

Approved by County
Council on 12/15/22
Conditions incorporated



EARTHSOURCE
ENGINEERING

CIVIL ENGINEERING | SITE PLANNING
LANDSCAPE DESIGN | LEED DESIGN

MILL CROSSING ESTATES
PLANNED DEVELOPMENT GUIDELINES
CHARLESTON COUNTY, SOUTH CAROLINA

Prepared for:
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Revised August 31, 2022

Mill Crossing Estates

Planned Development Guidelines

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Mill Crossing Estates

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1. Planned Development Name

Mill Crossing Estates

2. Statement of Objectives

The subject property is located off Mill Street and Dunmeyer Hill Road in Charleston County, South Carolina and currently contains three parcels of land equaling **5.62 acres**. The parcels are currently zoned Single Family Residential 4 (R-4) Zoning District. The intent of this application is to create a Planned Development for the entire **5.62 acre** project, giving the developer flexible lot standards and increased density.

Current Condition:

4.00 Acres (Zoned R-4) TMS: 385-15-00-017

1.62 Acres (Zoned R-4) TMS: 385-15-00-031

Proposed Condition:

5.62 Acres (Zoned PD) TMS: 385-15-00-017 (TBD Dunmeyer Hill Road)

PD Zoned project proposes a maximum of 30 dwelling units on 5.62 acres with a maximum density of 5.4 units/acre. Provided common open space for the PD Zoned residential project to be a minimum of 0.05 acres per lot or 1.50 acres.

3. Intent and Results

The proposed residential use is consistent with the area and meets the objectives of the Charleston County Zoning and Land Development Regulations (ZLDR) Art. 4.25. This application will meet the applicable criteria of Section 4.25.8.J as listed below.

- a. The PD Development Plan complies with the standards contained in this article. Compliance is demonstrated in Sections 3-27 of this document.
- b. The development is consistent with the intent of the *Comprehensive Plan* and other adopted policy documents. This will be accomplished by providing entry level housing for first time buyers within the Urban Growth Boundary (UGB) where public infrastructure and services exist. This development will increase the diversity in housing within the immediate area, while preserving natural resources to the greatest extent possible.
- c. 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. Coordination with all of the aforementioned agencies will occur and the correspondence is provided in the Appendix of this document.

The intent of the Mill Crossing Estates is to create a unique housing development providing smaller custom-built homes. This will provide a very cost-effective housing option for Charleston County.

The proposed development will meet the objectives contained in ZLDR Section 4.25.5, as listed below. A brief description for meeting objectives has been provided.

- A. A maximum choice in the types of environment available to the public by allowing a development that would not be possible under the strict application

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- of the standards of this Ordinance that were designated primarily for development on individual lots;
 - o The Mill Street Estates project will provide a product line and environment not readily available near the project area. The higher density development will create a first-time buyer housing product, which according to the developer's market studies, is very much needed for potential home buyers in this location.
- B. A greater freedom in selecting the means to provide access, light, common open space and design amenities;
 - o By creating this planned development, there will be an emphasis on creating useable common open space and design standards not available through the use of existing zoning ordinances.
- C. Quality design and environmentally sensitive development by allowing development to take advantage of special site characteristics, locations and land use arrangements;
 - o Existing site topography and features allow this site to be sensitive to the environment. By utilizing existing site slopes throughout our proposed layout, the design will minimize sizing of storm drainage infrastructure. Pond will be located in an area currently surrounded by trees and will include a pervious walking trail, allowing residents to enjoy nature.
- D. A development pattern in harmony with the applicable goals and strategies of the Comprehensive Plan;
 - o The Future Use Recommendation according to the Comprehensive Plan designates this area as Urban/Suburban Mixed Use. This use encourages more dense development, such as an M8 Zoning (8 units/acre). The proposed development would be in keeping with the Comprehensive Plan.
- E. The permanent preservation of common open space, recreation areas and facilities;
 - o By adoption of this planned development, 31% of the site will be preserved as common open space. This common open space will be intended for resident use.
- F. An efficient use of the land resulting in more economical networks of utilities, streets, schools, public grounds and buildings, and other facilities;
 - o Site design utilizes a single road with double loaded lots throughout the entire of the project. This allows for utility service to serve both sides of the road, avoiding excess utility extensions. Site design provides a cost-efficient approach to developing the lots.
- G. A creative approach to the use of land and related physical facilities that results in better development and design and the construction of amenities;
 - o The site design has utilized the existing topography, which drains towards the project's stormwater outfall ditch on the easternmost property line. The largest proposed common open spaces surrounds and includes our stormwater pond as well as is located across the street from the pond. Providing our stormwater detention adjacent to this outfall feature is an efficient design and provides a nice feature within the common open space. The pond may be a wet detention pond which will maintain a static water level.
- H. A development pattern that incorporates adequate public safety and transportation-related measures in its design and compliments the developed properties in the vicinity and the natural features of the site.

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- o The proposed design incorporates road design in which public safety providers will have access. There are 2 entrances and no cul-de-sacs or dead ends. Police, fire & emergency response travel will not be impeded by the proposed design.

Additional objectives of the Planned Development include:

- Creating an affordable neighborhood with quality homes that are well thought out and sensitive to surrounding neighbors.
- Creating walkability throughout the development through the use of sidewalks and trails that will connect the residential to the common open spaces providing for safety and encouraging outdoor activity.
- Providing meaningful common open space that ties together and allows additional buffering from neighbors and is environmentally sensitive.
- Allowing for street trees that enhance the neighborhood.
- Reducing lot sizes and setbacks to create a compact and walkable community and provide flexibility to work around natural site features

Residential Description

The residential portion of the property is made up of 5.62 acres total with a maximum of 3.02 acres for housing, while the remaining 2.6 acres will be used for infrastructure, roads, and common open space as shown on the Conceptual Site Plan attached as the Appendix 4. The site will be developed as single-family residential home sites which are being eagerly sought in this area. The development will incorporate a public or private road, along with common open space areas connected with sidewalks and trails around planned storm water pond. The intent is to preserve the natural beauty of the land while allowing it to be developed for residential dwellings and an active community positioned in a growing area of the County. The later sections of this document will further outline the preservation, building height restrictions, density, and other restrictions for this development.

Common Open Space Description

"Common Open Space" is defined as any land dedicated to the public or designated by the development plan for the use, benefit, and enjoyment of all residents of the development. The development is in compliance with the requirements of ZLDR Article 4.25.6, Common Open Space.

The common open space for this development was designed to create an active neighborhood. Approximately 31% of the total site will be preserved as open space with no more than 30% of the open space being comprised of freshwater wetlands, in buffers and stormwater ponds, per Section 4.25.6.B.2.f of the ZLDR. The HOA green space may have utility easements within them for underground utilities. These common open spaces will be maintained by the HOA. Playground area, passive parks along with sidewalks and trails connecting these areas will provide residents with multiple options for activity without having to leave the development.

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4. Site Information

Total Acreage = 5.62 Acres

Highland Acreage = 5.12*

Freshwater Wetland Acreage = 0.498*

(Freshwater wetlands are utilized in the calculation for density)

* USACOE Coordination provided in Appendix 15. No OCRM critical line present on-site.

5. Proposed Land Uses

Project limited to Single Family Detached Residential homes. No Accessory Structures and/or Accessory Dwelling Units (ADU's) are allowed. Short-term rentals are not allowed. Accessory uses such as home occupations are not allowed.

Subdivision of lots shall comply with ZLDR Chapter 8.

6. Maximum Density

ZLDR Section 4.25.5.A.2.b.i states:

The underlying zoning district is Single Family Residential(R-4). A max density of not more than two times the max allowable density in the underlying zoning district may be permitted when 0.05 acres of common open space per dwelling unit is provided.

By this standard, the proposed 30 Lot subdivision would require 1.50 acres of common open space (approximately 27% of the site).

The proposed development provides 1.74 acres common open space (approximately 31% of the site) with a maximum density of 5.4 units/acre. Freshwater wetlands are utilized in the calculations for density.

7. Impact Assessment/Analysis

There will be tie-ins to public water and sewer, which will cause a minimal additional demand on these utilities.

Water will be provided by the Charleston Water Systems and sewage will be provided by North Charleston Sewer District. Electricity will be provided by Dominion and shall be services by existing power lines. All new and relocated utility lines will be underground.

The development is planned to have a 50' public or private right of-way roadway. If the developer intends the road section be publicly owned and maintained, the roads must be offered and accepted by the County for public ownership and maintenance in accordance with County requirements and processes in effect at the time such application is made. The project will have two curb cuts that will service a single road system off Dunmeyer Hill Road and Mill Street. The final location and number of curb cuts will be dependent upon issuance of encroachment permits from applicable agencies. All lots within the development shall have access from the internal neighborhood road only; no lots shall have direct access to Dunmeyer Hill Road or Mill Street.

The planned development shall comply with all Charleston County Stormwater

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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.

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. Utilization of approved and permitted Low Impact Design elements is encouraged within a comprehensive site Master Drainage Plan.

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

Applicant will coordinate with SCDOT, Charleston County Public Works, and Charleston County Transportation Development regarding any transportation impacts.

8. Traffic Study

A traffic study was performed by Bihl Engineering in March 2022 for this development plan and assessed there would be no negative impacts to traffic flow for the area based on the proposed 30 lot subdivision. A copy of the full report has been provided to Charleston County.

Based on the analysis performed, there are no required improvements needed other than coordination with Charleston County and SCDOT on driveway locations and design details.

A traffic impact study shall be submitted as part of the Site Plan Review and/or Subdivision application process. The study shall comply with the traffic impact study requirements of the ZLDR in effect at that time.

9. Development Schedule

The infrastructure development is scheduled to occur in a single phase. Homes will be built as purchased.

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10. Common Open Space

Common open space areas will be provided within the development at various locations that interconnect with each other. Current planned amenities include passive parks and trails within the common open space areas. Lighting would be planned for these areas depending on use and to satisfy both security needs and the possibility of evening use of each. This will be designed to meet all County regulations and will require site plan approval. This area will be owned and maintained by the HOA. Common open space will be compliant with ZLDR Section 4.25.6.

The total combined acreage of detention ponds and buffers to be used as common open space shall not comprise more than thirty percent (30%) of the common open space requirement. The minimum common open space required is 1.50 acres for the 30 Lot subdivision (0.05 acres/lot).

The proposed sketch plan (Appendix 4) provides a detention pond 0.34 acres in size, and a buffer area of 0.18 acres in compliance with Article 9.4, for total of 0.52 acres of pond and buffer area. The combined pond and buffer areas account for 30% of the total common open space provided (1.74 acres).

Plantings in common open space areas will be planned so as to screen between properties and provide a visual barrier.

Common Open Space to be owned and maintained by the HOA upon completion of construction and prior to final platting. Dedication of common open space areas will be conveyed to the HOA entity to be preserved as required by Section 4.25.6.C.2 of the ZLDR.

Common Open Space shall comply with ZLDR Article 4.25.6 as well as ZLDR Article 9.2, Tree Protection and Preservation.

11. Compliance with the ZLDR

1. Items not specifically addressed with this Planned Development shall comply with the Charleston County Zoning and Land Development Regulations for the R-4 Zoning District in effect at the time of subsequent development application submittal.
2. The owner/developer shall proceed with the development in accordance with the provisions of these zoning regulations, applicable provisions of the Charleston County Comprehensive Plan, and with such conditions as may be attached to any rezoning to the applicable PD district.
3. The proposed development compiles with the approval criteria contained in Section 4.25.8.J as explained herein:
 - A. This Planned Development complies with the standards contained in Article 4 of the ZLDR.
 - B. The development is consistent with the intent of the Comprehensive Plan and other adopted policy documents since the property will preserve the natural resources, such as large trees and wetlands, while providing for the expansion

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and growth of Charleston County.

- C. The County and other agencies will be able to provide necessary public services, facilities, and programs to serve this development at the time it is developed. Please see Exhibit I for Letters of Coordination from the various public service providers in support of this development.

4. Any variations or modifications to the approved PD development plans will be subject to Section 4.25.10 of the ZLDR.

12. **Historical and Archaeological Survey**

Project contains no historical or architectural sites. Please see GIS map of site from the South Carolina Department of Archives and History Preservation located as Appendix 9.

13. **Letters of Coordination**

Letters of coordination for required agencies provided in appendix of this document.

14. **Dimensional Standards**

Density/Intensity and Dimensional Standards	
Maximum Residential Density	5.4 units per acre (<i>Maximum build out for 5.62 Acres = 30 Units</i>)*
Minimum Lot Area	4,000 Square Feet*
Minimum Lot Width	40 feet
Minimum Setbacks	
Front/Street Side	18 Feet
Side	5 Feet
Rear	15 Feet
Maximum Height	35 Feet
Maximum Impervious Lot Coverage	60% (Including structures, drives and sidewalks)
Maximum Building Footprint Size	2,000 Square Feet

**Freshwater wetlands are included in this calculation.*

- In addition to this table, lot dimensional standards to comply with Section 26.4 of PD.
- Where in conflict, the most restrictive provision shall apply.

15. **Architectural Guidelines**

The Architectural Guidelines of ZLDR Article 9.5 (per the ZLDR amendments adopted on 10/26/2021) shall apply to this proposed Planned Development.

Renderings can be found in Appendix 8.

16. **Lots to Abut Common Open Space**

Project layout was designed to maximize accessibility of residential lots to common open

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space as much as practical due to site constraint. Four lots immediately abut common open space and/or buffers. All proposed lots are within 200' of an HOA common open space and/or buffer in order to maximize accessibility and use of these areas. All property owners in the planned development shall have access to open space by means of public or private street or sidewalk in an easement with a minimum width of 20 feet.

17. Areas Designated for Future Use

Project to be developed in a single phase, so there are no areas designated for future use in the current project scope. However, if an area is later designated for future use, it shall comply with ZLDR Article 4.25.5.J below:

All areas designated for future expansion or not intended for immediate improvement or development shall remain in a natural state until such time as development permits are approved.

18. Signs

Signage for the subdivision will be compliant with the Charleston County ZLDR Art. 9.8 Signage will be limited in total size to conform with the County requirements. The monument signage is to be integrated with landscaping with a preference for uplighting.

19. Parking

Parking is to be provided per the Charleston County Zoning Ordinance current standards at the time of development.

- 2 spaces per unit (*Off-street*)

Note: Single Family residential units to provide 2 spaces per unit onsite. These can be provided in the driveway (*side by side*) or one (1) in the garage and one (1) in the driveway. In all applications pedestrian sidewalks are not to be obstructed due to parking. Parking shall be in compliance with ZLDR Article 9.3.

20. Tree Protection

The proposed Planned Development shall comply with all provisions of Art. 9.2, Resource Areas, of the ZLDR.

21. Resource Areas

This planned development shall protect any resources determined significant by the Zoning and Planning Director including, but not limited to agricultural soils and active farmland, buffer areas between active farmland and existing/planned future non-farm development, wetlands, mature trees, land adjacent to preserved farmland on neighboring properties, scenic views, water access and shoreline buffers, and habitat of species designated as of federal, state and local concern.

This planned development shall comply with all provisions of Section 4.25.5.I, Resource Management, of the ZLDR. Grand Trees variances may be applied for and requested through the Charleston County BZA process on a by case basis.

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22. Home Owner's Association (HOA)

A Home Owner's Association (HOA) Board of Directors will be created to own, manage, and maintain the residential roads & sidewalk (unless they are dedicated to the public), the drainage system (unless they are dedicated to the public), common open space and amenity features. 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.

All of these items will be owned and maintained by the Developer until the ongoing maintenance and ownership is assumed by the HOA.

If not dedicated to the public, the HOA shall fund, own, and maintain the stormwater system components, structures, and shall ensure they are maintained to permitted standards. Any modification to permitted pond configuration will require revision to approved comprehensive site drainage plan and issuance of Stormwater permit above staff approvals.

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

23. Additional Guidelines

Each unit and/or building within this Planned Development will be carefully located so that each will have a reasonable view and privacy. Consideration will be given to building regarding topography, the protection of existing trees, and/or other aesthetic or environmental conditions. The buffer will remain undisturbed other than the addition of supplemental landscaping and the proposed sidewalk.

1. Site Lighting

Site Lighting shall comply with ZLDR Section 9.5.3.C.

2. Garbage Disposal

The HOA will be responsible for securing a contract with a private company for garbage disposal. Covenants and restriction from the HOA will dictate requirements for trash can screening in the residential development.

3. Additional Building & Vehicular Limits

Other than occasional deliveries, heavy truck traffic will be prohibited in the development. Overnight parking of eighteen-wheel vehicles will be prohibited.

4. Landscaping & Buffer Requirements

Landscaping & Buffer requirements shall comply with ZLDR Art. 9.4.
Project to include S2 Buffer Type (20' minimum buffer) along Dunmeyer Hill Road

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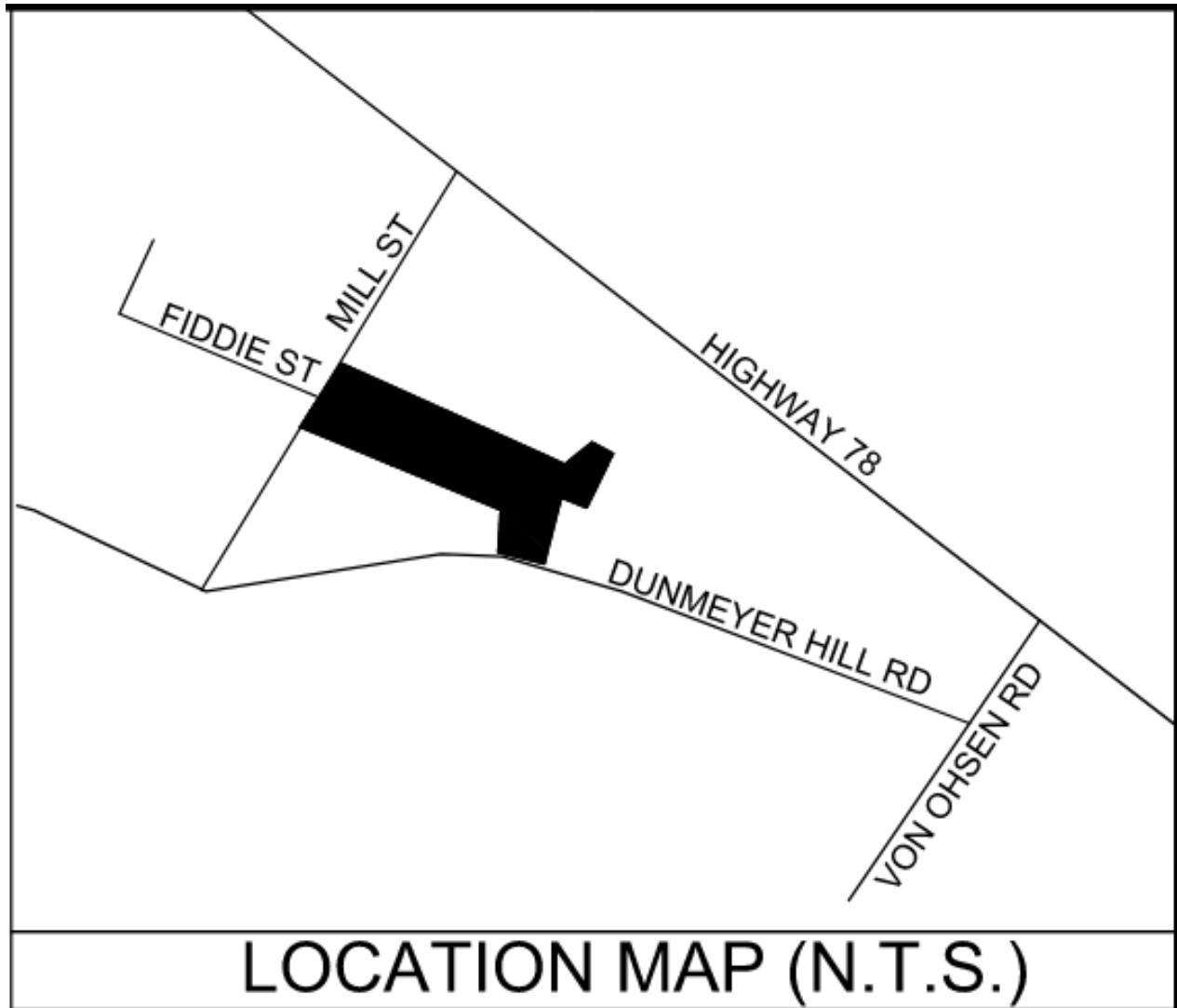
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and Mill Street in accordance with Article 9.4.4. All tree protection and preservation shall be in compliance with ZLDR Article 9.2.

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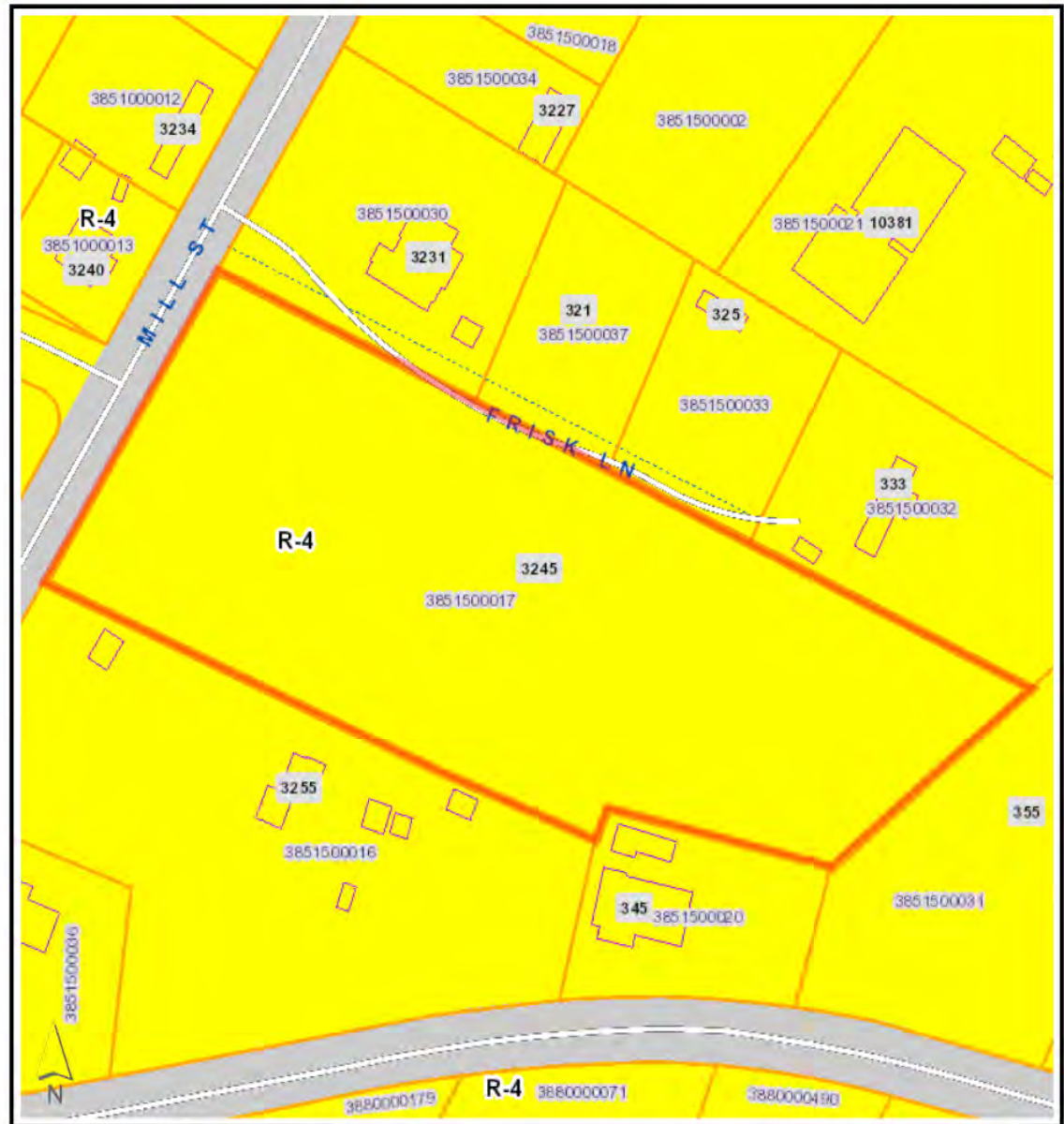
24. Appendices
1. Location Map



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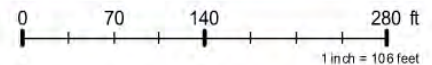
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2. Current Charleston County Zoning Map (R-4)



Charleston County SC

Parcel ID: 3851500017
OWNER1: BGE 2014 LLC
PLAT BOOK PAGE: DA-643
DEED BOOK PAGE: 0543-056
Jurisdiction: COUNTY OF
CHARLESTON



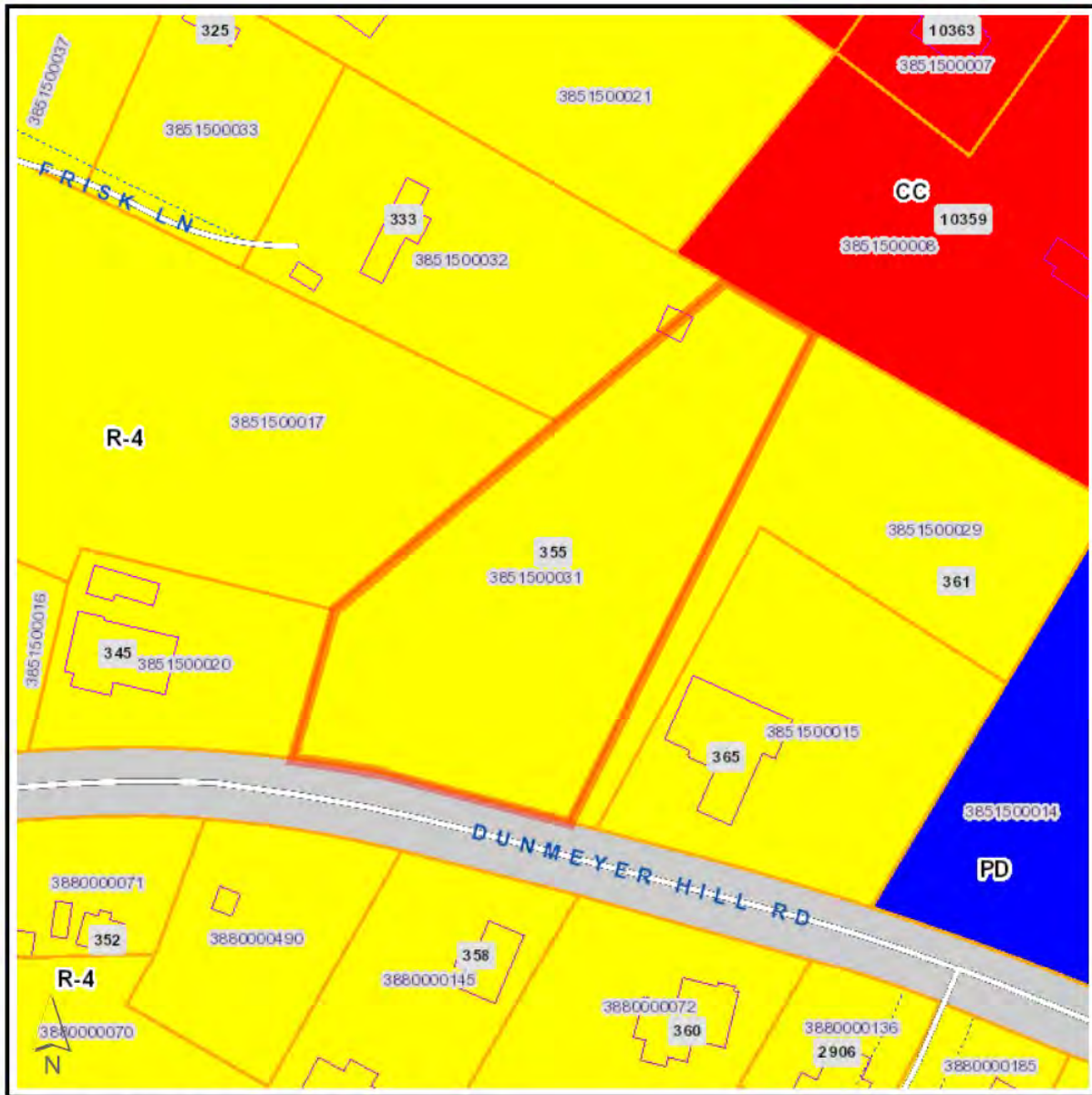
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Date: 11/2/2020

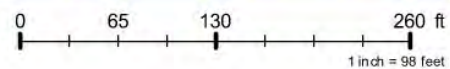
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Charleston County SC

Parcel ID: 3851500031
OWNER1: GUSTILO JOE PRIM G
PLAT BOOK PAGE: DC-144
DEED BOOK PAGE: X337-812
Jurisdiction: COUNTY OF
 CHARLESTON



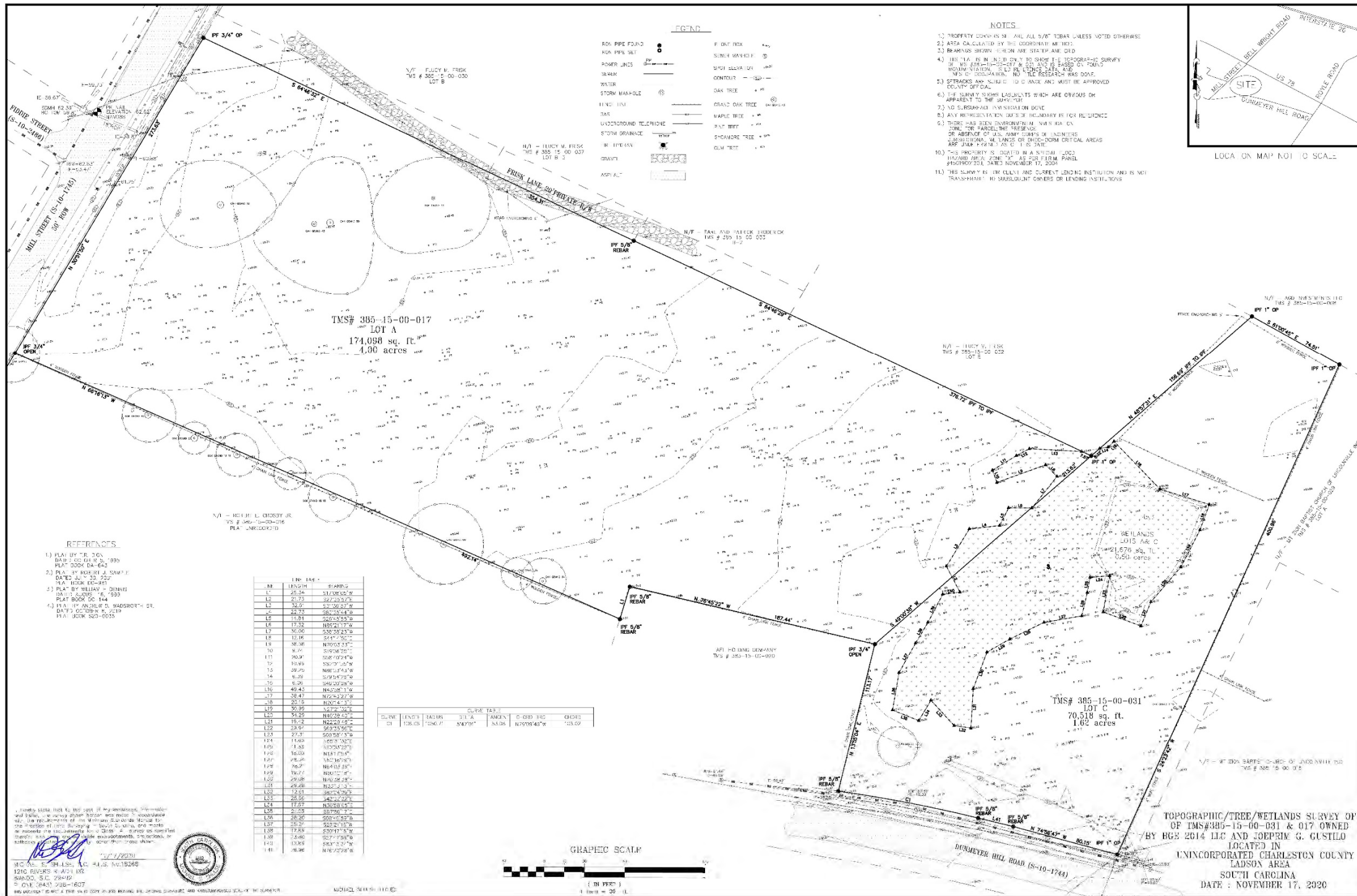
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Date: 11/2/2020

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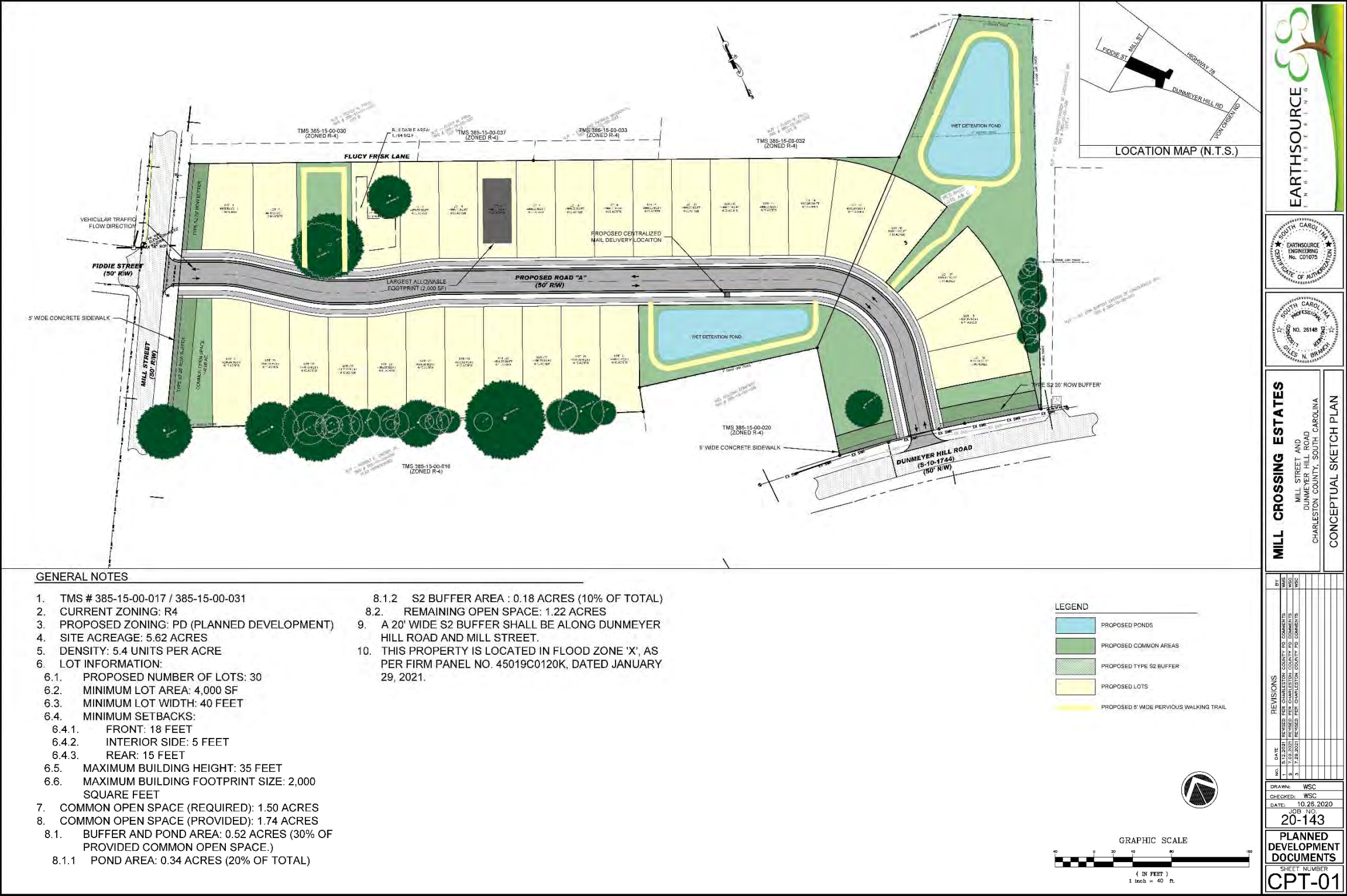
3. Survey of Tracts Including Trees



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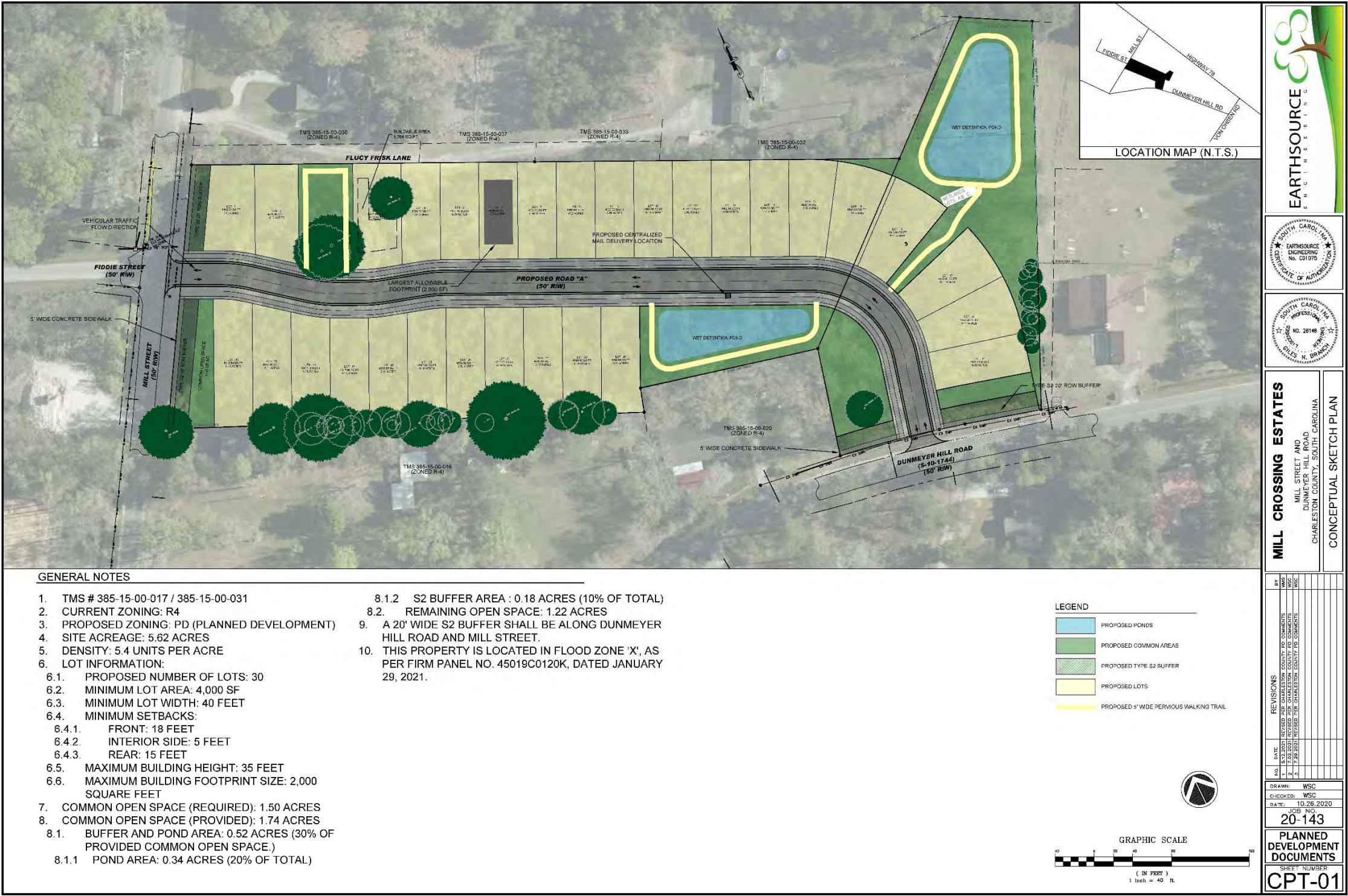
4. Conceptual Sketch Plan



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5. Conceptual Sketch Plan w/ Aerial



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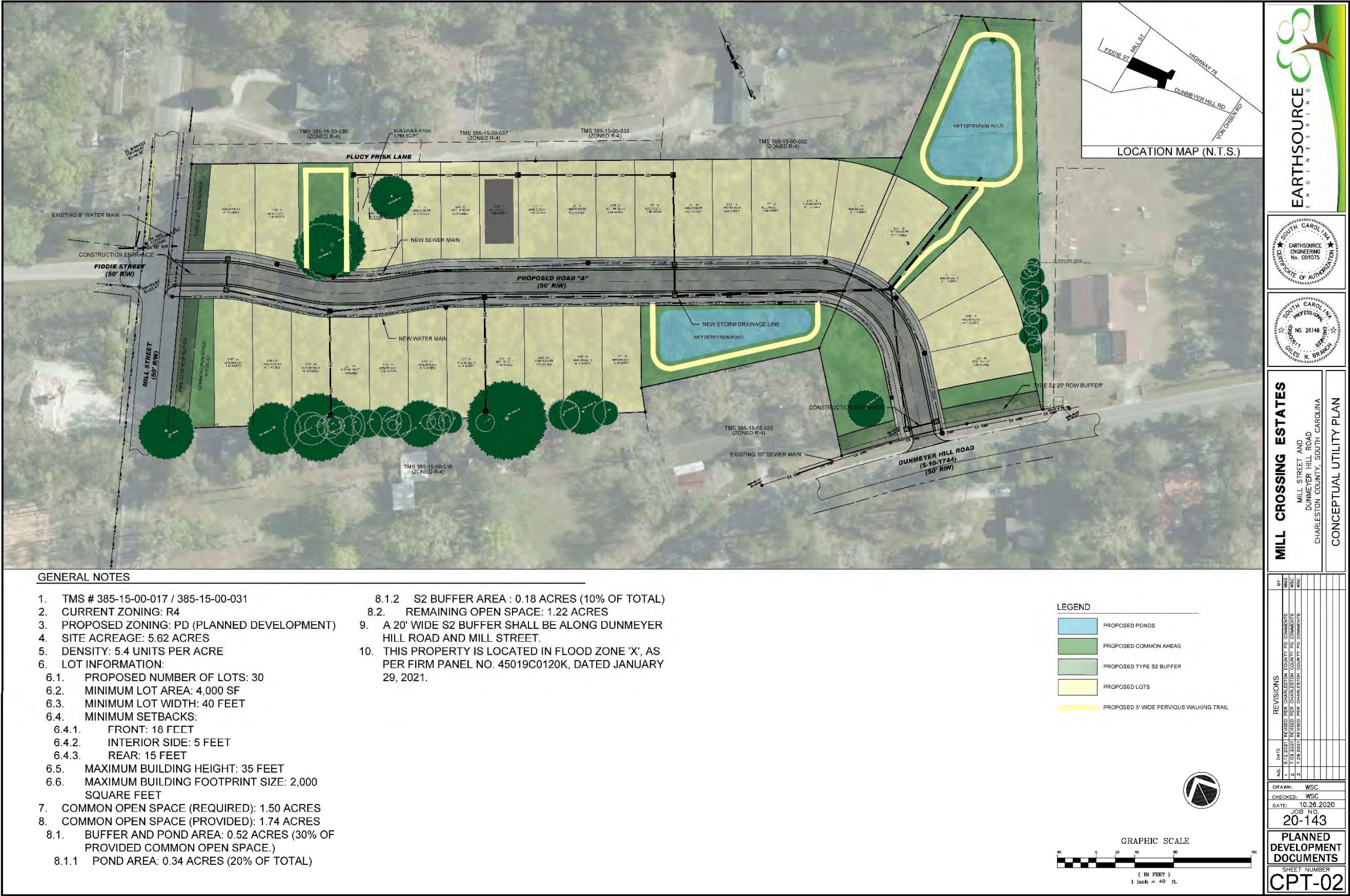
6. Conceptual Landscape Plan



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7. Conceptual Utility & Drainage Plan



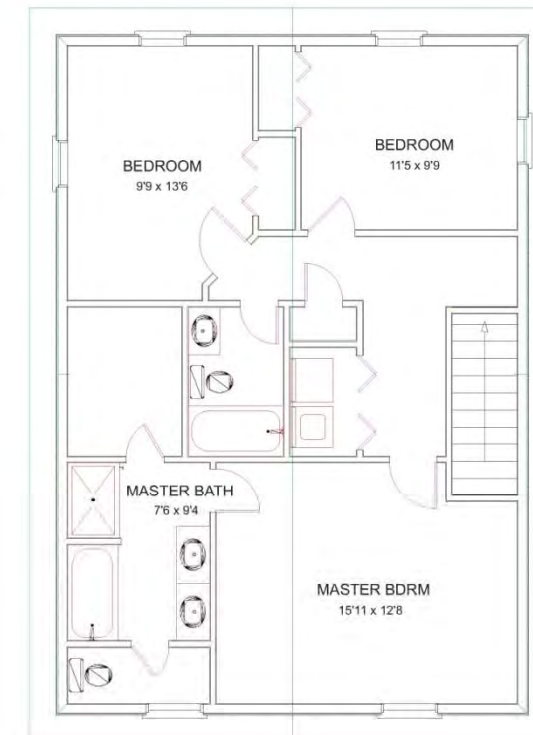
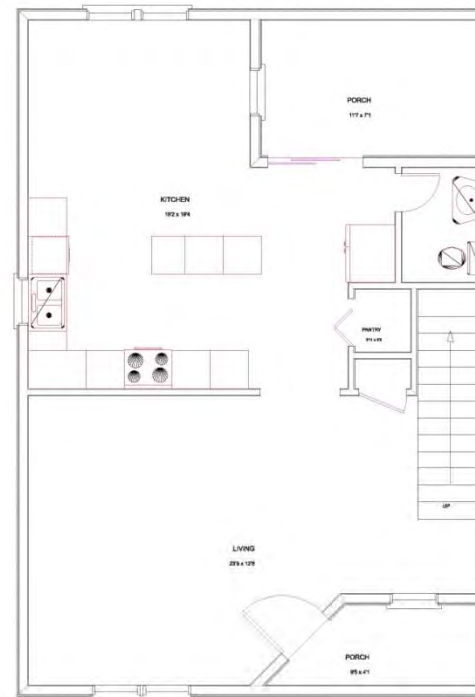
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8. Typical Single Family Residential Elevation



Conceptual Rendering and Floor Plans



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9. Historical and Architectural Survey

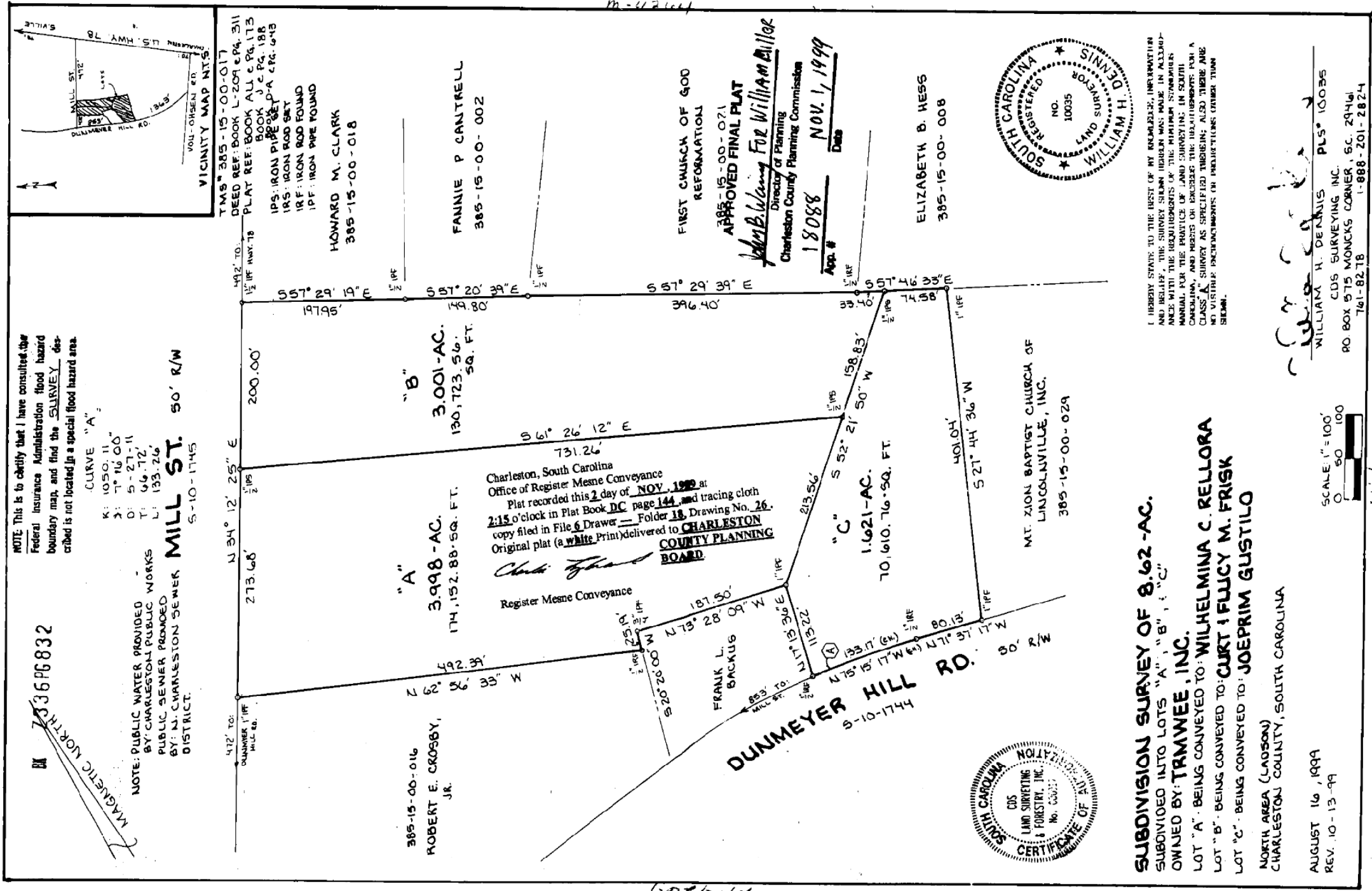


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10. Recorded Plat of Property

REVISED SURVEY COMBINING PARCELS A AND C TO BE SUBMITTED UPON RECORDING



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11. Letter of Coordination - SCDOT

From: Grooms, Robert W. <GroomsRW@scdot.org>
Sent: Friday, August 26, 2022 9:45 AM
To: Kevin Berry; Jennifer Costello
Cc: Fleming, Juleigh B.
Subject: RE: Updated Letter of Coordination (Mill Street PD)
Attachments: LAYOUT-11222021-Landscape.pdf

Good morning;

Thank you for the early coordination concerning the proposed single family Mill Crossing Estates on Dunmeyer Hill Road and Mill St in Charleston County.

After reviewing the attached concept plan for access locations, our office has no objection to the proposed project. We do have the following comments on the proposed driveways:

- 1) You must meet driveway spacing for the posted speed limit according to the ARMS manual. This may impact driveway access on Dunmeyer Hill Road. If driveway spacing is met for proposed and adjacent driveways, the proposed driveways will be permitted.
- 2) You will be required to meet sight distance for all proposed driveways.

Please check the SCDOT Project Viewer ([SCDOT Project Viewer](#)) for any upcoming projects in your vicinity. The Project Viewer has points of contact for all proposed projects. Please consult local governments for their upcoming projects also.

This development will not require a traffic impact study based on the lot count shown. If the lot count changes in the future, please refer to SCDOT's ARMS manual for traffic impact study thresholds. Please note that traffic impact studies must be provided to our traffic engineer for review and approval **prior to submitting your permit application**. Please note that all ARMS manual requirements (to include roadway and hydraulic design) for commercial development shall be met for permit approval.

This email does not constitute encroachment approval. Final approval is issued through our online EPPS system. This preliminary review is valid for six months. Any submissions after six months are subject to re-evaluation.

Please let me know if you have any questions.
Thank you.

Wade Grooms
Asst. District Permit Engineer
6355 Fain Street
North Charleston, SC 29406

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12. Letter of Coordination - North Charleston Sewer District



Safeguarding today, preserving tomorrow
7225 Stall Road / P.O. Box 63009 North Charleston, SC 29419 843.764.3072

8/18/2022

Jennifer Costello
962 Houston Northcutt Blvd., Suite 200
Mount Pleasant, SC 29464

Attn: Jennifer Costello

Re: Sanitary sewer availability to TMS 385-15-00-017 & 385-15-00-031

Dear Ms. Costello,

Please be advised that sanitary sewer service is available to TMS 385-15-00-017 & 385-15-00-031. 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,

A handwritten signature in blue ink, appearing to read "Kevin Trepen", is written over a light blue rectangular background.

Kevin Trepen
New Development Coordinator
North Charleston Sewer District

Mill Crossing Estates

Planned Development Guidelines

13. Letter of Coordination – Charleston Water Systems



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

(843) 727-6800
www.charlestonwater.com

Board of Commissioners

Thomas B. Pritchard, Chairman
Kathleen G. Wilson, Vice Chairman
William E. Koopman, Jr., Commissioner
Mayor John J. Tecklenburg (Ex-Officio)
City Councilmember Perry K. Waring (Ex-Officio)

Officers

Mark Cline, P.E., Chief Executive Officer
Dorothy Harrison, Chief Administrative Officer
Wesley Ropp, CMA, Chief Financial Officer
Russell Huggins, P.E., Capital Projects Officer
Paul Hanson, Chief Information Officer
Baker Mordecai, P.E., Chief Operating Officer

August 18, 2022

Jennifer Costello
Earthsource Engineering Co.
admin@earthsourceeng.com

Water Availability to TMS: 385-15-00-017 & 031
26 Lot single family residential 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 has an existing 8" water main in the ROW of Mill Street which can serve the development.

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 public water and not negatively impact the existing developments. Please be advised any extensions or modifications to the infrastructure 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,

A handwritten signature in blue ink that reads "Lydia Owens".

Lydia Owens
Charleston Water System

Mill Crossing Estates

Planned Development Guidelines

14. Letter of Coordination - Charleston County Public Works

Steve L. Thigpen
Director



843.202.7600
Fax 843.202.7601
Sthigpenl@charlestoncounty.org
Lonnie Hamilton, III
Public Services Building
4045 Bridge View Drive, Suite A301
North Charleston, SC 29405-7464

November 4, 2020

Shawn Cantey
Earthsource Engineering
962 Houston Northcutt Blvd. Ste. 200
Mt. Pleasant, SC 29464

RE: Proposed Subdivision – Mill Crossing Estates
TMS # 385-15-00-017, -031

Dear Mr. Cantey,

This letter acknowledges that you have notified Charleston County Public Works regarding your intent to prepare a single-family subdivision off of Mill Street in the Lincolnville area. The Public Works Department has reviewed the proposed Planned Development and is prepared to review your site plans.

Please continue to submit documentation directly to the County Zoning and Planning Department other than specific encroachment permit applications for County right-of-way. These applications should be provided to the Public Works Department to the attention of Mr. Herb Nimz at the address listed above.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brett Champion".

Brett Champion, P.E.
Civil Engineer II

cc: Ryan Petersen - Charleston County Planning Department



American Public Works Association

www.charlestoncounty.org

Mill Crossing Estates

Planned Development Guidelines

15. Letter of Coordination - USACOE Jurisdictional Determination Receipt

From: [SAC.RD.Charleston](#)
To: jagoff@comcast.net
Cc: [Estill, Leslie A CIV USARMY CESAC \(USA\)](#)
Subject: SAC-2020-01726 (Dunmeyer Hill Road)
Date: Friday, December 11, 2020 4:31:05 PM

The Charleston District Corps of Engineers has received your application concerning:

SAC Number: SAC-2020-01726

Applicant: Jason Maxwell; River Hawk Properties, LLC

Project: Dunmeyer Hill Road

Project Manager: Leslie Estill (cc'd)

Direct all future inquiries to your Project Manager by email or at (843) 329-8039.

Additional information about the Charleston District Regulatory Program and Public Notice postings can be found on our web site at <http://www.sac.usace.army.mil/Missions/Regulatory/Permitting-Process/>.

U.S. Army Corps of Engineers
Regulatory Division
Charleston District

Mill Crossing Estates

Planned Development Guidelines

16. Letter of Coordination - Charleston County School District



August 18, 2022

Earthsource Engineering
Attn: Jennifer Costello
926 Houston Northcutt Blvd
Suite 200
Mt Pleasant, SC 29464

Subject: Mill Street Conceptual Plan
TMS # 385-15-00-017 (4.00 Acres)
TMS # 385-15-00-031 (1.62 Acres)
Lincolnvile, SC

Operations Division

Gerrita Postlewait, Ed.D.
Superintendent of Schools

Jeffrey Borowy, P.E.
Chief Operating Officer

Dear Ms. Costello:

We have reviewed your request for a POC letter along with your Conceptual Plan regarding these two (2) parcels which will consist of 26 proposed single family units.

To determine an estimate of additional students any development will create, the following formula is used: on an average of .4 students per single-family unit and .2 students per multi-family unit which is then divided by the number of kindergarten through twelfth grade levels (which is a total of 13 levels) to get a grade level average. That average is multiplied by the number of grade levels per school level and rounded to the nearest whole number.

On the basis of the location supplied to us, we expect significant impact to enrollment from a capacity standpoint. The three (3) 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

Mill Crossing Estates

Planned Development Guidelines

17. Letter of Coordination – CARTA



CHARLESTON AREA REGIONAL TRANSPORTATION AUTHORITY

August 17, 2022

Jennifer Costello
962 Houston Northcutt Blvd, Suite 200
Mount Pleasant, SC 29464

RE: Letter of Coordination

Dear Ms. Costello,

Thank you for contacting us regarding your Mill Street PD 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

Mill Crossing Estates

Planned Development Guidelines

18. Letter of Coordination - Fire Department



C&B FIRE DEPARTMENT

509 Royle Rd, Ladson, SC 29456

Office (843)873-0714

Fire Chief

Joshua K Woodall



9/1/2022

Good Morning Kevin

C&B Fire Department is aware of the subdivision going in at between Dunmeyer Hill and Mill St. 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

Mill Crossing Estates

Planned Development Guidelines

19. Letter of Coordination – Dominion Energy



August 30, 2022

Jennifer Costello
962 Houston Northcutt Blvd., Suite 200
Mt Pleasant, SC 29464

Re: Mill Street Crossing, Summerville, SC
TMS # 385-15-00-017
TMS # 385-15-00-031

Dear Jennifer:

I am pleased to inform you that Dominion Energy will be able to provide electric service to the above referenced project. Electric service 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

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 at marionette.tindell-ware@dominionenergy.com.

Sincerely,

M. Denise T. Ware

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

Mill Crossing Estates

Planned Development Guidelines

20. Letter of Coordination – USPS

GROWTH MANAGEMENT
GREATER SOUTH CAROLINA DISTRICT



DATE: AUG 17 2022

EARTH SOURCE

962 AIRBORNE BLVD

29464

Ref: Proof of coordination

This letter is proof of coordination for MILL CROSSING
29485 DAIRBROOK (SUMMERVILLE)
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

Mill Crossing Estates

Planned Development Guidelines

21. Traffic Impact Analysis

Traffic Impact Analysis

**Mill Crossing Estates PD
Charleston County, SC**

Prepared for:
River Hawk Properties, LLC

© Bihl Engineering, LLC 2022

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**Traffic Impact Analysis
Mill Crossing Estates Planned Development
Charleston County, SC**

**Prepared for:
Riverhawk Properties**

**Prepared by:
Bihl Engineering, LLC
306 Meeting Street, Suite 300
Charleston, SC 29401
Mail:
P.O. Box 31318
Charleston, SC 29417
(843) 637-9187**



March 2022

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1.0 Executive Summary

The Mill Crossing Estates Planned Development is proposed to be located on Mill Street in Charleston County, SC. The development is proposed to include 30 single-family detached homes. The development will be accessed via two new full access driveways, one on Mill Street and one on Dunmeyer Hill Road. For the purposes of this traffic impact analysis (TIA), the development is assumed to be complete in 2023.

The study area for the TIA includes the following intersections:

- US 78 at Mill Street/Bell Wright Road (unsignalized)
- Mill Street at Fiddie Street/Site Driveway #1 (unsignalized)
- Dunmeyer Hill Road at Site Driveway #2 (unsignalized) (2023 Build conditions only)

Based on the results of the analysis, the intersection of US 78 at Mill Street/Bell Wright Road currently operates acceptably on the northbound (Mill Street) approach in the AM and PM peak hours and is expected to operate similarly in the 2023 No Build conditions. In the 2023 Build conditions, the northbound approach is expected to operate acceptably in the AM peak hour and with elevated delay in the PM peak hour. It is not uncommon for the unsignalized side streets on a major road to operate with elevated delay during the peak hours, while the main road experiences little to no delay. The project queues on the northbound or southbound approaches are expected to be similar to the No Build conditions or increase by one vehicle in the Build conditions. The southbound (Bell Wright Road) approach currently operates with elevated delay in the AM and PM peak hours and is expected to continue operating similarly in the 2023 No Build and Build conditions. The intersection of Mill Street at Fiddie Street currently operates acceptably in the AM and PM peak hour conditions and is projected to continue operating acceptably in the 2023 No Build conditions and in the 2023 Build conditions when Site Driveway #1 is added as the fourth leg. The intersection of Dunmeyer Hill Road at Site Driveway #2 is expected to operate acceptably in the 2023 Build conditions.

Based on the results of the analysis, the following transportation-related improvements are recommended as a part of this project:

- Coordination with Charleston County and SCDOT staff on driveway locations and design details

Results in this report are based solely on traffic studies and are considered input into final design considerations. The final design will be determined by the project engineer after other design elements (such as, but not limited to, utilities, stormwater, etc.) are taken into consideration.

2.0 Introduction

The Mill Crossing Estates Planned Development is proposed to be on Mill Street in Charleston County, SC. The development is proposed to include 30 single-family detached homes. The development will be accessed via two new full access driveways, one on Mill Street one on Dunmeyer Hill Road. For the purposes of this TIA, the development is assumed to be complete in 2023.

This report presents the trip generation, distribution, traffic analyses, and any recommendations for transportation improvements required to meet anticipated traffic demands.

3.0 Inventory

3.1 Study Area

The study area for the TIA includes the following existing intersections.

- US 78 at Mill Street/Bell Wright Road (unsignalized)
- Mill Street at Fiddie Street (unsignalized)

Figure 1 (Appendix) shows the proposed development location and **Figure 2 (Appendix)** shows the project conceptual site plan.

3.2 Existing Conditions

Roadways in the project vicinity include US 78, Bell Wright Road, Mill Street, Fiddie Street, and Dunmeyer Hill Road.

US 78 is a two-lane undivided roadway with a posted speed limit of 45 miles per hour (mph). Per South Carolina Department of Transportation (SCDOT) counts, along the corridor, US 78 has a 2020 AADT of 14,700 vpd in the vicinity of the project.

Bell Wright Road (S-1131) is a two-lane, undivided north-south roadway with a posted speed limit of 35 mph.

Dunmeyer Hill Road (S-1744) is a two-lane undivided roadway with a posted speed limit of 30 mph.

Mill Street (S-1745) and Fiddie Street (S-2486) are two-lane undivided roadways.

Figure 3 (Appendix) shows the existing roadway laneage in the study area.

4.0 Traffic Generation

The potential trip generation of the proposed development was determined using trip generation information from the Institute of Transportation Engineers' (ITE) *Trip Generation, 11th Edition* (2021).

Due to the nature of the development, no internal capture or pass-by trips were assumed in the analysis.

Table 1 summarizes the AM and PM peak hour trips associated with the proposed development.

Table 1: Projected Trip Generation							
Land Use and Intensity	ITE Land Use Code	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Single Family Detached Housing – 30 Dwelling Units	210	25	6	19	32	20	12
New Trips		25	6	19	32	20	12

Source: *ITE Trip Generation, 11th Edition*

As shown in **Table 1**, the proposed development is projected to generate 25 new trips (6 entering, 19 exiting) during the AM peak hour and 32 new trips (20 entering, 12 exiting) during the PM peak hour.

5.0 Site Traffic Distribution

The proposed development traffic was assigned to the surrounding roadway network. The directional distribution and assignment were based on qualitative knowledge of the project area, quantitative application of existing traffic patterns, and expected trip length.

The following general trip distribution was applied to the project trips associated with the proposed development.

- 45% to/from the west on US 78
- 10% to/from the west on Dunmeyer Hill Road
- 45% to/from the east on US 78

Figure 4 (Appendix) shows the traffic distribution for the proposed development in the study area.

6.0 Traffic Volumes

6.1 Existing Traffic

Peak hour intersection turning movement counts including vehicular, pedestrian, and heavy vehicle traffic were performed in March 2022 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM at the following intersections:

- Mill Street at Fiddie Street
- Mill Street at Dunmeyer Hill Road (used to determine background traffic volumes at Site Driveway #2)

Peak hour intersection turning movement counts including vehicular, pedestrian, and heavy vehicle traffic were performed in July 2021 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM at the following intersection:

- US 78 at Mill Street/Bell Wright Road

Due to the COVID-19 pandemic, traffic volumes and travel patterns have been impacted. The turning movement count performed in July 2021 was adjusted using AM and PM peak hour adjustment factors of 1.16 and 1.11 for the AM and PM peak hours, respectively, as stated in the SCDOT District 6 *Traffic Impact Analyses during COVID-19 Pandemic (Update)* memorandum (February 5, 2021). The adjusted count was then grown to 2022 using the annual growth rate as described below. The adjusted 2022 traffic volumes were used in the Existing conditions analysis.

Existing peak hour intersection turning movement volumes are shown on **Figure 5 (Appendix)**. The turning movement count data is included in the **Appendix**.

6.2 2023 No Build Traffic

Historic growth is the increase in existing traffic volumes due to usage increases and non-specific growth throughout the area. An overall growth rate of 1.0% per year was applied to the study area in the analysis.

The 2023 No Build traffic volumes include existing traffic grown to the buildout year. **Figure 6 (Appendix)** and **Figure 7 (Appendix)** show the 2023 No Build AM and PM peak hour traffic volumes, respectively.

6.3 Project Traffic

The AM peak hour and PM peak hour projected proposed development trips were assigned based on the trip distribution discussed in **Section 5**.

6.4 2023 Build Traffic

The 2023 total traffic volumes include the 2023 background traffic and the proposed development traffic at buildout. The 2023 AM and PM peak hour total traffic volumes are shown in **Figure 6 (Appendix)** and **Figure 7 (Appendix)**, respectively.

Intersection volume development worksheets are included in the **Appendix**.

7.0 Capacity Analysis

Capacity analyses were performed for the AM and PM peak hours in the Existing, 2023 No Build, and 2023 Build conditions using the Synchro, Version 10 software program to determine the operating characteristics of the adjacent roadway network and the impacts of the proposed development. The analyses were conducted with methodologies contained in the *Highway Capacity Manual, 6th Edition* (HCM 6) (Transportation Research Board, December 2016). The Synchro output sheets are included in the **Appendix**.

Capacity of an intersection is defined as the maximum number of vehicles that can pass through an intersection during a specified time, typically an hour. Capacity is described by level of service (LOS) for the operating characteristics of an intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. HCM 6 defines six levels of service, LOS A through LOS F, with A being the best and F being the worst.

LOS for a two-way stop-controlled (TWSC) intersection is determined by the delay of the poorest performing minor approach, as LOS is not defined for TWSC intersections as a whole. At a TWSC intersection, the major street experiences little to no delay.

Capacity analyses were performed for the Existing, 2023 No Build, and 2023 Build AM and PM peak hour traffic conditions at the following intersections:

- US 78 at Mill Street/Bell Wright Road (unsignalized)
- Mill Street at Fiddie Street/Site Driveway #1 (unsignalized)
- Dunmeyer Hill Road at Site Driveway #2 (unsignalized) (2023 Build conditions)

Any peak hour factors (PHF) above 0.95 were adjusted to 0.95 in all conditions for the purposes of the analysis. Any heavy vehicle percentages (HV%) below 2.0% were adjusted to 2.0% in all conditions for the purposes of the analysis.

The 95th percentile queue is considered the maximum number of vehicles that will queue while waiting to complete their maneuver at the intersection. Queues discussed in the report represent the 95th percentile or maximum queue.

Table 2 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2023 No Build, and 2023 Build AM and PM peak hour conditions at the study area locations.

Table 2: Level of Service and Delay (average seconds per vehicle)								
Intersection	Traffic Control ¹	Approach Direction	Existing Conditions		2023 No Build Conditions		2023 Build Conditions	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
US 78 at Mill Street/Bell Wright Road	U	NB	D (26.9)	D (31.4)	D (27.4)	D (32.2)	D (29.7)	E (40.1)
		SB	E (45.7)	F (155.6)	E (47.9)	F (168.9)	F (52.0)	F (200.3)
Mill Street at Fiddie Street/Site Driveway #1	U	EB	A (8.8)	A (8.7)	A (8.8)	A (8.7)	A (9.0)	A (9.2)
		WB	N/A	N/A	N/A	N/A	A (8.5)	A (8.4)
Dunmeyer Hill Road at Site Driveway #2	U	SB	N/A	N/A	N/A	N/A	A (8.4)	A (9.2)

N/A = Not Applicable

1. S = Signalized, U = Unsignalized

7.1 US 78 at Mill Street/Bell Wright Road

As shown in **Table 2**, the unsignalized intersection of US 78 at Mill Street/Bell Wright Road currently operates acceptably at LOS D on the northbound (Mill Street) approach in the AM and PM peak hours and is expected to operate similarly in the 2023 No Build Conditions. In the 2023 Build conditions, the northbound approach is expected to operate acceptably in the AM peak hour and with elevated delay at LOS E in the PM peak hour. It is not uncommon for the unsignalized side streets on a major road to operate with elevated delay during the peak hours, while the main road experiences little to no delay. The 95th percentile queues are projected to be approximately the same in the No Build and Build conditions.

The southbound (Bell Wright Road) approach currently operates with elevated delay at LOS E during the AM peak hour and at LOS F during the PM peak hour. The southbound approach is projected to operate similarly in the 2023 No Build AM and PM peak hour conditions. In the 2023 Build conditions, it is expected to operate with elevated delay at LOS F in the AM and PM peak hours. The 95th percentile queues are projected to be approximately the same in the No Build and Build conditions.

7.2 Mill Street at Fiddie Street/Site Driveway #1

SCDOT *Roadway Design Manual (2021)* guidelines were reviewed at the unsignalized intersection of Mill Street at Fiddie Street/Site Driveway #1 to determine if criteria were met for the installation of a southbound left-turn lane. Based on the projected 2023 Build conditions AM and PM peak hour traffic volumes to the criteria, it was determined that a westbound right-turn lane “should not be considered” at the intersection and is therefore not recommended. The turn lane analysis charts are included in the **Appendix**.

As shown in **Table 2**, the unsignalized intersection of Mill Street at Fiddie Street/Site Driveway #1 currently operates acceptably at LOS A during the AM and PM peak hours and is projected to operate similarly in the 2023 No Build conditions. In the 2023 Build conditions, Site Driveway #1 will form the fourth (westbound) leg of the intersection. The intersection is expected to operate at LOS A on both the eastbound and westbound approaches during the AM and PM peak hours in the 2023 Build conditions.

It is recommended that the driveway design details be confirmed to meet SCDOT and Charleston County standards as the project moves forward.

7.3 Dunmeyer Hill Road at Site Driveway #2

SCDOT *Roadway Design Manual (2021)* guidelines were reviewed at the unsignalized intersection of Dunmeyer Hill Road at Site Driveway #2 to determine if criteria were met for the installation of an eastbound left-turn lane. Based on the projected 2023 Build conditions AM and PM peak hour traffic volumes to the criteria, it was determined that an eastbound left-turn lane “should not be considered” at the intersection and is therefore not recommended. The turn lane analysis charts are included in the **Appendix**.

As shown in **Table 2**, the unsignalized intersection of Dunmeyer Hill Road at Site Driveway #2 is projected to operate at LOS A in the 2023 Build AM and PM peak hour conditions.

It is recommended that the driveway design details be confirmed to meet SCDOT and Charleston County standards as the project moves forward.

8.0 Conclusion

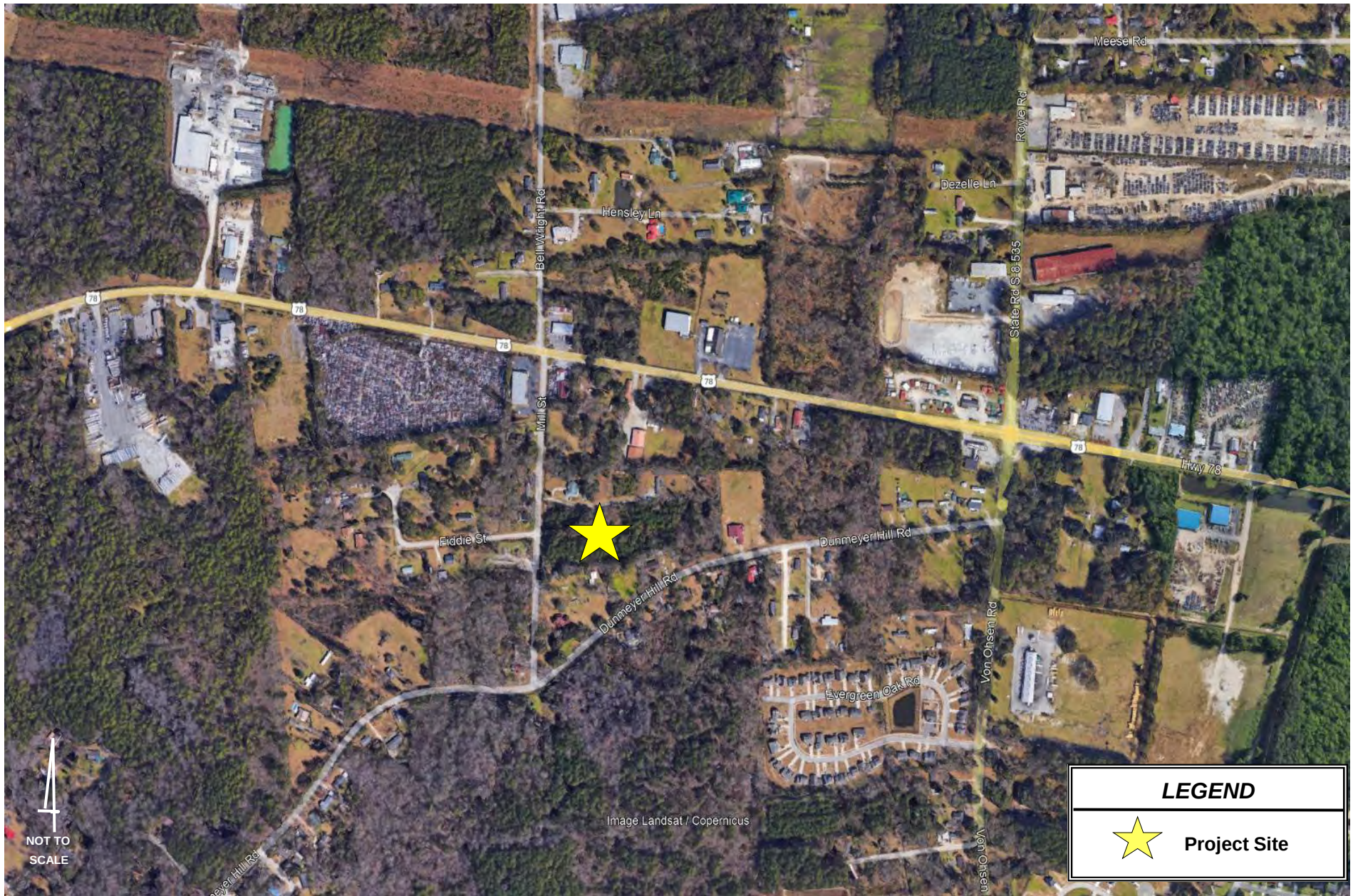
The Mill Crossing Estates Planned Development is proposed to be located on Mill Street in Charleston County, SC. The development is proposed to include 30 single-family detached homes. The development will be accessed via two new full access driveways, one on Mill Street and one on Dunmeyer Hill Road. For the purposes of this TIA, the development is assumed to be complete in 2023.

Based on results of the analysis, the following transportation-related improvements are recommended as a part of this project:

- Coordination with Charleston County and SCDOT staff on driveway locations and design details

Results in this report are based solely on traffic studies and are considered input into final design considerations. The final design will be determined by the project engineer after other design elements (such as, but not limited to, utilities, stormwater, etc.) are taken into consideration.

Appendix



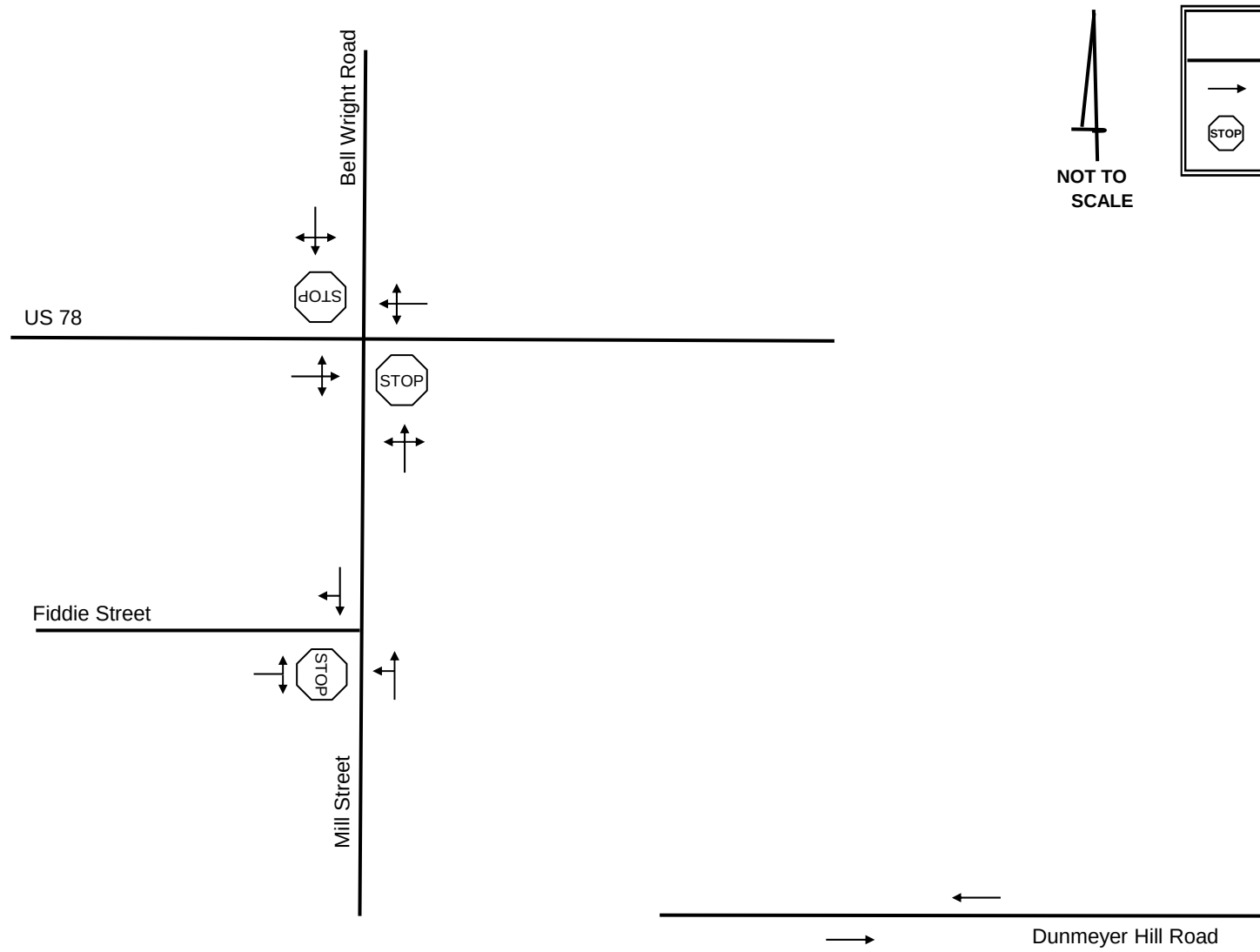


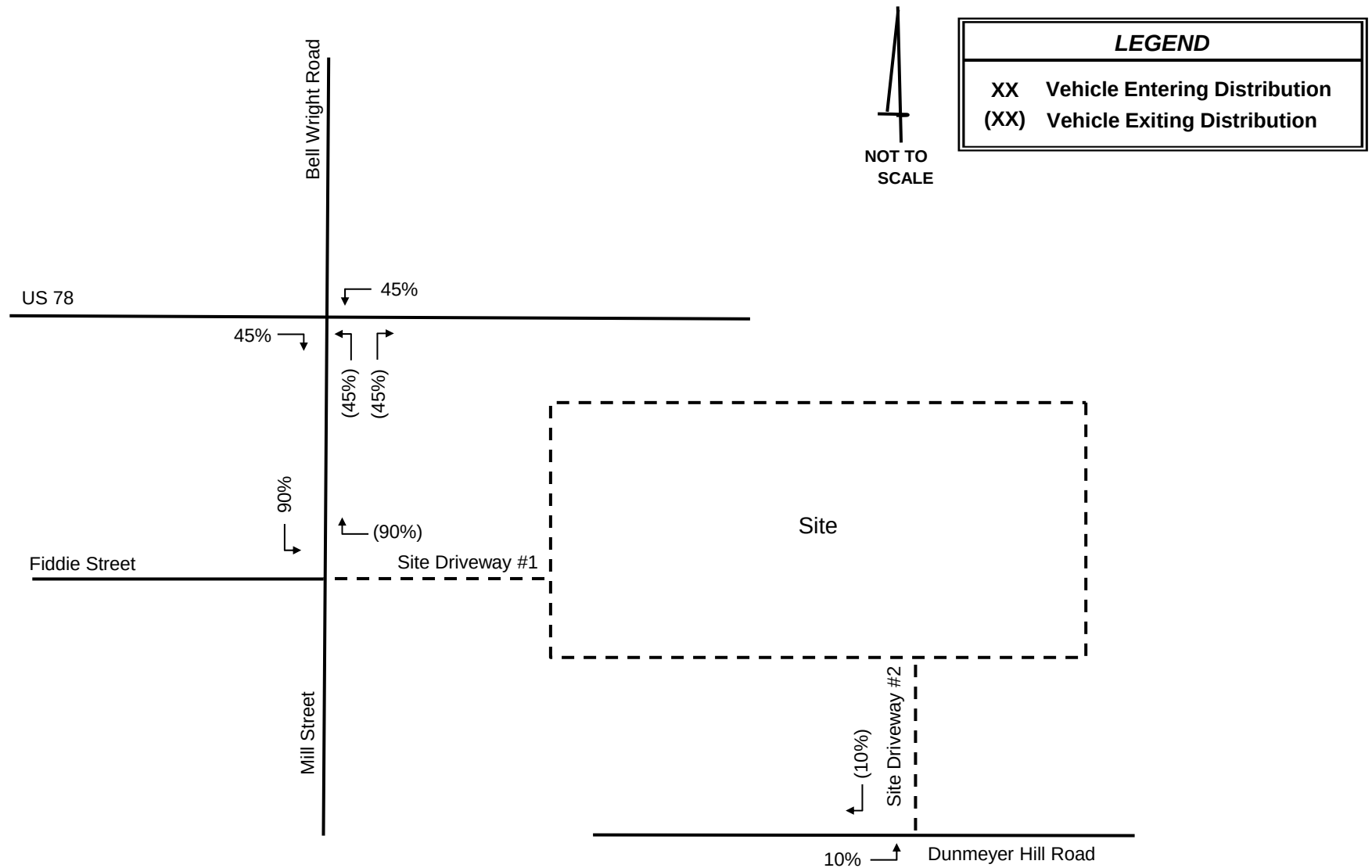
Source: Earthsource Engineering

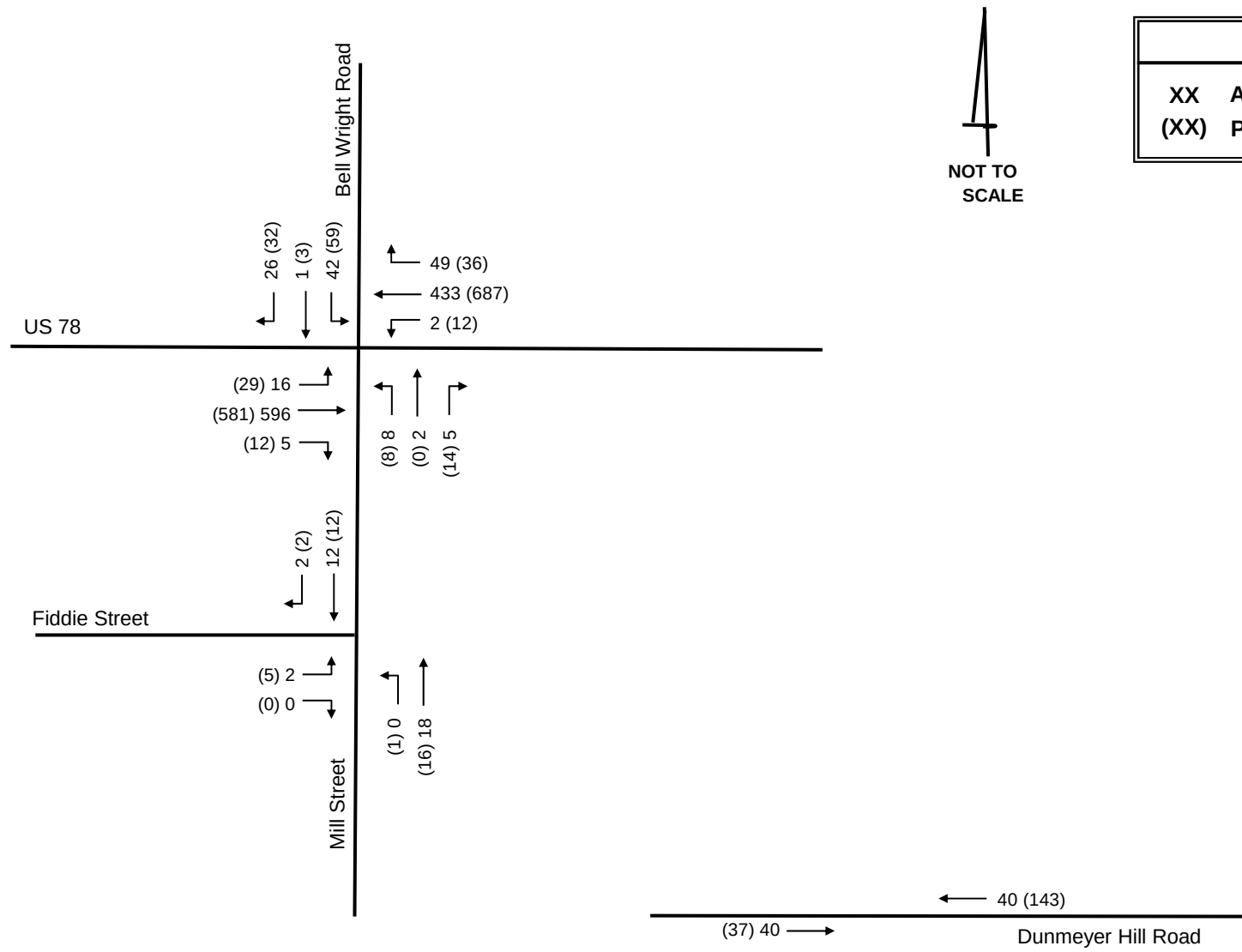
Mill Crossing Estates
Planned Development
Traffic Impact Analysis

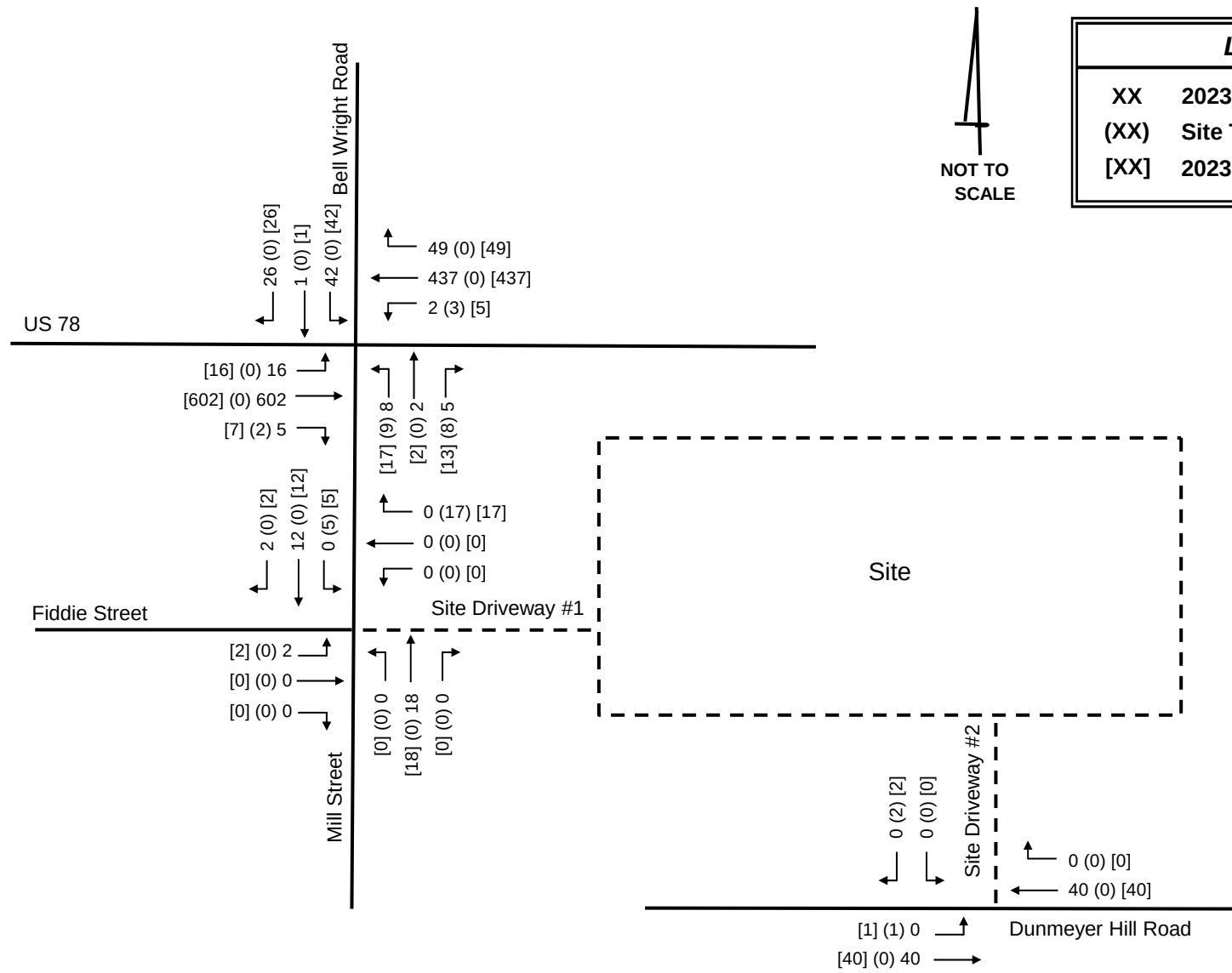
Conceptual
Site Plan

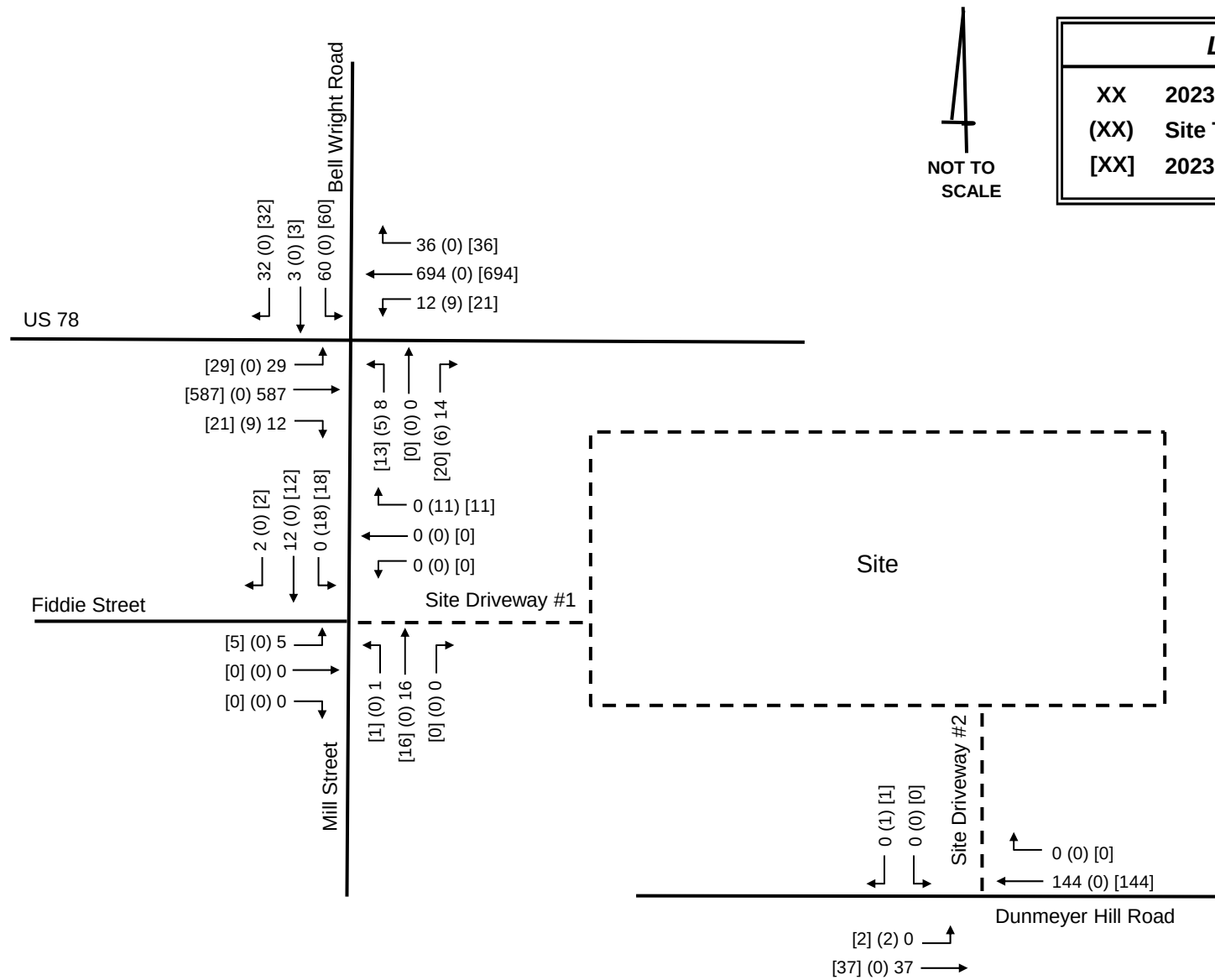
Figure 2











SHORT COUNTS

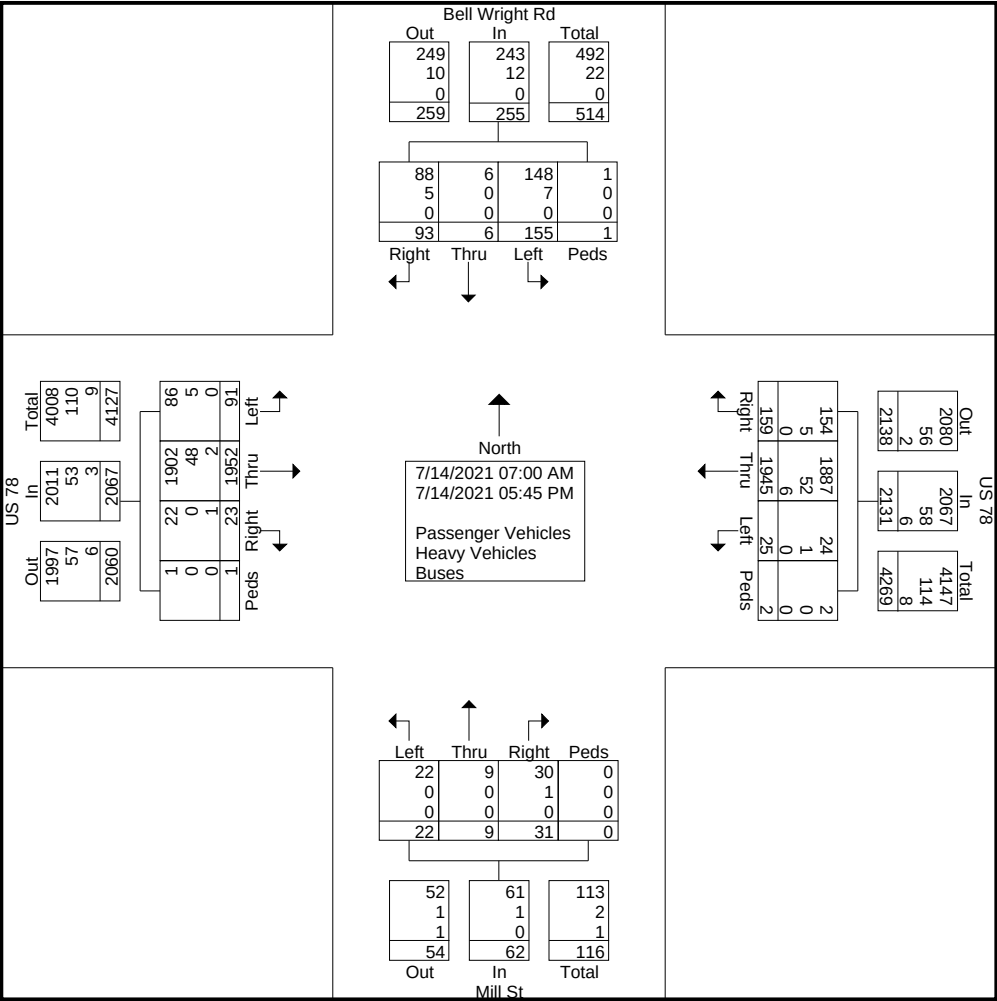
File Name : US 78 @ Bell Wright-Mill St
 Site Code :
 Start Date : 7/14/2021
 Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Bell Wright Rd From North				US 78 From East				Mill St 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	11	0	3	0	3	73	10	0	1	1	1	0	11	107	0	0	221
07:15 AM	2	0	2	0	2	90	4	0	0	0	3	0	7	129	1	0	240
07:30 AM	5	0	3	0	0	95	14	0	0	0	3	0	5	125	0	0	250
07:45 AM	7	1	2	0	0	103	16	0	4	2	0	0	3	98	2	0	238
Total	25	1	10	0	5	361	44	0	5	3	7	0	26	459	3	0	949
08:00 AM	5	0	4	0	0	86	15	0	2	1	0	0	2	122	0	0	237
08:15 AM	15	1	9	0	0	72	9	0	1	1	2	0	1	131	3	0	245
08:30 AM	7	0	5	0	0	97	9	0	1	0	1	0	7	129	0	0	256
08:45 AM	9	0	4	1	2	115	9	0	3	0	1	0	4	127	1	0	276
Total	36	1	22	1	2	370	42	0	7	2	4	0	14	509	4	0	1014
04:00 PM	15	0	8	0	2	138	9	1	1	1	2	0	3	117	1	0	298
04:15 PM	6	0	9	0	2	148	8	0	2	0	2	0	3	124	2	0	306
04:30 PM	12	0	9	0	1	161	6	0	0	1	2	0	5	113	0	0	310
04:45 PM	11	1	3	0	4	157	4	0	0	0	4	0	5	133	2	0	324
Total	44	1	29	0	9	604	27	1	3	2	10	0	16	487	5	0	1238
05:00 PM	18	0	9	0	3	170	7	0	0	0	3	0	8	139	4	0	361
05:15 PM	10	0	9	0	1	135	12	0	4	0	2	0	5	128	1	0	307
05:30 PM	13	2	8	0	3	151	9	1	3	0	4	0	8	118	4	1	325
05:45 PM	9	1	6	0	2	154	18	0	0	2	1	0	14	112	2	0	321
Total	50	3	32	0	9	610	46	1	7	2	10	0	35	497	11	1	1314
Grand Total	155	6	93	1	25	1945	159	2	22	9	31	0	91	1952	23	1	4515
Apprch %	60.8	2.4	36.5	0.4	1.2	91.3	7.5	0.1	35.5	14.5	50	0	4.4	94.4	1.1	0	
Total %	3.4	0.1	2.1	0	0.6	43.1	3.5	0	0.5	0.2	0.7	0	2	43.2	0.5	0	
Passenger Vehicles	148	6	88	1	24	1887	154	2	22	9	30	0	86	1902	22	1	4382
% Passenger Vehicles	95.5	100	94.6	100	96	97	96.9	100	100	100	96.8	0	94.5	97.4	95.7	100	97.1
Heavy Vehicles	7	0	5	0	1	52	5	0	0	0	1	0	5	48	0	0	124
% Heavy Vehicles	4.5	0	5.4	0	4	2.7	3.1	0	0	0	3.2	0	5.5	2.5	0	0	2.7
Buses	0	0	0	0	0	6	0	0	0	0	0	0	0	2	1	0	9
% Buses	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0.1	4.3	0	0.2

SHORT COUNTS

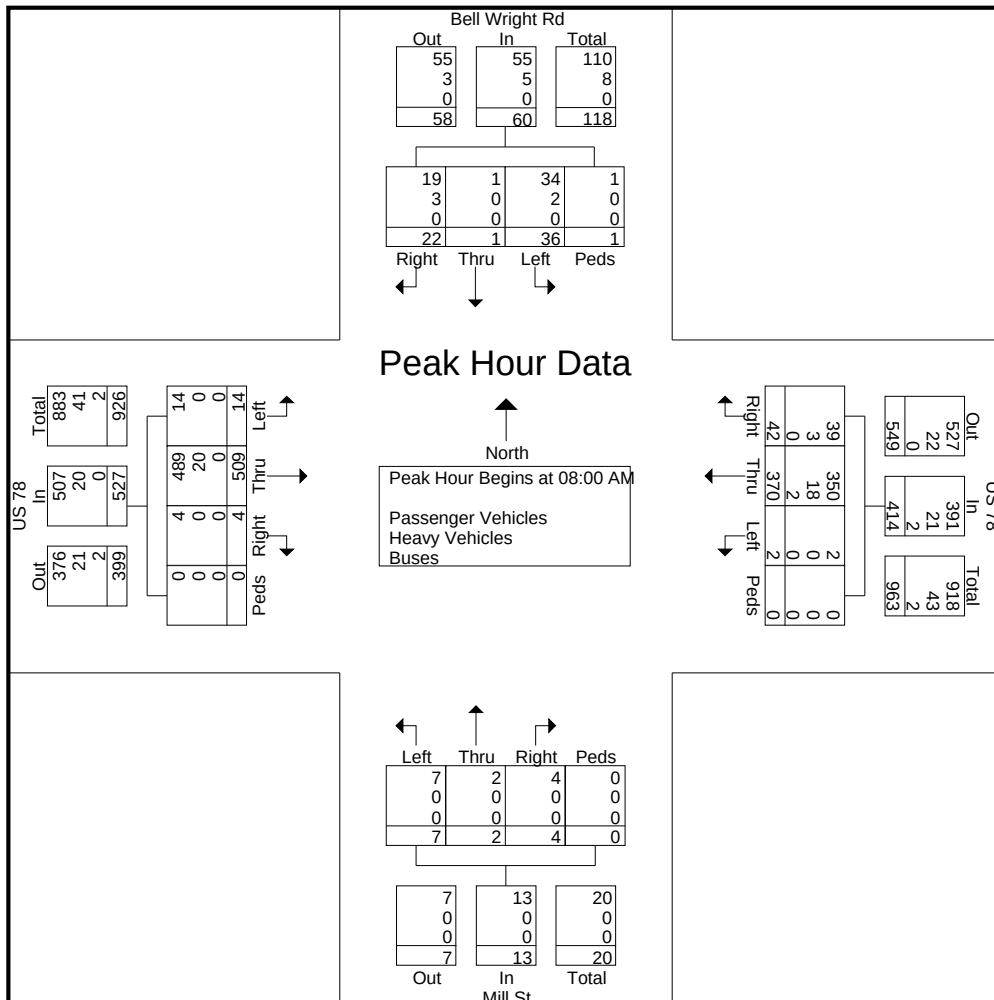
File Name : US 78 @ Bell Wright-Mill St
Site Code :
Start Date : 7/14/2021
Page No : 2



SHORT COUNTS

File Name : US 78 @ Bell Wright-Mill St
 Site Code :
 Start Date : 7/14/2021
 Page No : 3

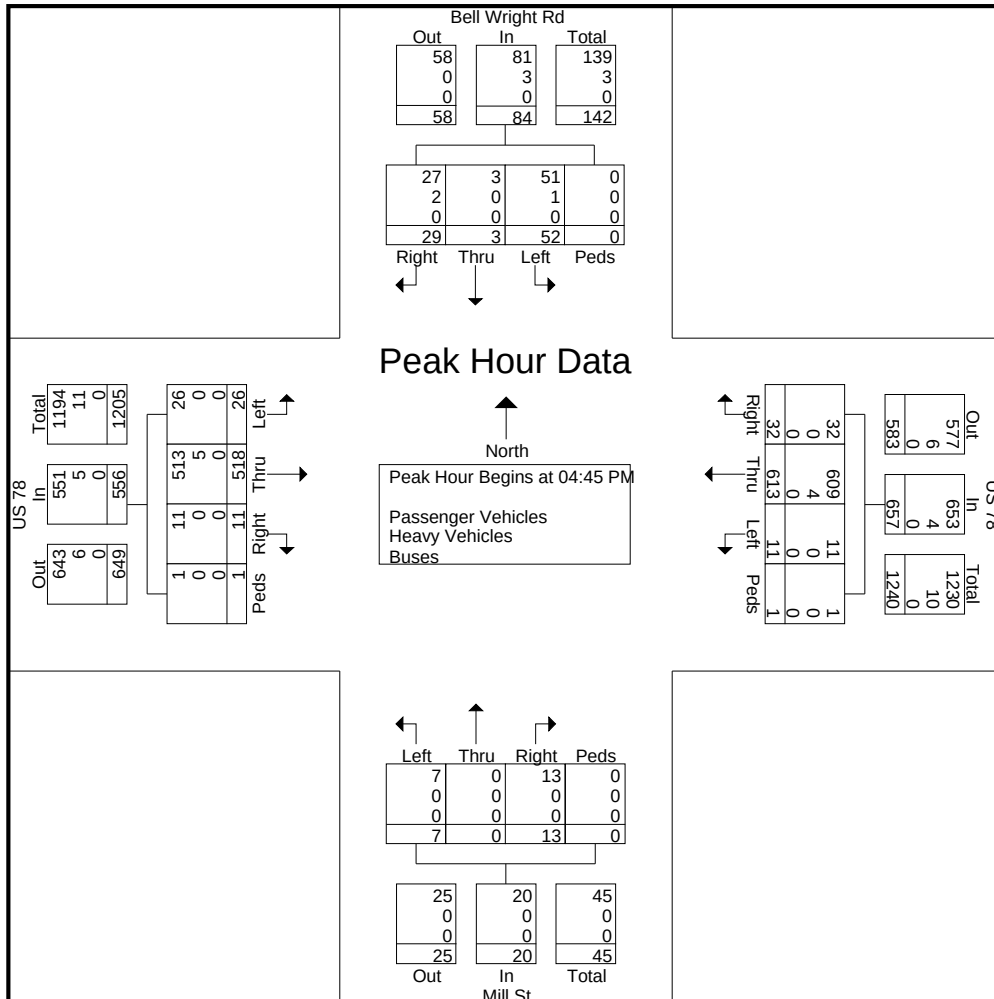
	Bell Wright Rd From North					US 78 From East					Mill St From South					US 78 From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	5	0	4	0	9	0	86	15	0	101	2	1	0	0	3	2	122	0	0	124	237
08:15 AM	15	1	9	0	25	0	72	9	0	81	1	1	2	0	4	1	131	3	0	135	245
08:30 AM	7	0	5	0	12	0	97	9	0	106	1	0	1	0	2	7	129	0	0	136	256
08:45 AM	9	0	4	1	14	2	115	9	0	126	3	0	1	0	4	4	127	1	0	132	276
Total Volume	36	1	22	1	60	2	370	42	0	414	7	2	4	0	13	14	509	4	0	527	1014
% App. Total	60	1.7	36.7	1.7		0.5	89.4	10.1	0		53.8	15.4	30.8	0		2.7	96.6	0.8	0		
PHF	.600	.250	.611	.250	.600	.250	.804	.700	.000	.821	.583	.500	.500	.000	.813	.500	.971	.333	.000	.969	.918
Passenger Vehicles	34	1	19	1	55	2	350	39	0	391	7	2	4	0	13	14	489	4	0	507	966
% Passenger Vehicles	94.4		86.4				94.6	92.9									96.1				
Heavy Vehicles	2	0	3	0	5	0	18	3	0	21	0	0	0	0	0	0	20	0	0	20	46
% Heavy Vehicles	5.6	0	13.6	0	8.3	0	4.9	7.1	0	5.1	0	0	0	0	0	0	3.9	0	0	3.8	4.5
Buses	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
% Buses	0	0	0	0	0	0	0.5	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0.2



SHORT COUNTS

File Name : US 78 @ Bell Wright-Mill St
 Site Code :
 Start Date : 7/14/2021
 Page No : 4

	Bell Wright Rd From North					US 78 From East					Mill St 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 04:45 PM																					
04:45 PM	11	1	3	0	15	4	157	4	0	165	0	0	4	0	4	5	133	2	0	140	324
05:00 PM	18	0	9	0	27	3	170	7	0	180	0	0	3	0	3	8	139	4	0	151	361
05:15 PM	10	0	9	0	19	1	135	12	0	148	4	0	2	0	6	5	128	1	0	134	307
05:30 PM	13	2	8	0	23	3	151	9	1	164	3	0	4	0	7	8	118	4	1	131	325
Total Volume	52	3	29	0	84	11	613	32	1	657	7	0	13	0	20	26	518	11	1	556	1317
% App. Total	61.9	3.6	34.5	0		1.7	93.3	4.9	0.2		35	0	65	0		4.7	93.2	2	0.2		
PHF	.722	.375	.806	.000	.778	.688	.901	.667	.250	.913	.438	.000	.813	.000	.714	.813	.932	.688	.250	.921	.912
Passenger Vehicles	51	3	27	0	81	11	609	32	1	653	7	0	13	0	20	26	513	11	1	551	1305
% Passenger Vehicles	98.1		93.1				99.3										99.0				
Heavy Vehicles	1	0	2	0	3	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	12
% Heavy Vehicles	1.9	0	6.9	0	3.6	0	0.7	0	0	0.6	0	0	0	0	0	0	1.0	0	0	0.9	0.9
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

File Name : Mill St @ Fiddie St

Site Code :

Start Date : 2/24/2022

Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Mill St From North				From East				Mill St From South				Fiddie St 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	2	1	0	0	0	0	0	0	3	0	0	1	0	0	0	7
07:15 AM	0	2	1	0	0	0	0	0	0	8	0	0	0	0	0	0	11
07:30 AM	0	5	0	0	0	0	0	0	0	4	0	0	1	0	0	0	10
07:45 AM	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	6
Total	0	12	2	0	0	0	0	0	0	18	0	0	2	0	0	0	34
08:00 AM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
08:15 AM	0	4	1	0	0	0	0	0	0	2	0	0	1	0	0	0	8
08:30 AM	0	3	1	0	0	0	0	0	0	2	0	0	0	0	1	0	7
08:45 AM	0	4	0	0	0	0	0	0	0	3	0	0	1	0	0	0	8
Total	0	13	2	0	0	0	0	0	0	8	0	0	2	0	1	0	26
04:00 PM	0	5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6
04:15 PM	0	3	2	0	0	0	0	0	0	5	0	0	1	0	0	0	11
04:30 PM	0	3	0	0	0	0	0	0	0	3	0	0	2	0	0	0	8
04:45 PM	0	2	0	0	0	0	0	0	1	4	0	0	2	0	0	0	9
Total	0	13	2	0	0	0	0	0	1	13	0	0	5	0	0	0	34
05:00 PM	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	8
05:15 PM	0	2	0	0	0	0	0	0	0	3	0	0	0	0	0	0	5
05:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:45 PM	0	2	0	0	0	0	0	0	0	4	0	0	0	0	0	0	6
Total	0	8	0	0	0	0	0	0	1	11	0	0	0	0	0	0	20
Grand Total	0	46	6	0	0	0	0	0	2	50	0	0	9	0	1	0	114
Apprch %	0	88.5	11.5	0	0	0	0	0	3.8	96.2	0	0	90	0	10	0	
Total %	0	40.4	5.3	0	0	0	0	0	1.8	43.9	0	0	7.9	0	0.9	0	
Passenger Vehicles	0	42	6	0	0	0	0	0	2	46	0	0	9	0	1	0	106
% Passenger Vehicles	0	91.3	100	0	0	0	0	0	100	92	0	0	100	0	100	0	93
Heavy Vehicles	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
% Heavy Vehicles	0	6.5	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4.4
Buses	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
% Buses	0	2.2	0	0	0	0	0	0	0	4	0	0	0	0	0	0	2.6

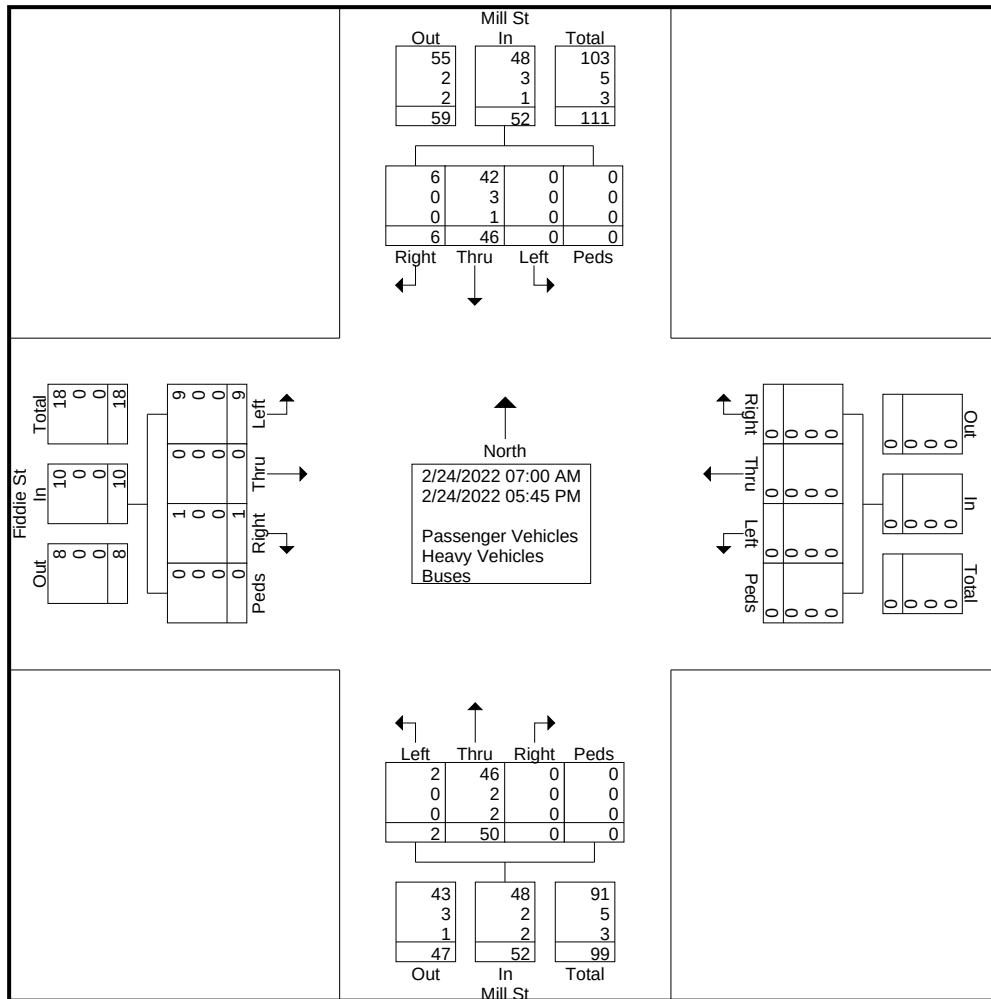
Short Counts

File Name : Mill St @ Fiddie St

Site Code :

Start Date : 2/24/2022

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Short Counts

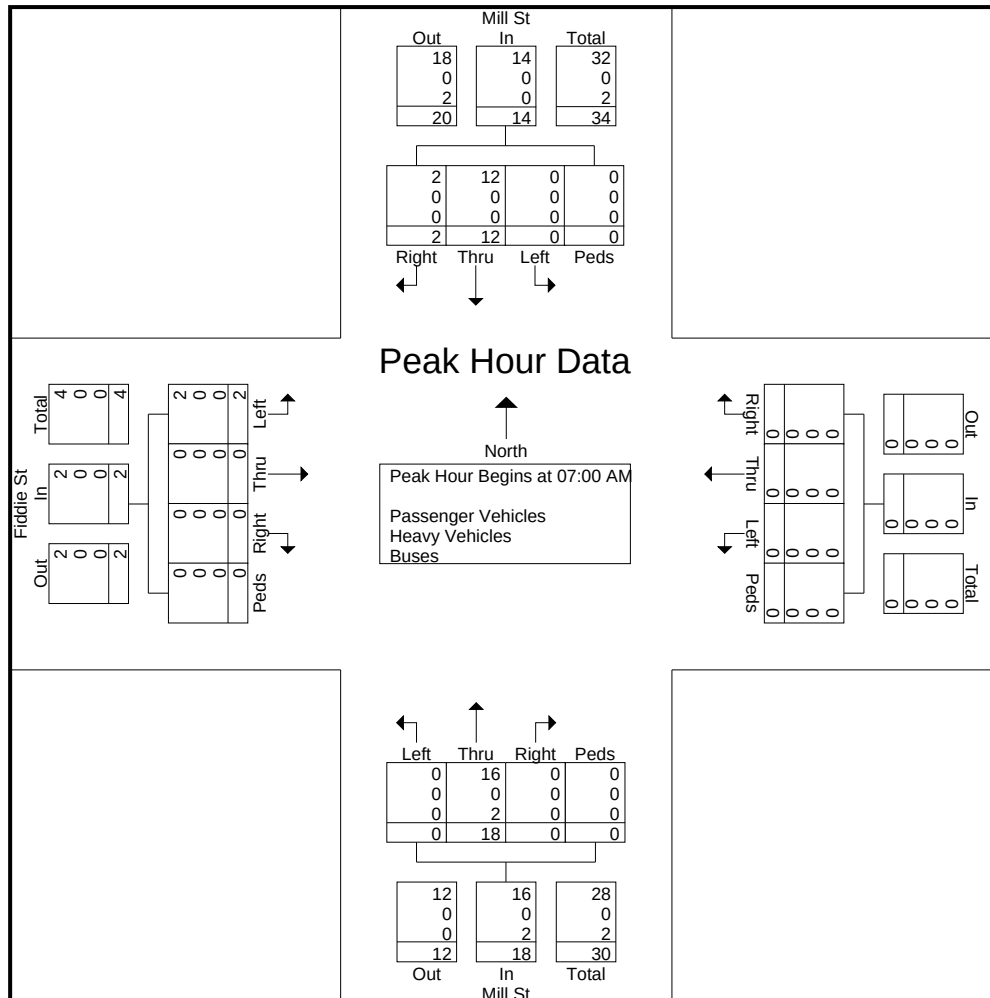
File Name : Mill St @ Fiddie St

Site Code :

Start Date : 2/24/2022

Page No : 3

	Mill St From North					From East					Mill St From South					Fiddie St 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	2	1	0	3	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	7
07:15 AM	0	2	1	0	3	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	11
07:30 AM	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	10
07:45 AM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
Total Volume	0	12	2	0	14	0	0	0	0	0	0	18	0	0	18	2	0	0	0	2	34
% App. Total	0	85.7	14.3	0		0	0	0	0		0	100	0	0		100	0	0	0		
PHF	.000	.600	.500	.000	.700	.000	.000	.000	.000	.000	.000	.563	.000	.000	.563	.500	.000	.000	.000	.500	.773
Passenger Vehicles	0	12	2	0	14	0	0	0	0	0	0	16	0	0	16	2	0	0	0	2	32
% Passenger Vehicles	0	100	100	0	100	0	0	0	0	0	0	88.9	0	0	88.9	100	0	0	0	100	94.1
Heavy Vehicles																					
% Heavy Vehicles	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	2	0	0	2	0	0	0	0	0	2
% Buses	0	0	0	0	0	0	0	0	0	0	0	11.1	0	0	11.1	0	0	0	0	0	5.9



Short Counts

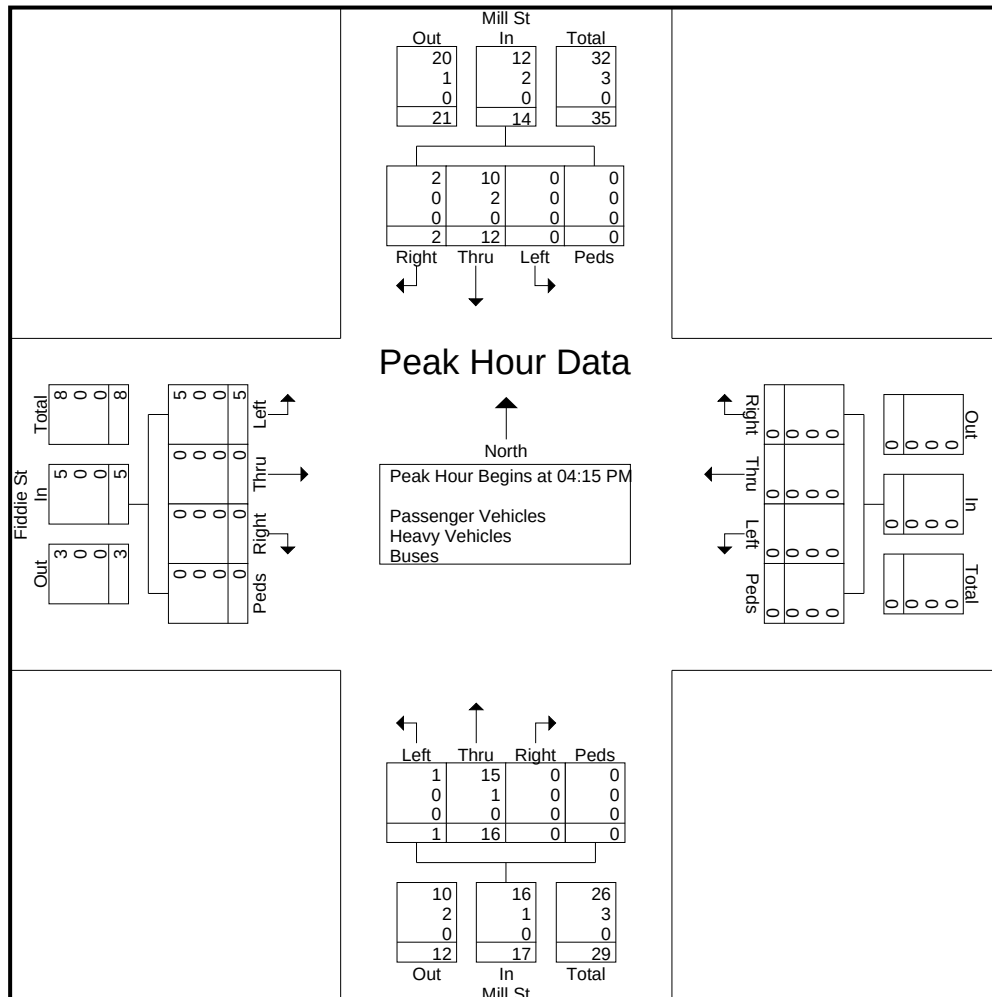
File Name : Mill St @ Fiddie St

Site Code :

Start Date : 2/24/2022

Page No : 4

	Mill St From North					From East					Mill St From South					Fiddie St 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 04:15 PM																					
04:15 PM	0	3	2	0	5	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	11
04:30 PM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	2	0	0	0	2	8
04:45 PM	0	2	0	0	2	0	0	0	0	0	1	4	0	0	5	2	0	0	0	2	9
05:00 PM	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
Total Volume	0	12	2	0	14	0	0	0	0	0	1	16	0	0	17	5	0	0	0	5	36
% App. Total	0	85.7	14.3	0		0	0	0	0		5.9	94.1	0	0		100	0	0	0		
PHF	.000	.750	.250	.000	.700	.000	.000	.000	.000	.000	.250	.800	.000	.000	.850	.625	.000	.000	.000	.625	.818
Passenger Vehicles	0	10	2	0	12	0	0	0	0	0	1	15	0	0	16	5	0	0	0	5	33
% Passenger Vehicles	0	83.3	100	0	85.7	0	0	0	0	0	100	93.8	0	0	94.1	100	0	0	0	100	91.7
Heavy Vehicles																					
% Heavy Vehicles	0	16.7	0	0	14.3	0	0	0	0	0	0	6.3	0	0	5.9	0	0	0	0	0	8.3
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

File Name : Mill St @ Dunmeyer Hill Rd

Site Code :

Start Date : 2/24/2022

Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Mill St From North				Dunmeyer Hill Rd From East				From South				Dunmeyer Hill Rd From West				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00 AM	1	0	2	0	0	4	1	0	0	0	0	0	3	13	0	0	24
07:15 AM	0	0	1	0	0	7	4	0	0	0	0	0	3	15	0	0	30
07:30 AM	0	0	2	0	0	7	2	0	0	0	0	0	1	8	0	0	20
07:45 AM	0	0	4	0	0	9	1	0	0	0	0	0	1	7	0	0	22
Total	1	0	9	0	0	27	8	0	0	0	0	0	8	43	0	0	96
08:00 AM	0	0	2	0	0	9	1	0	0	0	0	0	0	10	0	0	22
08:15 AM	1	0	2	0	0	8	0	0	0	0	0	0	1	8	0	0	20
08:30 AM	1	0	2	0	0	3	0	0	0	0	0	0	2	14	0	0	22
08:45 AM	1	0	1	0	0	8	1	0	0	0	0	0	0	5	0	0	16
Total	3	0	7	0	0	28	2	0	0	0	0	0	3	37	0	0	80
04:00 PM	0	0	5	0	0	26	0	0	0	0	0	0	1	11	0	0	43
04:15 PM	1	0	2	0	0	29	1	0	0	0	0	0	4	9	0	0	46
04:30 PM	0	0	3	0	0	21	1	0	0	0	0	0	1	8	0	0	34
04:45 PM	0	0	2	0	0	30	2	0	0	0	0	0	3	7	0	0	44
Total	1	0	12	0	0	106	4	0	0	0	0	0	9	35	0	0	167
05:00 PM	1	0	2	0	0	45	1	0	0	0	0	0	4	12	0	0	65
05:15 PM	0	0	2	0	0	28	0	0	0	0	0	0	3	10	0	0	43
05:30 PM	0	0	1	0	0	36	1	0	0	0	0	0	0	7	0	0	45
05:45 PM	1	0	1	0	0	26	0	0	0	0	0	0	4	6	0	0	38
Total	2	0	6	0	0	135	2	0	0	0	0	0	11	35	0	0	191
Grand Total	7	0	34	0	0	296	16	0	0	0	0	0	31	150	0	0	534
Apprch %	17.1	0	82.9	0	0	94.9	5.1	0	0	0	0	0	17.1	82.9	0	0	
Total %	1.3	0	6.4	0	0	55.4	3	0	0	0	0	0	5.8	28.1	0	0	
Passenger Vehicles	5	0	34	0	0	296	15	0	0	0	0	0	30	145	0	0	525
% Passenger Vehicles	71.4	0	100	0	0	100	93.8	0	0	0	0	0	96.8	96.7	0	0	98.3
Heavy Vehicles	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3
% Heavy Vehicles	14.3	0	0	0	0	0	0	0	0	0	0	0	0	1.3	0	0	0.6
Buses	1	0	0	0	0	0	1	0	0	0	0	0	1	3	0	0	6
% Buses	14.3	0	0	0	0	0	6.2	0	0	0	0	0	3.2	2	0	0	1.1

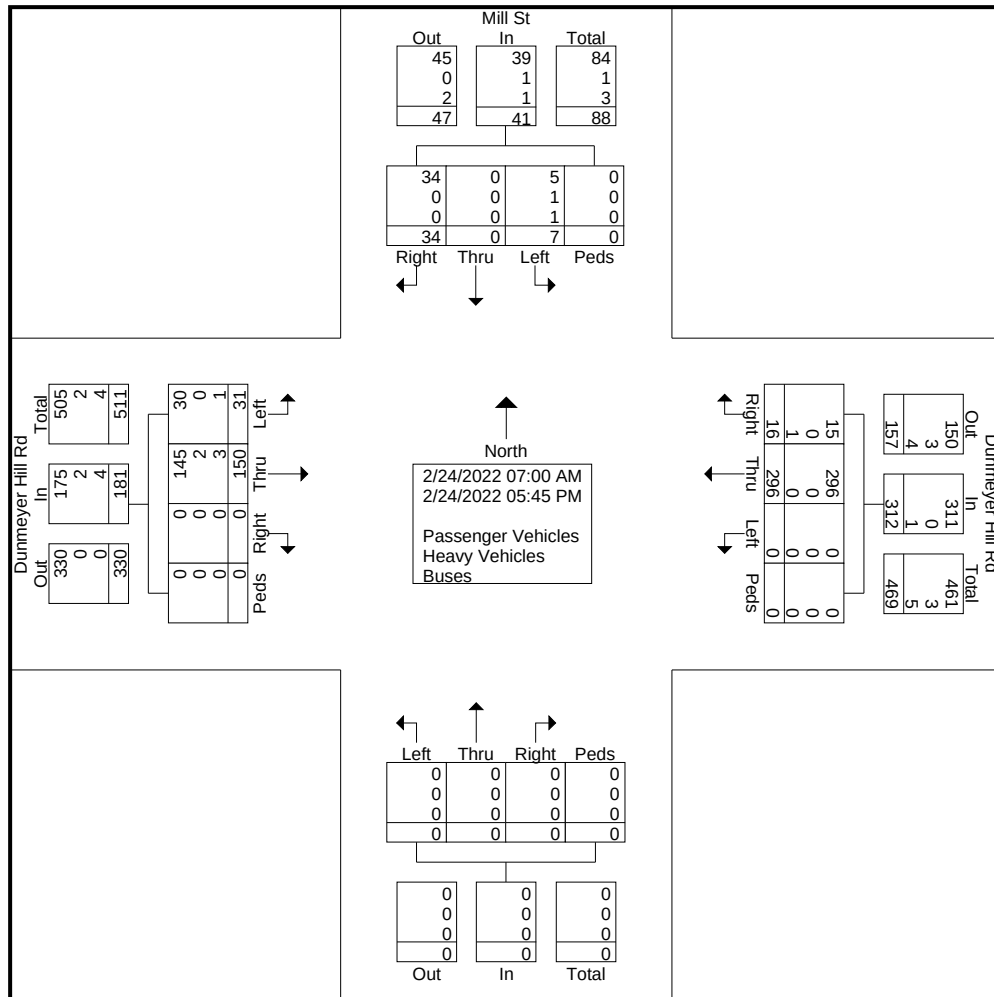
Short Counts

File Name : Mill St @ Dunmeyer Hill Rd

Site Code :

Start Date : 2/24/2022

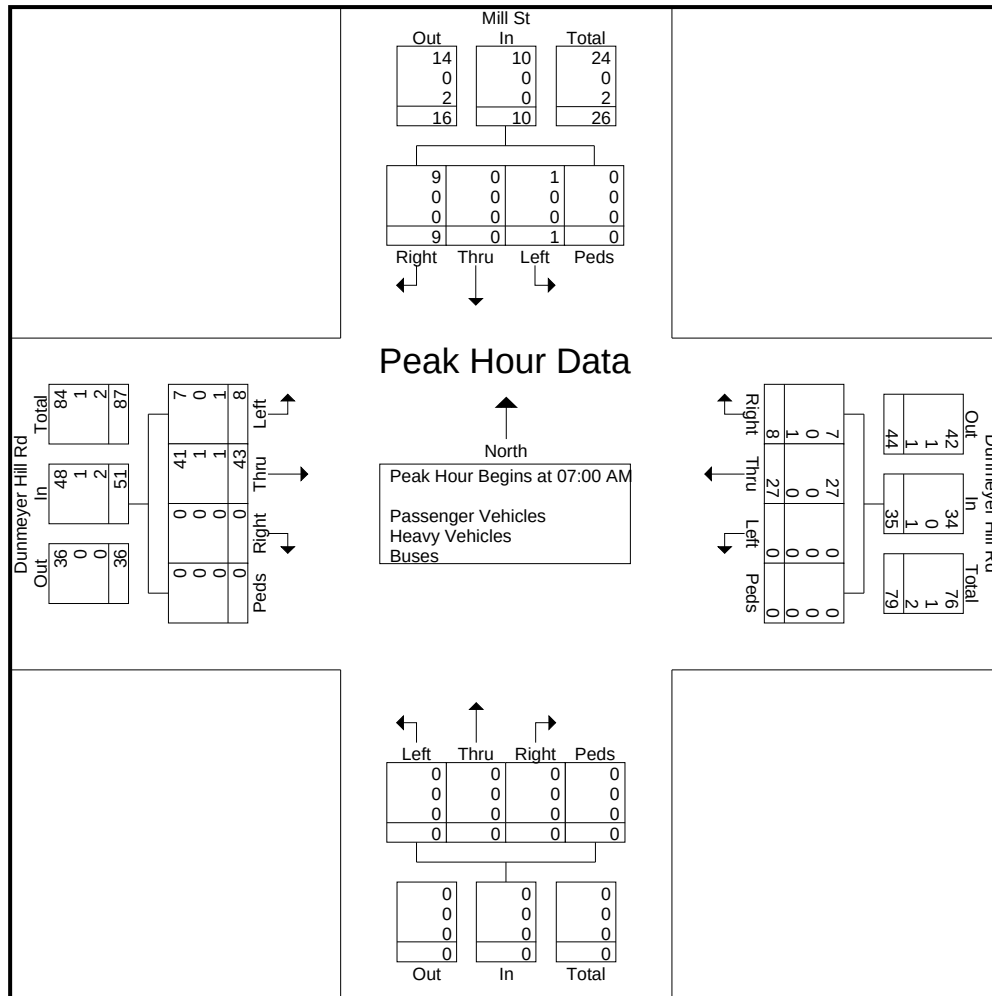
Page No : 2



Short Counts

File Name : Mill St @ Dunmeyer Hill Rd
 Site Code :
 Start Date : 2/24/2022
 Page No : 3

	Mill St From North					Dunmeyer Hill Rd From East					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 07:00 AM																					
07:00 AM	1	0	2	0	3	0	4	1	0	5	0	0	0	0	0	3	13	0	0	16	24
07:15 AM	0	0	1	0	1	0	7	4	0	11	0	0	0	0	0	3	15	0	0	18	30
07:30 AM	0	0	2	0	2	0	7	2	0	9	0	0	0	0	0	1	8	0	0	9	20
07:45 AM	0	0	4	0	4	0	9	1	0	10	0	0	0	0	0	1	7	0	0	8	22
Total Volume	1	0	9	0	10	0	27	8	0	35	0	0	0	0	0	8	43	0	0	51	96
% App. Total	10	0	90	0		0	77.1	22.9	0		0	0	0	0	0	15.7	84.3	0	0		
PHF	.250	.000	.563	.000	.625	.000	.750	.500	.000	.795	.000	.000	.000	.000	.000	.667	.717	.000	.000	.708	.800
Passenger Vehicles	1	0	9	0	10	0	27	7	0	34	0	0	0	0	0	7	41	0	0	48	92
% Passenger Vehicles	100	0	100	0	100	0	100	87.5	0	97.1	0	0	0	0	0	87.5	95.3	0	0	94.1	95.8
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.3	0	0	2.0	1.0
Buses	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0	2	3
% Buses	0	0	0	0	0	0	0	12.5	0	2.9	0	0	0	0	0	12.5	2.3	0	0	3.9	3.1



Short Counts

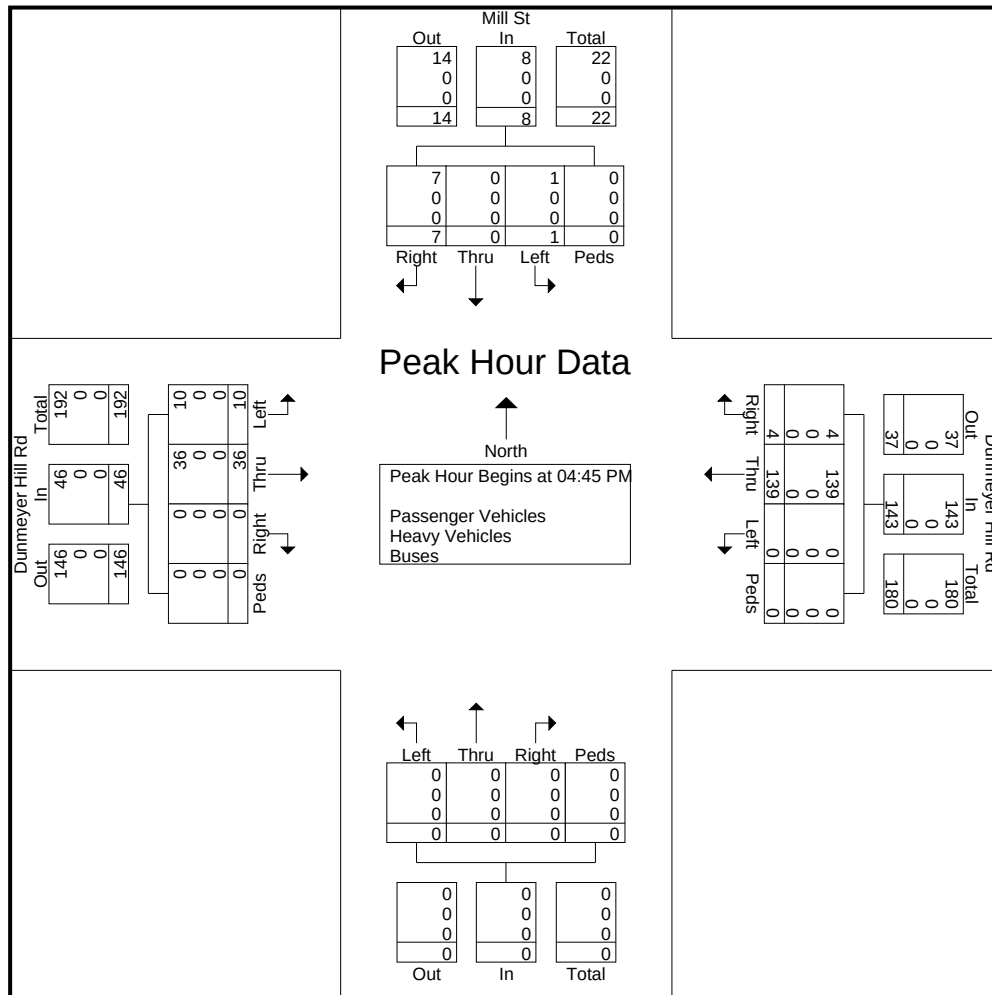
File Name : Mill St @ Dunmeyer Hill Rd

Site Code :

Start Date : 2/24/2022

Page No : 4

	Mill St From North					Dunmeyer Hill Rd From East					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 04:45 PM																					
04:45 PM	0	0	2	0	2	0	30	2	0	32	0	0	0	0	0	3	7	0	0	10	44
05:00 PM	1	0	2	0	3	0	45	1	0	46	0	0	0	0	0	4	12	0	0	16	65
05:15 PM	0	0	2	0	2	0	28	0	0	28	0	0	0	0	0	3	10	0	0	13	43
05:30 PM	0	0	1	0	1	0	36	1	0	37	0	0	0	0	0	0	7	0	0	7	45
Total Volume	1	0	7	0	8	0	139	4	0	143	0	0	0	0	0	10	36	0	0	46	197
% App. Total	12.5	0	87.5	0		0	97.2	2.8	0		0	0	0	0		21.7	78.3	0	0		
PHF	.250	.000	.875	.000	.667	.000	.772	.500	.000	.777	.000	.000	.000	.000	.000	.625	.750	.000	.000	.719	.758
Passenger Vehicles	1	0	7	0	8	0	139	4	0	143	0	0	0	0	0	10	36	0	0	46	197
% Passenger Vehicles	100	0	100	0	100	0	100	100	0	100	0	0	0	0	0	100	100	0	0	100	100
Heavy Vehicles																					
% Heavy Vehicles	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
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



INTERSECTION VOLUME DEVELOPMENT

Mill Crossing Estates

Mill Street at Fiddie Street/Site Driveway #1 AM PEAK HOUR (7:00 AM to 8:00 AM)

Description	Mill Street <u>Northbound</u>			Mill Street <u>Southbound</u>			Fiddie Street <u>Eastbound</u>			Site Driveway #1 <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 AM Volumes	0	18	0	0	12	2	2	0	0			
Pedestrians	0			0			0					
Heavy Vehicle %	11.1%			0.0%			0.0%			2.0%		
Peak Hour Factor	0.56			0.70			0.50			0.90		
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2023 Background Traffic	0	18	0	0	12	2	2	0	0	0	0	0
Trip Distribution												
New Trips IN				90%								
New Trips OUT												90%
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	5	0	0	0	0	0	0	0	17
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	5	0	0	0	0	0	0	0	17
2023 Buildout Total	0	18	0	5	12	2	2	0	0	0	0	17

PM PEAK HOUR (4:15 PM to 5:15 PM)

Description	Mill Street <u>Northbound</u>			Mill Street <u>Southbound</u>			Fiddie Street <u>Eastbound</u>			Site Driveway #1 <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 PM Volumes	1	16	0	0	12	2	5	0	0			
Pedestrians	0			0			0					
Heavy Vehicle %	5.9%			14.3%			0.0%			2.0%		
Peak Hour Factor	0.85			0.70			0.63			0.90		
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2023 Background Traffic	1	16	0	0	12	2	5	0	0	0	0	0
Trip Distribution												
New Trips IN				90%								
New Trips OUT												90%
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	18	0	0	0	0	0	0	0	11
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	18	0	0	0	0	0	0	0	11
2023 Buildout Total	1	16	0	18	12	2	5	0	0	0	0	11

INTERSECTION VOLUME DEVELOPMENT

Mill Crossing Estates

Dunmeyer Hill Road at Site Driveway #2

AM PEAK HOUR (7:00 AM to 8:00 AM)

Description	-			Site Driveway #2			Dunmeyer Hill Road			Dunmeyer Hill Road		
	<u>Northbound</u>			<u>Southbound</u>			<u>Eastbound</u>			<u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 AM Volumes								40			40	
Pedestrians												
Heavy Vehicle %					2.0%			0.0%			0.0%	
Peak Hour Factor					0.90			0.67			0.91	
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2023 Background Traffic	0	0	0	0	0	0	0	40	0	0	40	0
Trip Distribution												
New Trips IN							10%					
New Trips OUT						10%						
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	2	1	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	2	1	0	0	0	0	0
2023 Buildout Total	0	0	0	0	0	2	1	40	0	0	40	0

PM PEAK HOUR (4:45 PM to 5:45 PM)

Description	-			Site Driveway #2			Dunmeyer Hill Road			Dunmeyer Hill Road		
	<u>Northbound</u>			<u>Southbound</u>			<u>Eastbound</u>			<u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2022 PM Volumes								37			143	
Pedestrians												
Heavy Vehicle %					2.0%			0.0%			0.0%	
Peak Hour Factor					0.90			0.71			0.78	
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2023 Background Traffic	0	0	0	0	0	0	0	37	0	0	144	0
Trip Distribution												
New Trips IN							10%					
New Trips OUT						10%						
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	1	2	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	1	2	0	0	0	0	0
2023 Buildout Total	0	0	0	0	0	1	2	37	0	0	144	0

INTERSECTION VOLUME DEVELOPMENT

Mill Crossing Estates US 78 at Mill Street AM PEAK HOUR (7:00 AM to 8:00 AM)

Description	Mill Street <u>Northbound</u>			Bell Wright Road <u>Southbound</u>			US 78 <u>Eastbound</u>			US 78 <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Raw July 2021 Traffic Count Volumes	7	2	4	36	1	22	14	509	4	2	370	42
2021 Traffic Count Volumes with 1.16 COVID Adjustment Factor Applied ¹	8	2	5	42	1	26	16	590	5	2	429	49
Existing 2022 Traffic Volumes	8	2	5	42	1	26	16	596	5	2	433	49
Pedestrians	0			1			0			0		
Heavy Vehicle %	0.0%			8.3%			3.8%			5.6%		
Peak Hour Factor	0.81			0.60			0.97 (0.95)			0.82		
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2023 Background Traffic	8	2	5	42	1	26	16	602	5	2	437	49
Trip Distribution												
New Trips IN									45%	45%		
New Trips OUT	45%		45%									
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	9	0	8	0	0	0	0	0	2	3	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	9	0	8	0	0	0	0	0	2	3	0	0
2023 Buildout Total	17	2	13	42	1	26	16	602	7	5	437	49

PM PEAK HOUR (4:45 PM TO 5:45 PM)

Description	Mill Street <u>Northbound</u>			Bell Wright Road <u>Southbound</u>			US 78 <u>Eastbound</u>			US 78 <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Raw July 2021 Traffic Count Volumes	7	0	13	52	3	29	26	518	11	11	613	32
Existing 2021 Traffic Count Volumes with 1.11 COVID Adjustment Factor Applied ¹	8	0	14	58	3	32	29	575	12	12	680	36
Existing 2022 Traffic Volumes	8	0	14	59	3	32	29	581	12	12	687	36
Pedestrians	0			0			1			1		
Heavy Vehicle %	0.0%			3.6%			0.9%			0.6%		
Peak Hour Factor	0.71			0.78			0.92			0.91		
Annual Growth Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2023 Background Traffic	8	0	14	60	3	32	29	587	12	12	694	36
Trip Distribution												
New Trips IN									45%	45%		
New Trips OUT	45%		45%									
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	5	0	6	0	0	0	0	0	9	9	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	5	0	6	0	0	0	0	0	9	9	0	0
2023 Buildout Total	13	0	20	60	3	32	29	587	21	21	694	36

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	590	5	2	433	49	8	2	5	42	1	26
Future Vol, veh/h	16	590	5	2	433	49	8	2	5	42	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	82	82	82	81	81	81	60	60	60
Heavy Vehicles, %	4	4	4	6	6	6	2	2	2	8	8	8
Mvmt Flow	17	621	5	2	528	60	10	2	6	70	2	43
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	588	0	0	626	0	0	1243	1250	625	1225	1222	558
Stage 1	-	-	-	-	-	-	658	658	-	562	562	-
Stage 2	-	-	-	-	-	-	585	592	-	663	660	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.12	6.52	6.22	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.18	5.58	-
Follow-up Hdwy	2.236	-	-	2.254	-	-	3.518	4.018	3.318	3.572	4.072	3.372
Pot Cap-1 Maneuver	977	-	-	937	-	-	151	173	485	151	175	518
Stage 1	-	-	-	-	-	-	453	461	-	501	500	-
Stage 2	-	-	-	-	-	-	497	494	-	441	451	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	977	-	-	937	-	-	134	168	485	144	170	518
Mov Cap-2 Maneuver	-	-	-	-	-	-	134	168	-	144	170	-
Stage 1	-	-	-	-	-	-	441	449	-	487	499	-
Stage 2	-	-	-	-	-	-	453	493	-	421	439	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0			26.9			45.7		
HCM LOS							D			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	183	977	-	-	937	-	-	198				
HCM Lane V/C Ratio	0.101	0.017	-	-	0.003	-	-	0.581				
HCM Control Delay (s)	26.9	8.7	0	-	8.9	0	-	45.7				
HCM Lane LOS	D	A	A	-	A	A	-	E				
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	3.2				

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	0	18	12	2
Future Vol, veh/h	2	0	0	18	12	2
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	50	50	56	56	70	70
Heavy Vehicles, %	2	2	11	11	2	2
Mvmt Flow	4	0	0	32	17	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	51	19	20	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.21	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.299	-	-	-
Pot Cap-1 Maneuver	958	1059	1539	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	958	1059	1539	-	-	-
Mov Cap-2 Maneuver	958	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1539	-	958	-	-	
HCM Lane V/C Ratio	-	-	0.004	-	-	
HCM Control Delay (s)	0	-	8.8	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection												
Int Delay, s/veh	12.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	581	12	12	687	36	8	0	14	59	3	32
Future Vol, veh/h	29	581	12	12	687	36	8	0	14	59	3	32
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	91	91	91	71	71	71	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	4	4	4
Mvmt Flow	32	632	13	13	755	40	11	0	20	76	4	41
Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	796	0	0	646	0	0	1528	1526	640	1515	1512	776
Stage 1	-	-	-	-	-	-	704	704	-	802	802	-
Stage 2	-	-	-	-	-	-	824	822	-	713	710	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.14	5.54	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.536	4.036	3.336
Pot Cap-1 Maneuver	826	-	-	939	-	-	96	118	475	97	119	394
Stage 1	-	-	-	-	-	-	428	440	-	375	394	-
Stage 2	-	-	-	-	-	-	367	388	-	420	434	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	825	-	-	938	-	-	78	108	475	87	109	394
Mov Cap-2 Maneuver	-	-	-	-	-	-	78	108	-	87	109	-
Stage 1	-	-	-	-	-	-	401	413	-	352	384	-
Stage 2	-	-	-	-	-	-	317	378	-	378	407	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	0.4		0.1		31.4		155.6					
HCM LOS					D		F					
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	167	825	-	-	938	-	-	119				
HCM Lane V/C Ratio	0.186	0.038	-	-	0.014	-	-	1.013				
HCM Control Delay (s)	31.4	9.5	0	-	8.9	0	-	155.6				
HCM Lane LOS	D	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	6.8				

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	0	1	16	12	2
Future Vol, veh/h	5	0	1	16	12	2
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	63	63	85	85	70	70
Heavy Vehicles, %	2	2	6	6	14	14
Mvmt Flow	8	0	1	19	17	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	40	19	20	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.16	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.254	-	-	-
Pot Cap-1 Maneuver	972	1059	1570	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	971	1059	1570	-	-	-
Mov Cap-2 Maneuver	971	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	0.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1570	-	971	-	-	
HCM Lane V/C Ratio	0.001	-	0.008	-	-	
HCM Control Delay (s)	7.3	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	602	5	2	437	49	8	2	5	42	1	26
Future Vol, veh/h	16	602	5	2	437	49	8	2	5	42	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	82	82	82	81	81	81	60	60	60
Heavy Vehicles, %	4	4	4	6	6	6	2	2	2	8	8	8
Mvmt Flow	17	634	5	2	533	60	10	2	6	70	2	43
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	593	0	0	639	0	0	1261	1268	638	1243	1240	563
Stage 1	-	-	-	-	-	-	671	671	-	567	567	-
Stage 2	-	-	-	-	-	-	590	597	-	676	673	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.12	6.52	6.22	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.18	5.58	-
Follow-up Hdwy	2.236	-	-	2.254	-	-	3.518	4.018	3.318	3.572	4.072	3.372
Pot Cap-1 Maneuver	973	-	-	926	-	-	147	168	477	147	170	514
Stage 1	-	-	-	-	-	-	446	455	-	498	497	-
Stage 2	-	-	-	-	-	-	494	491	-	433	445	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	973	-	-	926	-	-	131	163	477	140	165	514
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	163	-	140	165	-
Stage 1	-	-	-	-	-	-	434	443	-	485	496	-
Stage 2	-	-	-	-	-	-	449	490	-	413	433	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0			27.4			47.9		
HCM LOS							D			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	179	973	-	-	926	-	-	193				
HCM Lane V/C Ratio	0.103	0.017	-	-	0.003	-	-	0.596				
HCM Control Delay (s)	27.4	8.8	0	-	8.9	0	-	47.9				
HCM Lane LOS	D	A	A	-	A	A	-	E				
HCM 95th %tile O(veh)	0.3	0.1	-	-	0	-	-	3.3				

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	0	18	12	2
Future Vol, veh/h	2	0	0	18	12	2
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	50	50	56	56	70	70
Heavy Vehicles, %	2	2	11	11	2	2
Mvmt Flow	4	0	0	32	17	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	51	19	20	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.21	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.299	-	-	-
Pot Cap-1 Maneuver	958	1059	1539	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	958	1059	1539	-	-	-
Mov Cap-2 Maneuver	958	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1539	-	958	-	-	
HCM Lane V/C Ratio	-	-	0.004	-	-	
HCM Control Delay (s)	0	-	8.8	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection												
Int Delay, s/veh	13.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	587	12	12	694	36	8	0	14	60	3	32
Future Vol, veh/h	29	587	12	12	694	36	8	0	14	60	3	32
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	91	91	91	71	71	71	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	4	4	4
Mvmt Flow	32	638	13	13	763	40	11	0	20	77	4	41
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	804	0	0	652	0	0	1542	1540	646	1529	1526	784
Stage 1	-	-	-	-	-	-	710	710	-	810	810	-
Stage 2	-	-	-	-	-	-	832	830	-	719	716	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.14	5.54	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.536	4.036	3.336
Pot Cap-1 Maneuver	820	-	-	935	-	-	94	115	472	95	116	390
Stage 1	-	-	-	-	-	-	424	437	-	371	390	-
Stage 2	-	-	-	-	-	-	363	385	-	416	431	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	819	-	-	934	-	-	76	105	472	85	106	390
Mov Cap-2 Maneuver	-	-	-	-	-	-	76	105	-	85	106	-
Stage 1	-	-	-	-	-	-	398	410	-	348	380	-
Stage 2	-	-	-	-	-	-	313	375	-	374	404	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0.4		0.1			32.2			168.9			
HCM LOS						D			F			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	163	819	-	-	934	-	-	116				
HCM Lane V/C Ratio	0.19	0.038	-	-	0.014	-	-	1.05				
HCM Control Delay (s)	32.2	9.6	0	-	8.9	0	-	168.9				
HCM Lane LOS	D	A	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	7.1				

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	0	1	16	12	2
Future Vol, veh/h	5	0	1	16	12	2
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	63	63	85	85	70	70
Heavy Vehicles, %	2	2	6	6	14	14
Mvmt Flow	8	0	1	19	17	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	40	19	20	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.16	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.254	-	-	-
Pot Cap-1 Maneuver	972	1059	1570	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	971	1059	1570	-	-	-
Mov Cap-2 Maneuver	971	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	0.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1570	-	971	-	-	
HCM Lane V/C Ratio	0.001	-	0.008	-	-	
HCM Control Delay (s)	7.3	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	602	7	5	437	49	17	2	13	42	1	26
Future Vol, veh/h	16	602	7	5	437	49	17	2	13	42	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	82	82	82	81	81	81	60	60	60
Heavy Vehicles, %	4	4	4	6	6	6	2	2	2	8	8	8
Mvmt Flow	17	634	7	6	533	60	21	2	16	70	2	43
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	593	0	0	641	0	0	1270	1277	639	1257	1250	563
Stage 1	-	-	-	-	-	-	672	672	-	575	575	-
Stage 2	-	-	-	-	-	-	598	605	-	682	675	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.12	6.52	6.22	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.18	5.58	-
Follow-up Hdwy	2.236	-	-	2.254	-	-	3.518	4.018	3.318	3.572	4.072	3.372
Pot Cap-1 Maneuver	973	-	-	924	-	-	145	166	476	144	168	514
Stage 1	-	-	-	-	-	-	445	454	-	493	493	-
Stage 2	-	-	-	-	-	-	489	487	-	430	444	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	973	-	-	924	-	-	128	160	476	133	162	514
Mov Cap-2 Maneuver	-	-	-	-	-	-	128	160	-	133	162	-
Stage 1	-	-	-	-	-	-	433	442	-	480	488	-
Stage 2	-	-	-	-	-	-	442	482	-	402	432	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			29.7			52		
HCM LOS							D			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	185	973	-	-	924	-	-	185				
HCM Lane V/C Ratio	0.214	0.017	-	-	0.007	-	-	0.622				
HCM Control Delay (s)	29.7	8.8	0	-	8.9	0	-	52				
HCM Lane LOS	D	A	A	-	A	A	-	F				
HCM 95th %tile O(veh)	0.8	0.1	-	-	0	-	-	3.5				

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	0	0	0	17	0	18	0	5	12	2
Future Vol, veh/h	2	0	0	0	0	17	0	18	0	5	12	2
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	50	50	50	90	90	90	56	56	56	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	11	11	11	2	2	2
Mvmt Flow	4	0	0	0	0	19	0	32	0	7	17	3
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	75	65	19	65	66	32	20	0	0	32	0	0
Stage 1	33	33	-	32	32	-	-	-	-	-	-	-
Stage 2	42	32	-	33	34	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.21	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.299	-	-	2.218	-	-
Pot Cap-1 Maneuver	915	826	1059	929	825	1042	1539	-	-	1580	-	-
Stage 1	983	868	-	984	868	-	-	-	-	-	-	-
Stage 2	972	868	-	983	867	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	896	823	1059	926	822	1042	1539	-	-	1580	-	-
Mov Cap-2 Maneuver	896	823	-	926	822	-	-	-	-	-	-	-
Stage 1	983	865	-	984	868	-	-	-	-	-	-	-
Stage 2	954	868	-	979	864	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9		8.5			0			1.9			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1539	-	-	896	1042	1580	-	-				
HCM Lane V/C Ratio	-	-	-	0.004	0.018	0.005	-	-				
HCM Control Delay (s)	0	-	-	9	8.5	7.3	0	-				
HCM Lane LOS	A	-	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0	0.1	0	-	-				

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	40	0	40	0	2
Future Vol, veh/h	1	40	0	40	0	2
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	67	67	91	91	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	60	0	44	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	44	0	-	0	84	22
Stage 1	-	-	-	-	22	-
Stage 2	-	-	-	-	62	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1564	-	-	-	918	1055
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	961	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1564	-	-	-	917	1055
Mov Cap-2 Maneuver	-	-	-	-	917	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	961	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		8.4		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1564	-	-	-	-	1055
HCM Lane V/C Ratio	0.001	-	-	-	-	0.002
HCM Control Delay (s)	7.3	0	-	-	-	8.4
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0

Intersection												
Int Delay, s/veh	15.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	587	21	21	694	36	13	0	20	60	3	32
Future Vol, veh/h	29	587	21	21	694	36	13	0	20	60	3	32
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	91	91	91	71	71	71	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	4	4	4
Mvmt Flow	32	638	23	23	763	40	18	0	28	77	4	41
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	804	0	0	662	0	0	1567	1565	651	1558	1556	784
Stage 1	-	-	-	-	-	-	715	715	-	830	830	-
Stage 2	-	-	-	-	-	-	852	850	-	728	726	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.14	5.54	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.536	4.036	3.336
Pot Cap-1 Maneuver	820	-	-	927	-	-	90	111	469	90	112	390
Stage 1	-	-	-	-	-	-	422	434	-	361	382	-
Stage 2	-	-	-	-	-	-	354	377	-	412	427	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	819	-	-	926	-	-	72	99	469	78	100	390
Mov Cap-2 Maneuver	-	-	-	-	-	-	72	99	-	78	100	-
Stage 1	-	-	-	-	-	-	395	407	-	338	364	-
Stage 2	-	-	-	-	-	-	299	360	-	363	400	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.3			40.1			200.3		
HCM LOS							E			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	148	819	-	-	926	-	-	108				
HCM Lane V/C Ratio	0.314	0.038	-	-	0.025	-	-	1.128				
HCM Control Delay (s)	40.1	9.6	0	-	9	0	-	200.3				
HCM Lane LOS	E	A	A	-	A	A	-	F				
HCM 95th %tile O(veh)	1.2	0.1	-	-	0.1	-	-	7.7				

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	0	0	0	11	1	16	0	18	12	2
Future Vol, veh/h	5	0	0	0	0	11	1	16	0	18	12	2
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	63	63	63	90	90	90	85	85	85	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	6	6	6	14	14	14
Mvmt Flow	8	0	0	0	0	12	1	19	0	26	17	3
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	98	92	19	92	93	19	20	0	0	19	0	0
Stage 1	71	71	-	21	21	-	-	-	-	-	-	-
Stage 2	27	21	-	71	72	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.16	-	-	4.24	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.254	-	-	2.326	-	-
Pot Cap-1 Maneuver	884	798	1059	892	797	1059	1570	-	-	1523	-	-
Stage 1	939	836	-	998	878	-	-	-	-	-	-	-
Stage 2	990	878	-	939	835	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	862	784	1059	880	783	1059	1570	-	-	1523	-	-
Mov Cap-2 Maneuver	862	784	-	880	783	-	-	-	-	-	-	-
Stage 1	938	822	-	997	877	-	-	-	-	-	-	-
Stage 2	978	877	-	923	821	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.2		8.4			0.4			4.2			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1570	-	-	862	1059	1523	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.009	0.012	0.017	-	-				
HCM Control Delay (s)	7.3	0	-	9.2	8.4	7.4	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0	0	0.1	-	-				

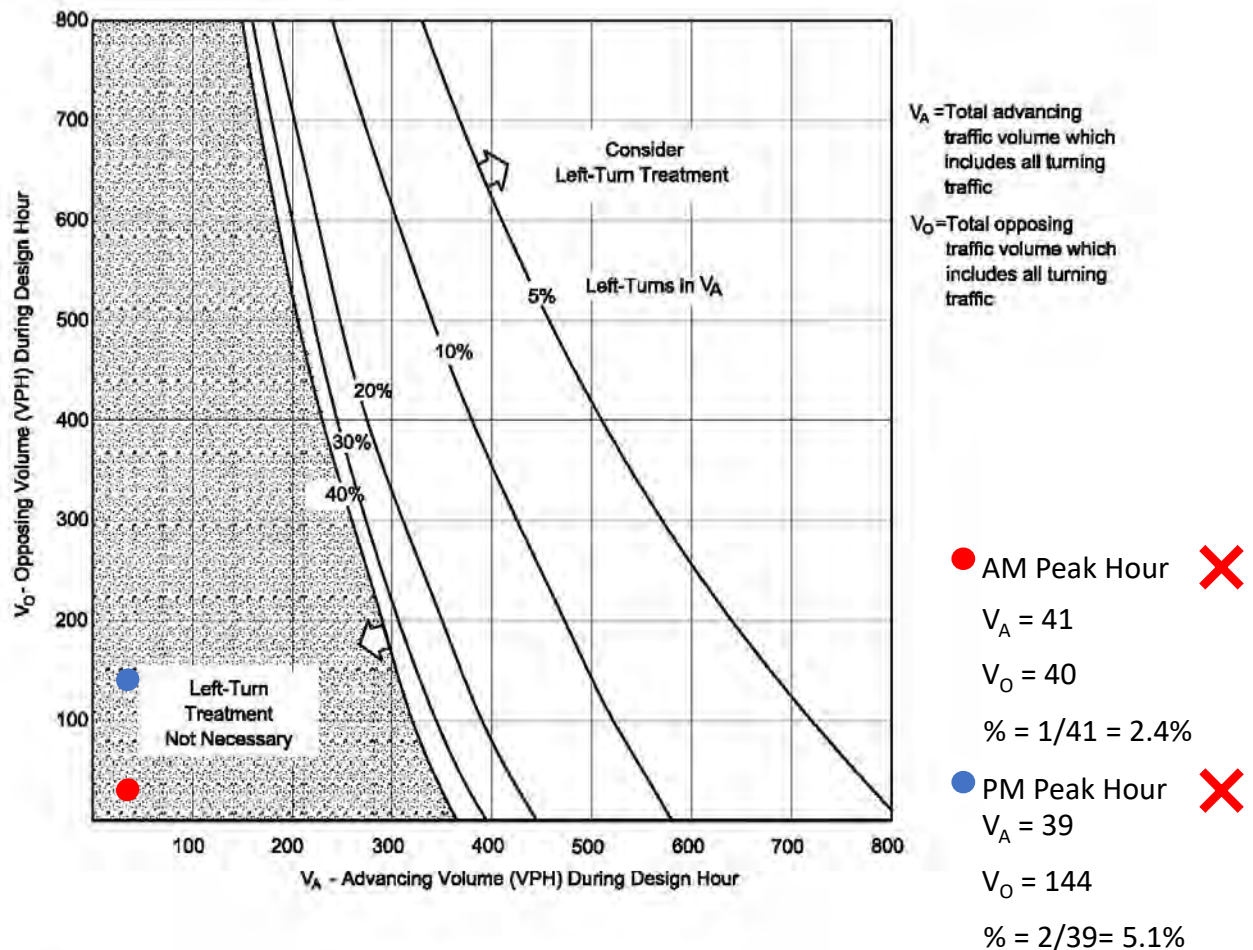
Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	37	144	0	0	1
Future Vol, veh/h	2	37	144	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	71	71	78	78	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	52	185	0	0	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	185	0	-	0	243	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	58	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1390	-	-	-	745	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1390	-	-	-	744	857
Mov Cap-2 Maneuver	-	-	-	-	744	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	965	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1390	-	-	-	857	
HCM Lane V/C Ratio	0.002	-	-	-	0.001	
HCM Control Delay (s)	7.6	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

MILL CROSSING PLANNED DEVELOPMENT DUNMEYER HILL ROAD AT SITE DRIVEWAY #2

March 2017

INTERSECTIONS

9.5-9



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

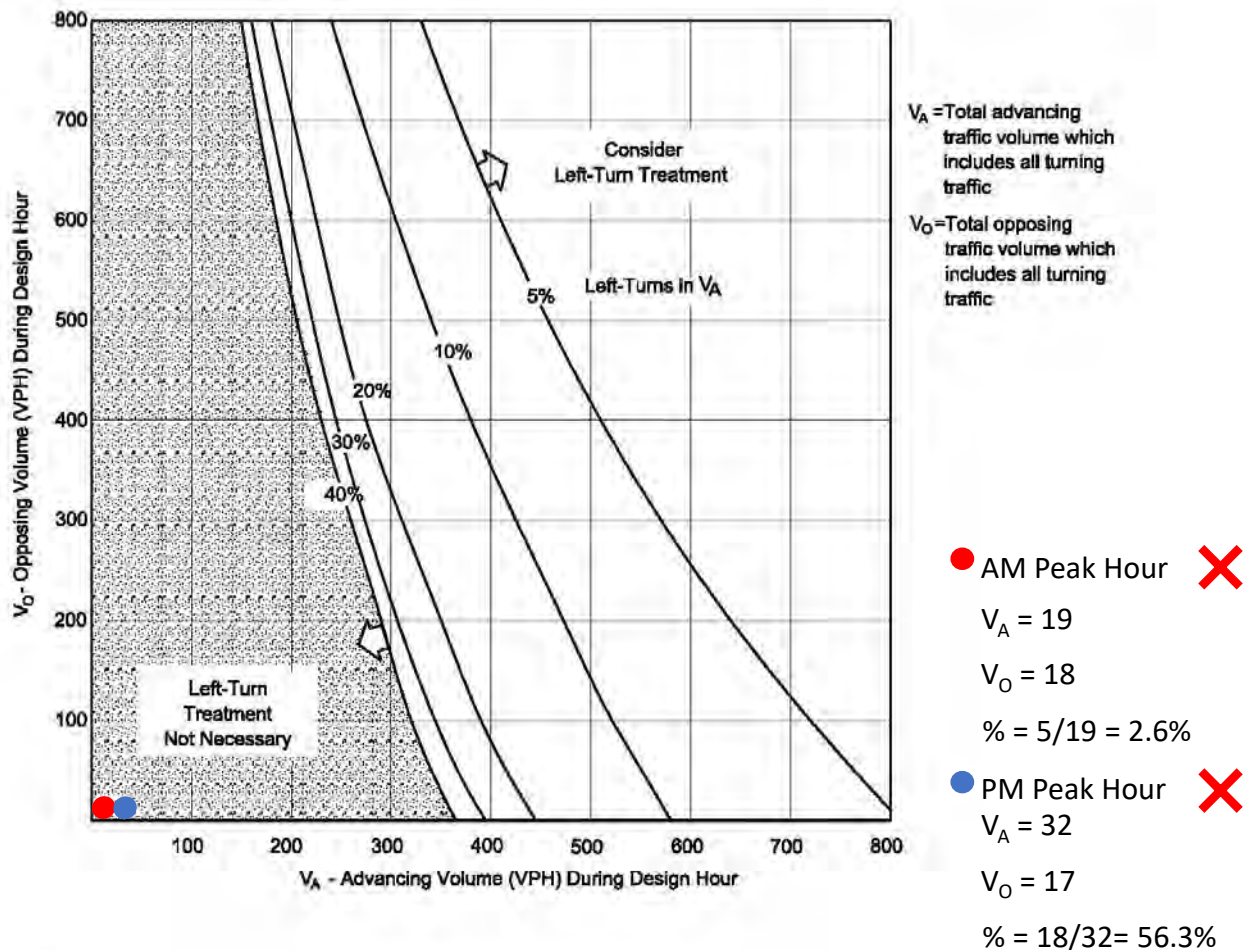
MILL CROSSING PLANNED DEVELOPMENT

MILL STREET AT FIDDIE STREET/SITE DRIVEWAY #1

March 2017

INTERSECTIONS

9.5-9



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