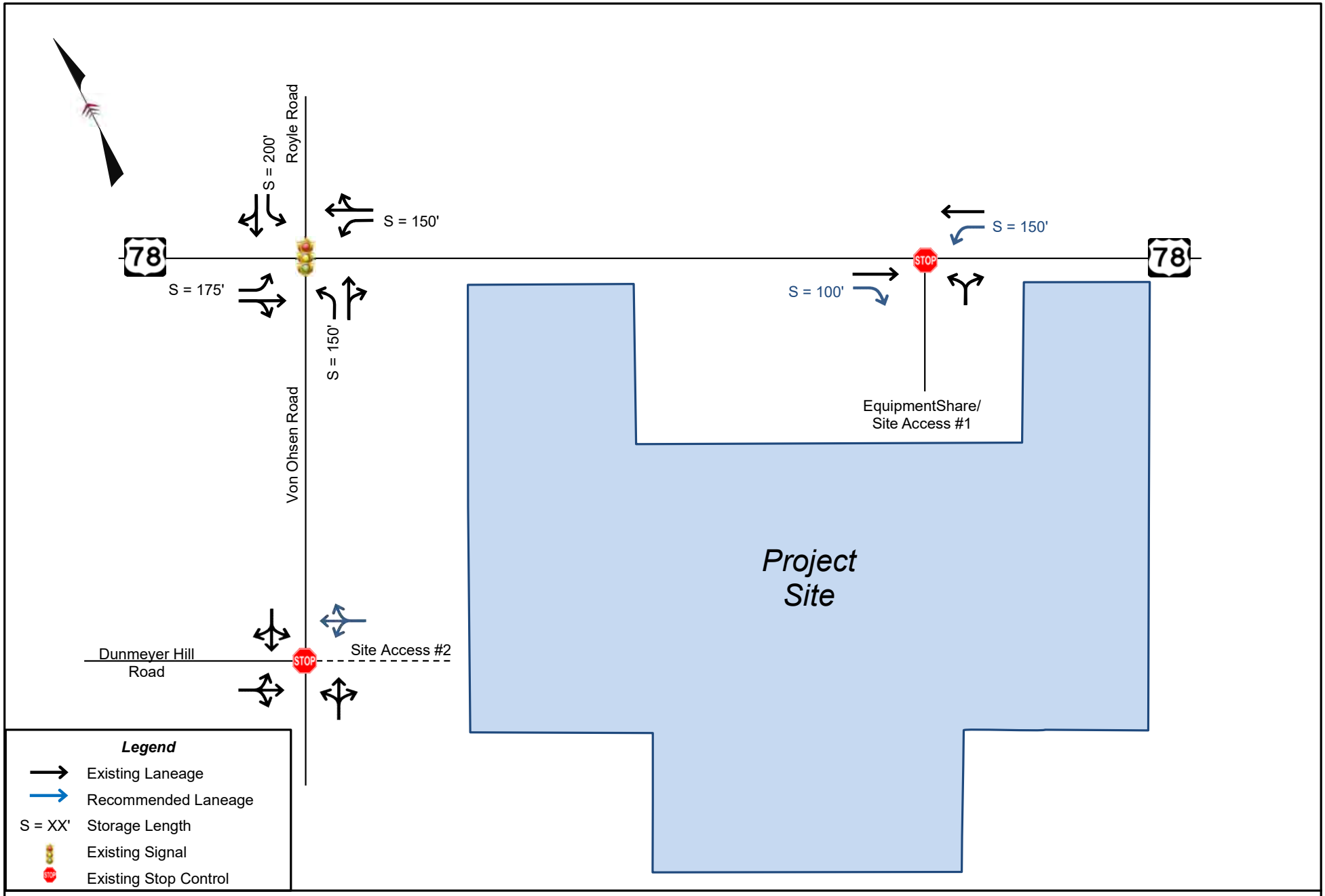
- Construct a westbound left-turn lane along US 78. The westbound left-turn lane should be designed per SCDOT guidelines.
- Construct an eastbound right-turn lane along US 78. The eastbound right-turn lane should be designed per SCDOT Guidelines. The eastbound right-turn lane is an accordance with the Planned Unit Development (PUD) agreement.

Von Ohsen Road at Dunmeyer Hill Road/Site Access #2

- Construct the site access with one egress lane and one ingress lane.

Von Ohsen Road/Royle Road at US 78

- Optimize the traffic signal splits during the AM and PM peak hours.



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Elms Glen Residential Development TIA

Figure 9 - 2028 Build Recommended Geometry

Appendix A – Proposed Development Site Plan

Development Summary

Total Lots: 308

- Single Family Front Loaded - 40' x 90'
- Single Family Rear Loaded - 35' x 90'
- Single Family R-4 Zonning - 50' x 100'
- Town Houses Front Loaded - 18' x 70'
- Town Houses Rear Loaded -16' x 70'

PD Development:

Single Family Front Loaded - 40' x 90':	50 Lots
Single Family Rear Loaded - 35' x 90':	39 Lots
Town Houses Front Loaded - 18' x 70':	47 Lots
Town Houses Rear Loaded -16' x 70':	86 Lots
Total:	222 Lots

Parcel TMS# 388-02-00-132 by zoning:

Single Family R-4 Zonning - 50' x 100':	5 Lots
Town Houses Front Loaded - 18' x 70':	34 Lots
Total:	39 Lots

Parcel TMS# 388-02-00-131

Single Family R-4 Zonning - 50' x 100':	47 Lots
Total:	47 Lots

HLA
LAND PLANNING
LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
SURVEYING
THE SITE EXPERTS
29 Leinbach Drive, A2. Charleston SC 29407-6988 / tel 843.763.1166

ELMS GLEN

CHARLESTON COUNTY, SOUTH CAROLINA
PROJECT #: 98080.00
DATE: 09/9/21

Appendix B – Turning Movement Counts; Historic Traffic Growth

TURNING MOVEMENT COUNTS

SHORT COUNTS

Obtained from Elms Glen TIA
conducted by BIHL Engineering
in May 2021

File Name : US 78 @ Existing DW's
Site Code :
Start Date : 2/3/2021

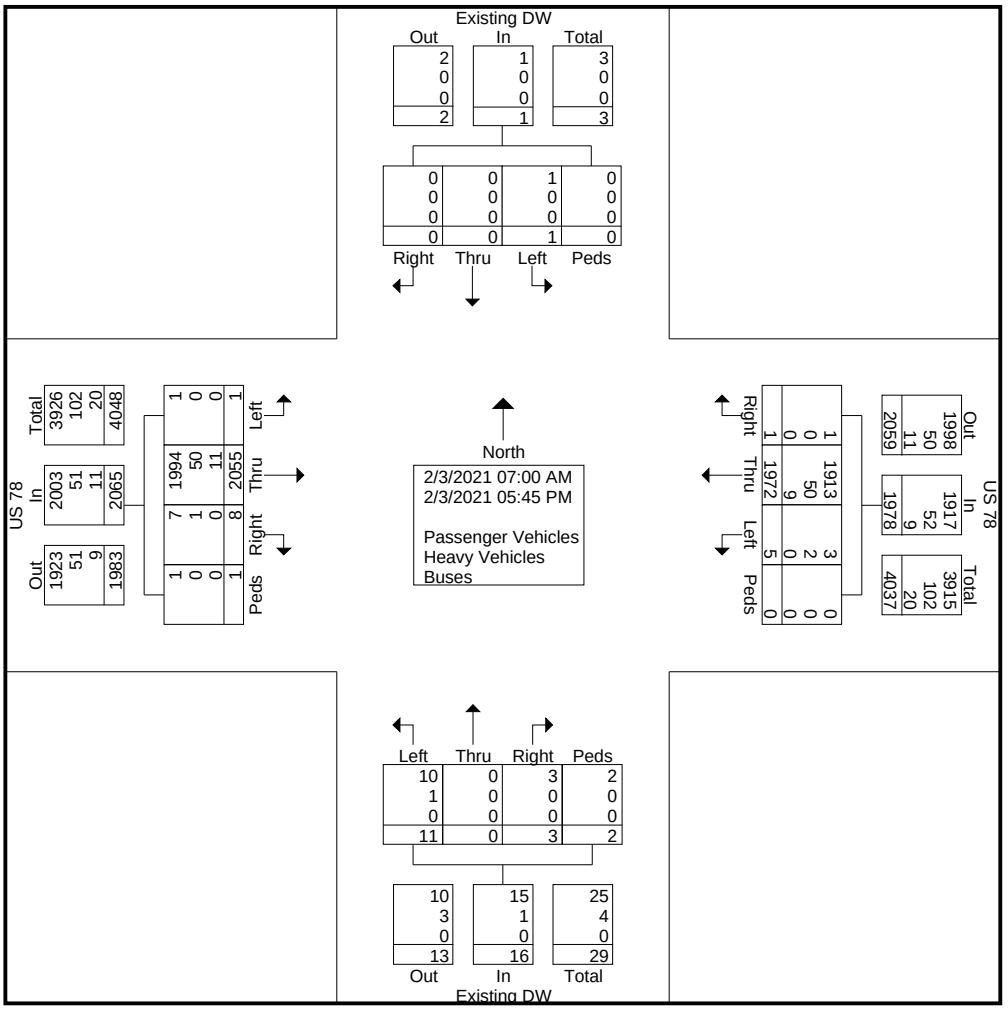
Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Existing DW From North				US 78 From East				Existing DW From South				US 78 From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	0	0	0	1	66	0	0	0	0	0	0	0	150	1	0	218
07:15 AM	0	0	0	0	0	88	0	0	1	0	0	0	0	152	1	0	242
07:30 AM	0	0	0	0	0	105	0	0	1	0	0	0	0	155	0	0	261
07:45 AM	0	0	0	0	0	93	0	0	1	0	0	0	0	125	1	0	220
Total	0	0	0	0	1	352	0	0	3	0	0	0	0	582	3	0	941
08:00 AM	0	0	0	0	1	79	0	0	1	0	1	0	1	119	1	0	203
08:15 AM	0	0	0	0	0	82	1	0	0	0	0	0	0	111	2	0	196
08:30 AM	1	0	0	0	1	100	0	0	1	0	0	0	0	127	0	0	230
08:45 AM	0	0	0	0	0	90	0	0	0	0	0	1	0	95	0	0	186
Total	1	0	0	0	2	351	1	0	2	0	1	1	1	452	3	0	815
04:00 PM	0	0	0	0	0	165	0	0	1	0	1	0	0	124	0	0	291
04:15 PM	0	0	0	0	0	155	0	0	1	0	0	0	0	110	1	0	267
04:30 PM	0	0	0	0	1	156	0	0	0	0	0	0	0	127	1	0	285
04:45 PM	0	0	0	0	1	157	0	0	0	0	0	0	0	132	0	0	290
Total	0	0	0	0	2	633	0	0	2	0	1	0	0	493	2	0	1133
05:00 PM	0	0	0	0	0	168	0	0	3	0	0	0	0	121	0	0	292
05:15 PM	0	0	0	0	0	146	0	0	0	0	1	0	0	130	0	0	277
05:30 PM	0	0	0	0	0	158	0	0	0	0	0	0	0	140	0	0	298
05:45 PM	0	0	0	0	0	164	0	0	1	0	0	1	0	137	0	1	304
Total	0	0	0	0	0	636	0	0	4	0	1	1	0	528	0	1	1171
Grand Total	1	0	0	0	5	1972	1	0	11	0	3	2	1	2055	8	1	4060
Apprch %	100	0	0	0	0.3	99.7	0.1	0	68.8	0	18.8	12.5	0	99.5	0.4	0	
Total %	0	0	0	0	0.1	48.6	0	0	0.3	0	0.1	0	0	50.6	0.2	0	
Passenger Vehicles	1	0	0	0	3	1913	1	0	10	0	3	2	1	1994	7	1	3936
% Passenger Vehicles	100	0	0	0	60	97	100	0	90.9	0	100	100	100	97	87.5	100	96.9
Heavy Vehicles	0	0	0	0	2	50	0	0	1	0	0	0	0	50	1	0	104
% Heavy Vehicles	0	0	0	0	40	2.5	0	0	9.1	0	0	0	0	2.4	12.5	0	2.6
Buses	0	0	0	0	0	9	0	0	0	0	0	0	0	11	0	0	20
% Buses	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0.5	0	0	0.5

SHORT COUNTS

Obtained from Elms Glen TIA
conducted by BIHL Engineering
in May 2021

File Name : US 78 @ Existing DW's
Site Code :
Start Date : 2/3/2021
Page No : 2

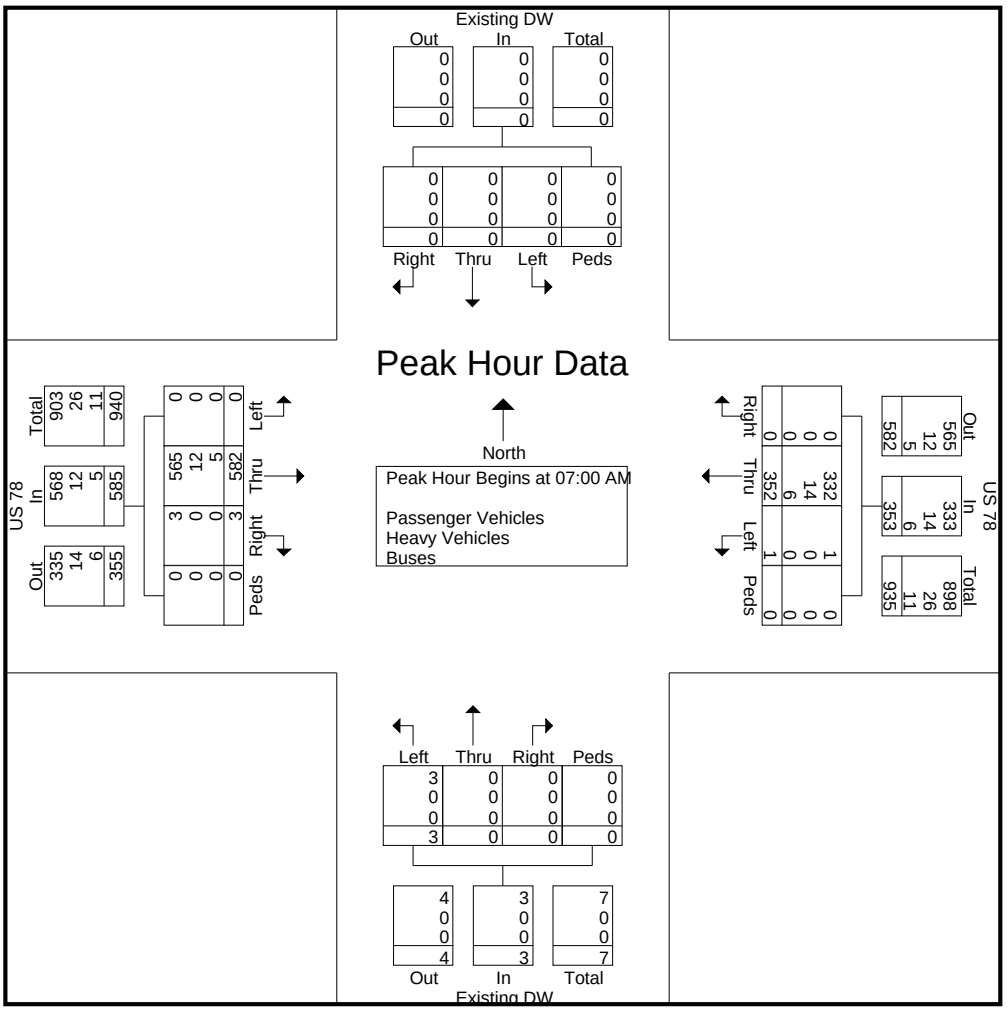


SHORT COUNTS

Obtained from Elms Glen TIA
conducted by BIHL Engineering
in May 2021

File Name : US 78 @ Existing DW's
Site Code :
Start Date : 2/3/2021
Page No : 3

	Existing DW From North					US 78 From East					Existing DW From South					US 78 From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	**1**	66	0	0	67	0	0	0	0	0	0	150	**1**	0	151	218
07:15 AM	0	0	0	0	0	0	88	0	0	88	**1**	0	0	0	**1**	0	152	1	0	153	242
07:30 AM	0	0	0	0	0	0	**105**	0	0	**105**	1	0	0	0	1	0	**155**	0	0	**155**	**261**
07:45 AM	0	0	0	0	0	0	93	0	0	93	1	0	0	0	1	0	125	1	0	126	220
Total Volume	0	0	0	0	0	1	352	0	0	353	3	0	0	0	3	0	582	3	0	585	941
% App. Total	0	0	0	0		0.3	99.7	0	0		100	0	0	0		0	99.5	0.5	0		
PHF	.000	.000	.000	.000	.000	.250	.838	.000	.000	.840	.750	.000	.000	.000	.750	.000	.939	.750	.000	.944	.901
Passenger Vehicles	0	0	0	0	0	1	332	0	0	333	3	0	0	0	3	0	565	3	0	568	904
% Passenger Vehicles							94.3										97.1				
Heavy Vehicles	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	0	12	0	0	12	26
% Heavy Vehicles	0	0	0	0	0	0	4.0	0	0	4.0	0	0	0	0	0	0	2.1	0	0	2.1	2.8
Buses	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	11
% Buses	0	0	0	0	0	0	1.7	0	0	1.7	0	0	0	0	0	0	0.9	0	0	0.9	1.2

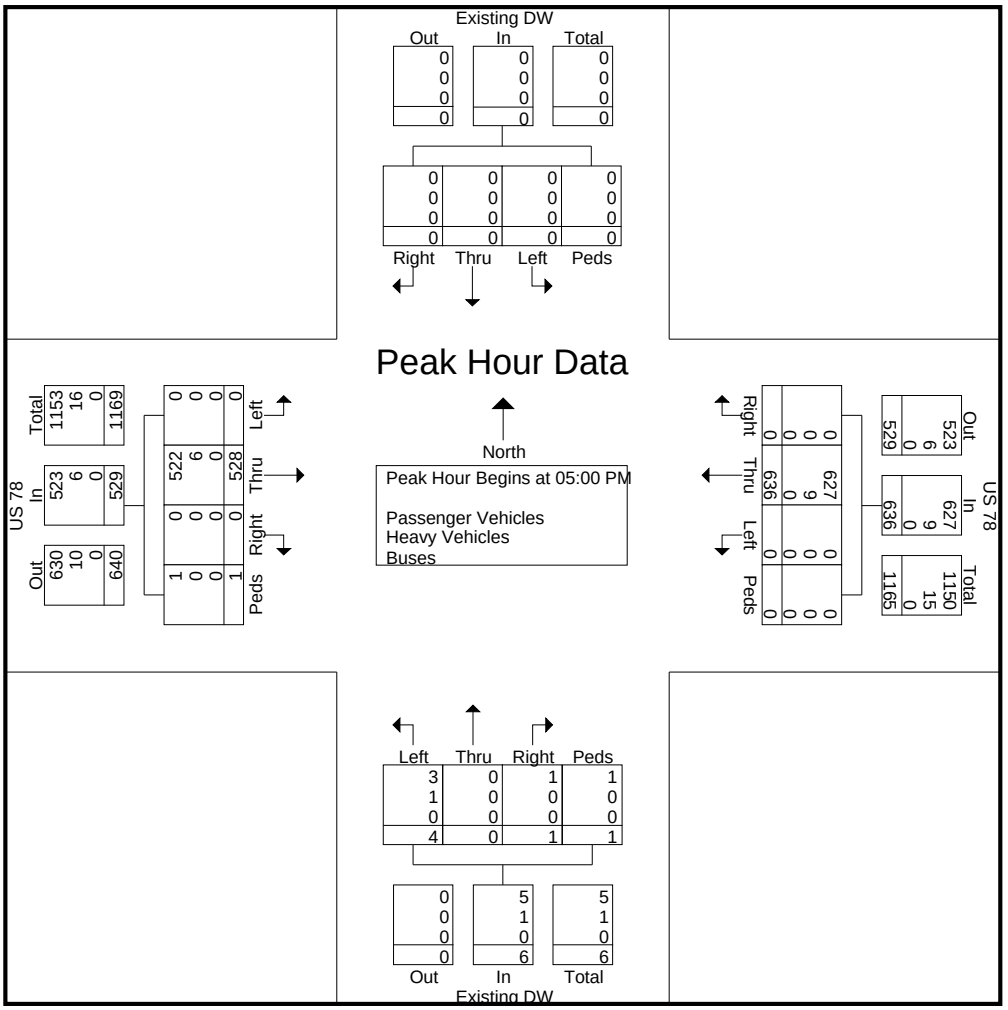


SHORT COUNTS

Obtained from Elms Glen TIA
conducted by BIHL Engineering
in May 2021

File Name : US 78 @ Existing DW's
Site Code :
Start Date : 2/3/2021
Page No : 4

	Existing DW From North					US 78 From East					Existing DW From South					US 78 From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	**168**	0	0	**168**	**3**	0	0	0	**3**	0	121	0	0	121	292
05:15 PM	0	0	0	0	0	0	146	0	0	146	0	0	**1**	0	1	0	130	0	0	130	277
05:30 PM	0	0	0	0	0	0	158	0	0	158	0	0	0	0	0	0	**140**	0	0	**140**	298
05:45 PM	0	0	0	0	0	0	164	0	0	164	1	0	0	**1**	2	0	137	0	**1**	138	**304**
Total Volume	0	0	0	0	0	0	636	0	0	636	4	0	1	1	6	0	528	0	1	529	1171
% App. Total	0	0	0	0		0	100	0	0		66.7	0	16.7	16.7		0	99.8	0	0.2		
PHF	.000	.000	.000	.000	.000	.000	.946	.000	.000	.946	.333	.000	.250	.250	.500	.000	.943	.000	.250	.945	.963
Passenger Vehicles	0	0	0	0	0	0	627	0	0	627	3	0	1	1	5	0	522	0	1	523	1155
% Passenger Vehicles							98.6				75.0						98.9				
Heavy Vehicles	0	0	0	0	0	0	9	0	0	9	1	0	0	0	1	0	6	0	0	6	16
% Heavy Vehicles	0	0	0	0	0	0	1.4	0	0	1.4	25.0	0	0	0	16.7	0	1.1	0	0	1.1	1.4
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



SHORT COUNTS

Obtained from Elms Glen TIA
conducted by BIHL Engineering
in May 2021

File Name : Von Ohsen Rd @ Dunmeyer Hill Rd
Site Code :
Start Date : 2/3/2021
Page No : 1

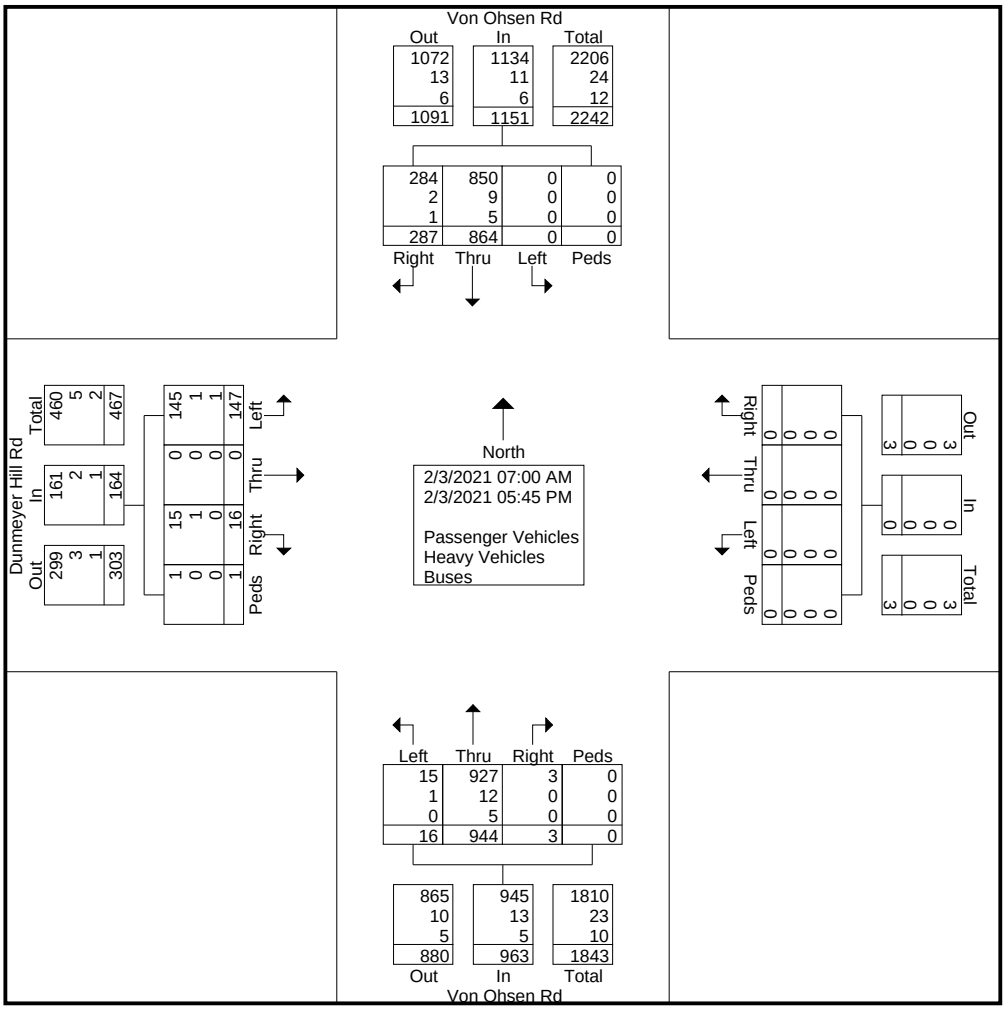
Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Von Ohsen Rd From North				From East				Von Ohsen Rd From South				Dunmeyer Hill Rd From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	23	4	0	0	0	0	0	0	58	0	0	4	0	0	0	89
07:15 AM	0	34	6	0	0	0	0	0	0	60	0	0	8	0	1	0	109
07:30 AM	0	40	9	0	0	0	0	0	0	78	0	0	11	0	1	0	139
07:45 AM	0	34	10	0	0	0	0	0	1	69	0	0	14	0	0	0	128
Total	0	131	29	0	0	0	0	0	1	265	0	0	37	0	2	0	465
08:00 AM	0	46	5	0	0	0	0	0	0	66	0	0	9	0	1	0	127
08:15 AM	0	43	3	0	0	0	0	0	0	58	0	0	8	0	1	0	113
08:30 AM	0	36	13	0	0	0	0	0	1	41	0	0	7	0	1	0	99
08:45 AM	0	40	8	0	0	0	0	0	1	41	0	0	5	0	2	0	97
Total	0	165	29	0	0	0	0	0	2	206	0	0	29	0	5	0	436
04:00 PM	0	68	33	0	0	0	0	0	3	53	2	0	7	0	2	0	168
04:15 PM	0	65	21	0	0	0	0	0	4	58	1	0	10	0	0	0	159
04:30 PM	0	72	18	0	0	0	0	0	1	71	0	0	11	0	2	0	175
04:45 PM	0	60	33	0	0	0	0	0	0	60	0	0	10	0	1	0	164
Total	0	265	105	0	0	0	0	0	8	242	3	0	38	0	5	0	666
05:00 PM	0	80	40	0	0	0	0	0	3	44	0	0	15	0	0	0	182
05:15 PM	0	76	41	0	0	0	0	0	0	83	0	0	11	0	2	1	214
05:30 PM	0	70	27	0	0	0	0	0	0	39	0	0	7	0	1	0	144
05:45 PM	0	77	16	0	0	0	0	0	2	65	0	0	10	0	1	0	171
Total	0	303	124	0	0	0	0	0	5	231	0	0	43	0	4	1	711
Grand Total	0	864	287	0	0	0	0	0	16	944	3	0	147	0	16	1	2278
Apprch %	0	75.1	24.9	0	0	0	0	0	1.7	98	0.3	0	89.6	0	9.8	0.6	
Total %	0	37.9	12.6	0	0	0	0	0	0.7	41.4	0.1	0	6.5	0	0.7	0	
Passenger Vehicles	0	850	284	0	0	0	0	0	15	927	3	0	145	0	15	1	2240
% Passenger Vehicles	0	98.4	99	0	0	0	0	0	93.8	98.2	100	0	98.6	0	93.8	100	98.3
Heavy Vehicles	0	9	2	0	0	0	0	0	1	12	0	0	1	0	1	0	26
% Heavy Vehicles	0	1	0.7	0	0	0	0	0	6.2	1.3	0	0	0.7	0	6.2	0	1.1
Buses	0	5	1	0	0	0	0	0	0	5	0	0	1	0	0	0	12
% Buses	0	0.6	0.3	0	0	0	0	0	0	0.5	0	0	0.7	0	0	0	0.5

SHORT COUNTS

Obtained from Elms Glen TIA
conducted by BIHL Engineering
in May 2021

File Name : Von Ohsen Rd @ Dunmeyer Hill Rd
Site Code :
Start Date : 2/3/2021
Page No : 2

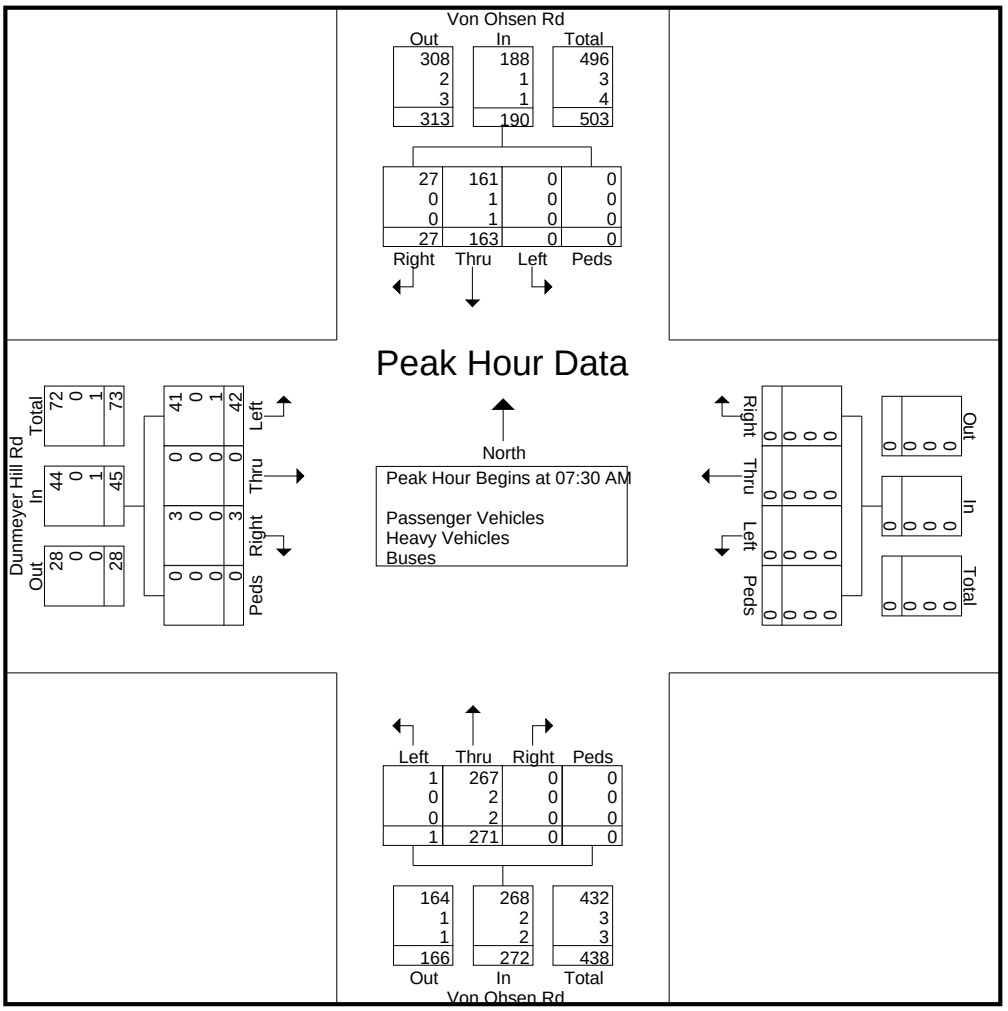


SHORT COUNTS

Obtained from Elms Glen TIA
conducted by BIHL Engineering
in May 2021

File Name : Von Ohsen Rd @ Dunmeyer Hill Rd
Site Code :
Start Date : 2/3/2021
Page No : 3

	Von Ohsen Rd From North					From East					Von Ohsen Rd From South					Dunmeyer Hill Rd From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	40	9	0	49	0	0	0	0	0	0	**78**	0	0	**78**	11	0	**1**	0	12	**139**
07:45 AM	0	34	**10**	0	44	0	0	0	0	0	**1**	69	0	0	70	**14**	0	0	0	**14**	128
08:00 AM	0	**46**	5	0	**51**	0	0	0	0	0	0	66	0	0	66	9	0	1	0	10	127
08:15 AM	0	43	3	0	46	0	0	0	0	0	0	58	0	0	58	8	0	1	0	9	113
Total Volume	0	163	27	0	190	0	0	0	0	0	1	271	0	0	272	42	0	3	0	45	507
% App. Total	0	85.8	14.2	0		0	0	0	0		0.4	99.6	0	0		93.3	0	6.7	0		
PHF	.000	.886	.675	.000	.931	.000	.000	.000	.000	.000	.250	.869	.000	.000	.872	.750	.000	.750	.000	.804	.912
Passenger Vehicles	0	161	27	0	188	0	0	0	0	0	1	267	0	0	268	41	0	3	0	44	500
% Passenger Vehicles		98.8										98.5				97.6					
Heavy Vehicles	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
% Heavy Vehicles	0	0.6	0	0	0.5	0	0	0	0	0	0	0.7	0	0	0.7	0	0	0	0	0	0.6
Buses	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	4
% Buses	0	0.6	0	0	0.5	0	0	0	0	0	0	0.7	0	0	0.7	2.4	0	0	0	2.2	0.8

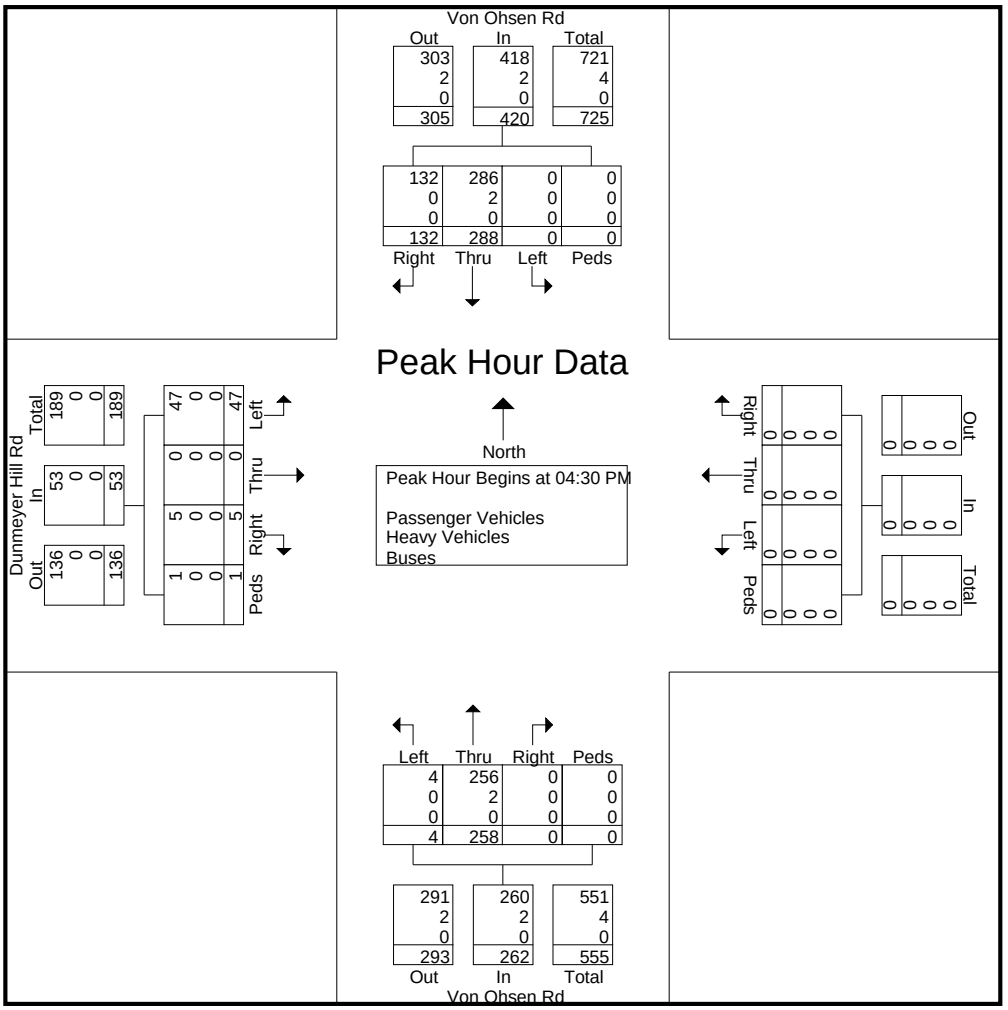


SHORT COUNTS

Obtained from Elms Glen TIA
conducted by BIHL Engineering
in May 2021

File Name : Von Ohsen Rd @ Dunmeyer Hill Rd
Site Code :
Start Date : 2/3/2021
Page No : 4

	Von Ohsen Rd From North					From East					Von Ohsen Rd From South					Dunmeyer Hill Rd From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	72	18	0	90	0	0	0	0	0	1	71	0	0	72	11	0	**2**	0	13	175
04:45 PM	0	60	33	0	93	0	0	0	0	0	0	60	0	0	60	10	0	1	0	11	164
05:00 PM	0	**80**	40	0	**120**	0	0	0	0	0	**3**	44	0	0	47	**15**	0	0	0	**15**	182
05:15 PM	0	76	**41**	0	117	0	0	0	0	0	0	**83**	0	0	**83**	11	0	2	**1**	14	**214**
Total Volume	0	288	132	0	420	0	0	0	0	0	4	258	0	0	262	47	0	5	1	53	735
% App. Total	0	68.6	31.4	0		0	0	0	0		1.5	98.5	0	0		88.7	0	9.4	1.9		
PHF	.000	.900	.805	.000	.875	.000	.000	.000	.000	.000	.333	.777	.000	.000	.789	.783	.000	.625	.250	.883	.859
Passenger Vehicles	0	286	132	0	418	0	0	0	0	0	4	256	0	0	260	47	0	5	1	53	731
% Passenger Vehicles		99.3										99.2									
Heavy Vehicles	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
% Heavy Vehicles	0	0.7	0	0	0.5	0	0	0	0	0	0	0.8	0	0	0.8	0	0	0	0	0	0.5
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



US 78 at Von Oshen Road SCDOT Count data from 2019

AM Peak Hour												
Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR
7	42	30	29	19	84	13	6	34	68	36	155	1
715	32	24	33	13	69	17	8	50	53	39	154	6
730	25	39	36	15	74	15	6	47	40	38	147	7
745	36	57	43	17	81	12	10	55	30	33	141	7
8	32	44	55	18	72	17	12	52	33	23	106	5
815	20	30	33	15	66	13	11	33	19	26	102	8
830	11	25	21	8	65	14	5	23	24	23	114	11
845	34	39	31	15	60	10	18	35	30	30	84	5

PM Peak Hour												
4	20	37	35	39	124	23	9	39	20	31	78	4
415	25	44	37	43	115	28	11	53	24	31	80	6
430	25	46	38	33	120	26	9	32	12	38	86	4
445	25	52	32	35	108	8	7	56	11	39	66	2
5	23	50	31	25	122	7	4	35	18	30	124	1
515	25	55	54	56	135	15	9	42	16	44	115	0
530	24	46	31	55	127	15	12	41	15	30	100	1
545	30	52	42	38	131	18	12	54	17	26	96	5

US 78 at Von Oshen Road SCDOT Count data from 2019 grown at 3% for two years

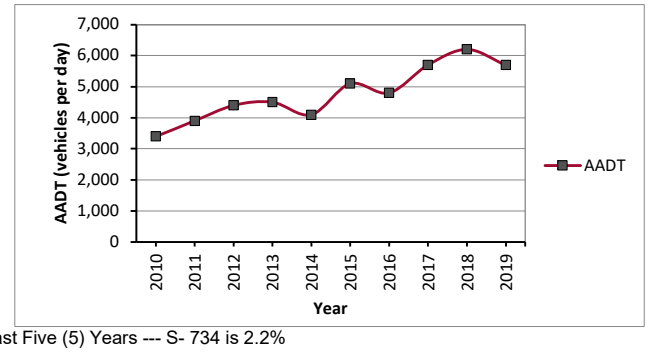
AM Peak Hour												
Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR
7	45	32	31	20	89	14	6	36	72	38	164	1
715	34	25	35	14	73	18	8	53	56	41	163	6
730	27	41	38	16	79	16	6	50	42	40	156	7
745	38	60	46	18	86	13	11	58	32	35	150	7
8	34	47	58	19	76	18	13	55	35	24	112	5
815	21	32	35	16	70	14	12	35	20	28	108	8
830	12	27	22	8	69	15	5	24	25	24	121	12
845	36	41	33	16	64	11	19	37	32	32	89	5

PM Peak Hour												
4	21	39	37	41	132	24	10	41	21	33	83	4
415	27	47	39	46	122	30	12	56	25	33	85	6
430	27	49	40	35	127	28	10	34	13	40	91	4
445	27	55	34	37	115	8	7	59	12	41	70	2
5	24	53	33	27	129	7	4	37	19	32	132	1
515	27	58	57	59	143	16	10	45	17	47	122	0
530	25	49	33	58	135	16	13	43	16	32	106	1
545	32	55	45	40	139	19	13	57	18	28	102	5

HISTORIC TRAFFIC GROWTH

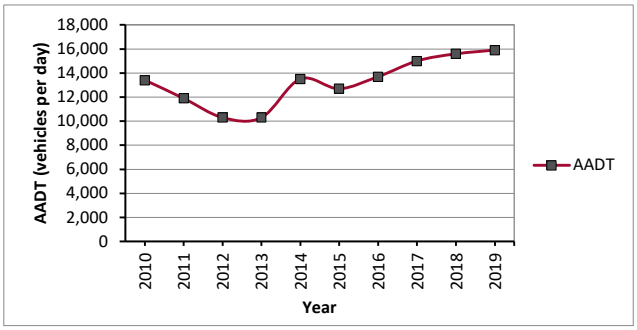
Annual Average Daily Traffic (AADT) from the South Carolina Department of Transportation (SCDOT)

Station	555
Route	S- 734
Location	US 78 (HIGHWAY 78) TO S- 881 (LINCOLNVILLE RD)
2010	3,400
2011	3,900
2012	4,400
2013	4,500
2014	4,100
2015	5,100
2016	4,800
2017	5,700
2018	6,200
2019	5,700



Annual Growth for Last Five (5) Years --- S- 734 is 2.2%
Annual Growth for Last Ten (10) Years --- S- 734 is 5.3%

Station	140
Route	US 76
Location	US 17 ALT (N MAIN ST) TO County Line - CHARLESTON
2010	13,400
2011	11,900
2012	10,300
2013	10,300
2014	13,500
2015	12,700
2016	13,700
2017	15,000
2018	15,600
2019	15,900



Annual Growth for Last Five (5) Years --- US 76 is 4.6%
Annual Growth for Last Ten (10) Years --- US 76 is 1.7%

Appendix C – Traffic Volume Development Worksheets

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: US 78 at Access #1/Equipment Share
COUNT DATE: February 3, 2021
AM PEAK HOUR FACTOR: 0.90 **AM FUTURE PEAK HOUR FACTOR:** 0.90
PM PEAK HOUR FACTOR: 0.96 **PM FUTURE PEAK HOUR FACTOR:** 0.96

AM Peak Hour

AM 2021 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movement Counts[1]	0	0	669	3	0	1	405	0	0	3	0	0	0	0	0	0
AM Volume Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Season Correction Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AM 2021 EXISTING TRAFFIC	**0**	**0**	**669**	**3**	**0**	**1**	**405**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**
AM Heavy Vehicle Percentage	3%	3%	2%	3%	3%	3%	4%	3%	3%	3%	3%	3%	3%	3%	3%	3%
AM 2028 NO-BUILD TRAFFIC	**EBU**	**EBL**	**EBT**	**EBR**	**WBU**	**WBL**	**WBT**	**WBR**	**NBU**	**NBL**	**NBT**	**NBR**	**SBU**	**SBL**	**SBT**	**SBR**
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
AM 2028 NO-BUILD TRAFFIC GROWTH	0	0	154	1	0	0	93	0	0	1	0	0	0	0	0	0
AM 2028 NO-BUILD TRAFFIC	**0**	**0**	**823**	**4**	**0**	**1**	**498**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New	Entering			0%	**25%**		**45%**	**5%**									
Distribution	Exiting			**5%**							**25%**		**45%**				

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Net New	0	0	**7**	**11**	0	**20**	**2**	0	0	**35**	0	**62**	0	0	0	0
AM TOTAL PROJECT TRIPS		**0**	**0**	**7**	**11**	**0**	**20**	**2**	**0**	**0**	**35**	**0**	**62**	**0**	**0**	**0**	**0**
AM 2028 BUILD-OUT TRAFFIC		**0**	**0**	**830**	**15**	**0**	**21**	**500**	**0**	**0**	**39**	**0**	**62**	**0**	**0**	**0**	**0**

PM Peak Hour

PM 2021 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movement Counts[1]	0	0	539	0	0	0	649	0	0	4	0	1	0	0	0	0
PM Volume Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Season Correction Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PM 2021 EXISTING TRAFFIC	**0**	**0**	**539**	**0**	**0**	**0**	**649**	**0**	**0**	**4**	**0**	**1**	**0**	**0**	**0**	**0**
PM Heavy Vehicle Percentage	3%	3%	3%	3%	3%	3%	1%	3%	3%	3%	3%	3%	3%	3%	3%	3%
PM 2028 NO-BUILD TRAFFIC	**EBU**	**EBL**	**EBT**	**EBR**	**WBU**	**WBL**	**WBT**	**WBR**	**NBU**	**NBL**	**NBT**	**NBR**	**SBU**	**SBL**	**SBT**	**SBR**
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
PM 2028 NO-BUILD TRAFFIC GROWTH	0	0	124	0	0	0	149	0	0	1	0	0	0	0	0	0
PM 2028 NO-BUILD TRAFFIC	**0**	**0**	**663**	**0**	**0**	**0**	**798**	**0**	**0**	**5**	**0**	**1**	**0**	**0**	**0**	**0**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New	Entering			0%	**25%**		**45%**	**5%**									
Distribution	Exiting			**5%**							**25%**		**45%**				

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Net New	0	0	**4**	**37**	0	**67**	**7**	0	0	**22**	0	**39**	0	0	0	0
PM TOTAL PROJECT TRIPS		**0**	**0**	**4**	**37**	**0**	**67**	**7**	**0**	**0**	**22**	**0**	**39**	**0**	**0**	**0**	**0**
PM 2028 BUILD-OUT TRAFFIC		**0**	**0**	**667**	**37**	**0**	**67**	**805**	**0**	**0**	**27**	**0**	**40**	**0**	**0**	**0**	**0**

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: Von Ohsen Road at Dunmeyer Hill Road/Site Access #2
COUNT DATE: February 3, 2021
AM PEAK HOUR FACTOR: 0.91 **AM FUTURE PEAK HOUR FACTOR:** 0.91
PM PEAK HOUR FACTOR: 0.86 **PM FUTURE PEAK HOUR FACTOR:** 0.86

AM Peak Hour

AM 2021 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movement Counts[1]	0	48	0	3	0	0	0	0	0	1	312	0	0	0	187	31
AM Volume Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Season Correction Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AM 2021 EXISTING TRAFFIC	**0**	**48**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**312**	**0**	**0**	**0**	**187**	**31**
AM Heavy Vehicle Percentage	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	1%	3%	3%	3%	1%	3%
AM 2028 NO-BUILD TRAFFIC	**EBU**	**EBL**	**EBT**	**EBR**	**WBU**	**WBL**	**WBT**	**WBR**	**NBU**	**NBL**	**NBT**	**NBR**	**SBU**	**SBL**	**SBT**	**SBR**
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
AM 2028 NO-BUILD TRAFFIC GROWTH	0	11	0	1	0	0	0	0	0	0	72	0	0	0	43	7
AM 2028 NO-BUILD TRAFFIC	**0**	**59**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**1**	**384**	**0**	**0**	**0**	**230**	**38**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New	Entering												10%		20%		
Distribution	Exiting						10%		20%								

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Net New	0	0	0	0	0	14	0	28	0	0	0	4	0	9	0	0
AM TOTAL PROJECT TRIPS		**0**	**0**	**0**	**0**	**0**	**14**	**0**	**28**	**0**	**0**	**0**	**4**	**0**	**9**	**0**	**0**
AM 2028 BUILD-OUT TRAFFIC		**0**	**59**	**0**	**4**	**0**	**14**	**0**	**28**	**0**	**1**	**384**	**4**	**0**	**9**	**230**	**38**

PM Peak Hour

PM 2021 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movement Counts[1]	0	48	0	5	0	0	0	0	0	4	263	0	0	0	294	135
PM Volume Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Season Correction Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PM 2021 EXISTING TRAFFIC	**0**	**48**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**4**	**263**	**0**	**0**	**0**	**294**	**135**
PM Heavy Vehicle Percentage	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	1%	3%	3%	3%	1%	3%
PM 2028 NO-BUILD TRAFFIC	**EBU**	**EBL**	**EBT**	**EBR**	**WBU**	**WBL**	**WBT**	**WBR**	**NBU**	**NBL**	**NBT**	**NBR**	**SBU**	**SBL**	**SBT**	**SBR**
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
PM 2028 NO-BUILD TRAFFIC GROWTH	0	11	0	1	0	0	0	0	0	1	60	0	0	0	68	31
PM 2028 NO-BUILD TRAFFIC	**0**	**59**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**5**	**323**	**0**	**0**	**0**	**362**	**166**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New	Entering												10%		20%		
Distribution	Exiting						10%		20%								

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Net New	0	0	0	0	0	8	0	17	0	0	0	15	0	29	0	0
PM TOTAL PROJECT TRIPS		**0**	**0**	**0**	**0**	**0**	**8**	**0**	**17**	**0**	**0**	**0**	**15**	**0**	**29**	**0**	**0**
PM 2028 BUILD-OUT TRAFFIC		**0**	**59**	**0**	**6**	**0**	**8**	**0**	**17**	**0**	**5**	**323**	**15**	**0**	**29**	**362**	**166**

INTERSECTION TRAFFIC VOLUME DEVELOPMENT

INTERSECTION: US 78 at Royle Road/Von Ohsen Road
COUNT DATE: January 1, 2019
AM PEAK HOUR FACTOR: 0.97 **AM FUTURE PEAK HOUR FACTOR:** 0.97
PM PEAK HOUR FACTOR: 0.91 **PM FUTURE PEAK HOUR FACTOR:** 0.91

AM Peak Hour

AM 2021 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Adjusted Turning Movement Counts[1]	0	154	633	21	0	68	327	61	0	31	197	202	0	144	158	150
AM Volume Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Season Correction Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AM 2021 EXISTING TRAFFIC	**0**	**154**	**633**	**21**	**0**	**68**	**327**	**61**	**0**	**31**	**197**	**202**	**0**	**144**	**158**	**150**
AM Heavy Vehicle Percentage	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
AM 2028 NO-BUILD TRAFFIC	**EBU**	**EBL**	**EBT**	**EBR**	**WBU**	**WBL**	**WBT**	**WBR**	**NBU**	**NBL**	**NBT**	**NBR**	**SBU**	**SBL**	**SBT**	**SBR**
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
AM 2028 NO-BUILD TRAFFIC GROWTH	0	35	146	5	0	16	75	14	0	7	45	46	0	33	36	34
AM 2028 NO-BUILD TRAFFIC	**0**	**189**	**779**	**26**	**0**	**84**	**402**	**75**	**0**	**38**	**242**	**248**	**0**	**177**	**194**	**184**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New	Entering			20%	10%		5%								5%	5%	
Distribution	Exiting							20%	5%		10%	5%	5%				

"AM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Net New	0	0	9	5	0	2	28	7	0	14	7	7	0	2	2	0
AM TOTAL PROJECT TRIPS		**0**	**0**	**9**	**5**	**0**	**2**	**28**	**7**	**0**	**14**	**7**	**7**	**0**	**2**	**2**	**0**
AM 2028 BUILD-OUT TRAFFIC		**0**	**189**	**788**	**31**	**0**	**86**	**430**	**82**	**0**	**52**	**249**	**255**	**0**	**179**	**196**	**184**

PM Peak Hour

PM 2021 EXISTING TRAFFIC	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Adjusted Turning Movement Counts[1]	0	139	462	7	0	184	546	58	0	40	182	70	0	108	215	168
PM Volume Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Season Correction Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
PM 2021 EXISTING TRAFFIC	**0**	**139**	**462**	**7**	**0**	**184**	**546**	**58**	**0**	**40**	**182**	**70**	**0**	**108**	**215**	**168**
PM Heavy Vehicle Percentage	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
PM 2028 NO-BUILD TRAFFIC	**EBU**	**EBL**	**EBT**	**EBR**	**WBU**	**WBL**	**WBT**	**WBR**	**NBU**	**NBL**	**NBT**	**NBR**	**SBU**	**SBL**	**SBT**	**SBR**
Years To Buildout	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Annual Growth Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
PM 2028 NO-BUILD TRAFFIC GROWTH	0	32	106	2	0	42	126	13	0	9	42	16	0	25	49	39
PM 2028 NO-BUILD TRAFFIC	**0**	**171**	**568**	**9**	**0**	**226**	**672**	**71**	**0**	**49**	**224**	**86**	**0**	**133**	**264**	**207**

"SITE TRAFFIC DISTRUBUTION"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Net New	Entering			20%	10%		5%								5%	5%	
Distribution	Exiting							20%	5%		10%	5%	5%				

"PM PROJECT TRIPS"

LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trip	Net New	0	0	30	15	0	7	18	4	0	9	4	4	0	7	7	0
PM TOTAL PROJECT TRIPS		**0**	**0**	**30**	**15**	**0**	**7**	**18**	**4**	**0**	**9**	**4**	**4**	**0**	**7**	**7**	**0**
PM 2028 BUILD-OUT TRAFFIC		**0**	**171**	**598**	**24**	**0**	**233**	**690**	**75**	**0**	**58**	**228**	**90**	**0**	**140**	**271**	**207**

Appendix D – Capacity Analysis Worksheets

2021 EXISTING CONDITIONS

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	669	3	1	405	3	0
Future Vol, veh/h	669	3	1	405	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	3	3	4	3	3
Mvmt Flow	743	3	1	450	3	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	746	0	1197	745
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	452	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	858	-	204	412
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	639	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	858	-	204	412
Mov Cap-2 Maneuver	-	-	-	-	204	-
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	638	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	204	-	-	858	-
HCM Lane V/C Ratio	0.016	-	-	0.001	-
HCM Control Delay (s)	22.9	-	-	9.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

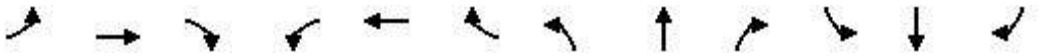
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	3	1	312	187	31
Future Vol, veh/h	48	3	1	312	187	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	1	1	3
Mvmt Flow	53	3	1	343	205	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	567	222	239	0	-	0
Stage 1	222	-	-	-	-	-
Stage 2	345	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	483	815	1322	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	483	815	1322	-	-	-
Mov Cap-2 Maneuver	483	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	715	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1322	-	495	-	-
HCM Lane V/C Ratio	0.001	-	0.113	-	-
HCM Control Delay (s)	7.7	0	13.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	633	21	68	327	61	31	197	202	144	158	150
Future Volume (veh/h)	154	633	21	68	327	61	31	197	202	144	158	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1803	1803	1803	1856	1856	1856
Adj Flow Rate, veh/h	159	653	22	70	337	63	32	203	208	148	163	155
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	407	758	26	210	607	113	146	215	221	178	241	229
Arrive On Green	0.07	0.42	0.42	0.05	0.40	0.40	0.05	0.26	0.26	0.07	0.28	0.28
Sat Flow, veh/h	1767	1785	60	1767	1520	284	1717	816	836	1767	874	831
Grp Volume(v), veh/h	159	0	675	70	0	400	32	0	411	148	0	318
Grp Sat Flow(s),veh/h/ln	1767	0	1845	1767	0	1804	1717	0	1652	1767	0	1706
Q Serve(g_s), s	6.3	0.0	39.9	2.6	0.0	20.5	2.4	0.0	29.3	5.8	0.0	19.9
Cycle Q Clear(g_c), s	6.3	0.0	39.9	2.6	0.0	20.5	2.4	0.0	29.3	5.8	0.0	19.9
Prop In Lane	1.00		0.03	1.00		0.16	1.00		0.51	1.00		0.49
Lane Grp Cap(c), veh/h	407	0	783	210	0	720	0	0	436	178	0	470
V/C Ratio(X)	0.39	0.00	0.86	0.33	0.00	0.56	0.00	0.00	0.94	0.83	0.00	0.68
Avail Cap(c_a), veh/h	489	0	783	336	0	720	0	0	468	266	0	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.6	0.0	31.3	24.9	0.0	27.8	0.0	0.0	43.3	30.0	0.0	38.7
Incr Delay (d2), s/veh	0.6	0.0	12.0	0.9	0.0	3.1	0.0	0.0	26.8	13.1	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	19.2	1.1	0.0	9.1	0.0	0.0	15.0	2.8	0.0	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.3	0.0	43.4	25.8	0.0	30.9	0.0	0.0	70.1	43.2	0.0	40.3
LnGrp LOS	C	A	D	C	A	C	A	A	E	D	A	D
Approach Vol, veh/h		834			470			443			466	
Approach Delay, s/veh		39.2			30.1			65.0			41.2	
Approach LOS		D			C			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	57.9	12.0	39.0	14.0	54.9	13.4	37.7
Change Period (Y+Rc), s	5.6	7.0	6.0	6.0	5.6	7.0	5.4	6.0
Max Green Setting (Gmax), s	14.0	34.0	53.4	53.4	14.0	34.0	14.0	34.0
Max Q Clear Time (g_c+I1), s	4.6	41.9	4.4	21.9	8.3	22.5	7.8	31.3
Green Ext Time (p_c), s	0.1	0.0	0.1	1.0	0.2	5.4	0.2	0.4

Intersection Summary	
HCM 6th Ctrl Delay	42.9
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	159	675	70	400	32	411	148	318
v/c Ratio	0.41	0.92	0.38	0.62	0.10	0.90	0.58	0.45
Control Delay	21.1	56.3	23.8	39.1	21.2	61.2	32.1	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	56.3	23.8	39.1	21.2	61.2	32.1	23.1
Queue Length 50th (ft)	68	~554	28	260	15	273	71	143
Queue Length 95th (ft)	117	#864	58	#410	35	#429	111	211
Internal Link Dist (ft)		1715		1136		295		1065
Turn Bay Length (ft)	150		175		150		200	
Base Capacity (vph)	430	731	265	640	367	508	286	789
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.92	0.26	0.63	0.09	0.81	0.52	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	539	0	0	649	4	1
Future Vol, veh/h	539	0	0	649	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	1	3	3
Mvmt Flow	561	0	0	676	4	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	561	0	1237	561
Stage 1	-	-	-	-	561	-
Stage 2	-	-	-	-	676	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1005	-	193	525
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	503	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1005	-	193	525
Mov Cap-2 Maneuver	-	-	-	-	193	-
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	503	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	221	-	-	1005	-
HCM Lane V/C Ratio	0.024	-	-	-	-
HCM Control Delay (s)	21.7	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	5	4	263	294	135
Future Vol, veh/h	48	5	4	263	294	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	1	1	3
Mvmt Flow	56	6	5	306	342	157

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	737	421	499	0	-	0
Stage 1	421	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	384	630	1060	-	-	-
Stage 1	660	-	-	-	-	-
Stage 2	737	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	382	630	1060	-	-	-
Mov Cap-2 Maneuver	382	-	-	-	-	-
Stage 1	656	-	-	-	-	-
Stage 2	737	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1060	-	397	-	-
HCM Lane V/C Ratio	0.004	-	0.155	-	-
HCM Control Delay (s)	8.4	0	15.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	462	7	184	546	58	40	182	70	108	215	168
Future Volume (veh/h)	139	462	7	184	546	58	40	182	70	108	215	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1803	1803	1803	1856	1856	1856
Adj Flow Rate, veh/h	153	508	8	202	600	64	44	200	77	119	236	185
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	237	718	11	351	679	72	146	330	127	156	256	201
Arrive On Green	0.07	0.39	0.39	0.09	0.41	0.41	0.05	0.27	0.27	0.05	0.27	0.27
Sat Flow, veh/h	1767	1822	29	1767	1648	176	1717	1239	477	1767	964	756
Grp Volume(v), veh/h	153	0	516	202	0	664	44	0	277	119	0	421
Grp Sat Flow(s),veh/h/ln	1767	0	1850	1767	0	1824	1717	0	1717	1767	0	1720
Q Serve(g_s), s	5.9	0.0	28.1	8.1	0.0	40.4	3.3	0.0	16.9	4.3	0.0	28.6
Cycle Q Clear(g_c), s	5.9	0.0	28.1	8.1	0.0	40.4	3.3	0.0	16.9	4.3	0.0	28.6
Prop In Lane	1.00		0.02	1.00		0.10	1.00		0.28	1.00		0.44
Lane Grp Cap(c), veh/h	237	0	729	351	0	752	0	0	457	156	0	457
V/C Ratio(X)	0.65	0.00	0.71	0.58	0.00	0.88	0.00	0.00	0.61	0.76	0.00	0.92
Avail Cap(c_a), veh/h	324	0	729	406	0	752	0	0	486	266	0	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.3	0.0	30.6	22.6	0.0	32.6	0.0	0.0	38.5	28.0	0.0	42.8
Incr Delay (d2), s/veh	3.0	0.0	5.7	1.5	0.0	14.3	0.0	0.0	1.8	7.5	0.0	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	13.1	3.3	0.0	19.7	0.0	0.0	7.3	2.1	0.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	36.3	24.1	0.0	46.9	0.0	0.0	40.3	35.6	0.0	52.8
LnGrp LOS	C	A	D	C	A	D	A	A	D	D	A	D
Approach Vol, veh/h		669			866			321			540	
Approach Delay, s/veh		34.7			41.6			34.8			49.0	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	54.3	12.0	37.9	13.7	56.5	11.9	38.0
Change Period (Y+Rc), s	5.6	7.0	6.0	6.0	5.6	7.0	5.4	6.0
Max Green Setting (Gmax), s	14.0	34.0	53.4	53.4	14.0	34.0	14.0	34.0
Max Q Clear Time (g_c+I1), s	10.1	30.1	5.3	30.6	7.9	42.4	6.3	18.9
Green Ext Time (p_c), s	0.2	2.6	0.1	1.3	0.2	0.0	0.2	0.7

Intersection Summary	
HCM 6th Ctrl Delay	40.4
HCM 6th LOS	D

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	153	516	202	664	44	277	119	421
v/c Ratio	0.56	0.71	0.51	0.88	0.26	0.79	0.44	0.70
Control Delay	24.1	39.9	19.4	48.4	30.5	59.1	31.5	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	39.9	19.4	48.4	30.5	59.1	31.5	36.8
Queue Length 50th (ft)	53	339	73	464	25	195	65	254
Queue Length 95th (ft)	116	#628	140	#887	51	271	96	321
Internal Link Dist (ft)		1715		1136		295		1065
Turn Bay Length (ft)	150		175		150		200	
Base Capacity (vph)	315	725	414	757	225	504	312	790
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.71	0.49	0.88	0.20	0.55	0.38	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2028 NO-BUILD CONDITIONS

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	823	4	1	498	4	0
Future Vol, veh/h	823	4	1	498	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	3	3	4	3	3
Mvmt Flow	914	4	1	553	4	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	918	0	1471	916
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	555	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	739	-	139	329
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	573	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	739	-	139	329
Mov Cap-2 Maneuver	-	-	-	-	139	-
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	572	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	31.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	139	-	-	739	-
HCM Lane V/C Ratio	0.032	-	-	0.002	-
HCM Control Delay (s)	31.8	-	-	9.9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

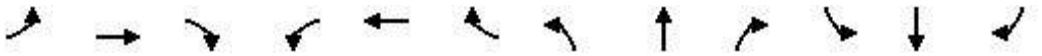
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	59	4	1	384	230	38
Future Vol, veh/h	59	4	1	384	230	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	1	1	3
Mvmt Flow	65	4	1	422	253	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	698	274	295	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	405	762	1261	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	658	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	405	762	1261	-	-	-
Mov Cap-2 Maneuver	405	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	658	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1261	-	417	-	-
HCM Lane V/C Ratio	0.001	-	0.166	-	-
HCM Control Delay (s)	7.9	0	15.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	779	26	84	402	75	38	242	248	177	194	184
Future Volume (veh/h)	189	779	26	84	402	75	38	242	248	177	194	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1803	1803	1803	1856	1856	1856
Adj Flow Rate, veh/h	195	803	27	87	414	77	39	249	256	182	200	190
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	304	685	23	143	522	97	146	231	237	211	274	261
Arrive On Green	0.09	0.38	0.38	0.05	0.34	0.34	0.05	0.28	0.28	0.09	0.31	0.31
Sat Flow, veh/h	1767	1785	60	1767	1522	283	1717	814	837	1767	875	831
Grp Volume(v), veh/h	195	0	830	87	0	491	39	0	505	182	0	390
Grp Sat Flow(s),veh/h/ln	1767	0	1845	1767	0	1805	1717	0	1652	1767	0	1706
Q Serve(g_s), s	8.5	0.0	46.1	3.5	0.0	29.5	2.9	0.0	34.0	8.1	0.0	24.4
Cycle Q Clear(g_c), s	8.5	0.0	46.1	3.5	0.0	29.5	2.9	0.0	34.0	8.1	0.0	24.4
Prop In Lane	1.00		0.03	1.00		0.16	1.00		0.51	1.00		0.49
Lane Grp Cap(c), veh/h	304	0	709	143	0	619	0	0	468	211	0	535
V/C Ratio(X)	0.64	0.00	1.17	0.61	0.00	0.79	0.00	0.00	1.08	0.86	0.00	0.73
Avail Cap(c_a), veh/h	353	0	709	266	0	619	0	0	468	266	0	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	37.0	29.3	0.0	35.6	0.0	0.0	43.0	34.0	0.0	36.6
Incr Delay (d2), s/veh	3.1	0.0	91.7	4.1	0.0	10.1	0.0	0.0	64.5	20.4	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	37.6	1.6	0.0	14.1	0.0	0.0	21.9	3.7	0.0	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	0.0	128.7	33.3	0.0	45.7	0.0	0.0	107.5	54.4	0.0	38.6
LnGrp LOS	C	A	F	C	A	D	A	A	F	D	A	D
Approach Vol, veh/h		1025			578			544			572	
Approach Delay, s/veh		109.8			43.8			99.8			43.6	
Approach LOS		F			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	53.1	12.0	43.6	16.2	48.1	15.6	40.0
Change Period (Y+Rc), s	5.6	7.0	6.0	6.0	5.6	7.0	5.4	6.0
Max Green Setting (Gmax), s	14.0	34.0	53.4	53.4	14.0	34.0	14.0	34.0
Max Q Clear Time (g_c+I1), s	5.5	48.1	4.9	26.4	10.5	31.5	10.1	36.0
Green Ext Time (p_c), s	0.1	0.0	0.1	1.2	0.2	1.7	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	79.9
HCM 6th LOS	E

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	195	830	87	491	39	505	182	390
v/c Ratio	0.73	1.39	0.45	0.92	0.12	0.96	0.75	0.50
Control Delay	39.1	217.6	26.5	64.5	20.9	69.7	44.6	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	217.6	26.5	64.5	20.9	69.7	44.6	23.0
Queue Length 50th (ft)	90	~861	38	369	17	362	85	182
Queue Length 95th (ft)	#173	#1144	69	#585	41	#595	#178	273
Internal Link Dist (ft)		1715		1136		295		1065
Turn Bay Length (ft)	150		175		150		200	
Base Capacity (vph)	285	598	266	535	329	525	267	789
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	1.39	0.33	0.92	0.12	0.96	0.68	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	663	0	0	798	5	1
Future Vol, veh/h	663	0	0	798	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	1	3	3
Mvmt Flow	691	0	0	831	5	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	691	0	1522	691
Stage 1	-	-	-	-	691	-
Stage 2	-	-	-	-	831	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	899	-	130	443
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	426	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	899	-	130	443
Mov Cap-2 Maneuver	-	-	-	-	130	-
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	426	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	30.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	147	-	-	899	-
HCM Lane V/C Ratio	0.043	-	-	-	-
HCM Control Delay (s)	30.6	-	-	0	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

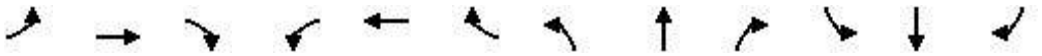
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	59	6	5	323	362	166
Future Vol, veh/h	59	6	5	323	362	166
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	1	1	3
Mvmt Flow	69	7	6	376	421	193

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	906	518	614	0	-	0
Stage 1	518	-	-	-	-	-
Stage 2	388	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	305	556	961	-	-	-
Stage 1	596	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	303	556	961	-	-	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	683	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.9	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	961	-	316	-	-
HCM Lane V/C Ratio	0.006	-	0.239	-	-
HCM Control Delay (s)	8.8	0	19.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	568	9	226	672	71	49	224	86	133	264	207
Future Volume (veh/h)	171	568	9	226	672	71	49	224	86	133	264	207
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1803	1803	1803	1856	1856	1856
Adj Flow Rate, veh/h	188	624	10	248	738	78	54	246	95	146	290	227
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	216	555	9	266	550	58	149	388	150	176	310	243
Arrive On Green	0.09	0.30	0.30	0.12	0.33	0.33	0.05	0.31	0.31	0.07	0.32	0.32
Sat Flow, veh/h	1767	1821	29	1767	1650	174	1717	1238	478	1767	965	755
Grp Volume(v), veh/h	188	0	634	248	0	816	54	0	341	146	0	517
Grp Sat Flow(s),veh/h/ln	1767	0	1850	1767	0	1824	1717	0	1716	1767	0	1720
Q Serve(g_s), s	8.5	0.0	36.6	12.6	0.0	40.0	4.1	0.0	20.4	5.7	0.0	35.0
Cycle Q Clear(g_c), s	8.5	0.0	36.6	12.6	0.0	40.0	4.1	0.0	20.4	5.7	0.0	35.0
Prop In Lane	1.00		0.02	1.00		0.10	1.00		0.28	1.00		0.44
Lane Grp Cap(c), veh/h	216	0	564	266	0	608	0	0	537	176	0	553
V/C Ratio(X)	0.87	0.00	1.12	0.93	0.00	1.34	0.00	0.00	0.63	0.83	0.00	0.94
Avail Cap(c_a), veh/h	266	0	564	266	0	608	0	0	537	266	0	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	41.7	34.1	0.0	40.0	0.0	0.0	35.3	29.7	0.0	39.5
Incr Delay (d2), s/veh	21.8	0.0	76.7	37.2	0.0	165.0	0.0	0.0	2.4	12.7	0.0	14.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	27.9	7.9	0.0	44.9	0.0	0.0	8.8	2.7	0.0	16.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	0.0	118.4	71.3	0.0	205.0	0.0	0.0	37.7	42.4	0.0	54.4
LnGrp LOS	D	A	F	E	A	F	A	A	D	D	A	D
Approach Vol, veh/h		822			1064			395			663	
Approach Delay, s/veh		103.2			173.8			32.6			51.7	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	43.6	12.2	44.6	16.2	47.0	13.2	43.6
Change Period (Y+Rc), s	5.6	7.0	6.0	6.0	5.6	7.0	5.4	6.0
Max Green Setting (Gmax), s	14.0	34.0	53.4	53.4	14.0	34.0	14.0	34.0
Max Q Clear Time (g_c+I1), s	14.6	38.6	6.1	37.0	10.5	42.0	7.7	22.4
Green Ext Time (p_c), s	0.0	0.0	0.1	1.6	0.2	0.0	0.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	107.6
HCM 6th LOS	F

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	188	634	248	816	54	341	146	517
v/c Ratio	0.75	1.03	0.81	1.22	0.38	0.84	0.53	0.78
Control Delay	45.2	83.7	50.8	146.5	33.3	60.1	31.3	38.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	83.7	50.8	146.5	33.3	60.1	31.3	38.3
Queue Length 50th (ft)	90	~583	133	~805	30	242	75	320
Queue Length 95th (ft)	#208	#835	#315	#1149	63	330	110	408
Internal Link Dist (ft)		1715		1136		295		1065
Turn Bay Length (ft)	150		175		150		200	
Base Capacity (vph)	275	618	306	669	173	504	304	790
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	1.03	0.81	1.22	0.31	0.68	0.48	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2028 BUILD CONDITIONS

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	830	15	21	500	39	62
Future Vol, veh/h	830	15	21	500	39	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	3	3	4	3	3
Mvmt Flow	922	17	23	556	43	69

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	939	0	1533	931
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	602	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	726	-	128	322
Stage 1	-	-	-	-	382	-
Stage 2	-	-	-	-	545	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	726	-	122	322
Mov Cap-2 Maneuver	-	-	-	-	122	-
Stage 1	-	-	-	-	382	-
Stage 2	-	-	-	-	520	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	45
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	197	-	-	726	-
HCM Lane V/C Ratio	0.57	-	-	0.032	-
HCM Control Delay (s)	45	-	-	10.1	0
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	3.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	59	0	4	14	0	28	1	384	4	9	230	38
Future Vol, veh/h	59	0	4	14	0	28	1	384	4	9	230	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3	3	1	3	3	1	3
Mvmt Flow	65	0	4	15	0	31	1	422	4	10	253	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	736	722	274	722	741	424	295	0	0	426	0	0
Stage 1	294	294	-	426	426	-	-	-	-	-	-	-
Stage 2	442	428	-	296	315	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	333	352	762	341	343	628	1261	-	-	1128	-	-
Stage 1	712	668	-	604	584	-	-	-	-	-	-	-
Stage 2	592	583	-	710	654	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	314	348	762	336	339	628	1261	-	-	1128	-	-
Mov Cap-2 Maneuver	314	348	-	336	339	-	-	-	-	-	-	-
Stage 1	711	661	-	603	583	-	-	-	-	-	-	-
Stage 2	562	582	-	698	647	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19	13.2	0	0.3
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1261	-	-	326	487	1128	-	-
HCM Lane V/C Ratio	0.001	-	-	0.212	0.095	0.009	-	-
HCM Control Delay (s)	7.9	0	-	19	13.2	8.2	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.3	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	788	31	86	430	82	52	249	255	179	196	184
Future Volume (veh/h)	189	788	31	86	430	82	52	249	255	179	196	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1803	1803	1803	1856	1856	1856
Adj Flow Rate, veh/h	195	812	32	89	443	85	54	257	263	185	202	190
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	276	678	27	144	516	99	149	231	237	214	276	259
Arrive On Green	0.09	0.38	0.38	0.05	0.34	0.34	0.05	0.28	0.28	0.09	0.31	0.31
Sat Flow, veh/h	1767	1773	70	1767	1513	290	1717	817	836	1767	879	827
Grp Volume(v), veh/h	195	0	844	89	0	528	54	0	520	185	0	392
Grp Sat Flow(s),veh/h/ln	1767	0	1843	1767	0	1803	1717	0	1652	1767	0	1707
Q Serve(g_s), s	8.5	0.0	45.9	3.6	0.0	32.7	4.1	0.0	34.0	8.3	0.0	24.6
Cycle Q Clear(g_c), s	8.5	0.0	45.9	3.6	0.0	32.7	4.1	0.0	34.0	8.3	0.0	24.6
Prop In Lane	1.00		0.04	1.00		0.16	1.00		0.51	1.00		0.48
Lane Grp Cap(c), veh/h	276	0	705	144	0	615	0	0	468	214	0	535
V/C Ratio(X)	0.71	0.00	1.20	0.62	0.00	0.86	0.00	0.00	1.11	0.87	0.00	0.73
Avail Cap(c_a), veh/h	325	0	705	266	0	615	0	0	468	266	0	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.7	0.0	37.1	29.3	0.0	36.8	0.0	0.0	43.0	34.2	0.0	36.7
Incr Delay (d2), s/veh	5.6	0.0	102.5	4.3	0.0	14.5	0.0	0.0	75.4	21.0	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	39.5	1.6	0.0	16.2	0.0	0.0	23.4	3.8	0.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	0.0	139.6	33.6	0.0	51.3	0.0	0.0	118.4	55.3	0.0	38.7
LnGrp LOS	C	A	F	C	A	D	A	A	F	E	A	D
Approach Vol, veh/h		1039			617			574			577	
Approach Delay, s/veh		119.6			48.8			107.3			44.0	
Approach LOS		F			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	52.9	12.2	43.6	16.2	47.9	15.8	40.0
Change Period (Y+Rc), s	5.6	7.0	6.0	6.0	5.6	7.0	5.4	6.0
Max Green Setting (Gmax), s	14.0	34.0	53.4	53.4	14.0	34.0	14.0	34.0
Max Q Clear Time (g_c+I1), s	5.6	47.9	6.1	26.6	10.5	34.7	10.3	36.0
Green Ext Time (p_c), s	0.1	0.0	0.1	1.2	0.2	0.0	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	86.0
HCM 6th LOS	F

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	195	844	89	528	54	520	185	392
v/c Ratio	0.78	1.42	0.45	0.99	0.16	0.99	0.75	0.50
Control Delay	47.7	229.6	26.6	79.2	21.8	76.3	45.6	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	229.6	26.6	79.2	21.8	76.3	45.6	23.0
Queue Length 50th (ft)	94	~885	38	~431	25	~402	88	183
Queue Length 95th (ft)	#200	#1169	71	#651	53	#623	#184	275
Internal Link Dist (ft)		1715		1136		295		1065
Turn Bay Length (ft)	150		175		150		200	
Base Capacity (vph)	268	596	267	533	328	525	266	789
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	1.42	0.33	0.99	0.16	0.99	0.70	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	667	37	67	805	27	40
Future Vol, veh/h	667	37	67	805	27	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	1	3	3
Mvmt Flow	695	39	70	839	28	42

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	734	0	1694	715
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	979	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	866	-	102	429
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	363	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	866	-	87	429
Mov Cap-2 Maneuver	-	-	-	-	87	-
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	308	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	41.6
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	166	-	-	866	-
HCM Lane V/C Ratio	0.42	-	-	0.081	-
HCM Control Delay (s)	41.6	-	-	9.5	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	1.9	-	-	0.3	-

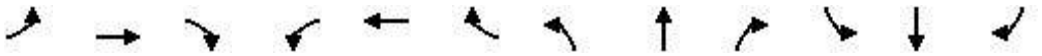
Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	0	6	8	0	17	5	323	15	29	362	166
Future Vol, veh/h	59	0	6	8	0	17	5	323	15	29	362	166
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3	1	3	3	1	3
Mvmt Flow	69	0	7	9	0	20	6	376	17	34	421	193

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	993	991	518	986	1079	385	614	0	0	393	0	0
Stage 1	586	586	-	397	397	-	-	-	-	-	-	-
Stage 2	407	405	-	589	682	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	223	245	556	226	217	660	961	-	-	1160	-	-
Stage 1	495	495	-	627	602	-	-	-	-	-	-	-
Stage 2	619	597	-	493	448	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	207	232	556	214	205	660	961	-	-	1160	-	-
Mov Cap-2 Maneuver	207	232	-	214	205	-	-	-	-	-	-	-
Stage 1	491	472	-	622	597	-	-	-	-	-	-	-
Stage 2	596	592	-	464	427	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.7	14.8	0.1	0.4
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	961	-	-	220	396	1160	-	-
HCM Lane V/C Ratio	0.006	-	-	0.344	0.073	0.029	-	-
HCM Control Delay (s)	8.8	0	-	29.7	14.8	8.2	0	-
HCM Lane LOS	A	A	-	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.5	0.2	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	598	24	233	690	75	58	228	90	140	271	207
Future Volume (veh/h)	171	598	24	233	690	75	58	228	90	140	271	207
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1803	1803	1803	1856	1856	1856
Adj Flow Rate, veh/h	188	657	26	256	758	82	64	251	99	154	298	227
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	216	521	21	266	530	57	161	393	155	183	318	243
Arrive On Green	0.09	0.29	0.29	0.12	0.32	0.32	0.06	0.32	0.32	0.07	0.33	0.33
Sat Flow, veh/h	1767	1773	70	1767	1645	178	1717	1230	485	1767	977	744
Grp Volume(v), veh/h	188	0	683	256	0	840	64	0	350	154	0	525
Grp Sat Flow(s),veh/h/ln	1767	0	1843	1767	0	1823	1717	0	1715	1767	0	1722
Q Serve(g_s), s	8.5	0.0	35.3	13.2	0.0	38.7	4.9	0.0	20.9	6.2	0.0	35.5
Cycle Q Clear(g_c), s	8.5	0.0	35.3	13.2	0.0	38.7	4.9	0.0	20.9	6.2	0.0	35.5
Prop In Lane	1.00		0.04	1.00		0.10	1.00		0.28	1.00		0.43
Lane Grp Cap(c), veh/h	216	0	542	266	0	587	0	0	548	183	0	561
V/C Ratio(X)	0.87	0.00	1.26	0.96	0.00	1.43	0.00	0.00	0.64	0.84	0.00	0.94
Avail Cap(c_a), veh/h	266	0	542	266	0	587	0	0	548	266	0	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	42.4	34.5	0.0	40.7	0.0	0.0	34.9	30.9	0.0	39.2
Incr Delay (d2), s/veh	21.8	0.0	131.8	44.6	0.0	203.2	0.0	0.0	2.4	14.5	0.0	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	35.1	8.7	0.0	49.7	0.0	0.0	9.0	2.9	0.0	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	0.0	174.2	79.1	0.0	243.9	0.0	0.0	37.3	45.4	0.0	54.4
LnGrp LOS	D	A	F	E	A	F	A	A	D	D	A	D
Approach Vol, veh/h		871			1096			414			679	
Approach Delay, s/veh		147.7			205.4			31.5			52.4	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	42.3	13.0	45.1	16.2	45.7	13.8	44.3
Change Period (Y+Rc), s	5.6	7.0	6.0	6.0	5.6	7.0	5.4	6.0
Max Green Setting (Gmax), s	14.0	34.0	53.4	53.4	14.0	34.0	14.0	34.0
Max Q Clear Time (g_c+I1), s	15.2	37.3	6.9	37.5	10.5	40.7	8.2	22.9
Green Ext Time (p_c), s	0.0	0.0	0.2	1.6	0.2	0.0	0.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	131.5
HCM 6th LOS	F

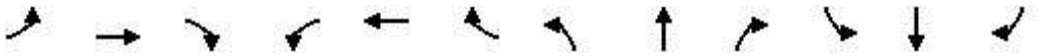
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	188	683	256	840	64	350	154	525
v/c Ratio	0.75	1.14	0.82	1.27	0.44	0.85	0.56	0.78
Control Delay	45.5	120.7	51.1	168.9	36.2	60.4	31.8	38.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	120.7	51.1	168.9	36.2	60.4	31.8	38.0
Queue Length 50th (ft)	90	~684	139	~855	36	247	78	324
Queue Length 95th (ft)	#207	#919	#326	#1190	75	341	115	417
Internal Link Dist (ft)		1715		1136		295		1065
Turn Bay Length (ft)	150		175		150		200	
Base Capacity (vph)	274	598	313	659	172	505	302	790
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	1.14	0.82	1.27	0.37	0.69	0.51	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2028 BUILD IMPROVED CONDITIONS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	788	31	86	430	82	52	249	255	179	196	184
Future Volume (veh/h)	189	788	31	86	430	82	52	249	255	179	196	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1803	1803	1803	1856	1856	1856
Adj Flow Rate, veh/h	195	812	32	89	443	85	54	257	263	185	202	190
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	334	764	30	144	605	116	149	231	237	212	275	258
Arrive On Green	0.08	0.43	0.43	0.05	0.40	0.40	0.05	0.28	0.28	0.09	0.31	0.31
Sat Flow, veh/h	1767	1773	70	1767	1513	290	1717	817	836	1767	879	827
Grp Volume(v), veh/h	195	0	844	89	0	528	54	0	520	185	0	392
Grp Sat Flow(s),veh/h/ln	1767	0	1843	1767	0	1803	1717	0	1652	1767	0	1707
Q Serve(g_s), s	7.8	0.0	51.7	3.3	0.0	29.8	4.1	0.0	34.0	8.3	0.0	24.6
Cycle Q Clear(g_c), s	7.8	0.0	51.7	3.3	0.0	29.8	4.1	0.0	34.0	8.3	0.0	24.6
Prop In Lane	1.00		0.04	1.00		0.16	1.00		0.51	1.00		0.48
Lane Grp Cap(c), veh/h	334	0	794	144	0	721	0	0	468	212	0	533
V/C Ratio(X)	0.58	0.00	1.06	0.62	0.00	0.73	0.00	0.00	1.11	0.87	0.00	0.74
Avail Cap(c_a), veh/h	334	0	794	198	0	721	0	0	468	216	0	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.0	0.0	34.2	28.3	0.0	30.6	0.0	0.0	43.0	33.2	0.0	36.8
Incr Delay (d2), s/veh	2.6	0.0	50.1	4.3	0.0	6.5	0.0	0.0	75.4	29.9	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	32.5	1.5	0.0	13.6	0.0	0.0	23.4	4.5	0.0	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	0.0	84.2	32.6	0.0	37.0	0.0	0.0	118.4	63.2	0.0	39.4
LnGrp LOS	C	A	F	C	A	D	A	A	F	E	A	D
Approach Vol, veh/h		1039			617			574			577	
Approach Delay, s/veh		73.2			36.4			107.3			47.0	
Approach LOS		E			D			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	58.4	12.2	43.5	15.0	54.7	15.7	40.0
Change Period (Y+Rc), s	5.6	7.0	6.0	6.0	5.6	7.0	5.4	6.0
Max Green Setting (Gmax), s	9.4	42.0	50.0	50.0	9.4	42.0	10.6	34.0
Max Q Clear Time (g_c+I1), s	5.3	53.7	6.1	26.6	9.8	31.8	10.3	36.0
Green Ext Time (p_c), s	0.1	0.0	0.1	1.2	0.0	6.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	66.7
HCM 6th LOS	E

Notes

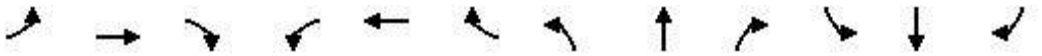
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	195	844	89	528	54	520	185	392
v/c Ratio	0.75	1.28	0.48	0.83	0.18	1.03	0.85	0.53
Control Delay	38.3	171.6	26.4	48.0	24.4	86.5	60.2	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	171.6	26.4	48.0	24.4	86.5	60.2	25.9
Queue Length 50th (ft)	85	~839	36	367	26	~405	91	196
Queue Length 95th (ft)	#153	#1094	68	#550	57	#623	#220	293
Internal Link Dist (ft)		1715		1136		295		1065
Turn Bay Length (ft)	150		175		150		200	
Base Capacity (vph)	260	659	200	635	292	506	217	740
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	1.28	0.45	0.83	0.18	1.03	0.85	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	598	24	233	690	75	58	228	90	140	271	207
Future Volume (veh/h)	171	598	24	233	690	75	58	228	90	140	271	207
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1803	1803	1803	1856	1856	1856
Adj Flow Rate, veh/h	188	657	26	256	758	82	64	251	99	154	298	227
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	204	571	23	276	597	65	161	392	155	185	318	242
Arrive On Green	0.08	0.32	0.32	0.12	0.36	0.36	0.06	0.32	0.32	0.07	0.33	0.33
Sat Flow, veh/h	1767	1773	70	1767	1645	178	1717	1230	485	1767	977	744
Grp Volume(v), veh/h	188	0	683	256	0	840	64	0	350	154	0	525
Grp Sat Flow(s),veh/h/ln	1767	0	1843	1767	0	1823	1717	0	1715	1767	0	1722
Q Serve(g_s), s	8.6	0.0	38.7	13.1	0.0	43.6	4.9	0.0	21.0	6.2	0.0	35.5
Cycle Q Clear(g_c), s	8.6	0.0	38.7	13.1	0.0	43.6	4.9	0.0	21.0	6.2	0.0	35.5
Prop In Lane	1.00		0.04	1.00		0.10	1.00		0.28	1.00		0.43
Lane Grp Cap(c), veh/h	204	0	594	276	0	662	0	0	546	185	0	561
V/C Ratio(X)	0.92	0.00	1.15	0.93	0.00	1.27	0.00	0.00	0.64	0.83	0.00	0.94
Avail Cap(c_a), veh/h	204	0	594	276	0	662	0	0	546	357	0	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.9	0.0	40.7	34.8	0.0	38.2	0.0	0.0	35.0	30.5	0.0	39.3
Incr Delay (d2), s/veh	41.3	0.0	85.9	35.1	0.0	132.8	0.0	0.0	2.4	9.3	0.0	15.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	30.8	8.0	0.0	42.8	0.0	0.0	9.0	3.0	0.0	17.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.2	0.0	126.6	69.9	0.0	171.0	0.0	0.0	37.5	39.8	0.0	54.9
LnGrp LOS	E	A	F	E	A	F	A	A	D	D	A	D
Approach Vol, veh/h		871			1096			414			679	
Approach Delay, s/veh		115.1			147.4			31.7			51.5	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.3	45.2	13.0	45.1	15.4	50.1	13.9	44.2
Change Period (Y+Rc), s	5.6	7.0	6.0	6.0	5.6	7.0	5.4	6.0
Max Green Setting (Gmax), s	14.7	34.1	52.6	52.6	9.8	39.0	20.2	27.0
Max Q Clear Time (g_c+I1), s	15.1	40.7	6.9	37.5	10.6	45.6	8.2	23.0
Green Ext Time (p_c), s	0.0	0.0	0.2	1.6	0.0	0.0	0.3	0.4

Intersection Summary	
HCM 6th Ctrl Delay	101.2
HCM 6th LOS	F

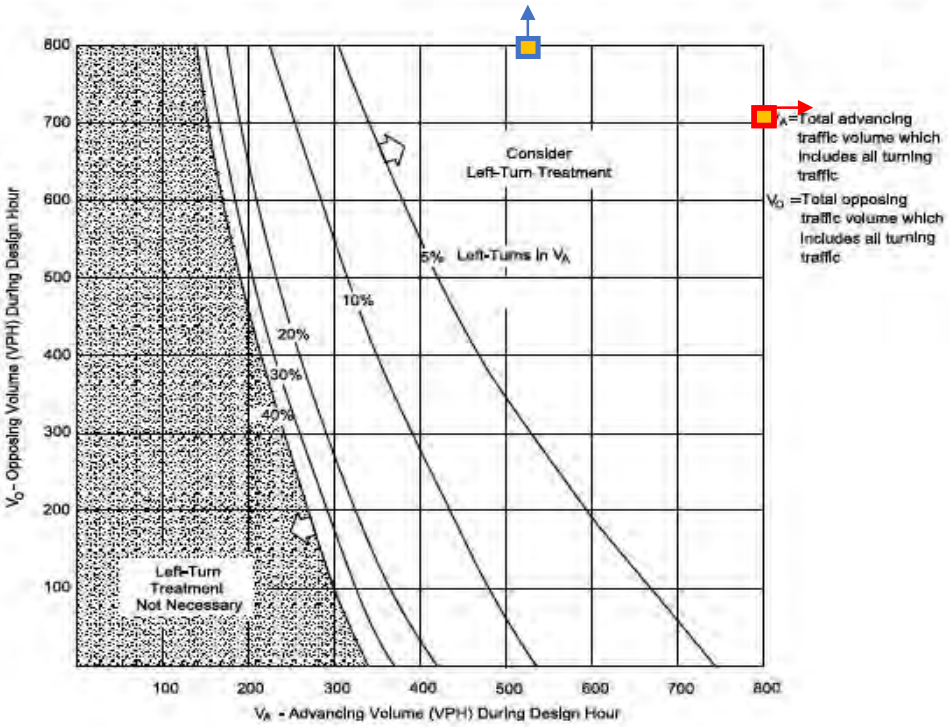
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	188	683	256	840	64	350	154	525
v/c Ratio	0.79	1.15	0.84	1.27	0.42	0.83	0.54	0.76
Control Delay	50.7	122.4	55.0	169.0	34.4	59.0	30.7	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	122.4	55.0	169.0	34.4	59.0	30.7	36.9
Queue Length 50th (ft)	92	~683	141	~879	35	245	77	319
Queue Length 95th (ft)	#246	#917	#318	#1127	75	#362	117	423
Internal Link Dist (ft)		1715		1136		295		1065
Turn Bay Length (ft)	150		175		150		200	
Base Capacity (vph)	238	596	305	659	176	439	389	779
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	1.15	0.84	1.27	0.36	0.80	0.40	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix E – Turn Lane Warrant Analyses



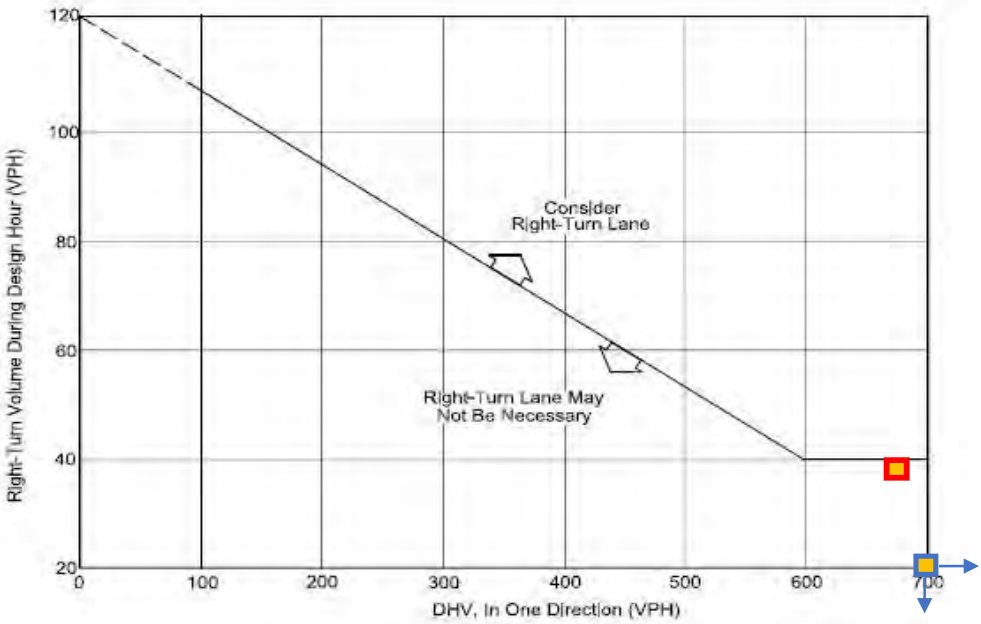
Instructions:

1. *The family of curves represents the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.*
2. *Read V_A and V_O into the chart and locate the intersection of the two volumes.*
3. *Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is warranted. If the point is to the left of the line, then a left-turn lane is not warranted based on traffic volumes.*

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (45 mph)
Figure 9.5-F

US 78 at EquipmentShare Access/Site Access #1

Westbound	Left	Va	Vo	LTs	LT %
	2027 Build	521	845	21	4.0%
	2031 Build	872	704	67	7.7%



Note: For highways with a design speed below 50 miles per hour with a DHV < 300 and where right turns > 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given:	Design Speed	=	35 miles per hour
	DHV	=	250 vehicles per hour
	Right Turns	=	100 vehicles per hour

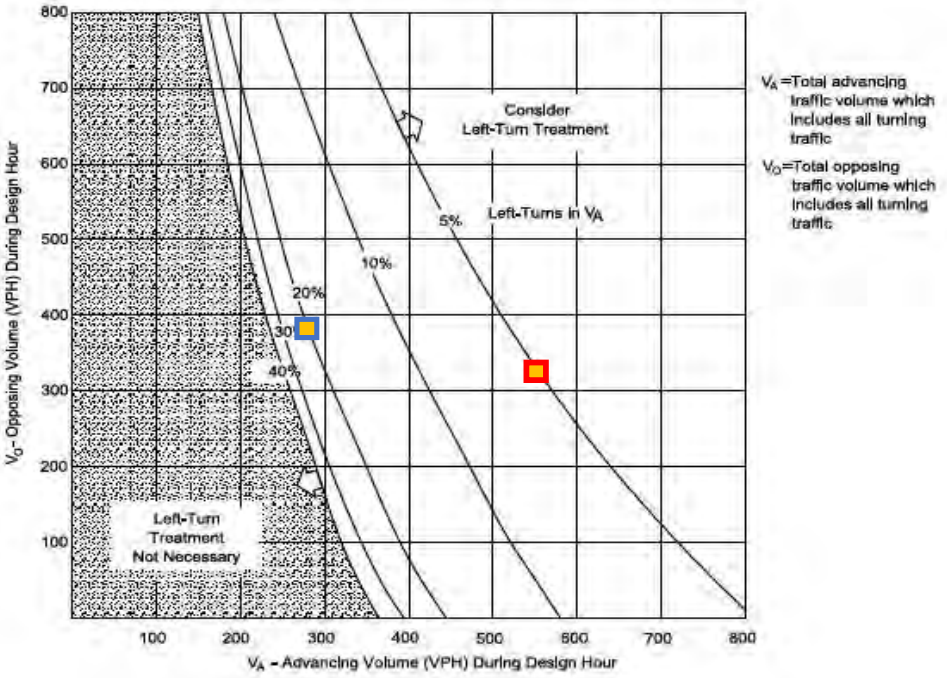
Problem: Determine if a right-turn lane is necessary.

Solution: To read the vertical axis, use 100 – 20 = 80 vehicles per hour. The figure indicates that a right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A

US 78 at Equipment Share Access

Eastbound	Right	DHV	RTs
	2023 Build AM	830	15
	2023 Build PM	667	37



Instructions:

1. *The family of curves represents the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.*
2. *Read V_A and V_O into the chart and locate the intersection of the two volumes.*
3. *Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is warranted. If the point is to the left of the line, then a left-turn lane is not warranted based on traffic volumes.*

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (40 mph)
Figure 9.5-G

Von Ohsen Road at Dunmeyer Road / Site Access #2

Southbound	Left	Va	Vo	LTs	LT %
■	2028 Build AM	271	389	9	3.3%
■	2028 Build PM	557	323	29	5.2%

Aponte, Crystal

From: Todd-Burke, Andrew
Sent: Monday, April 17, 2023 12:57 PM
To: Aponte, Crystal
Subject: FW: Elms Glen TIA Report
Attachments: 2022-02-21 Elms Glen Response Memo.pdf

Andrew Todd-Burke, PLA, ASLA

Kimley-Horn | 115 Fairchild Street, Suite 250, Charleston, SC 29492
Direct: 843 823 6793 | Mobile: 843 329 2269 | www.kimley-horn.com
Connect with us: Twitter | LinkedIn | Facebook | Instagram

From: Turner, Dillon <Dillon.Turner@kimley-horn.com>
Sent: Tuesday, March 28, 2023 4:31 PM
To: Todd-Burke, Andrew <Andrew.Todd-Burke@kimley-horn.com>
Subject: Fwd: Elms Glen TIA Report

Get Outlook for iOS

From: Turner, Dillon <Dillon.Turner@kimley-horn.com>
Sent: Tuesday, June 21, 2022 9:17:43 AM
To: Connelly, Reeves <Reeves.Connelly@kimley-horn.com>; Todd-Burke, Andrew <Andrew.Todd-Burke@kimley-horn.com>
Subject: Fwd: Elms Glen TIA Report

See email from Josh.
Get Outlook for iOS

From: Johnson, Joshua A. <JohnsonJA@scdot.org>
Sent: Tuesday, February 22, 2022 7:25:24 PM
To: Turner, Dillon <Dillon.Turner@kimley-horn.com>
Cc: Todd-Burke, Andrew <Andrew.Todd-Burke@kimley-horn.com>; Aponte, Crystal <Crystal.Aponte@kimley-horn.com>; Fleming, Juleigh B. <FlemingJB@scdot.org>; Grooms, Robert W. <GroomsRW@scdot.org>; Payne, Adam C. <PayneAC@scdot.org>
Subject: RE: Elms Glen TIA Report

Dillon,

The Elms Glen TIA with addendum is accepted with the proposed mitigation of left- and right-turn lanes at the site access on US 78. Please upload the TIA and this approval email with the encroachment application in EPPS.

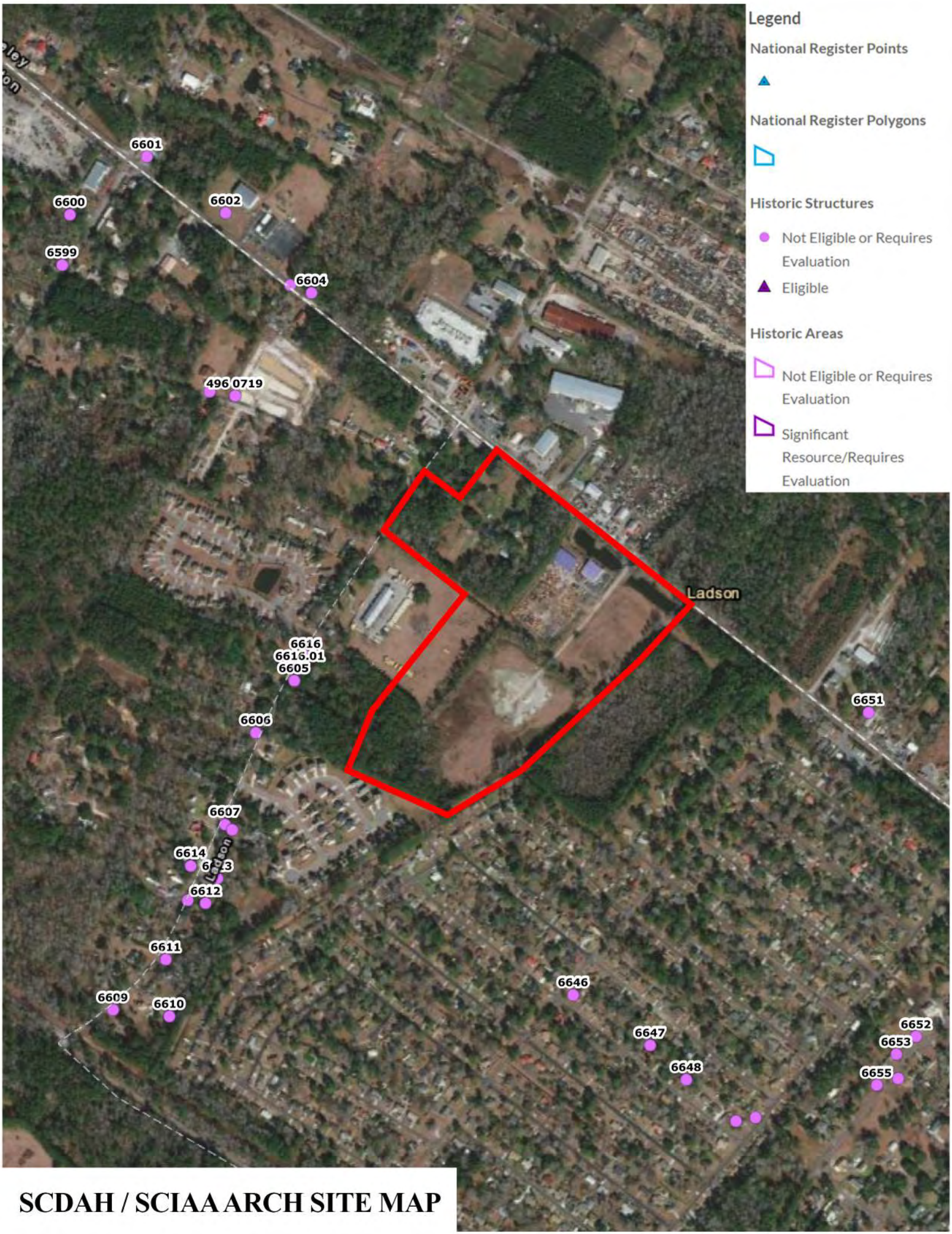
Thank you,
Josh Johnson, PE, PTOE
District Traffic Engineer
SCDOT District 6

From: Turner, Dillon <Dillon.Turner@kimley-horn.com>
Sent: Monday, February 21, 2022 12:07 PM
To: Johnson, Joshua A. <JohnsonJA@scdot.org>
Cc: Todd-Burke, Andrew <Andrew.Todd-Burke@kimley-horn.com>; Aponte, Crystal <Crystal.Aponte@kimley-horn.com>
Subject: RE: Elms Glen TIA Report

Josh,

We hope you are doing well! Please see the formalized comment responses for the Elms Glen TIA Report. Please let us know if you need anything else.

Thank You,
Dillon Turner



SCDAH / SCIAA ARCH SITE MAP

Charleston County SCHOOL DISTRICT
excellence is our standard

STUDENTS ARE THE HEART OF OUR WORK!

July 20, 2022

Kimley-Horn
Attn: Crystal Aponte
115 Fairchild Street, Ste 250
Charleston, SC 29492

Subject: TMS #'s: 388-00-00-116, 118, 119, 139, 140, 163 177, 178 & 223 and 388-02-00-131, 132 & 443
Elms Glen Project, Ladson SC

Operations Division

Donald R. Kennedy, Sr.
Superintendent of Schools

Jeffrey Borowy, P.E.
Chief Operating Officer

Dear Ms. Aponte:

Please accept this letter as "Proof of Coordination" and inadequate service capacity for the proposed Elms Glen Project in Ladson SC (Hwy 78 & Von Ohsen Rd), consisting of approximately 222 proposed single family units.

To determine an estimate of student yield that any development may create, a statistical formula is applied at the elementary, middle, and high school levels based on the type and number of units to be built.

On the basis of the location supplied to us, we expect significant impact to enrollment from a capacity standpoint. The three main schools that fall within the attendance zone where the development will take place are listed below, and are subject to zoning modification.

- Ladson Elementary
- Deer Park Middle
- Stall High

Please contact me at (843) 566-1995 if you have any questions and/or concerns.

Sincerely,

Angela Barnette, M.Ed.
Director of Planning & Real Estate

Charleston Water System

PO Box B
Charleston, SC 29402
103 St. Philip Street (29403)

(843) 727-6800
www.charlestonwater.com

July 15, 2022

Crystal Aponte
Kimley-Horn
Crystal.aponte@kimley-horn.com

Water Availability to TMS: 388-02-00-131, 132, 388-00-00-163, 139, 443, 116, 118, 119, 140
Re. Multi Family Development

This letter is to certify our willingness and ability to provide water service to the above referenced site in Charleston County, South Carolina. CWS currently has a 24" water main in the ROW of Highway 78, and 8" water mains in the ROW of both Von Oshen Road and Midview Drive which may serve the development. Upon submittal of formal plans, CWS may require looping of new water mains.

It will of course be a developer responsibility to ensure there are adequate pressures and quantities on the existing mains to serve this site with domestic water/fire flow and not negatively impact the existing developments. Please be advised any extensions or modifications to the infrastructure as well as any additional fire protection will be a developer's expense. All fees and cost associated with providing service to this site will be a developer expense and will be due prior to connection of any Charleston Water System's water system. This letter does not reserve capacity in the Charleston Water System infrastructure, and it is incumbent upon the developer or his agent to confirm the availability herein granted past 12 months of this correspondence.

The Charleston Water System certifies the availability of service only insofar as its rights allow. Should access to our existing main/mains be denied by appropriate governing authorities, the Charleston Water System will have no other option than to deny service. This letter is not to be construed as a letter of acceptance for operation and maintenance from the Department of Health and Environmental Control.

If there are any questions pertaining to this letter, please do not hesitate to call on me at (843) 727-6869.

Sincerely,

Lydia Owens
Charleston Water System

NORTH CHARLESTON SEWER DISTRICT

Safeguarding today, preserving tomorrow

7225 Stall Road /P.O. Box 63009 North Charleston, SC 29419 843.764.3072

7/18/2022

Crystal Ana Aponte
Landscape Architect Analyst
115 Fairchild Street, Suite 250
Charleston, SC 29492
843-737-6390

Attn: Crystal Ana Aponte

Re: Sanitary sewer availability to TMS 388-02-00-131, 388-00-00-443, 388-00-00-118, 388-00-00-163, 388-02-00-132, 388-00-00-119, 388-00-00-139, 388-00-00-116, 388-00-00-140

Dear Ms. Aponte,

Please be advised that sanitary sewer service is not available to 388-02-00-131, 388-00-00-443, 388-00-00-163. For these properties to have access to sewer, a pump station will need to be installed at the owner's expense.

Please be advised that sanitary sewer service is available to TMS 388-00-00-118, 388-02-00-132, 388-00-00-119, 388-00-00-139, 388-00-00-116 and 388-00-00-140. The property owner is responsible for installing a service into the main line or manhole located in an easement/right-of-way next to the property. If this property is subdivided, the property owner will be responsible for any sewer line modifications necessary to provide sewer service to each lot. If you have any questions, please call me at 843-764-3072.

Sincerely,

Kevin Trepen

Kevin Trepen
New Development Coordinator
North Charleston Sewer District

July 18, 2022

Crystal A. Aponte
Kimley-Horn
115 Fairchild St., Ste. 250
Charleston SC 29492

RE: TMS 388-02-00-131, -132
388-00-00-136, -139,-116,-118,-119,-140
Summerville, SC
The Elms Glen Project

Dear Crystal:

I am pleased to inform you that Dominion Energy will be able to provide electric and gas service to the above referenced project located in Summerville, South Carolina. Electric and Gas services will be provided in accordance with Dominion's General Terms and Conditions, other documents on file with the South Carolina Public Service Commission, and the company's standard operating policies and procedures. Any associated customer contribution will be determined when equipment loads and projected revenues are analyzed. In order to begin engineering work for the project, the following information will need to be provided:

- Detailed utility site plan (AutoCAD format preferred) showing water, sewer, and storm drainage as well as requested service point/transformer location.
- Additional drawings that indicate wetlands boundaries, tree survey with barricade plan and buffer zones (if required), as well as any existing or additional easements will also be needed.
- Electric load breakdown by type with riser diagrams
- Signed copy of this letter acknowledging its receipt and responsibility for its contents and authorization to begin engineering work with the understanding that Dominion Energy intends to serve the referenced project.

Dominion Energy's construction standards and specifications are available online. For more information or questions, please contact me by phone at (843) 576-8442 or denise.ware@dominionenergy.com.

Sincerely,

M. Denise T. Ware

M. Denise Tindell-Ware, ACEM
Customer Service Engineering
Project /Account Manager

GROWTH MANAGEMENT
GREATER SOUTH CAROLINA DISTRICT

UNITED STATES POSTAL SERVICE

DATE: 7/20/20

CRYSTAL ANA ABONTE

115 FAIRCHILD ST AVE 250

CHARLESTON, SC 29492

Ref: Proof of coordination

This letter is proof of coordination for ELMS GLEN, HWY 78 & VON OSHEN RD.

1:1.0 PARTIAL LOCK RATIO TO SF HOMES 1:.5 PARTIAL LOCKER RATIO FOR APARTMENTS
and the United States Postal Service; South Carolina District, Growth Management.

Respectfully,

Eric Sigmon
USPS; GSC District
Growth Management Coordinator
eric.r.sigmon@usps.gov
C-803-662-5436
O-(803) 926-6258

C&B FIRE DEPARTMENT

509 Royle Rd, Ladson, SC 29456
Office (843)873-0714
Fire Chief
Joshua K Woodall

718/2022

Good Morning Crystal

C&B Fire Department is aware of the subdivision Elms Glen, going in at the corner of Hwy 78 & Von Oshen Rd.
This is in our response area. We will serve this community, as we would serve any other area in our fire district.
Just for your records, our department's ISO rating is a Class 3.
Thanks for keeping C&B in the loop for this project.
If you have any questions, or if we can be of service, please let me know.
843-708-9428
rbryant@cbfiredept.org

Regards,

Ronny Bryant

Deputy Chief
C&B FD

Steven L. Thigpen, P. E.
Director of Public Works

CHARLESTON COUNTY
SOUTH CAROLINA

843.202.7600
Fax: 843.202.7601
sthigpen@charlestoncounty.org
Lonnie Hamilton III Public Services Building
4045 Bridge View Drive, Suite A301
North Charleston, SC 29405

August 5, 2022

Kimley-Horn
Attn.: Mr. Andrew Todd-Burke
115 Fairchild Street, Suite 250
Charleston, SC 29492

RE: US HIGHWAY 78 BUSINESS PARK AMENDMENT ELMS GLEN TMS # 388-00-00-223 / 443 / 163 / 178 / 177 / 139 / 118 / 119 / 140 / 116

Dear Mr. Richardson:

Charleston County Public Works has been made aware of the draft US Hwy 78 Business Park Planned Development Amendment Elms Glen for mixed use development of residential, commercial, and industrial uses with supporting infrastructure development on Highway 78 and Von Ohsen Road at TMS No.'s 388-00-00-223 / 443 / 163 / 187 / 177 / 139 / 118 / 119 / 140 and 116. This letter represents sufficient coordination with the Public Works Department to continue through the planned development process for the property.

This coordination letter does not represent a technical or comprehensive review or approval for this planned development. Based on the submitted documents, Public Works has determined a Stormwater MS4 application will be required.

This permit application submittals must address criteria set by Planning Commission Rezoning Approval Conditions, Charleston County Stormwater Program Permitting Standards and Procedures Manual, and Zoning and Land Development Regulations.

Sincerely,

Wesley D. Linker, P.E.
Technical Programs Manager

cc: Emily Wynn - Charleston County Planning Department

CHARLESTON AREA REGIONAL TRANSPORTATION AUTHORITY

August 3, 2022

Crystal Ana Aponte
Kimley-Horn
115 Fairchild Street, Suite 250,
Charleston, SC 29492

RE: Letter of Coordination

Dear Ms. Aponte,

Thank you for contacting us regarding your Elms Glen Project. No further approvals are required by CARTA. A BRT corridor has been proposed for this region along Rivers Avenue and is currently undergoing planning and design. There will be an impact to the right-of-way. For more information on the LCRT please visit this website (https://lowcountryrapidtransit.com/) or email us at info@lowcountryrapidtransit.com.

Thank you again,
Belén K. Vitello

1362 McMillan Avenue - Suite 100, North Charleston, SC 29405
Tel: (843) 529-0400 | Fax: (843) 529-0305
www.rideCARTA.com

COMMUNITY WORKSHOP NOTICE

You are invited to attend an informal community workshop regarding the proposed Planned Development rezoning of "Elms Glen", to be located near the intersection of Highway 78 and Von Oshen Road.

The community workshop will be held on

Tuesday, April 27th from 5pm to 6pm.

Zoom Meeting Information

Meeting ID: 872 3970 9551 Passcode: 348882

https://us02web.zoom.us/j/87239709551?pwd=bWt2ZEVzUDhFbVhrZlg3cWlZNDdzQT09

Phone number: 1 (301) 715-8592

The meeting will be held virtually via Zoom. Please use the information above to access via computer or telephone. If you would like to submit a comment or a question to be answered at the meeting please email HLAinc@outlook.com

You can also mail comments to HLA at 29A Leinbach Dr. Charleston, SC 29407. Please submit comments or questions by 12:00 pm on Tuesday, April 27th.