YERBY ROAD

DEVELOPMENT AGREEMENT

BY AND BETWEEN

BRD LAND & INVESTMENT

AND

DORCHESTER COUNTY, SOUTH CAROLINA

December ____, 2023

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BY AND BETWEEN
BRD LAND & INVESTMENT
AND
DORCHESTER COUNTY, SOUTH CAROLINA

This DEVELOPMENT AGREEMENT (together with the Exhibits attached hereto and incorporated by reference herein, this "**Agreement**") is entered into effective as of the ___ day of _____, 2023 (the "**Effective Date**"), by and between DORCHESTER COUNTY, SOUTH CAROLINA (the "**County**"), a political subdivision of the State of South Carolina (the "**State**"), and BRD LAND & INVESTMENT, a South Carolina general partnership ("**Developer**").

RECITALS

This Agreement is predicated upon the following:

1. The South Carolina Local Government Development Agreement Act (the "**Act**"), codified in the Code of Laws of South Carolina, 1976, as amended (the "**S.C. Code**"), Sections 6-31-10 through 6-31-160, as it exists on the Effective Date of this Agreement, enables political subdivisions of the State of South Carolina to enter into binding development agreements with entities having legal or equitable interest in real property.

2. Developer, as the purchaser, has entered into certain binding and effective purchase agreements for the purchase of those certain parcels of land within the County, totaling approximately Six Hundred Five and 46/100 (605.46) acres of real property, more particularly described on Exhibit A attached hereto (the "**Real Property**").

3. Upon acquiring title to the Real Property, the Developer and the County intend for the Real Property to be developed into a community containing single family detached residences, common areas and other related infrastructure and improvements, all pursuant to the terms and conditions set forth herein.

4. In connection with the proposed development of the Real Property, County Council adopted Ordinance No. [ ] on [ ], 2023, attached hereto as Exhibit D (the "**Rezoning Ordinance**"), thereby modifying the Official Zoning Map for Dorchester County, South Carolina, such that the Real Property subject to this Agreement was reclassified to the R-2, Single-Family Residential Zoning District.

5. After publishing and announcing notice in accordance with the Act, the County conducted public hearings regarding its consideration of this Agreement on [ ], 2023, and [ ], 2023. County Council further adopted Ordinance No. [ ] on [ ], 2023, (a) determining that this Agreement is consistent with the County's Comprehensive Plan, the Act, and the Current Regulations of the County, and (b) approving this Agreement.

NOW THEREFORE, in consideration of the premises of this Agreement and the mutual benefits to the parties, the parties agree as follows:

1. The Real Property. The real property subject to this Agreement is the sum of the following parcels of land:

(a) Parcel 1 of the Real Property, identified as Dorchester County TMS No. 127-00-00-140, is currently owned by DV Timber, LLC, a South Carolina limited liability company, and consists of approximately Two Hundred Twelve and 62/100 (212.62) acres ("**Parcel 1**").

(b) Parcel 2 of the Real Property, identified as Dorchester County TMS No. 127-00-00-099, is currently owned by Iron Horse, LLC, a South Carolina limited liability company, and consists of approximately One Hundred Twenty-Nine and 48/100 (129.48) acres, identified as Dorchester County TMS No. 127-00-00-099 ("**Parcel 2**").

(c) Parcel 3 of the Real Property, identified as Dorchester County TMS No. 120-00-00-017, is currently owned by Marlene Y. Hutson, Barbara Y. Slater, Donna Y. Robertson, and Deborah Y. Haas, and consists of approximately One Hundred Thirty-One and 84/100 (131.84) acres, identified as Dorchester County TMS No. 120-00-00-017 ("**Parcel 3**").

(d) Parcel 4 of the Real Property, identified as Dorchester County TMS No. 128-00-00-088, is currently owned by AGG, LLC, a South Carolina limited liability company, and consists of approximately Thirty and 39/100 (30.39) acres, identified as Dorchester County TMS No. 128-00-00-088 ("**Parcel 4**").

(e) Parcel 5 of the Real Property, identified as Dorchester County TMS No. 128-00-00-086, is currently owned by Anna S. Seago, as Trustee of the George H. Seago, III Irrevocable Trust dated August 25, 2009, and George H. Seago, III, as Trustee of the Ponderosa Irrevocable Trust dated September 29, 2008, and consists of approximately One Hundred One and 13/100 (101.13) acres, identified as Dorchester County TMS No. 128-00-00-086 ("**Parcel 5**").

In total, the Real Property currently consists of approximately Five Hundred Fifty and 16/100 (550.16) highland acres and approximately Fifty-Five and 3/10 (55.3) wetland acres, with a total gross acreage of approximately Six Hundred Five and 46/100 (605.46) acres.

Pursuant to the terms of the Act, Developer has an equitable property owner interest in the Real Property by virtue of entering into those certain binding and effective purchase agreements with each of the current legal owners of the Real Property, thereby entitling the County and the Developer to enter into this Agreement. In the event Developer does not acquire title to the Property by December 31, 2024, this Agreement may be terminated pursuant to Section 30(a) hereof.

2. Definitions. In this Agreement, unless the word or phrase is non-capitalized:

(a) "Agreement" means this Development Agreement, including the recitals and exhibits attached hereto.

(b) "Cluster Subdivision Development Regulations" means the ordinances and regulations enacted by the County applicable to developments utilizing a clustering site planning technique that concentrates buildings and structures in specific areas on a lot, site or parcel to allow the remaining land to be used for Common Open Space for recreation and/or preservation of

features or structures with environmental, historical, cultural or other significance, which ordinances and regulations are more particularly set forth in Section 10.7 of the Dorchester County Zoning Ordinance, attached hereto as Exhibit F and incorporated herein by reference.

(c) "Cluster Yield Plan" means the plan, attached hereto as Exhibit G and incorporated herein by reference, identifying the proposed layout of Development of the Real Property, and identifying the Gross and Net Calculated Developable Acres of the Real Property and required open space in accordance with the Cluster Subdivision Development Regulations.

(d) "Comprehensive Plan" means the Dorchester County Comprehensive Plan, Ordinance No. 19-01, adopted on January 7, 2019, pursuant to S.C. Code Section 6-29-510, et seq., as amended through the Effective Date.

(e) "Current Regulations" shall mean the following ordinances and provisions enacted by the County that are in effect as of the Effective Date of this Agreement: (i) the Comprehensive Plan; (ii) Article VI (Use Groups), Article VII, Section 7.3 (R-2, Single-Family Residential District) and Article X, Section 10.7 (Cluster Subdivision Development) of the Zoning Ordinance (hereinafter defined), each of which is attached hereto as Exhibit F and incorporated herein by reference, and (iii) the Cluster Yield Plan attached hereto as Exhibit G, all as amended through the Effective Date hereof. For the avoidance of doubt, the Current Regulations, which form a portion of Land Development Regulations (hereinafter defined), shall govern the Development of the Real Property under this Agreement and shall not be affected by any subsequent amendments of the Land Development Regulations enacted by the County, except as set forth in Section 9(b) hereof.

(f) "DCPW" means the Dorchester County Public Works Department.

(g) "DCWA" means the Dorchester County Water Authority, a public service district not affiliated with the County.

(h) "Developer" shall mean BRD Land & Investment, a South Carolina general partnership, and any and all successors in interest, successors in title or assigns of BRD Land & Investment who: (a) are transferred a legal or equitable interest and/or title to all or a portion of the Real Property in writing; and (b) are assigned rights and obligations under this Agreement to undertake Development of any portion of the Real Property pursuant to Section 29 hereof. When used herein with a reference to a specific portion of the Real Property, Developer shall mean and refer to the specific person or entity that holds legal or equitable title to such portion of the Real Property, and the rights to undertake Development of such portion of the Real Property. This definition of Developer shall not be understood to impose obligations, burdens or liabilities on any of the particular persons or entities who qualify as the Developer for portions of the Property such person or entity has not legal or equitable interest in. Developer hereby warrants that there are no other persons or entities that have an equitable interest in the Real Property.

(i) "Development" means the planning for or carrying out of a building activity, the making of a material change in the use or appearance of any structure or property, or the dividing of land into three or more parcels, and is intended by the parties to include all uses of, activities upon or changes to the Real Property as are authorized by the Agreement.

"Development," as designated in a land or development permit, includes the planning for, and all other activity customarily associated with it, unless otherwise specified. When appropriate to the context, "Development" refers to the planning for, or the act of developing, or to the result of development. Reference to a specific operation is not intended to mean that the operation or activity, when part of other operations or activities, is not development. Reference to particular operations is not intended to limit the generality of this item.

(j) "Development Agreement Ordinance" means County Ordinance No. [_____], adopted on the [___] day of [_____], 2023, approving this Agreement and attached hereto as Exhibit E and incorporated herein by reference.

(k) "Development Parcel" means any tract of land on which Development may occur, including platted lots and unplatted parcels, but excluding street rights-of-way.

(l) "Development Permit" includes a building permit, zoning permit, subdivision approval, certificate of occupancy and any other official action of the County having the effect of permitting the Development or use of property.

(m) "Development Phasing Schedule" means the schedule of proposed Development of the Real Property as shown on Exhibit C, attached hereto and incorporated by reference herein.

(n) "Development Rights" means all rights to the use and Development of the Real Property derived from this Agreement and the Cluster Yield Plan.

(o) "Dwelling Unit" means one or more rooms, designed, occupied or intended for occupancy as a separate living quarter, with cooking, sleeping and sanitary facilities provided within the dwelling unit, including, but not limited to, Renter-Occupied Homes.

(p) "Facilities" means major capital or community improvements including, but not limited to, transportation, sanitary sewer, solid waste, drainage, and potable water, a portion of which may constitute Public Improvements under the Improvement Plan.

(q) "Land Development Regulations" means the ordinances and regulations enacted and amended from time to time by the County for the regulation of any aspect of development and includes, but is not limited to, County zoning, rezoning, subdivision, building construction, or sign regulations or any other regulations controlling development or use of property.

(r) "Land for Community Facilities" means the land depicted on Exhibit H, consisting of approximately thirty-six and 5/10 (36.5) upland acres, with a total gross acreage of approximately fifty-one and 5/10 (51.5) acres, that shall be set aside by the Developer and dedicated to the County pursuant to Section 14(d) of this Agreement for the purposes of serving a community purpose. Developer shall convey title to the Land for Community Facilities to the County prior to the County's issuance of the first certificate of occupancy (CO) for a home constructed upon the Real Property.

(s) "Official Zoning Map" means the County's Official Zoning map.

(t) "Owner-Occupied Home" means a Dwelling Unit constructed on the Real Property, which is initially intended for occupancy by a fee-simple owner of such Dwelling Unit.

(u) "Project" is the Development that will occur within and upon the Real Property described in Exhibit A and Exhibit B.

(v) "Property Owner" means DV Timber, LLC, a South Carolina limited liability company, Iron Horse, LLC, a South Carolina limited liability company, Anna S. Seago, as Trustee of the George H. Seago, III Irrevocable Trust dated August 25, 2009, George H. Seago, III, as Trustee of the Ponderosa Irrevocable Trust dated September 29, 2008, Marlene Y. Hutson, Barbara Y. Slater, Donna Y. Robertson, Deborah Y. Haas, and AGG, LLC, a South Carolina limited liability company, each of which hold legal title and have a legal interest to certain portions of the Real Property on the date of execution hereof, as more particularly identified in Section 1 above, and includes each of their successors in interest, successors in title (as to any portion of the Real Property) and/or assigns. For the avoidance of doubt, this definition of Property Owner, or anything else in this Agreement, this Agreement shall not be understood to impose obligations, burdens, or liabilities, nor to confer any of the rights, benefits or privileges, upon any person or entity solely by virtue of constituting a Property Owner of any portion of the Property. The rights, benefits and privileges, and obligations, burdens and liabilities, contained herein shall only inure to the benefit and be binding upon those persons or entities constituting a Developer under this Agreement.

(w) "Real Property" is the real property referred to in Section 5 of this Agreement and includes any improvements or structures customarily regarded as part of real property.

(x) "Renter-Occupied Home" means a Dwelling Unit constructed on the Real Property, which is initially constructed with the sole purpose of being occupied by individual(s) renting or leasing such Dwelling Unit.

(y) "Term" shall have the meaning set forth in Section 18 of this Agreement.

(z) "Zoning Ordinance" means the Dorchester County Zoning and Land Development Standards of Dorchester County, adopted by Ordinance No. 04-13, as amended through the Effective Date hereof.

3. Parties. Parties to this Agreement are the Developer and the County.

4. Relationship of the Parties. This Agreement creates a contractual relationship between the parties. This Agreement is not intended to create, and does not create, the relationship of master/servant, principal/agent, independent contractor/employer, partnership, joint venture, or any other relationship where one party may be held responsible for acts of the other party. Further, this Agreement is not intended to create, nor does it create, a relationship whereby the conduct of the Developer constitutes "state action" for any purposes.

5. Legal Description of the Real Property. The Real Property which is subject to this Agreement is described as follows:

(a) A legal description of the Real Property is set forth in Exhibit A attached hereto.

(b) A boundary plat of the Real Property is set forth on Exhibit B, attached hereto and incorporated herein by reference.

No other property shall be added to the Agreement unless this Agreement is duly amended to add the legal description of the subsequently acquired properties to the legal description of the Real Property, pursuant to the Act. Notwithstanding the foregoing, nothing herein shall require the County or Developer to add any property to the Agreement.

6. Intent of the Parties. The County and Developer agree that the burdens of this Agreement bind, and the benefits of this Agreement shall inure, to each of them and to their successors in interest and, in the case of Developer, each of its successors in title and/or assigns. The County and the Developer are entering into this Agreement in order to secure benefits and burdens referenced in the Act. To that end, the parties agree to work cooperatively to accomplish the purposes of this Agreement during the Term of this Agreement.

7. Consistency with the County's Comprehensive Plan and Current Regulations. This Agreement, including, without limitation, the Development permitted hereunder, is consistent with the County's Comprehensive Plan and all other provisions of the Current Regulations. Whenever expressed or implied substantive provisions of this Agreement are inconsistent with the applicable standards set forth in the Current Regulations, the standards set forth in the Current Regulations and the standards set forth in this Agreement shall, to the extent possible, be considered in *pari material* to give effect to both the Current Regulations and this Agreement; provided, however, that in the event of a conflict, and subject to the provisions of S.C. Code Section 6-31-80, the standards set forth in the Current Regulations shall govern.

8. Legislative Act. Any change in the standards established by this Agreement or the Current Regulations pertaining to the same shall require the approval of County Council, subject to compliance with applicable statutory procedures and consistent with Section 9(b). This Agreement constitutes a legislative act of County Council. County Council adopted this Agreement only after following procedures required by the Act. This Agreement shall not be construed to create a debt of the County as referenced in S.C. Code Section 6-31-145.

9. Applicable Land Use Regulations.

(a) Applicable Land Development Regulations. Except as otherwise provided by this Agreement, including the limitations expressly set forth in Section 10 of this Agreement, or by the Act, the Development of the Real Property subject to this Agreement shall be governed by the Current Regulations which are those in force at the time of execution of this Agreement, and are as set forth, in part, in Exhibit F and Exhibit G.

(b) Subsequent Regulations. With the exception of the Current Regulations, the Developer expressly acknowledges and agrees that the County may apply subsequent laws, ordinances and regulations adopted after the execution of this Agreement, including, but not limited to, amendments to the Land Development Regulations (collectively, the "**Subsequent Regulations**"), that are of County wide application and are applied uniformly to similar situated

properties as the Real Property subject to this Agreement, provided, that such Subsequent Regulations, shall not prevent or unreasonably restrict the rights of Developer to undertake the permitted density established in Section 13(A)(iii) hereof. The provisions of this Agreement are not intended, nor should they be construed in any way, to alter or amend in any way the rights, duties and privileges of the County to exercise governmental powers applicable to development of real property. Notwithstanding the foregoing, no Subsequent Regulations adopted by the County after the Effective Date of this Agreement shall constitute an amendment of, or otherwise have any effect on, the Current Regulations applicable to the Real Property, unless the County has adopted such Subsequent Regulations pursuant to and in accordance with S.C. Code Section 6-31-80 of the Act. In the event state or federal enacted laws or regulations, enacted after the Effective Date of this Agreement, prevent or preclude compliance with one or more provisions of this Agreement, the provisions of this Agreement must be modified or suspended as may be necessary to comply with said state or federal enacted laws or regulations.

(c) Vested Rights. The County agrees that Developer, upon receipt of all required Development Permits, as applicable in each case, may proceed with the Development of the Real Property according to this Agreement. The rights of Developer to undertake Development of the Real Property as set forth herein, and pursuant to the Current Regulations, shall constitute Vested Rights pursuant to S.C. Code Section 6-29-1510 for the duration of the Term of this Agreement when Developer shall have complied with all requirements of Section 26 of this Agreement.

10. Applicable Building Codes and Other Regulations. Developer shall comply with all applicable Land Development Regulations as applicable in force at the time plans for Development of the Real Property are submitted to the County for review. The Parties expressly acknowledge and agree that nothing in this Agreement shall supersede or contravene the requirements of any Land Development Regulations adopted by the County and in force at the time plans for buildings are submitted to the County for review.

11. Eminent Domain. Nothing contained in this Agreement shall limit, impair, or restrict the County's right and power of eminent domain under the laws of the State.

12. Local Development Permits and Other Permits Needed. The parties anticipate that the following local Development Permits and other regulatory permits will be needed to complete the Development of the Project:

> Zoning permits, plat approvals (preliminary and/or final), road and drainage construction plan approvals, building permits, certificates of occupancy, county water and/or sewer development contracts, and utility construction and operating permits, as well as permits from the South Carolina Department of Health and Environmental Control, South Carolina Department of Transportation, and the US Environmental Protection Agency.

The failure of this Agreement to address a particular permit, condition, term, or restriction does not relieve the Developer of the necessity of complying with the Laws governing permit requirements, conditions, terms, or restrictions.

13. Vested Rights Governing the Development of the Real Property.

A. LAND USES AND INTENSITIES

(i) Cluster Subdivision. The County and Developer hereby acknowledge and agree that the Real Property shall be developed as a cluster subdivision pursuant to the Cluster Subdivision Development Regulations of the Zoning Ordinance.

(ii) Permitted Uses. All uses permitted within the R-2, Single-Family Residential Zoning District of the Zoning Ordinance, attached hereto as Exhibit F, are allowed on the Real Property. The County and Developer acknowledge that after approval of the Cluster Yield Plan and dedication to the County of the Land for Community Facilities, the County may rezone the Land for Community Facilities to the Public Institutional (PI) Zoning District and all uses permitted within the PI District shall be allowed on the Land for Community Facilities.

(iii) Density. The maximum number of Dwelling Units permitted on the Real Property shall be determined in accordance with provisions of the Cluster Subdivision Development Regulations applicable to the R-2, Single-Family Residential Zoning District, as more particularly set forth in the attached Exhibit F. Without limiting the foregoing, the County and Developer estimate that the Project will consist of no less than 1,367 Dwelling Units, and no more than 1,709 Dwelling Units, as more particularly set forth on the Cluster Yield Plan attached hereto as Exhibit G; provided, however, the actual number of Dwelling Units may vary due to application of the standards and provisions of Cluster Subdivision Development Regulations applicable to the R-2, Single-Family Residential Zoning District. For purposes of determining base density, the Land for Community Facilities, the Yerby Road Extension and the Spine Road, as defined herein, shall be included in the Gross Calculated Developable Area pursuant to Section 10.7.5(B) of the Zoning Ordinance.

(iv) Lot and Building Standards. The minimum lot and building standards applicable to the Real Property shall be as set forth in Table 1 and Table 2 in Section 10.7.6 of the Zoning Ordinance. Alley loaded homes shall be permitted to front upon the Interior Spine Road, but only along curb and gutter sections and when fronting a sidewalk or improved trail. Developer acknowledges that a 50' buffer is required along Yerby Road, but not the Interior Spine Road or Yerby Road Extension, in accordance with Section 10.7.4 (A) of the Zoning Ordinance.

B. RESTRICTIVE COVENANTS

The Developer shall record with office of Dorchester County Register of Deeds certain covenants, restrictions and by laws ("**Restrictive Covenants**") affecting the Real Property that will govern the Project. Notwithstanding the foregoing, the Land for Community Facilities shall be exempted from the application of all Restrictive Covenants set forth herein.

(i) Owner Occupied and Renter Occupied Homes. The Restrictive Covenants shall restrict number of Renter-Occupied Homes constructed on the Real Property to twenty-five percent (25%) of the total Dwelling Units planned for the Project. Notwithstanding the foregoing, nothing herein shall limit or restrict the owner of an Owner-Occupied Home from renting such

Owner-Occupied Home in accordance with the applicable terms and provisions that shall also be included within the Restrictive Covenants; provided, however, Developer and the County agree that no Owner-Occupied Home shall be constructed for the sole purpose of being occupied by renters. Prior to the County giving final plat approval for any phase or phases of Development, the Developer shall submit the proposed Restrictive Covenants to the County for its approval to ensure compliance with this subparagraph (i).

(ii) Property Owner's Association. The Restrictive Covenants may provide, at the sole discretion of the Developer, for the establishment a property owner's association ("**POA**"). Membership in the POA, if any, shall be as set forth in the Restrictive Covenants. Subject to the provisions of this Agreement regarding dedication of Public Improvements and the Land for Community Facilities to the County, the Restrictive Covenants may provide for the dedication of all or portions of Real Property to the POA for maintenance and management obligations or other functions, including the payment of fees, subject to the provisions of this Agreement. The recording of a restrictive covenant, conservation easement or similar instrument against all or any portion of the Real Property shall not require or constitute an amendment of this Agreement, unless it constitutes a material change under the Current Regulations, is less restrictive than this Agreement or the Current Regulations, or triggers a requirement for an amendment.

14. Facilities and Services. Although the nature of this long-term project prevents Developer from providing exact completion dates, the general phases of Development are set forth in Section 17 of this Agreement and described in Exhibit C. Developer certifies that the services and Facilities will be in place (or if not fully in place, the cost of construction fully bonded or letter of credit posted pursuant to the Current Regulations) at the times provided herein. Developer shall comply with applicable Land Development Regulations and all provisions of this Agreement, and obtain prior approval of construction plans by the County and other applicable governmental entities before installing the Facilities. Notwithstanding any provision herein to the contrary, Developer hereby assures the County that adequate Facilities shall be available concurrent with the phases of Development.

(a) Rights-of-Way/Easement. Developer or a third party shall, at the Developer's sole cost and expense, develop and provide roads, streets, and other transportation and drainage related facilities and infrastructure within the Project and pursuant to and at such time required by the development plans for the Project and/or the Current Regulations. Developer shall dedicate and convey such internal transportation infrastructure and related facilities within the Project to the County, and the County shall accept such dedication, pursuant to the County's road dedication and acceptance process. Thereafter, the County shall assume maintenance responsibility for such internal transportation infrastructure and related facilities.

(b) Potable Water. The Real Property lies within the DCWA water service area pursuant to the willingness to serve letter attached as Exhibit I. Subject to approval by the South Carolina Department of Health and Environmental Control ("**DHEC**"), the service and Facilities for water shall be provided by DCWA Notwithstanding anything to the contrary contained herein, nothing within this Agreement shall be construed to affect, modify or in any manner alter any existing or future agreements between Developer and DCWA.

(c) Sanitary Sewer Facilities and Service. Subject to approval by the DHEC and the terms set forth herein, the service and facilities for sanitary sewer for the Project shall be provided by the County.

Without limiting the foregoing, the County hereby agrees that Developer shall be permitted, at the Developer's sole cost and expense, to make upgrades and improvements to the existing sewer facilities and infrastructure serving the Real Property, including without limitation, the installation of sewer force main (the "**Phase 1 Sewer Force Main**") to the existing Pump Station Number 4, along with any other upgrades and improvements which may be necessary, or otherwise identified through hydraulic modeling, to support an additional 1,784 Equivalent Residential Units ("**ERUs**") (collectively, the "**Sewer Improvements**"). Developer further agrees that the Sewer Improvements shall include improvements necessary to provide 50 ERUs to serve the Land for Community Facilities. The County hereby agrees to participate in any condemnation proceedings which may be necessary to acquire utility easements for Developer to complete the Sewer Improvements at off-site locations mutually agreed upon by the County and Developer. The County shall commence such condemnation proceedings within a reasonable time following the date that such off-site locations for the Sewer Improvements have been identified. Developer hereby agrees to pay all reasonable costs associated with any such condemnation, including but not limited to, legal fees, costs, experts and just compensation to the landowner(s); provided, however, any outside legal counsel retained in connection with such condemnation proceedings shall be employed by the County and Developer shall pay all reasonable legal fees incurred by the County with respect to such condemnation proceedings.

The County may require the Sewer Improvements installed by Developer provide additional service capacity ("**Excess Capacity**") in excess of the capacity that would otherwise be necessary to adequately serve Project; provided, however, Developer shall have no obligation for Excess Capacity if it would materially delay completion of the Sewer Improvements. Any additional costs and expense of the Sewer Improvements in connection with providing Excess Capacity shall be the sole responsibility of the County. Notwithstanding anything to the contrary contained herein, upon payment of all applicable fees, rates and charges by the Developer, the capacity necessary to adequately serve the Project shall at all times be reserved for the Project.

Developer hereby agrees that all Sewer Improvements shall be constructed and shall conform with applicable County ordinance and regulations, as may be amended from time to time. Upon completion of the Sewer Improvements, Developer will transfer all such improvements, including without limitation the Phase 1 Sewer Force Main, to the County and will dedicate all easements or other appropriate conveyances to the County. The County agrees to accept all such dedication in accordance with its standards, as may be amended from time to time, and to maintain such Sewer Improvements after such transfer.

Developer shall pay sewer impact fees in the amounts in effect at the time of approval of a phase of construction, provided, however, the County agrees that Developer shall have the right from time to time, but not the obligation to, pre-pay sewer impact fees, at the then prevailing rate for all proposed Development in order to avoid increases in such impact fees.

(d) Land for Community Facilities. Developer hereby agrees to dedicate the Land for Community Facilities, in such approximate location as depicted on Exhibit H attached

hereto, consisting of a total of approximately 51.5 acres, including 36.5 upland acres, to the County for public use prior to the County's issuance of the first certificate of occupancy for any portion of the Real Property. Access to the Land for Community Facilities will be provided from Yerby Road, and Developer shall be responsible for such on-site roadway improvements up to and adjacent to the Land for Community Facilities site. Notwithstanding anything to contrary contained herein, in exchange for the Land for Community Facilities, the County hereby agrees that the Developer shall be entitled to bonus density in accordance with Section 10.7.7(D) of the Zoning Ordinance that the 36.5 upland acres of Land for Community Facilities shall be included within the Gross Calculable Developable Acres for purposes of determining base units pursuant to Section 10.7.5(B) of the Zoning Ordinance; provided, however, none of the Land for Community Facilities shall count towards open space as required under the Zoning Ordinance.

In connection with the dedication of the Land for Community Facilities, Developer shall construct a pedestrian connection to the Land for Community Facilities, the design of which shall conform with the intent of the Bonus Density provisions in Section 10.7.7(E)(5) of the Zoning Ordinance.

The County, at its sole discretion, may rezone the Land for Community Facilities to the Public Institution (PI) District after dedication without negative affect on the approved Cluster Yield Plan.

15. Transportation and Road Improvements.

(a) Developer Obligations for Road Improvements.

(i) Yerby Road Improvements. Primary access and the main entrance to the Project shall be provided from Yerby Road. Developer shall, at its cost and expense, design, engineer, acquire right-of-way, construct and improve the Yerby Road corridor in as currently aligned order to serve as the main entrance to the Project at such location mutually agreed upon by the County and Developer (the "**Yerby Road Improvements**"). The Yerby Road Improvements shall be designed and constructed in accordance with the County design standards. The Yerby Road Improvements shall be constructed within a Seventy-Five foot (75') right-of-way.

Developer shall submit a road maintenance acceptance application ("**RMAA**") to DCPW for the dedication of the Yerby Road Improvements to the County prior to the County's issuance of the Forty-First (41st) Certificate of Occupancy for the Real Property. Failure of Developer to timely submit such RMAA shall temporarily suspend the issuance of any additional building permits and Certificates of Occupancy in connection with the Project until such time an RMAA has been submitted and approved by County Council; provided, however, that a failure to submit the RMAA due to the County's failure to condemn the necessary right-of-way shall not result in the suspension of issuance of building permits or Certificates of Occupancy Upon proper dedication and acceptance by the County of the Yerby Road Improvements, the County shall be responsible for all maintenance of the Yerby Road Improvements. Should Developer choose to use Yerby Road Improvements as a construction entrance for the Development of any phase of the Project, including but not limited to construction of homes, the installation of infrastructure, or any other Development purposes, Developer shall be entitled to use the Yerby Road Improvements for such purposes, provided that Developer provide the County with a bond, in such form and in such

amount as is reasonably acceptable to the County, in order to ensure sufficient funding is available should it be necessary to perform any repaving or repairs to the Yerby Road Improvements as a result of its use as a construction entrance. Such bond shall be periodically updated as reasonably required by the County.

(ii) Spine Road. Developer shall, at its cost and expense, design, engineer, improve and construct a spine road from Yerby Road to Sinclair Road (the "**Interior Spine Road**") at such location depicted on the Cluster Yield Plan attached hereto as Exhibit G, provided, however, such location is preliminary and the Interior Spine Road, or portions thereof, may be relocated to accommodate traffic, adjacent land uses or site specific characteristics. The Interior Spine Road shall be constructed within a Seventy-Five foot (75') right-of-way and include wear surface, to be defined by DCPW. The Interior Spine Road may be constructed as either curb and gutter, road and ditch, or combination thereof, as may be determined by Developer in the Developer's sole discretion, provided, however, alley loaded homes shall be permitted to front the Interior Spine Road, but only along those portions of the Interior Spine Road that are constructed as curb and gutter and when fronting a sidewalk or improved trail. Should Developer choose to use Spine Road as a construction entrance for the Development of any phase of the Project, including but not limited to construction of homes, the installation of infrastructure, or any other Development purposes, Developer shall be entitled to use the Spine Road for such purposes, provided that Developer shall provide the County with a bond, in such form and in such amount as is reasonably acceptable to the County, in order to ensure sufficient funding is available should it be necessary to perform any repaving or repairs to the Spine Road as a result of its use as a construction entrance.

The Interior Spine Road shall be completed, and Developer shall have submitted an RMAA for dedication of the Interior Spine Road, prior the County's issuance of the Three Hundredth Forty-Third (343rd) certificate of occupancy for the Real Property. Failure of the Developer to timely submit such RMAA shall temporarily suspend the issuance of any additional building permits or certificates of occupancy in connection with the Project until such time an RMAA has been submitted. Upon proper dedication and acceptance by the County of the Interior Spine Road, the County shall be responsible for all maintenance of such roadway.

(iii) Sinclair Road. Developer shall, at their cost and expense, design, engineer, and construct improvements to Sinclair Road right-of-way to such extent necessary to support the increased traffic volumes resulting from the Development of the Project, as more particularly set forth in the traffic study attached hereto as Exhibit K ("**Sinclair Road Improvements**"). The Sinclair Road Improvements shall be constructed within a right-of-way of such width that is sufficient to accommodate the roadway and access for maintenance.

The Sinclair Road Improvements shall be completed, and Developer shall have submitted to DCPW an RMAA for dedication of such improvements, prior the County's issuance of the Three Hundredth Forty-Third (343rd) certificate of occupancy for the Real Property. Failure of Developer to timely submit such RMAA to DCPW shall temporarily suspend the issuance of any additional building permits or certificates of occupancy in connection with the Project until such time an RMAA has been submitted. Upon proper dedication and acceptance by the County of the Sinclair Road Improvements, the County shall be responsible for all maintenance of such roadway improvements.

(iv) Traffic Studies. A traffic study completed by Developer is attached hereto as Exhibit K. The County hereby agrees that no additional traffic mitigation measures or improvements shall be required of the Developer in connection with the Development of the Property other than road improvements identified in this Section 15(a); provided, however, Developer shall prepare and submit to the County updated traffic studies upon the issuance of the Three Hundredth (300th) certificate of occupancy for the Real Property, and each additional Three Hundredth (300th) certificate of occupancy thereafter for the sole purpose of evaluating the timing of construction of such road improvements. In the event any such traffic study determines that construction of any portion of the road improvements identified in this Section 15(a) are warranted at an earlier in time than as set forth in this Agreement, Developer hereby agrees to construct such improvements within such time period identified therein.

(v) Off-Site Road Improvements. In order to more effectively accommodate the vehicular traffic impacts associated with the Project, Developer hereby agrees to design and construct, at their cost and expense, the following off-site roadway improvements identified in the Traffic Study attached hereto as Exhibit K (collectively, the "Off-Site Road Improvements"):

1. Prior to issuance of the forty-first (41st) certificate of occupancy, a northbound left-turn lane, approximately five hundred thirty feet (530') in length, along Orangeburg Road at its intersection with Yerby Road;

2. Prior to the issuance of the two hundred ninety first (291st) certificate of occupancy, a southbound right-turn lane, approximately two hundred eight feet (280') feet in length, along Orangeburg Road at its intersection with Yerby Road;

3. Prior to the issuance of the seven hundred ninety first (791st) certificate of occupancy, an eastbound right-turn lane, approximately four hundred fifty feet (450') in length, along Yerby Road at its intersection with Orangeburg Road; and

4. Prior to the issuance of the one thousand forty first (1,041st) certificate of occupancy, the improvements to reconfigure the intersection of E. Butternut Road and Sinclair Road as a single lane roundabout.

(vi) Rights-of-way for Developer Road Improvements. With respect to any portion of the road improvements identified in Section 15(a) to be constructed by Developer and not located on the Real Property subject to this Agreement, the County hereby agrees to cooperate with Developer in the design and construction of such road improvements, including without limitation, providing Developer with any encroachment permits or construction easements within a reasonable time following Developer's written request. Moreover, Developer hereby agrees to use good faith, commercially reasonable efforts to acquire the rights-of-way necessary for construction of the Yerby Road Improvements, the Sinclair Road Improvements and the Off-Site Road Improvements through private negotiations; provided, however, in the event Developer

reasonably believe that the County's exercise of eminent domain is warranted for the full construction of said road improvements, the County hereby agrees to cooperate and assist Developer in obtaining any such rights-of-way. The County shall commence with any such condemnation proceedings within a reasonable time period following the County's receipt of written notice from Developer that condemnation is warranted. Developer hereby agrees to pay all reasonable costs associated with such condemnation, including but not limited to, legal fees, costs, experts and just compensation to the landowner(s); provided, however, any outside legal counsel retained in connection with such condemnation proceedings shall be employed by the County, and the Developer shall pay all reasonable legal fees and costs of the County's outside legal counsel with respect to such condemnation proceedings. Should the reasonable costs associated with any condemnation proceeding under this Section 15(a)(vi) (including legal fees) not be paid by the Developer within sixty (60) days following Developer's receipt of a written invoice for such cost, the County shall temporarily suspend the issuance of any additional building permits and Certificates of Occupancy in connection with the Project until the time such costs have been paid by Developer.

Without limiting the foregoing, in the event of a successful challenge to a condemnation proceeding contemplated in this Section 15(a)(vi), as evidenced by a final court order in favor of a third-party, then, notwithstanding anything to the contrary herein regarding the vesting of development rights, the County shall have the option to terminate this Agreement; provided, however, nothing contained herein shall be construed as to prevent the County's consideration of other options for acquisition of rights-of-way which may be necessary to support the Development and/or the Project, which consideration shall be subject to the sole discretion of the County.

(vii) Yerby Road Extension. Developer shall dedicate to the County a One Hundred foot (100') right-of-way, in such location as to align with that certain Road and Utility Easement Agreement recorded in in the office of the Dorchester County Register of Deeds in Book 12493 at Page 321, for the extension of Yerby Road (the "**Yerby Road Extension**") to the Town of Ridgeville.

(viii) Submerged Stormwater Infrastructure. In order to limit the amount of fill on the site, DCPW will consider the use of submerged pipes in accordance with the Dorchester County Stormwater Management Design Manual, as amended. Submerged piping should enter a stormwater pond at an invert elevation within 4' of the normal water level of the pond. For all submerged pipe runs, Isolation Boxes shall be provided at the outfall into the stormwater pond. A detail will be provided on the construction plans for the isolation boxes. In addition, a pumping plan which outlines the capacity of the submerged pipe runs and the time it would take to pump them out shall be provided with the construction plans. O-Ring joints and ASTM C443 specification shall be followed for the installation of submerged pipe.

(ix) Access to Project. The County and Developer acknowledge and agree that access to the Project shall be provided from Yerby Road and Sinclair Road. Any other means of access to the Project, including the location of any such additional access, may only be provided following the mutual agreement of the County and Developer.

(b) County Obligations for Road Improvements. The County shall, at its cost and expense, design, engineer, improve, construct and maintain certain improvements at the intersection of Orangeburg Road and Mallard Road (the "**Orangeburg/Mallard Road Improvements**"). To assist the County with cost of the Orangeburg/Mallard Road Improvements, Developer hereby agrees to make a contribution to the County in the total amount of Ten Million Three Hundred Thousand and No/100 Dollars ($10,300,000.00) (the "**Developer Payment**"), with the first deposit in the amount of Two Million and No/100 Dollars ($2,000,000.00) ("**First Deposit**") being paid prior to the Developer's receipt of a land disturbance permit authorizing the Development of the first phase of the Project. Thereafter, Developer shall deposit the remaining Eight Million Three Hundred Thousand and No/100 Dollars ($8,300,000.00) of the Developer Payment prior to the County's issuance of the One Hundredth (100^{th}) Certificate of Occupancy issued for the Project. Failure to pay the Developer Payment will suspend the issuance of any addition building permits or Certificates of Occupancy in connection with the Project until such time when the Developer Payment is made. The County shall not be limited to using the proceeds of the Developer Payment on the Orangeburg/Mallard Road Improvements, and the County shall be entitled to utilize the Developer Payment on any public improvement located within the County so long as the Orangeburg/Mallard Road Improvements are completed prior to utilization of the Developer Payment on any other public improvements.

Notwithstanding anything to the contrary contained herein, Developer shall have no other liability or obligations for any other improvements to roadways or additional economic contributions to the County except as set forth in this Section 15.

16. Improvement District.

Creation of Improvement District; Consent of Developer. The County acknowledges that the Developer, from time to time, may request that the County establish a Residential Improvement District pursuant to S.C. Code Section 6-35-10, et seq. (the **"Improvements Act"**) over and upon all or a portion of the Real Property (the **"Improvement District"**) which Improvement District shall be more particularly set forth in the Improvement Plan in connection therewith, in order to establish an assessment to fund, in whole or in part, certain "Improvements" as defined in Section 6-35-20(2) of the Improvements Act. Upon the request of the Developer, the County agrees to use its best efforts to expedite the creation of the Improvement District provided that the Developer shall be responsible for paying all costs related to the establishment of the Improvement District, including all reasonable costs incurred by the County in connection therewith.

The County agrees to reimburse Developer from the revenues of assessments and any proceeds of any assessment bonds issued by the County for the costs incurred by a Developer in completing public improvements which have been constructed in accordance with the County's then-current design and construction standards and which have been dedicated and conveyed to and accepted by the County or other governmental entity. The County agrees to use its best efforts to issue assessment bonds, with capitalized interest allowed, in such amounts and at such times as may be requested by Developer from time to time or as otherwise determined by the County, in each case subject to standard bond market constraints including the marketability of such assessment bonds. To the extent that the County deems any proposed improvements unacceptable to the County, such improvements shall not be funded with assessments or proceeds of assessment

bonds. Notwithstanding anything to the contrary contained herein, the assessment bonds shall be supported solely by the assessment revenues with no County backstop or security required.

Upon completion of public improvements, the parties anticipate that such public improvements will be dedicated and conveyed to the County or another governmental entity authorized to accept dedication and ownership of such public improvements in accordance with the County's or other governmental entity's then-current standard process. Upon any such proper dedication and acceptance of a public improvement by the County in accordance with the County's then-current standards, the County shall assume all maintenance responsibility with respect to such public improvement.

The County acknowledges that Developer may have completed or commenced construction of certain public improvements as of the date hereof and that such public improvements shall be eligible for funding and reimbursement pursuant to S.C. Code Section 6-35-90 of the Improvements Act at such time that they are dedicated and conveyed to and accepted by the County or other governmental entity.

17. Schedule for Project Development.

(a) Commencement Date. The Project will be deemed to commence Development upon the Effective Date of this Agreement.

(b) Development Phasing Schedule. The parties acknowledge that Developer intends to develop the Real Property in phases. In accordance with the Act, Developer shall develop the Real Property in a manner consistent with the Development Phasing Schedule as is set forth in Exhibit C hereto. As the timing of the Development will be affected by the health of the national and local economics as well as demand for various housing types in the region, it is difficult to accurately project the timing and scope of the Project. As such and using the most reliable information as of the Effective Date, Developer and the County agree upon the Development Phasing Schedule attached hereto as Exhibit C. The Development Phasing Schedule shall specify the maximum number of building permits to be issued by the County in each year. If the maximum number of building permits are not issued in a given year, the maximum number of building permits allowed in the next succeeding year shall not be increased.

Notwithstanding anything to the contrary contained herein, the County and Developer agree that the Development Phasing Schedule shall be, at a minimum, reviewed and, if applicable, updated on annual basis in conjunction with the Periodic Reviews set forth in Section 21 below. Prior to each Periodic Review, Developer shall submit to the County a detailed analysis of the anticipated Development to occur on the Real Property over the next year, along with information on the number of building permits and certificates of occupancy issued for the previous calendar year and for the Project to date, and other information reasonably requested by the County Director of Planning and Zoning.

Periodic adjustments to the Development Phasing Schedule, provided the Developer demonstrates and establishes that there is good cause for such adjustment, whether in conjunction with a Periodic Review or otherwise, shall not require a formal amendment to this Agreement and are not considered a Major Modification. To adjust the Development Phasing Schedule, Developer

shall submit in writing a proposed adjustment to the Director of the Planning and Zoning Department for the County, which shall be approved or disapproved at the County's reasonable discretion. Within 60 days of receipt of the proposed adjustment, the Director of the Planning and Zoning Department shall provide notice in writing to the Developer of the County's decision. In the event the County does not approve the proposed adjustment to the Development Phasing Schedule, the County's written decision on the proposed adjustment must be accompanied by an explanation and justification for the disapproval. Notwithstanding anything to the contrary contained herein, the County shall not revise or adjust the Development Phasing Schedule to reduce the maximum number of building permits for a given year without obtaining prior written approval from Developer.

(c) Project Construction Requirements. Developer shall ensure that all construction and site work performed in development of the Project shall take place only between the hours of 7:00 a.m. and 7:00 p.m. daily. Developer shall use commercially reasonable efforts to keep all public roadways clean and free of debris or excessive dust during all phases of construction. At no time shall construction materials be stored in any public roadway or right-of-way. The Developer expressly acknowledges that no construction traffic of any type shall be permitted on Sinclair Road. The restriction on working hours set forth in this Section 17(c) shall not apply to development of the Land for Community Facilities.

(d) Completion Date. Developer projects that by the year 2033 the Project should be substantially completed (i.e., essentially all structures erected and/or all necessary infrastructure in place to serve the intended uses).

18. Term of the Agreement. The term of this Agreement shall be ten (10) years, commencing on the Effective Date. Notwithstanding, the term of this Agreement shall be reduced in accordance with S.C. Code Section 6-31-40 if the total acreage of the Real Property is less than the total acreage identified in Section 1 of this Agreement.

19. Amending or Canceling the Agreement. Subject to the provisions of the Act and Section 20 of this Agreement, this Agreement may be amended or canceled in whole or in part only by mutual consent of the parties in writing or by their successors in interest. Any amendment to this Agreement shall comply with the provisions of the Act. A major modification of this Agreement shall occur only after public notice and a public hearing by the County pursuant to S.C. Code Section 6-31-60(B) of the Act.

Notwithstanding anything to the contrary contained herein, if an amendment to this Agreement affects only a specific portion and less than all of the Real Property, then this Agreement may be modified or amended as it applies only to such specific portion of the Real Property by written agreement of the County and the person(s) or entity(ies) comprising the Developer under this Agreement.

20. Modifying or Suspending the Agreement. Developer and the County each recognize that periodic modifications to the Agreement may be needed to address market conditions, environmental challenges, and other elements. The following will outline what is considered a minor modification and a major modification to this Agreement and the processes for a minor modification and major modification to this Agreement.

a. Minor Modifications: The Director of the Planning and Zoning Department for the County shall have the authority to administratively approve a minor modification to this Agreement. The following modifications, adjustment, and clarifications shall constitute minor modifications to this Agreement:

   i. Correction of any typographic or scrivener's error.

   ii. Recording of modification in the addressee provisions of Section 30(j) of this Agreement.

   iii. Recording of any instruments or documentation to evidence any act permissible or regulated pursuant to the terms of this Agreement, where the Agreement does not specifically provide for the recording of such instruments or documentation.

   iv. Adjustments to the development schedule, as requested by Developer and approved by the County, as set forth in Section 17 and Exhibit C of this Agreement, including commencement dates and interim completion dates.

b. Major Modifications: major modifications include all modifications that do not qualify as minor modifications. Major modifications must be processed and considered in the same manner as set forth in S.C. Code Section 6-31-60(B) of the Act.

Pursuant to Section 6-31-130 of the Act, in the event state or federal laws or regulations prevent or preclude compliance with one or more provisions of this Agreement, the pertinent provisions of this Agreement shall be modified or suspended as may be necessary to comply with the state or federal laws or regulations.

21. Periodic Review. In addition to reviewing the schedule of building permits and certificates of occupancy provided to the County as set forth in Section 17(b) of this Agreement, the County shall review the Project and this Agreement at least once every twelve (12) months in accordance with S.C. Code Section 6-31-90 (each, a "**Periodic Review**"), at which time the Developer shall demonstrate good-faith compliance with the terms of this Agreement. Developer shall demonstrate compliance with this Agreement by providing a written report (the "**Compliance Report**") to the County Director of Planning and Zoning, no later than November 30th of each year, documenting the status of development and particularly documenting steps toward accomplishing the items set forth in Sections 14, 15, 16, and 17 of this Agreement. Failure to provide the Compliance Report as required by this Section 21 shall result in the withholding of development and/or permit approvals.

If, as a result of its periodic review or at any other time, the County finds and determines that Developer has committed a material breach of the terms or conditions of this Agreement, the provisions of S.C. Code Section 6-31-90 shall apply. For the purposes of S.C. Code Section 6-31-90, the parties hereby agree that a period of thirty (30) days is a reasonable time in which to cure a material breach; provided, however nothing contained herein shall be construed as preventing the parties to mutually agreeing upon a longer period of time.

22. Severability. Subject to the provisions of S.C. Code Section 6-31-150, if any word, phrase, sentence, paragraph or provision of this Agreement shall be finally adjudicated to be invalid, void, or illegal, it shall be deleted and in no way affect, impair, or invalidate any other provision hereof.

23. Merger. This Agreement, coupled with its Exhibits which are incorporated herein by reference, shall state the final and complete expression of the parties' intentions.

The parties hereto agree to cooperate with each other to effectuate the provisions of this Agreement and to act reasonably and expeditiously in all performances required under the Agreement.

24. Conflicts of Law. This Agreement shall be construed and enforced in accordance with the laws of the State of South Carolina, and the First Judicial Circuit, Dorchester, shall be the proper venue for any disputes.

25. Remedies. In addition to the remedies found in Section 21 of this Agreement, Developer and the County each recognize that the other party would suffer irreparable harm from a material breach of this Agreement and that no adequate remedy at law exists to enforce this Agreement. Consequently, the parties agree that any non-breaching party who seeks enforcement of the Agreement is entitled to all remedies available at law and equity, including, but not limited to, actual damages; however, the parties agree that neither party is entitled to punitive damages. The County will look solely to Developer as to any rights it may have against Developer under this Agreement, and hereby waives any rights to assert any claims against the shareholders, employees or agents of Developer, and further agrees that no shareholder, employee, or agent of Developer has any personal liability under this Agreement. The Developer will look solely to County as to any rights it may have against County under this Agreement, and hereby waives any rights to assert any claims against the employees, elected officials, officers, or agents of the County, and further agrees that no employee, elected official, officer, or agent of the County has any personal liability under this Agreement. Moreover, notwithstanding anything to the contrary contained herein, the County hereby acknowledges and agrees that breach of this Agreement by one Developer shall not constitute a breach or default of this Agreement by any non-breaching Developer. The County will look solely to the breaching Developer as to any rights it may have against such Developer under this Agreement.

26. Recording. Within fourteen (14) days after execution of this Agreement by both parties, Developer shall record the Agreement in the office of the Dorchester County Register of Deeds. The burdens of this Agreement are binding upon, and the benefits of this Agreement shall inure to, all successors in interest and assigns of the parties to this Agreement.

27. Third Parties. Notwithstanding any provision herein to the contrary, this Agreement shall not be binding and shall have no force or effect as to persons or entities that are not parties or successors and assigns to this Agreement.

28. County Approval of Agreement. The County Council has approved the Project under the process set forth in S.C. Code Section 6-31-50 of the Act on the terms and conditions set forth in this Agreement.

29. Successors and Assigns.

(a) Binding Effect. The County and Developer agree that the burdens of this Agreement are binding upon, and the benefits of this Agreements shall inure to, all successors in interests to the Parties to this Agreement. Subject to the provisions of Section 29(c) of this Agreement, a purchaser, lessee or other successor in interest of any portion of the Real Property shall be responsible for performance of obligations hereunder as to the portion or portions of the Real Property so transferred. Assignees of development tracts shall be required to execute a written acknowledgment accepting and agreeing to perform the obligations in this Agreement, said document to be in recordable form and provided to the County at the time of the recording of any deed transferring a development tract. Following delivery of such documents and subject to the provisions of Section 29(c) of this Agreement, the previous Developer(s) shall be released of any further liability or obligation with respect to the obligations.

Developer shall not be required to notify the County or obtain the County's consent with regard to the sale of lots in residential areas which have been platted and approved in accordance with the terms of this Agreement.

(b) Transfer of Project. Developer shall be entitled to transfer any portion or all of the Real Property to a purchaser(s), subject to the following exceptions:

(i) Transfer of Facility and Service Obligations. Simultaneous with Developer conveying any portion of the Real Property to a third party, Developer shall be required to obtain a written agreement in substantially the same form as Exhibit J, attached hereto and incorporated herein by reference, expressly assuming the obligations with regard to the parcel conveyed and the potential Development of same. Developer shall notify the County within thirty (30) days after the conveyance of such portion of the Real Property, provide the County the applicable documents assigning the development obligations to the transferee and record the same in the office of the Dorchester County Register of Deeds.

(ii) Assignment of Development Rights. Any and all conveyances of any portion of the Real Property subject to the intensities/square footage set forth in Section 13(A) of this Agreement to third party developers shall, by written agreement in substantially the same form as Exhibit J, assign a precise number of Dwelling Units along with the permitted land uses that may be constructed on the subject. Developer shall notify the County within thirty (30) days of the conveyance of any portion of the Real Property, provide the County the applicable documents assigning the development rights to the transferee and record the same in the office of the Dorchester County Register of Deeds.

(iii) Mortgage Lenders. Notwithstanding anything to the contrary contained herein, the exceptions to transfer contained in this Section 29 shall not apply: (i) to any mortgage lender either as the result of foreclosure of any mortgage secured by any portion of the Real Property or any other transfer in lieu of foreclosure; (ii) to any third party purchaser at such a foreclosure; or (iii) to any third party purchaser of such mortgage lender's interest subsequent to the mortgage lender's acquiring ownership of any portion of the Real Property as set forth above. Furthermore, nothing contained herein shall prevent, hinder or delay any transfer or any portion of the Real Property to any such mortgage lender or subsequent purchaser.

(iv) Notice to the County. Except for the owners and lessees of completed residences on individual lots who are the end users and not the developers thereof and the owners and lessees of individual lots, who are not the developers and who intend to build a residence on the lot for the owner or lessee to occupy, any purchaser or other successor in title is responsible for performance of Developer's obligations pursuant to this Agreement as to the portion of the Real Property so transferred. Developer must give notice to County of the transfer of any portion or all of the Real Property to a developer in the manner prescribed in this Section 29.

(c) Release of Developer. Together with any conveyance or transfer of interest in a portion or all of the Real Property, Developer may assign any portion or all of its Development Rights under this Agreement to such transferee or grantee, provided, however, that the County as a result of the assignment does not release any current or subsequent Developer from any unsatisfied obligation under this Agreement which accrued during its time as a Developer of the Real Property. Subject to the provisions above, in the event of conveyance of all or a portion of the Real Property and compliance with the conditions set forth therein, Developer conveying such Real Property shall be released from all obligations as to the portion of the Real Property so transferred, and the transferee shall be substituted as Developer under the Agreement as to the portion of the Real Property so transferred.

(d) Estoppel Certificate. Upon request in writing from an assignee or Developer to the County sent by certified or registered mail or publicly licensed message carrier, return receipt requested, the County will provide a certificate (the "**Certificate**") in recordable form stating that solely with respect to the portion of the Real Property described in the request, there are no violations or breaches of this Agreement of which the County has actual knowledge, and without investigation, except as otherwise described in the Certificate. The County will respond to such a request within forty-five (45) days of the receipt of the request, and may employ such professional consultants, municipal, county and state agencies and staff as may be necessary to assure the truth and completeness of the statements in the certificate. If the County is unable to confirm the statements in said certificate are truthful and complete, the County will notify Developer in writing and will not be required to sign said certificate. The reasonable costs and disbursements of private consultants will be paid by the person making the request.

The Certificate issued by the County will be binding on the County in accordance with the facts and statements contained therein as of its date and may be relied upon by all persons having notice thereof.

If the County does not respond to such request within forty-five (45) days of the time of its receipt, the portion of the Real Property described in the request will be deemed in compliance with all of the covenants and terms of this Agreement. A certificate of such conclusion may be recorded by Developer, including a copy of the request and the notice of receipt and it shall be binding on the County as of its date. Such notice shall have the same effect as a Certificate issued by the County under this Section 29.

30. General Terms and Conditions.

(a) Acquisition of Property. Notwithstanding anything else contained herein, in the event that Developer, its affiliates, successors or assigns does not obtain title to all of the Real

Property by December 31, 2024, the County may notify Developer, its affiliates, successors or assigns of its intention to terminate this Agreement; provided, however, that Developer shall have ninety (90) days from the date of receipt of notice to obtain title to that portion of the Real Property not yet obtained.

(b) Agreements to Run with the Land. This Agreement shall be recorded against the Real Property as described in Exhibit A and shown on Exhibit B attached hereto. The agreements contained herein shall be deemed to run with the land. The burdens of this Agreement are binding upon, and the benefits of the Agreement shall inure to, all successors in interest to the parties to the Agreement.

(c) Pre-Existing Allowed Uses. All uses existing as of the Effective Date of this Agreement, including but not limited to commercial forestry and timbering, agricultural, sand or soil mining, wildlife management, hunt clubs, and wetland mitigation bank operations, including all practices, land uses, and improvements customarily associated with such operations, shall continue to be allowed uses if not provided for in this Agreement. Any subdivision of a portion of the Real Property used or planned to be used for any of the uses listed in the preceding sentence may be an exempt land development as provided by State law. Nothing herein shall be construed to abrogate any rights of Developer that may have accrued or vested as of the Effective Date or at any time during the Term of this Agreement pursuant to the Act, the South Carolina Local Government Comprehensive Planning Enabling Act of 1994, codified in Chapter 29 of Title 6 of South Carolina Code of Laws, Section 48-23-205 of South Carolina Code of Laws, or pursuant to common law.

(d) Construction of Agreement. This Agreement should be construed so as to effectuate the public purpose of settlement of disputes, while protecting the public health, safety and welfare, including but not limited to ensuring the adequacy of Facilities and compatibility between developed and undeveloped portions of the Real Property.

(e) Mutual Releases. At the time of, and subject to (i) the expiration of any applicable appeal period with respect to the approval of this Agreement without any appeal having been filed or (ii) the final determination of any court upholding this Agreement; whichever occurs later, and excepting the parties' respective rights and obligations under this Agreement, Developer, on behalf of itself and its members, officers, directors, employees, agents, attorneys, and consultants, hereby releases the County and the County Council members, officials, employees, agents, attorneys and consultants, and the County, on behalf of itself and the County's council members, officials, employees, agents, attorneys and consultants, hereby releases Developer and each of Developer's members, officers, directors, employees, agents, attorneys and consultants, from and against any and all claims, demands, liabilities, costs, expenses of whatever nature, whether known or unknown, and whether liquidated or contingent, arising on or before the date of this Agreement in connection with the Real Property or the application, processing or approval of the Project; provided, however, that each party shall not be released from its continuing obligation to comply with all Laws.

(f) State and Federal Law. The parties agree, intend and understand that the obligations imposed by this Agreement are only such as are consistent with state and federal law. In the event state or federal laws or regulations prevent or preclude compliance with one or more

provisions of the development agreement, the provisions of this Agreement shall be modified or suspended as may be necessary to comply with state or federal laws or regulations. The parties further agree that if any provision of this Agreement is declared invalid, this Agreement shall be deemed amended to the extent necessary to make it consistent with state or federal law, as the case may be, and the balance of the Agreement shall remain in full force and effect.

(g) No Waiver. Failure of a party hereto to exercise any right hereunder shall not be deemed a waiver of any such right and shall not affect the right of such party to exercise at some future time said right or any other right it may have hereunder. Unless this Agreement is amended by vote of the County Council taken with the same formality as the vote approving this Agreement, no officer, official or agent of the County has the power to amend, modify or alter this Agreement or waive any of its conditions so as to bind the County by making any promise or representation contained herein. Any amendments to this Agreement are subject to the provisions of Section 19 herein.

(h) Entire Agreement. This Agreement constitutes the entire agreement between the parties and supersedes all prior agreements, whether oral or written, covering the same subject matter. This Agreement may not be modified or amended except in writing mutually agreed to and accepted by both parties to this Agreement.

(i) Attorneys' Fees. Should any party hereto employ an attorney for the purpose of enforcing this Agreement, or any judgment based on this Agreement, for any reason or in any legal proceeding whatsoever, including insolvency, bankruptcy, arbitration, declaratory relief or other litigation, including appeal or rehearings, the prevailing party shall be reimbursed for its attorneys' fees and all costs and expenses. Should any judgment or final order be issued in that proceeding, said reimbursement shall be specified therein. Notwithstanding, the County shall not be required to reimburse the Developer for any attorneys' fees paid by the Developer in relation to the County's review, approval, and enactment of this Agreement.

(j) Notices. All notices hereunder shall be given in writing by certified mail, postage prepaid, at the following addresses:

To the County: Dorchester County Administrator
201 Johnston Street
St. George, South Carolina 29477
Telephone Number: (843) 563-0100

With copies to: Dorchester County Attorney's Office
201 Johnston Street
St. George, South Carolina 29477

To the Developer:

BRD LAND & INVESTMENT
Attn: Mark Mathewson
243 Kingsley Park Dr., Ste 110
Fort Mill, SC 29715

With copy to: Nicole A. Scott, Esquire
Maynard Nexsen PC
205 King Street, Suite 400
Charleston, SC 29401

(k) Indemnification Covenants.

(i) Save and except claims which may arise between the parties as provided for in Section 30(i) herein, and except as provided in Section 30(k)(iv) of this Agreement, the Developer shall indemnify and save the County, its employees, elected officials, officers and agents (each, an "**Indemnified Party**") harmless against and from all liability or claims arising from County's execution of this Agreement, performance of County's obligations under this Agreement or the administration of its duties pursuant to this Agreement, or otherwise by virtue of County having entered into this Agreement.

(ii) County is entitled to use counsel of its choice and the Developer shall reimburse County for all its costs, including attorneys' fees, incurred in connection with the response to or defense against such liability or claims as described in paragraph (a), above. County shall provide a statement of the costs incurred in the response or defense, and the Developer shall pay County within thirty (30) days of receipt of the statement. The Developer may request reasonable documentation evidencing the costs shown on the statement. However, County is not required to provide any documentation which may be privileged or confidential to evidence the costs.

(iii) County may request the Developer to resist or defend against any claim on behalf of an Indemnified Party. On such request, the Developer shall resist or defend against such claim on behalf of the Indemnified Party, at the Developer's expense. The Developer is entitled to use counsel of its choice, manage, and control the defense of or response to such claim for the Indemnified Party; provided the Developer is not entitled to settle any such claim without the consent of that Indemnified Party.

(iv) Notwithstanding anything in this Section or this Agreement to the contrary, the Developer is not required to indemnify any Indemnified Party against or reimburse County for costs arising from any claim or liability (i) occasioned by the acts of that Indemnified Party, which are unrelated to the execution of this Agreement, performance of County's obligations under this Agreement, or the administration of its duties under this Agreement, or otherwise by virtue of County having entered into this Agreement; or (ii) resulting from that Indemnified Party's own negligence, bad faith, fraud, deceit, or willful misconduct.

(v) An Indemnified Party may not avail itself of the indemnification or reimbursement of costs provided in this Section unless it provides the Developer with prompt notice, reasonable under the circumstances, of the existence or threat of any claim or liability, including, without limitation, copies of any citations, orders, fines, charges, remediation requests, or other claims or threats of claims, in order to afford the Developer notice, reasonable under the circumstances, within which to defend or otherwise respond to a claim.

(l) Execution of Agreement. This Agreement may be executed in multiple parts as originals or by electronic signature of originals; provided, however, if executed and evidence of execution is made by electronic signature, then an executed original shall be provided to the other party within seven (7) days of receipt of said electronically signed copy.

31. Statement of Required Provisions.

The Act requires that a development agreement must include certain mandatory provisions, pursuant to Section 6-31-60(A). Although certain of these items are addressed elsewhere in this Agreement, the following listing of the required provisions is set forth for convenient reference. The numbering below corresponds to the numbering utilized under Section 6-31-60(A) for the required items:

(a) Legal Description of Property and Legal and Equitable Owners. The legal description of the Real Property is set forth in Exhibit A attached hereto. The present legal owners of the Real Property are set forth in Section 1 of this Agreement, and Developer is entering into this Agreement with the County by virtue of its equitable interest in each of the parcels comprising the Real Property hereunder. There are no other legal or equitable owners of the Real Property.

(b) Duration of Agreement. The duration of this Agreement shall be as provided in Section 18 of this Agreement.

(c) Permitted Uses, Densities, Building Heights and Intensities. A complete listing and description of permitted uses, population densities, building intensities and heights, as well as other development – related standards, are contained in the Current Regulations, as supplemented by this Agreement.

(d) Required Public Facilities. The utility services available to the Real Property are described generally above regarding potable water services and sewer services. The provisions of Sections 14 and 15 of this Agreement are intended to ensure the availability of roads and other utilities to serve the residents on a timely basis.

(e) Dedication of Land and Provisions to Protect Environmentally Sensitive Areas. All requirements relating to land transfers for public facilities are set forth in Sections 14 and 15 above. The Current Regulations described above, and incorporated herein, contain numerous provisions for the protection of environmentally sensitive areas. All relevant state and federal laws will be fully complied with, in addition to the important provisions set forth in this Agreement.

(f) Local Development Permits. The development standards for the Real Property shall be as set forth in the Current Regulations. Specific permits must be obtained prior

to commencing Development, consistent with the standards set forth in the Current Regulations. Building permits must be obtained under applicable law for any vertical construction, and appropriate permits must be obtained from the State of South Carolina (OCRM) and Army Corps of Engineers, when applicable, prior to any impact upon freshwater wetlands. It is specifically understood that the failure of this Agreement to address a particular permit, condition, term or restriction does not relieve Developer, its successors and assign, of the necessity of complying with the law governing the permitting requirements, conditions, terms or restrictions, unless otherwise provided hereunder.

(g) Comprehensive Plan and Development Agreement. The Development permitted and proposed under and permitted by this Agreement is consistent with the Comprehensive Plan and with the Current Regulations of the County.

(h) Terms for Public Health, Safety and Welfare. The County Council finds that all issues relating to public health, safety and welfare have been adequately considered and appropriately dealt with under the terms of this Agreement, the Current Regulations and existing Laws.

(i) Historical Structures. Any cultural, historical structure or sites will be addressed through the applicable federal and state permitting process at the time of development.

(j) Recording. This Development Agreement shall be recorded in the public records of Dorchester County, South Carolina, in accordance with statutory requirements of the Act.

(k) Rezoning Upon Termination. If this Development Agreement is terminated in accordance with any of the provisions set forth herein, the Developer expressly acknowledges and agrees that the County may, at its sole discretion, immediately initiate a rezoning to revert the Real Property to its prior zoning district designation or to such other zoning district designation as may be deemed appropriate in the sole discretion of the County. Should the County act to rezone the Real Property under this Section 31(k), the Developer hereby waives any rights to object to such rezoning and waives any rights to assert any claims against the County in connection therewith. The Developer acknowledges that the County may require that any letters of agency submitted to the County by the Property Owners of the Real Property, authorizing any action by the Developer on behalf of the Property Owners, must likewise expressly acknowledge and agree that the Property Owners waive any rights to assert any claims against the County in connection with a rezoning of the Real Property in accordance with the provisions of this Section 31(k).

[SEPARATE SIGNATURE PAGES ATTACHED]

IN WITNESS WHEREOF, this Agreement has been executed by the parties as of the day and year first above written.

Witness: DORCHESTER COUNTY, SOUTH CAROLINA

_____ By:_____

Its:_____

_____ Attest:_____

Clerk of Council

STATE OF SOUTH CAROLINA)
) ACKNOWLEDGMENT
COUNTY OF DORCEHSTER)

I, the undersigned Notary of the Public of the State of South Carolina, do hereby certify that the County of Dorchester, a body politic of the South Carolina, by _____, its _____ and _____, its Clerk of Council, who is personally known to me, or was proved to me on the basis of satisfactory evidence to be the person who executed the foregoing instrument appeared before me this day, and acknowledged the due execution of the foregoing instrument.

Subscribed to and sworn before me this _____ day of _____, 2023.

_____
Notary Public for South Carolina

Print Name: _____

My Commission Expires: _____

IN WITNESS WHEREOF, this Agreement has been executed by the parties as of the day and year first above written.

Witness: **BRD LAND & INVESTMENT**

_____ By: _____
Name: _____
_____ Its: _____

STATE OF SOUTH CAROLINA)
) ACKNOWLEDGMENT
COUNTY OF _____)

I, the undersigned Notary of the Public of the State of South Carolina, do hereby certify that the BRD LAND & INVESTMENT, by _____, its _____, who is personally known to me, or was proved to me on the basis of satisfactory evidence to be the person who executed the foregoing instrument appeared before me this day, and acknowledged the due execution of the foregoing instrument.

Subscribed to and sworn before me this _____ day of _____, 2023.

_____
Notary Public for South Carolina
Print Name: _____
My Commission Expires: _____

EXHIBITS

Exhibit A: Legal Description

Exhibit B: Boundary Plat

Exhibit C: Development Phasing Schedule

Exhibit D: Rezoning Ordinance

Exhibit E: Development Agreement Ordinance

Exhibit F: Provisions from Zoning Ordinance

Exhibit G: Cluster Yield Plan

Exhibit H: Land for Community Facilities

Exhibit I: Letter of Service

Exhibit J: Form of Partial Assignment and Assumption of Rights and Obligations under Development Agreement

Exhibit K: Traffic Study

EXHIBIT A

LEGAL DESCRIPTION

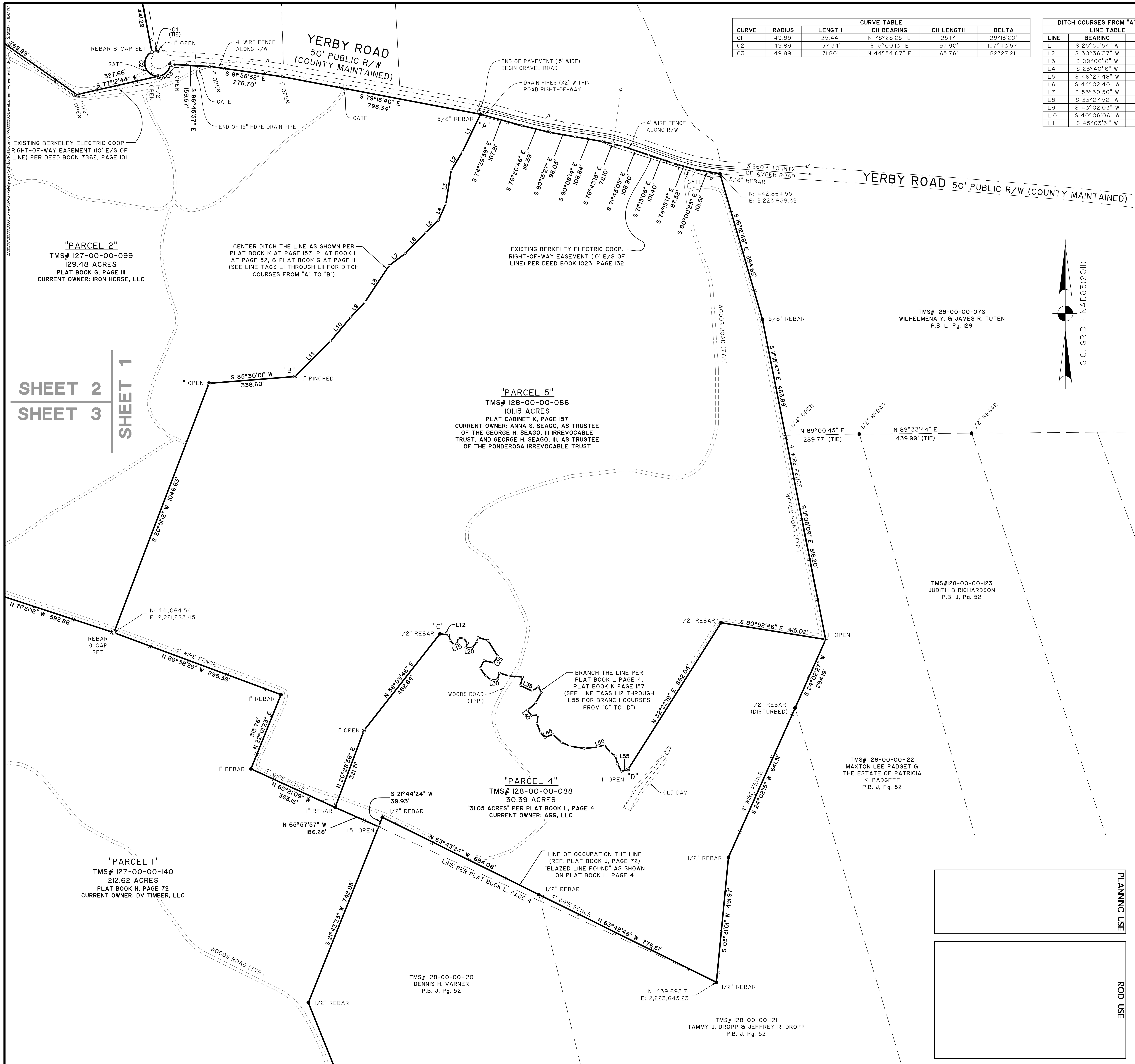
ALL those certain pieces, parcels and tracts of land situate, lying and being in Dorchester County, South Carolina, being shown and described as "**PARCEL 1**", "**PARCEL 2**", "**PARCEL 3**", "**PARCEL 4**" and "**PARCEL 5**", on that certain a plat entitled "**PLAT OF A BOUNDARY SURVEY OF FIVE TRACTS OF LAND CONTAINING A TOTAL OF 605.46 ACRES**" prepared for BRD Land & Investment, by Phillip P. Gerard, S.C.R.L.S. No. 26596, of Thomas & Hutton Engineering Co., Mt. Pleasant, SC dated _____, 2023, and recorded _____, 2023, in the Office of the Dorchester County Register of Deeds in Plat Book _____ at Page _____, reference to which is hereby craved for a more complete description.

TMS No. 127-00-00-140 (Parcel 1)
TMS No. 127-00-00-099 (Parcel 2)
TMS No. 120-00-00-017 (Parcel 3)
TMS No. 128-00-00-088 (Parcel 4)
TMS No. 128-00-00-086 (Parcel 5)

[*Plat to be recorded prior to execution*]

EXHIBIT B

BOUNDARY PLAT

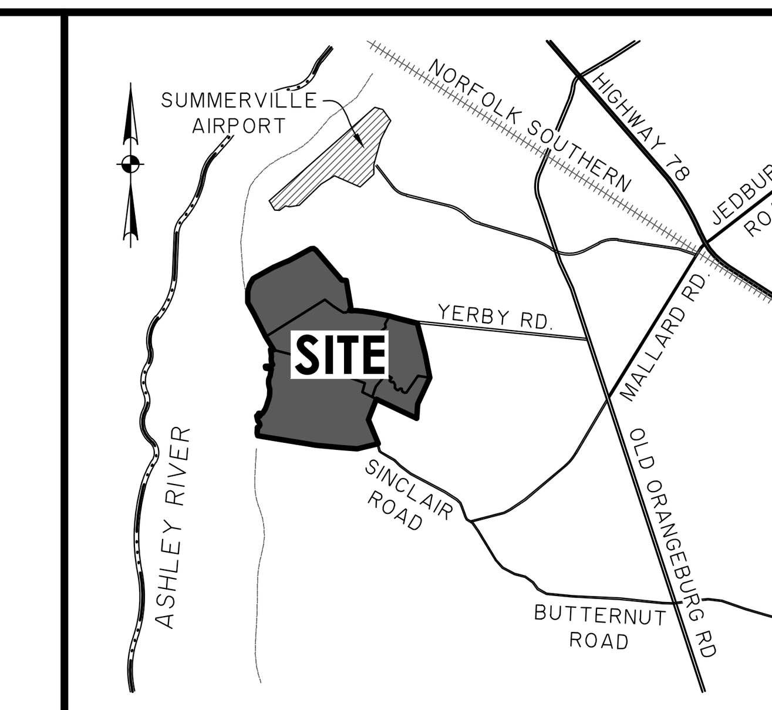


CURVE TABLE					
CURVE	RADIUS	LENGTH	CH BEARING	CH LENGTH	DELTA
C1	49.89'	25.44'	N 78°28'25" E	25.17'	29°13'20"
C2	49.89'	137.34'	S 15°00'13" E	97.90'	157°43'57"
C3	49.89'	71.80'	N 44°54'07" E	65.76'	82°27'21"

DITCH COURSES FROM "A" TO "B" LINE TABLE		
LINE	BEARING	LENGTH
L1	S 25°55'54" W	164.28'
L2	S 30°36'37" W	85.39'
L3	S 09°06'18" W	129.93'
L4	S 23°40'16" W	72.75'
L5	S 46°27'48" W	68.57'
L6	S 44°02'40" W	114.97'
L7	S 53°30'56" W	79.16'
L8	S 33°27'52" W	171.58'
L9	S 43°02'03" W	82.70'
L10	S 40°06'06" W	121.02'
L11	S 45°03'31" W	197.30'

BRANCH COURSES FROM "C" TO "D" LINE TABLE		
LINE	BEARING	LENGTH
L12	S 82°02'51" E	34.06'
L13	S 16°50'09" E	22.63'
L14	S 39°36'56" E	22.76'
L15	N 66°04'25" E	14.02'
L16	N 07°53'35" E	21.43'
L17	N 88°50'18" E	20.84'
L18	S 40°47'55" E	25.81'
L19	S 21°13'11" W	20.28'
L20	N 87°10'26" E	26.55'
L21	N 37°39'28" E	28.96'
L22	N 13°22'46" E	17.08'
L23	S 72°40'12" E	40.40'
L24	S 32°12'24" E	73.65'
L25	S 33°37'26" W	30.32'
L26	N 77°11'45" W	38.27'
L27	S 27°53'05" W	33.90'
L28	S 37°46'33" E	36.26'
L29	S 50°50'19" E	25.92'
L30	N 87°02'31" E	25.82'
L31	N 17°58'02" E	26.99'
L32	S 71°05'21" E	38.74'
L33	S 86°12'48" E	54.28'

BRANCH COURSES FROM "C" TO "D" LINE TABLE		
LINE	BEARING	LENGTH
L34	S 15°12'26" W	34.67'
L35	S 65°02'42" E	51.59'
L36	N 54°20'02" E	29.43'
L37	S 27°11'27" E	25.95'
L38	S 28°43'13" W	45.49'
L39	S 47°55'56" W	44.03'
L40	S 37°27'51" E	25.75'
L41	N 86°28'23" E	25.75'
L42	S 06°35'34" W	33.59'
L43	S 20°23'56" E	36.67'
L44	S 42°58'13" E	27.48'
L45	N 67°53'26" E	33.27'
L46	S 46°28'07" E	45.87'
L47	S 66°01'02" E	36.86'
L48	S 80°37'42" E	56.33'
L49	N 84°02'53" E	54.34'
L50	N 70°27'29" E	25.88'
L51	S 39°29'28" E	37.52'
L52	S 53°47'30" E	24.37'
L53	S 15°34'49" E	34.06'
L54	S 27°27'49" E	31.58'
L55	N 74°59'51" E	26.96'



VICINITY MAP not to scale

LEGEND

- ○ REBAR SET W/ CAP
- ◉ IRON PIPE FOUND (SIZE & TYPE NOTED)
- ● REBAR FOUND (SIZE & TYPE NOTED)
- ○ MEANDER POINT (NO MONUMENT)
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12. SUBDIVISION PLAT PREPARED FOR SANDRA PERRY, PREPARED BY ARTHUR E. WHITE, JR., DATED FEBRUARY 16, 2006, PLAT BOOK K, PAGE 194.
13. SUBDIVISION PLAT OF LOT 49 SUMMERSET ACRES, PREPARED BY J. HUGH CAMPBELL, JR., DATED FEBRUARY 18, 2006, PLAT BOOK K, PAGE 197.
14. BOUNDARY SURVEY AS REQUESTED BY GEORGE SEAGO, III PROPERTY OF WILLIAM R. KIRKLAND, PREPARED BY JAMES C. ULMER, DATED FEBRUARY 23, 2006, REVISED MARCH 20, 2006, PLAT BOOK L, PAGE 4.
15. BOUNDARY SURVEY AS REQUESTED BY YERBY ROAD, LLC FORMER LANDS OF THOMAS G. CONLEY, JR., JACK CONLEY, AND WILLIAM P. CONLEY, PREPARED BY JAMES C. ULMER, DATED JANUARY 3, 2006, PLAT BOOK L, PAGE 52.
16. SITE SURVEY AND MAP OF YERBY ROAD RIGHT-OF-WAY EXTENSION, PREPARED BY JAMES C. ULMER, DATED MARCH 9, 2007, LAST REVISED MAY 14, 2008, PLAT BOOK L, PAGE 112.
17. SUBDIVISION SURVEY SHOWING TMS 128-00-00-076 BEING SUBDIVIDED INTO NEW TRACTS A & B PREPARED FOR JIM TUTEN, PREPARED BY RANDALL H. PATRICK, DATED SEPTEMBER 10, 2008, PLAT BOOK L, PAGE 129.
18. BOUNDARY SURVEY OF TMS 134-00-00-004, 134-00-00-002 & 127-00-00-074 1,457.81 ACRES OWNED BY DARLINGTON VENEER COMPANY, INC., PREPARED BY PAUL C. LAWSON, JR., DATED JUNE 7, 2010, PLAT BOOK L, PAGE 155.
19. SUBDIVISION PLAT OF TMS 127-00-00-074, A 1,374.53 ACRES TRACT OF LAND INTO PARCEL A, PARCEL B, PARCEL C, AND PARCEL D OWNED BY DV TIMBER, LLC, PREPARED BY ANDREW C. GILLETTE, JR., DATED JANUARY 28, 2020, PLAT BOOK N, PAGE 72.

PLANNING USE

ROD USE

GENERAL NOTES:

1. TAX MAP NO.'S: 120-00-00-017, 127-00-00-(099 & 140), 128-00-00-(086 & 088)
2. COORDINATES AND DIRECTIONS ARE BASED ON THE SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM (NAD83).
3. ACCORDING TO F.I.R.M. MAP NO. 45035C, PANELS 0316E & 0317E, EFFECTIVE JULY 18, 2017, THE PROPERTY SHOWN ON THIS PLAT LIES IN ZONES X, X (SHADED), & AE.
4. DISTANCES SHOWN ARE GROUND DISTANCES.
5. THIS SURVEY DOES NOT DEPICT WETLAND DELINEATIONS OF THE PROPERTY.
6. THE POSITION OF UNDERGROUND UTILITIES SHOWN ON THIS DRAWING IS BASED UPON THE LOCATION OF SURFACE APPURTENANCES AND/OR SURFACE MARKINGS AND SHOULD BE CONSIDERED APPROXIMATE. THE EXACT LOCATION, SIZE, TYPE AND DEPTH OF UNDERGROUND UTILITIES SHOWN HEREON OR ANY OTHER UTILITIES THAT MAY EXIST, CAN ONLY BE DETERMINED VIA AN EXCAVATION OF THE UTILITY.
7. DEED REFERENCES: PARCEL 1 - BOOK 8477, PAGE 276; PARCEL 2 - BOOK 9214, PAGE 5; PARCEL 3 - BOOK 1000, PAGE 41; PARCEL 4 - 5297, PAGE 10; PARCEL 5 - BOOK 10122, PAGE 37
8. OTHER THAN THOSE SHOWN HEREON, NO ENCROACHMENTS OR PROJECTIONS FROM IMPROVEMENTS LOCATED ON THE PROPERTY ONTO ANY ADJACENT PROPERTIES AND/OR EASEMENTS OR RIGHTS-OF-WAY WERE OBSERVED AT THE TIME OF IS SURVEY.
9. LINE TAGS ARE CONSECUTIVE. FOR CLARITY REASONS, SOME LINE TAGS ARE INTENTIONALLY NOT SHOWN.
10. THERE ARE NO BUILDINGS SITUATED ON PARCELS 1, 2, 4 OR 5.
11. CONTACT DORCHESTER COUNTY PLANNING AND ZONING FOR CURRENT ZONING INFORMATION.

SOUTH CAROLINA THOMAS & HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR No. 26596 PHILLIP P. GERARD — FOR REVIEW

I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

PHILLIP P. GERARD
SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LICENSE NO. 26596

PLAT OF A
BOUNDARY SURVEY OF

FIVE TRACTS OF LAND CONTAINING A TOTAL OF 605.46 ACRES

PREPARED FOR

BRD LAND & INVESTMENT

DORCHESTER COUNTY, SOUTH CAROLINA

No.	Revision	By	Date

THOMAS & HUTTON
682 Johnnie Dodds Boulevard • Suite 100
Mt. Pleasant, SC 29464 • 843.849.0200
www.thomasandhutton.com

200 0 200 400
1 INCH = 200 FEET

plat	drawn	reviewed	field	crew
05/24/23	cww	ppg	03/23	ngo

job 30799.0000

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LINE TABLE		
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L136	N 11°14'01" W	59.24'
L137	N 20°34'40" E	41.41'
L138	N 09°29'39" W	37.52'
L139	N 26°25'16" E	34.31'
L140	N 00°25'21" W	42.09'
L141	N 34°06'51" W	43.21'
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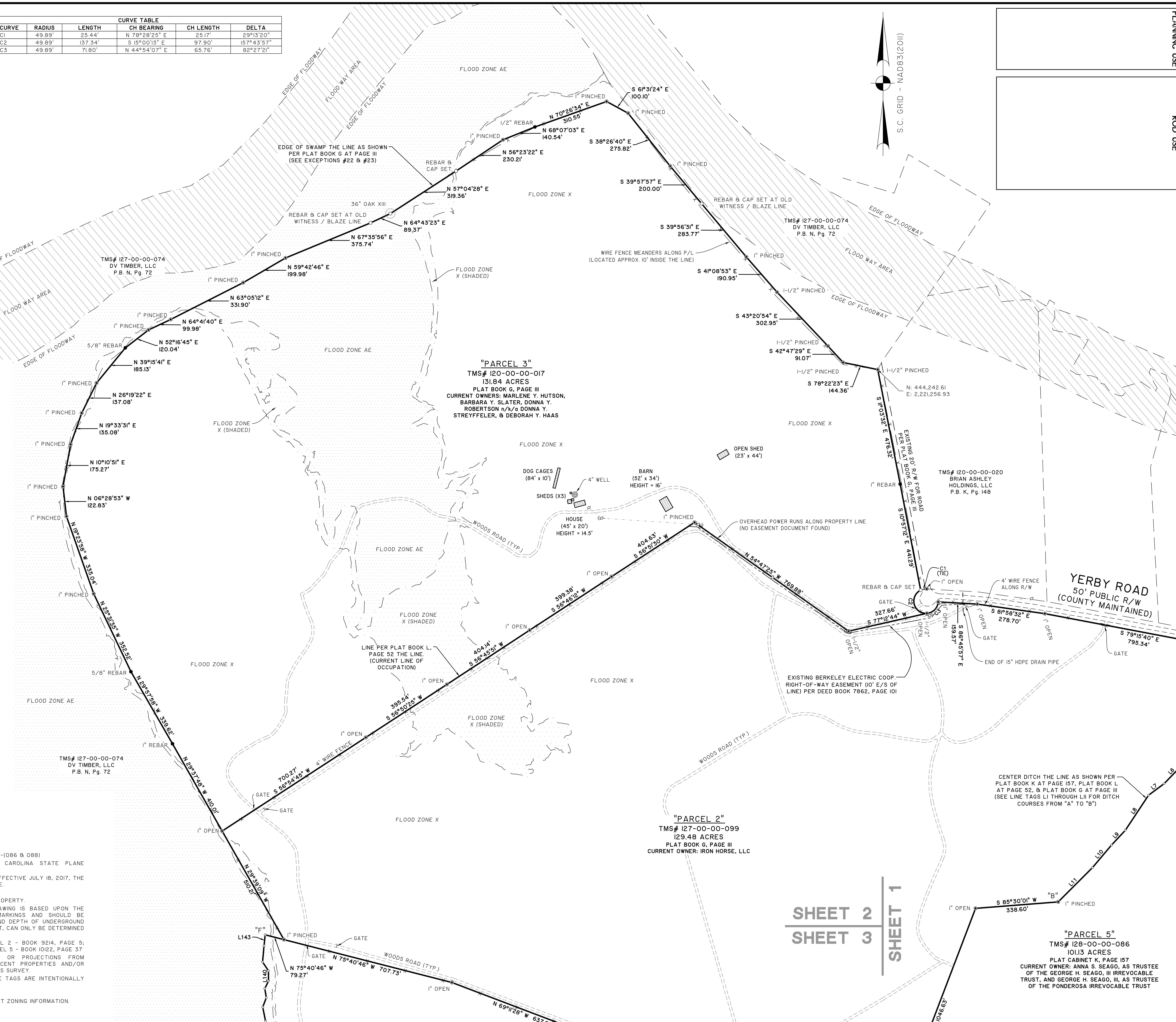

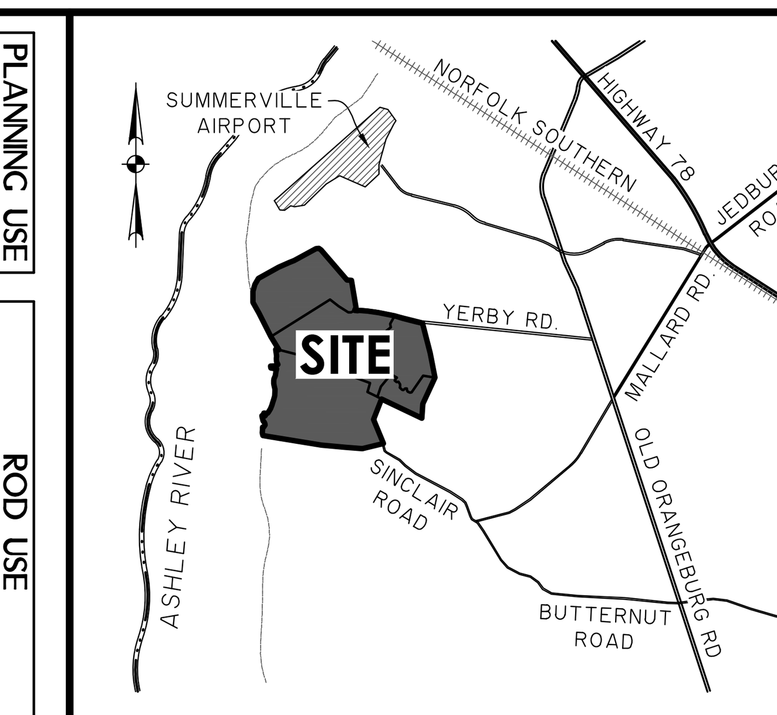

VICINITY MAP not to scale

LEGEND

- REBAR SET W/ CAP
- IRON PIPE FOUND (SIZE & TYPE NOTED)
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11. SUBDIVISION PLAT OF LOT 44-A SUMMERSET ACRES, PREPARED BY TIMOTHY D. ELMER, DATED DECEMBER 20, 2005, PLAT BOOK K, PAGE 186.
12. SUBDIVISION PLAT PREPARED FOR SANDRA PERRY, PREPARED BY ARTHUR E. WHITE, JR., DATED FEBRUARY 16, 2006, PLAT BOOK K, PAGE 194.
13. SUBDIVISION PLAT OF LOT 49 SUMMERSET ACRES, PREPARED BY J. HUGH CAMPBELL, JR., DATED FEBRUARY 18, 2006, PLAT BOOK K, PAGE 197.
14. BOUNDARY SURVEY AS REQUESTED BY GEORGE SEAGO, III PROPERTY OF WILLIAM R. KIRKLAND, PREPARED BY JAMES C. ULMER, DATED FEBRUARY 23, 2006, REVISED MARCH 20, 2006, PLAT BOOK L, PAGE 4.
15. BOUNDARY SURVEY AS REQUESTED BY YERBY ROAD, LLC FORMER LANDS OF THOMAS G. CONLEY, JR., JACK CONLEY, AND WILLIAM P. CONLEY, PREPARED BY JAMES C. ULMER, DATED JANUARY 3, 2006, PLAT BOOK L, PAGE 52.
16. SITE SURVEY AND MAP OF YERBY ROAD RIGHT-OF-WAY EXTENSION, PREPARED BY JAMES C. ULMER, DATED MARCH 9, 2007, LAST REVISED MAY 14, 2008, PLAT BOOK L, PAGE 112.
17. SUBDIVISION SURVEY SHOWING TMS 128-00-00-076 BEING SUBDIVIDED INTO NEW TRACTS A & B PREPARED FOR JIM TUTEN, PREPARED BY RANDALL H. PATRICK, DATED SEPTEMBER 10, 2008, PLAT BOOK L, PAGE 129.
18. BOUNDARY SURVEY OF TMS 134-00-00-004, 134-00-00-002 & 127-00-00-074 1,457.81 ACRES OWNED BY DARLINGTON VENEER COMPANY, INC., PREPARED BY PAUL C. LAWSON, JR., DATED JUNE 7, 2010, PLAT BOOK L, PAGE 155.
19. SUBDIVISION PLAT OF TMS 127-00-00-074, A 1,374.53 ACRES TRACT OF LAND INTO PARCEL A, PARCEL B, PARCEL C, AND PARCEL D OWNED BY DV TIMBER, LLC, PREPARED BY ANDREW C. GILLETTE, JR., DATED JANUARY 28, 2020, PLAT BOOK N, PAGE 72.

GENERAL NOTES:

1. TAX MAP NO.'S: 120-00-00-017, 127-00-00-(099 & 140), 128-00-00-(086 & 088)
2. COORDINATES AND DIRECTIONS ARE BASED ON THE SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM (NAD83).
3. ACCORDING TO F.I.R.M. MAP NO. 45035C, PANELS 0316E & 0317E, EFFECTIVE JULY 18, 2017, THE PROPERTY SHOWN ON THIS PLAT LIES IN ZONES X, X (SHADED), & AE.
4. DISTANCES SHOWN ARE GROUND DISTANCES.
5. THIS SURVEY DOES NOT DEPICT WETLAND DELINEATIONS OF THE PROPERTY.
6. THE POSITION OF UNDERGROUND UTILITIES SHOWN ON THIS DRAWING IS BASED UPON THE LOCATION OF SURFACE APPURTENANCES AND/OR SURFACE MARKINGS AND SHOULD BE CONSIDERED APPROXIMATE. THE EXACT LOCATION, SIZE, TYPE AND DEPTH OF UNDERGROUND UTILITIES SHOWN HEREON OR ANY OTHER UTILITIES THAT MAY EXIST, CAN ONLY BE DETERMINED VIA AN EXCAVATION OF THE UTILITY.
7. DEED REFERENCES: PARCEL 1 - BOOK 8477, PAGE 276; PARCEL 2 - BOOK 9214, PAGE 5; PARCEL 3 - BOOK 1000, PAGE 41; PARCEL 4 - 5297, PAGE 10; PARCEL 5 - BOOK 10122, PAGE 37
8. OTHER THAN THOSE SHOWN HEREON, NO ENCROACHMENTS OR PROJECTIONS FROM IMPROVEMENTS LOCATED ON THE PROPERTY ONTO ANY ADJACENT PROPERTIES AND/OR EASEMENTS OR RIGHTS-OF-WAY WERE OBSERVED AT THE TIME OF IS SURVEY.
9. LINE TAGS ARE CONSECUTIVE. FOR CLARITY REASONS, SOME LINE TAGS ARE INTENTIONALLY NOT SHOWN.
10. THERE ARE NO BUILDINGS SITUATED ON PARCELS 1, 2, 4 OR 5.
11. CONTACT DORCHESTER COUNTY PLANNING AND ZONING FOR CURRENT ZONING INFORMATION.

SOUTH CAROLINA THOMAS & HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR No. 26596 PHILLIP P. GERARD — FOR REVIEW

I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

PHILLIP P. GERARD
SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LICENSE NO. 26596

PLAT OF A
BOUNDARY SURVEY OF

FIVE TRACTS OF LAND CONTAINING A TOTAL OF 605.46 ACRES

PREPARED FOR

BRD LAND & INVESTMENT

DORCHESTER COUNTY, SOUTH CAROLINA

No.	Revision	By	Date

THOMAS & HUTTON
682 Johnnie Dodds Boulevard • Suite 100
Mt. Pleasant, SC 29464 • 843.849.0200
www.thomasandhutton.com

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1 INCH = 200 FEET

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05/24/23	cww	ppg	03/23	ngo

job 30799.0000

PLANNING USE

ROD USE

GENERAL NOTES:

1. TAX MAP NO.'S: 120-00-00-017, 127-00-00-(099 & 140), 128-00-00-(086 & 088)
2. COORDINATES AND DIRECTIONS ARE BASED ON THE SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM (NAD83).
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11. CONTACT DORCHESTER COUNTY PLANNING AND ZONING FOR CURRENT ZONING INFORMATION.

MEANDERING WESTERN LINE FROM "E"-"F"
LINE TABLE

LINE	BEARING	LENGTH
L56	N 47°15'20" E	16.97'
L57	N 12°23'54" W	59.34'
L58	N 25°39'25" E	49.49'
L59	N 20°10'32" W	65.39'
L60	N 10°50'37" E	39.86'
L61	N 17°55'07" W	45.18'
L62	N 32°51'52" E	66.44'
L63	N 51°31'24" E	59.97'
L64	N 16°06'49" E	36.56'
L65	N 29°04'09" W	45.32'
L66	N 61°54'07" W	46.81'
L67	N 57°06'15" W	49.41'
L68	N 17°43'38" E	67.02'
L69	N 25°09'59" E	59.44'
L70	N 28°31'33" W	60.36'
L71	N 35°44'28" W	43.80'
L72	N 60°32'47" E	26.33'
L73	S 47°31'45" E	52.70'
L74	S 85°38'21" E	50.38'
L75	N 38°52'46" W	36.67'
L76	N 58°28'52" W	24.74'
L77	N 24°20'19" W	35.89'
L78	N 16°34'36" E	39.01'
L79	N 83°38'50" E	40.84'
L80	S 67°05'12" E	42.32'
L81	S 67°19'49" E	36.84'
L82	S 71°05'01" E	44.81'
L83	N 53°01'37" E	31.45'
L84	N 14°50'26" E	43.26'
L85	N 06°56'53" W	60.16'
L86	N 49°11'27" E	36.40'
L87	N 34°21'28" E	37.17'
L88	N 12°48'16" W	35.87'
L89	N 26°17'45" E	60.83'
L90	N 20°47'15" E	42.46'
L91	N 05°47'04" E	67.62'
L92	N 41°30'14" E	46.26'
L93	N 28°32'45" E	52.83'
L94	N 18°58'42" E	32.18'
L95	N 01°25'02" W	69.54'
L96	N 05°32'41" W	45.46'
L97	N 19°24'53" E	47.30'
L98	N 36°59'41" E	49.95'
L99	S 84°21'48" E	32.06'

MEANDERING WESTERN LINE FROM "E"-"F"
LINE TABLE

LINE	BEARING	LENGTH
L100	N 58°44'02" E	13.35'
L101	N 58°13'09" W	33.03'
L102	N 12°50'36" W	34.25'
L103	N 05°45'12" W	47.30'
L104	N 01°49'25" E	48.41'
L105	N 20°31'31" E	47.34'
L106	N 04°44'00" E	42.52'
L107	N 33°31'06" W	45.03'
L108	N 21°42'45" W	60.62'
L109	N 84°49'37" W	53.65'
L110	N 79°44'50" W	47.45'
L111	N 24°52'37" W	34.42'
L112	N 11°39'39" W	36.30'
L113	N 46°12'54" E	38.93'
L114	N 32°05'26" E	54.13'
L115	N 29°35'03" E	56.01'
L116	N 38°35'30" E	55.91'
L117	N 37°41'50" E	44.50'
L118	N 05°14'46" E	46.14'
L119	N 00°51'29" W	103.49'
L120	N 04°18'58" E	48.17'
L121	N 30°06'17" E	31.96'
L122	N 72°03'08" W	44.79'
L123	N 59°55'25" W	57.18'
L124	N 83°51'35" W	80.09'
L125	N 54°16'23" W	43.34'
L126	N 02°18'22" E	22.49'
L127	S 83°51'12" E	97.49'
L128	S 66°16'22" E	61.97'
L129	N 86°05'20" E	53.46'
L130	N 29°35'42" E	60.22'
L131	N 14°28'26" E	38.55'
L132	N 53°13'29" W	23.51'
L133	N 26°47'31" W	49.15'
L134	N 31°12'23" W	23.09'
L135	N 05°04'43" E	56.93'
L136	N 11°14'01" W	59.24'
L137	N 20°34'40" E	41.41'
L138	N 09°29'39" W	37.52'
L139	N 26°25'16" E	34.31'
L140	N 00°25'21" W	42.09'
L141	N 34°06'51" W	43.21'
L142	N 05°15'42" E	66.35'
L143	N 05°49'04" E	45.09'

ADJACENT PROPERTY

	TMS#	OWNER	DEED BOOK/PAGE	PLAT BOOK/PAGE
Ⓐ	128-09-01-003	SANDRIA PERRY	5009/303	K/194
Ⓑ	128-09-01-002	TONY H. STILL	4677/189	K/197
Ⓒ	128-09-01-001	WALTER R. ALBRIGHTON	1949/137	15/280
Ⓓ	127-00-00-105	BRIAN A. BAZZLE	----	i/016
Ⓔ	127-00-00-064	BRIAN A. BAZZLE	1163/43	i/016
Ⓕ	127-00-00-108	KAMA M. BAZZLE	12468/322	i/323
Ⓖ	127-00-00-107	LAURIE BAZZLE	1855/116	i/323
Ⓗ	127-00-00-063	EDWARD & MELISSA BAZZLE	11485/2625	K/050
ⓘ	127-00-00-020	ESTELLE T. TANNER	242/20	15/280

VICINITY MAP not to scale

LEGEND

○	REBAR SET W/ CAP
◉	IRON PIPE FOUND (SIZE & TYPE NOTED)
●	REBAR FOUND (SIZE & TYPE NOTED)
∘	MEANDER POINT (NO MONUMENT)
⟵	GUY WIRE
⌀	POWER POLE
▬▬▬	SUBJECT PROPERTY LINE
— — —	LINE PER REFERENCE (NOT HELD)
— — —	ADJACENT PROPERTY LINE
— — —	EXISTING INGRESS/EGRESS ESMT.
—— — · ——	FLOOD ZONE LINE
—— - - ——	EXISTING POWER EASEMENT
═ ═ ═	GRAVEL ROAD
═ ═ ═	WOODS ROAD
≡≡≡	PAVED ROAD
—— X ——	FENCE LINE
- · - · -	OVERHEAD POWER LINE
═ ═ ═	DRAIN PIPE (SIZE & TYPE NOTED)

THOMAS & HUTTON ENGINEERING CO. No. C00285 SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION

No. 26596 PHILLIP P. GERARD

FOR REVIEW

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PLAT OF A
BOUNDARY SURVEY OF
FIVE TRACTS OF LAND CONTAINING A TOTAL OF 605.46 ACRES
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DORCHESTER COUNTY, SOUTH CAROLINA

No.	Revision	By	Date

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1 INCH = 200 FEET

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05/24/23	cww	ppg	03/23	ngo

job 30799.0000

SHEET 3 OF 3

EXHIBIT C

DEVELOPMENT PHASING SCHEDULE

EXHIBIT C

TO DEVELOPMENT AGREEMENT

DEVELOPMENT SCHEDULE

Development of the Property is expected to occur over the 10-year term of the Agreement, with the sequence and timing of development activity to be dictated largely by market conditions. The following estimate of expected activity is hereby included, to be updated by Owner as the development evolves over the term:

Type of Development	**Year(s) of Commencement / Completion**
Residential, Single Family	2023 commencement, expected buildout by end of year 2028: 801.
Residential, Single Family	2028 commencement, expected full buildout by end of year 2033.

Buildout per Year

FY 2025	25
FY 2026	229
FY 2027	235
FY 2028	312
FY 2029	312
FY 2030	243
FY 2031	204
FY 2032	82

As stated in the Development Agreement, Section VI, actual development may occur more rapidly or less rapidly, based on market conditions and final product mix.

EXHIBIT D

REZONING ORDINANCE

[TO BE INSERTED AT EXECUTION]

EXHIBIT E

DEVELOPMENT AGREEMENT ORDINANCE

[TO BE INSERTED AT EXECUTION]

EXHIBIT F

PROVISIONS FROM ZONING ORDINANCE

ARTICLE VI. USE GROUPS

In order to carry out the provisions of these regulations, the uses of land, buildings, and other structures are hereby classified into functionally compatible use groups. The names of the groups and a list of principal uses included within those groups are set forth below. Whenever a use is specifically listed in a use group, and also could be construed to be incorporated within a more inclusive listing in another group, the more specific listing shall control. Land uses, buildings or other structures not specifically included or implied in the description of a use group shall not be permitted within said use group. The Zoning Administrator for Dorchester County is empowered to make these determinations per Article XIV of this ordinance. For purpose of these regulations, the following use groups are hereby established and herein defined:

NUMBER, NAME, DESCRIPTION AND LIST OF PRINCIPAL USES
(Customary residential and nonresidential accessory uses are listed in Article X)

1. AGRICULTURE

(a) Land used for agricultural purposes including farming, horticulture, truck gardens and commercial nurseries; forestry and timber operations, fishing, hunting and trapping operations.

(b) Land used for raising and keeping domestic farm animals, including barns, sheds, auxiliary buildings and pens; also buildings and structures for processing shall not include cooking, canning, slaughtering and cleaning animals or poultry for commercial purposes except for non-domestic animals to include but not limited to feral hogs and deer.

(c) Ag-related businesses, including land or buildings used for small-scale service and contracting businesses which support agricultural operations, located and operated at the owner's principal place of residence, including but not limited to services such as soil preparation, crop harvesting, and livestock maintenance.

(d) Extraction of mineral resource operations, saw mills, chip mills and wood cutting operations, but not including the processing of wood products.

2. RESIDENTIAL, SINGLE-FAMILY DETACHED

Single family, detached dwellings

3. **RESIDENTIAL, SINGLE-FAMILY ATTACHED**

Duplexes, patio homes, and townhouses

4. **RESIDENTIAL, MULTI-FAMILY**

Multiplexes, townhouses, garden apartment, apartment buildings and any other multi-family structure or group of structures on a single lot

5. **RESIDENTIAL, MANUFACTURED HOUSING UNIT**

Manufactured Housing Units on wheels or a foundation, designed for single-family occupancy. Manufactured Housing Units may be located on individual lots or within Manufactured Housing Communities where lot areas are leased from a central management company.

6. **SOCIAL AND CULTURAL**

(a) Education - establishments providing for mental development and enlightenment of the individual, including universities and colleges, kindergartens, primary and secondary schools.

(b) Cultural and Arts Centers/Private Clubs - Establishments providing for the mental development and enlightenment of the individual and the development of the display and the performing arts, including museums, libraries, art galleries when non-profit and rehearsal and administrative activities associated with orchestral, choral, opera, ballet, dance, theatrical and other performing arts, but not including theaters or other structures and their associated activities when operated as commercial establishments. Establishments providing instruction in music, dance, crafts and art. Private and semi-private clubs, lodges, union halls, social centers, and similar establishments.

(c) Religion - Establishments providing for religious services and development, including churches, temples, synagogues, educational buildings and rectories.

(d) Recreation - Places for active or passive play including playgrounds, parks, tennis courts, ball fields, swimming pools, golf courses, recreational centers and other similar establishments designed for outdoor, or a combination of indoor and outdoor, recreational activities, but not including miniature golf courses, driving ranges, indoor tennis or racquetball, or other similar establishments designed primarily to provide entertainment or recreation as a commercial enterprise.

7. **BUSINESS, ACCOMODATION AND FOOD SERVICES**

(a) Establishments providing for resort and short-term occupancy, including but not limited to hotels, motels and tourist homes, bed and breakfasts, inns, and apartment accommodations. Restaurants, news stands, gift shops and snack bars within the principal building designed to cater primarily to the guests of the facility may be considered as accessory uses.

(b) Recreational vehicle parks, campgrounds, and recreation and vacation camps. Parking lots, swimming pools, tennis courts, playgrounds, and laundry rooms designed to serve guests of the establishment may be developed as accessory uses.

(c) Restaurants (excluding limited service establishments).

(d) Rural Retreats and Country Inns.

8. **BUSINESS, PRIMARY RETAIL**

Establishments selling commodities in small quantities to the consumer, including but not limited to, department stores and stores selling general merchandise and variety merchandise, such as but not limited to, clothing, jewelry, and shoes, books, flowers, food and groceries, gifts, health and personal care goods, music, cameras, luggage, optical, cigars, candy, sewing machines, picture framing, sporting goods, stationary, watches, art supplies, sporting goods ,hobby supplies, furs, leather goods, pet supplies, and saving stamp stores. Servicing of goods sold to customers may be provided as an accessory use.

9. **BUSINESS, SECONDARY RETAIL**

Establishments selling primarily one-stop shopping items, usually high bulk and very often more expensive items than those listed in Use Group 8, including but not limited to:

(a) electronics and appliances, floor coverings, furniture and other home furnishings, auto parts and accessories, business materials, office equipment, restaurant equipment, guns, and light fixtures.

(b) automobiles, motorcycles, boats, trailers, tires, hardware and building materials, nursery and garden centers, farm equipment, agricultural implements, auction houses, loan and pawn shops, second hand items, used cars, tombstones, surplus materials.

(c) automobile repair services, minor.

10. **BUSINESS, CONVENIENCE RETAIL**

Establishments providing convenience items and services to the general public, including but not limited to barber and beauty shops, drug stores, grocery and food stores, hardware stores, flower shops, laundromats and dry cleaning establishments, confectioneries, restaurants (not including limited service or fast food establishments except carry-out restaurants), news and magazine stands, bakeries where products are sold exclusively at retail and on premises, and branch banking facilities.

11. **BUSINESS, COMMUNICATION AND INFORMATION**

(a) Establishments carrying and/or conveying written and/or visual information to the public, including but not limited to newspaper offices , and publishing plants, motion picture production and distribution studios, broadcasting and telecommunications studios, sound recording studios, and information and data processing services.

(b) Communications Towers and Antennae.

12. **BUSINESS, WHOLESALE**

Establishments selling or arranging for the purchase or resale of commodities in large quantities and materials used in production to retailers and other businesses, operating from a warehouse or office with little or no display of merchandise, including wholesalers for all types of retail products, bulk stations for gasoline, kerosene, fuel oil, bottled gas, etc.

13. **BUSINESS, RECREATION**

(a) Establishments providing recreation and entertainment primarily as a commercial activity, including theaters, billiards, pool halls, bowling alleys, skating rinks, dance halls, shooting galleries, taverns, clubs, convention centers, coliseums, golf driving ranges and miniature golf, video arcades, gymnasiums, racquetball and indoor tennis centers and other similar commercial recreation activities.

(b) Adult Establishments, including adult novelty stores, entertainment, and motion picture theaters as defined in Article XXV of this Ordinance.

(c) Golf Course. A tract of land laid out for at least nine holes for playing the regulation game of golf and improved with tees, greens fairways and hazards and may include clubhouses and pro shops.

(d) Ecotourism. Organized educational and primarily outdoor recreation with or without lodging which invites participants to learn about and promote ecological preservation, conservation and sustainability.

(e) Historical Establishments and sites of a unique historic significance providing recreation and entertainment, including but limited to historic re-enactments, gift shops, equestrian centers, restaurants, bed and breakfast facilities and interpretive centers.

(f) Land used as a venue for outdoor special events for cultural, ceremonial, educational or celebratory purposes including but not limited to weddings, receptions, recitals, art exhibits, wine/food tasting events, executive retreats, or concerts.

14. **BUSINESS, PERSONAL SERVICES**

(a) Establishments providing services pertaining to an individual or person's apparel and personal effects, including but not limited to barber and beauty shops, washerettes, laundromats, dry cleaning and laundry pick-up, tailor, dressmaker, diet and weight reducing center, nail salons, funeral homes and services, photographers' studio, jewelry and watch repair, and adult and child day care centers, provided that such facilities meet the minimum rules and regulations for licensing by the South Carolina Department of Social Services.

(b) Tattoo Parlors if approved by SC legislature.

15. **BUSINESS, PROFESSIONAL SERVICES**

(a) Establishments of a business character which supply general needs of an intangible nature to the public without the attendant introduction of adverse environmental factors, such as, but not limited to, noise, increased traffic, and/or visual pollution, and including, but not limited to, establishments performing the management duties in the conduct of government business, industry, or welfare, including administrative offices of federal, state, and local governments, utilities, business, social welfare organizations and corporate administrative offices of business, provided that no such business shall allow outside storage of material and construction equipment and no overnight parking of company vehicles or heavy trucks. Also establishments engaged in providing monetary and specialized professional knowledge (except medical) such as architects, advertising agencies, legal services, credit and finance, brokers, banks, Chambers of Commerce, professional organizations, business consultants, photographers, management companies, administrative support services, and real estate and insurance agencies;

(b) Medical - Establishments engaged in the science and art of preventing, curing, or alleviating disease, including medical, surgical, psychiatric and dental hospitals, clinics and offices, but excluding veterinary clinics and associated uses.

(c) Institutional - Establishments for the care of a class or group of persons, including but not limited to homes and institutions for the deaf, blind, aged, orphaned, sanitariums; nursing and residential care facilities, and homeless shelters.

(d) Educational Services – Establishments providing instruction and training of a highly specialized nature on a contractual basis, such as business and secretarial schools, technical and trade schools, and cosmetology schools, sports and recreation instruction and automobile driving schools. Institutions listed in Use Group 6 are not included.

(e) Related - Establishments complementing medical and institutional operations, including but not limited to flower and gift shops, and apothecary shops located within the same building or complex as the use it complements.

16. **BUSINESS, OFFICE SERVICE**

Establishments of a business character which provide specialized office needs to individuals or other businesses, including but not limited to duplicating and printing shops, addressing and mailing services, stenographic and letter writing services, and establishments providing blueprinting and film developing services.

17. **BUSINESS, GENERAL SERVICES**

(a) Establishments of a business character providing maintenance, installation and repair of personal and business articles, including but not limited to automotive repair shops, building service establishments plumbing, heating and air conditioning, electrical, janitorial and contracting services, furniture refinishing, general machinery repair establishments, tire retreading operations, and other general business services, such as funeral homes, cold storage lockers and establishments engaged in the care, treatment and housing of domestic animals.

(b) Establishments selling, leasing and servicing of commercial equipment and specialty vehicles or storage space for commercial or domestic use (“mini-warehouses”) providing outdoor storage.

(c) Self –service storage facilities with no outside storage, establishments engaged in the care, treatment and housing of domestic animals, and car washes.

18. **BUSINESS, BEVERAGE AND/OR "QUICK STOP" SERVICES**

(a) Beverage Stores, limited service or fast food restaurants, drinking places.

(b) Gasoline stations and "quick stop" or "convenience stores”.

19. **TRANSPORTATION**

(a) Ground - Establishments providing for the interchange of passengers and freight, including but not limited to bus passenger and parking terminals, truck terminals, railroad passenger and freight terminals, railway express freight terminals and taxicab stands and yards and the maintenance and storage of vehicles used by these establishments.

(b) Air - Airports and terminals, air parks, flight strips, airfields, helistops and heliports, including the maintenance and storage of vehicles used by these operations.

(c) Facilities for storage of transport containers, pursuant to adopted standards in Section 10.4.

20. **MANUFACTURING**

(a) Industrial uses and processing plants, engaged in the mechanical, physical or chemical transformation of material or substances into new products provided that such uses shall not be injurious to, or cause unreasonable interference with surrounding development.

(b) Research and development activities related to the invention, discovery, study, experimentation, etc. of products, new technologies, techniques, or processes.

(c) Warehousing and distribution facilities for the storage, wholesale, and distribution of manufactured products, supplies and equipment, excluding bulk storage of materials that are inflammable or explosive or present hazards or conditions commonly recognized as offensive.

(d) The packaging, storage, assembly and/or treatment of finished or semi-finished products from previously prepared materials, of finished products or parts, including assembly, treatment, packaging, incidental storage, sales and distribution of such products, but excluding basic industrial processing conducted wholly within an enclosed building.

(e) Material Recovery Facilities.

21. MANUFACTURING SERVICES

(a) Construction - Establishments engaged in the construction, repair, or demolition of buildings, streets, water and sewer systems, bridges, and similar construction, including but not limited to residential and nonresidential building contracting and special trade contractors, such as but not limited to, electrical heating, air conditioning, heavy construction, paving and earth moving operations.

(b) Miscellaneous - Establishments supplying other business, industries, or individuals, including but not limited to laundry and dry cleaning plants, linen supply plants, closed storage, cabinet and metal shops, welding shops, but not including junkyards or other establishments designed primarily for outdoor, open air storage.

22. OUTDOOR STORAGE

(a) Land or buildings used for the abandonment, storage, keeping, collecting, or bailing of paper, rags, scrap metals, other scrap or discarded materials or for the abandonment, demolition, dismantling, storage or salvaging of automobiles or other vehicles or machinery not in running condition, or parts thereof,

(b) Outdoor storage space, accessory to the principal use of a lot or building, enclosed on all sides for the purpose of storing equipment, vehicles, construction materials and similar items incidental to the principal business.

(c) Establishments engaged in the disposal or treatment of all construction, demolition and land clearing debris.

(d) Outdoor storage established as the principal use of a lot for the purpose of storing commercial and industrial equipment, merchandise, finished products, heavy and light duty vehicles, construction materials and similar industrial use items.

(e) Outdoor storage established as the principal use of a lot for the purpose of storing personal and commercial vehicles, including boats, travel trailers and recreational vehicles, light duty utility and cargo trailers, sport and commercial utility vehicles, light duty commercial vans, and similar commercial items, and including free-standing storage sheds and containers measuring not more than 200 square feet in total area.

23. UTILITIES

(a) Waste Disposal Facilities for the disposal or treatment of solid and liquid sanitary wastes, including garbage incinerators, sanitary waste treatment plants, landfills, and related facilities, but not including sites used for the collection of recyclable materials from the public less than 2,000 square feet in area.

(b) (Reserved)

(c) Generating Plants and Transmission Facilities serving as part of a regional interconnecting system which provides for the production, transformation, transmission, and distribution of electric power or natural gas; and Water Treatment Plant, Storage Tank, or Pumping Station for the purification, storage and/or pumping of potable water.

(d) Distribution or Dedicated Facilities or structures for the transformation or transmission of usable/consumable electric, gas, television or telephone signals dedicated to an individual user, including substations and sub-installations, sewerage lift stations and pump houses.

24. **COMMUNITY SERVICES**

(a) General Government administrative offices for agencies that administer, oversee and manage public programs and activities not performed by private establishments.

(b) Public Safety Facilities - Fire, police and rescue operations, including sub-stations.

(c) Cemeteries.

(d) Zoos, carnivals and fairgrounds.

25. **OPEN SPACE**

A parcel, lot or tract of land not in use and lying idle in forest, marsh, grass or natural vegetation.

Section 7.3 R-2, Single-Family Residential and R-2(M), Single-Family Residential Manufactured Housing Districts

7.3.1 Statement of Intent

The intent of these districts is:

(a) To implement goals of the Land Use Plan regarding the moderate-density development of single-family dwellings and neighborhoods in accordance with the adopted Future Land Use map in the Dorchester County Comprehensive Plan for Settlement Type Characters identified as medium density;

(b) To minimize land use problems in such areas by requiring adequate infrastructure, i.e., public water and sanitary sewerage systems in support of such development;

(c) To protect development in such areas from infiltration and adverse impacts of incompatible land uses;

(d) To provide for the development of recreational, religious, medical and educational facilities as basic elements of a balanced residential area; and

(e) To permit the location of needed community facilities in support of residential development.

7.3.2 Permitted Use Groups

R-2

Use Group No.	Group Name
1(a)	Agriculture
2	Residential, Single-Family Detached
23(d)	Utilities
24(a),(b),(c)	Community Services
25	Open Space

R-2(M)

Use Group No.	Group Name
1(a)	Agriculture
2	Residential, Single-Family
5	Residential, Manufactured Housing in conformance with Section 10.4
23(d)	Utilities
24(a),(b),(c)	Community Services
25	Open Space

7.3.3 Conditional Uses

The following uses may be permitted in R-2 and R-2(M) zoning districts provided they conform to the performance standards or conditions listed for each in Section 10.4.

Use Group No.	Group Name
1(a)	Agriculture
2	Residential, Single-Family Detached
6(c),(d)	Social and Cultural
23(c)	Utilities
Accessory Uses:	Accessory Structures
	Home Occupations

7.3.4 Density Regulations

Development density shall not exceed one principal dwelling unit on each legally platted lot or parcel of record.

7.3.5 Minimum Lot and Building Requirements

(a) All lots zoned R-2 or R-2(M) shall be a minimum of 7,500 square feet, provided that all residential lots must be of sufficient size to meet the minimum requirements of the SC Department of Health and Environmental Control regarding the provision of water and sewer (septic) service.

(b) All lots must be a minimum of 50 feet in width.

(c) The following minimum yards must be provided:

Front yard	25 feet
Side yard	7.5 feet, provided that a dwelling unit may be set on a side lot line if a 10 foot easement for maintenance is acquired from the adjoining lot. This easement cannot be used as part of the required side yard setback for the adjoining lot if the result is to reduce the distance between structures to less than 10 feet.
Rear yard	25 feet

7.3.6 Height Limitations

No structure shall be more than two (2) stories in height, unless the entity providing fire protection service certifies either:

(a) that it can provide adequate fire protection service to a taller structure at the site in question; or

(b) that the proposed structure incorporates fire protection systems, such as sprinklers, that will provide adequate fire protection to a taller structure at the site in question.

The certification will state the maximum height to which adequate fire protection is available, and the structure may be built up to this height; provided that the entity providing fire protection service shall not certify any extension in allowable height that will adversely affect the entity's or the County's ISO fire rating.

7.3.7 Maximum Impervious Surface

No more than 40% of the gross acreage of any lot shall be covered by impervious surfaces; with the exception of single family dwelling maximum impervious surfaces is 50 percent, provided that this requirement may be superseded by specific development guidelines adopted by Dorchester County.

7.3.8 All utilities in this zone district shall be in compliance with Section 17.1.3.

7.3.9 Residential Clusters in the R-2 zoning district are permitted in accordance with Section 10.7.

Section 10.7 Cluster Subdivision Development

The purpose of the cluster development ordinance is to permit unique residential developments that:

(A) Utilize creative and flexible site design that is sensitive to natural, historical, cultural and/or other significant land features.

(B) Preserve quality common open space, both active and passive, for community members and citizens.

(C) Decrease stormwater runoff and nonpoint source pollution by reducing impervious surface in a development and maintaining natural surfaces.

(D) Reduce sprawling subdivisions and the developer costs associated with infrastructure improvements while reducing future county maintenance of said infrastructure.

(E) Provide for a variety of lot types, housing choices, densities and quality architectural features while promoting social interaction from walking, biking, and other outdoor activities.

(F) Create healthier communities that are walkable and connect to local schools, churches, recreation, community facilities, and neighborhood conveniences.

10.7.2 Definitions

(A) Cluster or Clustering - Means a site planning technique that concentrates buildings and structures in specific areas on a lot, site or parcel to allow the remaining land to be used for common open space for recreation and/or preservation of features and/or structures with environmental, historical, cultural, or other significance. The techniques used to concentrate buildings may include, but shall not be limited to, reduction in lot area, setback requirements, lot frontage, and/or lot occupancy with the resultant common open space being devoted by deed restrictions for one or more uses.

(B) Gross Calculated Developable Acres – The area of a parcel or site (in acres) remaining after subtracting wetlands, required road and perimeter buffers, existing streams and bodies of water, existing utility corridors and/or easements. Refer to section 10.7.5 for required calculation method.

(C) Net Calculated Developable Acres – The area of a parcel or site (in acres) remaining after calculating Gross Calculated Developable Acres and subtracting required Open Space. Refer to section 10.7.5 for required calculation method.

(D) Community Facilities – For the purposes of Section 10.7, community facilities shall be defined as land set aside that is deemed necessary by Dorchester County

to serve a community purpose. Land set aside for bonus density shall be approved by County Council.

(E) Cluster Yield Plan - A plan identifying the layout of the site showing gross and net calculated developable acreage and required open space utilizing the procedures outlined herein. The plan outlines the calculation of density (including bonus) applied to a site. Refer to section 10.7.5 for required calculation method.

(F) Base Units – The number of units allowed for each development when utilizing the cluster option prior to the calculations for bonus density.

(G) Common Open Space - For the purposes of Section 10.7, common open space shall be defined as any parcel, area of land or portion of a site derived from Gross Calculated Developable Acreage that is set aside in perpetuity as open space. Open space may be unimproved and set aside or improved, dedicated, designated or reserved for public or private use, or for the use and enjoyment of owners and occupants of land adjoining or neighboring such open space. Areas used for stormwater management ponds are not considered common open space and shall not count toward minimum requirement or be used for bonus density.

(1) Active Open Space – Areas used for active purposes are usually located within the developments limits of disturbance and include areas such as playgrounds, site amenities, trails, open lawns/fields, community gardens, and other uses proposed by the developer and approved by the Zoning Administrator.

(2) Passive Open Space – Areas used for passive purposes are usually located outside the development's limits of disturbance such as open natural fields, woods, trails and other uses proposed by the developer and approved by the Zoning Administrator.

10.7.3 Preparing a Cluster Yield Plan and Approval Process

(A) A pre-submission meeting is strongly encouraged with the planning and engineering staff prior to the submission of a Cluster Yield Plan.

(B) The applicant shall submit (3) copies of the Cluster Yield Plan for review following the TRC agenda schedule and pay required fee. Once staff has reviewed the plan against the requirements of this ordinance and approve the Cluster Yield Plan, the applicant may submit for Preliminary Plan. The Preliminary Plan submittal shall comply with the Dorchester County Zoning & Land Development Standards.

(C) The Cluster Yield Plan must include all information pertinent to properly calculate Net Calculated Developable Acres, required open space, and base density. If bonus density is utilized these calculations must be shown as well.

(D) Any changes to a Cluster Yield Plan resulting in an increase in dwelling units or a decrease in open space must be reviewed and approved by the Zoning Administrator. This constitutes a new approval and is subject to a revision review fee of 50% of the original fee.

10.7.4 Minimum Site Design Standards

Cluster developments shall be a minimum of ten (10) gross calculated developable acres and shall be evaluated as part of the County's review and approval process for compliance with the following criteria:

(A) There shall be a minimum fifty foot (50') buffer along all existing public roadways. The buffer cannot be placed on individual lots and will be owned and maintained by the HOA. There shall be no easements located within the buffer except those that run perpendicular for necessary utility services or drainage. Vehicular access roads may bisect the buffer. The buffer must be measured from future right-of-way if the road has been identified for improvements by the County or State road program. Planting requirements shall meet 11.2.7(D)(1) & (2). Retention of existing vegetation is encouraged.

(B) There shall be a minimum fifteen foot (15') buffer around the entire perimeter of the proposed development. The buffer cannot be placed on individual lots and will be owned and maintained by the HOA. There shall be no easement encumbrances located within the buffer except those that run perpendicular for necessary utility services or drainage. Vehicular access roads may bisect the buffer for connectivity to adjacent parcels. Planting requirements shall be one (1) canopy and one (1) understory tree every 50 feet. Retention of existing vegetation is encouraged.

(C) Enhanced road sections shall be provided in all cluster subdivisions. The Zoning Administrator may approve alterations to the minimum standard requirements if warranted by elements such as natural features, the entry road, or a connector road between two neighborhood sections, if in all cases the intent is achieved. The standard rights-of-way road section shall be fifty-six feet (56') wide and include at minimum:

(1) Four foot (4') sidewalk on both sides of street.

(2) Nine foot (9') lawn verge on both sides of street measured from back of curb to edge of sidewalk

(3) Canopy street trees shall be planted every fifty feet (50') on average. Understory trees may be considered for portions of a neighborhood by the Zoning Administrator on a case by case basis if design warrants the need.

(4) Two feet (2') of lawn between outer edge of sidewalk and right-of-way for utility services.

(5) Minimum travel lanes shall be eleven feet (11') wide.

(D) Drainage easements proposed along rear and/or side property lines of lots intended for housing shall not encroach into lots unless warranted by special circumstances (such as not filling in a pocket wetland) and approved by the County Engineer. The required fifteen foot (15') stormwater pond easements shall not encroach into lots.

(E) Driveways on individual residential lots shall not exceed sixteen feet (16') wide within the public or private street right-of-way and within the first five feet (5') of the front yard.

(F) Individual lots, building locations, streets, parking areas, utilities and infrastructure should be grouped in a manner so that the required percentage of common open space is achieved. As is practicable, passive common open space shall be designated as a single block or shall be contiguous and not divided into unconnected small parcels located in various parts of the development.

(G) Pedestrians shall have easy access to common open space.

(H) Individual lots, buildings, structures, streets, parking areas, utilities and infrastructure should be designed and sited to minimize the alteration of natural features, vegetation and topography.

(I) Existing scenic views or vistas are encouraged to remain unobstructed, especially from street rights-of-way.

(J) The site layout should accommodate and preserve any features of historic, cultural, archaeological or sensitive environmental value and the cluster development should advance the purposes of this part.

(K) Proper dedication statements protecting all required opens space shall be included on all plats and open space preservation easements shall be recorded concurrently with all final plats.

10.7.5 Calculations and Tables

(A) Cluster Base Density and Open Space Requirements Chart:

Required open spaces are lands that are not encumbered by wetlands, required road and perimeter buffers, existing streams and bodies of water, existing utility corridors and/or easements). See definition.

Zoning District	Required Open Space Multiplier (multiplied against gross calculated developable acres)	* Minimum Required Active Open Space (percentage of calculated required open space acreage)	Cluster Base Density (multiplied against Net Calculated Developable Acres)
R-1	30%	20%	2.75
R-2	20%	35%	3.15

*The balance of open space type can be either active or passive open space once minimum active acreage is achieved. In all instances the two shall add up to meet minimum open space acreage requirement. Stormwater ponds and the required fifteen foot (15') pond easement shall not count toward active or passive open space.

(B) Cluster Yield Plan Calculations:

Total Site Acreage *(minus –)* wetlands, required road and perimeter buffers, existing streams and bodies of water, existing utility corridors and/or easements = **Gross Calculated Developable Acres**

Gross Calculated Developable Acres ***X*** Open Space Percentage Multiplier = **Required Open Space Acreage**

Gross Calculated Developable Acres ***(minus –)*** Required Open Space Acreage = **Net Calculated Developable Acres**

Net Calculated Developable Acres ***X*** Cluster Base Density = **Base Units**

Base Units ***X*** (Bonus Density ≤ 25%) = **Total Units Allowed**

Example Calculation For Site Zoned R-2:

Total Site Acreage (450.6 acres) – wetlands, required road and perimeter buffers, existing streams and bodies of water, existing utility corridors and/or easements (286.6 acres) = **(164) Gross Calculated Developable Acres**

164 Acres x .20 (Required Open Space Multiplier) = **32.8 Acres (Total Required Open Space)**

164 Acres – 32.8 Acres = **131.2 (Net Calculated Developable Acres)**

131.2 Acres x 3.15 (Cluster Base Density Multiplier) = **413 Cluster Base Units**

Bonus Density Design Options Utilized

413 x 8% (Additional Open Space) = 33.04 Units

413 x 4% (Additional Roadside Buffer) = 16.52 Units

413 x 1.5% (Additional Perimeter Buffer) = 6.2 Units

413 x 2.5% (Additional Entrance) = 10.33 Units

413 x 1% (Multi-Use Trail Through Road Buffer) = 4.13 Units

Total Bonus Density Units = 70

413 (Base Units) + 70 (Bonus Units) = **483 (Total Units Allowed)**

10.7.6 Lot and Building Standards

Varying lot configurations and sizes are strongly encouraged to help realize a sites full potential while providing different housing types within neighborhoods. The following variation of lots size and building requirements are allowed by-right as detailed in each table and related notes.

(A) The lot and building requirements in Table 1 and Table 2 may be used in R-2 Single-Family Residential Zoning District.

(Table 1) Minimum Lot and Building Requirements

Min Lot Size:	6,000 sf
Min Lot Width:	50 ft
Primary Setbacks:	
Front	25 ft
Corner Lot Secondary Frontage	15 ft
Side	5 ft
Rear	15 ft
Detached Garage Setbacks:	
Corner Lot Secondary Frontage	20 ft
Side and Rear	5 ft
Rear (if measured from alley right-of way)	10 ft

1) Steps may encroach into setbacks but cannot be located in easements
2) Eaves may extend 18 inches into setbacks if properly fire rated.
3) Minimum lot width is measured at setback.
4) Minimum lot width around cul-de-sac may be reduced to 35’.

All lots created using (Table 2) Lot and Building Requirements must be served by a rear alley with a minimum private right-of-way of 20 feet **or** be designed wide enough to accommodate a slide-by driveway that serves a garage located behind the primary dwelling.

The building program within the cluster subdivision may utilize the standards in Table 2 as follows:

a. Subdivisions with a gross calculated developable acreage between 10-25 acres may provide up to 80% of total lots using Table 2.

b. Subdivisions with a gross calculated developable acreage between 26-50 acres may provide up to 60% of the total lots using Table 2.

c. Subdivisions with a gross calculated developable acreage above 51 acres may provide up to 40% of the total lots using Table 2.

(Table 2) Minimum Lot and Building Requirements

Min Lot Size:	4,000 sf
Min Lot Width:	40 ft
Primary Setbacks:	
Front	10 ft
Corner Lot Secondary Frontage	15 ft
Side	5 ft
Rear	15 ft
Detached Garage Setbacks:	
Corner Lot Secondary Frontage	20 ft
Side and Rear	5 ft
Rear (if measured from alley right-of way)	10 ft

1) Steps may encroach into setbacks but cannot be located in easements
2) Eaves may extend 18 inches into setbacks if properly fire rated
3) Minimum lot width is measured at setback.
4) Minimum lot width around cul-de-sac may be reduced to 30'.

(B) The lot and building requirements in Table 3 and Table 4 may be used in R-1 Single-Family Residential Zoning District.

(Table 3) Minimum Lot and Building Requirements

Min Lot Size:	8,000 sf
Min Lot Width:	60 ft
Primary Setbacks:	
Front	25 ft
Corner Lot Secondary Frontage	15 ft
Side	7.5 ft
Rear	20 ft
Detached Garage Setbacks:	
Corner Lot Secondary Frontage	20 ft
Side and Rear	5 ft
Rear (if measured from alley right-of way)	10 ft

1) Steps may encroach into setbacks but cannot be located in easements
2) Eaves may extend 18 inches into setbacks if properly fire rated.
3) Minimum lot width is measured at setback.
4) Minimum lot width around cul-de-sac may be reduced to 45'.

The building program within the cluster subdivision may utilize the standards in Table 4 as follows:

a. Subdivisions with a gross calculated developable acreage between 10-25 acres may provide up to 80% of total lots using Table 4.

b. Subdivisions with a gross calculated developable acreage between 26-50 acres may provide up to 60% of the total lots using Table 4.

c. Subdivisions with a gross calculated developable acreage above 51 acres may provide up to 40% of the total lots using Table 4.

(Table 4) Minimum Lot and Building Requirements

Min Lot Size:	6,000 sf
Min Lot Width:	50 ft
Primary Setbacks:	
Front	25 ft
Corner Lot Secondary Frontage	15 ft
Side	5 ft
Rear	15 ft
Detached Garage Setbacks:	
Corner Lot Secondary Frontage	20 ft
Side and Rear	5 ft
Rear (if measured from alley right-of way)	10 ft

1) Steps may encroach into setbacks but cannot be located in easements
2) Eaves may extend 18 inches into setbacks if properly fire rated.
3) Minimum lot width is measured at setback.
4) Minimum lot width around cul-de-sac may be reduced to 35'.

10.7.7 Bonus Density

The following bonus density may be added to the Cluster Yield Plan as a matter of right. Bonus Densities are additive in nature up to 25% per subdivision. Percentages are applied against the calculated base units allowed.

(A) Additional Open Space

(1) For every 5% additional open space from land included within the net calculated developable acreage (including wetland buffers), a 2% bonus density may be applied, or fraction thereof up to 8%.

(B) Additional Buffers (these areas cannot count toward required or additional open space)

(1) For every 12.5 feet of additional roadside buffer (up to 100 feet in total including the required 50 feet) a 1% bonus density may be applied.

(2) For every 15 feet of additional perimeter buffer (up to 45 feet in total including required 15 feet) a 1.5% bonus density may be applied.

(C) Housing Architectural Standards

(1) If housing products built in the neighborhood meet the following architectural design standards, a total bonus density of 15% may be applied. Features may be incorporated individually or as a whole. Failure to achieve minimum architectural standards during building permit application will result in a forfeiture of density bonus applied using this standard and will require a revised Cluster Yield Plan and plat approved by the Planning Commission.

(a) Neighborhoods that use fiber cement siding, brick, stone, stucco, or materials of equal quality as approved by the Zoning Administrator, a 5% bonus density may be applied.

(b) Neighborhoods that incorporate a minimum 8 foot deep x 15 foot long front porch, a 2.5% bonus density may be applied.

(c) Neighborhoods that provide a minimum 5 foot recessed garage from the building facade, a 2.5% bonus density may be applied, or fraction thereof up to 10 feet.

(d) Neighborhoods that incorporate a raised foundation with a minimum of 1 foot above the highest grade elevation around the house, a 2.5% bonus density may be applied. Homes built in a floodplain that require elevated homes to meet FEMA requirements cannot use this bonus density.

(D) Land for Community Facilities Uses

(1) For land set aside totaling five (5) acres a 2.5% bonus density may be applied, or fraction thereof.

(2) For land set aside totaling between five (5) acres but below ten (10) acres a 5% bonus density may be applied.

(3) For land set aside totaling above ten (10) acres a 7.5% bonus density may be applied.

(E) Community Consideration Neighborhood Design

(1) If cul-de-sacs or dead end roads (not including connections for future connectivity) are not utilized within the subdivision, a 5% bonus density may be applied.

(2) For every point of connection to an existing subdivision, neighborhood, or a secondary entrance, not including the main entrance, a 2.5% bonus density may be applied per connection, not to exceed 7.5%.

(3) If the development includes a trail system throughout the neighborhood passive open space, a 2% bonus density may be applied per the Zoning Administrator.

(4) If the development includes a minimum 8 foot paved multi-use trail through the length of the required roadside buffer, a 1% bonus density may be applied.

(5) If pedestrian connections to nearby community facilities such as schools, parks, churches and other community facilities are provided, a 2.5% bonus density may be applied per the Zoning Administrator.

(6) If the trail or sidewalk system within the neighborhood connects to an off-site trail or sidewalk that is greater than 1,000 feet from the property line, a 2.5% bonus density may be applied, or fractions of minimum 1,000 foot distance may be considered by the Zoning Administrator.

(7) If the site qualifies for a conservation easement as determined by authorized agencies for lands that are not already required or additional open space by this ordinance, a 2.5% bonus density may be applied per the Zoning Administrator.

EXHIBIT G

CLUSTER YIELD PLAN

CLUSTER YIELD PLAN

OF

YERBY ROAD TRACT

DORCHESTER COUNTY, SOUTH CAROLINA

PREPARED FOR:

BRD LAND & INVESTMENT

234 KINGSLEY PARK DR. SUITE 110

FORT MILL, SC 29715

TMS# 127-00-00-140

TMS# 128-00-00-088

TMS# 128-00-00-086

TMS# 127-00-00-099

TMS# 120-00-00-017

MAY 16, 2023

J-30799.0000

PREPARED BY:

THOMAS & HUTTON

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER DAVID KEITH WILLIAMS III No. 34604

SOUTH CAROLINA THOMAS & HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION

VICINITY MAP

SCALE: 1" = 2000'

YERBY ROAD TRACT

J-30799.0000

5-16-2023

Sheet List Table	
Sheet Number	Sheet Title
--	COVER SHEET
1	EXISTING CONDITIONS PLAN
2	CLUSTER YIELD PLAN

REVISION HISTORY			
REV. NO.	REVISION	BY	DATE

SUBMITTAL HISTORY	
DORCHESTER COUNTY PLANNING DEPARTMENT	05-16-23
SUBMITTED TO	DATE

811 Know what's below. Call before you dig.

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Mt. Pleasant, SC 29464

p.843.849.0200

www.thomasandhutton.com

S.C. GRID - NAD83(2011)

0.35 ACRES OF WETLAND AREA TO BE FILLED

TMS# 120-00-00-017
13.84 ACRES
CURRENT OWNER: MARLENE Y. HUTSON, AS TRUSTEE OF THE MARLENE Y. HUTSON A/K/A DONNA Y. STRETFFELER, & DEBORAH Y. HASS

EXISTING 60' R/W FOR HWY

0.74 ACRES OF WETLAND AREA TO BE FILLED

PROPERTY BOUNDARY (605.46 ACRES) (INCLUDES 48.50 ACRES OF WETLANDS AND 9.59 ACRES OF REQUIRED ROAD AND PERIMETER BUFFERS.

FUTURE WETLAND IMPACT REQUIRED

EXISTING BERKELEY ELECTRIC COOP. RIGHT-OF-WAY EASEMENT 20' E/S OF LINE) TO BE ABANDONED.

YERBY ROAD
50' PUBLIC R/W
(COUNTY MAINTAINED)

YERBY ROAD 50' PUBLIC R/W (COUNTY MAINTAINED)

EXISTING BERKELEY ELECTRIC COOP. RIGHT-OF-WAY EASEMENT 20' E/S OF LINE) TO BE ABANDONED.

TMS# 127-00-00-099
123.48 ACRES
CURRENT OWNER: IRON HORSE, LLC

0.14 ACRES OF WETLAND AREA TO BE FILLED

TMS# 128-00-00-086
103.13 ACRES
CURRENT OWNER: GEORGE H. SEAGO, AS TRUSTEE OF THE GEORGE H. SEAGO, II IRREVOCABLE TRUST, AND GEORGE H. SEAGO, III, AS TRUSTEE OF THE PONDEROSA IRREVOCABLE TRUST

0.18 ACRES OF WETLAND AREA TO BE FILLED

0.2 ACRES OF WETLAND AREA TO BE FILLED

0.11 ACRES OF WETLAND AREA TO BE FILLED

1.62 ACRES OF WETLAND AREA TO BE FILLED

TMS# 128-00-00-088
50.59 ACRES
CURRENT OWNER: ASD, LLC

0.4 ACRES OF WETLAND AREA TO BE FILLED

TMS# 127-00-00-140
212.62 ACRES
CURRENT OWNER: DV TIMBER, LLC

+/- 2 ACRES OF WETLAND AREA TO BE FILLED

BREAT OAKS DRIVE
EXISTING 20' PRIVATE INGRESS/EGRESS EASEMENT

EXISTING 20' PRIVATE INGRESS/EGRESS EASEMENT

SEDGEWICK ROAD
50' PUBLIC R/W
(COUNTY MAINTAINED)

BARONS ROAD
50' PUBLIC R/W
(COUNTY MAINTAINED)

SINCLAIR ROAD
50' PUBLIC R/W
(COUNTY MAINTAINED)

NO.	REVISIONS	BY	DATE

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Mt. Pleasant, SC 29464 • 843.849.0200
www.thomasandhutton.com

EXISTING CONDITIONS PLAN

YERBY ROAD TRACT

PROJECT LOCATION:
DORCHESTER COUNTY, SOUTH CAROLINA

CLIENT/OWNER:
BRD LAND & INVESTMENT

400 0 200 400
GRAPHIC SCALE:
1 INCH = 400 FEET

DATUM: HORIZ: VERT:

JOB NO:	30799.0000
DATE:	5-16-23
DRAWN:	ACS
DESIGNED:	MCB
REVIEWED:	DKW
APPROVED:	DKW
SCALE:	1" = 400'

PROPERTY ZONED	R-2
REQUIRED OPEN SPACE MULTIPLIER	20% (MULTIPLIED AGAINST GROSS CALCULATED DEVELOPABLE ACREAGE)
MINIMUM REQUIRED ACTIVE OPEN SPACE	35% (PERCENTAGE OF REQUIRED OPEN SPACE ACREAGE)
CLUSTER BASE DENSITY	3.15 (MULTIPLIED AGAINST NET CALCULATED DEVELOPABLE ACRES)
TOTAL SITE ACREAGE	603.85
WETLANDS ACREAGE	49.19
REQUIRED ROAD AND PERIMETER BUFFERS	9.24
EXISTING STREAMS/BODIES OF WATER	0.00
EXISTING UTILITY CORRIDORS AND/OR EASEMENTS	0.00
GROSS CALCULATED DEVELOPABLE AREAS	545.42
REQUIRED OPEN SPACE ACREAGE	109.08
REQUIRED ACTIVE OPEN SPACE ACREAGE	38.17
NET CALCULATED DEVELOPABLE ACREAGE	436.34
BASE UNITS ALLOWED	1374
BONUS DENSITY	
A.1 ADDITIONAL OPEN SPACE	2.0%
D.3 COMMUNITY FACILITIES	7.5%
E.2 ADDITIONAL POINT OF CONNECTION	7.5%
E.5 CONNECTION TO COMMUNITY FACILITY	2.5%
BONUS DENSITY TOTAL	19.5%
TOTAL UNITS ALLOWED	1642
PROVIDED OPEN SPACE ACREAGE	131.00
PROVIDED ACTIVE OPEN SPACE ACREAGE	38.38
ADDITIONAL OPEN SPACE PROVIDED	21.92
ADDITIONAL OS/NET CALC DEVELOPABLE ACREAGE	5%
TOTAL UNITS PROVIDED	1642

- ACTIVE OPEN SPACE
- PASSIVE OPEN SPACE
- WETLANDS TO REMAIN
- WETLANDS TO BE FILLED
- REQUIRED ROAD & PERIMETER BUFFERS
- PONDS
- 6,000SF LOTS
- 4,000SF LOTS

TABLE 1 LOTS (6,000SF): 1193 (72.66%)
TABLE 2 LOTS (4,000SF): 449 (27%)

SUBDIVISIONS WITH A GROSS CALCULATED DEVELOPABLE ACREAGE ABOVE 51 ACRES MAY PROVIDE UP TO 40% OF THE TOTAL LOTS USING TABLE 2.

(A) The lot and building requirements in Table 1 and Table 2 may be used in R-2 Single-Family Residential Zoning District.

(Table 1) Minimum Lot and Building Requirements

Min Lot Size:	6,000 sf
Min Lot Width:	50 ft
Primary Setbacks:	
Front	25 ft
Corner Lot Secondary Frontage	15 ft
Side	5 ft
Rear	15 ft
Detached Garage Setbacks:	
Corner Lot Secondary Frontage	20 ft
Side and Rear	5 ft
Rear (if measured from alley right-of way)	10 ft

1) Steps may encroach into setbacks but cannot be located in easements
2) Eaves may extend 18 inches into setbacks if properly fire rated.
3) Minimum lot width is measured at setback.
4) Minimum lot width around cul-de-sac may be reduced to 35'.

(Table 2) Minimum Lot and Building Requirements

Min Lot Size:	4,000 sf
Min Lot Width:	40 ft
Primary Setbacks:	
Front	10 ft
Corner Lot Secondary Frontage	15 ft
Side	5 ft
Rear	15 ft
Detached Garage Setbacks:	
Corner Lot Secondary Frontage	20 ft
Side and Rear	5 ft
Rear (if measured from alley right-of way)	10 ft

1) Steps may encroach into setbacks but cannot be located in easements
2) Eaves may extend 18 inches into setbacks if properly fire rated
3) Minimum lot width is measured at setback.
4) Minimum lot width around cul-de-sac may be reduced to 30'.

BONUS DENSITY DEFINED

A.1 ADDITIONAL OPEN SPACE
FOR EVERY 5% ADDITIONAL OPEN SPACE FROM LAND INCLUDED WITHIN THE NET CALCULATED DEVELOPABLE ACREAGE (INCLUDING WETLAND BUFFERS), A 2% BONUS DENSITY MAY BE APPLIED, OR FRACTION THEREOF UP TO 8%.

D.3 COMMUNITY FACILITIES
FOR LAND SET ASIDE TOTALING ABOVE TEN (10) ACRES A 7.5% BONUS DENSITY MAY BE APPLIED.

E.2 ADDITIONAL POINT OF CONNECTION
FOR EVERY POINT OF CONNECTION TO AN EXISTING SUBDIVISION, NEIGHBORHOOD, OR A SECONDARY ENTRANCE, NOT INCLUDING THE MAIN ENTRANCE, A 2.5% BONUS DENSITY MAY BE APPLIED PER CONNECTION, NOT TO EXCEED 7.5%.

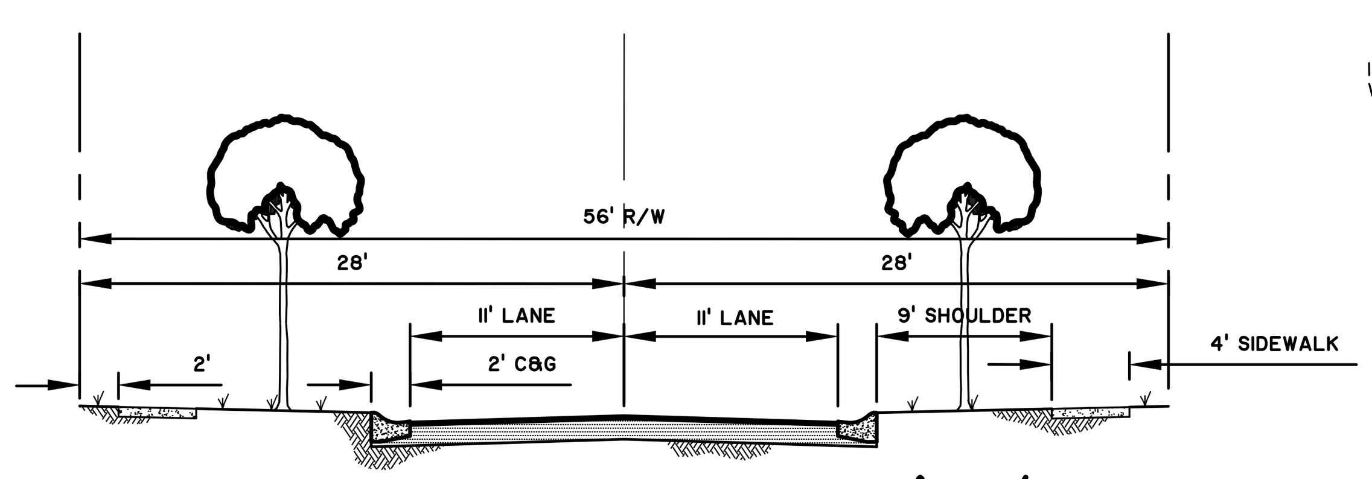
E.5 CONNECTION TO COMMUNITY FACILITY
IF PEDESTRIAN CONNECTIONS TO NEARBY COMMUNITY FACILITIES SUCH AS SCHOOLS, PARKS, CHURCHES, AND OTHER COMMUNITY FACILITIES ARE PROVIDED, A 2.5% BONUS DENSITY MAY BE APPLIED PER THE ZONING ADMINISTRATOR.

OPEN SPACE DEFINED

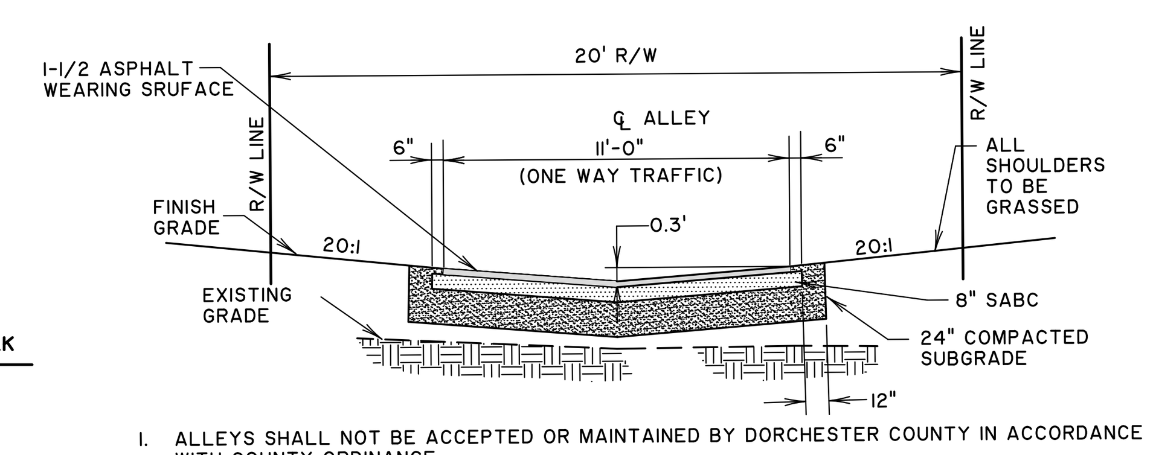
ACTIVE OPEN SPACE
AREAS USED FOR ACTIVE PROPOSED ARE USUALLY LOCATED WITHIN THE DEVELOPMENTS LIMITS OF DISTURBANCE AND INCLUDES AREAS SUCH AS PLAYGROUNDS, SITE AMENITIES, TRAILS, OPEN LAWNS/FIELDS, COMMUNITY GARDENS, AND OTHER USES PROPOSED BY THE DEVELOPER AND APPROVED BY THE ZONING ADMINISTRATOR.

PASSIVE OPEN SPACE
AREAS USED FOR PASSIVE PURPOSES ARE USUALLY LOCATED OUTSIDE THE DEVELOPMENT LIMITS OF DISTURBANCE SUCH AS OPEN NATURAL FIELDS, WOODS, TRAILS AND OTHER USES PROPOSED BY THE DEVELOPER AND APPROVED BY THE ZONING ADMINISTRATOR.

NOTE: PATHS SHOWN IN ACTIVE OPEN SPACE ARE CONCEPTUAL, STAFF WILL REVIEW AND PROVIDE COMMENTS ON MATERIAL TYPES AND LOCATION DURING THE PRELIMINARY PLAN APPROVAL PROCESS.



TYPICAL ROAD SECTION 56' R/W
NOT TO SCALE



1. ALLEYS SHALL NOT BE ACCEPTED OR MAINTAINED BY DORCHESTER COUNTY IN ACCORDANCE WITH COUNTY ORDINANCE.

TYPICAL ALLEY SECTION
NOT TO SCALE

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
682 Johnnie Dodds Blvd. • Suite 100
Mt. Pleasant, SC 29464 • 843.849.0200
www.thomasandhutton.com

CLUSTER YIELD PLAN

YERBY ROAD TRACT

PROJECT LOCATION:
DORCHESTER COUNTY, SOUTH CAROLINA

CLIENT/OWNER:
BRD LAND & INVESTMENT

GRAPHIC SCALE:
1 INCH = 400FEET

DATUM: HORIZ.: VERT.:

JOB NO:	J-30799
DATE:	5-16-23
DRAWN:	ACS
DESIGNED:	MCB
REVIEWED:	DKW
APPROVED:	DKW
SCALE:	1" = 400'

EX.4

EXHIBIT H

LAND FOR COMMUNITY FACILITIES

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 63°05'12" W	150.33'
L2	S 64°24'37" W	100.90'
L3	S 52°25'11" W	119.04'
L4	S 39°15'41" W	185.13'
L5	S 26°19'22" W	137.08'
L6	S 19°33'31" W	135.08'
L7	S 10°10'51" W	175.27'
L8	S 6°28'53" E	122.83'
L9	S 19°23'58" E	335.04'
L10	S 25°31'35" E	291.34'
L11	S 86°33'58" E	1089.83'
L12	N 7°20'46" W	643.34'
L13	N 42°38'36" E	116.66'
L14	N 13°57'27" W	166.99'
L15	N 55°53'13" W	133.17'
L16	N 18°17'13" W	259.50'
L17	N 12°36'54" E	32.31'
L18	N 79°01'54" E	36.05'
L19	S 64°29'57" E	36.58'
L20	S 83°38'52" E	50.82'
L21	N 14°14'16" E	252.26'
L22	N 11°52'57" W	128.94'
L23	N 1°37'02" W	98.74'
L24	N 60°11'59" W	138.82'
L25	N 21°25'23" W	98.02'
L26	S 64°43'23" W	43.25'
L27	S 67°35'56" W	375.74'
L28	S 59°42'46" W	199.98'
L29	S 63°05'12" W	181.56'
L30	S 81°49'01" E	66.70'
L31	N 71°00'40" E	54.61'
L32	N 67°30'43" E	45.09'
L33	N 74°44'14" E	49.75'
L34	N 81°35'49" E	56.43'
L35	S 44°24'06" E	38.54'
L36	S 77°01'36" E	32.00'
L37	S 21°59'28" E	33.83'
L38	S 5°42'07" E	48.22'
L39	S 34°36'45" E	57.13'
L40	S 21°21'03" E	50.88'
L41	S 36°00'26" E	50.12'
L42	S 25°50'59" W	27.64'
L43	S 77°53'09" W	44.53'
L44	S 84°48'46" W	48.65'
L45	N 67°25'42" W	55.72'
L46	N 86°08'55" W	44.08'
L47	S 29°35'18" W	48.16'
L48	S 22°05'39" E	42.96'
L49	S 4°05'59" E	51.46'
L50	S 32°26'51" E	48.42'
L51	S 20°20'33" E	16.20'
L52	N 19°17'15" E	38.80'
L53	N 5°52'14" W	42.41'
L54	N 21°35'31" E	47.81'
L55	N 77°14'58" E	36.54'
L56	S 69°47'54" E	38.97'
L57	S 0°40'34" W	34.95'
L58	S 57°11'05" E	54.34'
L59	N 66°05'39" E	32.09'
L60	N 29°06'47" E	41.03'
L61	S 51°20'33" E	50.41'
L62	S 16°05'18" W	69.81'
L63	S 43°53'45" W	43.29'
L64	S 88°24'20" W	51.44'
L65	S 66°02'00" W	43.81'
L66	S 82°04'01" W	34.36'
L67	S 16°06'20" W	40.50'
L68	S 24°46'59" E	32.00'
L69	S 63°51'31" E	46.11'
L70	S 64°08'17" E	46.25'
L71	S 39°33'12" E	33.25'
L72	N 83°50'59" E	41.95'
L73	N 67°32'24" E	37.45'
L74	S 25°09'10" E	42.79'
L75	S 57°21'28" W	48.95'
L76	S 59°23'22" W	41.00'
L77	S 20°23'57" W	22.41'
L78	N 73°57'50" E	19.91'
L79	N 45°40'05" E	20.79'
L80	N 63°07'08" E	39.89'
L81	N 72°03'42" E	55.86'
L82	N 63°55'59" E	53.78'
L83	N 72°23'48" E	47.87'
L84	N 62°08'29" E	36.27'
L85	N 10°29'36" E	66.46'

LINE TABLE		
LINE	BEARING	DISTANCE
L86	N 32°45'14" E	33.38'
L87	N 19°07'29" E	33.00'
L88	S 84°03'12" E	18.45'
L89	S 62°50'01" E	32.78'
L90	S 4°48'47" W	29.93'
L91	S 17°40'02" E	38.65'
L92	S 8°57'45" E	26.04'
L93	S 76°01'18" W	48.57'
L94	S 62°14'57" W	68.51'
L95	S 70°51'00" W	60.31'
L96	S 61°08'03" W	69.47'
L97	S 79°17'54" W	47.70'
L98	S 71°24'12" W	46.10'
L99	S 34°56'37" E	20.65'
L100	S 27°16'19" E	44.35'
L101	S 3°33'04" E	61.71'
L102	S 0°27'38" E	49.04'
L103	S 8°32'03" W	64.85'
L104	S 22°17'21" E	48.32'
L105	S 21°37'19" E	33.26'
L106	N 40°05'25" E	40.68'
L107	N 21°47'50" E	47.64'
L108	N 2°10'25" E	56.14'
L109	N 17°30'13" E	46.19'
L110	N 7°59'58" W	40.91'
L111	N 10°00'58" E	44.28'
L112	N 18°15'55" W	53.65'
L113	N 57°02'40" E	20.78'
L114	S 43°07'24" E	29.36'
L115	N 44°30'05" E	38.85'
L116	N 71°23'31" E	50.20'
L117	N 57°23'24" E	34.31'
L118	N 76°21'22" E	45.49'
L119	N 65°52'01" E	48.77'
L120	N 75°45'32" E	33.91'
L121	S 58°22'33" E	52.56'
L122	S 7°52'23" E	19.96'
L123	S 74°11'13" W	42.52'
L124	S 26°10'40" W	47.90'
L125	S 22°33'42" E	30.12'
L126	S 73°35'10" E	36.70'
L127	S 45°09'17" E	15.18'
L128	S 49°03'25" E	31.22'
L129	S 65°43'37" E	45.24'
L130	S 13°38'01" E	20.28'
L131	S 36°43'50" W	22.02'
L132	S 46°25'55" W	35.19'
L133	S 46°25'55" W	7.47'
L134	S 46°25'55" W	7.62'
L135	N 84°22'19" W	21.78'
L136	S 76°39'47" W	54.46'
L137	N 86°07'52" W	31.45'
L138	N 79°26'03" W	32.94'
L139	S 56°01'33" W	37.24'
L140	S 78°03'52" W	55.71'
L141	S 23°12'06" W	56.01'
L142	S 17°08'23" W	59.18'
L143	S 22°32'24" W	35.90'
L144	S 8°02'40" W	53.76'
L145	S 16°07'57" E	66.35'
L146	S 41°55'20" W	25.98'
L147	S 40°22'15" E	34.70'
L148	S 3°26'23" E	57.49'
L149	S 54°11'47" W	38.19'
L150	S 53°30'00" W	31.45'
L151	S 16°16'23" E	29.14'
L152	S 30°28'22" E	62.31'
L153	N 73°49'12" E	47.85'
L154	S 75°25'06" E	37.67'
L155	S 54°12'29" E	25.79'
L156	S 14°05'29" E	44.49'
L157	S 33°41'54" E	64.02'
L158	S 49°00'16" E	54.20'
L159	S 60°14'04" E	30.86'
L160	N 86°33'58" W	1029.57'
L161	S 29°57'58" E	119.78'
L162	S 86°33'58" E	979.88'
L163	S 79°21'24" E	161.26'
L164	N 70°40'08" E	31.09'
L165	N 34°55'55" W	35.63'
L166	N 18°24'41" E	32.92'
L167	N 8°00'13" W	28.57'
L168	N 16°51'10" E	32.68'
L169	N 58°02'35" E	15.67'

CURVE TABLE					
CURVE	RADIUS	LENGTH	CHORD	CHD BEARING	DELTA
C1	950.00'	62.13'	62.12'	S 88°26'24" E	3°44'50"
C2	950.00'	127.15'	127.05'	N 85°51'08" E	7°40'06"
C3	1050.00'	207.33'	207.00'	S 87°46'37" W	11°18'49"

TMS# 127-00-00-074
DV TIMBER, LLC
P.B. N, Pg. 72

EDGE OF FLOODWAY

FLOOD WAY AREA

EDGE OF FLOODWAY

FLOOD ZONE AE

FLOOD ZONE X SHADED

WETLAND

FUTURE DEVELOPMENT BY OTHERS
UPLAND AREA: 36.5 AC
WETLAND AREA: 15.0 AC
TOTAL PARCEL AREA: 51.5 AC

FUTURE 100' R/W

PROP. 100' R/W

100'

± 10,050 LF TO ORANGEBURG ROAD

N

W

E

S

LEGEND

PROP. 100' R/W: (3.2 AC)

UPLAND AREA:

WETLAND AREA:

FLOOD ZONE AE:

FLOOD ZONE X (SHADED):

SCHOOL SITE EXHIBIT

YERBY ROAD TRACT

DORCHESTER COUNTY, SC

PREPARED FOR:

BRD LAND & INVESTMENT

PREPARED BY:

THOMAS & HUTTON
682 Johnnie Dodds Blvd. • Suite 100
Mt. Pleasant, SC 29464 • 843.849.0200
www.thomasandhutton.com

JOB NO:	J-30799.0000
DRAWN:	SRD
REVIEWED:	ECA
DATE:	10/17/23
SCALE:	1" = 100'
SHEET:	1 OF 1

EXHIBIT I

SERVICE LETTERS

Dorchester County Water Authority

P. O. Box 250 P. O. Box 1565 Summerville, SC 29484
(843) 875-0140 Fax (843) 851-6790

ADMINISTRATOR
ROBERT C. HENSLEY

BOARD MEMBERS
LINDA B. EVANS-CHAIR
PAT LADOLCETTA-VICE CHAIR
JOHN WHEELER-SECRETARY/TREASURER
BRAD RAWLINGS-MEMBER
LINDY CUMMINS-MEMBER

October 5, 2023

Chris Ackerman
Thomas & Hutton Engineering
682 Johnnie Dodds Blvd. Suite 100
Mt Pleasant, SC 29464

Reference: Yerby Road Subdivision (1,709 Units)

Dear Mr. Ackerman,

Dorchester County Water Authority is the authorized supplier of water, for the above reference, and is in conformance with its water supply service area. We are willing and have the quantity of water to provide to this above reference. Dorchester County Water Authority's commitment for the availability of water will expire one year from the date of this letter.

Sincerely,

Richie Murdaugh, Operations Manager

RM/fb

EXHIBIT J

FORM OF PARTIAL ASSIGNMENT AND ASSUMPTION OF RIGHTS AND OBLIGATIONS UNDER DEVELOPMENT AGREEMENT

STATE OF SOUTH CAROLINA	**)**	**PARTIAL ASSIGNMENT AND**
	)	**ASSUMPTION OF RIGHTS AND**
	)	**OBLIGATIONS UNDER**
COUNTY OF CHARLESTON	**)**	**DEVELOPMENT AGREEMENT**

This **PARTIAL ASSIGNMENT AND ASSUMPTION OF RIGHTS AND OBLIGATIONS UNDER DEVELOPMENT AGREEMENT** ("Partial Assignment and Assumption") is dated as of this ____ day of _____, 20___, by and between _____ ("Assignor) and _____ ("Assignee").

R E C I T A L S:

WHEREAS, on or about _____, 2023, Assignor entered into that certain Development Agreement ("Development Agreement") with the Dorchester County, South Carolina (the "County"), incident to the future development of approximately Six Hundred Eight and 789/1000 (608.789) acres of real property, as further described on Exhibit "A" attached hereto (the "Property"), which Agreement was recorded in the Office of the Register of Deeds of Dorchester County, South Carolina (the "ROD") in Volume ____ at Page _____; and

WHEREAS, on _____, ____, Assignor conveyed _____ (____) acres of the Property to Assignee, as is more fully described on Exhibit "B" attached hereto (the "Transferred Property"), by that certain _____ deed recorded on _____, _____ in the ROD in Volume _____ at Page _____; and

WHEREAS, as an integral part of the conveyance of the Transferred Property from Assignor to Assignee, it is the desire and intention of Assignor to assign to Assignee, and it is the desire and intention of Assignee to assume certain rights, privileges and obligation under the terms of the Development Agreement applicable to the Transferred Property, thus necessitating the preparation and execution of the within Partial Assignment and Assumption.

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy whereof is herewith acknowledged, the parties hereby agree as follows, to wit:

1. Partial Assignment and Assumption of Rights Privileges and Obligations Applicable to the Transferred Property Pursuant to the Development Agreement. Subject to the provisions of Section 29(c) of the Development Agreement, Assignor does hereby transfer, assign, convey and deliver unto Assignee, its successors and assigns, all of Assignor's rights, privileges and obligations as described in the Development Agreement with respect to _____ (_____) acres with an _____ density not to exceed _____ (_____) Dwelling Units (as further described in Section 13.A. of the Development Agreement) (the "Allocated Rights"). Assignee hereby assumes and agrees to perform all of Assignor's rights, privileges and obligations as described in the Development Agreement, applicable to the Transferred Property, including without limitation, the Assumed Obligations (as defined below). Assignee acknowledges receipt of the Development Agreement and all Exhibits thereto and agrees to be bound by the terms thereof and to develop the Transferred Property in accordance with such terms. The rights and obligations hereby assigned and assumed shall be covenants running with the land, binding upon the parties hereto and their successors and assigns. Notwithstanding anything herein to the contrary, Assignee shall not convert (and shall have no right to convert) any of the _____ (_____) acres designated _____ density (not to exceed _____ (_____) Dwelling Units) to use for single family detached residential dwellings units, as is permitted under the Development Agreement.

2. Assumed Obligations. In connection with this Partial Assignment and Assumption, Assignee agrees to assume, and release Assignor from any liability for, the following obligations (the "Assumed Obligations") arising under the Development Agreement:

(i) _____

(ii)_____

(iii)_____

3. Default and Enforcement of Provisions. As provided in Section __ of the Development Agreement and as herein provided, upon the failure of Assignor or Assignee to comply with the terms of the Development Agreement and this Partial Assignment and Assumption incident to the Property, the non-defaulting party may pursue the remedies of injunction and specific performance, but not to any other legal or equitable remedies, including, but not limited to, damages.

4. Indemnification. Assignee agrees to indemnify, defend and hold harmless Assignor, its agents, principals, successors and assigns, and their affiliates from and against all losses, costs, damages, and reasonable attorney fees arising out of any breach by Assignee of the Development Agreement from and after the Closing Date, including without limitation the Assumed Obligations set forth in Section 2 hereof.

5. Notices. Any notice, demand, request, consent, approval or communication among any of the parties hereto shall be in writing and shall be delivered or addressed as provided under Section 30(i) of the Development Agreement and shall also be addressed as follows:

As to Assignee:

_____
_____
_____
_____
Attn: _____
Telephone Number: _____
Facsimile Number: _____
e-mail: _____

With a required copy to:

_____
_____
_____
_____
Attn: _____
Telephone Number: _____
Facsimile Number: _____
e-mail: _____

To Assignor:

_____
_____
_____
Attn: _____
Telephone Number: _____
Facsimile Number: _____
E-mail: _____

With a required copy to:

Maynard Nexsen PC
205 King Street, Suite 400
Charleston, SC 29401
Attention: Nicole A. Scott, Esq.
Phone: (843) 720-1716

6. Binding Effect. This Partial Assignment and Assumption shall inure to the benefit of and be binding upon the respective parties hereto, their successors and assigns.

7. Governing Law. The within Partial Assignment and Assumption shall be interpreted and construed and conform to the laws of the State of South Carolina.

8. Reaffirmation of Terms. All other terms, conditions, rights and privileges contained in the Development Agreement not specifically referenced herein shall remain in full force and effect and binding upon the parties hereto and their successors and assigns.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties have caused this Partial Assignment and Assumption to be duly executed as of the date set forth above.

Signed, sealed and delivered
in the presence of:

ASSIGNEE:

_____,
_____

_____
Witness

By:_____
Its:_____
Title:_____

_____
Witness

STATE OF SOUTH CAROLINA)
) ACKNOWLEDGMENT
COUNTY OF _____)

I, the undersigned Notary Public, do hereby certify that _____, as _____ of _____, personally appeared before me this day and, in the presence of the two witnesses above named, acknowledged the due execution of the foregoing instrument.

Witness my hand and seal this _____ day of _____, 20___.

_____
Notary Public for South Carolina
My Commission expires:

IN WITNESS WHEREOF, the parties have caused this Partial Assignment and Assumption to be duly executed as of the date set forth above.

Signed, sealed and delivered
in the presence of:

ASSIGNOR:

_____,
_____

_____
Witness

By:_____
Its:_____
Title:_____

_____
Witness

STATE OF SOUTH CAROLINA)
) ACKNOWLEDGMENT
COUNTY OF _____)

I, the undersigned Notary Public, do hereby certify that _____, as _____ of _____, personally appeared before me this day and, in the presence of the two witnesses above named, acknowledged the due execution of the foregoing instrument.

Witness my hand and seal this _____ day of _____, 20___.

_____
Notary Public for South Carolina
My Commission expires:

Exhibit A to Partial Assignment
Property

Exhibit B to Partial Assignment
Transferred Property

EXHIBIT K

TRAFFIC STUDY

YERBY DEVELOPMENT
TRAFFIC IMPACT ANALYSIS

Summerville, South Carolina

May 2023

Prepared for:
BRD Land & Investment 1, LP

Prepared by:
Stantec Consulting Services Inc.

YERBY DEVELOPMENT
TRAFFIC IMPACT ANALYSIS

Summerville, South Carolina

May 2023

Prepared for:
BRD Land & Investment 1, LP
725 Cherry Road
Rock Hill, SC 29730

Prepared by:
Stantec Consulting Services Inc.
4969 Centre Pointe Drive, Suite 200
North Charleston, South Carolina
Phone: (843) 740-7700
Fax: (843) 740-7707

Project No. 171002906

Signature *Date*

05/25/2023

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List of Appendices

Executive Summary

A traffic impact analysis was conducted for the Yerby Development in accordance with the Dorchester County and SCDOT guidelines. The proposed Yerby Development is located west of Orangeburg Road near Summerville, South Carolina. The Yerby Development is planned to be completed in eight phases with full completion proposed in 2032 and will consist of 1,709 single-family homes (developed in Phases 1 through 8) and a 1,200-student middle school (developed in Phase 8). The extent of the existing roadway network to be studied consists of the three intersections of Orangeburg Road & Yerby Road, Orangeburg Road & Mallard Road, and E. Butternut Road & Sinclair Road for use in the traffic impact analysis. Access to the development will be provided through one full access driveway along Yerby Road with a second full-access driveway via the intersection of E. Butternut Road & Sinclair Road provided in Phase 8 of the project. The paragraphs below detail the analysis results for the three (3) study intersections.

1 - Orangeburg Road & Yerby Road

Based on the Roadway Design Manual guidelines, a northbound exclusive left-turn lane of 530 feet of total length, with 350 feet of storage and a taper of 180 feet and a southbound exclusive right-turn lane of 280 feet of total length, with 100 feet of storage and a taper of 180 feet are recommended along Orangeburg Road at the intersection with Yerby Road. An eastbound right-turn lane of 450 feet of total length, with 350 feet of storage and a taper of 100 feet is also recommended along Yerby Road at the intersection with Orangeburg Road.

The intersection analysis results for the intersection of Orangeburg Road & Yerby Road indicate that with the recommended turn lane improvements listed above the intersection is projected to operate at an acceptable level of service (LOS) through the final phase of the development in 2032. Along with the turn lanes improvements, it is recommended to widen Yerby Road to 12-foot lanes and to repave the roadway surface in Phase 1 when the project driveway is added.

Proposed Yerby Buildout Scenario & Recommended Improvements

Phase	Buildout Year	Single-Family Detached Housing (dwelling units)		Middle School/Junior High School (students)		Recommended Improvements
		Phase	Cumulative	Phase	Cumulative	
1	2025	40	**40**	0	**0**	
2	2026	250	**290**	0	**0**	Install NBL on Orangeburg Road
3	2027	250	**540**	0	**0**	Install SBR on Orangeburg Road
4	2028	250	**790**	0	**0**	
5	2029	250	**1,040**	0	**0**	Install EBR on Yerby Road
6	2030	250	**1,290**	0	**0**	
7	2031	250	**1,540**	0	**0**	
8	2032	169	**1,709**	1,200	**1,200**	

2 - Orangeburg Road & Mallard Road

The intersection analysis results for the intersection of Orangeburg Road & Mallard Road indicate that the intersection is projected to operate at undesirable LOS until 2032, with or without the Yerby Development. Therefore, it is proposed to implement the following improvement in Phase 1 which include installing a southbound right turn lane (380 feet total length, 200 feet of storage with a 180-foot taper) on Orangeburg Road. It is also proposed to implement the following improvement in Phase 2 which include installing a westbound right turn lane (380 feet total length, 200 feet of storage with a 180-foot taper) on Mallard Road.

3 - E. Butternut Road & Sinclair Road

The intersection analysis results for the intersection of E. Butternut Road & Sinclair Road indicate that without any improvements the intersection is projected to operate at an acceptable LOS through Phase 7. However, it is anticipated to have undesirable LOS in Phase 8 when the additional full access driveway is added to the Yerby Development. Therefore, it is recommended that one of the following improvements be implemented:

- the intersection be re-aligned so that the northbound approach of W. Butternut Road is stop-controlled while the eastbound approach of Sinclair Road and the westbound approach of E. Butternut Road are free-flowing approaches; or
- the intersection be reconfigured as a single lane roundabout.

It is recommended that an exclusive northbound right turn lane (280 feet total length, 100 feet of storage with a 180-foot taper) be installed in Phase 8 – 2032.

Both intersection recommendations are anticipated to improve the intersection LOS. If the intersection is to be reconfigured as a single lane roundabout, it may require that additional right-of-way be purchased by Dorchester County. Along with the intersection improvements, it is recommended to widen Sinclair Road to 12-foot lanes and to repave the roadway surface in Phase 8 when the additional full access driveway is added to the Yerby Development.

1.0 INTRODUCTION

The purpose of this report is to document a traffic impact analysis for the Yerby Development in accordance with Dorchester County and SCDOT guidelines. This report summarizes the procedures and findings of the traffic impact analysis.

1.1 PROJECT BACKGROUND

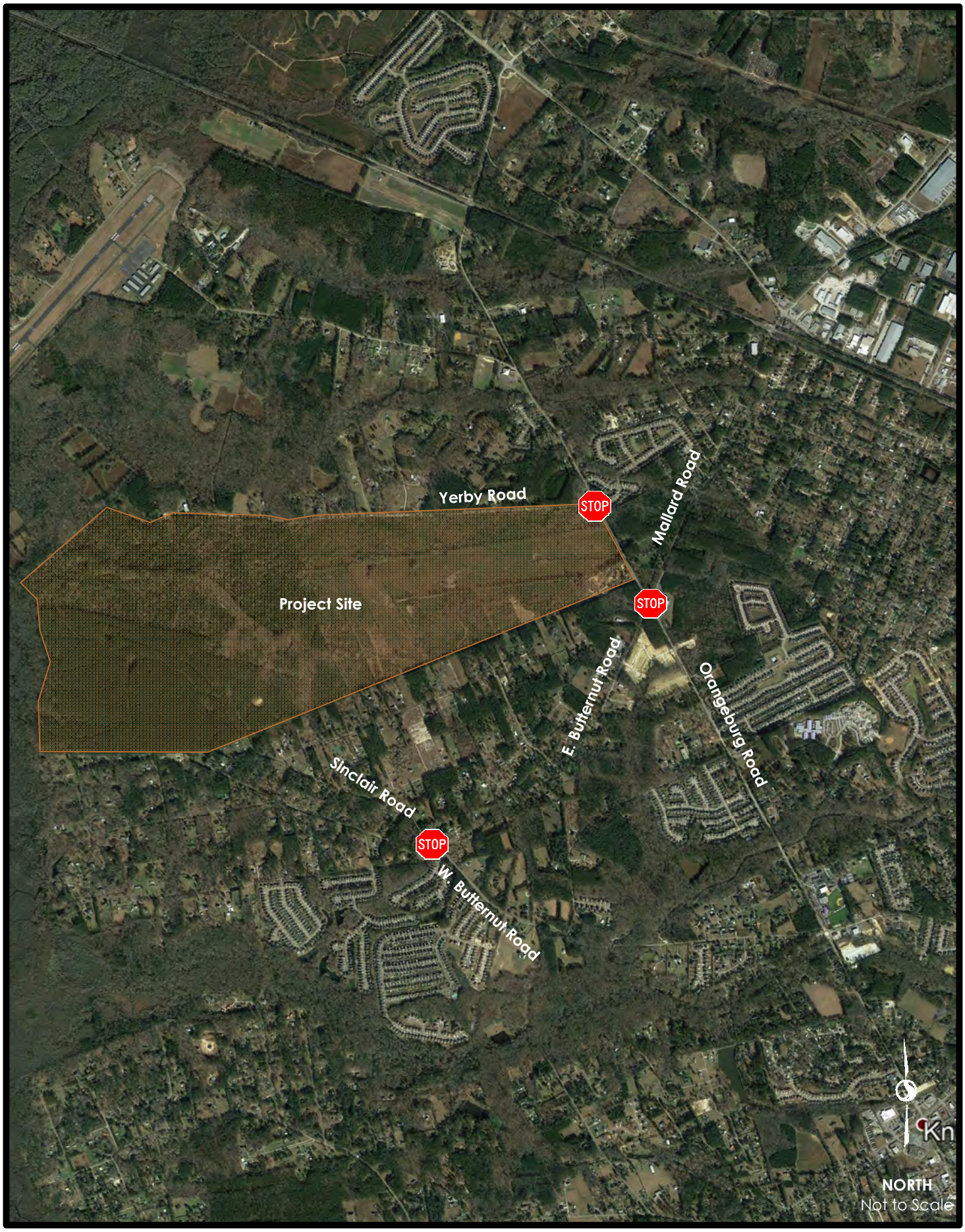
The proposed Yerby Development is located west of Orangeburg Road near Summerville, South Carolina. The development will be completed in eight phases and will consist of approximately 1,709 single-family homes and a 1,200-student middle school. Access to the development will be provided through one full access driveway along Yerby Road with a second full-access driveway via the intersection of E. Butternut Road & Sinclair Road provided in Phase 8 of the project.

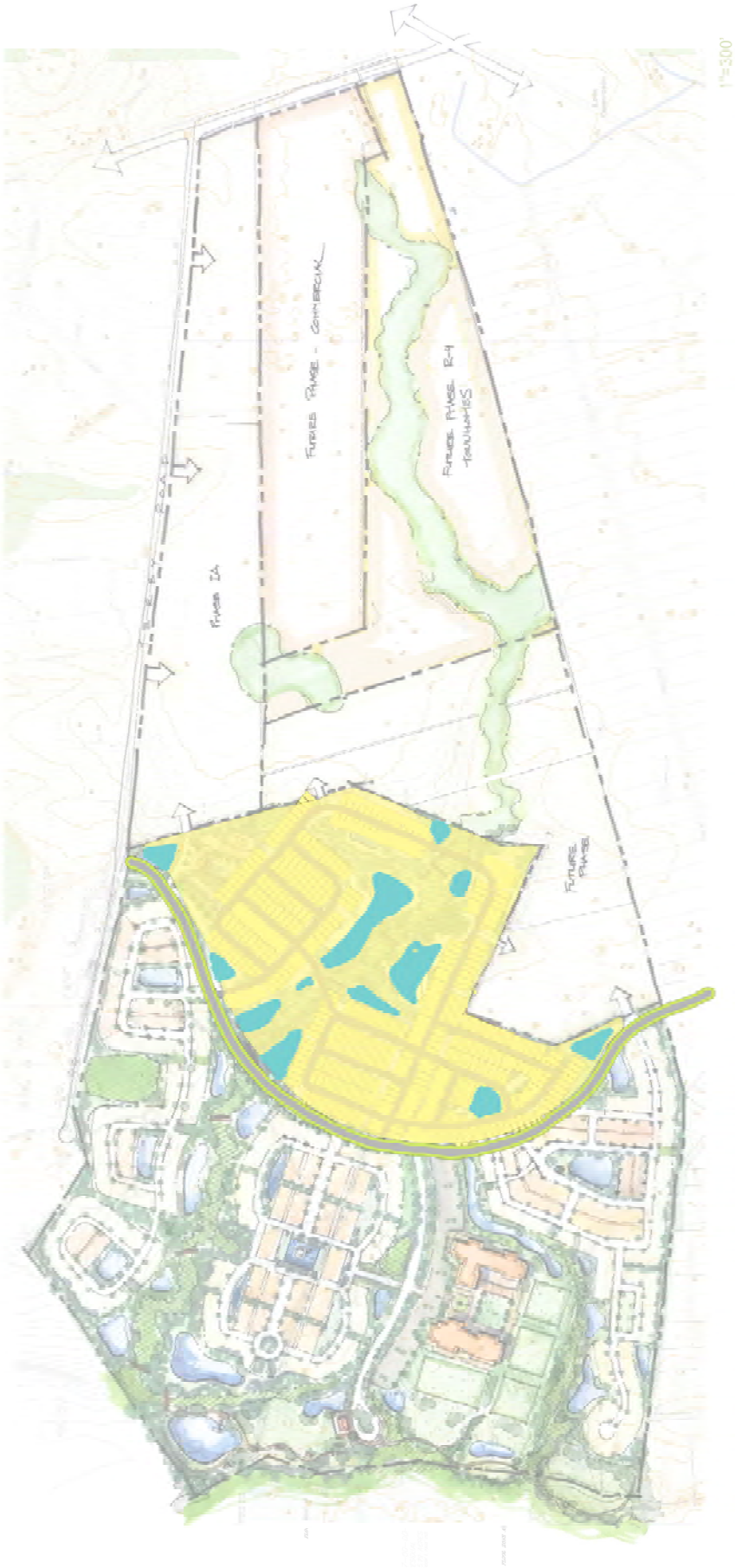
The traffic impact analysis considers the weekday AM peak hour (between 7:00 AM and 9:00 AM) and the weekday PM peak hour (between 4:00 PM and 6:00 PM) as the study time frames. The extent of the existing roadway network to be studied consists of the three intersections of Orangeburg Road & Yerby Road, Orangeburg Road & Mallard Road, and E. Butternut Road & Sinclair Road for use in the traffic impact analysis.

The buildout date for the proposed development is anticipated to be completed by 2032 and constructed in eight phases as shown in **Table 1.1**. **Exhibit 1.1** illustrates the location of the project site, including the adjacent public roadway network, and **Exhibit 1.2** illustrates a site plan of the proposed development.

Table 1.1 – Proposed Yerby Buildout Scenario

Phase	Buildout Year	Single-Family Detached Housing (dwelling units)		Middle School/Junior High School (students)	
		Phase	Cumulative	Phase	Cumulative
1	2025	40	**40**	0	**0**
2	2026	250	**290**	0	**0**
3	2027	250	**540**	0	**0**
4	2028	250	**790**	0	**0**
5	2029	250	**1,040**	0	**0**
6	2030	250	**1,290**	0	**0**
7	2031	250	**1,540**	0	**0**
8	2032	169	**1,709**	1,200	**1,200**


Yerby Road
STOP
Mallard Road
Project Site
STOP
E. Butternut Road
Orangeburg Road
Sinclair Road
STOP
W. Butternut Road
Kn
NORTH
Not to Scale



NORTH
Not to Scale

1.2 EXISTING ROADWAY CONDITIONS

Orangeburg Road is a two-lane minor arterial that primarily serves residential and commercial land uses. The posted speed limit is 45 miles per hour (mph) and the 2022 AADT was 13,100 vehicles per day (vpd). Based upon existing turning movement counts, the percentage of heavy vehicles along Orangeburg Road is approximately 3%.

Mallard Road is a two-lane minor arterial that primarily serves residential land uses. The speed limit is 55 mph and the 2022 AADT was 10,000 vpd. Based upon existing turning movement counts, the percentage of heavy vehicles along Mallard Road is approximately 3%.

E. Butternut Road is a two-lane minor collector that primarily serves residential land uses. The posted speed limit is 45 mph. Based upon existing turning movement counts, the percentage of heavy vehicles along E. Butternut Road is approximately 2%.

Yerby Road is a two-lane roadway that primarily serves residential land uses. The posted speed limit is 25 mph. Based upon existing turning movement counts, the percentage of heavy vehicles along Yerby Road is less than 1%.

Sinclair Road is a two-lane roadway that primarily serves residential land uses. The posted speed limit is 30 mph. Based upon existing turning movement counts, the percentage of heavy vehicles along Sinclair Road is less than 1%.

2.0 DRIVEWAY SPACING REVIEW

Access to the development will be provided through one full access driveway along Yerby Road with a second full-access driveway via the intersection of E. Butternut Road & Sinclair Road provided in Phase 5 of the project. A review of the driveway spacing of the proposed driveways was undertaken based upon information contained in *SCDOT's Access & Roadside Management Standards (ARMS) manual*.

Based upon the speed limit, AADT, and the driveway spacing criteria of *ARMS,* a minimum spacing of 160 feet is required for full-access driveways along Yerby Road. The Proposed Project Driveway is located approximately 1,500 feet west of the nearest driveway along Yerby Road and approximately 350 feet east of the nearest driveway which fulfills the SCDOT driveway spacing criteria.

3.0 PROJECT TRAFFIC

Project traffic used in this analysis is defined as the vehicle trips expected to be generated by the Yerby development. These trips were distributed and assigned throughout the study roadway network.

3.1 PROPOSED LAND USES

The Yerby Development will consist of approximately 1,709 single-family homes and a 1,200-student middle school. The project site is currently vacant.

3.2 TRIP GENERATION ESTIMATES

The trip generation potential for the development was estimated using information contained in ITE's *Trip Generation Manual*, 11th Edition (2021) reference. The estimates utilized land use codes (LUC) 210 – Single-Family Detached Housing and LUC 522 – Middle School/Junior High School and were developed for the weekday daily, the weekday AM peak hour of the adjacent street, and the weekday PM peak hour of the adjacent street time periods. Due to the nature of the development, pass-by capture trips were not considered in the trip generation estimates.

As shown in **Table 1.1**, Phases 1 through 7 of the Yerby Development includes only single-family homes. Therefore, no internal capture was considered for the trip generation of the development in these phases. However, Phase 8 of the development included the addition of the middle school. Therefore, internal capture was considered for the trip generation of this final phase of development. According to Dorchester School District 2, a middle school's student enrollment is estimated at approximately 10% of the number of homes zoned for that particular area. Based on a 1,200-student middle school, that means there are approximately 12,000 homes that would be zoned for a school of this size. The Yerby Development will consist of 1,709 single-family homes which accounts for approximately 14% of the zoned homes. To determine the number of internal capture trips that would occur, 14% of the daily and AM peak hour trips were deducted from both entering and exiting trips generated from the school site. In the PM peak hour, 2% of the trips were deducted to account for any staff that may live in the proposed development. No additional internal capture was considered for the PM peak hour trip generation as the PM peak hour (between 4:00 and 6:00 pm) occurs after the time of school dismissal.

The trip generation estimates for the development are shown in **Tables 3.1** to **3.8** and documented in **Appendix A**.

Table 3.1 – Trip Generation Estimates: Phase 1, 2025

Land Use	ITE LUC	Scale	Daily	Weekday AM Peak Hour		Weekday PM Peak Hour	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing	210	40 Homes	434	8	24	26	16
New External Trips:			**434**	**8**	**24**	**26**	**16**

Table 3.2 – Trip Generation Estimates: Phase 2, 2026

Land Use	ITE LUC	Scale	Daily	Weekday AM Peak Hour		Weekday PM Peak Hour	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing	210	290 Homes	2,688	49	147	170	100
New External Trips:			**2,688**	**49**	**147**	**170**	**100**

Table 3.3 – Trip Generation Estimates: Phase 3, 2027

Land Use	ITE LUC	Scale	Daily	Weekday AM Peak Hour		Weekday PM Peak Hour	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing	210	540 Homes	4,762	86	260	306	179
New External Trips:			**4,762**	**86**	**260**	**306**	**179**

Table 3.4 – Trip Generation Estimates: Phase 4, 2028

Land Use	ITE LUC	Scale	Daily	Weekday AM Peak Hour		Weekday PM Peak Hour	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing	210	790 Homes	6,758	122	367	437	256
New External Trips:			**6,758**	**122**	**367**	**437**	**256**

Table 3.5 – Trip Generation Estimates: Phase 5, 2029

Land Use	ITE LUC	Scale	Daily	Weekday AM Peak Hour		Weekday PM Peak Hour	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing	210	1,040 Homes	8,702	157	471	566	332
New External Trips:			**8,702**	**157**	**471**	**566**	**332**

Table 3.6 – Trip Generation Estimates: Phase 6, 2030

Land Use	ITE LUC	Scale	Daily	Weekday AM Peak Hour		Weekday PM Peak Hour	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing	210	1,290 Homes	10,608	191	572	693	407
New External Trips:			**10,608**	**191**	**572**	**693**	**407**

Table 3.7 – Trip Generation Estimates: Phase 7, 2031

Land Use	ITE LUC	Scale	Daily	Weekday AM Peak Hour		Weekday PM Peak Hour	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing	210	1,540 Homes	12,486	224	673	818	481
New External Trips:			**12,486**	**224**	**673**	**818**	**481**

Table 3.8 – Trip Generation Estimates: Phase 8, 2032

Land Use	ITE LUC	Scale	Daily	Weekday AM Peak Hour		Weekday PM Peak Hour	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing	210	1,709 Homes	13,742	247	739	902	530
Middle School/Junior High School	522	1,200 Students	2,508	434	370	86	94
Gross Trips:			16,250	681	1,109	988	624
- Internal Capture Trips:			-351	-61	-52	-2	-2
New External Trips:			**15,899**	**620**	**1,057**	**986**	**622**

3.3 TRIP DISTRIBUTION & ASSIGNMENT

New external traffic expected to be generated by the Yerby development was distributed and assigned to the roadway network based upon existing travel patterns in the area. The general distribution of new project trips was assumed to be:

- 20% to/from the north via Orangeburg Road;
- 45% to/from the south via Orangeburg Road; and
- 35% to/from the north via Mallard Road.

The assignment of project traffic, in terms of new and internal capture trips, is illustrated in **Exhibit 3.1 to 3.8** for the AM and PM peak hours for each phase.

Exhibit 3.1 - 2025 Peak Hour Project Traffic Volumes

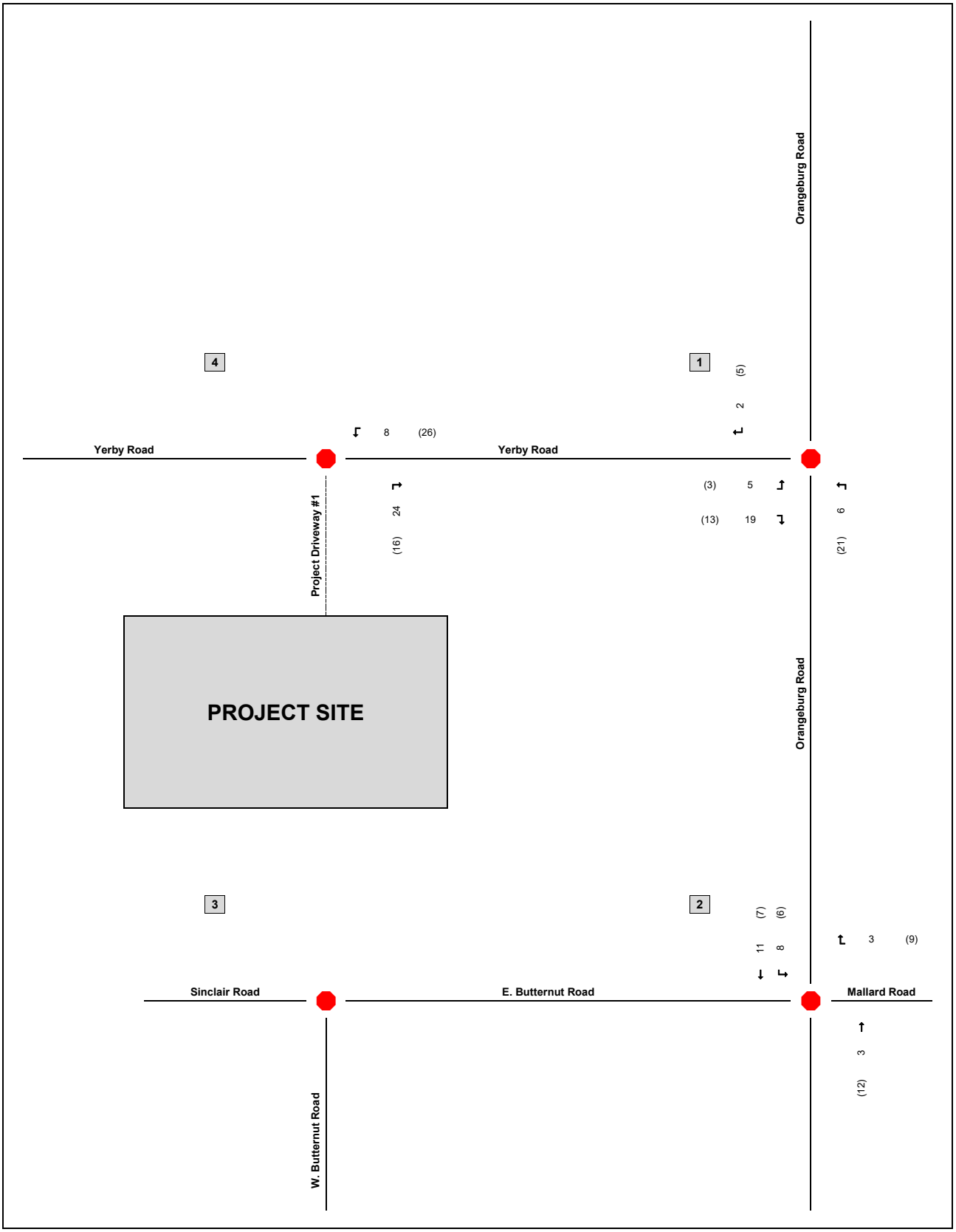


Exhibit 3.2 - 2026 Peak Hour Project Traffic Volumes

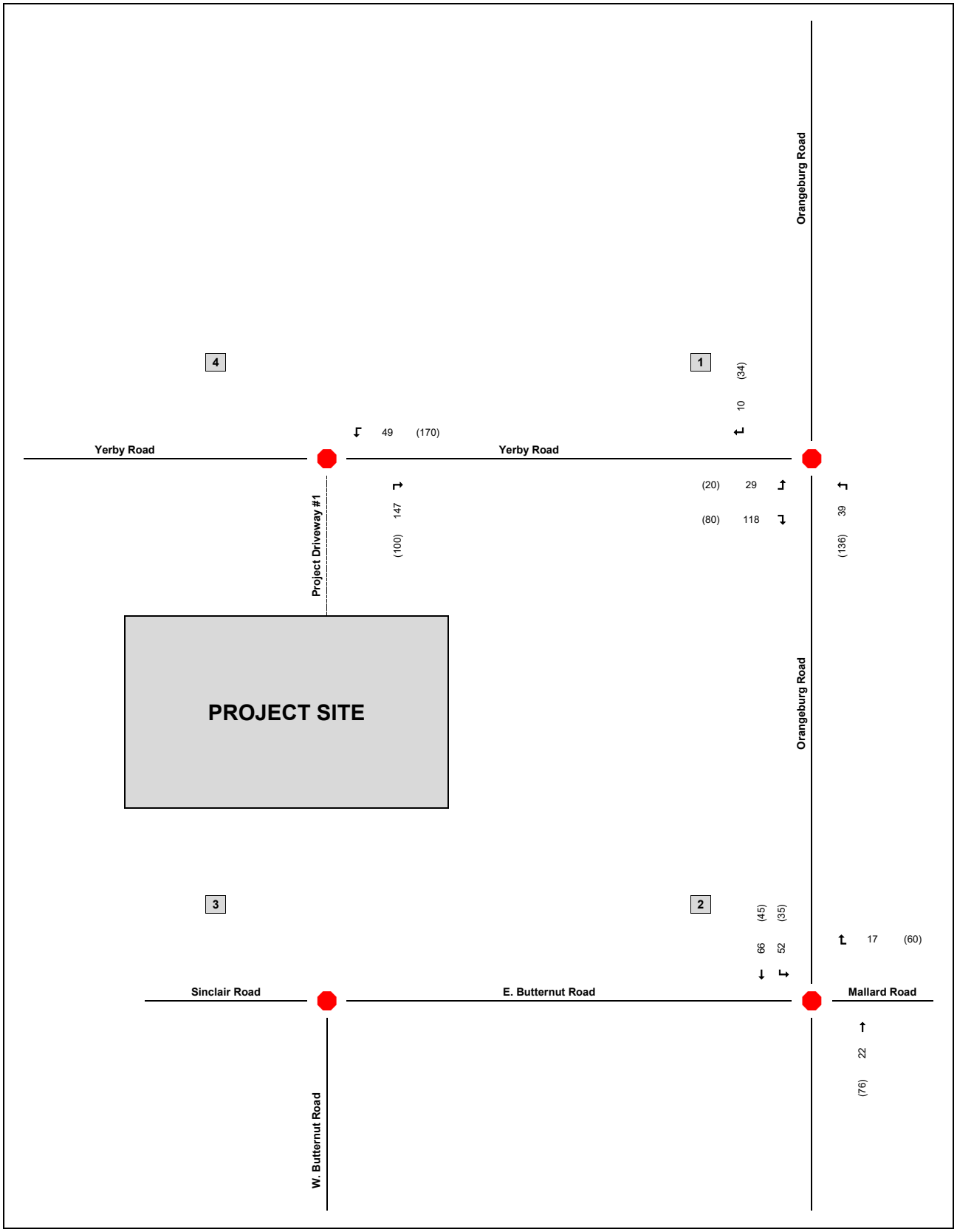


Exhibit 3.3 - 2027 Peak Hour Project Traffic Volumes

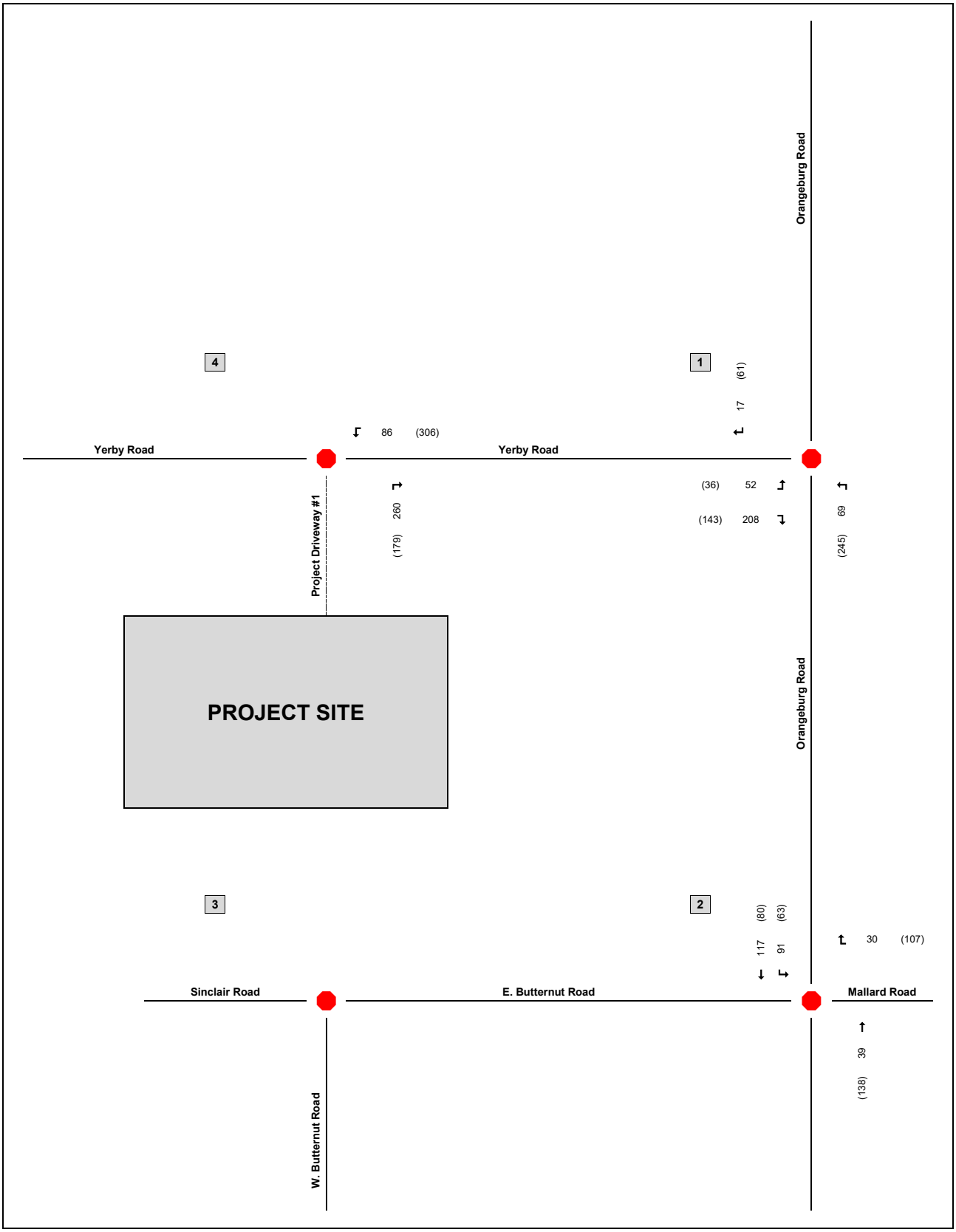


Exhibit 3.4 - 2028 Peak Hour Project Traffic Volumes

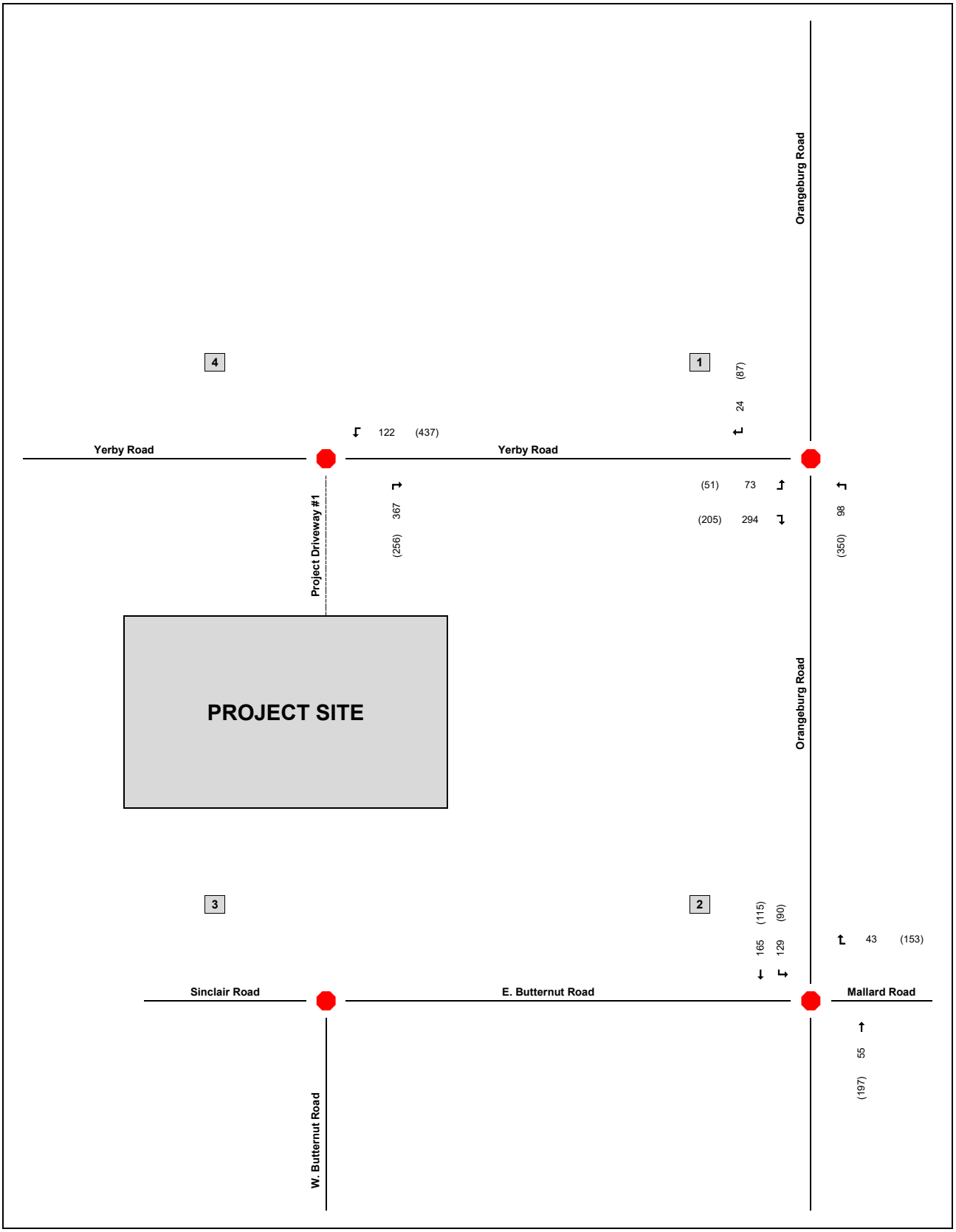


Exhibit 3.5 - 2029 Peak Hour Project Traffic Volumes

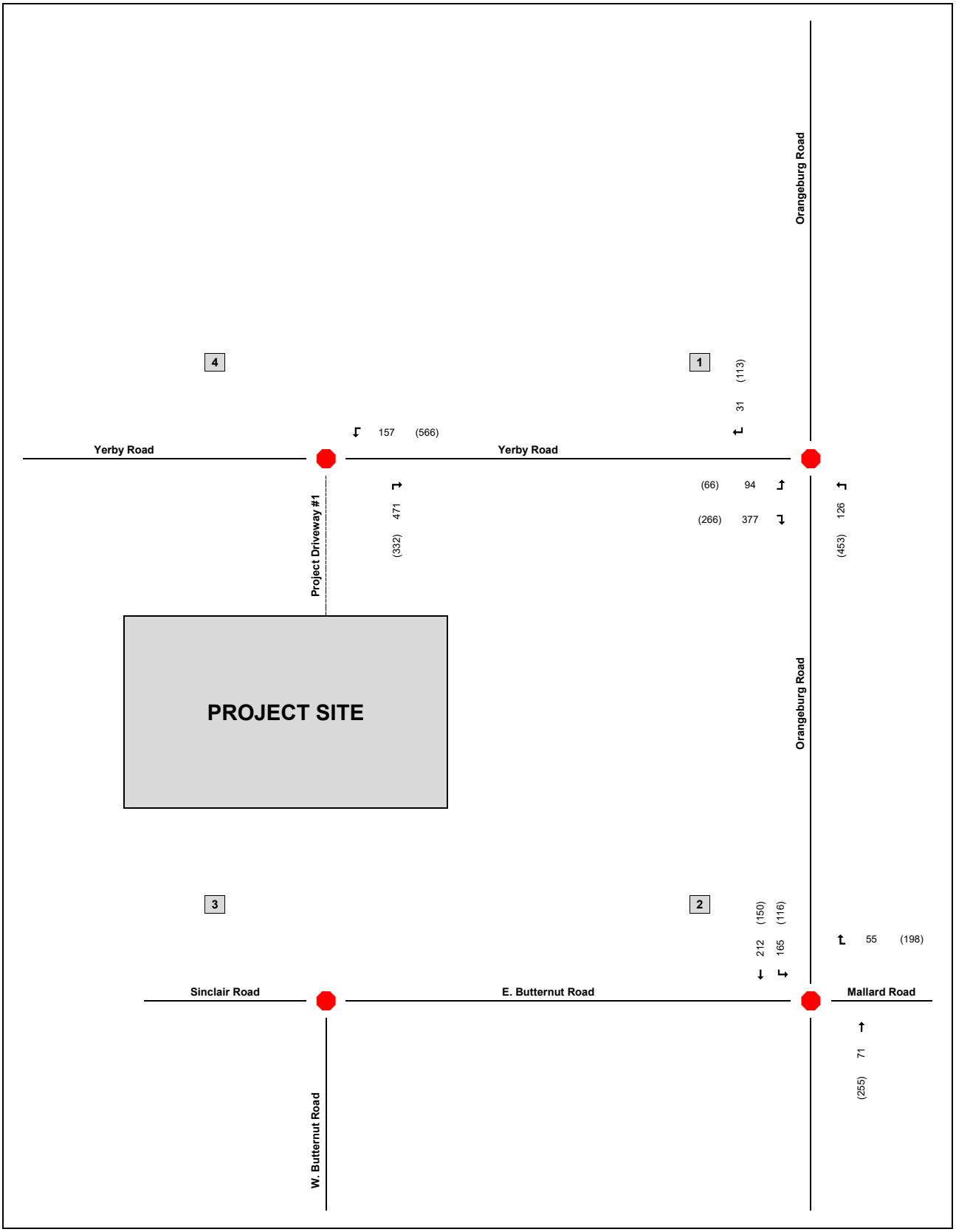


Exhibit 3.6 - 2030 Peak Hour Project Traffic Volumes

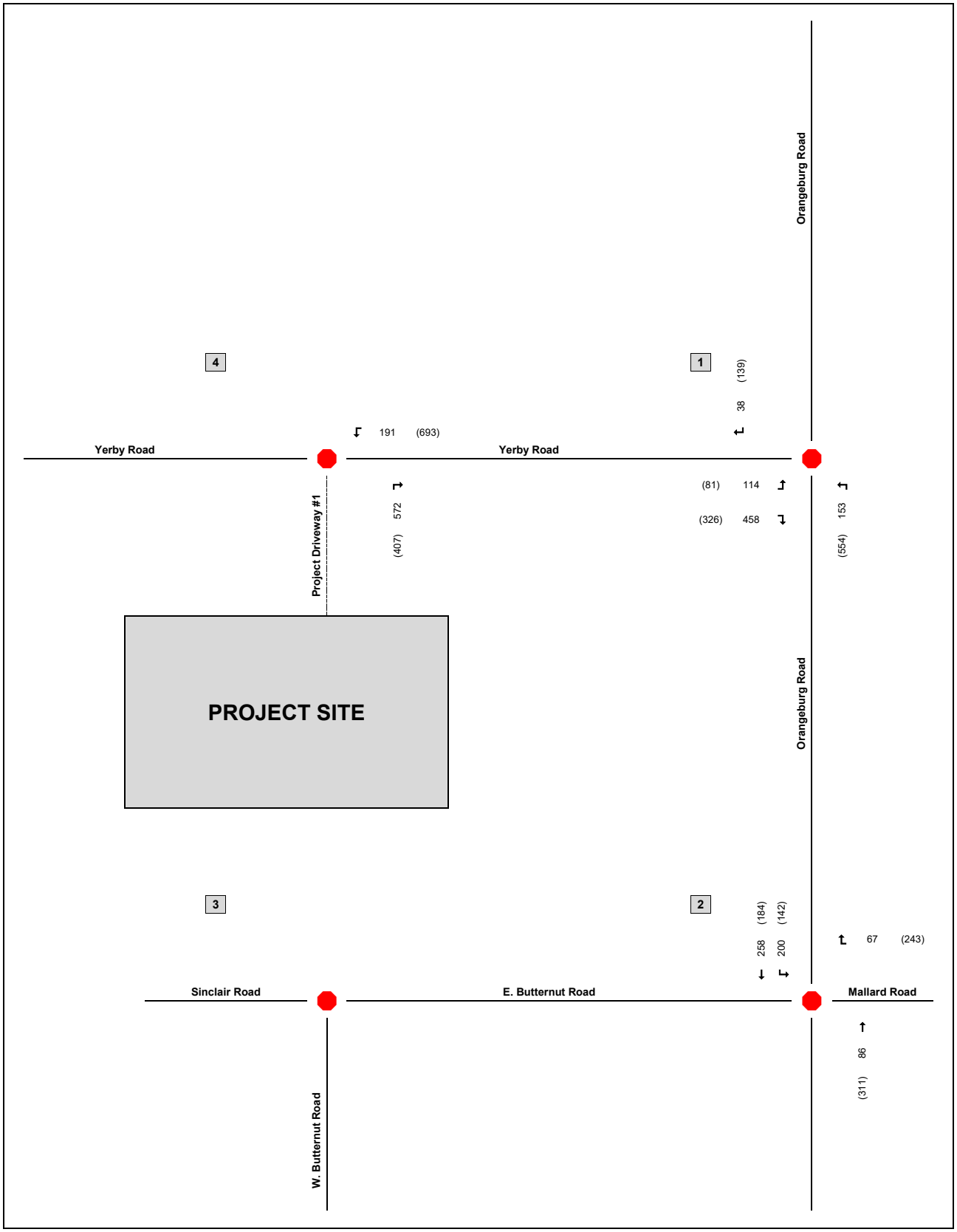


Exhibit 3.7 - 2031 Peak Hour Project Traffic Volumes

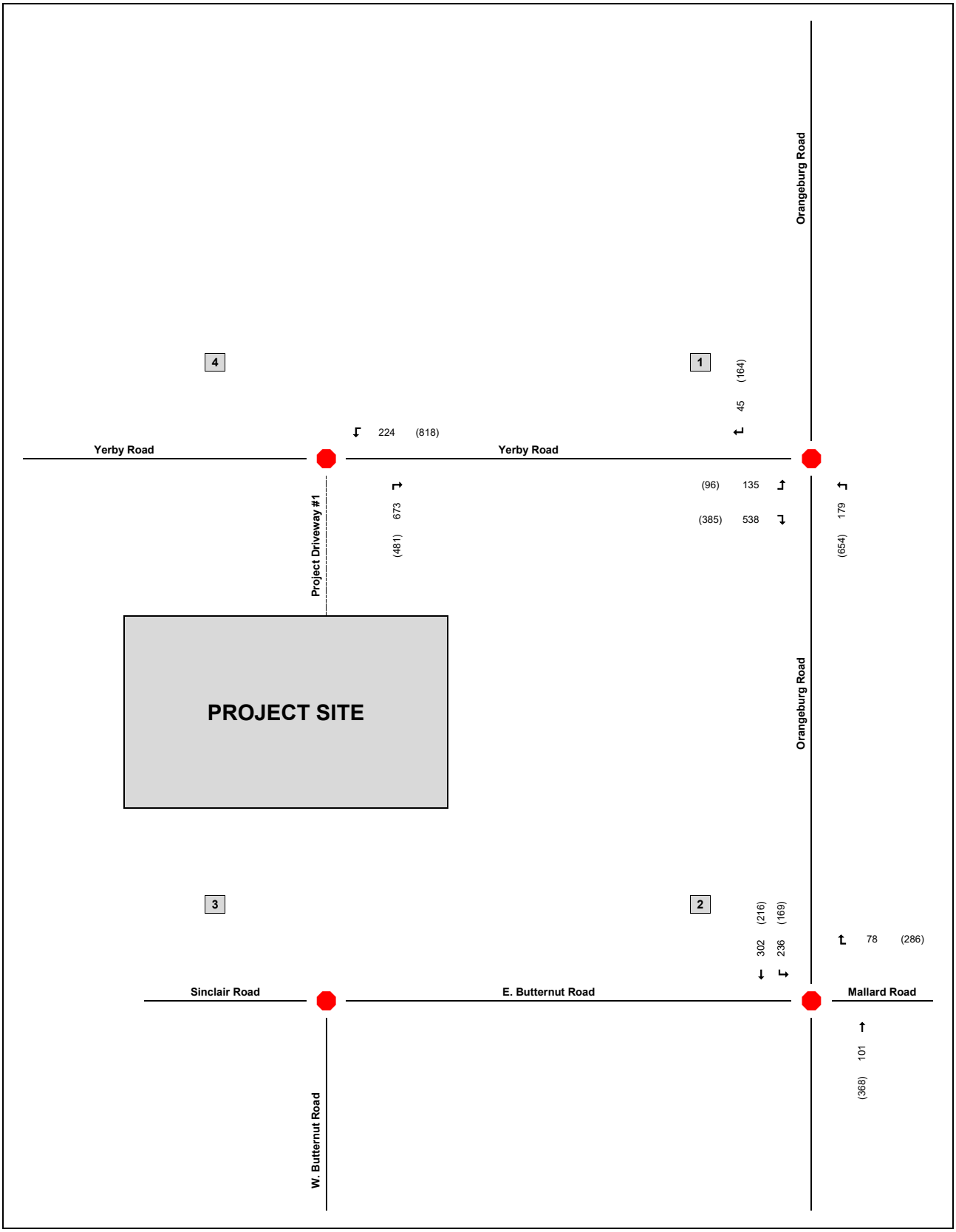
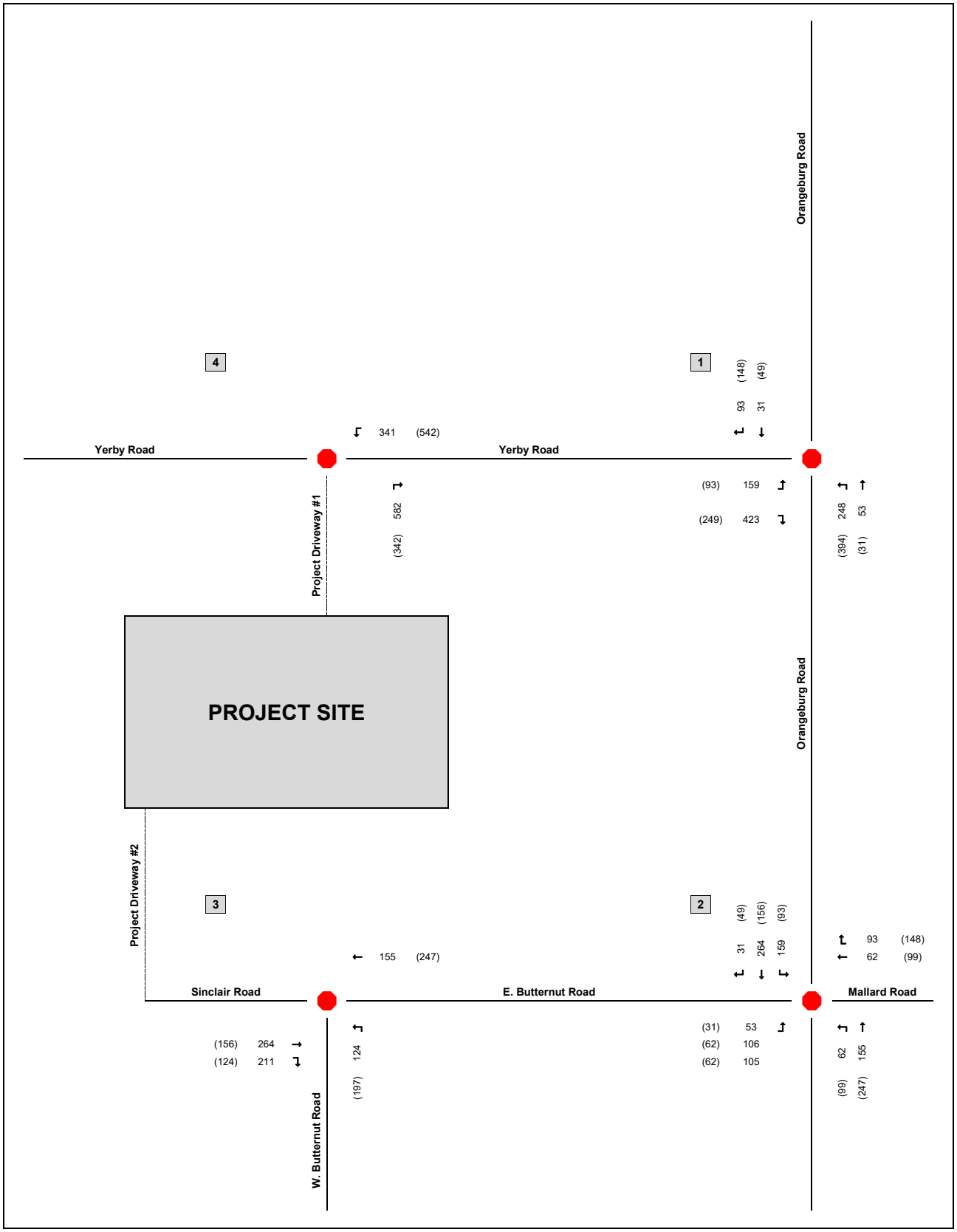


Exhibit 3.8 - 2032 Peak Hour Project Traffic Volumes



4.0 TRAFFIC VOLUME DEVELOPMENT

Existing traffic volumes were collected in September 2022 and were adjusted by an annual growth rate to 2023. These adjusted volumes were used in this analysis for future volume development. The future-year traffic volumes consisted of the 2023 traffic volumes adjusted by an annual growth rate and projected traffic volumes of the Yerby development.

4.1 EXISTING TRAFFIC VOLUMES

As previously discussed, vehicle turning movement counts were conducted in 2022 during the weekday AM peak period (from 7:00 AM to 9:00 AM) and the weekday PM peak period (from 4:00 PM to 6:00 PM) at the intersections of Orangeburg Road & Yerby Road, Orangeburg Road & Mallard Road, and E. Butternut Road & Sinclair Road for use in the traffic impact analysis. The existing traffic volume counts are illustrated in **Exhibit 4.1** and provided in **Appendix B**.

4.2 FUTURE TRAFFIC VOLUME PROJECTIONS

4.2.1 Historical Growth Rates

To develop an annual background growth rate for use in the analysis, historical count data along Orangeburg Road (SCDOT count station #213) and Mallard Road (SCDOT count station #241) were reviewed over the past ten years. It was determined that the roadway has experienced annual growth of approximately 4%. Therefore, this 4% annual growth rate was utilized to develop future No Build traffic volumes, which are illustrated in **Exhibits 4.2, 4.4, 4.6, 4.8, 4.10**, **4.12, 4.14,** and **4.16.**

The Yerby development project traffic volumes were then added to the No Build traffic volumes to develop future Build traffic volumes, which are illustrated in **Exhibits 4.3, 4.5, 4.7, 4.9, 4.11, 4.13, 4.15** and **4.17.** Intersection traffic volume development is documented in **Appendix C**.

4.2.2 Nearby Development (Vested) Traffic Volume Projections

In addition to the background growth rates, there ais a separate project currently vested near the intersection of Orangeburg Road & Mallard Road which was considered in the analysis.

The Carlile Property development consists of 151 multi-family homes and is located in the eastern quadrant of the Orangeburg Road & Mallard Road/E. Butternut Road intersection adjacent to the Mallard Lakes development. The traffic volumes from this adjacent project were added to the No Build and Build traffic volumes for consideration in the future traffic projections.

Exhibit 4.1 - 2023 Existing Peak Hour Traffic Volumes

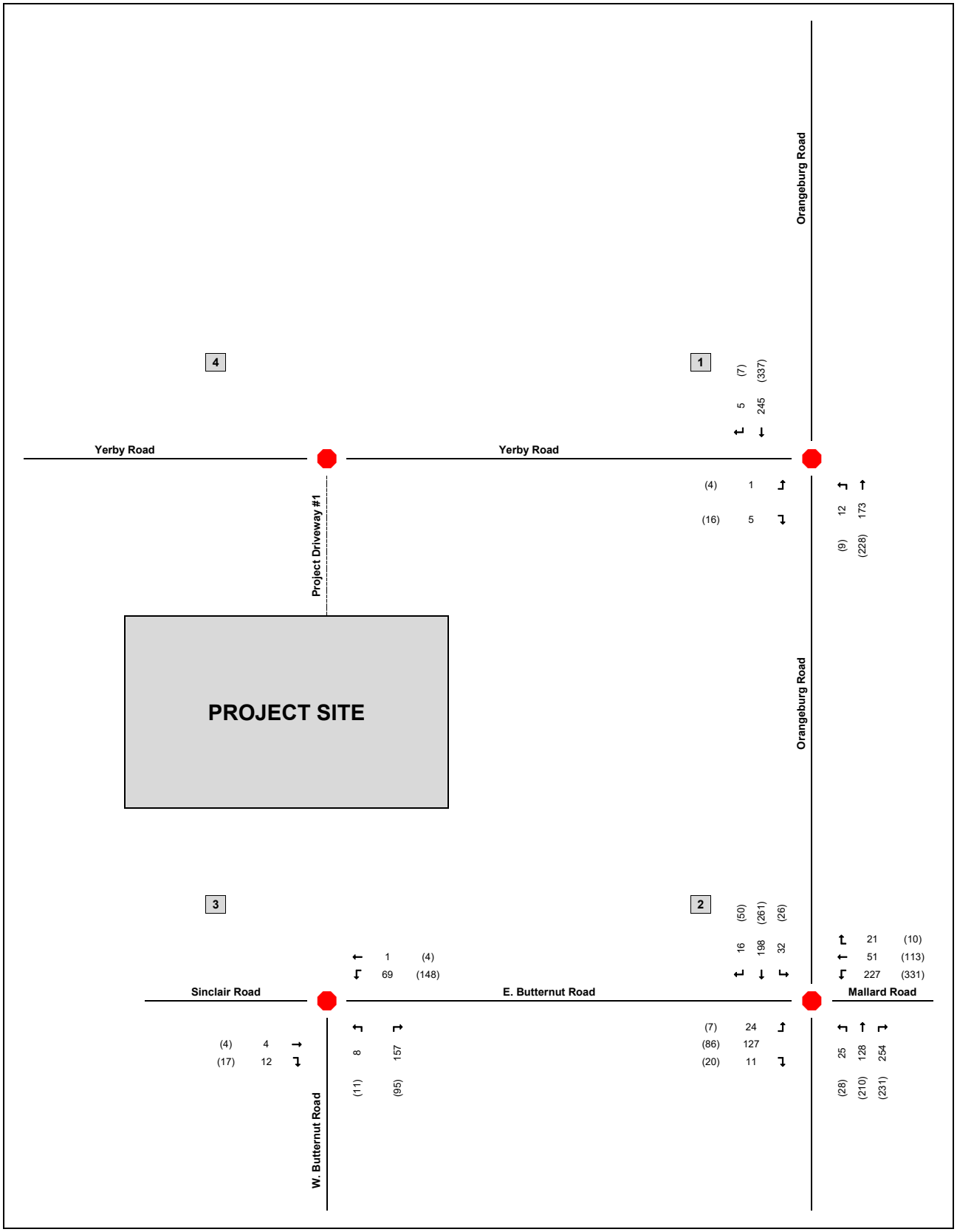


Exhibit 4.2 - 2025 No Build Peak Hour Traffic Volumes

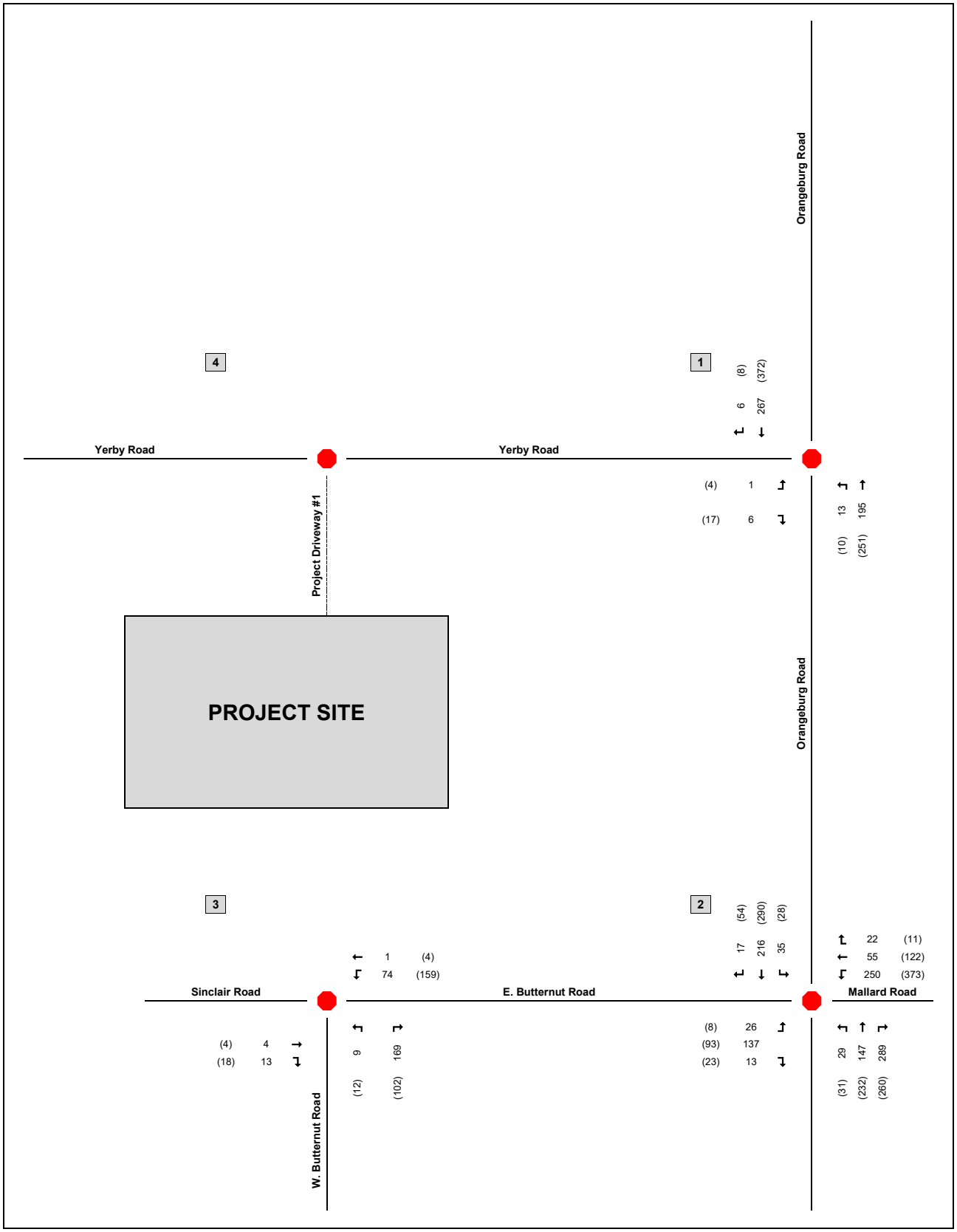


Exhibit 4.3 - 2025 Build Peak Hour Traffic Volumes

Traffic Volumes Legend
000 - AM Peak Hour Volumes
(000) - PM Peak Hour Volumes
TWSC

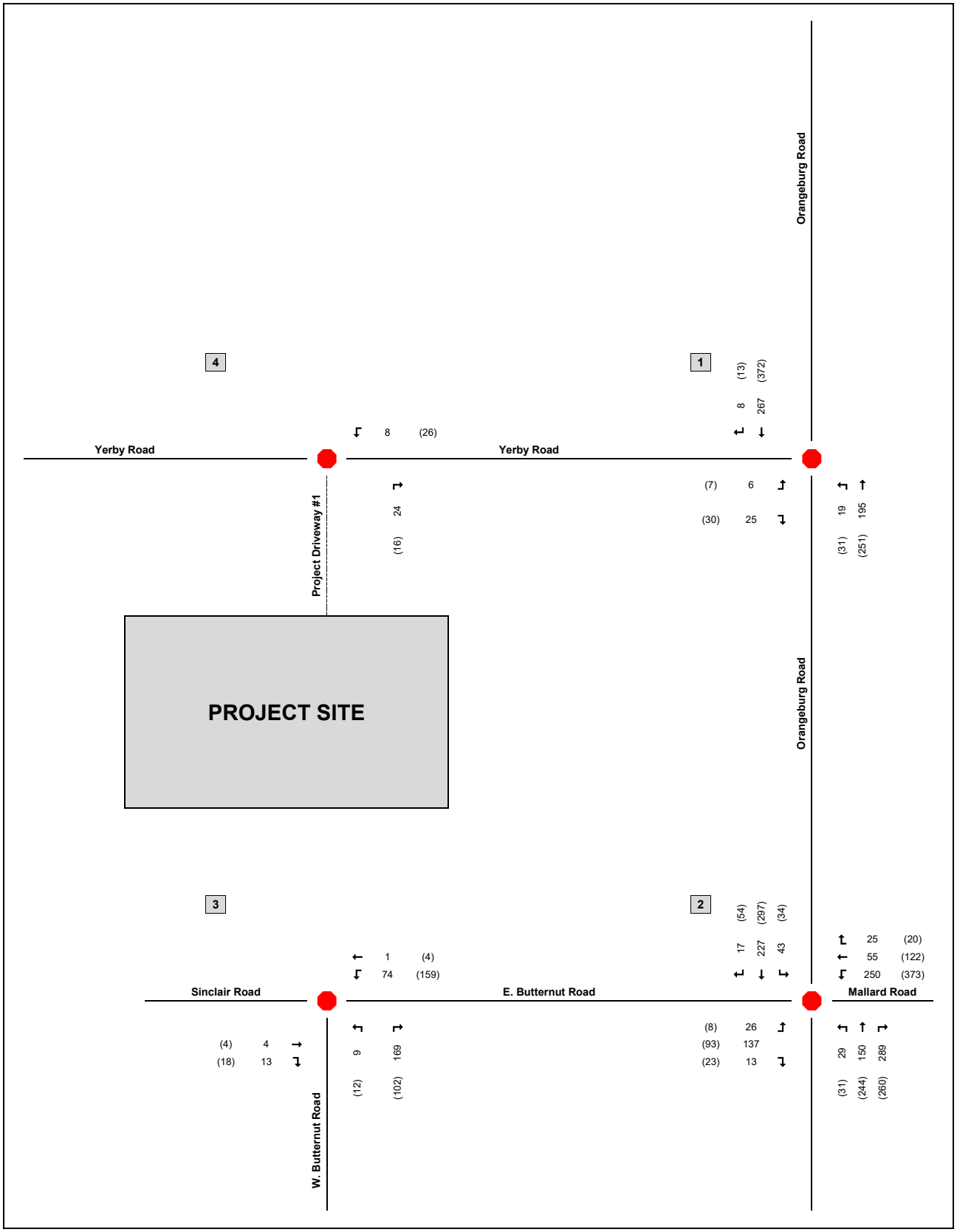


Exhibit 4.4 - 2026 No Build Peak Hour Traffic Volumes

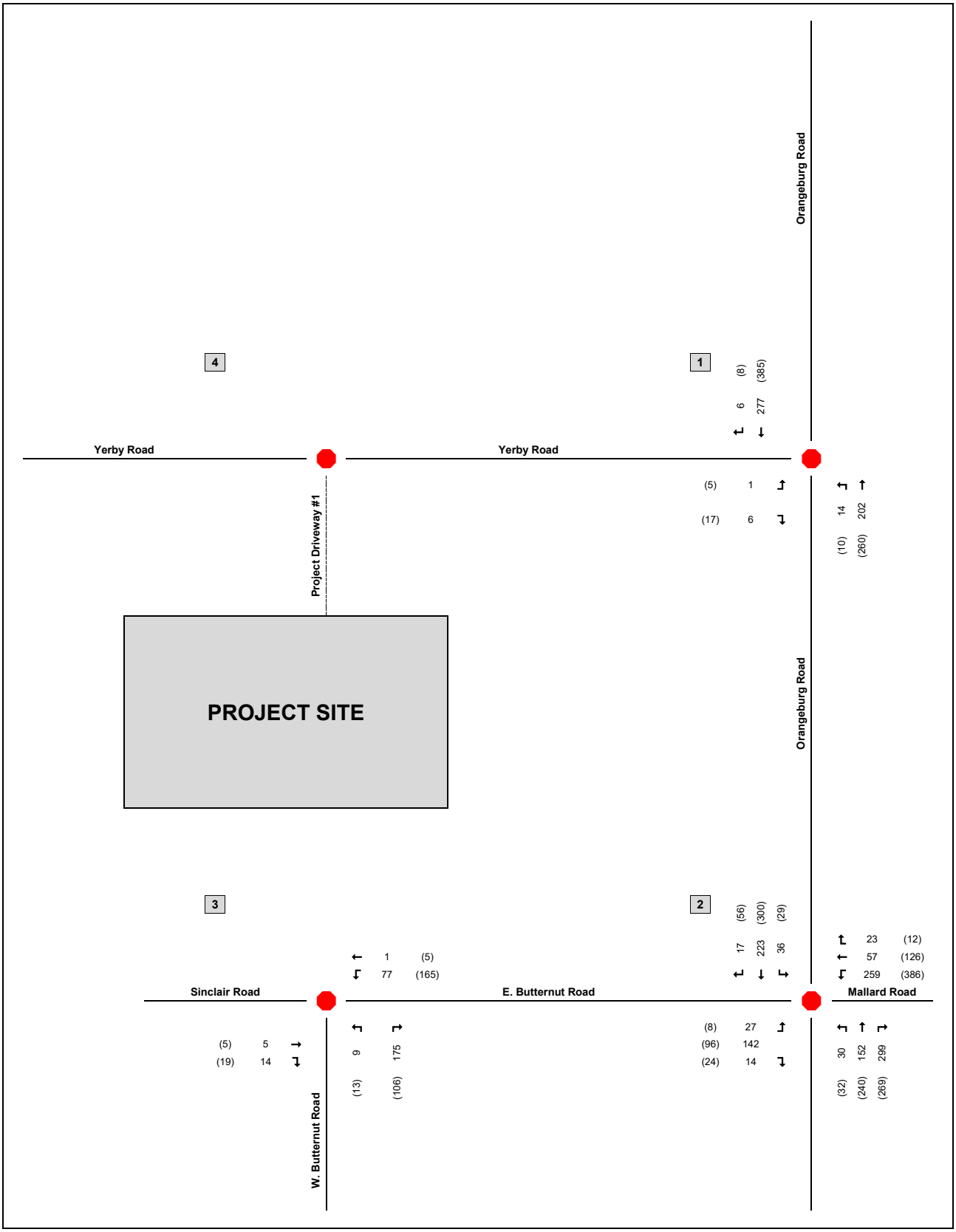


Exhibit 4.5 - 2026 Build Peak Hour Traffic Volumes

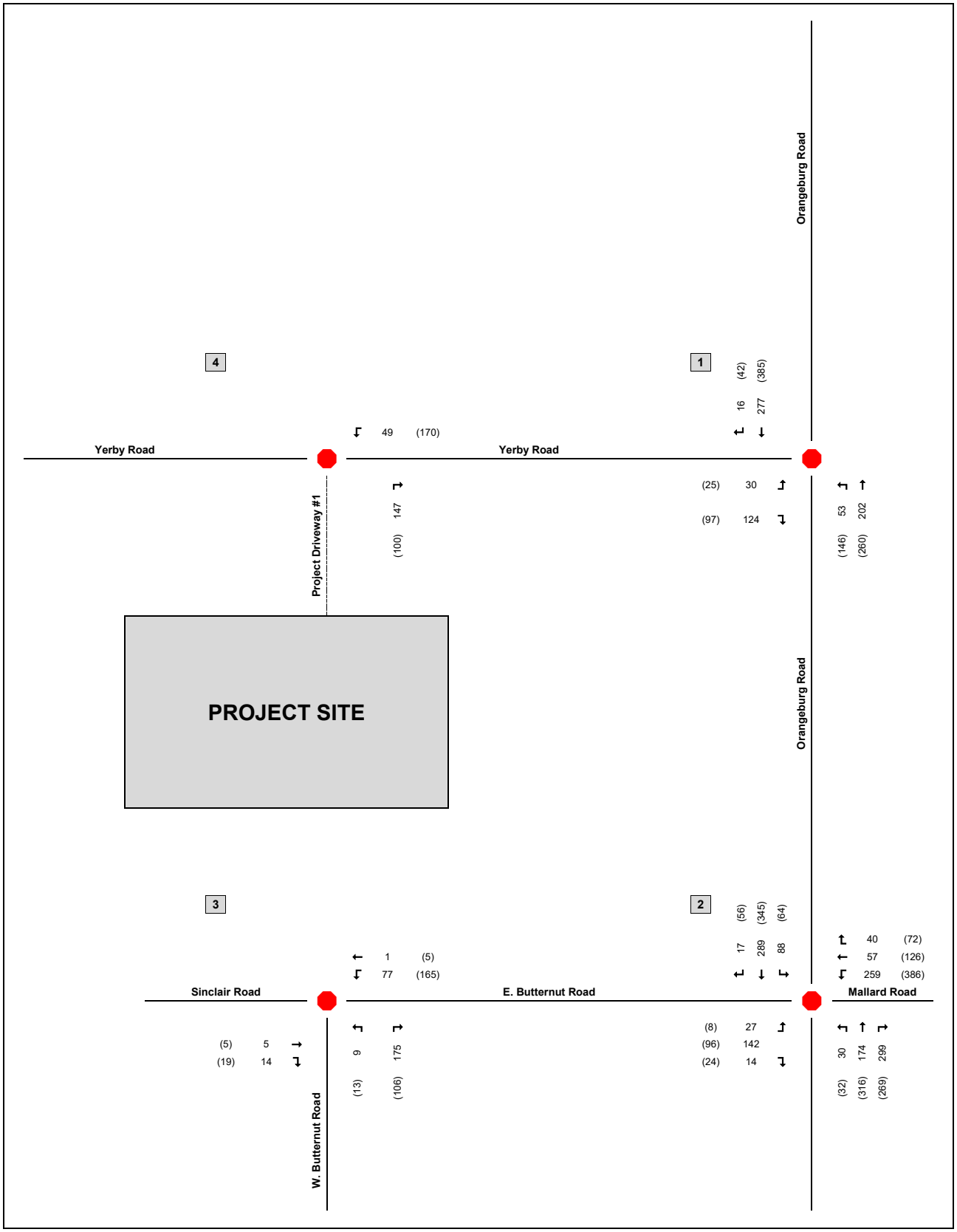


Exhibit 4.6 - 2027 No Build Peak Hour Traffic Volumes

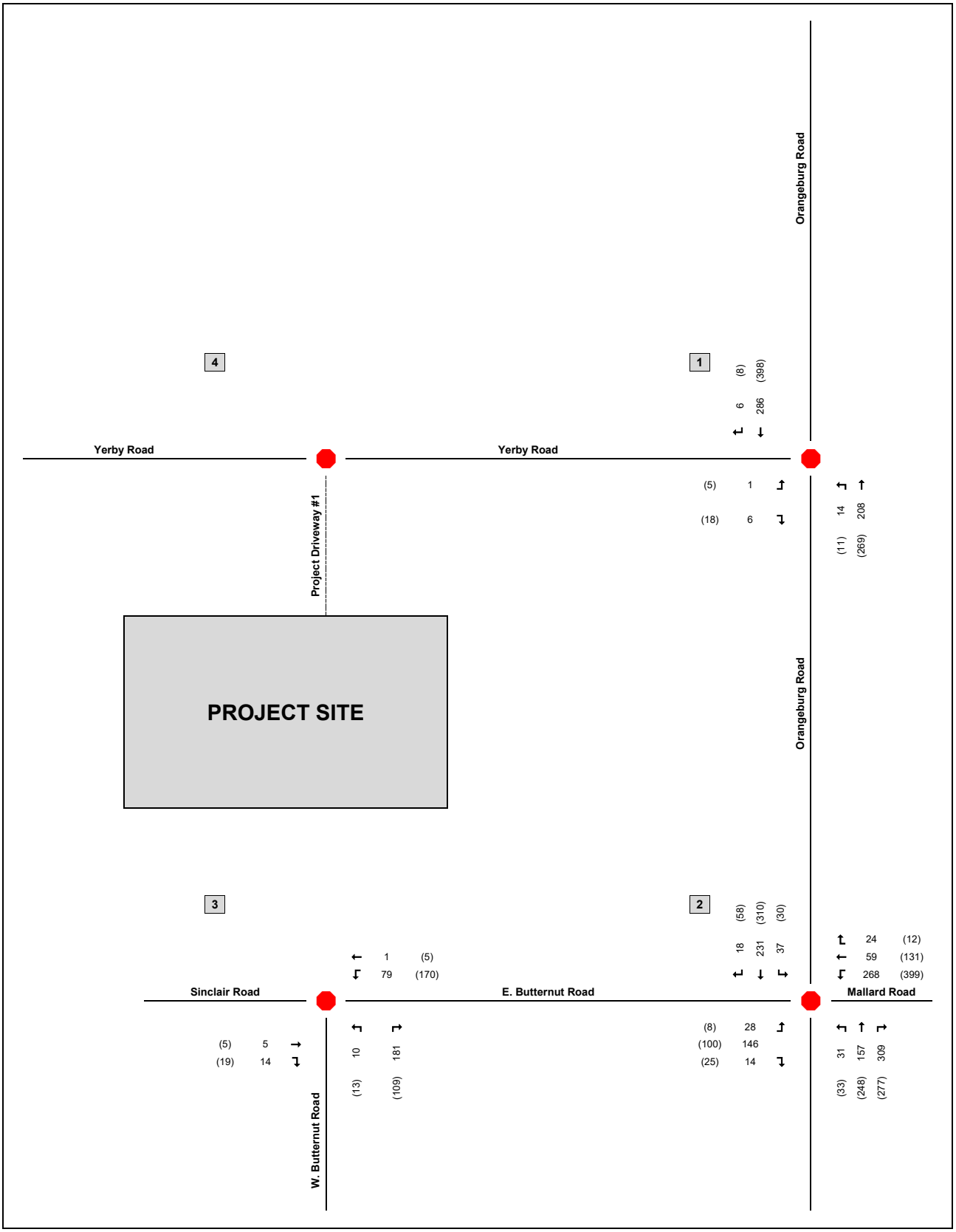


Exhibit 4.7 - 2027 Build Peak Hour Traffic Volumes

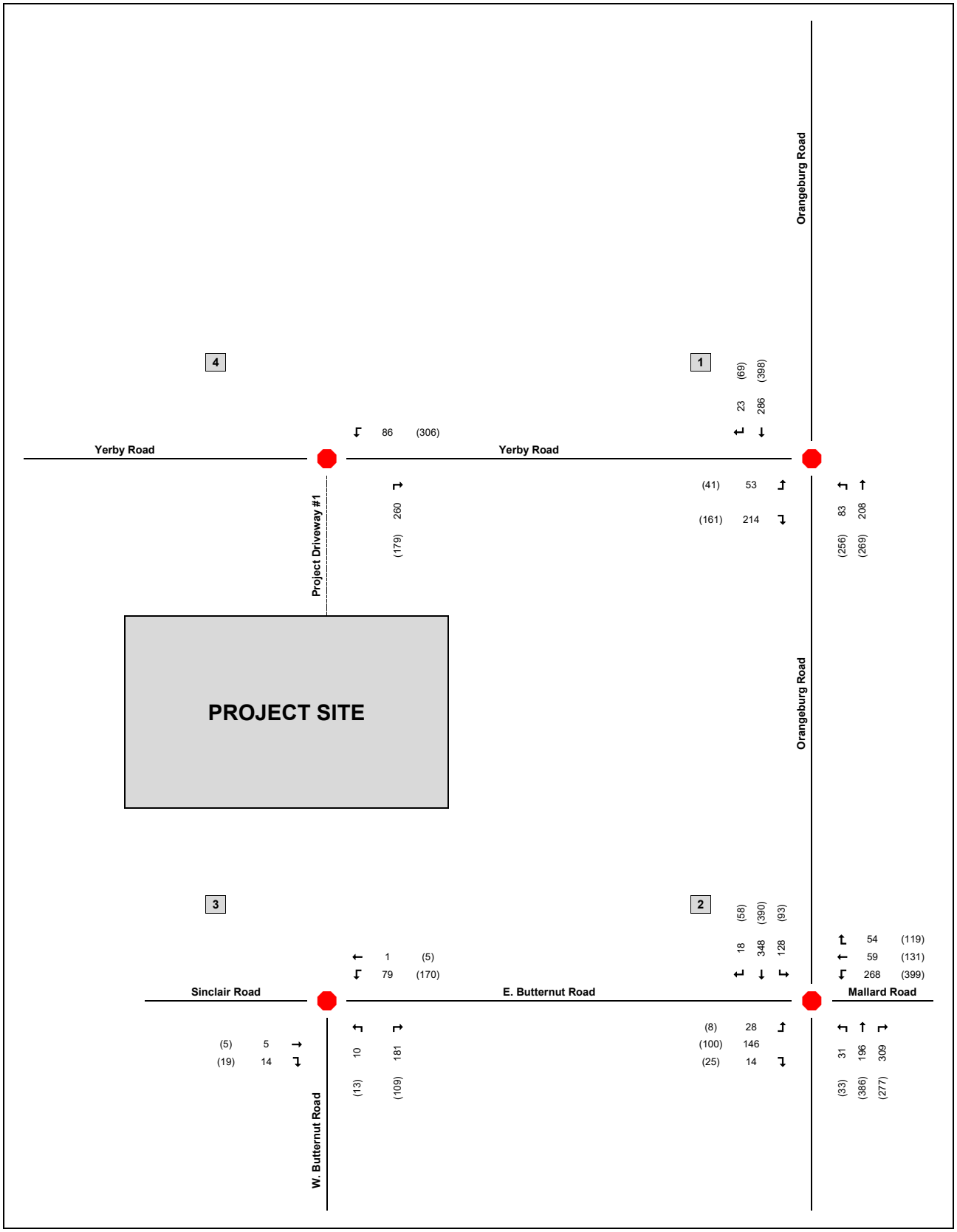


Exhibit 4.8 - 2028 No Build Peak Hour Traffic Volumes

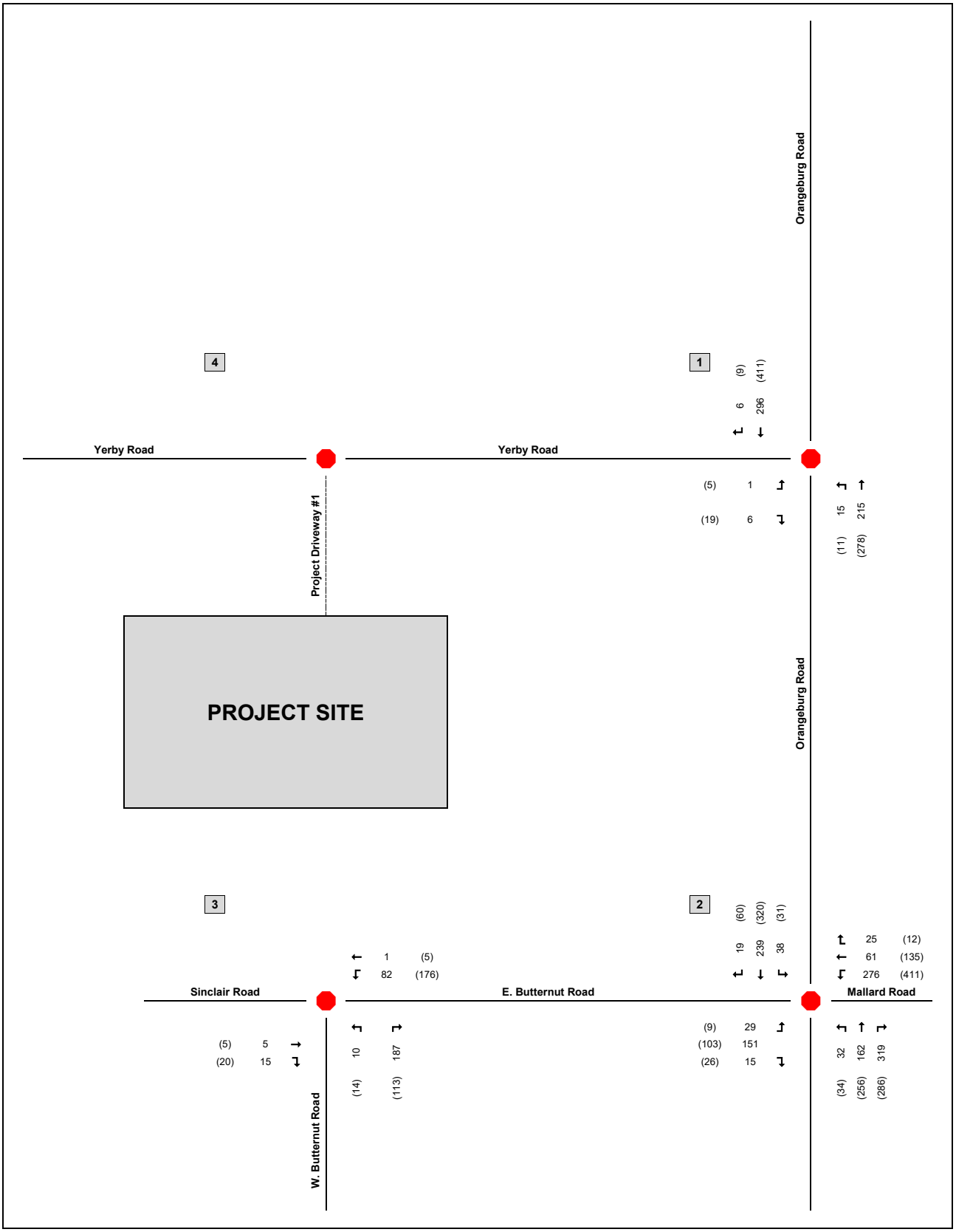


Exhibit 4.9 - 2028 Build Peak Hour Traffic Volumes

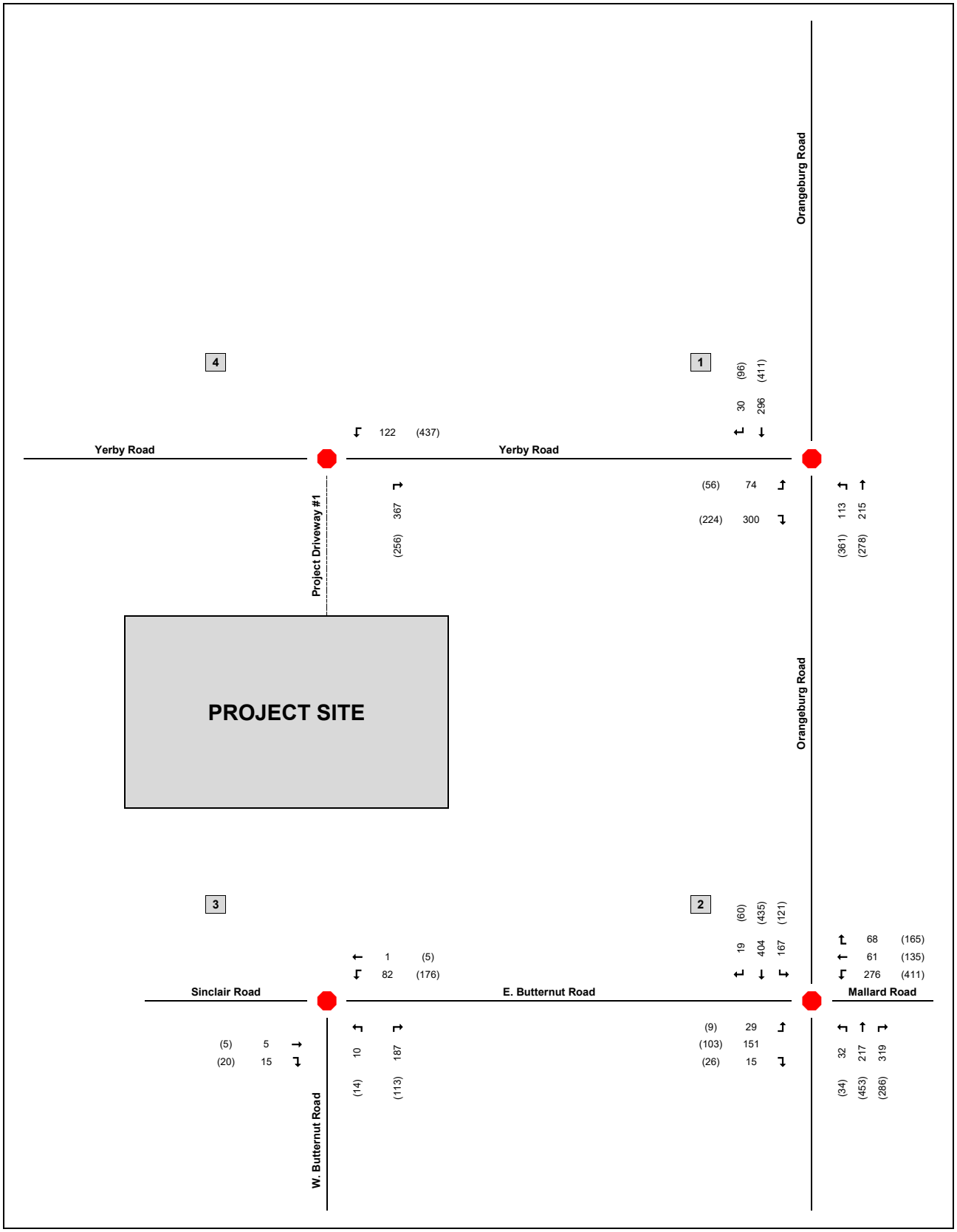


Exhibit 4.10 - 2029 No Build Peak Hour Traffic Volumes

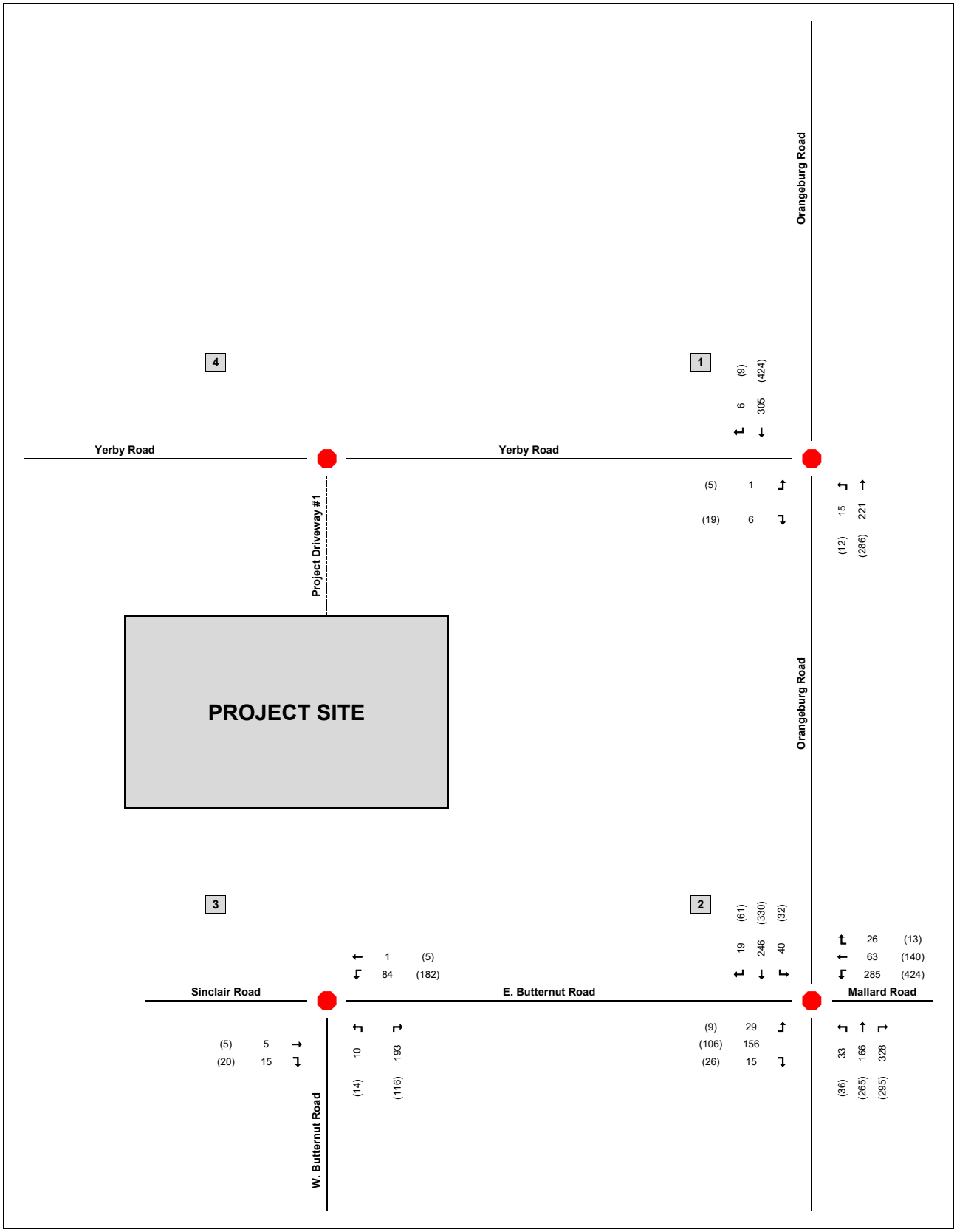


Exhibit 4.11 - 2029 Build Peak Hour Traffic Volumes

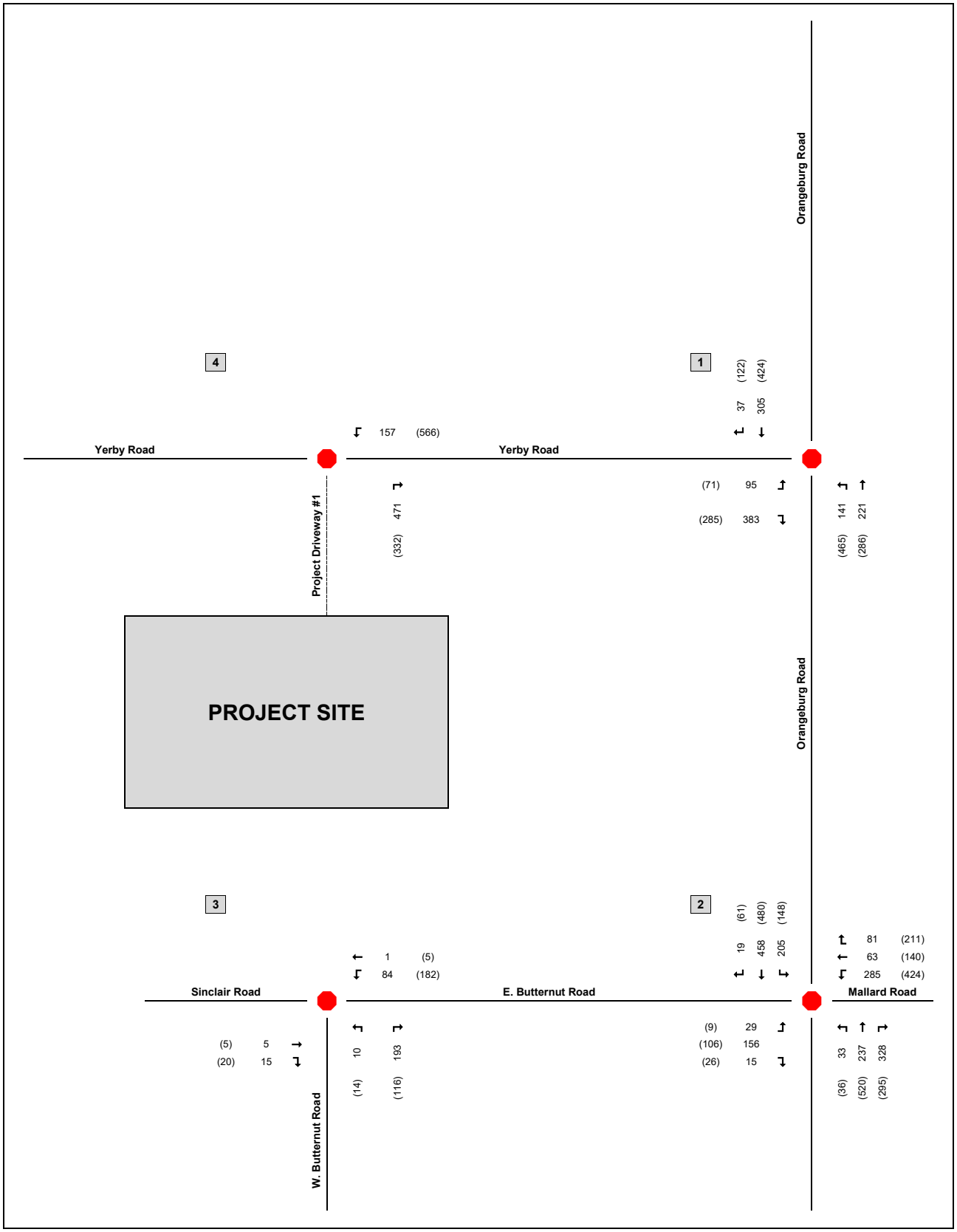


Exhibit 4.12 - 2030 No Build Peak Hour Traffic Volumes

Traffic Volumes Legend
000 - AM Peak Hour Volumes
(000) - PM Peak Hour Volumes
TWSC

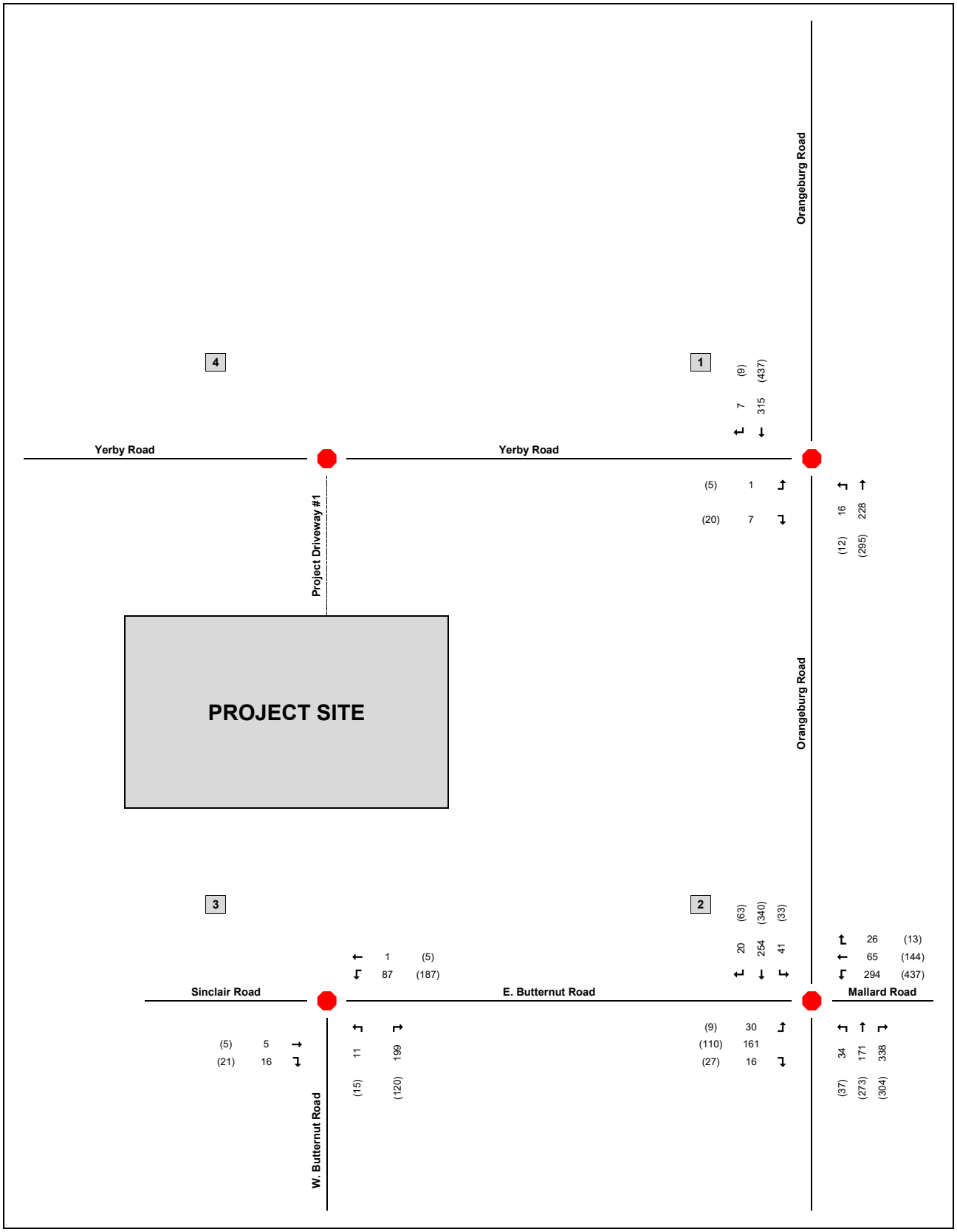


Exhibit 4.13 - 2030 Build Peak Hour Traffic Volumes

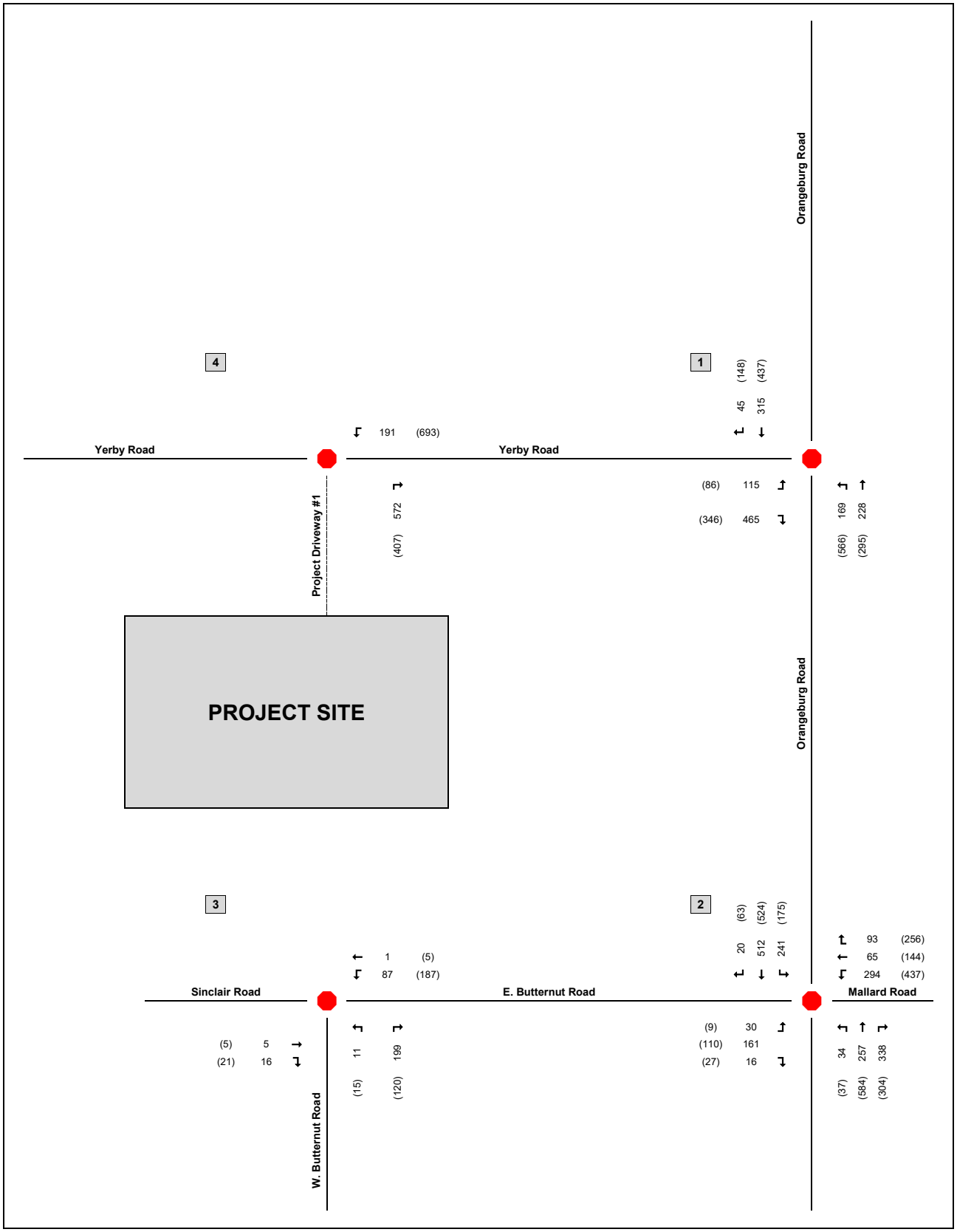


Exhibit 4.14 - 2031 No Build Peak Hour Traffic Volumes

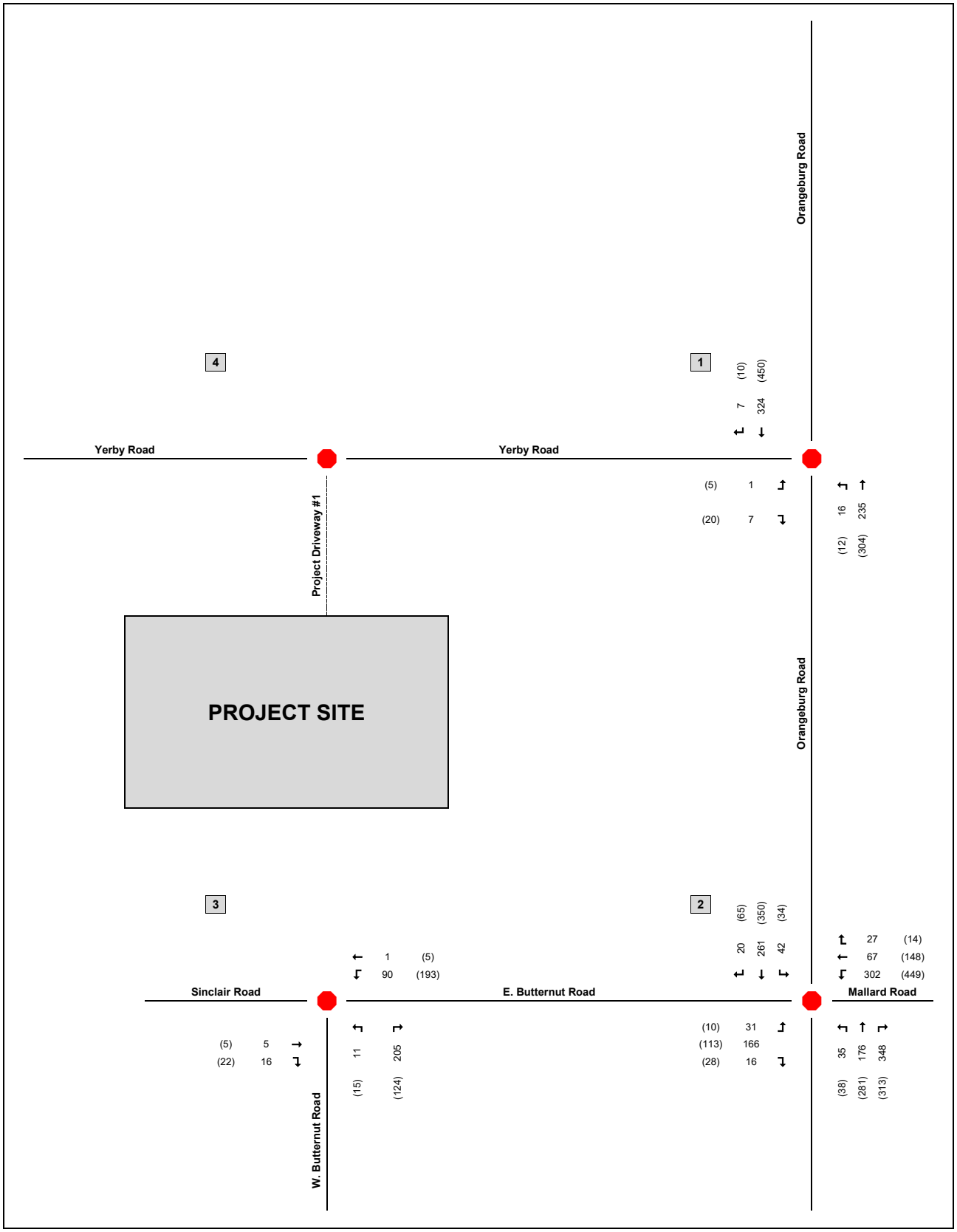


Exhibit 4.15 - 2031 Build Peak Hour Traffic Volumes

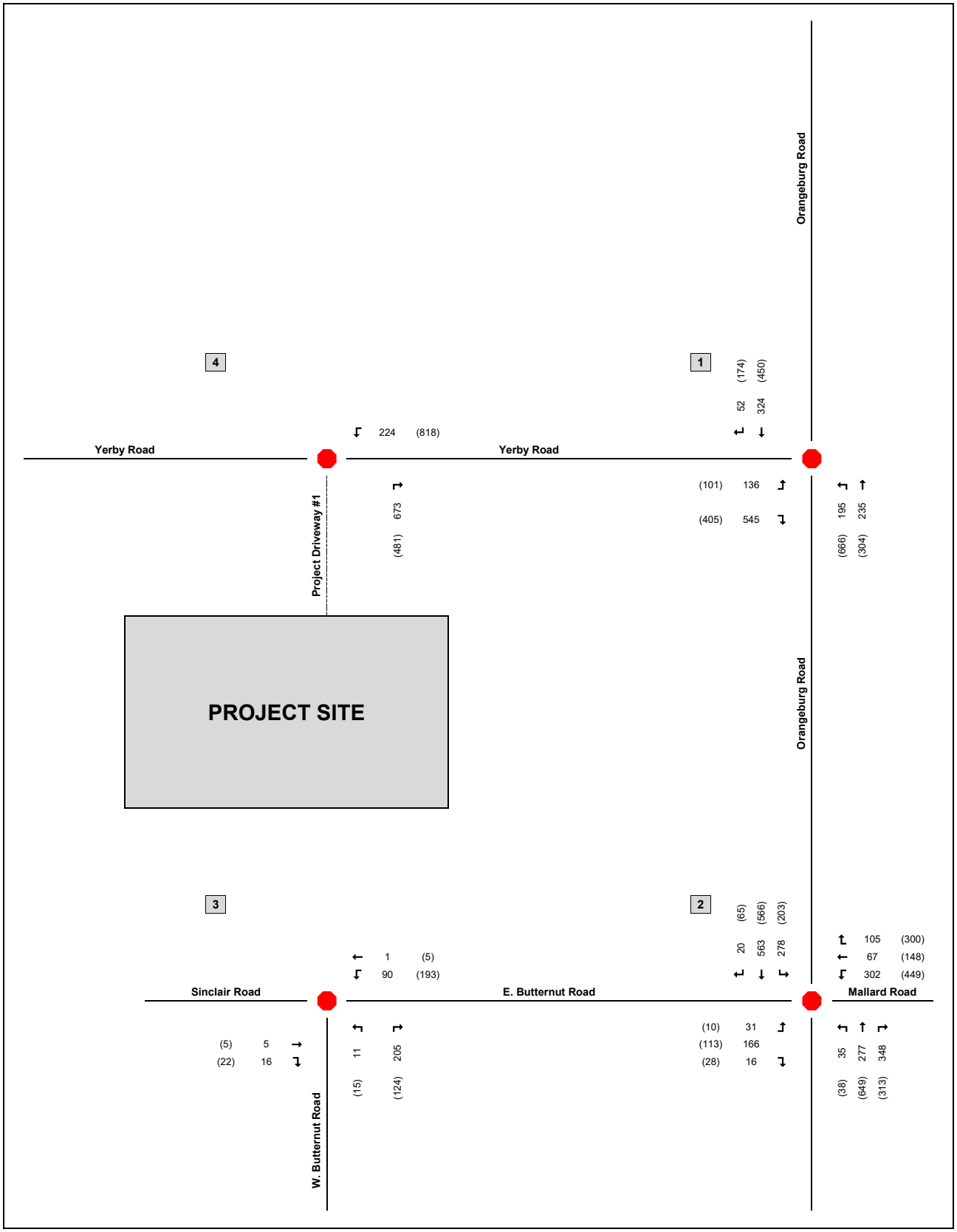


Exhibit 4.16 - 2032 No Build Peak Hour Traffic Volumes

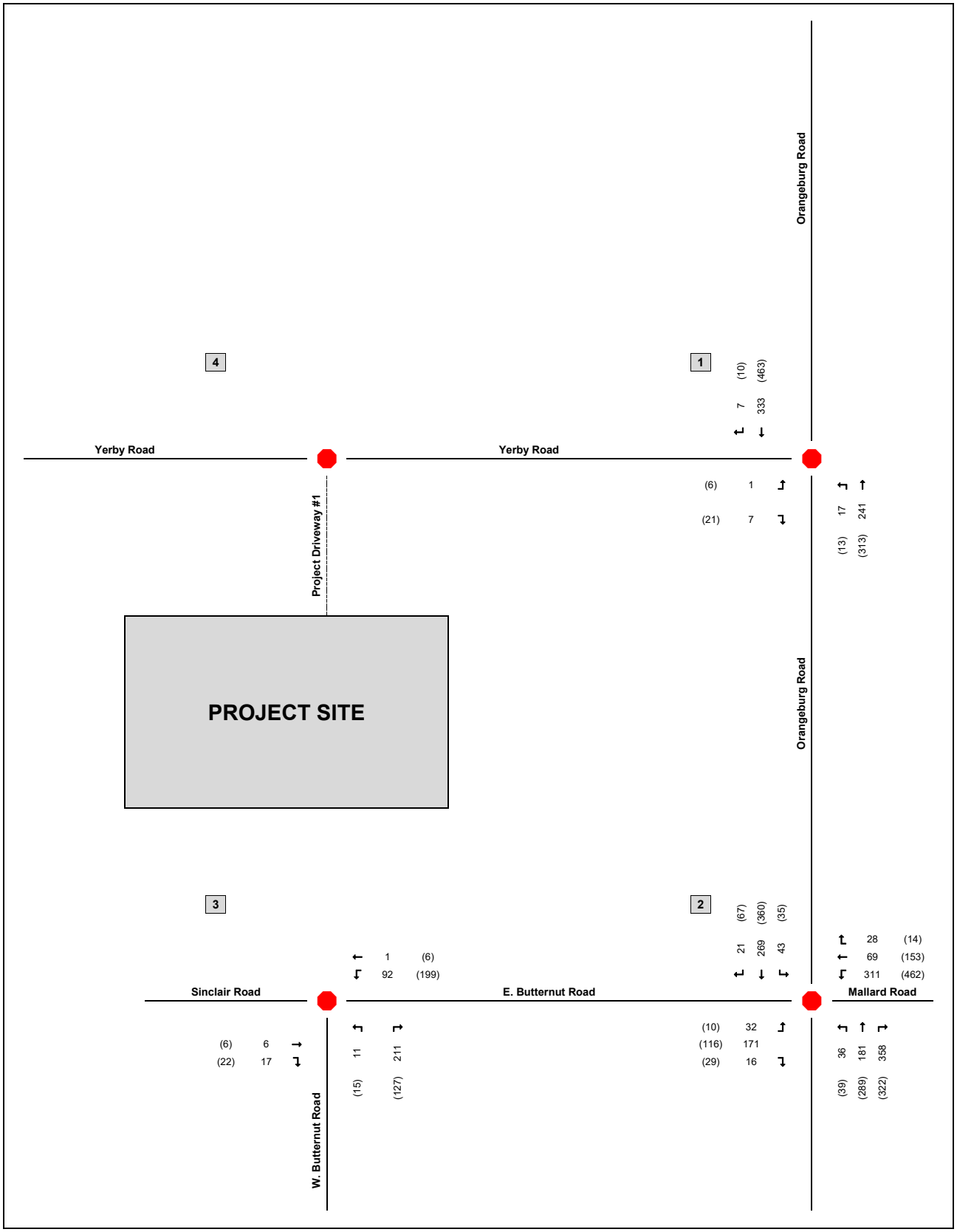
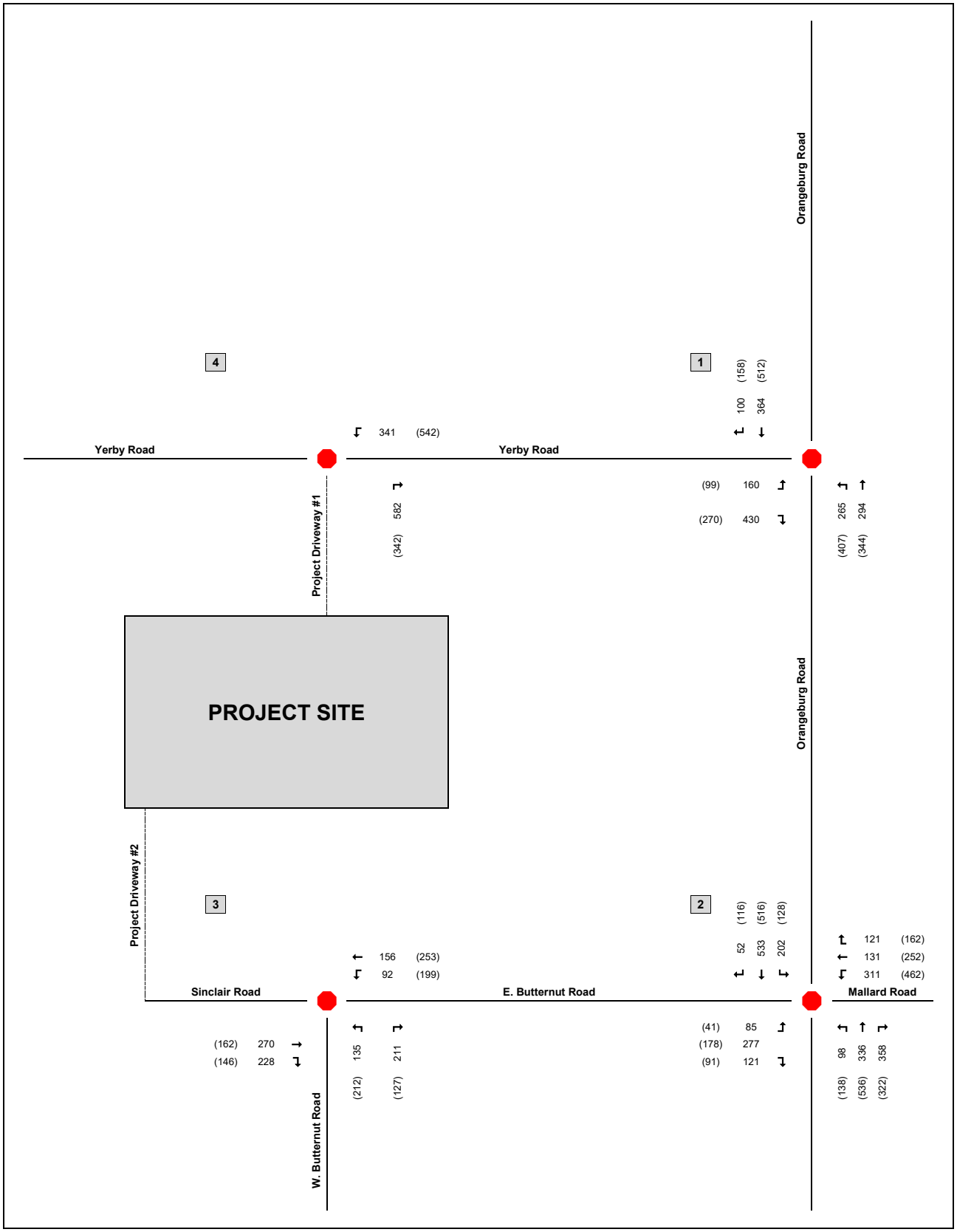


Exhibit 4.17 - 2032 Build Peak Hour Traffic Volumes



5.0 TRAFFIC IMPACT ANALYSIS

Using the existing and projected traffic volumes previously discussed, intersection analyses were conducted for the study and project driveway intersections considering 2022 Existing conditions and the future No Build and Build conditions. This analysis was conducted using the Transportation Research Board's *Highway Capacity Manual (HCM) 6th Edition* methodologies of the *Synchro*, Version 11 software for intersection analysis.

Intersection level of service (LOS) grades range from LOS A to LOS F, which are directly related to the level of control delay at the intersection and characterize the operational conditions of the intersection traffic flow. LOS A operations typically represent ideal, free-flow conditions where vehicles experience little to no delays, and LOS F operations typically represent poor, forced-flow (bumper-to-bumper) conditions with high vehicular delays, and are generally considered undesirable. **Table 5.1** summarizes the *HCM 6th Edition* control delay thresholds associated with each LOS grade for unsignalized intersections, signalized intersections, and roundabouts.

Table 5.1 – *HCM 6th Edition* LOS Criteria for Unsignalized & Signalized Intersections

Unsignalized Intersections	
LOS	**Control Delay Per Vehicle (seconds)**
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Signalized Intersections	
LOS	**Control Delay Per Vehicle (seconds)**
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

5.1 INTERSECTION LOS ANALYSIS

As part of the intersection analysis, SCDOT's default *Synchro* parameters were utilized. The 2022 traffic counts peak hour factors (PHF) were utilized in the analysis of existing peak season and future conditions with a minimum PHF of 0.90 and maximum PHF of 0.95 being considered for the future-year conditions. Existing heavy vehicle percentages, as previously discussed, were utilized in the analysis, with a minimum percentage of 2% considered. The existing lane geometry was utilized for the analysis of existing conditions. The No Build Conditions were analyzed with the existing lane geometry and with installation of an exclusive northbound right turn lane on Orangeburg Road in Phase 3 to be install by nearby Carlile development. The Build Conditions were analyzed both with existing lane geometry and with any proposed improvements resulting from this impact analysis (including any proposed exclusive turn lanes). The 2032 Build Conditions analysis also utilized a connecting road through the project site that connects Yerby Road to the intersection of E. Butternut Road & Sinclair Road.

Using the Synchro Intersection software, intersection analyses were conducted for 2023 Existing, No Build, and Build conditions for the weekday AM peak hour and the weekday PM peak hour time periods. The results of the intersection analyses for existing and future year conditions for the weekday AM and PM peak hour time periods are summarized in **Tables 5.2** to **5.4**. The results are shown for the ultimate build phase and those intermediate phases in which improvements ae recommended. For the unsignalized intersections, the LOS and delay results are shown for the worst-case minor-street approaches only, as based upon the *HCM 6th Edition* methodologies for two-way stop-controlled intersections.

Table 5.2 – Intersection Analysis Results – Orangeburg Road & Yerby Road

Phase	Scenario	Intersection Control	LOS/Delay		LOS/Delay with improvements		Notes
			AM	PM	AM	PM	
-	2023 Existing	Two-Way Stop	B/10.1 (EB)	B/11.2 (EB)	-	-	-
2	2026 No Build	Two-Way Stop	B/10.4 (EB)	B/11.9 (EB)	-	-	-
	2026 Build	Two-Way Stop	B/12.9 (EB)	C/17.1 (EB)	B/11.9 (EB)	B/14.2 (EB)	Install NBL on Orangeburg Road.
3	2027 No Build	Two-Way Stop	B/10.5 (EB)	B/12.1 (EB)	-	-	-
	2027 Build	Two-Way Stop	C/17.2 (EB)	E/40.3 (EB)	B/14.4 (EB)	C/17.2 (EB)	Install SBR on Orangeburg Road.
5	2029 No Build	Two-Way Stop	B/10.6 (EB)	B/12.4 (EB)	-	-	-
	2029 Build	Two-Way Stop	F/79.0 (EB)	F* (EB)	C/17.2 (EB)	C/22.2 (EB)	Install EBR on Yerby Road.
8	2032 No Build	Two-Way Stop	B/10.9 (EB)	B/13.2 (EB)	-	-	-
	2032 Build	Two-Way Stop	F* (EB)	F* (EB)	D/26.0 (EB)	D/29.4 (EB)	No additional recommendations.

Note: LOS/Delay is shown for the worst-case minor-street approach of the two-way stop-controlled intersections.
**Delay exceeds 300 seconds*

The stop-controlled intersection of Orangeburg Road & Yerby Road is projected to operate at an acceptable LOS with or without the Yerby development until the year 2027. However, based on the turning volumes it is recommended to install a northbound left turn lane of 530 feet of total length, with 350 feet of storage and a taper of 180 feet along Orangeburg Road at the intersection with Yerby Road in Phase 2. In Phase 3, it is recommended to install a southbound right turn lane of 280 feet of total length, 100 feet of storage and a taper of 180 feet along Orangeburg Road. In Phase 5, it is recommended to install an eastbound right turn lane of 530 feet of total length, with 350 feet of storage and a taper of 180 feet along Yerby Road at the intersection with Orangeburg Road. With these recommended turn lane improvements, the intersection is anticipated to operate at an acceptable level of service through the final phase of the Yerby Development. Along with the turn lanes improvements, it is recommended to widen Yerby Road to 12-foot lanes and to repave the roadway surface in Phase 1 when the project driveway is added. Since this intersection meets the SCDOT spacing requirement of 1,320 feet for a minor arterial, this intersection could be evaluated for signal warrants, but it is not likely to meet the 8-hour warrant.

Table 5.3 – Intersection Analysis Results – Orangeburg Road & Mallard Road/E. Butternut Road

Phase	Scenario	Intersection Control	LOS/Delay		LOS/Delay with improvements		Notes
			AM	PM	AM	PM	
	2022 Existing	Four-Way Stop	C/18.3	E/43.1	-	-	-
1	2025 No Build	Four-Way Stop	C/18.2	F/52.2	-	-	-
	2025 Build	Four-Way Stop	C/19.1	F/56.8	C/19.5	F/52.3	Install SBR turn lane on Orangeburg Road.
2	2026 No Build	Four-Way Stop	C/19.9	F/60.7	-	-	-
	2026 Build	Four-Way Stop	E/35.2	F/99.4	E/37.1	F/88.2	Install WBR turn lane on Mallard Road.
8	2032 No Build	Four-Way Stop	E/46.3	F/127.5	-	-	-
	2032 Build	Four-Way Stop	F*	F*	F/276.5	F*	No additional improvements

**Delay exceeds 300 seconds*

The stop-controlled intersection of Orangeburg Road & Mallard Road/E. Butternut Road is projected to operate at an undesirable LOS with or without the Yerby development in the future year conditions.

It is recommended that an exclusive southbound right turn lane (380 feet total length, 200 feet of storage with a 180-foot taper) be installed in Phase 1 – 2025 at the intersection of Orangeburg Road & Mallard Road/E. Butternut Road. It is recommended that a westbound right turn lane (380 feet total length, 200 feet of storage with a 180-foot taper) be installed in Phase 2 - 2026 at the intersection of Orangeburg Road & Mallard Road/E. Butternut Road.

Table 5.4 – Intersection Analysis Results – E. Butternut Road & Sinclair Road

Phase	Scenario	Intersection Control	LOS/Delay		LOS/Delay with improvements		Notes
			AM	PM	AM	PM	
1	2022 Existing	Two-Way Stop	A/9.1 (EB)	A/9.6 (EB)	-	-	
8	2032 No Build	Two-Way Stop	A/9.4 (EB)	B/10.0 (EB)	-	-	
	2032 Build	Two-Way Stop	F/102.6 (EB)	F/119.5 (EB)	C/19.1 (NB)	F/89.4 (NB)	Realigned intersection so that NB W. Butternut Rd is the stop-controlled approach. Install NBR turn lane.
	2032 Build	Roundabout	F/102.6 (EB)	F/119.5 (EB)	A/9.5	A/10.0	Reconfigured intersection as a single lane roundabout

Note: LOS/Delay is shown for the worst-case minor-street approach of the two-way stop-controlled intersections.

The stop-controlled intersection of E. Butternut Road & Sinclair Road is projected to operate at an acceptable LOS with or without the Yerby development until 2032. In 2032, the completion of the final phase of the Yerby Development is anticipated to lead to undesirable LOS in the AM and PM peak hours at the intersection if no improvements are implemented. This is due in part to the conservative nature of HCM and is not uncommon for two-way stop-controlled intersections. However, in an effort to bring the build LOS back to the no-build conditions it is recommended that one of the following improvements be implemented in Phase 8 – 2032 to the intersection of E. Butternut Road & Sinclair Road:

- the intersection be re-aligned so that the northbound approach of W. Butternut Road is stop-controlled while the eastbound approach of Sinclair Road and the westbound approach of E. Butternut Road are free-flowing approaches; or
- the intersection be reconfigured as a single lane roundabout.

It is recommended that an exclusive northbound left turn lane (280 feet total length, 100 feet of storage with a 180-foot taper) be installed in Phase 8 – 2032.

As shown in **Table 5.4** both intersection recommendations will improve the intersection LOS. If the intersection is to be reconfigured as a single lane roundabout, it may require that additional right-of-way be purchased by Dorchester County. Along with the intersection improvements, it is recommended to widen Sinclair Road to 12-foot lanes and to repave the roadway surface in Phase 8 when the additional full access driveway is added to the Yerby Development.

Synchro reports documenting the intersection analysis are provided in the following appendices:

- **D -** 2023 Existing Conditions;
- **E -** 2025 No Build Conditions;
- **F -** 2025 Build Conditions;
- **G -** 2025 Build Conditions w/ Proposed Improvements;
- **H -** 2026 No Build Conditions;
- **I -** 2026 Build Conditions;
- **J -** 2026 Build Conditions w/ Proposed Improvements;
- **K -** 2027 No Build Conditions;
- **L -** 2027 Build Conditions;
- **M -** 2027 Build Conditions w/ Proposed Improvements;
- **N -** 2029 No Build Conditions;
- **O -** 2029 Build Conditions;
- **P -** 2029 Build Conditions w/ Proposed Improvements;
- **Q -** 2032 No Build Conditions;
- **R -** 2032 Build Conditions; and
- **S -** 2032 Build Conditions w/ Proposed Improvements.

5.2 TURN LANE ANALYSIS

An analysis was conducted to determine the potential need for exclusive turn lanes for the intersection of Orangeburg Road & Yerby Road as well as the project driveway along Yerby Road. This analysis was conducted utilizing the criteria documented in SCDOT's ARMS manual (2008) and Roadway Design Manual (2021).

The need for exclusive right-turn lanes is based upon the criteria documented in Section 9.5.1.1 of the Roadway Design Manual, which consists of nine considerations. These considerations and applications for the intersection of Orangeburg Road & Yerby Road are listed below.

1) *at a free-flowing leg of any unsignalized intersection on a two-lane urban or rural highway which satisfies the criteria in Figure 9.5-A;*

   The intersection of Orangeburg Road & Yerby Road was analyzed for an exclusive southbound right-turn lane according to the Roadway Design Manual. The analysis shows that the intersection does satisfy the criteria for an exclusive right-turn lane in Phase 3 - 2027. Worksheets including the turn-lane analysis are provided in **Appendix P**.

2) *at the free-flowing leg of any unsignalized intersection on a high-speed (50 miles per hour or greater), four-lane urban or rural highway which satisfies the criteria in Figure 9.5-B;*

   This criterion is not applicable as Orangeburg Road nor Yerby Road are four-lane highways.

3) *at the free-flowing leg of any unsignalized intersection on a six-lane urban or rural highway;*

   This criterion is not applicable as Orangeburg Road nor Yerby Road are six-lane highways.

4) *at any intersection where a capacity analysis determines a right-turn lane is necessary to meet the overall level-of-service criteria;*

   The intersection analysis results shown in **Table 5.2** indicate that the intersection of Orangeburg Road & Yerby Road is projected to operate at an acceptable LOS with the exception of in Phase 5, 2029. Therefore, this criterion is applicable.

5) *as a general rule, at any signalized intersection where the projected right-turning volume is greater than 300 vehicles per hour and where there are greater than 300 vehicles per hour per lane on the mainline (A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.);*

   This criterion is not applicable as the proposed project driveway and the intersection of Orangeburg Road & Yerby Road are not proposed to be signalized.

6) *for uniformity of intersection design along the highway if other intersections have right-turn lanes;*

   Right turn lanes are not provided at other intersections with driveways along Orangeburg Road or Yerby Road. Therefore, this criterion is not applicable.

7) *At any intersection where the mainline is curved to the left and where the mainline curve requires superelevation;*

   The mainline is not curved and does not look to have superelevation at the intersection; therefore, this criterion is not applicable.

8) *at railroad crossings where the railroad is paralleled to the facility and is located close to the intersection and where a right-turn lane would be desirable to store queued vehicles avoiding interference with the movement of through traffic; or*

   The intersection is not located near railroad facilities; therefore, this criterion is not applicable.

9) *at any intersection where the crash experience, existing traffic operations, sight distance restrictions (e.g., intersection beyond a crest vertical curve), or engineering judgment indicates a significant conflict related to right turning vehicles.*

   No issues with crashes, traffic operations, or sight distance are known; therefore, this criterion is not applicable.

Based on the Roadway Design Manual guidelines, an exclusive southbound right-turn lane of 280 feet of total length, 100 feet of storage and a taper of 180 feet is recommended along Orangeburg Road at the intersection with Yerby Road in Phase 3 – 2027. It is also recommended to install an exclusive eastbound right-turn lane of 530 feet of total length, with 350 feet of storage and a taper of 180 feet along Yerby Road at the intersection with Orangeburg Road in Phase 5 – 2029.

The need for exclusive left-turn lanes is based upon the criteria documented in Section 9.5.1.2 of the Roadway Design Manual, which consists of nine considerations. These considerations and applications for the proposed full access project driveways along John Smith Road are listed below:

1) *at any unsignalized intersection on principal, high-speed rural highways with other arterials or collectors;*

   This criterion is applicable as Orangeburg Road is a minor arterial rural highway.

2) *at any unsignalized intersection on a two-lane urban or rural highway that satisfies the criteria in Figures 9.5-C, 9.5-D, 9.5-E, 9.5-F, or 9.5-G;*

   The analysis shows that the intersection of Orangeburg Road & Yerby Road satisfies the criteria for an exclusive northbound left-turn lane in Phase 2 - 2026 according to the Roadway Design Manual. Worksheets including the turn-lane analysis are provided in **Appendix P**.

3) *at any intersection where a capacity analysis determines a left-turn lane is necessary to meet the level-of-service criteria;*

   The intersection analysis results shown in **Table 5.2** indicate that the intersection of Orangeburg Road & Yerby Road is projected to operate at an acceptable LOS with the exception of in Phase 5, 2029. Therefore, this criterion is applicable.

4) *at any signalized intersection where the left-turn volume is 300 vehicles per hour or more, conduct a traffic review to determine if dual left-turn lanes are required;*

   This criterion is not applicable as the considered project driveway intersection nor the intersection of Orangeburg Road & Yerby Road are proposed to be signalized.

5) *as a general rule, at any intersection where the left-turning volume is 100 vehicles per hour (for a single turn lane) or 300 vehicles per hour (for a dual turn lane);*

   As shown in Exhibit 4.9, the northbound left-turning volume at the intersection of Orangeburg Road & Yerby Road are more than the threshold(s) listed. Therefore, this criterion is applicable.

6) *at all entrances to major residential, commercial, and industrial developments;*

   The Yerby Development is not considered a major residential, commercial, and industrial development. Therefore, this criterion is not applicable.

7) *at all median crossovers;*

   There is no median crossover along Orangeburg Road. Therefore, this criterion is not applicable.

8) *for uniformity of intersection design along the highway if other intersections have left-turn lanes (i.e., to satisfy driver expectancy); or*

   Left turn lanes are not provided at other intersections with driveways along Orangeburg Road nor Yerby Road. Therefore, this criterion is not applicable.

9) *at any intersection where crash experience, traffic operations, sight distance restrictions (e.g., intersection beyond a crest vertical curve), or engineering judgment indicates a significant conflict related to left-turning vehicles.*

   No issues with crashes, traffic operations, or sight distance are known; therefore, this criterion is not applicable.

Based on the Roadway Design Manual guidelines, an exclusive northbound left-turn lane of 530 feet of total length, with 350 feet of storage and a taper of 180 feet is recommended at the intersection of Orangeburg Road & Yerby Road in Phase 2 – 2026.

6.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

A traffic impact analysis was conducted for the Yerby Development in accordance with the Dorchester County and SCDOT guidelines. The proposed Yerby Development is located west of Orangeburg Road near Summerville, South Carolina. The Yerby Development is planned to be completed in eight phases with full completion proposed in 2032 and will consist of 1,709 single-family homes (developed in Phases 1 through 8) and a 1,200-student middle school (developed in Phase 8). The extent of the existing roadway network to be studied consists of the three intersections of Orangeburg Road & Yerby Road, Orangeburg Road & Mallard Road, and E. Butternut Road & Sinclair Road for use in the traffic impact analysis. Access to the development will be provided through one full access driveway along Yerby Road with a second full-access driveway via the intersection of E. Butternut Road & Sinclair Road provided in Phase 8 of the project. The paragraphs below detail the analysis results for the three (3) study intersections.

1 - Orangeburg Road & Yerby Road

Based on the Roadway Design Manual guidelines, a northbound exclusive left-turn lane of 530 feet of total length, with 350 feet of storage and a taper of 180 feet and a southbound exclusive right-turn lane of 280 feet of total length, with 100 feet of storage and a taper of 180 feet are recommended along Orangeburg Road at the intersection with Yerby Road. An eastbound right-turn lane of 450 feet of total length, with 350 feet of storage and a taper of 100 feet is also recommended along Yerby Road at the intersection with Orangeburg Road.

The intersection analysis results for the intersection of Orangeburg Road & Yerby Road indicate that with the recommended turn lane improvements listed above the intersection is projected to operate at an acceptable level of service (LOS) through the final phase of the development in 2032. Along with the turn lanes improvements, it is recommended to widen Yerby Road to 12-foot lanes and to repave the roadway surface in Phase 1 when the project driveway is added.

Proposed Yerby Buildout Scenario & Recommended Improvements

Phase	Buildout Year	Single-Family Detached Housing (dwelling units)		Middle School/Junior High School (students)		Recommended Improvements
		Phase	Cumulative	Phase	Cumulative	
1	2025	40	**40**	0	**0**	
2	2026	250	**290**	0	**0**	Install NBL on Orangeburg Road
3	2027	250	**540**	0	**0**	Install SBR on Orangeburg Road
4	2028	250	**790**	0	**0**	
5	2029	250	**1,040**	0	**0**	Install EBR on Yerby Road
6	2030	250	**1,290**	0	**0**	
7	2031	250	**1,540**	0	**0**	
8	2032	169	**1,709**	1,200	**1,200**	

2 - Orangeburg Road & Mallard Road

The intersection analysis results for the intersection of Orangeburg Road & Mallard Road indicate that the intersection is projected to operate at undesirable LOS until 2032, with or without the Yerby Development. Therefore, it is proposed to implement the following improvements in Phases 1 which include installing a southbound right turn lane (380 feet total length, 200 feet of storage with a 180-foot taper) on Orangeburg Road. It is also proposed to implement the following improvements in Phase 2 which include installing a westbound right turn lane (380 feet total length, 200 feet of storage with a 180-foot taper) on Mallard Road.

3 - E. Butternut Road & Sinclair Road

The intersection analysis results for the intersection of E. Butternut Road & Sinclair Road indicate that without any improvements the intersection is projected to operate at an acceptable LOS through Phase 7. However, it is anticipated to have undesirable LOS in Phase 8 when the additional full access driveway is added to the Yerby Development. Therefore, it is recommended that one of the following improvements be implemented:

- the intersection be re-aligned so that the northbound approach of W. Butternut Road is stop-controlled while the eastbound approach of Sinclair Road and the westbound approach of E. Butternut Road are free-flowing approaches; or
- the intersection be reconfigured as a single lane roundabout.

It is recommended that an exclusive northbound right turn lane (280 feet total length, 100 feet of storage with a 180-foot taper) be installed in Phase 8 – 2032.

Both intersection recommendations are anticipated to improve the intersection LOS. If the intersection is to be reconfigured as a single lane roundabout, it may require that additional right-of-way be purchased by Dorchester County. Along with the intersection improvements, it is recommended to widen Sinclair Road to 12-foot lanes and to repave the roadway surface in Phase 8 when the additional full access driveway is added to the Yerby Development.

Appendix A: Trip Generation Worksheet

TRIP GENERATION ESTIMATES
YERBY TIA (Phase 1)

Weekday Daily

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	40	DU	Ln(T) = 0.92 Ln(X) + 2.68	50%	50%	217	217	434	0%	0	0	0	0%	0	0	0	217	217	434
					Total:			**217**	**217**	**434**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**217**	**217**	**434**

Weekday AM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	40	DU	Ln(T) = 0.91 Ln(X) + 0.12	25%	75%	8	24	32	0%	0	0	0	0%	0	0	0	8	24	32
					Total:			**8**	**24**	**32**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**8**	**24**	**32**

Weekday PM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	40	DU	Ln(T) = 0.94 Ln(X) + 0.27	63%	37%	26	16	42	0%	0	0	0	0%	0	0	0	26	16	42
					Total:			**26**	**16**	**42**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**26**	**16**	**42**

TRIP GENERATION ESTIMATES
YERBY TIA (Phase 2)

Weekday Daily

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	290	DU	Ln(T) = 0.92 Ln(X) + 2.68	50%	50%	1,344	1,344	2,688	0%	0	0	0	0%	0	0	0	1,344	1,344	2,688
					Total:			**1,344**	**1,344**	**2,688**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**1,344**	**1,344**	**2,688**

Weekday AM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	290	DU	Ln(T) = 0.91 Ln(X) + 0.12	25%	75%	49	147	196	0%	0	0	0	0%	0	0	0	49	147	196
					Total:			**49**	**147**	**196**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**49**	**147**	**196**

Weekday PM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	290	DU	Ln(T) = 0.94 Ln(X) + 0.27	63%	37%	170	100	270	0%	0	0	0	0%	0	0	0	170	100	270
					Total:			**170**	**100**	**270**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**170**	**100**	**270**

TRIP GENERATION ESTIMATES
YERBY TIA (Phase 3)

Weekday Daily

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	540	DU	Ln(T) = 0.92 Ln(X) + 2.68	50%	50%	2,381	2,381	4,762	0%	0	0	0	0%	0	0	0	2,381	2,381	4,762
					Total:			**2,381**	**2,381**	**4,762**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**2,381**	**2,381**	**4,762**

Weekday AM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	540	DU	Ln(T) = 0.91 Ln(X) + 0.12	25%	75%	86	260	346	0%	0	0	0	0%	0	0	0	86	260	346
					Total:			**86**	**260**	**346**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**86**	**260**	**346**

Weekday PM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	540	DU	Ln(T) = 0.94 Ln(X) + 0.27	63%	37%	306	179	485	0%	0	0	0	0%	0	0	0	306	179	485
					Total:			**306**	**179**	**485**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**306**	**179**	**485**

TRIP GENERATION ESTIMATES
YERBY TIA (Phase 4)

Weekday Daily

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	790	DU	Ln(T) = 0.92 Ln(X) + 2.68	50%	50%	3,379	3,379	6,758	0%	0	0	0	0%	0	0	0	3,379	3,379	6,758
					Total:			**3,379**	**3,379**	**6,758**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**3,379**	**3,379**	**6,758**

Weekday AM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	790	DU	Ln(T) = 0.91 Ln(X) + 0.12	25%	75%	122	367	489	0%	0	0	0	0%	0	0	0	122	367	489
					Total:			**122**	**367**	**489**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**122**	**367**	**489**

Weekday PM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	790	DU	Ln(T) = 0.94 Ln(X) + 0.27	63%	37%	437	256	693	0%	0	0	0	0%	0	0	0	437	256	693
					Total:			**437**	**256**	**693**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**437**	**256**	**693**

TRIP GENERATION ESTIMATES
YERBY TIA (Phase 5)

Weekday Daily

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	Ed.	LUC	Scale	Unit	Equation/Rate	In	Out	In	Out	Total	%	In	Out	Trips	%	In	Out	Trips	In	Out	Total
Single-Family Detached Housing	11th	210	1040	DU	Ln(T) = 0.92 Ln(X) + 2.68	50%	50%	4,351	4,351	8,702	0%	0	0	0	0%	0	0	0	4,351	4,351	8,702
							Total:	**4,351**	**4,351**	**8,702**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**4,351**	**4,351**	**8,702**

Weekday AM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	Ed.	LUC	Scale	Unit	Equation/Rate	In	Out	In	Out	Total	%	In	Out	Trips	%	In	Out	Trips	In	Out	Total
Single-Family Detached Housing	11th	210	1040	DU	Ln(T) = 0.91 Ln(X) + 0.12	25%	75%	157	471	628	0%	0	0	0	0%	0	0	0	157	471	628
							Total:	**157**	**471**	**628**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**157**	**471**	**628**

Weekday PM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	Ed.	LUC	Scale	Unit	Equation/Rate	In	Out	In	Out	Total	%	In	Out	Trips	%	In	Out	Trips	In	Out	Total
Single-Family Detached Housing	11th	210	1040	DU	Ln(T) = 0.94 Ln(X) + 0.27	63%	37%	566	332	898	0%	0	0	0	0%	0	0	0	566	332	898
							Total:	**566**	**332**	**898**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**566**	**332**	**898**

TRIP GENERATION ESTIMATES
YERBY TIA (Phase 6)

Weekday Daily

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	1290	DU	Ln(T) = 0.92 Ln(X) + 2.68	50%	50%	5,304	5,304	10,608	0%	0	0	0	0%	0	0	0	5,304	5,304	10,608
					Total:			**5,304**	**5,304**	**10,608**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**5,304**	**5,304**	**10,608**

Weekday AM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	1290	DU	Ln(T) = 0.91 Ln(X) + 0.12	25%	75%	191	572	763	0%	0	0	0	0%	0	0	0	191	572	763
					Total:			**191**	**572**	**763**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**191**	**572**	**763**

Weekday PM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	1290	DU	Ln(T) = 0.94 Ln(X) + 0.27	63%	37%	693	407	1,100	0%	0	0	0	0%	0	0	0	693	407	1,100
					Total:			**693**	**407**	**1,100**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**693**	**407**	**1,100**

TRIP GENERATION ESTIMATES
YERBY TIA (Phase 7)

Weekday Daily

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	1540	DU	Ln(T) = 0.92 Ln(X) + 2.68	50%	50%	6,243	6,243	12,486	0%	0	0	0	0%	0	0	0	6,243	6,243	12,486
					Total:			**6,243**	**6,243**	**12,486**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**6,243**	**6,243**	**12,486**

Weekday AM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	1540	DU	Ln(T) = 0.91 Ln(X) + 0.12	25%	75%	224	673	897	0%	0	0	0	0%	0	0	0	224	673	897
					Total:			**224**	**673**	**897**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**224**	**673**	**897**

Weekday PM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	1540	DU	Ln(T) = 0.94 Ln(X) + 0.27	63%	37%	818	481	1,299	0%	0	0	0	0%	0	0	0	818	481	1,299
					Total:			**818**	**481**	**1,299**	**0%**	**0**	**0**	**0**	**0%**	**0**	**0**	**0**	**818**	**481**	**1,299**

TRIP GENERATION ESTIMATES
YERBY TIA (Phase 8)

Weekday Daily

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	1709	DU	Ln(T) = 0.92 Ln(X) + 2.68	50%	50%	6,871	6,871	13,742	0%	0	0	0	0%	0	0	0	6,871	6,871	13,742
Middle School/Junior High School	11th	522	1200	Students	Ln(T) = 0.97 Ln(X) + 0.95	50%	50%	1,254	1,254	2,508	14%	176	176	351	0%	0	0	0	1,078	1,079	2,157
							Total:	**8,125**	**8,125**	**16,250**	**2%**	**176**	**176**	**351**	**0%**	**0**	**0**	**0**	**7,949**	**7,950**	**15,899**

Weekday AM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	1709	DU	Ln(T) = 0.91 Ln(X) + 0.12	25%	75%	247	739	986	0%	0	0	0	0%	0	0	0	247	739	986
Middle School/Junior High School	11th	522	1200	Students	T = 0.67 (X)	54%	46%	434	370	804	14%	61	52	113	0%	0	0	0	373	318	691
							Total:	**681**	**1,109**	**1,790**	**6%**	**61**	**52**	**113**	**0%**	**0**	**0**	**0**	**620**	**1,057**	**1,677**

Weekday PM Peak Hour

Trip Generation Characteristics						Directional Distribution		Gross Trips			Internal Capture Trips				Pass-By Capture Trips				New External Trips		
Land Use	**Ed.**	**LUC**	**Scale**	**Unit**	**Equation/Rate**	**In**	**Out**	**In**	**Out**	**Total**	**%**	**In**	**Out**	**Trips**	**%**	**In**	**Out**	**Trips**	**In**	**Out**	**Total**
Single-Family Detached Housing	11th	210	1709	DU	Ln(T) = 0.94 Ln(X) + 0.27	63%	37%	902	530	1,432	0%	0	0	0	0%	0	0	0	902	530	1,432
Middle School/Junior High School	11th	522	1200	Students	T = 0.15 (X)	48%	52%	86	94	180	2%	2	2	4	0%	0	0	0	84	92	176
							Total:	**988**	**624**	**1,612**	**0.2%**	**2**	**2**	**4**	**0%**	**0**	**0**	**0**	**986**	**622**	**1,608**

Appendix B: Traffic Count Data

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name : Orangeburg Rd @ Yerby Rd
Site Code :
Start Date : 10/01/2020
Page No : 1

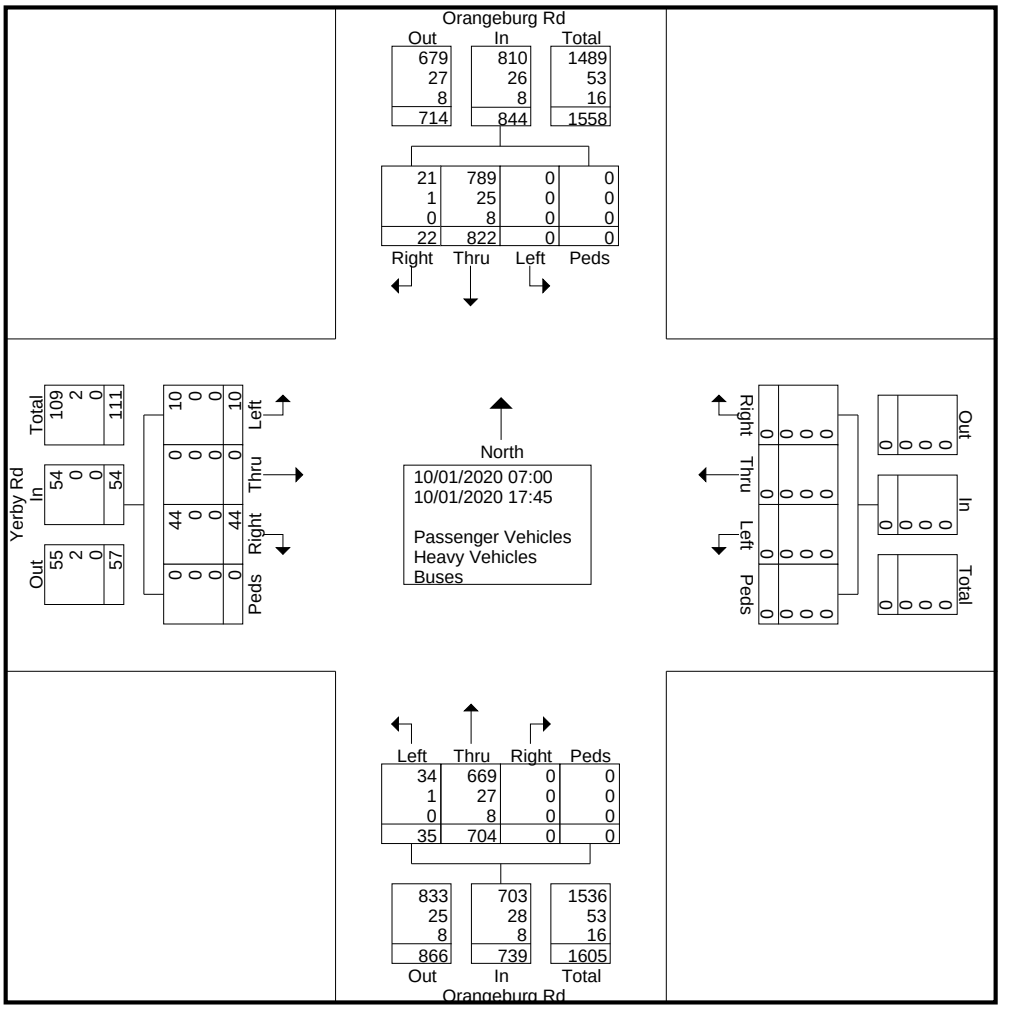
Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Orangeburg Rd Southbound				Westbound				Orangeburg Rd Northbound				Yerby Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	41	0	0	0	0	0	0	1	38	0	0	0	0	0	0	80
07:15	0	43	0	0	0	0	0	0	1	37	0	0	0	0	3	0	84
07:30	0	63	3	0	0	0	0	0	5	43	0	0	1	0	1	0	116
07:45	0	49	2	0	0	0	0	0	5	46	0	0	0	0	1	0	103
Total	0	196	5	0	0	0	0	0	12	164	0	0	1	0	5	0	383
08:00	0	39	1	0	0	0	0	0	4	29	0	0	0	0	0	0	73
08:15	0	26	1	0	0	0	0	0	4	36	0	0	1	0	9	0	77
08:30	0	43	0	0	0	0	0	0	0	37	0	0	1	0	6	0	87
08:45	0	40	0	0	0	0	0	0	2	33	0	0	2	0	2	0	79
Total	0	148	2	0	0	0	0	0	10	135	0	0	4	0	17	0	316
16:00	0	48	1	0	0	0	0	0	1	45	0	0	0	0	2	0	97
16:15	0	71	3	0	0	0	0	0	2	43	0	0	1	0	3	0	123
16:30	0	59	2	0	0	0	0	0	1	54	0	0	2	0	6	0	124
16:45	0	53	1	0	0	0	0	0	3	57	0	0	0	0	2	0	116
Total	0	231	7	0	0	0	0	0	7	199	0	0	3	0	13	0	460
17:00	0	77	1	0	0	0	0	0	3	59	0	0	1	0	4	0	145
17:15	0	60	2	0	0	0	0	0	2	52	0	0	1	0	1	0	118
17:30	0	59	4	0	0	0	0	0	0	48	0	0	0	0	3	0	114
17:45	0	51	1	0	0	0	0	0	1	47	0	0	0	0	1	0	101
Total	0	247	8	0	0	0	0	0	6	206	0	0	2	0	9	0	478
Grand Total	0	822	22	0	0	0	0	0	35	704	0	0	10	0	44	0	1637
Apprch %	0	97.4	2.6	0	0	0	0	0	4.7	95.3	0	0	18.5	0	81.5	0	
Total %	0	50.2	1.3	0	0	0	0	0	2.1	43	0	0	0.6	0	2.7	0	
Passenger Vehicles	0	789	21	0	0	0	0	0	34	669	0	0	10	0	44	0	1567
% Passenger Vehicles	0	96	95.5	0	0	0	0	0	97.1	95	0	0	100	0	100	0	95.7
Heavy Vehicles	0	25	1	0	0	0	0	0	1	27	0	0	0	0	0	0	54
% Heavy Vehicles	0	3	4.5	0	0	0	0	0	2.9	3.8	0	0	0	0	0	0	3.3
Buses	0	8	0	0	0	0	0	0	0	8	0	0	0	0	0	0	16
% Buses	0	1	0	0	0	0	0	0	0	1.1	0	0	0	0	0	0	1

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : Orangeburg Rd @ Yerby Rd
Site Code :
Start Date : 10/01/2020
Page No : 2



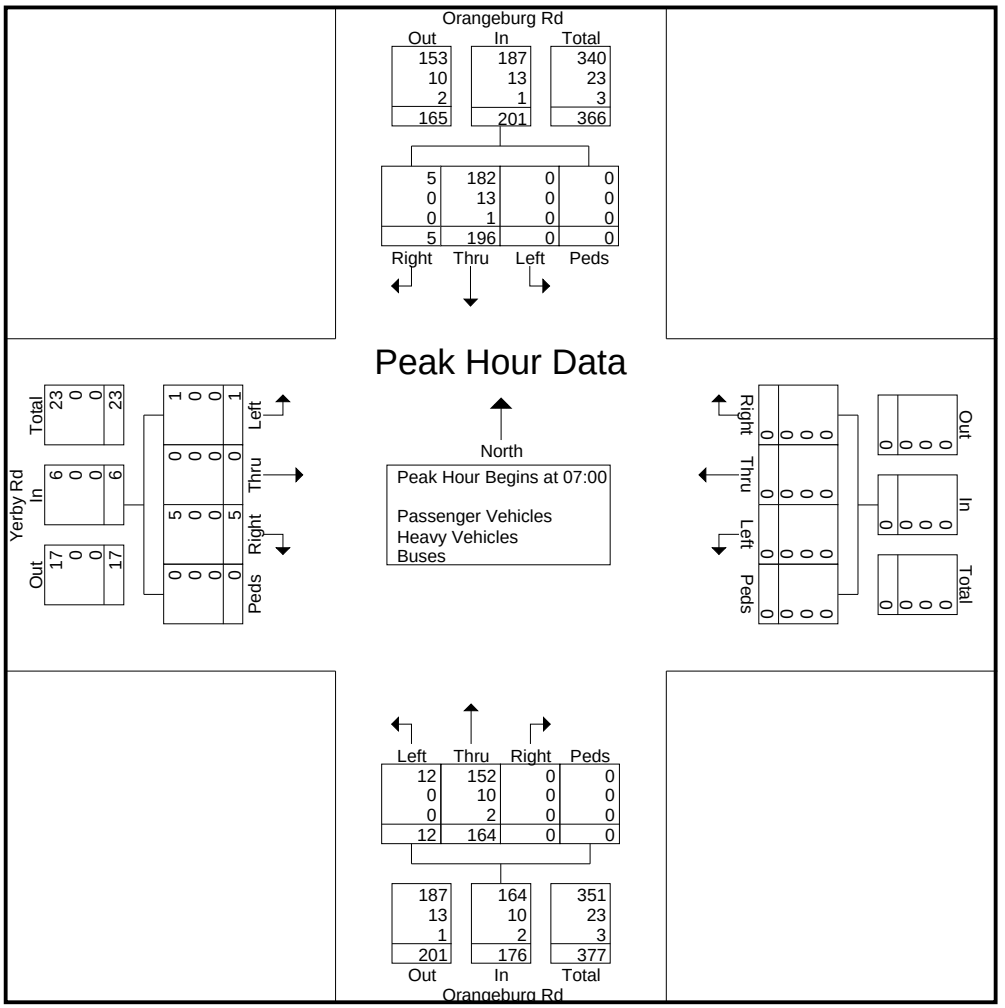
SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name : Orangeburg Rd @ Yerby Rd
Site Code :
Start Date : 10/01/2020
Page No : 3

	Orangeburg Rd Southbound					Westbound					Orangeburg Rd Northbound					Yerby Rd Eastbound					
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 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	0	41	0	0	41	0	0	0	0	0	1	38	0	0	39	0	0	0	0	0	80
07:15	0	43	0	0	43	0	0	0	0	0	1	37	0	0	38	0	0	**3**	0	**3**	84
07:30	0	**63**	**3**	0	**66**	0	0	0	0	0	**5**	43	0	0	48	**1**	0	1	0	2	**116**
07:45	0	49	2	0	51	0	0	0	0	0	5	**46**	0	0	**51**	0	0	1	0	1	103
Total Volume	0	196	5	0	201	0	0	0	0	0	12	164	0	0	176	1	0	5	0	6	383
% App. Total	0	97.5	2.5	0		0	0	0	0		6.8	93.2	0	0		16.7	0	83.3	0		
PHF	.000	.778	.417	.000	.761	.000	.000	.000	.000	.000	.600	.891	.000	.000	.863	.250	.000	.417	.000	.500	.825
Passenger Vehicles	0	182	5	0	187	0	0	0	0	0	12	152	0	0	164	1	0	5	0	6	357
% Passenger Vehicles																					
Heavy Vehicles	0	13	0	0	13	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	23
% Heavy Vehicles	0	6.6	0	0	6.5	0	0	0	0	0	0	6.1	0	0	5.7	0	0	0	0	0	6.0
Buses	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
% Buses	0	0.5	0	0	0.5	0	0	0	0	0	0	1.2	0	0	1.1	0	0	0	0	0	0.8

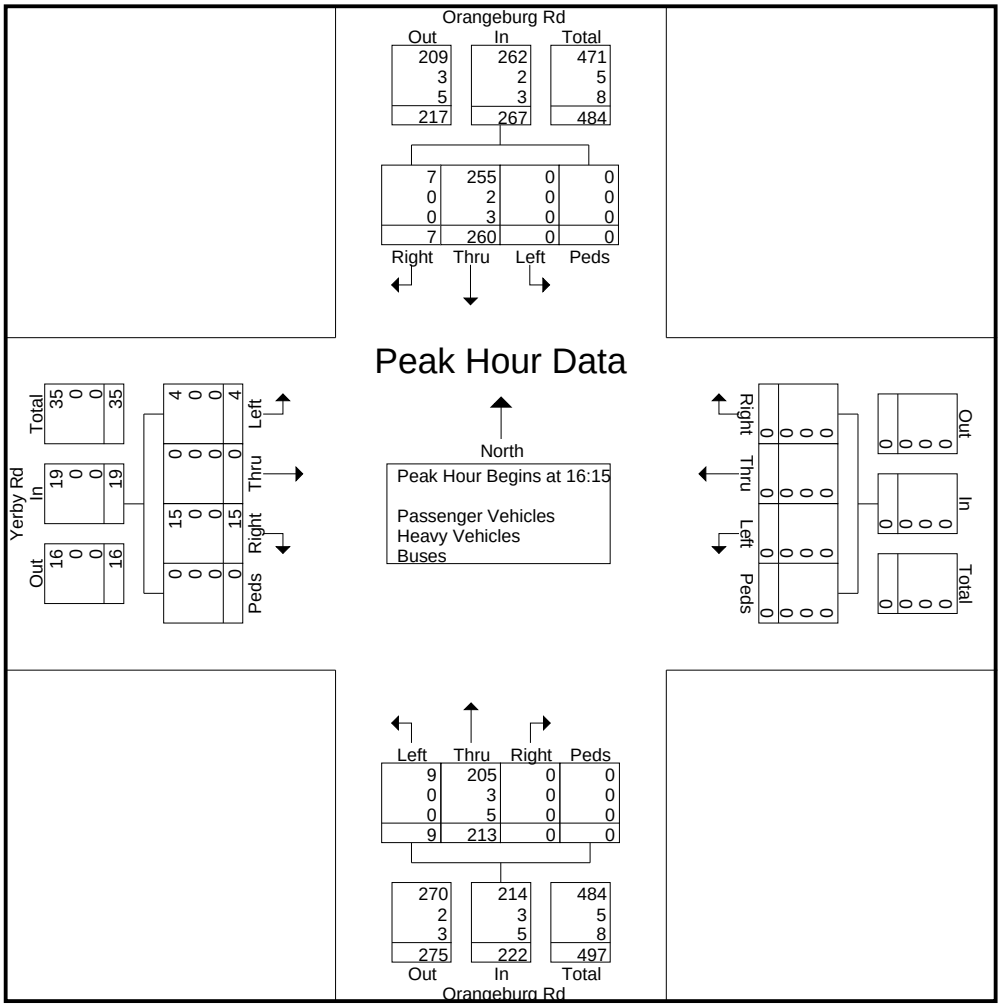


SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : Orangeburg Rd @ Yerby Rd
Site Code :
Start Date : 10/01/2020
Page No : 4

	Orangeburg Rd Southbound					Westbound					Orangeburg Rd Northbound					Yerby Rd Eastbound					
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 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	0	71	**3**	0	74	0	0	0	0	0	2	43	0	0	45	1	0	3	0	4	123
16:30	0	59	2	0	61	0	0	0	0	0	1	54	0	0	55	**2**	0	**6**	0	**8**	124
16:45	0	53	1	0	54	0	0	0	0	0	**3**	57	0	0	60	0	0	2	0	2	116
17:00	0	**77**	1	0	**78**	0	0	0	0	0	3	**59**	0	0	**62**	1	0	4	0	5	**145**
Total Volume	0	260	7	0	267	0	0	0	0	0	9	213	0	0	222	4	0	15	0	19	508
% App. Total	0	97.4	2.6	0		0	0	0	0		4.1	95.9	0	0		21.1	0	78.9	0		
PHF	.000	.844	.583	.000	.856	.000	.000	.000	.000	.000	.750	.903	.000	.000	.895	.500	.000	.625	.000	.594	.876
Passenger Vehicles	0	255	7	0	262	0	0	0	0	0	9	205	0	0	214	4	0	15	0	19	495
% Passenger Vehicles																					
Heavy Vehicles	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
% Heavy Vehicles	0	0.8	0	0	0.7	0	0	0	0	0	0	1.4	0	0	1.4	0	0	0	0	0	1.0
Buses	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	8
% Buses	0	1.2	0	0	1.1	0	0	0	0	0	0	2.3	0	0	2.3	0	0	0	0	0	1.6



SHORT COUNTS, LLC

735 Maryland St
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File Name : Orangeburg Rd @ E Butternut-Mallard Rd
Site Code :
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Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Orangeburg Rd Southbound				Mallard Rd Westbound				Orangeburg Rd Northbound				E Butternut Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	6	28	7	0	42	6	2	0	12	35	59	0	6	39	4	0	246
07:15	6	32	4	0	44	10	7	0	3	43	74	0	6	34	4	0	267
07:30	7	34	8	0	42	8	5	0	1	36	56	0	10	34	5	0	246
07:45	4	54	5	0	59	12	4	0	5	22	72	0	7	27	2	0	273
Total	23	148	24	0	187	36	18	0	21	136	261	0	29	134	15	0	1032
08:00	7	51	1	0	51	17	6	0	7	31	66	0	11	27	3	0	278
08:15	8	48	4	0	49	7	6	0	6	41	50	0	2	39	4	0	264
08:30	12	37	5	0	59	13	4	0	6	29	56	0	3	29	2	0	255
08:45	9	41	4	0	41	7	3	0	1	33	37	0	1	19	2	0	198
Total	36	177	14	0	200	44	19	0	20	134	209	0	17	114	11	0	995
16:00	5	38	8	0	87	24	1	0	3	39	56	0	1	12	3	0	277
16:15	4	52	10	0	86	24	1	0	3	31	56	0	2	8	4	0	281
16:30	6	39	8	0	75	32	1	0	7	45	44	0	3	17	4	0	281
16:45	5	56	9	0	77	24	3	0	4	53	46	0	4	17	3	0	301
Total	20	185	35	0	325	104	6	0	17	168	202	0	10	54	14	0	1140
17:00	6	60	13	0	79	27	2	0	2	54	54	0	3	17	6	0	323
17:15	3	65	5	0	73	34	5	0	8	46	63	0	2	22	3	0	329
17:30	9	65	21	0	80	22	3	1	8	55	47	0	0	23	5	0	339
17:45	7	61	9	0	86	26	0	0	9	47	58	0	2	21	5	1	332
Total	25	251	48	0	318	109	10	1	27	202	222	0	7	83	19	1	1323
Grand Total	104	761	121	0	1030	293	53	1	85	640	894	0	63	385	59	1	4490
Apprch %	10.5	77.2	12.3	0	74.8	21.3	3.8	0.1	5.3	39.5	55.2	0	12.4	75.8	11.6	0.2	
Total %	2.3	16.9	2.7	0	22.9	6.5	1.2	0	1.9	14.3	19.9	0	1.4	8.6	1.3	0	
Passenger Vehicles	103	717	117	0	981	290	49	1	83	611	843	0	63	383	55	1	4297
% Passenger Vehicles	99	94.2	96.7	0	95.2	99	92.5	100	97.6	95.5	94.3	0	100	99.5	93.2	100	95.7
Heavy Vehicles	0	32	4	0	45	3	1	0	0	25	49	0	0	2	1	0	162
% Heavy Vehicles	0	4.2	3.3	0	4.4	1	1.9	0	0	3.9	5.5	0	0	0.5	1.7	0	3.6
Buses	1	12	0	0	4	0	3	0	2	4	2	0	0	0	3	0	31
% Buses	1	1.6	0	0	0.4	0	5.7	0	2.4	0.6	0.2	0	0	0	5.1	0	0.7

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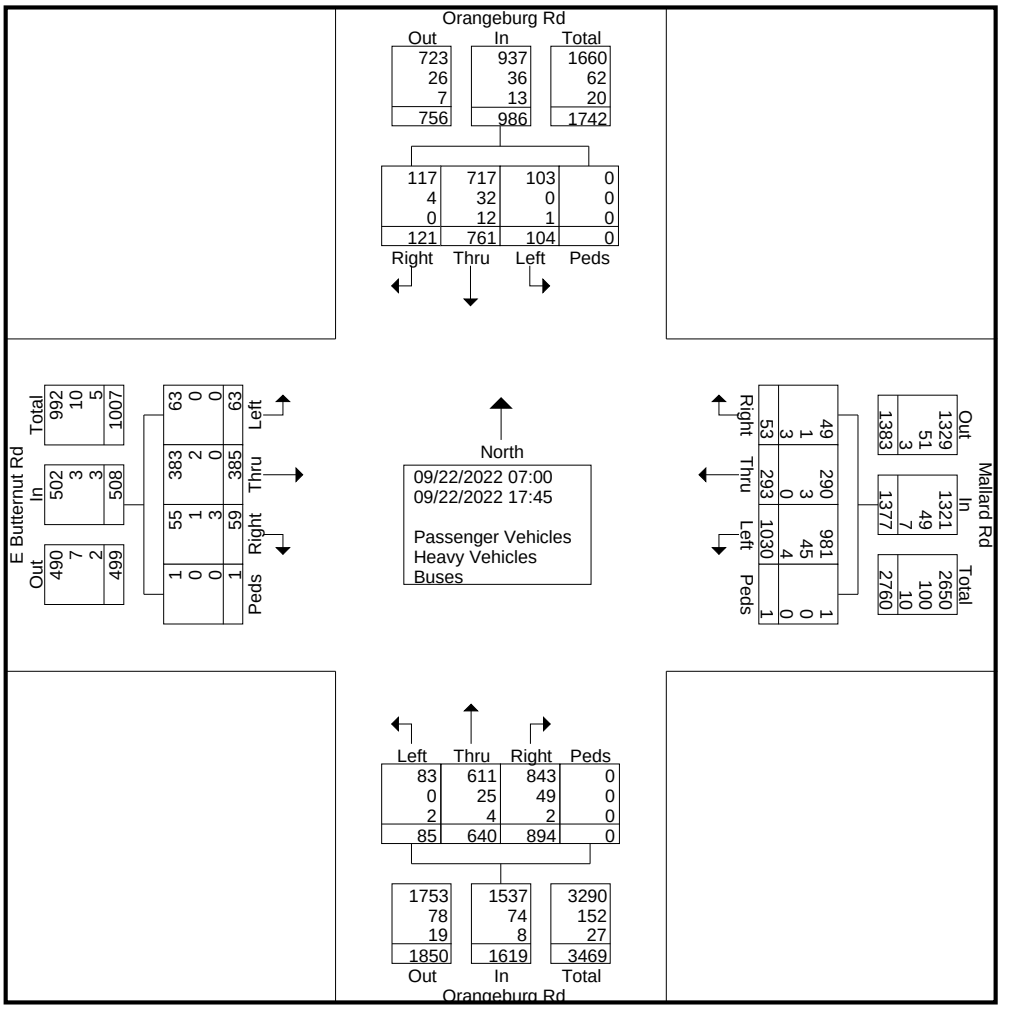

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We can't say we're the Best, but you Can!

File Name : Orangeburg Rd @ E Butternut-Mallard Rd
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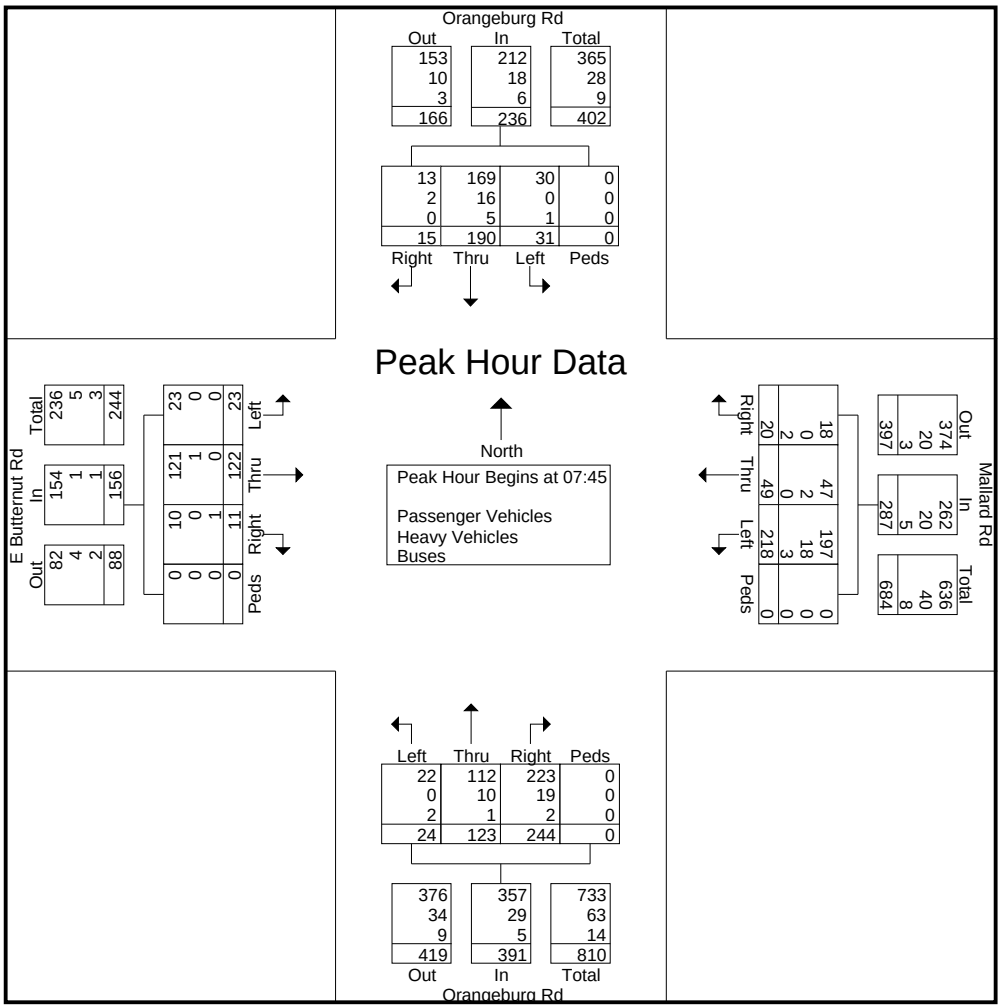
Start Date : 09/22/2022
Page No : 3

	Orangeburg Rd Southbound					Mallard Rd Westbound					Orangeburg Rd Northbound					E Butternut Rd Eastbound					
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 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	4	**54**	**5**	0	**63**	**59**	12	4	0	75	5	22	**72**	0	99	7	27	2	0	36	273
08:00	7	51	1	0	59	51	**17**	**6**	0	74	**7**	31	66	0	**104**	**11**	27	3	0	41	**278**
08:15	8	48	4	0	60	49	7	6	0	62	6	**41**	50	0	97	2	**39**	**4**	0	**45**	264
08:30	**12**	37	5	0	54	59	13	4	0	**76**	6	29	56	0	91	3	29	2	0	34	255
Total Volume	31	190	15	0	236	218	49	20	0	287	24	123	244	0	391	23	122	11	0	156	1070
% App. Total	13.1	80.5	6.4	0		76	17.1	7	0		6.1	31.5	62.4	0		14.7	78.2	7.1	0		
PHF	.646	.880	.750	.000	.937	.924	.721	.833	.000	.944	.857	.750	.847	.000	.940	.523	.782	.688	.000	.867	.962
Passenger Vehicles	30	169	13	0	212	197	47	18	0	262	22	112	223	0	357	23	121	10	0	154	985
% Passenger Vehicles																					
Heavy Vehicles	0	16	2	0	18	18	2	0	0	20	0	10	19	0	29	0	1	0	0	1	68
% Heavy Vehicles	0	8.4	13.3	0	7.6	8.3	4.1	0	0	7.0	0	8.1	7.8	0	7.4	0	0.8	0	0	0.6	6.4
Buses	1	5	0	0	6	3	0	2	0	5	2	1	2	0	5	0	0	1	0	1	17
% Buses	3.2	2.6	0	0	2.5	1.4	0	10.0	0	1.7	8.3	0.8	0.8	0	1.3	0	0	9.1	0	0.6	1.6



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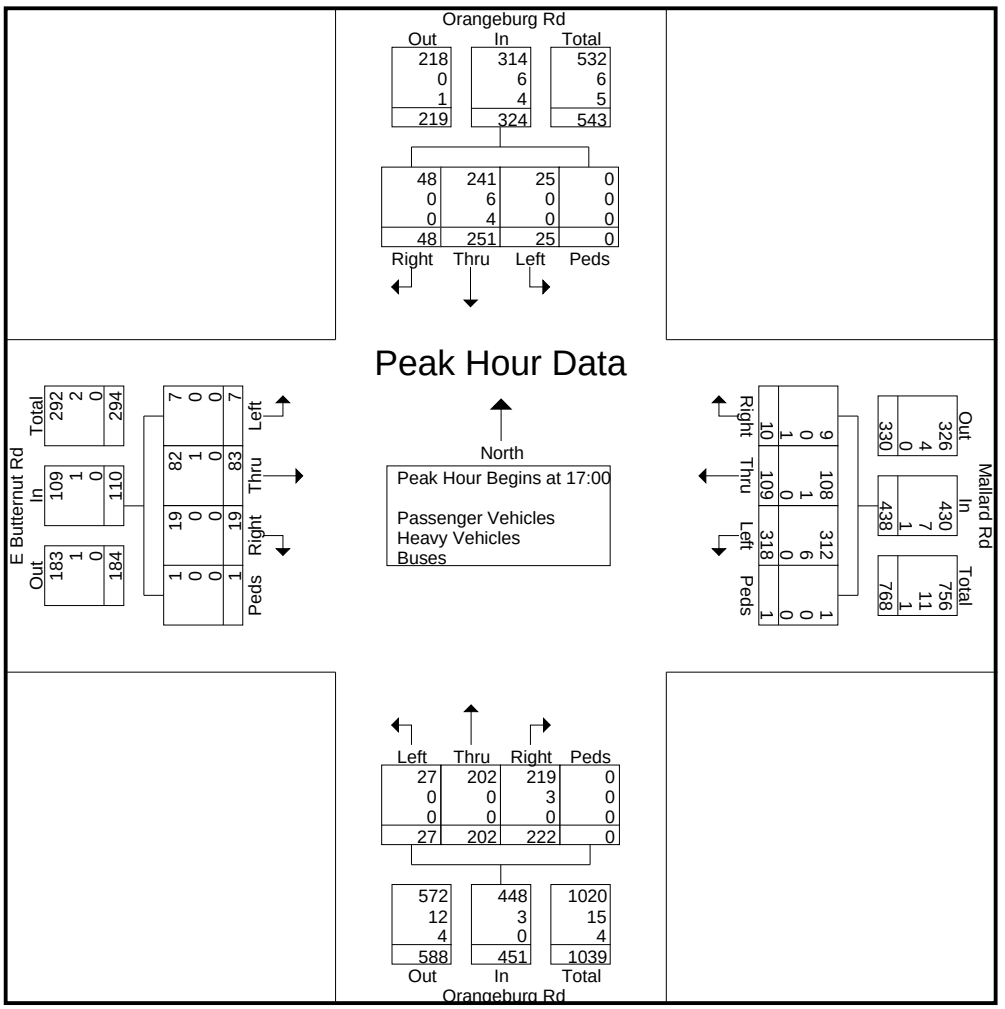
Site Code :
Start Date : 09/22/2022
Page No : 4

	Orangeburg Rd Southbound					Mallard Rd Westbound					Orangeburg Rd Northbound					E Butternut Rd Eastbound					
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 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	6	60	13	0	79	79	27	2	0	108	2	54	54	0	110	**3**	17	**6**	0	26	323
17:15	3	**65**	5	0	73	73	**34**	**5**	0	**112**	8	46	**63**	0	**117**	2	22	3	0	27	329
17:30	**9**	65	**21**	0	**95**	80	22	3	**1**	106	8	**55**	47	0	110	0	**23**	5	0	28	**339**
17:45	7	61	9	0	77	**86**	26	0	0	112	**9**	47	58	0	114	2	21	5	**1**	**29**	332
Total Volume	25	251	48	0	324	318	109	10	1	438	27	202	222	0	451	7	83	19	1	110	1323
% App. Total	7.7	77.5	14.8	0		72.6	24.9	2.3	0.2		6	44.8	49.2	0		6.4	75.5	17.3	0.9		
PHF	.694	.965	.571	.000	.853	.924	.801	.500	.250	.978	.750	.918	.881	.000	.964	.583	.902	.792	.250	.948	.976
Passenger Vehicles	25	241	48	0	314	312	108	9	1	430	27	202	219	0	448	7	82	19	1	109	1301
% Passenger Vehicles																					
Heavy Vehicles	0	6	0	0	6	6	1	0	0	7	0	0	3	0	3	0	1	0	0	1	17
% Heavy Vehicles	0	2.4	0	0	1.9	1.9	0.9	0	0	1.6	0	0	1.4	0	0.7	0	1.2	0	0	0.9	1.3
Buses	0	4	0	0	4	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	5
% Buses	0	1.6	0	0	1.2	0	0	10.0	0	0.2	0	0	0	0	0	0	0	0	0	0	0.4



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735 Maryland St
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We can't say we're the Best, but you Can!

File Name : Butternut Rd @ Sinclair Rd
Site Code :
Start Date : 09/22/2022
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Sinclair Rd Southbound				E Butternut Rd Westbound				W Butternut Rd Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	1	3	0	0	22	0	0	0	0	5	37	0	0	0	0	0	68
07:15	1	4	0	0	16	0	1	0	0	2	38	0	0	0	0	0	62
07:30	1	1	0	0	12	0	0	0	0	1	45	0	0	0	0	0	60
07:45	1	4	0	0	16	0	0	0	0	0	31	0	0	0	0	0	52
Total	4	12	0	0	66	0	1	0	0	8	151	0	0	0	0	0	242
08:00	4	1	0	0	17	0	0	0	0	0	30	0	0	0	0	0	52
08:15	1	2	0	0	19	0	0	0	0	3	31	0	0	0	0	0	56
08:30	1	6	0	0	21	0	3	0	0	2	27	0	0	0	0	0	60
08:45	3	6	0	0	14	0	0	0	0	1	13	0	0	0	0	0	37
Total	9	15	0	0	71	0	3	0	0	6	101	0	0	0	0	0	205
16:00	1	2	0	0	32	0	3	0	0	4	14	0	0	0	0	0	56
16:15	0	3	0	0	31	0	0	0	0	5	12	0	0	0	0	0	51
16:30	2	3	0	0	36	0	3	0	0	3	20	0	0	0	0	0	67
16:45	0	1	0	0	28	0	1	0	0	5	20	0	0	0	0	0	55
Total	3	9	0	0	127	0	7	0	0	17	66	0	0	0	0	0	229
17:00	1	7	0	0	26	0	2	0	0	2	23	0	0	0	0	0	61
17:15	1	4	0	0	36	0	0	0	0	3	22	0	0	0	0	0	66
17:30	0	3	0	0	46	0	1	0	0	3	26	0	0	0	0	0	79
17:45	2	2	0	0	34	0	1	0	0	3	20	0	0	0	0	0	62
Total	4	16	0	0	142	0	4	0	0	11	91	0	0	0	0	0	268
Grand Total	20	52	0	0	406	0	15	0	0	42	409	0	0	0	0	0	944
Apprch %	27.8	72.2	0	0	96.4	0	3.6	0	0	9.3	90.7	0	0	0	0	0	
Total %	2.1	5.5	0	0	43	0	1.6	0	0	4.4	43.3	0	0	0	0	0	
Passenger Vehicles	19	51	0	0	397	0	15	0	0	41	402	0	0	0	0	0	925
% Passenger Vehicles	95	98.1	0	0	97.8	0	100	0	0	97.6	98.3	0	0	0	0	0	98
Heavy Vehicles	1	0	0	0	7	0	0	0	0	0	3	0	0	0	0	0	11
% Heavy Vehicles	5	0	0	0	1.7	0	0	0	0	0	0.7	0	0	0	0	0	1.2
Buses	0	1	0	0	2	0	0	0	0	1	4	0	0	0	0	0	8
% Buses	0	1.9	0	0	0.5	0	0	0	0	2.4	1	0	0	0	0	0	0.8

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File Name : Butternut Rd @ Sinclair Rd
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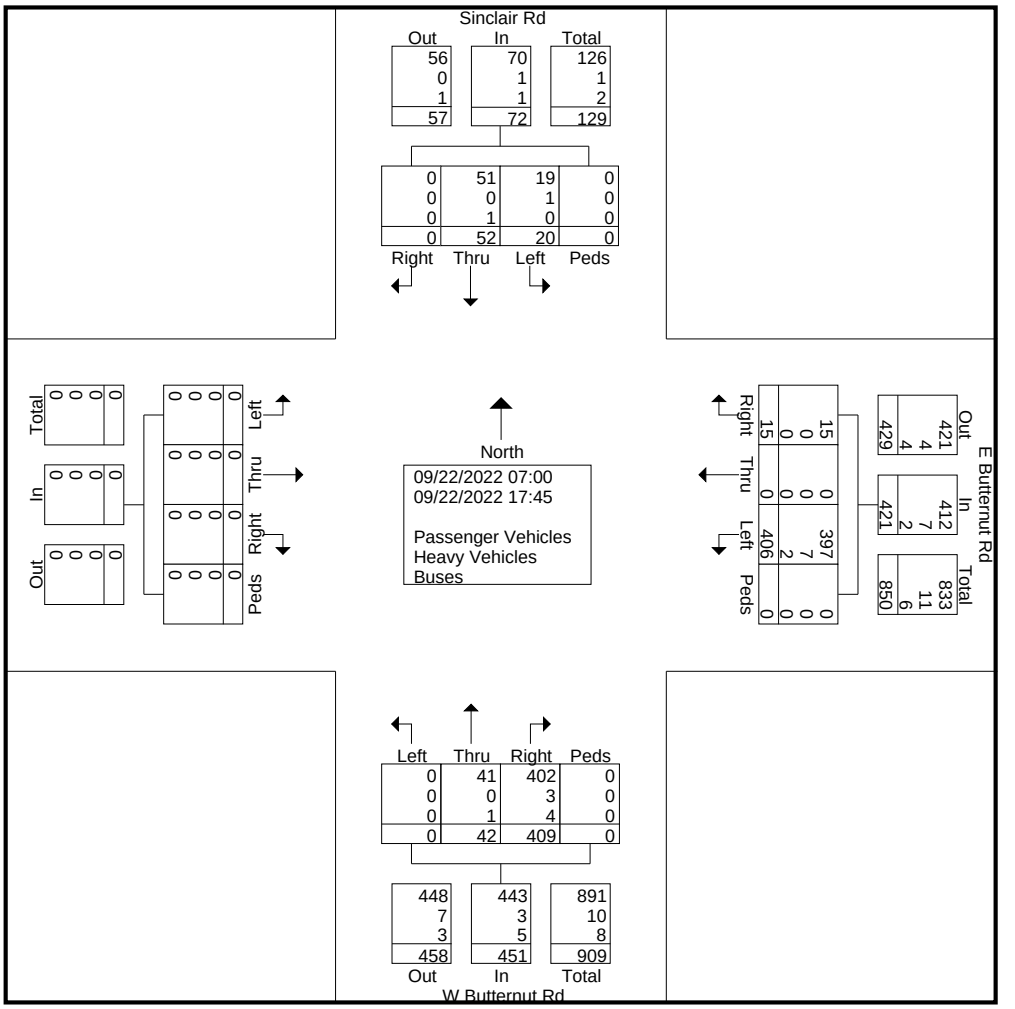

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File Name : Butternut Rd @ Sinclair Rd
Site Code :
Start Date : 09/22/2022
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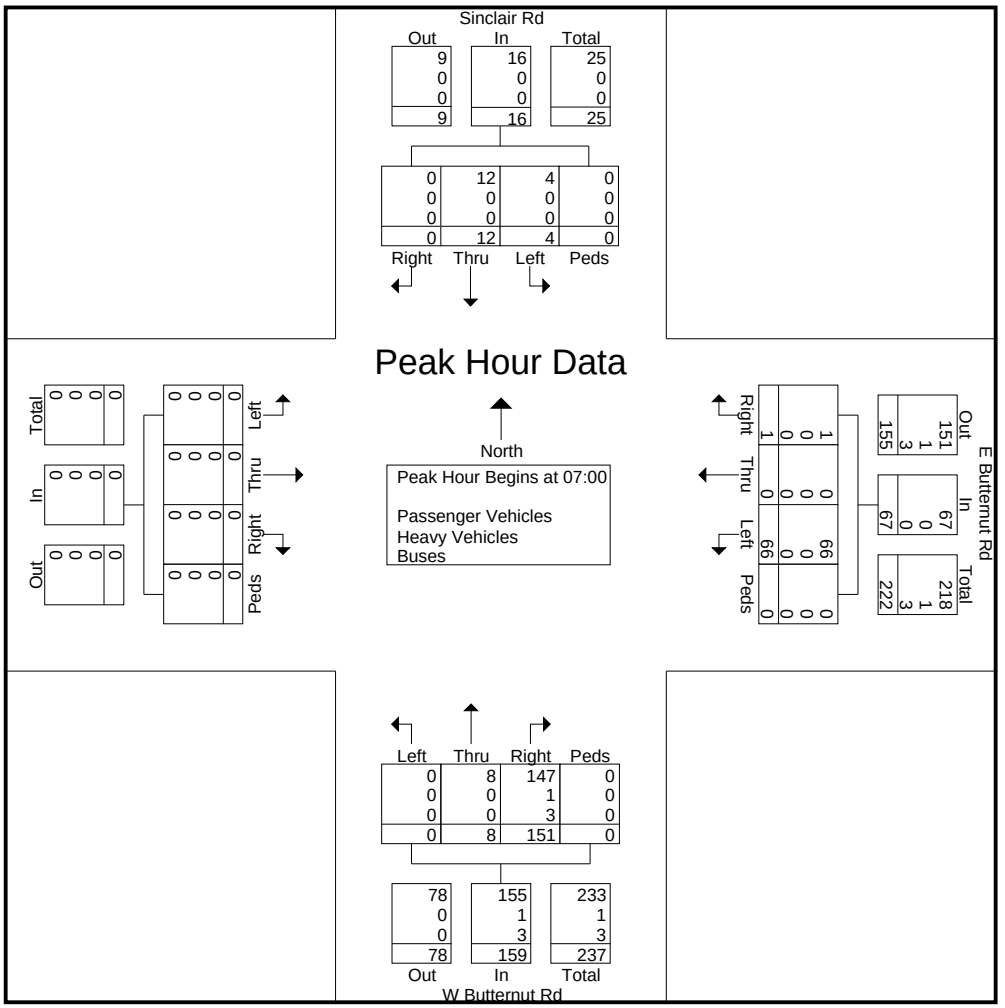
	Sinclair Rd Southbound					E Butternut Rd Westbound					W Butternut Rd Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	**1**	3	0	0	4	**22**	0	0	0	**22**	0	**5**	37	0	42	0	0	0	0	0	**68**
07:15	1	**4**	0	0	**5**	16	0	**1**	0	17	0	2	38	0	40	0	0	0	0	0	62
07:30	1	1	0	0	2	12	0	0	0	12	0	1	**45**	0	**46**	0	0	0	0	0	60
07:45	1	4	0	0	5	16	0	0	0	16	0	0	31	0	31	0	0	0	0	0	52
Total Volume	4	12	0	0	16	66	0	1	0	67	0	8	151	0	159	0	0	0	0	0	242
% App. Total	25	75	0	0		98.5	0	1.5	0		0	5	95	0		0	0	0	0		
PHF	1.00	.750	.000	.000	.800	.750	.000	.250	.000	.761	.000	.400	.839	.000	.864	.000	.000	.000	.000	.000	.890
Passenger Vehicles	4	12	0	0	16	66	0	1	0	67	0	8	147	0	155	0	0	0	0	0	238
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0	0.6	0	0	0	0	0	0.4
Buses	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	3
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	2.0	0	1.9	0	0	0	0	0	1.2



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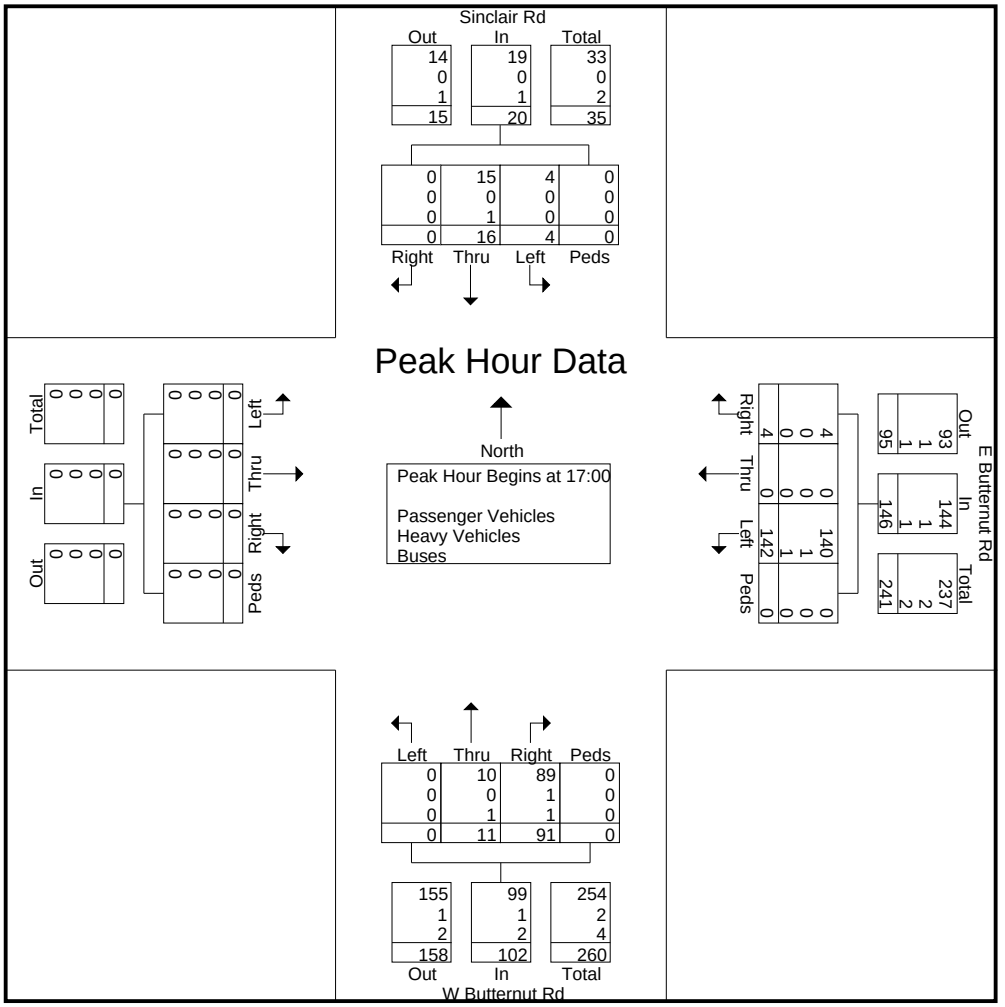
File Name : Butternut Rd @ Sinclair Rd
Site Code :
Start Date : 09/22/2022
Page No : 4

	Sinclair Rd Southbound					E Butternut Rd Westbound					W Butternut Rd Northbound					Eastbound					
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 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	1	**7**	0	0	**8**	26	0	**2**	0	28	0	2	23	0	25	0	0	0	0	0	61
17:15	1	4	0	0	5	36	0	0	0	36	0	**3**	22	0	25	0	0	0	0	0	66
17:30	0	3	0	0	3	**46**	0	1	0	**47**	0	3	**26**	0	**29**	0	0	0	0	0	**79**
17:45	**2**	2	0	0	4	34	0	1	0	35	0	3	20	0	23	0	0	0	0	0	62
Total Volume	4	16	0	0	20	142	0	4	0	146	0	11	91	0	102	0	0	0	0	0	268
% App. Total	20	80	0	0		97.3	0	2.7	0		0	10.8	89.2	0		0	0	0	0		
PHF	.500	.571	.000	.000	.625	.772	.000	.500	.000	.777	.000	.917	.875	.000	.879	.000	.000	.000	.000	.000	.848
Passenger Vehicles	4	15	0	0	19	140	0	4	0	144	0	10	89	0	99	0	0	0	0	0	262
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	2
% Heavy Vehicles	0	0	0	0	0	0.7	0	0	0	0.7	0	0	1.1	0	1.0	0	0	0	0	0	0.7
Buses	0	1	0	0	1	1	0	0	0	1	0	1	1	0	2	0	0	0	0	0	4
% Buses	0	6.3	0	0	5.0	0.7	0	0	0	0.7	0	9.1	1.1	0	2.0	0	0	0	0	0	1.5



Appendix C: Traffic Volume Development Worksheets

1 - Yerby Road & Orangeburg Road

Traffic Control: TWSC
Date Counted: 1/0/1900

AM PEAK HOUR 7:45 AM - 8:45 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	1	0	5	0	0	0	12	166	0	0	236	5
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
2023 Existing Traffic Volumes	**1**	**0**	**5**	**0**	**0**	**0**	**12**	**173**	**0**	**0**	**245**	**5**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	1	0	0	0	1	20	0	0	28	1
Vested Traffic	0	0	0	0	0	0	0	9	0	0	3	0
2025 No Build Traffic Volumes	**1**	**0**	**6**	**0**	**0**	**0**	**13**	**195**	**0**	**0**	**267**	**6**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	20%
Outbound Project Traffic %	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2025 Project Traffic	5	0	19	0	0	0	6	0	0	0	0	2
2025 Pass-By Traffic												
2025 Build Traffic Volumes (Phase 1)	**6**	**0**	**25**	**0**	**0**	**0**	**19**	**195**	**0**	**0**	**267**	**8**
Years to Buildout	4	4	4	4	4	4	4	4	4	4	4	4
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	1	0	0	0	2	27	0	0	38	1
Vested Traffic	0	0	0	0	0	0	0	9	0	0	3	0
2026 No Build Traffic Volumes	**1**	**0**	**6**	**0**	**0**	**0**	**14**	**202**	**0**	**0**	**277**	**6**
Inbound Project Traffic %							80%					20%
Outbound Project Traffic %	20%		80%									
2026 Project Traffic	29	0	118	0	0	0	39	0	0	0	0	10
2026 Pass-By Traffic												
2026 Build Traffic Volumes (Phase 2)	**30**	**0**	**124**	**0**	**0**	**0**	**53**	**202**	**0**	**0**	**277**	**16**
Years to Buildout	5	5	5	5	5	5	5	5	5	5	5	5
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	1	0	0	0	2	33	0	0	47	1
Vested Traffic	0	0	0	0	0	0	0	9	0	0	3	0
2027 No Build Traffic Volumes	**1**	**0**	**6**	**0**	**0**	**0**	**14**	**208**	**0**	**0**	**286**	**6**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	20%
Outbound Project Traffic %	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2027 Project Traffic	52	0	208	0	0	0	69	0	0	0	0	17
2027 Pass-By Traffic												
2027 Build Traffic Volumes (Phase 3)	**53**	**0**	**214**	**0**	**0**	**0**	**83**	**208**	**0**	**0**	**286**	**23**
Years to Buildout	6	6	6	6	6	6	6	6	6	6	6	6
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	1	0	0	0	3	40	0	0	57	1
Vested Traffic	0	0	0	0	0	0	0	9	0	0	3	0
2028 No Build Traffic Volumes	**1**	**0**	**6**	**0**	**0**	**0**	**15**	**215**	**0**	**0**	**296**	**6**
Inbound Project Traffic %							80%					20%
Outbound Project Traffic %	20%		80%									
2028 Project Traffic	73	0	294	0	0	0	98	0	0	0	0	24
2028 Pass-By Traffic												
2028 Build Traffic Volumes (Phase 4)	**74**	**0**	**300**	**0**	**0**	**0**	**113**	**215**	**0**	**0**	**296**	**30**
Years to Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	1	0	0	0	3	46	0	0	66	1
Vested Traffic	0	0	0	0	0	0	0	9	0	0	3	0
2029 No Build Traffic Volumes	**1**	**0**	**6**	**0**	**0**	**0**	**15**	**221**	**0**	**0**	**305**	**6**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	20%
Outbound Project Traffic %	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2029 Project Traffic	94	0	377	0	0	0	126	0	0	0	0	31
2029 Pass-By Traffic												
2029 Build Traffic Volumes (Phase 5)	**95**	**0**	**383**	**0**	**0**	**0**	**141**	**221**	**0**	**0**	**305**	**37**
Years to Buildout	8	8	8	8	8	8	8	8	8	8	8	8
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	2	0	0	0	4	53	0	0	76	2
Vested Traffic	0	0	0	0	0	0	0	9	0	0	3	0
2030 No Build Traffic Volumes	**1**	**0**	**7**	**0**	**0**	**0**	**16**	**228**	**0**	**0**	**315**	**7**
Inbound Project Traffic %							80%					20%
Outbound Project Traffic %	20%		80%									
2030 Project Traffic	114	0	458	0	0	0	153	0	0	0	0	38

2030 Pass-By Traffic												
2030 Build Traffic Volumes (Phase 6)	**115**	**0**	**465**	**0**	**0**	**0**	**169**	**228**	**0**	**0**	**315**	**45**
Years to Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	2	0	0	0	4	60	0	0	85	2
Vested Traffic	0	0	0	0	0	0	0	9	0	0	3	0
2031 No Build Traffic Volumes	**1**	**0**	**7**	**0**	**0**	**0**	**16**	**235**	**0**	**0**	**324**	**7**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	20%
Outbound Project Traffic %	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2031 Project Traffic	135	0	538	0	0	0	179	0	0	0	0	45
2031 Pass-By Traffic												
2031 Build Traffic Volumes (Phase 7)	**136**	**0**	**545**	**0**	**0**	**0**	**195**	**235**	**0**	**0**	**324**	**52**

PM PEAK HOUR 5:00 PM - 6:00 PM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**4**	**0**	**15**	**0**	**0**	**0**	**9**	**219**	**0**	**0**	**324**	**7**
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
2023 Existing Traffic Volumes	**4**	**0**	**16**	**0**	**0**	**0**	**9**	**228**	**0**	**0**	**337**	**7**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	2	0	0	0	1	26	0	0	39	1
Vested Traffic	0	0	0	0	0	0	0	6	0	0	9	0
2025 No Build Traffic Volumes	**4**	**0**	**17**	**0**	**0**	**0**	**10**	**251**	**0**	**0**	**372**	**8**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	20%
Outbound Project Traffic %	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2025 Project Traffic	3	0	13	0	0	0	21	0	0	0	0	5
2025 Pass-By Traffic												
2025 Build Traffic Volumes (Phase 1)	**7**	**0**	**30**	**0**	**0**	**0**	**31**	**251**	**0**	**0**	**372**	**13**
Years to Buildout	4	4	4	4	4	4	4	4	4	4	4	4
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	1	0	2	0	0	0	1	35	0	0	52	1
Vested Traffic	0	0	0	0	0	0	0	6	0	0	9	0
2026 No Build Traffic Volumes	**5**	**0**	**17**	**0**	**0**	**0**	**10**	**260**	**0**	**0**	**385**	**8**
Inbound Project Traffic %							80%					20%
Outbound Project Traffic %	20%		80%									
2026 Project Traffic	20	0	80	0	0	0	136	0	0	0	0	34
2026 Pass-By Traffic												
2026 Build Traffic Volumes (Phase 2)	**25**	**0**	**97**	**0**	**0**	**0**	**146**	**260**	**0**	**0**	**385**	**42**
Years to Buildout	5	5	5	5	5	5	5	5	5	5	5	5
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	1	0	3	0	0	0	2	44	0	0	65	1
Vested Traffic	0	0	0	0	0	0	0	6	0	0	9	0
2027 No Build Traffic Volumes	**5**	**0**	**18**	**0**	**0**	**0**	**11**	**269**	**0**	**0**	**398**	**8**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	20%
Outbound Project Traffic %	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2027 Project Traffic	36	0	143	0	0	0	245	0	0	0	0	61
2027 Pass-By Traffic												
2027 Build Traffic Volumes (Phase 1)	**41**	**0**	**161**	**0**	**0**	**0**	**256**	**269**	**0**	**0**	**398**	**69**
Years to Buildout	6	6	6	6	6	6	6	6	6	6	6	6
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	1	0	4	0	0	0	2	53	0	0	78	2
Vested Traffic	0	0	0	0	0	0	0	6	0	0	9	0
2028 No Build Traffic Volumes	**5**	**0**	**19**	**0**	**0**	**0**	**11**	**278**	**0**	**0**	**411**	**9**
Inbound Project Traffic %							80%					20%
Outbound Project Traffic %	20%		80%									
2028 Project Traffic	51	0	205	0	0	0	350	0	0	0	0	87
2028 Pass-By Traffic												
2028 Build Traffic Volumes (Phase 2)	**56**	**0**	**224**	**0**	**0**	**0**	**361**	**278**	**0**	**0**	**411**	**96**
Years to Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	1	0	4	0	0	0	3	61	0	0	91	2
Vested Traffic	0	0	0	0	0	0	0	6	0	0	9	0
2029 No Build Traffic Volumes	**5**	**0**	**19**	**0**	**0**	**0**	**12**	**286**	**0**	**0**	**424**	**9**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	20%
Outbound Project Traffic %	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2029 Project Traffic	66	0	266	0	0	0	453	0	0	0	0	113
2029 Pass-By Traffic												
2029 Build Traffic Volumes (Phase 1)	**71**	**0**	**285**	**0**	**0**	**0**	**465**	**286**	**0**	**0**	**424**	**122**
Years to Buildout	8	8	8	8	8	8	8	8	8	8	8	8
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	1	0	5	0	0	0	3	70	0	0	104	2

Vested Traffic	0	0	0	0	0	0	0	6	0	0	9	0
2030 No Build Traffic Volumes	**5**	**0**	**20**	**0**	**0**	**0**	**12**	**295**	**0**	**0**	**437**	**9**
Inbound Project Traffic %							80%					20%
Outbound Project Traffic %	20%		80%									
2030 Project Traffic	81	0	326	0	0	0	554	0	0	0	0	139
2030 Pass-By Traffic												
2030 Build Traffic Volumes (Phase 6)	**86**	**0**	**346**	**0**	**0**	**0**	**566**	**295**	**0**	**0**	**437**	**148**
Years to Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	1	0	5	0	0	0	3	79	0	0	117	3
Vested Traffic	0	0	0	0	0	0	0	6	0	0	9	0
2031 No Build Traffic Volumes	**5**	**0**	**20**	**0**	**0**	**0**	**12**	**304**	**0**	**0**	**450**	**10**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	20%
Outbound Project Traffic %	20%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2031 Project Traffic	96	0	385	0	0	0	654	0	0	0	0	164
2031 Pass-By Traffic												
2031 Build Traffic Volumes (Phase 7)	**101**	**0**	**405**	**0**	**0**	**0**	**666**	**304**	**0**	**0**	**450**	**174**

2 - E Butternut Road/Mallard Road & Orangeburg Road

Traffic Control: TWSC
Date Counted: 9/22/2022

AM PEAK HOUR 7:45 AM - 8:45 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	23	122	11	218	49	20	24	123	244	31	190	15
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
2023 Existing Traffic Volumes	**24**	**127**	**11**	**227**	**51**	**21**	**25**	**128**	**254**	**32**	**198**	**16**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	3	15	1	26	6	2	3	15	29	4	23	2
Vested Traffic	0	0	1	6	0	0	2	9	16	0	3	0
2025 No Build Traffic Volumes	**26**	**137**	**13**	**250**	**55**	**22**	**29**	**147**	**289**	**35**	**216**	**17**
Inbound Project Traffic %	0%	0%	0%	0%	0%	35%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	45%	0%
2025 Project Traffic	0	0	0	0	0	3	0	3	0	8	11	0
2025 Pass-By Traffic												
2025 Build Traffic Volumes (Phase 1)	**26**	**137**	**13**	**250**	**55**	**25**	**29**	**150**	**289**	**43**	**227**	**17**
Years to Buildout	4	4	4	4	4	4	4	4	4	4	4	4
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	4	20	2	35	8	3	4	20	39	5	30	2
Vested Traffic	0	0	1	6	0	0	2	9	16	0	3	0
2026 No Build Traffic Volumes	**27**	**142**	**14**	**259**	**57**	**23**	**30**	**152**	**299**	**36**	**223**	**17**
Inbound Project Traffic %						35%		45%				
Outbound Project Traffic %										35%	45%	
2026 Project Traffic	0	0	0	0	0	17	0	22	0	52	66	0
2026 Pass-By Traffic												
2026 Build Traffic Volumes (Phase 2)	**27**	**142**	**14**	**259**	**57**	**40**	**30**	**174**	**299**	**88**	**289**	**17**
Years to Buildout	5	5	5	5	5	5	5	5	5	5	5	5
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	5	24	2	44	10	4	5	25	49	6	38	3
Vested Traffic	0	0	1	6	0	0	2	9	16	0	3	0
2027 No Build Traffic Volumes	**28**	**146**	**14**	**268**	**59**	**24**	**31**	**157**	**309**	**37**	**231**	**18**
Inbound Project Traffic %	0%	0%	0%	0%	0%	35%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	45%	0%
2027 Project Traffic	0	0	0	0	0	30	0	39	0	91	117	0
2027 Pass-By Traffic												
2027 Build Traffic Volumes (Phase 3)	**28**	**146**	**14**	**268**	**59**	**54**	**31**	**196**	**309**	**128**	**348**	**18**
Years to Buildout	6	6	6	6	6	6	6	6	6	6	6	6
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	6	29	3	52	12	5	6	30	59	7	46	4
Vested Traffic	0	0	1	6	0	0	2	9	16	0	3	0
2028 No Build Traffic Volumes	**29**	**151**	**15**	**276**	**61**	**25**	**32**	**162**	**319**	**38**	**239**	**19**
Inbound Project Traffic %						35%		45%				
Outbound Project Traffic %										35%	45%	
2028 Project Traffic	0	0	0	0	0	43	0	55	0	129	165	0
2028 Pass-By Traffic												
2028 Build Traffic Volumes (Phase 4)	**29**	**151**	**15**	**276**	**61**	**68**	**32**	**217**	**319**	**167**	**404**	**19**
Years to Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	6	34	3	61	14	6	7	34	68	9	53	4
Vested Traffic	0	0	1	6	0	0	2	9	16	0	3	0
2029 No Build Traffic Volumes	**29**	**156**	**15**	**285**	**63**	**26**	**33**	**166**	**328**	**40**	**246**	**19**
Inbound Project Traffic %	0%	0%	0%	0%	0%	35%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	45%	0%
2029 Project Traffic	0	0	0	0	0	55	0	71	0	165	212	0
2029 Pass-By Traffic												
2029 Build Traffic Volumes (Phase 5)	**29**	**156**	**15**	**285**	**63**	**81**	**33**	**237**	**328**	**205**	**458**	**19**
Years to Buildout	8	8	8	8	8	8	8	8	8	8	8	8
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	7	39	4	70	16	6	8	39	78	10	61	5
Vested Traffic	0	0	1	6	0	0	2	9	16	0	3	0
2030 No Build Traffic Volumes	**30**	**161**	**16**	**294**	**65**	**26**	**34**	**171**	**338**	**41**	**254**	**20**
Inbound Project Traffic %						35%		45%				
Outbound Project Traffic %										35%	45%	
2030 Project Traffic	0	0	0	0	0	67	0	86	0	200	258	0

2030 Pass-By Traffic												
2030 Build Traffic Volumes (Phase 6)	**30**	**161**	**16**	**294**	**65**	**93**	**34**	**257**	**338**	**241**	**512**	**20**
Years to Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	8	44	4	78	18	7	9	44	88	11	68	5
Vested Traffic	0	0	1	6	0	0	2	9	16	0	3	0
2031 No Build Traffic Volumes	**31**	**166**	**16**	**302**	**67**	**27**	**35**	**176**	**348**	**42**	**261**	**20**
Inbound Project Traffic %	0%	0%	0%	0%	0%	35%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	45%	0%
2031 Project Traffic	0	0	0	0	0	78	0	101	0	236	302	0
2031 Pass-By Traffic												
2031 Build Traffic Volumes (Phase 7)	**31**	**166**	**16**	**302**	**67**	**105**	**35**	**277**	**348**	**278**	**563**	**20**

PM PEAK HOUR 5:00 PM - 6:00 PM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**7**	**83**	**19**	**318**	**109**	**10**	**27**	**202**	**222**	**25**	**251**	**48**
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
2023 Existing Traffic Volumes	**7**	**86**	**20**	**331**	**113**	**10**	**28**	**210**	**231**	**26**	**261**	**50**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	1	10	2	38	13	1	3	24	27	3	30	6
Vested Traffic	0	0	2	17	0	0	1	6	11	0	9	0
2025 No Build Traffic Volumes	**8**	**93**	**23**	**373**	**122**	**11**	**31**	**232**	**260**	**28**	**290**	**54**
Inbound Project Traffic %	0%	0%	0%	0%	0%	35%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	45%	0%
2025 Project Traffic	0	0	0	0	0	9	0	12	0	6	7	0
2025 Pass-By Traffic												
2025 Build Traffic Volumes (Phase 1)	**8**	**93**	**23**	**373**	**122**	**20**	**31**	**244**	**260**	**34**	**297**	**54**
Years to Buildout	4	4	4	4	4	4	4	4	4	4	4	4
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	1	13	3	51	17	2	4	32	36	4	40	8
Vested Traffic	0	0	2	17	0	0	1	6	11	0	9	0
2026 No Build Traffic Volumes	**8**	**96**	**24**	**386**	**126**	**12**	**32**	**240**	**269**	**29**	**300**	**56**
Inbound Project Traffic %						35%		45%				
Outbound Project Traffic %										35%	45%	
2026 Project Traffic	0	0	0	0	0	60	0	76	0	35	45	0
2026 Pass-By Traffic												
2026 Build Traffic Volumes (Phase 2)	**8**	**96**	**24**	**386**	**126**	**72**	**32**	**316**	**269**	**64**	**345**	**56**
Years to Buildout	5	5	5	5	5	5	5	5	5	5	5	5
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	1	17	4	64	22	2	5	40	44	5	50	10
Vested Traffic	0	0	2	17	0	0	1	6	11	0	9	0
2027 No Build Traffic Volumes	**8**	**100**	**25**	**399**	**131**	**12**	**33**	**248**	**277**	**30**	**310**	**58**
Inbound Project Traffic %	0%	0%	0%	0%	0%	35%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	45%	0%
2027 Project Traffic	0	0	0	0	0	107	0	138	0	63	80	0
2027 Pass-By Traffic												
2027 Build Traffic Volumes (Phase 3)	**8**	**100**	**25**	**399**	**131**	**119**	**33**	**386**	**277**	**93**	**390**	**58**
Years to Buildout	6	6	6	6	6	6	6	6	6	6	6	6
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	2	20	5	76	26	2	6	48	53	6	60	12
Vested Traffic	0	0	2	17	0	0	1	6	11	0	9	0
2028 No Build Traffic Volumes	**9**	**103**	**26**	**411**	**135**	**12**	**34**	**256**	**286**	**31**	**320**	**60**
Inbound Project Traffic %						35%		45%				
Outbound Project Traffic %										35%	45%	
2028 Project Traffic	0	0	0	0	0	153	0	197	0	90	115	0
2028 Pass-By Traffic												
2028 Build Traffic Volumes (Phase 2)	**9**	**103**	**26**	**411**	**135**	**165**	**34**	**453**	**286**	**121**	**435**	**60**
Years to Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	2	23	5	89	31	3	8	57	62	7	70	13
Vested Traffic	0	0	2	17	0	0	1	6	11	0	9	0
2029 No Build Traffic Volumes	**9**	**106**	**26**	**424**	**140**	**13**	**36**	**265**	**295**	**32**	**330**	**61**
Inbound Project Traffic %	0%	0%	0%	0%	0%	35%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	45%	0%
2029 Project Traffic	0	0	0	0	0	198	0	255	0	116	150	0
2029 Pass-By Traffic												
2029 Build Traffic Volumes (Phase 1)	**9**	**106**	**26**	**424**	**140**	**211**	**36**	**520**	**295**	**148**	**480**	**61**
Years to Buildout	8	8	8	8	8	8	8	8	8	8	8	8
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	2	27	6	102	35	3	9	65	71	8	80	15

Vested Traffic	0	0	2	17	0	0	1	6	11	0	9	0
2030 No Build Traffic Volumes	**9**	**110**	**27**	**437**	**144**	**13**	**37**	**273**	**304**	**33**	**340**	**63**
Inbound Project Traffic %						35%		45%				
Outbound Project Traffic %										35%	45%	
2030 Project Traffic	0	0	0	0	0	243	0	311	0	142	184	0
2030 Pass-By Traffic												
2030 Build Traffic Volumes (Phase 6)	**9**	**110**	**27**	**437**	**144**	**256**	**37**	**584**	**304**	**175**	**524**	**63**
Years to Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	3	30	7	114	39	4	10	73	80	9	90	17
Vested Traffic	0	0	2	17	0	0	1	6	11	0	9	0
2031 No Build Traffic Volumes	**10**	**113**	**28**	**449**	**148**	**14**	**38**	**281**	**313**	**34**	**350**	**65**
Inbound Project Traffic %	0%	0%	0%	0%	0%	35%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%	45%	0%
2031 Project Traffic	0	0	0	0	0	286	0	368	0	169	216	0
2031 Pass-By Traffic												
2031 Build Traffic Volumes (Phase 7)	**10**	**113**	**28**	**449**	**148**	**300**	**38**	**649**	**313**	**203**	**566**	**65**

3 - Sinclair Road & E Butternut Road

Traffic Control: TWSC
Date Counted: 9/22/2022

AM PEAK HOUR 7:00 AM - 8:00 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	0	4	12	66	1	0	8	0	151	0	0	0
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
2023 Existing Traffic Volumes	**0**	**4**	**12**	**69**	**1**	**0**	**8**	**0**	**157**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	1	8	0	0	1	0	18	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**4**	**13**	**74**	**1**	**0**	**9**	**0**	**169**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2025 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2025 Pass-By Traffic												
2025 Build Traffic Volumes (Phase 1)	**0**	**4**	**13**	**74**	**1**	**0**	**9**	**0**	**169**	**0**	**0**	**0**
Years to Buildout	4	4	4	4	4	4	4	4	4	4	4	4
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	2	11	0	0	1	0	24	0	0	0
Vested Traffic												
2026 No Build Traffic Volumes	**0**	**5**	**14**	**77**	**1**	**0**	**9**	**0**	**175**	**0**	**0**	**0**
Inbound Project Traffic %												
Outbound Project Traffic %												
2026 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2026 Pass-By Traffic												
2026 Build Traffic Volumes (Phase 2)	**0**	**5**	**14**	**77**	**1**	**0**	**9**	**0**	**175**	**0**	**0**	**0**
Years to Buildout	5	5	5	5	5	5	5	5	5	5	5	5
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	2	13	0	0	2	0	30	0	0	0
Vested Traffic												
2027 No Build Traffic Volumes	**0**	**5**	**14**	**79**	**1**	**0**	**10**	**0**	**181**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2027 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2027 Pass-By Traffic												
2027 Build Traffic Volumes (Phase 3)	**0**	**5**	**14**	**79**	**1**	**0**	**10**	**0**	**181**	**0**	**0**	**0**
Years to Buildout	6	6	6	6	6	6	6	6	6	6	6	6
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	3	16	0	0	2	0	36	0	0	0
Vested Traffic												
2028 No Build Traffic Volumes	**0**	**5**	**15**	**82**	**1**	**0**	**10**	**0**	**187**	**0**	**0**	**0**
Inbound Project Traffic %												
Outbound Project Traffic %												
2028 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2028 Pass-By Traffic												
2028 Build Traffic Volumes (Phase 4)	**0**	**5**	**15**	**82**	**1**	**0**	**10**	**0**	**187**	**0**	**0**	**0**
Years to Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	3	18	0	0	2	0	42	0	0	0
Vested Traffic												
2029 No Build Traffic Volumes	**0**	**5**	**15**	**84**	**1**	**0**	**10**	**0**	**193**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2029 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2029 Pass-By Traffic												
2029 Build Traffic Volumes (Phase 5)	**0**	**5**	**15**	**84**	**1**	**0**	**10**	**0**	**193**	**0**	**0**	**0**
Years to Buildout	8	8	8	8	8	8	8	8	8	8	8	8
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	4	21	0	0	3	0	48	0	0	0
Vested Traffic												
2030 No Build Traffic Volumes	**0**	**5**	**16**	**87**	**1**	**0**	**11**	**0**	**199**	**0**	**0**	**0**
Inbound Project Traffic %												
Outbound Project Traffic %												
2030 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0

2030 Pass-By Traffic												
2030 Build Traffic Volumes (Phase 6)	**0**	**5**	**16**	**87**	**1**	**0**	**11**	**0**	**199**	**0**	**0**	**0**
Years to Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	4	24	0	0	3	0	54	0	0	0
Vested Traffic												
2031 No Build Traffic Volumes	**0**	**5**	**16**	**90**	**1**	**0**	**11**	**0**	**205**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2031 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2031 Pass-By Traffic												
2031 Build Traffic Volumes (Phase 7)	**0**	**5**	**16**	**90**	**1**	**0**	**11**	**0**	**205**	**0**	**0**	**0**

PM PEAK HOUR 5:00 PM - 6:00 PM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**0**	**4**	**16**	**142**	**4**	**0**	**11**	**0**	**91**	**0**	**0**	**0**
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
2023 Existing Traffic Volumes	**0**	**4**	**17**	**148**	**4**	**0**	**11**	**0**	**95**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	2	17	0	0	1	0	11	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**4**	**18**	**159**	**4**	**0**	**12**	**0**	**102**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2025 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2025 Pass-By Traffic												
2025 Build Traffic Volumes (Phase 1)	**0**	**4**	**18**	**159**	**4**	**0**	**12**	**0**	**102**	**0**	**0**	**0**
Years to Buildout	4	4	4	4	4	4	4	4	4	4	4	4
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	3	23	1	0	2	0	15	0	0	0
Vested Traffic												
2026 No Build Traffic Volumes	**0**	**5**	**19**	**165**	**5**	**0**	**13**	**0**	**106**	**0**	**0**	**0**
Inbound Project Traffic %												
Outbound Project Traffic %												
2026 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2026 Pass-By Traffic												
2026 Build Traffic Volumes (Phase 2)	**0**	**5**	**19**	**165**	**5**	**0**	**13**	**0**	**106**	**0**	**0**	**0**
Years to Buildout	5	5	5	5	5	5	5	5	5	5	5	5
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	3	28	1	0	2	0	18	0	0	0
Vested Traffic												
2027 No Build Traffic Volumes	**0**	**5**	**19**	**170**	**5**	**0**	**13**	**0**	**109**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2027 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2027 Pass-By Traffic												
2027 Build Traffic Volumes (Phase 1)	**0**	**5**	**19**	**170**	**5**	**0**	**13**	**0**	**109**	**0**	**0**	**0**
Years to Buildout	6	6	6	6	6	6	6	6	6	6	6	6
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	4	34	1	0	3	0	22	0	0	0
Vested Traffic												
2028 No Build Traffic Volumes	**0**	**5**	**20**	**176**	**5**	**0**	**14**	**0**	**113**	**0**	**0**	**0**
Inbound Project Traffic %												
Outbound Project Traffic %												
2028 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2028 Pass-By Traffic												
2028 Build Traffic Volumes (Phase 2)	**0**	**5**	**20**	**176**	**5**	**0**	**14**	**0**	**113**	**0**	**0**	**0**
Years to Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	4	40	1	0	3	0	25	0	0	0
Vested Traffic												
2029 No Build Traffic Volumes	**0**	**5**	**20**	**182**	**5**	**0**	**14**	**0**	**116**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2029 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2029 Pass-By Traffic												
2029 Build Traffic Volumes (Phase 1)	**0**	**5**	**20**	**182**	**5**	**0**	**14**	**0**	**116**	**0**	**0**	**0**
Years to Buildout	8	8	8	8	8	8	8	8	8	8	8	8
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	5	45	1	0	4	0	29	0	0	0

Vested Traffic												
2030 No Build Traffic Volumes	**0**	**5**	**21**	**187**	**5**	**0**	**15**	**0**	**120**	**0**	**0**	**0**
Inbound Project Traffic %												
Outbound Project Traffic %												
2030 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2030 Pass-By Traffic												
2030 Build Traffic Volumes (Phase 6)	**0**	**5**	**21**	**187**	**5**	**0**	**15**	**0**	**120**	**0**	**0**	**0**
Years to Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	1	6	51	1	0	4	0	33	0	0	0
Vested Traffic												
2031 No Build Traffic Volumes	**0**	**5**	**22**	**193**	**5**	**0**	**15**	**0**	**124**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2031 Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2031 Pass-By Traffic												
2031 Build Traffic Volumes (Phase 7)	**0**	**5**	**22**	**193**	**5**	**0**	**15**	**0**	**124**	**0**	**0**	**0**

4 - Yerby Road & Project Driveway #1

Traffic Control: TWSC
Date Counted: 1/0/1900

AM PEAK HOUR 12:00 AM -	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
2023 Existing Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
2025 Project Traffic	0	0	0	8	0	0	0	0	24	0	0	0
2025 Pass-By Traffic												
2025 Build Traffic Volumes (Phase 1)	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**24**	**0**	**0**	**0**
Years to Buildout	4	4	4	4	4	4	4	4	4	4	4	4
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2026 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %				100%								
Outbound Project Traffic %									100%			
2026 Project Traffic	0	0	0	49	0	0	0	0	147	0	0	0
2026 Pass-By Traffic												
2026 Build Traffic Volumes (Phase 2)	**0**	**0**	**0**	**49**	**0**	**0**	**0**	**0**	**147**	**0**	**0**	**0**
Years to Buildout	5	5	5	5	5	5	5	5	5	5	5	5
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2027 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
2027 Project Traffic	0	0	0	86	0	0	0	0	260	0	0	0
2027 Pass-By Traffic												
2027 Build Traffic Volumes (Phase 3)	**0**	**0**	**0**	**86**	**0**	**0**	**0**	**0**	**260**	**0**	**0**	**0**
Years to Buildout	6	6	6	6	6	6	6	6	6	6	6	6
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2028 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %				100%								
Outbound Project Traffic %									100%			
2028 Project Traffic	0	0	0	122	0	0	0	0	367	0	0	0
2028 Pass-By Traffic												
2028 Build Traffic Volumes (Phase 4)	**0**	**0**	**0**	**122**	**0**	**0**	**0**	**0**	**367**	**0**	**0**	**0**
Years to Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2029 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
2029 Project Traffic	0	0	0	157	0	0	0	0	471	0	0	0
2029 Pass-By Traffic												
2029 Build Traffic Volumes (Phase 5)	**0**	**0**	**0**	**157**	**0**	**0**	**0**	**0**	**471**	**0**	**0**	**0**
Years to Buildout	8	8	8	8	8	8	8	8	8	8	8	8
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2030 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %				100%								
Outbound Project Traffic %									100%			
2030 Project Traffic	0	0	0	191	0	0	0	0	572	0	0	0

2030 Pass-By Traffic												
2030 Build Traffic Volumes (Phase 6)	**0**	**0**	**0**	**191**	**0**	**0**	**0**	**0**	**572**	**0**	**0**	**0**
Years to Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2031 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
2031 Project Traffic	0	0	0	224	0	0	0	0	673	0	0	0
2031 Pass-By Traffic												
2031 Build Traffic Volumes (Phase 7)	**0**	**0**	**0**	**224**	**0**	**0**	**0**	**0**	**673**	**0**	**0**	**0**

PM PEAK HOUR 12:00 AM - 12:00 AM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
2023 Existing Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
2025 Project Traffic	0	0	0	26	0	0	0	0	16	0	0	0
2025 Pass-By Traffic												
2025 Build Traffic Volumes (Phase 1)	**0**	**0**	**0**	**26**	**0**	**0**	**0**	**0**	**16**	**0**	**0**	**0**
Years to Buildout	4	4	4	4	4	4	4	4	4	4	4	4
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2026 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %				100%								
Outbound Project Traffic %									100%			
2026 Project Traffic	0	0	0	170	0	0	0	0	100	0	0	0
2026 Pass-By Traffic												
2026 Build Traffic Volumes (Phase 2)	**0**	**0**	**0**	**170**	**0**	**0**	**0**	**0**	**100**	**0**	**0**	**0**
Years to Buildout	5	5	5	5	5	5	5	5	5	5	5	5
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2027 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
2027 Project Traffic	0	0	0	306	0	0	0	0	179	0	0	0
2027 Pass-By Traffic												
2027 Build Traffic Volumes (Phase 1)	**0**	**0**	**0**	**306**	**0**	**0**	**0**	**0**	**179**	**0**	**0**	**0**
Years to Buildout	6	6	6	6	6	6	6	6	6	6	6	6
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2028 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %				100%								
Outbound Project Traffic %									100%			
2028 Project Traffic	0	0	0	437	0	0	0	0	256	0	0	0
2028 Pass-By Traffic												
2028 Build Traffic Volumes (Phase 2)	**0**	**0**	**0**	**437**	**0**	**0**	**0**	**0**	**256**	**0**	**0**	**0**
Years to Buildout	7	7	7	7	7	7	7	7	7	7	7	7
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2029 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
2029 Project Traffic	0	0	0	566	0	0	0	0	332	0	0	0
2029 Pass-By Traffic												
2029 Build Traffic Volumes (Phase 1)	**0**	**0**	**0**	**566**	**0**	**0**	**0**	**0**	**332**	**0**	**0**	**0**
Years to Buildout	8	8	8	8	8	8	8	8	8	8	8	8
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0

Vested Traffic												
2030 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %				100%								
Outbound Project Traffic %									100%			
2030 Project Traffic	0	0	0	693	0	0	0	0	407	0	0	0
2030 Pass-By Traffic												
2030 Build Traffic Volumes (Phase 6)	**0**	**0**	**0**	**693**	**0**	**0**	**0**	**0**	**407**	**0**	**0**	**0**
Years to Buildout	9	9	9	9	9	9	9	9	9	9	9	9
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic												
2031 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic %	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
2031 Project Traffic	0	0	0	818	0	0	0	0	481	0	0	0
2031 Pass-By Traffic												
2031 Build Traffic Volumes (Phase 7)	**0**	**0**	**0**	**818**	**0**	**0**	**0**	**0**	**481**	**0**	**0**	**0**

1 - Yerby Road & Orangeburg Road

Traffic Control: TWSC

		TOTAL PROJECT TRAFFIC				
		IN	OUT		IN	OUT
Date Counted:	AM	**620**	**1,057**	PM	**986**	**622**

AM PEAK HOUR 7:45 AM - 8:45 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**1**	**0**	**5**	**0**	**0**	**0**	**12**	**166**	**0**	**0**	**236**	**5**
Years to Buildout	10	10	10	10	10	10	10	10	10	10	10	10
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	2	0	0	0	5	66	0	0	94	2
Vested Traffic	0	0	0	0	0	0	0	9	0	0	3	0
2032 No Build Traffic Volumes	**1**	**0**	**7**	**0**	**0**	**0**	**17**	**241**	**0**	**0**	**333**	**7**
Inbound Project Traffic %							40%				5%	15%
Outbound Project Traffic %	15%		40%					5%				
2032 Project Traffic	159	0	423	0	0	0	248	53	0	0	31	93
2032 Pass-By Traffic												
2032 Build Traffic Volumes	**160**	**0**	**430**	**0**	**0**	**0**	**265**	**294**	**0**	**0**	**364**	**100**

PM PEAK HOUR 5:00 PM - 6:00 PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**4**	**0**	**15**	**0**	**0**	**0**	**9**	**219**	**0**	**0**	**324**	**7**
Years to Buildout	10	10	10	10	10	10	10	10	10	10	10	10
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	2	0	6	0	0	0	4	88	0	0	130	3
Vested Traffic	0	0	0	0	0	0	0	6	0	0	9	0
2032 No Build Traffic Volumes	**6**	**0**	**21**	**0**	**0**	**0**	**13**	**313**	**0**	**0**	**463**	**10**
Inbound Project Traffic %							40%				5%	15%
Outbound Project Traffic %	15%		40%					5%				
2032 Project Traffic	93	0	249	0	0	0	394	31	0	0	49	148
2032 Pass-By Traffic												
2032 Build Traffic Volumes	**99**	**0**	**270**	**0**	**0**	**0**	**407**	**344**	**0**	**0**	**512**	**158**

2 - E Butternut Road/Mallard Road & Orangeburg Road

Traffic Control: TWSC
Date Counted: 9/22/2022

TOTAL PROJECT TRAFFIC

	IN	OUT		IN	OUT
AM	**620**	**1,057**	PM	**986**	**622**

AM PEAK HOUR 7:45 AM - 8:45 AM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**23**	**122**	**11**	**218**	**49**	**20**	**24**	**123**	**244**	**31**	**190**	**15**
Years to Buildout	10	10	10	10	10	10	10	10	10	10	10	10
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	9	49	4	87	20	8	10	49	98	12	76	6
Vested Traffic	0	0	1	6	0	0	2	9	16	0	3	0
2032 No Build Traffic Volumes	**32**	**171**	**16**	**311**	**69**	**28**	**36**	**181**	**358**	**43**	**269**	**21**
Inbound Project Traffic %					10%	15%	10%	25%				5%
Outbound Project Traffic %	5%	10%	10%							15%	25%	
2032 Project Traffic	53	106	105	0	62	93	62	155	0	159	264	31
2032 Pass-By Traffic												
2032 Build Traffic Volumes	**85**	**277**	**121**	**311**	**131**	**121**	**98**	**336**	**358**	**202**	**533**	**52**

PM PEAK HOUR 5:00 PM - 6:00 PM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**7**	**83**	**19**	**318**	**109**	**10**	**27**	**202**	**222**	**25**	**251**	**48**
Years to Buildout	10	10	10	10	10	10	10	10	10	10	10	10
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	3	33	8	127	44	4	11	81	89	10	100	19
Vested Traffic	0	0	2	17	0	0	1	6	11	0	9	0
2032 No Build Traffic Volumes	**10**	**116**	**29**	**462**	**153**	**14**	**39**	**289**	**322**	**35**	**360**	**67**
Inbound Project Traffic %					10%	15%	10%	25%				5%
Outbound Project Traffic %	5%	10%	10%							15%	25%	
2032 Project Traffic	31	62	62	0	99	148	99	247	0	93	156	49
2032 Pass-By Traffic												
2032 Build Traffic Volumes	**41**	**178**	**91**	**462**	**252**	**162**	**138**	**536**	**322**	**128**	**516**	**116**

3 - Sinclair Road & E Butternut Road

Traffic Control: TWSC
Date Counted: 9/22/2022

TOTAL PROJECT TRAFFIC

	IN	OUT		IN	OUT
AM	**620**	**1,057**	PM	**986**	**622**

AM PEAK HOUR 7:00 AM - 8:00 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**0**	**4**	**12**	**66**	**1**	**0**	**8**	**0**	**151**	**0**	**0**	**0**
Years to Buildout	10	10	10	10	10	10	10	10	10	10	10	10
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	2	5	26	0	0	3	0	60	0	0	0
Vested Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2032 No Build Traffic Volumes	**0**	**6**	**17**	**92**	**1**	**0**	**11**	**0**	**211**	**0**	**0**	**0**
Inbound Project Traffic %					25%		20%					
Outbound Project Traffic %		25%	20%									
2032 Project Traffic	0	264	211	0	155	0	124	0	0	0	0	0
2032 Pass-By Traffic												
2032 Build Traffic Volumes	**0**	**270**	**228**	**92**	**156**	**0**	**135**	**0**	**211**	**0**	**0**	**0**

PM PEAK HOUR 5:00 PM - 6:00 PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**0**	**4**	**16**	**142**	**4**	**0**	**11**	**0**	**91**	**0**	**0**	**0**
Years to Buildout	10	10	10	10	10	10	10	10	10	10	10	10
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	2	6	57	2	0	4	0	36	0	0	0
Vested Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2032 No Build Traffic Volumes	**0**	**6**	**22**	**199**	**6**	**0**	**15**	**0**	**127**	**0**	**0**	**0**
Inbound Project Traffic %					25%		20%					
Outbound Project Traffic %		25%	20%									
2032 Project Traffic	0	156	124	0	247	0	197	0	0	0	0	0
2032 Pass-By Traffic												
2032 Build Traffic Volumes	**0**	**162**	**146**	**199**	**253**	**0**	**212**	**0**	**127**	**0**	**0**	**0**

4 - Yerby Road & Project Driveway #1

Traffic Control: TWSC
Date Counted: 1/0/1900

TOTAL PROJECT TRAFFIC

	IN	OUT		IN	OUT
AM	**620**	**1,057**	PM	**986**	**622**

AM PEAK HOUR 12:00 AM -	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	10	10	10	10	10	10	10	10	10	10	10	10
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2032 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %				55%								
Outbound Project Traffic %									55%			
2032 Project Traffic	0	0	0	341	0	0	0	0	582	0	0	0
2032 Pass-By Traffic												
2032 Build Traffic Volumes	**0**	**0**	**0**	**341**	**0**	**0**	**0**	**0**	**582**	**0**	**0**	**0**

PM PEAK HOUR 12:00 AM - 12:00 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	10	10	10	10	10	10	10	10	10	10	10	10
Yearly Growth Rate	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Background Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Vested Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2032 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %				55%								
Outbound Project Traffic %									55%			
2032 Project Traffic	0	0	0	542	0	0	0	0	342	0	0	0
2032 Pass-By Traffic												
2032 Build Traffic Volumes	**0**	**0**	**0**	**542**	**0**	**0**	**0**	**0**	**342**	**0**	**0**	**0**

Appendix D: Analysis Worksheets (2023 Existing Conditions)

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	12	173	245	5
Future Vol, veh/h	1	5	12	173	245	5
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	1	6	13	192	272	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	493	275	278	0	-	0
Stage 1	275	-	-	-	-	-
Stage 2	218	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	535	764	1246	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	529	764	1246	-	-	-
Mov Cap-2 Maneuver	529	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	818	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1246	-	711	-	-
HCM Lane V/C Ratio	0.011	-	0.009	-	-
HCM Control Delay (s)	7.9	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Intersection Delay, s/veh	18.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	127	11	227	51	21	25	128	254	32	198	16
Future Vol, veh/h	24	127	11	227	51	21	25	128	254	32	198	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	25	132	11	236	53	22	26	133	265	33	206	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.2	18.7	21.6	15.5
HCM LOS	B	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	15%	76%	13%
Vol Thru, %	31%	78%	17%	80%
Vol Right, %	62%	7%	7%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	407	162	299	246
LT Vol	25	24	227	32
Through Vol	128	127	51	198
RT Vol	254	11	21	16
Lane Flow Rate	424	169	311	256
Geometry Grp	1	1	1	1
Degree of Util (X)	0.698	0.322	0.58	0.471
Departure Headway (Hd)	5.931	6.872	6.703	6.613
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	606	520	536	543
Service Time	3.987	4.949	4.767	4.681
HCM Lane V/C Ratio	0.7	0.325	0.58	0.471
HCM Control Delay	21.6	13.2	18.7	15.5
HCM Lane LOS	C	B	C	C
HCM 95th-tile Q	5.6	1.4	3.7	2.5

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	12	8	157	69	1
Future Vol, veh/h	4	12	8	157	69	1
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	89	89	89	89	89	89
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	4	13	9	176	78	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	273	79	79	0	-	0
Stage 1	79	-	-	-	-	-
Stage 2	194	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	716	981	1513	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	711	981	1513	-	-	-
Mov Cap-2 Maneuver	711	-	-	-	-	-
Stage 1	937	-	-	-	-	-
Stage 2	839	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1513	-	896	-	-
HCM Lane V/C Ratio	0.006	-	0.02	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	16	9	228	337	7
Future Vol, veh/h	4	16	9	228	337	7
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	4	18	10	253	374	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	651	378	382	0	-	0
Stage 1	378	-	-	-	-	-
Stage 2	273	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	433	669	1176	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	773	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	429	669	1176	-	-	-
Mov Cap-2 Maneuver	429	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	773	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1176	-	602	-	-
HCM Lane V/C Ratio	0.009	-	0.037	-	-
HCM Control Delay (s)	8.1	0	11.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	43.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	86	20	331	113	10	28	210	231	26	261	50
Future Vol, veh/h	7	86	20	331	113	10	28	210	231	26	261	50
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	7	88	20	338	115	10	29	214	236	27	266	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.9	55.4	48.7	28
HCM LOS	B	F	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	6%	73%	8%
Vol Thru, %	45%	76%	25%	77%
Vol Right, %	49%	18%	2%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	469	113	454	337
LT Vol	28	7	331	26
Through Vol	210	86	113	261
RT Vol	231	20	10	50
Lane Flow Rate	479	115	463	344
Geometry Grp	1	1	1	1
Degree of Util (X)	0.919	0.277	0.944	0.724
Departure Headway (Hd)	7.025	8.634	7.439	7.575
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	522	417	491	481
Service Time	5.025	6.663	5.439	5.575
HCM Lane V/C Ratio	0.918	0.276	0.943	0.715
HCM Control Delay	48.7	14.9	55.4	28
HCM Lane LOS	E	B	F	D
HCM 95th-tile Q	10.9	1.1	11.5	5.8

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	17	11	95	148	4
Future Vol, veh/h	4	17	11	95	148	4
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	85	85	85	85	85	85
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	5	20	13	112	174	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	315	177	179	0	-	0
Stage 1	177	-	-	-	-	-
Stage 2	138	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	672	858	1391	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	665	858	1391	-	-	-
Mov Cap-2 Maneuver	665	-	-	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	881	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1391	-	813	-	-
HCM Lane V/C Ratio	0.009	-	0.03	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix E: Analysis Worksheets (2025 No Build Conditions)

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	13	195	267	6
Future Vol, veh/h	1	6	13	195	267	6
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	1	7	14	217	297	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	546	301	304	0	-	0
Stage 1	301	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	499	739	1218	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	796	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	493	739	1218	-	-	-
Mov Cap-2 Maneuver	493	-	-	-	-	-
Stage 1	741	-	-	-	-	-
Stage 2	796	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1218	-	690	-	-
HCM Lane V/C Ratio	0.012	-	0.011	-	-
HCM Control Delay (s)	8	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	137	13	250	55	22	29	147	289	35	216	17
Future Vol, veh/h	26	137	13	250	55	22	29	147	289	35	216	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	27	144	14	263	58	23	31	155	304	37	227	18
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	14.6	23	16	18.6
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	0%	15%	76%	13%
Vol Thru, %	84%	0%	78%	17%	81%
Vol Right, %	0%	100%	7%	7%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	176	289	176	327	268
LT Vol	29	0	26	250	35
Through Vol	147	0	137	55	216
RT Vol	0	289	13	22	17
Lane Flow Rate	185	304	185	344	282
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.375	0.548	0.372	0.666	0.553
Departure Headway (Hd)	7.285	6.484	7.225	6.968	7.057
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	493	554	495	516	508
Service Time	5.058	4.256	5.311	5.039	5.136
HCM Lane V/C Ratio	0.375	0.549	0.374	0.667	0.555
HCM Control Delay	14.4	16.9	14.6	23	18.6
HCM Lane LOS	B	C	B	C	C
HCM 95th-tile Q	1.7	3.3	1.7	4.9	3.3

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	13	9	169	74	1
Future Vol, veh/h	4	13	9	169	74	1
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	4	14	10	188	82	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	291	83	83	0	-	0
Stage 1	83	-	-	-	-	-
Stage 2	208	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	700	976	1508	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	695	976	1508	-	-	-
Mov Cap-2 Maneuver	695	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	827	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1508	-	891	-	-
HCM Lane V/C Ratio	0.007	-	0.021	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	17	10	251	372	8
Future Vol, veh/h	4	17	10	251	372	8
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	4	19	11	279	413	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	719	418	422	0	-	0
Stage 1	418	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	395	635	1137	-	-	-
Stage 1	664	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	391	635	1137	-	-	-
Mov Cap-2 Maneuver	391	-	-	-	-	-
Stage 1	657	-	-	-	-	-
Stage 2	751	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1137	-	568	-	-
HCM Lane V/C Ratio	0.01	-	0.041	-	-
HCM Control Delay (s)	8.2	0	11.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	52.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	93	23	373	122	11	31	232	260	28	290	54
Future Vol, veh/h	8	93	23	373	122	11	31	232	260	28	290	54
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	8	98	24	393	128	12	33	244	274	29	305	57
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	16.2	102.1	21.8	38.9
HCM LOS	C	F	C	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	0%	6%	74%	8%
Vol Thru, %	88%	0%	75%	24%	78%
Vol Right, %	0%	100%	19%	2%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	263	260	124	506	372
LT Vol	31	0	8	373	28
Through Vol	232	0	93	122	290
RT Vol	0	260	23	11	54
Lane Flow Rate	277	274	131	533	392
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.618	0.551	0.314	1.112	0.824
Departure Headway (Hd)	8.521	7.734	9.064	7.517	8.042
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	426	471	399	485	454
Service Time	6.221	5.434	7.064	5.531	6.042
HCM Lane V/C Ratio	0.65	0.582	0.328	1.099	0.863
HCM Control Delay	24	19.5	16.2	102.1	38.9
HCM Lane LOS	C	C	C	F	E
HCM 95th-tile Q	4	3.3	1.3	17.9	7.8

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	18	12	102	159	4
Future Vol, veh/h	4	18	12	102	159	4
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	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	4	20	13	113	177	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	318	179	181	0	-	0
Stage 1	179	-	-	-	-	-
Stage 2	139	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	669	856	1388	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	662	856	1388	-	-	-
Mov Cap-2 Maneuver	662	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1388	-	813	-	-
HCM Lane V/C Ratio	0.01	-	0.03	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix F: Analysis Worksheets (2025 Build Conditions)

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	25	19	195	267	8
Future Vol, veh/h	6	25	19	195	267	8
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	7	28	21	217	297	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	561	302	306	0	-	0
Stage 1	302	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	489	738	1216	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	784	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	479	738	1216	-	-	-
Mov Cap-2 Maneuver	479	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	784	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1216	-	668	-	-
HCM Lane V/C Ratio	0.017	-	0.052	-	-
HCM Control Delay (s)	8	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	19.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	137	13	250	55	25	29	150	289	43	227	17
Future Vol, veh/h	26	137	13	250	55	25	29	150	289	43	227	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	27	144	14	263	58	26	31	158	304	45	239	18
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	14.9	24.2	16.4	20.4
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	0%	15%	76%	15%
Vol Thru, %	84%	0%	78%	17%	79%
Vol Right, %	0%	100%	7%	8%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	179	289	176	330	287
LT Vol	29	0	26	250	43
Through Vol	150	0	137	55	227
RT Vol	0	289	13	25	17
Lane Flow Rate	188	304	185	347	302
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.387	0.556	0.379	0.683	0.598
Departure Headway (Hd)	7.386	6.585	7.366	7.074	7.126
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	484	545	485	507	505
Service Time	5.169	4.367	5.465	5.151	5.214
HCM Lane V/C Ratio	0.388	0.558	0.381	0.684	0.598
HCM Control Delay	14.8	17.4	14.9	24.2	20.4
HCM Lane LOS	B	C	B	C	C
HCM 95th-tile Q	1.8	3.4	1.7	5.1	3.9

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	13	9	169	74	1
Future Vol, veh/h	4	13	9	169	74	1
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	4	14	10	188	82	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	291	83	83	0	-	0
Stage 1	83	-	-	-	-	-
Stage 2	208	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	700	976	1508	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	695	976	1508	-	-	-
Mov Cap-2 Maneuver	695	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	827	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1508	-	891	-	-
HCM Lane V/C Ratio	0.007	-	0.021	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	30	31	251	372	13
Future Vol, veh/h	7	30	31	251	372	13
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	8	33	34	279	413	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	767	420	427	0	-	0
Stage 1	420	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	370	633	1132	-	-	-
Stage 1	663	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	357	633	1132	-	-	-
Mov Cap-2 Maneuver	357	-	-	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	716	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1132	-	552	-	-
HCM Lane V/C Ratio	0.03	-	0.074	-	-
HCM Control Delay (s)	8.3	0	12	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	56.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	93	23	373	122	20	31	244	260	34	297	54
Future Vol, veh/h	8	93	23	373	122	20	31	244	260	34	297	54
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	8	98	24	393	128	21	33	257	274	36	313	57
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	16.5	111.4	23.2	43.6
HCM LOS	C	F	C	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	0%	6%	72%	9%
Vol Thru, %	89%	0%	75%	24%	77%
Vol Right, %	0%	100%	19%	4%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	275	260	124	515	385
LT Vol	31	0	8	373	34
Through Vol	244	0	93	122	297
RT Vol	0	260	23	20	54
Lane Flow Rate	289	274	131	542	405
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.652	0.559	0.316	1.138	0.857
Departure Headway (Hd)	8.64	7.855	9.265	7.554	8.148
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	420	463	390	482	450
Service Time	6.34	5.555	7.265	5.613	6.148
HCM Lane V/C Ratio	0.688	0.592	0.336	1.124	0.9
HCM Control Delay	26.1	20.1	16.5	111.4	43.6
HCM Lane LOS	D	C	C	F	E
HCM 95th-tile Q	4.5	3.4	1.3	18.9	8.6

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	18	12	102	159	4
Future Vol, veh/h	4	18	12	102	159	4
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	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	4	20	13	113	177	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	318	179	181	0	-	0
Stage 1	179	-	-	-	-	-
Stage 2	139	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	669	856	1388	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	662	856	1388	-	-	-
Mov Cap-2 Maneuver	662	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1388	-	813	-	-
HCM Lane V/C Ratio	0.01	-	0.03	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix G: ANALYSIS WORKSHEETS (2025 BUILD CONDITIONS W/ PROPOSED IMPROVEMENTS)

Intersection	
Intersection Delay, s/veh	19.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	137	13	250	55	25	29	150	289	43	227	17
Future Vol, veh/h	26	137	13	250	55	25	29	150	289	43	227	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	27	144	14	263	58	26	31	158	304	45	239	18
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	15.1	24.5	16.7	21.1
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	16%	0%	15%	76%	16%	0%
Vol Thru, %	84%	0%	78%	17%	84%	0%
Vol Right, %	0%	100%	7%	8%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	179	289	176	330	270	17
LT Vol	29	0	26	250	43	0
Through Vol	150	0	137	55	227	0
RT Vol	0	289	13	25	0	17
Lane Flow Rate	188	304	185	347	284	18
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.39	0.562	0.382	0.687	0.608	0.034
Departure Headway (Hd)	7.458	6.655	7.43	7.121	7.697	6.893
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	480	538	482	504	466	516
Service Time	5.241	4.436	5.527	5.197	5.478	4.674
HCM Lane V/C Ratio	0.392	0.565	0.384	0.688	0.609	0.035
HCM Control Delay	15	17.7	15.1	24.5	21.8	9.9
HCM Lane LOS	B	C	C	C	C	A
HCM 95th-tile Q	1.8	3.4	1.8	5.2	4	0.1

Intersection	
Intersection Delay, s/veh	52.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	93	23	373	122	20	31	244	260	34	297	54
Future Vol, veh/h	8	93	23	373	122	20	31	244	260	34	297	54
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	8	98	24	393	128	21	33	257	274	36	313	57
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	16.2	106	22.7	33.2
HCM LOS	C	F	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	11%	0%	6%	72%	10%	0%
Vol Thru, %	89%	0%	75%	24%	90%	0%
Vol Right, %	0%	100%	19%	4%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	275	260	124	515	331	54
LT Vol	31	0	8	373	34	0
Through Vol	244	0	93	122	297	0
RT Vol	0	260	23	20	0	54
Lane Flow Rate	289	274	131	542	348	57
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.647	0.554	0.312	1.124	0.788	0.117
Departure Headway (Hd)	8.559	7.77	9.099	7.461	8.633	7.849
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	426	468	398	488	422	459
Service Time	6.259	5.47	7.099	5.506	6.333	5.549
HCM Lane V/C Ratio	0.678	0.585	0.329	1.111	0.825	0.124
HCM Control Delay	25.6	19.7	16.2	106	36.7	11.6
HCM Lane LOS	D	C	C	F	E	B
HCM 95th-tile Q	4.4	3.3	1.3	18.4	6.9	0.4

Appendix H: Analysis Worksheets (2026 No Build Conditions)

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	14	202	277	6
Future Vol, veh/h	1	6	14	202	277	6
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	1	7	16	224	308	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	568	312	315	0	-	0
Stage 1	312	-	-	-	-	-
Stage 2	256	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	484	728	1207	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	477	728	1207	-	-	-
Mov Cap-2 Maneuver	477	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	787	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1207	-	677	-	-
HCM Lane V/C Ratio	0.013	-	0.011	-	-
HCM Control Delay (s)	8	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	142	14	259	57	23	30	152	299	36	223	17
Future Vol, veh/h	27	142	14	259	57	23	30	152	299	36	223	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	28	149	15	273	60	24	32	160	315	38	235	18
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	15.5	25.7	17.2	20.5
HCM LOS	C	D	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	0%	15%	76%	13%
Vol Thru, %	84%	0%	78%	17%	81%
Vol Right, %	0%	100%	8%	7%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	182	299	183	339	276
LT Vol	30	0	27	259	36
Through Vol	152	0	142	57	223
RT Vol	0	299	14	23	17
Lane Flow Rate	192	315	193	357	291
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.396	0.581	0.402	0.705	0.593
Departure Headway (Hd)	7.557	6.754	7.516	7.227	7.342
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	479	538	480	503	494
Service Time	5.257	4.454	5.536	5.227	5.342
HCM Lane V/C Ratio	0.401	0.586	0.402	0.71	0.589
HCM Control Delay	15.1	18.4	15.5	25.7	20.5
HCM Lane LOS	C	C	C	D	C
HCM 95th-tile Q	1.9	3.7	1.9	5.5	3.8

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	14	9	175	77	1
Future Vol, veh/h	5	14	9	175	77	1
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	6	16	10	194	86	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	301	87	87	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	214	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	691	971	1503	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	686	971	1503	-	-	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	822	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	875	-	-
HCM Lane V/C Ratio	0.007	-	0.024	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	17	10	260	385	8
Future Vol, veh/h	5	17	10	260	385	8
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	6	19	11	289	428	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	744	433	437	0	-	0
Stage 1	433	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	382	623	1123	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	377	623	1123	-	-	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	646	-	-	-	-	-
Stage 2	743	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1123	-	543	-	-
HCM Lane V/C Ratio	0.01	-	0.045	-	-
HCM Control Delay (s)	8.2	0	11.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	60.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	96	24	386	126	12	32	240	269	29	300	56
Future Vol, veh/h	8	96	24	386	126	12	32	240	269	29	300	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	8	101	25	406	133	13	34	253	283	31	316	59
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	16.8	121.6	23.6	44.6
HCM LOS	C	F	C	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	0%	6%	74%	8%
Vol Thru, %	88%	0%	75%	24%	78%
Vol Right, %	0%	100%	19%	2%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	272	269	128	524	385
LT Vol	32	0	8	386	29
Through Vol	240	0	96	126	300
RT Vol	0	269	24	12	56
Lane Flow Rate	286	283	135	552	405
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.647	0.58	0.327	1.166	0.861
Departure Headway (Hd)	8.739	7.951	9.353	7.609	8.246
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	415	456	387	480	442
Service Time	6.439	5.651	7.353	5.667	6.246
HCM Lane V/C Ratio	0.689	0.621	0.349	1.15	0.916
HCM Control Delay	26.1	21.1	16.8	121.6	44.6
HCM Lane LOS	D	C	C	F	E
HCM 95th-tile Q	4.4	3.6	1.4	20	8.7

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	19	13	106	165	5
Future Vol, veh/h	5	19	13	106	165	5
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	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	6	21	14	118	183	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	332	186	189	0	-	0
Stage 1	186	-	-	-	-	-
Stage 2	146	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	657	849	1379	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	650	849	1379	-	-	-
Mov Cap-2 Maneuver	650	-	-	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	874	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1379	-	798	-	-
HCM Lane V/C Ratio	0.01	-	0.033	-	-
HCM Control Delay (s)	7.6	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix I: Analysis Worksheets (2026 Build Conditions)

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	124	53	202	277	16
Future Vol, veh/h	30	124	53	202	277	16
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	33	138	59	224	308	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	659	317	326	0	-	0
Stage 1	317	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	429	724	1195	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	405	724	1195	-	-	-
Mov Cap-2 Maneuver	405	-	-	-	-	-
Stage 1	697	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	1.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1195	-	628	-	-
HCM Lane V/C Ratio	0.049	-	0.272	-	-
HCM Control Delay (s)	8.2	0	12.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.1	-	-

Intersection	
Intersection Delay, s/veh	35.2
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	142	14	259	57	40	30	174	299	88	289	17
Future Vol, veh/h	27	142	14	259	57	40	30	174	299	88	289	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	28	149	15	273	60	42	32	183	315	93	304	18
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	19.3	41.6	22.5	52.9
HCM LOS	C	E	C	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	0%	15%	73%	22%
Vol Thru, %	85%	0%	78%	16%	73%
Vol Right, %	0%	100%	8%	11%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	204	299	183	356	394
LT Vol	30	0	27	259	88
Through Vol	174	0	142	57	289
RT Vol	0	299	14	40	17
Lane Flow Rate	215	315	193	375	415
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.503	0.668	0.467	0.843	0.918
Departure Headway (Hd)	8.44	7.639	8.728	8.098	7.968
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	427	472	412	450	456
Service Time	6.182	5.381	6.797	6.135	6.003
HCM Lane V/C Ratio	0.504	0.667	0.468	0.833	0.91
HCM Control Delay	19.5	24.5	19.3	41.6	52.9
HCM Lane LOS	C	C	C	E	F
HCM 95th-tile Q	2.7	4.8	2.4	8.3	10.4

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	14	9	175	77	1
Future Vol, veh/h	5	14	9	175	77	1
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	6	16	10	194	86	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	301	87	87	0	-	0
Stage 1	87	-	-	-	-	-
Stage 2	214	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	691	971	1503	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	686	971	1503	-	-	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	822	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	875	-	-
HCM Lane V/C Ratio	0.007	-	0.024	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	97	146	260	385	42
Future Vol, veh/h	25	97	146	260	385	42
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	28	108	162	289	428	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1065	452	475	0	-	0
Stage 1	452	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	246	608	1087	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	202	608	1087	-	-	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	527	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.1	3.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1087	-	431	-	-
HCM Lane V/C Ratio	0.149	-	0.315	-	-
HCM Control Delay (s)	8.9	0	17.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.5	-	1.3	-	-

Intersection	
Intersection Delay, s/veh	99.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	96	24	386	126	72	32	316	269	64	345	56
Future Vol, veh/h	8	96	24	386	126	72	32	316	269	64	345	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	8	101	25	406	133	76	34	333	283	67	363	59
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	19.2	188.2	37.2	92.6
HCM LOS	C	F	E	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	0%	6%	66%	14%
Vol Thru, %	91%	0%	75%	22%	74%
Vol Right, %	0%	100%	19%	12%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	348	269	128	584	465
LT Vol	32	0	8	386	64
Through Vol	316	0	96	126	345
RT Vol	0	269	24	72	56
Lane Flow Rate	366	283	135	615	489
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.85	0.599	0.349	1.332	1.062
Departure Headway (Hd)	9.542	8.762	10.627	8.162	8.907
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	381	416	341	449	411
Service Time	7.242	6.462	8.627	6.162	6.907
HCM Lane V/C Ratio	0.961	0.68	0.396	1.37	1.19
HCM Control Delay	47.7	23.7	19.2	188.2	92.6
HCM Lane LOS	E	C	C	F	F
HCM 95th-tile Q	8	3.8	1.5	26.6	14.3

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	19	13	106	165	5
Future Vol, veh/h	5	19	13	106	165	5
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	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	6	21	14	118	183	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	332	186	189	0	-	0
Stage 1	186	-	-	-	-	-
Stage 2	146	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	657	849	1379	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	650	849	1379	-	-	-
Mov Cap-2 Maneuver	650	-	-	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	874	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1379	-	798	-	-
HCM Lane V/C Ratio	0.01	-	0.033	-	-
HCM Control Delay (s)	7.6	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix J: ANALYSIS WORKSHEETS (2026 BUILD CONDITIONS W/ PROPOSED IMPROVEMENTS)

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	124	53	202	277	16
Future Vol, veh/h	30	124	53	202	277	16
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	-	350	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	33	138	59	224	308	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	659	317	326	0	-	0
Stage 1	317	-	-	-	-	-
Stage 2	342	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	429	724	1195	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	408	724	1195	-	-	-
Mov Cap-2 Maneuver	578	-	-	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	1.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1195	-	690	-	-
HCM Lane V/C Ratio	0.049	-	0.248	-	-
HCM Control Delay (s)	8.2	-	11.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1	-	-

Intersection	
Intersection Delay, s/veh	37.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	142	14	259	57	40	30	174	299	88	289	17
Future Vol, veh/h	27	142	14	259	57	40	30	174	299	88	289	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	28	149	15	273	60	42	32	183	315	93	304	18
Number of Lanes	0	1	0	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	21.9	40.4	23.5	58.6
HCM LOS	C	E	C	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	15%	0%	15%	82%	0%	23%	0%
Vol Thru, %	85%	0%	78%	18%	0%	77%	0%
Vol Right, %	0%	100%	8%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	204	299	183	316	40	377	17
LT Vol	30	0	27	259	0	88	0
Through Vol	174	0	142	57	0	289	0
RT Vol	0	299	14	0	40	0	17
Lane Flow Rate	215	315	193	333	42	397	18
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.513	0.681	0.505	0.836	0.092	0.945	0.038
Departure Headway (Hd)	8.597	7.792	9.442	9.048	7.899	8.577	7.729
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	419	463	381	399	453	421	462
Service Time	6.371	5.566	7.532	6.813	5.662	6.344	5.495
HCM Lane V/C Ratio	0.513	0.68	0.507	0.835	0.093	0.943	0.039
HCM Control Delay	20.2	25.8	21.9	44.1	11.5	60.8	10.8
HCM Lane LOS	C	D	C	E	B	F	B
HCM 95th-tile Q	2.8	5	2.7	7.8	0.3	10.8	0.1

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	97	146	260	385	42
Future Vol, veh/h	25	97	146	260	385	42
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	-	350	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	28	108	162	289	428	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1065	452	475	0	-	0
Stage 1	452	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	246	608	1087	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	209	608	1087	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	545	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	3.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1087	-	525	-	-
HCM Lane V/C Ratio	0.149	-	0.258	-	-
HCM Control Delay (s)	8.9	-	14.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.5	-	1	-	-

Intersection	
Intersection Delay, s/veh	88.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	96	24	386	126	72	32	316	269	64	345	56
Future Vol, veh/h	8	96	24	386	126	72	32	316	269	64	345	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	8	101	25	406	133	76	34	333	283	67	363	59
Number of Lanes	0	1	0	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	20.4	166.4	38.3	74.7
HCM LOS	C	F	E	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	9%	0%	6%	75%	0%	16%	0%
Vol Thru, %	91%	0%	75%	25%	0%	84%	0%
Vol Right, %	0%	100%	19%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	348	269	128	512	72	409	56
LT Vol	32	0	8	386	0	64	0
Through Vol	316	0	96	126	0	345	0
RT Vol	0	269	24	0	72	0	56
Lane Flow Rate	366	283	135	539	76	431	59
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.864	0.609	0.372	1.324	0.163	1.023	0.127
Departure Headway (Hd)	9.425	8.641	10.999	9.056	7.939	9.385	8.568
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	388	422	329	404	455	392	421
Service Time	7.125	6.341	8.999	6.756	5.639	7.085	6.268
HCM Lane V/C Ratio	0.943	0.671	0.41	1.334	0.167	1.099	0.14
HCM Control Delay	49.4	23.9	20.4	188.1	12.2	83.2	12.5
HCM Lane LOS	E	C	C	F	B	F	B
HCM 95th-tile Q	8.3	3.9	1.7	24.2	0.6	12.7	0.4

Appendix K: Analysis Worksheets (2027 No Build Conditions)

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	14	208	286	6
Future Vol, veh/h	1	6	14	208	286	6
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	1	7	16	231	318	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	585	322	325	0	-	0
Stage 1	322	-	-	-	-	-
Stage 2	263	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	473	719	1196	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	781	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	466	719	1196	-	-	-
Mov Cap-2 Maneuver	466	-	-	-	-	-
Stage 1	724	-	-	-	-	-
Stage 2	781	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1196	-	667	-	-
HCM Lane V/C Ratio	0.013	-	0.012	-	-
HCM Control Delay (s)	8.1	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Intersection Delay, s/veh	22.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	146	14	268	59	24	31	157	309	37	231	18
Future Vol, veh/h	28	146	14	268	59	24	31	157	309	37	231	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	29	154	15	282	62	25	33	165	325	39	243	19
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	16.5	30.3	18.9	22.6
HCM LOS	C	D	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	0%	15%	76%	13%
Vol Thru, %	84%	0%	78%	17%	81%
Vol Right, %	0%	100%	7%	7%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	188	309	188	351	286
LT Vol	31	0	28	268	37
Through Vol	157	0	146	59	231
RT Vol	0	309	14	24	18
Lane Flow Rate	198	325	198	369	301
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.424	0.625	0.426	0.761	0.629
Departure Headway (Hd)	7.719	6.914	7.746	7.415	7.526
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	465	520	463	491	479
Service Time	5.479	4.674	5.812	5.415	5.589
HCM Lane V/C Ratio	0.426	0.625	0.428	0.752	0.628
HCM Control Delay	16.1	20.6	16.5	30.3	22.6
HCM Lane LOS	C	C	C	D	C
HCM 95th-tile Q	2.1	4.3	2.1	6.6	4.3

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	14	10	181	79	1
Future Vol, veh/h	5	14	10	181	79	1
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	6	16	11	201	88	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	312	89	89	0	-	0
Stage 1	89	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	681	969	1500	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	676	969	1500	-	-	-
Mov Cap-2 Maneuver	676	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1500	-	870	-	-
HCM Lane V/C Ratio	0.007	-	0.024	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	18	11	269	398	8
Future Vol, veh/h	5	18	11	269	398	8
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	6	20	12	299	442	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	770	447	451	0	-	0
Stage 1	447	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	369	612	1109	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	734	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	364	612	1109	-	-	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	734	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1109	-	533	-	-
HCM Lane V/C Ratio	0.011	-	0.048	-	-
HCM Control Delay (s)	8.3	0	12.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	71.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	100	25	399	131	12	33	248	277	30	310	58
Future Vol, veh/h	8	100	25	399	131	12	33	248	277	30	310	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	8	105	26	420	138	13	35	261	292	32	326	61
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	17.7	146.3	25.6	51.6
HCM LOS	C	F	D	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	0%	6%	74%	8%
Vol Thru, %	88%	0%	75%	24%	78%
Vol Right, %	0%	100%	19%	2%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	277	133	542	398
LT Vol	33	0	8	399	30
Through Vol	248	0	100	131	310
RT Vol	0	277	25	12	58
Lane Flow Rate	296	292	140	571	419
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.676	0.605	0.346	1.23	0.899
Departure Headway (Hd)	8.998	8.208	9.67	7.76	8.486
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	405	443	374	468	432
Service Time	6.698	5.908	7.67	5.817	6.486
HCM Lane V/C Ratio	0.731	0.659	0.374	1.22	0.97
HCM Control Delay	28.5	22.7	17.7	146.3	51.6
HCM Lane LOS	D	C	C	F	F
HCM 95th-tile Q	4.8	3.9	1.5	22.6	9.6

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	19	13	109	170	5
Future Vol, veh/h	5	19	13	109	170	5
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	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	6	21	14	121	189	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	341	192	195	0	-	0
Stage 1	192	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	649	842	1372	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	642	842	1372	-	-	-
Mov Cap-2 Maneuver	642	-	-	-	-	-
Stage 1	824	-	-	-	-	-
Stage 2	871	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1372	-	791	-	-
HCM Lane V/C Ratio	0.011	-	0.034	-	-
HCM Control Delay (s)	7.7	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix L: Analysis Worksheets (2027 Build Conditions)

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	53	214	83	208	286	23
Future Vol, veh/h	53	214	83	208	286	23
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	59	238	92	231	318	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	746	331	344	0	-	0
Stage 1	331	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	381	711	1177	-	-	-
Stage 1	728	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	347	711	1177	-	-	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	666	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.2	2.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1177	-	588	-	-
HCM Lane V/C Ratio	0.078	-	0.505	-	-
HCM Control Delay (s)	8.3	0	17.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	2.8	-	-

Intersection	
Intersection Delay, s/veh	67.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	146	14	268	59	54	31	196	309	128	348	18
Future Vol, veh/h	28	146	14	268	59	54	31	196	309	128	348	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	29	154	15	282	62	57	33	206	325	135	366	19
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	22	55.4	26.5	137.8
HCM LOS	C	F	D	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	0%	15%	70%	26%
Vol Thru, %	86%	0%	78%	15%	70%
Vol Right, %	0%	100%	7%	14%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	227	309	188	381	494
LT Vol	31	0	28	268	128
Through Vol	196	0	146	59	348
RT Vol	0	309	14	54	18
Lane Flow Rate	239	325	198	401	520
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.569	0.706	0.494	0.912	1.202
Departure Headway (Hd)	9.169	8.369	9.776	8.821	8.319
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	397	436	372	413	442
Service Time	6.869	6.069	7.776	6.821	6.319
HCM Lane V/C Ratio	0.602	0.745	0.532	0.971	1.176
HCM Control Delay	23.3	28.8	22	55.4	137.8
HCM Lane LOS	C	D	C	F	F
HCM 95th-tile Q	3.4	5.4	2.6	9.8	20.5

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	14	10	181	79	1
Future Vol, veh/h	5	14	10	181	79	1
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	6	16	11	201	88	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	312	89	89	0	-	0
Stage 1	89	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	681	969	1500	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	676	969	1500	-	-	-
Mov Cap-2 Maneuver	676	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1500	-	870	-	-
HCM Lane V/C Ratio	0.007	-	0.024	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	41	161	256	269	398	69
Future Vol, veh/h	41	161	256	269	398	69
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	46	179	284	299	442	77

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1348	481	519	0	-	0
Stage 1	481	-	-	-	-	-
Stage 2	867	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	166	585	1047	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	411	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	112	585	1047	-	-	-
Mov Cap-2 Maneuver	112	-	-	-	-	-
Stage 1	420	-	-	-	-	-
Stage 2	411	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	40.3	4.7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1047	-	315	-	-
HCM Lane V/C Ratio	0.272	-	0.713	-	-
HCM Control Delay (s)	9.7	0	40.3	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	1.1	-	5.1	-	-

Intersection	
Intersection Delay, s/veh	154.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	100	25	399	131	119	33	386	277	93	390	58
Future Vol, veh/h	8	100	25	399	131	119	33	386	277	93	390	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	8	105	26	420	138	125	35	406	292	98	411	61
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	22	265.4	65.2	169.9
HCM LOS	C	F	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	0%	6%	61%	17%
Vol Thru, %	92%	0%	75%	20%	72%
Vol Right, %	0%	100%	19%	18%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	419	277	133	649	541
LT Vol	33	0	8	399	93
Through Vol	386	0	100	131	390
RT Vol	0	277	25	119	58
Lane Flow Rate	441	292	140	683	569
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.032	0.622	0.371	1.512	1.272
Departure Headway (Hd)	10.465	9.686	12.069	8.681	9.587
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	348	376	301	424	382
Service Time	8.165	7.386	10.069	6.681	7.587
HCM Lane V/C Ratio	1.267	0.777	0.465	1.611	1.49
HCM Control Delay	90.4	27.1	22	265.4	169.9
HCM Lane LOS	F	D	C	F	F
HCM 95th-tile Q	12.2	4	1.7	33.5	21.2

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	19	13	109	170	5
Future Vol, veh/h	5	19	13	109	170	5
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	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	6	21	14	121	189	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	341	192	195	0	-	0
Stage 1	192	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	649	842	1372	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	642	842	1372	-	-	-
Mov Cap-2 Maneuver	642	-	-	-	-	-
Stage 1	824	-	-	-	-	-
Stage 2	871	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1372	-	791	-	-
HCM Lane V/C Ratio	0.011	-	0.034	-	-
HCM Control Delay (s)	7.7	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix M: ANALYSIS WORKSHEETS (2027 BUILD CONDITIONS W/ PROPOSED IMPROVEMENTS)

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	53	214	83	208	286	23
Future Vol, veh/h	53	214	83	208	286	23
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	-	350	-	-	100
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	59	238	92	231	318	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	733	318	344	0	-	0
Stage 1	318	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	388	723	1177	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	358	723	1177	-	-	-
Mov Cap-2 Maneuver	539	-	-	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	666	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	2.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1177	-	677	-	-
HCM Lane V/C Ratio	0.078	-	0.438	-	-
HCM Control Delay (s)	8.3	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	2.2	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	41	161	256	269	398	69
Future Vol, veh/h	41	161	256	269	398	69
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	-	350	-	-	100
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	46	179	284	299	442	77

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1309	442	519	0	-	0
Stage 1	442	-	-	-	-	-
Stage 2	867	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	176	615	1047	-	-	-
Stage 1	648	-	-	-	-	-
Stage 2	411	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	128	615	1047	-	-	-
Mov Cap-2 Maneuver	317	-	-	-	-	-
Stage 1	472	-	-	-	-	-
Stage 2	411	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.2	4.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1047	-	516	-	-
HCM Lane V/C Ratio	0.272	-	0.435	-	-
HCM Control Delay (s)	9.7	-	17.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	1.1	-	2.2	-	-

Appendix N: Analysis Worksheets (2029 No Build Conditions)

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	15	221	305	6
Future Vol, veh/h	1	6	15	221	305	6
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	1	7	17	246	339	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	623	343	346	0	-	0
Stage 1	343	-	-	-	-	-
Stage 2	280	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	450	700	1175	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	442	700	1175	-	-	-
Mov Cap-2 Maneuver	442	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1175	-	646	-	-
HCM Lane V/C Ratio	0.014	-	0.012	-	-
HCM Control Delay (s)	8.1	0	10.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Intersection Delay, s/veh	28.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	156	15	285	63	26	33	166	328	40	246	19
Future Vol, veh/h	29	156	15	285	63	26	33	166	328	40	246	19
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	31	164	16	300	66	27	35	175	345	42	259	20
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	18.8	40.6	22.8	28.3
HCM LOS	C	E	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	0%	14%	76%	13%
Vol Thru, %	83%	0%	78%	17%	81%
Vol Right, %	0%	100%	7%	7%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	199	328	200	374	305
LT Vol	33	0	29	285	40
Through Vol	166	0	156	63	246
RT Vol	0	328	15	26	19
Lane Flow Rate	209	345	211	394	321
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.473	0.702	0.481	0.845	0.709
Departure Headway (Hd)	8.123	7.315	8.223	7.731	7.949
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	442	494	436	468	453
Service Time	5.896	5.088	6.311	5.801	6.026
HCM Lane V/C Ratio	0.473	0.698	0.484	0.842	0.709
HCM Control Delay	18	25.7	18.8	40.6	28.3
HCM Lane LOS	C	D	C	E	D
HCM 95th-tile Q	2.5	5.4	2.5	8.4	5.5

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	10	193	84	1
Future Vol, veh/h	5	15	10	193	84	1
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	6	17	11	214	93	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	330	94	94	0	-	0
Stage 1	94	-	-	-	-	-
Stage 2	236	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	665	963	1494	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	803	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	660	963	1494	-	-	-
Mov Cap-2 Maneuver	660	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	803	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1494	-	864	-	-
HCM Lane V/C Ratio	0.007	-	0.026	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	19	12	286	424	9
Future Vol, veh/h	5	19	12	286	424	9
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	6	21	13	318	471	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	820	476	481	0	-	0
Stage 1	476	-	-	-	-	-
Stage 2	344	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	345	589	1082	-	-	-
Stage 1	625	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	340	589	1082	-	-	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	616	-	-	-	-	-
Stage 2	718	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1082	-	511	-	-
HCM Lane V/C Ratio	0.012	-	0.052	-	-
HCM Control Delay (s)	8.4	0	12.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	95.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	106	26	424	140	13	36	265	295	32	330	61
Future Vol, veh/h	9	106	26	424	140	13	36	265	295	32	330	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	9	112	27	446	147	14	38	279	311	34	347	64
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	19.5	199.5	31	69.3
HCM LOS	C	F	D	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	0%	6%	73%	8%
Vol Thru, %	88%	0%	75%	24%	78%
Vol Right, %	0%	100%	18%	2%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	301	295	141	577	423
LT Vol	36	0	9	424	32
Through Vol	265	0	106	140	330
RT Vol	0	295	26	13	61
Lane Flow Rate	317	311	148	607	445
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.741	0.661	0.38	1.36	0.975
Departure Headway (Hd)	9.526	8.732	10.344	8.06	8.973
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	383	416	350	456	410
Service Time	7.226	6.432	8.344	6.112	6.973
HCM Lane V/C Ratio	0.828	0.748	0.423	1.331	1.085
HCM Control Delay	35	26.9	19.5	199.5	69.3
HCM Lane LOS	D	D	C	F	F
HCM 95th-tile Q	5.8	4.6	1.7	28	11.5

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	20	14	116	182	5
Future Vol, veh/h	5	20	14	116	182	5
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	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	6	22	16	129	202	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	366	205	208	0	-	0
Stage 1	205	-	-	-	-	-
Stage 2	161	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	628	828	1357	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	861	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	620	828	1357	-	-	-
Mov Cap-2 Maneuver	620	-	-	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	861	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1357	-	776	-	-
HCM Lane V/C Ratio	0.011	-	0.036	-	-
HCM Control Delay (s)	7.7	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix O: Analysis Worksheets (2029 Build Conditions)

Intersection	
Int Delay, s/veh	33

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	383	141	221	305	37
Future Vol, veh/h	95	383	141	221	305	37
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	106	426	157	246	339	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	920	360	380	0	-	0
Stage 1	360	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	301	684	1141	-	-	-
Stage 1	706	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	253	684	1141	-	-	-
Mov Cap-2 Maneuver	253	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	572	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	79	3.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1141	-	511	-	-
HCM Lane V/C Ratio	0.137	-	1.039	-	-
HCM Control Delay (s)	8.7	0	79	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.5	-	15.4	-	-

Intersection	
Intersection Delay, s/veh	161.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	156	15	285	63	81	33	237	328	205	458	19
Future Vol, veh/h	29	156	15	285	63	81	33	237	328	205	458	19
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	31	164	16	300	66	85	35	249	345	216	482	20
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	28.3	97.1	38.1	349.6
HCM LOS	D	F	E	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	0%	14%	66%	30%
Vol Thru, %	88%	0%	78%	15%	67%
Vol Right, %	0%	100%	7%	19%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	328	200	429	682
LT Vol	33	0	29	285	205
Through Vol	237	0	156	63	458
RT Vol	0	328	15	81	19
Lane Flow Rate	284	345	211	452	718
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.707	0.786	0.552	1.059	1.705
Departure Headway (Hd)	10.597	9.796	11.738	10.114	8.974
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	344	373	309	361	409
Service Time	8.297	7.496	9.738	8.114	6.974
HCM Lane V/C Ratio	0.826	0.925	0.683	1.252	1.756
HCM Control Delay	35.2	40.4	28.3	97.1	349.6
HCM Lane LOS	E	E	D	F	F
HCM 95th-tile Q	5.1	6.6	3.1	13.3	41.5

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	10	193	84	1
Future Vol, veh/h	5	15	10	193	84	1
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	6	17	11	214	93	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	330	94	94	0	-	0
Stage 1	94	-	-	-	-	-
Stage 2	236	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	665	963	1494	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	803	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	660	963	1494	-	-	-
Mov Cap-2 Maneuver	660	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	803	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1494	-	864	-	-
HCM Lane V/C Ratio	0.007	-	0.026	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	243.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	258	465	286	424	122
Future Vol, veh/h	71	258	465	286	424	122
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	79	287	517	318	471	136

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1891	539	607	0	-	0
Stage 1	539	-	-	-	-	-
Stage 2	1352	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 77	542	971	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 27	542	971	-	-	-
Mov Cap-2 Maneuver	~ 27	-	-	-	-	-
Stage 1	207	-	-	-	-	-
Stage 2	241	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	1186.8	8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	971	-	106	-	-
HCM Lane V/C Ratio	0.532	-	3.449	-	-
HCM Control Delay (s)	12.8	$	1186.8	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	3.2	-	36.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	273.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	106	26	424	140	211	36	520	295	148	480	61
Future Vol, veh/h	9	106	26	424	140	211	36	520	295	148	480	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	9	112	27	446	147	222	38	547	311	156	505	64
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	27.3	398.1	157.1	328.3
HCM LOS	D	F	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	0%	6%	55%	21%
Vol Thru, %	94%	0%	75%	18%	70%
Vol Right, %	0%	100%	18%	27%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	556	295	141	775	689
LT Vol	36	0	9	424	148
Through Vol	520	0	106	140	480
RT Vol	0	295	26	211	61
Lane Flow Rate	585	311	148	816	725
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.38	0.669	0.393	1.812	1.643
Departure Headway (Hd)	12.166	11.385	14.916	9.547	10.717
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	304	320	243	392	348
Service Time	9.866	9.085	12.916	7.547	8.717
HCM Lane V/C Ratio	1.924	0.972	0.609	2.082	2.083
HCM Control Delay	222.3	34.3	27.3	398.1	328.3
HCM Lane LOS	F	D	D	F	F
HCM 95th-tile Q	21.3	4.5	1.8	44.1	33.2

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	20	14	116	182	5
Future Vol, veh/h	5	20	14	116	182	5
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	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	6	22	16	129	202	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	366	205	208	0	-	0
Stage 1	205	-	-	-	-	-
Stage 2	161	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	628	828	1357	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	861	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	620	828	1357	-	-	-
Mov Cap-2 Maneuver	620	-	-	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	861	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1357	-	776	-	-
HCM Lane V/C Ratio	0.011	-	0.036	-	-
HCM Control Delay (s)	7.7	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix P: ANALYSIS WORKSHEETS (2029 BUILD CONDITIONS W/ PROPOSED IMPROVEMENTS)

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	95	383	141	221	305	37
Future Vol, veh/h	95	383	141	221	305	37
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	350	350	-	-	100
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	106	426	157	246	339	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	899	339	380	0	-	0
Stage 1	339	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	309	703	1141	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	266	703	1141	-	-	-
Mov Cap-2 Maneuver	460	-	-	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	572	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.2	3.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1141	-	460	703	-	-
HCM Lane V/C Ratio	0.137	-	0.229	0.605	-	-
HCM Control Delay (s)	8.7	-	15.1	17.7	-	-
HCM Lane LOS	A	-	C	C	-	-
HCM 95th %tile Q(veh)	0.5	-	0.9	4.1	-	-

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	285	465	286	424	122
Future Vol, veh/h	71	285	465	286	424	122
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	350	350	-	-	100
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	79	317	517	318	471	136

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1823	471	607	0	-	0
Stage 1	471	-	-	-	-	-
Stage 2	1352	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	85	593	971	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 40	593	971	-	-	-
Mov Cap-2 Maneuver	179	-	-	-	-	-
Stage 1	294	-	-	-	-	-
Stage 2	241	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.2	8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	971	-	179	593	-	-
HCM Lane V/C Ratio	0.532	-	0.441	0.534	-	-
HCM Control Delay (s)	12.8	-	40.1	17.8	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	3.2	-	2	3.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Appendix Q: Analysis Worksheets (2032 No Build Conditions)

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	7	17	241	333	7
Future Vol, veh/h	1	7	17	241	333	7
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	1	8	19	268	370	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	680	374	378	0	-	0
Stage 1	374	-	-	-	-	-
Stage 2	306	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	417	672	1143	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	747	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	409	672	1143	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	682	-	-	-	-	-
Stage 2	747	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1143	-	622	-	-
HCM Lane V/C Ratio	0.017	-	0.014	-	-
HCM Control Delay (s)	8.2	0	10.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Intersection Delay, s/veh	46.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	171	16	311	69	28	36	181	358	43	269	21
Future Vol, veh/h	32	171	16	311	69	28	36	181	358	43	269	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	34	180	17	327	73	29	38	191	377	45	283	22
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	24.4	76.4	34.4	44.4
HCM LOS	C	F	D	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	0%	15%	76%	13%
Vol Thru, %	83%	0%	78%	17%	81%
Vol Right, %	0%	100%	7%	7%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	358	219	408	333
LT Vol	36	0	32	311	43
Through Vol	181	0	171	69	269
RT Vol	0	358	16	28	21
Lane Flow Rate	228	377	231	429	351
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.56	0.843	0.583	1.012	0.843
Departure Headway (Hd)	9.004	8.19	9.251	8.481	8.865
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	404	445	392	429	410
Service Time	6.704	5.89	7.251	6.486	6.865
HCM Lane V/C Ratio	0.564	0.847	0.589	1	0.856
HCM Control Delay	22.6	41.6	24.4	76.4	44.4
HCM Lane LOS	C	E	C	F	E
HCM 95th-tile Q	3.3	8.2	3.6	13	8

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	17	11	211	92	1
Future Vol, veh/h	6	17	11	211	92	1
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	93	93	93	93	93	93
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	6	18	12	227	99	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	351	100	100	0	-	0
Stage 1	100	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	646	956	1486	-	-	-
Stage 1	924	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	640	956	1486	-	-	-
Mov Cap-2 Maneuver	640	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	791	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1486	-	847	-	-
HCM Lane V/C Ratio	0.008	-	0.029	-	-
HCM Control Delay (s)	7.4	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	21	13	313	463	10
Future Vol, veh/h	6	21	13	313	463	10
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	7	23	14	348	514	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	896	520	525	0	-	0
Stage 1	520	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	311	556	1042	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	306	556	1042	-	-	-
Mov Cap-2 Maneuver	306	-	-	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	694	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1042	-	471	-	-
HCM Lane V/C Ratio	0.014	-	0.064	-	-
HCM Control Delay (s)	8.5	0	13.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	127.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	116	29	462	153	14	39	289	322	35	360	67
Future Vol, veh/h	10	116	29	462	153	14	39	289	322	35	360	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	11	122	31	486	161	15	41	304	339	37	379	71
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	22.2	260.9	39.6	104.7
HCM LOS	C	F	E	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	0%	6%	73%	8%
Vol Thru, %	88%	0%	75%	24%	78%
Vol Right, %	0%	100%	19%	2%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	328	322	155	629	462
LT Vol	39	0	10	462	35
Through Vol	289	0	116	153	360
RT Vol	0	322	29	14	67
Lane Flow Rate	345	339	163	662	486
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.816	0.73	0.423	1.503	1.092
Departure Headway (Hd)	10.203	9.405	11.221	8.514	9.525
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	359	386	323	430	384
Service Time	7.903	7.105	9.221	6.514	7.525
HCM Lane V/C Ratio	0.961	0.878	0.505	1.54	1.266
HCM Control Delay	45.4	33.7	22.2	260.9	104.7
HCM Lane LOS	E	D	C	F	F
HCM 95th-tile Q	7.1	5.6	2	33.7	14.8

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	22	15	127	199	6
Future Vol, veh/h	6	22	15	127	199	6
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	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	7	24	17	141	221	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	400	225	228	0	-	0
Stage 1	225	-	-	-	-	-
Stage 2	175	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	600	807	1334	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	592	807	1334	-	-	-
Mov Cap-2 Maneuver	592	-	-	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	848	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1334	-	749	-	-
HCM Lane V/C Ratio	0.012	-	0.042	-	-
HCM Control Delay (s)	7.7	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix R: Analysis Worksheets (2032 Build Conditions)

Intersection	
Int Delay, s/veh	267.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	160	430	265	294	364	100
Future Vol, veh/h	160	430	265	294	364	100
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	178	478	294	327	404	111

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1375	460	515	0	-	0
Stage 1	460	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	~ 160	601	1016	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	390	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 103	601	1016	-	-	-
Mov Cap-2 Maneuver	~ 103	-	-	-	-	-
Stage 1	411	-	-	-	-	-
Stage 2	390	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 725.7	4.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1016	-	260	-	-
HCM Lane V/C Ratio	0.29	-	2.521	-	-
HCM Control Delay (s)	10	0	$ 725.7	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	1.2	-	54	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	334.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	277	121	311	131	121	98	336	358	202	533	52
Future Vol, veh/h	85	277	121	311	131	121	98	336	358	202	533	52
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	89	292	127	327	138	127	103	354	377	213	561	55
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	218.5	320.8	144.7	606
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	0%	18%	55%	26%
Vol Thru, %	77%	0%	57%	23%	68%
Vol Right, %	0%	100%	25%	21%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	434	358	483	563	787
LT Vol	98	0	85	311	202
Through Vol	336	0	277	131	533
RT Vol	0	358	121	121	52
Lane Flow Rate	457	377	508	593	828
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.264	0.958	1.338	1.595	2.263
Departure Headway (Hd)	15.944	15.074	15.783	14.87	12.73
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	233	245	234	249	298
Service Time	13.644	12.774	13.783	12.87	10.73
HCM Lane V/C Ratio	1.961	1.539	2.171	2.382	2.779
HCM Control Delay	190.3	89.5	218.5	320.8	606
HCM Lane LOS	F	F	F	F	F
HCM 95th-tile Q	14.7	8.7	16.6	24	49.5

Intersection	
Int Delay, s/veh	47.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	270	228	135	211	92	156
Future Vol, veh/h	270	228	135	211	92	156
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	93	93	93	93	93	93
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	290	245	145	227	99	168

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	700	183	267	0	-	0
Stage 1	183	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	405	859	1291	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	353	859	1291	-	-	-
Mov Cap-2 Maneuver	353	-	-	-	-	-
Stage 1	739	-	-	-	-	-
Stage 2	598	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	102.6	3.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1291	-	483	-	-
HCM Lane V/C Ratio	0.112	-	1.109	-	-
HCM Control Delay (s)	8.1	0	102.6	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	17.8	-	-

Intersection	
Int Delay, s/veh	419.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	99	270	407	344	512	158
Future Vol, veh/h	99	270	407	344	512	158
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	110	300	452	382	569	176

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1943	657	745	0	-	0
Stage 1	657	-	-	-	-	-
Stage 2	1286	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 71	465	863	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 24	465	863	-	-	-
Mov Cap-2 Maneuver	~ 24	-	-	-	-	-
Stage 1	173	-	-	-	-	-
Stage 2	259	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	2021.9	7.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	863	-	78	-	-
HCM Lane V/C Ratio	0.524	-	5.256	-	-
HCM Control Delay (s)	13.7	$	2021.9	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	3.1	-	44.9	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	448.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	178	91	462	252	162	138	536	322	128	516	116
Future Vol, veh/h	41	178	91	462	252	162	138	536	322	128	516	116
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	43	187	96	486	265	171	145	564	339	135	543	122
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	82.4	653.4	323.2	524.6
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	0%	13%	53%	17%
Vol Thru, %	80%	0%	57%	29%	68%
Vol Right, %	0%	100%	29%	18%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	674	322	310	876	760
LT Vol	138	0	41	462	128
Through Vol	536	0	178	252	516
RT Vol	0	322	91	162	116
Lane Flow Rate	709	339	326	922	800
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.88	0.823	0.859	2.371	2.072
Departure Headway (Hd)	16.307	15.44	19.227	12.53	13.838
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	234	237	193	304	272
Service Time	14.007	13.14	17.227	10.53	11.838
HCM Lane V/C Ratio	3.03	1.43	1.689	3.033	2.941
HCM Control Delay	447.2	63.8	82.4	653.4	524.6
HCM Lane LOS	F	F	F	F	F
HCM 95th-tile Q	29.6	6.3	6.3	54	39.9

Intersection	
Int Delay, s/veh	35.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	162	146	212	127	199	253
Future Vol, veh/h	162	146	212	127	199	253
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	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	180	162	236	141	221	281

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	975	362	502	0	-	0
Stage 1	362	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Critical Hdwy	6.45	6.25	4.13	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	275	676	1057	-	-	-
Stage 1	698	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	208	676	1057	-	-	-
Mov Cap-2 Maneuver	208	-	-	-	-	-
Stage 1	529	-	-	-	-	-
Stage 2	535	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	119.5	5.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1057	-	310	-	-
HCM Lane V/C Ratio	0.223	-	1.104	-	-
HCM Control Delay (s)	9.4	0	119.5	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.9	-	13.5	-	-

Appendix S: ANALYSIS WORKSHEETS (2032 BUILD CONDITIONS W/ PROPOSED IMPROVEMENTS)

Intersection	
Int Delay, s/veh	11.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	160	430	265	264	364	100
Future Vol, veh/h	160	430	265	264	364	100
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	350	350	-	-	100
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	10	10
Mvmt Flow	178	478	294	293	404	111

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1285	404	515	0	-	0
Stage 1	404	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.19	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.281	-	-	-
Pot Cap-1 Maneuver	182	647	1016	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	405	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 129	647	1016	-	-	-
Mov Cap-2 Maneuver	317	-	-	-	-	-
Stage 1	479	-	-	-	-	-
Stage 2	405	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26	5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1016	-	317	647	-	-
HCM Lane V/C Ratio	0.29	-	0.561	0.738	-	-
HCM Control Delay (s)	10	-	29.9	24.6	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	1.2	-	3.2	6.5	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	276.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	277	121	311	131	121	98	336	358	202	533	52
Future Vol, veh/h	85	277	121	311	131	121	98	336	358	202	533	52
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	9	9	9	9	9	9	10	10	10
Mvmt Flow	89	292	127	327	138	127	103	354	377	213	561	55
Number of Lanes	0	1	0	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	243.8	163.1	138.8	516.2
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	23%	0%	18%	70%	0%	27%	0%
Vol Thru, %	77%	0%	57%	30%	0%	73%	0%
Vol Right, %	0%	100%	25%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	434	358	483	442	121	735	52
LT Vol	98	0	85	311	0	202	0
Through Vol	336	0	277	131	0	533	0
RT Vol	0	358	121	0	121	0	52
Lane Flow Rate	457	377	508	465	127	774	55
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	1.264	0.958	1.417	1.314	0.322	2.148	0.139
Departure Headway (Hd)	14.324	13.436	13.945	13.821	12.686	11.583	10.687
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	260	275	264	265	285	325	338
Service Time	12.024	11.136	11.945	11.521	10.386	9.283	8.387
HCM Lane V/C Ratio	1.758	1.371	1.924	1.755	0.446	2.382	0.163
HCM Control Delay	184.5	83.4	243.8	201.9	21.3	551.7	15.1
HCM Lane LOS	F	F	F	F	C	F	C
HCM 95th-tile Q	15.8	9.1	20.2	17.5	1.3	49.6	0.5

Intersection	
Int Delay, s/veh	6.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	270	228	92	156	135	211
Future Vol, veh/h	270	228	92	156	135	211
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	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	300	253	102	173	150	234

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	553	0	804	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	377	-
Critical Hdwy	-	-	4.12	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.218	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1017	-	351	625
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1017	-	312	625
Mov Cap-2 Maneuver	-	-	-	-	312	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	614	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.3	19.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	312	625	-	-	1017	-
HCM Lane V/C Ratio	0.481	0.375	-	-	0.101	-
HCM Control Delay (s)	26.8	14.2	-	-	8.9	0
HCM Lane LOS	D	B	-	-	A	A
HCM 95th %tile Q(veh)	2.5	1.7	-	-	0.3	-

MOVEMENT SUMMARY

Site: 103 [E. Butternut Road & Sinclair Road (Site Folder: AM Peak Hour)]

AM Peak Hour
Site Category: 2032 Build
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: E. Butternut Road														
3	L2	135	2.0	145	2.0	0.452	10.2	LOS B	2.3	59.6	0.53	0.49	0.57	30.8
18	R2	211	2.0	227	2.0	0.452	10.2	LOS B	2.3	59.6	0.53	0.49	0.57	30.3
Approach		346	2.0	372	2.0	0.452	10.2	LOS B	2.3	59.6	0.53	0.49	0.57	30.5
East: E. Butternut Road														
1	L2	92	6.0	99	6.0	0.290	7.0	LOS A	1.2	31.3	0.32	0.21	0.32	32.1
6	T1	156	6.0	168	6.0	0.290	7.0	LOS A	1.2	31.3	0.32	0.21	0.32	32.3
Approach		248	6.0	267	6.0	0.290	7.0	LOS A	1.2	31.3	0.32	0.21	0.32	32.2
West: Sinclair Road														
2	T1	270	2.0	290	2.0	0.537	10.4	LOS B	3.3	85.1	0.39	0.24	0.39	31.6
12	R2	228	2.0	245	2.0	0.537	10.4	LOS B	3.3	85.1	0.39	0.24	0.39	30.9
Approach		498	2.0	535	2.0	0.537	10.4	LOS B	3.3	85.1	0.39	0.24	0.39	31.3
All Vehicles		1092	2.9	1174	2.9	0.537	9.5	LOS A	3.3	85.1	0.42	0.31	0.43	31.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	99	270	407	344	512	158
Future Vol, veh/h	99	270	407	344	512	158
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	350	350	-	-	100
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	110	300	452	382	569	176

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1855	569	745	0	-	0
Stage 1	569	-	-	-	-	-
Stage 2	1286	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 81	522	863	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 39	522	863	-	-	-
Mov Cap-2 Maneuver	179	-	-	-	-	-
Stage 1	269	-	-	-	-	-
Stage 2	259	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.4	7.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	863	-	179	522	-	-
HCM Lane V/C Ratio	0.524	-	0.615	0.575	-	-
HCM Control Delay (s)	13.7	-	52.8	20.8	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	3.1	-	3.4	3.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	338.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	178	91	462	252	162	138	536	322	128	516	116
Future Vol, veh/h	41	178	91	462	252	162	138	536	322	128	516	116
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	3
Mvmt Flow	43	187	96	486	265	171	145	564	339	135	543	122
Number of Lanes	0	1	0	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	78.1	429.8	322.9	358.3
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	20%	0%	13%	65%	0%	20%	0%
Vol Thru, %	80%	0%	57%	35%	0%	80%	0%
Vol Right, %	0%	100%	29%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	674	322	310	714	162	644	116
LT Vol	138	0	41	462	0	128	0
Through Vol	536	0	178	252	0	516	0
RT Vol	0	322	91	0	162	0	116
Lane Flow Rate	709	339	326	752	171	678	122
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	1.911	0.838	0.912	2.081	0.424	1.845	0.305
Departure Headway (Hd)	12.905	12.037	14.72	11.774	10.685	11.997	11.14
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	291	305	248	316	339	312	325
Service Time	10.605	9.737	12.72	9.474	8.385	9.697	8.84
HCM Lane V/C Ratio	2.436	1.111	1.315	2.38	0.504	2.173	0.375
HCM Control Delay	451	54.9	78.1	522.6	21	419.5	18.7
HCM Lane LOS	F	F	F	F	C	F	C
HCM 95th-tile Q	37.1	7.1	7.9	46.5	2	37.3	1.3

Intersection	
Int Delay, s/veh	29.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	162	146	199	253	212	127
Future Vol, veh/h	162	146	199	253	212	127
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	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	2	2	3	3
Mvmt Flow	180	162	221	281	236	141

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	342	0	984	261
Stage 1	-	-	-	-	261	-
Stage 2	-	-	-	-	723	-
Critical Hdwy	-	-	4.12	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.218	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1217	-	274	775
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	479	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1217	-	~ 215	775
Mov Cap-2 Maneuver	-	-	-	-	~ 215	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	376	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.8	89.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	215	775	-	-	1217	-
HCM Lane V/C Ratio	1.096	0.182	-	-	0.182	-
HCM Control Delay (s)	136.6	10.7	-	-	8.6	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q(veh)	10.8	0.7	-	-	0.7	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

MOVEMENT SUMMARY

Site: 103 [E. Butternut Road & Sinclair Road (Site Folder: PM Peak Hour)]

AM Peak Hour
Site Category: 2032 Build
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: E. Butternut Road														
3	L2	212	2.0	233	2.0	0.403	8.5	LOS A	2.0	49.9	0.41	0.30	0.41	31.1
18	R2	127	2.0	140	2.0	0.403	8.5	LOS A	2.0	49.9	0.41	0.30	0.41	30.6
Approach		339	2.0	373	2.0	0.403	8.5	LOS A	2.0	49.9	0.41	0.30	0.41	30.9
East: E. Butternut Road														
1	L2	199	2.0	219	2.0	0.569	12.3	LOS B	4.7	118.4	0.57	0.56	0.74	29.9
6	T1	253	2.0	278	2.0	0.569	12.3	LOS B	4.7	118.4	0.57	0.56	0.74	30.0
Approach		452	2.0	497	2.0	0.569	12.3	LOS B	4.7	118.4	0.57	0.56	0.74	30.0
West: Sinclair Road														
2	T1	162	2.0	178	2.0	0.382	8.5	LOS A	1.8	45.1	0.44	0.35	0.44	32.5
12	R2	146	2.0	160	2.0	0.382	8.5	LOS A	1.8	45.1	0.44	0.35	0.44	31.8
Approach		308	2.0	338	2.0	0.382	8.5	LOS A	1.8	45.1	0.44	0.35	0.44	32.1
All Vehicles		1099	2.0	1208	2.0	0.569	10.0	LOS B	4.7	118.4	0.49	0.42	0.56	30.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Appendix T: Turn Lane Analysis

Stantec

Study Area Information

County:	Dorchester County	Date:	4/14/2023
SCDOT Engineering District:	District 6	Analyst:	Claudia Thompson
Analysis Year:	2025	Agency:	**Stantec Consulting Services Inc.**

Intersection:	Orangeburg Road & Yerby Road
Left Turn Movement:	Northbound Left-Turn Lane
Right Turn Movement:	Southbound Right-Turn Lane

Posted Speed Limit:	45 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	19	31
	Through	195	251
	Right		
Opposing	Left		
	Through	267	372
	Right	8	13

	AM	PM
Advancing Volume:	214	282
Opposing Volume:	275	385
Left Turn Volume:	19	31
% Left Turns in Advancing Volume:	8.9%	11.0%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	0	0
	Through	267	372
	Right	8	13

Adjustment to Right Turn Volume[1]: Include? **No**

	AM	PM
Advancing Volume:	275	385
Right Turn Volume:	8	13

Turn Lane Warrant Met?

Left Turn Lane Warrant		Right Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-F**	Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**No**	Warrant Satisfied:	**No**

Recommended Turn Lane Length

Left Turn Lane			Right Turn Lane		
Turning Truck%:	2%		Turning Truck%:	2%	
Storage Length (ft):	**N/A**	ft	Storage Length:	**N/A**	ft
Taper Length (ft):	**N/A**	ft	Taper Length:	**N/A**	ft
Total Left Turn Lane (ft):	**N/A**	ft	Total Left Turn Lane:	**N/A**	ft

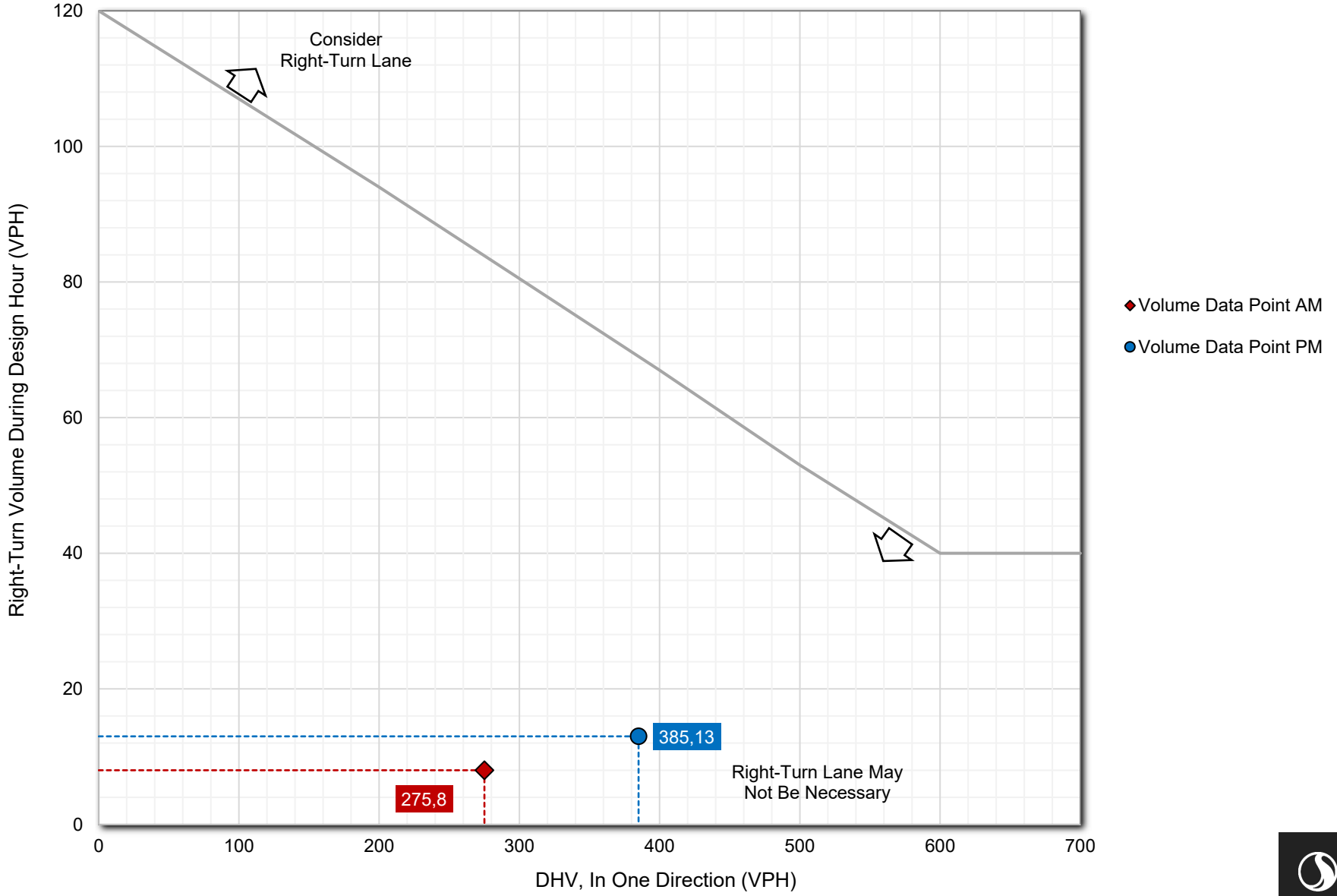
Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

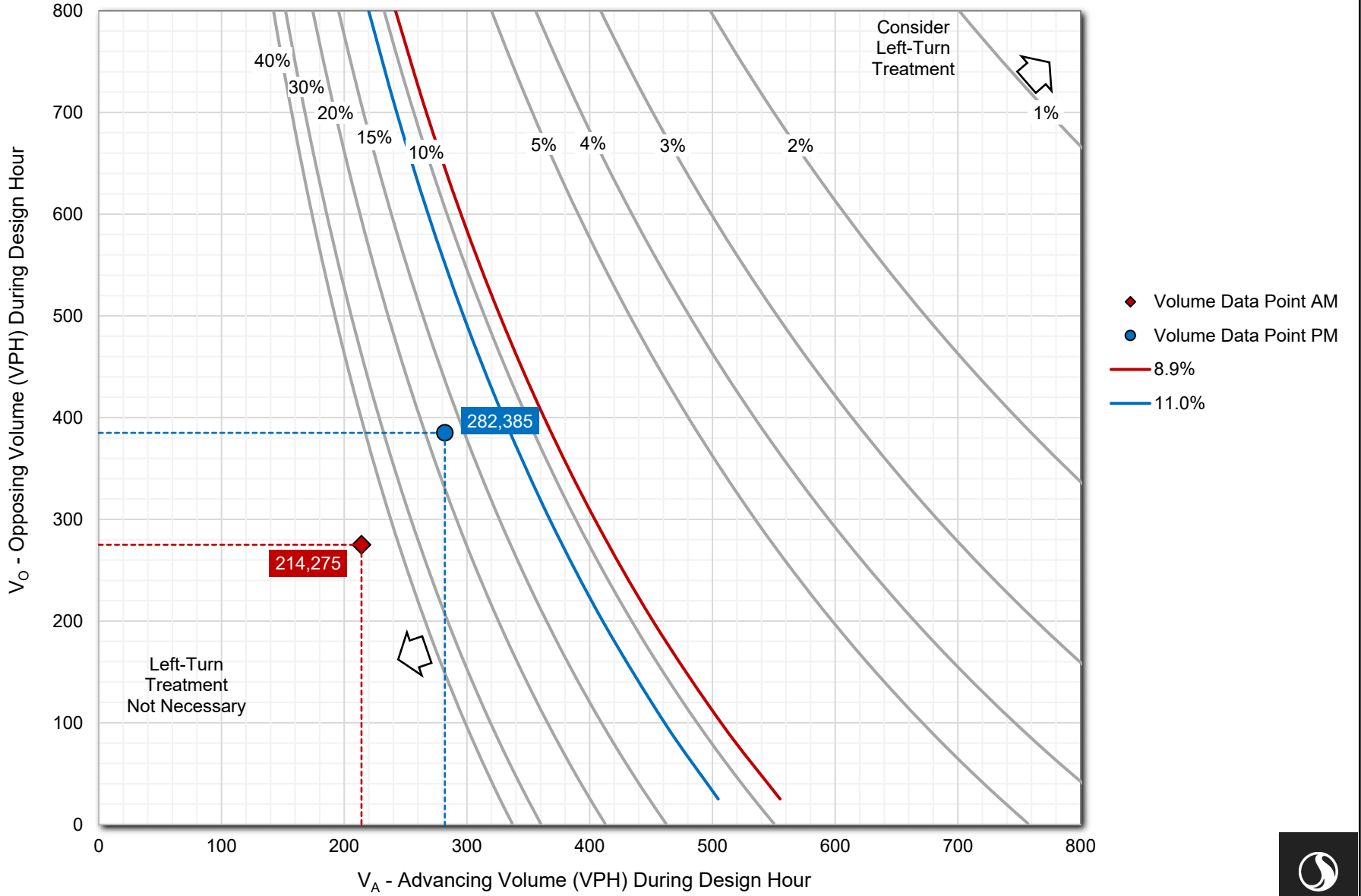
Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.

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

Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)



VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (45 mph)
Figure 9.5-F, (SCDOT ROADWAY DESIGN MANUAL 2021)



Stantec

Study Area Information

County:	Dorchester County	Date:	4/14/2023
SCDOT Engineering District:	District 6	Analyst:	Claudia Thompson
Analysis Year:	2026	Agency:	**Stantec Consulting Services Inc.**

Intersection:	Orangeburg Road & Yerby Road
Left Turn Movement:	Northbound Left-Turn Lane
Right Turn Movement:	Southbound Right-Turn Lane

Posted Speed Limit:	45 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	53	146
	Through	202	260
	Right		
Opposing	Left		
	Through	277	385
	Right	16	42

	AM	PM
Advancing Volume:	255	406
Opposing Volume:	293	427
Left Turn Volume:	53	146
% Left Turns in Advancing Volume:	20.8%	36.0%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	0	0
	Through	277	385
	Right	16	42

Adjustment to Right Turn Volume[1]: Include? No

	AM	PM
Advancing Volume:	293	427
Right Turn Volume:	16	42

Turn Lane Warrant Met?

Left Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-F**
Warrant Satisfied:	**Yes**

Right Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**No**

Recommended Turn Lane Length

Turning Truck%: 2%

Left Turn Lane		
Storage Length (ft):	**200**	ft
Taper Length (ft):	**180**	ft
Total Left Turn Lane (ft):	**380**	ft

Turning Truck%: 2%

Right Turn Lane		
Storage Length:	**N/A**	ft
Taper Length:	**N/A**	ft
Total Left Turn Lane:	**N/A**	ft

Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

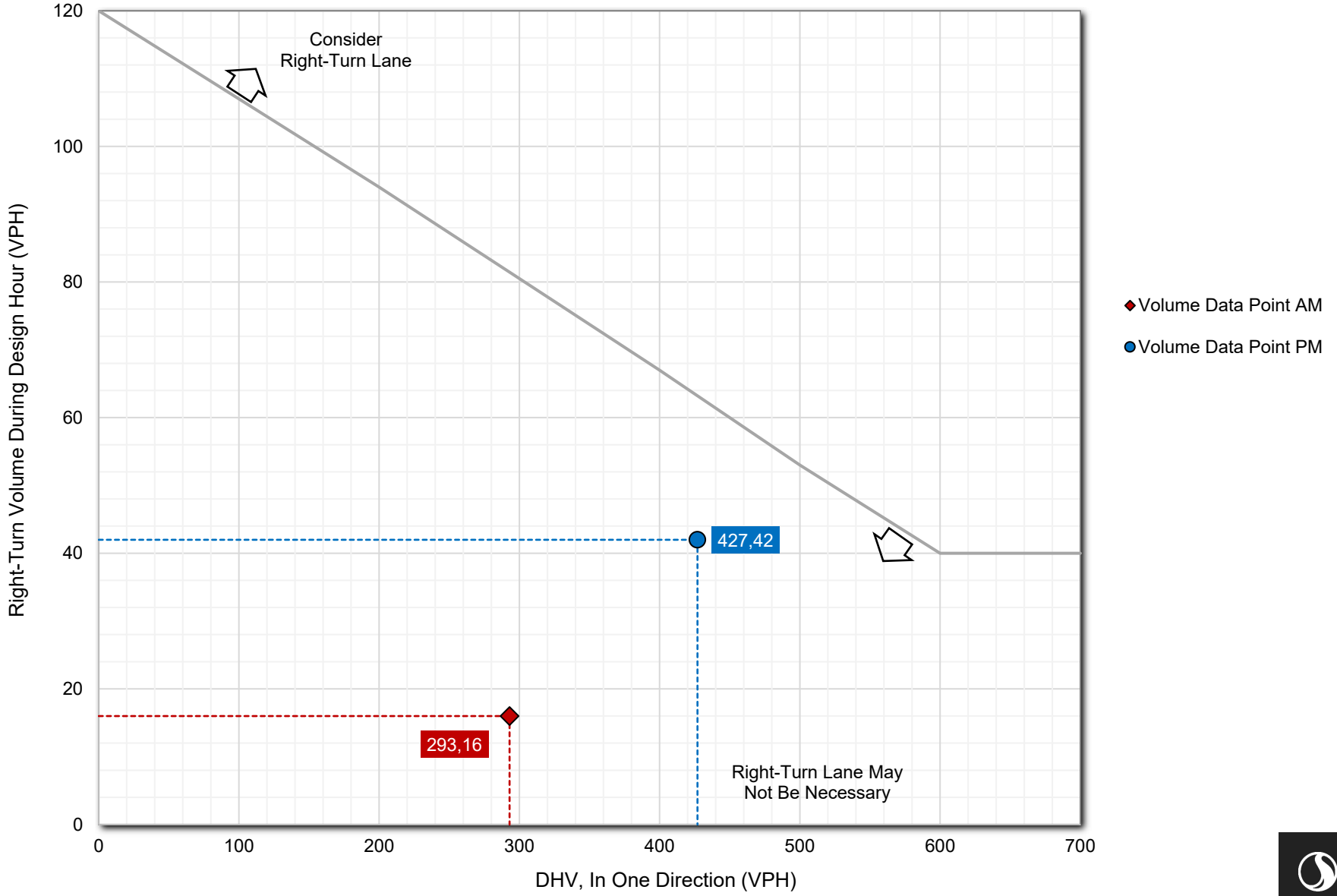
The traffic designer should review the design to determine if longer turn lane lengths are required.

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

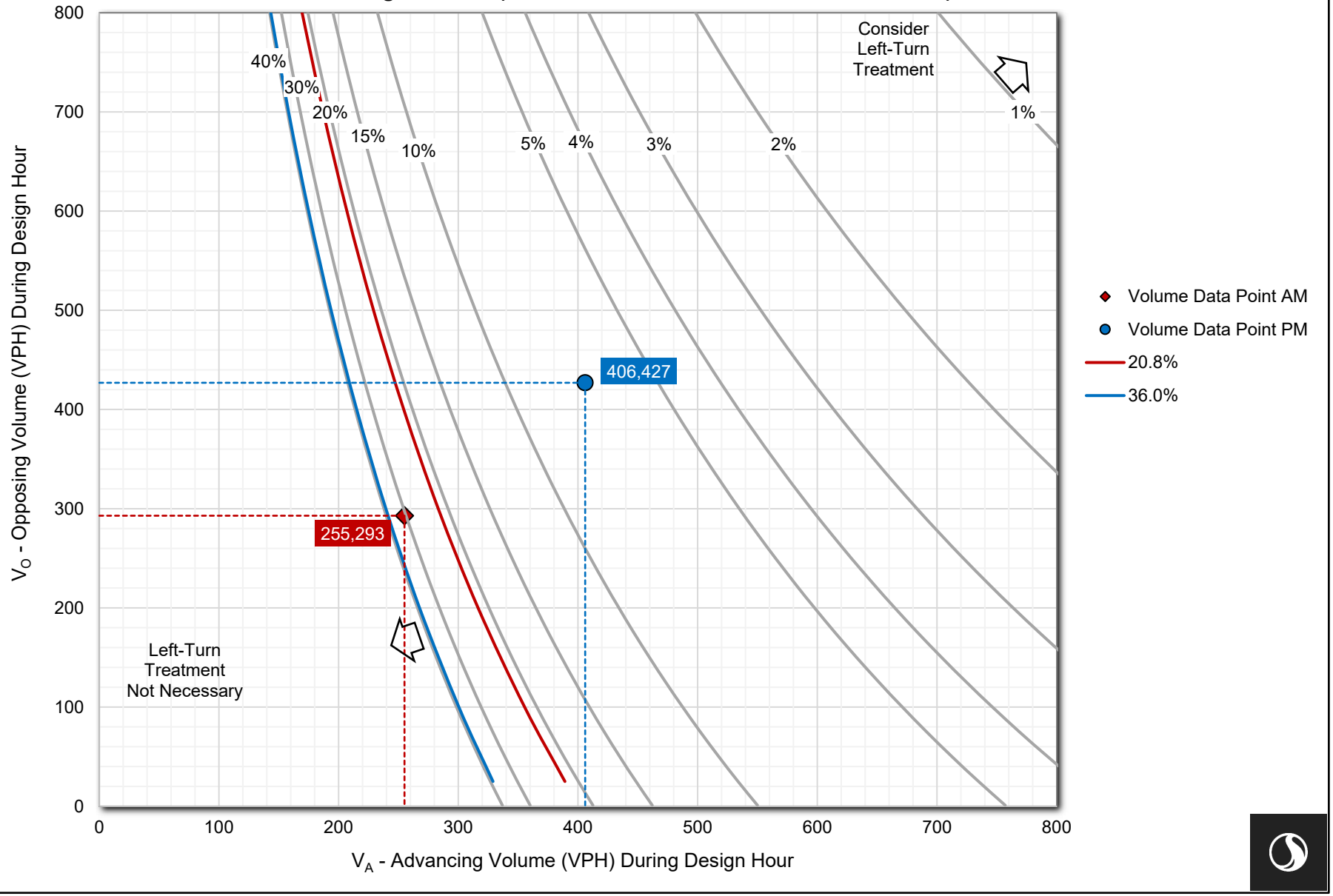
Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.

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

Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)



VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (45 mph)
Figure 9.5-F, (SCDOT ROADWAY DESIGN MANUAL 2021)



Stantec

Study Area Information

County:	Dorchester County	Date:	4/14/2023
SCDOT Engineering District:	District 6	Analyst:	Claudia Thompson
Analysis Year:	2027	Agency:	**Stantec Consulting Services Inc.**

Intersection:	Orangeburg Road & Yerby Road
Left Turn Movement:	Northbound Left-Turn Lane
Right Turn Movement:	Southbound Right-Turn Lane

Posted Speed Limit:	45 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	83	256
	Through	208	269
	Right		
Opposing	Left		
	Through	286	398
	Right	23	69

	AM	PM
Advancing Volume:	291	525
Opposing Volume:	309	467
Left Turn Volume:	83	256
% Left Turns in Advancing Volume:	28.5%	48.8%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	0	0
	Through	286	398
	Right	23	69

Adjustment to Right Turn Volume[1]: Include? No

	AM	PM
Advancing Volume:	309	467
Right Turn Volume:	23	69

Turn Lane Warrant Met?

Left Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-F**
Warrant Satisfied:	**Yes**

Right Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**Yes**

Recommended Turn Lane Length

Turning Truck%:	2%	Turning Truck%:	2%

Left Turn Lane			Right Turn Lane		
Storage Length (ft):	**200**	ft	Storage Length:	**100**	ft
Taper Length (ft):	**180**	ft	Taper Length:	**180**	ft
Total Left Turn Lane (ft):	**380**	ft	Total Left Turn Lane:	**280**	ft

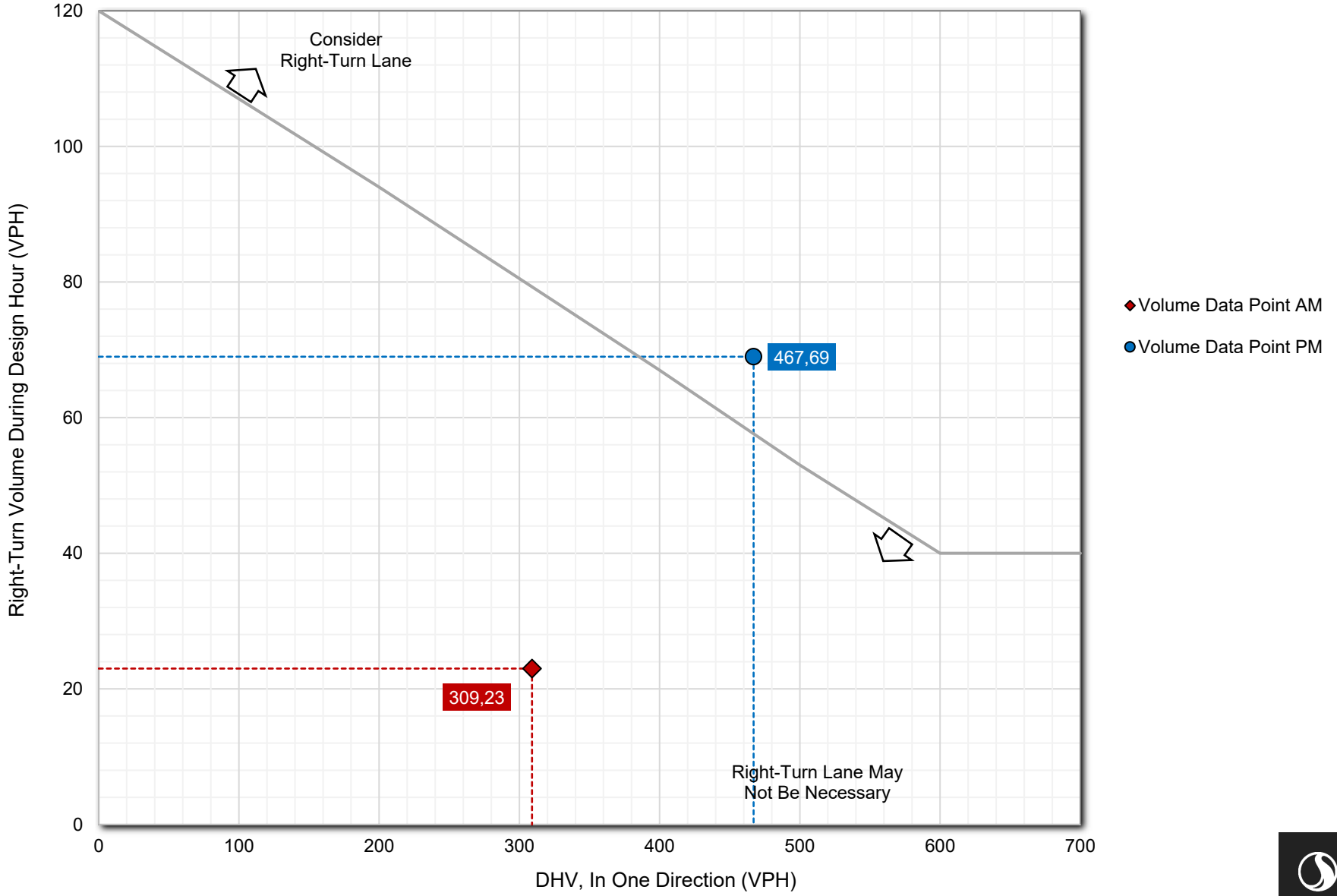
Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

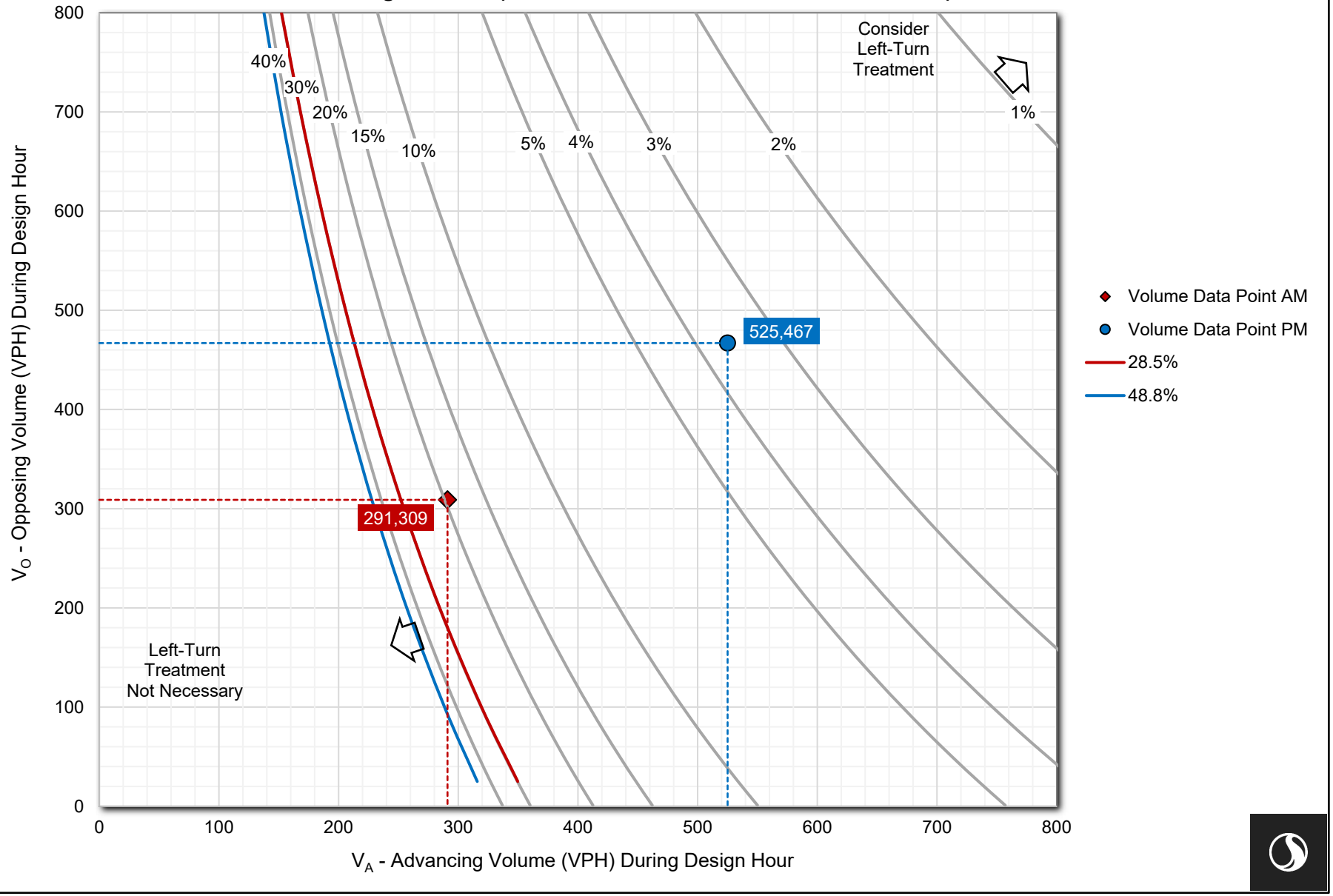
Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.

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

Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)



VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (45 mph)
Figure 9.5-F, (SCDOT ROADWAY DESIGN MANUAL 2021)



Stantec

Study Area Information

County:	Dorchester County	Date:	4/21/2023
SCDOT Engineering District:	District 6	Analyst:	Claudia Thompson
Analysis Year:	2025	Agency:	**Stantec Consulting Services Inc.**

Intersection:	Orangeburg Road & Mallard Road
Left Turn Movement:	
Right Turn Movement:	Southbound Right-Turn Lane

Posted Speed Limit:	45 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	98	138
	Through	336	536
	Right	358	322
Opposing	Left	202	128
	Through	533	516
	Right	52	116

	AM	PM
Advancing Volume:	792	996
Opposing Volume:	787	760
Left Turn Volume:	98	138
% Left Turns in Advancing Volume:	12.4%	13.9%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	202	128
	Through	533	516
	Right	52	116

Adjustment to Right Turn Volume[1]: Include? No

	AM	PM
Advancing Volume:	787	760
Right Turn Volume:	52	116

Turn Lane Warrant Met?

Left Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-F**
Warrant Satisfied:	**Yes**

Right Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**N/A**

Recommended Turn Lane Length

Turning Truck%: 2%

Left Turn Lane		
Storage Length (ft):	**200**	ft
Taper Length (ft):	**180**	ft
Total Left Turn Lane (ft):	**380**	ft

Turning Truck%: 2%

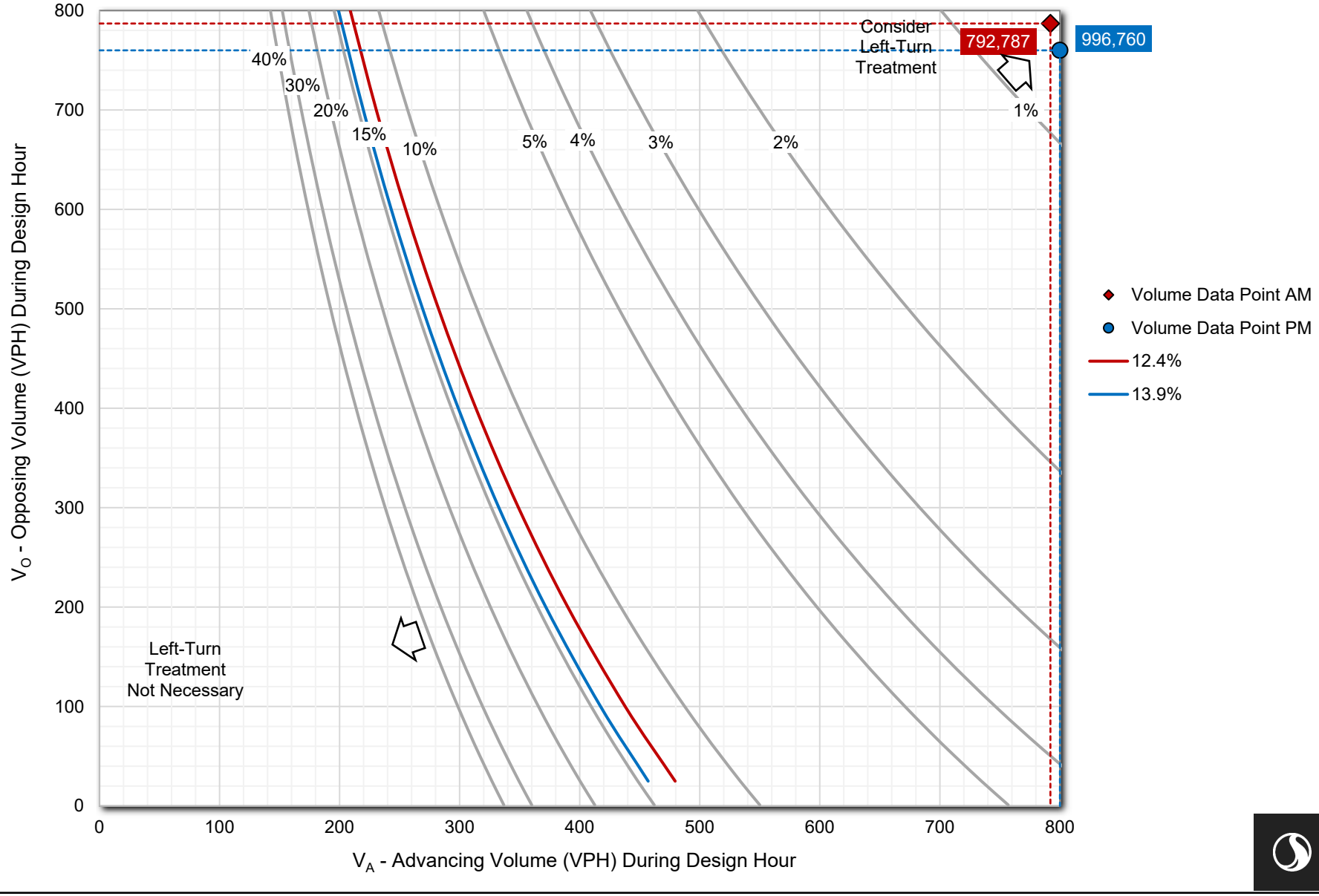
Right Turn Lane		
Storage Length:	**N/A**	ft
Taper Length:	**N/A**	ft
Total Left Turn Lane:	**N/A**	ft

Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (45 mph)
Figure 9.5-F, (SCDOT ROADWAY DESIGN MANUAL 2021)



Stantec

Study Area Information

County:	Dorchester County	Date:	4/14/2023
SCDOT Engineering District:	District 6	Analyst:	Claudia Thompson
Analysis Year:	2025	Agency:	**Stantec Consulting Services Inc.**

Intersection:	Orangeburg Road & Mallard Road
Left Turn Movement:	
Right Turn Movement:	Westbound Right-Turn Lane

Posted Speed Limit:	55 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	26	8
	Through	137	93
	Right	13	23
Opposing	Left	250	373
	Through	55	122
	Right	25	20

	AM	PM
Advancing Volume:	176	124
Opposing Volume:	330	515
Left Turn Volume:	26	8
% Left Turns in Advancing Volume:	14.8%	6.5%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	250	373
	Through	55	122
	Right	25	20

Adjustment to Right Turn Volume[1]: Include? **No**

	AM	PM
Advancing Volume:	330	515
Right Turn Volume:	25	20

Turn Lane Warrant Met?

Left Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-D**
Warrant Satisfied:	**N/A**

Right Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**No**

Recommended Turn Lane Length

Turning Truck%: 2%

Left Turn Lane		
Storage Length (ft):	**N/A**	ft
Taper Length (ft):	**N/A**	ft
Total Left Turn Lane (ft):	**N/A**	ft

Turning Truck%: 2%

Right Turn Lane		
Storage Length:	**N/A**	ft
Taper Length:	**N/A**	ft
Total Left Turn Lane:	**N/A**	ft

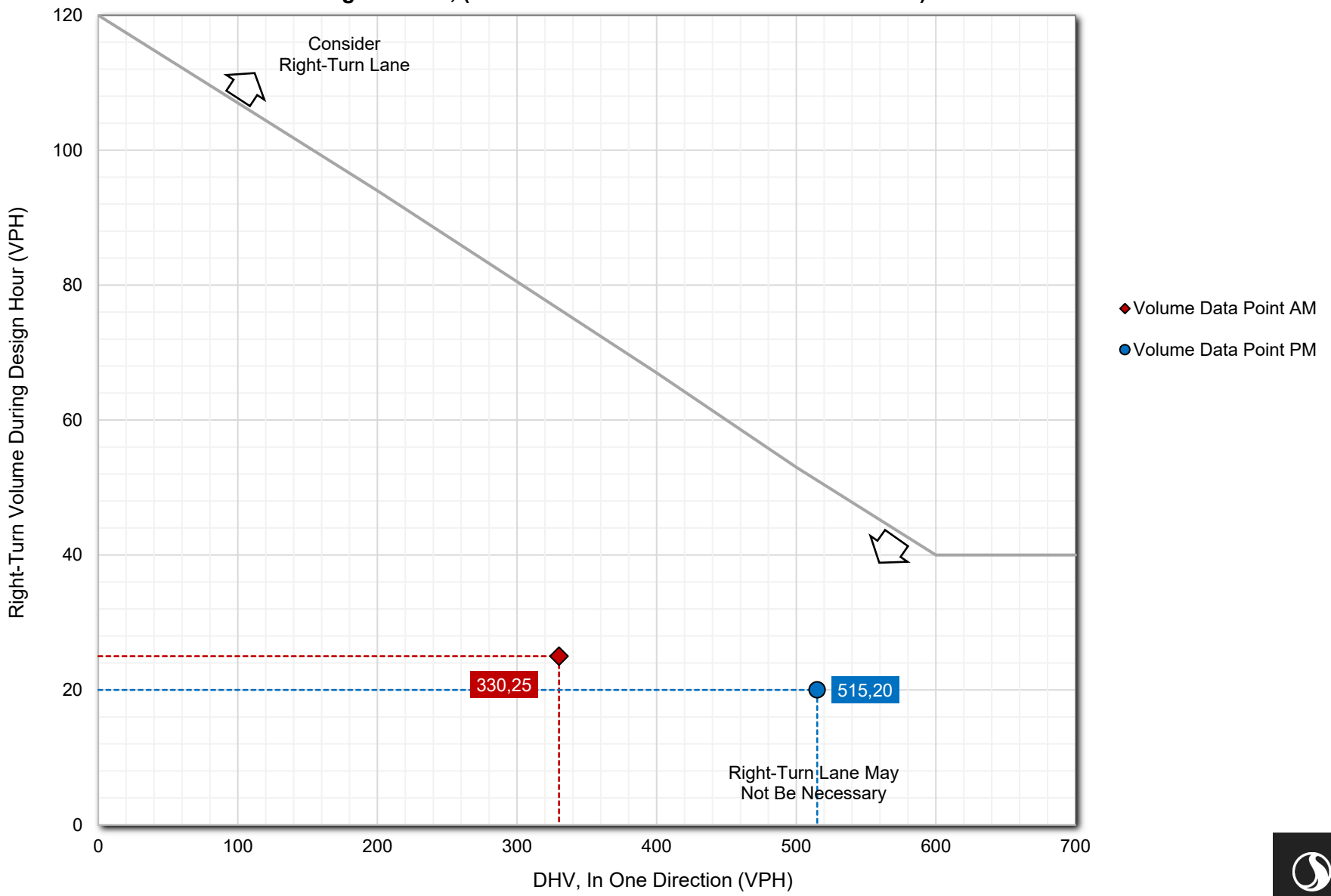
Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.

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

Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)



Stantec

Study Area Information

County:	Dorchester County	Date:	4/14/2023
SCDOT Engineering District:	District 6	Analyst:	Claudia Thompson
Analysis Year:	2026	Agency:	**Stantec Consulting Services Inc.**

Intersection:	Orangeburg Road & Mallard Road
Left Turn Movement:	
Right Turn Movement:	Westbound Right-Turn Lane

Posted Speed Limit:	55 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	27	8
	Through	142	96
	Right	14	24
Opposing	Left	259	386
	Through	57	126
	Right	40	72

	AM	PM
Advancing Volume:	183	128
Opposing Volume:	356	584
Left Turn Volume:	27	8
% Left Turns in Advancing Volume:	14.8%	6.3%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	259	386
	Through	57	126
	Right	40	72

Adjustment to Right Turn Volume[1]: Include? No

	AM	PM
Advancing Volume:	356	584
Right Turn Volume:	40	72

Turn Lane Warrant Met?

Left Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-D**
Warrant Satisfied:	**N/A**

Right Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**Yes**

Recommended Turn Lane Length

Turning Truck%:	2%	Turning Truck%:	2%

Left Turn Lane			Right Turn Lane		
Storage Length (ft):	**N/A**	ft	Storage Length:	**100**	ft
Taper Length (ft):	**N/A**	ft	Taper Length:	**200**	ft
Total Left Turn Lane (ft):	**N/A**	ft	Total Left Turn Lane:	**300**	ft

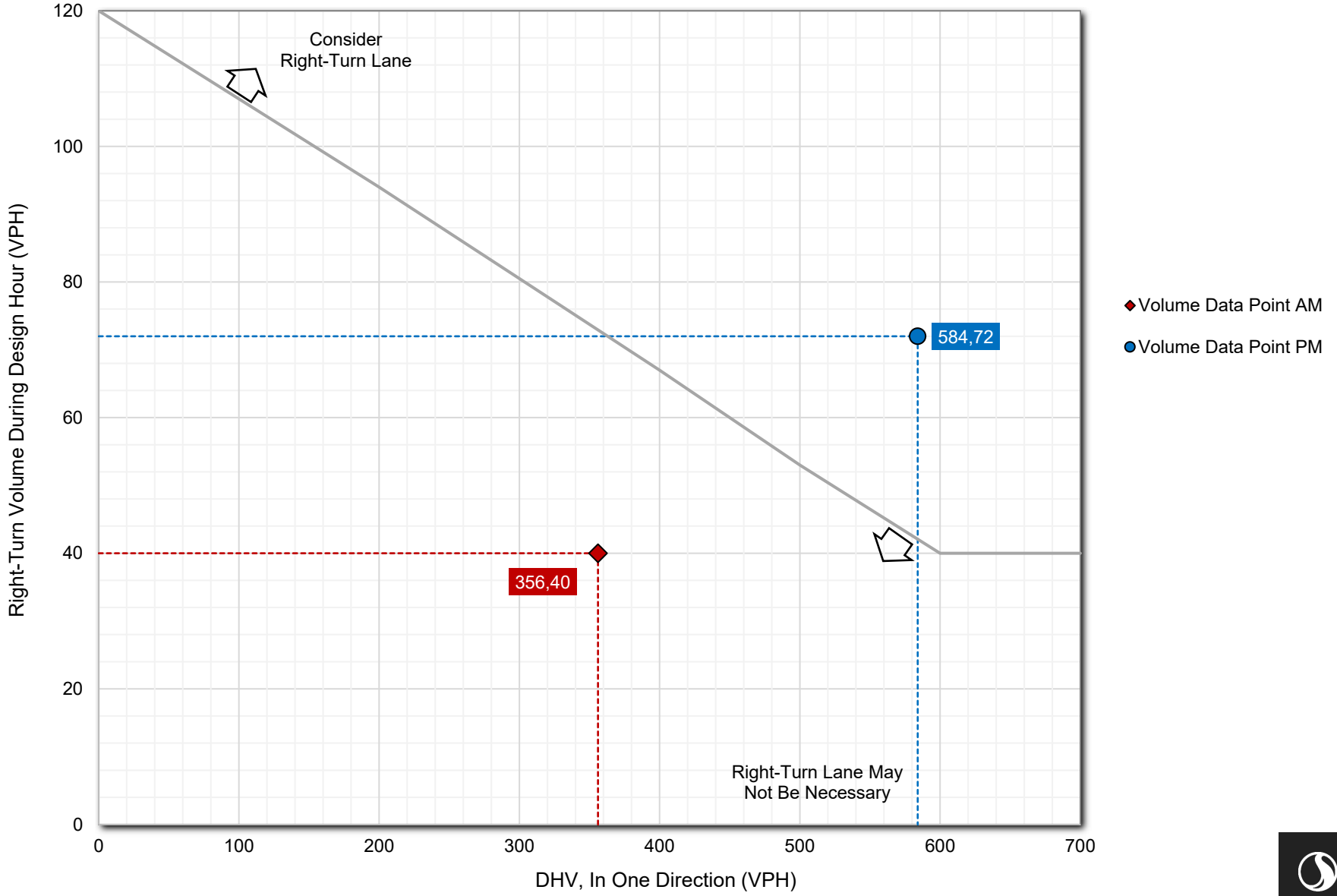
Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.

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

Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)



Stantec

Study Area Information

County:	Dorchester County	Date:	4/14/2023
SCDOT Engineering District:	District 6	Analyst:	Claudia Thompson
Analysis Year:	2032	Agency:	**Stantec Consulting Services Inc.**

Intersection:	E. Butternut Road & Sinclair Road
Left Turn Movement:	Westbound Left-Turn Lane
Right Turn Movement:	Eastbound Right-Turn Lane

Posted Speed Limit:	45 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	92	199
	Through	156	253
	Right		
Opposing	Left		
	Through	270	162
	Right	228	146

	AM	PM
Advancing Volume:	248	452
Opposing Volume:	498	308
Left Turn Volume:	92	199
% Left Turns in Advancing Volume:	37.1%	44.0%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	0	0
	Through	270	162
	Right	228	146

Adjustment to Right Turn Volume[1]: Include? No

	AM	PM
Advancing Volume:	498	308
Right Turn Volume:	228	146

Turn Lane Warrant Met?

Left Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-F**
Warrant Satisfied:	**Yes**

Right Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**Yes**

Recommended Turn Lane Length

Turning Truck%:	2%	Turning Truck%:	2%

Left Turn Lane			Right Turn Lane		
Storage Length (ft):	**200**	ft	Storage Length:	**150**	ft
Taper Length (ft):	**180**	ft	Taper Length:	**180**	ft
Total Left Turn Lane (ft):	**380**	ft	Total Left Turn Lane:	**330**	ft

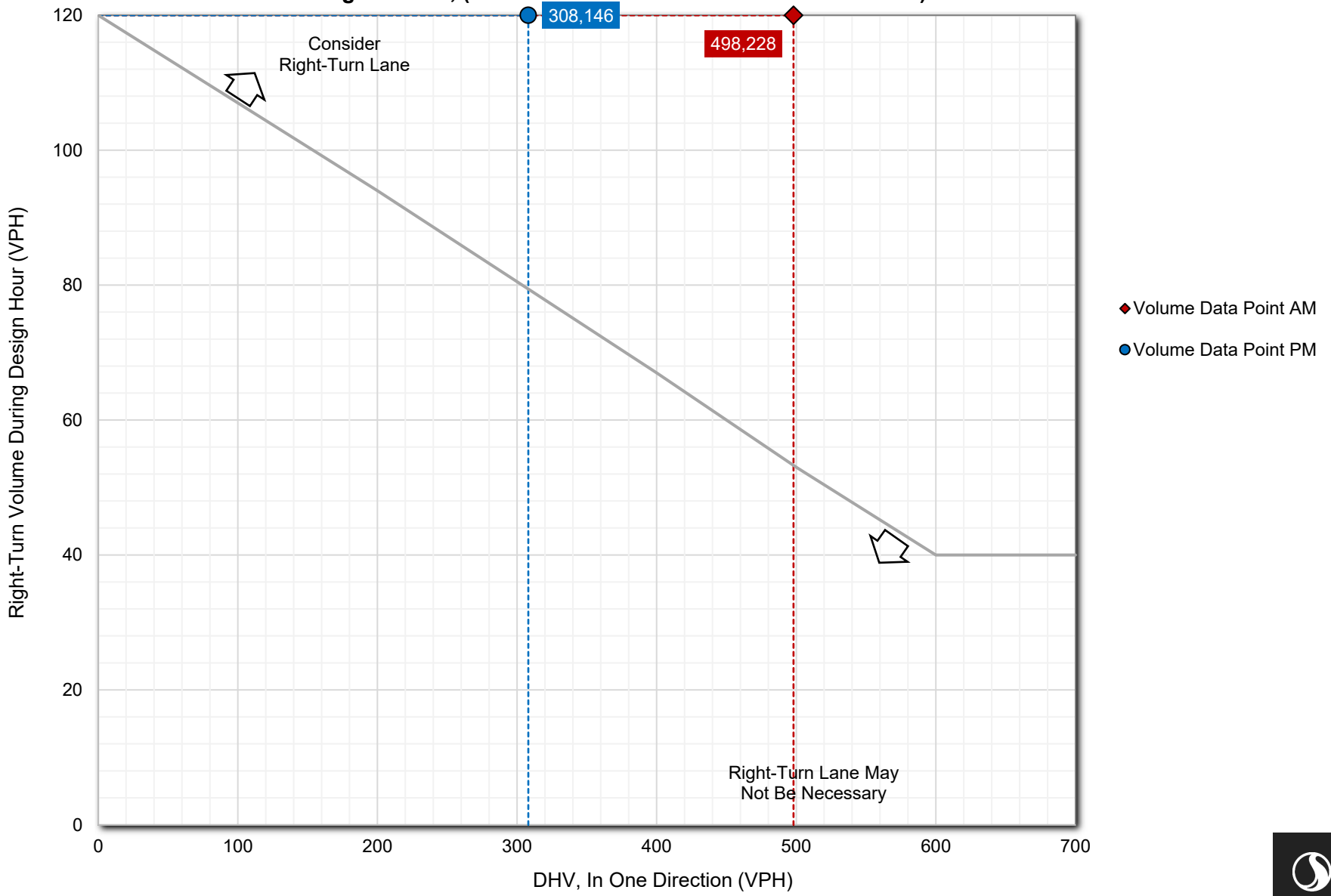
Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.

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

Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)



VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (45 mph)
Figure 9.5-F, (SCDOT ROADWAY DESIGN MANUAL 2021)