

LOWER GWYNEDD TOWNSHIP BOARD OF SUPERVISORS PUBLIC MEETING AGENDA

Tuesday, April 7, 2026, 7:00 p.m.

To join the meeting via Zoom:

<https://us02web.zoom.us/j/82983466123?pwd=OO8a5pKLavNmXBMfhT3zVwWlavZbVx.1>

Call #: 1-646-876-9923



CALL TO ORDER AND PLEDGE OF ALLEGIANCE

BET's revised proposal to redevelop the Spring House Corporate Center at Norristown Road and Route 309

1. Presentation by BET about their applications

- **Ordinance amendment** seeking to revitalize an under-utilized corporate center at 321 Norristown Road by rezoning it to the MF-3 Multi-Family Residential Zoning District and adding a mixed-use development as a permitted use in the MF-3 District
- **Conditional use site plan with traffic study** depicting the development that is proposed if the above amendment is adopted, including retaining an existing occupied office building, demolishing a vacant office building and replacing it with an apartment building, and constructing new retail buildings near Norristown Road

2. Community questions and feedback

3. Board of Supervisors questions and feedback

4. Review application processes for ordinance amendment and conditional use plan

- **Lower Gwynedd Planning Commission** public meetings to review and eventual make a recommendation to the Board – may take multiple meetings

1st meeting: Wednesday, April 15th at 7:00 pm, Township Building

Subsequent meetings: TBD

- **Lower Gwynedd Board of Supervisors** consideration at public hearings

Dates TBD – will be advertised through a legal notice and promotions through the Township's website, e-news, and social media

5. Board of Supervisors action at this stage required for the application processes

- Authorization to advertise a legal notice for a public hearing to be held following Planning Commission review to consider a text and map **ordinance amendment** for the Spring House Corporate Center
- Authorization to advertise a legal notice for a public hearing to be held following Planning Commission review to consider a **conditional use application** for the Spring House Corporate Center

6. Reminder: Sign up for Lower Gwynedd e-news on the [Township's website](#)

GENERAL BUSINESS OF THE BOARD OF SUPERVISORS

1. Approval of invoice report for April 7, 2026
2. Approval of minutes for the meeting of March 24, 2026
3. Announcement: The Board of Supervisors met in executive session prior to tonight's meeting to discuss matters of personnel decisions; potential litigation related to emergency services; and supervisor training.

SUPERVISOR LIAISON REPORTS

Questions about Volunteer Commission Meeting Highlights

STAFF UPDATES

Updates from staff on municipal activities and projects

SUPERVISORS COMMENTS

Comments or questions from the Board of Supervisors

Adjournment

UPCOMING MEETING DATES*

HUMAN RELATIONS COMMISSION	THURS	06/04/2026	7:00 P.M.
BOARD OF SUPERVISORS	TUES	04/14/2026	7:00 P.M.
ENVIRONMENTAL ADVISORY COUNCIL	WED	04/08/2026	7:00 P.M.
ZONING HEARING BOARD	THURS	04/16/2026	6:00 P.M.
PARKS AND RECREATION	TUES	04/21/2026	6:00 P.M.
PLANNING COMMISSION	WED	04/15/2026	7:00 P.M.

*Please check the Township website to confirm meeting dates and times.



MEMORANDUM

ATTN: Board of Supervisors

DATE: April 2, 2026

FROM: Jamie P. Worman, Assistant Township Manager

SUBJ: [BET Presentation- Spring House Corporate Center](#)

BET representatives Michael Markman and Peter Clelland, along with their attorney, Christen Pionzio, will attend the April 7, 2026, BOS meeting to present a revised mixed-use redevelopment proposal for the Spring House Corporate Center.

The applicant is seeking to revitalize the underutilized property at 321 Norristown Road by rezoning it from a D-1 Special Use District to an MF-3 Multi-Family Residential District. As part of this request, they propose adding a provision to the existing MF-3 ordinance that would permit mixed-use development under specific criteria.

On February 13, 2026, BET submitted applications for both a zoning amendment and conditional use approval. The submission included a site plan and traffic study illustrating the proposed development, contingent upon approval of the zoning amendment. The property currently includes two office buildings, a barn, parking areas, a driveway, lighting, landscaping, and signage.

Under the proposed plan, one office building would be demolished while the other would be retained for Berkadia. The redevelopment would include a four-story, 278-unit multi-family apartment building with an interior parking garage. Additionally, three commercial retail buildings totaling approximately 47,000 square feet are proposed, along with

expanded parking and an emergency access connection between the Spring House Corporate Center and the adjacent Gwynedd Estates.

The proposed mixed-use ordinance provision outlines permitted uses, most notably residential apartments with amenities and retail space, as well as dimensional standards, parking requirements, and other regulations, including a workforce housing component. Workforce housing is defined in the proposed ordinance as dwelling units offered at reduced rental rates to households earning no more than 100% of the Montgomery County Household Median Income (HMI). For reference, the current HMI is \$83,600 for a one-person household and \$95,600 for a two-person household. The ordinance would allow a density bonus of 1.5 dwelling units per acre when at least 10% of the residential units are designated as workforce housing.

At the meeting, BET will present its plan and traffic study and respond to questions. The BOS must determine whether to proceed with the process for the rezoning application. If so, the BOS may authorize staff to advertise a legal notice for a public hearing, to be held following Planning Commission review, regarding the proposed text and map amendments for the Spring House Corporate Center.

Additionally, the BOS is required to hold a hearing on the conditional use application by May 30, 2026, unless waived by the applicant. Accordingly, the BOS should also consider authorizing advertisement of a legal notice for a public hearing on the conditional use request, to follow Planning Commission review.

[Full Traffic Study linked here.](#)

BOARD OF SUPERVISORS
LOWER GWYNEDD TOWNSHIP

MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO. _____

AN ORDINANCE OF THE TOWNSHIP OF LOWER GWYNEDD, MONTGOMERY COUNTY, PENNSYLVANIA, AMENDING THE LOWER GWYNEDD TOWNSHIP CODE OF ORDINANCES, PART TWELVE PLANNING AND ZONING CODE, TITLE SIX ZONING, CHAPTER 1276 MF-3 MULTI-FAMILY RESIDENTIAL DISTRICT, § 1276.02 “PERMITTED USES” BY ADDING A MIXED-USE DEVELOPMENT OPTION AUTHORIZED BY CONDITIONAL USE; AND BY ADDING A NEW SECTION 1276.09 “REGULATIONS AND STANDARDS FOR A MIXED-USE DEVELOPMENT” WHICH INCLUDES PROVISIONS FOR WORKFORCE HOUSING AND PROVIDES FOR DIMENSIONAL AND PARKING REGULATIONS AND DEVELOPMENT STANDARDS FOR THE MIXED-USE DEVELOPMENT; AND, BY ADDING STANDARDS FOR RESIDENTIAL PARKING STRUCTURES TO §1298.20 “PARKING STRUCTURES”, REPEALING ALL INCONSISTENT ORDINANCES OR PARTS THEREOF; PROVIDING A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, § 1506 of the Second Class Township Code, Act of May 1, 1993, P. L. 103, No. 69, as amended by the Act of November 9, 1995, P. L. 350, No. 60, at 53 P.S. §66506, entitled “General Powers”, section 601 of the Pennsylvania Municipalities Code, 53 P.S. § 10601, and, section 1299.12 of the Lower Gwynedd Township Zoning Ordinance, as amended (“**Zoning Ordinance**”) authorizes the Lower Gwynedd Township (“**Township**”) Board of Supervisors (“**Board**”) to enact and amend ordinances necessary for the proper management, care and control of the Township and the maintenance of the health and welfare of the Township and its citizens; and

WHEREAS, the Board has determined that an amendment to the MF-3 Multifamily Residential District’s list of permitted uses to allow a mixed-use development option by Conditional Use, comprised of a multifamily residential use with workforce dwelling units, and office, retail, and restaurant uses, is warranted to further the purpose and intent of providing for mixed residential and commercial development uses within the Township (“**Proposed Amendment**”); and

WHEREAS, the Lower Gwynedd Township Planning Commission reviewed the Proposed Amendment at a public meeting and recommended that the Proposed Amendment be approved by the Board; and

WHEREAS, the Board has determined that it is in the best interests of the municipality and the public welfare to adopt the Proposed Amendment to promote the following community

development objectives:

1. Achievement of the best use of land within the Township's MF-3 Multifamily Residential District by providing a mixed residential and commercial option.
2. Encouragement and promotion of workforce housing within the Township to achieve a more diverse and balanced community.
3. Encourage developers to construct workforce housing units.
4. Encouragement and promotion of a new mixed residential and commercial use type within the Township to serve the needs of all Township residents.
5. Encouragement of ingenuity in architectural design and site planning by allowing for an innovative mixed residential and commercial use provision within the MF-3 Multifamily Residential District.

WHEREAS, a public hearing was held, following notice, for the purpose of considering this Proposed Amendment to the Zoning Ordinance; and

WHEREAS, the Board, after the public hearing held pursuant to public notice, and after receipt of recommendations from the Lower Gwynedd Township Planning Commission and the Montgomery County Planning Commission, deems it appropriate and proper that the Zoning Ordinance be amended by the Proposed Amendment; and

WHEREAS, the Board has determined that amending the MF-3 Multifamily Residential District to permit the mixed-use development, with appropriate regulations and development standards, is warranted to enhance development and the economic vitality of the Township within that district.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the Board of Supervisors of Lower Gwynedd Township, Montgomery County, Pennsylvania, and it is enacted and ordained as follows:

Section 1: Title Six, "Zoning", Chapter 1276 "MF-3 Multifamily Residential District, § 1276.02 "Permitted uses" is amended to read as follows:

(e) Mixed-Use Development, in accordance with §1276.09.

(1) On a property with frontage along a major roadway as classified in §1230.37(b)(1) of the Township Subdivision and Land Development Ordinance, a development consisting of a minimum of three (3) of the following uses, for single and multiple occupancy of property and buildings, shall be permitted when authorized by conditional use, in accordance with §1298.07 "Conditional uses". Existing buildings may be part of a Mixed-Use Development provided they contain a permitted use and meet all standards of §1276.09.

A. Multifamily apartment buildings with amenities, and which may include a parking structure designed in accordance with §1298.20(b). "Parking Structures".

- B. Office building.
- C. Retail store.
- D. Personal service shop.
- E. Restaurant, excluding drive-thru service.
- F. Bank or financial institution, with drive-thru service.
- G. Medical services, such as dental care, aesthetic procedures, urgent care, and outpatient surgery center.
- H. Medical office.

(2) *Master Plan and Architecture.* For all mixed-use developments, a master plan shall be submitted as part of the required conditional use application, which adequately depicts where each of the above category of uses and parking shall occur on the property. Material changes to the Master Plan involving the relocation, addition or deletion of buildings, vehicular circulation or access shall require an amended conditional use approval from the Board of Supervisors. Review and approval of the conditional use shall include the approval of the dimensional criteria and parking as shown on the Master Plan. As part of the conditional use application, architectural renderings shall be submitted. Such renderings shall include: a perspective view of the building from the exterior main road(s) showing the façade(s) and streetscape, in addition, elevations of all sides of the proposed building(s). The renderings shall be in color and indicate the mass, form, color, and materials of the proposed building(s). The renderings shall show conceptual connections to an existing public trail network which is immediately and directly adjacent to the mixed-use development.

Section 2: Title Six, “Zoning”, Chapter 1276 “MF-3 Multifamily Residential District, is amended by adding a new section 1276.09 entitled “Regulations and standards for a Mixed-Use Development”, to read as follows:

§ 1276.09 Regulations and standards for a Mixed-Use Development.

The following regulations and standards shall apply to a Mixed-Use Development in the case of a conflict with any other sections of the Zoning Ordinance, the provisions of this section shall apply.

- (a) *Minimum Lot Area.* For a Mixed-Use Development, a lot area of not less than 20 acres shall be provided.
- (b) *Minimum Lot Width.* A lot width of not less than 800 feet shall be provided along a public street or way for every access to the development.
- (c) *Yards.*
 - (1) *Front Yard for a Mixed-Use Development*

- A. *For multifamily apartment buildings and office buildings there shall be a front yard, which shall not be less than 200 feet in depth.*
 - B. *For all other uses there shall be a front yard along Norristown Road, which shall not be less than 100 feet in depth.*
- (2) *Side Yards. For a Mixed-Use Development there shall be two side yards, neither of which shall be less than 50 feet in depth.*
- (3) *Rear Yard. For a Mixed-Use Development there shall be a rear yard, which yard shall not be less than 100 feet in depth.*
- (d) *Building Coverage. The total building coverage shall not exceed 20%.*
- (e) *Impervious Coverage. The total impervious coverage shall not exceed 60%.*
- (f) *Building Height.*
 - (1) *Multifamily Apartment Buildings. The maximum height for a multifamily apartment building shall be 55 feet, not exceeding 4 stories. For purposes of measuring the building height for multifamily apartment buildings, unoccupied architectural features extending above the main roof such as dormers, gables, and similar treatments, shall be required in order to provide variations in rooflines and the appearance of the multifamily apartment building façade, and shall be excluded from the calculation of height. Such features shall not exceed 10 feet in total height.*
 - (2) *Office Building. The maximum height for an office building shall be 50 feet, not exceeding 3 stories.*
 - (3) *The maximum height for all other buildings and structures shall be 35 feet, not exceeding 2 stories.*
 - (4) *The maximum height for buildings and structures with a front yard setback less than 200 feet from Norristown Road shall be 35 feet, not exceeding 2 stories.*
- (g) *Building Spacing. The distance at the closest point between any buildings shall not be less than 75 feet.*
- (h) *Density. For a multifamily apartment building, the number of residential units per gross acre shall not exceed 12.*
 - (1) *Bonus Density. Provided that a minimum of 10% of the residential units are designated as workforce housing the density may be increased by 1.5 dwelling units per gross acre. The maximum density, including any density bonus, shall not exceed 13.5 dwelling units per gross acre.*
 - (2) *A Workforce Housing Declaration of Covenants shall be prepared to the satisfaction of the Township Solicitor and agreed upon by the property*

owner/developer, which Declaration of Covenants shall be recorded in the Montgomery County Recorder of Deeds office at the time of recording of the final land development plan. For the purposes of this clause “workforce housing” shall mean; a dwelling unit available to a household with a total income not exceeding 100% of the Household Median Income (HMI) of Montgomery County as determined on an annual basis by the Pennsylvania Housing Finance Agency (PHFA). The monthly rent amount shall be no more than 30% of the Household Median Income.

- (3) *Property owner/developer shall submit an annual report to the Township Building and Zoning Department which demonstrates that the multifamily apartment building is in compliance with workforce housing requirements contained in the Declaration of Covenants. The report shall include, annually, the total number of units in the building, and for the workforce housing units only the following additional information: the total number of units, number of bedrooms, tenant incomes and rents, unit locations within the multifamily apartment building, and square footage.*
- (i) *Off-street parking and loading.*
- (1) *Multifamily Apartments. For each residential unit, 1.5 parking spaces shall be provided.*
 - (2) *Office building. One space for every 250 square feet of gross floor area, minus common areas.*
 - (3) *Retail store and personal service shop. One space for every 250 square feet of sales area.*
 - (4) *Restaurant. One parking space for every 100 square feet of floor space devoted to patron use.*
 - (5) *Bank or financial institution. One space for every 500 square feet of floor area space devoted to patron use.*
 - (6) *Medical services. One parking space for every 250 square feet of gross floor area.*
 - (7) *No parking, service, or loading area shall be located within 75 feet of any side or rear yard property lines, or within 10 feet of any side yard property line abutting a major roadway, except as required for normal ingress or egress, and no service drives shall be located within 25 feet of any side or rear property line. No service and loading area shall directly face a highway as defined in §1298.12 unless adequate architectural detailing and/or landscaping is provided which obscures the service and/or loading areas to the satisfaction of the Township Board of Supervisors.*
 - (8) *Parking Reduction. The total number of required parking spaces may be reduced by conditional use. The total parking may be reduced by a maximum of up to 20% provided the applicant can demonstrate the reduction is warranted through the submission of a parking study, parking*

counts, or other pertinent information.

- (j) *Signage. The Mixed-Use Development shall be permitted one (1) pylon/free-standing sign not to exceed twenty (20) feet in height and two hundred (200) square feet in area. Each tenant in the Mixed-Use Development shall be permitted one (1) wall sign not to exceed forty (40) square feet per building façade of the leased area facing a street. Digital signs are prohibited.*
- (k) *Storage of Refuse. Raw materials, supplies, trash, rubbish and other refuse shall be stored in covered containers within an adequate enclosure and handled and disposed of in such a manner so as not to give rise to smoke, odor, or litter.*
- (l) *Landscaping. All Mixed-Use Developments shall be designed and maintained in accordance with the landscape provisions of the Subdivision Regulations.*
- (m) *Emergency access. All Mixed-Use Developments shall have an emergency driveway access in addition to and separate from the main driveway access.*
- (n) *Public water and sewer. All Mixed-Use Developments shall be served by public water and public sewer.*
- (o) *With the exception of gate houses, guard houses, and trails, no accessory building or structure shall be located within a required perimeter setback and no accessory building or structure shall be located between the front of a building unit and a street line, if any.*
- (p) *All new buildings within the Mixed-Use Development shall be constructed in accordance with an overall plan and a common architectural theme as approved by the Board of Supervisors during the conditional use stage.*
- (q) *Special Conveyancing. When a lot or lots are developed as a Mixed-Use Development, the creation of and conveyance of a lot or lots within such Mixed-Use Development shall be permitted upon compliance with the following conditions.*
 - (1) *Irrevocable cross-easements in favor of, and duly binding on all title owners within the area of the development plan, their successors and assigns, with respect to use, control and maintenance of the common areas including access, green space, and parking areas are in effect and recorded, with form and substance subject to the prior approval of the Township solicitor; and*
 - (2) *Individual lots or parcels created pursuant to this section need not comply with the dimensional standards of §1276.09 herein but shall remain in compliance with all other aspects of the approved Mixed-Use Development Plan.*

Section 3: Title Six, "Zoning", Chapter 1298 "General Provisions", §1298.20 "Parking structures is amended to read as follows:

- (b) *The erection and use of structured parking facilities, otherwise prohibited, shall be permitted only in the MF-3 Multifamily Residential District subject to the following regulations:*
- (1) *Parking structures shall be permitted for a multifamily apartment building provided the parking structure is entirely internal to the multifamily apartment building, or the residential units are wrapped around the perimeter parking structure.*
 - (2) *When a parking structure is wrapped with residential units no more than 25% of the perimeter of the parking structure shall be visible from the exterior of the building. The exposed portion of the parking structure shall not directly face an external street. The exposed portion of the parking structure shall be buffered through the use of architectural elements to the satisfaction of the Board of Supervisors.*
 - (3) *A parking structure shall not be taller than the residential portions of the building.*
 - (4) *The design, layout and sizes of the parking spaces, driveways, ramps and other elements of the parking structure shall be subject to the review of the Township Traffic Engineer and the approval of the Township.*
 - (5) *There shall be no protection of lighting or other elements above the required guardrail height on the roof deck of parking structures, except for minimal access shelters over stair enclosures.*
 - (6) *Building Coverage. The total building coverage may be increased from 20% to 30% if a parking structure is included as part of the Mixed-Use Development.*

Section 4: Repeal and Ratification. All other sections, parts, and provisions of the Zoning Ordinance and Map shall remain in full force and effect as previously enacted.

Section 5: Severability. The provisions of this Ordinance are severable. If any section, clause, sentence, part or provision thereof shall be held illegal, invalid or unconstitutional by any court of competent jurisdiction, such decisions of the court shall not impair the validity of any of the remaining sections, clauses, sentences, part or provisions of the Ordinance. It is hereby declared the intent of the Lower Gwynedd Township Board of Supervisors that this Ordinance would have been enacted if such illegal, invalid or unconstitutional section, clause, sentence, part or provision had not been included herein.

Section 6: Effective Date. This Ordinance shall become effective five (5) calendar days after the date of enactment.

ORDAINED AND ENACTED by the Board of Supervisors of Lower Gwynedd Township, Montgomery County, Pennsylvania, this ____ day of _____, 2026.

Attest:

**LOWER GWYNEDD TOWNSHIP
BOARD OF SUPERVISORS**

Mimi Gleason, Township Manager

By: _____
Danielle A. Duckett, Chairperson

**BOARD OF SUPERVISORS
LOWER GWYNEDD TOWNSHIP**

MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO. _____

**AN ORDINANCE OF THE TOWNSHIP OF LOWER GWYNEDD,
MONTGOMERY COUNTY, PENNSYLVANIA, AMENDING THE
LOWER GWYNEDD TOWNSHIP ZONING MAP BY REZONING A
PARCEL OF LAND FROM D-1 TO MF-3 TO EXTEND THE MF-3
ZONING DISTRICT ALONG A PORTION OF NORRISTOWN ROAD.**

WHEREAS, § 1506 of the Second Class Township Code, Act of May 1, 1993, P. L. 103, No. 69, as amended by the Act of November 9, 1995, P. L. 350, No. 60, at 53 P.S. §66506, entitled “General Powers”, section 601 of the Pennsylvania Municipalities Code, 53 P.S. § 10601, and, section 1299.12 of the Lower Gwynedd Township Zoning Ordinance, as amended (“**Zoning Ordinance**”) authorizes the Lower Gwynedd Township (“**Township**”) Board of Supervisors (“**Board**”) to enact and amend ordinances necessary for the proper management, care and control of the Township and the maintenance of the health and welfare of the Township and its citizens; and

WHEREAS, the Board has determined that extending the MF-3 Multifamily Residential District along a portion of Norristown Road is warranted to further the purpose and intent of the MF-3 Residential District (“**Proposed Zoning Map Amendment**”); and

WHEREAS, the Lower Gwynedd Township Planning Commission reviewed the Proposed Zoning Map Amendment at a public meeting and recommended that the Proposed Zoning Map Amendment be approved by the Board; and

WHEREAS, a public hearing was held, following notice, for the purpose of considering this Proposed Zoning Map Amendment; and

WHEREAS, the Board, after the public hearing held pursuant to public notice, and after receipt of recommendations from the Lower Gwynedd Township Planning Commission and the Montgomery County Planning Commission, deems it appropriate and proper that the Zoning Map be amended by the Proposed Zoning Map Amendment.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the Board of Supervisors of Lower Gwynedd Township, Montgomery County, Pennsylvania, and it is enacted and ordained as follows:

Section 1: The Lower Gwynedd Township Zoning Map (“**Map**”), § 1254.01, is amended to re-designate from D-1 Special Use District to MF-3 Multifamily Residential District the parcel of ground identified as Montgomery County Tax Map Parcel No. 39-00-02956-00-2, a/k/a 321 Norristown Road (“**Property**”), as shown on Appendix “A” and more particularly described in Appendix “B”.

Section 2: The Township Engineer is directed to revise the Zoning Map of Lower Gwynedd Township, as last revised, to incorporate the change in classification of the Property from D-1 Special Use District to MF-3 Multifamily Residential District.

Section 3: Repealer. All ordinances, resolutions, and regulations inconsistent with this ordinance are hereby repealed.

Section 4: Effective Date. This Amendment shall become effective five (5) calendar days after the date of enactment.

ORDAINED AND ENACTED by the Board of Supervisors of Lower Gwynedd Township, Montgomery County, Pennsylvania, this ____ day of _____, 2026.

Attest:

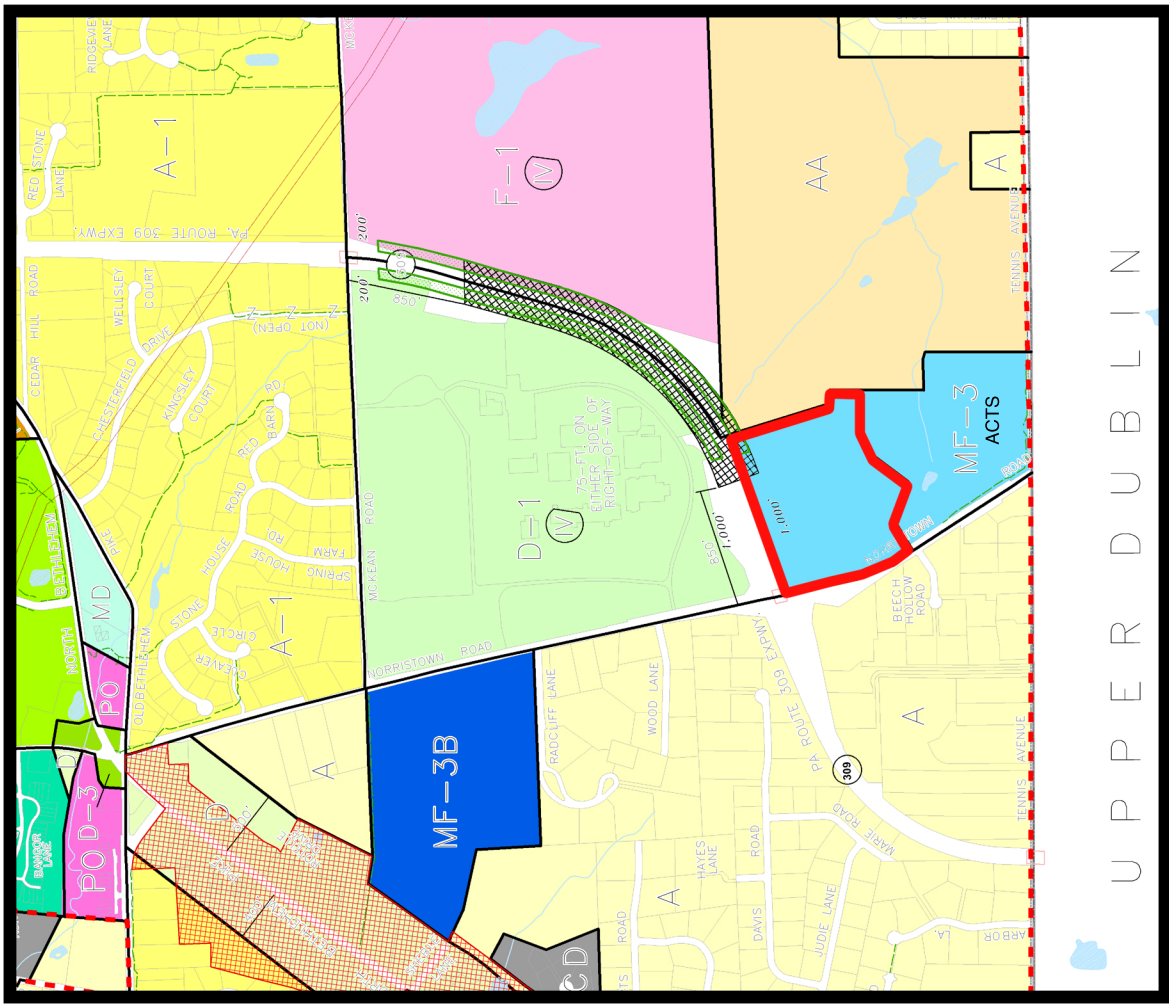
**LOWER GWYNEDD TOWNSHIP
BOARD OF SUPERVISORS**

Mimi Gleason, Township Manager

By: _____
Danielle A. Duckett, Chairperson

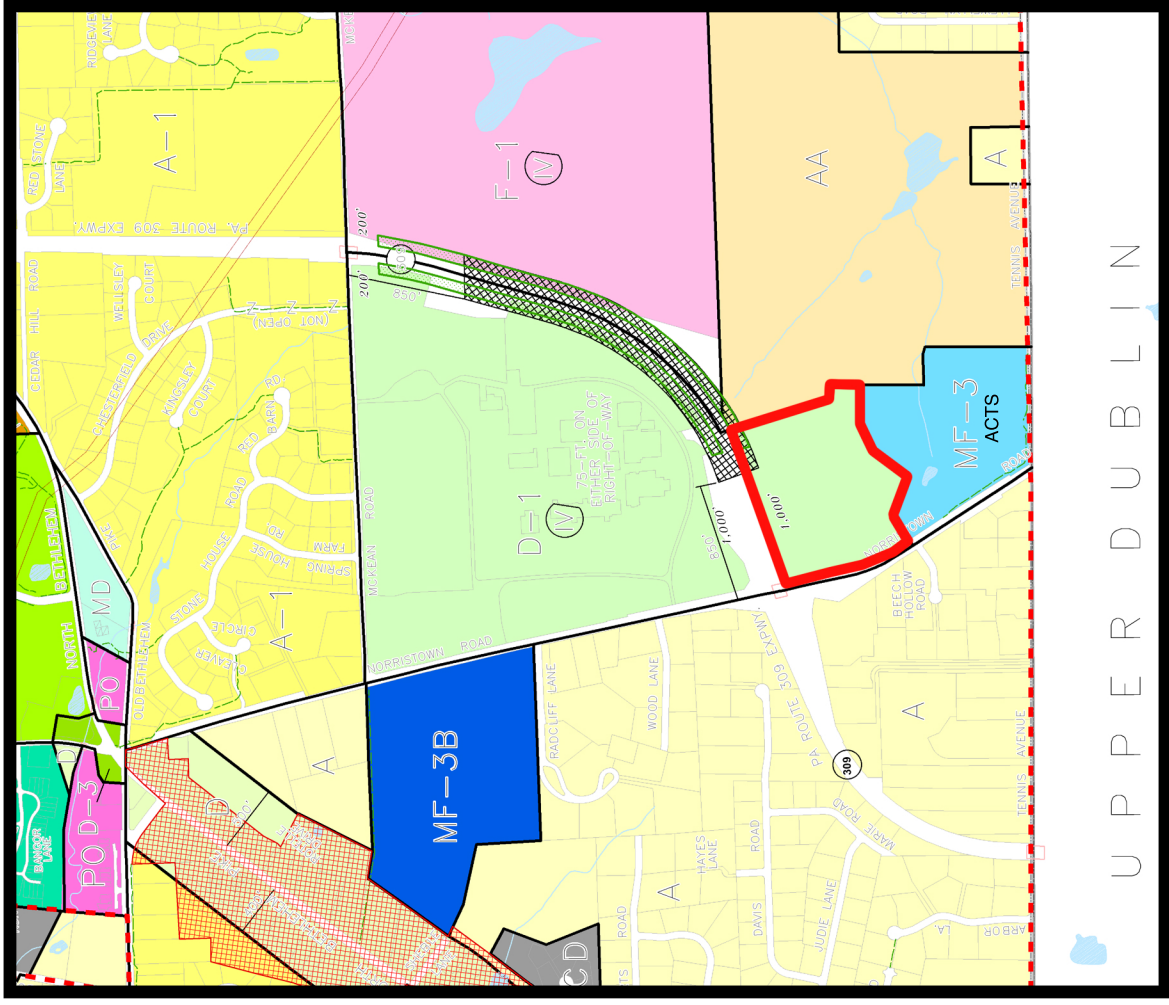
APPENDIX "A"

Zoning Map Amendment



U P P E R D U B L I N

PROPOSED



U P P E R D U B L I N

EXISTING

- A**
 - AA**
 - MF-3**
 - D-1**
 - F-1**
- COMMUNICATION FACILITIES OVERLAY DISTRICTS**
- STRUCTURE ZONE
 - I 150' @ SIDE OF C OF RT. 309
 - II 150' x 250' @ RT. 302 & R.R.
 - ATTACHMENT ZONE
 - I RAILROAD PARCEL @ RT. 302 & 200' N/W SOUTH OF R.R.
 - II INSIDE ON AND OFF RAMPS TO RT. 309
 - III WATER TOWER PARCEL
 - IV WATER TOWER PARCEL AND D-1 DISTRICTS
 - ACT 209 TRANSPORTATION IMPACT FEE PARCEL
- EMPLOYMENT IN THIS AREA SUBJECT TO TRAFFIC IMPACT FEE SERVICE AREA

APPENDIX "B"

Legal Description

EXHIBIT A

(321/323 Norristown Road)

ALL THAT CERTAIN lot or piece of ground with the buildings and improvements thereon erected; SITUATE in Lower Gwynedd Township, Montgomery County, Pennsylvania and described according to a As-Built-Survey prepared for Brandywine Realty Trust made by Herbert H. Metz, Inc., Civil Engineers and Surveyors dated 4/25/1997, as follows, to wit:

BEGINNING at a point being the intersection of the Southeasterly side of Route 309 L.R. 782 and the Northeasterly side of Norristown Road; thence extending from said point of beginning North 20 degrees 10 minutes 20 seconds East along Route 309, 816.37 feet to a point of curve; thence extending on a line curving to the left having a radius of 1,970.08 feet and the arc distance of 355.00 feet to a point; thence extending South 66 degrees 23 minutes 30 seconds East 742.63 feet to a point; thence extending North 43 degrees 10 minutes 30 seconds East 103.86 feet to a point; thence extending South 51 degrees 05 minutes 30 seconds East 200.00 feet to a point; thence extending South 37 degrees 24 minutes 51 seconds West 267.38 feet to a point; thence extending South 14 degrees 55 minutes 30 seconds West 183.31 feet to a point; thence extending South 13 degrees 45 minutes 50 seconds East 341.82 feet to a point; thence extending South 60 degrees 06 minutes 34 seconds West 288.28 feet to a point; thence extending South 09 degrees 13 minutes 55 seconds West 210.00 feet to a point on the Northeasterly side of Norristown Road; thence extending along Norristown Road the following eight (8) courses and distances: (1) North 84 degrees 46 minutes 30 seconds West 120.50 feet to a point; (2) Thence extending South 86 degrees 42 minutes 19 seconds West 34.02 feet to a point of curve; (3) Thence extending along the arc of circle curving to the left having a radius of 1,372.69 feet the arc distance of 222.34 feet to a point; (4) Thence extending North 20 degrees 27 minutes 16 seconds East 10.00 feet to a point of curve; (5) Thence extending along the arc of a circle curving to the right having the radius of 1,362.69 feet and the arc distance of 144.58 feet to a point; (6) Thence extending North 63 degrees 28 minutes 00 seconds West 74.13 feet to a point; (7) Thence extending South 26 degrees 32 minutes 00 seconds West 10.00 feet to a point; and (8) Thence extending North 63 degrees 28 minutes 00 seconds West 336.51 feet to a point on the Southeasterly side of Route 309 L.R. 782, being the first mentioned point and place of beginning.

LESS AND EXCEPT that portion of the above described premises taken by the Commonwealth of Pennsylvania, Department of Transportation for highway purposes pursuant to a condemnation in CP-2006-22302, a Declaration of Taking thereof being recorded in the Recorder of Deeds Office of Montgomery County in Deed Book 5614, Page 1926 and plans there of recorded in said recording Office in Plan/Highway Book 23, Page 88; Plan/Highway Book 24, Page 388 and Plan/Highway Book 27, Page 21.

BEING Tax Parcel 39-00-02956-00-2

BEING the same premises which Brandywine Operating Partnership, L.P., a Delaware limited partnership, by Deed dated 12/11/2007 and recorded 12/24/2007 in Montgomery County at Deed Book 5676, Page 1201, granted and conveyed unto G&I VI 321/323 NORRISTOWN FE LLC, a Delaware limited liability company, in fee.

Prepared by/Return to: **Julie L. Von Spreckelsen**
470 Norristown Road, Suite 302
Blue Bell, PA 19422
jvonspreckelsen@eastburngray.com

Tax Parcel No.: 39-00-02956-002 (321 Norristown Road)

WORKFORCE HOUSING DECLARATION OF COVENANTS

THIS WORKFORCE HOUSING DECLARATION OF COVENANTS (“Declaration”), is made as of the Effective Date, as defined below, by BT 309, LLC.

BACKGROUND

- A. BT 309, LLC (“**Declarant**”) is the owner of the real property currently known as 321 Norristown Road located in Lower Gwynedd Township, Montgomery County, Pennsylvania, identified as Montgomery County Tax Parcel number: 39-00-02956-002 (“**Property**”). The Property is currently improved with office buildings, a barn, parking areas, and related improvements.
- B. Declarant plans to redevelop the Property by demolishing all but one of the existing office buildings and constructing a multifamily apartment building, retail buildings, and related improvements on the Property (collectively “**Mixed-Use Development**”).
- C. The multifamily apartment building is proposed to contain 278 dwelling units, amenity space, a parking garage, and service areas (“**Multifamily Apartment Building**”).
- D. Under the current provisions of the Lower Gwynedd Township Zoning Ordinance (“**Zoning Ordinance**”) the Property is located in the MF-3 Multifamily Residential District (“**MF-3 District**”) and the Mixed-Use Development is permitted by conditional use pursuant to Zoning Ordinance §§ 1276.02 “Permitted uses” and 1276.09 “Regulations and standards for a Mixed-Use Development”.
- E. Subsection (h) of § 1276.09 provides that the Multifamily Apartment Building is permitted 13.5 residential units per acre provided a minimum of 10% of the residential units to be leased are workforce dwelling units for the first 10 years post issuance of a certificate of occupancy for the Multifamily Apartment Building.

- F. On February 13, 2026 Declarant submitted a conditional use application with the Township which proposed the Mixed-Use Development including the Multifamily Apartment Building with 10% of the residential units designated as workforce dwelling units in accordance with Zoning Ordinance §§ 1276.02 and 1276.09 (“**Conditional Use Development Plan**”). The Township granted approval of the Declarant’s Conditional Use Plans on _____.
- G. The Conditional Use Plan approval for the Mixed-Use Development are subject to the requirement that a minimum of 10% of the residential dwelling units in the Multifamily Apartment Building be leased as workforce dwelling units in accordance with the requirements of Zoning Ordinance §§ 1276.02 and 1276.09(h) and this Declaration.
- H. This Declaration is made to document and record the requirements for the workforce dwelling units.

DECLARATION OF COVENANTS FOR WORKFORCE HOUSING

NOW THEREFORE, intending to be legally bound, Declarant hereby declares and covenants as follows:

- 1. **Definitions.** In addition to the other defined terms which appear in this Declaration as capitalized terms or phrases in quotations and parentheses the following terms used in this Declaration shall have the meanings set forth below, and unless the context clearly indicates otherwise, shall include the plural as well as the singular:

“**Area Median Income**” or “**AMI**” - The Area Median Income for Montgomery County, Pennsylvania as adjusted for Household size as set forth Pennsylvania Housing Finance Agency (“**PHFA**”) Keystone Home Loan Program (“**KHLP**”) household income limits in effect each year or successor agency or successor program. In the event that such AMI determinations are no longer published or are not updated for a period of at least 24 months from the date of the previous publication, the Township and Declarant shall agree upon another AMI determination that is substantially similar to the previous methods of calculation by PHFA for the KHLP.

“**Dwelling Unit**” - A residential living unit within the Multifamily Apartment Building with cooking facilities, bathroom facilities and sleeping quarters designed for and occupied exclusively as a living quarters for a single family or a Household.

“**Family**” or “**Household**” - One or more individuals occupying and living in a Dwelling Unit, excluding domestic servants (if any).

“**Qualified Household**” - A Family or Household with an income that does not exceed 100% of the applicable AMI and who has resided in Montgomery County for at least 24 months preceding submission of a lease application and/or who is

and continues to be employed by a business located in Montgomery County during the term of the lease.

“Workforce Dwelling Unit” - A dwelling unit that is available for and/or occupied by a Qualified Household.

2. **Workforce Dwelling Units.** No less than ten percent (10%) of the Dwelling Units shall be Workforce Dwelling Units for a period of 10 years post issuance of a certificate of occupancy for the Multifamily Apartment Building. Workforce Dwelling Units will be designated as such and every other Dwelling Unit over the aforesaid designated ten percent (10%) level is not required to be a Workforce Dwelling Unit and may be leased at market-rate. Additional requirements of the Workforce Dwelling Units are:
 - a. Workforce Dwelling Units must be occupied by the Qualified Household and must be used as the principal place of residence.
 - b. Workforce Dwelling Units shall be leased at a rate equal to or less than 30% of the AMI for Montgomery County at and for the time when the unit is leased.
 - c. The bedroom mix of Workforce Dwelling Units shall be in the same ratio as the bedroom mix of the market-rate dwelling units.
 - d. Workforce Dwelling Units shall be like market-rate units, exclusive of upgrades, with regard to number of bedrooms, amenities, and access to amenities, but may differ from market-rate dwelling units regarding interior amenities, provided that:
 - (i) These differences, excluding differences related to size differentials, are not apparent in the general exterior appearance of the market-rate units; and
 - (ii) These differences do not include insulation, windows, heating systems, and other improvements related to lessening the energy efficiency and standard components of the unit.
 - e. If no Qualified Households apply to lease a vacant Workforce Dwelling Unit for a 6-month consecutive period, Declarant shall then be permitted to lease the Workforce Dwelling Unit at market-rate until such time as the Workforce Dwelling Unit becomes vacant, at which time the unit shall then become available again for lease as a Workforce Dwelling Unit for the next 6-month consecutive period.
 - f. Declarant shall submit an annual report to the Township Building and Zoning Department, certified by a licensed CPA, which demonstrates that the Multifamily Apartment Building is being leased in compliance with Workforce Dwelling Unit requirements contained in this Declaration of Covenants.

3. Miscellaneous Provisions

- a. **Headings**. The headings in this Declaration are for convenience only and shall not be used to interpret the provisions of this Declaration.
- b. **Background/Exhibits**. The Background and all exhibits, if any, referenced herein shall form a part of this Declaration.
- c. **Interpretation against Drafter**. This Declaration has been reviewed by the Township and shall not be construed against Declarant as the drafter of this Declaration.
- d. **Notices/Written Requests**. Any notice or written request relating to this Declaration shall be in writing and delivered by certified mail (return receipt requested) or by private courier service to Declarant or the Township (as the case may be) at the addresses as set forth below and/or to such other party or addresses given hereunder. If the sending party has access to the intended recipient(s) contact information an electronic copy shall also be provided contemporaneously.

Declarant: BT 309, LLC, c/o:
BET Investments, Inc.
200 Dryden Road, Suite 2000
Dresher PA 19025

Township: Township of Lower Gwynedd
Township Manager
1130 North Bethlehem Pike
Spring House, PA 19477

- e. **Confirmation of Compliance**. Declarant may request that the Township confirm in writing whether the Township is, as of a certain date, aware of any uncorrected violation(s) of this Declaration. The Township shall have a period of thirty (30) days to respond in writing to such a written request, and if such a written response is not received within thirty (30) days it shall be deemed that there are no uncorrected violation(s) of this Declaration.
- f. **Binding Effect**. This Declaration shall, during the period of its effectiveness, run with the land and shall be binding upon Declarant while Declarant owns any interest in the Property, and all of its respective successors, and assigns with respect to the ownership of the Property.
- g. **Enforceability**. This Declaration may be enforced by Declarant and the Township.

- h. **No Third-Party Beneficiaries.** Except the Township and Declarant there are no other beneficiaries of this Declaration, and no other person or entity shall have standing or the right to enforce this Declaration.
- i. **Amendment.** This Declaration may not be amended unless duly amended in writing by Declarant upon prior written approval of the Township. Any such amendment must be recorded in the Montgomery County Recorder of Deeds Office.
- j. **Effective Date/Termination.** This Declaration shall be effective upon its recordation in the Montgomery County Recorder of Deeds Office. This Declaration shall remain in effect for a period of 10 years from the date of the issuance of a certificate of occupancy for the Multifamily Apartment Building. This Declaration shall automatically terminate at the end of the 10-year period and Declarant, its successors and assigns, shall be permitted to record a Termination of Declaration in the Montgomery County Recorder of Deeds office. If during the 10-year period in which the Declaration remains in effect, the Multifamily Apartment Building is no longer used for residential purposes and/or the Township Zoning Ordinance no longer requires that a Multifamily Apartment Building within a Mixed-Use Development contain Workforce Dwelling Units, the Declarant may immediately record a Termination of Declaration with the Montgomery County Recorder of Deeds office and this Declaration, and any subsequent amendments, shall be null and void and of no further force and effect.
- k. **Applicable Law.** This Declaration shall be governed by, interpreted under, and enforced in accordance with the laws of the Commonwealth of Pennsylvania. In the event that this Declaration is found to be illegal or invalid, it shall be void, unenforceable, and of no force or effect.

IN WITNESS WHEREOF, Declarant has executed this Declaration as of the date set forth below.

BT 309, LLC

By: _____

Name: _____

Title: _____

Date: _____

ACKNOWLEDGEMENT

COMMONWEALTH OF PENNSYLVANIA :
: SS
COUNTY OF MONTGOMERY :

On this, the ____ day of _____, 2026, before me _____, the undersigned officer, personally appeared _____, who acknowledged himself to be the _____ of BT 309, LLC and that he as such _____ being authorized to do so, executed the foregoing instrument for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Notary Public

Printed Name: _____

My Commission Expires:



Lower Gwynedd Township
1130 N. Bethlehem Pike, P.O. Box 625
Spring House, PA 19477
(215)646-5302- phone
(215)646-3357-fax
www.lowergwynedd.org

**Request for a Conditional Use Hearing Before the
Lower Gwynedd Township Board of Supervisors**

Instructions for the Completion of this Application

1. An original and twenty (20) copies of this application as well as all pertinent documents, plans, and drawings must be submitted to the Lower Gwynedd Township Zoning Officer with the appropriate filing fee. In addition, an electronic version of the complete submission including drawings/plans must be submitted via email or an external hard drive. A submission is not considered complete and will not be processed until the Township is in receipt of all the required components.
2. Each application must be accompanied by a plot plan of the property showing the exact dimensions of the property, the names of all immediately adjacent property owners, all of the setbacks of the pertinent zoning district, the existing improvements on the property, the proposed improvements on the property, the total area of the lot in square feet, any water courses or rights of way which may extend through the property, and any other information pertinent to the specific issues to be raised before the Board of Supervisors. Except in cases where the Zoning Officer deems it unnecessary, every such plan is to be prepared and signed by a registered architect, surveyor or engineer. At the hearing itself, the applicant shall provide five (5) legal sized duplicates of any large, mounted exhibits so that duplicates may be folded and placed in the permanent Township files for this application. Any exhibits that are to be shown on the monitors must be provided to staff one day prior to the hearing.
3. Filing Fees will be set by resolution of the Lower Gwynedd Township Board of Supervisors and will be amended from time to time. Please refer to the attached fee schedule section pertaining to Conditional Use Hearings.
4. After the initial full hearing (3 hours) on an application, each additional hearing needed to complete the testimony (whether or not such testimony is being offered by the applicant, by protestants or by the Township itself) shall require an additional filing fee as per the attached fee schedule to cover the Township's additional costs. The failure to deliver the additional filing fee prior to the scheduled

hearing date shall be construed as the intention of the applicant to withdraw his application.

5. Lower Gwynedd Township shall not be deemed to have accepted this application for filing until all information required by the Application Form, as well as, supporting plans and other documentation have been submitted and received by the Zoning Officer. The date of the effective filing of the Application shall be noted by the Zoning Officer on the Application itself.
6. A complete application will be delivered to the required review agents and the Board of Supervisors shall schedule and hold a public hearing within a sixty (60) day period (unless otherwise waived or extended with consent of applicant) and act upon the application within the allowed forty-five (45) days.



Lower Gwynedd Township

1130 N. Bethlehem Pike, P.O. Box 625
Spring House, PA 19477
(215)646-5302- phone
(215)646-3357-fax
www.lowergwynedd.org

Conditional Use Appeal to Board of Supervisors

1. Date: 02/13/2026

2. Classification of Appeal (check all that apply):
 Request for a Conditional Use
 Other (specify): _____

3. Applicant:
Name: BT 309, LLC
Mailing Address: 200 Dryden Road, Suite 2000, Dresher, PA 19025

Phone Number: 215-416-2110
Email Address: Pclelland@betinvestments.com
State owner of legal title, if other than Applicant: _____
Brookwood Philadelphia I, LLC and Brookwood Philadelphia II, LLC

4. Applicant's Attorney:
Name: Julie L. Von Spreckelsen, Esquire-Eastburn and Gray, P.C.
Mailing Address: 470 Norristown Road, Suite 302, Blue Bell, PA 19422

Phone Number: 215-461-1238
Email Address: jvonspreckelsen@eastburngray.com

5. Property:
Location: 321 Norristown Road; Springhouse Corporate Center
Present Zoning Classification: MF-3 Multi-Family Residential 3
Area: 24.097 acres
Frontage: 820'
Depth: 1,148'
Description of the current use and the existing improvements on the property: Two office buildings, 2 and 3 story totaling 136,966 sq. ft. gross floor area a 1,500 sq. ft. barn and associated parking, lighting, landscaping and signage.

Description of the proposed use and the proposed improvements (if different):

Demolition of the 2-story office building and the construction of a 4-story multi-family apartment building consisting of 278 units and interior parking garage with 433 parking spaces and 3 commercial retail buildings of 30,750 sq. ft., 12,000 sq. ft., and 4,000 sq. ft. with 234 parking spaces. The 3-story office building will remain along with the designated 315 parking spaces.

6. Legal grounds for appeal:

Meets all of specific objective and general criteria for a Mixed Use Development permitted by conditional use in the MF-3 District.

7. State each section of the zoning ordinance involved in this application:

Section 1276.02 "Permitted Uses"

Section 1276.09 "Regulations and Standards for a Mixed Use Development"

Section 1298.20 "Parking Structures"

Section 1298.07 "Conditional Uses"

8. Has any previous appeal or application been filed in connection with this property?

Yes No If yes, date and specifics: A Rezone/Zoning Ordinance and Map Amendment request has been submitted simultaneously with this conditional use application

9. Is public water available to this property?

Yes No

Is public sewer available to this property?

Yes No

10. Does this Application involve a proposed subdivision?

Yes No

If yes, has a subdivision plan been filed with the Township?

Yes No



Signature of Applicant

Peter J. Clelland, VP of Development

WAIVER

I/We hereby waive the provision that the hearing before the Board of Supervisors of Lower Gwynedd Township be held within 60 days of the application, as stipulated in the Pennsylvania Municipalities Planning Code.

Authorized Signature

Printed Name

Date

EXTENSION OF TIME
CONDITIONAL USE REQUEST

Date: _____

Township Manager
Lower Gwynedd Township
1130 North Bethlehem Pike
Spring House, PA 19477

RE: Property Address: _____

Current Use: _____

Requested Use: _____

On _____, I filed an official application for Conditional Use approval for the above referenced property and paid all appropriate fees. I understand that the Township's Zoning Ordinance and the Pennsylvania Municipalities Planning Code ("MPC") require that the Board of Supervisors hold the initial hearing on this application within 60 days of filing all appropriate fees and applications.

Please be advised that, notwithstanding any contrary provision of the Township's Zoning Ordinance or the MPC, this letter will serve as notice to the Township that the requirement that the initial hearing on this request by the Board of Supervisors take place within 60 days is hereby waived, without limitation as to time.

Should it become necessary to limit the amount of time for the Board of Supervisors to take action on my request, I may revoke this extension of time in writing, sent regular mail and certified mail to the Township, return receipt requested, and the Township shall be obligated hold a hearing on the Conditional Use application within the time then required by the MPC, starting from the date of the Township's receipt of the notice described in this paragraph.

If the Township, in its sole discretion, determines that insufficient progress is being made with regard to the progress of the Conditional Use application, the Township may also revoke this extension of time in writing, sent regular mail and certified mail, return receipt requested. I understand that the Township will advertise and hold a public hearing on the application within the time then required by the MPC, starting from the date of the Applicant's receipt of the notice described in this paragraph.

For the purposes stated herein, written notice shall be deemed received, if sent regular mail and certified mail, on the date of the written receipt on the certified mail return receipt, or, three (3) days after the date indicated on the notification letter in the event the certified mail is returned as "refused", "unclaimed", or is otherwise returned without indication of receipt.

Sincerely,



MEMORANDUM

TO: Lower Gwynedd Township Board of Supervisors

FROM: Matthew I. Hammond, P.E., TPD

CC: Chad Dixson, AICP, PP, Bowman
Lower Gwynedd Township
Project Team

DATE: February 4th, 2026

RE: **Traffic Impact Study Summary from Traffic Impact Study Dated February 4, 2026**
Springhouse Mixed Use Development
Lower Gwynedd Township, Montgomery County, PA
TPD# BETI.00012

-
- » The project site is located on the northwestern corner of Norristown Road (SR 2052) and Boveri Drive and currently consists of 143,295 sf of office space.
 - » The proposed site will be redeveloped and will consist of the following uses:
 - » 77,619 sf of Office Space;
 - » A 30,750 sf Grocery Store;
 - » 16,000 sf of Retail Space;
 - » 278 mid-rise apartments.
 - » Access to the Proposed Site will be provided via one (1) full-access signalized driveway via existing Boveri Drive. In addition, emergency access will be provided from the east side of the property, to the existing ACTS property to the east.
 - » Upon full build-out, the proposed development is expected to generate **311 new trips** during the weekday A.M. peak hour, **339 new trips** during the weekday P.M. peak hour, and **382 new trips** during the Saturday midday peak hour.
 - » When compared to the **Existing Site** (at full capacity), the **Proposed Site** will generate **131 more net new trips** (approximately 2.2 additional trips per minute) during the weekday AM peak hour, **166 more net new trips** (approximately 2.8 additional trips per minute) during the weekday PM peak hour, and **256 more net new trips** (approximately 4.3 additional trips per minute) during the Saturday Midday peak hour. *Based on the above, and a Township Transportation Impact Fee of \$3,865 per "new" weekday afternoon peak hour trip, the **Impact Fee is \$641,590.***
 - » Under the 2027 and 2032 projected conditions, with the development of the proposed site, with site-related recommendations, all study area intersections **will satisfy** PennDOT Standards.
 - » TPD has made the following recommendations in relation to the proposed Springhouse Mixed-Use development:

Norristown Road (SR 2052) & Boveri Drive

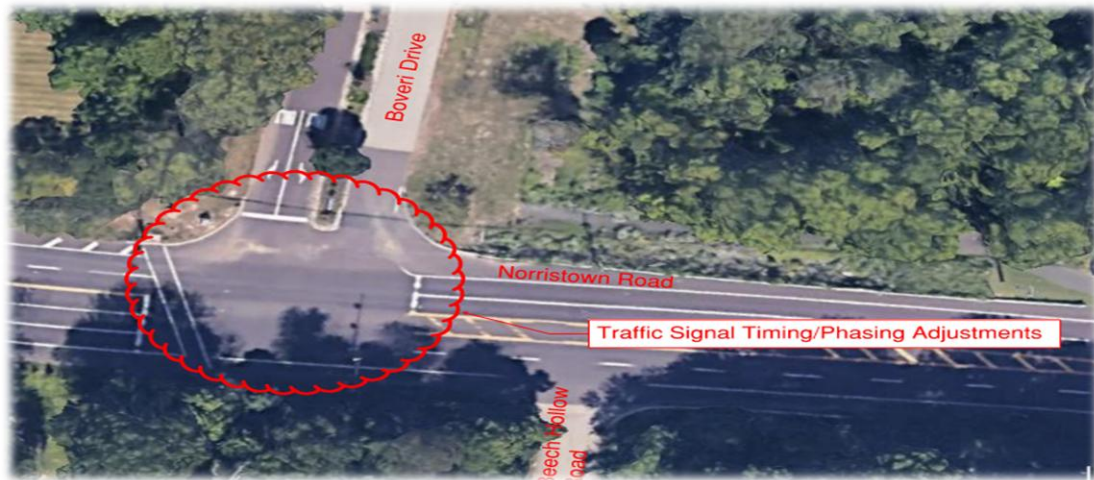
- » Restripe the Eastbound Left Turn Lane to increase the storage length to 250 feet.



- » Extend the southbound Boveri Drive right turn lane, via widening, to the first internal intersection in order to accommodate future queue lengths.



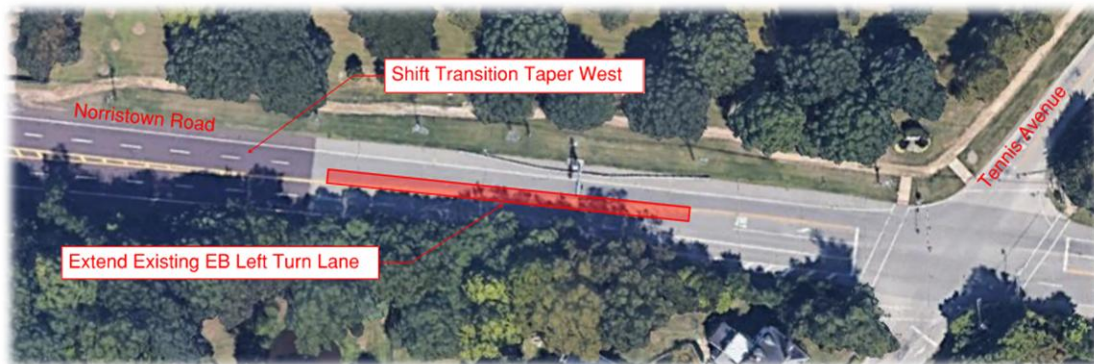
- » Work with the Township and PennDOT on potential traffic signal timing modifications to increase the green time on the westbound Norristown Road approach in order to create a gap in the eastbound traffic to facilitate turns in/out of Beech Hollow Road.



- » Maintenance of on-site vegetation to maximize available sight distance.

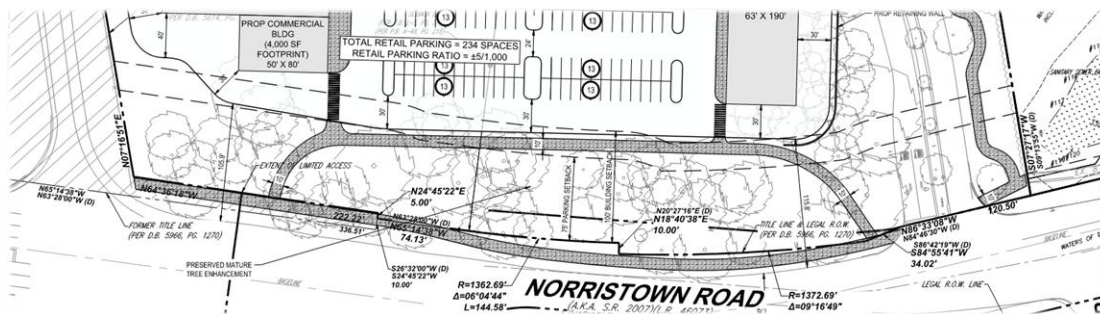
Norristown Road (SR 2052) & Tennis Avenue (SR 2020)

- » Coordinate with the Township and PennDOT on shifting where the transition occurs between the one (1) westbound lane to two (2) westbound lanes further west in order to extend the existing eastbound left turn lane approaching Tennis Avenue.



Norristown Road (SR 2052) Frontage – Pedestrian Improvements

- » Provide a 10' wide trail along Norristown Road, and within the property, connecting to the existing trail located to the east of the site.



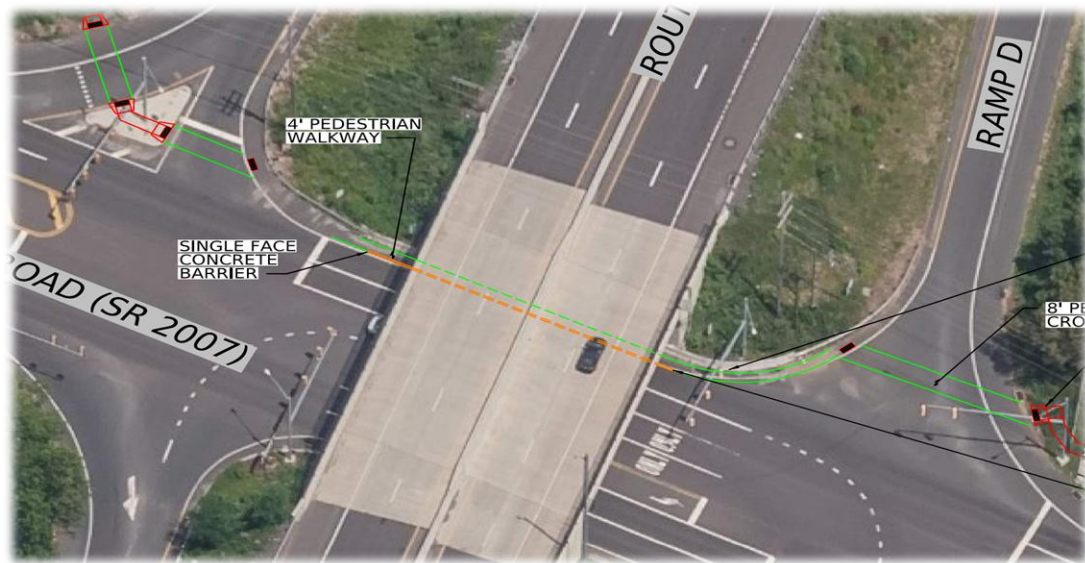
- » Provide sidewalk extending across the northbound Route 309 on-ramp, under Route 309, across the southbound Route 309 off-ramp and terminating at/near the SHIP property to the west of the site.

EXISTING UNDERPASS SHOULDER



DEPICTION OF PROPOSED UNDERPASS WALKWAY

- » Provide PennDOT compliant crosswalks and pedestrian traffic signal equipment at the existing signalized intersections between Boveri Drive and the Route 309 southbound off-ramp.



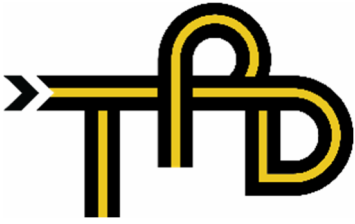
Norristown Road (SR 2052) Corridor – Signal Timing Adjustments

- » Provide Traffic Signal Timing adjustments to the following intersections within the Norristown Road Corridor:
 - Norristown Road & Tennis Avenue;
 - Norristown Road & Boveri Drive¹;
 - Norristown Road & Route 309 NB Ramps¹;
 - Norristown Road & Route 309 SB Ramps¹;
 - Norristown Road & Springhouse Estates/Springhouse Innovation Park;
 - Norristown Road & McKean Road;

- Norristown Road & Bethlehem Pike/Sumneytown Pike.

¹ – *Traffic Signal Equipment upgrades are also proposed at these intersections. The extent of the equipment upgrades will be determined during the Township's Land Development process, as well as during the PennDOT Highway Occupancy Permit (HOP) process.*

As previously mentioned, the above excerpts were taken from the Traffic Impact Study, dated February 4, 2026 completed in relation to the proposed Springhouse Mixed Use Development. Additional details can be found in the February 4, 2026 Traffic Impact Study.



March 18, 2025
(Last Revised February 4, 2026)
TPD# BETI.00012

Springhouse Mixed Use Development

Transportation Impact Study

Lower Gwynedd Township, Montgomery County, PA

For Submission To:

Lower Gwynedd Township, Montgomery County, PA

SPRINGHOUSE MIXED USE DEVELOPMENT TRANSPORTATION IMPACT STUDY

FOR SUBMISSION TO:

Lower Gwynedd Township, Montgomery County, PA

Prepared For:
BT 309, LLC
Mr. Peter Clelland
200 Dryden Road, Suite 2000
Dresher, PA 19025

March 18, 2025
(Last Revised February 4, 2026)

TPD # BETI.00012



Prepared By:
TPD
2500 East High Street, Suite 650
Pottstown, Pennsylvania 19464

Phone: (610) 326-3100
Fax: (610) 326-9410
E-mail: TPD@TPDinc.com
Website: www.TPDinc.com



Matthew I. Hammond, P.E.
Executive Vice President
Pennsylvania License Number 071037

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TECHNICAL APPENDICES

- Appendix A: Project Correspondence
- Appendix B: Study Area Photographs
- Appendix C: Manual Traffic Count Printouts
- Appendix D: Nearby Developments
- Appendix E: Trip Generation/Internal Capture Data
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- Appendix G: Critical and Follow-Up Gap Data
- Appendix H: Capacity Analyses
- Appendix I: Traffic Signal Diagram
- Appendix J: Auxiliary Turn Lane Warrant Analyses

EXECUTIVE SUMMARY

The purpose of this study is to examine the potential traffic impact associated with the proposed Springhouse Mixed-Use development on the roadway network in Lower Gwynedd Township, Montgomery County, PA. Based on this evaluation, the following conclusions were reached:

- » The project site is located on the northwestern corner of Norristown Road (SR 2052) and Boveri Drive and currently consists of 143,295 sf of office space.
- » The proposed site will be redeveloped and will consist of the following uses:
 - » 77,619 sf of Office Space;
 - » A 30,750 sf Grocery Store;
 - » 16,000 sf of Retail Space;
 - » 278 mid-rise apartments.
- » Access to the Proposed Site will be provided via one (1) full-access signalized driveway via existing Boveri Drive. In addition, an emergency access will be provided in coordination with the Township Fire Marshal.
- » All measured sight distances at the site driveway exceed the acceptable sight distances and, in most cases, exceed PennDOT's desirable sight distance requirements.
- » Upon full build-out, the proposed development is expected to generate **311 new trips** during the weekday A.M. peak hour, **339 new trips** during the weekday P.M. peak hour, and **382 new trips** during the Saturday midday peak hour.
- » The Existing Site (at full capacity) will generate **180 new trips** during the weekday AM peak hour, **173 new trips** during the weekday PM peak hour, and **126 new trips** during the Saturday Midday peak hour.
- » When compared to the Existing Site (at full capacity), the **Proposed Site** will generate **131 more net new trips** during the weekday AM peak hour, **166 more net new trips** during the weekday PM peak hour, and **256 more net new trips** during the Saturday Midday peak hour.
- » Under the 2027 and 2032 projected conditions, with the development of the proposed site, with site-related recommendations outline in **Table II**, all study area intersections will satisfy PennDOT ILOS Standards.
- » Levels of Service (LOS) for the study area intersections have been summarized in matrix form. **Table I** details the overall intersection LOS for each study area intersection:

**TABLE I
OVERALL INTERSECTION LEVEL OF SERVICE SUMMARY**

Intersection	Peak Hour	2024 Existing	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²			Meets LOS Requirements?
			Base	Projected	Projected ^{3,4}	Without SHIP Development		With SHIP Development				
						Base	Projected	Projected ^{3,4}	Base	Projected	Projected ^{3,4}	
Norristown Road (SR 2052) & Boveri Drive (Site Driveway)	Weekday A.M.	A (0.8)	A (0.8)	A (5.9)	A (5.9)	A (0.8)	A (5.9)	A (5.9)	A (0.8)	A (5.5)	A (5.5)	YES
	Weekday P.M.	A (1.2)	A (1.2)	A (8.1)	A (8.1)	A (1.2)	A (8.1)	A (8.1)	A (1.4)	A (8.2)	A (8.2)	
	Saturday	A (0.7)	A (0.7)	A (8.0)	A (8.0)	A (0.7)	A (8.0)	A (8.0)	A (0.7)	A (7.9)	A (7.9)	
Norristown Road (SR 2052) & Beech Hollow Road	Weekday A.M.	A (0.0)	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--	YES
	Weekday P.M.	A (0.0)	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--	A (0.1)	A (0.1)	--	
	Saturday	A (0.0)	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--	
Norristown Road (SR 2052) & Route 309 NB Ramps	Weekday A.M.	C (31.3)	C (31.2)	C (30.1)	--	C (27.5)	C (26.7)	--	C (26.3)	C (26.8)	--	YES
	Weekday P.M.	B (17.8)	B (18.7)	B (18.4)	--	B (18.1)	B (17.8)	--	B (18.4)	B (18.6)	--	
	Saturday	C (21.2)	C (23.1)	C (21.4)	--	C (23.2)	C (21.4)	--	C (22.3)	C (20.7)	--	
Norristown Road (SR 2052) & Route 309 SB Ramps	Weekday A.M.	B (15.1)	B (15.5)	B (19.2)	--	B (15.8)	B (18.7)	--	B (19.6)	C (27.6)	--	YES
	Weekday P.M.	B (16.4)	B (16.9)	B (16.8)	--	B (17.3)	B (17.2)	--	B (19.4)	B (19.3)	--	
	Saturday	B (11.0)	B (10.8)	B (12.0)	--	B (11.0)	B (12.0)	--	B (11.4)	B (12.5)	--	
Norristown Road (SR 2052) & Tennis Avenue	Weekday A.M.	C (20.8)	C (21.4)	C (22.8)	--	C (20.8)	C (22.2)	--	C (26.9)	C (30.5)	--	YES
	Weekday P.M.	B (19.8)	B (19.8)	C (21.3)	--	C (20.3)	C (22.3)	--	C (23.6)	C (27.3)	--	
	Saturday	B (16.8)	B (16.7)	B (16.6)	--	B (16.5)	B (16.4)	--	B (17.2)	B (16.9)	--	
Norristown Road (SR 2052) & Residential Driveway/ SHIP Driveway	Weekday A.M.	A (2.2)	A (2.2)	A (2.2)	--	A (2.2)	A (2.2)	--	A (5.6)	A (5.8)	--	YES
	Weekday P.M.	A (3.5)	A (3.5)	A (3.4)	--	A (3.4)	A (3.4)	--	B (12.3)	B (12.6)	--	
	Saturday	A (2.0)	A (2.0)	A (2.0)	--	A (2.0)	A (2.0)	--	A (3.9)	A (3.9)	--	
Norristown Road (SR 2052) & McKean Road	Weekday A.M.	B (13.3)	B (13.5)	B (15.8)	--	B (13.7)	B (16.0)	--	B (13.4)	B (14.7)	--	YES
	Weekday P.M.	B (15.3)	B (15.0)	B (16.1)	--	B (15.2)	B (16.4)	--	B (17.1)	B (18.6)	--	
	Saturday	A (8.2)	A (8.2)	A (8.8)	--	A (8.3)	A (8.9)	--	A (8.8)	A (9.4)	--	
Norristown Road (SR 2052)/ Sumneytown Pike & Bethlehem Pike	Weekday A.M.	D (51.2)	D (40.4)	D (43.2)	--	D (40.9)	D (43.9)	--	D (49.2)	D (53.8)	--	YES
	Weekday P.M.	D (53.8)	D (47.1)	D (50.6)	--	D (45.2)	D (48.4)	--	D (45.8)	D (51.7)	--	
	Saturday	C (29.9)	C (29.8)	C (30.9)	--	C (29.9)	C (31.1)	--	C (30.3)	C (31.5)	--	

Base = No-Build scenario, Projected = Build scenario

1 = Without SHIP Traffic and Roadway Improvements

2 = With SHIP Traffic and Roadway Improvements

3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

» Site-related recommendations are summarized in **Table II:**

**TABLE II
RECOMMENDATIONS**

Intersection	Recommendation
Norristown Road (SR 2052) Corridor	Optimize traffic signals timings at the signalized study area intersections.
Norristown Road (SR 2052) & Boveri Drive (Site Driveway)	Restripe the Eastbound Left Turn Lane to increase the storage length to 250 feet.
	Extend the southbound Boveri Drive right turn lane, via widening, to the first internal intersection in order to accommodate future queue lengths.
	Work with the Township and PennDOT on potential traffic signal equipment upgrades.
	Work with the Township and PennDOT on potential traffic signal timing modifications to increase the green time on the westbound Norristown Road approach in order to create a gap in the eastbound traffic to facilitate turns in/out of Beech Hollow Road.
	Maintenance of on-site vegetation to maximize available sight distance.
Norristown Road (SR 2052) & Tennis Avenue (SR 2020)	Coordinate with the Township and PennDOT on shifting where the transition occurs between the one (1) westbound lane to two (2) westbound lanes further west in order to extend the existing eastbound left turn lane approaching Tennis Avenue.
Norristown Road Frontage	Provide a 10' wide trail beginning within the site and connecting to the existing trail located to the east of the site.
	Provide a 10' wide trail along the property's frontage.
	Provide sidewalk extending across the northbound Route 309 on-ramp, under Route 309, across the southbound Route 309 off-ramp and terminating at/near the SHIP property to the west of the site.
	Provide PennDOT compliant crosswalks and pedestrian traffic signal equipment at the existing signalized intersections between Boveri Drive and the Route 309 southbound off-ramp.

INTRODUCTION

Traffic Planning and Design, Inc. (TPD) has completed a Revised Transportation Impact Study (TIS) for the proposed Springhouse Mixed-Use Development in Lower Gwynedd Township, Montgomery County, Pennsylvania. The project site is located on the northwestern corner of Norristown Road (SR 2052) and Boveri Drive, and consists of 143,295 sf of office space, as shown in **Figure 1**. As shown in **Figure 2**, the proposed site will consist of the following uses:

- » 77,619 sf of Office Space;
- » A 30,750 sf Grocery Store;
- » 16,000 sf of Retail Space;
- » 278 mid-rise apartments.

TPD assumed an opening year of 2027 and a design year of 2032. This report has been prepared in accordance with PennDOT's *Policies and Procedures for Transportation Impact Studies*, found in PennDOT's Publication 282, Appendix A, dated September 2022. This TIS has been revised based on review comments contained in the Bowman review letter, dated June 26, 2025. Project Correspondence is contained in **Appendix A**.

EXISTING ROADWAY NETWORK

A field review of the existing roadway system in the study area was conducted. The existing roadway characteristics within the study area are summarized in **Table 1**. Photographs of the study area intersections are included in **Appendix B**.

TABLE 1
ROADWAY CHARACTERISTICS WITHIN STUDY AREA

Roadway	Ownership	Functional Classification/ Roadway Type	Predominant Directional Orientation	Average Daily Traffic	Posted Speed Limit
Bethlehem Pike	State (SR 2018)	Minor Arterial	North-South	16,215	40 mph
Norristown Road	State (SR 2052)	Minor Arterial	East-West	19,169	45/40 mph
Tennis Avenue	State (SR 2020)	Urban Collector	North-South	5,277	40 mph
Route 309 NB Off Ramp	State (SR 8039)	Other Freeway	North	5,089	40 mph
Route 309 NB On Ramp	State (SR 8039)	Other Freeway	North	453	--
Route 309 SB Off Ramp	State (SR 8039)	Other Freeway	South	507	40 mph
Route 309 SB On Ramp	State (SR 8039)	Other Freeway	South	4,311	--
Sumneytown Pike	Other Principle Arterial Highway		East-West	14,748	35 mph
McKean Road	Urban Collector		North-South	2,981	35 mph
Boveri Drive	Local Road		North-South	--	25 mph
Beech Hollow Road	Local Road		North-South	--	--

Bicycle and Pedestrian Facilities

Based on observations during field visits at the study area intersections, there are no bicycle specific accommodations present. Pedestrian accommodations are detailed per intersection below.

- » Norristown Road (SR 2052) & Boveri Drive – The signalized intersection does not have sidewalks. One (1) curb ramp exists on the NW corner serving one (1) crosswalk that crosses Norristown Road. Pedestrians are prohibited via signage from crossing the northern and eastern approaches.

- » Norristown Road (SR 2052) & Beech Hollow Road – The unsignalized intersection does not have any pedestrian accommodations besides paved shoulders.
- » Norristown Road (SR 2052) & Route 309 NB Ramps – The signalized intersection does not have any pedestrian accommodations besides paved shoulders. Pedestrians are prohibited via signage from crossing all approaches.
- » Norristown Road (SR 2052) & Route 309 SB Ramps – The signalized intersection does not have any pedestrian accommodations besides paved shoulders. Pedestrians are prohibited via signage from crossing all approaches.
- » Norristown Road (SR 2052) & Tennis Avenue – The signalized intersection has pedestrian curb ramps and crosswalks on all four approaches. There are pedestrian push buttons on the Norristown Road crossings.
- » Norristown Road (SR 2052) & Residential Driveway/SHIP Driveway – The signalized intersection does not have any sidewalks or pedestrian curb ramps. There are crosswalks across Norristown Road with pedestrian push buttons.
- » Norristown Road (SR 2052) & McKean Road – The signalized intersection has pedestrian curb ramps on the Northwestern, Northeastern, and Southeastern corners of the intersection. There are pedestrian push buttons and crosswalks on the southbound and westbound approaches, while pedestrians are prohibited via signage from crossing the Eastbound approach.
- » Norristown Road (SR 2052)/Sumneytown Pike & Bethlehem Pike (SR 2018) – The signalized intersection has pedestrian curb ramps on all four corners of the intersection. There are pedestrian push buttons and crosswalks on all approaches.

Mass Transit Facilities

Montgomery County and the Lower Gwynedd area are provided with public transportation by SEPTA. Public transportation is not currently available in the vicinity of the proposed site.

Crash Data Investigation

Crash data were obtained from PennDOT for the study area intersections. PennDOT defines a reportable crash as follows, "A reportable (crash) is one in which an injury or fatality occurs or if at least one of the vehicles involved requires towing from the scene." Reportable crashes were tabulated for the five-year time period beginning 01/01/2019 and ending 12/31/2023. For a given intersection, PennDOT considers a crash occurrence of 5 reportable, correctable crashes over a continuous twelve-month period during the past five years to be a threshold value, above which the intersection design should be reviewed to examine if corrective measures can be taken to enhance safety. The number of reportable crashes at the study area intersections is shown in **Table 2**.

**TABLE 2
PENNDOT REPORTABLE CRASH DATA**

Study Area Intersection	Number of Reportable Crashes				
	2019	2020	2021	2022	2023
Norristown Road (SR 2052) & Boveri Drive (Site Driveway)	0	0	0	0	0
Norristown Road (SR 2052) & Beech Hollow Road	0	0	0	0	0
Norristown Road (SR 2052) & Route 309 NB Ramps	4	1	2	5	0
Norristown Road (SR 2052) & Route 309 SB Ramps	0	0	0	0	0
Norristown Road (SR 2052) & Tennis Avenue	1	2	1	1	1
Norristown Road (SR 2052) & Residential Driveway/SHIP Driveway	1	2	1	2	2
Norristown Road (SR 2052) & McKean Road	4	2	3	2	4
Norristown Road/Sumneytown Pike & Bethlehem Pike (SR 2018)	4	1	2	4	4

Based on a review of the crash data, there were no continuous twelve-month periods during the past five years where 5 or more crashes occurred that were deemed correctable, except for the following intersection:

- » Norristown Road (SR 2052) & Route 309 NB Ramps – There were 5 or more reportable crashes that occurred in 2022. The primary types of crash were the angle and rear-end crashes. The primary causation of the crashes was due to driver error such as improper/careless turn, driving too fast for conditions, and running red light.

EXISTING TRAFFIC CONDITIONS

Manual Turning Movement Counts

Manual traffic counts were conducted on 15-minute intervals during the weekday morning (6:00 to 10:00 A.M.), weekday evening (3:00 to 7:00 P.M.) and Saturday midday (10:00 A.M. to 2:00 P.M.) peak periods. Data pertaining to heavy vehicles, pedestrians and transit vehicles were observed during the turning movement counts. Peak hours and count dates for the study area intersections are identified in **Table 3**.

**TABLE 3
TRAFFIC COUNT INFORMATION**

Intersection	Date of Traffic Counts	Time Period	Intersection Peak Hour ¹
Norristown Road (SR 2052) & Boveri Drive (Site Driveway)	Thursday, October 24, 2024	Weekday A.M.	7:30 to 8:30 A.M.
		Weekday P.M.	3:00 to 4:00 P.M.
	Saturday, October 26, 2024	Saturday Midday	12:15 to 1:15 P.M.
Norristown Road (SR 2052) & Beech Hollow Road	Thursday, October 24, 2024	Weekday A.M.	7:30 to 8:30 A.M.
		Weekday P.M.	3:00 to 4:00 P.M.
	Saturday, October 26, 2024	Saturday Midday	12:15 to 1:15 P.M.
Norristown Road (SR 2052) & Route 309 NB Ramps	Thursday, October 24, 2024	Weekday A.M.	7:30 to 8:30 A.M.
		Weekday P.M.	3:00 to 4:00 P.M.
	Saturday, October 26, 2024	Saturday Midday	12:30 to 1:30 P.M.
Norristown Road (SR 2052) & Route 309 SB Ramps	Thursday, October 24, 2024	Weekday A.M.	7:30 to 8:30 A.M.
		Weekday P.M.	4:15 to 5:15 P.M.
	Saturday, October 26, 2024	Saturday Midday	1:00 to 2:00 P.M.
Norristown Road (SR 2052) & Tennis Avenue	Thursday, October 24, 2024	Weekday A.M.	7:30 to 8:30 A.M.
		Weekday P.M.	3:00 to 4:00 P.M.
	Saturday, October 26, 2024	Saturday Midday	12:00 to 1:00 P.M.
Norristown Road (SR 2052) & Residential Driveway/SHIP Driveway	Thursday, October 24, 2024	Weekday A.M.	7:30 to 8:30 A.M.
		Weekday P.M.	4:15 to 5:15 P.M.
	Saturday, October 26, 2024	Saturday Midday	12:30 to 1:30 P.M.
Norristown Road (SR 2052) & McKean Road	Thursday, February 13, 2025	Weekday A.M.	7:15 to 8:15 A.M.
		Weekday P.M.	4:15 to 5:15 P.M.
	Saturday, February 15, 2025	Saturday Midday	11:30 A.M. to 12:30 P.M.
Norristown Road/Sumneytown Pike & Bethlehem Pike	Thursday, February 13, 2025	Weekday A.M.	7:15 to 8:15 A.M.
		Weekday P.M.	4:30 to 5:30 P.M.
	Saturday, February 15, 2025	Saturday Midday	12:15 to 1:15 P.M.

Peak Hour consists of the four consecutive 15-minute intervals where the highest traffic volumes occur.

Existing condition traffic volumes for the weekday A.M., weekday P.M., and Saturday peak hours are illustrated in **Figures 3-5**, respectively. Traffic count data sheets are provided in **Appendix C**.

BASE (NO-BUILD) CONDITIONS

Annual Background Growth

A background growth factor for the roadways in the study area was developed based on growth factors for August 2024 to July 2025 obtained from the PennDOT Bureau of Planning and Research (BPR). The PennDOT BPR suggests using a background growth trend factor of 0.17% per year in Montgomery County for urban non-interstate roadways. Also, existing counts contained in this TIS were conducted in both 2024 and 2025. As such, the background growth factor was applied annually to yield overall growth percentages of 0.34%-0.51% (0.17% per year, compounded over 2-3 years) for the 2027 opening year and 1.2%-1.37% (0.17% per year, compounded over 7-8 years) for the 2032 design year.

Nearby Proposed Developments

Base (no-build) traffic conditions were calculated to include traffic volumes from proposed developments, which, though not operating under existing conditions, may be operating by the opening year (2027) and design year (2032) of the proposed development. Based on discussions with Lower Gwynedd Township staff, the following nearby planned development was specifically included in this study:

SHIP Development - The project site is located on the northeastern corner of Norristown Road (S.R. 2007) and McKean Road. The Proposed Site will be a redevelopment of the former Rohm and Haas campus and

will consist of the following uses: 80,606 ksf Manufacturing and 598.161 ksf of Research and Development. TPD based trip generation and distribution on previous Traffic Impact Studies (TIS) conducted for this site. The latest TIS called for the following roadway improvements as a result of the development:

- Norristown Road (S.R. 2007) & McKean Road
 - 350' EB left-turn lane
- Norristown Road (S.R. 2007) & SHIP Driveway/Springhouse Estates
 - 250' EB left-turn lane
 - 225' WB right-turn lane

Based on the current schedule for this site and the Proposed Site, TPD included the traffic associated with this development under 2032 Design Year Conditions only. The site-related improvements listed above were included under 2032 Base and 2032 Projected Conditions. ***In addition, as requested by Township Consultants in their review, 2032 Base and 2032 Projected Conditions have been analyzed with and without the traffic and roadway improvements associated with this development.***

Additionally, through further coordination with Lower Gwynedd Township, the proposed developments of Ambler Yards, Maple Glen Townhomes and Promenade East in Upper Dublin were mentioned. However, it is TPD's opinion that due to their proximity to the site, any traffic associated with these developments would be captured in the annual background growth rates applied.

The additional traffic volumes due to background growth and background developments (as relevant) were added to the existing traffic data to produce 2027 and 2032 base (no-build) condition traffic volumes (with and without SHIP Development traffic and improvements). Base condition volumes for the weekday A.M., weekday P.M. and Saturday midday peak hours are illustrated in **Figures 6-8** for the 2027 opening year conditions and **Figures 9-14** for the 2032 design year conditions (with and without SHIP Development traffic and improvements). Trip distributions for background developments are provided in **Appendix D**.

SCHEDULED ROADWAY IMPROVEMENTS

Based on a review of the Pennsylvania and DVRPC Transportation Improvement Programs (TIP) there are no programmed roadway improvements in the vicinity of the proposed site.

As stated above, the nearby planned SHIP Development includes several roadway improvements in the Study Area. Design Year (2032 Base and Projected) Conditions are assumed with and without SHIP Development traffic and improvements.

PROPOSED SITE ACCESS

The proposed site will be served by one (1) full-movement signalized driveway to Norristown Road (SR 2052), via existing Boveri Drive. In addition, an emergency access will be provided in coordination with the Township Fire Marshal.

Sight Distance Analysis

A sight distance analysis was prepared for the proposed site driveway. In general, recommended safe sight distances depend upon the posted speed limit and roadway grades. The existing sight distances at the proposed driveways were measured in accordance with PennDOT Publication 282 Highway Occupancy Permit Operations Manual and compared to PennDOT's desirable sight distance standard, which is identified in 67 PA Code Chapter 441.8(h), "Access to and Occupancy of Highways by Driveways and Local Roads." In addition,

measured sight distances at the proposed driveways were compared to PennDOT’s safe stopping sight distance standard, which is calculated by the following equation:

$$SSSD = 1.47VT + V^2/[30(f \pm g)]$$

- SSSD = safe stopping sight distance (acceptable sight distance)
- V = Vehicle Speed
- T = Perception Reaction Time of Driver (2.5 seconds)
- f = Coefficient of Friction for Wet Pavements
- g = Percent of Roadway Grade Divided by 100

Table 4 shows the measured, desirable, acceptable (SSSD) sight distances at the site driveway for vehicles entering and exiting the site.

**TABLE 4
SIGHT DISTANCE ANALYSIS**

	Direction	Speed	Grade ¹	Sight Distances (feet)		
				DES	SSSD	EXIST ²
Site Driveway (Boveri Drive) to Norristown Road (SR 2052)						
Exiting Movements	To the left	45 mph	-1%	635'	390'	650'+
	To the right	45 mph	-1%	570'	390'	450'
Entering Left Turns	Approaching same direction	45 mph	-1%	N/A	390'	600'+
	Approaching opposite direction	45 mph	-1%	445'	390'	650'+

*DES = PennDOT Desirable Sight Distance
SSSD = PennDOT Acceptable Sight Distance
EXIST = Existing (measured) Sight Distance*

*1 = Roadway Grade Approaching Driveway
2 = With removal of vegetation*

As shown in **Table 4** above, all measured sight distances at the signalized site driveway exceed the acceptable sight distances and, in most cases, exceed PennDOT’s desirable sight distance requirements.

TRIP GENERATION

The trip generation rates for the Proposed Site were obtained from the Trip Generation Manual, Twelfth Edition, 2025, an institute of Transportation Engineers (ITE) Informational Report. Land Use Code #221 (Multifamily Housing (Mid-Rise) – Not Close to Rail Transit), #710 (General Office), #821 (Shopping Plaza (40-150K) - with Supermarket) was used to calculate the number of vehicular trips generated during the following time periods: average weekday; weekday A.M. peak hour, weekday P.M. peak hour and Saturday Midday peak hour.

Table 5 shows the rates and directional percentages for the analyzed time periods.

TABLE 5
ITE TRIP GENERATION DATA

Land Use	ITE #	Units	Time Period	Equations/Rates	Entering %	Pass-By %
Multifamily Housing (Mid-Rise) (Not Close to Rail Transit)	221	278 du	Average Weekday	$T = 4.55*(X) - 17.52$	50%	--
			Weekday A.M. Peak Hour	$T = 0.42*(X) - 7.77$	23%	--
			Weekday P.M. Peak Hour	$T = 0.38*(X)$	64%	--
			Saturday Midday Peak Hour	$T = 0.36*(X)$	51%	--
General Office	710	77.619 ksf	Average Weekday	$T = 6.18*(X) + 207.96$	50%	--
			Weekday A.M. Peak Hour	$T = 1.12*(X) + 19.95$	88%	--
			Weekday P.M. Peak Hour	$T = 0.99*(X) + 31.14$	16%	--
			Saturday Midday Peak Hour	$T = 0.88*(X)$	54%	--
Shopping Plaza (40-150K) - with Supermarket	821	46.750 ksf	Average Weekday	$T = 101.43*(X)$	50%	--
			Weekday A.M. Peak Hour	$T = 3.54*(X)$	60%	30% ¹
			Weekday P.M. Peak Hour	$T = 8.58*(X)$	49%	40%
			Saturday Midday Peak Hour	$T = 5.46*(X) + 168.21$	49%	31%

T = number of site-generated vehicular trips
X = independent variable (ksf = 1000 sf, du= Dwelling Units)
1 = Data not published, used 10% less than PM Peak Hour

Internal Trips

TPD assumed interaction between the individual uses for the Proposed (Future Build) scenario utilizing the methodology outlined in the NHCRP Report 684. Based on this methodology, the following overall weighted interaction percentages were calculated:

- » Average Weekday – 16.1% (weighted average based on AM and PM, by land use)
- » Weekday AM Peak Hour – 6.3%
- » Weekday PM Peak Hour – 23.1%
- » SAT Midday Peak Hour – 16.2% (weighted average based on AM and PM, by land use, by enter and exit)

The interaction worksheets are included in **Appendix E** and are summarized in **Table 6**. **As requested, descriptions of the interaction calculations for the Average Weekday and Saturday Midday are also included in Appendix E.**

**TABLE 6
TRIP GENERATION SUMMARY**

Land Use	Total Trips			Interaction			Pass-By Trips			New Trips		
	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit
Average Weekday												
Multifamily Housing (Mid-Rise)	1247	624	623	-320	-160	-160	--	--	--	927	464	463
General Office	688	344	344	-110	-55	-55	--	--	--	578	289	289
Shopping Plaza (40-150K)	4742	2371	2371	-646	-323	-323	--	--	--	4096	2048	2048
Total	6677	3339	3338	-1076	-538	-538	--	--	--	5601	2801	2800
Weekday A.M. Peak Hour												
Multifamily Housing (Mid-Rise)	109	25	84	-4	-1	-3	0	0	0	105	24	81
General Office	107	94	13	-10	-6	-4	0	0	0	97	88	9
Shopping Plaza (40-150K)	165	99	66	-10	-5	-5	46	28	18	109	66	43
Total	381	218	163	-24	-12	-12	46	28	18	311	178	133
Weekday P.M. Peak Hour												
Multifamily Housing (Mid-Rise)	106	68	38	-51	-33	-18	0	0	0	55	35	20
General Office	108	17	91	-24	-6	-18	0	0	0	84	11	73
Shopping Plaza (40-150K)	401	197	204	-67	-32	-35	134	66	68	200	99	101
Total	615	282	333	-142	-71	-71	134	66	68	339	145	194
Saturday Midday Peak Hour												
Multifamily Housing (Mid-Rise)	100	51	49	-27	-19	-8	0	0	0	73	32	41
General Office	68	37	31	-11	-4	-7	0	0	0	57	33	24
Shopping Plaza (40-150K)	423	207	216	-58	-26	-32	113	56	57	252	125	127
Total	591	295	296	-96	-49	-47	113	56	57	382	190	192

Based on Table 6, the Proposed Site will generate 311 new trips during the weekday AM peak hour, 339 new trips during the weekday PM peak hour, and 382 new trips during the Saturday Midday peak hour.

Trip Generation Comparison

It is TPD’s understanding the Existing Site consists of 143,295 sf of general office space. Based on the trip generation data contained in Table 5 (ITE #710), the Existing Site (at full capacity) would generate **180 new trips** during the weekday AM peak hour, **173 new trips** during the weekday PM peak hour, and **126 new trips** during the Saturday Midday peak hour. Therefore, when compared to the Existing Site (at full capacity), the Proposed Site will generate **131 more net new trips** during the weekday AM peak hour, **166 more net new trips** during the weekday PM peak hour, and **256 more net new trips** during the Saturday Midday peak hour.

Trip Generation Credit

In order to account for the traffic associated with the Existing Site (at current capacity) being replaced by the traffic associated with the Proposed Site (at full capacity), TPD developed a base condition redistribution based on the counts performed at Norristown Road (S.R. 2052) and Boveri Drive, which will zero-out the current trip generation. This base redistribution is shown in Figures 15-17.

TRIP DISTRIBUTION

The distribution of trips generated by the proposed development was based on the local road network, the existing traffic patterns, the proposed use of the site, and the site driveway location. The new trips for the proposed development were distributed to the local roadway network based on the percentages shown in Table 7.

**TABLE 7
TRIP DISTRIBUTION PERCENTAGES – NEW TRIPS**

Direction - To/From	Assignment (To/From)	Distribution Percentage
West	via Sumneytown Pike	20%
South	via Bethlehem Pike	17%
South	via Route 309 NB	16%
North	via Bethlehem Pike	13%
East	via Norristown Road	12%
South	via Tennis Avenue	7%
North	via Tennis Avenue	7%
North	via McKean Road	6%
North	via Route 309 SB	2%

Pass-By Trips

Pass-by trips were established based on the existing traffic patterns in the vicinity of the site and the location and configuration of the site driveway. The percentages used for the distribution of pass-by trips to the project site are shown below in **Table 8**.

**TABLE 8
TRIP DISTRIBUTION PERCENTAGES – PASS-BY TRIPS**

Direction	Pass-by Trip Distribution Percentages		
	Weekday A.M.	Weekday P.M.	Saturday Midday
EB via Norristown Road	53%	65%	50%
WB via Norristown Road	47%	35%	50%

The assignment of site-generated trips for the proposed developments during the weekday A.M., P.M., and Saturday midday peak hours are shown in **Figures 18-20**. The trip distribution and assignment percentage information are included in **Appendix F**. ***It should be noted that, in order to comply with a review comment from the Township Traffic Engineer (pertaining to pass-by trips balancing), TPD conservatively increased the respective lower enter or exit pass-by trip numbers during each peak hour to be equal with the higher enter or exit pass-by trip numbers. This is reflected in the volume development spreadsheet and figures.***

PROJECTED (BUILD) CONDITION TRAFFIC VOLUMES

The site-generated trips for the proposed development were added to the 2027 and respective 2032 base (no-build) condition traffic volumes to develop the 2027 and 2032 projected (build) (with and without SHIP Development traffic and improvements) condition traffic volumes. Projected condition traffic volumes for the opening year of 2027 for the weekday A.M., P.M., and Saturday midday peak hours are shown in **Figures 21-23**. Projected condition traffic volumes for the design year of 2032 (with and without SHIP Development traffic and improvements) for the weekday A.M., P.M., and Saturday midday peak hours are shown in **Figures 24-29**. Traffic volume development worksheets are also contained in **Appendix F**.

LEVELS OF SERVICE FOR AN INTERSECTION

For analysis of intersections, level of service is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. LOS criteria is stated in terms of control delay per vehicle

for a one-hour analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The criteria are shown in **Table 9**. Delay, as it relates to level of service, is a complex measure and is dependent upon a number of variables. For signalized intersections, these variables include the quality of vehicle progression, the cycle length, the green time ratio, and the volume/capacity ratio for the lane group in question. For unsignalized intersections, delay is related to the availability of gaps in the flow of traffic on the major street and the driver's discretion in selecting an appropriate gap for a particular movement from the minor street (straight across, left or right turn).

TABLE 9
LEVEL OF SERVICE CRITERIA
UNSIGNALIZED AND SIGNALIZED INTERSECTIONS¹

Level of Service	Control Delay Per Vehicle (Seconds)	
	Signalized	Unsignalized
A	< 10	< 10
B	> 10 and < 20	> 10 and < 15
C	> 20 and < 35	> 15 and < 25
D	> 35 and < 55	> 25 and < 35
E	> 55 and < 80	> 35 and < 50
F	> 80 or v/c > 1.0	> 50 or v/c > 1.0

¹ Obtained from Exhibits 19-8 and 20-2 of the Transportation Research Board's Highway Capacity Manual 6th Edition

CAPACITY ANALYSIS METHODOLOGY

Capacity analyses were conducted for the weekday A.M., P.M., and Saturday midday peak hours at the study area intersections. These analyses were conducted according to the methodologies contained in the *Highway Capacity Manual 6th Edition* (HCM) using *Synchro 12* software, a Trafficware product.

The following conditions were analyzed, as applicable:

- » Existing conditions;
- » 2027 Base conditions (Build-out year without development);
- » 2027 Projected conditions (Build-out year with development);
- » 2032 Base conditions (Design year without development) – Without SHIP Traffic/Improvements;
- » 2032 Projected conditions (Design year with development) – Without SHIP Traffic/Improvements;
- » 2032 Base conditions (Design year without development) – With SHIP Traffic/Improvements;
- » 2032 Projected conditions (Design year with development) – With SHIP Traffic/Improvements.

It should be noted that based on methodologies contained in Chapter 10 of PennDOT's Publication 46, TPD adjusted the following 2010 HCM default values in the *Synchro 12* capacity analysis. These adjustments were made at the signalized intersections within the study area for all time periods based on the study area location being classified as Suburban:

- » Base saturation flow rates for signalized intersections. The saturation flow rate was changed from the default value of 1900 to 1800 based on Exhibit 10-9.
- » Start-up lost time and extension of effective green time for signalized intersections. The startup lost time was changed from the default value of 2.0 seconds to 2.5 seconds. Based on the total clearance time (yellow plus all-red time) being greater than 5 seconds, the extension of green time

was changed from the default value of 2 seconds to 3.5 seconds. These adjusted values were based on Exhibit 10-10.

- » Critical and Follow-Up Gap times were adjusted relative to the difference between default and PA Default values contained in Exhibits 10-11 and 10-12. As requested by PennDOT, worksheets/tables showing how these values were calculated are included in **Appendix G**.
- » Due to limitations of the HCM methodology to analyze clustered intersections, the signalized intersections of Norristown Road (SR 2052) and Route 309 Ramps have been analyzed with the synchro percentile methodology.
- » Due to limitations of the HCM methodology to analyze intersections which have protected left turn movements from a shared left-thru lane, the signalized intersection of Norristown Road (SR 2052) and Tennis Avenue (SR 2020) has been analyzed with the synchro percentile methodology.
- » Due to limitations of the HCM methodology to analyze intersections which have protected left turn movements from a shared left-thru lane, the signalized intersection of Norristown Road (SR 2052) and McKean Road has been analyzed with the synchro percentile methodology.

In addition, capacity analyses were conducted at the proposed site driveway intersection under the 2027 and 2032 projected conditions. The capacity analysis worksheets are included in **Appendix H**. The PennDOT-approved signal plans are included in **Appendix I**.

PennDOT's Transportation Impact Study Guidelines outlined in PennDOT's *Policies and Procedures for Transportation Impact Studies*, found in PennDOT's Publication 282, Appendix A, dated September 2022 contain the following criteria regarding levels of service:

- » Page 29 of the Guidelines state that if evaluation of the With Development Horizon Year Scenario to the Without Development Horizon Year Scenario indicates that the overall intersection level of service has dropped, the applicant will be required to mitigate the level of service if the increase in overall intersection delay is greater than 10-seconds. If the overall intersection delay increase is less than or equal to 10-seconds, mitigation of the intersection will not be required.
- » Page 29 of the Guidelines state that for mitigation scenarios, applicants are expected to mitigate the overall intersection LOS to the original Without Development LOS; the 10-second delay variance is not applied to mitigation scenarios. Applicants may be required to address available storage and queue lengths at critical movements or approaches even if the overall LOS requirements are met.
- » Page 31 of the Guidelines state that if signalization is the preferred alternative for mitigation, overall intersection LOS C in rural areas and LOS D in urban areas is acceptable.
- » Page 31 of the Guidelines states new signalized or unsignalized intersection established to serve as access to the development shall be designed to operate at minimum LOS C for rural areas, and minimum LOS D for urban areas.

LEVELS OF SERVICE IN THE STUDY AREA

Level of service (LOS) matrices for the study area intersections are shown in **Tables 10-12** for the weekday A.M., weekday P.M., and Saturday midday peak hours.

**TABLE 10
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY**

Intersection	Movement	Weekday A.M. Peak Hour									
		Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
			Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & Boveri Drive/ Site Driveway	EB L	A	A	A	A	A	A	A	A	A	A
	EB T	A	A	A	A	A	A	A	A	A	A
	WB T	A	A	A	A	A	A	A	A	A	A
	WB TR	A	A	A	A	A	A	A	A	A	A
	SB L	D	D	D	D	D	D	D	D	D	D
	SB R	D	D	D	D	D	D	D	D	D	D
	ILOS	A (0.8)	A (0.8)	A (5.9)	A (5.9)	A (0.8)	A (5.9)	A (5.9)	A (0.8)	A (5.5)	A (5.5)
Norristown Road (SR 2052) & Beech Hollow Road	WB LT	A	A	A	--	A	A	--	A	A	--
	NB LR	A	A	A	--	A	A	--	A	A	--
	ILOS	A (0.0)	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--
Norristown Road (SR 2052) & Route 309 NB Ramps	EB L	B	B	B	--	B	B	--	B	B	--
	EB T	A	A	A	--	A	A	--	A	A	--
	WB TR	C	C	C	--	C	C	--	C	C	--
	NB L	E	E	E	--	D	D	--	D	D	--
	NB LT	E	E	E	--	D	D	--	D	D	--
	NB R	A	A	A	--	A	A	--	A	A	--
	ILOS	C (31.3)	C (31.2)	C (30.1)	--	C (27.5)	C (26.7)	--	C (26.3)	C (26.8)	--
Norristown Road (SR 2052) & Route 309 SB Ramps	EB T	C	C	C	--	C	C	--	C	D	--
	EB R	B	B	B	--	B	B	--	B	B	--
	WB L	D	D	D	--	D	D	--	D	D	--
	WB T	A	A	B	--	A	A	--	B	C	--
	SB L	C	C	C	--	C	C	--	C	C	--
	SB R	A	A	A	--	A	A	--	A	A	--
	ILOS	B (15.1)	B (15.5)	B (19.2)	--	B (15.8)	B (18.7)	--	B (19.6)	C (27.6)	--
Norristown Road (SR 2052) & Tennis Avenue	EB L	B	B	C	--	C	C	--	D	E	--
	EB TR	A	A	B	--	A	B	--	B	B	--
	WB L	B	B	B	--	B	B	--	B	B	--
	WB TR	C	C	C	--	C	C	--	D	D	--
	NB LT	C	C	C	--	C	C	--	C	C	--
	NB R	A	A	A	--	A	A	--	A	A	--
	SB LTR	C	C	C	--	C	C	--	C	C	--
ILOS	C (20.8)	C (21.4)	C (22.8)	--	C (20.8)	C (22.2)	--	C (26.9)	C (30.5)	--	
Norristown Road (SR 2052) & Residential Driveway/ SHIP Driveway	EB L	A	A	A	--	A	A	--	B	B	--
	EB T		A	A	--	A	A	--	A	A	--
	EB TR	A	A	A	--	A	A	--	A	A	--
	WB LT	A	A	A	--	A	A	--	A	A	--
	WB T	A	A	A	--	A	A	--	A	A	--
	WB R		A	A	--	A	A	--	A	A	--
	NB L	D	D	D	--	D	D	--	D	D	--
	NB TR	D	D	D	--	D	D	--	D	D	--
	SB L	D	D	D	--	D	D	--	D	D	--
	SB TR	D	D	D	--	D	D	--	D	D	--
ILOS	A (2.2)	A (2.2)	A (2.2)	--	A (2.2)	A (2.2)	--	A (5.6)	A (5.8)	--	

Base = No-Build scenario, Proj. = Build scenario
1 = Without SHIP Traffic and Roadway Improvements
2 = With SHIP Traffic and Roadway Improvements
3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

**TABLE 10 (CONTINUED)
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY**

Intersection	Movement	Weekday A.M. Peak Hour									
		Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
			Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & McKean Road	EB L	B	B	B	--	B	B	--	A	B	--
	EB T	B	B	B	--	B	B	--	A	A	--
	WB T	B	B	B	--	B	B	--	B	C	--
	WB R	A	A	A	--	A	A	--	A	A	--
	NB LTR	A	A	A	--	A	A	--	A	A	--
	SB L	D	D	D	--	D	D	--	D	D	--
	SB R	B	B	B	--	B	C	--	B	B	--
	ILOS	B (13.3)	B (13.5)	B (15.8)	--	B (13.7)	B (16.0)	--	B (13.4)	B (14.7)	--
Norristown Road (SR 2052) /Sumneytown Pike & Bethlehem Pike	EB L	C	C	C	--	C	C	--	C	C	--
	EB T	F (97.7)	E	E	--	E	E	--	F (87.7)	F (99.6)	--
	EB R	C	C	C	--	C	C	--	C	C	--
	WB L	D	D	D	--	D	D	--	D	E	--
	WB T	D	D	D	--	D	D	--	D	D	--
	WB TR	D	D	D	--	D	D	--	D	D	--
	NB L	C	C	C	--	C	C	--	C	C	--
	NB T	C	C	C	--	C	C	--	C	D	--
	NB TR	C	C	C	--	C	C	--	D	D	--
	SB L	C	C	C	--	C	C	--	C	C	--
	SB T	C	C	C	--	C	C	--	C	C	--
	SB TR	A	A	A	--	A	A	--	A	A	--
ILOS	D (51.2)	D (40.4)	D (43.2)	--	D (40.9)	D (43.9)	--	D (49.2)	D (53.8)	--	

Base = No-Build scenario, Proj. = Build scenario

1 = Without SHIP Traffic and Roadway Improvements

2 = With SHIP Traffic and Roadway Improvements

3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

**TABLE 11
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY**

Intersection	Movement	Weekday P.M. Peak Hour									
		Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
			Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & Boveri Drive/ Site Driveway	EB L	A	A	A	A	A	A	A	A	A	A
	EB T	A	A	A	A	A	A	A	A	A	A
	WB T	A	A	A	A	A	A	A	A	A	A
	WB TR	A	A	A	A	A	A	A	A	A	A
	SB L	D	D	D	D	D	D	D	D	D	D
	SB R	A	A	D	D	A	D	D	A	D	D
	ILOS	A (1.2)	A (1.2)	A (8.1)	A (8.1)	A (1.2)	A (8.1)	A (8.1)	A (1.4)	A (8.2)	A (8.2)
Norristown Road (SR 2052) & Beech Hollow Road	WB LT	B	B	B	--	B	B	--	B	B	--
	NB LR	C	C	C	--	C	C	--	D	E	--
	ILOS	A (0.0)	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--	A (0.1)	A (0.1)	--
Norristown Road (SR 2052) & Route 309 NB Ramps	EB L	C	C	C	--	C	C	--	C	C	--
	EB T	A	A	A	--	A	A	--	A	A	--
	WB TR	B	B	B	--	B	B	--	B	B	--
	NB L	D	D	D	--	D	D	--	D	D	--
	NB LT	D	D	D	--	D	D	--	D	D	--
	NB R	B	B	B	--	B	B	--	B	B	--
	ILOS	B (17.8)	B (18.7)	B (18.4)	--	B (18.1)	B (17.8)	--	B (18.4)	B (18.6)	--
Norristown Road (SR 2052) & Route 309 SB Ramps	EB T	C	C	C	--	C	C	--	C	C	--
	EB R	C	C	C	--	C	C	--	C	C	--
	WB L	D	D	D	--	D	D	--	D	D	--
	WB T	A	A	A	--	A	A	--	A	A	--
	SB L	C	C	C	--	C	C	--	C	C	--
	SB R	A	A	A	--	A	A	--	A	A	--
	ILOS	B (16.4)	B (16.9)	B (16.8)	--	B (17.3)	B (17.2)	--	B (19.4)	B (19.3)	--
Norristown Road (SR 2052) & Tennis Avenue	EB L	A	A	B	--	A	B	--	C	D	--
	EB TR	B	B	B	--	B	B	--	B	C	--
	WB L	B	B	B	--	B	B	--	B	B	--
	WB TR	C	C	C	--	C	C	--	C	D	--
	NB LT	D	D	D	--	D	D	--	D	D	--
	NB R	A	A	A	--	A	A	--	A	A	--
	SB LTR	C	C	C	--	C	C	--	C	C	--
ILOS	B (19.8)	B (19.8)	C (21.3)	--	C (20.3)	C (22.3)	--	C (23.6)	C (27.3)	--	
Norristown Road (SR 2052) & Residential Driveway/ SHIP Driveway	EB L	A	A	A	--	A	A	--	A	A	--
	EB T		A	A	--	A	A	--	A	A	--
	EB TR	A	A	A	--	A	A	--	A	A	--
	WB LT	A	A	A	--	A	A	--	A	B	--
	WB T	A	A	A	--	A	A	--	B	B	--
	WB R		A	A	--	A	A	--	A	A	--
	NB L	D	D	D	--	D	D	--	C	C	--
	NB TR	D	D	D	--	D	D	--	C	C	--
	SB L	D	D	D	--	D	D	--	D	D	--
SB TR	D	D	D	--	D	D	--	C	C	--	
ILOS	A (3.5)	A (3.5)	A (3.4)	--	A (3.4)	A (3.4)	--	B (12.3)	B (12.6)	--	

Base = No-Build scenario, Proj. = Build scenario
1 = Without SHIP Traffic and Roadway Improvements
2 = With SHIP Traffic and Roadway Improvements
3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

**TABLE 11 (CONTINUED)
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY**

Intersection	Movement	Weekday P.M. Peak Hour									
		Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
			Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & McKean Road	EB L	B	B	B	--	B	B	--	A	B	--
	EB T								A	A	--
	WB T	A	A	A	--	A	A	--	B	B	--
	WB R	A	A	A	--	A	A	--	A	A	--
	NB LTR	A	A	A	--	A	A	--	A	A	--
	SB L	E	E	E	--	E	E	--	E	E	--
	SB R	A	A	B	--	A	B	--	B	B	--
	ILOS	B (15.3)	B (15.0)	B (16.1)	--	B (15.2)	B (16.4)	--	B (17.1)	B (18.6)	--
Norristown Road (SR 2052) /Sumneytown Pike & Bethlehem Pike	EB L	D	D	D	--	C	C	--	C	C	--
	EB T	F (116.9)	F (88.2)	F (98.7)	--	F (79.4)	F (87.9)	--	E	E	--
	EB R	C	C	C	--	C	C	--	C	C	--
	WB L	D	D	D	--	D	D	--	E	F (95.0)	--
	WB T	D	D	D	--	D	D	--	D	D	--
	WB TR	D	D	D	--	D	D	--	D	D	--
	NB L	C	C	C	--	C	C	--	C	C	--
	NB T	C	C	C	--	C	C	--	D	D	--
	NB TR	C	C	C	--	C	D	--	D	D	--
	SB L	C	C	C	--	C	C	--	D	D	--
	SB T	C	C	C	--	C	C	--	D	D	--
	SB TR	A	A	A	--	A	A	--	A	A	--
ILOS	D (53.8)	D (47.1)	D (50.6)	--	D (45.2)	D (48.4)	--	D (45.8)	D (51.7)	--	

Base = No-Build scenario, Proj. = Build scenario

1 = Without SHIP Traffic and Roadway Improvements

2 = With SHIP Traffic and Roadway Improvements

3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

**TABLE 12
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY**

Intersection	Movement	SAT Midday Peak Hour									
		Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
			Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & Boveri Drive/ Site Driveway	EB L	A	A	A	A	A	A	A	A	A	A
	EB T	A	A	A	A	A	A	A	A	A	A
	WB T	A	A	A	A	A	A	A	A	A	A
	WB TR	A	A	A	A	A	A	A	A	A	A
	SB L	D	D	D	D	D	D	D	D	D	D
	SB R	A	A	D	D	A	D	D	A	D	D
	ILOS	A (0.7)	A (0.7)	A (8.0)	A (8.0)	A (0.7)	A (8.0)	A (8.0)	A (0.7)	A (7.9)	A (7.9)
Norristown Road (SR 2052) & Beech Hollow Road	WB LT	A	A	A	--	A	A	--	A	A	--
	NB LR	A	A	A	--	A	A	--	A	A	--
	ILOS	A (0.0)	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--	A (0.0)	A (0.0)	--
Norristown Road (SR 2052) & Route 309 NB Ramps	EB L	C	C	C	--	C	C	--	C	C	--
	EB T	A	A	A	--	A	A	--	A	A	--
	WB TR	C	C	C	--	C	C	--	C	C	--
	NB L	D	E	E	--	E	E	--	D	D	--
	NB LT	D	E	E	--	E	E	--	D	D	--
	NB R	A	A	B	--	B	B	--	A	A	--
	ILOS	C (21.2)	C (23.1)	C (21.4)	--	C (23.2)	C (21.4)	--	C (22.3)	C (20.7)	--
Norristown Road (SR 2052) & Route 309 SB Ramps	EB T	C	B	C	--	B	C	--	C	C	--
	EB R	A	A	A	--	A	A	--	A	A	--
	WB L	D	D	D	--	D	D	--	D	D	--
	WB T	A	A	A	--	A	A	--	A	A	--
	SB L	C	C	C	--	C	C	--	C	C	--
	SB R	A	A	A	--	A	A	--	A	A	--
	ILOS	B (11.0)	B (10.8)	B (12.0)	--	B (11.0)	B (12.0)	--	B (11.4)	B (12.5)	--
Norristown Road (SR 2052) & Tennis Avenue	EB L	A	A	A	--	A	A	--	A	A	--
	EB TR	A	A	A	--	A	A	--	A	A	--
	WB L	A	A	A	--	A	A	--	A	A	--
	WB TR	B	B	B	--	B	B	--	B	B	--
	NB LT	E	E	E	--	E	E	--	E	E	--
	NB R	A	A	A	--	A	A	--	A	A	--
	SB LTR	C	C	C	--	C	C	--	C	C	--
ILOS	B (16.8)	B (16.7)	B (16.6)	--	B (16.5)	B (16.4)	--	B (17.2)	B (16.9)	--	
Norristown Road (SR 2052) & Residential Driveway/ SHIP Driveway	EB L	A	A	A	--	A	A	--	A	A	--
	EB T		A	A	--	A	A	--	A	A	--
	EB TR	A	A	A	--	A	A	--	A	A	--
	WB LT	A	A	A	--	A	A	--	A	A	--
	WB T	A	A	A	--	A	A	--	A	A	--
	WB R		A	A	--	A	A	--	A	A	--
	NB L	D	D	D	--	D	D	--	D	D	--
	NB TR	D	D	D	--	D	D	--	D	D	--
	SB L	D	D	D	--	D	D	--	D	D	--
SB TR	A	A	A	--	A	A	--	D	D	--	
ILOS	A (2.0)	A (2.0)	A (2.0)	--	A (2.0)	A (2.0)	--	A (3.9)	A (3.9)	--	

Base = No-Build scenario, Proj. = Build scenario

1 = Without SHIP Traffic and Roadway Improvements

2 = With SHIP Traffic and Roadway Improvements

3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

**TABLE 12 (CONTINUED)
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY**

Intersection	Movement	SAT Midday Peak Hour									
		Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
			Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & McKean Road	EB L	A	A	A	--	A	A	--	A	A	--
	EB T	A	A	A	--	A	A	--	A	A	--
	WB T	A	A	A	--	A	A	--	B	B	--
	WB R	A	A	A	--	A	A	--	A	A	--
	NB LTR	A	A	A	--	A	A	--	A	A	--
	SB L	D	D	D	--	D	D	--	D	D	--
	SB R	A	A	A	--	A	A	--	A	A	--
	ILOS	A (8.2)	A (8.2)	A (8.8)	--	A (8.3)	A (8.9)	--	A (8.8)	A (9.4)	--
Norristown Road (SR 2052) /Sumneytown Pike & Bethlehem Pike	EB L	C	C	C	--	C	C	--	C	C	--
	EB T	D	D	D	--	D	D	--	D	D	--
	EB R	C	C	C	--	C	C	--	C	C	--
	WB L	C	C	C	--	C	C	--	C	C	--
	WB T	D	D	D	--	D	D	--	D	D	--
	WB TR	D	D	D	--	D	D	--	D	D	--
	NB L	B	B	B	--	B	B	--	B	B	--
	NB T	C	C	C	--	C	C	--	C	C	--
	NB TR	C	C	C	--	C	C	--	C	C	--
	SB L	B	B	B	--	B	B	--	B	C	--
	SB T	C	C	C	--	C	C	--	C	C	--
	SB TR	A	A	A	--	A	A	--	A	A	--
ILOS	C (29.9)	C (29.8)	C (30.9)	--	C (29.9)	C (31.1)	--	C (30.3)	C (31.5)	--	

Base = No-Build scenario, Proj. = Build scenario

1 = Without SHIP Traffic and Roadway Improvements

2 = With SHIP Traffic and Roadway Improvements

3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

As shown in **Tables 10-12**, under all projected (build) conditions with the development of the proposed site and with site-related recommendations outlined in **Table 17**, all study area intersections will satisfy PennDOT ILOS Standards.

95TH PERCENTILE QUEUE ANALYSIS

Queue analyses were conducted at the study area intersections using *Synchro 12* software. For this analysis, the 95th percentile queue is defined as the queue length that is exceeded in 5% of the signal cycles. As an example, for a signal with a 90-second cycle, this means that the 95th percentile queue length will be exceeded during 2 of the 40 signal cycles that occur during the peak hour. The queue analysis results are summarized in **Table 13 - 15** for the analyzed peak hours.

**TABLE 13
95TH PERCENTILE QUEUE ANALYSIS (FEET)**

Intersection	Movement	Available Storage	Weekday A.M. Peak Hour									
			Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
				Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & Boveri Drive (Site Driveway)	EB L	150'	0'	0'	28'	28'	0'	28'	28'	0'	30'	30'
	EB T	575 ³	3'	3'	53'	53'	3'	53'	53'	5'	58'	58'
	WB T	50 ³	8'	8'	8'	8'	8'	8'	8'	10'	13'	13'
	WB TR	605'	8'	8'	8'	8'	8'	8'	8'	10'	13'	13'
	SB L	250 ⁵	0'	0'	48'	48'	0'	48'	48'	0'	48'	48'
	SB R	250 ³	3'	3'	123'	123'	3'	123'	123'	3'	123'	123'
Norristown Road (SR 2052) & Beech Hollow Road	WB LT	895 ³	0'	0'	0'	--	0'	0'	--	0'	0'	--
	NB LR	335 ³	0'	0'	0'	--	0'	0'	--	0'	0'	--
Norristown Road (SR 2052) & Route 309 NB Ramps	EB L	110'	6'	6'	4'	--	6'	4'	--	7'	5'	--
	EB T	160 ³	36'	37'	56'	--	37'	54'	--	44'	61'	--
	WB TR	350'+	99'	108'	92'	--	110'	93'	--	143'	150'	--
	NB L	350'	407'	409'	409'	--	393'	393'	--	398'	398'	--
	NB LT	350'	408'	410'	410'	--	393'	393'	--	401'	401'	--
	NB R	140'	67'	69'	73'	--	64'	67'	--	62'	68'	--
Norristown Road (SR 2052) & Route 309 SB Ramps	EB T	580 ³	119'	121'	147'	--	121'	146'	--	133'	157'	--
	EB R	60'	226'	243'	250'	--	241'	242'	--	268'	275'	--
	WB L	110'	72'	72'	81'	--	75'	82'	--	70'	74'	--
	WB T	160 ³	39'	39'	41'	--	39'	45'	--	77'	98'	--
	SB L	50'	48'	48'	51'	--	50'	54'	--	53'	58'	--
	SB R	1000'+ ³	0'	0'	0'	--	0'	0'	--	0'	0'	--
Norristown Road (SR 2052) & Tennis Avenue	EB L	100'	118'	126'	171'	--	132'	121'	--	210'	243'	--
	EB TR	885 ³	83'	85'	94'	--	82'	93'	--	83'	93'	--
	WB L	70'	62'	62'	64'	--	64'	64'	--	66'	66'	--
	WB TR	950 ³	329'	365'	391'	--	328'	354'	--	400'	426'	--
	NB LT	430 ³	111'	112'	120'	--	110'	120'	--	143'	156'	--
	NB R	35'	25'	25'	24'	--	25'	25'	--	24'	24'	--
	SB LTR	1000'+ ³	248'	251'	253'	--	247'	256'	--	308'	316'	--
Norristown Road (SR 2052) & Residential Driveway/SHIP Driveway	EB L	250'	10'	10'	10'	--	8'	8'	--	103'	118'	--
	EB T	865 ³										
	EB TR	865 ³	8'	8'	8'	--	8'	8'	--	58'	68'	--
	WB LT	160 ³	15'	15'	18'	--	15'	18'	--	70'	78'	--
	WB T	160 ³										
	WB R	225'										
	NB L	50'	8'	8'	8'	--	8'	8'	--	8'	8'	--
	NB TR	50'	3'	3'	3'	--	3'	3'	--	3'	3'	--
	SB L	35'	8'	8'	8'	--	8'	8'	--	58'	58'	--
SB TR	365 ³	0'	0'	0'	--	0'	0'	--	40'	40'	--	

Base = No-Build scenario, Proj. = Build scenario

1 = Without SHIP Traffic and Roadway Improvements

2 = With SHIP Traffic and Roadway Improvements

3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

5 = Distance to nearest public intersection

**TABLE 13 (CONT'D)
95TH PERCENTILE QUEUE ANALYSIS (FEET)**

Intersection	Movement	Available Storage	Weekday A.M. Peak Hour									
			Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
				Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & McKean Road	EB L	350'	211'	213'	268'	--	216'	276'	--	81'	92'	--
	EB T	1000'+ ³								235'	273'	--
	WB T	870' ³	225'	227'	257'	--	229'	260'	--	330'	382'	--
	WB R	230'	32'	32'	33'	--	32'	33'	--	45'	48'	--
	NB LTR	--	0'	0'	0'	--	0'	0'	--	0'	0'	--
	SB L	70'	157'	158'	166'	--	159'	167'	--	164'	172'	--
	SB R	820' ³	77'	81'	82'	--	81'	83'	--	69'	65'	--
Norristown Road (SR 2052) / Sumneytown Pike & Bethlehem Pike	EB L	100'	53'	50'	50'	--	50'	50'	--	50'	50'	--
	EB T	585' ³	655'	535'	583'	--	545'	593'	--	690'	753'	--
	EB R	305'	215'	205'	205'	--	208'	208'	--	208'	208'	--
	WB L	600'+	150'	150'	183'	--	153'	188'	--	183'	228'	--
	WB T	1000'+ ³	405'	380'	403'	--	385'	408'	--	400'	428'	--
	WB TR	1000'+ ³	415'	390'	413'	--	395'	415'	--	410'	433'	--
	NB L	135'	168'	183'	188'	--	185'	190'	--	190'	190'	--
	NB T	340' ³	183'	195'	215'	--	195'	218'	--	260'	280'	--
	NB TR	340' ³	183'	195'	213'	--	195'	215'	--	250'	270'	--
	SB L	325'	73'	78'	98'	--	80'	100'	--	138'	158'	--
	SB T	512' ³	203'	213'	213'	--	215'	215'	--	215'	215'	--
SB TR	110'	0'	0'	0'	--	0'	0'	--	0'	0'	--	

Base = No-Build scenario, Proj. = Build scenario

1 = Without SHIP Traffic and Roadway Improvements

2 = With SHIP Traffic and Roadway Improvements

3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

5 = Distance to nearest public intersection

**TABLE 14
95TH PERCENTILE QUEUE ANALYSIS (FEET)**

Intersection	Movement	Available Storage	Weekday P.M. Peak Hour									
			Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
				Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & Boveri Drive (Site Driveway)	EB L	150'	0'	0'	45'	45'	0'	45'	45'	0'	48'	48'
	EB T	575 ⁵	8'	10'	148'	148'	10'	148'	148'	13'	190'	190'
	WB T	50 ⁵	5'	5'	10'	10'	5'	10'	10'	5'	10'	10'
	WB TR	605'	0'	0'	10'	10'	0'	10'	10'	0'	10'	10'
	SB L	250 ⁵	3'	3'	108'	108'	3'	108'	108'	3'	108'	108'
	SB R	250 ⁵	0'	0'	200'	200'	0'	200'	200'	0'	200'	200'
Norristown Road (SR 2052) & Beech Hollow Road	WB LT	895 ⁵	0'	0'	0'	--	0'	0'	--	0'	0'	--
	NB LR	335 ⁵	3'	3'	3'	--	3'	3'	--	3'	3'	--
Norristown Road (SR 2052) & Route 309 NB Ramps	EB L	110'	33'	33'	33'	--	33'	32'	--	36'	34'	--
	EB T	160 ⁵	54'	52'	53'	--	55'	56'	--	58'	69'	--
	WB TR	350'+	47'	49'	84'	--	46'	82'	--	54'	89'	--
	NB L	350'	189'	209'	209'	--	192'	192'	--	213'	213'	--
	NB LT	350'	190'	210'	210'	--	194'	194'	--	214'	214'	--
	NB R	140'	64'	66'	84'	--	66'	84'	--	66'	84'	--
Norristown Road (SR 2052) & Route 309 SB Ramps	EB T	580 ⁵	120'	119'	131'	--	124'	137'	--	145'	157'	--
	EB R	60'	516'	544'	552'	--	551'	557'	--	444'	445'	--
	WB L	110'	81'	79'	92'	--	81'	94'	--	80'	94'	--
	WB T	160 ⁵	32'	33'	32'	--	32'	31'	--	33'	32'	--
	SB L	50'	38'	38'	40'	--	38'	40'	--	38'	40'	--
	SB R	1000'+ ⁵	0'	0'	0'	--	0'	0'	--	0'	0'	--
Norristown Road (SR 2052) & Tennis Avenue	EB L	100'	60'	67'	95'	--	76'	160'	--	288'	319'	--
	EB TR	885 ⁵	401'	410'	436'	--	413'	456'	--	462'	491'	--
	WB L	70'	44'	45'	48'	--	45'	50'	--	49'	49'	--
	WB TR	950 ⁵	325'	320'	345'	--	365'	392'	--	336'	384'	--
	NB LT	430 ⁵	179'	177'	179'	--	182'	178'	--	178'	190'	--
	NB R	35'	25'	25'	23'	--	25'	23'	--	24'	24'	--
	SB LTR	1000'+ ⁵	180'	179'	177'	--	183'	175'	--	181'	188'	--
Norristown Road (SR 2052) & Residential Driveway/SHIP Driveway	EB L	250'	15'	15'	13'	--	13'	13'	--	13'	15'	--
	EB T	865 ⁵								128'	138'	--
	EB TR	865 ⁵	15'	15'	15'	--	15'	15'	--	133'	145'	--
	WB LT	160 ⁵	60'	60'	70'	--	63'	73'	--	215'	245'	--
	WB T	160 ⁵	53'	50'	60'	--	53'	60'	--	198'	223'	--
	WB R	225'								13'	13'	--
	NB L	50'	13'	13'	13'	--	13'	13'	--	13'	13'	--
	NB TR	50'	20'	20'	20'	--	20'	20'	--	15'	15'	--
	SB L	35'	55'	55'	55'	--	55'	55'	--	270'	270'	--
SB TR	365 ⁵	20'	20'	20'	--	20'	20'	--	168'	168'	--	

Base = No-Build scenario, Proj. = Build scenario

1 = Without SHIP Traffic and Roadway Improvements

2 = With SHIP Traffic and Roadway Improvements

3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

5 = Distance to nearest public intersection

**TABLE 14 (CONT'D)
95TH PERCENTILE QUEUE ANALYSIS (FEET)**

Intersection	Movement	Available Storage	Weekday P.M. Peak Hour									
			Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
				Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & McKean Road	EB L	350'	189'	207'	227'	--	210'	230'	--	43'	43'	--
	EB T	1000'+ ⁵								200'	220'	--
	WB T	870' ⁵	126'	127'	140'	--	130'	144'	--	259'	296'	--
	WB R	230'	21'	20'	18'	--	21'	18'	--	25'	32'	--
	NB LTR	--	0'	0'	0'	--	0'	0'	--	0'	0'	--
	SB L	70'	275'	259'	272'	--	262'	274'	--	294'	307'	--
	SB R	820' ⁵	68'	73'	87'	--	75'	89'	--	119'	126'	--
Norristown Road (SR 2052) / Sumneytown Pike & Bethlehem Pike	EB L	100'	65'	65'	65'	--	65'	65'	--	63'	63'	--
	EB T	585' ⁵	648'	573'	620'	--	553'	593'	--	520'	558'	--
	EB R	305'	148'	143'	143'	--	143'	140'	--	135'	135'	--
	WB L	600'+	205'	205'	240'	--	208'	243'	--	318'	420'	--
	WB T	1000'+ ⁵	450'	433'	465'	--	433'	460'	--	490'	535'	--
	WB TR	1000'+ ⁵	455'	440'	470'	--	440'	465'	--	490'	533'	--
	NB L	135'	178'	185'	190'	--	190'	195'	--	203'	203'	--
	NB T	340' ⁵	298'	305'	328'	--	313'	335'	--	350'	368'	--
	NB TR	340' ⁵	293'	303'	323'	--	310'	330'	--	345'	358'	--
	SB L	325'	135'	140'	168'	--	145'	175'	--	180'	90'	--
	SB T	512' ⁵	213'	218'	223'	--	223'	228'	--	238'	238'	--
SB TR	110'	0'	0'	0'	--	0'	0'	--	0'	0'	--	

Base = No-Build scenario, Proj. = Build scenario

1 = Without SHIP Traffic and Roadway Improvements

2 = With SHIP Traffic and Roadway Improvements

3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

5 = Distance to nearest public intersection

**TABLE 15
95TH PERCENTILE QUEUE ANALYSIS (FEET)**

Intersection	Movement	Available Storage	Midday Saturday Peak Hour									
			Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
				Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & Boveri Drive (Site Driveway)	EB L	150'	0'	0'	35'	35'	0'	35'	35'	0'	35'	35'
	EB T	575 ⁵	3'	3'	43'	43'	3'	43'	43'	3'	45'	45'
	WB T	50 ⁵	5'	5'	8'	8'	5'	8'	8'	5'	8'	8'
	WB TR	605'	5'	5'	8'	8'	5'	8'	8'	5'	8'	8'
	SB L	250 ⁵	3'	3'	75'	75'	3'	75'	75'	3'	75'	75'
	SB R	250 ⁵	0'	0'	180'	180'	0'	180'	180'	0'	180'	180'
Norristown Road (SR 2052) & Beech Hollow Road	WB LT	895 ⁵	0'	0'	0'	--	0'	0'	--	0'	0'	--
	NB LR	335 ⁵	0'	0'	0'	--	0'	0'	--	0'	0'	--
Norristown Road (SR 2052) & Route 309 NB Ramps	EB L	110'	12'	13'	10'	--	13'	10'	--	17'	13'	--
	EB T	160 ⁵	14'	12'	29'	--	13'	30'	--	19'	34'	--
	WB TR	350'+	88'	88'	110'	--	89'	111'	--	91'	111'	--
	NB L	350'	189'	212'	212'	--	215'	215'	--	212'	212'	--
	NB LT	350'	189'	212'	212'	--	216'	216'	--	213'	213'	--
	NB R	140'	53'	55'	61'	--	56'	61'	--	55'	60'	--
Norristown Road (SR 2052) & Route 309 SB Ramps	EB T	580 ⁵	85'	81'	110'	--	84'	110'	--	94'	119'	--
	EB R	60'	130'	127'	134'	--	131'	134'	--	138'	142'	--
	WB L	110'	53'	51'	66'	--	51'	65'	--	52'	67'	--
	WB T	160 ⁵	41'	46'	46'	--	47'	46'	--	46'	45'	--
	SB L	50'	49'	50'	50'	--	50'	51'	--	49'	52'	--
	SB R	1000'+ ⁵	0'	0'	0'	--	0'	0'	--	0'	0'	--
Norristown Road (SR 2052) & Tennis Avenue	EB L	100'	24'	24'	21'	--	24'	23'	--	25'	28'	--
	EB TR	885 ⁵	35'	36'	59'	--	36'	60'	--	46'	66'	--
	WB L	70'	23'	23'	27'	--	24'	28'	--	25'	29'	--
	WB TR	950 ⁵	238'	240'	285'	--	247'	296'	--	261'	314'	--
	NB LT	430 ⁵	137'	137'	142'	--	137'	141'	--	142'	145'	--
	NB R	35'	9'	9'	9'	--	10'	9'	--	9'	9'	--
Norristown Road (SR 2052) & Residential Driveway/SHIP Driveway	SB LTR	1000'+ ⁵	135'	137'	134'	--	137'	134'	--	139'	135'	--
	EB L	250'	8'	8'	8'	--	8'	8'	--	3'	3'	--
	EB T	865 ⁵								25'	28'	--
	EB TR	865 ⁵	8'	8'	8'	--	8'	8'	--	25'	30'	--
	WB LT	160 ⁵	10'	10'	13'	--	10'	13'	--	33'	38'	--
	WB T	160 ⁵	8'	8'	10'	--	8'	10'	--	25'	28'	--
	WB R	225'								0'	0'	--
	NB L	50'	8'	8'	8'	--	8'	8'	--	8'	8'	--
	NB TR	50'	5'	5'	5'	--	5'	5'	--	5'	5'	--
	SB L	35'	8'	8'	8'	--	8'	8'	--	40'	40'	--
SB TR	365 ⁵	0'	0'	0'	--	0'	0'	--	25'	25'	--	

Base = No-Build scenario, Proj. = Build scenario

1 = Without SHIP Traffic and Roadway Improvements

2 = With SHIP Traffic and Roadway Improvements

3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

5 = Distance to nearest public intersection

**TABLE 15 (CONT'D)
95TH PERCENTILE QUEUE ANALYSIS (FEET)**

Intersection	Movement	Available Storage	Midday Saturday Peak Hour									
			Existing Condition	Opening Year 2027			Design Year 2032 ¹			Design Year 2032 ²		
				Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}	Base	Proj.	Proj. ^{3,4}
Norristown Road (SR 2052) & McKean Road	EB L	350'	94'	95'	117'	--	96'	118'	--	37'	38'	--
	EB T	1000'+ ⁵								85'	106'	--
	WB T	870' ⁵	117'	118'	147'	--	120'	148'	--	142'	175'	--
	WB R	230'	8'	8'	13'	--	9'	14'	--	11'	17'	--
	NB LTR	--	0'	0'	0'	--	0'	0'	--	0'	0'	--
	SB L	70'	91'	91'	98'	--	91'	100'	--	94'	102'	--
	SB R	820' ⁵	34'	34'	33'	--	34'	34'	--	32'	31'	--
Norristown Road (SR 2052) / Sumneytown Pike & Bethlehem Pike	EB L	100'	55'	55'	53'	--	55'	55'	--	55'	55'	--
	EB T	585' ⁵	225'	225'	243'	--	228'	245'	--	230'	250'	--
	EB R	305'	128'	128'	125'	--	128'	125'	--	128'	123'	--
	WB L	600'+	110'	108'	135'	--	110'	135'	--	120'	145'	--
	WB T	1000'+ ⁵	258'	255'	278'	--	258'	283'	--	268'	290'	--
	WB TR	1000'+ ⁵	260'	258'	278'	--	260'	283'	--	268'	290'	--
	NB L	135'	100'	100'	108'	--	103'	108'	--	105'	110'	--
	NB T	340' ⁵	213'	215'	240'	--	218'	243'	--	228'	253'	--
	NB TR	340' ⁵	215'	215'	238'	--	218'	240'	--	228'	250'	--
	SB L	325'	95'	95'	123'	--	98'	123'	--	108'	135'	--
	SB T	512' ⁵	168'	170'	180'	--	173'	183'	--	178'	188'	--
	SB TR	110'	0'	0'	0'	--	0'	0'	--	0'	0'	--

Base = No-Build scenario, Proj. = Build scenario

1 = Without SHIP Traffic and Roadway Improvements

2 = With SHIP Traffic and Roadway Improvements

3 = with site-related improvements

4 = Signal timing adjustments proposed at all signalized intersections within the study area

5 = Distance to nearest public intersection

The queues are accommodated within the available storage in most cases.

With respect to the eastbound Norristown Road left turn queue storage area approaching Tennis Avenue, the Applicant will coordinate with the Township and PennDOT on the possibility of shifting where the transition occurs between the one (1) westbound lane to two (2) westbound lanes further west in order to extend the existing eastbound left turn lane approaching Tennis Avenue in order to accommodate the existing and projected queues. In regard to the eastbound Sumneytown Pike approach to Bethlehem Pike, based on a review of the conditions in the field, the available storage within the eastbound approach accommodates the existing queues, which was confirmed by the Township Traffic Engineer. The difference between the field observations (i.e. actual operations) and the analysis conducted relates to the use of an adaptive traffic signal system at this intersection. Due to the complications in modeling an adaptive system, the analysis conducted in the Traffic Impact Study should be considered conservative (i.e. less efficient than actual operations).

Queue analysis worksheets are included with the capacity analysis worksheets provided in **Appendix H**.

AUXILIARY TURN LANE ANALYSIS

Methodology

TPD evaluated auxiliary turn lane warrants at the site access intersection. The warrant analysis methodology contained within Chapter 11 of PennDOT's *Publication 46*, Section 11.17 and Strike-Off Letter 470-08-07 was utilized for this evaluation.

Findings

Table 16 summarizes the results of the auxiliary turn lane analysis at the site access intersections.

TABLE 16
AUXILIARY TURN LANE ANALYSIS SUMMARY

Intersection	Auxiliary Lane	Warrant Satisfied?	Required Lane Length	Proposed Lane Length
Norristown Road (SR 2052) & Boveri Drive (Site Driveway)	EB Left-Turn Lane	Yes	250'	250'
	WB Right-Turn Lane	Yes	175'	--

As shown in **Table 16**, warrants are satisfied for a 250' eastbound left turn lane and a 175' westbound right turn lane at the existing signalized site driveway (Boveri Drive). TPD recommends restriping the existing gore area located before the existing eastbound left turn lane in order to accommodate the additional storage length warranted for the eastbound left turn lane.

While a 175' westbound right turn lane is warranted, there exists a steep drop off adjacent to the existing shoulder area on the northern side of Norristown Road (SR 2052). In addition, a newly constructed walking trail also precludes the construction of the right turn lane. Furthermore, as shown above in **Tables 10-15**, the westbound approaches operate at LOS A with the longest queue in the westbound direction projected to be less than one (1) vehicle length. Therefore, TPD does not recommend the installation of a westbound right turn lane. The calculations for the auxiliary turn lane warrants are included in **Appendix J**.

RECOMMENDATIONS

TPD has made the following recommendations in relation to the proposed Springhouse Mixed-Use development in Lower Gwynedd Township, Montgomery County, as outlined in **Table 17**.

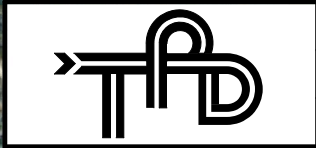
**TABLE 17
RECOMMENDATIONS**

Intersection	Recommendation
Norristown Road (SR 2052) Corridor	Optimize traffic signals timings at the signalized study area intersections.
Norristown Road (SR 2052) & Boveri Drive (Site Driveway)	Restripe the Eastbound Left Turn Lane to increase the storage length to 250 feet.
	Extend the southbound Boveri Drive right turn lane, via widening, to the first internal intersection in order to accommodate future queue lengths.
	Work with the Township and PennDOT on potential traffic signal equipment upgrades.
	Work with the Township and PennDOT on potential traffic signal timing modifications to increase the green time on the westbound Norristown Road approach in order to create a gap in the eastbound traffic to facilitate turns in/out of Beech Hollow Road.
	Maintenance of on-site vegetation to maximize available sight distance.
Norristown Road (SR 2052) & Tennis Avenue (SR 2020)	Coordinate with the Township and PennDOT on shifting where the transition occurs between the one (1) westbound lane to two (2) westbound lanes further west in order to extend the existing eastbound left turn lane approaching Tennis Avenue.
Norristown Road Frontage	Provide a 10' wide trail beginning within the site and connecting to the existing trail located to the east of the site.
	Provide a 10' wide trail along the property's frontage.
	Provide sidewalk extending across the northbound Route 309 on-ramp, under Route 309, across the southbound Route 309 off-ramp and terminating at/near the SHIP property to the west of the site.
	Provide PennDOT compliant crosswalks and pedestrian traffic signal equipment at the existing signalized intersections between Boveri Drive and the Route 309 southbound off-ramp.

CONCLUSIONS

- » The project site is located on the northwestern corner of Norristown Road (SR 2052) and Boveri Drive and currently consists of 143,295 sf of office space.
- » The proposed site will be redeveloped and will consist of the following uses:
 - » 77,619 sf of Office Space;
 - » A 30,750 sf Grocery Store;
 - » 16,000 sf of Retail Space;
 - » 278 mid-rise apartments.
- » Access to the Proposed Site will be provided via one (1) full-access signalized driveway via existing Boveri Drive. In addition, an emergency access will be provided in coordination with the Township Fire Marshal.

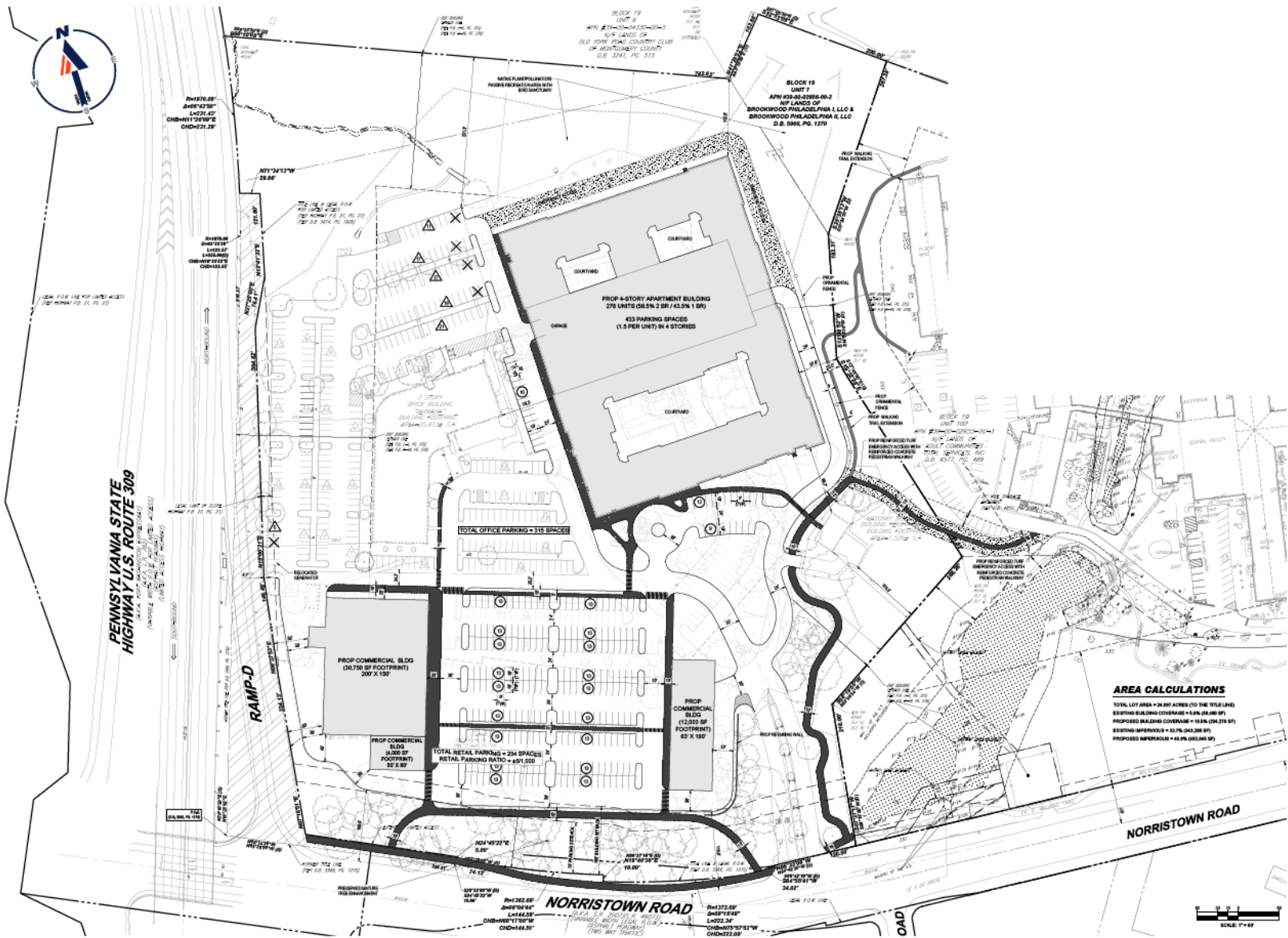
- » All measured sight distances at the site driveway exceed the acceptable sight distances and, in most cases, exceed PennDOT's desirable sight distance requirements.
- » Upon full build-out, the proposed development is expected to generate **311 new trips** during the weekday A.M. peak hour, **339 new trips** during the weekday P.M. peak hour, and **382 new trips** during the Saturday midday peak hour.
- » The Existing Site (at full capacity) will generate **180 new trips** during the weekday AM peak hour, **173 new trips** during the weekday PM peak hour, and **126 new trips** during the Saturday Midday peak hour.
- » When compared to the Existing Site (at full capacity), the **Proposed Site** will generate **131 more net new trips** during the weekday AM peak hour, **166 more net new trips** during the weekday PM peak hour, and **256 more net new trips** during the Saturday Midday peak hour.
- » Under the 2027 and 2032 projected conditions, with the development of the proposed site, with site-related recommendations outline in **Table 17**, all study area intersections will satisfy PennDOT ILOS Standards.




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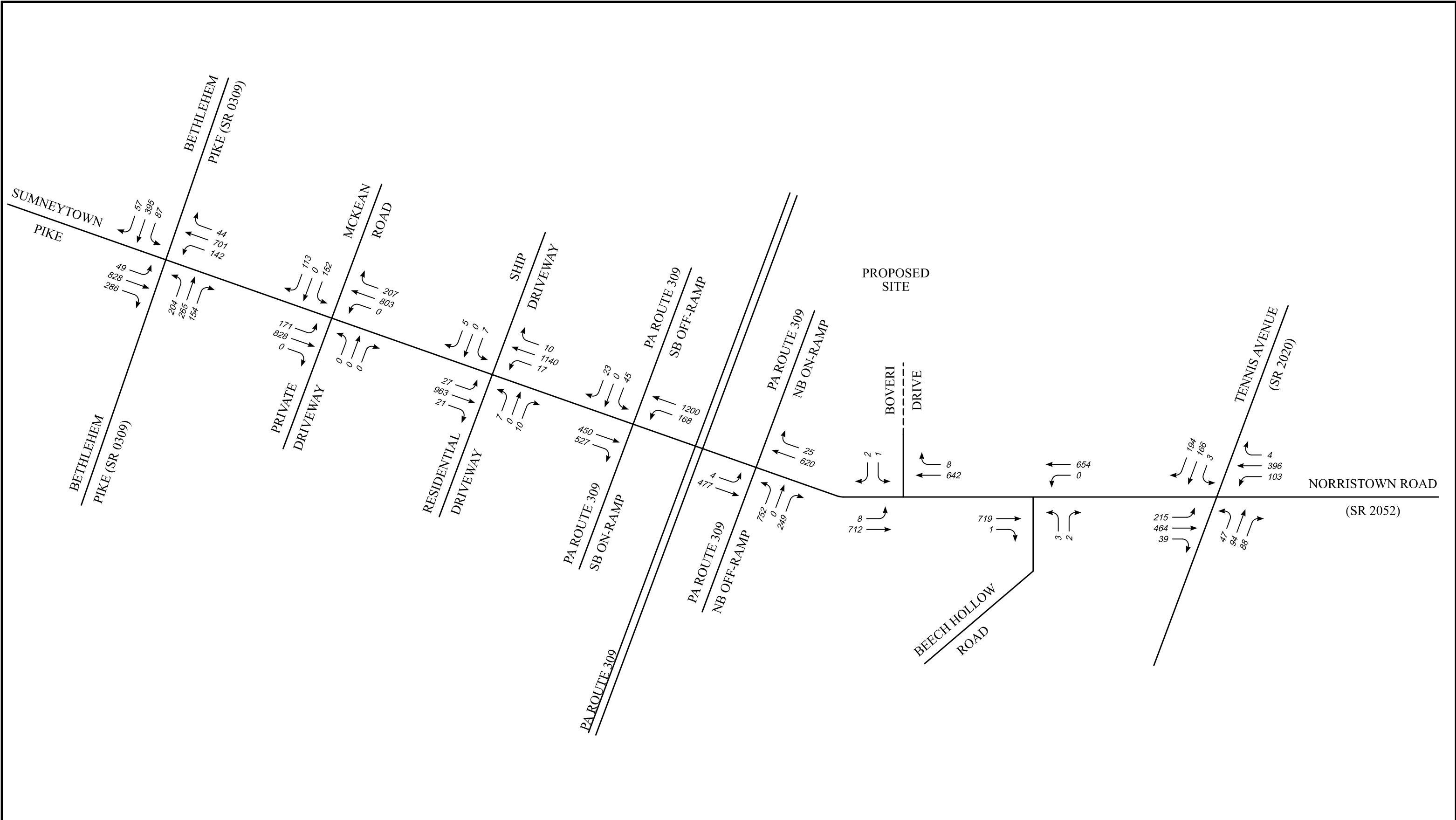
FIGURE 1

PROJECT SITE LOCATION



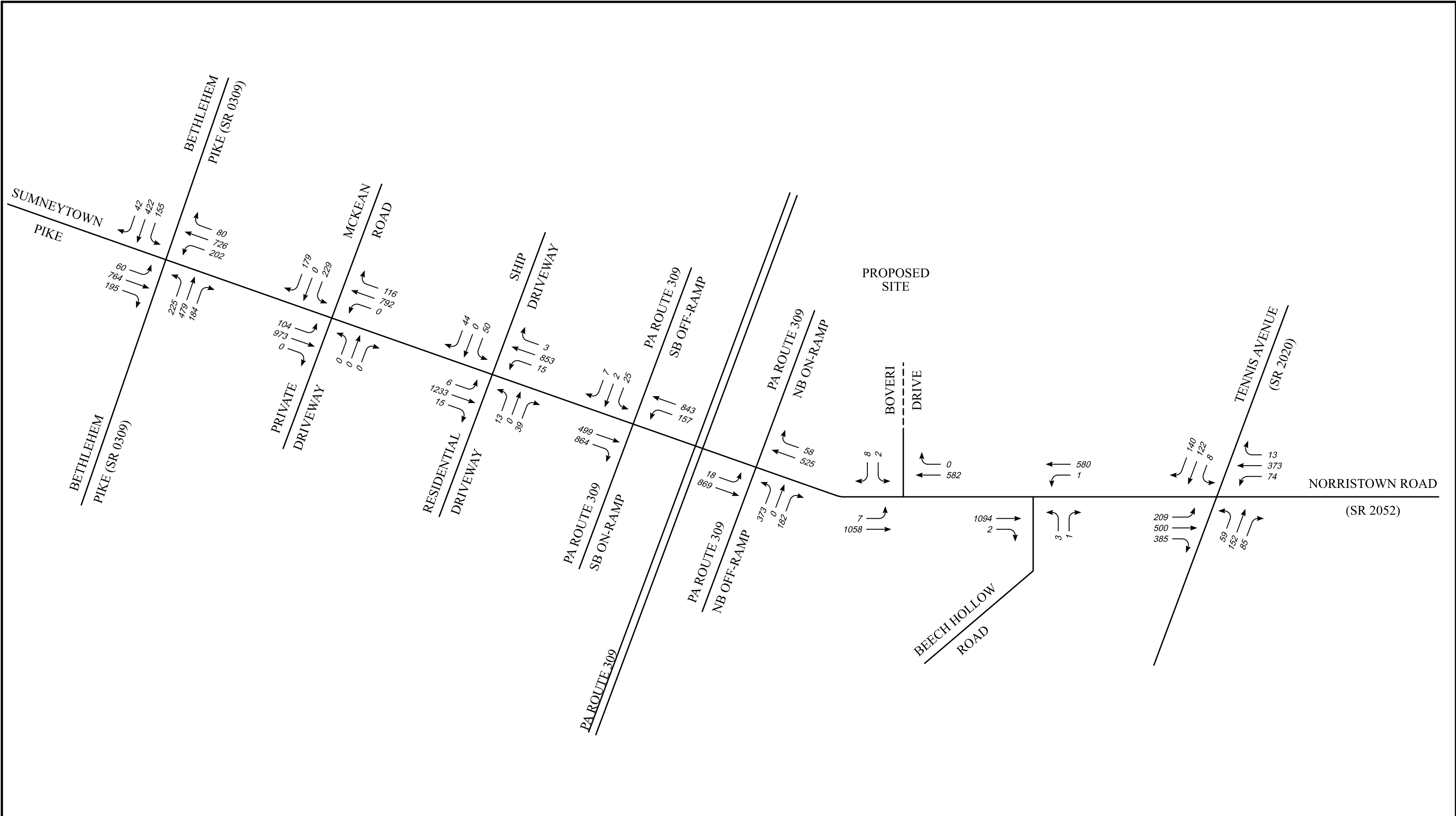
KEY:
SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 2 PROPOSED SITE PLAN	



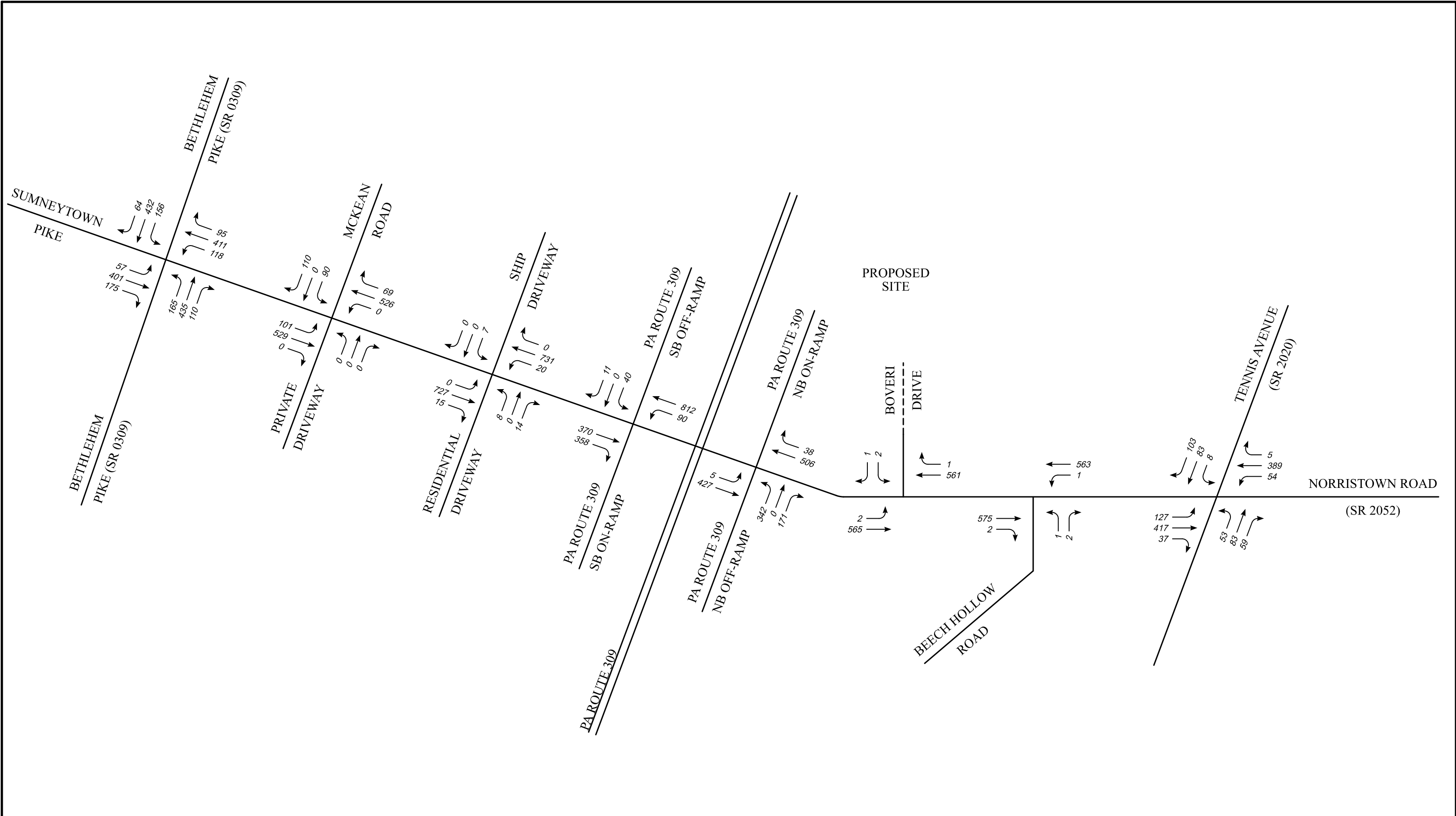
KEY:
 ----- PROPOSED DRIVEWAY
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FIGURE 3 2024 EXISTING CONDITIONS WEEKDAY A.M. PEAK HOUR TRAFFIC VOLUMES		





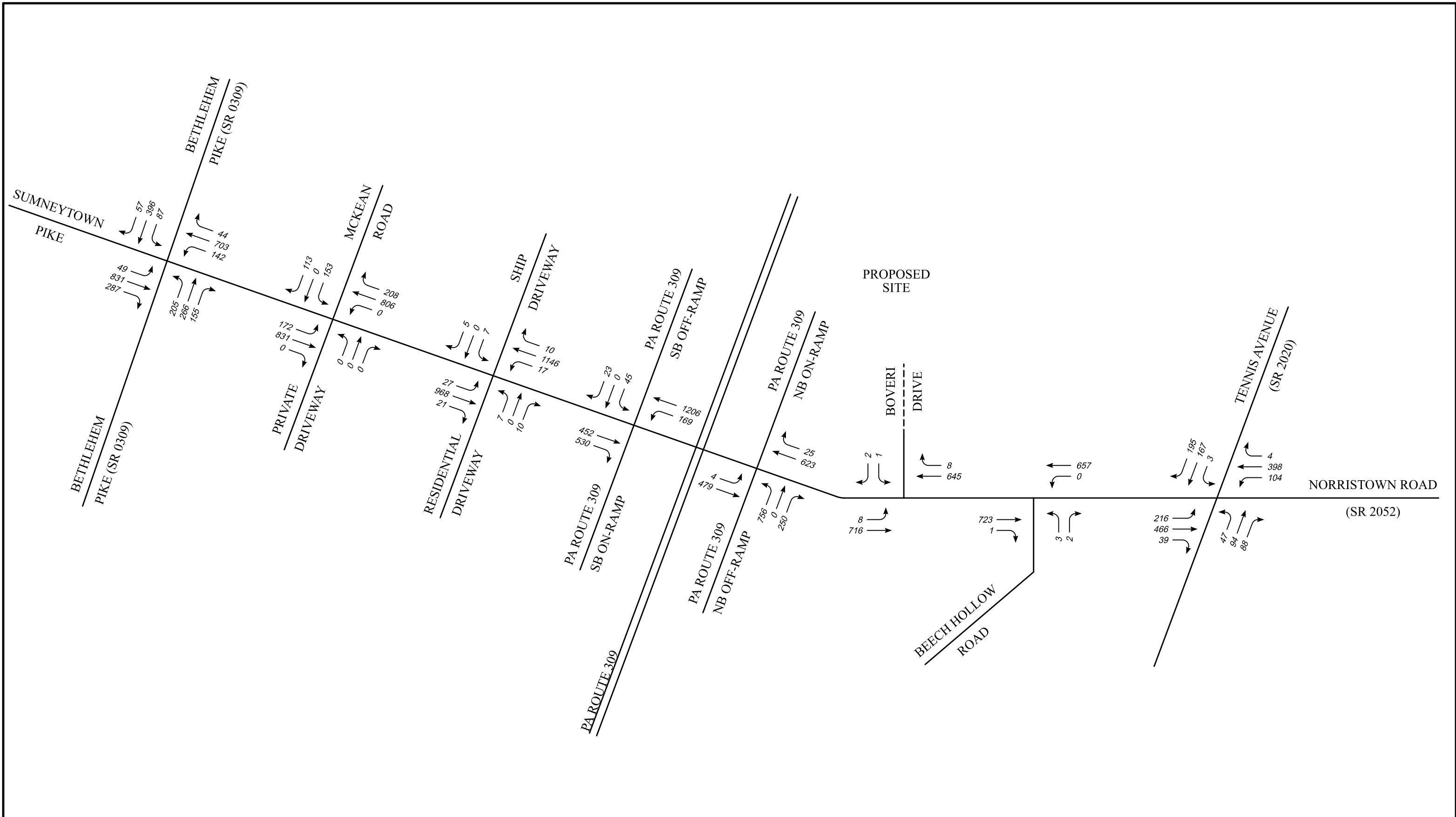
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 - - - - - PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 4 2024 EXISTING CONDITIONS WEEKDAY P.M. PEAK HOUR TRAFFIC VOLUMES		



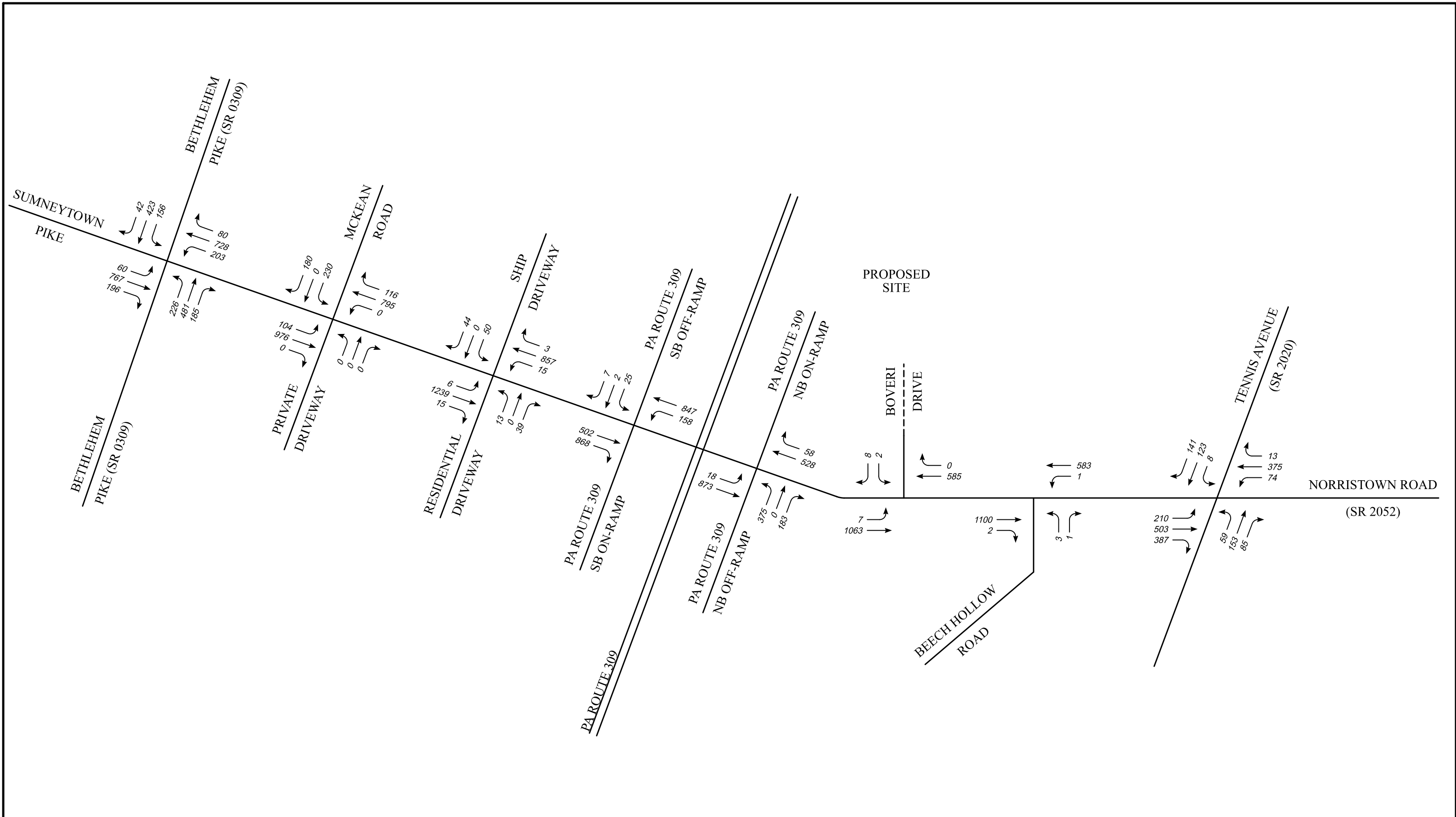
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 - - - - - PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 5 2024 EXISTING CONDITIONS MIDDAY SATURDAY PEAK HOUR TRAFFIC VOLUMES		



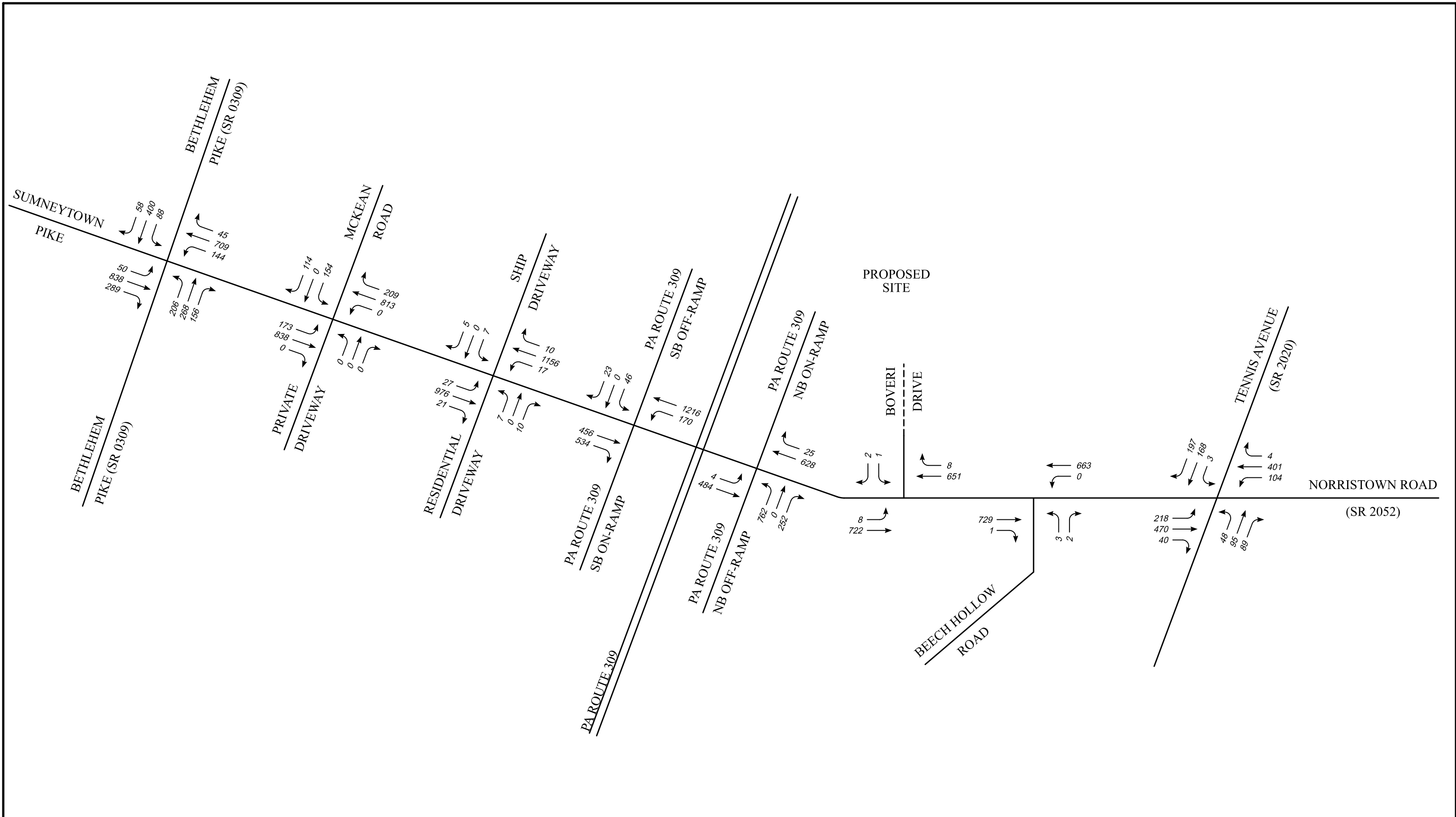
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 ----- PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 6 2027 BASE CONDITIONS WEEKDAY A.M. PEAK HOUR TRAFFIC VOLUMES		



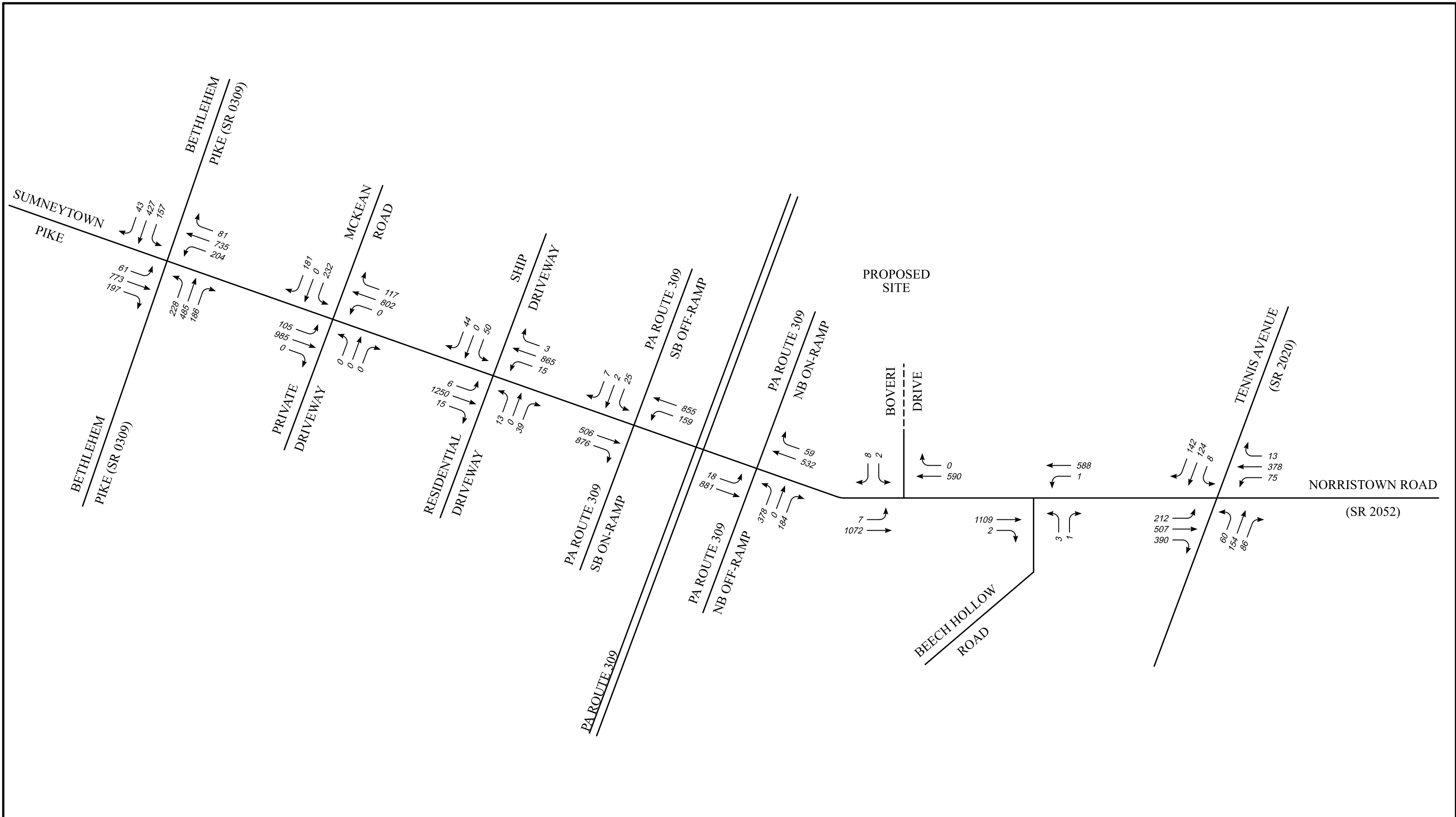
KEY:
 - - - - - PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 7 2027 BASE CONDITIONS WEEKDAY P.M. PEAK HOUR TRAFFIC VOLUMES		



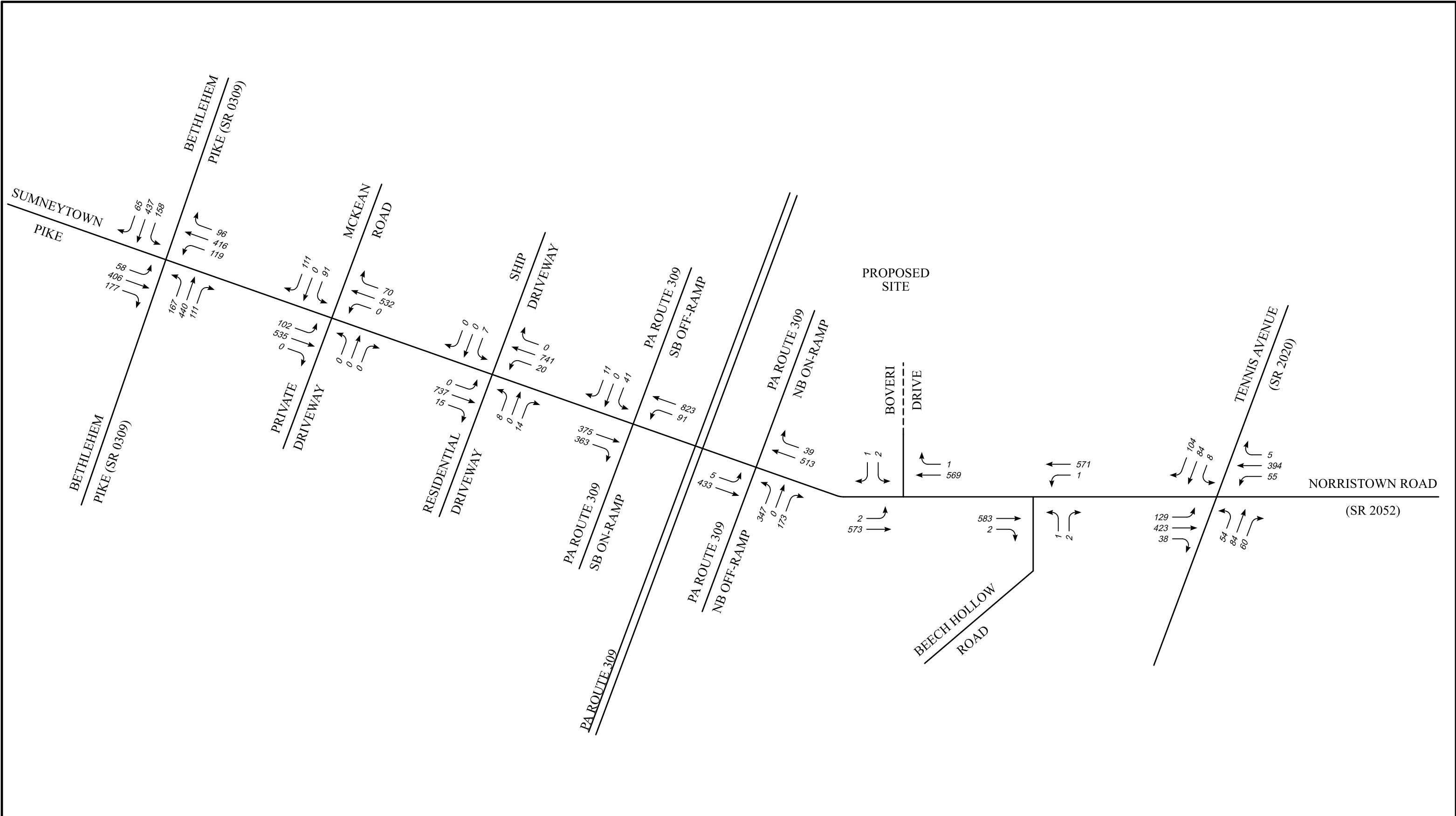
KEY:
 ----- PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 9 2032 BASE CONDITIONS WITHOUT SHIP WEEKDAY A.M. PEAK HOUR TRAFFIC VOLUMES		



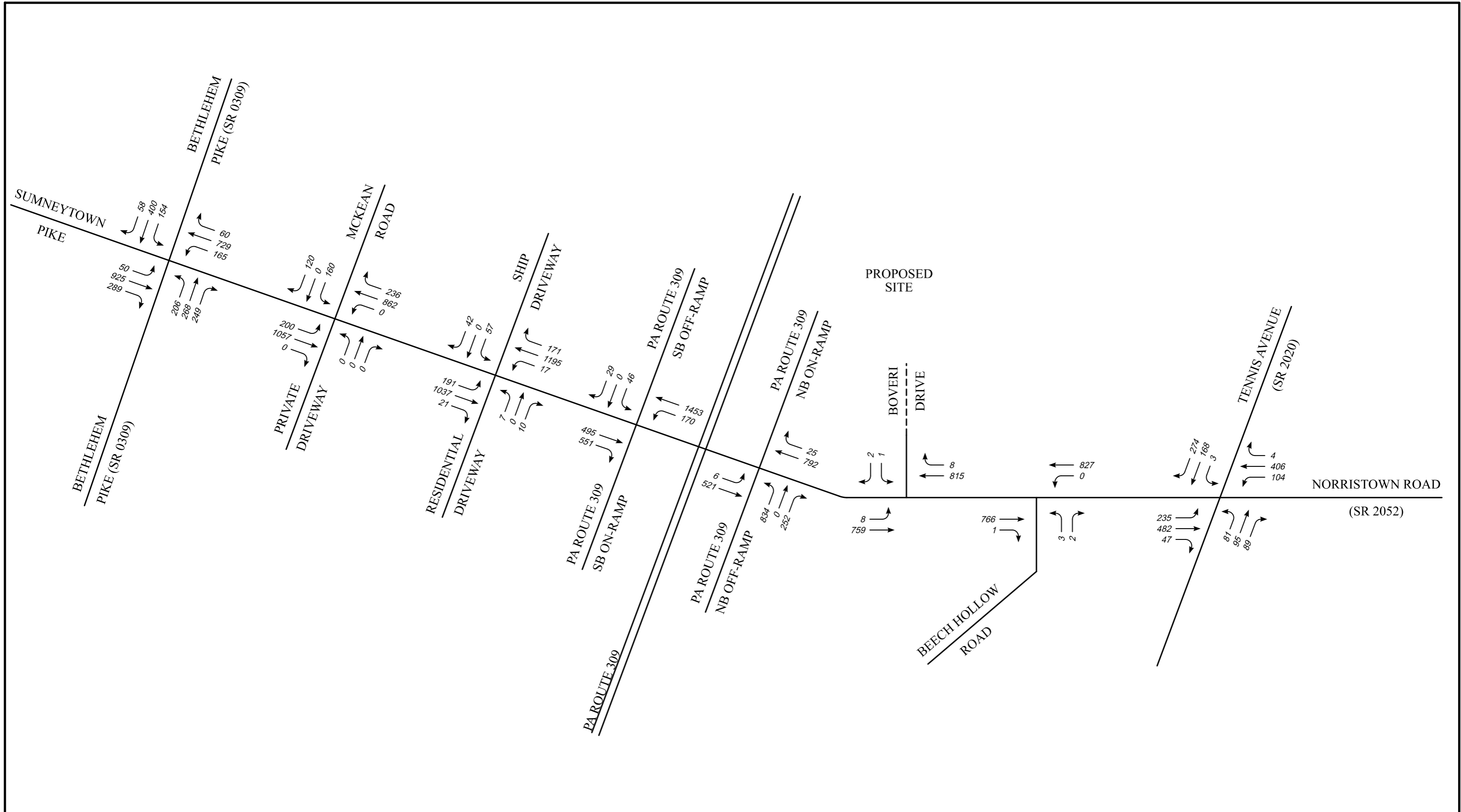
KEY:
 - - - - - PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 10 2032 BASE CONDITIONS WITHOUT SHIP WEEKDAY P.M. PEAK HOUR TRAFFIC VOLUMES		



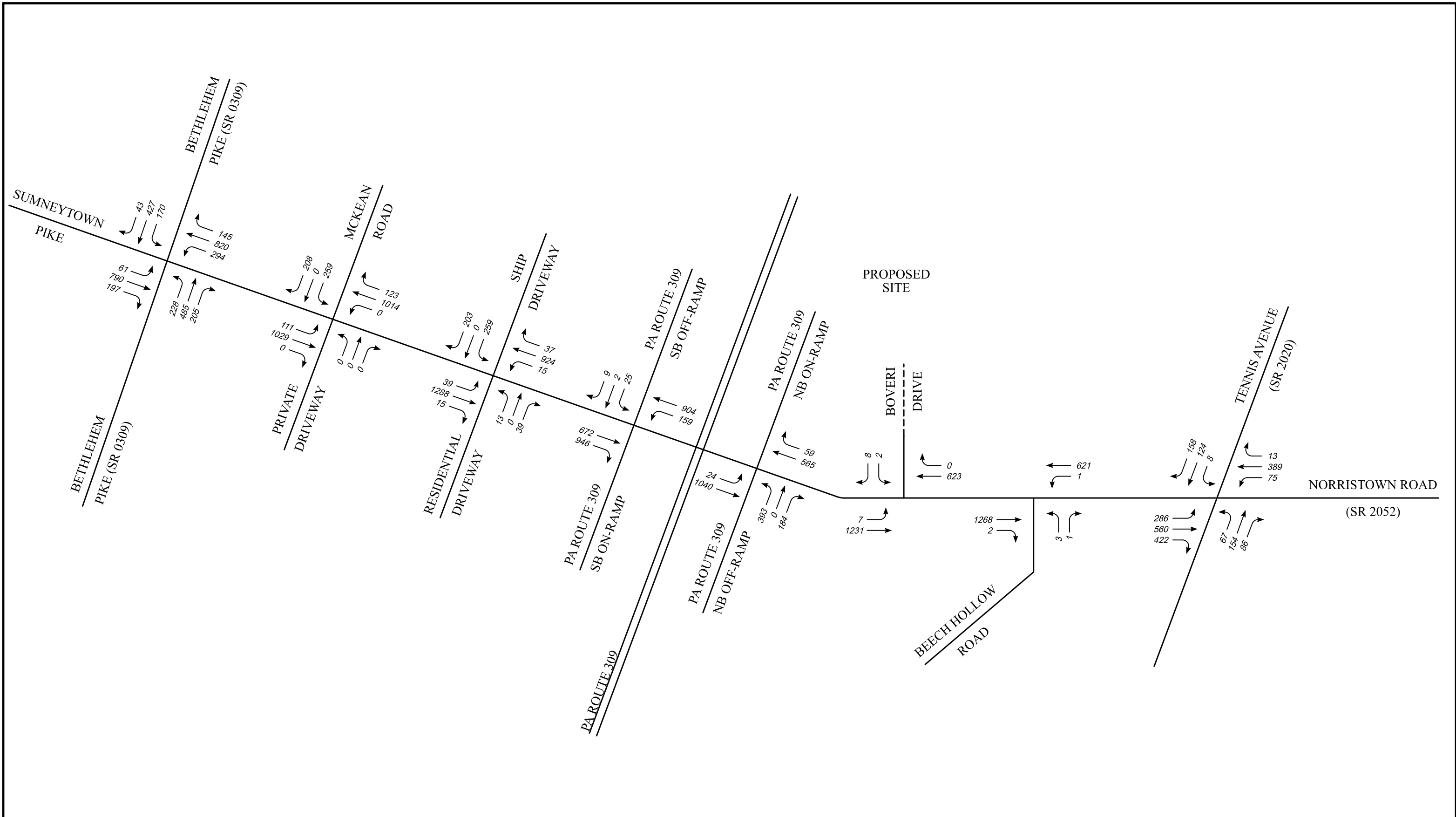
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 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 11 2032 BASE CONDITIONS WITHOUT SHIP MIDDAY SATURDAY PEAK HOUR TRAFFIC VOLUMES		



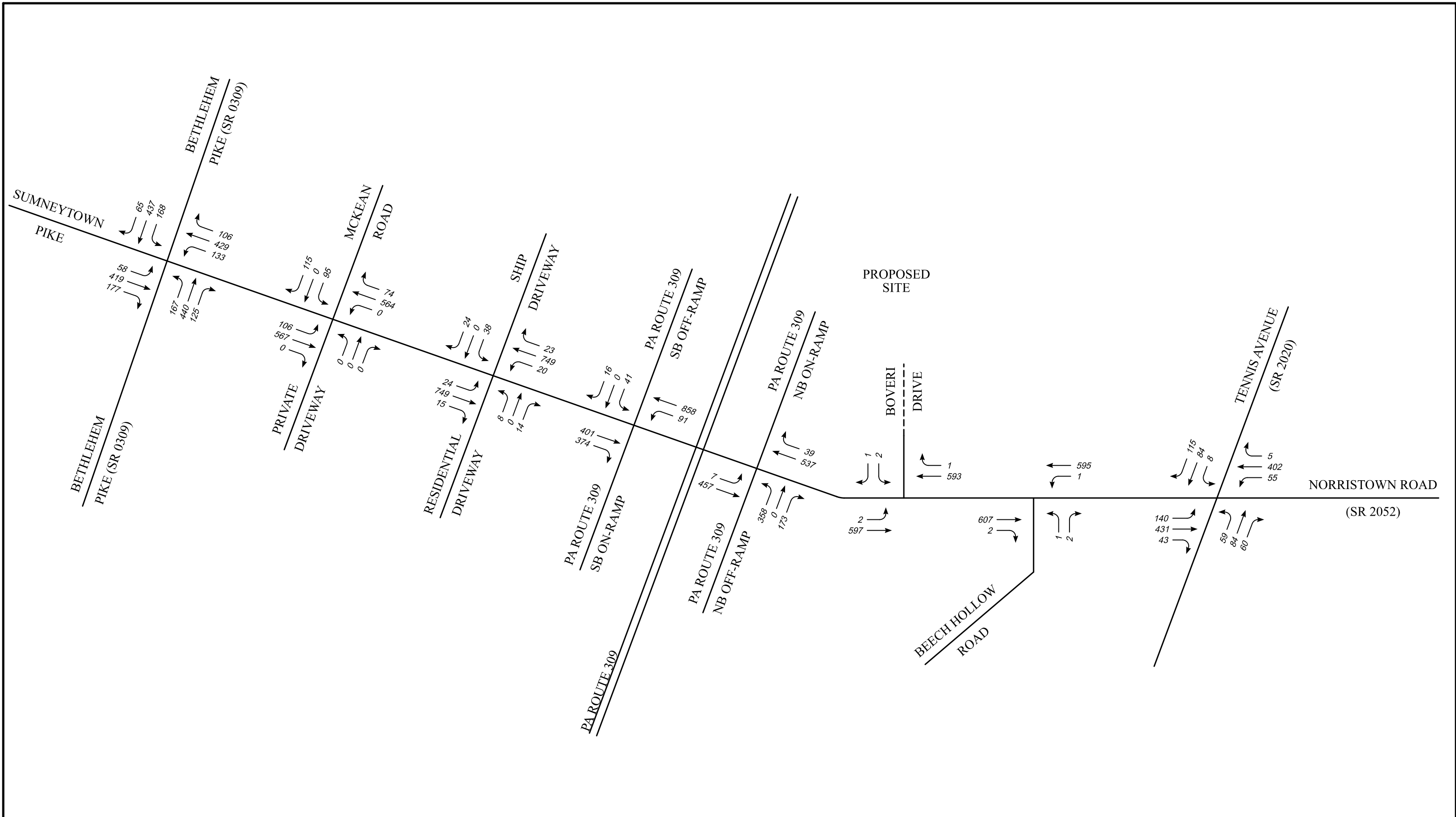
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 ----- PROPOSED DRIVEWAY
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FIGURE 12 2032 BASE CONDITIONS WITH SHIP WEEKDAY A.M. PEAK HOUR TRAFFIC VOLUMES		



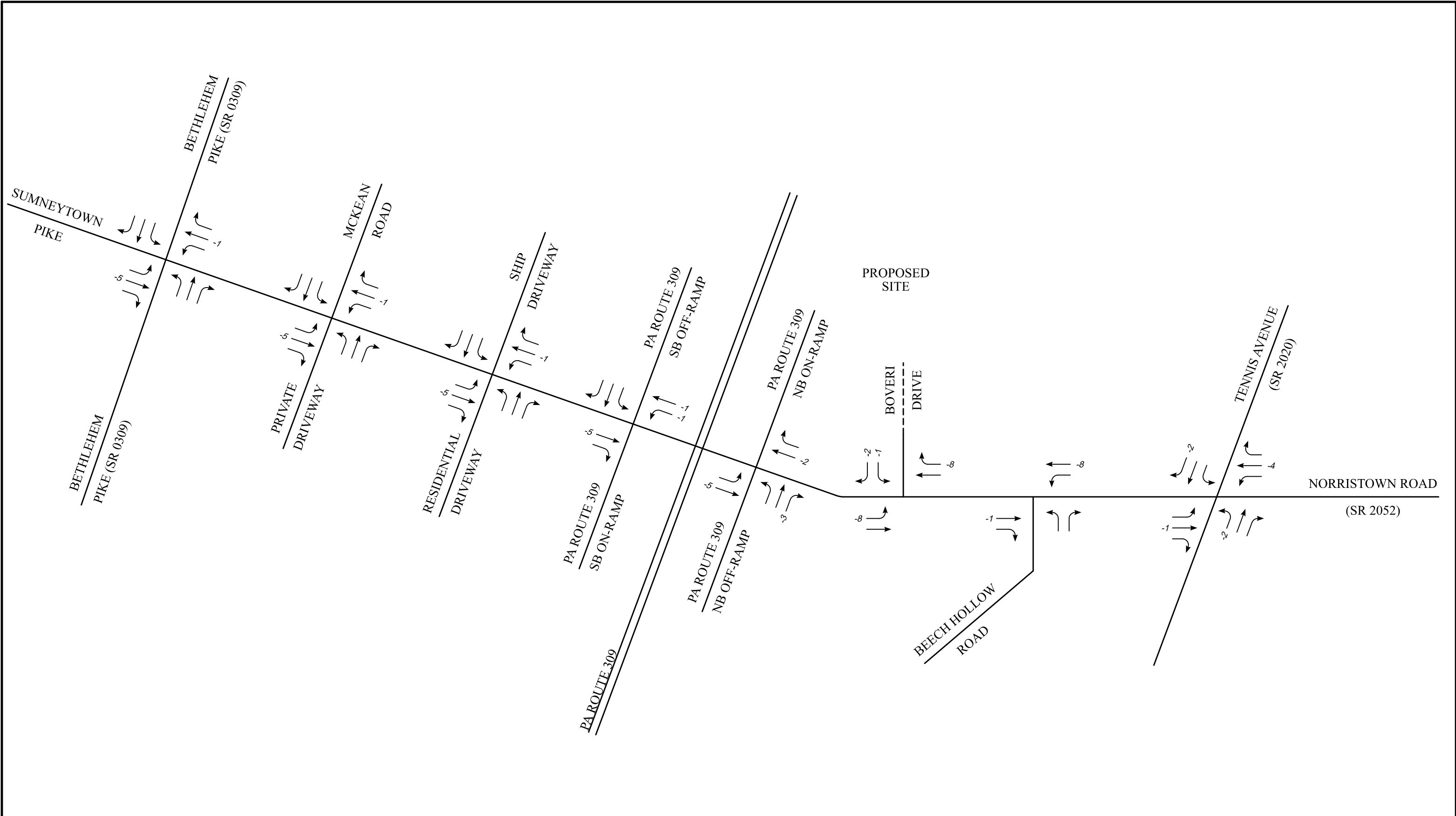
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 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 13 2032 BASE CONDITIONS WITH SHIP WEEKDAY P.M. PEAK HOUR TRAFFIC VOLUMES		

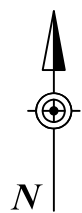



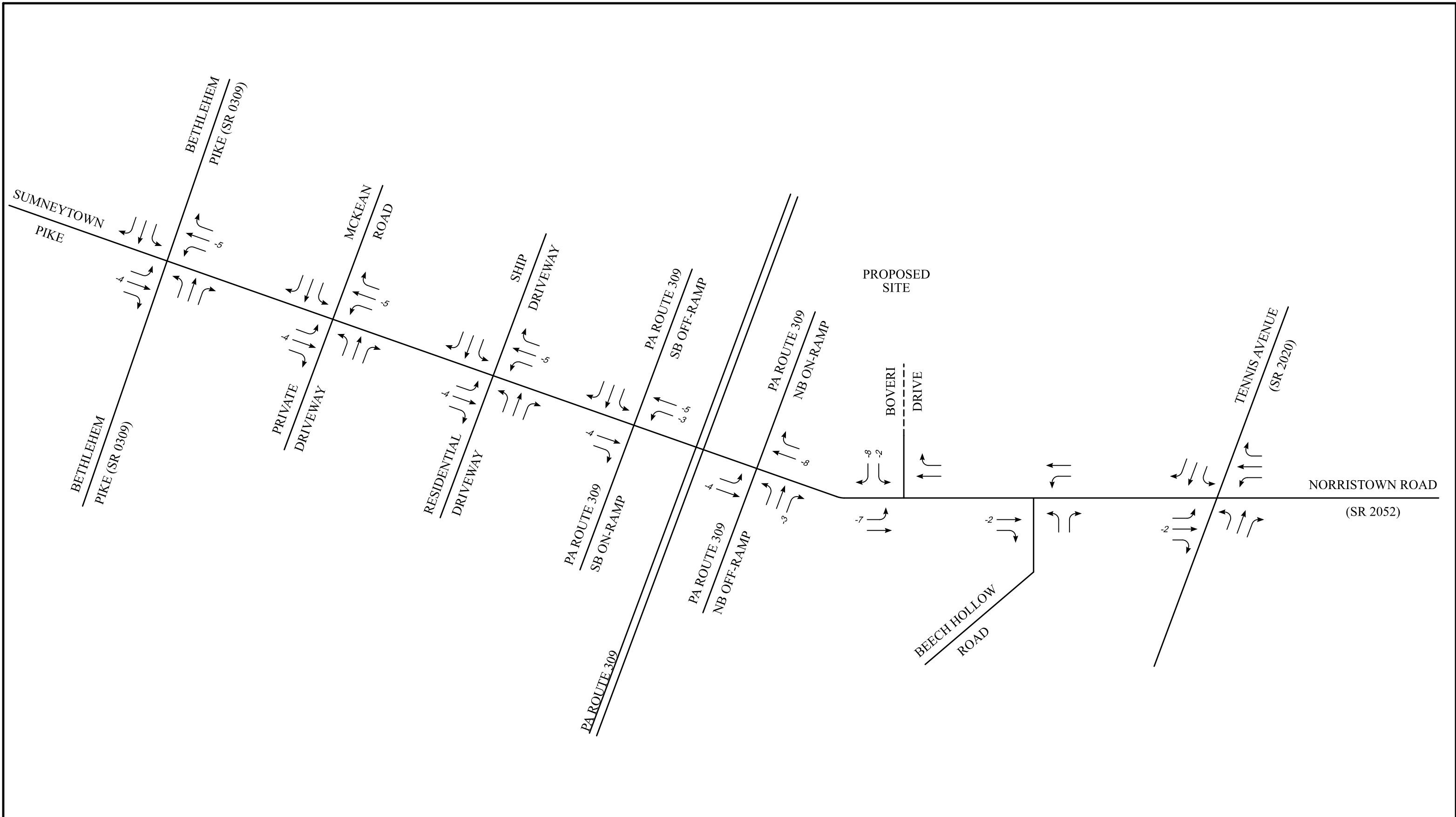
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 ----- PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 14 2032 BASE CONDITIONS WITH SHIP MIDDAY SATURDAY PEAK HOUR TRAFFIC VOLUMES		

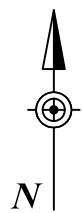



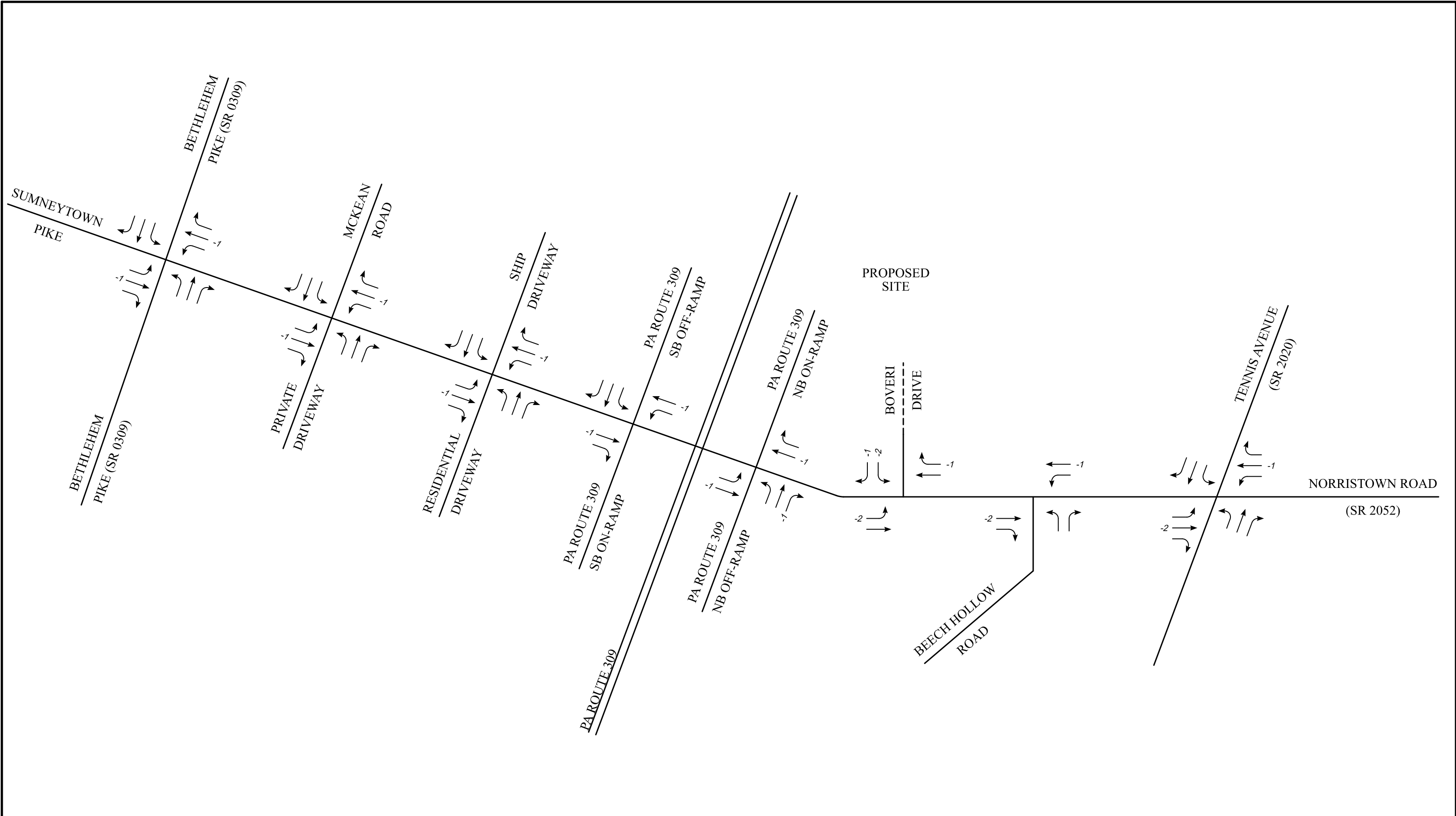
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 ----- PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 15 BASE REDISTRIBUTION WEEKDAY A.M. PEAK HOUR TRIP DISTRIBUTION		



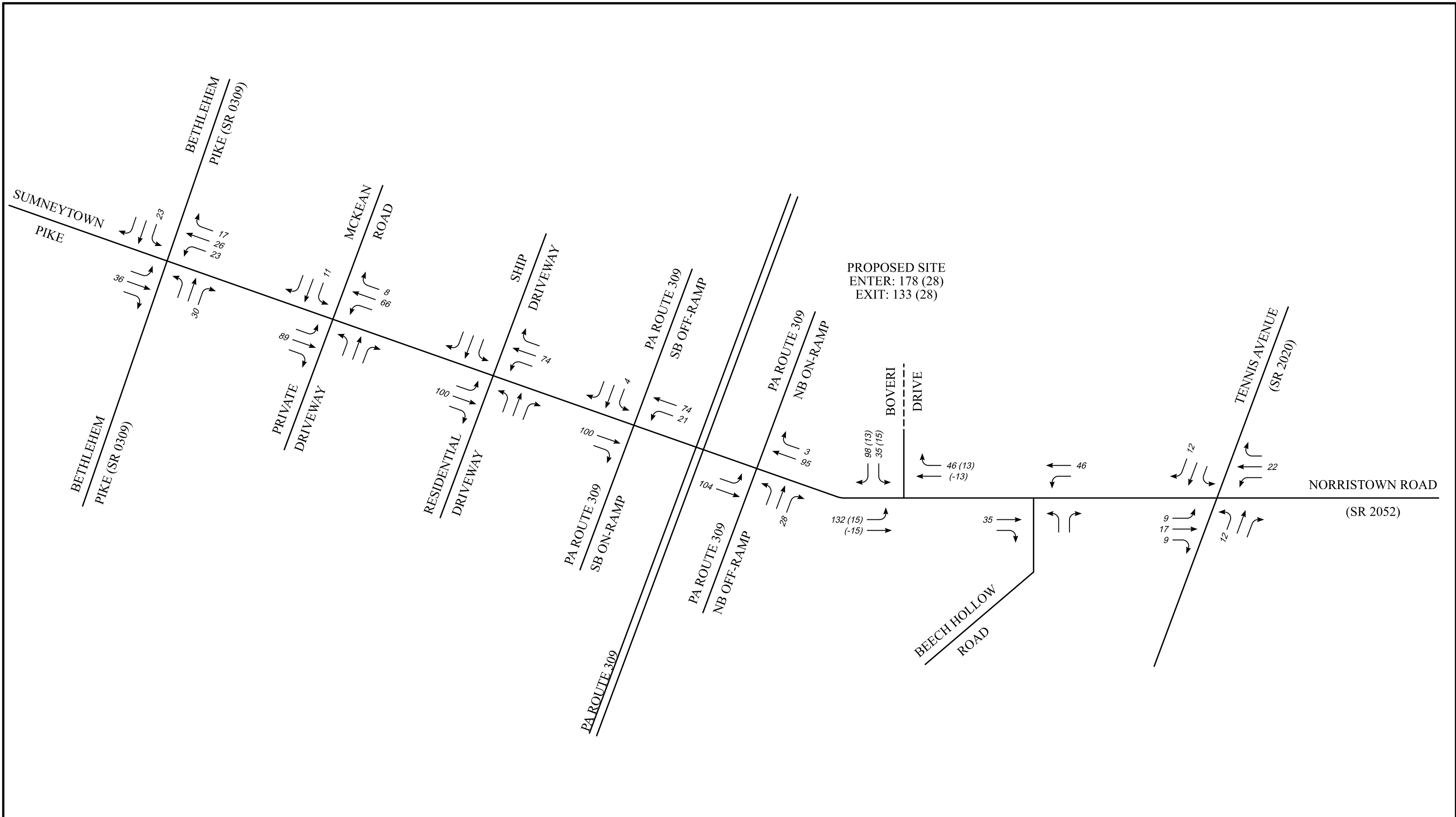
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 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 16 BASE REDISTRIBUTION WEEKDAY P.M. PEAK HOUR TRIP DISTRIBUTION		



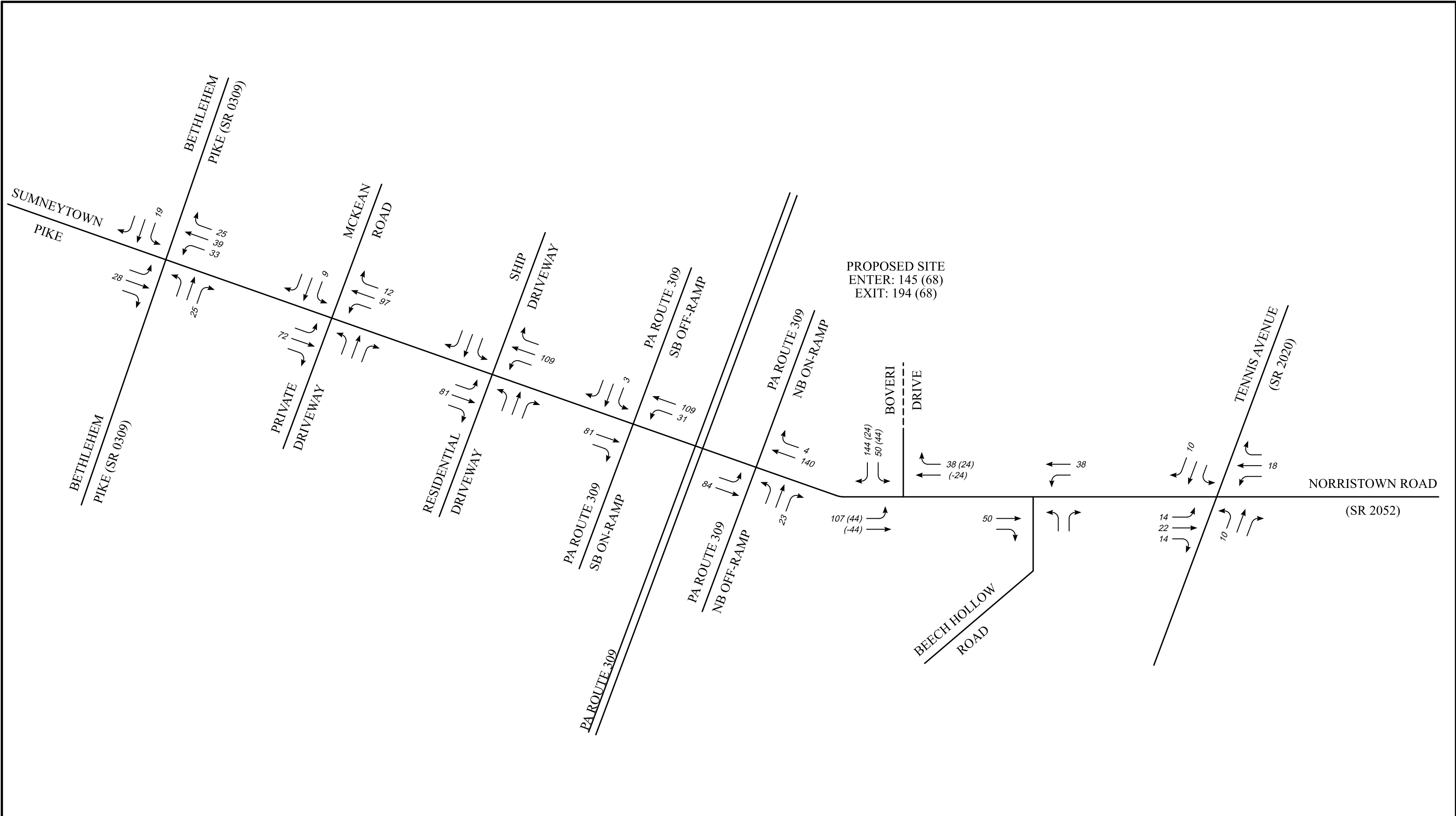
KEY:
 ----- PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 17 BASE REDISTRIBUTION MIDDAY SATURDAY PEAK HOUR TRIP DISTRIBUTION		



KEY:
 - - - - - PROPOSED DRIVEWAY
 NEW(PASS-BY)TRIPS
 SCHEMATIC DRAWING:NOT TO SCALE

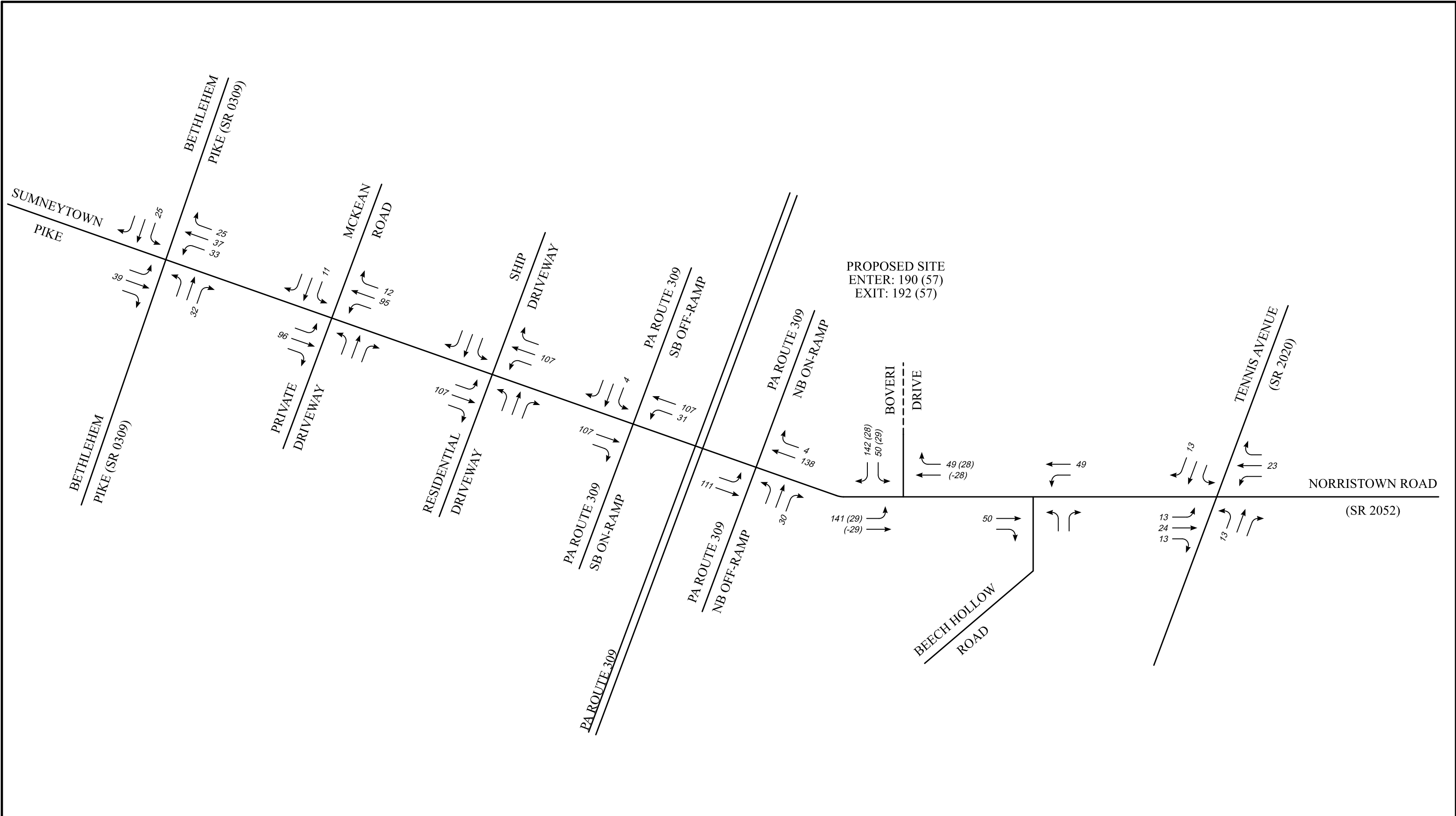
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FIGURE 18 SPRINGHOUSE MIXED USE DEVELOPMENT WEEKDAY A.M. PEAK HOUR TRIP DISTRIBUTION		



PROPOSED SITE
 ENTER: 145 (68)
 EXIT: 194 (68)

KEY:
 - - - - - PROPOSED DRIVEWAY
 NEW(PASS-BY)TRIPS
 SCHEMATIC DRAWING:NOT TO SCALE

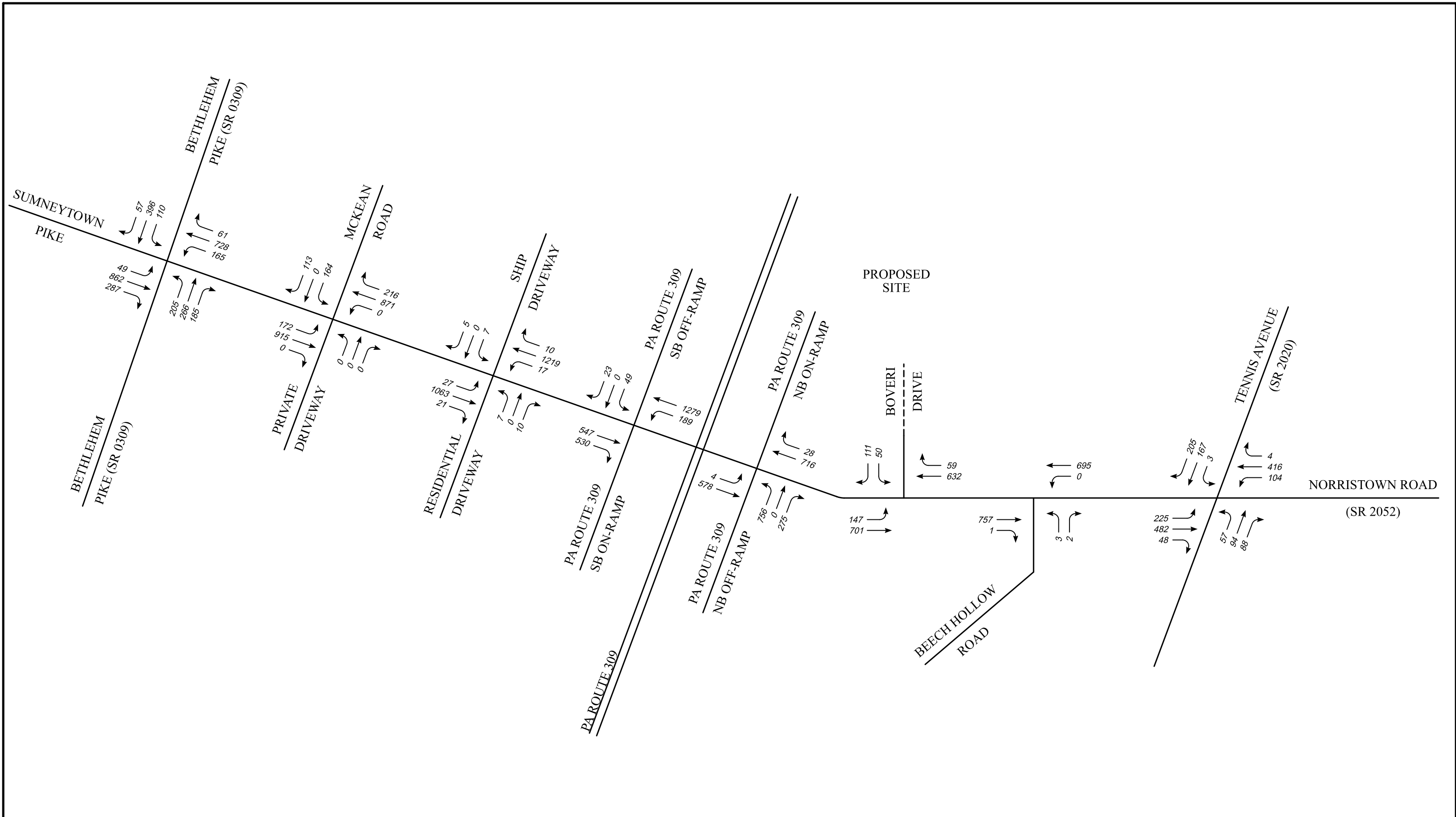
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FIGURE 19 SPRINGHOUSE MIXED USE DEVELOPMENT WEEKDAY P.M. PEAK HOUR TRIP DISTRIBUTION		



PROPOSED SITE
 ENTER: 190 (57)
 EXIT: 192 (57)

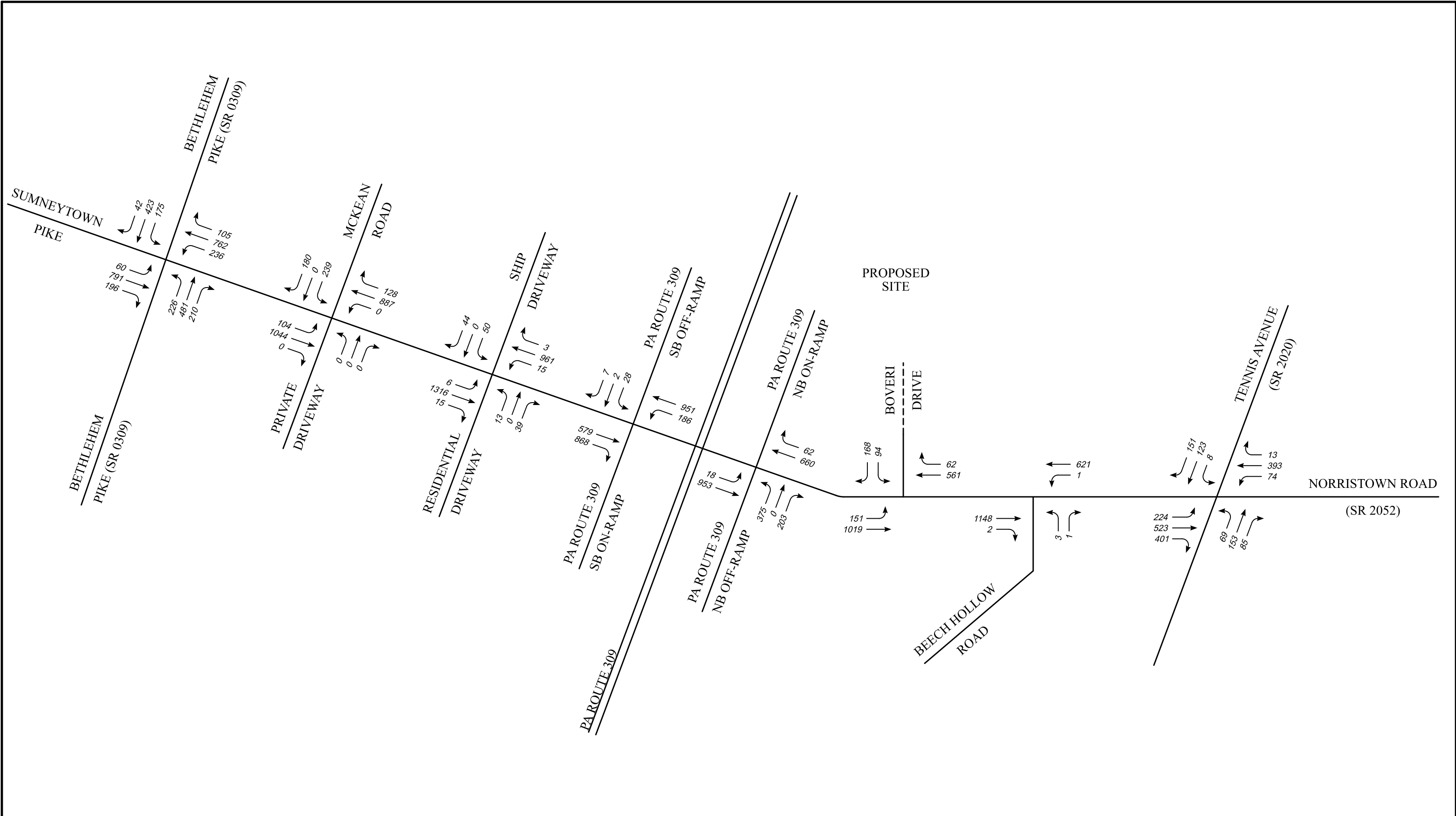
KEY:
 - - - - - PROPOSED DRIVEWAY
 NEW(PASS-BY)TRIPS
 SCHEMATIC DRAWING:NOT TO SCALE

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FIGURE 20 SPRINGHOUSE MIXED USE DEVELOPMENT MIDDAY SATURDAY PEAK HOUR TRIP DISTRIBUTION		



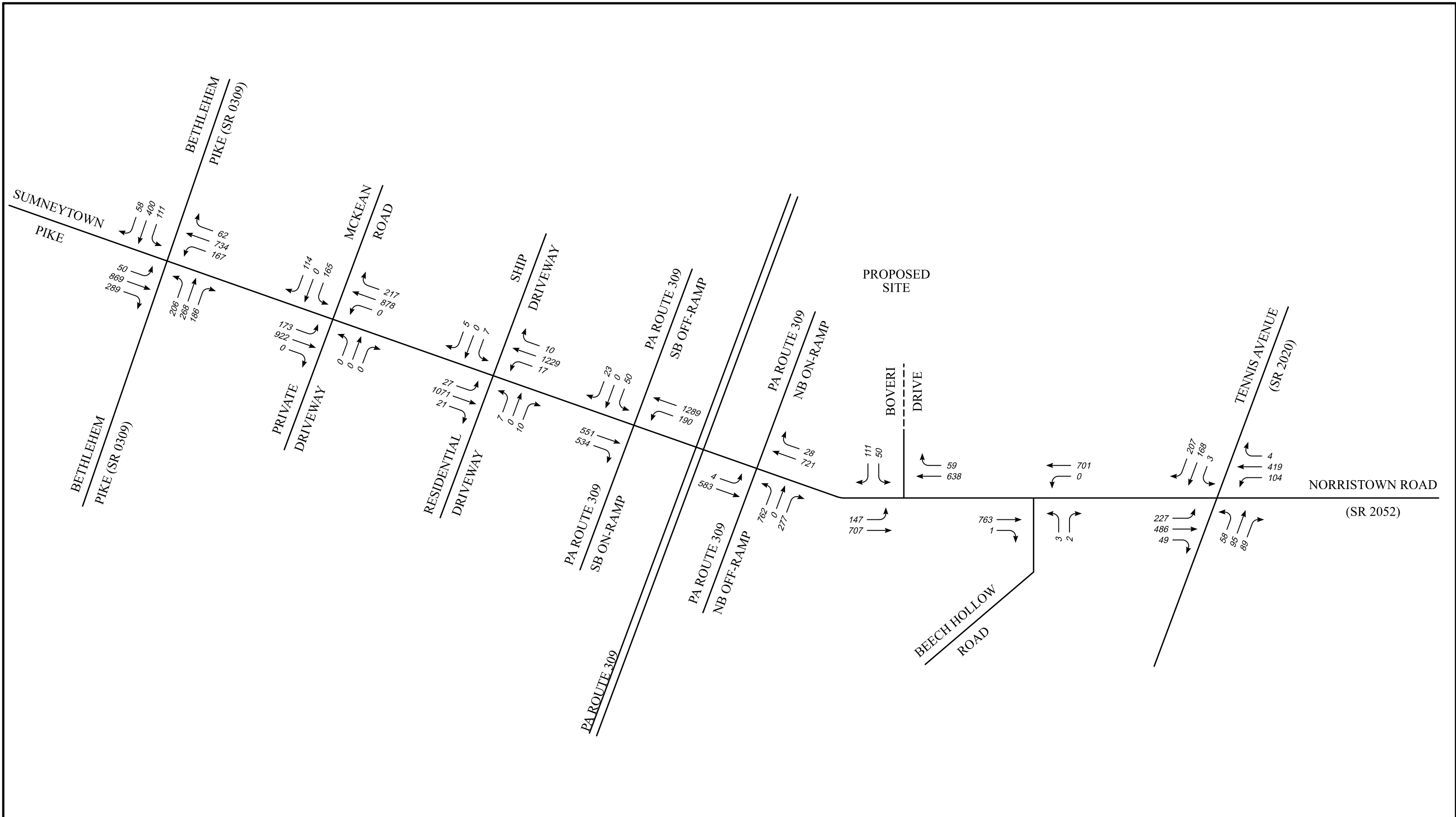
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 ----- PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 21 2027 PROJECTED CONDITIONS WEEKDAY A.M. PEAK HOUR TRAFFIC VOLUMES		



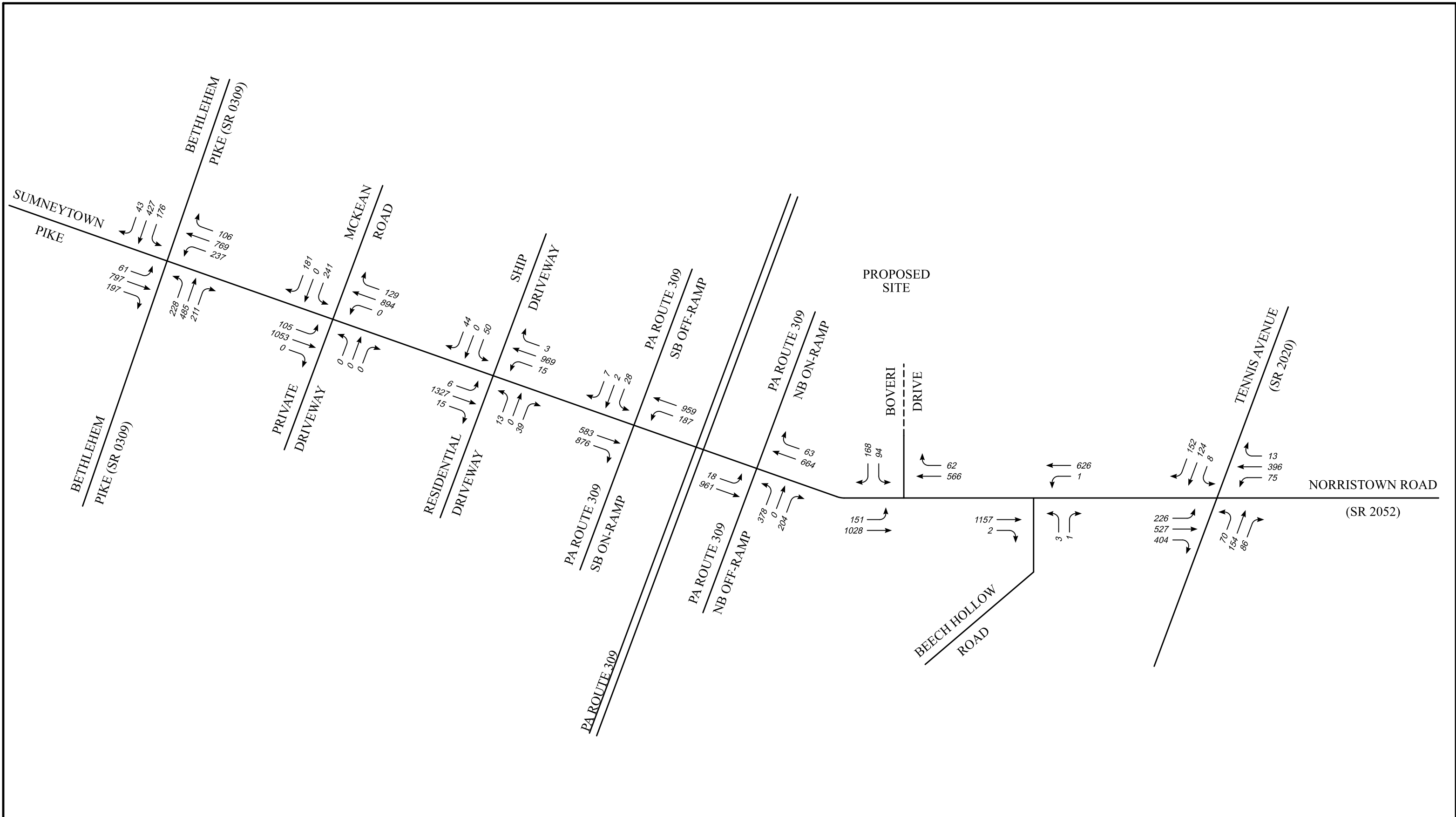
KEY:
 ----- PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 22 2027 PROJECTED CONDITIONS WEEKDAY P.M. PEAK HOUR TRAFFIC VOLUMES		



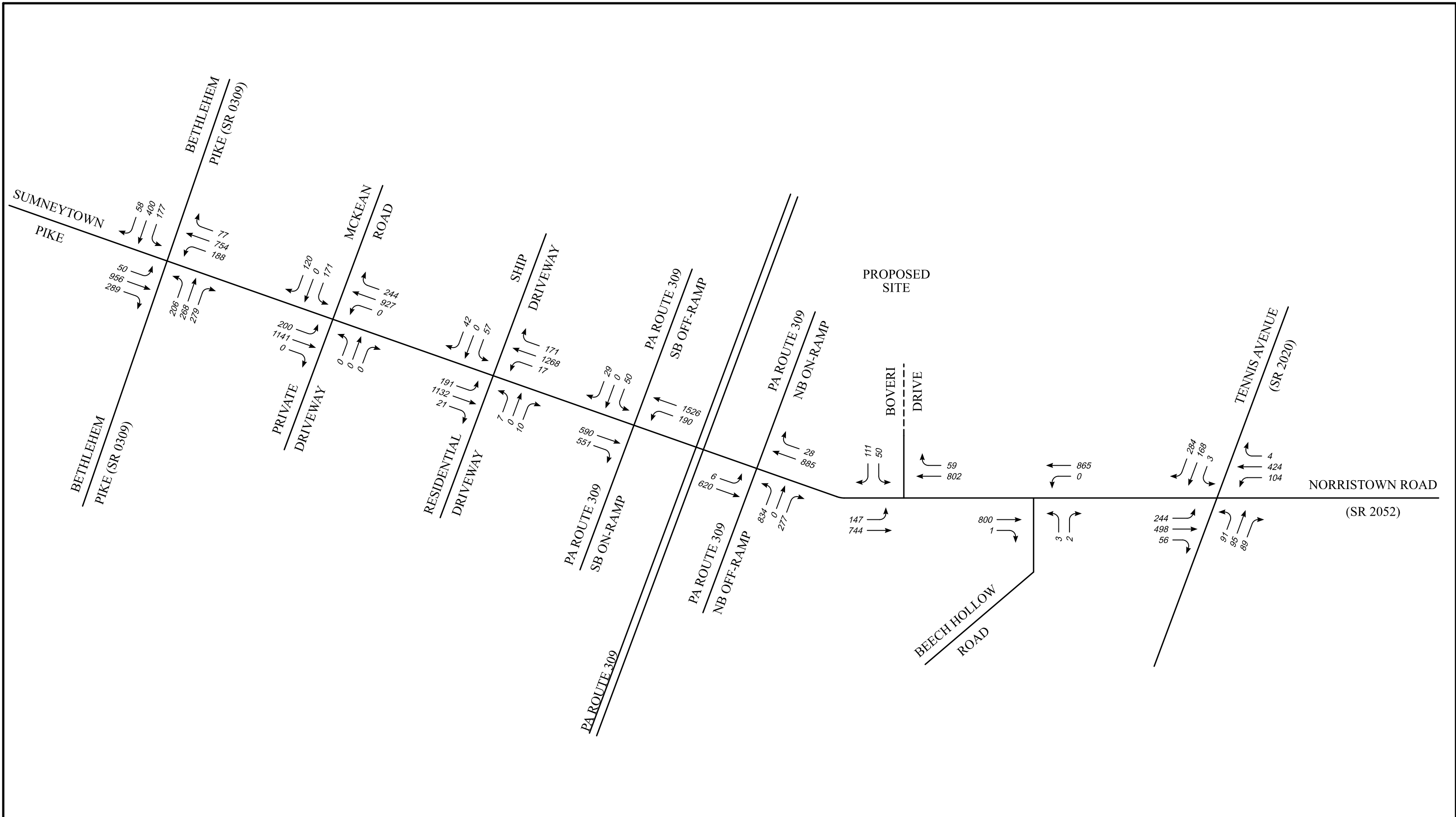
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 ----- PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 24 2032 PROJECTED CONDITIONS WITHOUT SHIP WEEKDAY A.M. PEAK HOUR TRAFFIC VOLUMES		



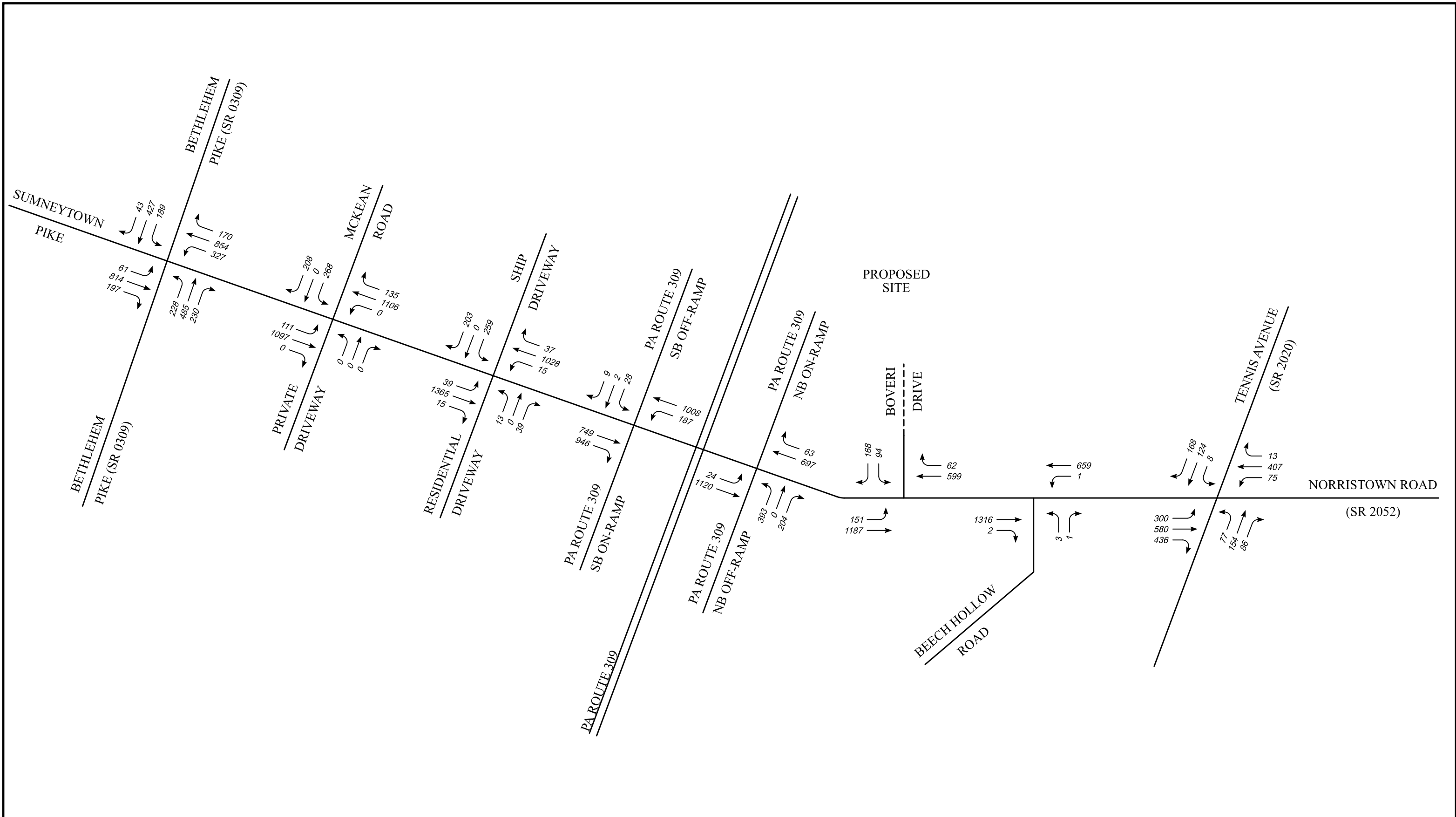
KEY:
 ----- PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 25 2032 PROJECTED CONDITIONS WITHOUT SHIP WEEKDAY P.M. PEAK HOUR TRAFFIC VOLUMES		



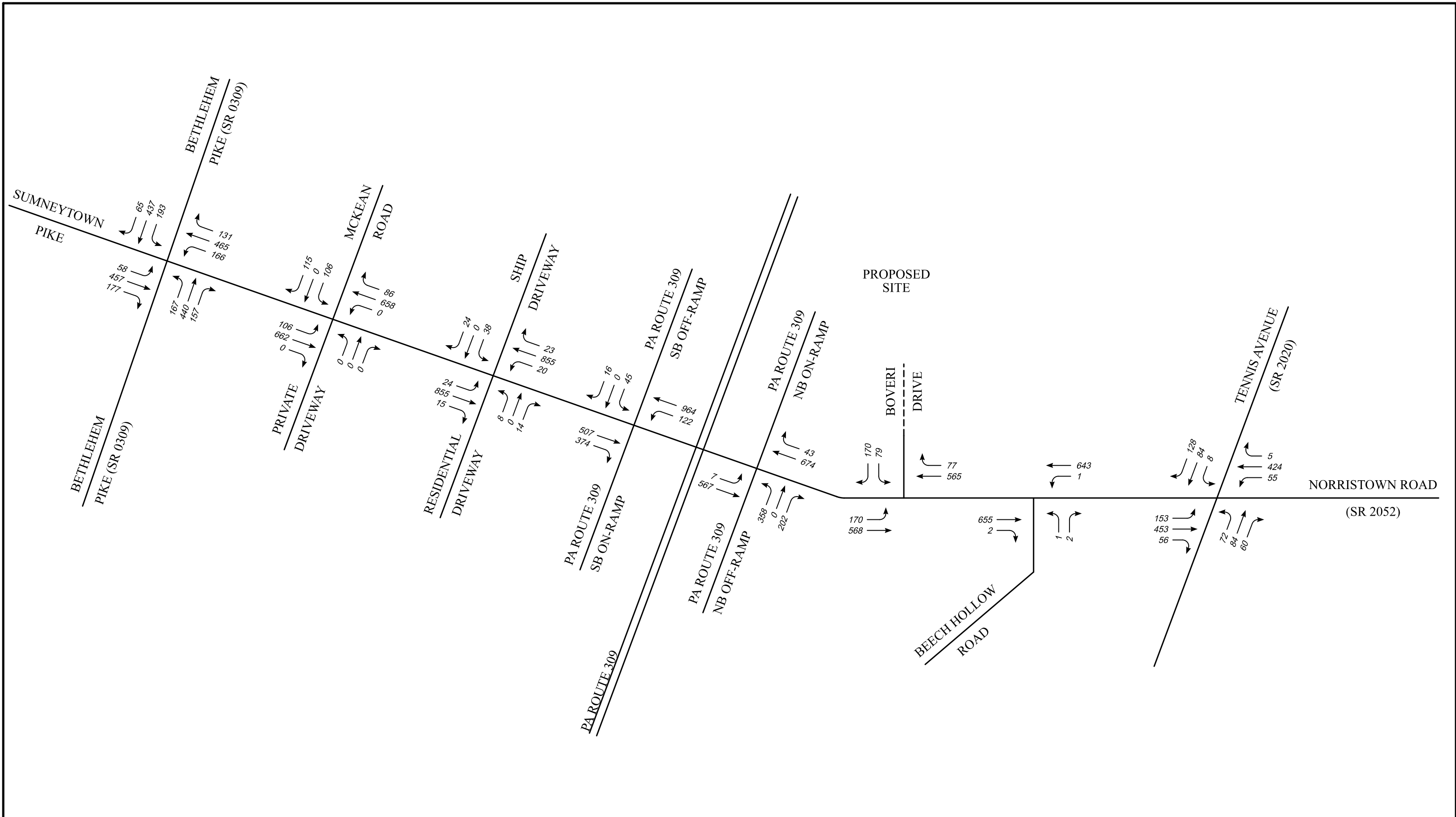
KEY:
 - - - - - PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 27 2032 PROJECTED CONDITIONS WITH SHIP WEEKDAY A.M. PEAK HOUR TRAFFIC VOLUMES		



KEY:
 ----- PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 28 2032 PROJECTED CONDITIONS WITH SHIP WEEKDAY P.M. PEAK HOUR TRAFFIC VOLUMES		



KEY:
 ----- PROPOSED DRIVEWAY
 SCHEMATIC DRAWING: NOT TO SCALE

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FIGURE 29 2032 PROJECTED CONDITIONS WITH SHIP MIDDAY SATURDAY PEAK HOUR TRAFFIC VOLUMES		

PAID INVOICES REPORT

WARRANT: 040726

TO FISCAL 2026/04 01/01/2026 TO 12/31/2026

VENDOR NAME	DOCUMENT	INV DATE	VOUCHER	PO	CHECK NO	T	CHK DATE	GL ACCOUNT	GL ACCOUNT DESCRIPTION	
4208 G & B CONSTRUCTION GROUP INC	171647	03/05/26	73430		105831	P	04/07/26	30439 721	OLD BETHLEHEM PIKE CULVER	292,657.14
INVOICE: OLD BETH PK BRIDGE-1										
VENDOR TOTALS		292,657.14		YTD INVOICED		292,657.14		YTD PAID		292,657.14
REPORT TOTALS										292,657.14

TOTAL PRINTED CHECKS	COUNT	AMOUNT
	1	292,657.14

** END OF REPORT - Generated by Rachael Kang **