M E M O R A N D U M

ATTN: **Planning Commission**

DATE: April 10, 2026

FROM: Jamie P. Worman, Assistant Township Manager Jamie Worman

SUBJ: **Cedar Hill Road Subdivision (1512-1524 Cedar Hill)-#25-07SUBD**

Susan Rice, P.E., of STA Engineering Inc., will attend the Planning Commission meeting on April 10, 2026, to present the revised Cedar Hill Road 4-Lot Subdivision plan on behalf of her client, Tisman Group LLC. As you may recall, the Planning Commission previously recommended this plan for approval in October 2025.

The original proposal involved combining the two parcels located at 1512 and 1524 Cedar Hill Road, demolishing the existing structures, and subdividing the merged property into four new building lots. The applicant intends to construct four new single-family dwellings, each with its own stormwater management facilities, and to provide a trail along the property frontage.
The revised plan continues to propose a four-lot subdivision but has been redesigned to comply with A-Residential District standards, as permitted under Section 1258.02(b)(1) of the code. This approach results in slightly larger lots and eliminates the requirement for designated open space, which could have posed potential challenges for future property owners.

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

April 10, 2026

File No. 19-06051-01

Mimi Gleason, Township Manager
Lower Gwynedd Township
1130 N Bethlehem Pike
P.O. Box 625
Spring House, PA 19477

Reference: 1512 & 1524 Cedar Hill Road Subdivision
TMP's #39-00-00646-00-8 and #39-00-00649-00-5
Preliminary/Final Land Development Application

Dear Ms. Gleason:

Pursuant to your request, Gilmore & Associates, Inc. performed a review of the preliminary submission for land development for the above-referenced project. Upon review, we offer the following comments for consideration by the Lower Gwynedd Township Board of Supervisors:

I. Submission

A. Preliminary/Final Land Development Plans, consisting of 1 through 18 of 18, dated August 25, 2025, latest revision February 27, 2026, as prepared by STA Engineering, Inc. for Tisman Group, LLC.

B. Erosion and Sediment Control and Post Construction Stormwater Management Plan Narrative dated August 25, 2025, latest revision November 20, 2025, as prepared by STA Engineering, Inc. for Tisman Group, LLC.

II. Project Description

The subject property consists of two parcels, TMP's #39-00-00646-00-8 and #39-00-00649-00-5 located within the A-1 Residential Zoning District. The subject property is approximately 7.76 acres, currently containing two (2) dwellings with various accessory structures and two (2) swimming pools.

The Applicant proposes to subdivide the combined two parcels with a total area of 7.76- acres into four (4) new lots. Along with this parcel reorganization, the applicant proposes to demolish all existing improvements on the properties, including the dwellings and associated impervious driveways, walkways, accessory buildings, etc. The plans propose the construction of four (4) new dwellings with Managed Release Concept basins proposed to the rear of the properties to control the runoff from the added impervious surface areas. All proposed lots will be served by public water and sewer.

III. Review Comments

A. Zoning Ordinance

§1258.08(a) - It is our understanding that the proposed land development is permitted use as single-family detached dwellings in accordance with the regulations applicable to an "A" residential district.

As such, the permanent open space requirement outlined in §1258.08(a)(3) & (9) of the Township's Ordinance for the "A-1" residential district would not apply. We defer all comments with respect to the Lower Gwynedd Township Zoning Ordinance to the Township's Zoning Officer.

B. Waivers Requested

Pursuant to §1230.09, the Township Board of Supervisors may grant a waiver of the requirements of one or more provisions of this ordinance provided the Applicant proves undue hardship. We note that the waiver requests are noted on the Subdivision Plan (to be recorded) in the Preliminary/Final Land Development Plans (sheet 2 of 18). The Record Plan shall list the waivers, applicable section numbers, and the date granted as applicable, including any conditions.

a. §1230.07(c) – A waiver is requested to permit a concurrent preliminary/final land development application submission.

b. §1230.45(a) – A waiver from providing the required sidewalks along both sides of existing and proposed streets. **We note that the applicant is proposing a paved trail across the frontage of the subject property. We defer to the Board of Supervisors regarding the material of the trail/sidewalk. Additionally, Note 22 on Sheet 2 shall be revised to specifically include snow removal as the homeowner's responsibility.**

c. §1230.60(b) – A waiver from the requirement of constructing driveway aprons at all private driveways and within residential areas. **We note that if the Board of Supervisors recommends the construction of concrete sidewalk along the frontage in lieu of the proposed paved trail, then we would not support this waiver and would request the concrete driveway aprons be added to the plans.**

d. §1230.61(a) – A waiver from providing curb along all existing and proposed streets. **We note that curbing has been provided on the opposite side of the street from previous subdivisions, however no curbing exists on the side of the subject property.**

e. §1241.401(n) – A waiver from the requirement of 18" minimum diameter pipe. Instead, 8", 10", 12" and 15" pipe is proposed for stormwater basins. **We note that all pipes are designed to accommodate the 100-year storm. As such, we have no objection to this waiver request.**

C. Subdivision and Land Development Ordinance

We offer the following comments with respect to the current Lower Gwynedd Township Subdivision and Land Development Ordinance:

1. §1230.15 – The Applicant is responsible for all required approvals, permits, etc. (e.g., Montgomery County Conservation District, PennDOT HOP, Fire Marshal, PADEP, etc.).

2. §1230.16(b) – The Applicant shall address the following general plan issues:

a. The 360-foot contour line along the front walkway and garage entrance of unit number four (4) appears to be incorrect and shall be revised to 380 on the Construction Improvement Plan (sheet 6 of 18).

b. We note that the sanitary later for Lot 1 will connect to the sewer main within the easement on the side of the property. As such, the 4" PVC San Lateral text located in the front yard of unit number one (1) shall be removed from the plans.

c. The width of all Rock Construction Entrances shall be 20 feet on the E&S Control Plan (sheet 7 of 18) as outlined in the Standard Construction Detail #3-1 located on the E&S Detail Sheet (8 of 18).

d. The E&S Detail Sheet (8 of 18) shall be revised to include a detail for tree protection.

e. Inlet protection shall be added to the proposed inlet in the back yard of unit one (1) and all 2'x2' yard inlets on the E&s Plan (sheet 7 of 18). Additionally, a detail for inlet protection shall be added to the E&S Detail Sheet (8 of 18).

f. The PCSM Plan (sheet 9 of 18) shall be revised so that the callout text does not overlap other linetypes for clarity.

g. The widths of SCM 005 & SCM 007 on the PCSM Plan (sheet 9 of 18) is not consistent with the callout and details. The Applicant shall confirm the sizes and revised the plans accordingly.

h. The sanitary manhole #7230 shall be revised to show invert 366.47 as an "in" instead of an "out" on the Plan, Profile, & Detail Sheet (14 of 18).

3. §1230.33 – The Applicant is required to obtain an NPDES and Erosion & Sediment Control permit from the Montgomery County Conservation District. The Township shall be copied on all future correspondence with the Conservation District.

4. §1230.40(a)(2) – We defer to the Township Traffic Engineer regarding the calculation of any applicable Act 209 fees and any comments related to traffic, signage, sight distance, etc.

5. §1230.41(i) – Each tree having a caliper of six inches or more measured six inches above the ground, that is removed shall be replaced with a shade tree or shade trees, which have a total caliper equal to or greater than the tree removed. The plans propose to remove 274 caliper inches of existing trees. We note that the replacement tree requirement shall be separate from the additional landscaping requirements, such as basin landscaping and street trees. It appears that the Applicant is counting the required street trees and basin plantings into the tree replacement quantity. The plans shall be revised to break out each separate landscaping requirement and shall not utilize other required plantings in the tree replacement calculations.

   Lastly, the plans propose to utilize some evergreen trees to satisfy the tree replacement calculation, with two (2) evergreen trees for each shade tree required. We defer to the Board of Supervisors to determine whether evergreen tree equivalent will be accepted.

6. §1230.53(a)(1) – All applicants for residential subdivision or land development approval for 10 or fewer single-family residential units shall, concurrent with the submission of a final plan of subdivision or land development, submit and tender to the Township a fixed park and recreation area fee of $1,000 for each of the proposed dwelling units. We calculate the fee based on four (4) new dwellings to be $2,000.00.

7. §1230.63 – The Applicant shall address the following issues in regard to the proposed sanitary sewer design:

   a. We note that the Applicant has confirmed the sewer planning exemption with PA DEP. The Applicant will be required to obtain approval from Ambler Borough Wastewater Treatment plans for the additional connections.

   b. The Applicant will be required to enter into a Tapping Agreement with the Township for the sanitary connections. The document will be prepared by the Township Sewer Solicitor. In addition, The Applicant shall pay the required tapping fee to the Township prior to the start of work.

8. The Applicant will be required to pay a recreation impact fee of $500 per new dwelling unit, as provided under Chapter 1236 of the Lower Gywnedd Township Code. We calculate the fee based on four (4) new dwellings to be $2,000.00.

D. Stormwater Management Ordinance

We offer the following comments with respect to the current Lower Gwynedd Township Stormwater Management Ordinance (SWMO) (Adopted May 2017):

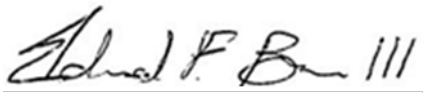
1. §1241.301 – If the waiver for curbing is denied, the applicant will be required to install the appropriate stormwater improvements along Cedar Hill Road, including but not limited to stormwater piping and inlets to capture the runoff from the roadway.

2. §1241.704 – The Applicant will be required to enter into a Stormwater Ownership & Maintenance Agreement with the Township for the proposed on-site stormwater improvements. The document will be prepared by the Township Solicitor and shall be executed prior to the plans being recorded.

3. In accordance with Lower Gwynedd Township Resolution 2005-16, the Applicant is required to pay a Stormwater Management Facility fee in the amount of $500 per 1000 cubic feet of storage volume within the proposed BMP's. We calculate the fee based on 69,152 CF of proposed storage, to be $34,576.00.

If you have any questions regarding the above, please contact this office.

Sincerely,



Edward Brown, P.E.
Project Manager
Gilmore & Associates, Inc.

EB/sl

cc: Jamie Worman Assistant Township Manager
Neil A. Stein, Esq. Township Solicitor
Al Comly, Township Fire Marshal
Chad Dixon, AICP, PP, McMahon Associates, Inc.
Susan Rice, P.E., STA Engineering, Inc.
Jim Hersh, P.E., Vice President, Gilmore & Associates, Inc.

Bowman

April 9, 2026

Ms. Mimi Gleason
Township Manager
Lower Gwynedd Township
1130 N. Bethlehem Pike
Spring House, PA 19477

RE: **Traffic Review – Preliminary/Final Subdivision Plans**
1512 & 1524 Cedar Hill Road
Lower Gwynedd Township, Montgomery County, PA
Project No. 314087-01-018

Dear Mimi:

As requested, on behalf of Lower Gwynedd Township, Bowman Consulting Group (Bowman) has completed a traffic review for the proposed subdivision to be located at 1512 & 1524 Cedar Hill Road in Lower Gwynedd Township, Montgomery County, PA. It is our understanding that the proposed subdivision involves subdividing Parcel #39-00-00646-00-8 and Parcel #39-00-00649-00-5 into four lots (Lots 1 to 4) with a single-family home proposed on each lot. Access to Lots 1 to 4 will be provided via individual driveway connections along Cedar Hill Road.

The following documents were reviewed in preparation of our comments:

- Preliminary/Final Subdivision Plans for 1512 & 1524 Cedar Hill Road, prepared by S.T.A. Engineering, Inc., last revised February 27, 2026.
- Response to Comments Letter for 1512 & 1524 Cedar Hill Road, prepared by S.T.A. Engineering, Inc., dated March 2, 2026.

Bowman offers the following comments for consideration by the Township and action by the applicant:

1. The applicant is requesting a waiver from the following traffic-related Subdivision and Land Development Ordinance requirements:
   - Section 1230.45(a) – requiring sidewalk along the Cedar Hill Road site frontage. The plans currently show a paved trail along the Cedar Hill Road site frontage in lieu of sidewalk.
   - Section 1230.60(b) – requiring driveway aprons to be constructed at all private driveways and within residential areas.
   - Section 1230.61(a) – requiring curbing along the Cedar Hill Road site frontage.

2. The taper provided at the end of the road widening along the site frontage on the northern end of property should begin at the northernmost property line. Although the taper would be located along the frontage of the adjacent property, it appears from the plans it would be located within the existing legal right-of-way.

3. The proposed development will be subject to the transportation impact fee of $3,865 per "new" weekday afternoon peak hour trip and the applicant will be required to pay a Transportation Impact

Fee. Based on Land Use Code 210 (Single-Family Detached Housing) in the Institute of Transportation Engineers publication, *Trip Generation, 12th Edition,* the proposed 4 single-family homes will generate approximately 4 "new" weekday afternoon peak hour trips. Providing a credit of 2 "new" weekday afternoon peak hour trips for the two existing single-family homes, the number of trips subject to the transportation impact fee is 2, resulting in a transportation impact fee of $7,730.

We trust that this review letter responds to the Township's request and addresses our review of the materials related to the proposed development apparent to us at this time. If the Township has any questions, or requires further clarification, please contact me.

Sincerely,

Chad Dixson, AICP, PP
Senior Project Manager

BMJ/CED

cc: Jamie Worman, Assistant Township Manager
James Hersh, P.E., Gilmore & Associates, Inc.
Neil Stein, Esquire, Solicitor
Chris Condello, Tisman Group, LLC (Applicant)
Susan Rice, P.E., S.T.A. Engineering, Inc. (Applicant's Engineer)

V:\314087 - Lower Gwynedd Township\314087-01-018 (TRN) - 1512 & 1524 Cedar Hill Road\Engineering\Submissions\2026-04-09 LD Plans\Review\2026-03-16 Review Letter – 1512 & 1524 Cedar Hill Road.docx

Outlook

Re: 1512 & 1524 Cedar Hill Road - RESUBMISSION

From Al Comly Jr <alcomlyjr8@gmail.com>
Date Tue 3/3/2026 10:51 PM
To Chad Dixson <cdixson@bowman.com>
Cc Patty Furber <pfurber@lowergwynedd.org>

I have reviewed the revised Preliminary/ Final Subdivision Plan submittal for 1512 & 1524 Cedar Hill Road as prepared by STA Engineers Inc dated Revision 3 "Revised per various reviews" dated 2/27/2026, consisting of 18 drawing sheets. I have no comments.

My review of the drawing sheets implies to me that the 2 residential structures on the site are to be demolished as part of the ultimate scope of this subdivision. Should that be the case, I wish to put in a strong request to allow the use of these structures for fire training by the Township Fire Companies prior to demolition. Such training could **NOT INVOLVE BURNING** the structures as part of this training . I ams happy to answer any questions regarding this request.

Al Comly
Fire Marshal, Lower Gwynedd Township

On Tue, Mar 3, 2026 at 4:33 PM Chad Dixson <cdixson@bowman.com> wrote:

> Hi Patty,
>
> Thanks for forwarding. We did have a few minor comments for them to address regarding the proposed widening and driveways. We'll take a look at the submission.
>
> -Chad
>
> **CHAD DIXSON, AICP, PP**
>
> Senior Project Manager, Transportation | **BOWMAN**
>
> O: (215) 283-9444 | D: (267) 419-1238 | M: (610) 999-3985
>
> cdixson@bowman.com | bowman.com

S T A
Engineering, Inc.
Civil Engineers • Land Surveyors

March 2, 2026

Lower Gwynedd Township
1130 N. Bethlehem Pike
P.O. Box 625
Spring House, PA 19477

Received
MAR 03 2026
Lower Gwynedd TWP

Attn: Mimi Gleason, Township Manager

Subj: 1512 & 1524 Cedar Hill Road – 4-Lot Residential Subdivision
PRELIMINARY/FINAL PLAN RESUBMISSION
TMP Nos. 39-00-00646-00-8 and 39-00-006949-00-5
Lower Gwynedd Township, Montgomery County, PA
STA Project #6571

Dear Ms. Gleason:

Enclosed herewith please find the following items being submitted in response to the Gilmore & Associates, Inc. and Bowman letters dated October 10, 2025:

1. Eight (8) copies of revised Subdivision/Land Development Plans last dated February 27, 2026;
2. One (1) copy of the Stormwater Management/E&S Report last dated November 20, 2025;
3. Legal Descriptions;
4. NWWA Will Serve Letter;
5. PaDEP Sewage Planning Exemption Letter;
6. Tree Evaluation Letter from Rockwell Associates;
7. *Electronic copy of all submission documents sent via email.*

Comments expressed in the letters have been addressed as follows:

Gilmore & Associates, Inc. letter dated October 10, 2025:

A. Zoning Ordinance

1. §1258.08(a)(3) & (9) – Permanent open space of not less than 10% of the gross tract area shall be offered for dedication. We note that the proposed open space area is located in the rear of the property. However, common open space shall be provided with safe and convenient access to the residentially developed area of the tract by adjoining frontage on streets or easements capable of accommodating pedestrian, bicycle and maintenance vehicle traffic. Additionally, common open space shall not be provided in narrow strips of land less than 50 feet in width. We defer to the Board of Supervisors to determine if this location and size is acceptable.

   Response: The subdivision is now proposed to be developed in accordance with the A Residential District regulations as permitted by §1258.02(b)(1). Open space is not required in the A Residential District and is no longer shown on the plan.

B. Waivers Requested

Response: Waivers are requested and have been discussed with the Township Planning Commission and Township Board of Supervisors. Note 22 has been added to Sheet 2 to address trail maintenance responsibilities.

C. Subdivision and Land Development Ordinance

1. §1230.15 – The Applicant is responsible for all required approvals, permits, etc. (e.g., Montgomery County Conservation District, PennDOT HOP, Fire Marshal, PADEP, etc.).

   Response: Understood and will comply.

2. §1230.16(b) – The Applicant shall address the following general plan issues:

   a. We note that the PCSM plan shows the existing inlets that the basin discharge pipe ties into as crossed out. The applicant shall clarify the purpose of crossing out the existing inlets on the plan sheets.

      Response: The X's over the existing inlets on the PCSM plans signify an analysis point for the stormwater management design. The legend on the PCSM plan includes the meaning of the X.

   b. The Construction Improvement Plan, sheet 6, shows the proposed sanitary lateral on Lot 1 connecting into the existing main within the easement. However, it also appears that a separate lateral extends across the rear property of Lot 1 and Lot 3. The Applicant shall clarify the purpose of the additional laterals.

      Response: Sheet 6 has been corrected to show the proposed lateral connections only. The existing features plan now includes additional notes and hatches to show portions of the existing laterals to be removed and/or abandoned. Lot 1 will utilize the existing lateral connection in the side yard and Lot 3 will connect to the existing sewer in Cedar Hill Road.

   c. The Zoning Data Schedule on Sheet 2 shall be revised to provide individual information for each lot created as part of this project. All information provided should be quantified for each of the lots.

      Response: The Zoning Data Table on Sheet 2 is updated to provide individual lot information. It should be noted that the dwellings shown on the plans are not the final footprint. The footprints will be finalized at the building permit stage and will comply with all dimensional zoning requirements.

   d. Dimensions listed as "Proposed" shall be updated to reflect the correct dimension as shown on the proposed layout plan.

      Response: The dwellings shown on the plans are not the final footprint and are intended to demonstrate the ability for compliance of dimensional criteria, grading and stormwater management. The footprints will be finalized at the building permit stage and will comply with all dimensional zoning requirements. The building permit plans will depict the accurate

proposed data.

e. A note shall be added to the Record Plan and Post Construction Stormwater Management Plan, Sheets 2, 6 and 9, indicating the amount of impervious surface on each lot that the proposed stormwater BMP's area designed to handle.

Response: Note 21 is added to Sheet 2, Note 21 is added to Sheet 6 and a Stormwater Note is added to Sheet 9.

f. The signature block for the sewer authority shall be removed from the plans.

Response: The specified signature block is removed from Sheet 2.

g. The Plan Sheet Index on the Cover Sheet shall be updated to reference each plan to be recorded.

Response: The plan sheet index on the Cover Sheet now has an asterisk for all plans to be recorded.

3. §1230.29 & 30 – The Applicant shall provide legal descriptions for each of the new lots, Right-of-Way dedication, the open space area, and any proposed storm and sanitary sewer easements.

Response: The required legal descriptions are included with this submission.

4. §1230.33 – The Applicant is required to obtain an NPDES and Erosion & Sediment Control permit from the Montgomery County Conservation District. The Township shall be copied on all future correspondence with the Conservation District.

Response: The MCCD submission is currently in Technical Review. Permit documentation will be provided to the Township upon receipt.

5. §1230.37(c)&(e) – We note that Cedar Hill Road shall have a right-of-way width of at least 50 feet, which is offered for dedication as stated in notes 8 and 12 on Sheet 2.

Response: No comment is necessary.

6. §1230.40(a)(2) – We defer to the Township Traffic Engineer regarding the calculation of any applicable Act 209 fees and any comments related to traffic, signage, sight distance, etc.

Response: No comment is necessary.

7. §1230.41(c) – Street trees shall be planted outside the ultimate right-of-way, but not over underground utilities. The plans shall be revised to relocate the trees outside of the ultimate right-of-way. Additionally, we note that several proposed trees, including the proposed street trees are immediately adjacent to the proposed utility lines. The plans shall be revised to provide sufficient separation between the proposed utilities and the proposed trees.

Response: Street trees and other proposed trees have been shifted as needed on Sheet 12.

8. §1230.41(i) – Each tree having a caliper of six inches or more measured six inches above the ground, that is removed shall be replaced with a shade tree or shade trees, which have a total caliper equal to or greater than the tree removed. We note that the plans have indicated the trees to be removed, however the caliper inches have not been included. The plans shall be revised to include the size of the trees to be removed so the tree replacement requirements can be quantified. Additionally, the Replacement Tree Equivalent table on Sheet 13, appears to utilize other landscaping and planting requirements to satisfy the tree replacement requirement. We note that the tree replacement quantity shall be separate from any other required landscaping.

   Response: The required replacement trees are provided on Sheet 13.

9. §1230.53(a)(1) – All applicants for residential subdivision or land development approval for 10 or fewer single-family residential units shall, concurrent with the submission of a final plan of subdivision or land development, submit and tender to the Township a fixed park and recreation area fee of $1,000 for each of the proposed dwelling units. We calculate the fee based on four (4) new dwellings to be $4,000.00.

   Response: Understood and will comply.

10. §1230.53(b)(4) – Land for dedication shall be easily and safely accessible from all residential or occupied areas within the development or the general area to be served, and it shall have road frontage or, subject to the sole discretion of the Board of Supervisors, suitable access, ingress and egress from a public roadway for maintenance purposes. We note that the proposed open space area is along the rear of the proposed properties and does not have any road frontage. We defer to the Board of Supervisors to determine whether the location of the open area is acceptable.

    Response: The subdivision is now proposed to be developed in accordance with the A Residential District regulations open space is not required and is no longer shown on the plan.

11. §1230.62 – The Applicant shall obtain a "will serve" letter from the water supplier. A copy of the letter shall be provided to the Township. Additionally, the plans shall be submitted to the water supplier for review/approval.

    Response: The 'Will Serve' letter is included with this submission.

12. §1230.63 – The Applicant shall address the following issues in regards to the proposed sanitary sewer design:

    a. The Applicant should confirm sewage planning with PA DEP.

       Response: A sewage planning exemption approval letter dated February 25, 2026, was issued by PaDEP and is included in this submission..

    b. Utility user's list and contact information should be added to the Plans.

       Response: The requested information is provided on the Cover Sheet.

c. A note should be added to the Plans that states that construction of all sanitary sewer facilities and appurtenances shall be performed in accordance with Lower Gwynedd Township Standards and Specifications.

Response: Note 1 is provided on Sheet 16.

d. A note shall be added to the plans stating the proper clearances (18" vertical/10'horizontal) from the sanitary sewer to other utilities.

Response: Note 2 is provided on Sheet 16.

e. A note should be added to the Plans stating sanitary sewer laterals shall have a minimum of 4'-0" cover.

Response: Note 3 is provided on Sheet 16.

f. A note should be added to the Plans stating that the proposed sanitary sewer lateral within the right-of-way or easement shall be 6" PVC.

Response: Note 4 is provided on Sheet 16.

g. A note should be added to the Plans that states that the sanitary sewer lateral connection to existing Lower Gwynedd Township sanitary sewer may be installed with a wye saddle in accordance with Lower Gwynedd Township Standards and Specifications.

Response: Note 5 is provided on Sheet 16.

h. We note that the size, slope and inverts shall be added to the plans for the sanitary laterals at the building line, each cleanout, and the connection to the main.

Response: The requested information is provided on Sheet 16.

i. All applicable sewer details should be included on the plans and should conform to LGT Standard Details.

Response: Applicable details are provided on Sheet 16.

j. The Applicant will be required to enter into a Tapping Agreement with the Township for the sanitary connections. The document will be prepared by the Township Sewer Solicitor. In addition, The Applicant shall pay the required tapping fee to the Township prior to the start of work.

Response: Understood and will comply.

13. §1230.69 – Tree protection fence shall be provided around all trees to remain within or adjacent to the limits of disturbance and shall be shown on the Existing Features Plan and the PCSM Landscape Plan

Response: Tree protection fence is now shown on Sheets 3, 6, 7, 9 and 12.

14. The Applicant will be required to pay a recreation impact fee of $500 per new dwelling unit, as provided under Chapter 1236 of the Lower Gwynedd Township Code. We calculate the fee based on four (4) new dwellings to be $2,000.00.

    Response: Understood and will comply.

D. Stormwater Management Ordinance

1. §1241.301 – The plans shall be revised to address the following general comments with regard to the stormwater management design.

    a. It appears that the proposed project will be completed in two (2) phases; where the stormwater and some grading improvements will be completed during Phase 1, and the final grading and construction of the dwellings will be completed in Phase 2. As such, the Applicant will be required to provide plot plans for each new lot prior to the construction of the buildings as stated in Note 20 on Sheet 2. Additionally, depending on the size and configuration of the new dwellings, additional stormwater improvements may be required at the time of the building permit.

    Response: The stormwater management design is based on the maximum permitted impervious surface for each lot. Additional stormwater management improvements should not be required.

    b. Roof drain location, size and material shall be added to the plans in order to confirm management of all impervious area from the dwellings.

    Response: Note 20 and a block note is provided on Sheet 6.

    c. If the waiver for curbing is denied, the applicant will be required to install the appropriate stormwater improvements along Cedar Hill Road, including but not limited to stormwater piping and inlets to capture the runoff from the roadway.

    Response: Waivers were discussed with both the Township Planning Commission and Board of Supervisors, and the curbing waiver is expected to be granted. If anything changes, the applicant will comply as required.

2. §1241.401.j – Storage facilities shall completely drain both the volume control and rate control capacities over a period of time not less than 24 and not more than 72 hours from the end of the design storm. The basin dewatering calculations shall be added to the stormwater report.

    Response: Dewatering calculations are provided on Pages 128 through 131 of the stormwater management report.

3. §1241.401.y – The minimum freeboard within the emergency spillway flow elevation to the top of berm elevation shall be one (1) foot. It appears that several basins propose less than one (1) of free board required. The freeboard design shall be verified and revised accordingly.

    Response: The grading on Sheet 6 and the Emergency Spillway Cross-Section Detail on Sheet

10 have been revised to provide the required one (1) foot of freeboard.

4. §1241.704 – The Applicant will be required to enter into a Stormwater Ownership & Maintenance Agreement with the Township for the proposed on-site stormwater improvements. The document will be prepared by the Township Solicitor and shall be executed prior to the plans being recorded.

   Response: Understood and will comply.

5. In accordance with Lower Gwynedd Township Resolution 2005-16, the Applicant is required to pay a Stormwater Management Facility fee in the amount of $500 per 1000 cubic feet of storage volume within the proposed BMP's. We calculate the fee based on 52,699 CF of proposed storage, to be $26,349.50. We note this fee calculation may change following any revisions to the stormwater design.

   Response: Understood and will comply.

Bowman Letter dated October 10, 2025:

1. The applicant is requesting a waiver from the following Subdivision and Land Development Ordinance requirements:
   - Section 1230.45(a) – requiring sidewalk along the Cedar Hill Road site frontage. The plans currently show a paved trail along the Cedar Hill Road site frontage in lieu of sidewalk.
   - Section 1230.60(b) – requiring driveway aprons to be constructed at all private driveways and within residential areas.
   - Section 1230.61(a) – requiring curbing along the Cedar Hill Road site frontage.

   Response: Waivers are requested and have been discussed with the Township Planning Commission and Township Board of Supervisors. Note 22 has been added to Sheet 2 to address trail maintenance responsibilities.

2. Sight distance measurements should be shown on the plans at the lot 1 to 4 driveway intersections with Cedar Hill Road as required in **Section 1230.38(a)** of the **Subdivision and Land Development Ordinance.**

   Response: Sight distance measurements are provided on Sheet 14.

3. Additional details for the proposed driveways to lots 1 to 4 must be added to the plans. The driveways must be designed in accordance with **Section 1230.38** of the **Subdivision and Land Development Ordinance** with respect to grades and widths. The details should include the following:

   a. Driveway tie-in radii.
   b. Driveway width(s).
   c. Driveway grades, as well as the cross-slope grades of the roadway.
   d. Location and distance of driveway grade breaks.

   Response: The requested information is provided on Sheet 15.

4. Appropriate tapers must be provided to transition the proposed edge of roadway to the existing edge

of roadway on each side of the proposed development.

Response: Tapers are now shown on Sheet 15.

5. The details provided on Sheet 14 of the plan set appear to have a discrepancy in regards to the grass strip width between the edge of pavement and the proposed paved trail. The designer should evaluate and revise as necessary, and the buffer strip should be in accordance with **Section 1230-45** of the **Subdivision and Land Development Ordinance**.

   Response: The details on Sheet 14 have been corrected to be consistent and now show a 5 ft. wide grass strip which exceeds the minimum required 4 ft. grass strip in §1230-45.

6. The Township Fire Marshal should review the proposed subdivision for the accessibility and circulation needs of emergency apparatus. Ensure that any correspondence, including any review comments and/or approvals, is included in subsequent submissions.

   Response: Applicant will provide documentation from the fire marshal upon receipt.

7. The proposed development will be subject to the transportation impact fee of $3,865 per "new" weekday afternoon peak hour trip and the applicant will be required to pay a Transportation Impact Fee. Based on Land Use Code 210 (Single-Family Detached Housing) in the Institute of Transportation Engineers publication, *Trip Generation, 12th Edition,* the proposed 4 single-family homes will generate approximately 4 "new" weekday afternoon peak hour trips. Providing a credit of 2 "new" weekday afternoon peak hour trips for the two existing single-family homes, the number of trips subject to the transportation impact fee is 2, resulting in a transportation impact fee of $7,730.

   Response: Understood and will comply.

8. Based on our review, the applicant should address the aforementioned comments and provide revised plans to the Township and our office for further review and approval recommendations. The applicant's engineer must provide a response letter that describes how each specific review comment has been addressed, where each can be found in the plan set or materials, as opposed to general responses. This will aid in the detailed review and subsequent review timeframes.

   Response: This letter serves to address this comment.

If you should have any questions or require additional information, please do not hesitate to contact me.

Respectfully submitted,

Susan A Rice

Susan Rice, P.E.
S.T.A. Engineering, Inc.

cc: Jamie Worman, Assistant Township Manager
Jim Hersh, P.E., Gilmore & Associates, Inc., Township Engineer
Chad Dixson, AICP, PP, McMahon Associates, Inc.
Andrew R. Freimuth, Esq., Wisler Pearlstine, LLP
Chris Condello, Tisman Group LLC

ROCKWELL ASSOCIATES
URBAN FORESTRY, NATURAL RESOURCE & LANDSCAPE CONSULTANTS

Via Email delivery

JOHN ROCKWELL HOSBACH JR.
Urban Forester
Registered Consulting Arborist #483
ISA Certified Arborist PD-0372
610-731-7969
john@rockwellurbanforestry.com

Condition Evaluation Summary Report

Project: 1512 & 1524 Cedar Hill Road, Lower Gwynedd Township
Client: Chris Condello | President | Fairmont Builders Inc.
Address: 453 School Rd | Blue Bell, PA 19422
Date of Current Review: October 14, 2025
Original Evaluation Date: February 2021

Purpose of Report

At the request of Fairmont Builders, Rockwell Associates performed a follow-up assessment of the tree population located at 1512 and 1524 Cedar Hill Road.

The purpose of this updated inspection was to compare the current tree conditions (as of October 2025) with those observed in the original evaluation conducted in February 2021, and to document the extent of decline or mortality due to lack of maintenance over the past four years.

Methodology

Both assessments consisted of visual ground-level inspections of trees located within the designated parcels.
Each tree was evaluated for:

- Species and approximate size (DBH)
- Structural condition and stability
- Health and vigor (canopy density, dieback, disease presence)
- Longevity potential and safety risk

The updated inspection utilized the same rating framework to ensure consistent comparison between the two data sets.

Summary of Findings

Original Findings (February 2021)

A total of 64 trees were reviewed.

P.O. Box 542 | Ridley Park, PA 19078

JOHN ROCKWELL HOSBACH JR.
Urban Forester
Registered Consulting Arborist #483
ISA Certified Arborist PD-0372
610-731-7969
john@rockwellurbanforestry.com

- 27 trees were rated in poor condition, showing signs of stress, decay, or structural weakness.
- 37 trees were rated in fair condition, displaying moderate health but requiring corrective or maintenance actions for preservation.

Updated Findings (October 2025)
A secondary inspection revealed significant degradation across the population.

Since 2021, no proactive care, pruning, or mitigation has been conducted, resulting in progressive decline.

Current observations:

- 3 trees have completely died.
- 2 trees have structurally failed (partial or total collapse).
- 13 additional trees have degraded beyond repair, showing advanced decay, disease progression, or structural instability.

As of this inspection:

- 45 trees are dead, dying, diseased, or have failed.
- 19 trees remain in fair to poor condition, showing limited recovery potential without intervention.

The data indicates a degradation rate exceeding 40% over the four-year interval, correlating directly with lack of care and possible site stress (soil compaction, drought, or construction disturbance).

Conclusions and Recommendations

1. Tree Removal:
   Immediate removal of the 45 non-viable or high-risk trees is strongly recommended to mitigate safety hazards.
2. Selective compensation:
   The remaining 19 trees should be considered for compensation planting.
3. Replanting Plan:
   A phased reforestation or landscape restoration plan should be implemented to replace lost canopy and maintain compliance with municipal or environmental guidelines.

P.O. Box 542 | Ridley Park, PA 19078

ROCKWELL ASSOCIATES
URBAN FORESTRY, NATURAL RESOURCE & LANDSCAPE CONSULTANTS

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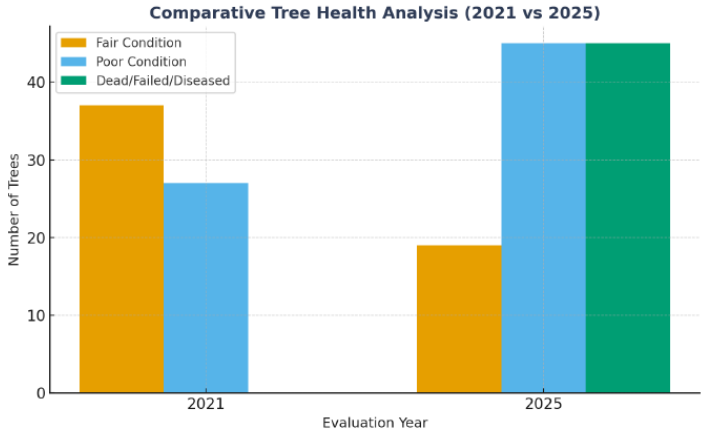
Comparative Tree Health Analysis – 1512 & 1524 Cedar Hill Rd.

Evaluation Year	Total Trees	Fair Condition	Poor Condition	Dead/Failed/Diseased	Notable Trend
2021	64	37	27	0	Moderate overall health with need for maintenance
2025	64	19	45	45 (includes dead/dying/failed)	Major decline due to neglect and environmental stressors



Summary Insight:
The data indicates a **degradation rate exceeding 40%** over the four-year interval, correlating directly with lack of care and possible site stress (soil compaction, drought, or construction disturbance).

Compensation

737 inches in total. 274 inches to be replaced. 463 inches do not require compensation.

Respectfully submitted,

John Rockwell Hosbach Jr.

P.O. Box 542 | Ridley Park, PA 19078

PRELIMINARY/FINAL SUBDIVISION PLANS

OF THE

1512 & 1524 CEDAR HILL ROAD

SITE SITUATE IN LOWER GWYNEDD TOWNSHIP, MONTGOMERY COUNTY

PLAN SHEET INDEX

SHEET NO.	PLAN TITLE	DATE	LAST REVISED
1 OF 18	COVER SHEET	AUG. 25, 2025	FEB. 27, 2026
2 OF 18	*SUBDIVISION PLAN	AUG. 25, 2025	FEB. 27, 2026
3 OF 18	EXISTING FEATURES PLAN	AUG. 25, 2025	FEB. 27, 2026
4 OF 18	DEMOLITION PLAN	AUG. 25, 2025	FEB. 27, 2026
5 OF 18	AERIAL PHOTO	AUG. 25, 2025	FEB. 27, 2026
6 OF 18	CONSTRUCTION IMPROVEMENT PLAN	AUG. 25, 2025	FEB. 27, 2026
7 OF 18	E&S PLAN	AUG. 25, 2025	FEB. 27, 2026
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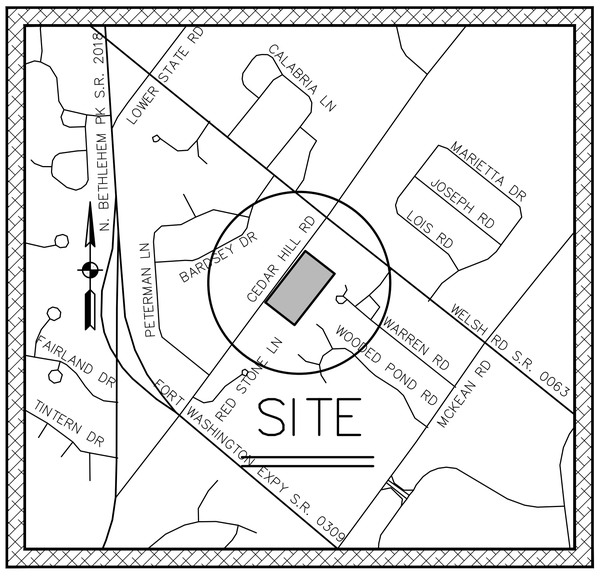
10 OF 18	*PCSM NOTES & DETAIL SHEET	AUG. 25, 2025	FEB. 27, 2026
11 OF 18	*PCSM DETAIL SHEET	AUG. 25, 2025	FEB. 27, 2026
12 OF 18	*PCSM LANDSCAPE PLAN	AUG. 25, 2025	FEB. 27, 2026
13 OF 18	*PCSM LANDSCAPE DETAIL SHEET	AUG. 25, 2025	FEB. 27, 2026
14 OF 18	PLAN, PROFILE, AND DETAIL SHEET OF CEDAR HILL ROAD	AUG. 25, 2025	FEB. 27, 2026
15 OF 18	CEDAR HILL ROAD GRADING & DRIVEWAY PROFILES	AUG. 25, 2025	FEB. 27, 2026
16 OF 18	SANITARY SEWER PROFILE AND DETAIL SHEET	AUG. 25, 2025	FEB. 27, 2026
17 OF 18	PRE-DEVELOPMENT DRAINAGE SHED PLAN	AUG. 25, 2025	FEB. 27, 2026
18 OF 18	POST-DEVELOPMENT DRAINAGE SHED PLAN	AUG. 25, 2025	FEB. 27, 2026

*DENOTES PLANS TO BE RECORDED

ADDITIONAL SUPPORTING DOCUMENTS

1	POST-CONSTRUCTION STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL PLAN NARRATIVE WITH DRAINAGE SHED PLANS	AUG. 25, 2025	FEB. 27, 2026
2	STORMWATER INFILTRATION REPORT PREPARED BY VW CONSULTANTS LLC LIST ALL OTHER REPORTS USED.	SEPT. 2, 2025	–
3	WETLAND REPORT PREPARED BY VALLEY ENVIRONMENTAL SERVICES, INC.	JUNE 6, 2023	–



SITE LOCATION MAP 1" = 800'

SITE STATISTICS

1. SUBJECT TRACT MAY BE IDENTIFIED BY MONTGOMERY COUNTY TAX ASSESSMENT INFORMATION AS FOLLOWS:

   A. LOWER GWYNEDD TOWNSHIP
   TAXMAPID: 39018 028
   PARID: 39-00-00646-00-8
   1512 CEDAR HILL ROAD

   B. LOWER GWYNEDD TOWNSHIP
   TAXMAPID: 39018 029
   PARID: 39-00-00649-00-5
   1524 CEDAR HILL ROAD

2. RECORDED DEED DATA IS AS FOLLOWS:

   AS RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC., IN AND FOR THE COUNTY OF MONTGOMERY AT DOYLESTOWN, PENNSYLVANIA IN:

   A. DEED BOOK 6409, PAGE 02531

   B. DEED BOOK 6409, PAGE 02542

3. NAME AND ADDRESS OF THE OWNER OF THE SUBJECT TRACT:

   A. TISMAN GROUP, LLC
   831 N STILLMAN ST
   PHILADELPHIA, PA 19130

   B. TISMAN GROUP, LLC
   831 N STILLMAN ST
   PHILADELPHIA, PA 19130

4. AREA STATISTICS:

   A. TOTAL TRACT AREA = 4.00 AC. (GROSS)

   B. TOTAL TRACT AREA = 3.76 AC. (TO TITLE LINES)

   C. TOTAL COMBINED TRACT AREA = 7.76 AC. (GROSS)
   TOTAL COMBINED TRACT AREA = 7.30 AC. (NET)

ACT 50 UTILITY NOTE

811

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDER-GROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 121 AS PER THE AMENDMENT OF PA ACT 287 OF 1974, EFFECTIVE OCTOBER 30, 2017 CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. REFERENCE UTILITY CASE NUMBER: 20252383716.

LOWER GWYNEDD TOWNSHIP
P.O. BOX 293
Spring House, PA 19477
215-646-5302

COMCAST CABLE COMMUNICATION
237 W. Germantown Pike
Norristown, PA 19403
610-279-7200

VERIZON PENNSYLVANIA, INC.
1350 Welsh Road - Suite 100
North Wales, Pa 19454
215-956-2605

PECO ENERGY
680 Ridge Pike
Plymouth Meeting, PA 19462
610-943-5522

NORTH WALES WATER AUTHORITY
200 West Walnut Street
North Wales, pa 19454
215-699-4836

TRANSCONTINENTAL GAS
PIPE LINE CORP
60 Bockton Hill Road
Frazier, Pa 19355
610-644-7373

PREPARED FOR

TISMAN GROUP, LLC

3901 PARKSIDE DRIVE
FURLONG, PA 18925

S T A Engineering, Inc.
Civil Engineers • Land Surveyors
2499 KNIGHT ROAD, PENNSBURG, PA 18073
PH: (215) 679-0200; www.stotac.com

NOTES

1. THE METES AND BOUNDS ILLUSTRATED ON THIS PLAN WAS PREPARED FROM DOCUMENTS OF RECORD AND WITH BENEFIT OF TITLE REPORTS BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, COMMITMENT NUMBERS 245702LAFS, 245731LAFS & 245713LAFS WITH EFFECTIVE DATES OF OCTOBER 22 & 23 OF 2018. ALL DATA SHOWN VERIFIED FROM ACTUAL FIELD SURVEY IN MAY, 2019. ALL BEARINGS SHOWN REFLECT A –08 DEG. 08 MIN. 38 SEC. CLOCKWISE ROTATION FROM DEED BEARING BASIS TO PENNSYLVANIA SOUTH ZONE 3702 STATE PLANE COORDINATE BEARING BASIS.

2. ALL TOPOGRAPHIC AND EXISTING FEATURES ILLUSTRATED ON THIS PLAN WERE PREPARED BY SITE FIELD SURVEY DURING THE MONTH OF MAY, 2019. SITE BENCHMARK IS A SANITARY MANHOLE #7230 LOCATED WITHIN CEDAR HILL ROAD HAVING A RIM ELEVATION OF 379.37. SITE DATUM IS REFERENCED PER NOTE 3c BELOW.

3. THIS PLAN AND SURVEY WERE PREPARED UTILIZING THE FOLLOWING REFERENCES:

   a. TAX MAPS AND DEEDS OF RECORD AS OBTAINED FROM THE RECORDER OF DEEDS ONLINE RESOURCES.

   b. EXISTING SOILS CLASSIFICATIONS AND MAPPING HAS BEEN PLOTTED FROM MAPS OBTAINED FROM THE USDA WEB SOIL SURVEY WEBSITE (HTTP: //WEBSOILSURVEY.SC.EGOV.USDA.GOV/) UNLESS OTHERWISE NOTED.

   c. VERTICAL DATUM REFERENCES PROVIDED BY THE PA SPECIAL DATA ACCESS SYSTEM (PASDA). PAMAP DATA IS BASED ON PA STATE PLANE (SOUTH) NAD83 HORIZONTAL, NAVD88 VERTICAL DATUM. FLIGHT DATE WAS SPRING 2008, UPDATED BY DVRPC FLIGHT 2010.

   d. AERIAL IMAGERY USED FOR BASE PLAN REFERENCE PROVIDED BY NEARMAP, INC. IMAGERY FROM FLIGHT DATED MARCH 19, 2019.

4. THIS SITE IS LOCATED WITHIN FLOOD PLAIN ZONE 'X' (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS ILLUSTRATED ON COMMUNITY PANEL NUMBER 42091–C–0279G, EFFECTIVE DATE MARCH 2, 2016 AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. NO COMPUTATIONAL FLOODPLAIN STUDY HAS BEEN PERFORMED FOR THIS PLAN.

5. ALL PERSONS DIGGING ON THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 5 OF PA ACT 287 AS AMENDED BY PA ACT 181. STATE LAW REQUIRES A THREE (3) BUSINESS DAY NOTICE PRIOR TO ANY DIGGING (DOES NOT INCLUDE STATE HOLIDAYS OR WEEKENDS). DIAL 8–1–1 OR GO TO WWW.PAONECALL.ORG.

6. EXISTING SUBSURFACE UTILITY INFORMATION ILLUSTRATED ON THESE PLANS IS BASED UPON VISUAL FIELD LOCATIONS OBTAINED AS PART OF SITE SURVEY. THE INFORMATION PROVIDED IS REPRESENTATIVE OF SUBSURFACE CONDITIONS ONLY AT LOCATIONS AND DEPTHS WHERE SUCH INFORMATION WAS AVAILABLE. UTILITY INFORMATION SHOWN SHOULD NOT BE RELIED UPON FOR CONSTRUCTION, IT IS INCUMBENT UPON THE CONTRACTOR TO VERIFY SUBSURFACE UTILITIES PRIOR TO EXCAVATION.

7. SUBJECT PROPERTY IS ZONED 'A–1' AS NOTED ON THE OFFICIAL ZONING MAP FOR THIS MUNICIPALITY.

8. CEDAR HILL ROAD IS NOTED IN LOWER GWYNEDD SUBDIVISION ORDINANCE AS HAVING A 50–FT ULTIMATE RIGHT–OF–WAY WIDTH.

9. THE PROJECT PROPOSES 4 LOTS FOR SINGLE–FAMILY DETACHED RESIDENTIAL DWELLINGS.

10. THE CONTRACTOR SHALL ENSURE THAT ALL NECESSARY PERMITS AND APPROVALS HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF ANY SITE CONSTRUCTION ACTIVITIES.

11. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE AND FUNCTIONAL PRIOR TO ANY EARTH DISTURBANCE OR GRADING WORK.

12. THE AREA BETWEEN THE PROJECT TITLE LINE AND THE ULTIMATE RIGHTS–OF–WAY IS/ARE OFFERED IN PERPETUITY FOR DEDICATION TO THE AGENCY HAVING JURISDICTION OVER SAID RIGHT–OF–WAY AT TIME OF DEDICATION.

13. THIS PROJECT SHALL BE SERVED BY PUBLIC SANITARY SEWER BY LOWER GWYNEDD TOWNSHIP AND WATER SERVICES BY NORTH WALES WATER AUTHORITY.

14. NOTHING SHALL BE PERMITTED TO BE SET ON, OR PLANTED WITHIN, THE AREA OF ANY UTILITY OR STORM WATER EASEMENT EXCEPT LAWNS OR SUITABLE LOW GROUND COVER.

15. CONSTRUCTION MATERIALS AND PROCEDURES SHALL FOLLOW PENNSYLVANIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND STANDARD DRAWINGS (LATEST EDITION).

16. ANY/ALL STORM WATER CONVEYANCE SYSTEM(S) AND SCM'S SHOWN ON THESE PLANS ARE A BASIC AND PERPETUAL PART OF THE STORM WATER MANAGEMENT SYSTEM FOR THIS TOWNSHIP, AND AS SUCH, ARE TO BE PROTECTED, MAINTAINED AND PRESERVED IN ACCORDANCE WITH THE APPROVED FINAL PLANS. THE TOWNSHIP AND/OR ITS AGENTS MAY RESERVE THE RIGHT AND PRIVILEGE TO ENTER UPON SUCH LANDS FROM TIME TO TIME FOR THE PURPOSE OF INSPECTION OF SAID STORM WATER MANAGEMENT SYSTEM IN ORDER TO DETERMINE THAT THE STRUCTURAL DESIGN AND INTEGRITY ARE BEING MAINTAINED.

17. COMMON OPEN SPACE SHALL NOT BE SEPARATELY SOLD AND SHALL NOT BE FURTHER DEVELOPED OR SUBDIVIDED.

18. THE COMMON OPEN SPACE ILLUSTRATED ON THIS PLAN SHALL BE OWNED AND MAINTAINED BY EACH INDIVIDUAL HOMEOWNER.

19. ANY DAMAGE INCURRED WITHIN THE PUBLIC RIGHT–OF–WAY AS A RESULT OF CONSTRUCTION IS TO BE REPAIRED AT THE OWNER'S SOLE EXPENSE.

20. PLOT PLANS FOR EACH NEW LOT SHALL BE SUBMITTED TO THE TOWNSHIP FOR REVIEW PRIOR TO CONSTRUCTION TO ENSURE THE CONSTRUCTED BMPS ARE SIZED TO ACCOMMODATE THE ACTUAL PROPOSED DWELLING SIZE.

21. STORM WATER MANAGEMENT IS DESIGNED FOR 25% MAXIMUM IMPERVIOUS COVER FOR EACH LOT. REFER TO STORMWATER DESIGN CHART ON SHEET 10.

22. HOMEOWNERS WILL BE RESPONSIBLE FOR ANY NECCESSARY REPAIRS AND/OR MAINTENANCE OF THE PROPOSED 6 FT. WIDE TRAIL ALONG THEIR PROPERTY FRONTAGE.

23. THE BUILDING FOOTPRINTS DEPICTED HEREON HAVE BEEN SHOWN FOR PLANNING AND GRADING PURPOSES ONLY. EXACT CONFIGURATION OF STRUCTURES (i.e. LENGTH, WIDTH, EXTENT) SHALL BE DEPENDENT ON FINAL ARCHITECTURAL DRAWINGS.

ZONING DATA

"A–1" – RESIDENTIAL DISTRICT

ITEM:	SECTION:	REQUIREMENT:	LOT 1 PROPOSED:	LOT 2 PROPOSED:	LOT 3 PROPOSED:	LOT 4 PROPOSED:
PERMITTED USE	1258.02.(b)(1)	SINGLE–FAMILY DETACHED DWELLING IN ACCORDANCE WITH THE REGULATIONS APPLICABLE TO AN "A" RESIDENTIAL DISTRICT				
MIN. LOT AREA:	1257.03(a)(3)	40,000 S.F. [1]	79,040 S.F.	79,282 S.F.	79,362 S.F.	79,605 S.F.
MIN. LOT WIDTH:	1257.03(b)	200 FT. [2]	204.1 FT.	204.3 FT.	204.3 FT.	204.5 FT.
MIN. FRONT YARD:	1257.04(a)	75 FT.	75 FT.	75 FT.	75 FT.	75 FT.
MIN. SIDE YARD:	1257.04(b)(1)	50 FT. EACH	50 FT.	50 FT.	50 FT.	50 FT.
MIN. REAR YARD:	1257.04(c)	75 FT.	75 FT.	75 FT.	75 FT.	75 FT.
MAX. BUILDING COVERAGE:	1257.05.(a)(3)	20 % [1]	20 %	20 %	20 %	20 %
MAX. IMPERVIOUS COVERAGE:	1257.05(b)(1)	25 %	25 %	25 %	25 %	25 %
MAX. BUILDING HEIGHT:	1257.06(a)	45 FT. & 2.5 STORIES	<45 FT. & 2.5 STORIES	<45 FT. & 2.5 STORIES	<45 FT. & 2.5 STORIES	<45 FT. & 2.5 STORIES
MIN. OFF–STREET PARKING:	1257.07(a)	2 SPACES	>2 SPACES	>2 SPACES	>2 SPACES	>2 SPACES

[1] PUBLIC WATER AND SEWER IS AVAILABLE
[2] LOT WIDTH AT THE BUILDING LINE

PLAN SHEET INDEX

SHEET NO.	PLAN TITLE
1 OF 18	COVER SHEET
2 OF 18	*SUBDIVISION PLAN
3 OF 18	EXISTING FEATURES PLAN
4 OF 18	DEMOLITION PLAN
5 OF 18	AERIAL PHOTO
6 OF 18	CONSTRUCTION IMPROVEMENT PLAN
7 OF 18	E&S PLAN
8 OF 18	E&S DETAIL SHEET
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11 OF 18	*PCSM DETAIL SHEET
12 OF 18	*PCSM LANDSCAPE PLAN
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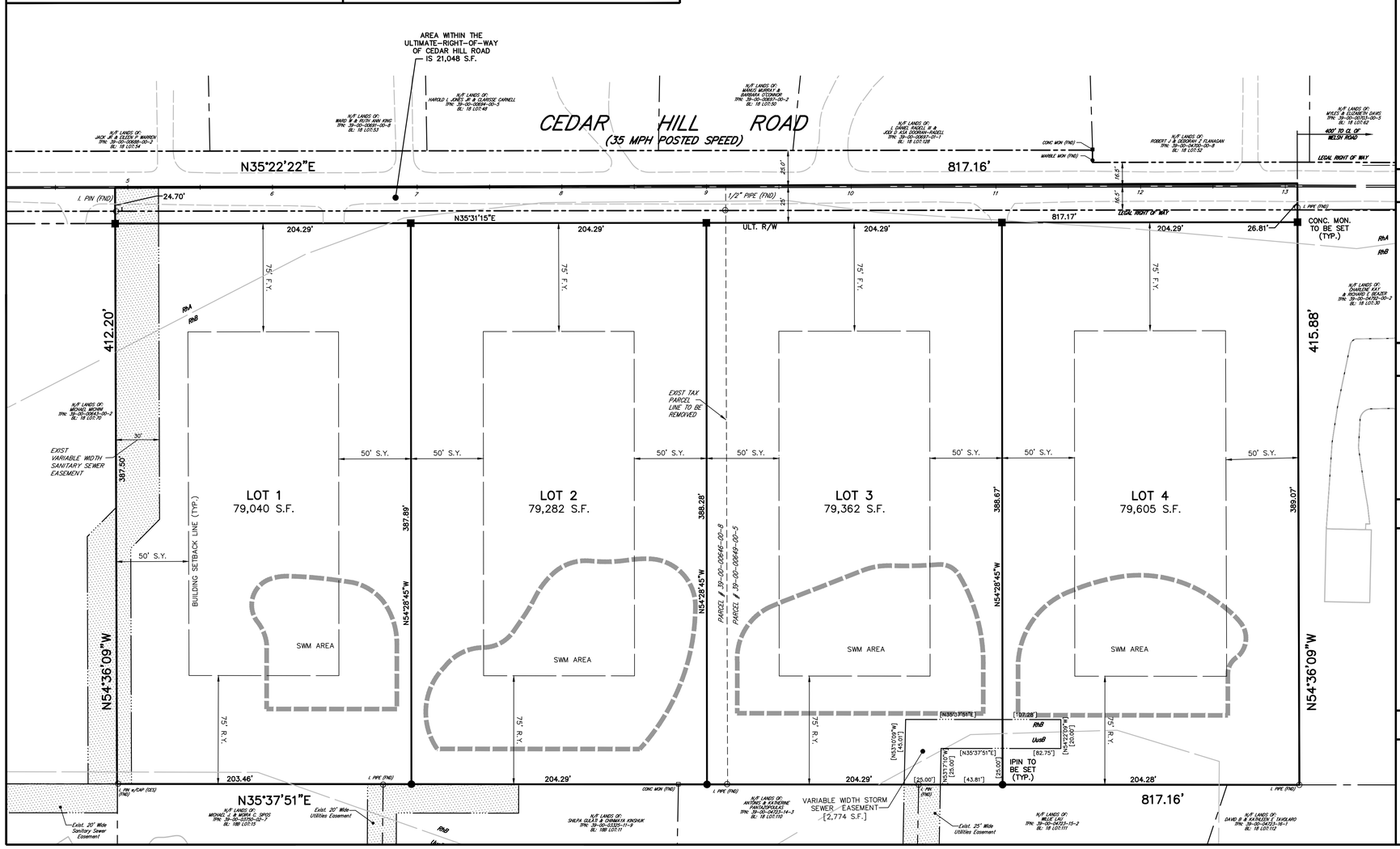
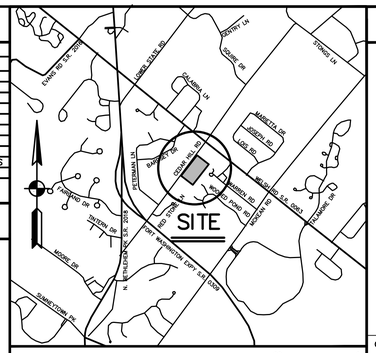
14 OF 18	PLAN, PROFILE, AND DETAIL SHEET OF CEDAR HILL ROAD
15 OF 18	CEDAR HILL ROAD GRADING & DRIVEWAY PROFILES
16 OF 18	SANITARY SEWER PROFILE AND DETAIL SHEET
17 OF 18	PRE–DEVELOPMENT DRAINAGE SHED PLAN
18 OF 18	POST–DEVELOPMENT DRAINAGE SHED PLAN





SITE LOCATION MAP 1"=2000'

SITE STATISTICS

1. SUBJECT TRACT MAY BE IDENTIFIED BY MONTGOMERY COUNTY TAX ASSESSMENT INFORMATION AS FOLLOWS:

   A. LOWER GWYNEDD TOWNSHIP
      TAXMAPID: 39018 028
      PARID: 39–00–00646–00–8
      1512 CEDAR HILL ROAD

   B. LOWER GWYNEDD TOWNSHIP
      TAXMAPID: 39018 029
      PARID: 39–00–00649–00–5
      1524 CEDAR HILL ROAD

2. RECORDED DEED DATA IS AS FOLLOWS:

   AS RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC., IN AND FOR THE COUNTY OF MONTGOMERY AT DOYLESTOWN, PENNSYLVANIA IN:

   A. DEED BOOK 6409, PAGE 02531

   B. DEED BOOK 6409, PAGE 02542

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      PHILADELPHIA, PA 19130

   B. TISMAN GROUP, LLC
      831 N STILLMAN ST
      PHILADELPHIA, PA 19130

4. AREA STATISTICS:

   A. TOTAL TRACT AREA = 4.00 AC. (GROSS)

   B. TOTAL TRACT AREA = 3.76 AC. (TO TITLE LINES)

   C. TOTAL COMBINED TRACT AREA = 7.76 AC. (GROSS)
      TOTAL COMBINED TRACT AREA = 7.30 AC. (NET)

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THE PLAN SHOWN AND DESCRIBED HERON, AS WELL AS ALL DRAWINGS BEARINGS MY SEAL, ARE TRUE AND CORRECT TO THE ACCURACY REQUIRED BY THE LOWER GWYNEDD TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE AND WERE PREPARED BY ME OR UNDER MY DIRECTION AND FOR WHICH I ACCEPT FULL RESPONSIBILITY. THE PERIMETER MONUMENTS SHALL BE ACCURATELY PLACED AS REQUIRED BY THE TOWNSHIP.

SIGNATURE: DATE: LIC. NO:

ENGINEER CERTIFICATION

I, SUSAN A. RICE, P.E. , DO HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF PENNSYLVANIA; THAT THIS PLAN WAS PREPARED BY MYSELF OR UNDER MY SUPERVISION AND THAT SAID PLAN COMPLIES WITH ALL ORDINANCES AND REGULATIONS OF THE TOWNSHIP.

SUAN A. RICE, P.E. DATE: PE074508

WAIVERS REQUESTED

1. SECTION 1230.07.(c): – REQUIRES THAT THE PRESENTATION OF A SKETCH PLAN, A PRELIMINARY PLAN AND FINAL PLAN SHALL EACH BE CONSIDERED A SEPARATE SUBMISSION. THE APPLICANT PROPOSES A CONCURRENT PRELIMINARY AND FINAL SUBMISSION.

2. SECTION 1230.45.(a): – REQUIRES THAT SIDEWALK BE PROVIDED ALONG BOTH SIDES OF EXISTING AND NEW STREETS. A PAVED TRAIL ACROSS THE FRONTAGE OF THE SUBJECT PROPERTY IS PROPOSED.

3. SECTION 1230.60.(b): – REQUIRES THAT DRIVEWAY APRONS BE CONSTRUCTED AT ALL PRIVATE DRIVEWAYS AND WITHIN RESIDENTIAL AREAS. DRIVEWAY APRONS ARE NOT PROPOSED.

4. SECTION 1230.61.(a): – REQUIRES THAT CURBS SHALL BE PROVIDED ALONG BOTH SIDES OF ALL EXISTING AND PROPOSED STREETS. NO CURB IS PROPOSED.

5. SECTION 1241.401(n): – REQUIRES A MINIMUM PIPE DIAMETER OF 18", WHEREAS 8", 10", 12" & 15" IS PROPOSED FROM SCM OUTLET PIPES.

ACT 50 UTILITY NOTE

811

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE–GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDER–GROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 121 AS PER THE AMENDMENT OF PA ACT 287 OF 1974, EFFECTIVE OCTOBER 30, 2017 CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. REFERENCE UTILITY CASE NUMBER: 20252383716.

RECORDING ACKNOWLEDGEMENTS

COMMONWEALTH OF PENNSYLVANIA)
COUNTY OF MONTGOMERY) SS:

ON THIS, THE _____ DAY OF _____, 20___, BEFORE ME, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED _____, BEING DULY SWORN ACCORDING TO LAW, DEPOSES AND SAYS THAT HE IS A MEMBER OF TISMAN GROUP, LLC, A PENNSYLVANIA LIMITED LIABILITY CORPORATION, AND THAT HE BEING DULY AUTHORIZED TO DO SO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED BY SIGNING AS PRESIDENT.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND OFFICIAL SEAL.

_____
NOTARY PUBLIC

I, _____ ACKNOWLEDGE MYSELF TO BE A MEMBER OF TISMAN GROUP, LLC, A PENNSYLVANIA LIMITED LIABILITY CORPORATION, AND THAT AS SUCH BEING AUTHORIZED TO DO SO, CERTIFY THAT THE CORPORATION IS THE SOLE REGISTERED OWNER OF THE LAND HEREIN SUBDIVIDED AND THAT THERE ARE NO SUITS PENDING AFFECTING THE TITLE OF THE SAME AND THAT I DO HEREBY ADOPT THIS PLAN AND DESIRE THE SAME TO BE RECORDED. I DO FURTHER SAVE THE TOWNSHIP HARMLESS AND IDEMNIFY THE TOWNSHIP OF LOWER GWYNEDD AGAINST ANY LIABILITY OR LOSS RESULTING FROM THE SUBDIVISION OR DEVELOPMENT OF THIS PLAT FOR WHATEVER REASON PRESENT OR FUTURE.

TISMAN GROUP, LLC

BY: _____
MEMBER

CERTIFICATION OF TOWNSHIP APPROVAL:

AT THE MEETING HELD ON _____ THE BOARD OF SUPERVISORS OF LOWER GWYNEDD TOWNSHIP BY RESOLUTION DULY ENACTED AND APPROVED THE SUBDIVISION/LAND DEVELOPMENT PLAN OF THE PROPERTY OF _____ AS SHOWN HEREON.

_____ TOWNSHIP SEAL
CHAIRMAN OF THE BOARD OF SUPERVISORS

_____
TOWNSHIP SECRETARY

REVIEWED BY THE LOWER GWYNEDD TOWNSHIP PLANNING COMMISSION AND RECOMMENDED FOR APPROVAL ON THE _____ DAY OF _____

_____
PLANNING COMMISSION CHAIRMAN

REVIEWED BY THE TOWNSHIP ENGINEER ON THE _____ DAY OF _____

_____
TOWNSHIP ENGINEER

MCPC No. 20–0225–003

PROCESSED and REVIEWED. A report has been prepared by the Montgomery County Planning Commission in accordance with the Municipalities Planning Code.

Certified this date _____

_____
For the Director
MONTGOMERY COUNTY PLANNING COMMISSION

40 0 20 40 80 120
GRAPHIC SCALE

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

SUBDIVISION PLAN
AS PART OF
1512 & 1524 CEDAR HILL ROAD
PREPARED FOR
TISMAN GROUP, LLC
SITE SITUATE IN
LOWER GWYNEDD TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

S T A Engineering, Inc.
Civil Engineers • Land Surveyors
2499 KNIGHT ROAD, PENNSBURG, PA 18073
PH: (215) 679–0200; www.stotac.com

PLAN SCALE	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
HORIZONTAL: 1" = 40'	M.J.P.	S.A.R.	2 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571SUB	

1512 & 1524 CEDAR HILL ROAD (STA #6571)

NOTES

1. THE METES AND BOUNDS ILLUSTRATED ON THIS PLAN WAS PREPARED FROM DOCUMENTS OF RECORD AND WITH BENEFIT OF TITLE REPORTS BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, COMMITMENT NUMBERS 245702LAFS, 245731LAFS & 245713LAFS WITH EFFECTIVE DATES OF OCTOBER 22 & 23 OF 2018. ALL DATA SHOWN VERIFIED FROM ACTUAL FIELD SURVEY IN MAY, 2019. ALL BEARINGS SHOWN REFLECT A -08 DEG. 08 MIN. 38 SEC. CLOCKWISE ROTATION FROM DEED BEARING BASIS TO PENNSYLVANIA SOUTH ZONE 3702 STATE PLANE COORDINATE BEARING BASIS.

2. ALL TOPOGRAPHIC AND EXISTING FEATURES ILLUSTRATED ON THIS PLAN WERE PREPARED BY SITE FIELD SURVEY DURING THE MONTH OF MAY, 2019. SITE BENCHMARK IS A SANITARY MANHOLE #7230 LOCATED WITHIN CEDAR HILL ROAD HAVING A RIM ELEVATION OF 379.37. SITE DATUM IS REFERENCED PER NOTE 3c BELOW.

3. THIS PLAN AND SURVEY WERE PREPARED UTILIZING THE FOLLOWING REFERENCES:

   a. TAX MAPS AND DEEDS OF RECORD AS OBTAINED FROM THE RECORDER OF DEEDS ONLINE RESOURCES.

   b. EXISTING SOILS CLASSIFICATIONS AND MAPPING HAS BEEN PLOTTED FROM MAPS OBTAINED FROM THE USDA WEB SOIL SURVEY WEBSITE (HTTP://WEBSOILSURVEY.SC.EGOV.USDA.GOV/) UNLESS OTHERWISE NOTED.

   c. VERTICAL DATUM REFERENCES PROVIDED BY THE PA SPECIAL DATA ACCESS SYSTEM (PASDA). PAMAP DATA IS BASED ON PA STATE PLANE (SOUTH) NAD83 HORIZONTAL, NAVD88 VERTICAL DATUM. FLIGHT DATE WAS SPRING 2008, UPDATED BY DVRPC FLIGHT 2010.

   d. AERIAL IMAGERY USED FOR BASE PLAN REFERENCE PROVIDED BY NEARMAP, INC. IMAGERY FROM FLIGHT DATED MARCH 19, 2019.

4. THIS SITE IS LOCATED WITHIN FLOOD PLAIN ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS ILLUSTRATED ON COMMUNITY PANEL NUMBER 42091-C-0279G, EFFECTIVE DATE MARCH 2, 2016 AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. NO COMPUTATIONAL FLOODPLAIN STUDY HAS BEEN PERFORMED FOR THIS PLAN.

5. ALL PERSONS DIGGING ON THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 5 OF PA ACT 287 AS AMENDED BY PA ACT 181. STATE LAW REQUIRES A THREE (3) BUSINESS DAY NOTICE PRIOR TO ANY DIGGING (DOES NOT INCLUDE STATE HOLIDAYS OR WEEKENDS). DIAL 8-1-1 OR GO TO WWW.PAONECALL.ORG.

6. EXISTING SUBSURFACE UTILITY INFORMATION ILLUSTRATED ON THESE PLANS IS BASED UPON VISUAL FIELD LOCATIONS OBTAINED AS PART OF SITE SURVEY. THE INFORMATION PROVIDED IS REPRESENTATIVE OF SUBSURFACE CONDITIONS ONLY AT LOCATIONS AND DEPTHS WHERE SUCH INFORMATION WAS AVAILABLE. UTILITY INFORMATION SHOWN SHOULD NOT BE RELIED UPON FOR CONSTRUCTION. IT IS INCUMBENT UPON THE CONTRACTOR TO VERIFY SUBSURFACE UTILITIES PRIOR TO EXCAVATION.

7. SUBJECT PROPERTY IS ZONED "A-1" AS NOTED ON THE OFFICIAL ZONING MAP FOR THIS MUNICIPALITY.

8. CEDAR HILL ROAD IS NOTED IN LOWER GWYNEDD SUBDIVISION ORDINANCE AS HAVING A 50-FT ULTIMATE RIGHT-OF-WAY WIDTH.

SOILS DATA

SOILS TYPE:	SLOPES:	DEPTH TO RESTRICTIVE FEATURE:	DEPTH TO WATER TABLE:	HYDROLOGIC SOIL GROUP:
RhA REAVILLE SILT LOAM	0 TO 3 PERCENT	20-40" TO LITHIC BEDROCK	6 TO 36"	D
RhB REAVILLE SILT LOAM	3 TO 8 PERCENT	20-40" TO LITHIC BEDROCK	6 TO 36"	D
UusB URBAN LAND-UDORTHENTS SHALE & SANDSTONE	0 TO 8 PERCENT	20-99" TO LITHIC BEDROCK	MORE THAN 80"	D

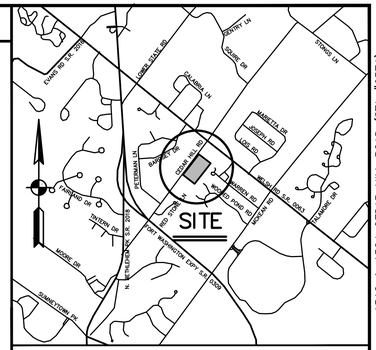
ACT 50 UTILITY NOTE

811

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDER-GROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 121 AS PER THE AMENDMENT OF PA ACT 287 OF 1974, EFFECTIVE OCTOBER 30, 2017 CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. REFERENCE UTILITY CASE NUMBER: 20252383716.

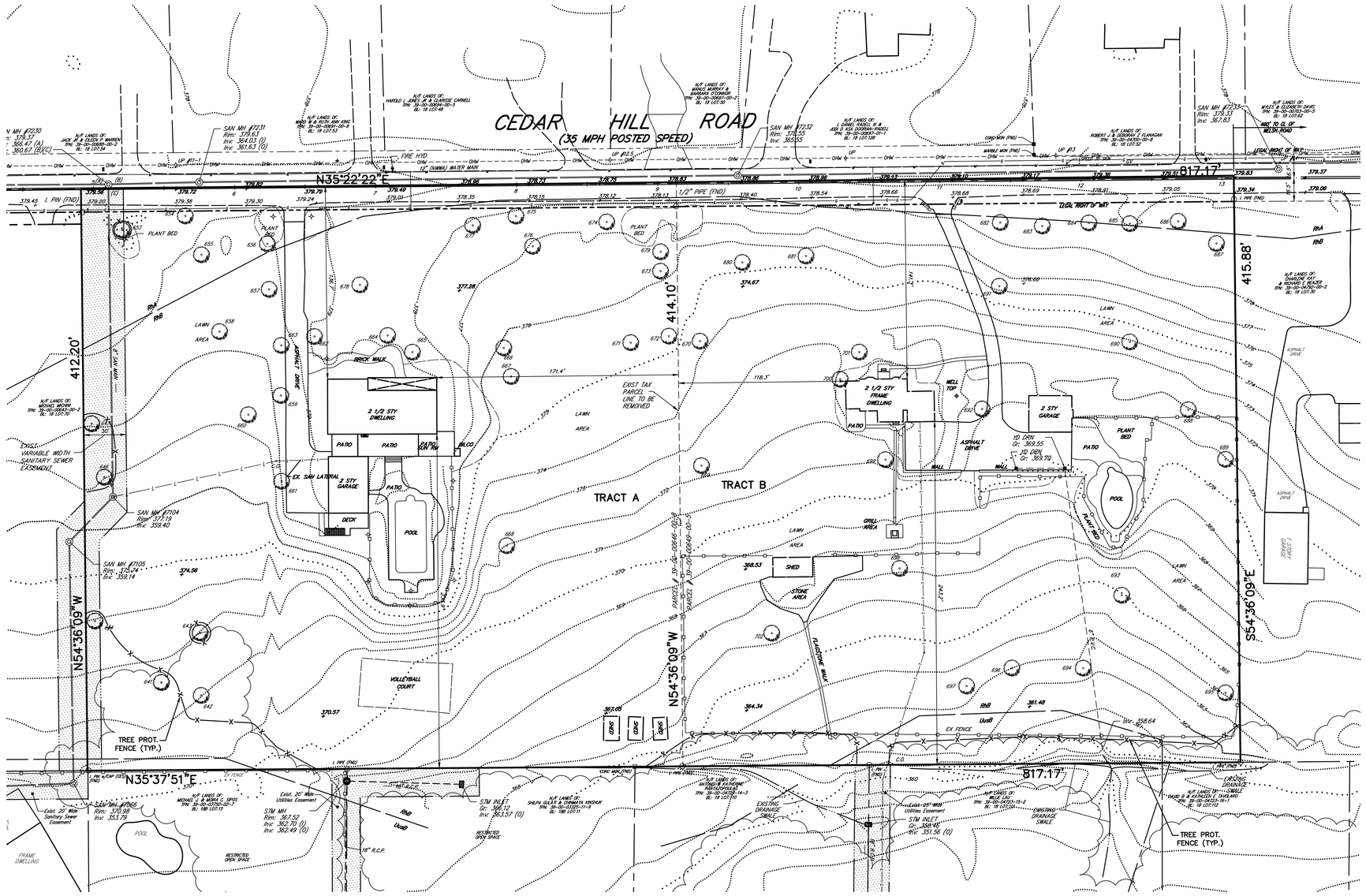
LEGEND

ADJOINING OWNERS
EXISTING CONTOUR (MAJOR) 301
EXISTING CONTOUR (MINOR) 300
EXISTING SANITARY SEWER
EXISTING STORM SEWER
EXISTING EDGE OF ROAD
EXISTING RIGHT-OF-WAY
EXISTING CENTERLINE
EXISTING DRIVES
EXISTING EASEMENT
EXISTING WOODS
EXISTING TREE
SOIL LINE RhB / RhC
EXISTING CONCRETE
EXISTING EASEMENT
OVERHEAD WIRES OHW
EXISTING LAMP POST L.P.
EXISTING CLEANOUT C.O.
EXISTING UTILITY POLE U.P.
EXISTING SIGN
IRON PIN FOUND
CONC. MONUMENT FOUND



SITE LOCATION MAP 1"=2000'

1512 & 1524 CEDAR HILL ROAD (STA #6571)



SITE STATISTICS

1. SUBJECT TRACT MAY BE IDENTIFIED BY MONTGOMERY COUNTY TAX ASSESSMENT INFORMATION AS FOLLOWS:

   A. LOWER GWYNEDD TOWNSHIP
   TAXMAPID: 39018 028
   PARID: 39-00-00646-00-8
   1512 CEDAR HILL ROAD

   B. LOWER GWYNEDD TOWNSHIP
   TAXMAPID: 39018 029
   PARID: 39-00-00649-00-5
   1524 CEDAR HILL ROAD

2. RECORDED DEED DATA IS AS FOLLOWS:

   AS RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC., IN AND FOR THE COUNTY OF MONTGOMERY AT DOYLESTOWN, PENNSYLVANIA IN:

   A. DEED BOOK 6409, PAGE 02531

   B. DEED BOOK 6409, PAGE 02542

3. NAME AND ADDRESS OF THE OWNER OF THE SUBJECT TRACT:

   A. TISMAN GROUP, LLC
   831 N STILLMAN ST
   PHILADELPHIA, PA 19130

   B. TISMAN GROUP, LLC
   831 N STILLMAN ST
   PHILADELPHIA, PA 19130

4. AREA STATISTICS:

   A. TOTAL TRACT AREA = 4.00 AC. (GROSS)

   B. TOTAL TRACT AREA = 3.76 AC. (TO TITLE LINES)

   C. TOTAL COMBINED TRACT AREA = 7.76 AC. (GROSS)
   TOTAL COMBINED TRACT AREA = 7.30 AC. (NET)

ZONING DATA

DATA OBTAINED FROM LOWER GWYNEDD TOWNSHIP ZONING ORDINANCE, AS LAST REVISED 2017, REFERENCE CHAPTER 1258.

DISTRICT CLASSIFICATION:
"A-1" – RESIDENTIAL DISTRICT

CRITERIA:	REQUIRED:	TRACT A:	TRACT B:
MINIMUM LOT AREA:	35,000 S.F.	174,348 S.F.	163,990 S.F.
MINIMUM LOT WIDTH @ BUILDING LINE:	175 FT.	422.0 FT.	395.2 FT.
FRONT YARD SETBACK:	65 FT.	136.7 FT.	141.3 FT.
SIDE YARD RESTRICTION:	45 FT.	171.4 FT.	118.3 FT.
REAR YARD RESTRICTION:	65 FT.	236.9 FT.	243.2 FT.
MAXIMUM BUILDING COVERAGE:	20 %	2.8 %	1.4 %
MAXIMUM IMPERVIOUS SURFACE COVERAGE:	25 %	10.5 %	10.3 %
MAXIMUM BUILDING HEIGHT:	35 FT.	<35 FT.	<35 FT.

GRAPHIC SCALE
40 0 20 40 80 120

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

EXISTING FEATURES PLAN
AS PART OF
1512 & 1524 CEDAR HILL ROAD
PREPARED FOR
TISMAN GROUP, LLC
SITE SITUATE IN
LOWER GWYNEDD TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

S T A Engineering, Inc.
Civil Engineers • Land Surveyors
2499 KNIGHT ROAD, PENNSBURG, PA 18073
PH: (215) 679-0200; www.stotac.com

PLAN SCALE HORIZONTAL:	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
1" = 40'	M.J.P.	S.A.R.	3 OF 18
	PROJECT NUMBER: 6571	DRAWING FILE NUMBER: 6571EF	

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UusB URBAN LAND-UDORTHENTS SHALE & SANDSTONE	0 TO 8 PERCENT	20-99" TO LITHIC BEDROCK	MORE THAN 80"	D

SEPTIC ABANDONMENT NOTE

WELLS AND EXISTING SANITARY SEWER SERVICES TO BE ABANDONED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL RULES AND REGULATIONS.

LEGEND

ADJOINING OWNERS
EXISTING CONTOUR (MAJOR) 301
EXISTING CONTOUR (MINOR) 300
EXISTING SANITARY SEWER
EXISTING STORM SEWER
EXISTING EDGE OF ROAD
EXISTING RIGHT-OF-WAY
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EXISTING DRIVES
EXISTING EASEMENT
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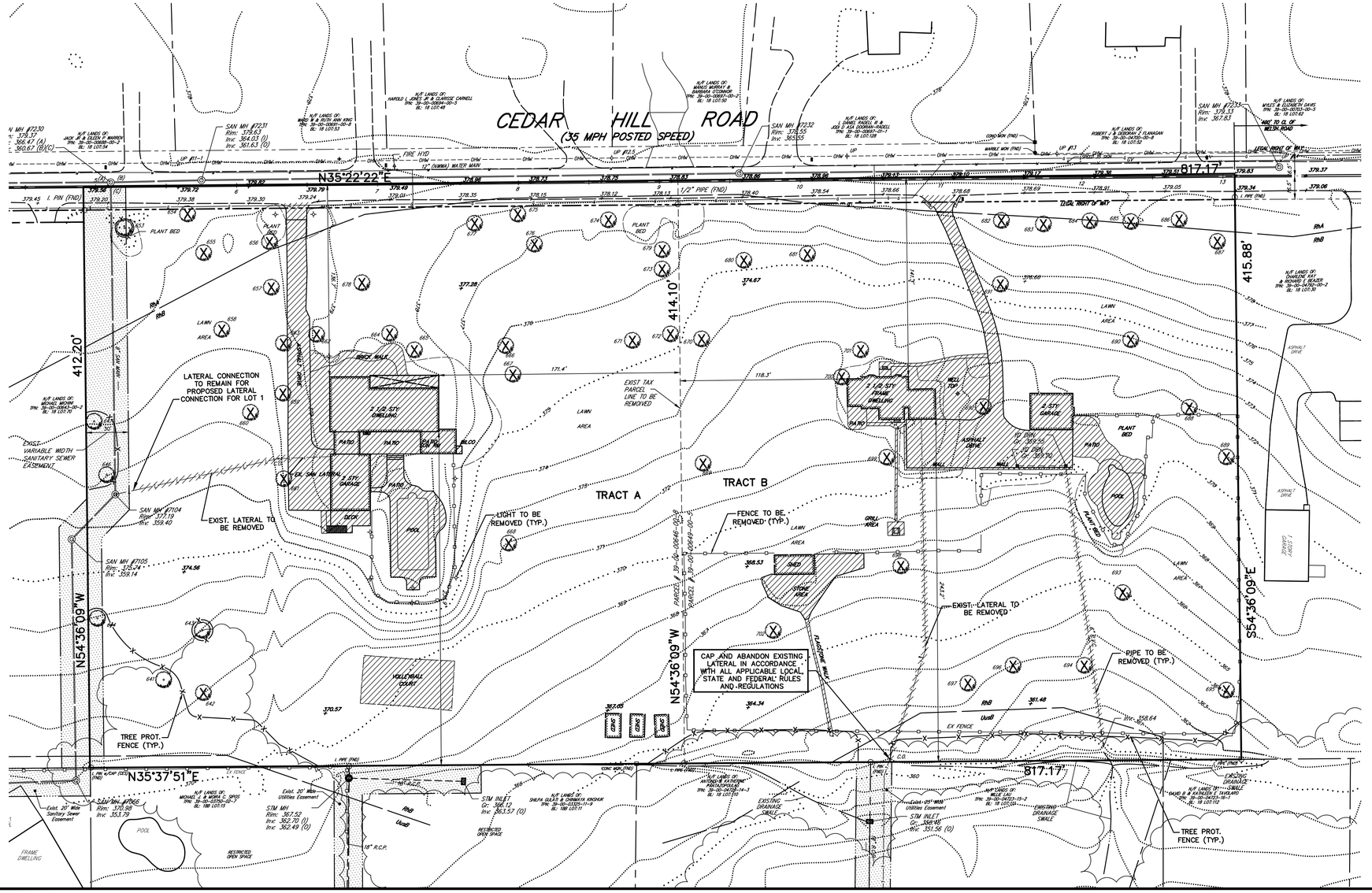
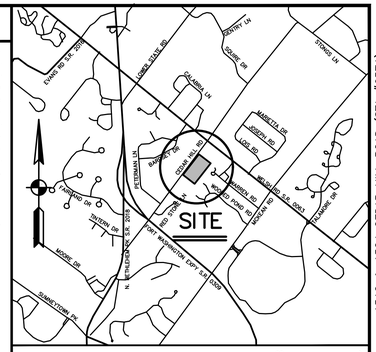
EXISTING CLEANOUT C.O.
EXISTING UTILITY POLE U.P.
EXISTING SIGN
IRON PIN FOUND
CONC. MONUMENT FOUND
DENOTES STRUCTURES TO BE REMOVED
DENOTES TREES TO BE REMOVED X





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   PARID: 39-00-00646-00-8
   1512 CEDAR HILL ROAD

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   PARID: 39-00-00649-00-5
   1524 CEDAR HILL ROAD

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   PHILADELPHIA, PA 19130

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GRAPHIC SCALE
40 0 20 40 80 120

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	INT.	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

DEMOLITION PLAN

AS PART OF

1512 & 1524 CEDAR HILL ROAD

PREPARED FOR

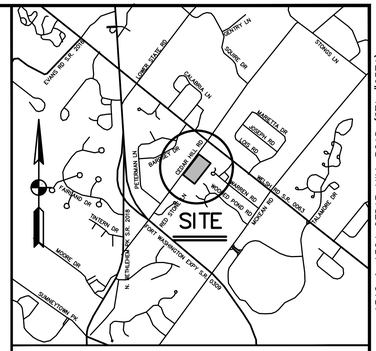
TISMAN GROUP, LLC

SITE SITUATE IN

LOWER GWYNEDD TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

S T A Engineering, Inc.
Civil Engineers • Land Surveyors
2499 KNIGHT ROAD, PENNSBURG, PA 18073
PH: (215) 679-0200; www.stotac.com

PLAN SCALE HORIZONTAL:	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
1" = 40'	M.J.P.	S.A.R.	4 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571DEMO	



SITE LOCATION MAP 1"=2000'

1512 & 1524 CEDAR HILL ROAD (STA #6571)

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   1512 CEDAR HILL ROAD

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   PARID: 39-00-00640-00-5
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   PHILADELPHIA, PA 19130

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AERIAL PHOTO TAKEN FROM GOOGLE EARTH, IMAGERY DATED AUGUST 8, 2025.

60 0 30 60 120 180
GRAPHIC SCALE

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
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1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

AERIAL PHOTO
AS PART OF
1512 & 1524 CEDAR HILL ROAD
PREPARED FOR
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SITE SITUATE IN
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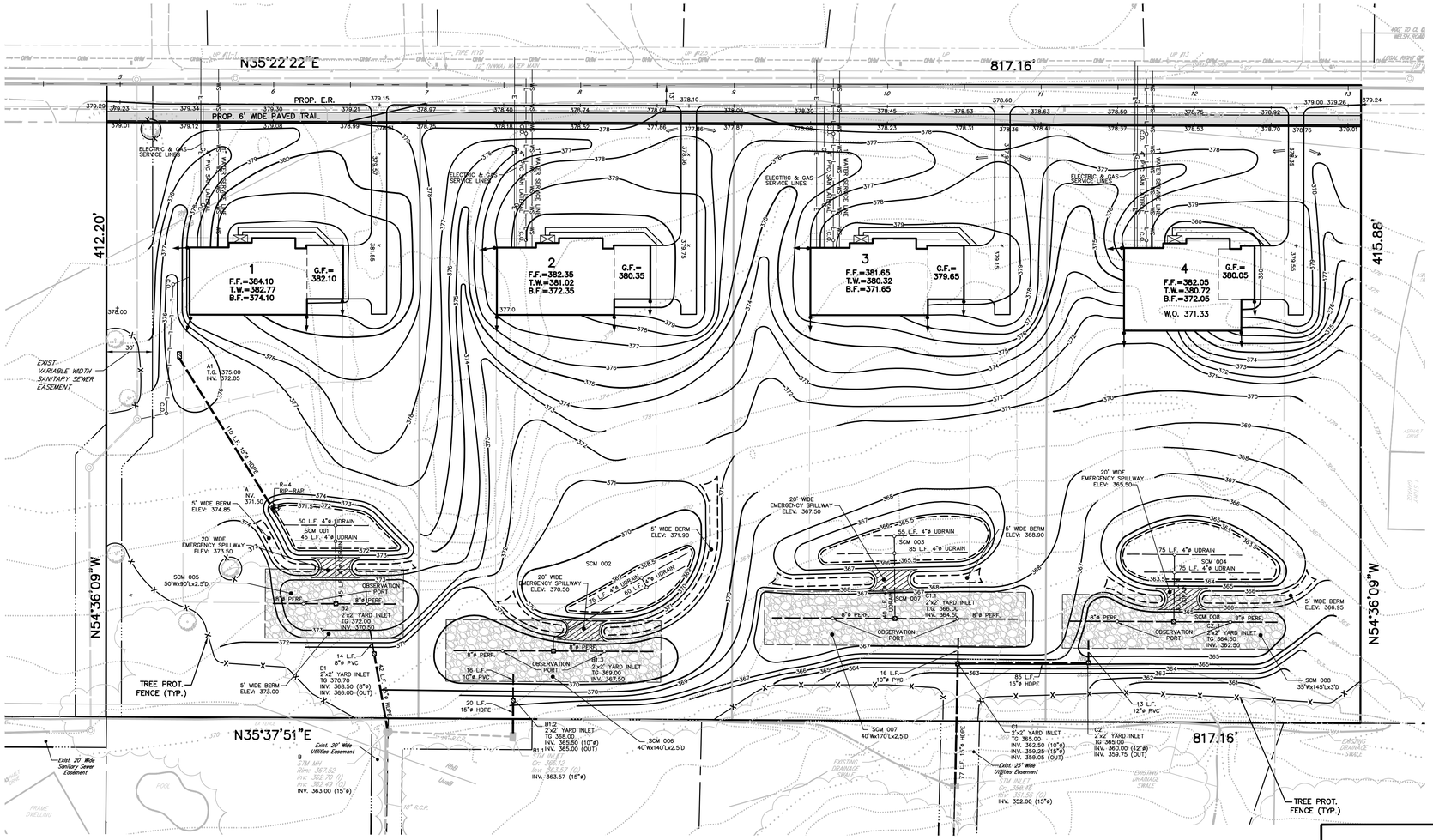
PLAN SCALE HORIZONTAL:	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
1" = 60'	M.J.P.	S.A.R.	5 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571AERIAL	



ROOF DRAIN DISCHARGE LOCATIONS ARE APPROXIMATE AND WILL BE FINALIZED WITH THE BUILDING PERMIT APPLICATION. ROOF DRAINS FOR EACH LOT ARE TO BE DISCHARGED TO VEGETATED SURFACES AND GRADING IS TO BE IN A MANNER TO DIRECT RUNOFF TO THE SCM FOR EACH LOT.

LEGEND

- ADJOINING OWNERS
- SETBACK LINES
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- EXISTING EDGE OF ROAD
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING DRIVES
- EXISTING EXISTING SOILS
- EXISTING TREE ROW
- EXISTING EASEMENT
- EXISTING FENCE
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- EXISTING WATER SERVICE
- EXISTING OVERHEAD WIRES
- PROPOSED CONTOUR (MINOR)
- PROPOSED CONTOUR (MAJOR)
- PROPOSED STORM SEWER
- PROPOSED ROOF DRAIN DISCHARGE
- PROPOSED EDGE OF ROAD
- PROPOSED DRIVEWAY
- PROPOSED WATER SERVICE
- PROPOSED GAS SERVICE
- PROPROSED ELECTRIC LINE
- PROPOSED LATERAL
- TREE PROTECTION FENCE

CONSTRUCTION NOTES

1. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL COMPLY WITH THE REQUIREMENTS PF P.L. 852, NO. 287, DECEMBER 10, 1974, AS AMENDED ON DECEMBER 12, 1986 P.L. 1574, NO. 172. CONTRACTORS MUST NOTIFY PA ONE CALL SYSTEM, INC. THREE (3) DAYS PRIOR TO THE START OF ANY CONSTRUCTION. 1-(800)-242-1776.
2. CONTRACTORS SHALL NOT ENCROACH ONTO ADJOINING PROPERTIES UNLESS A TEMPORARY GRADING EASEMENT HAS BEEN OBTAINED FROM THE ADJOINING OWNERS. ALL PROPERTY LINES MUST BE SHALL BE ADEQUATELY MARKED AN ANY AREA THAT PROPOSED GRADING ENCROACHES WITHIN FIVE (5) FEET OF THE PROPERTY LINE THE CONTRACTOR SHALL INSTALL TEMPORARY ORANGE CONSTRUCTION FENCE TO PREVENT ENCROACHMENT ONTO ADJOINING PROPERTIES.
3. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL ENSURE THAT ALL CONSTRUCTION PERFORMED IS IN ACCORDANCE WITH ALL APPLICABLE OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) STANDARDS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL ENSURE THAT ALL NECESSARY PERMITS AND APPROVALS HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF ANY SITE CONSTRICTION ACTIVITIES.
5. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE AND FUNCTIONAL PRIOR TO ANY EARTH DISTURBANCE OR GRADING WORK WITHIN THE TRIBUTARY AREA.
6. BURYING OF TREES, TREE STUMP AND CONSTRUCTION DEBRIS IS PROHIBITED. ALL DEBRIS SHALL BE REMOVED AND DISPOSED OF IN STRICT ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL MUNICIPALITY STANDARDS AND SPECIFICATIONS. TREE STUMPS MAY BE GROUND OR CHIPPED AND SPREAD ON SITE.
7. NOTHING SHALL BE PERMITTED TO BE SET ON, PLACED OR PLANTED WITHIN, THE AREA OF ANY UTILITY OR STORM WATER EASEMENT EXCEPT LAWNS OR SUITABLE LOW GROUND COVER.
8. PROPOSED LAWN IMPROVEMENTS: THE PROPOSED DWELLING FOOTPRINT, DRIVEWAY, UTILITY CONNECTIONS, ETC. ARE SHOWN TO VERIFY CONFORMITY WITH ORDINANCES. FINAL DESIGN MAY VARY AND WILL REQUIRE INDIVIDUAL BUILDING PERMIT PLANS TO BE PREPARED AND SUBMITTED TO THE TOWNSHIP(S) FOR APPROVAL.
9. ALL CONSTRUCTION REQUIREMENTS, METHODS, MATERIALS AND SPECIFICATION SHALL BE IN ACCORDANCE WITH ALL MUNICIPAL AUTHORITY STANDARDS, MUNICIPALITY STANDARDS AND PENN-DOT FORM 408 (LATEST EDITION). WHERE IN THE CASE OF CONFLICT THE MORE STRINGENT REQUIREMENT SHALL APPLY.
10. ALL STORM SEWER PIPING SHALL BE HDPE PIPE UNLESS NOTED OTHERWSE.
11. ALL PRECAST STORM SEWER STRUCTURES SUCH AS INLETS, STORM MANHOLES, ENDWALLS, ETC. SHALL CONFORM TO THE COMMON WEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION # 72 (LATEST ADDITION). SHOP DRAWINGS SHALL BE SUBMITTED TO THE TOWNSHIP ENGINEERS OFFICE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
12. ALL UTILITY INSTALLATION MUST BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PENNSYLVANIA UNIFORM CONSTRUCTION CODE, AS ADOPTED BY THE MUNICIPALITY.
13. ALL SLOPES AND GRADES THREE (3) FOOT HORIZONTAL TO ONE (1) FOOT VERTICAL (3:1) SHALL BE STABILIZED WITH A NORTH AMERICAN GREEN OR APPROVED EQUAL EROSION CONTROL BLANKET INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS STANDARDS AND SPECIFICATIONS. SEE EROSION CONTROL PLANS FOR LOCATION AND DETAILS.
14. THE MINIMUM SLOPE IN GRASSED AREAS SHALL NOT BE LESS THAN 2% AND THE MINIMUM IN PAVED AREAS SHALL NOT BE LESS THAN 1%.
15. SITE GRADING SHAL BE PERFORMED IN ACCORDANCE WITH THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DENSITY PER A.S.T.M. TEST D-1557. MOISTURE CONTENT AT THE TIME OF PLACEMENT SHALLBE NO MORE THAN 2% ABOVE NOR 3% BELOW OPTIMUM. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED SOILS ENGINEER, REGISTERED WITHIN THE STATE WHERE THE WORK IS PERFORMED, VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AREA AND AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS.
16. ANY STORMWATER CONVEYANCE SYSTEM AND DETENTION FACILITY SHOWN ON THESE PLANS ARE A BASIC AND PERPETUAL PART OF THE STORMWATER MANAGEMENT SYSTEM FOR THIS TOWNSHIP, AND AS SUCH, ARE TO BE PROTECTED, MAINTAINED AND PRESERVED IN ACCORDANCE WITH THE APPROVED FINAL PLANS. THE TOWNSHIP AND/OR ITS AGENTS MAY RESERVE THE RIGHT AND PRIVILEGE TO ENTER UPON SUCH LANDS FROM TIME TO TIME FOR THE PURPOSE OF INSPECTION OF SAID STORMWATER MANAGEMENT SYSTEM IN ORDER TO DETERMINE THAT THE STRUCTURAL DESIGN AND INTERGRITY ARE BEING MAINTAINED.
17. A MINIMUM OF SIX (6) INCHES OF CLEAN TOPSOIL SHALL BE PROVIDED ON ALL LAWN AND PLANTING AREAS.
18. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED TO 95% OPTIMUM DENSITY (AS DETERMINED BY MODIFIED PROCTOR METHOD).
19. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED TO 95% OPTIMUM DENSITY (AS DETERMINED BY MODIFIED PROCTOR METHOD).
20. ALL ROOF LEADER COLLECTION SYSTEMS MUST BE DIRECTED TOWARDS THE DRAINAGE AREAS ILLUSTRATED ON THE POST DEVELOPMENT SHED PLANS. THE REAR OF EACH DWELLING UNIT SHALL BE DIRECTED TO THE SCM FOR EACH INDIVIDUAL LOT. ROOF LEADER LOCATIONS AND SIZING TO BE PROVIDED ON THE BUILDING PERMIT PLAN WHEN THE HOUSE FOOTPRINT AND DESIGN IS FINALIZED.
21. STORM WATER MANAGEMENT IS DESIGNED FOR 25% MAXIMUM IMPERVIOUS COVER FOR EACH LOT. REFER TO STORMWATER DESIGN CHART ON SHEET 10.

40 0 20 40 80 120
GRAPHIC SCALE

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

CONSTRUCTION IMPROVEMENT PLAN

AS PART OF

1512 & 1524 CEDAR HILL ROAD

PREPARED FOR

TISMAN GROUP, LLC

SITE SITUATE IN

LOWER GWYNEDD TOWNSHIP

MONTGOMERY COUNTY, PENNSYLVANIA

S T A Engineering, Inc.

Civil Engineers • Land Surveyors

2499 KNIGHT ROAD, PENNSBURG, PA 18073

PH: (215) 679-0200; www.stotac.com

PLAN SCALE	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
HORIZONTAL: 1" = 40'	M.J.P.	S.A.R.	6 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571CI	

1512 & 1524 CEDAR HILL ROAD (STA #6571)

ACT 50 UTILITY NOTE

811

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDER-GROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 121 AS PER THE AMENDMENT OF PA ACT 287 OF 1974, EFFECTIVE OCTOBER 30, 2017 CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. REFERENCE UTILITY CASE NUMBER: 20252383716.

LIMITATIONS OF PENNSYLVANIA SOILS PERTAINING TO EARTHMOVING PROJECTS (Absence of an X does not mean "No Potential Limitation")
NOTE: THIS IS NOT NECESSARILY AN ALL-INCLUSIVE LIST.

SOIL NAME	SOIL SYMBOL	DEPTH TO SEASONAL HIGH WATER TABLE	DEPTH TO BEDROCK	REACTION (pH)	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	FLOOD EXPOSURE	FLOODING	DEPTH TO SATURATED ZONE/SEASONAL HIGH WATER TABLE	HYDRIC/ HYDRIC INCLUSIONS	LOW STRENGTH/ LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK - SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
Reaville	RhA	0.5 – 3.0	1.7 – 3.3	5.1 – 6.5	X	C/S	X	X		X	X		X	X	X	X				X
Reaville	RhB	0.5 – 3.0	1.7 – 3.3	5.1 – 6.5	X	C/S	X	X		X	X		X	X	X	X				X
Urban Land Udorthents	UusB	6.7+	1.7 – 8.3	4.5 – 8.4	X	C/S	X	X				X	X		X	X				

SOILS DATA

SOILS TYPE:	SLOPES:	DEPTH TO RESTRICTIVE FEATURE:	DEPTH TO WATER TABLE:	HYDROLOGIC SOIL GROUP:
RhA REAVILLE SILT LOAM	0 TO 3 PERCENT	20-40" TO LITHIC BEDROCK	6 TO 36"	D
RhB REAVILLE SILT LOAM	3 TO 8 PERCENT	20-40" TO LITHIC BEDROCK	6 TO 36"	D
UusB URBAN LAND-UDORTHENTS SHALE & SANDSTONE	0 TO 8 PERCENT	20-99" TO LITHIC BEDROCK	MORE THAN 80"	D

Limitations for site soils will be resolved as suggested in the following table:

CHARACTERISTICS	RESOLUTIONS
SHALLOW DEPTH TO SEASONAL HIGH-WATER TABLE/WETNESS	PROVIDE PUMPED WATER SEDIMENT REMOVAL FACILITY EFFECTIVE SITE GRADING UNDERDRAINS WITHIN ROADWAYS, AS NEEDED BASEMENT DRAINS AND SUMP PUMPS
SHALLOW DEPTH TO BEDROCK	LIMIT EXCAVATION DEPTHS WHERE POSSIBLE PERFORM BLASTING WHERE RIPPER TEETH ON EXCAVATING EQUIPMENT CANNOT REMOVE MATERIAL BY MECHANICAL MEANS
HIGH ACIDITY (ph LOWER THAN 5.5)	SOIL TESTS INCREASE SOIL NUTRIENTS ADJUSTING SOILph SELECT TOLERANT SPECIES FERTILIZE-MULCH-LIME
CUTBANKS CAVE	FOLLOW OSHA STANDARDS AND REGULATIONS AT ALL TIMES SAFEGUARD WORKERS DURING TRENCHING AND EXCAVATION OPERATIONS
CORROSIVE TO CONCRETE/STEEL	COAT UNDERGROUND PIPES, CONDUITS AND TANKS WITH NON-CORROSIVE MATERIALS
DROUGHTY	SELECT TOLERANT SPECIES WATERING WHERE NECESSARY
EASILY ERODIBLE	DISCHARGE TO EROSION AND SEDIMENT CONTROL BMP STABILIZE SLOPES AND CHANNELS WITH EROSION CONTROL MATTING AND VEGETATION STABILIZE DISTURBED AREAS IMMEDIATELY
HYDRIC INCLUSIONS	DELINEATE WETLANDS PROTECT WETLANDS OBTAIN PERMIT(S)
LOW STRENGTH/LANDSLIDE PRONE SHRINK/SWELL	USE SUITABLE MATERIAL THAT COMPLIES WITH COMPACTION REQUIREMENTS AND MINIMIZE EROSION PROPERLY DRAIN AND COMPACT SOILS FOLLOW OSHA GUIDELINES
SLOW PERCOLATION	SOIL AMENDMENTS MRC STORMWATER MANAGEMENT FACILITIES
PIPING	USE ALTERNATE SOILS FOR BACKFILL USE CONCRETE CRADLE, ANTI-SEEP COLLAR, FILTER DIAPHRAM OR OTHER ACCEPTABLE DEVICE WHEN BACKFILLING AROUND BASIN OUTFALL PIPES
POOR SOURCE OF TOPSOIL	SOIL TESTS TO DETERMINE IF AMENDMENTS ARE NEEDED IMPORT GOOD TOPSOIL
WINTER GRADING FROST ACTION	SELECT FILL MATERIAL FROM OTHER AREAS OF SITE LIMIT EARTH MOVING ACTIVITIES IN WINTER MONTHS DO NOT PERFORM GRADING IN FROZEN SOILS
POTENTIAL SINKHOLE	PERFORM SOIL PREPARATION ACTIVITES – WICK DRAIN AND DYNAMIC COMPACTION – TO PREPARE SITE FOR CONSTRUCTION

NOTE: WHEN A DISTURBED AREA IS TO BE STABILIZED BY VEGETATION, NO MORE THAN 15,000 S.F. SHALL REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED. WAITING UNTIL EARTHMOVING ACTIVITIES ARE COMPLETED BEFORE SEEDING AND MULCHING OPERATIONS ARE COMPLETED IS NOT RECOMENDED.

TABLE 11.2 SOIL AMENDMENT APPLICATION RATE EQUIVALENT

SOIL AMENDMENT	PERMANENT SEEDING APPLICATION RATE			NOTES
	PER ACRE	PER 1,000 S.F.	PER 1,000 S.Y.	
AGRICULTURAL LIME	6 TONS	240 lb.	2,480 lb.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
10-20-20 FERTILIZER	1,000 lb.	25 lb.	210 lb.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
	TEMPORARY SEEDING APPLICATION RATE			
AGRICULTURAL LIME	1 TON	40 lb.	410 lb.	TYPICALLY NOT REQUIRED FOR TOPSOIL STOCKPILES
10-10-10 FERTILIZER	500 lb.	12.5 lb.	100 lb.	TYPICALLY NOT REQUIRED FOR TOPSOIL STOCKPILES

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"

NOTES: A COMPOST BLANKET WHICH MEETS THE STANDARDS OF THIS CHAPTER MAY BE SUBSTITUTED FOR THE SOIL AMENDMENTS SHOWN IN THIS TABLE.

SOIL TESTING IS RECOMMENDED IN ORDER TO DETERMINE APPROPRIATE LIME AND FERTILIZATION RATES.

TABLE 11.6 MULCH APPLICATION RATES

MULCH TYPE	APPLICATION RATE (MIN.)			NOTES
	PER ACRE	PER 1,000 S.F.	PER 1,000 S.Y.	
STRAW	3 TONS	140 lb.	1,240 lb.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 lb.	1,240 lb.	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES
WOOD CHIPS	4–6 TONS	185–275 lb.	1,650–2,500 lb.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES
HYDROMULCH	1 TON	47 lb.	415 lb.	SEE LIMITATIONS ABOVE

1. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL – ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ON THE CONTOUR. NOTE: CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.

2. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45 DEGREES ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS GENERALLY MORE EFFECTIVE.

3. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.

4. MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

5. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.

SEEDING SPECIFICATIONS

TABLE 11.4
Recommended Seed Mixtures

Mixture Number	Species	Seeding Rate - Pure Live Seed [1]	
		Most Sites	Adverse Sites
TEMPORARY SEEDING (DURING CONSTRUCTION)	Spring oats (spring), or	64	96
	Annual ryegrass (spring or fall), or	10	15
	Winter wheat (fall), or	90	120
	Winter rye (fall)	56	112
PERMANENT SEEDING FOR LAWN AREAS OUTSIDE OF BMP AREAS	Tall fescue, or	60	75
	Fine fescue, or	35	40
	Kentucky bluegrass, plus	25	30
	Redtop[4], or	3	3
	Perennial ryegrass	15	20
1 [2]	Birdsfoot trefoil, plus	6	10
	Tall fescue	30	35
3	Birdsfoot trefoil, plus	6	10
	Reed canarygrass	10	15
4	Crownvetch, plus	10	15
	Tall fescue, or	20	25
5[6]	Perennial ryegrass	20	25
	Crownvetch, plus	10	15
6 [5,6]	Annual ryegrass	20	25
	Birdsfoot trefoil, plus	6	10
7[6]	Crownvetch, plus	10	15
	Tall fescue	20	30
	Flatpea, plus	20	30
8	Tall fescue, or	20	30
	Perennial ryegrass	20	25
	Serecia lespedeza, plus	10	20
9 [6]	Tall fescue, plus	10	25
	Redtop[4]	3	3
	Tall fescue, plus	40	60
10	Fine fescue	10	15
	Deertongue, plus	15	20
11	Birdsfoot trefoil	6	10
	Switchgrass, or	15	20
12 [7]	Big Bluestem, plus	15	20
	Birdsfoot trefoil	6	10
	Orchardgrass, or	20	30
13	Smooth bromegrass, plus	25	35
	Birdsfoot trefoil	6	10

Penn State, "Erosion Control and Conservation Plantings on Noncropland"

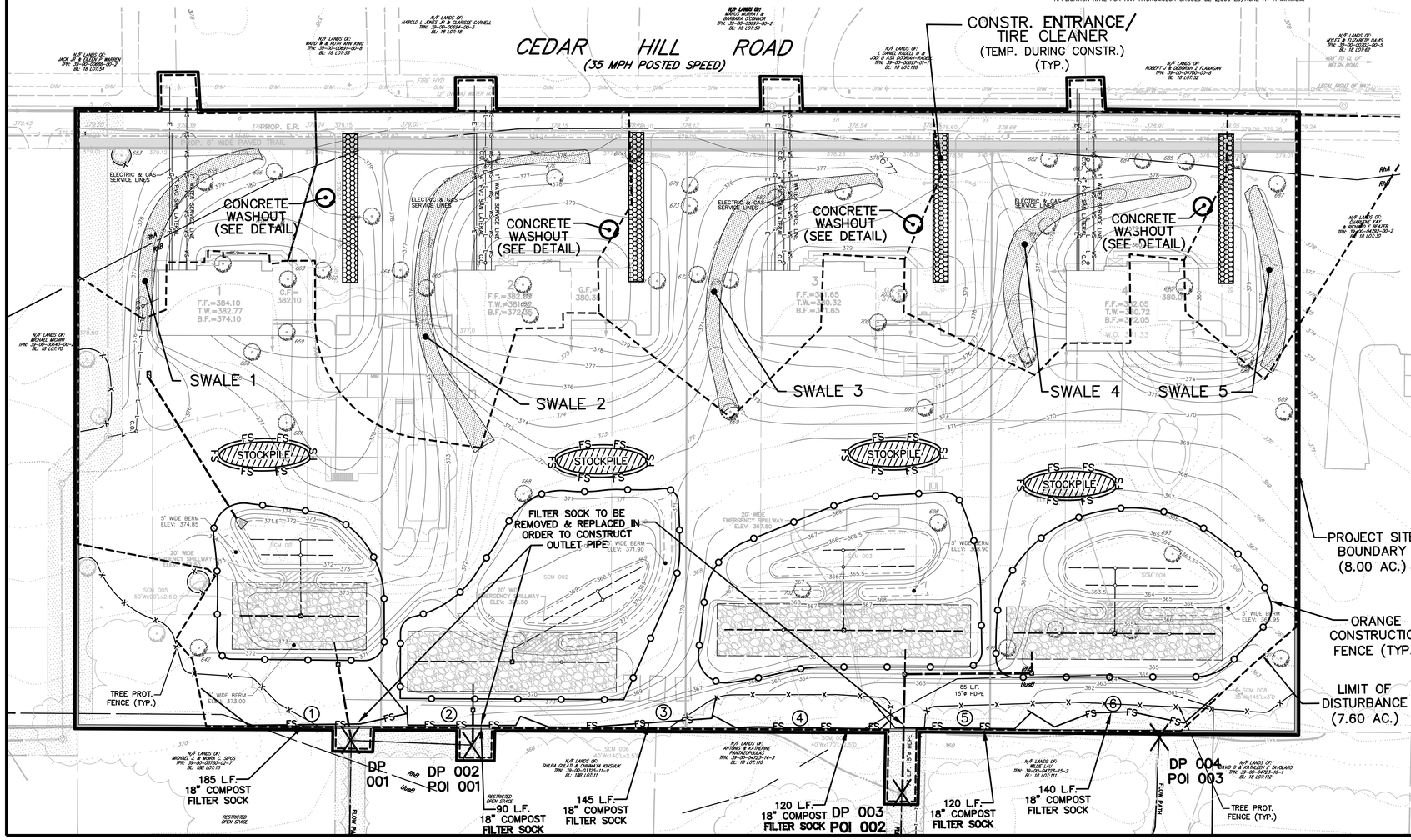
1. PLS is the product of the percentage of pure seed times percentage germination divided by 100. For example, to secure the actual planting rate for switchgrass, divide 12 pounds PLS shown on the seed tag. Thus, if the PLS content of a given seed lot is 35%, divide 12 PLS by 0.35 to obtain 34.3 pounds of seed required to plant one acre. All mixtures in this table are shown in terms of PLS.
2. If high-quality seed is used, for most sites seed spring oats at a rate of 2 bushels per acre, winter wheat at 1.5 bushels per acre, and winter rye at 1 bushel per acre. If germination is below 90%, increase these suggested seeding rates by 0.5 bushel per acre.
3. This mixture is suitable for frequent mowing. Do not cut shorter than 4 inches.
4. Keep seeding rate to that recommended in table. These species have many seeds per pound and are very competitive. To seed small quantities of small seeds such as weeping lovegrass and redtop, dilute with dry sawdust, sand, rice hulls, buckwheat hulls, etc.
5. Use for highway slopes and similar sites where the desired species after establishment is crownvetch.
6. Use only in extreme southeastern or extreme southwestern Pennsylvania. *Serecia lespedeza* is not well adapted to most of PA.
7. Do not mow shorter than 9 to 10 inches.
8. Seed mixtures containing crown vetch should not be used in areas adjacent to wetlands or stream channels due to the invasive nature of this species.

TABLE 11.5
Recommended Seed Mixtures for Stabilizing Disturbed Areas

Site Condition	Nurse Crop	Seed Mixture (Select one mixture)
Slopes and Banks (not mowed)		
Well-drained	1 plus	3, 5, 8, or 12[1]
Variable drainage	1 plus	3 or 7
Slopes and Banks (mowed)		
Well-drained	1 plus	2 or 10
Slopes and Banks (grazed/hay)		
Well-drained	1 plus	2, 3, or 13
Gullies and Eroded Areas	1 plus	3, 5, 7, or 12[1]
Erosion Control Facilities (BMPs)		
Sod waterways, spillways, frequent water flow areas	1 plus	2, 3, or 4
Drainage ditches		
Shallow, less than 3 feet deep	1 plus	2, 3, or 4
Deep, not mowed	1 plus	5 or 7
Pond banks, dikes, levees, dams, diversion channels, And occasional water flow areas		
Mowed areas	1 plus	2 or 3
Non-mowed areas	1 plus	5 or 7
For hay or silage on diversion channels and occasional water flow areas	1 plus	3 or 13
Highways [3]		
Non-mowed areas		
Pure crownvetch[3]	1 plus	5 or 6
Well-drained	1 plus	5, 7, 8, 9, or 10
Variable drained	1 plus	3 or 7
Poorly drained	1 plus	3 or 4
Areas mowed several times per year	1 plus	2, 3, or 10
Utility Right-of-way		
Well-drained	1 plus	5, 8, or 12[1]
Variable drained	1 plus	3 or 7
Well-drained areas for grazing/hay	1 plus	2, 3, or 13
Effluent Disposal Areas	1 plus	3 or 4
Sanitary Landfills	1 plus	3, 5, 7, 11[1], or 12[1]
Surface mines		
Spoils, mine wastes, fly ash, slag, settling basin		
Residues and other severely disturbed areas (lime to soil test)	1 plus	3, 4, 5, 7, 8, 9, 11[1], or 12[1]
Severely disturbed areas for grazing/hay	1 plus	3 or 13

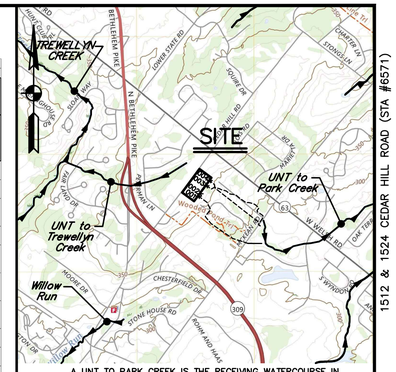
Penn State, "Erosion Control and Conservation Plantings on Noncropland"

1. For seed mixtures 11 and 12, only use spring oats or weeping lovegrass (included in mix) as nurse crop.
2. Contact the Pennsylvania Department of Transportation district roadside specialist for specific suggestions on treatment techniques and management practices.
3. Seed mixtures containing crown vetch should not be used in areas adjacent to wetlands or stream channels due to the invasive nature of this species.



LEGEND

PROPOSED CONTOUR (MINOR)	222
PROPOSED CONTOUR (MAJOR)	230
PROPOSED DRIVEWAY	
PROPOSED EASEMENT	
PROPOSED RIGHT-OF-WAY	
PROPOSED CENTERLINE	
PROPOSED CONCRETE WALKWAY	
PROPOSED WATER SERVICE	WS
PROPOSED FORCE MAIN	FM
PROPOSED SANITARY LATERAL	L
PROPOSED ELECTRIC AND COMMUNICATION	E/C
ADJOINING OWNERS	
EXISTING CONTOUR (MINOR)	232
EXISTING CONTOUR (MAJOR)	230
EXISTING EDGE OF ROAD	
EXISTING RIGHT-OF-WAY	
EXISTING CENTERLINE	
EXISTING DRIVES	
EXISTING SOILS	
EXISTING TREE ROW	
EXISTING LAMP POST	LP
EXISTING MAIL BOX	MB
PROJECT SITE BOUNDARY	
COMPOST FILTER SOCK	FS FS
LIMIT OF DISTURBANCE	
TREE PROTECTION FENCE	X X X
ORANGE CONSTRUCTION FENCE	
STOCKPILE AREA	
CONSTR. ENTRANCE/TIRE CLEANER	
SWALE LINING	
ANALYSIS POINT	X



A UNT TO PARK CREEK IS THE RECEIVING WATERCOURSE IN THE NESHAMINY CREEK WATERSHED. THE CHAPTER 93 CLASSIFICATION FOR THE UNT TO PARK CREEK IS WWF, MF.

SCALE: 1"=2000'

RECYCLING STATEMENT

INDIVIDUALS RESPONSIBLE FOR EARTH DISTURBANCE ACTIVITIES MUST ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS. CONSTRUCTION WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY. MEASURES SHOULD BE PLANNED AND IMPLEMENTED FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL. WHEREVER POSSIBLE, RECYCLING OF EXCESS MATERIALS IS PREFERRED, RATHER THAN DISPOSAL.

CRITICAL STAGES OF BMP CONSTRUCTION

THE FOLLOWING STORMWATER MANAGEMENT BMP'S SHALL HAVE CONSTRUCTION OVERSIGHT:

- BIO-RETENTION W/MRC 001
- BIO-RETENTION W/MRC 002
- BIO-RETENTION W/MRC 003
- BIO-RETENTION W/MRC 004
- SEEPAGE BED 005
- SEEPAGE BED 006
- SEEPAGE BED 007
- SEEPAGE BED 008

COMMONWEALTH OF PENNSYLVANIA
SUSAN ANN RICE
ENGINEER
PE074508
PENNSYLVANIA

40 0 20 40 80 120
GRAPHIC SCALE

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	M.P	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

E&S PLAN
AS PART OF
1512 & 1524 CEDAR HILL ROAD
PREPARED FOR
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SITE SITUATE IN
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S T A
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PLAN SCALE HORIZONTAL:	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
1" = 40'	M.J.P.	S.A.R.	7 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571ES	

1512 & 1524 CEDAR HILL ROAD (STA #6571)

E&S NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.

2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.

3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.

4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.

5. AREAS TO BE FILLED AND TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.

6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.

7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.

8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 3H:1V OR FLATTER.

9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.

10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.

12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.

13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OR UNDISTURBED VEGETATED AREAS.

14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.

15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.

16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.

17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.

18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM OF 3 TO 5 INCHES PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM OF 8 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING.

19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.

20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.

21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.

22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.

23. FILLS SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.

24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.

25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.

26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREA. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.

27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.

28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.

29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF E&S BMPS.

30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING THE REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.

31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.

32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

33. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.

34. SEDIMENT BASINS SHALL AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.

35. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA GUIDELINES AND THE HEALTH AND SAFETY ENDORSEMENT OF THE OWNER. THE CONTRACTORS SHALL BE RESPONSIBLE FOR MAINTAINING EXCAVATIONS DURING THE PERIOD OF CONSTRUCTION. CONTROL OF GROUNDWATER SEEPAGE AND STORMWATER RUNOFF INTO EXCAVATIONS SHALL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

36. APPLICATIONS AND/OR OPERATORS MUST IMPLEMENT ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT ALL FILL MATERIAL QUALIFIES AS CLEAN FILL. IF BROUGHT FROM OFF-SITE, FILL MUST BE CERTIFIED CLEAN FILL.

37. TO THE BEST OF OUR KNOWLEDGE, NO SPECIAL GEOLOGIC FORMATIONS OR SOIL CONDITIONS HAVING THE POTENTIAL TO CAUSE POLLUTION TO SURFACE WATERS EXIST AT THE SITE.

38. THERMAL IMPACT: DURING CONSTRUCTION STORMWATER RUNOFF IS FILTERED THROUGH ON-SITE BMP'S TO THE MAXIMUM EXTENT POSSIBLE TO AVOID THERMAL IMPACTS. RUNOFF IS FILTERED THROUGH COMPOST FILTER SOCKS PROVIDING AN OPPORTUNITY FOR WATER TO COOL, THEN FLOWING THROUGH EXISTING PROTECTED WOODED AREA BEFORE REACHING THE EXISTING STREAM CHANNEL.

CONSTRUCTION SEQUENCE

CONSTRUCTION SEQUENCE NOTES:

- At least 7 days prior to starting any earth disturbance activities (including clearing and grubbing) the owner and/or operator shall invite all contractors, the landowner, appropriate municipal officials, the E&S plan preparer, the PCSM plan preparer, the designated licensed professional and a representative from the Montgomery County Conservation District to an on-site pre-construction meeting.
- Critical stages as noted throughout the construction sequence are defined as sequence steps that require the permittee to provide engineering construction oversight. A licensed professional engineer knowledgeable in the design and construction of stormwater SCM's, preferably the design engineer, shall conduct the oversight.
- At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System, Inc. shall be notified at 1-800-242-1776 for the location of existing underground utilities.
- All earth disturbance activities shall proceed in accordance with the following sequence. Each step of the sequence shall be completed before proceeding to the next step, except where noted. Deviation from the sequence must be approved by the Montgomery County Conservation District or by the department prior to implementation.
- Any cessation of activity for 4 days or longer requires temporary stabilization.
- As soon as slopes, channels, ditches and other disturbed areas reach final grade, they must be permanently stabilized immediately.
- Perimeter compost filter sock to be installed by clearing area for sock and installing sock immediately or by clearing and installing sock as you go. No disturbed area should be left without perimeter controls. Sock shall be installed to minimize existing tree removal to the greatest extent possible.

CONSTRUCTION SEQUENCE:

1. Field-mark the limits of disturbance, streams and wetlands prior to disturbance activities (i.e. survey stakes, posts & rope, construction fence, etc.) in accordance with the erosion and sediment control plan.
2. Clear, grub and strip topsoil in the area proposed for the construction entrance. Install the temporary stone construction entrance/tire cleaners in accordance with the construction detail.
3. Install compost filter sock 1 through 3 as shown on the erosion and sediment control plan.
4. Install orange construction fence for SCMs 001 through 008 as shown.
5. Upon installation and stabilization of all perimeter sediment control SCM's and at least 3 days prior to proceeding with the bulk earth disturbance activities, the permittee or co-permittee shall provide notification to the department or authorized conservation district.
6. Strip any remaining topsoil and stockpile. Stabilize stockpile and protect with compost filter sock. Clear and grub any remaining areas left to be disturbed.
7. Rough grade the site and pad out building sites, rough grade swales 1 through 5.
8. Install road widening and sidewalk along Cedar Hill Road. Stabilize disturbed areas immediately with seed and mulch.
9. Construction of dwellings can begin. Install on-lot sediment controls in accordance with construction details #10-1, #10-2 or #10-3, as applicable, prior to construction on each lot. If driveway is not stabilized, access to the constructed units shall be stabilized to a minimum of a stone base for construction vehicle access. Construct buildings, install utilities, sidewalks and driveway paving.
10. Replace topsoil equal to pre-development depths or to a minimum depth of 6-in., whichever is greater. And finish grade, wherever and whenever possible. Seed and mulch each area of disturbance immediately after construction is completed. No more than 15,000 s.f. of disturbed area shall reach final grade before initiating seeding and mulching operations. Graded areas should be scarified or otherwise loosened to a depth of 3- to 5-inches prior to topsoil placement.
11. Install trees and shrubs wherever and whenever possible in accordance with the PCSM Landscape Plan and details.
12. Perform final landscaping operations. In such cases, permanently seed and mulch disturbed areas. Seeding shall follow fertilization and seeding rates specified in seeding specification chart. If finish grading is not practical, temporarily seed all disturbed areas.

NOTE: THE MONTGOMERY COUNTY CONSERVATION DISTRICT MUST BE NOTIFIED PRIOR TO THE REMOVAL OF PRIMARY EROSION AND SEDIMENT CONTROL SCM'S.

13. Critical Stage - When areas upstream of SCMs 001 through 004 are permanently stabilized, install bio-retention with MRC SCMs in accordance with the following sequence and the construction details:

a. Notify Lower Gwynedd Township and the Conservation District prior to construction.
b. Unless otherwise infeasible, construction of the permanent basin should be scheduled to allow for installation of the specified seed mixes as soon as permanent basin construction is complete between early April to mid-June to provide the plants with a full growing season to build strong root reserves for winter hardiness. In no case shall seed be installed prior to April 1 or later than September 15. Install annual rye cover crop for over-wintering, followed by site preparation and application of the specified seed mixes during the following spring.
c. A licensed professional engineer (or authorized representative) knowledgeable in the design and construction of stormwater SCM's, preferably the design engineer, shall conduct the oversight during installation.
d. Install the MRC SCM during final phases of site construction to prevent sedimentation and/or damage from construction activity. After installation, prevent sediment-laden water from entering via overland, inlets and pipes.
e. Install and maintain proper E&S SCMs during construction.
f. If necessary, excavate the MRC SCM bottom to an un-compacted subgrade free from rocks and debris. Do NOT compact the subgrade.
g. Install reinforced spillway, pipe bedding, underdrain piping and aggregate envelope, cleanouts, etc.
h. Place soil mix gently. Do not compact soil mix. The placement of soil mix should be done from outside the SCM footprint to avoid compaction by construction equipment. Equipment should never drive over placed soil mix.
i. Prepare for seeding by eliminating any weed growth prior to seed installation using an appropriate herbicide to control undesirable vegetation. For optimal seed establishment, soil ph shall be between 5.5 and 6.5.
j. Seed and stabilize disturbed area. Apply seed by carefully proportioning seed for the entire area. Broadcast seed in two separate applications by applying seed at half the suggested rate for each application to ensure even and adequate coverage. After the full rate of seeding has been achieved, follow by rolling or tracking seed into the top 1/4 inch of soil to achieve good seed to soil contact - do not roll or track the seed when soil is wet. Vegetate with native plantings.
k. Cover seeded area with a light layer of salt hay, threshed straw or pine needles and apply erosion control matting over 3:1 slopes and the basin floor.
l. Plant and mulch according to specifications on the landscape plan.
m. Maintain site until PCSM plans and other E&S SCMs until the site is fully stabilized.
n. Complete SCM Certification form and submit to MCCD within 30 days of completion.

14. Critical Stage - Simultaneously with Step 13, and when areas upstream of SCMs 005 through 008 are permanently stabilized, install seepage bed SCMs in accordance with the following sequence and the construction details:

a. Notify Lower Gwynedd Township and the Conservation District prior to construction.
b. A licensed professional engineer (or authorized representative) knowledgeable in the design and construction of stormwater SCM's, preferably the design engineer, shall conduct the oversight during installation.
c. Install the SCM during final phases of site construction to prevent sedimentation and/or damage from construction activity. After installation, prevent sediment-laden water from entering via overland, inlets and pipes.
d. Install and maintain proper E&S SCMs during construction.
e. Excavate bed bottom to a uniform, level uncompacted subgrade free from rocks and debris. Do not compact subgrade. If the area has been subject to compaction or sedimentation during construction, infiltration testing may be required during/prior to the construction of the SCM to verify the volume credits taken by design. If unfavorable conditions are encountered during installation (i.e. groundwater and/or bedrock, etc.), the engineer should be consulted, and the location of the proposed facility should be re-evaluated.
f. To the greatest extent possible, excavation should be performed with the lightest practical equipment. Excavation equipment should be placed outside the limits of the infiltration bed.
g. Completely wrap bed with nonwoven geotextile. (remove any accumulated sediment and/or debris prior to geotextile placement.) Geotextile rolls should overlap by a minimum of 24 inches within the trench. Fold back and secure excess geotextile during stone placement and installation of perforated storm pipe.
h. Place uniformly graded, clean-washed aggregate in 6-inch lifts, lightly compacting between lifts. Install inlet structure with connection to upstream MRC SCM underdrain upturned elbow, perforated pipe with caps and/or mesh, observation ports, outlet pipe and associated structures.
i. Fold and secure nonwoven geotextile over trench, with minimum overlap of 12-inches.
j. Backfill bed with soil mix as shown on plans and specifications. Overfill is recommended to account for settlement. Light hand tamping is acceptable if necessary.
k. Seed and stabilize soil.
l. Do not remove erosion and sediment control measures until site is fully stabilized.
m. Complete SCM Certification form and submit to MCCD within 30 days of completion.

15. After all construction work is completed, install final paving, permanent striping and signage.

16. Upon final stabilization, remove all other temporary sediment controls. An area shall be considered to have achieved final stabilization when it has minimum 70 % uniform perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

17. Critical Stage - The site engineer shall inspect the PCSM SCM to ensure that the SCM has not been impacted by construction activities. Completion of the Notice to New Property Owners of PCSM SCMs and O&M Requirements "New Property Owner Notification Form" shall be provided for the property owners of Lots 1, 2, 3 and 4.

18. Within 30 days after the completion of earth disturbance activities authorized by this permit, including the permanent stabilization of the site and proper installation of PCSM SCMs in accordance with the approved PCSM plan, or upon submission of the NOT if sooner, the permittee shall file with the department or authorized conservation district a statement signed by a licensed professional and by the permittee certifying that work has been performed in accordance with the terms and conditions of this permit and the approved E&S and PCSM plans. Completion certificates are needed to ensure that all work is performed in accordance with the terms and conditions of the permit and approved E&S and PCSM plans.

19. Upon completion of all certifications and final inspection, the permittee or co-permittee shall submit a Notice of Termination (NOT) to the Conservation District.

ANY SEDIMENT CONTROL, SUCH AS COMPOST FILTER SOCK, ROCK FILTER, OR INLET FILTER MUST NOT BE REMOVED UNTIL ALL VEGETATION (UPSTREAM OF THAT PARTICULAR CONTROL) HAS BEEN RE-ESTABLISHED.

ANY AREAS DISTURBED DURING THE REMOVAL OF SEDIMENT CONTROLS SHALL BE IMMEDIATELY RE-STABILIZED.

E&S MAINTENANCE PROGRAM AND NOTES

During construction, maintenance of the control facilities will be the responsibility of the general contractor. Erosion and sediment control (E&SC) BMPs will be inspected weekly or after each erosion-producing storm event, and cleaned and repaired as necessary. After completion and acceptance of construction, the property owners will be responsible for the maintenance of the control facilities, essentially ground cover. Disturbed areas of the topsoil stockpile will be reseeded with temporary seeding in accordance with specifications for seeding and soil supplements as shown on the plans.

Until the site is stabilized, all E&SC BMPs shall be maintained properly. Maintenance shall include inspections of all E&SC BMPs after each runoff event, and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If the E&SC BMPs fail to perform as expected, replacement BMPs or modifications of those installed will be required.

A Qualified Inspector shall perform weekly site inspections and post-rain event inspections per the new NPDES guidelines.

A log showing dates that E&SC BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.

All sediment removed during maintenance and cleaning of E&SC BMPs shall be incorporated into the fine grading upstream from a sediment control device, outside of steep slopes, wetlands, floodplains or drainage swales and within the limit of disturbance, or otherwise disposed of in the manner described on the plan drawings.

Compost Filter Sock - installed at the location(s) shown on the approved plans.

- The sock installation must be inspected weekly and after each runoff event. Any necessary repairs or replacement to be made within 24 hours.
- Accumulated sediment will be removed as required to keep the sock functional. In all cases deposits must be removed where accumulations reach ½ the above ground height of the barrier.
- Adhere to any manufacturer's recommendations for replacing compost filter sock for any reason.

Construction Entrance - install at the location(s) shown on the approved plans.

- Construction entrance to be inspected weekly and after each runoff event. Perform daily and as needed street sweeping to ensure sediment is removed from existing roadways.
- The structure's thickness will be constantly maintained to the specified dimensions by adding rock. A stockpile of rock material will be maintained on the site for this purpose. At the end of each construction day, all sediment deposited on public roads will be removed and returned to the construction site. Washing the roadway with water is not permitted.

Pumped Water Filter Bag - utilize as dictated by work area conditions.

- Pumped water filter bag to be inspected daily and after each runoff event.
- Refer to details on plan drawings for maintenance requirements.

Sump Pit - utilize in conjunction with pumped water filter bag.

- Sump pit to be inspected at least weekly and after each runoff event.
- Refer to details on plan drawings for maintenance requirements.

Concrete Washout - install at the location(s) shown on the approved plans.

- Concrete washout to be inspected at least weekly and after each runoff event.
- Refer to details on plan drawings for maintenance requirements.

Erosion Control Blankets - install at the location(s) shown on the approved plans.

- Erosion control blankets to be inspected at least weekly and after each runoff event.
- Refer to details on plan drawings for maintenance requirements / specifications as shown on the approved plan.

Rock Filter Outlet - utilize as dictated by work area conditions.

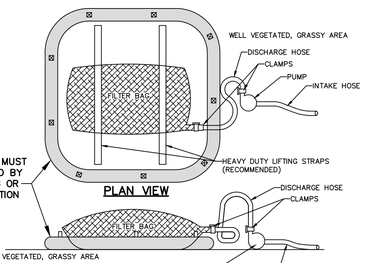
- Rock filter outlet to be inspected at least weekly and after each runoff event.
- Refer to details on plan drawings for maintenance requirements.

Vegetated Channel - install at the location(s) shown on the approved plans.

- Vegetated channel to be inspected at least weekly and after each runoff event.
- Refer to details on plan drawings for maintenance requirements.

Riprap Apron - install at the location(s) shown on the approved plans.

- Riprap apron to be inspected at least weekly and after each runoff event.
- Refer to details on plan drawings for maintenance requirements.



PLAN VIEW

ELEVATION VIEW

NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

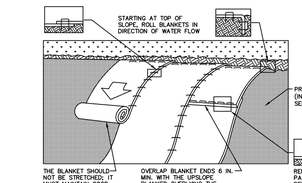
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

ABACT IS REQUIRED – MUST BE EITHER SURROUNDED BY A COMPOST SOCK RING OR OPERATED IN CONJUNCTION WITH A SUMP PIT.

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG

NOT TO SCALE



NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

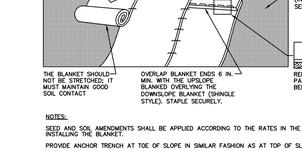
BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

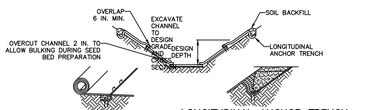
BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE

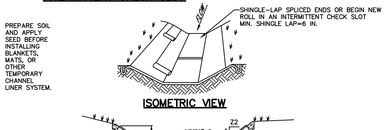


STOCKPILE CONTROL



INTERMITTENT CHECK SLOT

LONGITUDINAL ANCHOR TRENCH


PREPARE SOIL AND APPLY SEED BEFORE INSTALLING BLANKETS, MATS, OR OTHER TEMPORARY CHANNEL LINER SYSTEM.
SHINGLE-LAP SPLICED ENDS OR BEGIN NEW ROLL IN

SOILS DATA

SOILS TYPE:	SLOPES:	DEPTH TO RESTRICTIVE FEATURE:	DEPTH TO WATER TABLE:	HYDROLOGIC SOIL GROUP:
RHA REAVILLE SILT LOAM	0 TO 3 PERCENT	20-40" TO LITHIC BEDROCK	6 TO 36"	D
RHB REAVILLE SILT LOAM	3 TO 8 PERCENT	20-40" TO LITHIC BEDROCK	6 TO 36"	D
RHA REAVILLE SILT LOAM	0 TO 3 PERCENT	20-40" TO LITHIC BEDROCK	6 TO 36"	D

2025 TEST PIT INFILTRATION DATA

TEST PIT NO.	LIMITING ZONE	EXIST. GROUND ELEV.	TEST ELEV.	INFILTRATION RATE (in/hr)
1	369.5 (R)	372.5	371.5	0.00
2	368.5 (R)	371.5	370.5	0.00
3	365.5 (R)	369.0	367.5	0.00
4	365.3 (R)	368.3	367.3	0.00
5	362.7 (R)	365.7	364.7	0.00
6	360.2 (R)	363.2	362.2	0.00

2023 TEST PIT DATA

TEST PIT NO.	LIMITING ZONE	EXIST. GROUND ELEV.	TEST ELEV.	INFILTRATION RATE (in/hr)
1001	359.5 (R)	365.5	N/A	N/A
1002	360.5 (R)	365.7	N/A	N/A

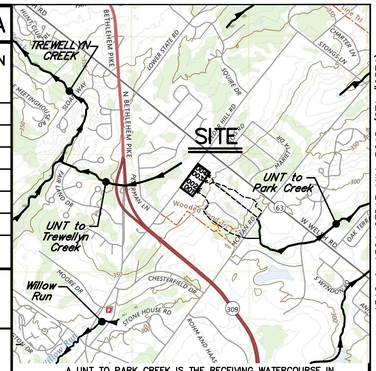
NOTE: TEST PITS 1003 - 1006 ARE NOT LOCATED WITHIN THE DEVELOPMENT SITE AREA AND HAVE BEEN EXCLUDED FROM THIS TABLE.

2020 TEST PIT INFILTRATION DATA

TEST PIT NO.	LIMITING ZONE	EXIST. GROUND ELEV.	TEST ELEV.	INFILTRATION RATE (in/hr)
104A	370.5 (R)	373.0	372.5	0.25
104B	370.5 (R)	373.0	372.5	0.00
105A	368.5 (R)	371.0	370.5	0.25
105B	368.5 (R)	371.0	370.5	0.25
106A	360.5 (R)	364.0	362.5	0.50
106B	360.5 (R)	364.0	362.5	0.00

NOTE: TEST PITS 101A, 101B, 102A, 102B, 103A AND 103B ARE NOT LOCATED WITHIN THE DEVELOPMENT SITE AREA AND HAVE BEEN EXCLUDED FROM THIS TABLE.

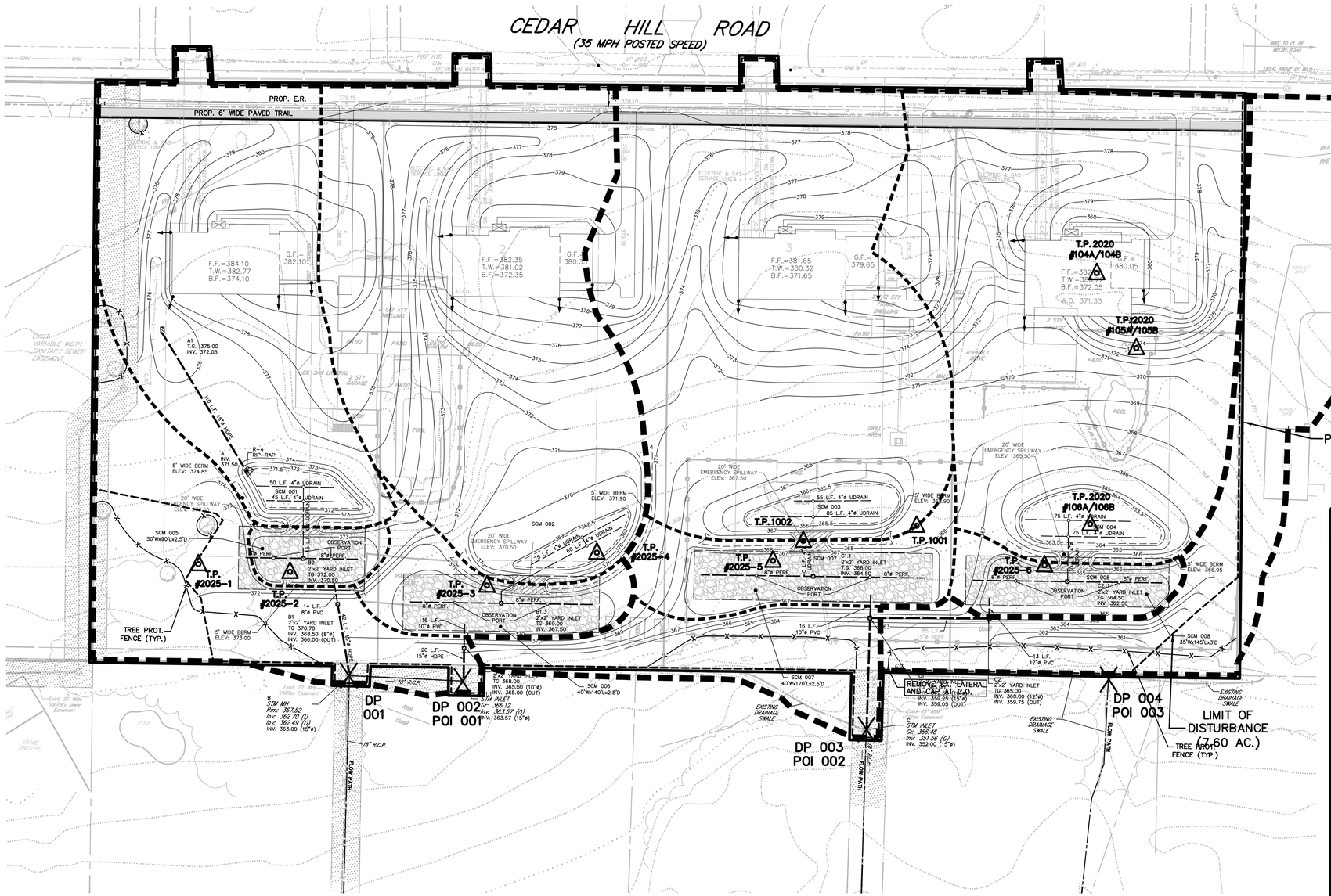
STORM WATER MANAGEMENT IS DESIGNED FOR 25% MAXIMUM IMPERVIOUS COVER FOR EACH LOT. REFER TO STORMWATER DESIGN CHART ON SHEET 10.



A UNT TO PARK CREEK IS THE RECEIVING WATERCOURSE IN THE NESHAMINY CREEK WATERSHED. THE CHAPTER 93 CLASSIFICATION FOR PARK CREEK IS WWF, MF.

SCALE: 1"=2000'

1512 & 1524 CEDAR HILL ROAD (STA #6571)



LEGEND

- ADJOINING OWNERS
- SETBACK LINES
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- EXISTING EDGE OF ROAD
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING DRIVES
- EXISTING EXISTING SOILS (Bp, AbB)
- EXISTING TREE ROW
- EXISTING EASEMENT
- EXISTING FENCE
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- EXISTING WATER SERVICE
- EXISTING OVERHEAD WIRES
- PROPOSED CONTOUR (MINOR) 222
- PROPOSED CONTOUR (MAJOR) 230
- PROPOSED STORM SEWER
- PROPOSED EDGE OF ROAD
- PROPOSED DRIVEWAY
- PROPOSED WATER SERVICE
- PROPOSED GAS SERVICE
- PROPROSED ELECTRIC LINE
- PROPOSED LATERAL
- PROJECT SITE BOUNDARY
- LIMIT OF DISTURBANCE
- POST-DEVELOPMENT OVERALL
- SWM FACILITY WATERSHED BOUNDARY
- TEST PIT LOCATION
- ANALYSIS POINT

RECYCLING STATEMENT

IF NECESSARY, SEDIMENT SHOULD BE REMOVED WHEN THE BMP'S ARE THOROUGHLY DRY. TRASH AND DEBRIS REMOVED FROM THE SITE SHOULD BE DEPOSITED ONLY AT SUITABLE DISPOSAL/RECYCLING SITES AND MUST COMPLY WITH APPLICABLE LOCAL, STATE, AND FEDERAL WASTE REGULATIONS. IN THE CASE WHERE A BMP IS USED FOR SEDIMENT CONTROL, IT SHOULD BE REGRADED AND RESEEDED IMMEDIATELY AFTER CONSTRUCTION HAS CONCLUDED.

ACT 50 UTILITY NOTE

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE. COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDER-GROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 121 AS PER THE AMENDMENT OF PA ACT 287 OF 1974, EFFECTIVE OCTOBER 30, 2017 CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. REFERENCE UTILITY CASE NUMBER: 20252383716.

CRITICAL STAGES OF BMP CONSTRUCTION

THE FOLLOWING STORMWATER MANAGEMENT BMP'S SHALL HAVE CONSTRUCTION OVERSIGHT:

- BIO-RETENTION W/MRC 001
- BIO-RETENTION W/MRC 002
- BIO-RETENTION W/MRC 003
- BIO-RETENTION W/MRC 004
- SEEPAGE BED 005
- SEEPAGE BED 006
- SEEPAGE BED 007
- SEEPAGE BED 008

COMMONWEALTH OF PENNSYLVANIA
SUSAN ANN RICE
ENGINEER
PE074508

GRAPHIC SCALE
40 0 20 40 80 120

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

PCSM PLAN
AS PART OF
1512 & 1524 CEDAR HILL ROAD
PREPARED FOR
TISMAN GROUP, LLC
SITE SITUATE IN
LOWER GWYNEDD TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

S T A Engineering, Inc.
Civil Engineers • Land Surveyors
2499 KNIGHT ROAD, PENNSBURG, PA 18073
PH: (215) 679-0200; www.stotac.com

PLAN SCALE HORIZONTAL:	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
1" = 40'	M.J.P.	S.A.R.	9 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571PCSM	

POST-CONSTRUCTION STORMWATER MANAGEMENT OPERATION & MAINTENANCE NOTES

1. SCM DESCRIPTIONS:

The primary SCM's proposed for the development site consists of the following:

Structural SCM's

SCM 6.4.5 Bio-retention w/MRC SCM 001, SCM 002, SCM 003 & SCM 004
SCM 6.4.6 Seepage Pit SCM 005, SCM 006, SCM 007 & SCM 008

2. GENERAL SCM OPERATION, MAINTENANCE, INSPECTION AND CERTIFICATION NOTES:

At such time that the site is stabilized and the temporary during construction erosion and sediment controls are removed, the permanent non-structural and structural SCM's will be installed and functioning. The non-structural SCM's are intended to be permanent facilities that mitigate peak flows and address minimal volume control in addition to promoting water quality.

General Maintenance - The stormwater management SCM's shall be owned and maintained by the property owner in perpetuity. The property owner shall conduct maintenance on a short-term and long-term schedule in accordance with the maintenance procedures outlined in this narrative and on the PCSM plans. Until such time that the site is fully established and operational, the developer and/or permittee shall perform the required maintenance of the stormwater management SCM's. In addition to the procedures outlined in the narrative and on the plans, a property owner shall be responsible to make a visual inspection of the SCM facilities after all major storm events greater than 1.0 inch and after extreme events (10-, 50- and 100-year storm events) to verify their integrity and to note any damage requiring corrective action. Furthermore, said party shall be responsible to perform an annual inspection of the facilities and generate a report to document the condition of the facilities. Copies of the annual report shall be submitted to the property owner for review and, where required, corrective action. If significant repairs are required, the Township Engineer shall be consulted prior to repair. The Municipality shall have the right, but not the duty, to inspect the stormwater management facilities, and if the property owner fails to do so, perform necessary maintenance.

Written Reports - Written reports should be filed with the Township in a designated format suitable for Township compliance with NPDES MS4 permit reports to document each inspection. The inspection report shall contain the date and time of the inspection, the individual(s) who completed the inspection, the location of the SCM facility or structure inspected, observations on performance, and recommendations for improving performance, if applicable. Inspection reports shall be submitted to the municipality within 30 days following completion of the inspection.

Critical Stages/Oversight - The permittee shall provide engineering construction oversight during installation of all aspects of the stormwater management facility. A licensed professional engineer knowledgeable in the design and construction of stormwater SCMs, preferably the design engineer, shall conduct the oversight. Refer to the PCSM plans for a complete tabulation of the designated SCM's requiring construction oversight.

Final Certification - the permittee shall include with the Notice of Termination "Record Drawings" with a final certification statement from a licensed professional, which reads as follows:
"I, (name), do hereby certify pursuant to the penalties of 18. Pa.c.s.a. § 4904 to the best of my knowledge, information and belief, that the accompanying record drawings accurately reflect the as-built conditions, are true and correct, and are in conformance with Chapter 102 of the Rules and Regulations of the Department of Environmental Protection and that the project was constructed in accordance with the approved PCSM Plan, all approved plan changes and accepted construction practices."

The permittee shall retain a copy of the record drawings as a part of the approved PCSM Plan and shall provide a copy of the record drawings as a part of the approved PCSM Plan to the person identified in this section as being responsible for the long-term operation and maintenance of the PCSM SCM's.

Upon permanent stabilization of the earth disturbance activity under § 102.22(a)(2) (relating to permanent stabilization), and installation of SCM's in accordance with an approved plan prepared and implemented in accordance with § 102.4 and 102.8 (relating to erosion and sediment control requirements; and PCSM requirements), the permittee or co-permittee shall submit a Notice of Termination (NOT) to the Department or County Conservation District. Prior to accepting the NOT, the Department and/or Conservation District staff will perform a final inspection and approve or deny the NOT.

3. SPECIFIC SCM OPERATION AND MAINTENANCE NOTES:

Short Term:

Inspect SCM's after every storm event greater than 1.0-inch and after extreme events (10-, 50- and 100-year storm events) for damage and/or erosion activity, paying close attention to the embankments, spillway, and berm. Repair erosion with appropriate measures immediately.

Inspect SCM plantings on a monthly basis during the growing season for the first two years to evaluate plant establishment and mortality - replace dead plants with same or like plants able to establish in the cultural conditions present. If necessary, replace plants with a different species suitable to any microclimatic effects that might develop.

Long Term:

Until the permittee or co-permittee has received written approval of a Notice of Termination, the permittee or co-permittee will remain responsible for compliance with the permit terms and conditions including long-term operation and maintenance of all PCSM SCM's on the project site and responsibility for violations occurring on the project site.

The permittee or co-permittee shall be responsible for long-term operation and maintenance of PCSM SCM's unless a different person is identified in the Notice of Termination and has agreed to long-term operation and maintenance of PCSM SCM's.

For any property containing a PCSM SCM, the permittee or co-permittee shall record an instrument with the recorder of deeds, which will assure disclosure of the PCSM SCM and the related obligations in the ordinary course of a title search of the subject property. The recorded instrument must identify the PCSM SCM, provide for necessary access related to long-term operation and maintenance for PCSM SCM's and provide notice that the responsibility for long-term operation and maintenance of the PCSM SCM is a covenant that runs with the land that is binding upon and enforceable by subsequent grantees, and provide proof of filing with the Notice of Termination under § 102.7(b)(5) (relating to permit termination).

The person or entity responsible for performing long-term operation and maintenance may enter into an agreement with another person including a conservation district, non-profit organization, municipality, authority, private corporation or other person to transfer the responsibility for PCSM SCM's or to perform long-term operation and maintenance and provide notice thereof to the department.

A permittee or co-permittee that fails to transfer long-term operation and maintenance of the PCSM SCM or otherwise fails to comply with this requirement shall remain jointly and severally responsible with the landowner for long-term operation and maintenance of the PCSM SCM's located on the property.

A written report must be completed to document each inspection and all SCM repair and maintenance activities.

The PCSM Plan, inspection reports and monitoring records shall be available for review and inspection by the Department or the Conservation District.

Specific SCM Construction Sequence and Long-Term Maintenance Notes:

GENERAL:

1. Catch basins and inlets should be inspected and cleaned at least two times per year and after storm events greater than 1.0-inch and after extreme events (10-, 50- and 100-year storm events)
2. Vehicles should not be parked or driven over infiltration SCM's.
3. Structural SCM's should be inspected for accumulation of sediment, damage to outlet structures, signs of contamination or spills, and berm stability.

SCM 6.4.5 - BIO-RETENTION W/MRC SCM 001, SCM 002, SCM 003 & SCM 004

Characteristics and Functions:

1. The SCMs have 3:1 side slopes. The SCMs are 2.0 ft. deep from the emergency spillway elevation to the bottom of the SCMs.
2. The SCMs have 2.0 ft. of soil mix in the bottom and is proposed to be seeded with a seed mix that will create a naturalized SCM setting requiring minimal maintenance (mowing).
3. An underdrain with a small orifice is utilized to dewater the SCM at the end of the 24-hour storm (surface storage and soil storage volume).

SCM 001 dewatering orifice size:	1.25-inch diameter
SCM 002 dewatering orifice size:	1.10-inch diameter
SCM 003 dewatering orifice size:	1.20-inch diameter
SCM 004 dewatering orifice size:	1.30-inch diameter

4. Additional trees and shrubs are planted in and around the SCMs to create a naturalized setting.
5. The SCMs controls peak stormwater flows up to the 2-year design storms and provides water quality benefits. For all storms above the 2-year design storm, water will utilize the spillway and be directed into a seepage pit SCM to further control peak rates.
6. The SCMs have 2.0 ft. of surface storage for stormwater runoff (i.e. the controlling orifice is set above the bottom of the SCM).

Construction Sequence-Critical Stage:

1. Unless otherwise infeasible, construction of the permanent basin should be scheduled to allow for installation of the specified seed mixes as soon as permanent basin construction is complete between early April to mid-June to provide the plants with a full growing season to build strong root reserves for winter hardiness. In no case shall seed be installed prior to April 1 or later than September 15. Install annual rye cover crop for over-wintering, followed by site preparation and application of the specified seed mixes during the following spring.
2. A licensed professional engineer (or authorized representative) knowledgeable in the design and construction of stormwater SCM's, preferably the design engineer, shall conduct the oversight during installation.
3. Install and maintain proper E&S SCMs during construction.
4. Install reinforced spillway, pipe bedding, underdrain piping and aggregate envelope, cleanouts, etc.
5. If necessary, excavate the MRC SCM bottom to an un-compacted subgrade free from rocks and debris. Do NOT compact the subgrade.
6. Install reinforced spillway, pipe bedding, underdrain piping and aggregate envelope, cleanouts, etc.
7. Place soil mix gently. Do not compact soil mix. The placement of soil mix should be done from outside the SCM footprint to avoid compaction by construction equipment. Equipment should never drive over placed soil mix.
8. Prepare for seeding by eliminating any weed growth prior to seed installation using an appropriate herbicide to control undesirable vegetation. For optimal seed establishment, soil ph shall be between 5.5 and 6.5.
9. Seed and stabilize disturbed area. Apply seed by carefully proportioning seed for the entire area. Broadcast seed in two separate applications by applying seed at half the suggested rate for each application to ensure even and adequate coverage. After the full rate of seeding has been achieved, follow by rolling or tracking seed into the top 1/4 inch of soil to achieve good seed to soil contact - do not roll or track the seed when soil is wet. Vegetate with native plantings.
10. Cover seeded area with a light layer of salt hay, threshed straw or pine needles and apply erosion control matting over 3:1 slopes and the basin floor.
11. Plant and mulch according to specifications on the landscape plan.
12. Maintain inlet protection and other E&S SCMs until the site is fully stabilized.

Maintenance:

1. Upgradient catch basins and inlets should be inspected and cleaned annually, or more often if historical maintenance records suggest a more frequent cleaning.
2. The vegetation (for the MRC SCM and contributing drainage area) should be maintained in good condition, and any bare spots revegetated.
3. Care should be taken to avoid excessive compaction by mowers. Mow only as appropriate for vegetative species.
4. Inspect at least two times per year after runoff events greater than 0.8 inch and after the 1.2-inch/2-hour storm event and extreme events (10-, 50- and 100-year storm events). Make sure that runoff drains down within the design parameters to ensure the maximum time of 72 hours is not being exceeded. Inspection of the following areas should occur 72 hours following the end of the storm event and should include (at a minimum) the following:
   a. Inspect for the presence of water or ponding at the SCM surface.
   b. Inspect for sediment collecting in the SCM surface.
   c. Inspect vegetation for bare spots or areas of erosion that are occurring.
   d. Inspect for health of trees and shrubs.
   e. Take corrective measures as needed.
5. At least two times per year and after the 1.2-inch/2-hour storm event and extreme events (10-, 50- and 100-year storm events), or more if historical maintenance indicate it is necessary, inspect for accumulation of sediment, damage to outlet control structures, erosion, signs of water contamination/spills, and instability.
6. As needed, remove accumulated sediment to maintain infiltration through the MRCs soil mix and to maintain water quality functionality. Restore original cross section. Properly dispose of sediment.
7. All MRC SCM components should be maintained as indicated in the Stormwater SCM Manual.
8. Any repairs made to the spillway should be reviewed by a professional engineer.
9. Care must be taken to protect the facility from excessive sediments from the drainage shed. Whenever additional land disturbance activity takes place in the area draining to the facility, effective erosion and sediment control measures must first be put in place to exclude sediments from the basin.
10. Should the facility fail to manage the volume or reduce the level of pollutants anticipated as designed, a professional engineer should evaluate the facility to determine appropriate measures to be taken to ensure that the facility functions properly.
11. If slow drainage is occurring, a professional engineer should evaluate the facility as may be required to determine an appropriate course of action and if additional pumping and clean out of the perforated piping is necessary. If slow drainage persists, other corrective action may be required, including but not limited to, replacement of the facility.

SCM 6.4.6 - SEEPAGE BED SCM 005, SCM 006, SCM 007 & SCM 008

Construction Sequence-Critical Stage:

1. A licensed professional engineer (or authorized representative) knowledgeable in the design and construction of stormwater SCM's, preferably the design engineer, shall conduct the oversight during installation.
2. Install the SCM during final phases of site construction to prevent sedimentation and/or damage from construction activity. After installation, prevent sediment-laden water from entering via overland, inlets and pipes.
3. Install and maintain proper E&S SCMs during construction.
4. Excavate bed bottom to a uniform, level uncompacted subgrade free from rocks and debris. Do not compact subgrade. If the area has been subject to compaction or sedimentation during construction, infiltration testing may be required during/prior to the construction of the SCM to verify the volume credits taken by design. If unfavorable conditions are encountered (i.e. groundwater and/or bedrock, etc.), the engineer should be consulted, and the location of the proposed facility should be re-evaluated.
5. To the greatest extent possible, excavation should be performed with the lightest practical equipment. Excavation equipment should be placed outside the limits of the infiltration bed.
6. Completely wrap bed with nonwoven geotextile. (remove any accumulated sediment and/or debris prior to geotextile placement.) Geotextile rolls should overlap by a minimum of 24 inches within the trench. Fold back and secure excess geotextile during stone placement and installation of perforated storm pipe.
7. Place uniformly graded, clean-washed aggregate in 6-inch lifts, lightly compacting between lifts. Install inlet structure with connection to upstream MRC SCM underdrain upturned elbow, perforated pipe with caps and/or mesh, observation ports, outlet pipe and associated structures.
8. Fold and secure nonwoven geotextile over trench, with minimum overlap of 12-inches.
9. Backfill bed with soil mix as shown on plans and specifications. Overfill is recommended to account for settlement. Light hand tamping is acceptable if necessary.
10. Seed and stabilize soil.
11. Do not remove erosion and sediment control measures until site is fully stabilized.

Maintenance:

1. When the SCM is first made functional it should be inspected monthly and after any large storm event. Thereafter, once the trench is functioning satisfactorily and without potential sediment problems, inspections should be conducted at least four times per year, as well as after every storm greater than or after runoff events greater than 1.0 inch and after extreme events (10-, 50- and 100-year storm events). Make sure that runoff drains down within the design parameters to ensure the maximum time of 72 hours is not being exceeded. Inspection of the following areas should occur 72 hours following the end of the storm event and should include (at a minimum) the following:
   a. Inspect for the presence of water or ponding in the observation port / clean out.
   b. Inspect inlet structure and cap with dewatering orifice from upstream MRC SCM for signs of clogging and damage.
   c. Inspect outlet structure and orifice for signs of clogging and damage.
   d. Take corrective measures as needed.
2. Vegetation surrounding the trench should be well maintained, to prevent erosion and sediment accumulating in the facility. Bare spots should be immediately stabilized and re-vegetated. Fertilizers should only be applied as necessary and in limited amounts to avoid contributing to groundwater pollution.
3. Care must be taken to protect the SCM from excessive sediments from the drainage shed. Whenever additional land disturbance activity takes place in the area draining to the facility, effective erosion and sediment control measures must first be put in place to exclude sediments from the trench.
4. If water is evident and the facility fails to drain within 72 hours following a rain event, drain the trench via pumping and clean out perforated piping, if included. If slow drainage persists, a professional engineer should evaluate the facility as may be required to determine an appropriate course of action. This includes, but is not limited to, replacement of the facility.

RIP-RAP MAINTENANCE NOTES:

1. All rip-rap aprons shall be inspected after runoff events greater than 1.0 inch and after extreme events (10-, 50- and 100-year storm events).
2. Displaced rip-rap within the apron should be replaced immediately.
3. Replace rip-rap on back side of apron on both sides of pipe as needed to prevent scour around the pipe.

LANDSCAPE RESTORATION

Construction Sequence:

1. All plant material to be installed in accordance with the planting practices stated in Chapter 3 of "Tree Maintenance" by P.P. Pirone (fifth or most recent edition).
2. Take extreme care in handling and installing all plants to prevent damage to bark, branches, and root balls.
3. All planting areas shall be free from weeds prior to the beginning of planting operation. Contact herbicide sprays should only be used as required and all manufactures specifications followed.
4. Prepare tree and shrub planting pits with proper size excavations and backfill during planting with prepared backfill mixture. Backfill in layers, water thoroughly to allow settlement and remove air pockets.
5. Plant root balls at the same relation to grade as previously grown at the nursery. High or low root balls shall not be accepted.
6. Backfill planting soil of 50% topsoil and 50% peat moss shall be mixed with existing soil at a rate of 1/3 planting soil and 2/3 existing soil.
7. Fertilize all plants with appropriate starter fertilizer at time of planting.
8. All plantings must be thoroughly watered within the first 12 hours of installation. The contractor is responsible for providing water for this operation.
9. Mulch all plantings immediately after planting operations are completed with a three-inch (3") layer of finely shredded bark mulch or licorice root. The mulch shall be aged a minimum of 6 months. A granular pre-emergent weed control shall be spread prior to mulching. The limit of this mulch for deciduous trees and single evergreen trees shall be the area of the pit excavation. For all evergreen tree and shrub clusters, a fully mulched bed shall be created. Mulch planting beds entirely around and between all plants for a fully mulched bed. Depth shall be cleanly cut and tapered to match surrounding lawn grades.
10. All shrubs are to be mulched in groups. No singularly mulched shrubs will be accepted, unless a singular specimen shrub in lawn has been shown on the drawings. A continuous mulch bed shall be provided for each grouping or cluster of shrubs to the extent of their collective branch drip line.

Maintenance:

1. Application of a carefully selected herbicide around the protective tree shelters/tubes may be necessary, and reinforced by selective cutting/manual removal, if necessary for the initial 2 to 3 years of growth and may be necessary for up to 5 years until tree growth and tree canopy begins to form, naturally inhibiting weed growth (once shading is adequate, growth of invasives and other weeds will be naturally prevented, and the trees becomes self-maintaining).
2. Review of the new trees should be undertaken intermittently to determine if replacement trees should be provided (some modest rate of planting failure is usual).
3. Landscape restoration areas planted with a proper cover crop can be expected to require annual mowing to control invasive species.

SPECIAL GEOLOGIC FORMATIONS OR SOIL CONDITIONS & POTENTIAL POLLUTION:

To the best of our knowledge, no geologic formations or soil conditions having the potential to cause pollution to surface waters exist at the site.

THERMAL IMPACT STATEMENT:

Stormwater runoff from the proposed impervious surfaces will be directed into bio-retention w/MRC stormwater management facilities before reaching existing storm sewer piping that ultimately reaches the existing stream, to minimize the potential for thermal impacts. Stormwater runoff will be managed and filtered in the facility before being discharged through the existing stormwater piping system where the runoff has additional time to cool before reaching the surface waters.

CONSTRUCTION SEQUENCE

CONSTRUCTION SEQUENCE NOTES:

- At least 7 days prior to starting any earth disturbance activities (including clearing and grubbing) the owner and/or operator shall invite all contractors, the landowner, appropriate municipal officials, the E&S plan preparer, the PCSM plan preparer, the designated licensed professional and a representative from the Montgomery County Conservation District to an on-site pre-construction meeting.
- Critical stages as noted throughout the construction sequence are defined as sequence steps that require the permittee to provide engineering construction oversight. A licensed professional engineer knowledgeable in the design and construction of stormwater SCM's, preferably the design engineer, shall conduct the oversight.
- At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System, Inc. shall be notified at 1-800-242-1776 for the location of existing underground utilities.
- All earth disturbance activities shall proceed in accordance with the following sequence. Each step of the sequence shall be completed before proceeding to the next step, except where noted. Deviation from the sequence must be approved by the Montgomery County Conservation District or by the department prior to implementation.
- Any cessation of activity for 4 days or longer requires temporary stabilization.
- As soon as slopes, channels, ditches and other disturbed areas reach final grade, they must be permanently stabilized immediately.
- Perimeter compost filter sock to be installed by clearing area for sock and installing sock immediately or by clearing and installing sock as you go. No disturbed area should be left without perimeter controls. Sock shall be installed to minimize existing tree removal to the greatest extent possible.

CONSTRUCTION SEQUENCE:

1. Field-mark the limits of disturbance, streams and wetlands prior to disturbance activities (i.e. survey stakes, posts & rope, construction fence, etc.) in accordance with the erosion and sediment control plan.
2. Clear, grub and strip topsoil in the area proposed for the construction entrance. Install the temporary stone construction entrance/tire cleaners in accordance with the construction detail.
3. Install compost filter sock 1 through 6 as shown on the erosion and sediment control plan.
4. Install orange construction fence for SCMs 001 through 008 as shown.
5. Upon installation and stabilization of all perimeter sediment control SCM's and at least 3 days prior to proceeding with the bulk earth disturbance activities, the permittee or co-permittee shall provide notification to the department or authorized conservation district.
6. Strip any remaining topsoil and stockpile. Stabilize stockpile and protect with compost filter sock. Clear and grub any remaining areas left to be disturbed.
7. Rough grade the site and pad out building sites, rough grade swales 1 through 5.
8. Install road widening and sidewalk along Cedar Hill Road. Stabilize disturbed areas immediately with seed and mulch.
9. Construction of dwellings can begin. Install on-lot sediment controls in accordance with construction details #10-1, #10-2 or #10-3, as applicable, prior to construction on each lot. If driveway is not stabilized, access to the constructed units shall be stabilized to a minimum of a stone base for construction vehicle access. Construct buildings, install utilities, sidewalks and driveway paving.
10. Replace topsoil equal to pre-development depths or to a minimum depth of 6-in., whichever is greater. And finish grade, wherever and whenever possible. Seed and mulch each area of disturbance immediately after construction is completed. No more than 15,000 s.f. of disturbed area shall reach final grade before initiating seeding and mulching operations. Graded areas should be scarified or otherwise loosened to a depth of 3- to 5-inches prior to topsoil placement.
11. Install trees and shrubs wherever and whenever possible in accordance with the PCSM Landscape Plan and details.
12. Perform final landscaping operations. In such cases, permanently seed and mulch disturbed areas. Seeding shall follow fertilization and seeding rates specified in seeding specification chart. If finish grading is not practical, temporarily seed all disturbed areas.

NOTE: THE MONTGOMERY COUNTY CONSERVATION DISTRICT MUST BE NOTIFIED PRIOR TO THE REMOVAL OF PRIMARY EROSION AND SEDIMENT CONTROL SCM'S.

13. Critical Stage - When areas upstream of SCMs 001 through 004 are permanently stabilized, install bio-retention with MRC SCMs in accordance with the following sequence and the construction details:
   a. Notify Lower Gwynedd Township and the Conservation District prior to construction.
   b. Unless otherwise infeasible, construction of the permanent basin should be scheduled to allow for installation of the specified seed mixes as soon as permanent basin construction is complete between early April to mid-June to provide the plants with a full growing season to build strong root reserves for winter hardiness. In no case shall seed be installed prior to April 1 or later than September 15. Install annual rye cover crop for over-wintering, followed by site preparation and application of the specified seed mixes during the following spring.
   c. A licensed professional engineer (or authorized representative) knowledgeable in the design and construction of stormwater SCM's, preferably the design engineer, shall conduct the oversight during installation.
   d. Install the MRC SCM during final phases of site construction to prevent sedimentation and/or damage from construction activity. After installation, prevent sediment-laden water from entering via overland, inlets and pipes.
   e. Install and maintain proper E&S SCMs during construction.
   f. If necessary, excavate the MRC SCM bottom to an un-compacted subgrade free from rocks and debris. Do NOT compact the subgrade.
   g. Install reinforced spillway, pipe bedding, underdrain piping and aggregate envelope, cleanouts, etc.
   h. Place soil mix gently. Do not compact soil mix. The placement of soil mix should be done from outside the SCM footprint to avoid compaction by construction equipment. Equipment should never drive over placed soil mix.
   i. Prepare for seeding by eliminating any weed growth prior to seed installation using an appropriate herbicide to control undesirable vegetation. For optimal seed establishment, soil ph shall be between 5.5 and 6.5.
   j. Seed and stabilize disturbed area. Apply seed by carefully proportioning seed for the entire area. Broadcast seed in two separate applications by applying seed at half the suggested rate for each application to ensure even and adequate coverage. After the full rate of seeding has been achieved, follow by rolling or tracking seed into the top 1/4 inch of soil to achieve good seed to soil contact - do not roll or track the seed when soil is wet. Vegetate with native plantings.
   k. Cover seeded area with a light layer of salt hay, threshed straw or pine needles and apply erosion control matting over 3:1 slopes and the basin floor.
   l. Plant and mulch according to specifications on the landscape plan.
   m. Maintain inlet protection and other E&S SCMs until the site is fully stabilized.
   n. Complete SCM Certification form and submit to MCCD within 30 days of completion.
14. Critical Stage - Simultaneously with Step 13, and when areas upstream of SCMs 005 through 008 are permanently stabilized, install seepage bed SCMs in accordance with the following sequence and the construction details:
   a. Notify Lower Gwynedd Township and the Conservation District prior to construction.
   b. A licensed professional engineer (or authorized representative) knowledgeable in the design and construction of stormwater SCM's, preferably the design engineer, shall conduct the oversight during installation.
   c. Install the SCM during final phases of site construction to prevent sedimentation and/or damage from construction activity. After installation, prevent sediment-laden water from entering via overland, inlets and pipes.
   d. Install and maintain proper E&S SCMs during construction.
   e. Excavate bed bottom to a uniform, level uncompacted subgrade free from rocks and debris. Do not compact subgrade. If the area has been subject to compaction or sedimentation during construction, infiltration testing may be required during/prior to the construction of the SCM to verify the volume credits taken by design. If unfavorable conditions are encountered during installation (i.e. groundwater and/or bedrock, etc.), the engineer should be consulted, and the location of the proposed facility should be re-evaluated.
   f. To the greatest extent possible, excavation should be performed with the lightest practical equipment. Excavation equipment should be placed outside the limits of the infiltration bed.
   g. Completely wrap bed with nonwoven geotextile. (remove any accumulated sediment and/or debris prior to geotextile placement.) Geotextile rolls should overlap by a minimum of 24 inches within the trench. Fold back and secure excess geotextile during stone placement and installation of perforated storm pipe.
   h. Place uniformly graded, clean-washed aggregate in 6-inch lifts, lightly compacting between lifts. Install inlet structure with connection to upstream MRC SCM underdrain upturned elbow, perforated pipe with caps and/or mesh, observation ports, outlet pipe and associated structures.
   i. Fold and secure nonwoven geotextile over trench, with minimum overlap of 12-inches.
   j. Backfill bed with soil mix as shown on plans and specifications. Overfill is recommended to account for settlement. Light hand tamping is acceptable if necessary.
   k. Seed and stabilize soil.
   l. Do not remove erosion and sediment control measures until site is fully stabilized.
   m. Complete SCM Certification form and submit to MCCD within 30 days of completion.
15. After all construction work is completed, install final paving, permanent striping and signage.
16. Upon final stabilization, remove all other temporary sediment controls. An area shall be considered to have achieved final stabilization when it has minimum 70 % uniform perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.
17. Critical Stage - The site engineer shall inspect the PCSM SCM to ensure that the SCM has not been impacted by construction activities. Completion of the Notice to New Property Owners of PCSM SCMs and O&M Requirements "New Property Owner Notification Form" shall be provided for the property owners of Lots 1, 2, 3 and 4.
18. Within 30 days after the completion of earth disturbance activities authorized by this permit, including the permanent stabilization of the site and proper installation of PCSM SCM's in accordance with the approved PCSM plan, or upon submission of the NOT if sooner, the permittee shall file with the department or authorized conservation district a statement signed by a licensed professional and by the permittee certifying that work has been performed in accordance with the terms and conditions of this permit and the approved E&S and PCSM plans. Completion certificates are needed to ensure that all work is performed in accordance with the terms and conditions of the permit and approved E&S and PCSM plans.
19. Upon completion of all certifications and final inspection, the permittee or co-permittee shall submit a Notice of Termination (NOT) to the Conservation District.

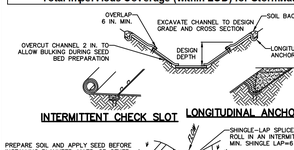
ANY SEDIMENT CONTROL, SUCH AS COMPOST FILTER SOCK, ROCK FILTER, OR INLET FILTER MUST NOT BE REMOVED UNTIL ALL VEGETATION (UPSTREAM OF THAT PARTICULAR CONTROL) HAS BEEN RE-ESTABLISHED.

ANY AREA (S) DISTURBED DURING THE REMOVAL OF SEDIMENT CONTROLS SHALL BE IMMEDIATELY RE-STABILIZED.

1512 & 1524 CEDAR HILL ROAD
8/25/2025

LOT NO	PROP. LOT AREA (S.F.)	20 % MAX. BLDG. COV. (S.F.)	25% MAX. IMP. COV. (S.F.)
1	79,226	15,845	19,807
2	79,391	15,878	19,848
3	79,564	15,913	19,891
4	79,773	15,955	19,943
	Total:		79,489

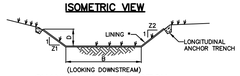
Design Max Cover	1.82
Exist. Cedar Hill Road	0.27
Proposed Cedar Hill Road Widening	0.04
Proposed Sidewalk w/in ROW	0.08
Total Impervious Coverage (within LOD) for Stormwater Design	2.21



INTERMITTENT CHECK SLOT

LONGITUDINAL ANCHOR TRENCH

ISOMETRIC VIEW



CHANNEL CROSS-SECTION

* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING *
1	ALL	3	1	9	3	3	NAG S75 (TRP.) VEG. (PERM.)
2	ALL	3	1	9	3	3	NAG S75 (TRP.) VEG. (PERM.)
4	ALL	3	1	9	3	3	NAG S75 (TRP.) VEG. (PERM.)
5	ALL	3	1	9	3	3	NAG S75 (TRP.) VEG. (PERM.)

NOTES:

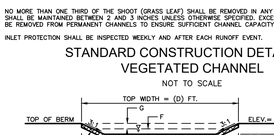
ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

INLET PROTECTION SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.

STANDARD CONSTRUCTION DETAIL #6-1
VEGETATED CHANNEL
NOT TO SCALE



SCM I.D.	TOP OF BERM ELEV. (FT.) G	EMERGENCY SPILLWAY ELEV. (FT.) F	BOTTOM WIDTH (FT.) C	TOP WIDTH (FT.) D	SPILLWAY LINING E	FLOW DEPTH (FT.) B	FREEBOARD (FT.) A
001	374.85	373.50	20	26	575	0.31	1.04
002	371.90	370.50	20	26	575	0.38	1.02
003	368.90	367.50	20	26	575	0.40	1.00
004	366.95	365.50	20	26	575	0.42	1.03

EMERGENCY SPILLWAY CROSS-SECTION
N.T.S.

NOTES:
1. THE UPSTREAM EDGE OF THE SPILLWAY LINING IS TO EXTEND A MINIMUM OF 3 FEET BELOW THE SPILLWAY CREST ELEVATION AND THE DOWNSTREAM SLOPE OF THE SPILLWAY SHALL AS A MINIMUM EXTEND TO THE TOE OF THE EMBANKMENT.
2. SPILLWAY SHALL BE PERMANENTLY SEEDED IN ACCORDANCE WITH SPECIFICATIONS ON THE EROSION AND SEDIMENT CONTROL DETAIL SHEET.

SOIL MIX FOR SCM's
SPECIFICATIONS:

1. MUST BE WELL BLENDED, HOMOGENEOUS MIX BY VOLUME OF APPROXIMATELY 1/3 COMPOST, 1/3 SAND (C-33), & 1/3 TOPSOIL WITH CLAY CONTENT OF 10% OR LESS.
2. MUST MEET SOIL PERMEABILITY OF 2.0 IN/HR.
3. MUST HAVE MAX. 5% ORGANICS BY VOLUME.
4. COMPOST USED SHALL MEET THE FOLLOWING PHYSICAL PARAMETERS:

ORGANIC MATTER CONTENT	25% – 100% (DRY WEIGHT BASIS)
ORGANIC FORMS	FIBROUS AND ELONGATED
PH	5.5 – 8.5
MOISTURE CONTENT	30% – 60%
PARTICLE SIZE	30% – 60% PASS THROUGH ¾" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 DS/M (MMHOS/CM) MAXIMUM

5. BULK DENSITY OF THE AMENDED SOIL TO MEET THE FOLLOWING CRITERIA:

SOIL TEXTURE	IDEAL BULK DENSITIES g/cm3
SANDS, LOAMY SANDS	<1.60
SANDY LOAMS, LOAMS	<1.40
SANDY CLAY LOAMS, LOAMS, CLAY LOAMS	<1.40
SILT, SILT LOAMS	<1.30
SILT LOAMS, SILTY CLAY LOAMS	<1.10
SANDY CLAYS, SILTY CLAYS, SOME CLAY LOAMS (35%-55% CLAY)	<1.10
CLAYS (>45% CLAY)	<1.10

6. THE AMENDED SOIL MIXTURE SHOULD BE APPROVED BY THE ENGINEER OR SOIL SCIENTIST PRIOR TO PLACEMENT. PROTECTING URBAN SOIL QUALITY, USDA-NRCS.
7. ON-SITE SOILS WITH AN ORGANIC MATTER CONTENT OF AT LEAST 5% CAN BE PROPERLY STOCKPILED (TO MAINTAIN ORGANIC CONTENT) AND REUSED AS THE TOPSOIL COMPONENT OF THE AMENDED SOILS.

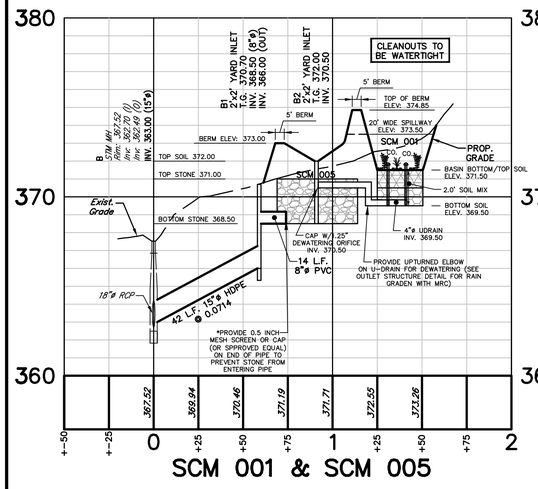
APPLICATION:

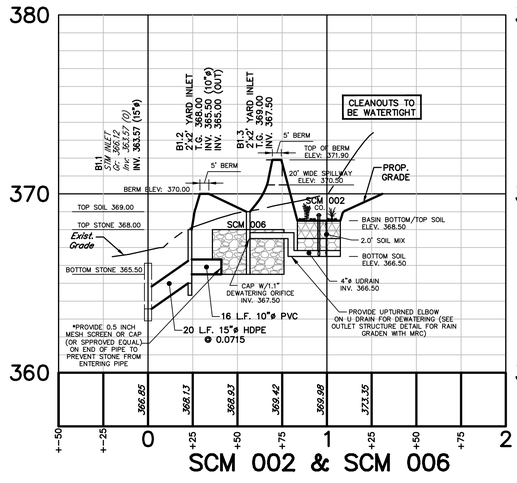
1. REFER TO DETAILS FOR SOIL AMENDMENT DEPTHS WITHIN BMP's.
2. THE AMENDED SOIL SHOULD BE PLACED DURING DRY, FRIABLE SOIL CONDITIONS ON SCARIFIED, UNCOMPACTED SUB-GRADE.
3. CARE SHOULD BE TAKEN TO AVOID COMPACTION OF BOTH THE SUB-GRADE AND AMENDED SOIL DURING PLACEMENT.
4. SEED AND STABILIZE IMMEDIATELY AFTER PLACEMENT.
5. PREVENT SEDIMENTATION OF THE AMENDED SOIL AFTER PLACEMENT.

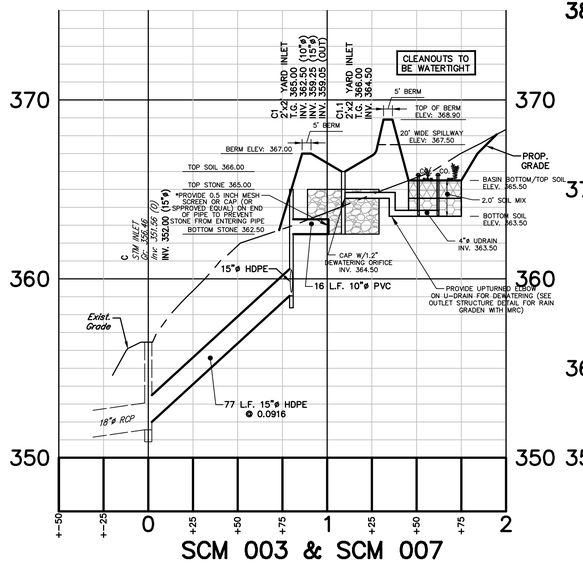
NOTE: WHEN A DISTURBED AREA IS TO BE STABILIZED BY VEGETATION, NO MORE THAN 15,000 S.F. SHALL REACH FINAL GRADE WITHOUT BEING SEEDED AND MULCHED, WAITING UNTIL EARTHMOVING ACTIVITIES ARE COMPLETED BEFORE SEEDING AND MULCHING OPERATIONS ARE COMPLETED IS NOT RECOMMENDED.

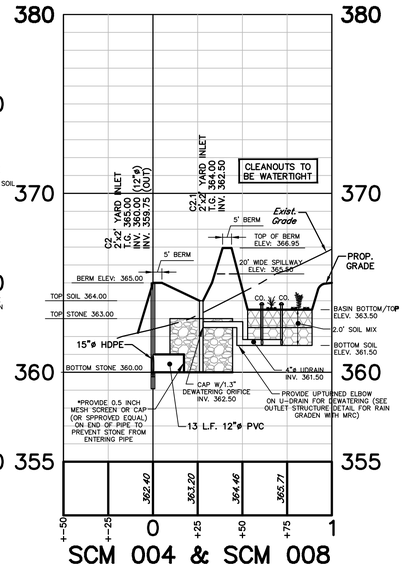
TABLE 11.2 SOIL AMENDMENT AND FERTILIZER APPLICATION RATE EQUIVALENT

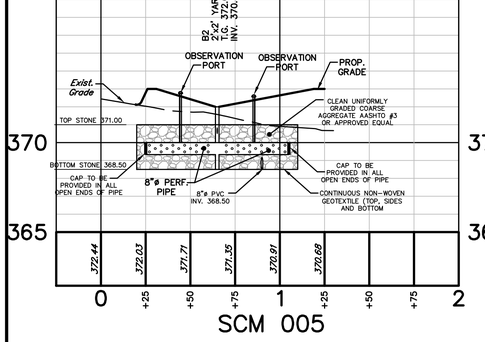
| SOIL AMENDMENT | PERMANENT SEEDING APPLICATION RATE PER ACRE | PER 1,000 S.F. | PER 1,000

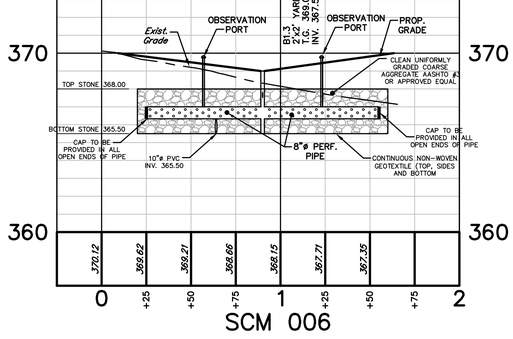


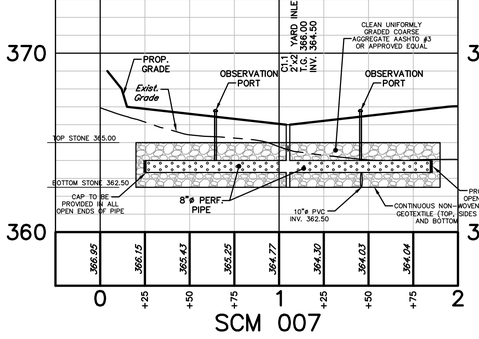


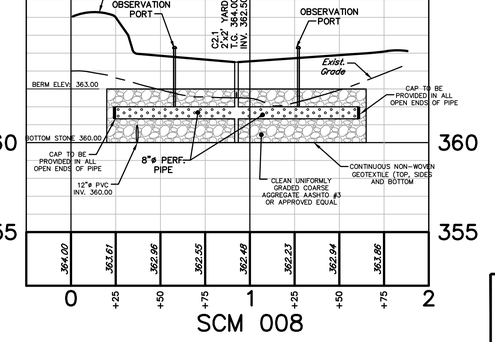


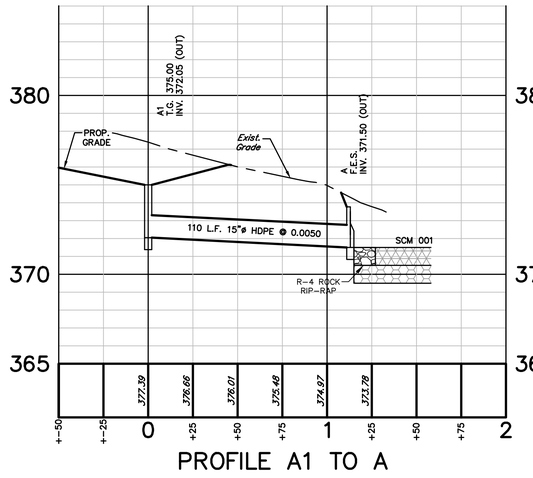


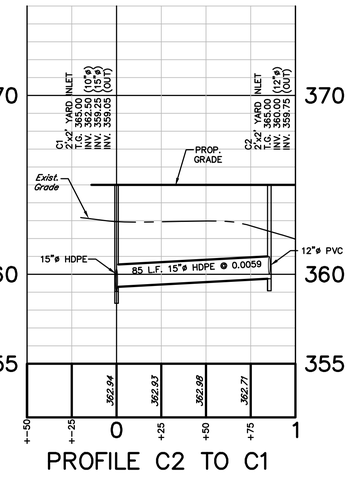












1512 & 1524 CEDAR HILL ROAD (STA #6571)

COMMONWEALTH OF PENNSYLVANIA SUSAN ANN RICE ENGINEER PE074508

GRAPHIC SCALE
40 0 20 40 80 120

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

PCSM DETAIL SHEET

AS PART OF

1512 & 1524 CEDAR HILL ROAD

PREPARED FOR

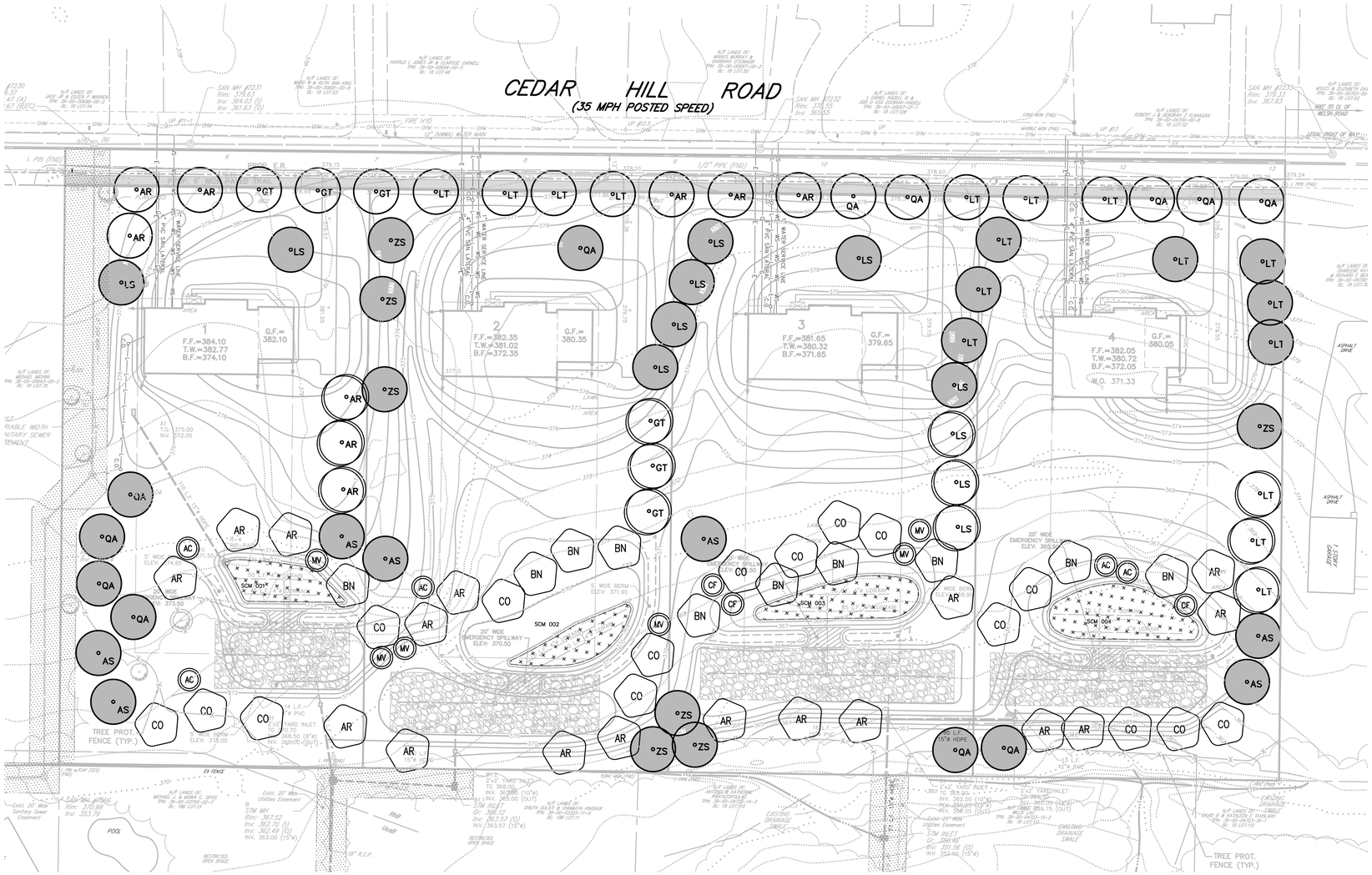
TISMAN GROUP, LLC

SITE SITUATE IN

LOWER GWYNEDD TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

S T A Engineering, Inc.
Civil Engineers • Land Surveyors
2499 KNIGHT ROAD, PENNSBURG, PA 18073
PH: (215) 679-0200; www.stotac.com

PLAN SCALE	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
HORIZONTAL: 1" = 40' VERTICAL: 1" = 5'	M.J.P.	S.A.R.	11 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571PCSM	



LANDSCAPE NOTES

1. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY. THEY SHALL HAVE WELL DEVELOPED BRANCHES, AND VIGOROUS FIBROUS ROOT SYSTEMS. THEY SHALL BE FREE FROM DISFIGURING KNOTS, SUN SCALE, INJURIES, ABRASIONS OF BARK, PLANT DISEASES, INSECT EGGS, BORERS, AND ALL FORMS OF INFESTATION. ALL COLLECTED MATERIAL SHALL BE CLEAN, SOUND STOCK, AND FREE FROM DECAYING STUMPS.

2. SIZE AND GRADING STANDARDS SHALL CONFORM TO THE "U.S.A. STANDARD FOR NURSERY STOCK". LOOSE, BROKEN, OR MANUFACTURED BALLS WILL BE REJECTED.

3. BALLED AND BURLAPED, AND BALLED AND PLATFORM PLANTS, SHALL HAVE SOLID BALL OF EARTH SECURELY HELD IN PLACE BY BURLAP AND STOUT ROPE. MINIMUM BALL SIZES SHALL BE SPECIFIED IN THE "U.S.A. STANDARD FOR NURSERY STOCK" AS SPONSORED BY THE AMERICAN ASSOCIATION OF NURSERYMAN.

4. PROVIDE CONTINUOUS DOUBLE-SHREDDED HARDWOOD BARK MULCH (3" THICK) AT THE BASE OF THE SPECIMEN TREES AND SHRUBS.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING WHERE THE UNDERGROUND UTILITIES EXIST ON-SITE. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING NEAR THESE UTILITIES.

6. ALL DISTURBED PERVIOUS AREAS EXCEPT PLANTING BEDS SHALL BE SEEDED AND MULCHED.

7. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, CULTIVATING, FERTILIZING, SPRAYING, TIGHTENING, AND REPAIRING OF GUYS, REMOVAL AND REPLACEMENT OF DEAD MATERIAL, RESETTING SETTLED PLANTS TO PROPER GRADES OR UPRIGHT POSITION, AND OTHER NECESSARY OPERATIONS AS MAY BE REQUIRED TO KEEP THE PLANTS IN A LIVE AND HEALTHY GROWING ENVIRONMENT.

8. STREET TREES AND OTHER REQUIRED PLANT MATERIAL SHALL NOT BE PLANTED UNTIL THE FINISHED GRADING OF THE PROPERTY HAS BEEN COMPLETED.

9. NO GRADING IS TO OCCUR WITHIN 5 FEET OF ANY TRACT BOUNDARY LINE.

10. REQUIRED PLANT MATERIAL SHALL BE MAINTAINED FOR THE LIFE OF THE PROJECT TO ACHIEVE THE REQUIRED VISUAL EFFECT OF THE BUFFER OR SCREEN. IT SHALL BE THE ULTIMATE RESPONSIBILITY OF SUCCESSIVE PROPERTY OWNERS TO ENSURE THAT THE REQUIRED PLANTINGS ARE PROPERLY MAINTAINED. DEAD OR DISEASED PLANT MATERIAL SHALL BE REMOVED OR TREATED PROMPTLY BY THE PROPERTY OWNER AND REPLACED AT THE NEXT GROWING SEASON.

11. STREET TREES SHALL BE OF NURSERY ROCK. THEY SHALL BE OF SYMMETRICAL GROWTH, FREE OF INSECTS, PEST, AND DISEASE. ALL PLANT MATERIAL SHALL CONFORM TO THE APPLICABLE STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN. THESE STANDARDS INCLUDE, BUT ARE NOT LIMITED TO, CALIPER, HEIGHT, SPREAD AND ROOT BALL SIZE.

12. SOIL QUALITY. ALL SOIL IN ALL LANDSCAPED AREAS BE COMPROMISED OF TOPSOIL FROM THE SITE, OR HAULED TO THE SITE, TO A DEPTH OF 36 INCHES. SUBSOIL OR FILL DIRT SHALL NOT BE ADDED TO THE UPPER 36 INCHES OF SOIL IN LANDSCAPED AREAS.

13. SOIL AMENDMENTS. WHEN EXISTING TOPSOIL FROM THE SITE IS USED IN LANDSCAPED AREAS, ONE CUBIC YARD OF COMPOSTED LEAF MULCH OR SIMILAR ORGANIC MATERIAL FOR EVERY 100 SQUARE FEET OF LANDSCAPED AREA SHALL BE TILLED INTO THE SOIL TO A DEPTH NO GREATER THAN 12 INCHES, PRIOR TO PLANTING.

14. SOIL MULCH LAYER. TO PROMOTE THE ESTABLISHMENT OF HEALTHY PLANT COMMUNITIES THROUGH THE SUPPRESSION OF WEEDS AND RETENTION OF SOIL MOISTURE, A THREE-INCH-THICK LAYER OF SHREDDED MULCH (BARK, ROOT, OR HARDWOOD) IS REQUIRED IN ALL LANDSCAPED AREAS, TO BE APPLIED IMMEDIATELY AFTER PLANTING IS COMPLETED. THE DEVELOPER MAY SUBSTITUTE WOOD CHIPS OR OTHER SUITABLE MATERIALS IN AREAS NOT DESIGNATED AS STORMWATER MANAGEMENT FACILITIES. THE USE OF STONE AS A MULCH SHOULD BE LIMITED TO AREAS SUBJECTED TO EROSION, SUCH AS INLETS, FILTER TRENCHES, OR OVERFLOW RISERS. STONE IS NOT PERMITTED ELSEWHERE IN THE LANDSCAPED AREA.

15. NATIVE PLANTIN REQUIREMENTS. TO PROMOTE THE RESTORATION OF NATIVE PLANTS, NO LESS THAN 75% OF THE TREES, SHRUBS, AND PERENNIALS SELECTED FOR A NEW SUBDIVISION OR LAND DEVELOPMENT SHALL BE NATIVE TO THE LOWER DELAWARE VALLEY, PIEDMONT- COSTAL PLAINS AREAS, AS INDICATED BY THE PENNSYLVANIA DEPARTMENT OF NATURAL RESOURCES ("DCNR LIST").

16. LANDSCAPE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO ANY EXCAVATION AND PLANTING INSTALLATION.

17. ALL PROPOSED PLANT MATERIAL SHALL BE INSTALLED PER STANDARDS OF THE "AMERICAN ASSOCIATION OF NURSERYMEN" AND STATE NURSERY/LANDSCAPE ASSOCIATION WITH REGARD TO PLANTING, PIT SIZE, BACKFILL MIXTURE, STAKING AND GUYING

18. PLANT MATERIAL SHALL BE GUARANTEED FOR EIGHTEEN (18) MONTHS FROM THE DATE OF SUBSTANTIAL COMPLETENESS. THE CONTRACTOR SHALL REPLACE ANY; DEAD, UNHEALTHY, DYING OR DAMAGED PLANTS, THROUGH LOSS OF BRANCHES AND/OR FOLIAGE. LAWNS THAT ARE NOT IN GOOD CONDITION AT THE END OF THE GUARANTEE PERIOD SHALL BE REPAIRED UNTIL A GOOD LAWN RESULTS.

19. REFER TO REPORT BY ROCKWELL ASSOCIATES DATED OCTOBER 14, 2025 FOR AN EVALUATION SUMMARY OF THE CONDITION OF THE EXISTING TREES ON SITE. THE ARBORIST CONCLUDED THAT 274 CALIPER INCHES MUST BE REPLACED. REFER TO SHEET 13 FOR REPLACEMENT TREE CALCULATIONS.

LEGEND

SOIL MIX / SCM FLOOR MIX:
ERNMX-180 (OR APPROVED EQUAL)
WITH ADDITIONAL PLUG PLANTINGS

BMP SEED MIX SPECIFICATIONS

Rain Garden Mix - ERNMX-180

	Botanical Name	Common Name	Price/Lb
29.50 %	*Schizachyrium scoparium, Fort Indiantown Gap-PA Ecotype*	Little Bluestem, Fort Indiantown Gap-PA Ecotype	13.67
20.00 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype	9.56
9.00 %	*Carex vulpinoidea, PA Ecotype*	Fox Sedge, PA Ecotype	28.80
8.00 %	*Echinacea purpurea*	Purple Coneflower	51.20
5.00 %	*Panicum virgatum, PA Ecotype*	Rodbed Switchgrass, PA Ecotype	57.60
5.00 %	*Andropogon gerardii, WV Ecotype*	Big Bluestem, WV Ecotype	16.00
3.00 %	*Coreopsis lanceolata*	Lanceleaf Coreopsis	28.80
3.00 %	*Rudbeckia hirta*	Blackeyed Susan	31.20
2.50 %	*Verbena hastata, PA Ecotype*	Blue Vervain, PA Ecotype	38.40
2.00 %	*Panicum clandestinum, Tioga*	Deertongue, Tioga	22.14
1.80 %	*Helianthus helianthoides, PA Ecotype*	Ovate Sunflower, PA Ecotype	33.60
1.50 %	*Asclepias incarnata, PA Ecotype*	Swamp Milkweed, PA Ecotype	177.60
1.50 %	*Penstemon digitalis, PA Ecotype*	Tall Beardtongue, PA Ecotype	160.00
1.00 %	*Geum triflorum, PA Ecotype*	Blunt Prairie Smoke, PA Ecotype	38.40
1.00 %	*Senna hebecarpa, VA & WV Ecotype*	Wild Senna, VA & WV Ecotype	28.80
1.00 %	*Zizia aurea, PA Ecotype*	Golden Alexanders, PA Ecotype	72.00
0.50 %	*Baptisia australis, Southern WV Ecotype*	Blue False Indigo, Southern WV Ecotype	96.00
0.50 %	*Juncus effusus*	Soft Rush	48.00
0.50 %	*Juncus tenuis, PA Ecotype*	Path Rush, PA Ecotype	48.00
0.50 %	*Pycnanthemum tenuifolium*	Narrowleaf Mountainmint	240.00
0.50 %	*Vernonia noveboracensis, PA Ecotype*	New York Ironweed, PA Ecotype	264.00
0.50 %	*Liatris spicata, PA Ecotype*	Marsh Blazingstar, PA Ecotype	96.00
0.40 %	*Monarda fistulosa, Fort Indiantown Gap-PA Ecotype*	Wild Bergamot, Fort Indiantown Gap-PA Ecotype	96.00
0.20 %	*Aster prenanthoides, PA Ecotype*	Zigzag Aster, PA Ecotype	432.00
0.10 %	*Aster lanceolatus*	Lance Leaved Aster	432.00
0.10 %	*Aster lateriflorus*	Calico Aster	336.00
0.10 %	*Aster pilosus, PA Ecotype*	Heath Aster, PA Ecotype	264.00
0.10 %	*Eupatorium perfoliatum, PA Ecotype*	Boneset, PA Ecotype	192.00
0.10 %	*Mimulus ringens, PA Ecotype*	Square Stemmed Monkeyflower, PA Ecotype	216.00
0.10 %	*Solidago juncea, PA Ecotype*	Early Goldenrod, PA Ecotype	336.00
0.10 %	*Solidago nemoralis, PA Ecotype*	Gray Goldenrod, PA Ecotype	264.00
0.10 %	*Solidago rugosa, PA Ecotype*	Wrinkleleaf Goldenrod, PA Ecotype	264.00
100.00 %		**Mix Price/Lb Bulk:**	**$39.36**

Seeding Rate: 20 lb per acre with a cover crop. For sites that drain within 24 hours of a rain event use one of the following cover crops-Oats (1 Jan to 31 Jul, 30 lbs/acre), Japanese Millet (1 May to 31 Aug, 10 lbs/acre), or grain rye (1 Aug to 31 Dec, 30 lbs/acre).

PLUGS FOR DEPRESSION AREAS:

BOTANICAL NAME	COMMON NAME	SIZE - ROOT	SPACING	QTY.
ASCLEPIAS INCARNATA	SWAMP MILKWEED	2" PLUG	2'-3" O.C.	**
CAREX STRICTA	TUSSOCK SEDGE	2" PLUG	2'-3" O.C.	**
CHELONE GLABRA	WHITE TURTLEHEAD	2" PLUG	2'-3" O.C.	**
IRIS VERSICOLOR	BLUE FLAG IRIS	2" PLUG	2'-3" O.C.	**
JUNCUS EFFUSUS	SOFT RUSH	2" PLUG	2'-3" O.C.	**
LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	2" PLUG	2'-3" O.C.	**
PANICUM VIRGATUM	SWITCH GRASS	2" PLUG	2'-3" O.C.	**

**** REQUIRED PLUG PLANTING QUANTITIES. THE CONTRACTOR SHALL ADHERE TO THE FOLLOWING PLUG INSTALLATION GUIDELINES:**

SCM 001 REQUIRES A MINIMUM OF 180 PLUG PLANTINGS
SCM 002 REQUIRES A MINIMUM OF 165 PLUG PLANTINGS
SCM 003 REQUIRES A MINIMUM OF 255 PLUG PLANTINGS
SCM 004 REQUIRES A MINIMUM OF 320 PLUG PLANTINGS

- PLUGS SHALL BE INSTALLED WITHIN THE DEPRESSION AREAS OF SCM 001, 002, 003 AND 004 AS INDICATED ON THE PLANS.
- INDIVIDUAL PLANT SPECIES SHALL BE GROUPED IN SEVERAL SEPARATE MASSINGS WITHIN EACH DEPRESSION AREA, AND THE MASSINGS OF DIFFERENT SPECIES SHALL BE INTERMIXED WITHIN EACH AREA TO MIMIC A NATURALIZED PLANT HABITAT.
- EACH SCM SHALL CONTAIN EACH OF THE SEVEN PLANT VARIETIES LISTED ABOVE FOR PLUGS, WITH NO ONE SPECIES ACCOUNTING FOR GREATER THAN 25% OF THE TOTAL QUANTITY OF PLUGS INSTALLED IN ANY ONE SCM.

COMMONWEALTH OF PENNSYLVANIA
SUSAN ANN RICE
ENGINEER
PE074508

40 0 20 40 80 120
GRAPHIC SCALE

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

PCSM LANDSCAPE PLAN
AS PART OF
1512 & 1524 CEDAR HILL ROAD
PREPARED FOR
TISMAN GROUP, LLC
SITE SITUATE IN
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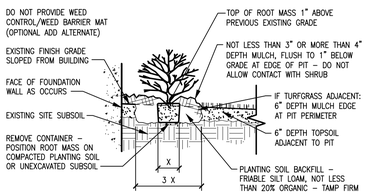
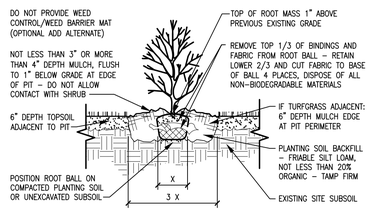
PLAN SCALE HORIZONTAL:	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
1" = 40'	M.J.P.	S.A.R.	12 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571LA	

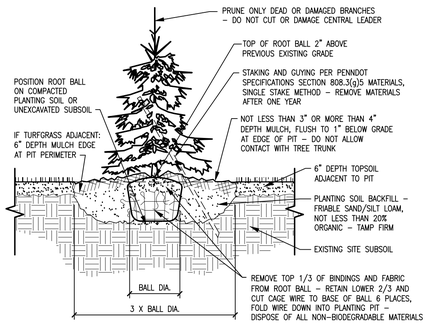
1512 & 1524 CEDAR HILL ROAD (STA #6571)



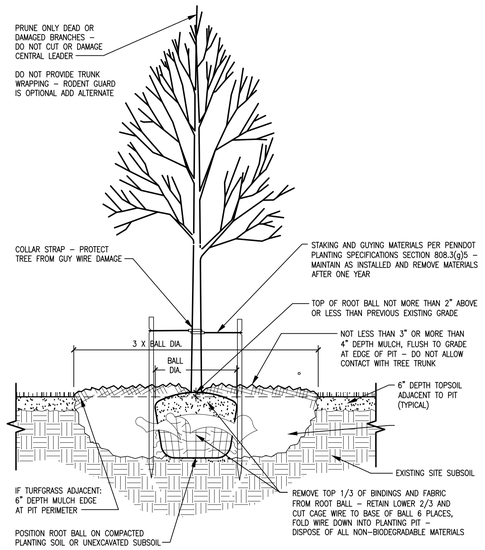
CONTAINER SHRUB PLANTING
N.T.S.



B&B SHRUB PLANTING
N.T.S.



EVERGREEN TREE – OPEN LAWN OR LANDSCAPE BUFFER
N.T.S.



DECIDUOUS TREE PLANTING
N.T.S.

STREET TREES – SECTION 1230.42(a)(1)

REQUIRED: 1 SHADE TREE PER 40 L.F. (ONE SIDE OF STREET)

STREET NAME	STREET LENGTH	REQUIRED TREES	PROVIDED TREES
CEDAR HILL ROAD	817 L.F.	21	21

SHADE TREES
3.5 IN. CALIPER MINIMUM

CEDAR HILL ROAD	KEY	BOTANICAL NAME / COMMON NAME
6	AR	ACER RUBRUM / RED MAPLE (NATIVE)
3	GT	GLEDITSIA TRIACANTHOS F. INERMIS / THORNLESS HONEYLOCUST
7	LT	URIODENDRON TULIPIFERA / TULIPTREE, TULIP POPLAR (NATIVE)
5	QA	QUERCUS ALBA / WHITE OAK (NATIVE)
TOTAL: 21		21 SHADE TREES PROVIDED

ST
TREE SYMBOL

DETENTION BASIN PERIMETER PLANTINGS – SECTION 1230.42(a)(2)

REQUIRED TREES: 1 SHADE TREE PER 30 LINEAR FEET OF BASIN PERIMETER

PROPOSED REPLACEMENT TREES:
1 FLOWERING TREE AND 2 EVERGREEN TREES PER 100 LINEAR FEET OF BASIN PERIMETER

SCM NO.	PERIMETER LENGTH	REQUIRED: SHADE TREES: REQUIRED	REQUIRED: SHADE TREES: PROVIDED	REPLACEMENT: FLOWERING: PROVIDED	REPLACEMENT: EVERGREEN: PROVIDED
001	235 L.F.	8	8	3	6
002	355 L.F.	12	12	4	8
003	355 L.F.	12	12	4	8
004	325 L.F.	11	11	3	6
TOTAL		43	43	14	28

BASIN REQUIRED:

SHADE TREES
3.5 IN. CALIPER MINIMUM

SCM 001	SCM 002	SCM 003	SCM 004	TOTAL EACH	KEY	BOTANICAL NAME / COMMON NAME
4	5	4	4	17	AR	ACER RUBRUM / RED MAPLE (NATIVE)
1	3	4	2	10	BN	BETULA NIGRA / RIVER BIRCH (NATIVE)
3	4	4	5	16	CO	CARYA OVATA / SHAGBARK HICKORY (NATIVE)
TOTAL: 8	12	12	11			43 SHADE TREES PROVIDED

BT
TREE SYMBOL

BASIN REPLACEMENT:

FLOWERING TREES
10 FT. MIN. HEIGHT

SCM 001	SCM 002	SCM 003	SCM 004	TOTAL EACH	KEY	BOTANICAL NAME / COMMON NAME
2	2	0	2	6	AC	AMELANCHIER CANADENSIS / SHADBLOW SERVICEBERRY (NATIVE)
1	0	2	1	4	CF	CORNUS FLORIDA / FLOWERING DOGWOOD (NATIVE)
0	2	2	0	4	MV	MAGNOLIA VIRGINIANA / SWEETBAY MAGNOLIA (NATIVE)
TOTAL: 3	4	4	3			14 FLOWERING TREES PROVIDED

UT
TREE SYMBOL

EVERGREEN TREES
10 FT. MIN. HEIGHT

SCM 001	SCM 002	SCM 003	SCM 004	TOTAL EACH	KEY	BOTANICAL NAME / COMMON NAME
6	8	8	6	28	IO	ILEX OPACA / AMERICAN HOLLY (NATIVE)
TOTAL: 6	8	8	6			28 EVERGREEN TREES PROVIDED

TREE SYMBOL
IO

INTERIOR LANDSCAPING – SECTION 1230.42(b)

REQUIRED: 3 SHADE TREES PER DWELLING

NO. OF DWELLINGS	REQUIRED TREES	PROVIDED TREES
4	12	12

SHADE TREES
3.5 IN. CALIPER MINIMUM

LOTS 1-4	KEY	BOTANICAL NAME / COMMON NAME
3	AR	ACER RUBRUM / RED MAPLE (NATIVE)
3	GT	GLEDITSIA TRIACANTHOS F. INERMIS / THORNLESS HONEYLOCUST
3	LS	LIQUIDAMBAR STYRACIFLUA / SWEET GUM (NATIVE)
3	LT	LIRIODENDRON TULIPIFERA / TULIPTREE, TULIP POPLAR (NATIVE)
TOTAL: 12		12 SHADE TREES PROVIDED

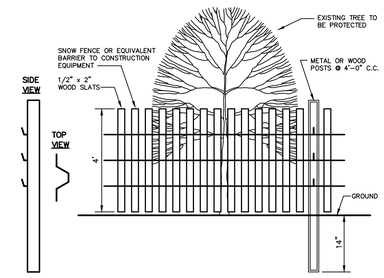
ST
TREE SYMBOL

ADDITONAL TREE REPLACEMENT:

SHADE TREES
3.5 IN. CALIPER MINIMUM

	KEY	BOTANICAL NAME / COMMON NAME
7	AS	ACER SACCHARUM / SUGAR MAPLE (NATIVE)
8	LS	LIQUIDAMBAR STYRACIFLUA / SWEET GUM (NATIVE)
7	LT	LIRIODENDRON TULIPIFERA / TULIPTREE, TULIP POPLAR (NATIVE)
7	QA	QUERCUS ALBA / WHITE OAK (NATIVE)
7	ZS	ZELKOVA SERRATA / JAPANESE ZELKOVA
TOTAL: 36		36 SHADE TREES PROVIDED

RT
TREE SYMBOL



TREE PROTECTION FENCE DETAIL
not to scale

REPLACEMENT TREE EQUIVALENTS

REPLACEMENT TREE CALIPER INCHES REQUIRED – 274 INCHES OR 79 TREES BASED ON 3.5" CAL.

- 36 SHADE TREES OF 3.5" CAL. = 80.5 INCHES
- 21 BASIN FLOWERING/EVERGREEN EQUIVALENTS (10 FT. MIN. HT.)
  14 FLOWERING TREES + 28 EVERGREEN TREES = 42/2 = 21 EQUIVALENTS
- 6 UPSIZED STREET TREES (3.5" CAL.)
  3.5"–2.5" (REQ. STREET TREE SIZE) = 1.0 ADDITIONAL INCH PER TREE
  21 STREET TREES x 1.0" = 21"/3.5" = 6 EQUIVALENTS
- 16 UPSIZED BASIN SHADE AND INTERIOR LANDSCAPE TREES (3.5" CAL.)
  3.5"–2.5" (REQ. BASIN/INTERIOR LANDSCAPE TREE SIZE) = 1.0 ADDITIONAL INCH PER TREE
  [43 BASIN SHADE TREES + 12 INTERIOR LANDSCAPE TREES] x 1.0" = 55"/3.5" = 16 EQUIVALENTS

TOTAL REPLACEMENT TREES PROVIDED – 79 TREES

COMMONWEALTH OF PENNSYLVANIA
REGISTERED
SUSAN ANN RICE
ENGINEER
PE074508
PENNSYLVANIA

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
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PCSM LANDSCAPE DETAIL SHEET
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1512 & 1524 CEDAR HILL ROAD
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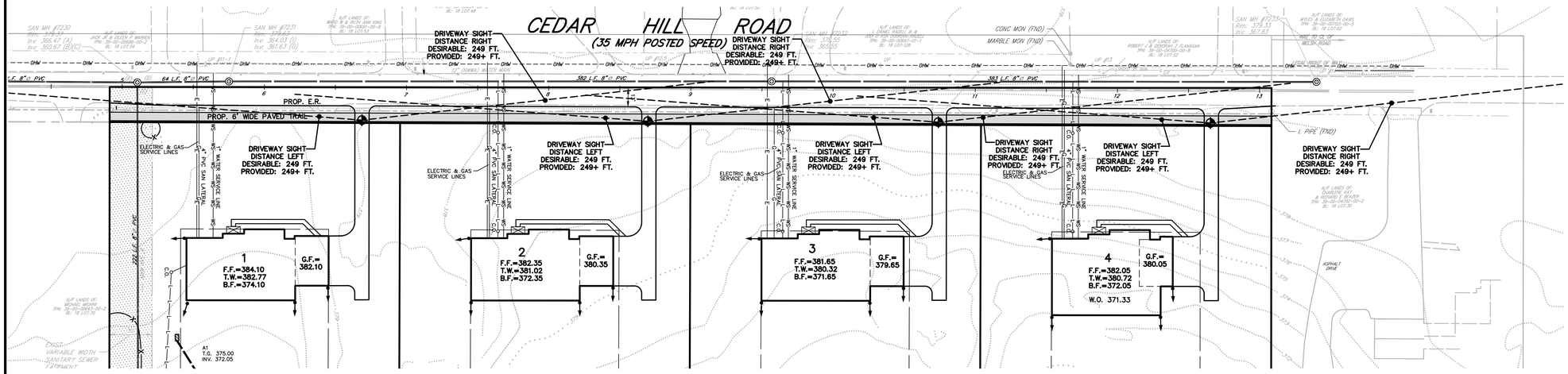
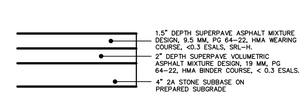
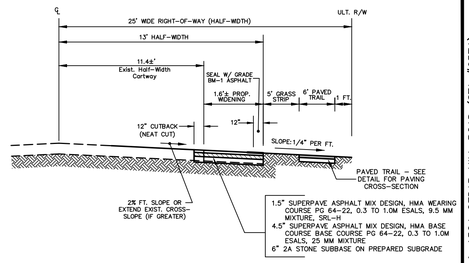
PLAN SCALE HORIZONTAL:	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
N.T.S.	M.J.P.	S.A.R.	13 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571LA	

1512 & 1524 CEDAR HILL ROAD (STA #6571)



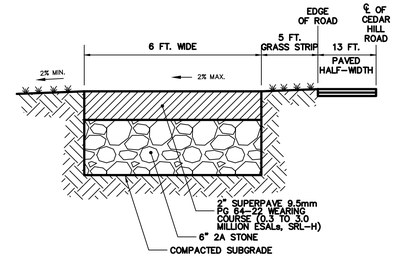


RESIDENTIAL DRIVEWAY
CROSS-SECTION

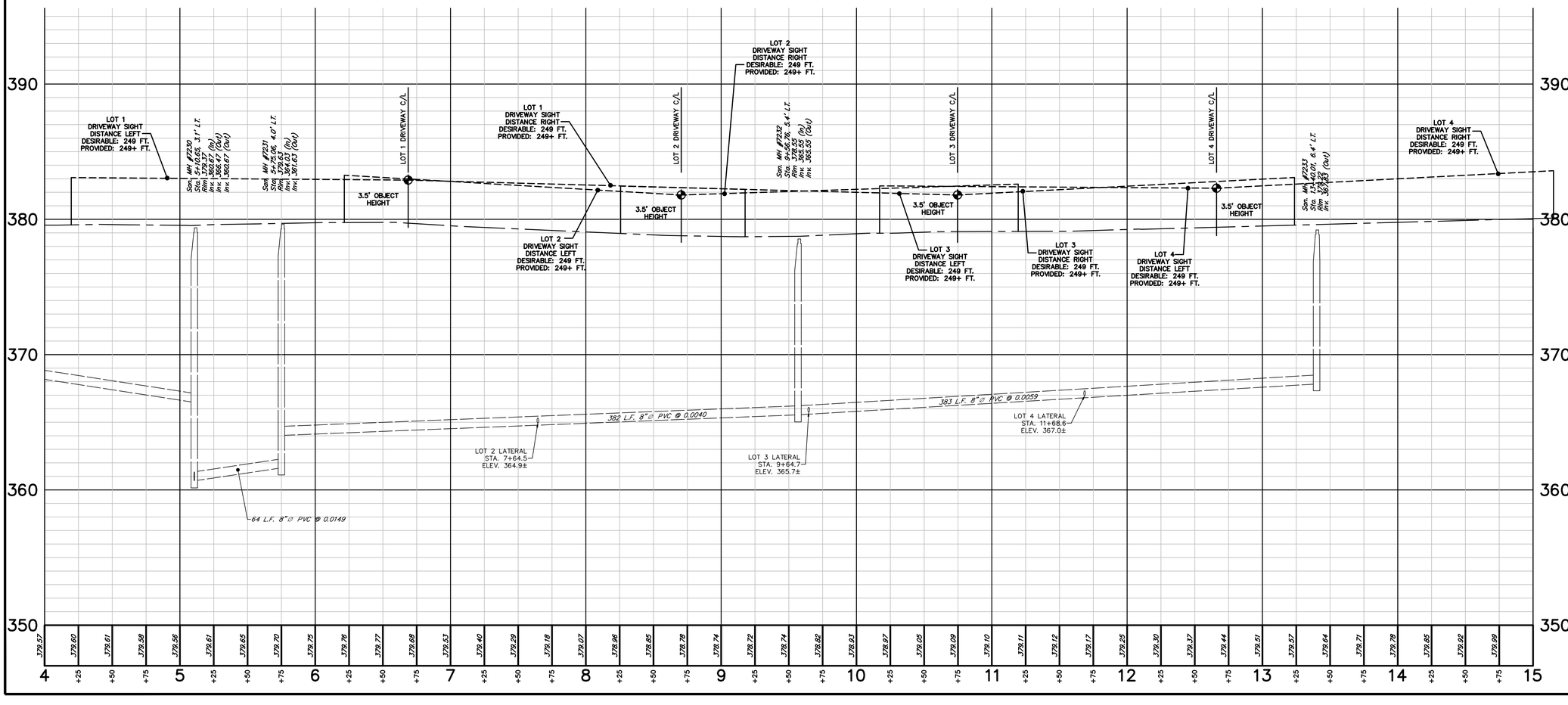


NOTES:
1. ALL SUBGRADE AREAS TO BE COMPACTED AND APPROVED PRIOR TO PLACEMENT OF MATERIALS.
2. BASE UNDERDRAIN TO BE INSTALLED AS DIRECTED BY MUNICIPAL ENGINEER.

TYPICAL HALF-SECTION
CEDAR HILL ROAD WIDENING
N.T.S.

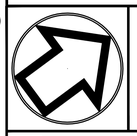


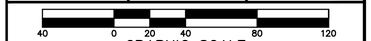
6 FT. BITUMINOUS TRAIL DETAIL



NOTES

1. CONSTRUCTION OF ALL SANITARY SEWER FACILITIES AND APPURTENANCES SHALL BE PERFORMED IN ACCORDANCE WITH LOWER GWYNEDD TOWNSHIP STANDARDS AND SPECIFICATIONS.
2. ALL SANITARY SEWER SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET AND A MINIMUM VERTICAL SEPARATION OF 18 INCHES FROM ALL UTILITIES.
3. SANITARY SEWER LATERALS SHALL HAVE A MINIMUM OF 4 FEET OF COVER.
4. THE PROPOSED SANITARY SEWER LATERAL WITHIN THE RIGHT-OF-WAY OR EASEMENT SHALL BE 6-INCH PVC.
5. THE SANITARY SEWER LATERAL CONNECTION TO EXISTING LOWER GWYNEDD TOWNSHIP SANITARY SEWER MAY BE INSTALLED WITH A WYE SADDLE IN ACCORDANCE WITH LOWER GWYNEDD TOWNSHIP STANDARDS AND SPECIFICATIONS.





2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

PLAN, PROFILE, AND DETAIL SHEET
OF
CEDAR HILL ROAD
AS PART OF
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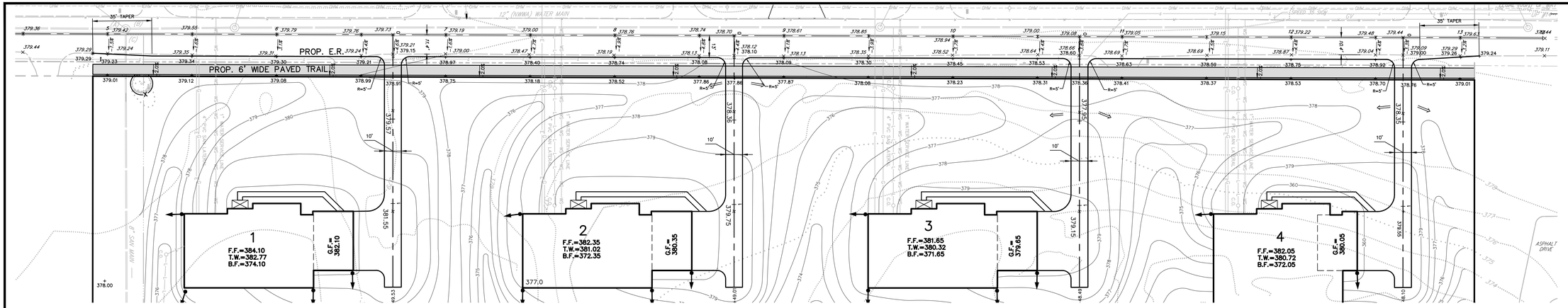
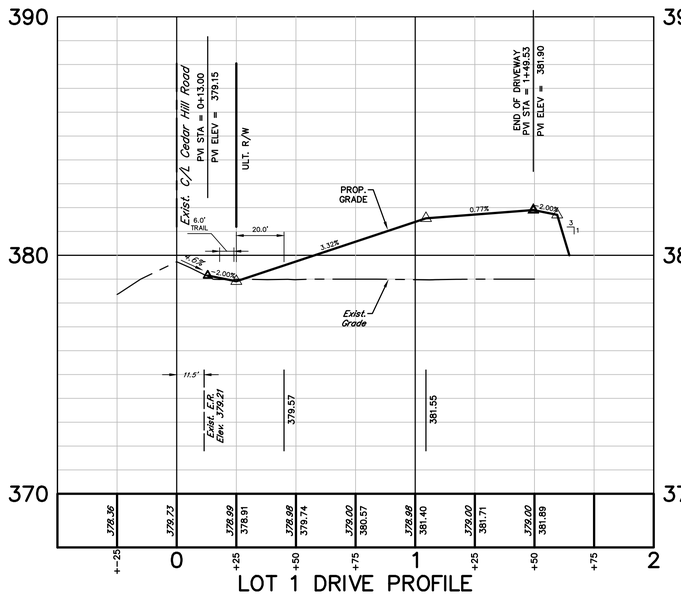
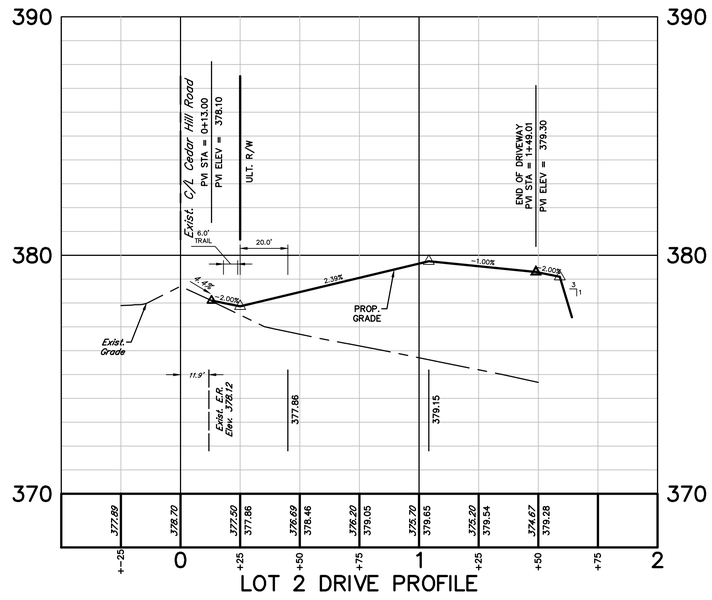
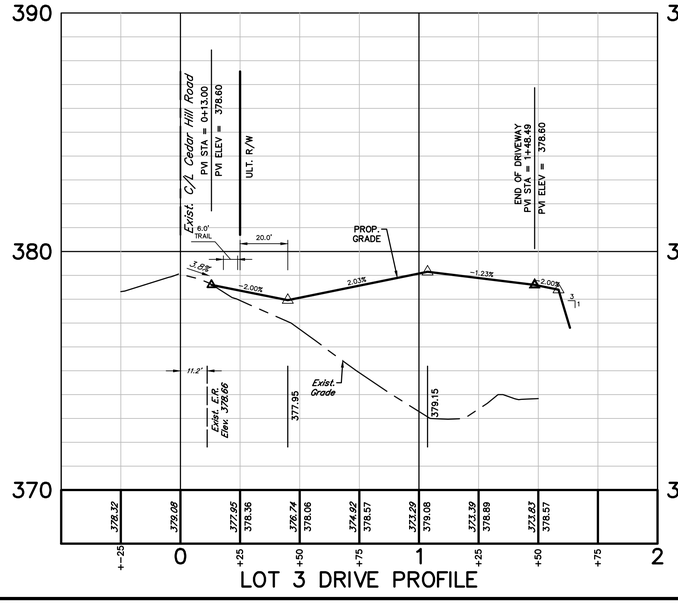
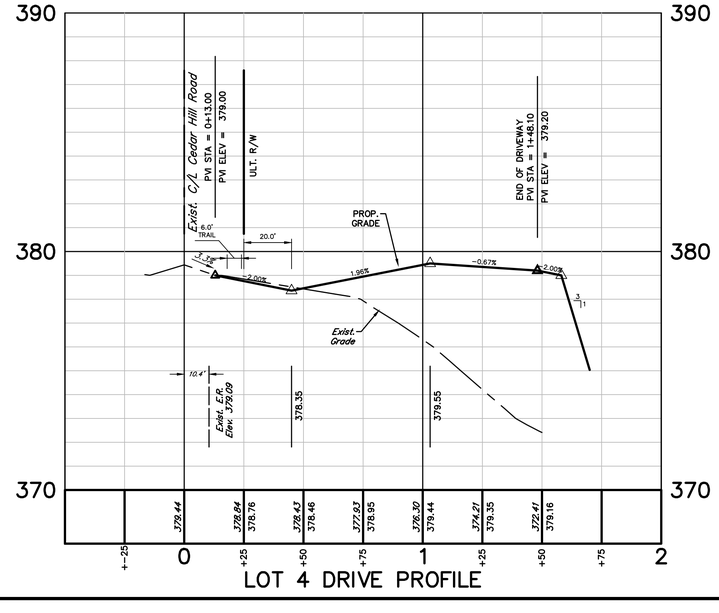
PLAN SCALE	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
HORIZONTAL: 1" = 40' VERTICAL: 1" = 4'	M.J.P.	S.A.R.	14 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571RD	











GRAPHIC SCALE

30 0 15 30 60 90

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

CEDAR HILL ROAD GRADING & DRIVEWAY PROFILES

OF

CEDAR HILL ROAD

AS PART OF

1512 & 1524 CEDAR HILL ROAD

PREPARED FOR

TISMAN GROUP, LLC

SITE SITUATE IN

LOWER GWYNEDD TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

S T A Engineering, Inc.
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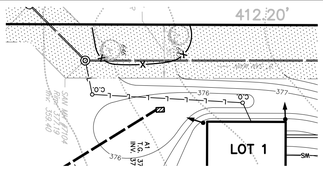
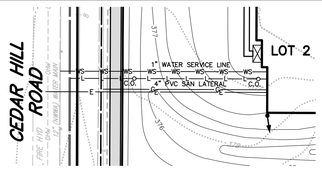
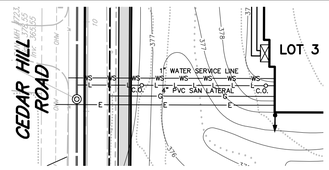
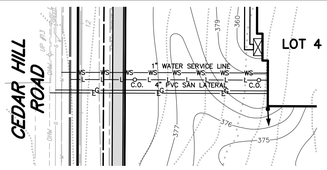
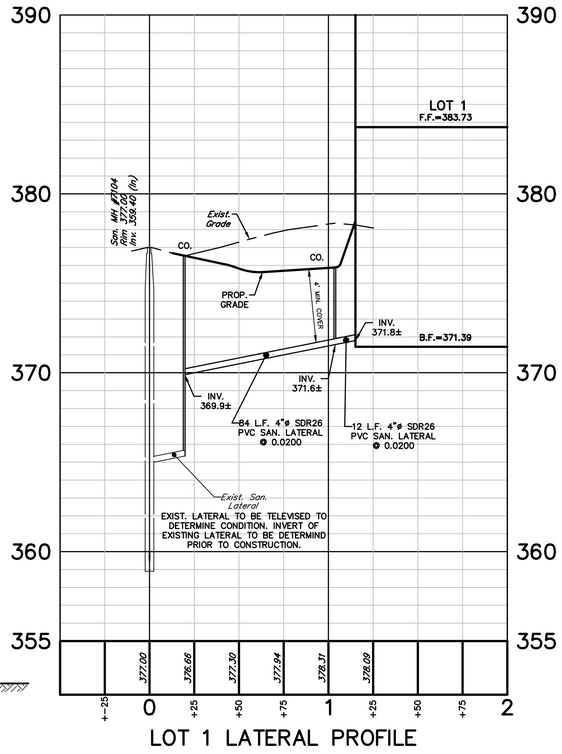
PLAN SCALE	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
HORIZONTAL: 1" = 30' VERTICAL: 1" = 3'	M.J.P.	S.A.R.	15 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571PDRV	



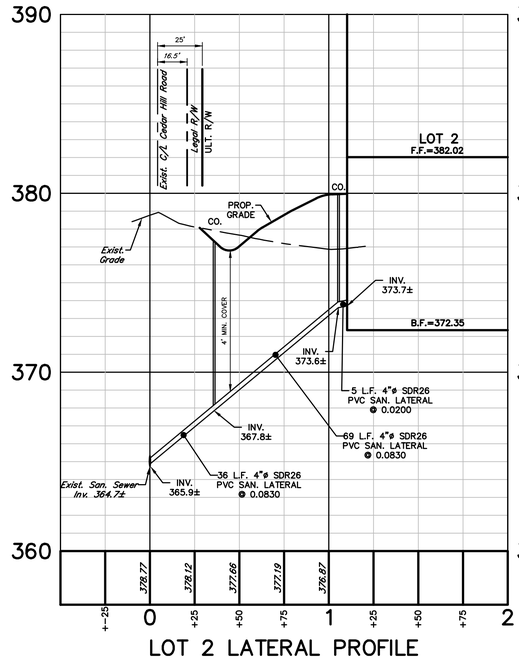




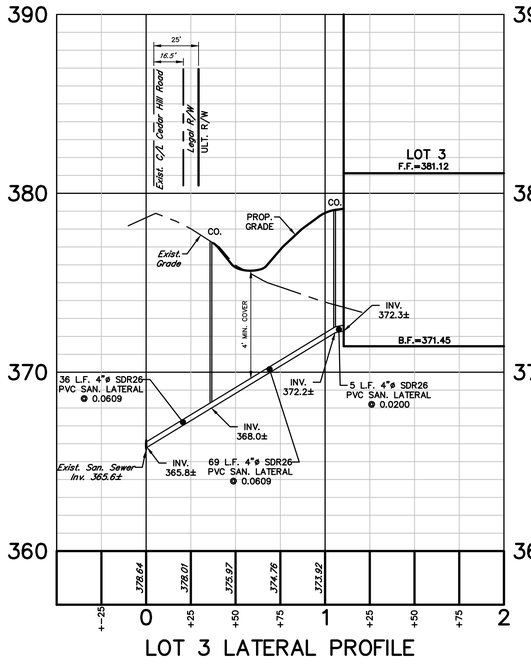




LOT 1 LATERAL PROFILE



LOT 2 LATERAL PROFILE



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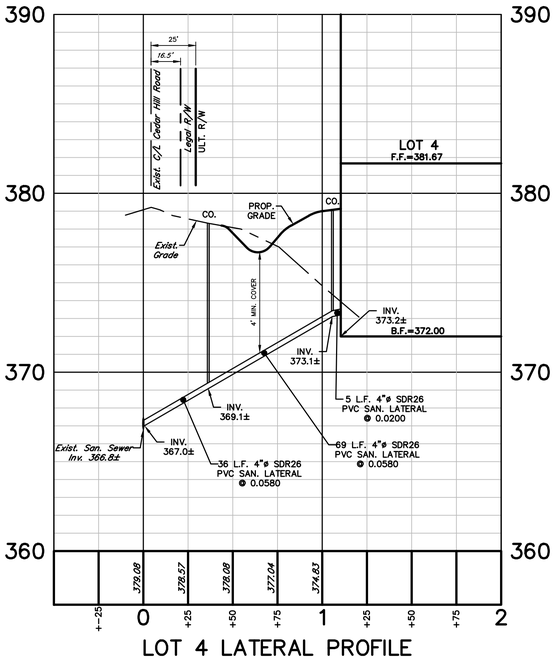

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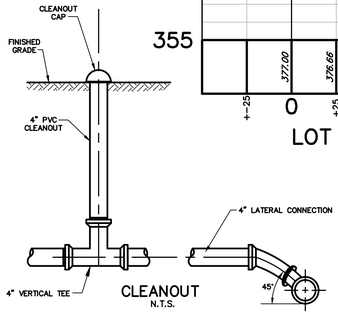
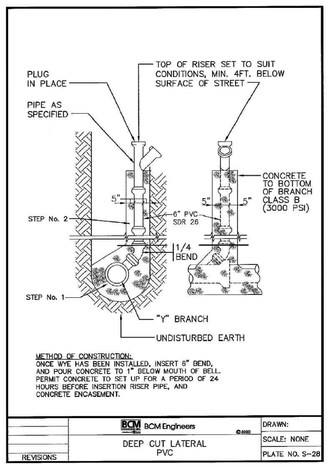
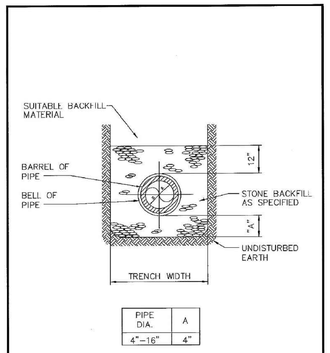


CLEANOUT
N.T.S.



REVISIONS	BCM Engineers	DRAWN:
	DEEP CUT LATERAL PVC	SCALE: NONE
		PLATE NO. S-28



JAN. 2, 2001 REVISIONS		DRAWN:
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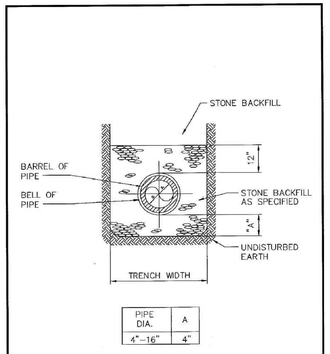

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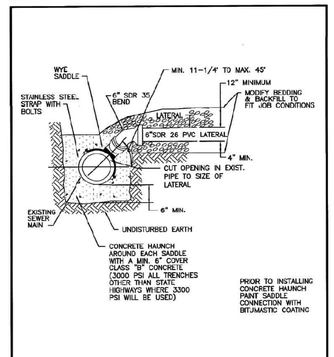

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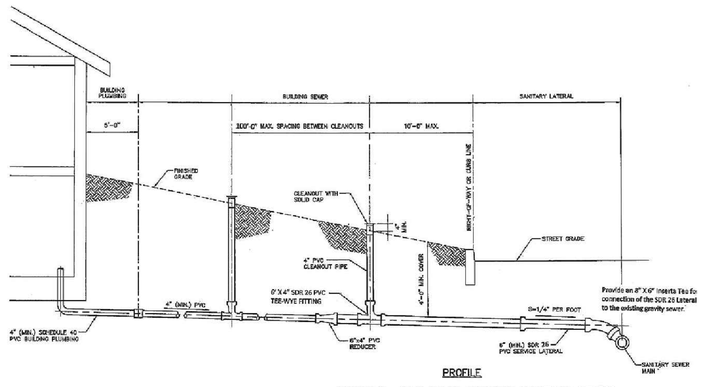
		PLATE NO. S-22



PROFILE

TYPICAL BUILDING SEWER INSTALLATION
NO SCALE

Lower Gwynedd Township
Sewer Lateral Profile

40 0 20 40 80 120
GRAPHIC SCALE

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

SANITARY SEWER PROFILE AND DETAIL SHEET
OF
CEDAR HILL ROAD
AS PART OF
1512 & 1524 CEDAR HILL ROAD
PREPARED FOR
TISMAN GROUP, LLC
SITE SITUATE IN
LOWER GWYNEDD TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

S T A
Engineering, Inc.
Civil Engineers • Land Surveyors
2499 KNIGHT ROAD, PENNSBURG, PA 18073
PH: (215) 679–0200; www.stotac.com

PLAN SCALE	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
HORIZONTAL: 1" = 40' VERTICAL: 1" = 4'	M.J.P.	S.A.R.	16 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER 6571PSAN	

SOILS DATA

SOILS TYPE:	SLOPES:	DEPTH TO RESTRICTIVE FEATURE:	DEPTH TO WATER TABLE:	HYDROLOGIC SOIL GROUP:
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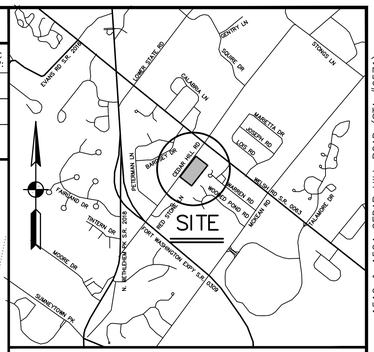
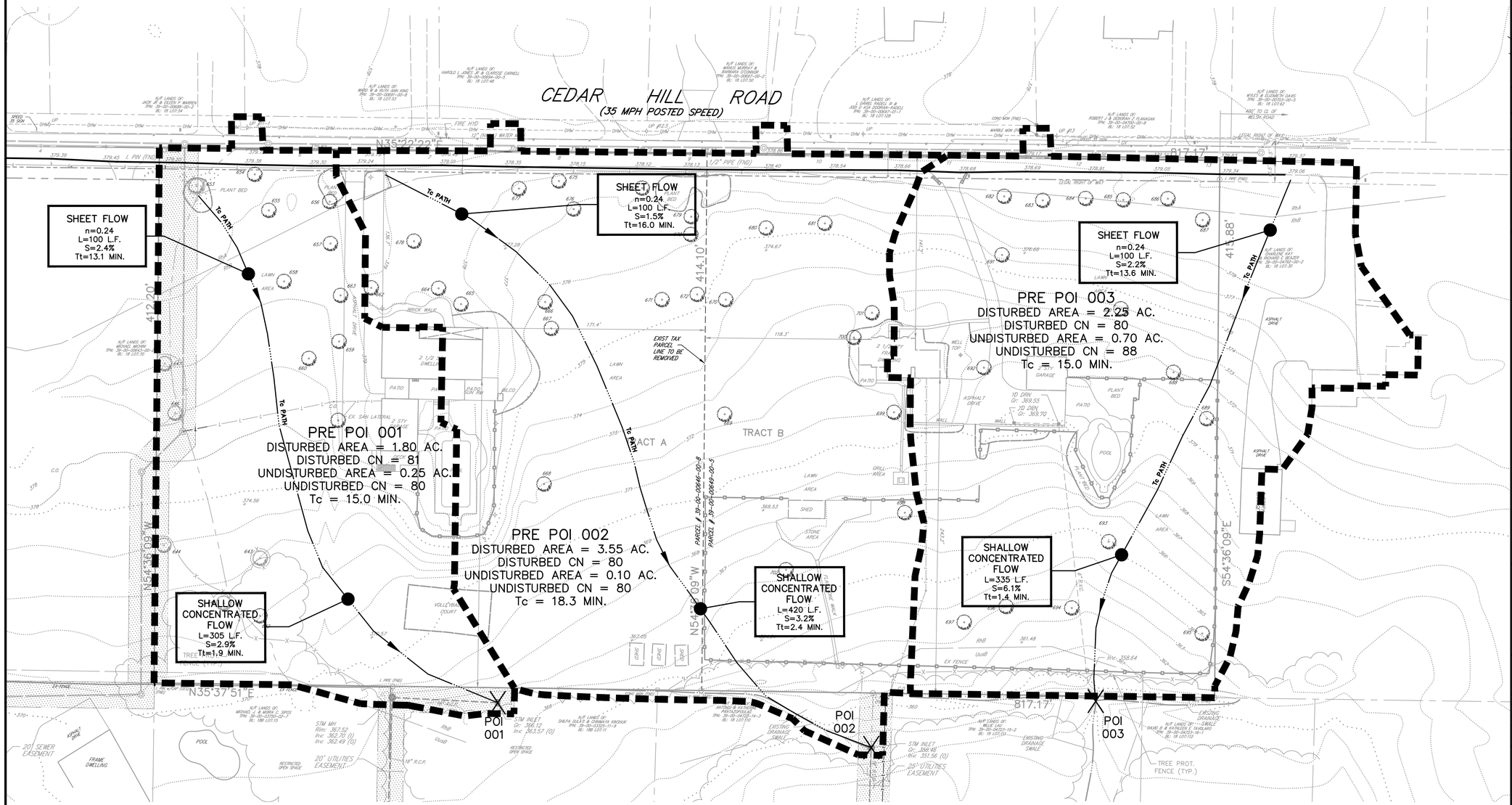
RhB REAVILLE SILT LOAM	3 TO 8 PERCENT	20–40" TO LITHIC BEDROCK	6 TO 36"	D
UusB URBAN LAND–UDORTHENTS SHALE & SANDSTONE	0 TO 8 PERCENT	20–99" TO LITHIC BEDROCK	MORE THAN 80"	D



SITE LOCATION MAP 1"=2000'

LEGEND

- PRE–DEVELOPMENT WATERSHED BOUNDARY
- TIME OF CONCENTRATION PATH
- X DISCHARGE POINT



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3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

PRE–DEVELOPMENT DRAINAGE SHED PLAN

AS PART OF

1512 & 1524 CEDAR HILL ROAD

PREPARED FOR

TISMAN GROUP, LLC

SITE SITUATE IN

LOWER GWYNEDD TOWNSHIP

MONTGOMERY COUNTY

S T A Engineering, Inc.

Civil Engineers • Land Surveyors

2499 KNIGHT ROAD, PENNSBURG, PA 18073

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PLAN SCALE	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
1" = 40'	M.J.P.	S.A.R.	17 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER SHED–PRE	

SOILS DATA

SOILS TYPE:	SLOPES:	DEPTH TO RESTRICTIVE FEATURE:	DEPTH TO WATER TABLE:	HYDROLOGIC SOIL GROUP:
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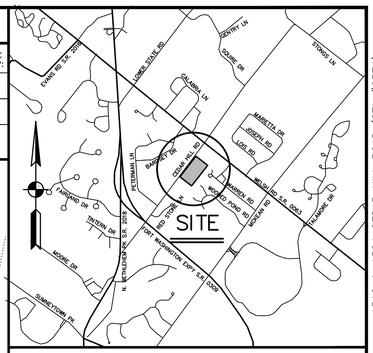
RhB REAVILLE SILT LOAM	3 TO 8 PERCENT	20–40" TO LITHIC BEDROCK	6 TO 36"	D
UusB URBAN LAND–UDORTHENTS SHALE & SANDSTONE	0 TO 8 PERCENT	20–99" TO LITHIC BEDROCK	MORE THAN 80"	D

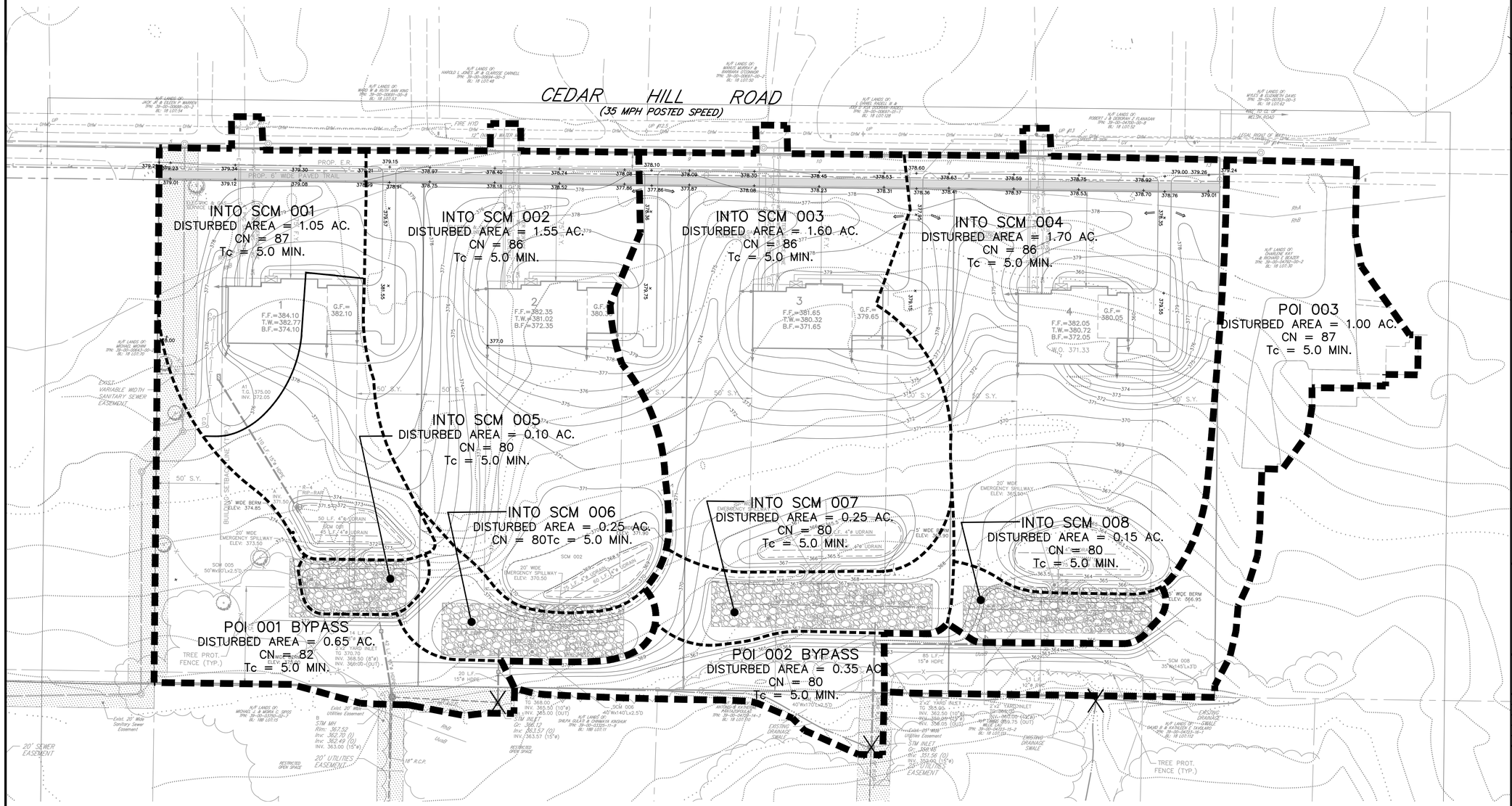


SITE LOCATION MAP 1"=2000'

1512 & 1524 CEDAR HILL ROAD (STA #6571)

LEGEND

- PRE–DEVELOPMENT WATERSHED BOUNDARY
- PSCM WATERSHED BOUNDARY
- DISCHARGE POINT



GRAPHIC SCALE 40 0 20 40 80 120

3	ADM	REVISED PER VARIOUS REVIEWS	FEB. 27, 2026
2	ADM	REVISED PER VARIOUS REVIEWS	NOV. 20, 2025
1	MJP	S.T.A. PLAN ORIGINATION DATE	AUG. 25, 2025

POST–DEVELOPMENT DRAINAGE SHED PLAN

AS PART OF

1512 & 1524 CEDAR HILL ROAD

PREPARED FOR

TISMAN GROUP, LLC

SITE SITUATE IN

LOWER GWYNEDD TOWNSHIP

MONTGOMERY COUNTY

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PLAN SCALE	DRAFTED BY	PROJECT MANAGER	PLAN SHEET NUMBER
1" = 40'	M.J.P.	S.A.R.	18 OF 18
	PROJECT NUMBER 6571	DRAWING FILE NUMBER SHED–POST	

MEMORANDUM

ATTN: **Planning Commission**

DATE: April 8, 2026

FROM: Jamie P. Worman, Assistant Township Manager

SUBJ: **BET- Spring House Corporate Center**

BET representatives Michael Markman and Peter Clelland, along with their attorney, Christen Pionzio, will attend the April 15, 2026, PC 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. Attached to this memo is the existing MF-3 Multi-Family Residential District with the proposed changes by BET in red.

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. This information is also attached to this memo.

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 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. The monthly rental rates for these units would fall between $2,000-$2,400. In comparison, the rental rates for a 2-bedroom apartment at the Hunt Club are approximately $1,875-$2,000 and similarly, Georgetown rates range from $1,750-$2,850.

At the meeting, BET will present its plan and traffic study and respond to questions. The PC will review the proposed ordinance text and offer any feedback pertaining to the proposed amendments. The ordinance is currently under review by Township Staff and Consultants as well. In addition, the PC will review and discuss the proposed conditional use application.

Township Staff will compile feedback received from the PC, MCPC, and the Township Engineers and revise the ordinance accordingly to the satisfaction of the Township Solicitor.

Chapter 1276

MF-3 MULTIFAMILY RESIDENTIAL DISTRICT

§ 1276.01. Application of chapter. [Ord. 223. Passed 12-10-1985]

In an "MF-3" Multifamily Residential District, the regulations set forth in this chapter shall apply.

§ 1276.02. Permitted uses. [Ord. 223. Passed 12-10-1985]

In an "MF-3" Multifamily Residential District, a building may be erected or used, and a lot may be used or occupied, for any of the following purposes and no other:

(a) Housing for the elderly.

(b) Residential nursing care facilities.

(c) Municipal use.

(d) Accessory uses in accordance with Section 1250.04(2) and Chapter 1298.

(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 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.

§ 1276.03. Lot area and width. [Ord. 223. Passed 12-10-1985]

(a) Minimum Lot Area. In an "MF-3" Multifamily Residential District, a lot area of not less than 20 acres shall be provided for every development.

(b) Minimum Lot Width. A lot width of not less than 200 feet shall be provided along a public street or way for every access to the development

§ 1276.04. Yards. [Ord. 223. Passed 12-10-1985; Ord. 395. Passed 2-19-2001]

In an "MF-3" Multifamily Residential District, the front yard provided on each lot shall not be less than 200 feet in width. The side yards and rear yards shall not be less than 75 feet in width.

§ 1276.05. Lot coverage. [Ord. 223. Passed 12-10-1985]

(a) Building Coverage. In an "MF-3" Multifamily Residential District, the total building coverage shall not exceed 20%.

(b) Impervious Coverage. The total impervious coverage shall not exceed 45%.

§ 1276.06. Building height. [Ord. 223. Passed 12-10-1985]

(a) The maximum height for dwellings, buildings or other structures erected or enlarged in an "MF-3" Multifamily Residential District shall be 30 feet, not exceeding two stories.

(b) The maximum height for any building accessory to any dwelling shall be 14 feet, not exceeding one story.

§ 1276.07. Off-street parking and loading. [Ord. 223. Passed 12-10-1985; Ord. 395. Passed 2-19-2002]

(a) For each dwelling unit in an "MF-3" Multifamily Residential District, 0.85 of a parking space shall be provided in accordance with Chapter 1294.

b) For employee and accessory uses, parking shall be provided in accordance with Chapter 1294.

(c) Areas for loading and unloading of delivery trucks and other vehicles, and for refuse collection, fuel and other service vehicles, shall be provided, shall be adequate in size and shall be so arranged that they may be used without blocking or interfering with the use of access roads or automobile parking facilities, and all such areas shall be in accordance with Chapter 1294.

(d) No parking area shall be located within 75 feet of the property line and no service or loading area shall be located within 200 feet of any property line, except as required for normal ingress or egress.

§ 1276.08. Development standards. [Ord. 223. Passed 12-10-1985; Ord. 251. Passed 2-16-1988; Ord. 395. Passed 2-19-2002]

(a) Density. In the "MF-3" Multifamily Residential District, the number of residential units per acre shall not exceed 8.04. For the purposes of this calculation, the gross acreage of the tract shall be used for lands zoned MF-3. Apartments and personal care beds shall each be equal to one residential unit. The ratio of apartments to personal care units shall not exceed 9.05 to 1.

(b) Building Plan. Buildings shall be in accordance with an overall plan and shall be designed as a single architectural scheme. The distance at the closest point between buildings shall be not less than 30 feet.

(c) Preservation of Natural Features. The development plan shall preserve and incorporate natural features such as woods, streams and open space areas, which add to the overall cohesive development of this district and to the overall Township development.

(d) Lighting; Utility Lines. Spaces between buildings, parking areas, loading areas, access areas and service areas shall be adequately illuminated at night. Lighting, including sign lighting, shall be arranged to protect the highway and adjoining property from direct glare or hazardous interference. Utility lines servicing the area shall be placed underground.

(e) 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.

(f) Landscaping. All development in an "MF-3" Multifamily Residential District shall be designed and maintained in accordance with the landscape provisions of the Subdivision Regulations.

(g) Common Open Space. Any development in such district shall contain a minimum of five acres of common open space. Such common open space shall be of a character and quality acceptable to the Board of Supervisors. In addition, there shall be such provision for the ownership and maintenance of the common open space as is reasonable to ensure its preservation. To this end, the Township may accept the dedication of land or any interest therein for public use and maintenance, but the Board need not require that land proposed to be set aside for common open space be dedicated as a condition of the approval of the subdivision or land development. The Board shall require the landowner to provide for and establish an organization for the ownership and maintenance of the common open space consistent with the requirements of the Pennsylvania Uniform Condominium Act, and such organization shall not dispose of the common open space by sale or otherwise, except to the Township or, after approval of the Board, to an organization established to own and maintain the common open space. If the common open space deteriorates or if, in the judgment of the Board, it is not maintained in a reasonable manner in accordance with any approved plan or otherwise, the Township may proceed to remedy any such deficiency by enforcement of any applicable Township ordinance or by injunctive relief or otherwise.

(h) (Reserved)1

(i) Personal Care Units. In an MF-3 Project with only apartment units, the owner may apply one time for conditional use approval to convert up to four apartment units to personal care units at a ratio of five personal care units to one apartment unit.

§ 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 of 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 or 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 to not 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 §1276.09 herein but shall remain in compliance with all other aspects of the approved Mixed-Use Development Plan.

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§ 1298.20. Parking structures. [Added 1-27-2009 by Ord. No. 462]

(a) The erection and use of structured parking facilities shall be permitted only in the D-1 Special Use District and the F-1 Zoning District subject to the following regulations: [Amended 5-28-2019 by Ord. No. 523]

(1) Parking structures shall be permitted only upon demonstration to the satisfaction of the Township that the site will be no more intensely developed (as to permitted square footage of building and to required number of parking spaces) than could be achieved through the use of surface parking alone.

(2) Parking structures shall be located entirely within the principal building envelope, except in the instance where the subject property is immediately adjacent to the rightof-way of a limited access highway. Parking structures immediately adjacent to such a highway may be located no closer than 50 feet from the ultimate right-of-way of the adjacent highway, which shall be considered the parking setback line. When located in the D-1 Special Use District, parking structures shall be no greater than two stories in height.

(3) 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.

(4) The exterior facade of the parking structure shall be of a design and materials consistent with adjacent occupied structures on the site. Compatibility of design shall be accomplished through the use of like materials, similar detailing and harmonious proportioning of the design elements. The design shall be subject to the review and approval of the Board of Supervisors at the appropriate stage in the land development approval process.

(5) There shall be no projection 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) Parking structures shall be effectively screened from off-site view through the use of other buildings or berms and landscaping. Berms shall be a minimum of eight feet high, and the plantings on top of the berm shall be a minimum of 10 feet in height and shall be planted in sufficient density to provide an opaque screen. Parking structures adjacent to a divided, limited access highway shall be exempt from the above requirements, but shall be subject to the requirement of a softening buffer composed of deciduous trees as approved by the Township. In addition, any openings into parking structures adjacent to these highways shall be architecturally treated (through the use of screens, louvers, etc.) in a manner so as to obscure the direct view of the automobiles parked in the structure.

(7) Parking structures shall in all cases be 10 feet lower in height than the occupied buildings that they serve on the site, and their perimeter length shall not exceed the perimeter length of the occupied buildings that they serve.

(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 that 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 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.

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 Public Hearing Before the Lower Gwynedd Township Board of Supervisors to Amend the Zoning Ordinance Text and/or the Zoning Map

Instructions for the Completion of this Application

1. An original and ten (10) 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. Please include a narrative regarding the nature of your proposal. Including all applicable information such as a detailed map of your location showing any proposed changes, draft text for proposed ordinance amendments, tax parcel and ownership information including deeds, and any other information pertinent to the specific issues to be raised before the Board of Supervisors.

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 Rezone Requests.

4. The Board of Supervisors will review all submitted applications. Should they be inclined to grant a hearing the applicant will be contacted to schedule such hearing. 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.

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Rezone/Zoning Ordinance & Map Amendment
Request for Public Hearing to the
Board of Supervisors

1. Date: 02/13/2026

2. Classification of Request (check all that apply):
   - ☑ Rezone Request- Individual Parcel
   - ☑ Text Amendment
   - ☑ Map Amendment
   - ☐ Extension or Application of existing overlay
   - ☐ Overlay Proposal

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
   Tax Parcel No. (list parcel numbers for all subject properties): 39-00-02956-00-2

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: 215-461-1239
   Email Address: jvonspreckelsen@eastburngray.com

5. Property:

Location: 321 Norristown Road; Springhouse Corporate Center

Present Zoning Classification: D-1 Special Use District

Tax Parcel No. (list parcel numbers for all subject properties): 39-00-02956-00-2

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

Rezone of the property from D-1 to MF-3 to permit 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. 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 1254.01 "Zoning Map"

7. Has any previous appeal or application been filed in connection with this property?
   ☑ Yes ☐ No If yes, date and specifics: A conditional use application has been submitted simultaneously with this Rezone/Zoning Ordinance and Map Amendment request.

8. 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

Narrative to Rezone/Zoning Ordinance & Map Amendment Request of BT 309, LLC
Property: 321 Norristown Road; TPN 39-00-02956-00-2

The Property is currently zoned D-1 Special Use District. The only other property zoned D-1 in the Township is located across a limited access highway from the Property. The D-1 District is very restrictive in terms of the uses permitted, only a scientific research laboratory, an engineering center, an office building, or a municipal use is permitted. The Property comprises 24 acres, abuts a limited access highway, and is improved with a 2-story and 3-story office building. The 2-story office building is and has been vacant for a number of years due to lack of tenant interest, although diligently marketed for lease by the Property owner.

The purpose of the Rezone/Zoning Ordinance & Map Amendment is to revitalize an under-utilized Property by rezoning the Property to the MF-3 Multi-Family Residential District and adding a mixed-use development as a permitted use in the MF-3 District. Currently, the MF-3 District consists of one tax parcel, the ACTS parcel, which abuts the Property. Rezoning the Property to MF-3 is a natural extension of the MF-3 District. The mixed-use development, which use does not exist within the Township, adds a variety of permitted uses to the MF-3 District in order to serve the community, such as apartment buildings that may include workforce/attainable housing units, restaurants, retail and personal service shops.

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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.

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(215)646-5302- phone
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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

BLOCK 19
UNIT 9
APN #39-00-04330-00-5
N/F LANDS OF
OLD YORK ROAD COUNTRY CLUB
OF MONTGOMERY COUNTY
D.B. 3241, PG. 515

BLOCK 19
UNIT 7
APN #39-00-02956-00-2
N/F LANDS OF
BROOKWOOD PHILADELPHIA I, LLC &
BROOKWOOD PHILADELPHIA II, LLC
D.B. 5966, PG. 1270

BLOCK 19
UNIT 100
APN #39-00-02955-00-3
N/F LANDS OF
ADULT COMMUNITIES
TOTAL SERVICES, INC.
D.B. 4577, PG. 459

S66°23'30"E (D)
S68°10'08"E
742.63'
N41°23'52"E (D)
N39°36'08"E (D)
105.85'
S51°05'30"E (D)
S52°52'08"E (D)
200.00'
287.38'
S35°38'13"W (D)
S37°24'51"W (D)
183.31'
S51°08'52"W (D)
S14°55'30"W (D)
S12°45'08"E (D)
S13°32'08"E
350'
341.82'
288.28'
S68°19'56"W (D)
S66°06'54"W (D)
210.00'
N20°27'16"W (D)
N18°40'38"W
120.50'
N86°33'08"W (D)
N84°46'39"W (D)
S86°42'19"W (D)
S84°55'41"W
34.02'
R=1970.08'
Δ=06°43'50"
L=231.43'
CHB=N11°26'09"E
CHD=231.29'
N71°34'13"W
29.86'
121.80'
N13°41'32"E
N27°23'00"E
76.41'
364.82'
N15°00'21"E
146.49'
N08°37'53"E
234.13'
N07°16'51"E
N64°36'18"W
222.22'
N24°45'22"E
5.00'
N63°28'00"W (D)
N65°14'38"W
74.13'
R=1362.69'
Δ=06°04'44"
L=144.58'
CHB=N68°17'00"W
CHD=144.51'
R=1372.69'
Δ=09°16'49"
L=222.34'
CHB=N75°57'53"W
CHD=222.09'

TITLE LINE & LEGAL R.O.W FOR LIMITED ACCESS (PER HIGHWAY P.B. 21, PG. 27) (PER D.B. 5614, PG. 1926)

LEGAL LIMIT OF SLOPE HIGHWAY P.B. 27, PG. 21)

EXTENT OF LIMITED ACCESS

TITLE LINE & LEGAL R.O.W. (PER D.B. 5966, PG. 1270)

LEGAL R.O.W. LINE

PENNSYLVANIA STATE HIGHWAY U.S. ROUTE 309
(A.K.A. FORT WASHINGTON EXPRESSWAY)
(A.K.A. S.R. 0073)
(VARIABLE WIDTH, LEGAL R.O.W.)
(ASPHALT ROADWAY)
(LIMITED ACCESS HIGHWAY)

SOUTHBOUND
NORTHBOUND

RAMP-D

NORRISTOWN ROAD
(A.K.A. S.R. 2007/L.R. 46073)
(VARIABLE WIDTH, LEGAL R.O.W.)
(ASPHALT ROADWAY)
(TWO WAY TRAFFIC)

3 STORY
BRICK BUILDING
"DERKADIA"
BUILDING FOOTPRINT
AREA=25,873± S.F.

2 STORY
MASONRY BUILDING
BUILDING FOOTPRINT
AREA=31,081± S.F.

EXISTING BARN
AREA=1,326± S.F.

FILBERT WING

ELM WING

OAK BRIDGE TERRACE

10' WIDE DRAINAGE EASEMENT (PER D.B. 4850, PG. 2166)

SANITARY SEWER (TYP.)

WATERS OF THE U.S. INCLUDING WETLANDS

EX. 8" WALKING TRAIL

10' X 20' BRIDGE

IRON PIN FOUND

CONC. MONUMENT FOUND (0.2' SC) (0.5' OB) (DISTURBED)

CONC. MONUMENT FOUND

NAD83

LOCATION MAP
SCALE: 1" = 1,000'
SOURCE: BING MAPS

60 30 15 0 60
SCALE: 1" = 60'

M:\PA\32\47\PAA240076.00\CAD\DRAWINGS\PLAN SETS\CONDITIONAL USE PLAN\P-CUSE-PROP-PAA240076.00-0A---3-LAYOUT- C-001 EX

PB

BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL SERVICES
PERMITTING SERVICES
TRANSPORTATION SERVICES

THE INFORMATION, DESIGN AND CONTENT OF THIS PLAN ARE PROPRIETARY AND SHALL NOT BE DISCLOSED OR USED FOR ANY PURPOSE WITHOUT THE EXPRESS AUTHORIZATION FROM BOHLER. ONLY APPROVED, SEALED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES.

REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY

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PROJECT No.:	PAA240076.00-0A
DRAWN BY:	PAB
CHECKED BY:	GJH
DATE:	02/11/2026
CAD I.D.:	P-CUSE-PROP

PROJECT:

MIXED USE DEVELOPMENT

FOR

BT 309, LLC

PROPOSED MIXED USE DEVELOPMENT

321 NORRISTOWN ROAD
MONTGOMERY COUNTY
LOWER GWYNEDD TOWNSHIP
PENNSYLVANIA, 19002

BOHLER
1600 MANOR DRIVE, SUITE 200
CHALFONT, PA 18914
Phone: (215) 996-9100
Fax: (215) 996-9102
www.BohlerEngineering.com

COMMONWEALTH OF PENNSYLVANIA
T.R. KNAB
REGISTERED LANDSCAPE ARCHITECT
REGISTERED LANDSCAPE ARCHITECT
PENNSYLVANIA LICENSE No. LA002352

SHEET TITLE:

EXISTING CONDITIONS PLAN

SHEET NUMBER:

1

ORG. DATE - 02/11/2026

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

April 10, 2026

File No. 24-00662

Mimi Gleason, Township Manager
Lower Gwynedd Township
1130 N. Bethlehem Pike, PO Box 625
Spring House, PA 19477

Reference: Spring House Corporate Center
Conditional Use Review

Dear Ms. Gleason:

Pursuant to your request, Gilmore & Associates, Inc. performed a review of the submission for the above-referenced project in relation to the conditional use application. Upon review we offer the following comments for consideration by the Lower Gwynedd Township Board of Supervisors:

I. Submission

A. Conditional Use Plans, titled Mixed Use Development for BT 309, LLC, consisting of sheets 1 through 3 of 3, dated February 11, 2026, as prepared by Bohler Engineering.

B. Architectural Exhibits, dated February 12, 2026, as prepared by AEI (Architecture Engineering Interiors).

C. Ordinance Alternative MF-3 Text Amendment Language

D. Rezoning Ordinance Map Amendment

II. General Information

The subject property consists of one (1) parcel located within the D-1 District. The overall tract is approximately 24.09 acres and currently contains a 3-story brick office building, 2-story masonry office building, and 3-story masonry barn building with existing parking areas.

The Applicant proposes to remove the existing 2-story masonry office building to construct a 4-story multi-family apartment building with interior parking garage and three (3) commercial retail buildings. The existing 3-story brick office building and 3-story masonry barn building are to remain. The subject property will be accessed to Norristown Road (SR 2007) and will contain internal drives for access to the apartment building and retail spaces. Additional improvements include parking areas, curbing, sidewalk, ornamental fence, landscaping, and associated stormwater management facilities.

II. Review Comments

A. Conditional Use

The existing property is subject to a proposed Zoning Map and Ordinance Amendment to rezone the property to Multi-Family Residential District (MF-3). The proposed text amendment adds additional uses and requirements to the MF-3 District while allowing mixed use development by conditional use. The Applicant has submitted a Conditional Use application showing their proposed development in the event that the map and text amendment are approved. As such, we have reviewed the plan in accordance with the Multi-Family Residential District where this project shall have its design be subject to conditional use approval. Upon review of the conditional use application, we offer the following comments. The comments contained in this section should not be misconstrued as requirements, but rather discussion points for the Board's consideration when evaluating the Conditional Use Application.

1. We defer to the Township Traffic Engineer regarding comments related to traffic improvements, signage, sight distance, and the calculation of any applicable traffic impact fees.

2. We note that the proposed text amendment allows for a base density of 12 units per acre with the potential to gain a bonus density of an additional 1.5 units per acres in the event that a minimum of 10% of the units are designated as workforce housing. The Applicant has submitted conditional use plan showing a four-story apartment building with a density of 11.58 dwelling units per acre. Additionally, the Applicant has submitted a Workforce Housing Declaration of Covenants, indicating that they intend to take advantage of the Bonus Density. The Applicant shall clarify their intentions for the potential to build additional apartment units on the property as the discussions to this point have centered around one apartment building on the property and a final design consistent with the submitted Conditional Use plan.

3. We note that the conceptual locations for stormwater management facilities are not shown on the plans. We recommend conceptual locations be added and preliminary calculations for sizing the stormwater facilities be submitted for review so that it can be determined if the conceptual areas are sufficient to support the plan as currently proposed.

4. We note that the Applicant has explored the feasibility of pedestrian facilities under the PA-309 overpass and believe the connection to possible. We recommend that the full design, permitting, and construction of those facilities be a condition of conditional use approval.

5. We note that additional buffering should be provided between the subject property and the Gwynedd Estates development. To provide a sufficient landscape buffer, the Applicant may be required to provide buffer plantings on both the subject property and Gwynedd Estates. An agreement will be needed between the Applicant and Gwynedd Estates.

6. We note that a pedestrian connection easement will be required for the trail connection to the Gwynedd Estates development. We recommend consideration be given to allow the Gwynedd Estates residents to utilize the subject property trails but not encourage the mixed-use development residents to utilize the property at Gwynedd Estates as the connection does not lead to the trail network within Gwynedd Estates.

7. Common Amenity spaces throughout the development should be added to the plans. Currently, the only amenity space is depicted within the proposed courtyard area.

8. The Applicant should explore the feasibility of a crosswalk and pedestrian facilities to accommodate a connection Beach Hollow Road neighborhood.

9. We note that the buffer plantings between Norristown Road and mixed-use parking lot may need to be supplemented with additional landscaping screenings in order to achieve the aesthetic as depicted on the Conditional Use plan. We recommend a condition of approval be that the Applicant supplement the plantings in this area to the satisfaction of the Township in order to achieve the conditional use plan aesthetic representation.

10. The Applicant will need to work with the Township to determine the best design and path for the sanitary sewer line and connection with sanitary sewer main in Norristown Road (SR 2007) to minimize the environmental impact and address the concerns of the increased capacity on the system.

11. ADA compliant ramps/access ways should be considered at all crosswalks and buildings to nearby public facilities.

12. Snow storage areas should be considered in the design of parking lot areas. Snow removal and storage during major snow events could potentially cause the total number of parking spaces to be inadequate.

13. Areas designated for trash storage and routes of removal should be considered and implemented in land development plans. The waste produced by the residents of the proposed 278 units in the 4-story apartment building and commercial buildings will likely cause any remaining existing waste removal facilities to be inadequate.

14. The Multi-Family District requires that the design of landscaping, lighting, streetscape improvements, and architectural elements be established and reviewed for the project during Conditional Use. We defer to the Board to determine whether the submitted renderings are sufficient.

15. Based on the level of design at this time, we recommend the Applicant provide a list of important waivers that they know they will request at the time of the land development submission, so that the Board of Supervisors can evaluate the entire scope of the project. Examples include but are not limited to: Frontage Improvements, Landscaping, Stormwater Management.

16. We recommend implementing a dense visual buffer of evergreen vegetation behind the proposed ornamental fence located in front of the garage entry/exit way of the proposed service drive to minimize disturbance to the residents of the neighboring property and pedestrians on walking trail.

17. The plan shall be reviewed by the Lower Gwynedd Township Fire Marshal for internal circulation and location of proposed fire hydrants. Additionally, a turning template will be required to be submitted to ensure the circulation of emergency vehicles.

18. We note that the proposed development will be required to obtain all applicable permits, including but not limited to Montgomery County Conservation District, PA DEP, PennDOT, etc. The Township and our office shall be copied on correspondence with these agencies.

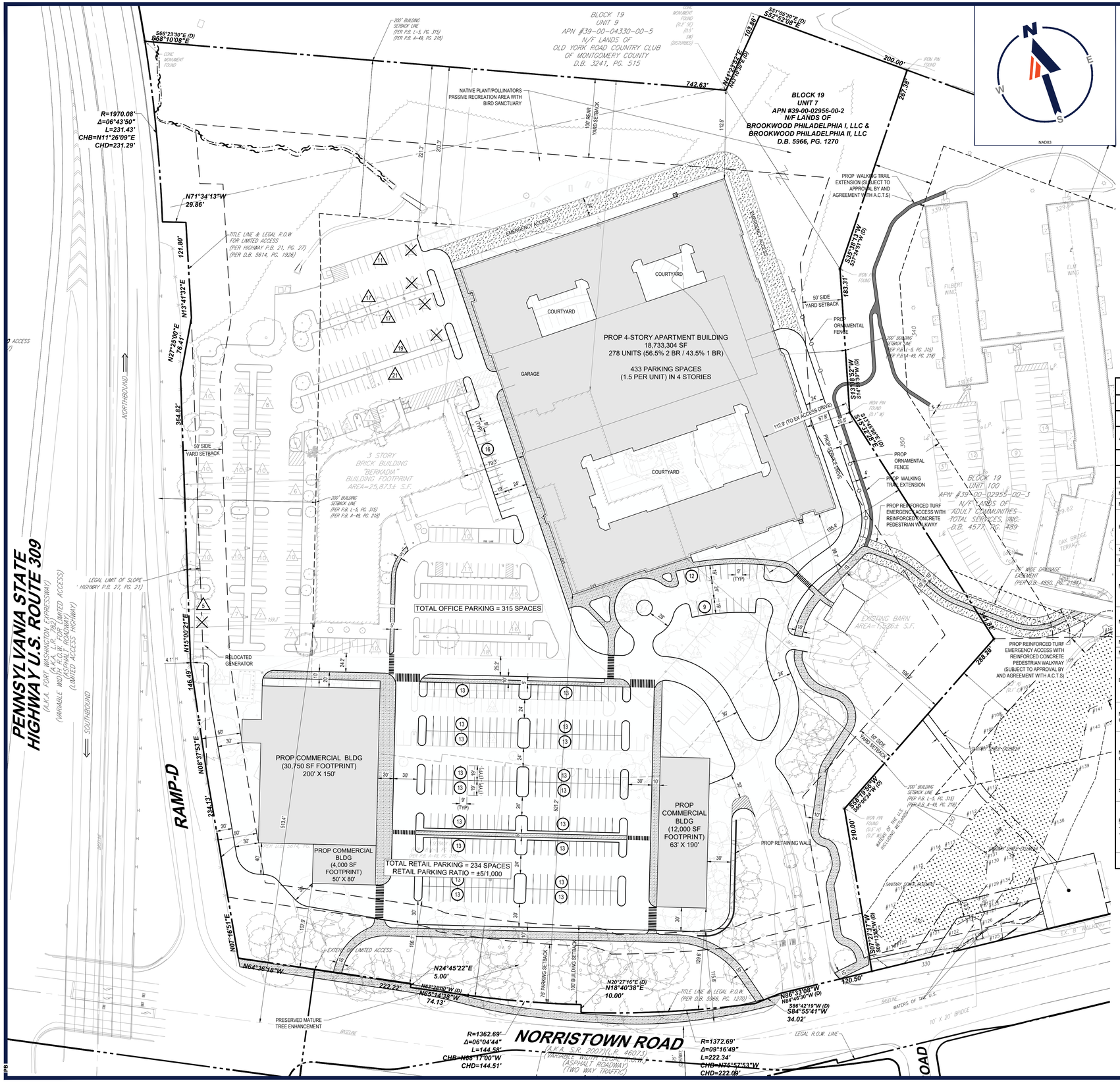
Please note that additional comments will be made during the land development review process. If you have any questions regarding the above, please contact this office.

Sincerely,

James J. Hersh, P.E.
Vice President
Gilmore & Associates, Inc.

EB/sl

cc: Neil A Stein, Esq., Kaplin Stewart
Jamie Worman, Assistant Township Manager
Patty Sexton-Furber, Building Codes Administrator
Peter J. Clelland, VP of Development, BT 309, LLC
Thomas R. Knab, R.L.A., Bohler Engineering
Al Comly, Township Fire Marshal
Chad Dixson, P.E., Bowman Consulting Group
Edward Brown, P.E., Gilmore & Associates, Inc.



LOCATION MAP

SCALE: 1" = 1,000'
SOURCE: BING MAPS

ZONING TABLE

ZONE: MF-3
USE PERMITTED BY CONDITIONAL USE: MIXED USE DEVELOPMENT

APPLICANT/ OWNER INFORMATION

APPLICANT:	BT 309, LLC 200 DRYDEN ROAD, SUITE 2000 DRESHER, PA 19025

BULK REQUIREMENTS

ITEM	CODE	REQUIRED	EXISTING	PROPOSED
MIN LOT AREA	§ 1276.09	20 AC	24.097 AC	24.097 AC
MIN LOT WIDTH	§ 1276.09	800.0'	820.9'	820.9'
MIN YARD SETBACKS				
FRONT YARD	§ 1276.09	MULTI-FAMILY APT & OFFICE - 200.0' OTHER USES - 100.0' ALONG NORRISTOWN ROAD	OFFICE 513.4'	APT BLDGS 521.2' OTHER USE 107.9
SIDE YARD	§ 1276.09	50.0'	112.9'	50.0'
REAR YARD	§ 1276.09	100.0'	395.7'	112.5'
MAX PERMITTED HEIGHT	§ 1276.09	MULTI-FAMILY APT 55.0' & 4 STORIES OFFICE 50.0' & 3 STORIES OTHER USES 35.0' & 2 STORIES	OFFICE <40.0' - 3 STORIES	APT BLDG <55.0' - 4 STORIES OFFICE <50' - 3 STORIES OTHER USES <35.0' - 2 STORIES
MAX BUILDING COVERAGE	§ 1276.09	20.0% BASE REQUIREMENT 30.0% (BONUS PROVISION WHEN A PARKING STRUCTURE IS IMPLEMENTED)	5.6% (58,480 SF)	19.4% (203,879 SF)
MAX LOT COVERAGE	§ 1276.09	60.0%	32.7% (343,285 SF)	46.9% (492,045 SF)
MIN BUILDING SPACING	§ 1276.09	75.0'	40.5' (ENC)	79.3'
DENSITY	§ 1276.09	NUMBER OF RESIDENTIAL UNITS PER GROSS ACRE SHALL NOT EXCEED 12 BASE 12 DWELLING UNITS / ACRE (288) BONUS WHEN WORKFORCE HOUSING IS IMPLEMENTED 13.5 DWELLING UNITS / ACRE (324)	N/A	278 UNITS (11.58 DU/ACRE)
MIN PARKING, SERVICE, OR LOADING AREA SETBACKS	§ 1276.09	10' FROM ANY SIDE YARD PROPERTY LINE ABUTTING A MAJOR ROADWAY (ADJ 309 RAMP)	4.1' (ENC) (ADJ 309 RAMP)	4.1' (ENC) (ADJ 309 RAMP) 20.0' ALL NEW AREAS
MIN PARKING, SERVICE, OR LOADING AREA SETBACKS	§ 1276.09	75' FROM ANY SIDE OR REAR PROPERTY LINE	SIDE YARD ADJ TO ACTS 195.4' REAR YARD TO OLD YORK RD CC 203.3'	SIDE YARD ADJ TO ACTS 106.3' REAR YARD TO OLD YORK RD CC 221.3'
SERVICE DRIVEWAY SETBACKS	§ 1276.09	25' FROM SIDE OR REAR PROPERTY LINE	SIDE YARD ADJ TO ACTS 112.9'	SIDE YARD ADJ TO ACTS 25.5'
PARKING REQUIREMENTS - MULTIFAMILY APARTMENTS - OFFICE / RETAIL BUILDING	§ 1276.09	MULTI FAMILY APT* 278 UNITS x 1.5 STALLS=417 SPACES OFFICE** 77,619 GFA / 250SF=311 SPACES OTHER USE** 46,750 GFA / 250SF=187 SPACES *1.5 STALLS / RESIDENTIAL UNIT **1 STALL / EVERY 250 SF OF GFA	623 SPACES (144,359 GFA)	APT BLDG 433 SPACES OFFICE 315 SPACES OTHER USE 234 SPACES
			ENC =	EXISTING NON-CONFORMITY

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL SERVICES
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY

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THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.:	PAA240076.00-0A
DRAWN BY:	PAB
CHECKED BY:	GJH
DATE:	02/11/2026
CAD I.D.:	P-CUSE-PROP

PROJECT:

MIXED USE DEVELOPMENT

FOR

BT 309, LLC

PROPOSED MIXED USE DEVELOPMENT

321 NORRISTOWN ROAD
MONTGOMERY COUNTY
LOWER GWYNEDD TOWNSHIP
PENNSYLVANIA, 19002

BOHLER
1600 MANOR DRIVE, SUITE 200
CHALFONT, PA 18914
Phone: (215) 996-9100
Fax: (215) 996-9102
www.BohlerEngineering.com

COMMONWEALTH OF PENNSYLVANIA REGISTERED LANDSCAPE ARCHITECT
T.R. KNAB
REGISTERED LANDSCAPE ARCHITECT
PENNSYLVANIA LICENSE No. LA002352
REGISTERED LANDSCAPE ARCHITECT

SHEET TITLE:

CONDITIONAL USE PLAN

SHEET NUMBER:

2

ORG. DATE - 02/11/2026

M:\PA2024\PAA240076.00\CAD\DRAWINGS\PLAN SETS\CONDITIONAL USE PLAN\P-CUSE-PROP-PAA240076.00-0A.dwg — LAYOUT: C-402 CUSE

Bowman

April 10, 2026

Ms. Mimi Gleason
Township Manager
Lower Gwynedd Township
1130 N. Bethlehem Pike
Spring House, PA 19477

RE: **Traffic Review – Transportation Impact Study and Conditional Use Plans**
321 Norristown Road (S.R. 2052) – Spring House Mixed-Use Development
Lower Gwynedd Township, Montgomery County, PA
Project No. 314087-01-005

Dear Mimi:

As requested, on behalf of Lower Gwynedd Township, Bowman Consulting Group (Bowman) has completed our traffic engineering review of the proposed mixed-use development to be located at 321 Norristown Road (S.R. 2052) in Lower Gwynedd Township, Montgomery County, PA. Based on information provided in the submission, the proposed development will consist of 278 mid-rise apartments, 77,619 square feet of office space, a 30,750 square-foot grocery store, and 16,000 square feet of general retail space. Access to the site will continue to be provided via the existing signalized full-movement driveway (Boveri Drive) along Norristown Road (S.R. 2052).

The following documents were reviewed in preparation of our review:

- Transportation Impact Study – Springhouse Mixed-Use Development, prepared by TPD, Inc., last revised February 4, 2026.
- Transportation Impact Study Summary Memorandum – Springhouse Mixed-Use Development, prepared by TPD, Inc., dated February 4, 2026.
- Response to Comments Letter – Springhouse Mixed-Use Development, prepared by TPD, Inc., dated February 4, 2026.
- Conditional Use Plans – Mixed-Use Development, prepared by Bohler Engineering, dated February 11, 2026.

Based on our review of the submitted documents noted above, Bowman offers the following comments for consideration by the Township and action by the applicant.

General

1. The applicant should address the comments contained in this letter and provide revised materials to the Township and our office for further review and recommendations as the proposed development proceeds through the Township and PennDOT review process. The applicant's engineers must provide a response letter that describes how each specific review comment has been addressed, where each can be found in the study or materials.

2. The proposed development will be subject to the transportation impact fee of $3,865 per "new" weekday afternoon peak hour trip and the applicant will be required to pay a Transportation Impact

Fee. If the proposed development moves forward to the land development phase, the transportation impact fee will be calculated at that time.

3. Since Norristown Road (S.R. 2052) is a state roadway, a Highway Occupancy Permit (HOP) will be required for any modifications within the legal right-of-way along Norristown Road (S.R. 2052). The Township and our office must be copied on all plan submissions and correspondence between the applicant and PennDOT and invited to any and all meetings between these parties.

Transportation Impact Study

4. The transportation impact study (TIS) should be concurrently reviewed by PennDOT at the appropriate time during the land development process to obtain concurrence and approvals on the access and associated improvements proposed in the study. Any comments from PennDOT are requested to also be coordinated with/copied to our office and Lower Gwynedd Township. It is noted that the PennDOT has provided preliminary comments regarding the TIS Scoping Application in its review dated April 2, 2026.

5. The applicant's traffic engineer concludes that under the 2027 and 2032 projected conditions, with the development of the proposed site, and with the site-related recommendations outlined in Table II of the Executive summary of the TIS, all study area intersections will satisfy PennDOT ILOS Standards. The study presents the following recommendations/conclusions (bullet items below), that should minimally be required of the applicant as we note after each, and of which will also be reviewed by PennDOT. In addition, we have provided recommendations for additional improvements that should be further considered and evaluated by the applicant, Township, and PennDOT. The improvements included in the revised TIS suggested for further evaluation by our office in our June 25, 2025 review letter are provided in **bold font below** for reference.

Norristown Road (S.R. 2052) Corridor

- Optimize traffic signal timings at the signalized study intersections.
- **In addition to the traffic signal timing adjustments for the Norristown Road (S.R. 2052) corridor listed above, we recommend the existing loop detection system for the Route 309 interchange traffic signals be replaced with detection systems that are consistent with the current Township traffic signal specifications in order to further optimize traffic flow through the interchange area. Additional traffic signal equipment upgrade requirements may be identified at intersections when a review of the design plans is completed for the proposed improvements along the corridor.**

PennDOT TIS guidelines state if the evaluation of the With Development Horizon Year Scenario to the Without Development Horizon Year Scenario indicates that the overall intersection levels-of-service have dropped, the applicant will be required to mitigate the levels-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. It should be noted that the proposed traffic signal timing optimization at the signalized intersections along Norristown Road (S.R. 2052) from Bethlehem Pike (S.R. 2018) to Tennis Avenue (S.R. 2020) are expected to mitigate the overall intersection levels-of-service (LOS) impacts of the proposed development according to current PennDOT criteria. It is also noted that the Township will work with the Applicant's traffic engineer to evaluate the adjusted traffic signal timings for the Norristown

Road (S.R. 2052) and Bethlehem Pike (S.R. 2018) intersection to best optimize operations for the intersection.

Norristown Road (S.R. 2052) Site Access (Boveri Drive)

- Restripe the eastbound left-turn lane to increase the storage length to 250 feet.
- Maintenance of on-site vegetation to maximize available sight distance.
- **Extend the southbound right-turn lane on the site access approach to the first internal intersection via widening.**
- **Work with PennDOT and the Township on potential traffic signal equipment upgrades. If the proposed development moves forward, Bowman recommends that a review of the traffic signal equipment for the Boveri Drive intersection be completed to determine upgrades that will be required of the applicant for compliance with the current township traffic signal specifications.**
- **Work with PennDOT and the Township on potential traffic signal timing modifications to increase the green time on the westbound Norristown Road (S.R. 2052) approach in order to create a gap in the eastbound traffic stream to facilitate turns into and out of Beech Hollow Road.**

According to the turn lane warrant analysis summarized in Table 16, a 175-foot right-turn lane is warranted along the westbound Norristown Road (S.R. 2052) approach to Boveri Drive. Based on information provided in the study, the applicant is not proposing to install this right-turn lane due to steep grades adjacent to Norristown Road (S.R. 2052), small stream crossing of Norristown Road (S.R. 2052) and the existing walking trail along Norristown Road (S.R. 2052). It should be noted that the westbound Norristown Road (S.R. 2052) approach to Boveri Drive is expected to operate at LOS A during all three peak hours under 2027 and 2032 future projected conditions. The Township and the applicant should further evaluate the impacts to the existing features along the north side of Norristown Road (S.R. 2052) from widening Norristown Road (S.R. 2052) and relocating the trail to provide the right-turn lane and discuss with PennDOT during the HOP review process.

The residents located along Beech Hollow Road raised concerns at the January 2025 community meeting about the difficulty of making a left-turn from Beech Hollow Road onto Norristown Road (S.R. 2052), which could potentially be exacerbated by the proposed development. The separation distance between the Beech Hollow Road intersection and the existing traffic signal at Boveri Drive must be taken into consideration for the feasibility of lane improvements or traffic signal modifications. *The applicant's traffic engineer indicates in its response that the traffic signal timings have been optimized to meet PennDOT standards. Future modifications to the signal timings to allow for additional green time on the westbound Norristown Road (S.R. 2052) approach will be coordinated with PennDOT. This additional westbound green time would provide a gap in the eastbound traffic for the vehicles entering and exiting Beech Hollow Road.*

Any improvements to Norristown Road (S.R. 2052) or modifications to the existing traffic signal would require PennDOT approval. The applicant and Township should coordinate any potential improvements to the Norristown Road (S.R. 2052)/Beech Hollow Road intersection with PennDOT during the PennDOT HOP review process.

Norristown Road (S.R. 2052) Site Frontage

- Provide a 10-foot-wide trail along the Norristown Road (S.R. 2052) site frontage. In addition, provide a 10-foot-wide trail through portions of the site that connects to the proposed trail along the Norristown Road (S.R. 2052) site frontage and to the existing trail to the east of the site.
- Provide sidewalk extending across the Route 309 northbound on-ramp, under Route 309, across the Route 309 southbound off-ramp terminating at/near the SHIP property to the west of the site.
- Provide PennDOT compliant crosswalks and pedestrian traffic signal equipment at the signalized study intersections between Boveri Drive and the Route 309 southbound off-ramp.

Based on our preliminary review of the proposed sidewalk extending under the Route 309 along Norristown Road (S.R. 2052), identified in the Traffic Impact Summary memorandum, it appears that providing a 4' sidewalk and single-faced barrier curb may reduce the outermost westbound through lane to less than 11' in width which may require adjustments to lane widths and or shifting of travel lanes on Norristown Road (S.R. 2052) through the interchange area. It is noted that the applicant's traffic engineer has included the conceptual sketch of the proposed sidewalk with the TIS Scoping Application submitted to PennDOT on March 4, 2026. PennDOT has provided preliminary comments regarding the proposed sidewalk in their TIS Scoping Application review dated April 2, 2026. If the proposed development moves forward, a more detailed concept plan should be prepared for review by the Township and PennDOT.

Norristown Road (S.R. 2052) and Tennis Avenue (S.R. 2020)

- **Coordinate with PennDOT and the Township on shifting where the transition occurs between the one westbound lane and two westbound lanes further west in order to extend the existing eastbound left-turn lane approaching Tennis Avenue (S.R. 2020).**
- **In addition to the lane improvements suggested in our June 25, 2025 letter and the recommendations provided in the TIS, Bowman recommends that a review of the traffic signal equipment for the Tennis Avenue intersection be completed with the design plans for the proposed improvements to determine upgrades that may be required of the applicant to improve traffic operations for the intersection.**

PennDOT TIS guidelines state that applicants may be required to address available storage and queue lengths at critical movements or approaches even if the overall intersection LOS requirements are met. The applicant's engineer should evaluate feasible improvements at the intersection of Norristown Road (S.R. 2052) and Tennis Avenue (S.R. 2020) to accommodate the 2027 and 2032 future projected queues that are projected to exceed the available storage length for the eastbound left-turn movement on Norristown Road (S.R. 2052) during the weekday morning and weekday afternoon peak hours according to the queue analysis provided in Tables 13 to 15 of the TIS.

The applicant's traffic engineer indicates in its response that the existing eastbound Norristown Road (S.R. 2052) left-turn queue storage area is approximately 100 feet and that queues for this movement exceed 100 feet under existing conditions during the AM Peak Hour and during the AM and PM peak hours during all projected conditions. Due to the high volume of left turns, the queue cannot be shortened through retiming alone. Additionally, the road cannot be restriped due to the presence of

narrow shoulders and the variable message board structure within the westbound shoulder. However, as part of further coordination with Bowman, 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 was discussed. Since Norristown Road (S.R. 2052) is a PennDOT owned roadway, the proposed "lane transition shift" would require PennDOT approval. The applicant and the Township Traffic Engineer will coordinate with PennDOT on this potential "shift" at the appropriate time during the Land Development process.

If improvements to address available storage and queue lengths at critical movements or approaches are not feasible and agreed upon by PennDOT, the applicant should identify other improvements for the intersection or Norristown Road (S.R. 2052) corridor in place of those referenced above. Additionally, the applicant may be required by PennDOT to provide an Alternative Transportation Plan (ATP) that proposes necessary storage and/or infrastructure improvements in the study area that are feasible and will improve transportation (multi-modal) mobility.

6. Additional comments and requirements could be raised, and revisions may be required for the site access, and recommended transportation improvements for the Norristown Road (S.R. 2052) corridor during the Conditional Use, Land Development and PennDOT Highway Occupancy Permit (HOP) review processes.

7. Based on information provided in Table 6 of the TIS, the proposed development will generate 311 total "new" trips during the weekday morning peak hour, 339 total "new" trips during the weekday afternoon peak hour, and 382 total "new" trips during the Saturday midday peak hour. The table below summarizes the "new" trips for the proposed development.

Total "New" Trips
Proposed Site

Land Uses	Size	AM Peak	PM Peak	Saturday Midday Peak
Office (Existing to Remain)	77,619 s.f.	97	84	57
Proposed Residential	278 units	105	55	73
Proposed Retail Buildings	46,750 s.f.	109	200	252
Total New Trips		311	339	382

The existing site consists of a 143,295 square-foot office building which if fully occupied would generate 180 total "new" trips during the weekday morning peak hour, 173 total "new" trips during the weekday afternoon peak hour, and 126 total "new" trips during the Saturday midday peak hour. Therefore, the proposed development is expected to generate an additional 131 total "new" trips during the weekday morning peak hour, an additional 166 total "new" trips during the weekday afternoon peak hour, and an additional 256 total "new" trips during the Saturday midday peak hour over the existing office buildings of the site if fully occupied.

8. Crash resumes should be provided to our office and PennDOT during the land development and HOP review process in order for the crashes summarized in the study at the intersection of Norristown Road (S.R. 2052) and Route 309 Northbound Ramps can be further evaluated. The evaluation may help determine if there is a pattern to the crashes at this intersection and if the provision of safety improvements may benefit this intersection and reduce the types of crashes that are occurring there. The applicant's review of the same should indicate their recommendation, as

well. *The applicant's traffic engineer indicates in its response that the crash resumes will be provided during the land development and HOP processes.*

9. If the proposed development proceeds to the land development process, the applicant's traffic engineer should discuss with the Township whether additional background developments should be included in future revisions to the TIS.

10. The applicant must forward the revised electronic Synchro files to our office with future submissions for further review, and verification, to confirm the analyses inputs and operations.

11. If the proposed development is approved and constructed, we continue to recommend that the applicant complete a post-development trip generation study after the development is completely constructed and fully occupied to determine if additional traffic analysis at any of the study intersections should be completed to determine if further mitigation should be required of the applicant. *The applicant's traffic engineer indicates in its response that this comment is noted.*

Conditional Use Plans

In addition to the improvements identified for the site frontage and access at the signalized intersection of Norristown Road (S.R. 2052) and Boveri Drive referenced in comment 5 of this letter, we offer the following additional comments for consideration pertaining to the conditional use plan.

12. The applicant's engineer should evaluate the feasibility of adjusting the alignment of the first internal intersection to the site so that the minor approaches to this intersection are aligned opposite each other.

13. The applicant's engineer should consider alternative access configurations for the parking areas leading to/from the apartment building and the supermarket/commercial area on the northern end of the main access drive leading to/from Norristown Road (S.R. 2052) to improve internal circulation and access management in this area of the site.

14. The applicant's engineer should review the proposed parking and consider whether the proposed parking spaces located in the vicinity of the parking garage entrance and the internal intersection on the northern end of the main access drive leading to/from Norristown Road (S.R. 2052) should be relocated to other areas of the parking fields.

15. The applicant has proposed an emergency access only driveway connecting to the Gwynedd Estates parking lot adjacent to the property. We defer to the Township Fire Marshal on the most appropriate location of the proposed emergency access only driveway.

16. Turning templates should be provided demonstrating the ability of emergency vehicles, trash trucks, and the largest expected delivery vehicle expected to routinely access the site to maneuver into and out of the site access along Norristown Road (S,R. 2052) and entirely through the site (including through the emergency access located adjacent to the apartment building). It is recommended that the Township Fire Marshal review the plans for accessibility and circulation needs of emergency apparatus.

17. A more detailed review of land development plans will be conducted if and when the project moves forward through a detailed land development review and approval process. Additional comments and requirements could be raised, and revisions may be required for the site access, roads internal to the development, pedestrian facilities, signage, and parking at that time.

If you or the Township have any questions, or require clarification on the above comments, please contact me.

Sincerely,

Chad Dixson, AICP, PP
Senior Project Manager

CED/BMJ

cc: Jamie Worman, Assistant Township Manager
Patty Sexton-Furber, Building Codes Administrator
James Hersh, P.E., Gilmore & Associates, Inc.
Neil Stein, Esquire, Solicitor
Al Comly, Township Fire Marshal
Mirlene SaintVal, P.E., PennDOT
Nidhi Mehra, PennDOT
John Gallagher, P.E., PennDOT
Peter Clelland, BT 309, LLC (Applicant)
Christen Pionzio, Esquire, HRMM&L (Applicant's Attorney)
Thomas Knab, R.L.A, Bohler Engineering (Applicant's Architect)
Matt Hammond, P.E., TPD, Inc. (Applicant's Traffic Engineer)

V:\314087 - Lower Gwynedd Township\314087-01-005 (TRA) - BET 321 NorristownRd\Engineering\Submissions\2026-02-19 CU\Review\2026-04-10 Review Letter – BET Spring House.docx

Office of the Fire Marshal
1130 N. Bethlehem Pike--P.O.Box 625--Spring House, PA 19477-0625--(215) 646-5302--FAX (215) 646-3357

MEMORANDUM

TO MIMI GLEASON, TOWNSHIP MANAGER
FROM: AL COMLY, FIRE MARSHAL
DATE: APRIL 14, 2026

RE: SPRING HOUSE CORPORATE CENTER
BET DEVELOPMENT
321-323 NORRISTOWN ROAD

REVIEW CONDITIONAL USE SUBMITTAL
PREPARED BY BOHLER ENGINEERING
DATED 2-11-2026

SUBMITTAL

1 EXISTING CONDITIONS PLAN (SHOWING SITE BOUNDARIES)
2 CONDITIONAL USE PLAN (SHOWING PROPOSED LAYOUT)
3 SITE PLAN (RENDERED IN COLOR TO SHOW PROPOSED LAYOUT)

SUMMARY PLAN SHOWS THE SITE WITH THE FOLLOWING:

- EXISTING 323 OFFICE BUILDING REMAINS
- FORMER 321 OFFICE BUILDING IS REMOVED
- NEW CONSTRUCTION: HOUSING BUILDING (278 UNITS) WITH PARKING GARAGE (433 SPACES) IN THE CORE AREA IN THE NORTH CENTRAL AREA OF THE SITE
- NEW CONSTRUCTION: RETAIL BUILDING IN THE SOUTHEAST AREA OF THE SITE (12,000 SF)
- NEW CONSTRUCTION: LARGE RETAIL, WITH ADJACENT SMALLER RETAIL BUILDINGS ALONG THE WESTERN BOUNDARY OF THE SITE (ADJACENT TO US 309) (30,750 SF WITH 4,000 SF APPENDAGE)

Proposed plan shows buildings as blocks of space. Uses and Occupancies to be determined at a later date.

The site is accessed from Norristown Road by Boveri Drive–a divided road with 2 lanes each side of the center green area. construction on the western boundary of the site. No topography information has been provided in the submittal

Plan Comments–Township Fire Code–International Fire Code 2018 Edition with Lower Gwynedd amendments

Emergency Access

The driveway shown on the drawings now accesses through the ACTS Gwynedd Estates property. I've reviewed this with the Fire Chief and we agree on the proposed approach. In my previous Memo dated August 13, 2025, I noted some technical details to be finalized, but they are traditionally addressed in the land development process, specifically:

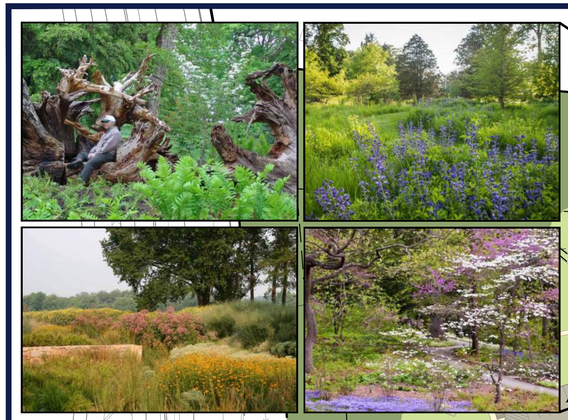
- Width (IFC 503.2.1)
- Slope, including arrival and departure points
- Turning Radius
- Surface (IFC 503.2.3)

Additionally, existence of a memo of understanding with ACTS agreeing to this layout, and detailing of any proposed security to limit this driveway to emergency use only will be addressed in Land Development.

The proposed residential building is shown with a roadway completely encircling the building.

Other Comments to address in Land Development

- All structures, including the parking garage, will be equipped with automatic sprinklers installed in accordance with NFPA 13 Automatic Sprinklers.
- Parking garage does not appear to meet the requirement for an "Open Parking Garage" Section 406 of the Building Code provides the details associated with this calculation. This will affect the requirements for emergency power & ventilation.
- EV charging stations cannot be installed in the garage. (standards for this are currently under development)
- Hydrant locations, fire department connections dumpster locations, and delivery spaces will be addressed.



BLOCK 19
UNIT 9
APN #39-00-04330-00-5
N/F LANDS OF
OLD YORK ROAD COUNTRY CLUB
OF MONTGOMERY COUNTY
D.B. 3241, PG. 515

NATIVE PLANT/POLLINATORS PASSIVE RECREATION AREA WITH BIRD SANCTUARY

100' REAR YARD SETBACK

112.5'

221.3'

283.3'

BLOCK 19
UNIT 2
APN #39-00-02955-00-3
N/F LANDS OF
BARCLAY WHITE (PHILADELPHIA)
CORPORATION OF PHILADELPHIA
D.B. 5960, PG. 1270

PROP WALKING TRAIL EXTENSION (SUBJECT TO APPROVAL BY AND AGREEMENT WITH A.C.T.S)

EMERGENCY ACCESS

24'

EMERGENCY ACCESS

50' SIDE YARD SETBACK

PROP ORNAMENTAL FENCE

PROP 4-STORY APARTMENT BUILDING
18,733,304 SF
278 UNITS (56.5% 2 BR / 43.5% 1 BR)

433 PARKING SPACES
(1.5 PER UNIT) IN 4 STORIES

GARAGE

COURTYARD

COURTYARD

COURTYARD

112.9' TO EX ACCESS DRIVE

57.4'

25.5'

PROP SIDEWALK

PROP ORNAMENTAL FENCE

PROP WALKING TRAIL EXTENSION

PROP REINFORCED TURF EMERGENCY ACCESS WITH REINFORCED CONCRETE PEDESTRIAN WALKWAY

195.4'

BLOCK 19
UNIT 100
APN #39-00-02955-00-3
N/F LANDS OF
ADULT COMMUNITIES TOTAL SERVICES, INC.
D.B. 4577, PG. 489

FILBERT WING

ELM WING

OAK BRIDGE TERRACE

50' SIDE YARD SETBACK

3 STORY BRICK BUILDING "TERRADA" BUILDING FOOTPRINT AREA=25,873± S.F.

TOTAL OFFICE PARKING = 315 SPACES

RELOCATED GENERATOR

PROP COMMERCIAL BLDG (30,750 SF FOOTPRINT) 200' X 150'

PROP COMMERCIAL BLDG (4,000 SF FOOTPRINT) 50' X 80'

TOTAL RETAIL PARKING = 234 SPACES
RETAIL PARKING RATIO = ±5/1,000

PROP COMMERCIAL BLDG (12,000 SF FOOTPRINT) 63' X 190'

PROP RETAINING WALL

75' PARKING SETBACK

100' BUILDING SETBACK

50' SIDE YARD SETBACK

20' WIDE DRAINAGE EASEMENT (PER D.B. 4850, PG. 2186)

PROP REINFORCED TURF EMERGENCY ACCESS WITH REINFORCED CONCRETE PEDESTRIAN WALKWAY (SUBJECT TO APPROVAL BY AND AGREEMENT WITH A.C.T.S)

SANITARY SEWER EASEMENT

PENNSYLVANIA STATE HIGHWAY U.S. ROUTE 309
(A.K.A. FORT WASHINGTON EXPRESSWAY)
(A.K.A. U.S. RT. 202)
(VARIABLE WIDTH LIMITED ACCESS)
(ASPHALT ROADWAY)
(LIMITED ACCESS HIGHWAY)

NORTHBOUND

SOUTHBOUND

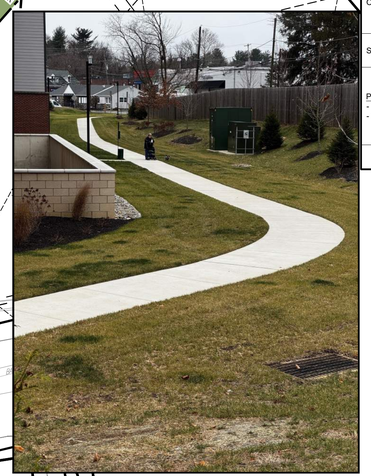
LEGAL LIMIT OF SLOPE
(HIGHWAY P.B. 27, PG. 21)

NORRISTOWN ROAD
(A.K.A. S.R. 2007)(L.R. 46073)
(VARIABLE WIDTH)
(ASPHALT ROADWAY)
(TWO WAY TRAFFIC)

PRESERVED MATURE TREE ENHANCEMENT

BASELINE

LEGAL R.O.W. LINE



NADB3

LOCATION MAP

SCALE: 1" = 1,000'
SOURCE: BING MAPS

ZONING TABLE

ZONE: MF-3
USE PERMITTED BY CONDITIONAL USE: MIXED USE DEVELOPMENT

APPLICANT/ OWNER INFORMATION

APPLICANT:	BT 309, LLC 200 DRYDEN ROAD, SUITE 2000 DRESHER, PA 19025

BULK REQUIREMENTS

ITEM	CODE	REQUIRED	EXISTING	PROPOSED
MIN LOT AREA	§ 1276.09	20 AC	24.097 AC	24.097 AC
MIN LOT WIDTH	§ 1276.09	800.0'	820.9'	820.9'
MIN YARD SETBACKS				
FRONT YARD	§ 1276.09	MULTI-FAMILY APT & OFFICE - 200.0' OTHER USES - 100.0' ALONG NORRISTOWN ROAD	OFFICE 513.4'	APT BLDGS 521.2' OTHER USE 107.9
SIDE YARD	§ 1276.09	50.0'	112.9'	50.0'
REAR YARD	§ 1276.09	100.0'	395.7'	112.5'
MAX PERMITTED HEIGHT	§ 1276.09	MULTI-FAMILY APT 55.0' & 4 STORIES OFFICE 50.0' & 3 STORIES OTHER USES 35.0' & 2 STORIES	OFFICE <40.0' - 3 STORIES	APT BLDG <55.0' - 4 STORIES OFFICE <50' - 3 STORIES OTHER USES <35.0' - 2 STORIES
MAX BUILDING COVERAGE	§ 1276.09	20.0% BASE REQUIREMENT 30.0% (BONUS PROVISION WHEN A PARKING STRUCTURE IS IMPLEMENTED)	5.6% (58,480 SF)	19.4% (203,879 SF)
MAX LOT COVERAGE	§ 1276.09	60.0%	32.7% (343,285 SF)	46.9% (492,045 SF)
MIN BUILDING SPACING	§ 1276.09	75.0'	40.5' (ENC)	79.3'
DENSITY	§ 1276.09	NUMBER OF RESIDENTIAL UNITS PER GROSS ACRE SHALL NOT EXCEED 12 BASE 12 DWELLING UNITS / ACRE (288) BONUS WHEN WORKFORCE HOUSING IS IMPLEMENTED 13.5 DWELLING UNITS / ACRE (324)	N/A	278 UNITS (11.58 DU/ACRE)
MIN PARKING, SERVICE, OR LOADING AREA SETBACKS	§ 1276.09	10' FROM ANY SIDE YARD PROPERTY LINE ABUTTING A MAJOR ROADWAY (ADJ 309 RAMP)	4.1' (ENC) (ADJ 309 RAMP)	4.1' (ENC) (ADJ 309 RAMP) 20.0' ALL NEW AREAS
MIN PARKING, SERVICE, OR LOADING AREA SETBACKS	§ 1276.09	75' FROM ANY SIDE OR REAR PROPERTY LINE	SIDE YARD ADJ TO ACTS 195.4' REAR YARD TO OLD YORK RD CC 221.3'	SIDE YARD ADJ TO ACTS 106.3' REAR YARD TO OLD YORK RD CC 221.3'
SERVICE DRIVEWAY SETBACKS	§ 1276.09	25' FROM SIDE OR REAR PROPERTY LINE	SIDE YARD ADJ TO ACTS 112.9'	SIDE YARD ADJ TO ACTS 25.5'
PARKING REQUIREMENTS - MULTIFAMILY APARTMENTS - OFFICE / RETAIL BUILDING	§ 1276.09	MULTI FAMILY APT* 278 UNITS x 1.5 STALLS=417 SPACES OFFICE** 77,619 GFA / 250SF=311 SPACES OTHER USE** 46,750 GFA / 250SF=187 SPACES *1.5 STALLS / RESIDENTIAL UNIT **1 STALL / EVERY 250 SF OF GFA	623 SPACES (144,359 GFA)	APT BLDG 433 SPACES OFFICE 315 SPACES OTHER USE 234 SPACES
			ENC =	EXISTING NON-CONFORMITY

60 30 15 0 60
SCALE: 1" = 60'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ISSUANCE AND ELECTRONIC
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY

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THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.:	PAA240076.00-0A
DRAWN BY:	PAB
CHECKED BY:	GJH
DATE:	02/11/2026
CAD I.D.:	P-CUSE-PROP

PROJECT:

MIXED USE DEVELOPMENT

FOR

BT 309, LLC

PROPOSED MIXED USE DEVELOPMENT

321 NORRISTOWN ROAD
MONTGOMERY COUNTY
LOWER GWYNEDD TOWNSHIP
PENNSYLVANIA, 19002

BOHLER
1600 MANOR DRIVE, SUITE 200
CHALFONT, PA 18914
Phone: (215) 996-9100
Fax: (215) 996-9102
www.BohlerEngineering.com

T.R. KNAB
COMMONWEALTH OF PENNSYLVANIA
REGISTERED LANDSCAPE ARCHITECT
REGISTERED LANDSCAPE ARCHITECT
PENNSYLVANIA LICENSE No. LA002352

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

3

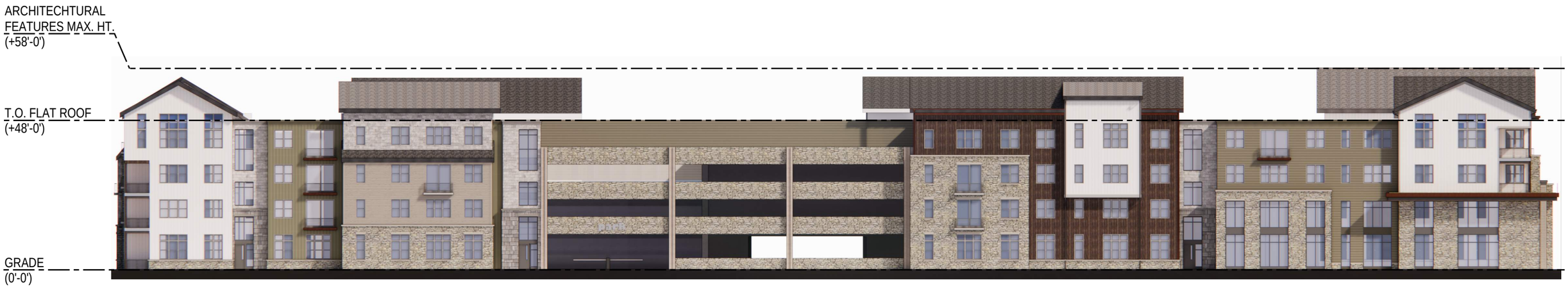
ORG. DATE - 02/11/2026

M:\PA\2024\PAA240076.00\CAD\DRAWINGS\PLAN SETS\CONDITIONAL USE PLAN\P-CUSE-PROP-PAA240076.00-0A-----LAYOUT: C-003 REND
PB

RESIDENTIAL

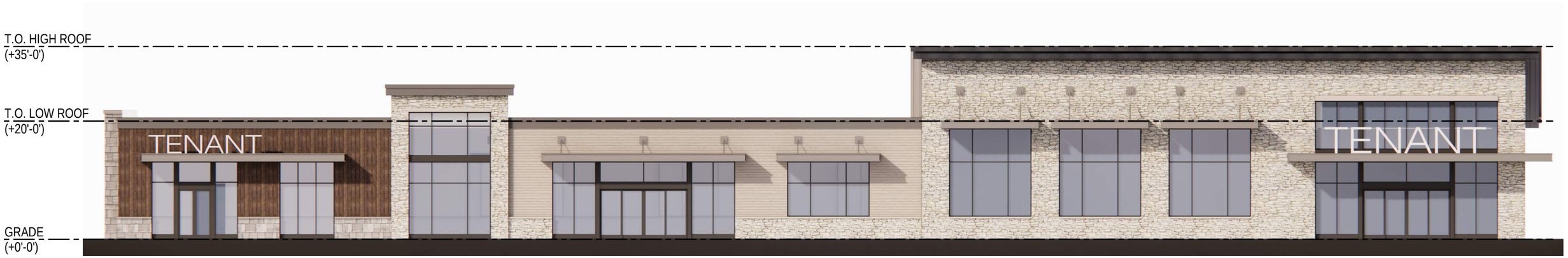
BUILDING ELEVATIONS

RESIDENTIAL



BUILDING ELEVATIONS

RETAIL



BUILDING ELEVATIONS

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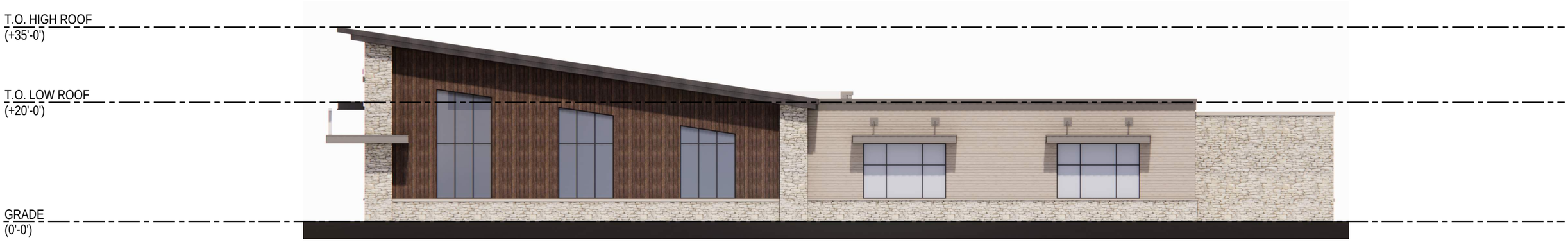


BUILDING ELEVATIONS

RETAIL

BUILDING ELEVATIONS

RETAIL

T.O. HIGH ROOF
(+25'-0")
T.O. LOW ROOF
(+20'-0")

GRADE
(0'-0')

T.O. HIGH ROOF
(+25'-0")
T.O. LOW ROOF
(+20'-0")

GRADE
(+0'-0')

BUILDING ELEVATIONS

610.326.3100 | INFO@TPDINC.COM
WWW.TPDINC.COM

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

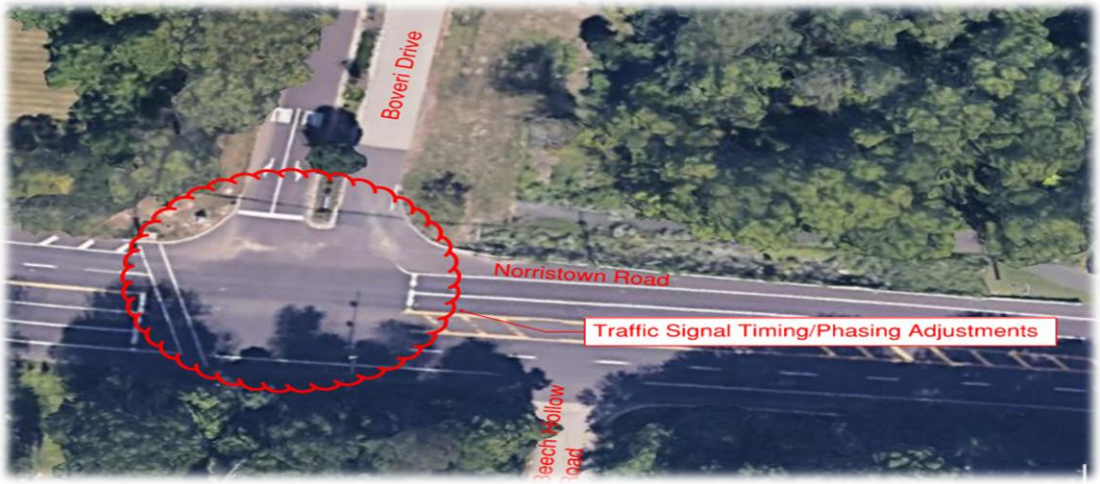
- The project site is located on the northwestern corner of Norristown Road (SR 2052) and Boveri Drive and currently consists of 143,295 sf of office space.
- The proposed site will be redeveloped and will consist of the following uses:
  - 77,619 sf of Office Space;
  - A 30,750 sf Grocery Store;
  - 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.

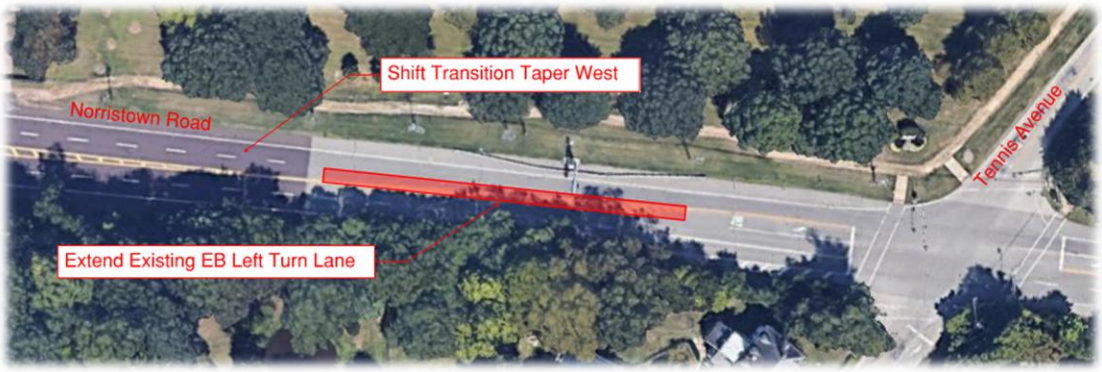
» Work with the Township and PennDOT on potential traffic signal timing modifications to increase the green time on the westbound Norristown Road approach in order to create a gap in the eastbound traffic to facilitate turns in/out of Beech Hollow Road.



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

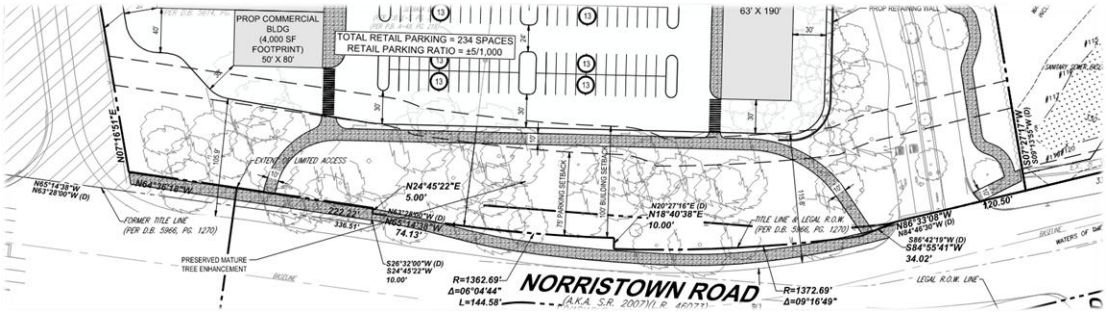
Norristown Road (SR 2052) & Tennis Avenue (SR 2020)

» 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.

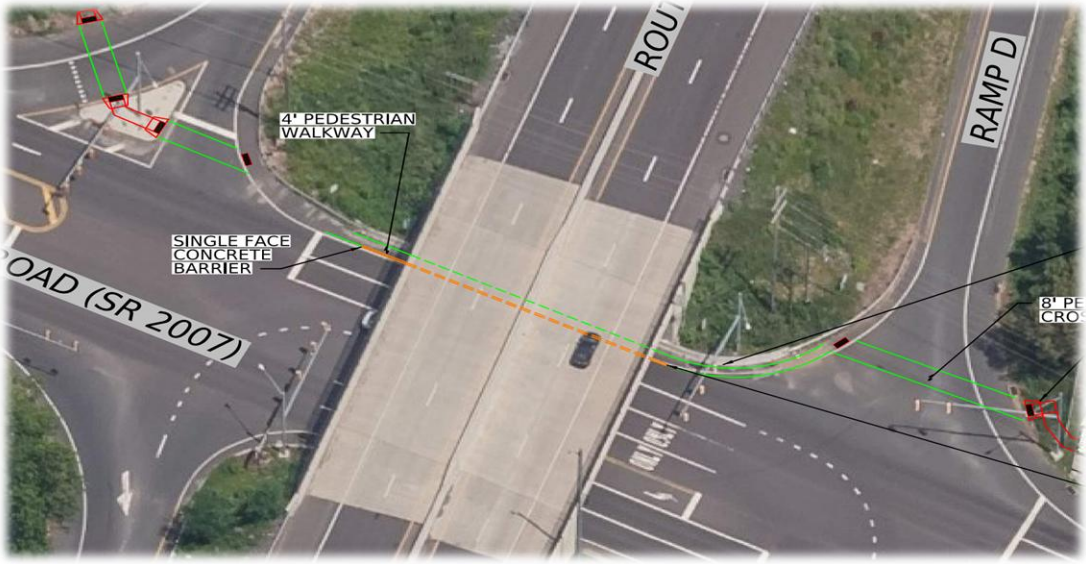


» Provide sidewalk extending across the northbound Route 309 on-ramp, under Route 309, across the southbound Route 309 off-ramp and terminating at/near the SHIP property to the west of the site.

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 Drive[1];
- Norristown Road & Route 309 NB Ramps[1];
- Norristown Road & Route 309 SB Ramps[1];
- 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

Moving ***Forward*** **Together**®

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

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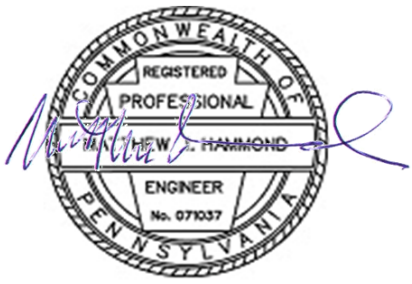
E-mail: TPD@TPDinc.com
Website: www.TPDinc.com



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

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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] Without SHIP Development			Design Year 2032[2] With SHIP Development			Meets LOS Requirements?
			Base	Projected	Projected[3,4]	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:

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

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 INTERSECTIONS[1]

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	--
	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	--
	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								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	--
	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	--
	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	--
	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	--
	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	--
	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]							--	55′	65′	--
	EB TR	865′[3]	8′	8′	8′	--	8′	8′	--	58′	68′	--
	WB LT	160′[3]	18′	18′	18′	--	18′	20′	--	88′	98′	--
	WB T	160′[3]	15′	15′	18′	--	15′	18′	--	70′	78′	--
	WB R	225′							--	15′	15′	--
	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′	--
	SB LTR	1000′+[5]	135′	137′	134′	--	137′	134′	--	139′	135′	--
Norristown Road (SR 2052) & Residential Driveway/SHIP Driveway	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.

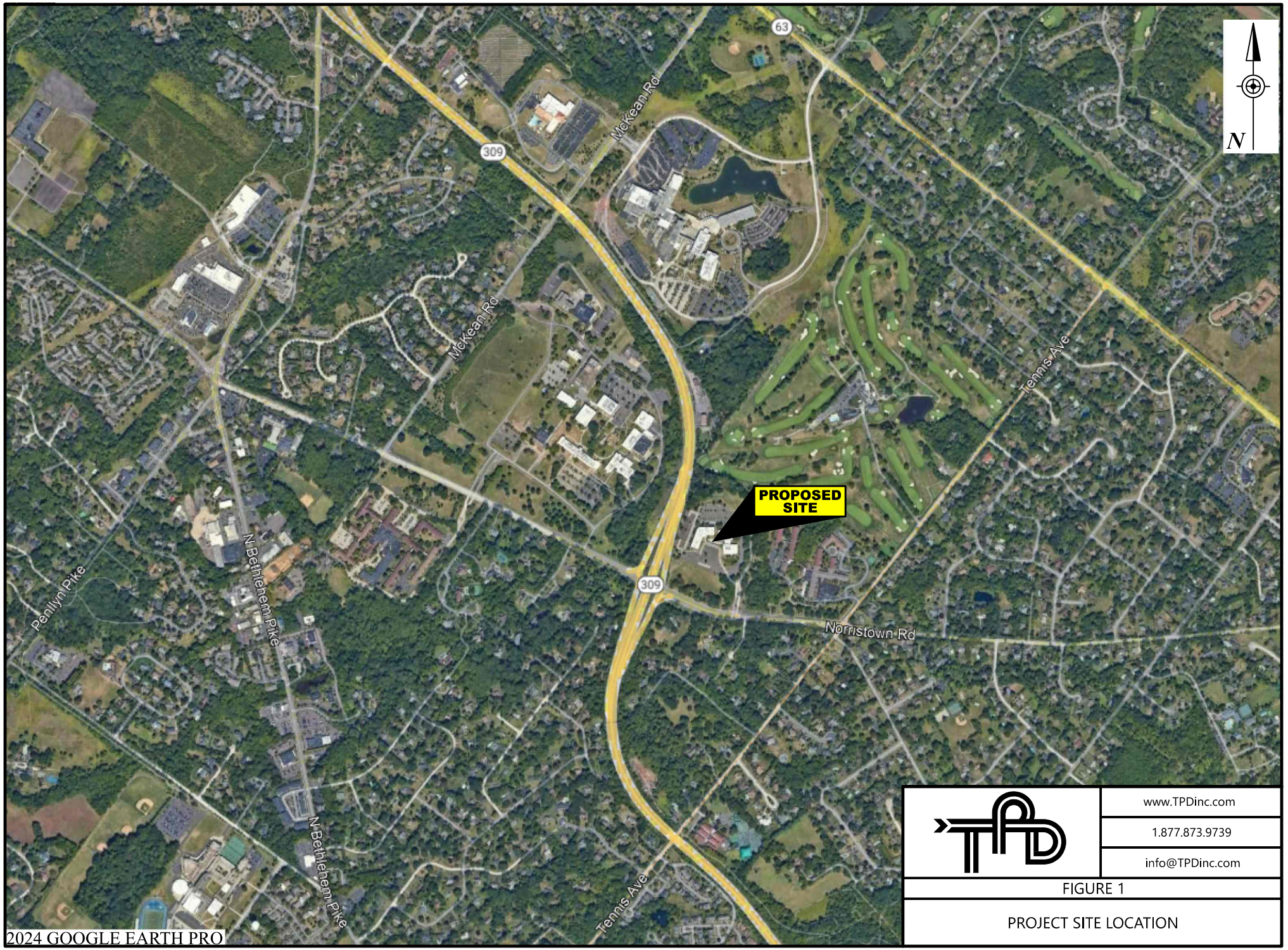

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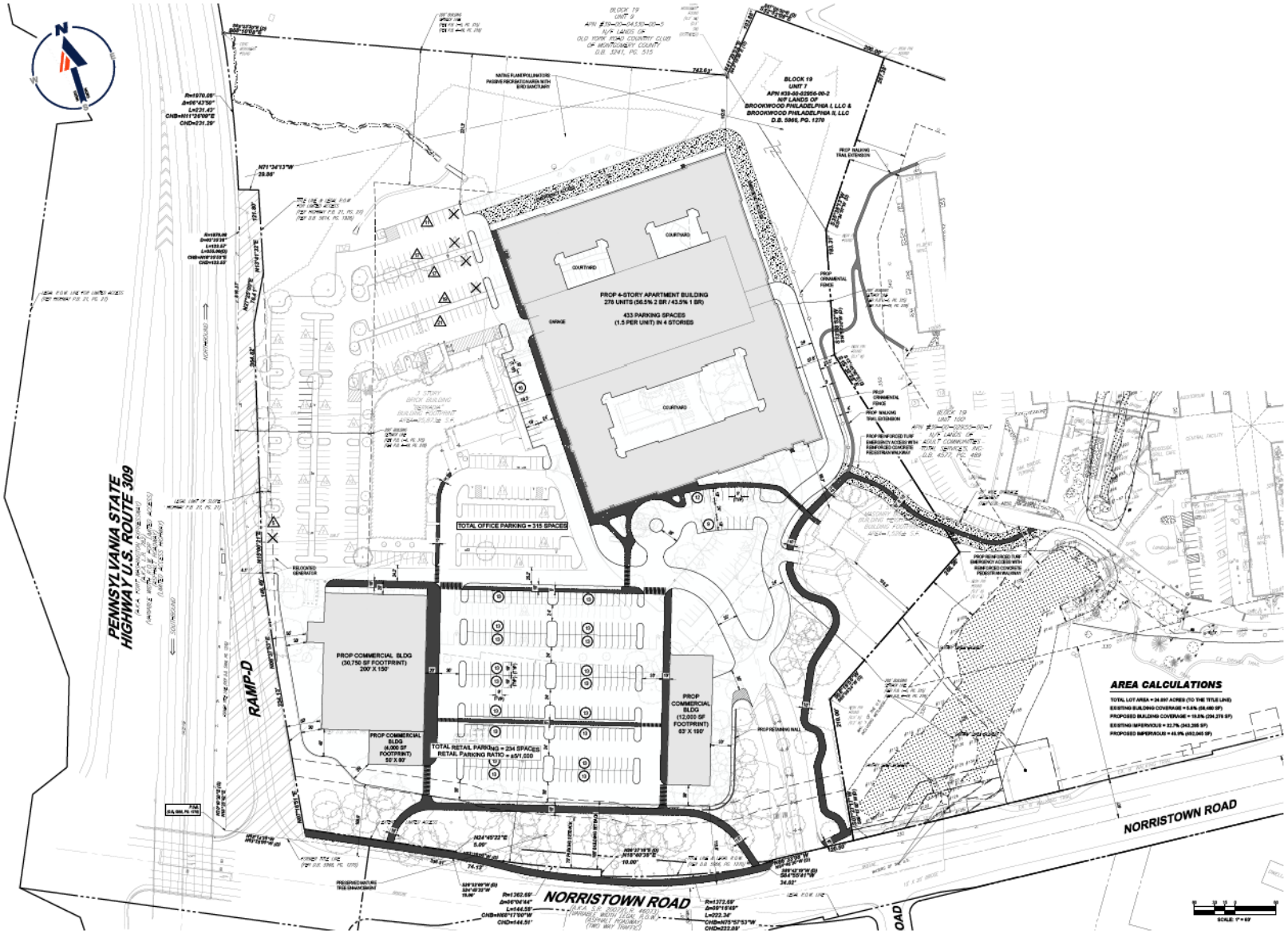
FIGURE 1

PROJECT SITE LOCATION



KEY:
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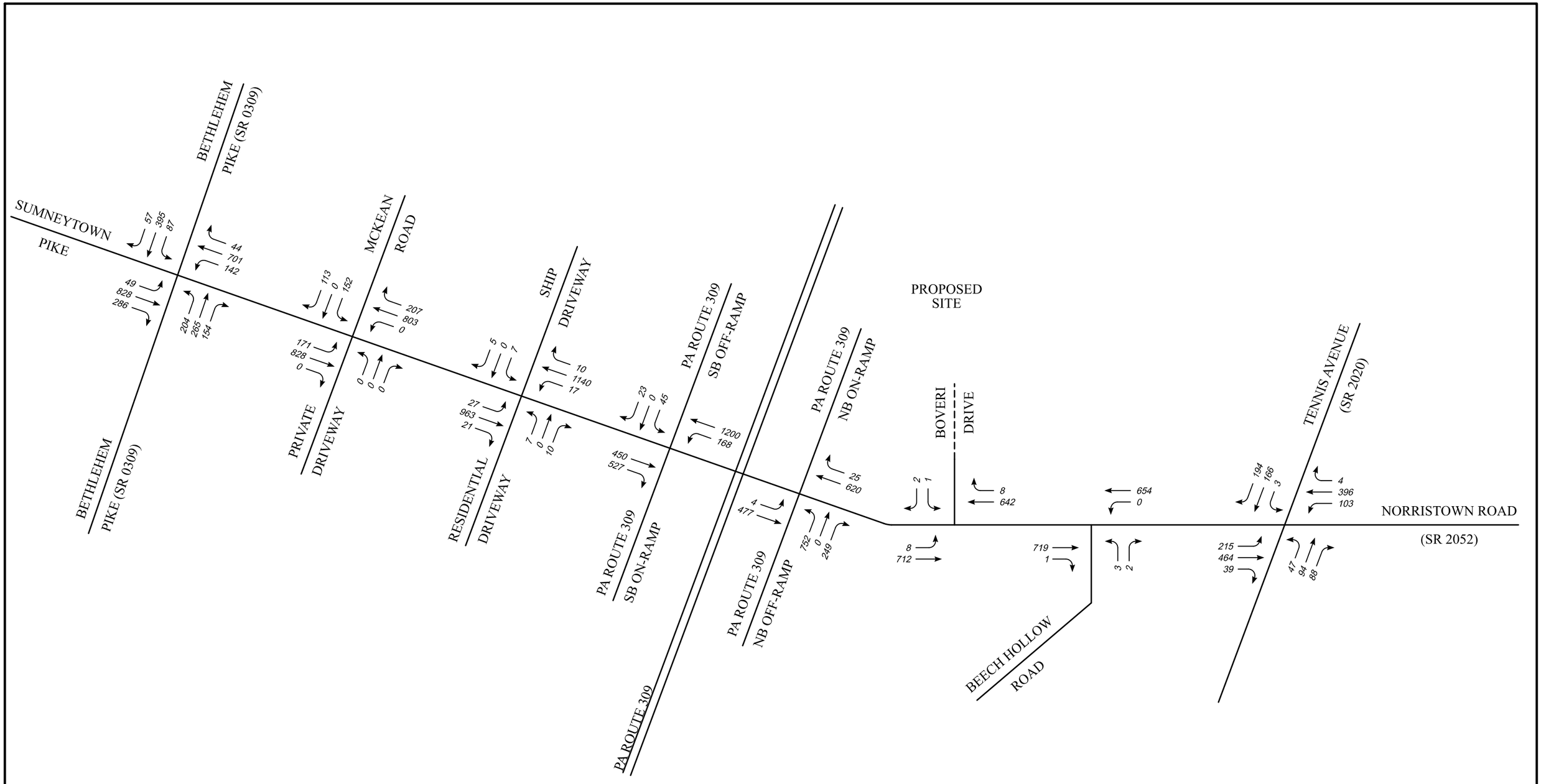
FIGURE 2

PROPOSED SITE PLAN



KEY:

– – – – – · **PROPOSED DRIVEWAY**

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FIGURE 3

2024 EXISTING CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES

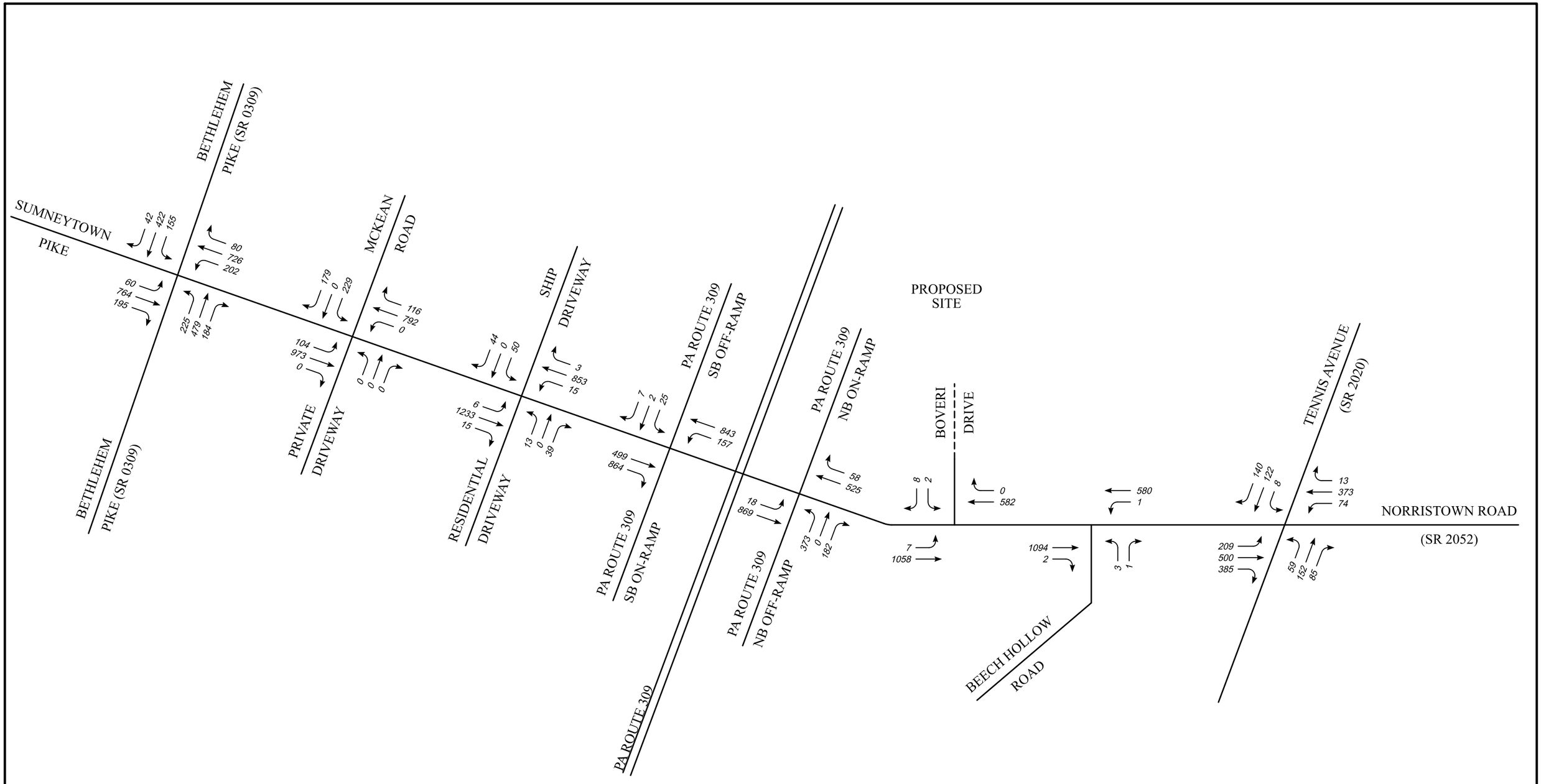
SUMNEYTOWN PIKE
BETHLEHEM PIKE (SR 0309)
BETHLEHEM PIKE (SR 0309)
MCKEAN ROAD
PRIVATE DRIVEWAY
RESIDENTIAL DRIVEWAY
SHIP DRIVEWAY
PA ROUTE 309 SB OFF-RAMP
PA ROUTE 309 NB ON-RAMP
PROPOSED SITE
BOVERI DRIVE
TENNIS AVENUE (SR 2020)
NORRISTOWN ROAD (SR 2052)
PA ROUTE 309 SB ON-RAMP
PA ROUTE 309 NB OFF-RAMP
PA ROUTE 309
BEECH HOLLOW ROAD
42 422 155
60 764 195
80 726 202
225 479 184
179 0 229
104 973 0
116 792 0
0 0 0
44 0 50
6 1233 15
13 0 39
3 853 15
7 2 25
499 864
843 157
18 869
373 0 182
58 525
8 2
0 582
580 1
7 1058
1094 2
3 1
140 122 8
13 373 74
209 500 385
59 152 85
N
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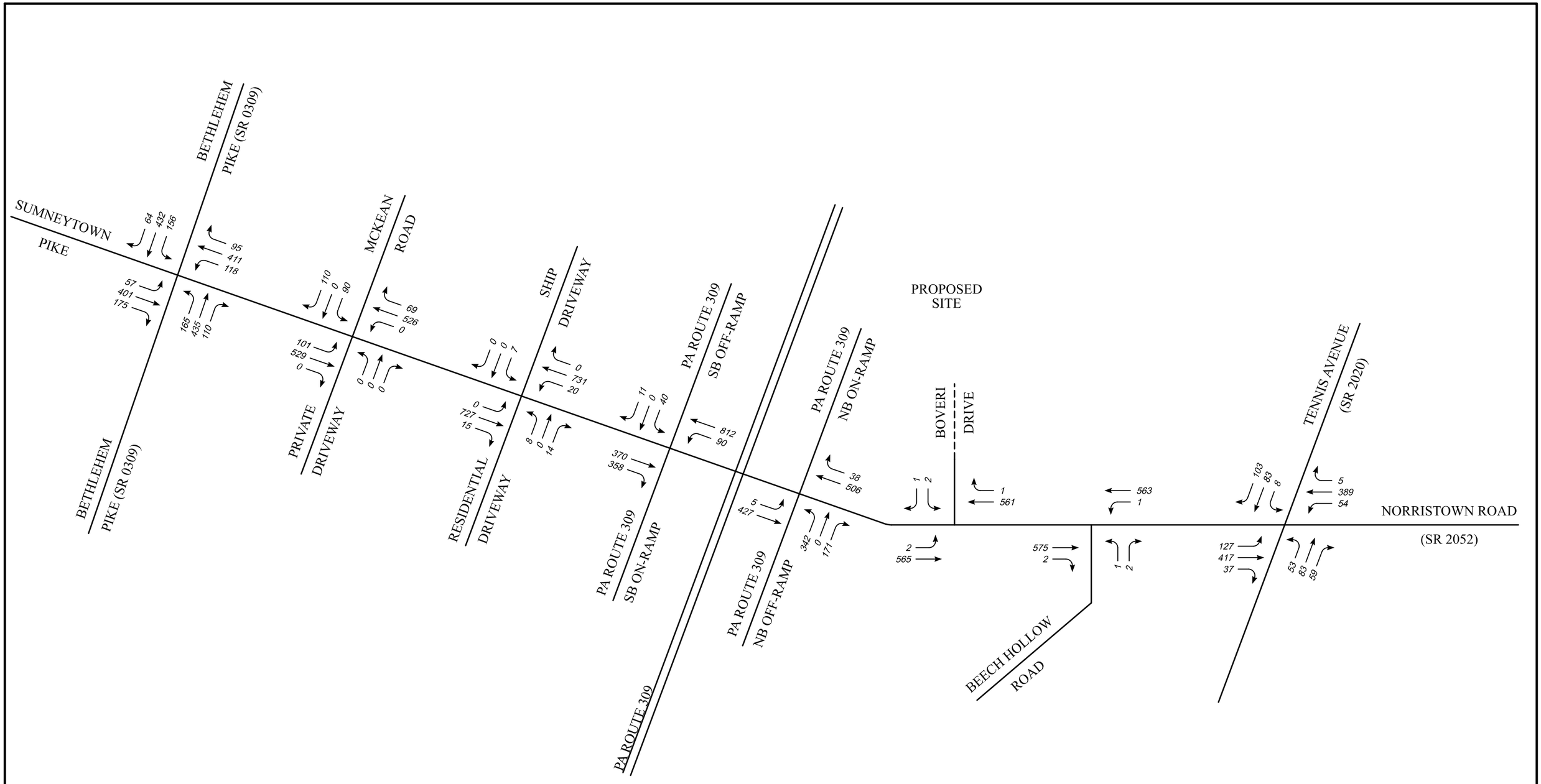
FIGURE 4
2024 EXISTING CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES
KEY:
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE



KEY:

– – – – – **PROPOSED DRIVEWAY**

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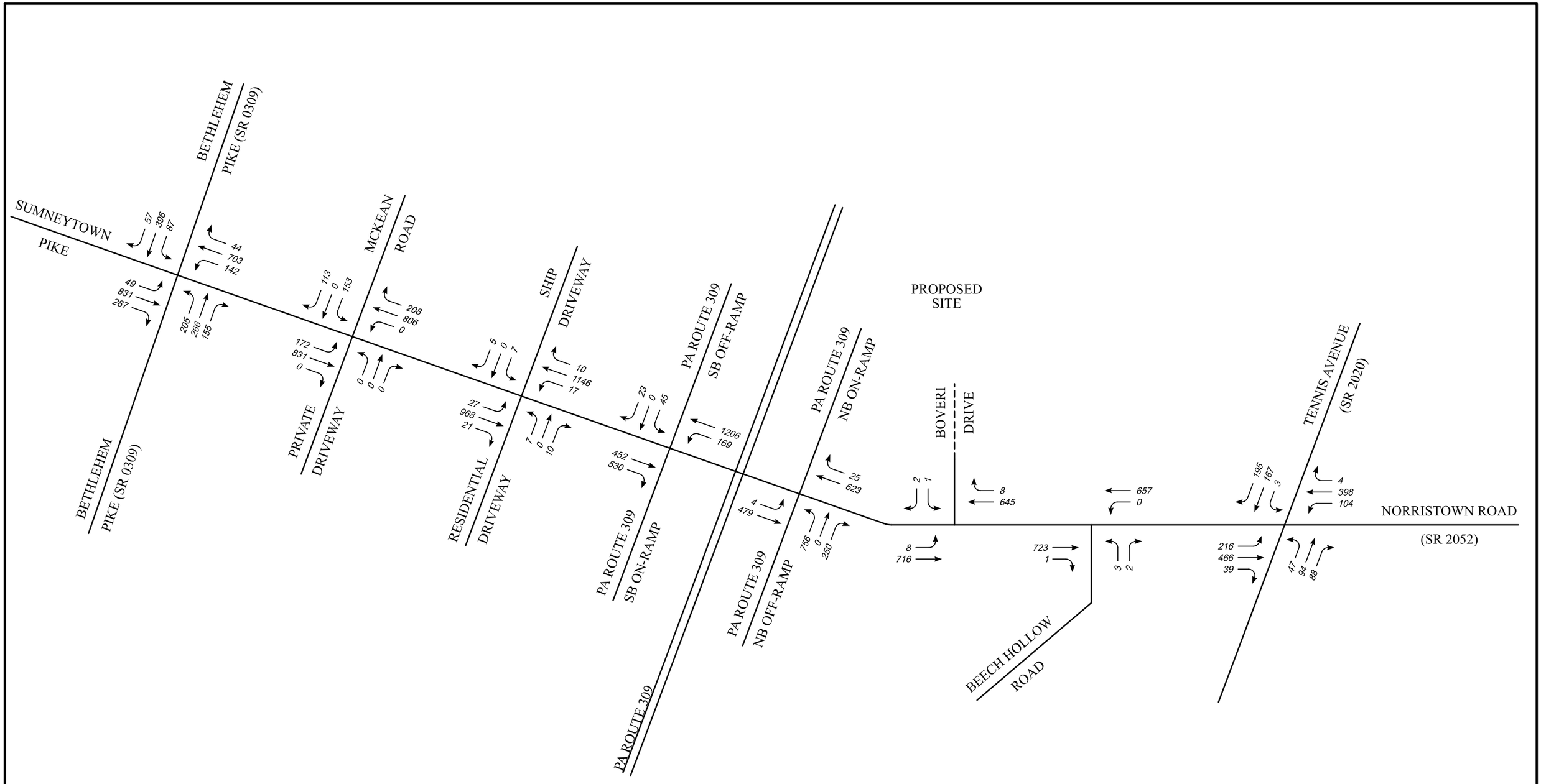
FIGURE 5

2024 EXISTING CONDITIONS
MIDDAY SATURDAY PEAK HOUR
TRAFFIC VOLUMES



KEY:

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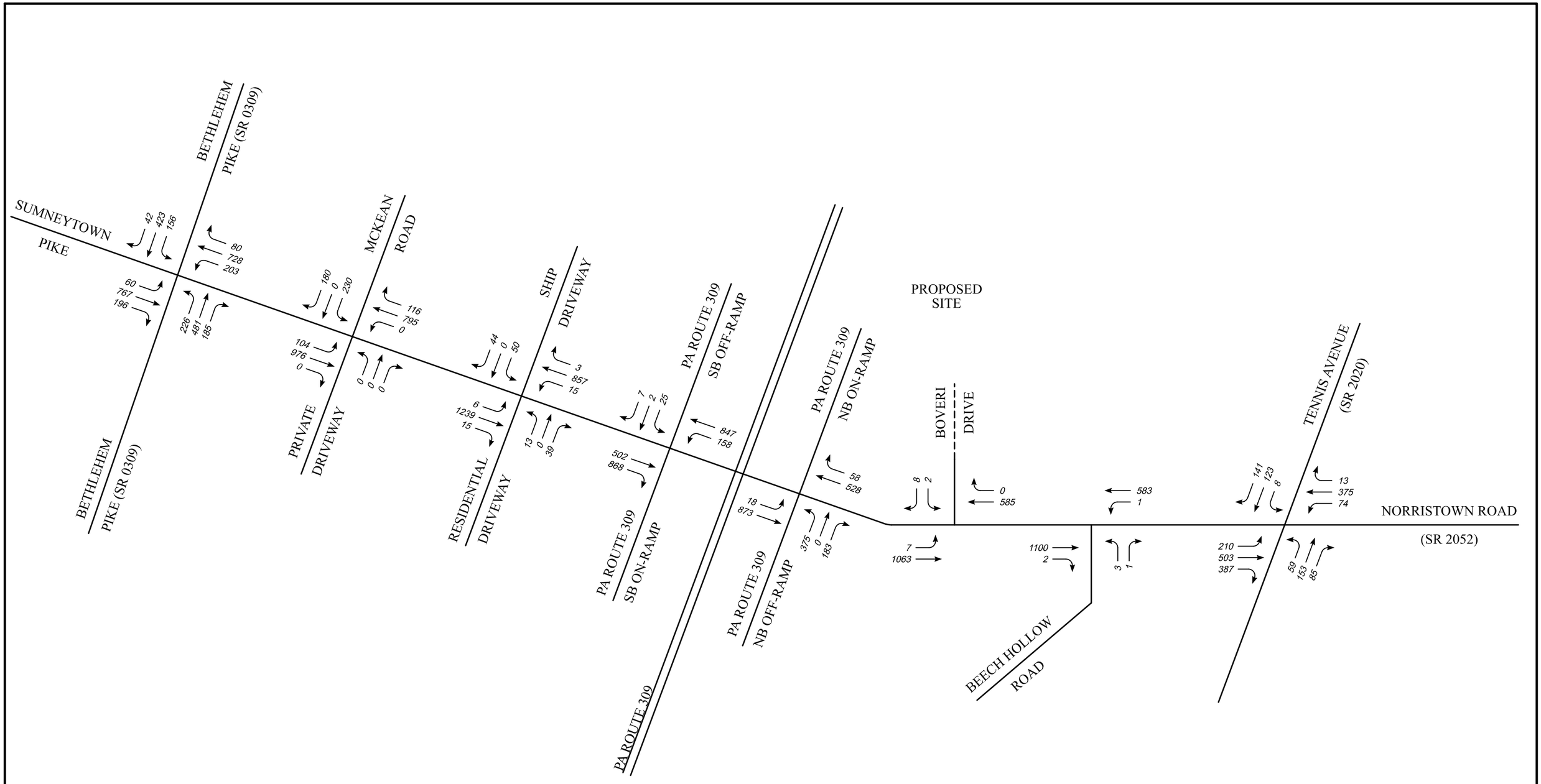
FIGURE 6

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



KEY:

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FIGURE 7

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

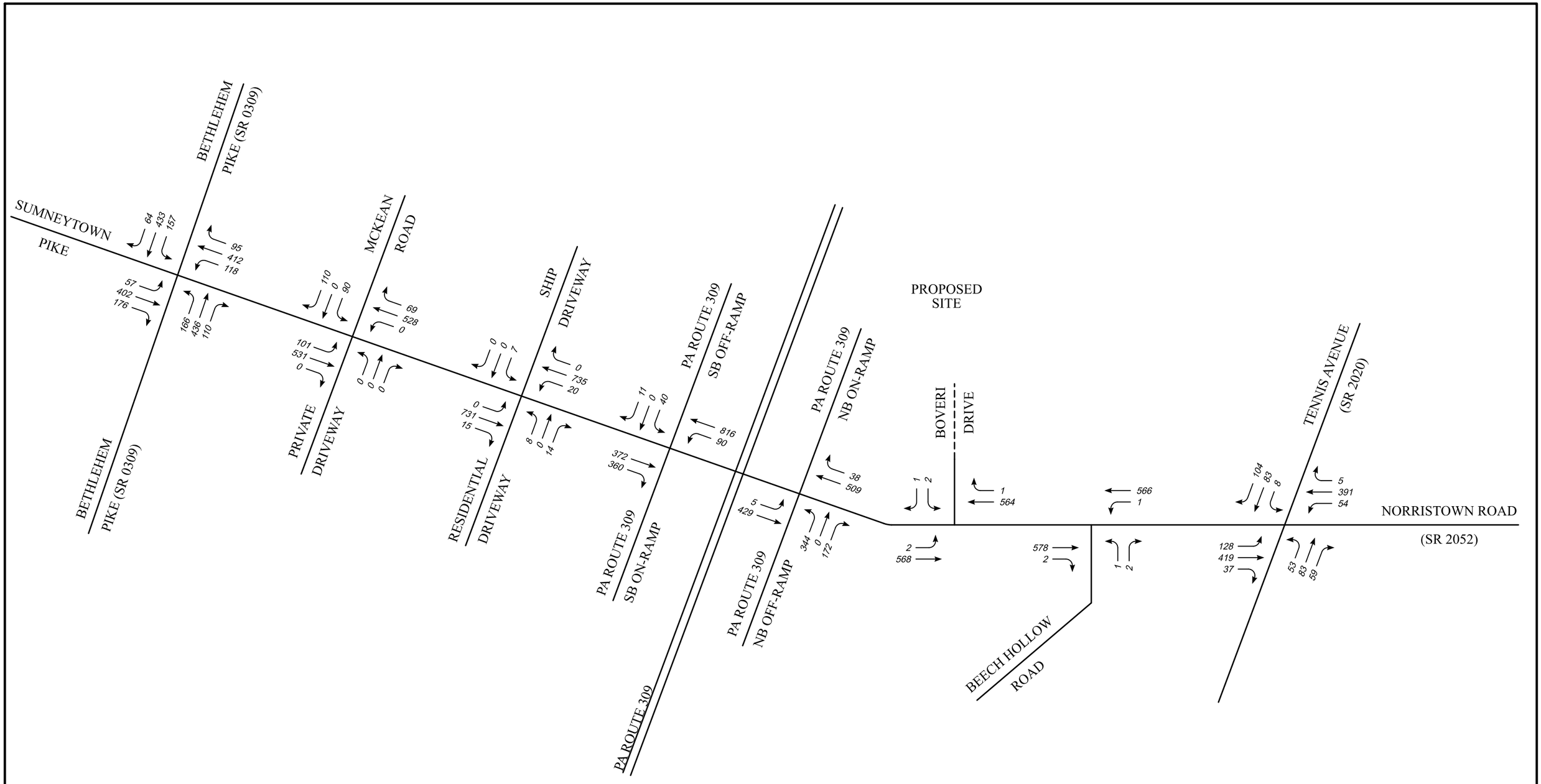

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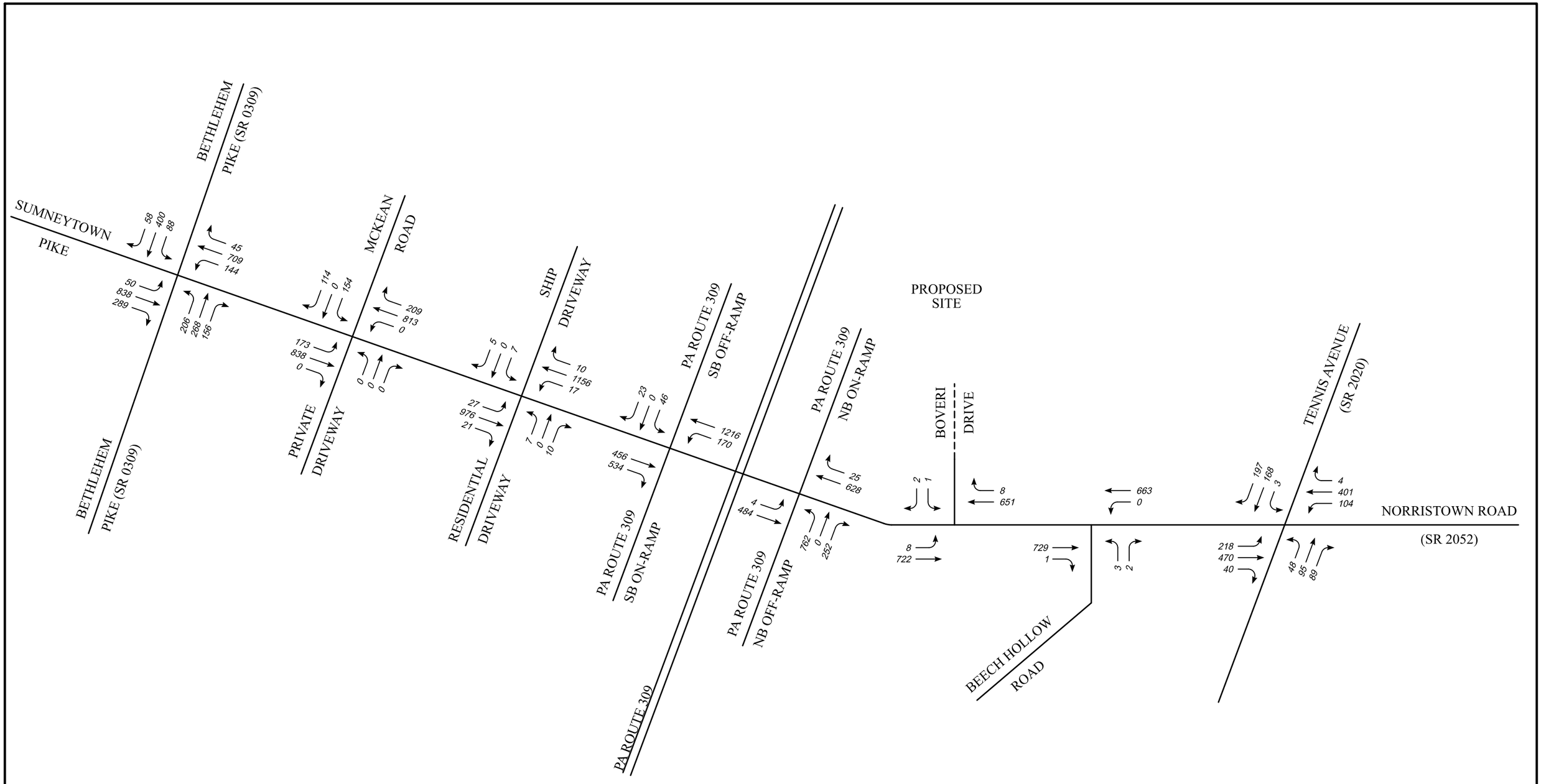
FIGURE 8

2027 BASE CONDITIONS
MIDDAY SATURDAY PEAK HOUR
TRAFFIC VOLUMES



KEY:

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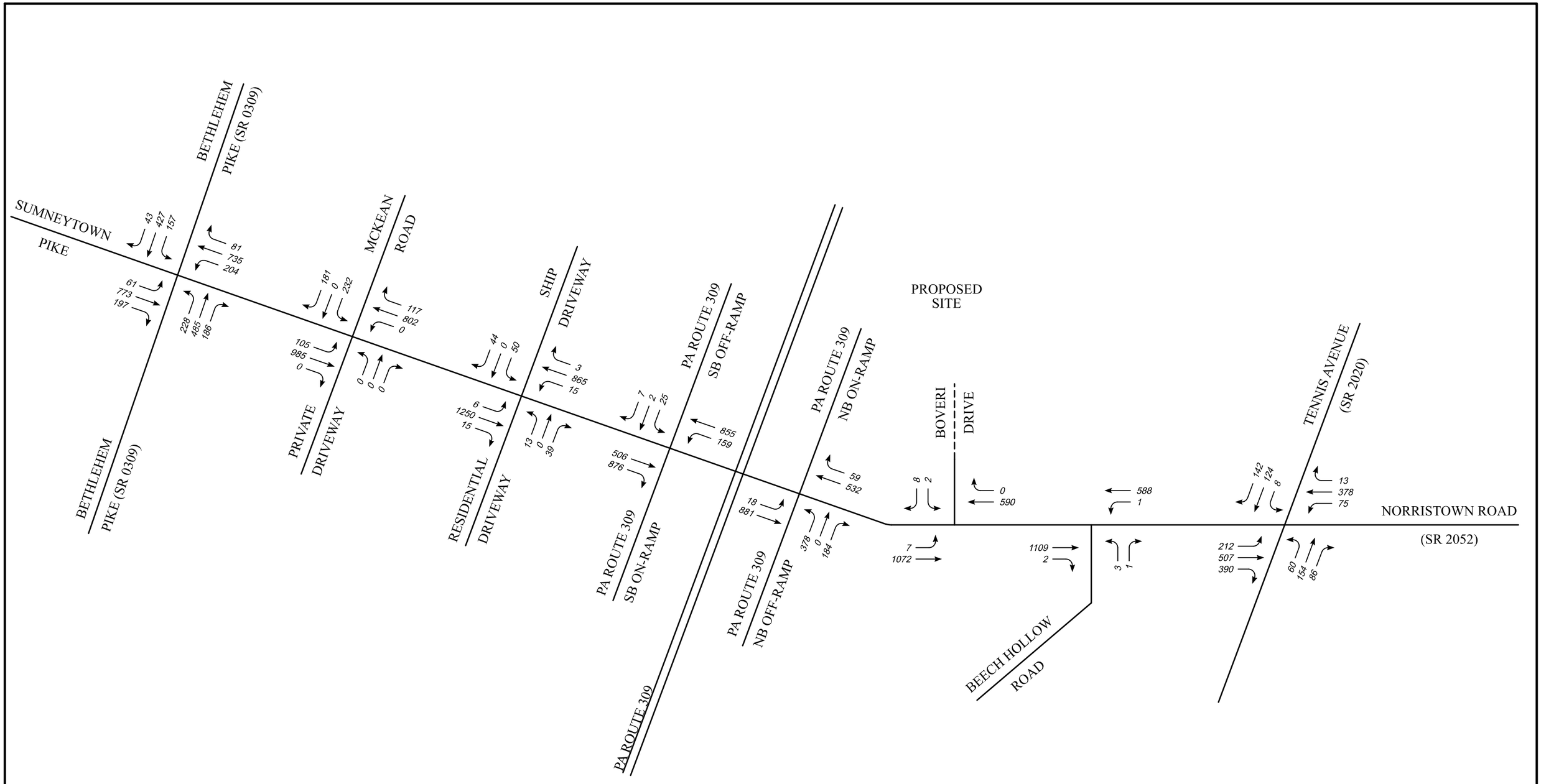
FIGURE 9

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



KEY:

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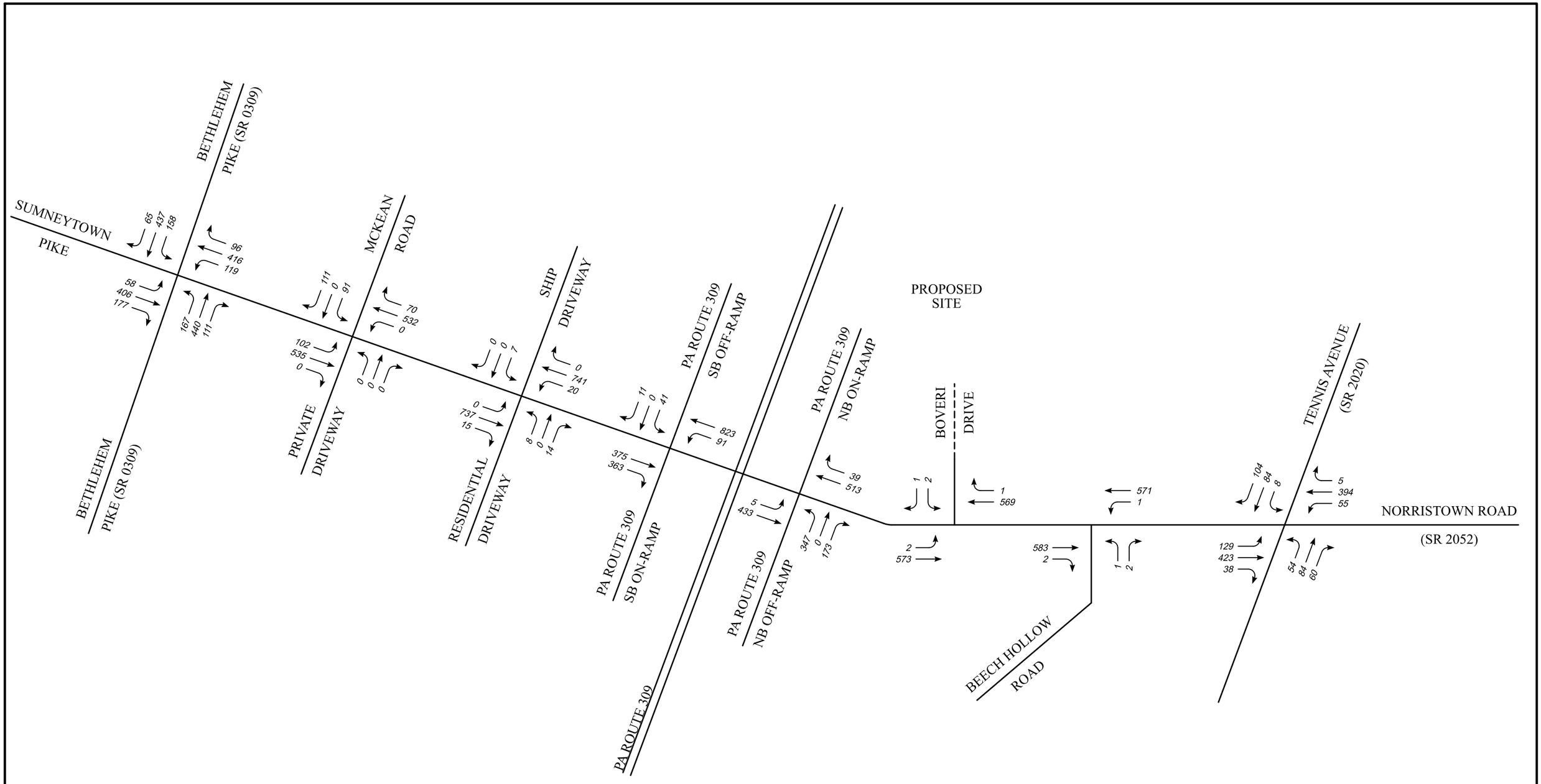
FIGURE 10

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



KEY:

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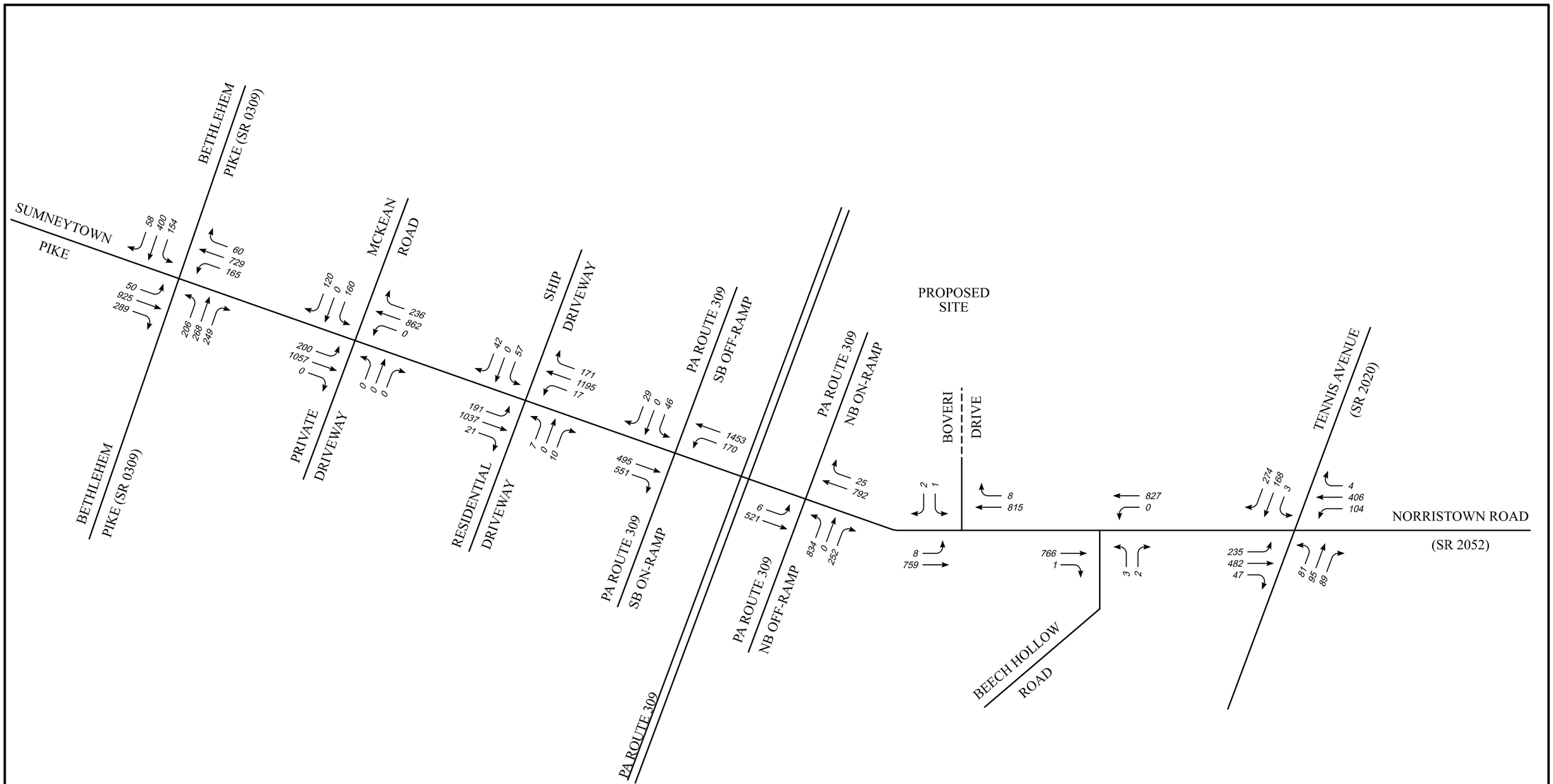
FIGURE 11

2032 BASE CONDITIONS WITHOUT SHIP
MIDDAY SATURDAY PEAK HOUR
TRAFFIC VOLUMES



KEY:

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FIGURE 12

2032 BASE CONDITIONS WITH SHIP
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES

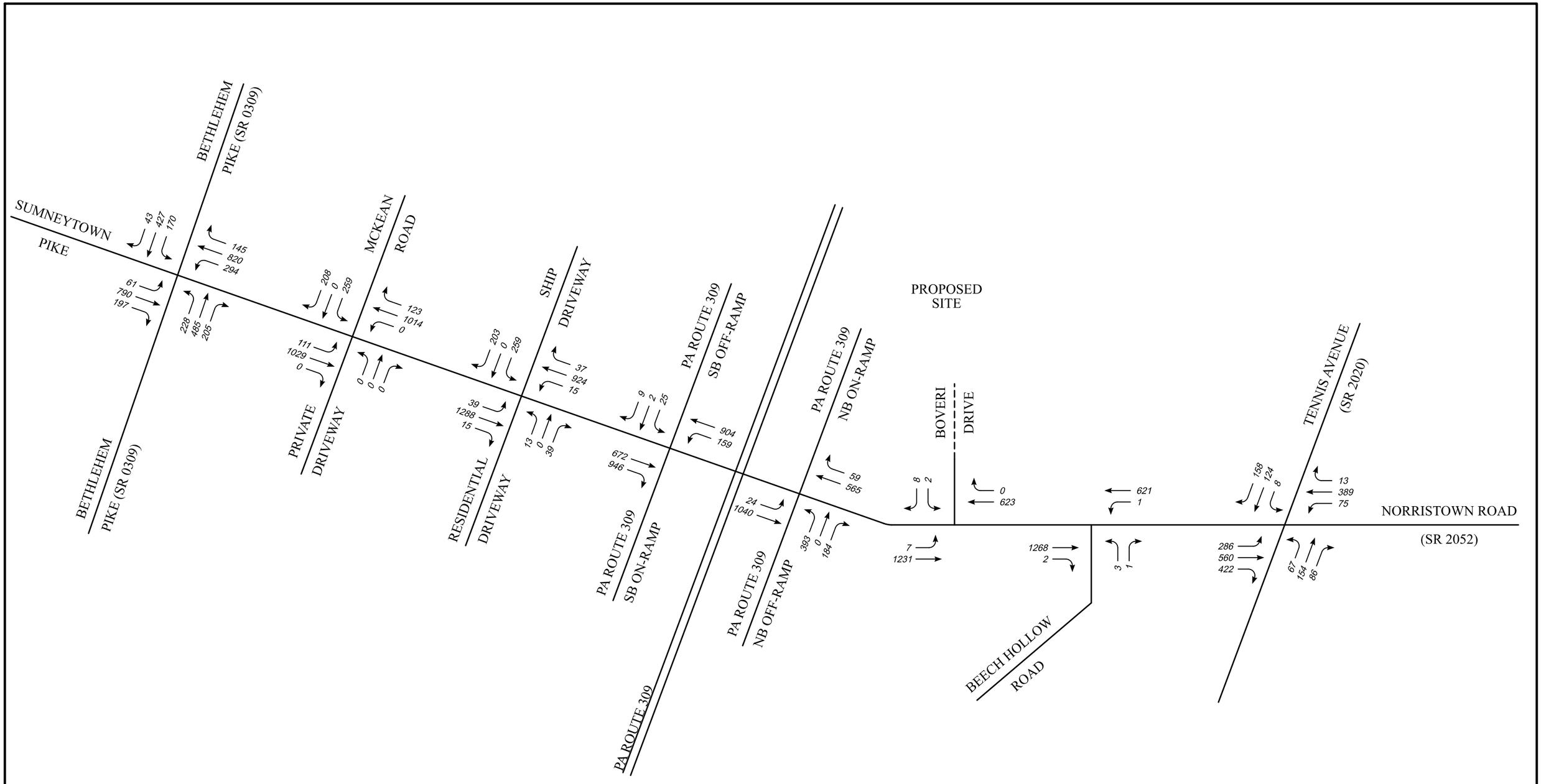

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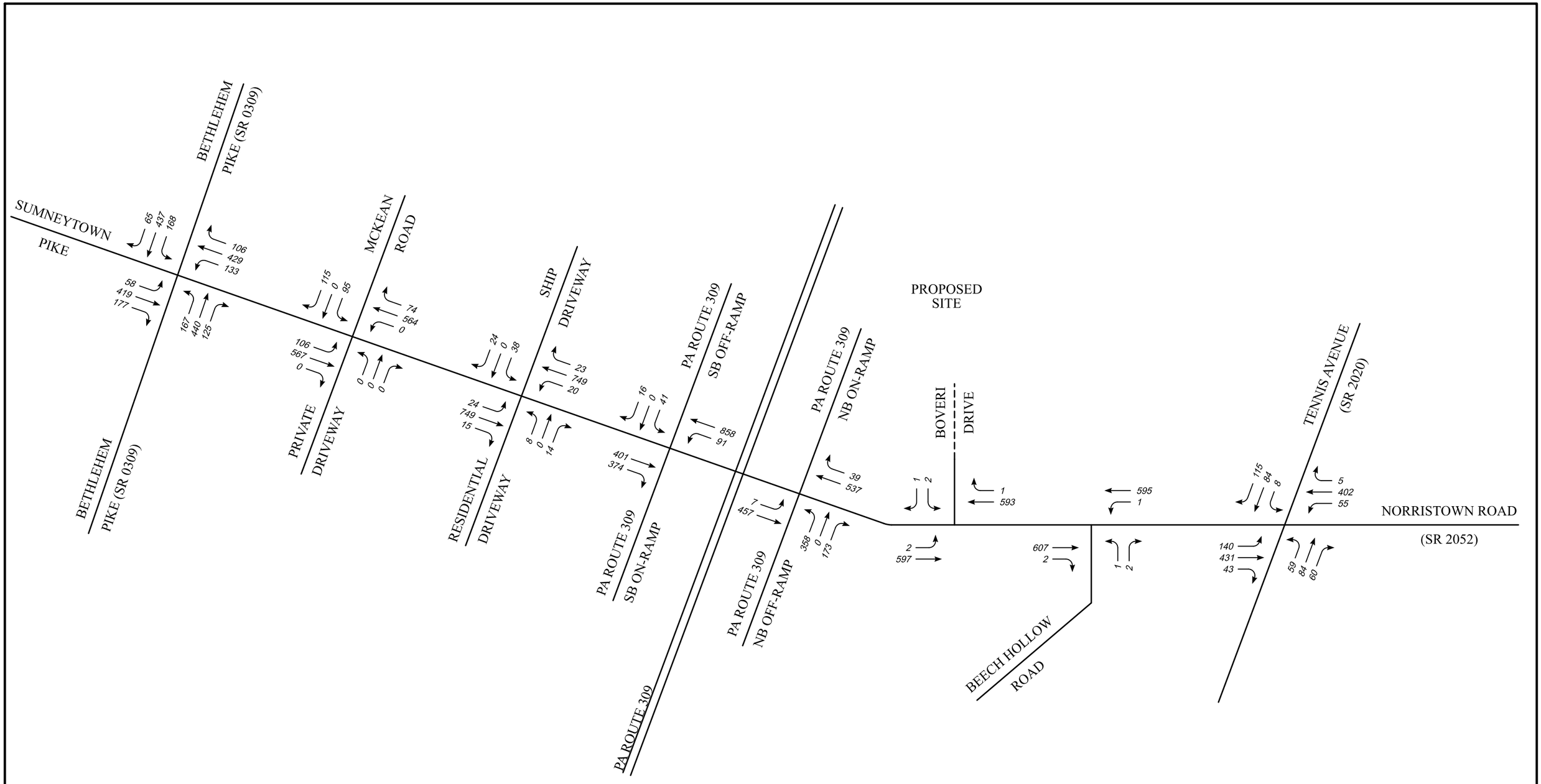
FIGURE 13

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



KEY:

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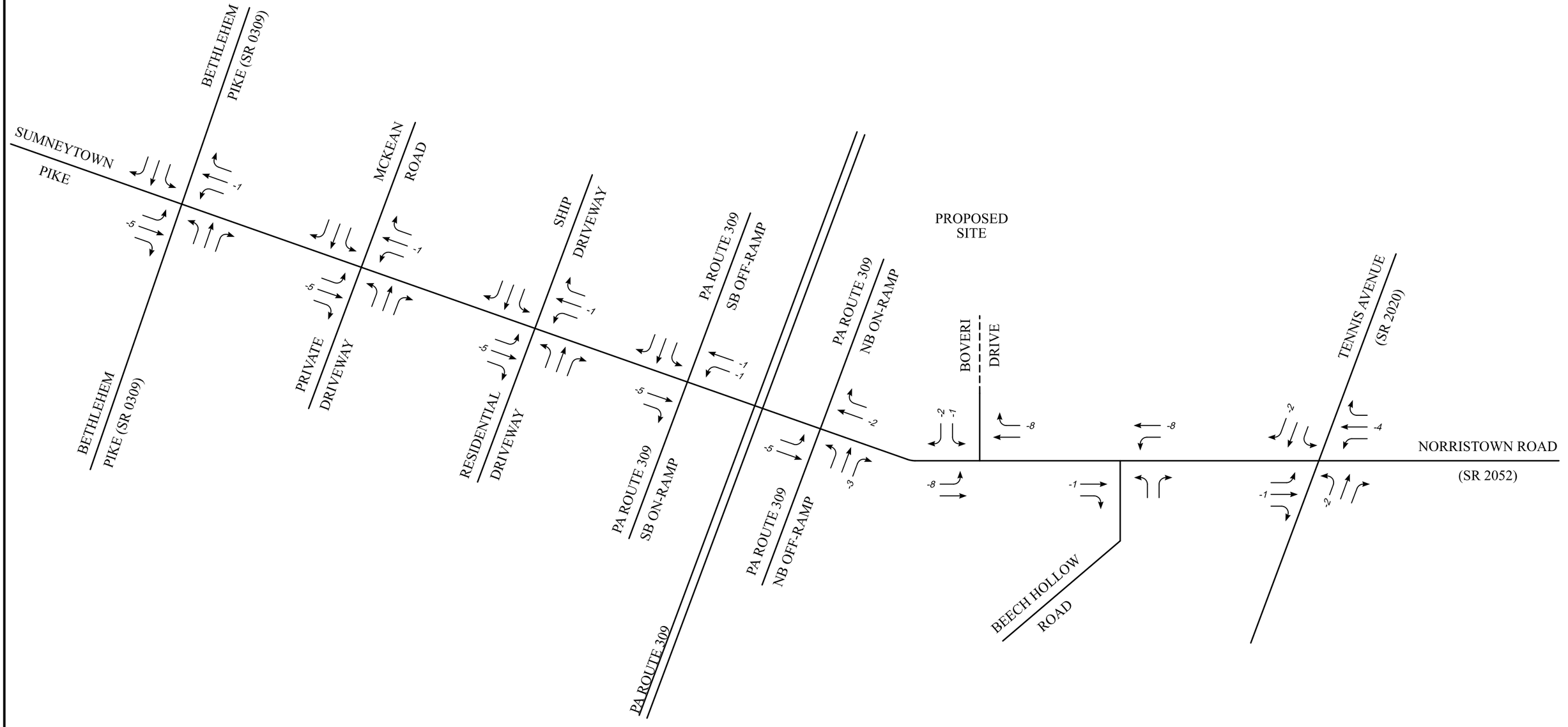
FIGURE 14

2032 BASE CONDITIONS WITH SHIP
MIDDAY SATURDAY PEAK HOUR
TRAFFIC VOLUMES



KEY:

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FIGURE 15

BASE REDISTRIBUTION
WEEKDAY A.M. PEAK HOUR
TRIP DISTRIBUTION

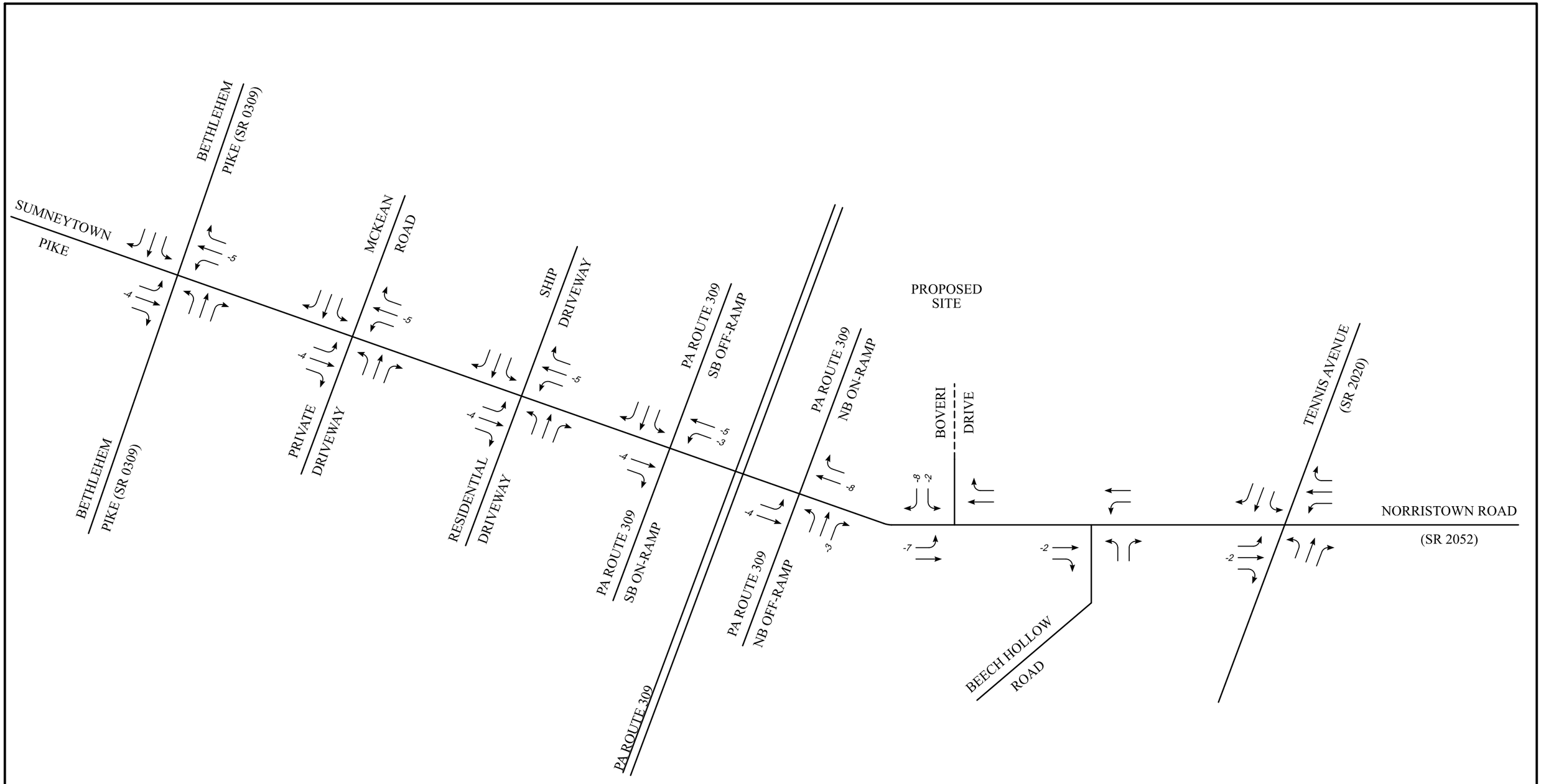

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FIGURE 16

BASE REDISTRIBUTION
WEEKDAY P.M. PEAK HOUR
TRIP DISTRIBUTION

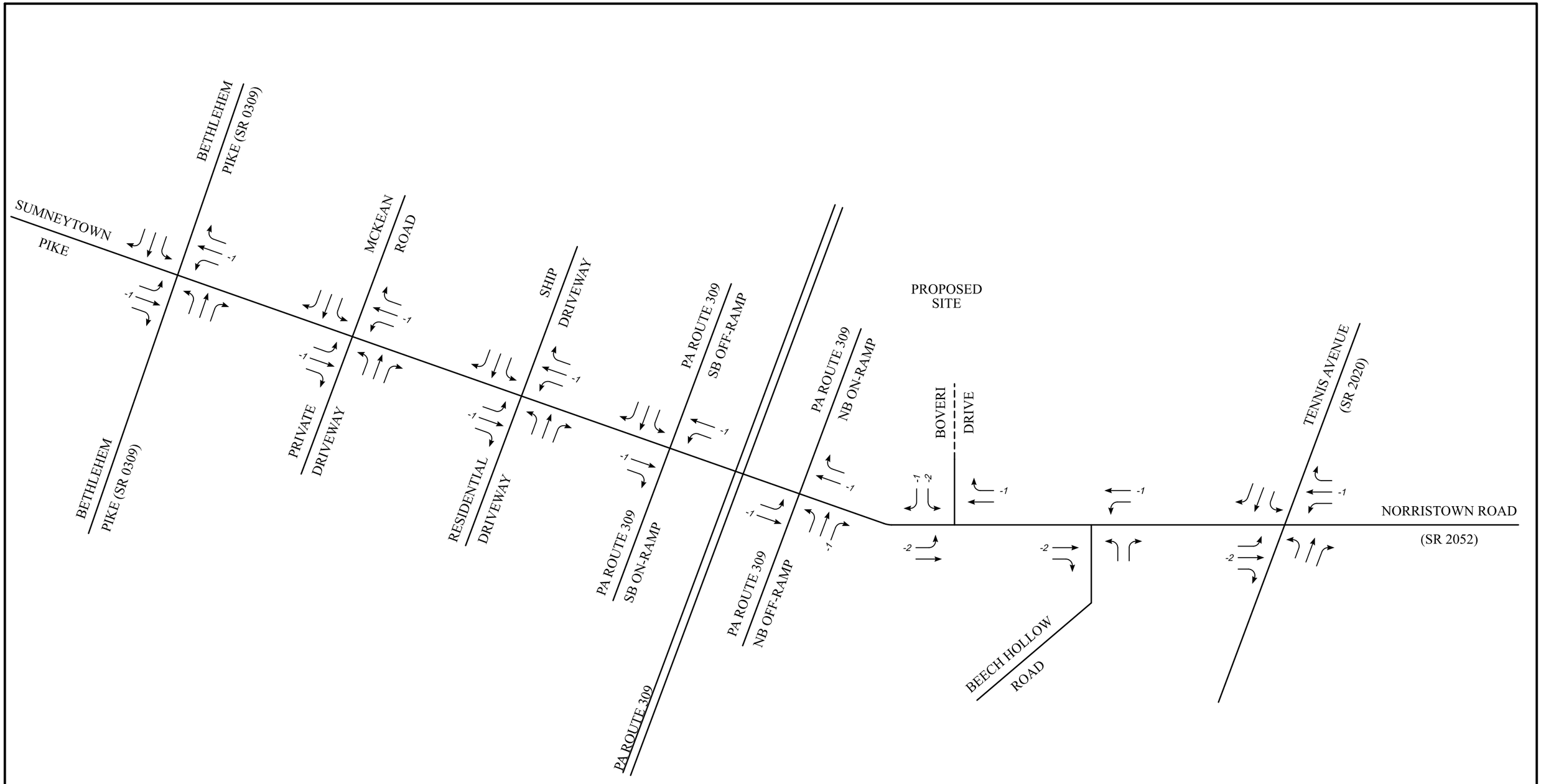

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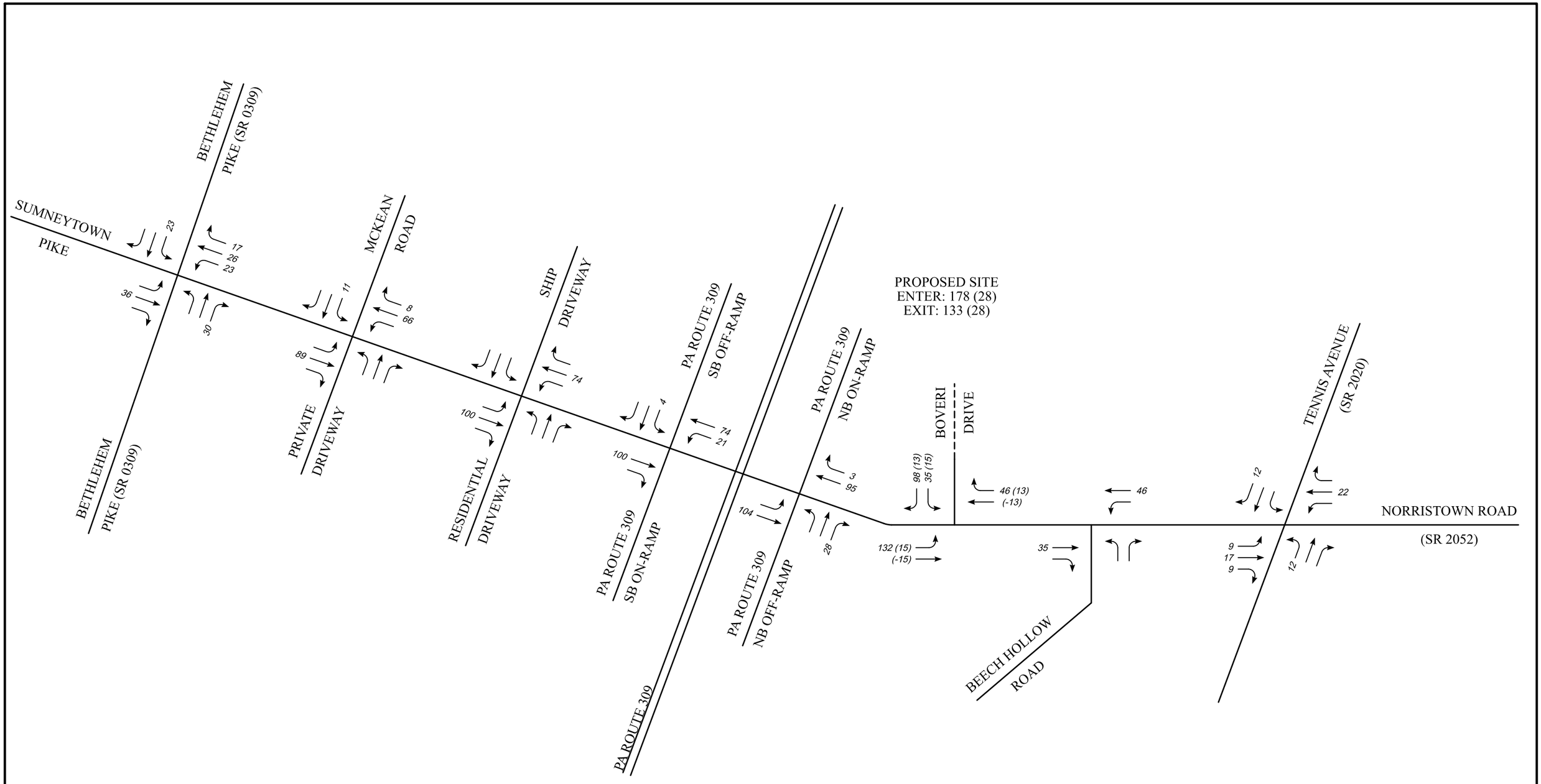
FIGURE 17

BASE REDISTRIBUTION
MIDDAY SATURDAY PEAK HOUR
TRIP DISTRIBUTION



KEY:

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NEW(PASS-BY)TRIPS

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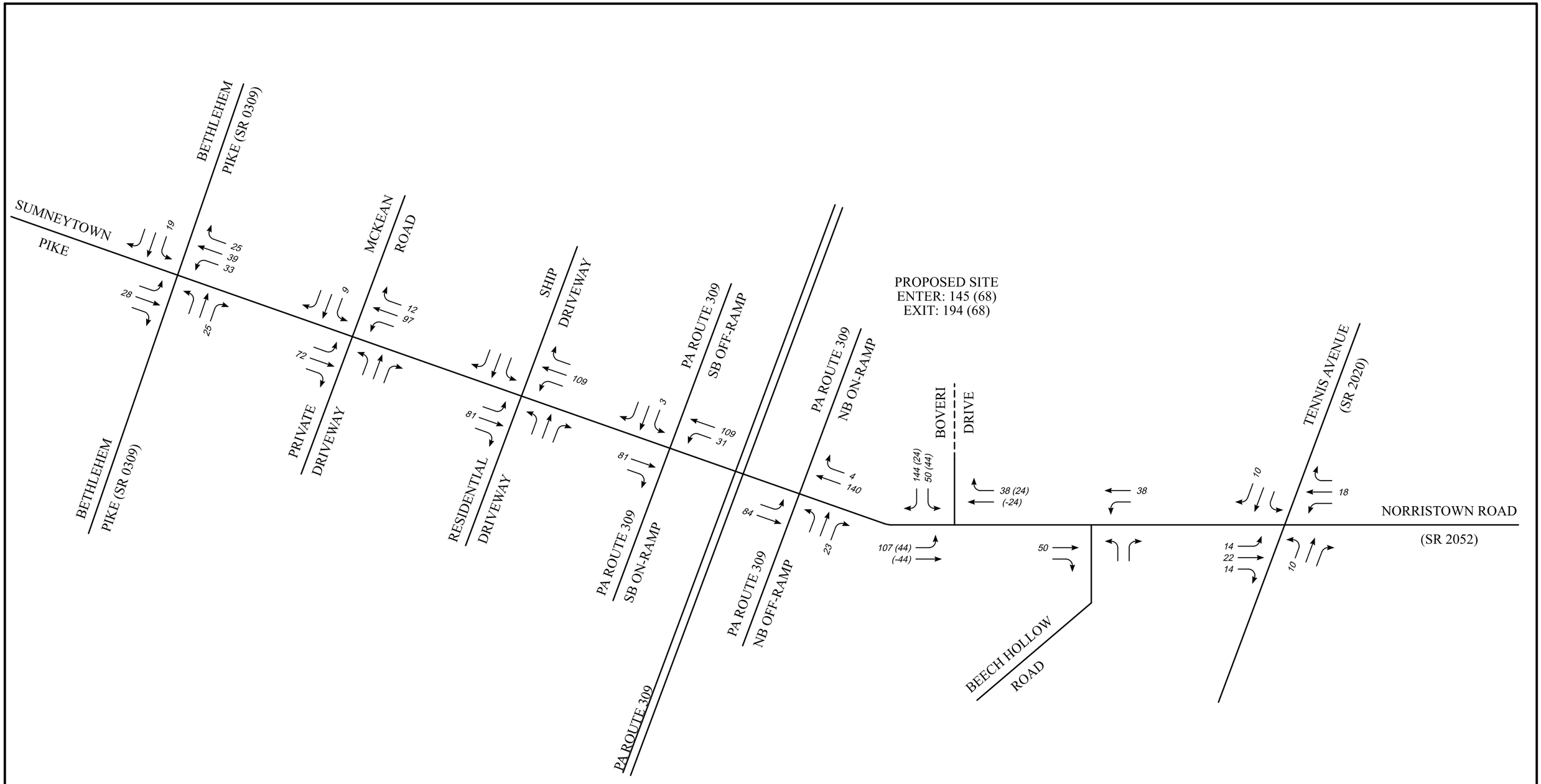
FIGURE 18

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



KEY:

– – – – – **PROPOSED DRIVEWAY**

NEW(PASS-BY)TRIPS

SCHEMATIC DRAWING:NOT TO SCALE

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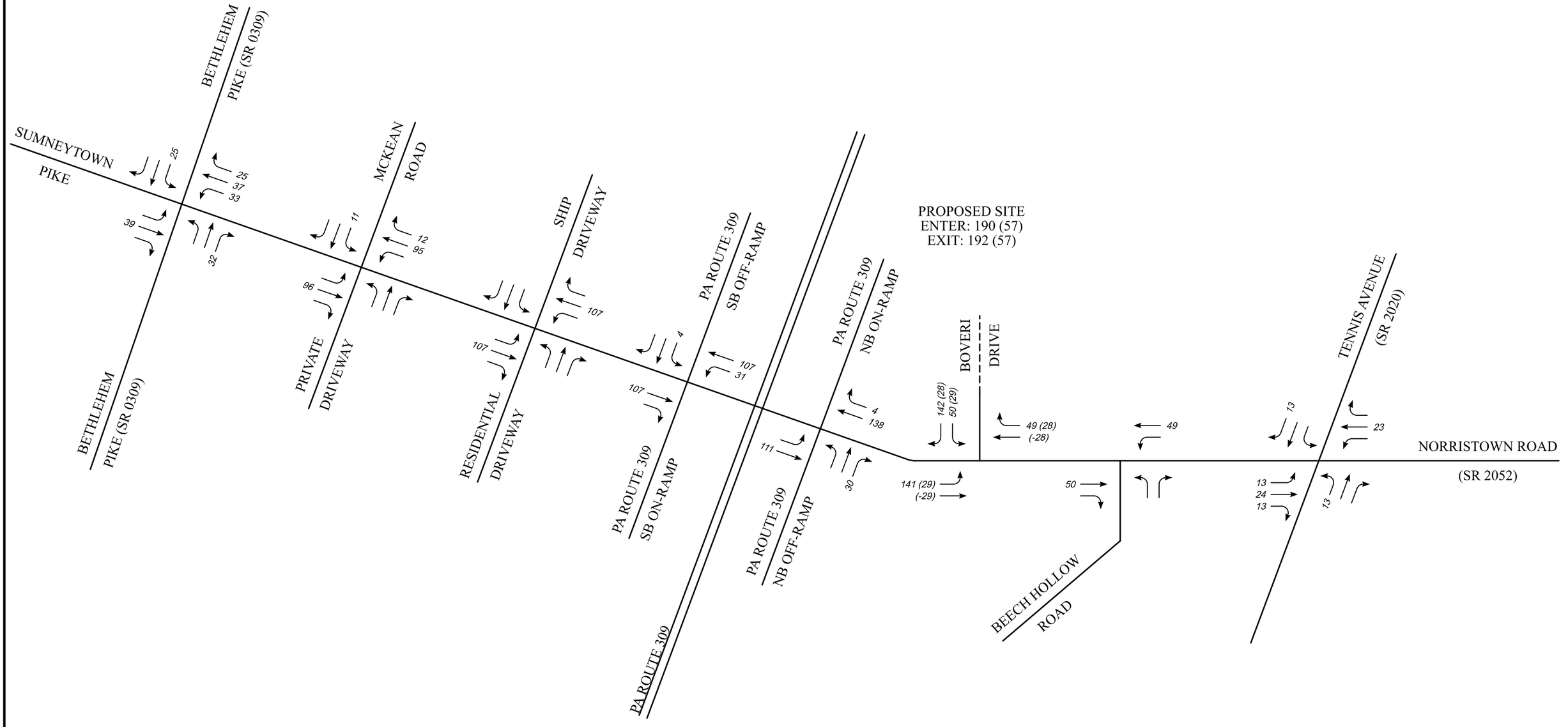
FIGURE 19

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



KEY:

– – – – – **PROPOSED DRIVEWAY**

NEW(PASS-BY)TRIPS

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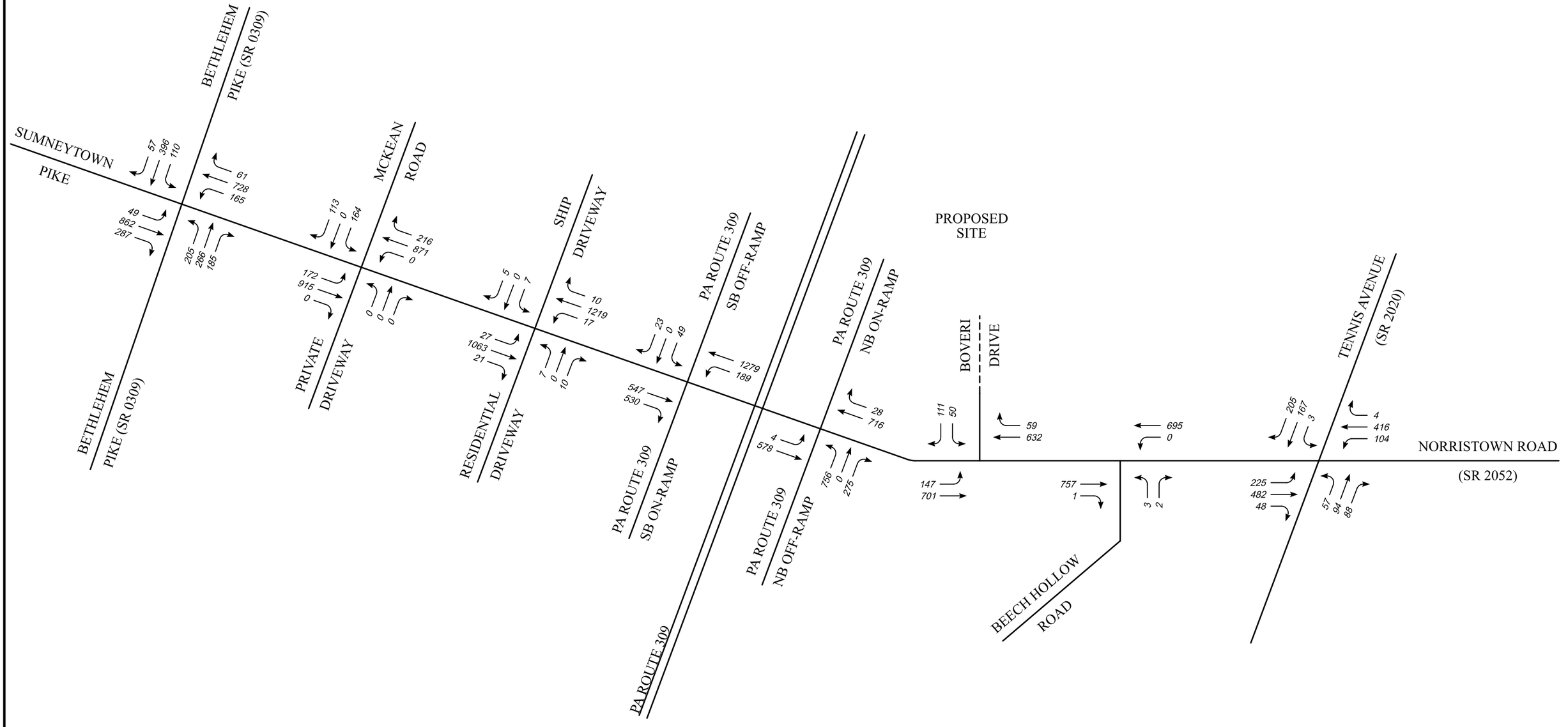
FIGURE 20

SPRINGHOUSE MIXED USE DEVELOPMENT
MIDDAY SATURDAY PEAK HOUR
TRIP DISTRIBUTION



KEY:

– – – – – **PROPOSED DRIVEWAY**

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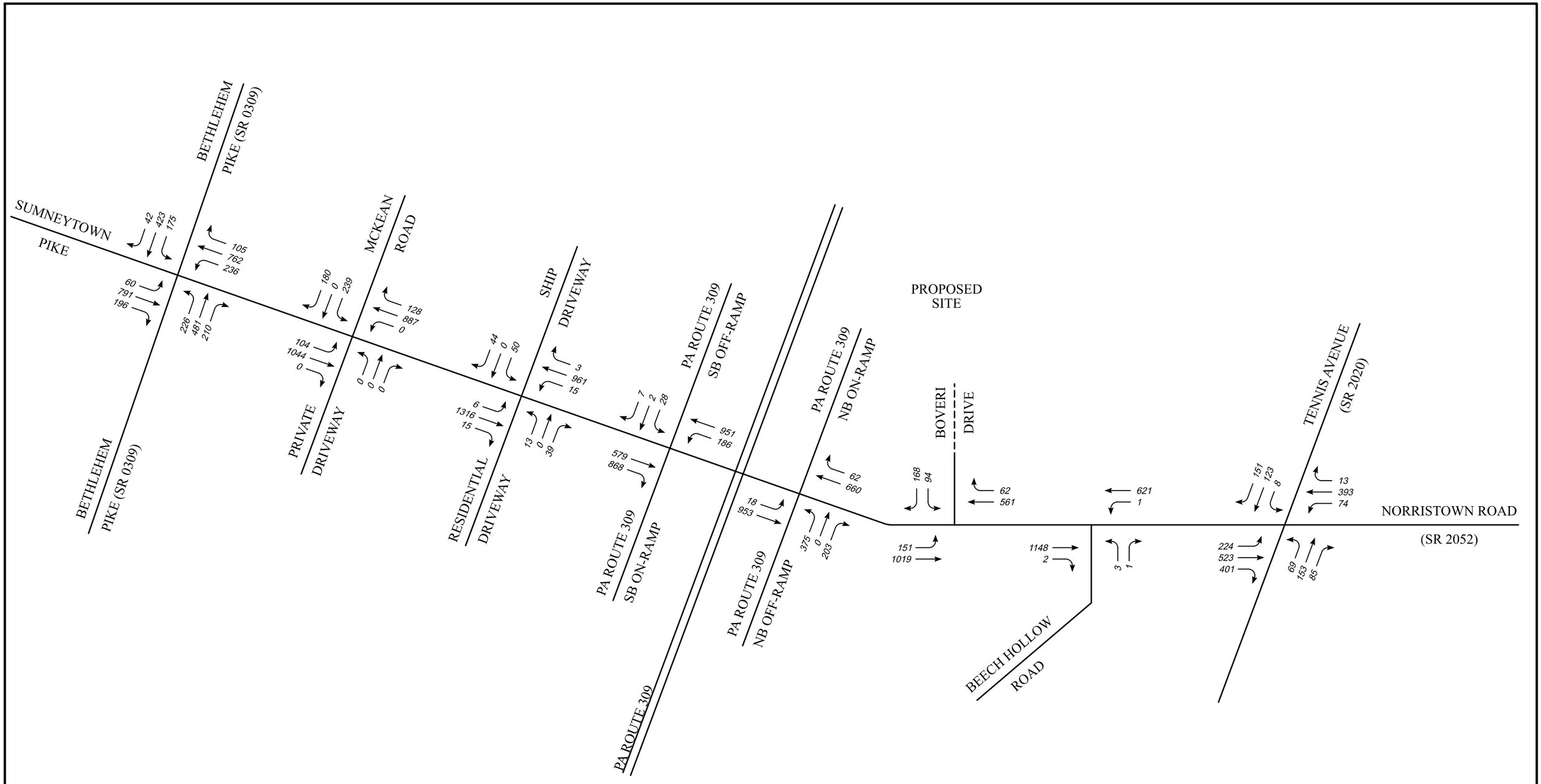
FIGURE 21

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



KEY:

– – – – – **PROPOSED DRIVEWAY**

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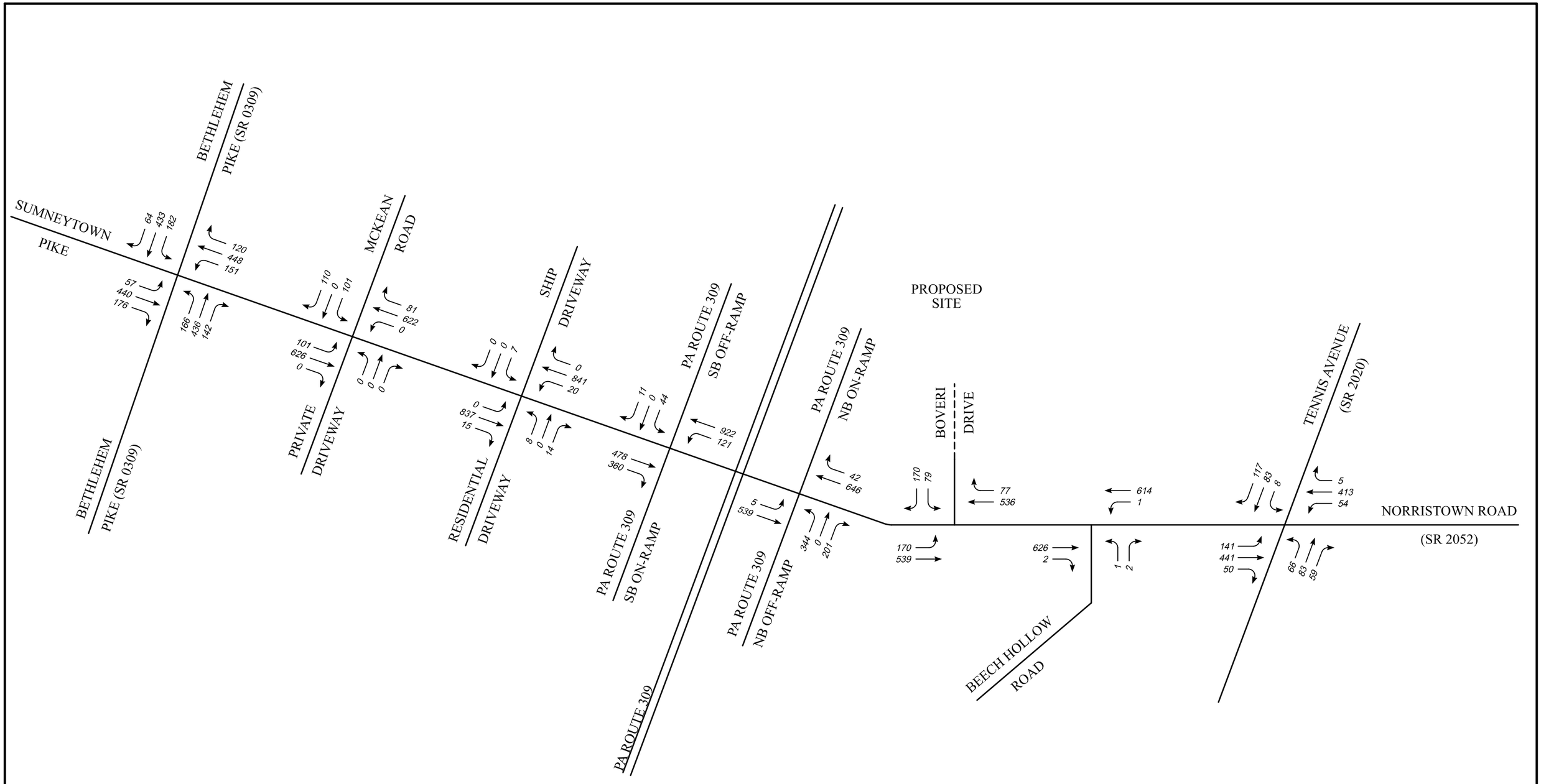
FIGURE 22

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



KEY:

– – – – – **PROPOSED DRIVEWAY**

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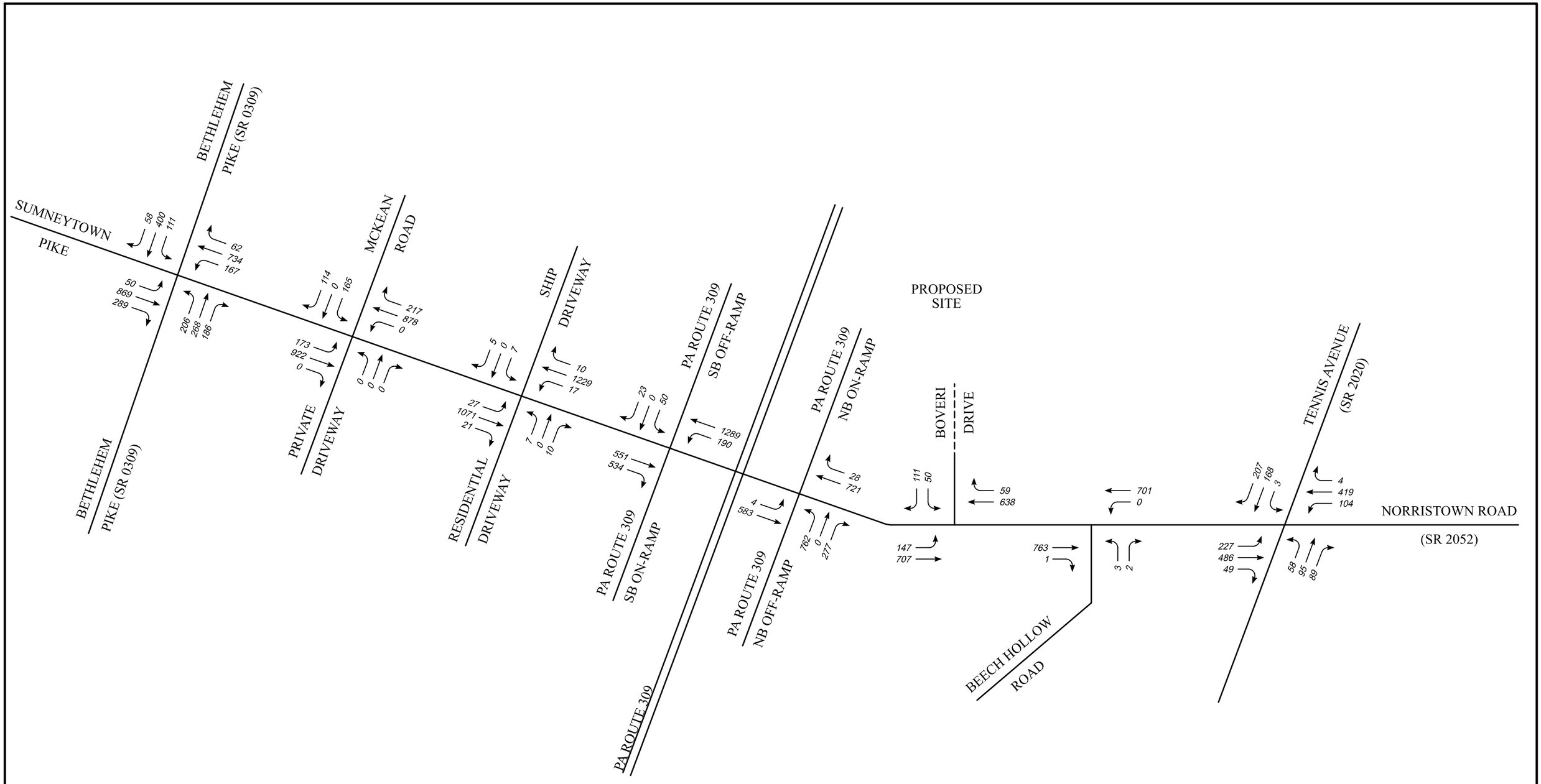
FIGURE 23

2027 PROJECTED CONDITIONS
MIDDAY SATURDAY PEAK HOUR
TRAFFIC VOLUMES



KEY:

– – – – – **PROPOSED DRIVEWAY**

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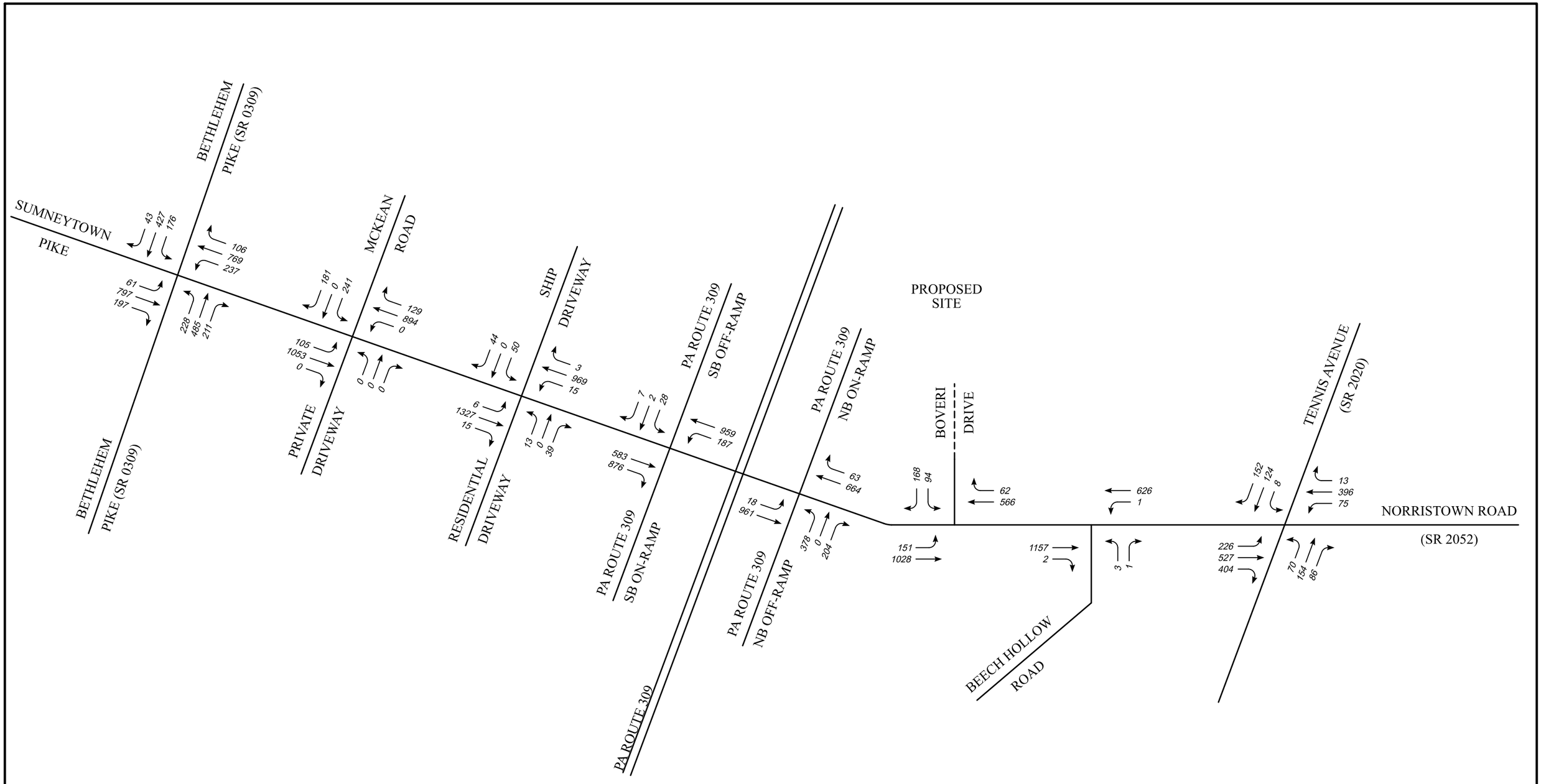
FIGURE 24

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



KEY:

– – – – – **PROPOSED DRIVEWAY**

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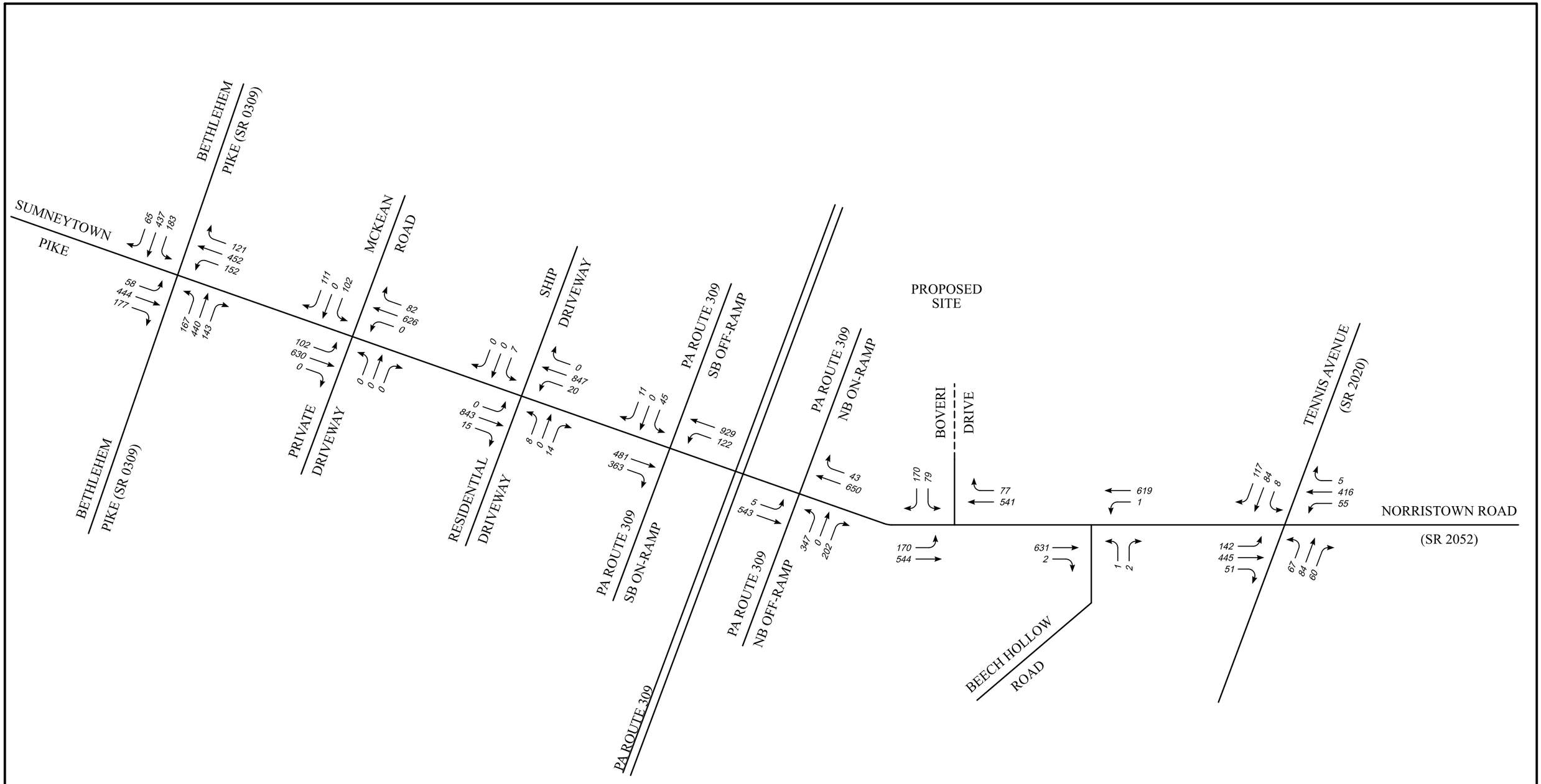
FIGURE 25

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



KEY:

– – – – – **PROPOSED DRIVEWAY**

SCHEMATIC DRAWING:NOT TO SCALE

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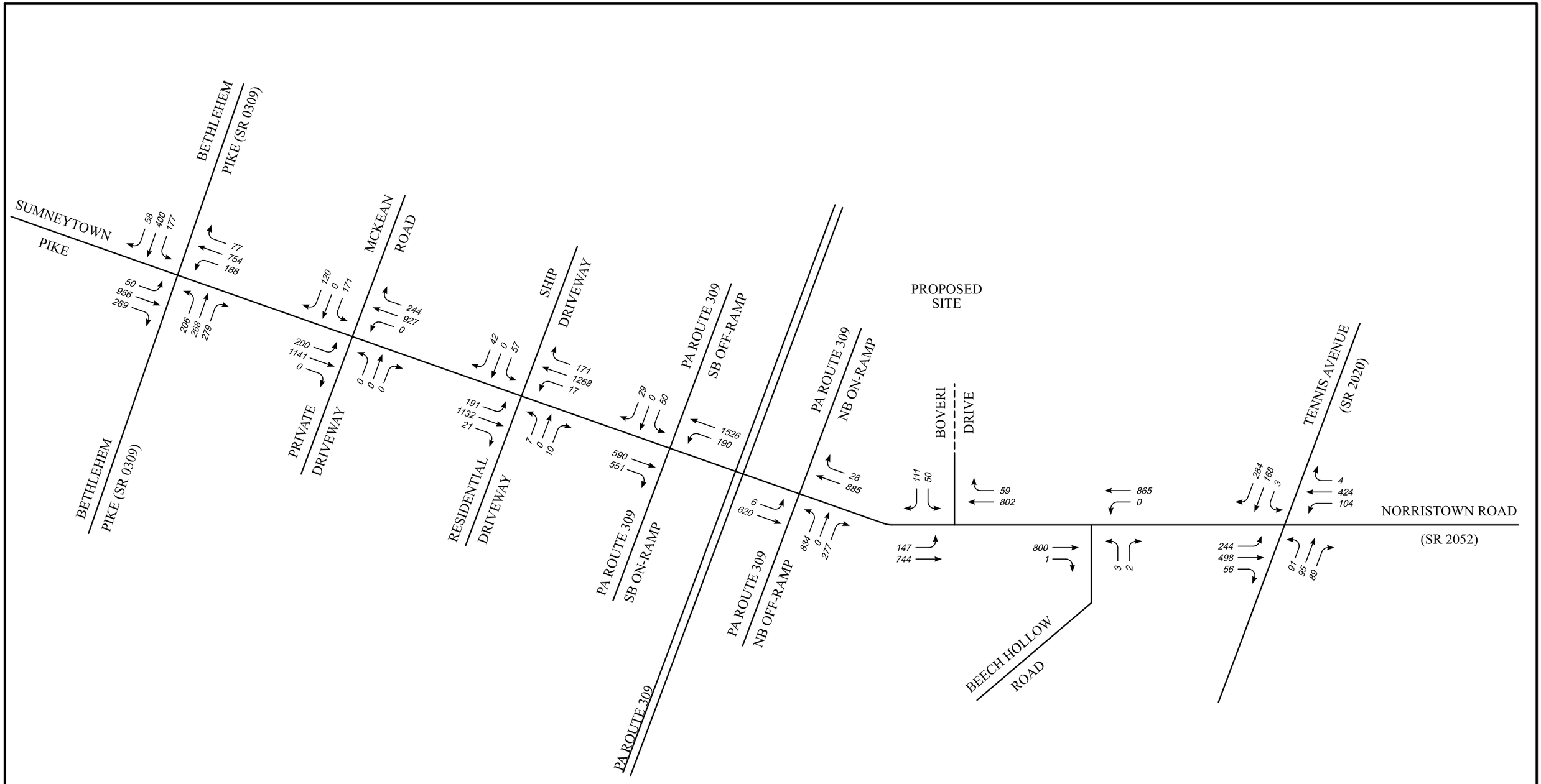
FIGURE 26

2032 PROJECTED CONDITIONS WITHOUT SHIP
MIDDAY SATURDAY PEAK HOUR
TRAFFIC VOLUMES



KEY:

– – – – – **PROPOSED DRIVEWAY**

SCHEMATIC DRAWING:NOT TO SCALE

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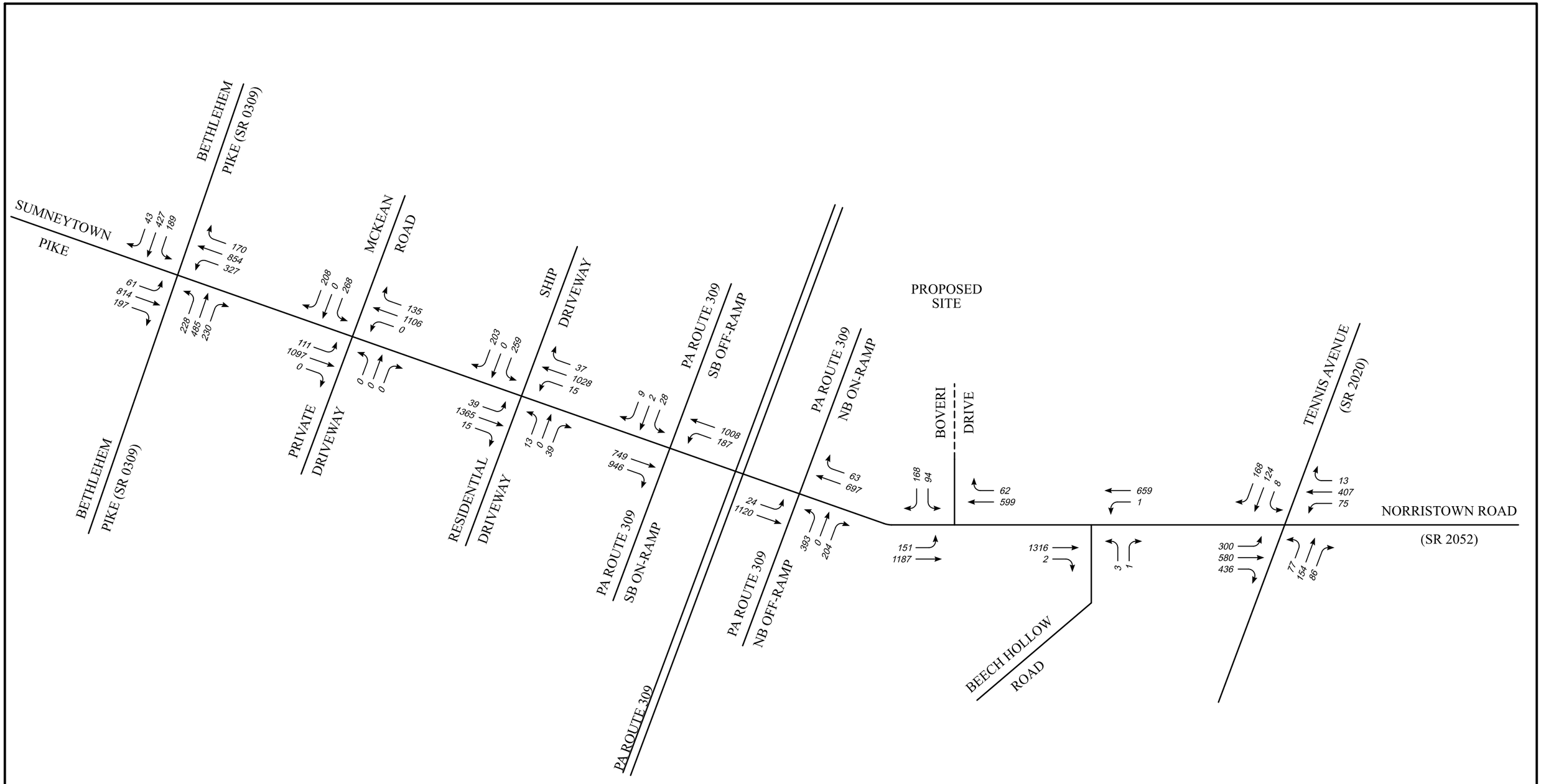
FIGURE 27

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



KEY:

– – – – – **PROPOSED DRIVEWAY**

SCHEMATIC DRAWING:NOT TO SCALE

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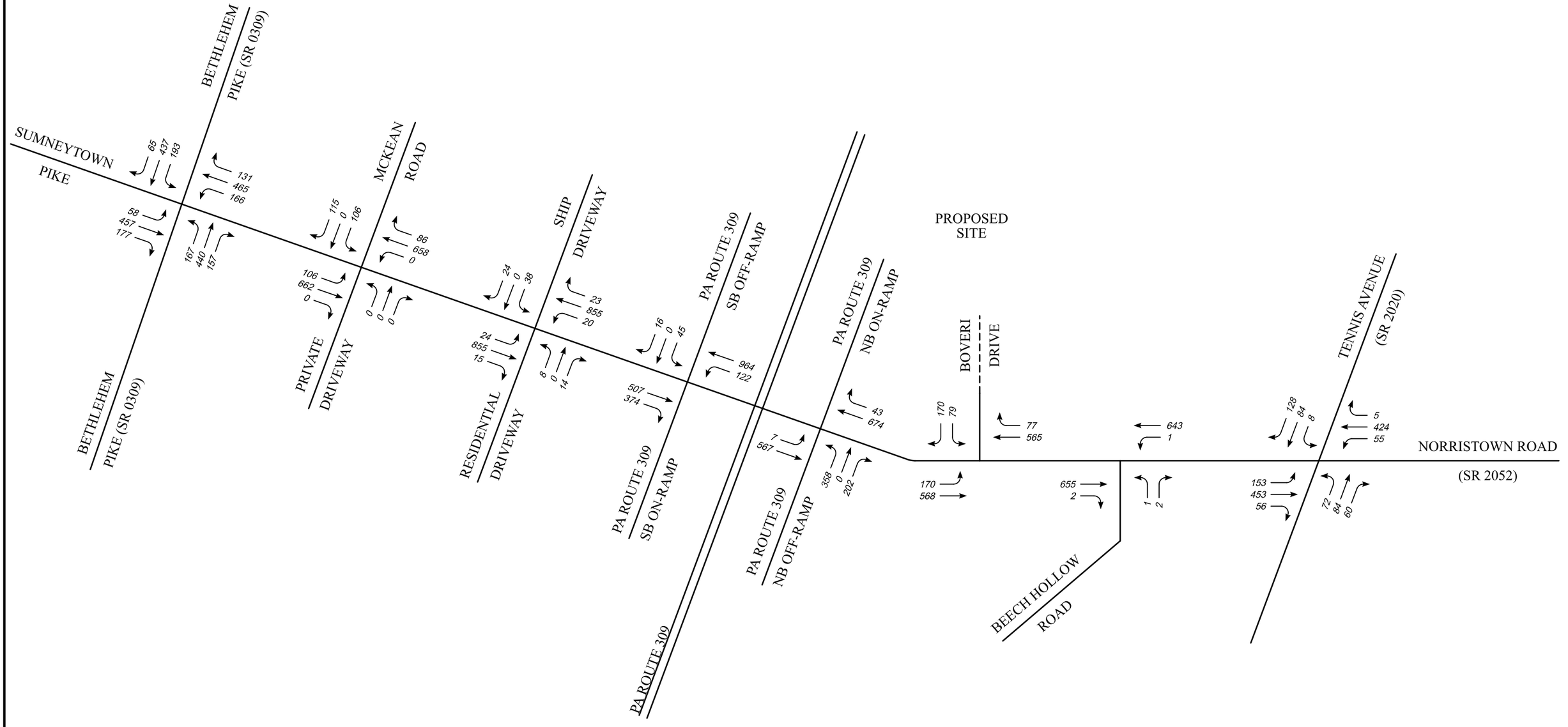
FIGURE 28

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