PUC Application Form G.

BEFORE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

In re: Application of Upper Nazareth Township for approval of the alteration of the crossing (AAR # 851943H) where Gun Club Road (T-506) crosses at grade the tracks of the Norfolk Southern Railway Company, located in Upper Nazareth Township in Northampton County, Pennsylvania.

Application Docket No. _____

To Pennsylvania Public Utility Commission:

1. The name and address of applicant are:
   Upper Nazareth Township
   Attn. Lisa Klem, Township Manager
   100 Newport Avenue
   Nazareth, PA 18064

DATE OF DEPOSIT

JUN 14 2023

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

2. The name and address of applicant's attorney are:
   Gary N. Asteak, Esq.
   Asteak Law Offices
   726 Walnut Street
   Easton, PA 18042

3. The Applicant, Upper Nazareth Township (Township) is a municipal corporation and political subdivision of the Commonwealth of Pennsylvania, situated in Northampton County. The Township was duly organized and is lawfully existing as a township of the second class, under the Constitution and laws of the Commonwealth. As such, the Township has all the authority, powers, and rights of a township of the second class, pursuant to "The Second Class Township Code" of the Commonwealth, Act of May 1, 1933, P.L. No. 103, as amended, including the Act of November 9, 1995, P.L. 350, No. 60, and as codified in Title 53 -- Municipal and Quasi-Municipal Corporation of Purdon's Pennsylvania Statutes Annotated at Section 65101 *et seq.*, as amended.

   The Applicant, Upper Nazareth Township, has the right to alter the crossing that is the subject of this application under and by virtue of the Township's authority, powers, and rights as a Township of the Second Class under the aforesaid "Second Class Township Code," including but not limited to Section 2321.--*Railroad Crossings* of the Act of May 1, 1933, P.L. No. 103, as amended, including the Act of November 9, 1995, P.L. 350, No. 60, and as codified in Title 53 -- Municipal and Quasi-Municipal Corporations of Purdon's Pennsylvania Statues Annotated at Section 67321. -- *Railroad Crossings*, as amended.

4. By this Application, approval is sought for:

   A. Widen the existing asphalt Township Roadway width at the at-grade railroad crossing as measured edge of pavement to edge of pavement from 22+/- feet wide to 29 feet wide.

   B. Replace and widen the existing railroad track crossing from an asphalt and rubber flange-type crossing to a precast concrete panel crossing system.

   C. Per Norfolk Southern direction, relocate one (1) existing railroad crossing signal on west side of Gun Club Road for southbound traffic to establish a minimum 8'-3" offset distance measured from edge of travel lane to centerline of signal assembly.

   No utility relocations are anticipated with respect to the proposed alterations to the subject At-Grade Railroad Crossing AAR # 851943H.

   The alterations are shown on drawings submitted with this application. They are Colliers Engineering Drawing No. C-RAIL-EXBT entitled "Norfolk-Southern Railroad Crossing Exhibit Plans for Project Tadmor 2, Sheet Nos. 1 through 6, dated 4/6/2023.

5. The names and addresses of persons, parties, or entities in, or affected by the proposed construction are as follows:

   A. Norfolk Southern Railway Company
   Attn.: Shawn Starling, P.E., Senior Engineer Public Improvements
   Engineering – Design & Construction
   650 West Peachtree Street NW – Box 45
   Atlanta, GA 30308

   B. Upper Nazareth Township
   Attn.: Lisa Klem, Township Manager
   100 Newport Avenue
   Nazareth, PA 18064

   C. Pennsylvania Department of Transportation
   Bureau of Design, ROW and Utility Design Division, Grade Crossing Unit
   PO Box 3362
   Harrisburg, PA 17105-3362

   D. Pennsylvania Department of Transportation
   Office of Chief Counsel
   PO Box 8212
   Harrisburg, PA 17105-8212

E. Pennsylvania Department of Transportation
Office of the District Portfolio Manager
Engineering District 5-0
1002 Hamilton Street
Allentown, PA 18101

F. Crossroads XOX, LLC
c/o JVI, LLC
Attn: James A. Vozar
1265 Miller Road
Wind Gap, PA 18091

G. NP Gun Club Building I, LLC
c/o NorthPoint Development
Attn. Dan Zuk
3010 Highland Parkway, Suite 440
Downers Grove, IL 60515

H. UGI Utilities
2121 City Line Road
Bethlehem, PA 18017-2187

I. FirstEnergy Corp (MetEd)
76 S Main Street
Akron, OH 44309-1890

J. Northampton County
669 Washington Street
Easton, PA 18042

6. Submitted with this Application is report titled "Traffic Impact Assessment – Project Tadmor" (174 pages) prepared by Maser Consulting P.C. (now DBA as Colliers Engineering), dated September 20, 2018, and last revised February 5, 2021. We note that since this report was prepared, Upper Nazareth Township lowered the posted speed limit to 25 MPH.

An affidavit of anticipated number of persons and vehicles of all kinds using the highway at the crossing is also being submitted with this Application in the form of a Memorandum (1 page) signed and sealed by the Pennsylvania Licensed Professional Engineer responsible for the traffic impact assessment. The affidavit, prepared by Professional Engineer Jeffrey Fiore (PA Lic. No. PE-77227) of Colliers Engineering under Colliers Engineering Project No. 18000145B, is dated August 9, 2022, and states projected three-day total projected vehicle volumes taking into account the projected volume increase in the Build Condition due to the construction of a 1.1M sq.ft. warehouse. Total Weekday vehicle volume is projected to be 500

vehicles per day, and weekend vehicle volume is projected to be about 181 vehicles per day.

No substantial pedestrian volumes are anticipated in the Colliers Engineering report. However, the Applicant does anticipate future construction of a regional trail system that would have a path connection using the subject at-grade crossing. This future trail system is projected to generate minimal pedestrian traffic due to the subject at-grade crossing's rural-suburban location.

Train traffic volumes are not known to the Applicant, but are relatively low based on empirical observations.

7. Costs are unavailable at this time. The funding will be provided by the Norfolk Southern Railway Company and NP Gun Club Building I, LLC.

8. The (construction, alteration, relocation, abolition or suspension) is necessary or proper for the following reason:

   A. SAFETY
   The main improvement will be for vehicular safety for said traffic using the Township roadway. Widening the travelways of the Township roadway will permit the anticipated increase in truck traffic due to the projected construction of a 1.1M sq.ft. warehouse to safely pass in opposing directions by increasing the available passing clearance distance.

   While pedestrian traffic is very low now, the projected future construction of a regional trail system will create a notional increase in pedestrian traffic. The proposed pavement widening will provide for a minimum 4'-9" wide shoulder on the west side of Gun Club Road at the at-grade crossing that will provide an FHWY and PennDOT-recognized pedestrian travel path.

   The vertical curve geometry over the crossing will be improved to make the transition smoother, which will result in decreased wheel impacts and higher allowable vehicle speed, which may decrease risk of vehicle getting stuck on the tracks.

   B. IMPROVED FUNCTIONAL PERFORMANCE
   The existing crossing construction type is subject to faster degradation under truck loads, especially with respect to localized wheel rutting that increases wheel impact forces for vehicles crossing the tracks. Improving long term functional performance will decrease the potential for damage to vehicles and reduce corresponding administrative burden of local municipality fielding complaints about the perceived bumpiness of the crossing. It is also expected the precast concrete panel crossing will decrease the overall frequency of pavement maintenance at the crossing.

Wherefore, applicant prays your Honorable Commission to approve the application:

Scott Sylvainus

Scott Sylvainus, Chairman
Upper Nazareth Township Board of Supervisors

VERIFICATION

I, Scott Sylvainus, hereby state that the facts above set forth are true and correct (or are true and correct to the best of my knowledge, information and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

Date: 5/3/23 Scott Sylvainus

Scott Sylvainus, Chairman
Upper Nazareth Township Board of Supervisors

UPPER NAZARETH TOWNSHIP
BOARD OF SUPERVISORS
100 Newport Avenue • Nazareth, PA 18064
(610) 759-5341
FAX (610) 759-4430

May 3, 2023

Re: Notice of Pennsylvania Public Utility Commission Application to for the Alteration of Norfolk Southern Railway Corporation's At-Grade Railroad Crossing (AAR# 851943H) on Gun Club Road (T-506) in Upper Nazareth Township, Northampton County, Pennsylvania

To whom it may concern:

Upper Nazareth Township will file an application with the Pennsylvania Public Utility commission for the alteration of Southern Railway Corporation's At-Grade Railroad Crossing (AAR# 851943H) on Gun Club Road (T-506) in Upper Nazareth Township, Northampton County, Pennsylvania Norfolk.

The proposed alteration will be comprised of the following:

A. Widen the Township roadway pavement width at the At-Grade Crossing from approximately 22-feet wide to 29-feet wide.
B. Replace the existing asphalt and rubber flange-type railroad crossing with a precast concrete panel crossing system.
C. Relocate one (1) railroad crossing warning signal on the west side to Gun Club Road to meet minimum offset distance requirements from the travelway for southbound Gun Club Road traffic.

In accordance with Pennsylvania Public Utility Commission (PUC) regulations, the attached documents are hereby provided for your use:

- PUC Application
- Certificate of Service
- Exhibit A: Location and Situation Plan Exhibits (8.5x11, 4 pages)
- Exhibit B: Norfolk-Southern Railroad Crossing Exhibit Plans for Project Tadmor 2, prepared by Maser Consulting (now D.B.A. Colliers Engineering) dated 4/6/2023, 6 sheets)

Respectfully yours,

Lisa Klem
Township Manager
Upper Nazareth Township

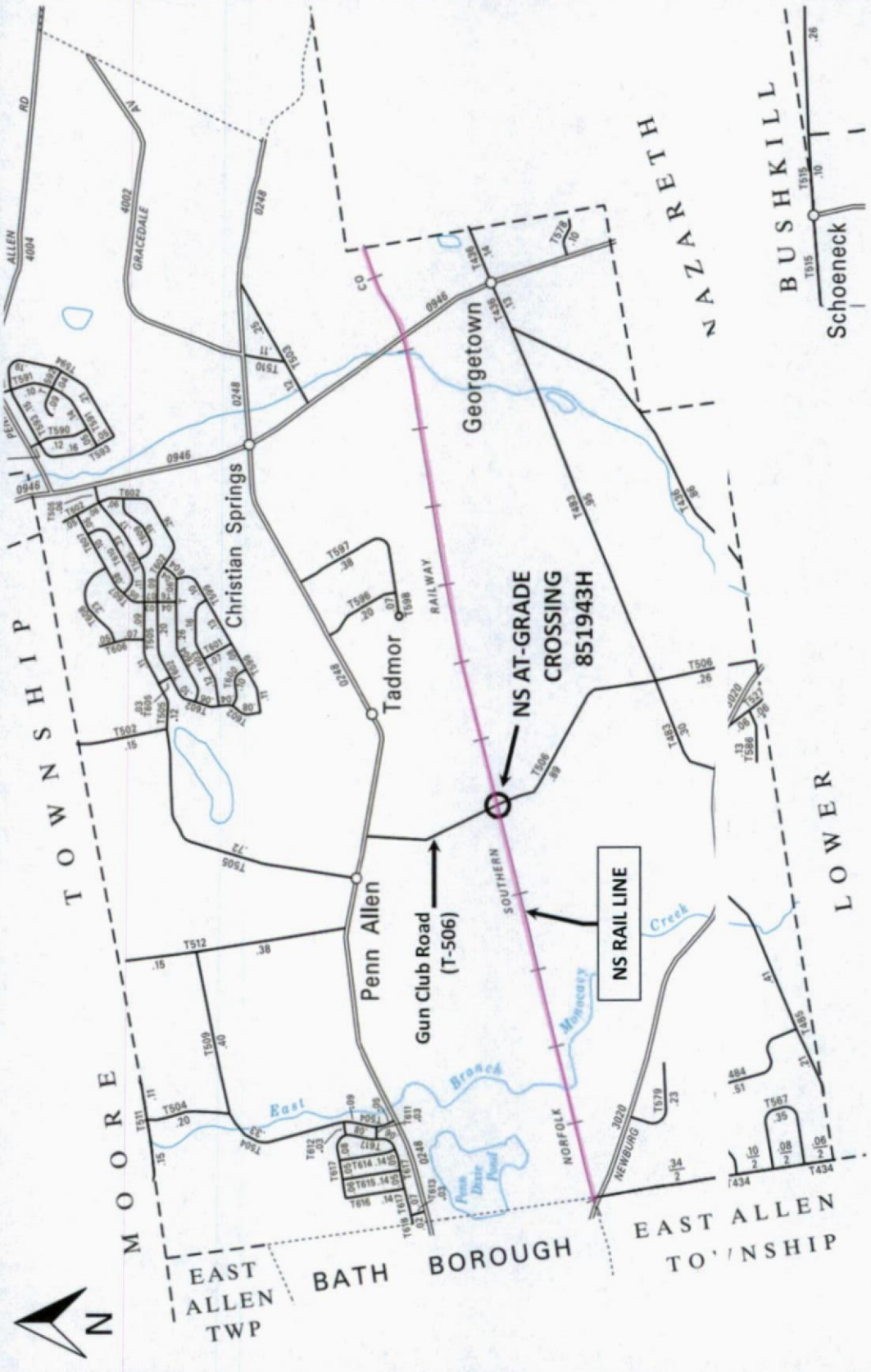
cc: Upper Nazareth Township
Gary N. Asteak, Esq., Upper Nazareth Township Solicitor
Sean C. Dooley, P.E., Upper Nazareth Township Engineer
Pennsylvania Public Utility Commission

KEYSTONE CONSULTING ENGINEERS
2870 Emrick Boulevard, Bethlehem, PA 18020 P. 610-865-4555
www.KeystoneConsultingEngineers.com F. 610-758-9009

LOCATION MAP-1

NORFOLK SOUTHERN RR X-ING (851943H)
REPLACMENT PROJECT
Gun Club Road (T-506)
UPPER NAZARETH TOWNSHIP
NORTHAMPTON COUNTY, PENNSYLVANIA

DWG. NO. UNT-17-016B
SCALE: N.T.S.
DWN. BY: SCD
DATE: APR. 5, 2021
REVISED: -
SHEET: 1 OF 4



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LOCATION MAP-2

NORFOLK SOUTHERN RR X-ING (851943H) REPLACMENT PROJECT

Gun Club Road (T-506)

UPPER NAZARETH TOWNSHIP
NORTHAMPTON COUNTY, PENNSYLVANIA

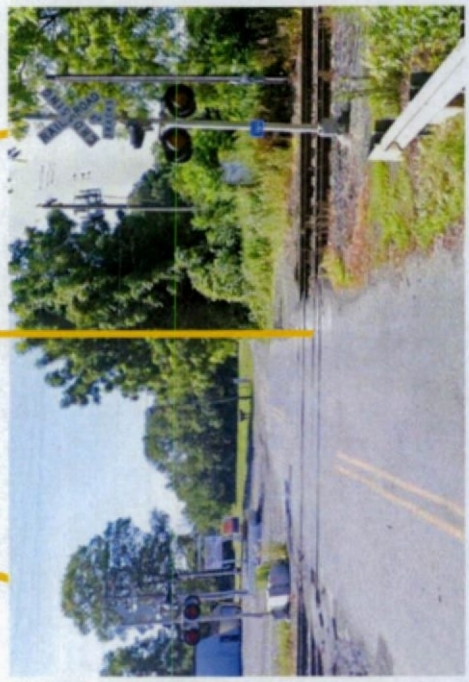
DWG. NO.	UNT-17-016B
SCALE:	N.T.S.
DWN. BY:	SCD
DATE:	APR. 5, 2021
REVISED:	-
SHEET:	2 OF 4

Advance RR X-ing Pavement Markings per MUTCD Fig. 8B-6 and 8B-7 with W10-1 Sign

Pestal Mount Flashing Light Signal with R15-1 and R15-2P (2 TRACKS) Signs

Twin RR Tracks

Pedestal Mount Flashing Light Signal with R15-1 and R15-2P (2 TRACKS) Signs
Flashing Light Signals oriented in N-S and E-W directions



Advance RR X-ing Pavement Markings per MUTCD Fig. 8B-6 and 8B-7 with W10-1 Sign (TO BE RELOCATED)

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AERIAL VIEW OF EXISTING CROSSING

NORFOLK SOUTHERN RR X-ING (851943H) REPLACMENT PROJECT
Gun Club Road (T-506)

UPPER NAZARETH TOWNSHIP
NORTHAMPTON COUNTY, PENNSYLVANIA

DWG. NO. UNT-17-016B
SCALE: N.T.S.
DWN. BY: SCD
DATE: APR. 5, 2021
REVISED: -
SHEET: 3 OF 4

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VIEWS OF EXISTING CROSSING

NORFOLK SOUTHERN RR X-ING (851943H)
REPLACMENT PROJECT
Gun Club Road (T-506)

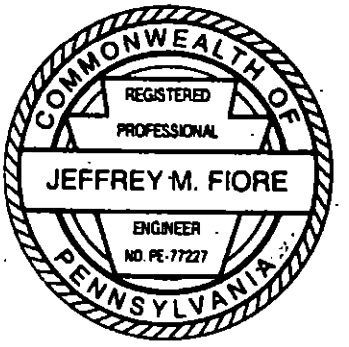
UPPER NAZARETH TOWNSHIP
NORTHAMPTON COUNTY, PENNSYLVANIA

DWG. NO. UNT-17-016B
SCALE: N.T.S.
DWN. BY: SCD
DATE: APR. 5, 2021
REVISED: -
SHEET: 4 OF 4

941 Marcon Boulevard
Suite 801
Allentown, Pennsylvania 18109
Main: 877 627 3772
http://colliersengineering.com

Colliers
Engineering
& Design

Memorandum



From: Jeffrey Fiore, P.E.

Date: August 9, 2022

Subject: Project Tadmor 2 – Traffic / Pedestrian Counts

Project No.: 18000145B

As part of the Pennsylvania Public Utility Commission (PA PUC) Application Form G, Item 6 calls for a statement of the number of persons and vehicles of all kinds using the highway at the crossing for three days, preferably a Friday, Saturday, and Sunday. The count is to be taken 24 hours each day.

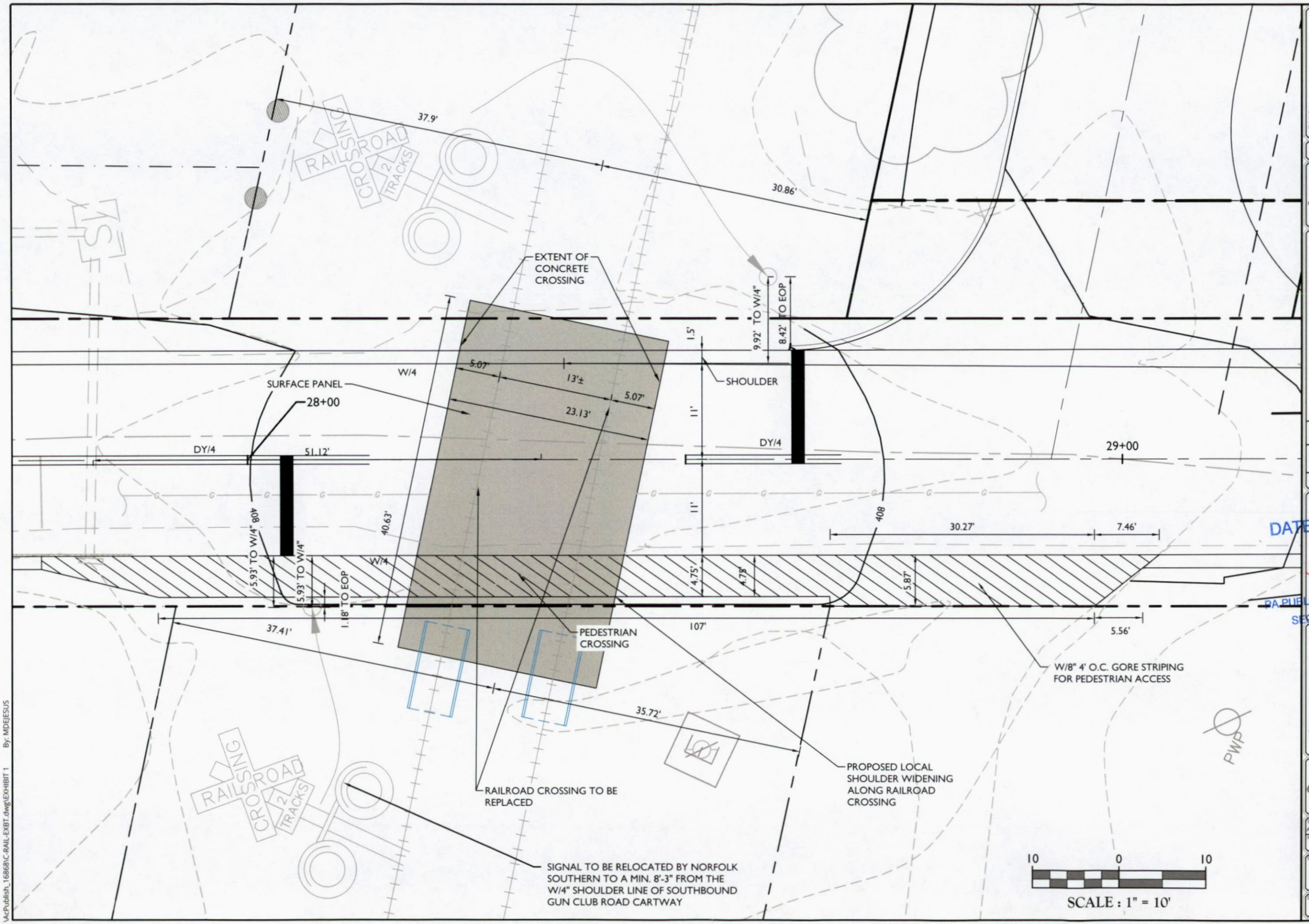
As stated my February 5, 2021 Traffic Impact Assessment (TIA), an Automatic Traffic Recorder (ATR) was placed roughly ¼ mile south of the Route 248 / Gun Club Road intersection to capture vehicular traffic data between May 17, 2018 through May 25, 2018. The ATR data reflected the following:

	Friday, May 18, 2018	Saturday, May 19, 2018	Sunday May 20, 2018	3-day Average
AM Vehicles NB	121	37	29	62
AM Vehicles SB	90	34	25	50
PM Vehicles NB	127	50	63	80
PM Vehicles SB	162	59	65	95
Total	500	180	182	--

There are no pedestrian generators adjacent to the proposed warehouse development. There are no sidewalks along either side of Gun Club Road. The nearest LANTA bus stop is located approximately 2 miles away from the proposed project, and there are no nearby public transit rail centers. Additionally, there are no pedestrian or bike trail facilities in this region of Upper Nazareth Township.

The adjoining businesses in the project vicinity are industrial, and do not create pedestrian traffic. Therefore, the only pedestrian traffic that would traverse this railroad crossing would be generated by the residential homes located on the southwestern side of Gun Club Road. Based on the minimal vehicular traffic along Gun Club Road on the weekends as well as personal observations of the roadway during daylight hours, the Gun Club Road railroad crossing is rarely traversed by pedestrians. As such, any pedestrian traffic over the railroad tracks would be considered de minimis. A copy of the referenced TIA is included in the submission documents.

R:\Projects\2018\18000145B\Correspondence\OUT\220809 PA PUC Item 6.docx



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DATE OF DEPOSIT
JUN 14 2023
PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

NORFOLK-SOUTHERN RAILROAD CROSSING EXHIBIT PLANS
FOR
PROJECT TADMOR 2

UPPER NAZARETH TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

EXTON
410 Eagleview Boulevard, Suite 104
Exton, PA 19341
Phone: 610.254.9140

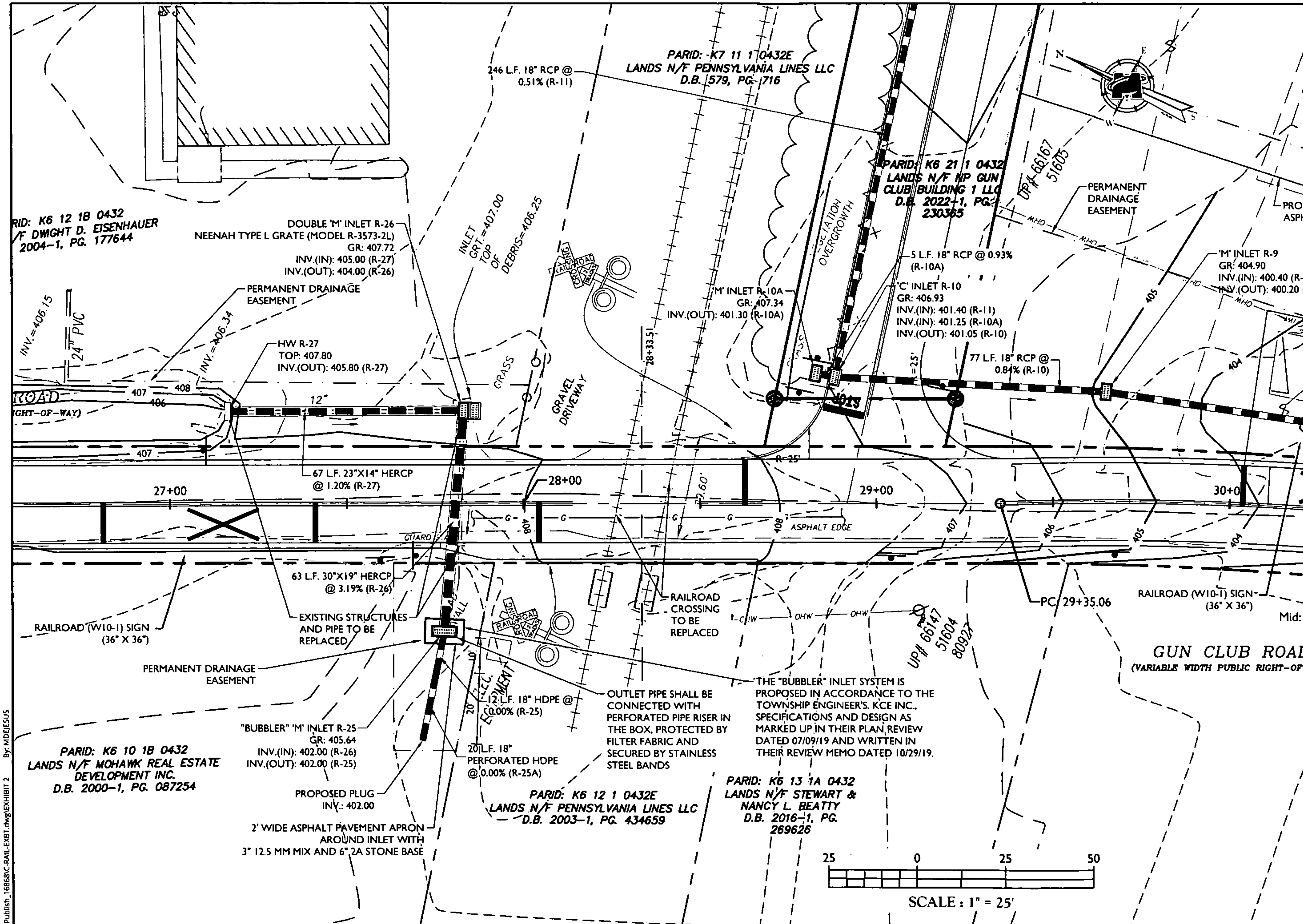
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	4/06/2023	MD	CRR

PROJECT NUMBER:	DRAWING NAME:
BLISH_168	C-RAIL-EXBT

SHEET TITLE:
EXHIBIT 1 - CROSSING OVERVIEW

SHEET NUMBER:
1 of 6

\\AcPublish_16868\C-RAIL-EXBT.dwg\EXHIBIT 1 By: MDEJESUS


PARID: K7 11 1 0432E
LANDS N/F PENNSYLVANIA LINES LLC
D.B. 579, PG. 716
246 L.F. 18" RCP @ 0.51% (R-11)
PARID: K6 12 1B 0432
N/F DWIGHT D. EISENHAUER
2004-1, PG. 177644
DOUBLE 'M' INLET R-26
NEENAH TYPE L GRATE (MODEL R-3573-2L)
GR: 407.72
INV.(IN): 405.00 (R-27)
INV.(OUT): 404.00 (R-26)
INLET GRT.=407.00
TOP OF DEBRIS=406.25
PERMANENT DRAINAGE EASEMENT
INV.=406.15
24" PVC
INV.=406.34
HW R-27
TOP: 407.80
INV.(OUT): 405.80 (R-27)
GRASS
GRAVEL DRIVEWAY
RAILROAD CROSSING
PARID: K6 21 1 0432
LANDS N/F NP GUN CLUB BUILDING 1 LLC
D.B. 2022-1, PG. 230365
VEGETATION OVERGROWTH
UP# 66167 51605
PERMANENT DRAINAGE EASEMENT
5 L.F. 18" RCP @ 0.93% (R-10A)
'M' INLET R-10A
GR: 407.34
INV.(OUT): 401.30 (R-10A)
'C' INLET R-10
GR: 406.93
INV.(IN): 401.40 (R-11)
INV.(IN): 401.25 (R-10A)
INV.(OUT): 401.05 (R-10)
'M' INLET R-9
GR: 404.90
INV.(IN): 400.40 (R-10)
INV.(OUT): 400.20 (R-9)
77 L.F. 18" RCP @ 0.84% (R-10)
28+33.51
ROAD
RIGHT-OF-WAY
12"
67 L.F. 23"X14" HERCP @ 1.20% (R-27)
27+00
28+00
29+00
30+00
R=25'
ASPHALT EDGE
GUARD
63 L.F. 30"X19" HERCP @ 3.19% (R-26)
RAILROAD (W10-1) SIGN (36" X 36")
EXISTING STRUCTURES AND PIPE TO BE REPLACED
RAILROAD CROSSING TO BE REPLACED
PC 29+35.06
RAILROAD (W10-1) SIGN (36" X 36")
Mid: 3
UP# 66147 51604 80927
GUN CLUB ROAD
(VARIABLE WIDTH PUBLIC RIGHT-OF-WAY)
PERMANENT DRAINAGE EASEMENT
12 L.F. 18" HDPE @ 0.00% (R-25)
OUTLET PIPE SHALL BE CONNECTED WITH PERFORATED PIPE RISER IN THE BOX, PROTECTED BY FILTER FABRIC AND SECURED BY STAINLESS STEEL BANDS
THE "BUBBLER" INLET SYSTEM IS PROPOSED IN ACCORDANCE TO THE TOWNSHIP ENGINEER'S, KCE INC., SPECIFICATIONS AND DESIGN AS MARKED UP IN THEIR PLAN REVIEW DATED 07/09/19 AND WRITTEN IN THEIR REVIEW MEMO DATED 10/29/19.
"BUBBLER" 'M' INLET R-25
GR: 405.64
INV.(IN): 402.00 (R-26)
INV.(OUT): 402.00 (R-25)
20 L.F. 18" PERFORATED HDPE @ 0.00% (R-25A)
PARID: K6 10 1B 0432
LANDS N/F MOHAWK REAL ESTATE DEVELOPMENT INC.
D.B. 2000-1, PG. 087254
PROPOSED PLUG
INV.: 402.00
2' WIDE ASPHALT PAVEMENT APRON AROUND INLET WITH 3" 12.5 MM MIX AND 6" 2A STONE BASE
PARID: K6 12 1 0432E
LANDS N/F PENNSYLVANIA LINES LLC
D.B. 2003-1, PG. 434659
PARID: K6 13 1A 0432
LANDS N/F STEWART & NANCY L. BEATTY
D.B. 2016-1, PG. 269626
25 0 25 50
SCALE : 1" = 25'

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NORFOLK-SOUTHERN RAILROAD CROSSING EXHIBIT PLANS FOR PROJECT TADMOR 2

UPPER NAZARETH TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

EXTON — 410 Eagleview Boulevard, Suite 104, Exton, PA 19341 — Phone: 610 254 9140

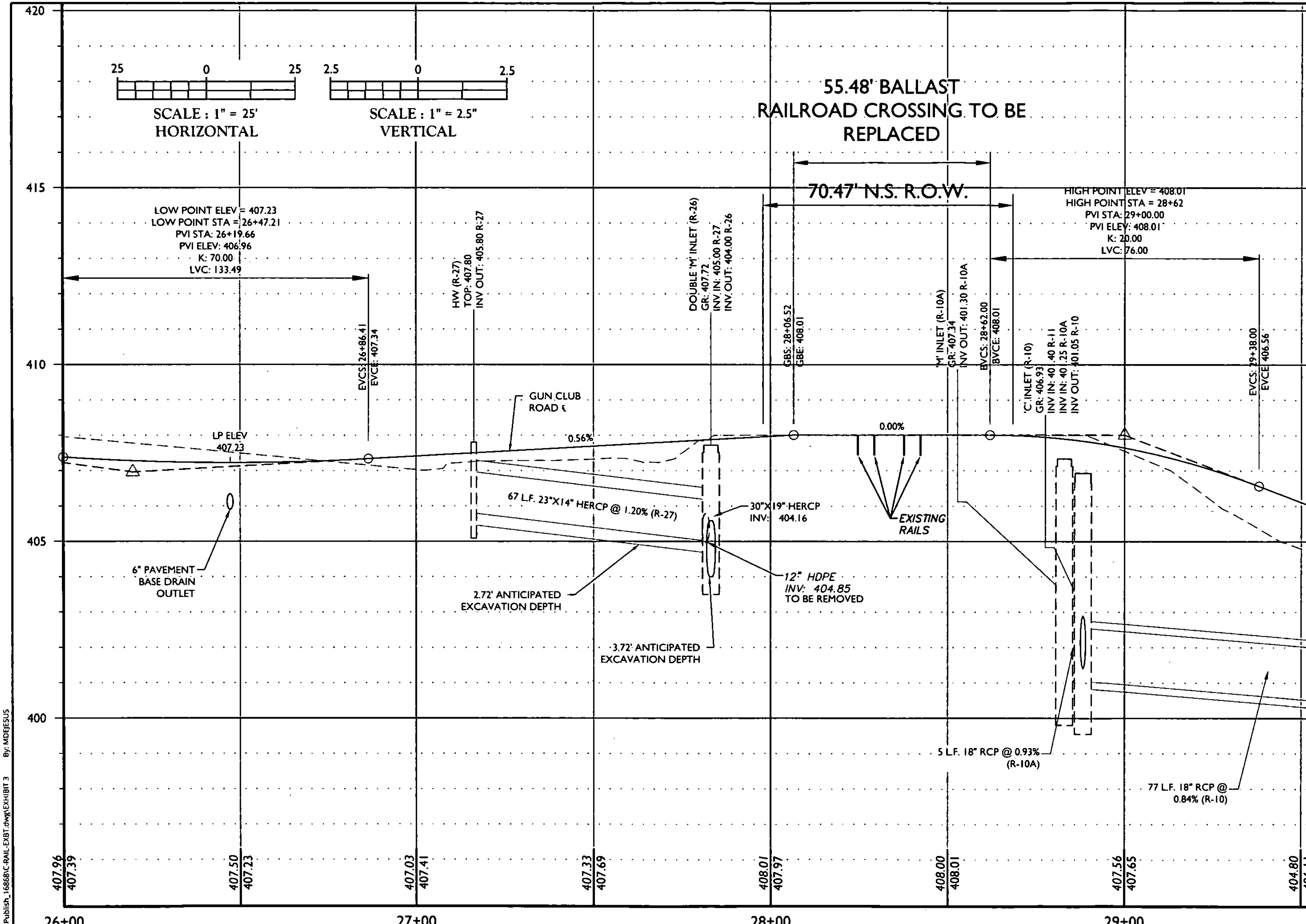
SCALE	DATE	DRAWN BY	CHECKED BY
AS SHOWN	4/06/2023	MD	CRR

PROJECT NUMBER: BUSH_168 — DRAWING NAME: C-RAIL-EXBT

EXHIBIT 2 - GRADING & DRAINAGE

2 of 6

By: MDEJESUS — \AcPublish_16868\C-RAIL-EXBT.dwg\EXHIBIT 2


SCALE : 1" = 25'
HORIZONTAL
SCALE : 1" = 2.5"
VERTICAL
55.48' BALLAST
RAILROAD CROSSING TO BE
REPLACED
70.47' N.S. R.O.W.
LOW POINT ELEV = 407.23
LOW POINT STA = 26+47.21
PVI STA: 26+19.66
PVI ELEV: 406.96
K: 70.00
LVC: 133.49
HIGH POINT ELEV = 408.01
HIGH POINT STA = 28+62
PVI STA: 29+00.00
PVI ELEV: 408.01
K: 20.00
LVC: 76.00
EVCS: 26+86.41
EVCE: 407.34
HW (R-27)
TOP: 407.80
INV OUT: 405.80 R-27
DOUBLE 'M' INLET (R-26)
GR: 407.72
INV IN: 405.00 R-27
INV OUT: 404.00 R-26
GBS: 28+06.52
GBE: 408.01
'M' INLET (R-10A)
GR: 407.34
INV OUT: 401.30 R-10A
BVCS: 28+62.00
BVCE: 408.01
'C' INLET (R-10)
GR: 406.93
INV IN: 401.40 R-11
INV IN: 401.25 R-10A
INV OUT: 401.05 R-10
EVCS: 29+38.00
EVCE: 406.56
GUN CLUB
ROAD ℄
0.56%
0.00%
LP ELEV
407.23
6" PAVEMENT
BASE DRAIN
OUTLET
67 L.F. 23"X14" HERCP @ 1.20% (R-27)
30"X19" HERCP
INV: 404.16
EXISTING
RAILS
12" HDPE
INV: 404.85
TO BE REMOVED
2.72' ANTICIPATED
EXCAVATION DEPTH
3.72' ANTICIPATED
EXCAVATION DEPTH
5 L.F. 18" RCP @ 0.93%
(R-10A)
77 L.F. 18" RCP @
0.84% (R-10)
420
415
410
405
400
407.96
407.39
407.50
407.23
407.03
407.41
407.33
407.69
408.01
407.97
408.00
408.01
407.56
407.65
404.80
406.11
26+00
27+00
28+00
29+00

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NORFOLK-SOUTHERN RAILROAD CROSSING EXHIBIT PLANS
FOR
PROJECT TADMOR 2

UPPER NAZARETH TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

EXTON
410 Eagleview Boulevard, Suite 104
Exton, PA 19341
Phone: 610 254 9140

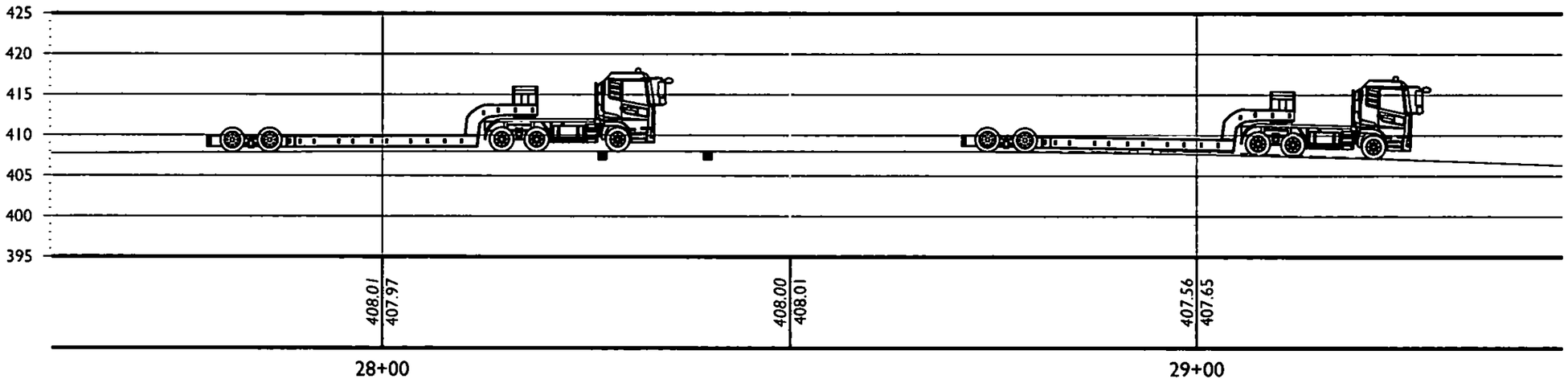
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	4/06/2023	MD	CRR

PROJECT NUMBER:	DRAWING NAME:
BLISH_168	C-RAIL-EXBT

SHEET TITLE:
EXHIBIT 3: PROFILES

SHEET NUMBER:
3 of 6

AcPublish_16868\C-RAIL-EXBT.dwg\EXHIBIT 3 By: MDEJESUS



PROFILE OF GUN CLUB ROAD

25 0 25

SCALE : 1" = 25'
HORIZONTAL

2.5 0 2.5

SCALE : 1" = 2.5"
VERTICAL

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REV	DATE	DRAWN BY	DESCRIPTION

NORFOLK-SOUTHERN RAILROAD CROSSING EXHIBIT PLANS
FOR
PROJECT TADMOR 2

UPPER NAZARETH TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA

EXTON
410 Eagleview Boulevard
Suite 104
Exton, PA 19341
Phone: 610.254.9140

SCALE	DATE	DRAWN BY	ENGINEER
AS SHOWN	4/25/2023	MD	CEB

PROJECT NUMBER	DRAWING NAME
CUSH_168	C-RAIL-EXBT

EXHIBIT 4 -
TRUCK CROSSING

4 of 6

MASER CONSULTING

Engineers · Planners · Surveyors · Landscape Architects · Environmental Scientists

Traffic Impact Assessment

Project Tadmor

3363 Gun Club Road
Upper Nazareth Township, Northampton County, PA

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Prepared For

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I. EXECUTIVE SUMMARY

This Traffic Impact Assessment has been prepared for JVI, LLC ("Applicant") in association with a proposal to develop a warehouse facility at 3363 Gun Club Road ("The Project") within the Township of Upper Nazareth, Northampton County, Pennsylvania. The subject site is currently undeveloped. The Applicant proposes to develop a 1,006,155 SF high-cube warehouse facility, to be constructed in one (1) phase. Site access is proposed via one (1) full-movement driveway along Gun Club Road for passenger vehicles and one (1) driveway along Gun Club Road for trucks. The proposed truck driveway will prohibit egress left turns and will be converted to All-Way Stop Control.

Traffic data was collected within the study area to gain an understanding of the existing roadway conditions and operations. Turning movement count ("TMC") data was collected on Tuesday, May 22, 2018 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM at the following intersections:

- Bath Pike (SR 248) & Gun Club Road/Business Driveway;
- Bath Pike (SR 248) & Daniels Road (SR 946); and
- Newburg Road (SR 3020) & Werner Road/Gun Club Road.

Additionally, the intersection of Bath Pike (SR 248) & Gun Club Road was counted from 6:00 AM to 7:00 PM on Tuesday, May 22, 2018 in order to conduct a 12-hour traffic signal warrant assessment. Automatic Traffic Recorders ("ATR") were installed along Bath Pike (SR 248), east of its intersection with Gun Club Road, and along Gun Club Road, south of its intersection with Bath Pike (SR 248), to capture a week of traffic data. The TMC data and ATR data were cross-referenced to establish the existing traffic conditions.

Turn lane warrant analyses were conducted at the intersection of Bath Pike (SR 248) & Gun Club Road for an eastbound right-turn lane, a westbound left-turn lane, and a northbound left-turn lane. Based upon the anticipated Build conditions, and included in this analysis, a 150' left-turn lane is proposed along the westbound approach of Bath Pike (SR 248) at its intersection with Gun Club Road.

A traffic signal warrant analysis was conducted at the intersection of Bath Pike (SR 248) & Gun Club Road. Based on MUTCD standards, the eight-hour, four-hour, and peak hour traffic signal warrants are not met under the 2020 Build conditions.

A review of the capacity under the build-out scenario shows that all No-Build Levels of Service will be maintained with the traffic associated with the proposed development. All movements at the proposed site driveways will operate at Levels of Service "A" during both peak hours studied. The available sight distances at the proposed site driveways exceed PennDOT requirements. Any resultant queuing can be accommodated within the layout of the site. The Levels of Service for the 2020 No-Build and Build conditions are detailed in the following table.

Table 1 – Level of Service Summary

Intersection	Movement		2020 No-Build				2020 Build			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Bath Pike (SR 248) (EB/WB) & Gun Club Road (NB)/ Business Driveway (SB)	EB	L	a	9.2	a	9.1	a	9.2	a	9.1
	WB	L	a	9.7	a	8.9	b	10.0	a	9.0
	NB	LTR	b	12.6	c	16.0	b	12.8	b	13.9
	SB	LTR	c	15.6	c	15.9	c	18.3	c	17.2
	Overall		**a**	**1.3**	**a**	**1.2**	**a**	**2.2**	**a**	**2.3**
Bath Pike (SR 248) (EB/WB) & Daniels Road (SR 946) (NB/SB)	EB	LTR	B	13.2	A	6.3	B	13.5	A	6.5
	WB	LTR	B	12.9	B	10.6	B	13.7	B	11.0
	NB	LTR	B	10.6	C	23.3	B	10.9	C	23.8
	SB	LTR	B	15.5	C	22.4	B	16.0	C	23.0
	Overall		**B**	**13.7**	**B**	**13.9**	**B**	**14.2**	**B**	**14.1**
Newburg Road (SR 3020) (EB/WB) & Werner Road (NB)/Gun Club Road (SB)	EB	L	a	8.9	a	9.6	a	8.9	a	9.6
	WB	L	a	9.2	a	9.2	a	9.2	a	9.2
	NB	LTR	b	11.1	b	13.3	b	11.2	b	13.6
	SB	LTR	b	11.5	b	13.3	b	11.6	b	13.3
	Overall		**a**	**1.3**	**a**	**0.6**	**a**	**1.2**	**a**	**0.9**
Car Site Driveway (WB) & Gun Club Road (NB/SB)	WB	LR	-	-	-	-	a	8.4	a	8.6
	SB	L	-	-	-	-	a	8.2	a	8.2
	Overall		-	-	-	-	**a**	**2.9**	**a**	**4.1**
Truck Site Driveway (WB) & Gun Club Road (NB/SB)	WB	R	-	-	-	-	a	8.3	a	8.4
	NB	T					a	7.4	a	7.3
	SB	LT	-	-	-	-	a	9.4	a	9.2
	Overall		-	-	-	-	**a**	**8.8**	**a**	**8.4**

Note: Uppercase indicates a signalized intersection; lowercase indicates an unsignalized intersection.

The following tables detail the 95th percentile queue lengths associated with the proposed site driveways along Gun Club Road.

Table 2 – 95th Percentile Queues – Car Site Driveway & Gun Club Road

Roadway	Movement		AM Peak		PM Peak	
Car Site Driveway	WB	LR	0.0 veh	25'	0.2 veh	25'
Gun Club Road	SB	L	0.1 veh	25'	0.0 veh	25'

Table 3 – 95th Percentile Queues – Truck Site Driveway & Gun Club Road

Roadway	Movement		AM Peak		PM Peak	
Truck Site Driveway	WB	R	0.0 veh	25'	0.1 veh	25'
Gun Club Road	NB	T	0.1 veh	25'	0.1 veh	25'
	SB	LT	0.4 veh	25'	0.3 veh	25'

II. INTRODUCTION

This Traffic Impact Assessment has been prepared for JVI, LLC ("Applicant") in association with a proposal to develop a warehouse facility at 3363 Gun Club Road ("The Project") within the Township of Upper Nazareth, Northampton County, Pennsylvania. The subject site is bounded by industrial land uses to the north, residential land uses to the south, Gun Club Road to the west, and undeveloped land to the east. The subject site is located within the General Industrial (I-2) Zoning District. A site location map is included as **Figure 1** in **Appendix A**.

The subject site is currently undeveloped. The Applicant proposes to develop a 1,006,155 SF high-cube warehouse facility, to be constructed in one (1) phase. Site access is proposed via one (1) full-movement driveway along Gun Club Road for passenger vehicles and one (1) driveway along Gun Club Road for trucks. The proposed truck driveway will prohibit egress left turns and will be converted to All-Way Stop Control. The proposed Site Plan is provided as **Figure 2** in **Appendix A**.

In association with the proposed development, the Applicant proposes full reconstruction of Gun Club Road, with widening on both sides from the southern end of the property northward to its intersection with Bath Pike (SR 248). Additionally, it is proposed to construct a 150' left-turn lane along the westbound approach of Bath Pike (SR 248) at its intersection with Gun Club Road.

A Scoping Meeting occurred on May 7, 2018 at the project site between the Applicant, Maser Consulting, Upper Nazareth Township, and PennDOT. The Scoping Application and Meeting Minutes are provided in **Appendix B**.

This study presents an evaluation of the current and future traffic conditions in the vicinity of The Project. Specific elements included in this study are:

- An inventory of the roadway facilities in the vicinity of the project, including the existing physical and traffic operating characteristics;
- Determination of the Existing Conditions;
- Site Generated Trips as described in the ITE Trip Generation Manual, 10th Edition;
- Trip Distribution and Assignment;
- Forecast of the 2020 No-Build Traffic Volumes;
- Forecast of the 2020 Build Traffic Volumes;
- Turn Lane Warrant Analyses;
- Traffic Signal Warrant Analysis;
- Peak Hour Capacity and Queue Analysis for the 2020 Build Conditions;
- Sight Distance Analysis; and
- Summary and Conclusions.

III. EXISTING ROADWAY CONDITIONS

A field investigation was conducted adjacent to the project site to obtain an inventory of existing roadway conditions, posted traffic controls, adjacent land uses, lane configurations, and existing vehicular/pedestrian traffic patterns.

Roadways

Bath Pike (SR 248) is an east-west oriented urban principal arterial roadway under jurisdiction of the Pennsylvania Department of Transportation ("PennDOT"). The roadway provides one (1) travel lane in each direction with shoulders. The posted speed limit is 45 MPH.

Daniels Road (SR 946) is a north-south oriented urban collector roadway under jurisdiction of the Pennsylvania Department of Transportation ("PennDOT"). The roadway provides one (1) travel lane in each direction with shoulders. The posted speed limit is 45 MPH.

Newburg Road (SR 3020) is an east-west oriented urban collector roadway under jurisdiction of Pennsylvania Department of Transportation ("PennDOT"). The roadway provides one (1) travel lane in each direction with shoulders. The posted speed limit is 45 MPH.

Gun Club Road is a north-south oriented roadway under local jurisdiction. The roadway provides one (1) travel lane in each direction. The posted speed limit is 35 MPH.

Werner Road is a north-south oriented roadway under local jurisdiction. The roadway provides one (1) travel lane in each direction. The posted speed limit is 25 MPH.

Signalized Intersection

Bath Pike (SR 248) & Daniels Road (SR 946) is a four-leg intersection controlled by a fully-actuated signal. Bath Pike (SR 248) represents the eastbound and westbound approaches, and Daniels Road (SR 946) represents the northbound and southbound approaches. All intersection approaches provide one (1) shared lane for all turning movements. The signal operates on a variable cycle length with two (2) phases. The first phase is the Bath Pike (SR 248) eastbound and westbound ROW. The second phase is the Daniels Road (SR 946) northbound and southbound ROW. The signal timing directive is provided in **Appendix C**.

Unsignalized Intersections

Bath Pike (SR 248) & Gun Club Road/Business Driveway is a four-leg intersection with the northbound and southbound approaches under stop control. Bath Pike (SR 248) represents the eastbound and westbound approaches. Gun Club Road represents the northbound approach. The business driveway represents the southbound approach. All intersection approaches provide one (1) shared lane for all turning movements. A sketch detailing the lane geometry is provided in **Appendix C**.

Newburg Road (SR 3020) & Werner Road/Gun Club Road is a four-leg intersection with the northbound and southbound approaches of Werner Road and Gun Club Road under stop control. All intersection approaches provide one (1) shared lane for all turning movements. A sketch detailing the lane geometry is provided in **Appendix C**.

There are no bus stops within 0.25 miles of the site, no public transit rail centers within 0.5 miles of the site, and no pedestrian or bike facilities in the area.

IV. EXISTING TRAFFIC CONDITIONS

Traffic data was collected within the study area to gain an understanding of the existing roadway conditions and operations. The following subsections summarize the data collection efforts.

Turning Movement Counts

Turning Movement Counts ("TMC") were conducted on Tuesday, May 22, 2018 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. The TMCs were conducted at the following intersections:

- Bath Pike (SR 248) & Gun Club Road/Business Driveway;
- Bath Pike (SR 248) & Daniels Road (SR 946); and
- Newburg Road (SR 3020) & Werner Road/Gun Club Road.

The intersection of Bath Pike (SR 248) & Gun Club Road was counted from 6:00 AM to 7:00 PM on Tuesday, May 22, 2018 in order to conduct a 12-hour traffic signal warrant assessment. The data collection efforts and peak hours are detailed in **Table 4**. The processed count data is provided in **Appendix C**.

Table 4 – Data Collection Efforts and Established Peak Hours

Peak Period	Date Collected	Traffic Count Time Frame	Established Peak Hour
Weekday Morning	Tuesday, May 22, 2018	7:00 AM – 9:00 AM	7:15 AM – 8:15 AM
Weekday Evening		4:00 PM – 6:00 PM	4:15 PM – 5:15 PM

Automatic Traffic Recorders

Automatic Traffic Recorders ("ATR") were installed from Thursday, May 17, 2018 to Friday, May 25, 2017 to capture a week of traffic data. The ATRs were installed at the following locations:

- Bath Pike (SR 248), east of its intersection with Gun Club Road; and
- Gun Club Road, south of its intersection with Bath Pike (SR 248).

The processed count data is provided in **Appendix C**.

Existing Traffic Volumes

The TMC data and the ATR data were cross-referenced to establish the Existing Traffic Conditions. The traffic volume differential between the ATR units and intersection counts was minimal during the peak hours. Overall, the intersection turning movement data was determined to be accurate and consistent with the ATR data. The volumes were balanced in an upward fashion to provide a conservative analysis. A Volume Flow Diagram illustrating the Existing Conditions is provided as **Figure 3** in **Appendix A**.

V. TRIP GENERATION & DISTRIBUTION

Trip Generation

The trips generated by the proposed development were estimated based upon the *Institute of Transportation Engineers'* (ITE) Trip Generation Manual, 10th Edition. This publication establishes trip generation rates based on land use and traffic studies conducted throughout the country.

Per guidance provided by PennDOT, ITE Land Use Code 154 – High-Cube Transload and Short-Term Storage Warehouse was utilized to generate the site trips for the proposed development. This is the closest related land use and accurately describes the proposed development. The ITE Trip Generation Manual states:

> *A high-cube warehouse (HCW) is a building that typically has at least 200,000 gross square feet of floor area, has a ceiling height of 24 feet or more, and is used primarily for the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses. A typical HCW has a high level of on-site automation and logistics management. The automation and logistics enable highly-efficient processing of goods through the HCW. The HCWs included in this land use include transload and short-term facilities. Transload facilities have a primary function of consolidation and distribution of pallet loads (or larger) for manufacturers, wholesalers, or retailers. They typically have little storage duration, high throughput, and are high-efficiency facilities. Short-term HCWs are high-efficiency distribution facilities often with custom/special features built into structure for movement of large volumes of freight with only short-term storage of products.*

As such, the trip generation was estimated based upon ITE Land Use Code 154 – High-Cube Transload and Short-Term Storage Warehouse. The site generated trip estimates are provided in **Table 5**. The comprehensive trip generation worksheets are provided in **Appendix D**.

Table 5 – Site Generated Trips

ITE Land Use	Size	AM Peak			PM Peak			Daily		
		In	Out	Total	In	Out	Total	In	Out	Total
LUC 154 – High-Cube Transload and Short-Term Storage Warehouse	1,006,155 SF	61	19	80	28	73	101	704	705	1,409

Truck Percentage

According to the ITE Trip Generation Manual, truck trips for industrial land uses account for 9% to 29% of the weekday site generated trips. Based on this guidance, the truck trip percentage is estimated as 20% during the peak hours. The peak hour capacity analyses utilized in this report reflect this truck percentage. A breakdown of the site generated trips between cars and trucks is provided in **Table 6**.

Table 6 – Site Generated Trip Summary by Classification

Trip Classification	AM Peak			PM Peak			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
Car Trips (80%)	49	15	64	22	58	80	563	564	1,127
Truck Trips (20%)	12	4	16	6	15	21	141	141	282
Total Trips	61	19	80	28	73	101	704	705	1,409

Trip Distribution

Trip distribution methodology is developed based on a variety of factors. These factors include the existing travel patterns within the adjacent roadway network, adjacent land uses, the proposed land use, development locations, driveway locations, and the proximity of major arterials within the project vicinity.

Car Trip Distribution

The following trip distribution patterns were established for cars upon a review of the existing roadway volumes and location of major arterials within the project vicinity:

- To/from Bath Pike (SR 248), West of Site – 10%;
- To/from Bath Pike (SR 248), East of Site – 45%;
- To/from Daniels Road (SR 946), North of Site – 10%;
- To/from Daniels Road (SR 946), South of Site – 5%;
- To/from Newburg Road (SR 3020), West of Site – 20%; and
- To/from Newburg Road (SR 3020), East of Site – 10%.

A Volume Flow Diagram illustrating the Car Trip Distribution is provided as **Figure 4** in **Appendix A**. A Volume Flow Diagram illustrating the Car Site Generated Trips is provided as **Figure 5** in **Appendix A**.

Truck Trip Distribution

The following trip distribution pattern was established for trucks upon a review of the existing roadway volumes and location of major arterials within the project vicinity:

- To/from Bath Pike (SR 248), East of Site – 100%.

A Volume Flow Diagram illustrating the Truck Trip Distribution is provided as **Figure 6** in **Appendix A**. A Volume Flow Diagram illustrating the Truck Site Generated Trips is provided as **Figure 7** in **Appendix A**. A Volume Flow Diagram illustrating the Total Site Generated Trips is provided as **Figure 8** in **Appendix A**.

VI. FUTURE TRAFFIC CONDITIONS

2020 No-Build Traffic Volumes

An estimation of the traffic operational characteristics at the build date, *without* the construction of The Project (or "No-Build" condition) is made to determine the traffic impact of the proposed development. The existing volumes are forecasted to the build year of 2020.

Background Growth

A general background growth rate was applied to the transient traffic volumes within the study area to account for general increases in traffic due to regional population and employment growth by the build year. The 2020 No-Build traffic volumes were forecasted by applying a background growth rate from the PennDOT Annual Background Growth Rate Table. The annual background growth rate is 0.54% for urban non-interstate roadways within Northampton County.

Adjacent Developments

PennDOT and the Township of Upper Nazareth were contacted to determine if any developments in the vicinity of The Project would increase adjacent street traffic volumes within the study area by the build year. It was determined there were no such projects.

The 2020 No-Build traffic volumes were forecasted by applying the PennDOT annual background growth rate to the existing traffic volumes. A Volume Flow Diagram illustrating the 2020 No-Build Conditions is provided as **Figure 9** in **Appendix A**.

2020 Build Traffic Volumes

The proposed site generated trips were added to the 2020 No-Build traffic volumes to simulate the 2020 Build traffic volumes. A Volume Flow Diagram illustrating the 2020 Build Conditions is provided as **Figure 10** in **Appendix A**.

VII. TURN LANE WARRANT ANALYSIS

In association with the proposed development, turn lane warrant analyses were conducted at the intersection of Bath Pike (SR 248) & Gun Club Road. Turn lane warrants were analyzed for the following movements at the intersection of Bath Pike (SR 248) & Gun Club Road:

- Bath Pike (SR 248) eastbound right-turn;
- Bath Pike (SR 248) westbound left-turn; and
- Gun Club Road northbound left-turn.

The following subsections detail the results of the turn lane warrants. The comprehensive PennDOT turn lane warrant analysis worksheets are provided in **Appendix E**.

Bath Pike (SR 248) Eastbound Right-Turn Lane Warrant Analysis

A right-turn lane warrant analysis was conducted along the eastbound approach of Bath Pike (SR 248) at its intersection with Gun Club Road. The right-turn lane warrant analysis was conducted in accordance with PennDOT Publication 46, Section 11.16. Based upon the anticipated 2020 Build conditions, a dedicated right-turn lane along Bath Pike (SR 248) eastbound is **not warranted** at its intersection with Gun Club Road.

Bath Pike (SR 248) Westbound Left-Turn Lane Warrant Analysis

A left-turn lane warrant analysis was conducted along the westbound approach of Bath Pike (SR 248) at its intersection with Gun Club Road. The left-turn lane warrant analysis was conducted in accordance with PennDOT Publication 46, Section 11.16. Based upon the anticipated 2020 Build conditions, a dedicated left-turn lane along Bath Pike (SR 248) westbound is **warranted** at its intersection with Gun Club Road.

Gun Club Road Northbound Left-Turn Lane Warrant Analysis

A left-turn lane warrant analysis was conducted along the northbound approach of Gun Club Road at its intersection with Bath Pike (SR 248). The left-turn lane warrant analysis was conducted in accordance with PennDOT Publication 46, Section 11.16. Based upon the anticipated 2020 Build conditions, a dedicated left-turn lane along Gun Club Road northbound is **not warranted** at its intersection with Bath Pike (SR 248).

The 2020 Build Conditions capacity analyses reflect the proposed 150' Bath Pike (SR 248) westbound left-turn lane at its intersection with Gun Club Road. The comprehensive PennDOT turn lane warrant analysis worksheets are provided in **Appendix E**.

VIII. TRAFFIC SIGNAL WARRANT ANALYSIS

A traffic signal warrant analysis was prepared in order to assess whether the intersection of Bath Pike (SR 248) & Gun Club Road within the Township of Upper Nazareth, Northampton County, Pennsylvania meets warrants for the installation of a traffic signal.

A traffic signal warrant analysis is a comprehensive investigation of traffic conditions and physical characteristics required to determine the necessity of a signal installation. The field observations, future traffic volumes, and roadway characteristics were compiled and compared to the Traffic Signal Warrants as set forth in the *Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 Edition* ("MUTCD") as published by the Federal Highway Administration ("FHWA"). A traffic signal warrant analysis involves the investigation of the existing and/or future traffic conditions and geometric alignment of a study location to determine if the installation of a traffic control signal is justified. For the intersection of Bath Pike (SR 248) & Gun Club Road, the following MUTCD Warrants are applicable and were investigated.

Table 7 – Traffic Signal Warrant Descriptions

Warrant		Description
1	**8-Hour Vehicular Volume**	This warrant examines any 8 hours within a study period with consideration given to large volumes of traffic interacting at an intersection and/or large queues of traffic along an intersecting minor street.
2	**4-Hour Vehicular Volume**	This warrant examines any 4 hours within a study period with consideration given to intersecting traffic volume as the main consideration.
3	**Peak Hour**	This warrant is considered for locations where traffic conditions for a minimum of 1 hour within a study period on the minor street experience undue delay in entering or crossing the major street.

Signal Warrant Traffic Volumes

A typical signal warrant analysis is based on traffic volumes in 15-minute intervals over a 24-hour period. This general methodology is detailed below.

24-Hour Existing Traffic Volumes

The data from the traffic counts at the intersection of Bath Pike (SR 218) & Gun Club Road from 6:00 AM to 7:00 PM on Tuesday, May 22, 2018 were used to perform the warrant analysis. The future base traffic volumes were forecasted by applying a background growth rate from the PennDOT Annual Background Growth Rate Table. The background growth rate is 0.54% for urban non-interstate roadways within Northampton County.

24-Hour Site Generated Trips

The weekday daily trips generated by the proposed development were estimated based upon the *Institute of Transportation Engineers'* (ITE), Trip Generation Manual, 10th Edition. ITE Land Use Code 154 – High-Cube Transload and Short-Term Storage Warehouse was used to estimate the site generated trips for the proposed development. The weekday daily site generated trip estimates at the intersection of Bath Pike (SR 248) & Gun Club Road are detailed in **Table 8**.

Table 8 – Bath Pike (SR 248) & Gun Club Road – Weekday Daily Site Generated Trips

Trip Type		% Trips		Weekday Daily Trips		
		Cars	Trucks	Cars	Trucks	Total
Weekday Daily	Total	100%	100%	1,127	282	1,409
	At Intersection	70%	100%	789	282	1,071
Bath Pike (SR 248)	Eastbound	5%	0%	56	0	56
	Westbound	30%	50%	338	141	479
Gun Club Road	Northbound	35%	50%	394	141	535

The ITE Trip Generation Manual provides the hourly percent of daily traffic for Land Use Code 154 – High-Cube Transload and Short-Term Storage Warehouse. The hourly percentages were used to estimate the site generated trips for each 15-minute interval during the signal warrant analysis period. The turning movements at the study intersection were then established based on the established trip distribution. The site generated trips were added to the No-Build traffic volumes to determine the Build traffic volumes at the intersection of Bath Pike (SR 248) & Gun Club Road and were used for the traffic signal warrant analysis.

Traffic Control Signal Warrant Results

The Traffic Signal Warrant Analysis investigated whether a traffic signal is warranted at the intersection of Bath Pike (SR 248) & Gun Club Road based on the anticipated future traffic volumes, roadway operating characteristics, and the geometry of the intersection. The results of the MUTCD Warrants Assessment are detailed below. Based on MUTCD standards, the eight-hour, four-hour, and peak hour traffic signal warrants are **not met** for the intersection of Bath Pike (SR 248) & Gun Club Road under the 2020 Build conditions. **Table 9** summarizes the warrant analysis results for the intersection of Bath Pike (SR 248) & Gun Club Road under the 2020 Build conditions. The results of the warrant analyses are detailed in **Appendix F**.

Table 9 – Bath Pike (SR 248) & Gun Club Road – Signal Warrant Results

Warrant	Minimum Hours	Hours Reached	Satisfied
1: Eight-Hour Vehicular Volume	-	-	**NO**
1A	*8*	*1*	*NO*
1B	*8*	*0*	*NO*
2: Four-Hour Volumes	**4**	**0**	**NO**
3: Peak Hour Volumes	-	-	**NO**
3A	*1*	*0*	*NO*
3B	*1*	*0*	*NO*
		Total Warrants Satisfied:	**0**

The installation of a traffic signal at the intersection of Bath Pike (SR 248) & Gun Club Road is **not warranted** per MUTCD standards.

IX. HCM CAPACITY ANALYSIS

The peak hour traffic operations within the project vicinity were evaluated at the study intersections. The analyses were performed using *Synchro Trafficware*, a traffic analysis and simulation program. The results of these analyses provide Levels of Service (LOS), volume/capacity descriptions, and average seconds of delay for the intersection movements.

The efficiency with which an intersection operates is a function of volume and capacity. The capacity of an intersection is the volume of vehicles it can accommodate during a given time period. LOS is a qualitative measure describing operational conditions within a traffic stream in terms of traffic characteristics, such as freedom to maneuver, traffic interruption, comfort, and convenience. Six (6) LOS are defined for each type of facility with analysis procedures available. Levels of Service range from "A" through "F," with Level "A" representing excellent conditions with no delays, and failure and deficient operations denoted by Level "F." The HCM LOS criteria for unsignalized and signalized intersections are summarized in **Table 10**.

Table 10 – HCM 6th Edition LOS/Delay Criteria

Level of Service	Average Control Delay (sec/veh)	
	Signalized Intersection	Unsignalized Intersection
A	< 10	< 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

The Levels of Service for the 2020 No-Build and Build conditions are detailed in **Table 11**.

Table 11 – Level of Service Summary

Intersection	Movement		2020 No-Build				2020 Build			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Bath Pike (SR 248) (EB/WB) & Gun Club Road (NB)/ Business Driveway (SB)	EB	L	a	9.2	a	9.1	a	9.2	a	9.1
	WB	L	a	9.7	a	8.9	b	10.0	a	9.0
	NB	LTR	b	12.6	c	16.0	b	12.8	b	13.9
	SB	LTR	c	15.6	c	15.9	c	18.3	c	17.2
	Overall		**a**	**1.3**	**a**	**1.2**	**a**	**2.2**	**a**	**2.3**
Bath Pike (SR 248) (EB/WB) & Daniels Road (SR 946) (NB/SB)	EB	LTR	B	13.2	A	6.3	B	13.5	A	6.5
	WB	LTR	B	12.9	B	10.6	B	13.7	B	11.0
	NB	LTR	B	10.6	C	23.3	B	10.9	C	23.8
	SB	LTR	B	15.5	C	22.4	B	16.0	C	23.0
	Overall		**B**	**13.7**	**B**	**13.9**	**B**	**14.2**	**B**	**14.1**
Newburg Road (SR 3020) (EB/WB) & Werner Road (NB)/Gun Club Road (SB)	EB	L	a	8.9	a	9.6	a	8.9	a	9.6
	WB	L	a	9.2	a	9.2	a	9.2	a	9.2
	NB	LTR	b	11.1	b	13.3	b	11.2	b	13.6
	SB	LTR	b	11.5	b	13.3	b	11.6	b	13.3
	Overall		**a**	**1.3**	**a**	**0.6**	**a**	**1.2**	**a**	**0.9**
Car Site Driveway (WB) & Gun Club Road (NB/SB)	WB	LR	-	-	-	-	a	8.4	a	8.6
	SB	L	-	-	-	-	a	8.2	a	8.2
	Overall		**-**	**-**	-	-	**a**	**2.9**	**a**	**4.1**
Truck Site Driveway (WB) & Gun Club Road (NB/SB)	WB	R	-	-	-	-	a	8.3	a	8.4
	NB	T					a	7.4	a	7.3
	SB	LT	-	-	-	-	a	9.4	a	9.2
	Overall		**-**	**-**	**-**	**-**	**a**	**8.8**	**a**	**8.4**

Note: Uppercase indicates a signalized intersection; lowercase indicates an unsignalized intersection.

All capacity analysis calculation worksheets are provided in **Appendix G**. The following subsections summarize the findings for the study intersections.

Bath Pike (SR 248) & Gun Club Road/Business Driveway

2020 No-Build Analysis

Under the No-Build conditions, all intersection movements will operate at Levels of Service "C" or better during both peak hours studied. The intersection will operate at an overall Level of Service "A" during both peak hours studied.

2020 Build Analysis

A 150' left-turn lane is proposed to be constructed along the westbound approach of Bath Pike (SR 248) at its intersection with Gun Club Road in association with the proposed development.

Under the Build conditions with improvements, all movements at the intersection of Bath Pike (SR 248) & Gun Club Road will operate at or near No-Build Levels of Service during both peak hours studied. The intersection will continue to operate at an overall Level of Service "A" during both peak hours studied. The Bath Pike (SR 248) westbound left-turn 95th percentile queue length will be approximately one (1) vehicle or less during both peak hours studied, thus the proposed 150' storage length will be sufficient to accommodate the queue.

Bath Pike (SR 248) & Daniels Road (SR 946)

2020 No-Build Analysis

Under the No-Build conditions, all intersection movements will operate at Levels of Service "C" or better during both peak hours studied. The intersection will operate at an overall Level of Service "B" during both peak hours studied.

2020 Build Analysis

Under the Build conditions, all movements at the intersection of Bath Pike (SR 248) & Daniels Road (SR 946) will operate at or near No-Build Levels of Service during both peak hours studied. The intersection will continue to operate at an overall Level of Service "B" during both peak hours studied.

Newburg Road (SR 3020) & Werner Road/Gun Club Road

2020 No-Build Analysis

Under the No-Build conditions, all intersection movements will operate at Levels of Service "B" or better during both peak hours studied. The intersection will operate at an overall Level of Service "A" during both peak hours studied.

2020 Build Analysis

Under the Build conditions, all movements at the intersection of Newburg Road (SR 3020) & Werner Road/Gun Club Road will operate at or near No-Build Levels of Service during both peak hours studied. The intersection will continue to operate at an overall Level of Service "A" during both peak hours studied.

Car Site Driveway & Gun Club Road

2020 Build Analysis

Under the Build conditions, all movements at the Car Site Driveway along Gun Club Road will operate at a Level of Service "A" during both peak hours studied. The intersection will operate at an overall Level of Service "A" during both peak hours studied. The Car Site Driveway westbound 95th percentile queue length will be approximately one (1) vehicle or less, which can be accommodated within the layout of the site.

Truck Site Driveway & Gun Club Road

2020 Build Analysis

Under the Build conditions, all movements at the Truck Site Driveway along Gun Club Road will operate at a Level of Service "A" during both peak hours studied. The intersection will operate at an overall Level of Service "A" during both peak hours studied. The Truck Site Driveway westbound 95th percentile queue length will be approximately one (1) vehicle or less, which can be accommodated within the layout of the site.

X. SIGHT DISTANCE ANALYSIS

Sufficient sight distance must be provided at access points to allow drivers leaving the site to find adequate gaps in the traffic stream and complete desired maneuvers safely. A sight distance analysis was performed at the proposed site driveways. The sight distances at the proposed site driveways were calculated in accordance with PennDOT Form M-950S and compared to the PennDOT desirable sight distance standards defined in Title 67, Section 441.8(h)(1) of the PA Code. The sight distance analysis for the site driveways along Gun Club Road are provided below.

Table 12 – Sight Distance Analysis

Site Driveway	Direction	Desirable Sight Distance	Safe Stopping Sight Distance	Available Sight Distance	Meets PennDOT Standards
Car Site Driveway	Looking to the Left	440'	256'	460'	YES
	Looking to the Right	350'	269'	1,050'	YES
Truck Site Driveway	Looking to the Left	462'	219'	1,100'	YES

The proposed site driveways will provide sight distances in excess of the PennDOT sight distance standards.

XI. SUMMARY AND CONCLUSIONS

This Traffic Impact Assessment evaluated a proposal to develop a warehouse facility within the Township of Upper Nazareth, Northampton County, Pennsylvania. The findings of the Traffic Impact Assessment are summarized as follows:

1. The Applicant proposes to develop a 1,006,155 SF warehouse facility, to be constructed in one (1) phase.

2. Site access is proposed via one (1) full-movement driveway along Gun Club Road for passenger vehicles and one (1) driveway along Gun Club Road for trucks. The proposed truck driveway will prohibit egress left turns and will be converted to All-Way Stop Control.

3. Based upon the anticipated 2020 Build traffic conditions and in accordance with PennDOT Publication 46, Section 11.16, a dedicated left-turn lane along Bath Pike (SR 248) westbound is warranted at its intersection with Gun Club Road.

4. A 150' left-turn lane is proposed to be constructed along Bath Pike (SR 248) westbound at its intersection with Gun Club Road in association with the proposed development.

5. The installation of a traffic signal at the intersection of Bath Pike (SR 248) & Gun Club Road is not warranted per MUTCD standards.

6. Under the Build conditions with improvements, all movements at the intersection of Bath Pike (SR 248) & Gun Club Road will continue to operate at or near No-Build Levels of Service during both peak hours studied. The Bath Pike (SR 248) westbound left-turn 95th percentile queue length will be approximately one (1) vehicle or less during both peak hours studied, thus the proposed 150' storage length will be sufficient to accommodate the queue.

7. Under the Build conditions, all movements at the intersection of Bath Pike (SR 248) & Daniels Road (SR 946) will continue to operate at or near No-Build Levels of Service during both peak hours studied.

8. Under the Build conditions, all movements at the intersection of Newburg Road (SR 3020) & Werner Road/Gun Club Road will continue to operate at or near No-Build Levels of Service during both peak hours studied.

9. Under the Build conditions, all movements at the Car Site Driveway along Gun Club Road will operate at a Level of Service "A" during both peak hours studied. The Car Site Driveway westbound 95th percentile queue length will be approximately one (1) vehicle or less, which can be accommodated within the layout of the site.

10. Under the Build conditions, all movements at the Truck Site Driveway along Gun Club Road will operate at a Level of Service "A" during both peak hours studied. The Truck Site Driveway westbound 95th percentile queue length will be approximately one (1) vehicle or less, which can be accommodated within the layout of the site.

11. The available sight distances at the proposed site driveways exceed the PennDOT sight distance requirements.

PROJECT TADMOR

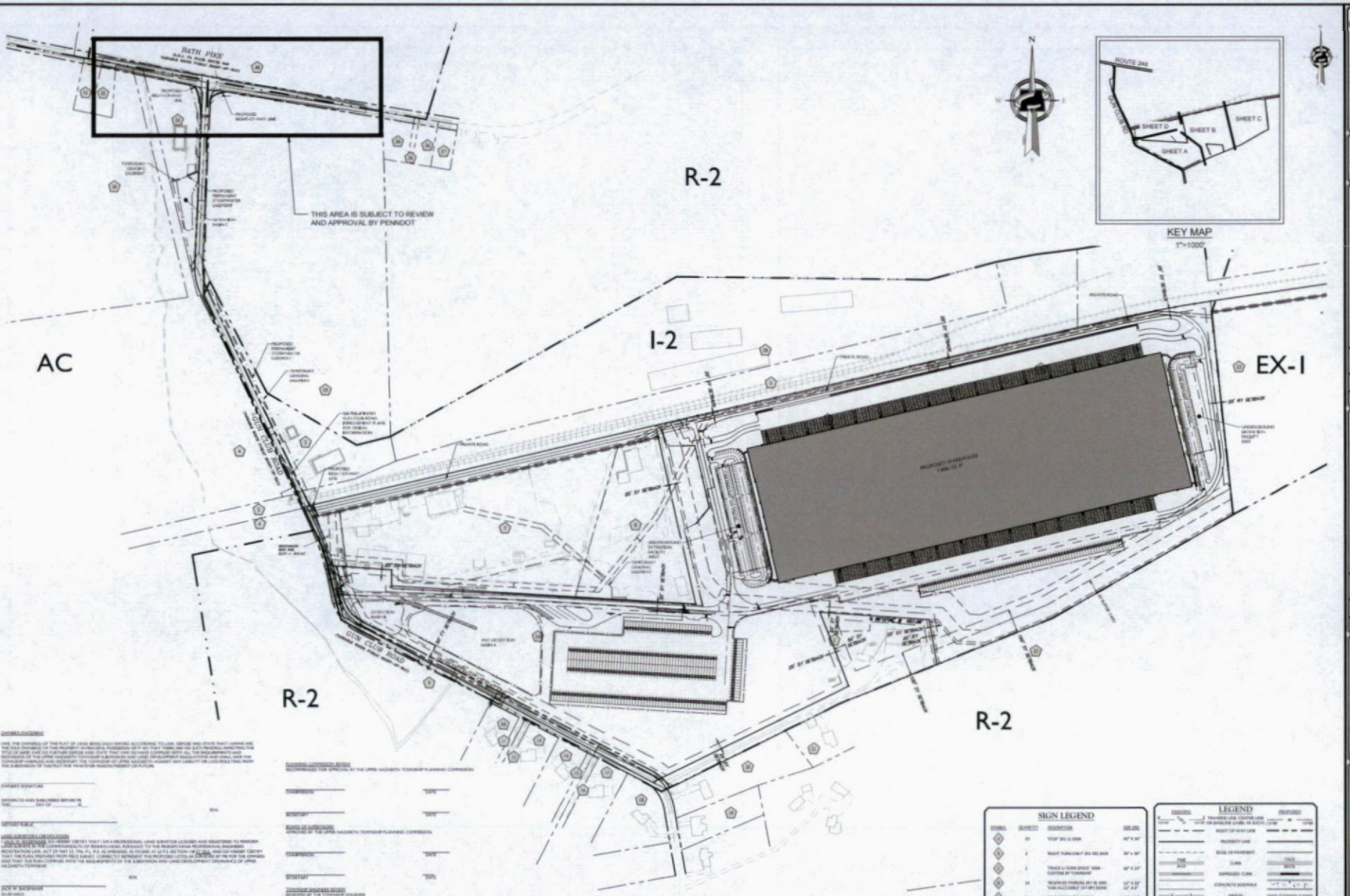
TRAFFIC IMPACT ASSESSMENT

APPENDIX A

TRAFFIC FIGURES

18000145B	Project Tadmor	**Figure 1**
	Upper Nazareth Township, Northampton County, Pennsylvania	**Site Location Map**

FIGURE 2



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C. RICHARD ROSEBERRY

PRELIMINARY LAND DEVELOPMENT PLAN

FOR

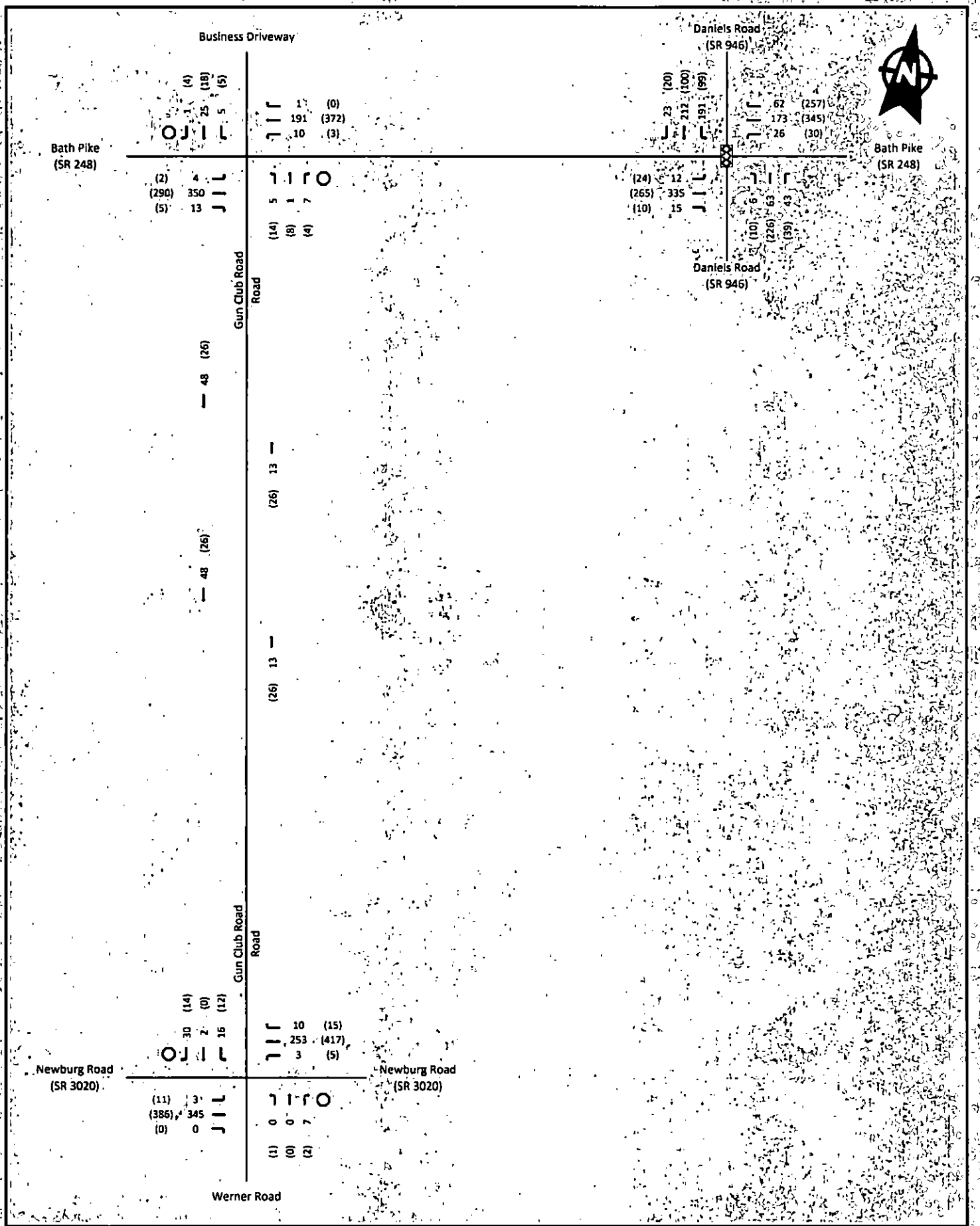
PROJECT TADMOR 2

APN #K6-21-1-0432, K7-14-1-0432, K7-13-1A-0432, & K6-21-1A-0432
UPPER NAZARETH TOWNSHIP
NORTHAMPTON COUNTY
PENNSYLVANIA

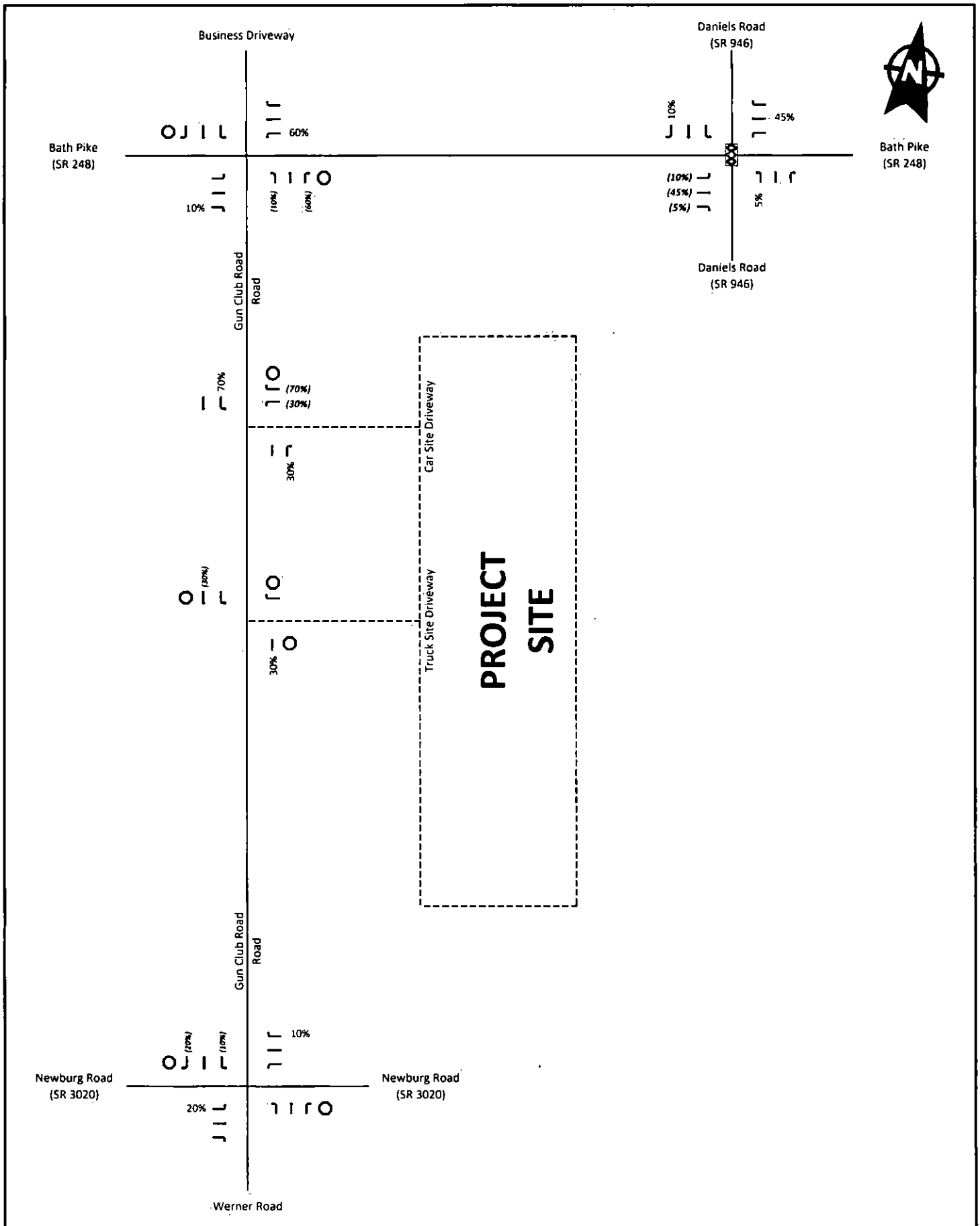
OVERALL DIMENSION PLAN

7 of 49

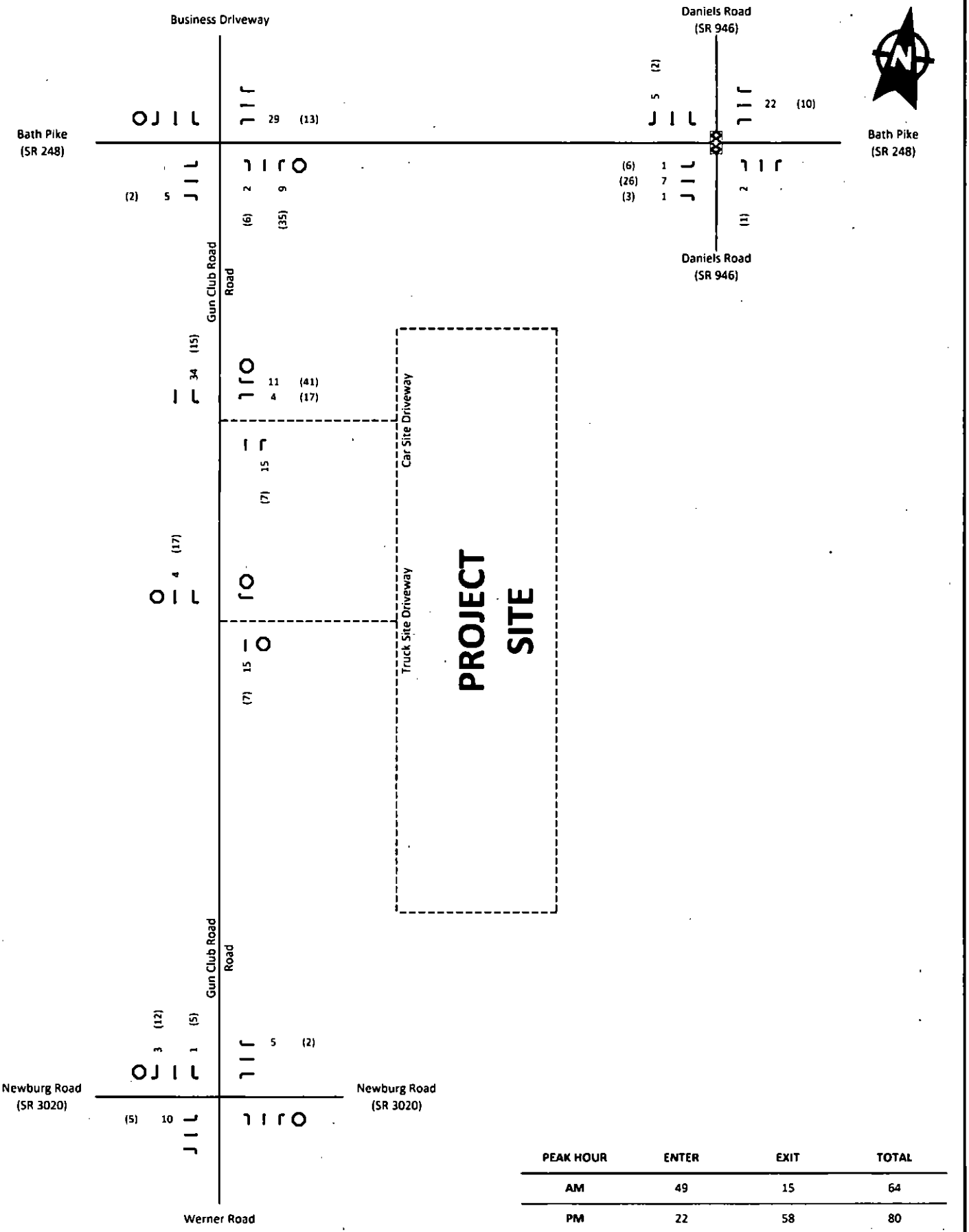
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION



MASER CONSULTING	Project Tadmor	Legend	Figure 3
	MC Project No. 18000145B	AM Peak Hour: ### / PM Peak Hour: (###) — Through Movement: — / Turning Movement: ⌐ / Signalized Intersection: ● / Stop Control: ⊥	Existing Conditions
	Upper Nazareth Township, Northampton County, PA		AM & PM Peak Hours

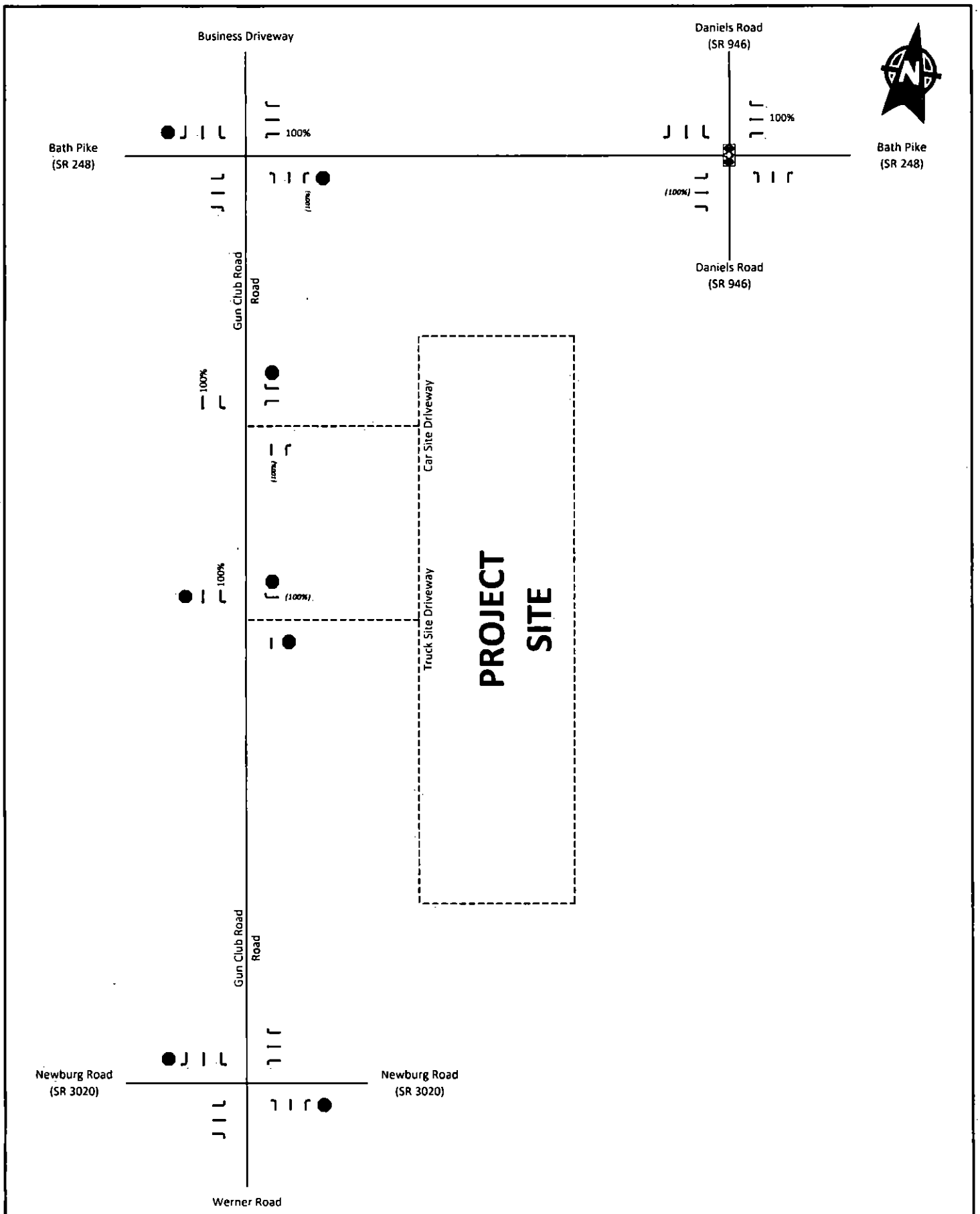


MASER CONSULTING	Project Tadmor	Legend	Figure 4
	MC Project No. 18000145B	AM Peak Hour: ###% PM Peak Hour: (###%) Through Movement: Turning Movement: Signalized Intersection: Stop Control:	Car Trip Distribution
	Upper Nazareth Township, Northampton County, PA		AM & PM Peak Hours

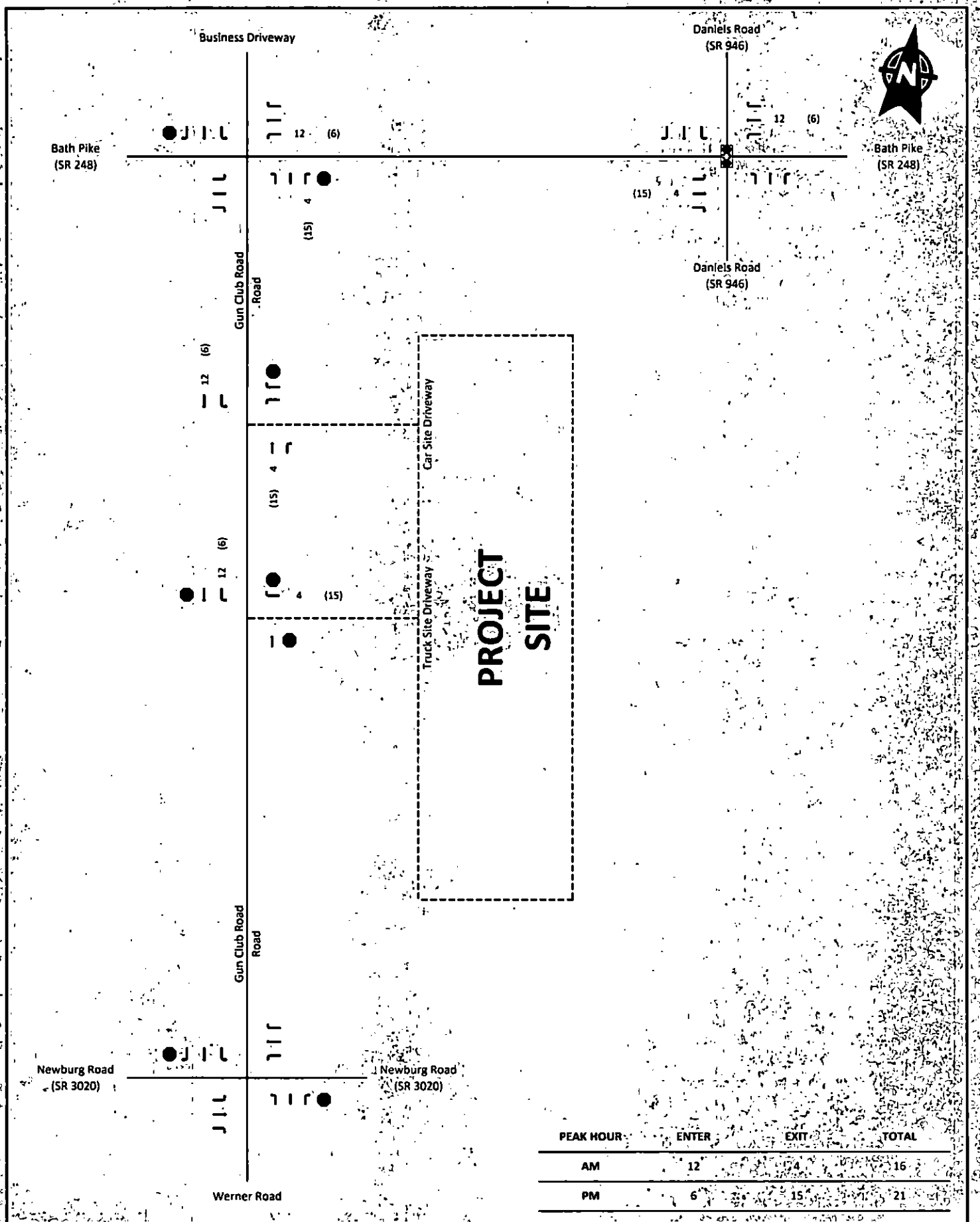


PEAK HOUR	ENTER	EXIT	TOTAL
AM	49	15	64
PM	22	58	80

MASER CONSULTING	Project Tadmor	Legend	Figure 5
	MC Project No. 18000145B	AM Peak Hour: ### PM Peak Hour: (###) Through Movement: Turning Movement: Signalized Intersection: Stop Control:	Car Site Generated Trips
	Upper Nazareth Township, Northampton County, PA		AM & PM Peak Hours



MASER CONSULTING	Project Tadmor	Legend	Figure 6
	MC Project No. 18000145B	AM Peak Hour: ###% Through Movement: PM Peak Hour: (###%) Turning Movement: Signalized Intersection: Stop Control:	Truck Trip Distribution
	Upper Nazareth Township, Northampton County, PA		AM & PM Peak Hours



PEAK HOUR	ENTER	EXIT	TOTAL
AM	12	4	16
PM	6	15	21

MASER CONSULTING

Project Tadmor

MC Project No. 18000145B

Upper Nazareth Township, Northampton County, PA

Legend

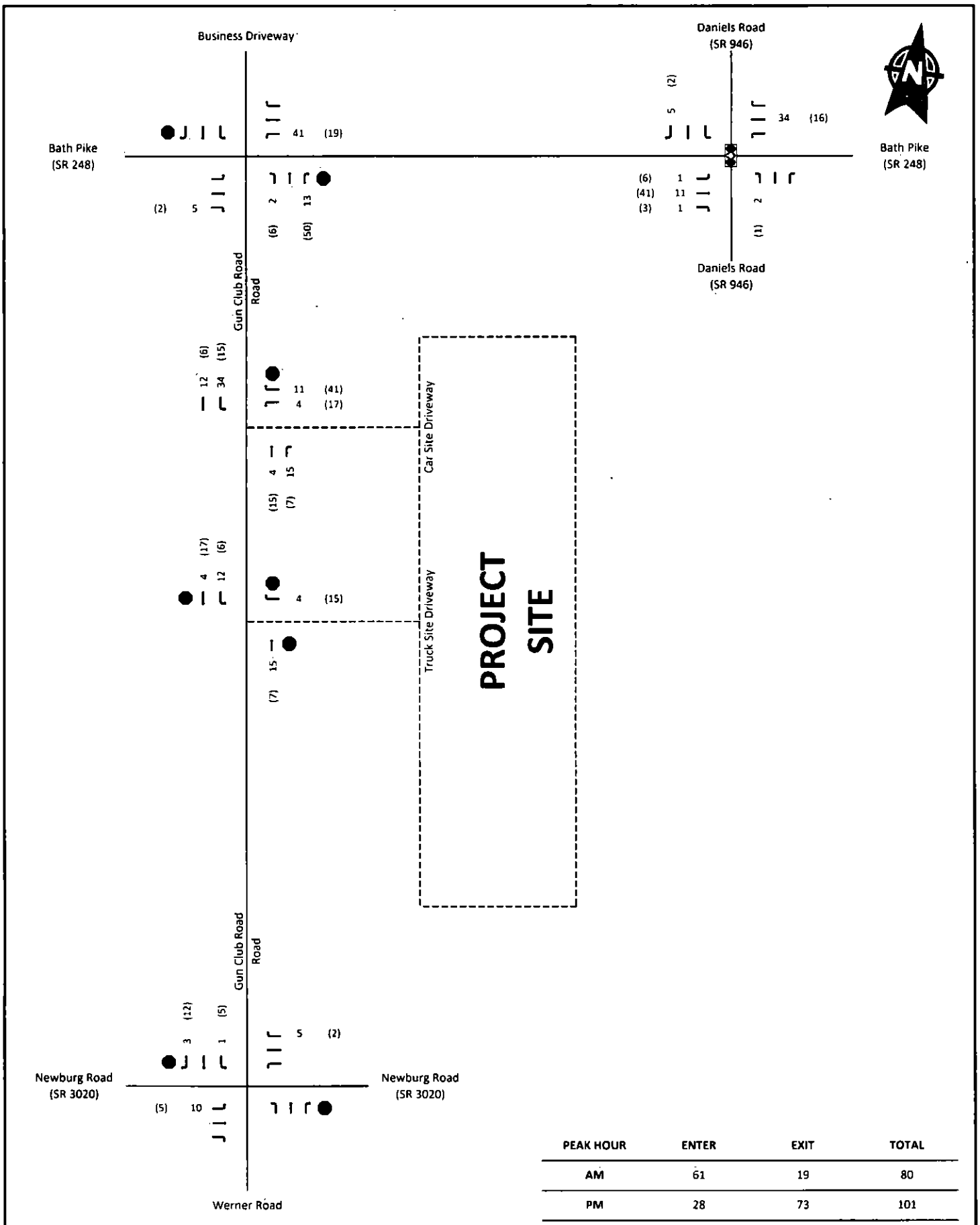
AM Peak Hour: ###
PM Peak Hour: (###)

Through Movement:
Turning Movement:
Signalized Intersection:
Stop Control:

Figure 7

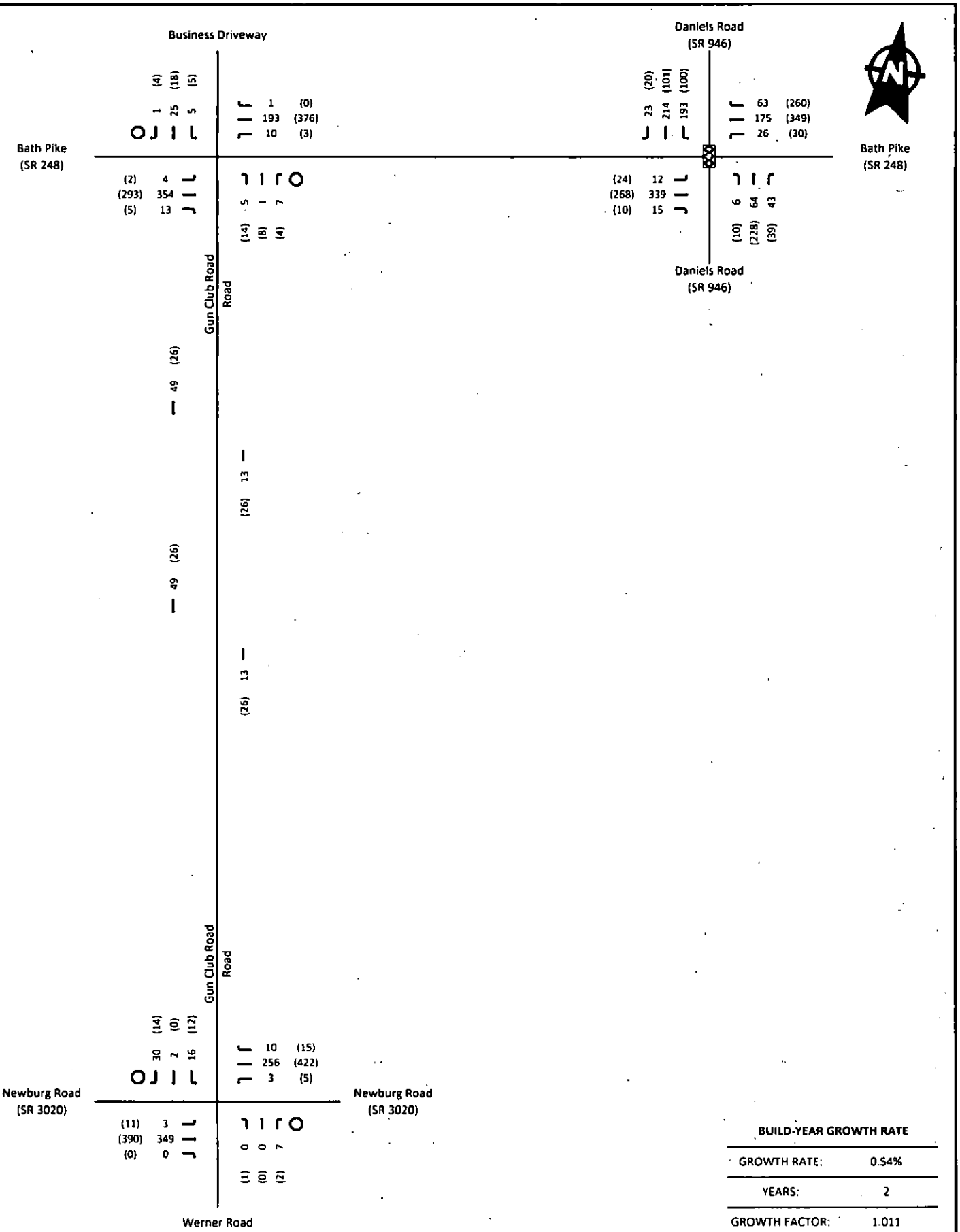
Truck Site Generated Trips

AM & PM Peak Hours



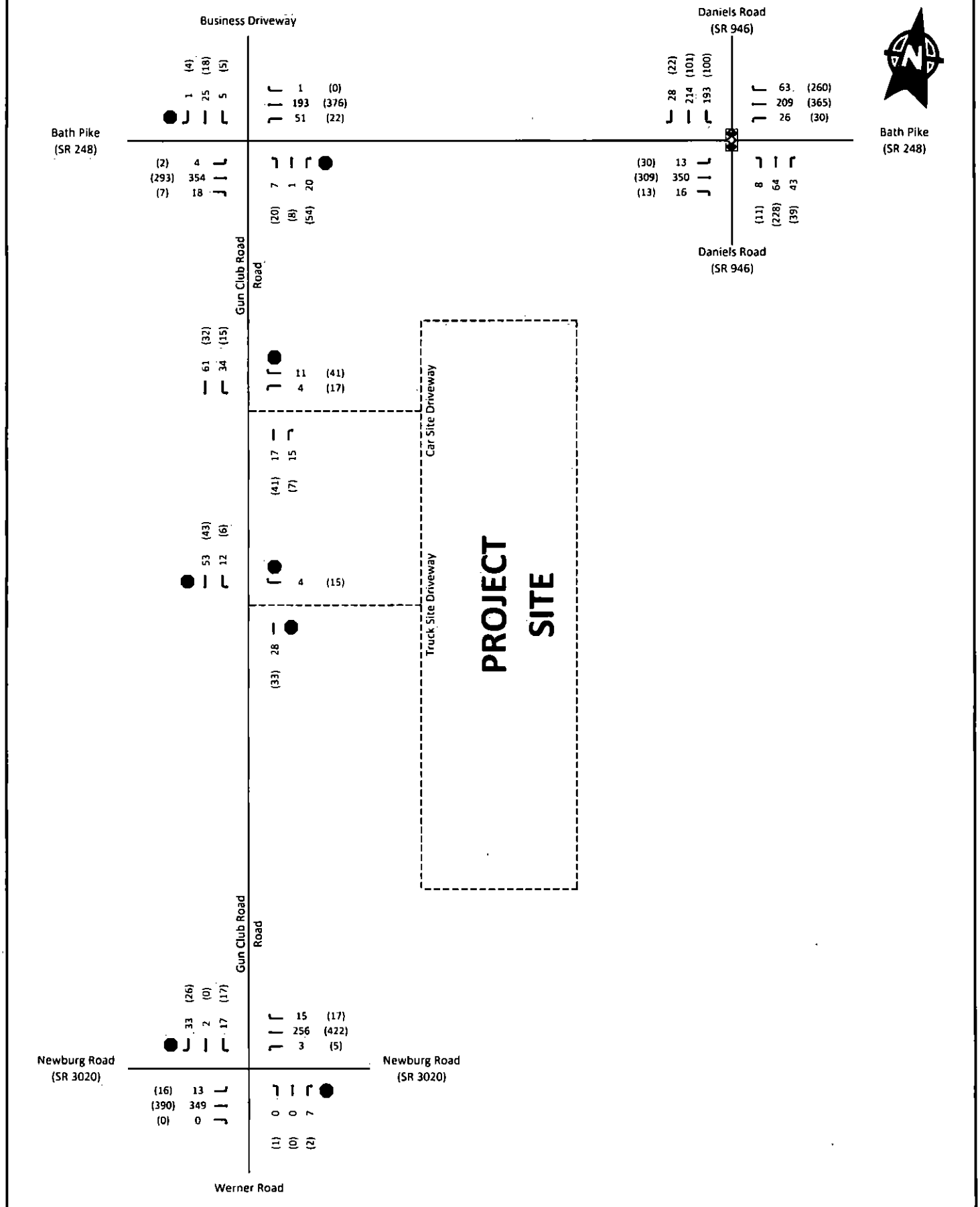
PEAK HOUR	ENTER	EXIT	TOTAL
AM	61	19	80
PM	28	73	101

MASER CONSULTING	Project Tadmor	Legend	Figure 8
	MC Project No. 18000145B	AM Peak Hour: ### Through Movement: PM Peak Hour: (###) Turning Movement: Signalized Intersection: Stop Control:	Total Site Generated Trips
	Upper Nazareth Township, Northampton County, PA		AM & PM Peak Hours

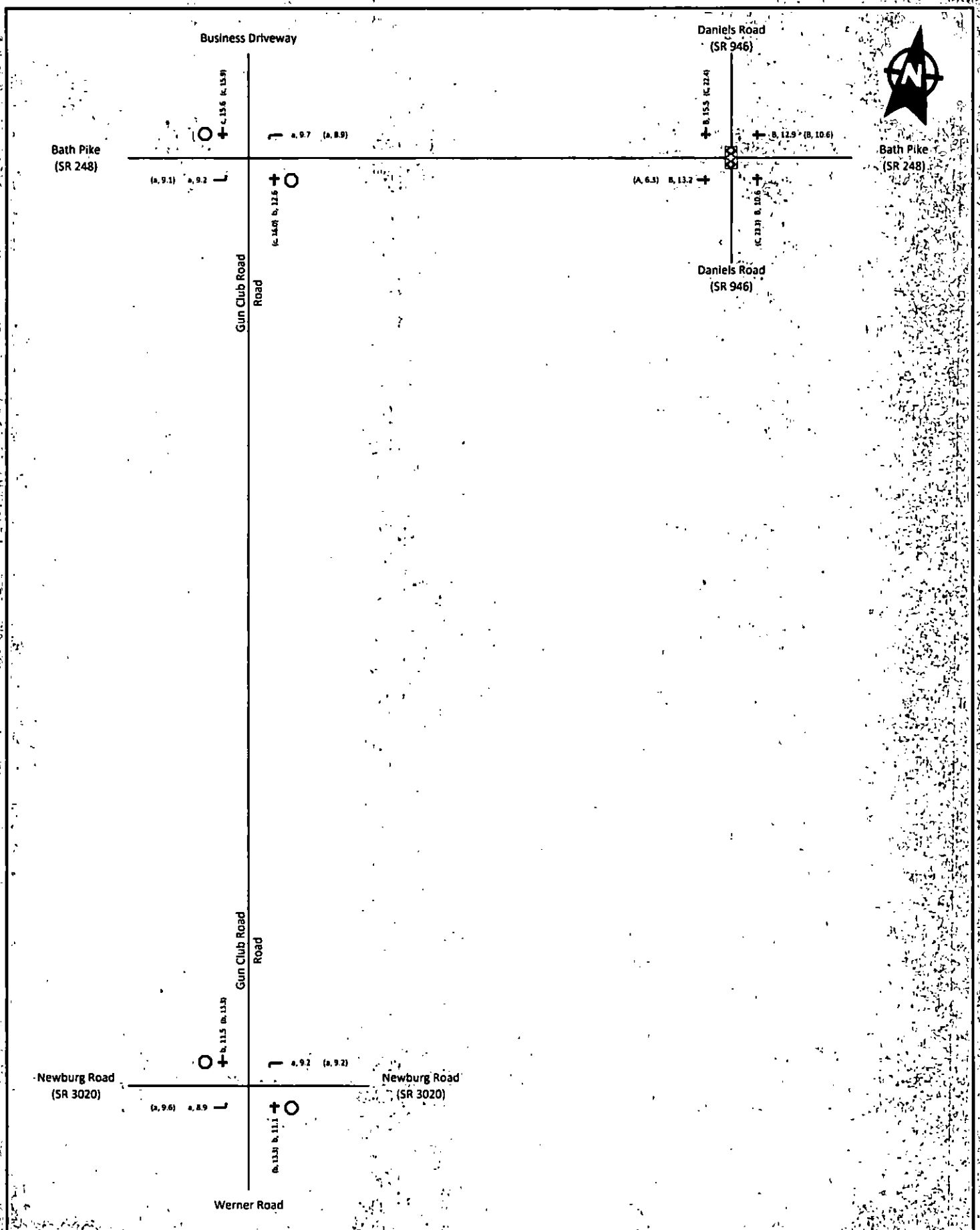


BUILD-YEAR GROWTH RATE	
GROWTH RATE:	0.54%
YEARS:	2
GROWTH FACTOR:	1.011

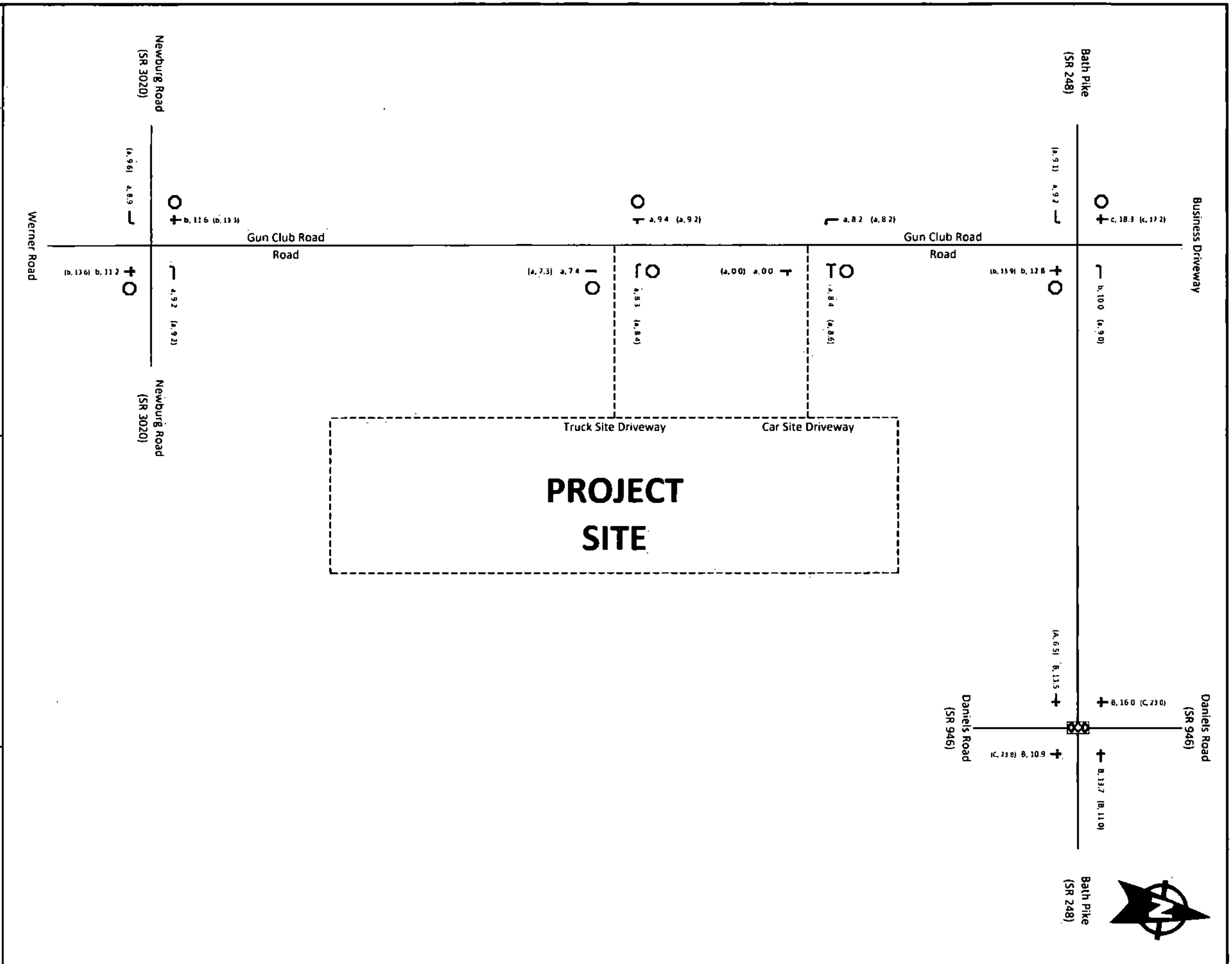
MASER CONSULTING	Project Tadmor	Legend	Figure 9
	MC Project No. 18000145B	AM Peak Hour: ### PM Peak Hour: (###) Through Movement: Turning Movement: Signalized Intersection: Stop Control:	2020 No-Build Conditions
	Upper Nazareth Township, Northampton County, PA		AM & PM Peak Hours



MASER Consulting	Project Tadmor	Legend	Figure 10
	MC Project No. 18000145B	AM Peak Hour: ### Through Movement: — PM Peak Hour: (###) Turning Movement: ⌐ Signalized Intersection: ■ Stop Control: ●	2020 Build Conditions
	Upper Nazareth Township, Northampton County, PA		AM & PM Peak Hours



MASER CONSULTING	Project Tadmor	Legend	Figure 11
	MC Project No. 18000145B	AM LOS: @ Through Movement: AM Delay: ### Turning Movement: PM LOS: (@) Signalized Intersection: PM Delay: (###) Stop Control:	2020 No-Build Levels of Service
	Upper Nazareth Township, Northampton County, PA		AM & PM Peak Hours



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Project Tadmor

MC Project No. 18000145B

Upper Nazareth Township, Northampton County, PA

Legend

AM LOS: @ Through Movement:
AM Delay: ### Turning Movement:
PM LOS: (@) Signalized Intersection:
PM Delay: (###) Stop Control:

Figure 12

2020 Build Levels of Service

AM & PM Peak Hours

PROJECT TADMOR

TRAFFIC IMPACT ASSESSMENT

APPENDIX B

PENNDOT SCOPING MATERIALS

TRANSPORTATION IMPACT STUDY (TIS)
SCOPING MEETING APPLICATION

Scoping Meeting Date: May 7, 2018 at 10:00 AM

Applicant: JVI, LLC

Applicant's Consultant: Maser Consulting P.A.

Applicant's Primary Contact: Jeffrey M. Fiore (Maser Consulting P.A.)

(Attach a list of meeting attendees along with phone numbers and email addresses)

(1) LOCATION OF PROPOSED DEVELOPMENT: (Attach location map if available)

PennDOT Engineering Dist.: 5 0 County: Northampton

Municipality: Upper Nazareth Township

State Route(s) (SR): 0248

Segment(s): 0340 Offset(s): 84

(2) DESCRIPTION OF PROPOSED DEVELOPMENT: (Attach site plan if available)

Proposed site access: Three (3) full-movement driveways along Gun Club Road.

Proposed land uses: 1,092,000 SF of Warehouse/Industrial

Community linkages *(access to neighboring properties, cross easements, pedestrian and transit accommodations)*: _____

(3) DEVELOPMENT SCHEDULE AND STAGING:

Anticipated Opening Date: 2020

Full Buildout Date: 2020 or after

Describe Proposed Development Schedule/Staging:

First Phase: 992,000 SF industrial building, parking and site facilities, and access.

Subsequent Phase(s): The remaining 100,000 SF of the industrial development will be constructed.

(4) TRIP GENERATION: (Use the most recent edition of "Institute of Transportation Engineers (ITE) Trip Generation," unless the Department approves another source. Non-ITE methods must be fully justified based on surveys of multiple sites of the same land use type and size.)

Trip generation for the proposed development will be based on:

X ITE Trip Generation Manual.
(List proposed development land uses and associated ITE Land Use Codes)

____ Other independent surveys.
(Attach justification for non-ITE methods)

List land development and trip generation information, as appropriate. If necessary, attach additional sheets to indicate additional land uses or development phases.

Land Use	Size	Daily Trips	Peak Hour Trips	
			Inbound	Outbound
(1) ITE LUC 154 - High-Cube Transload & Short-Term Warehouse	1,092,000 SF	Weekday: 1,529	AM: 67	20
(2)		Weekend: 1,026	PM: 31	78
(3)			SAT: 66	65
(4)				
(5)				
(6)				
	Totals	-	-	-

(5) ESTIMATED DAILY TRIP GENERATION/DRIVEWAY CLASSIFICATION:

(a) Estimated Daily Trip Generation of Proposed Development -- Assuming One Access Point and Full Build out/Occupancy of Entire Tract: trips/day 1,529 trips/day

(b) Driveway Classification Based on Trip Generation and One Access Point:

Medium Volume: 765 vehicles/day

High Volume: N/A

(6) TRANSPORTATION IMPACT STUDY REQUIRED? TBD

_____ No

_____ Yes, based on: _____ 3,000 or more vehicle trips/day generated

_____ During any one-hour time period, 100 or more new (added) vehicle trips generated entering or 100 or more new (added) vehicle trips generated exiting development

_____ Other considerations as described below:

(7) TRAFFIC IMPACT ASSESSMENT REQUIRED? _____ No ___X___ Yes

(If a TIS is required, the following sections of this checklist will be discussed at the TIS Scoping Meeting. The applicant may provide preliminary information.)

(8) TIS STUDY AREA: (Describe; attach map and/or diagram)

Roadway and Study Intersections Gun Club Road & SR 0248

Land use context (Refer to Smart Transportation Handbook) TBD

Known Congestion Areas TBD

Known Safety Concerns TBD

Known Environmental Constraints TBD

Pedestrian/Bike Review (Community Centers, Parks, Schools, etc.) TBD

Transit Review (Current routes/stops) TBD

(9) STUDY AREA TYPE: Urban X Rural _____

(10) TIS ANALYSIS PERIODS AND TIMES:

(List periods and times. Normal analysis periods are existing conditions, 5 years in the future without development, and 5 years in the future with development. Normal analysis times for each period are the AM peak hour, the PM peak hour, and the peak hour of site-generated traffic.)

TBD

(11) TRAFFIC ADJUSTMENT FACTORS:

(a) Seasonal Adjustment: (Identify counts requiring adjustment and methodology)

TBD

(b) Annual Base Traffic Growth: _____ %/yr. Source: TBD by PennDOT

(c) Pass-By Trips: (Attach justification where required)

Land Use	%	Source
N/A		

(d) Captured Trips for Multi-Use Sites:
(List % and manner of application. Attach justification where required.)

N/A

(e) Modal Split Reductions

N/A

(f) Other Reductions

N/A

(12) OTHER PROJECTS WITHIN STUDY AREA TO BE ADDED TO BASE TRAFFIC:
(Identify proposed developments with issued permits that need to be included.)

TBD

(13) TRIP DISTRIBUTION AND ASSIGNMENT:
(Describe; explain/justify; attach diagram and related information.)

TBD

(14) Approval of Data Collection Elements and Methodologies :

Location	Period	Type
Gun Club Road & SR 0248	TBD	Manual

(15) CAPACITY/LOS ANALYSIS:

Location	Period	Type
Gun Club Road & SR 0248	TBD	HCM 6th

(16) ROADWAY IMPROVEMENTS/MODIFICATIONS BY OTHERS TO BE INCLUDED:
(Projects programmed for construction or other developments with issued permits.)

TBD

(17) OTHER NEEDED ANALYSES:

(a) Sight Distance Analysis:
(Required for all site access driveways; identify other locations)

N/A

(b) Signal Warrant Analysis:
(Identify locations)

TBD

(a) Required Signal Phasing/Timing Modifications:
(Determine for all signalized intersections; specify methodology.)

N/A

(d) Traffic Signal Corridor/Network Analysis:
(Identify locations/methodology)

N/A

(e) Analysis of the Need for Turning Lanes:
(Identify locations/methodology)

TBD

(f) Turning Lane Lengths:
(Identify methodology to be used)

PennDOT / HCM 6th Ed.

(g) Left Turn Signal Phasing Analysis:
(Identify locations/methodology)

N/A

(h) Queuing Analysis:
(Identify locations/methodology)

TBD

(i) Gap Studies:
(Identify locations/methodology)

N/A

(j) Crash Analysis:
(Identify locations)

N/A

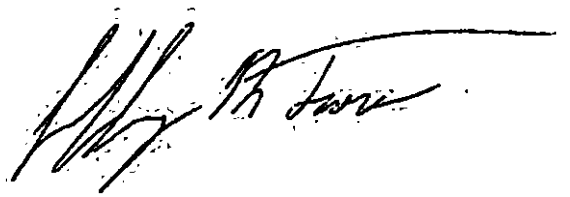
(k) Weaving Analysis:
(Identify locations)

N/A

(l) Other Required Studies:
(Specify locations/methodology)

N/A

(18) ADDITIONAL COMMENTS OR RECOMMENDATIONS RELATIVE TO THE SCOPE OF THE TIS:



Signature of Applicant's Engineer — Date: 5/3/18

Signature of District Traffic PennDOT Representative — Date: _____

Signature of District Permit PennDOT Representative (if present) — Date: _____

Signature of Municipal Traffic Representative — Date: _____

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MINUTES OF MEETING

By: Jeffrey Fiore

Meeting Date: May 7, 2018

Place: Project Site
Gun Club Road
Upper Nazareth Township, Northampton County, PA

Re: PennDOT Scoping Meeting
Project Tadmor-Proposed High-Cube Warehouse Development
Upper Nazareth Township, Northampton County, PA
MC PROJECT NO. 18000145A

Attendees: Melissa Mauphin, PennDOT-Region 5
James Dimmerling, Dimmerling Consulting (PennDOT Traffic Consultant)
E.J. Mentry (Township Administrator)
Sean Dooley, KCE (Township Engineer)
Jim Vozar, JVI, LLC
Nicole Galio, Maser Consulting
Jeffrey Fiore, Maser Consulting

On May 7, 2018, a meeting to discuss the proposed High-Cube Warehouse facility project in the Township of Upper Nazareth, Northampton County, Pennsylvania was held at the project site with the above attendees.

Regarding the above referenced application, the following is the summary of discussion:

- Jeffrey Fiore gave an overview of the project. The project will consist of a 1,092,000 SF high-cube warehouse facility, with an anticipated build year of 2020. Access is proposed via three full movement driveways along Gun Club Road. It was clarified that no access is proposed to the rear of the site to SR 0946.

- Although there is no direct site access to any PennDOT roadway, it was stated that roadway improvements along Gun Club Road from the site access northward to the its intersection with SR 0248 (Bath Pike), would be constructed to accommodate the truck traffic anticipated with the project. Therefore, PennDOT approval would be required for the intersection improvements. It is anticipated that a minimum, a left turn lane on the westbound approach of SR 0248 (Bath Pike) would be required. Turn lane warrants would be provided as part of the Traffic Impact Assessment. Also, the intersection will be reviewed to determine if the intersection warrants a traffic signal.

- It was recommended by the Township that all the anticipated widening of SR 0248 (Bath Pike) occur on the south side of the roadway. It was also requested that turning templates be provided for eastbound right turn and westbound left turn movements along SR 0248 (Bath Pike) and the northbound left and right turn movements on the Gun Club Road approach.

- Jeffrey Fiore reviewed the scoping meeting submission that was provided to PennDOT and the Township. Melissa Mauphin stated that only a Traffic Impact Assessment would be required for the project and the scope would be limited to the intersection of SR 0248 (Bath Pike) with Gun Club Road. It was stated that the Township had previously requested the intersections of Gun Club Road with Newburgh Road and SR 0248 (Bath Pike) with SR 0946 be included within the Traffic Impact Assessment. It was agreed that these two additional intersections would be included within Traffic Impact Assessment for informational purposes only. Only a full build out analysis would be required and an analysis for 5 years beyond the full build out of the site would not be required.

- It was agreed that the design year to be utilized for the TIA would be 2020, utilizing the 0.54% annual growth rate provided by PennDOT.

- It was recommended that traffic counts be conducted later in the month of May during the weekday morning (7-9AM) and evening (4-6PM) peak periods prior to schools closing for the summer.

- It was stated that there are no other planned projects within the area that would need to be included within the Traffic Impact Assessment.

- It was recommended a concept plan for the intersection improvements at SR 0248 (Bath Pike) with Gun Club Road be provided to PennDOT and the Township for review and comment prior to a full set of design plans being prepared.

- It was also recommended that the trip distribution and site generated traffic volume figures be provided to James Dimmerling for review prior to proceeding with the full Traffic Impact Assesment.

- It was stated that should a separate left turn lane be required on the northbound Gun Club Road approach with its intersection at SR 0248 (Bath Pike), a concrete median should be provided between the left turn lane and through/right turn lane.

Please contact our office with any questions or comments regarding these minutes.

JMF
cc: All Attendees
Rick Roseberry, Maser Consulting
Nick Aiello, Maser Consulting

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PROJECT TADMOR

TRAFFIC IMPACT ASSESSMENT

APPENDIX C

EXISTING DATA

Route 248/Gun Club Rd - TMC
Tue May 22, 2018
Full Length (6AM-7PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)
All Movements
ID: 528446, Location: 40.730329, -75.363542

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road, Coatesville, PA, 19320, US

Leg	Route 248						Route 248						Gun Club Road						Business Driveway						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2018-05-22 6:00AM	0	53	0	0	53	0	4	22	0	0	26	0	0	0	1	0	1	0	3	0	1	0	4	0	84
6:15AM	0	67	1	0	68	0	2	21	0	0	23	0	0	0	1	0	1	0	1	0	0	0	1	0	93
6:30AM	0	89	4	0	93	0	2	30	2	0	34	0	0	0	1	0	1	0	1	0	4	0	5	0	133
6:45AM	0	81	2	0	83	0	4	31	0	0	35	0	0	0	3	0	3	0	2	0	1	0	3	0	124
Hourly Total	0	290	7	0	297	0	12	104	2	0	118	0	0	0	6	0	6	0	7	0	6	0	13	0	434
7:00AM	2	73	4	0	79	0	2	49	0	0	51	0	1	0	0	0	1	0	0	0	1	0	1	0	132
7:15AM	0	83	3	0	86	0	4	29	0	0	33	0	0	0	3	0	3	0	0	0	0	0	0	0	122
7:30AM	3	94	3	0	100	0	4	47	0	0	51	0	0	0	3	0	3	0	1	0	0	0	1	0	155
7:45AM	1	84	7	0	92	0	1	53	1	0	55	0	1	0	1	0	2	0	1	0	0	0	1	0	150
Hourly Total	6	334	17	0	357	0	11	178	1	0	190	0	2	0	7	0	9	0	2	0	1	0	3	0	559
8:00AM	0	69	0	0	69	0	1	53	0	0	54	0	4	0	0	0	4	0	3	0	1	0	4	0	131
8:15AM	0	50	3	0	53	0	3	44	0	0	47	0	0	0	0	0	0	0	0	0	2	0	2	0	102
8:30AM	0	58	1	0	59	0	0	41	0	0	41	0	2	1	1	0	4	0	2	0	0	0	2	0	106
8:45AM	1	52	3	0	56	0	0	41	0	0	41	0	0	0	1	0	1	0	0	0	0	0	0	0	98
Hourly Total	1	229	7	0	237	0	4	179	0	0	183	0	6	1	2	0	9	0	5	0	3	0	8	0	437
9:00AM	0	50	0	0	50	0	2	29	1	0	32	0	1	0	0	0	1	0	0	0	0	0	0	0	83
9:15AM	0	50	3	0	53	0	0	28	3	0	31	0	2	0	1	0	3	0	2	0	0	0	2	0	89
9:30AM	0	49	1	0	50	0	2	44	0	0	46	0	2	0	2	0	4	0	1	0	0	0	1	0	101
9:45AM	1	55	1	0	57	0	1	37	1	0	39	0	1	0	0	0	1	0	1	0	0	0	1	0	98
Hourly Total	1	204	5	0	210	0	5	138	5	0	148	0	6	0	3	0	9	0	4	0	0	0	4	0	371
10:00AM	1	44	1	0	46	0	1	47	0	0	48	0	3	0	0	0	3	0	0	1	0	0	1	0	98
10:15AM	0	44	1	0	45	0	0	29	3	0	32	0	1	0	0	0	1	0	0	0	0	0	0	0	78
10:30AM	1	55	1	0	57	0	0	33	1	0	34	0	0	0	1	0	1	0	0	0	0	0	0	0	92
10:45AM	0	46	0	0	46	0	1	38	0	0	39	0	1	0	0	0	1	0	1	0	1	0	2	0	88
Hourly Total	2	189	3	0	194	0	2	147	4	0	153	0	5	0	1	0	6	0	1	1	1	0	3	0	356
11:00AM	1	53	1	0	55	0	1	34	1	0	36	0	0	1	1	0	2	0	3	1	0	0	5	0	98
11:15AM	0	47	0	0	47	0	1	41	0	0	42	0	1	0	1	0	2	0	0	0	2	0	2	0	93
11:30AM	1	43	2	0	46	0	0	41	0	0	41	0	2	0	1	0	3	0	0	0	0	0	0	0	90
11:45AM	0	51	3	0	54	0	0	54	3	0	57	0	1	0	3	0	4	0	1	1	0	0	2	0	117
Hourly Total	2	194	6	0	202	0	2	170	4	0	176	0	4	1	6	0	11	0	5	2	2	0	9	0	398
12:00PM	1	36	0	0	37	0	2	41	0	0	43	0	0	0	0	0	0	0	1	1	0	0	2	0	82
12:15PM	1	43	0	0	44	0	1	44	1	0	46	0	2	1	4	0	7	0	2	0	0	0	2	0	99
12:30PM	1	40	1	0	42	0	4	42	1	1	48	0	0	0	2	0	2	0	2	0	3	0	5	0	97
12:45PM	1	52	1	0	54	0	0	45	3	0	48	0	0	0	2	0	2	0	1	0	1	0	2	0	106
Hourly Total	4	171	2	0	177	0	7	172	5	1	185	0	2	1	8	0	11	0	6	1	4	0	11	0	384
1:00PM	3	42	1	0	46	0	2	53	0	0	55	0	1	0	0	0	1	0	1	0	0	0	1	0	103
1:15PM	2	50	1	0	53	0	6	45	0	1	52	0	0	0	5	0	5	0	2	0	1	0	3	0	113
1:30PM	0	56	3	1	60	0	0	50	0	0	50	0	3	0	4	0	7	0	1	0	1	0	2	0	119
1:45PM	0	60	4	0	64	0	2	61	3	0	66	0	1	0	0	0	1	0	2	0	0	0	2	0	133
Hourly Total	5	208	9	1	223	0	10	209	3	1	223	0	5	0	9	0	14	0	6	0	2	0	8	0	468
2:00PM	3	49	0	0	52	0	1	62	0	0	63	0	1	0	3	0	4	0	3	1	3	0	7	0	126
2:15PM	0	55	0	0	55	0	0	68	0	0	68	0	2	0	5	0	7	0	1	0	1	0	2	0	132
2:30PM	1	47	3	0	51	0	3	64	1	0	68	0	3	0	5	0	8	0	1	0	0	0	1	0	128
2:45PM	0	66	0	0	66	0	0	50	0	0	50	0	3	0	5	0	8	0	1	0	3	0	4	0	128
Hourly Total	4	217	3	0	224	0	4	244	1	0	249	0	9	0	18	0	27	0	6	1	7	0	14	0	514
3:00PM	0	45	4	0	49	0	2	96	1	0	99	0	2	0	1	0	3	0	0	0	0	0	0	0	151
3:15PM	0	57	1	0	58	0	0	73	0	0	73	0	1	0	0	0	1	0	1	0	0	0	1	0	133
3:30PM	0	54	0	0	54	0	4	82	1	0	87	0	6	0	2	0	8	0	0	0	0	0	0	0	149
3:45PM	0	66	1	0	67	0	0	83	0	0	83	0	3	0	7	0	10	0	1	0	0	0	1	0	161
Hourly Total	0	222	6	0	228	0	6	334	2	0	342	0	12	0	10	0	22	0	2	0	0	0	2	0	594
4:00PM	0	73	1	0	74	0	1	82	5	0	88	0	3	0	4	0	7	0	0	0	1	0	1	0	170
4:15PM	0	68	1	0	69	0	1	101	0	0	102	0	2	0	2	0	4	0	2	0	2	0	4	0	179
4:30PM	2	65	0	0	67	0	0	83	0	0	83	0	3	0	0	0	3	0	2	0	1	0	3	0	156
4:45PM	0	56	3	0	59	0	2	95	0	0	97	0	5	0	1	0	6	0	1	0	0	0	1	0	163
Hourly Total	2	262	5	0	269	0	4	361	5	0	370	0	13	0	7	0	20	0	5	0	4	0	9	0	668
5:00PM	0	82	1	0	83	0	0	92	0	0	92	0	4	1	1	0	6	0	0	1	1	0	2	0	183
5:15PM	2	71	1	0	74	0	1	85	0	0	86	0	2	0	4	0	6	0	0	0	0	0	0	0	166
5:30PM	1	58	0	0	59	0	2	92	0	0	94	0	1	0	0	0	1	0	1	0	1	0	2	0	156
5:45PM	0	71	1	0	72	0	1	62	0	0	63	0	4	0	1	0	5	0	1	0	0	0	1	0	141
Hourly Total	3	282	3	0	288	0	4	331	0	0	335	0	11	1	6	0	18	0	2	1	2	0	5	0	646
6:00PM	1	48	4	0	53	0	0	63	0	0	63	0	1	1	1	0	3	0	0	0	0	0	0	0	119
6:15PM	0	50	0	0	50	0	0	56	0	0	56	0	0	0	1	0	1	0	1	0	0	0	1	0	108
6:30PM	0	47	0	0	47	0	1	41	0	0	42	0	0	0	0	0	0	0	0	0	1	0	1	0	90
6:45PM	0	34	1	0	35	0	0	41	0	0	41	0	1	0	0	0	1	0	0	0	0	0	0	0	77
Hourly Total	1	179	5	0	185	0	1	201	0	0	202	0	2	1	2	0	5	0	1	0	1	0	2	0	394

Leg	Route 248						Route 248						Gun Club Road						Business Driveway						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
Total	31	2981	78	1	3091	0	72	2768	32	2	2874	0	77	5	85	0	167	0	52	6	33	0	91	0	6223
% Approach	1.0%	96.4%	2.5%	0%	-	-	2.5%	96.3%	1.1%	0.1%	-	-	46.1%	3.0%	50.9%	0%	-	-	57.1%	6.6%	36.3%	0%	-	-	-
% Total	0.5%	47.9%	1.3%	0%	49.7%	-	1.2%	44.5%	0.5%	0%	46.2%	-	1.2%	0.1%	1.4%	0%	2.7%	-	0.8%	0.1%	0.5%	0%	1.5%	-	-
Lights	22	2838	67	1	2928	-	52	2616	23	0	2691	-	68	5	62	0	135	-	41	6	29	0	76	-	5830
% Lights	71.0%	95.2%	85.9%	100%	94.7%	-	72.2%	94.5%	71.9%	0%	93.6%	-	88.3%	100%	72.9%	0%	80.8%	-	78.8%	100%	87.9%	0%	83.5%	-	93.7%
Articulated Trucks and Single-Unit Trucks	9	125	9	0	143	-	16	128	9	2	155	-	9	0	20	0	29	-	11	0	4	0	15	-	342
% Articulated Trucks and Single-Unit Trucks	29.0%	4.2%	11.5%	0%	4.6%	-	22.2%	4.6%	28.1%	100%	5.4%	-	11.7%	0%	23.5%	0%	17.4%	-	21.2%	0%	12.1%	0%	16.5%	-	5.5%
Buses	0	18	2	0	20	-	4	24	0	0	28	-	0	0	3	0	3	-	0	0	0	0	0	-	51
% Buses	0%	0.6%	2.6%	0%	0.6%	-	5.6%	0.9%	0%	0%	1.0%	-	0%	0%	3.5%	0%	1.8%	-	0%	0%	0%	0%	0%	-	0.8%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Route 248/Gun Club Rd - TMC
Tue May 22, 2018
Forced Peak (7:15AM - 8:15AM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)
All Movements
ID: 528446, Location: 40.730329, -75.363542

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road, Coatesville, PA, 19320, US

Leg / Direction	Route 248 Eastbound						Route 248 Westbound						Gun Club Road Northbound						Business Driveway Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2018-05-22 7:15AM	0	83	3	0	86	0	4	29	0	0	33	0	0	0	3	0	3	0	0	0	0	0	0	0	122
7:30AM	3	94	3	0	100	0	4	47	0	0	51	0	0	0	3	0	3	0	1	0	0	0	1	0	155
7:45AM	1	84	7	0	92	0	1	53	1	0	55	0	1	0	1	0	2	0	1	0	0	0	1	0	150
8:00AM	0	69	0	0	69	0	1	53	0	0	54	0	4	0	0	0	4	0	3	0	1	0	4	0	131
Total	4	330	13	0	347	0	10	182	1	0	193	0	5	0	7	0	12	0	5	0	1	0	6	0	558
% Approach	1.2%	95.1%	3.7%	0%	-	-	5.2%	94.3%	0.5%	0%	-	-	41.7%	0%	58.3%	0%	-	-	83.3%	0%	16.7%	0%	-	-	-
% Total	0.7%	59.1%	2.3%	0%	62.2%	-	1.8%	32.6%	0.2%	0%	34.6%	-	0.9%	0%	1.3%	0%	2.2%	-	0.9%	0%	0.2%	0%	1.1%	-	-
PHF	0.333	0.878	0.464	-	0.868	-	0.625	0.858	0.250	-	0.877	-	0.313	-	0.583	-	0.750	-	0.417	-	0.250	-	0.375	-	0.900
Lights	2	317	11	0	330	-	7	168	0	0	175	-	3	0	4	0	7	-	1	0	1	0	2	-	514
% Lights	50.0%	96.1%	84.6%	0%	95.1%	-	70.0%	92.3%	0%	0%	90.7%	-	60.0%	0%	57.1%	0%	58.3%	-	20.0%	0%	100%	0%	33.3%	-	92.1%
Articulated Trucks and Single-Unit Trucks	2	12	2	0	16	-	1	8	1	0	10	-	2	0	3	0	5	-	4	0	0	0	4	-	35
% Articulated Trucks and Single-Unit Trucks	50.0%	3.6%	15.4%	0%	4.6%	-	10.0%	4.4%	100%	0%	5.2%	-	40.0%	0%	42.9%	0%	41.7%	-	80.0%	0%	0%	0%	66.7%	-	6.3%
Buses	0	1	0	0	1	-	2	6	0	0	8	-	0	0	0	0	0	-	0	0	0	0	0	-	9
% Buses	0%	0.3%	0%	0%	0.3%	-	20.0%	3.3%	0%	0%	4.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	1.6%
Pedestrians						0						0						0						0	
% Pedestrians						-						-						-						-	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Route 248/Gun Club Rd - TMC
Tue May 22, 2018
PM Peak, Forced Peak (4:15PM - 5:15PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians)
All Movements
ID: 528446, Location: 40.730329, -75.363542

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road, Coatesville, PA, 19320, US

Leg	Route 248						Route 248						Gun Club Road						Business Driveway						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2018-05-22 4:15PM	0	68	1	0	69	0	1	101	0	0	102	0	2	0	2	0	4	0	2	0	2	0	4	0	179
4:30PM	2	65	0	0	67	0	0	83	0	0	83	0	3	0	0	0	3	0	2	0	1	0	3	0	156
4:45PM	0	56	3	0	59	0	2	95	0	0	97	0	5	0	1	0	6	0	1	0	0	0	1	0	163
5:00PM	0	82	1	0	83	0	0	92	0	0	92	0	4	1	1	0	6	0	0	1	1	0	2	0	183
Total	2	271	5	0	278	0	3	371	0	0	374	0	14	1	4	0	19	0	5	1	4	0	10	0	681
% Approach	0.7%	97.5%	1.8%	0%	-	-	0.8%	99.2%	0%	0%	-	-	73.7%	5.3%	21.1%	0%	-	-	50.0%	10.0%	40.0%	0%	-	-	-
% Total	0.3%	39.8%	0.7%	0%	40.8%	-	0.4%	54.5%	0%	0%	54.9%	-	2.1%	0.1%	0.6%	0%	2.8%	-	0.7%	0.1%	0.6%	0%	1.5%	-	-
PHF	0.250	0.826	0.417	-	0.837	-	0.375	0.918	-	-	0.917	-	0.700	0.250	0.500	-	0.792	-	0.625	0.250	0.500	-	0.625	-	0.930
Lights	2	264	5	0	271	-	3	365	0	0	368	-	13	1	4	0	18	-	5	1	4	0	10	-	667
% Lights	100%	97.4%	100%	0%	97.5%	-	100%	98.4%	0%	0%	98.4%	-	92.9%	100%	100%	0%	94.7%	-	100%	100%	100%	0%	100%	-	97.9%
Articulated Trucks and Single-Unit Trucks	0	6	0	0	6	-	0	6	0	0	6	-	1	0	0	0	1	-	0	0	0	0	0	-	13
% Articulated Trucks and Single-Unit Trucks	0%	2.2%	0%	0%	2.2%	-	0%	1.6%	0%	0%	1.6%	-	7.1%	0%	0%	0%	5.3%	-	0%	0%	0%	0%	0%	-	1.9%
Buses	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Buses	0%	0.4%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Route 248/Route 946 - TMC
Tue May 22, 2018
Full Length (7AM-9AM, 4PM-6PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 528447, Location: 40.734216, -75.345082

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US

Leg	Route 248							Route 248						
Direction	Eastbound							Westbound						
Time	L	T	R	U	RR	App	Ped*	L	T	R	U	RR	App	Ped*
2018-05-22 7:00AM	2	76	3	0	0	**81**	0	10	43	8	0	1	**62**	0
7:15AM	1	79	3	0	1	**84**	0	7	35	12	0	4	**58**	0
7:30AM	3	94	5	0	0	**102**	0	5	44	13	0	3	**65**	0
7:45AM	3	92	4	0	0	**99**	0	9	45	11	0	6	**71**	0
Hourly Total	9	341	15	0	1	**366**	0	31	167	44	0	14	**256**	0
8:00AM	5	70	2	0	0	**77**	0	5	49	12	0	1	**67**	0
8:15AM	2	46	2	0	0	**50**	0	6	37	14	0	1	**58**	0
8:30AM	1	59	5	0	0	**65**	0	5	37	14	0	0	**56**	0
8:45AM	3	49	3	0	1	**56**	0	6	43	4	0	5	**58**	0
Hourly Total	11	224	12	0	1	**248**	0	22	166	44	0	7	**239**	0
9:00AM	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0
Hourly Total	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0
4:00PM	10	64	3	0	0	**77**	0	8	93	50	0	3	**154**	0
4:15PM	7	76	3	1	0	**87**	0	8	87	66	0	0	**161**	0
4:30PM	7	57	1	0	1	**66**	0	11	76	68	0	3	**158**	0
4:45PM	2	67	1	0	0	**70**	0	7	93	50	0	2	**152**	0
Hourly Total	26	264	8	1	1	**300**	0	34	349	234	0	8	**625**	0
5:00PM	8	65	4	0	0	**77**	0	4	89	66	0	2	**161**	0
5:15PM	11	68	1	0	0	**80**	0	3	88	49	0	8	**148**	0
5:30PM	3	48	3	0	0	**54**	0	4	82	57	0	5	**148**	0
5:45PM	5	65	9	0	0	**79**	0	6	62	55	0	2	**125**	0
Hourly Total	27	246	17	0	0	**290**	0	17	321	227	0	17	**582**	0
6:00PM	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0
Hourly Total	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0
Total	73	1075	52	1	3	**1204**	0	104	1003	549	0	46	**1702**	0
% Approach	6.1%	89.3%	4.3%	0.1%	0.2%	-	-	6.1%	58.9%	32.3%	0%	2.7%	-	-
% Total	1.5%	22.4%	1.1%	0%	0.1%	**25.1%**	-	2.2%	20.9%	11.4%	0%	1.0%	**35.4%**	-
Lights	70	1039	51	1	2	**1163**	-	101	954	539	0	44	**1638**	-
% Lights	95.9%	96.7%	98.1%	100%	66.7%	**96.6%**	-	97.1%	95.1%	98.2%	0%	95.7%	**96.2%**	-
Articulated Trucks and Single-Unit Trucks	2	32	1	0	1	**36**	-	3	39	8	0	2	**52**	-
% Articulated Trucks and Single-Unit Trucks	2.7%	3.0%	1.9%	0%	33.3%	**3.0%**	-	2.9%	3.9%	1.5%	0%	4.3%	**3.1%**	-
Buses	1	4	0	0	0	**5**	-	0	10	2	0	0	**12**	-
% Buses	1.4%	0.4%	0%	0%	0%	**0.4%**	-	0%	1.0%	0.4%	0%	0%	**0.7%**	-
Pedestrians	-	-	-	-	-	-	0	-	-	-	-	-	-	0
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Route 248/Route 946 - TMC
Tue May 22, 2018
Full Length (7AM-9AM, 4PM-6PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 528447, Location: 40.734216, -75.345082

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US

Leg / Direction	Route 946 Northbound							Route 946 Southbound							
Time	L	T	R	U	RR	App	Ped*	L	T	R	U	RR	App	Ped*	Int
2018-05-22 7:00AM	1	14	3	0	1	**19**	0	36	38	1	0	0	**75**	0	**237**
7:15AM	3	10	6	0	3	**22**	0	45	60	4	0	0	**109**	0	**273**
7:30AM	0	16	8	0	5	**29**	0	66	68	8	0	0	**142**	0	**338**
7:45AM	1	22	10	0	2	**35**	0	43	47	5	0	1	**96**	0	**301**
Hourly Total	5	62	27	0	11	**105**	0	190	213	18	0	1	**422**	0	**1149**
8:00AM	2	15	5	0	4	**26**	0	37	37	4	0	1	**79**	0	**249**
8:15AM	2	15	2	0	2	**21**	0	24	33	2	0	1	**60**	0	**189**
8:30AM	3	13	3	0	0	**19**	0	41	34	3	1	2	**81**	0	**221**
8:45AM	2	21	0	0	2	**25**	0	41	25	4	0	0	**70**	0	**209**
Hourly Total	9	64	10	0	8	**91**	0	143	129	13	1	4	**290**	0	**868**
9:00AM	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	**0**
Hourly Total	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	**0**
4:00PM	4	41	8	0	2	**55**	0	27	23	1	0	0	**51**	0	**337**
4:15PM	5	50	4	0	4	**63**	0	21	30	3	0	2	**56**	0	**367**
4:30PM	2	61	6	0	0	**69**	0	21	33	8	0	1	**63**	0	**356**
4:45PM	2	73	14	0	3	**92**	0	24	18	0	0	1	**43**	0	**357**
Hourly Total	13	225	32	0	9	**279**	0	93	104	12	0	4	**213**	0	**1417**
5:00PM	1	42	6	0	2	**51**	0	33	19	2	0	3	**57**	0	**346**
5:15PM	3	53	6	0	2	**64**	0	28	26	3	0	1	**58**	0	**350**
5:30PM	5	52	6	0	0	**63**	0	31	31	2	0	3	**67**	0	**332**
5:45PM	6	52	10	0	0	**68**	0	37	31	0	0	1	**69**	0	**341**
Hourly Total	15	199	28	0	4	**246**	0	129	107	7	0	8	**251**	0	**1369**
6:00PM	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	**0**
Hourly Total	0	0	0	0	0	**0**	0	0	0	0	0	0	**0**	0	**0**
Total	42	550	97	0	32	**721**	0	555	553	50	1	17	**1176**	0	**4803**
% Approach	5.8%	76.3%	13.5%	0%	4.4%	-	-	47.2%	47.0%	4.3%	0.1%	1.4%	-	-	-
% Total	0.9%	11.5%	2.0%	0%	0.7%	**15.0%**	-	11.6%	11.5%	1.0%	0%	0.4%	**24.5%**	-	-
Lights	40	534	92	0	32	**698**	-	540	543	46	1	17	**1147**	-	4646
% Lights	95.2%	97.1%	94.8%	0%	100%	**96.8%**	-	97.3%	98.2%	92.0%	100%	100%	**97.5%**	-	96.7%
Articulated Trucks and Single-Unit Trucks	2	9	4	0	0	15	-	13	6	2	0	0	21	-	124
% Articulated Trucks and Single-Unit Trucks	4.8%	1.6%	4.1%	0%	0%	**2.1%**	-	2.3%	1.1%	4.0%	0%	0%	**1.8%**	-	2.6%
Buses	0	7	1	0	0	**8**	-	2	4	2	0	0	**8**	-	33
% Buses	0%	1.3%	1.0%	0%	0%	**1.1%**	-	0.4%	0.7%	4.0%	0%	0%	**0.7%**	-	0.7%
Pedestrians	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Route 248/Route 946 - TMC
Tue May 22, 2018
AM Peak, Forced Peak (7:15AM - 8:15AM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 528447, Location: 40.734216, -75.345082

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US

Leg / Direction	Route 248 Eastbound							Route 248 Westbound						
Time	L	T	R	U	RR	App	Ped*	L	T	R	U	RR	App	Ped*
2018-05-22 7:15AM	1	79	3	0	1	**84**	0	7	35	12	0	4	**58**	0
7:30AM	3	94	5	0	0	**102**	0	5	44	13	0	3	**65**	0
7:45AM	3	92	4	0	0	**99**	0	9	45	11	0	6	**71**	0
8:00AM	5	70	2	0	0	**77**	0	5	49	12	0	1	**67**	0
Total	12	335	14	0	1	**362**	0	26	173	48	0	14	**261**	0
% Approach	3.3%	92.5%	3.9%	0%	0.3%	-	-	10.0%	66.3%	18.4%	0%	5.4%	-	-
% Total	1.0%	28.9%	1.2%	0%	0.1%	**31.2%**	-	2.2%	14.9%	4.1%	0%	1.2%	**22.5%**	-
PHF	0.600	0.891	0.700	-	0.250	**0.887**	-	0.722	0.883	0.923	-	0.583	**0.919**	-
Lights	11	319	14	0	1	**345**	-	26	155	41	0	12	**234**	-
% Lights	91.7%	95.2%	100%	0%	100%	**95.3%**	-	100%	89.6%	85.4%	0%	85.7%	**89.7%**	-
Articulated Trucks and Single-Unit Trucks	0	16	0	0	0	**16**	-	0	11	5	0	2	**18**	-
% Articulated Trucks and Single-Unit Trucks	0%	4.8%	0%	0%	0%	**4.4%**	-	0%	6.4%	10.4%	0%	14.3%	**6.9%**	-
Buses	1	0	0	0	0	**1**	-	0	7	2	0	0	**9**	-
% Buses	8.3%	0%	0%	0%	0%	**0.3%**	-	0%	4.0%	4.2%	0%	0%	**3.4%**	-
Pedestrians	-	-	-	-	-	-	0	-	-	-	-	-	-	0
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Route 248/Route 946 - TMC

Tue May 22, 2018
AM Peak, Forced Peak (7:15AM - 8:15AM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 528447, Location: 40.734216, -75.345082

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US

Leg / Direction	Route 946 Northbound							Route 946 Southbound							
Time	L	T	R	U	RR	App	Ped*	L	T	R	U	RR	App	Ped*	Int
2018-05-22 7:15AM	3	10	6	0	3	**22**	0	45	60	4	0	0	**109**	0	**273**
7:30AM	0	16	8	0	5	**29**	0	66	68	8	0	0	**142**	0	**338**
7:45AM	1	22	10	0	2	**35**	0	43	47	5	0	1	**96**	0	**301**
8:00AM	2	15	5	0	4	**26**	0	37	37	4	0	1	**79**	0	**249**
Total	6	63	29	0	14	**112**	0	191	212	21	0	2	**426**	0	**1161**
% Approach	5.4%	56.3%	25.9%	0%	12.5%	-	-	44.8%	49.8%	4.9%	0%	0.5%	-	-	-
% Total	0.5%	5.4%	2.5%	0%	1.2%	**9.6%**	-	16.5%	18.3%	1.8%	0%	0.2%	**36.7%**	-	-
PHF	0.500	0.716	0.725	-	0.700	**0.800**	-	0.723	0.779	0.656	-	0.500	**0.750**	-	0.859
Lights	6	56	25	0	14	**101**	-	186	207	19	0	2	**414**	-	1094
% Lights	100%	88.9%	86.2%	0%	100%	**90.2%**	-	97.4%	97.6%	90.5%	0%	100%	**97.2%**	-	94.2%
Articulated Trucks and Single-Unit Trucks	0	2	3	0	0	**5**	-	4	2	0	0	0	**6**	-	45
% Articulated Trucks and Single-Unit Trucks	0%	3.2%	10.3%	0%	0%	**4.5%**	-	2.1%	0.9%	0%	0%	0%	**1.4%**	-	3.9%
Buses	0	5	1	0	0	**6**	-	1	3	2	0	0	**6**	-	22
% Buses	0%	7.9%	3.4%	0%	0%	**5.4%**	-	0.5%	1.4%	9.5%	0%	0%	**1.4%**	-	1.9%
Pedestrians	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Route 248/Route 946 - TMC
Tue May 22, 2018
PM Peak, Forced Peak (4:15PM - 5:15PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 528447, Location: 40.734216, -75.345082

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US

Leg / Direction	Route 248 Eastbound							Route 248 Westbound						
Time	L	T	R	U	RR	App	Ped*	L	T	R	U	RR	App	Ped*
2018-05-22 4:15PM	7	76	3	1	0	**87**	0	8	87	66	0	0	**161**	0
4:30PM	7	57	1	0	1	**66**	0	11	76	68	0	3	**158**	0
4:45PM	2	67	1	0	0	**70**	0	7	93	50	0	2	**152**	0
5:00PM	8	65	4	0	0	**77**	0	4	89	66	0	2	**161**	0
Total	24	265	9	1	1	**300**	0	30	345	250	0	7	**632**	0
% Approach	8.0%	88.3%	3.0%	0.3%	0.3%	-	-	4.7%	54.6%	39.6%	0%	1.1%	-	-
% Total	1.7%	18.6%	0.6%	0.1%	0.1%	**21.0%**	-	2.1%	24.2%	17.5%	0%	0.5%	**44.3%**	-
PHF	0.750	0.872	0.563	0.250	0.250	**0.862**	-	0.682	0.927	0.919	-	0.583	**0.981**	-
Lights	24	260	9	1	1	**295**	-	30	340	248	0	7	**625**	-
% Lights	100%	98.1%	100%	100%	100%	**98.3%**	-	100%	98.6%	99.2%	0%	100%	**98.9%**	-
Articulated Trucks and Single-Unit Trucks	0	4	0	0	0	**4**	-	0	5	2	0	0	**7**	-
% Articulated Trucks and Single-Unit Trucks	0%	1.5%	0%	0%	0%	**1.3%**	-	0%	1.4%	0.8%	0%	0%	**1.1%**	-
Buses	0	1	0	0	0	**1**	-	0	0	0	0	0	**0**	-
% Buses	0%	0.4%	0%	0%	0%	**0.3%**	-	0%	0%	0%	0%	0%	**0%**	-
Pedestrians	-	-	-	-	-	-	0	-	-	-	-	-	-	0
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Route 248/Route 946 - TMC

Tue May 22, 2018
PM Peak, Forced Peak (4:15PM - 5:15PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 528447, Location: 40.734216, -75.345082

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US

Leg	Route 946							Route 946							
Direction	Northbound							Southbound							
Time	L	T	R	U	RR	App	Ped*	L	T	R	U	RR	App	Ped*	Int
2018-05-22 4:15PM	5	50	4	0	4	**63**	0	21	30	3	0	2	**56**	0	**367**
4:30PM	2	61	6	0	0	**69**	0	21	33	8	0	1	**63**	0	**356**
4:45PM	2	73	14	0	3	**92**	0	24	18	0	0	1	**43**	0	**357**
5:00PM	1	42	6	0	2	**51**	0	33	19	2	0	3	**57**	0	**346**
Total	10	226	30	0	9	**275**	0	99	100	13	0	7	**219**	0	**1426**
% Approach	3.6%	82.2%	10.9%	0%	3.3%	-	-	45.2%	45.7%	5.9%	0%	3.2%	-	-	-
% Total	0.7%	15.8%	2.1%	0%	0.6%	**19.3%**	-	6.9%	7.0%	0.9%	0%	0.5%	**15.4%**	-	-
PHF	0.500	0.774	0.536	-	0.563	**0.747**	-	0.750	0.758	0.406	-	0.583	**0.869**	-	0.971
Lights	10	223	30	0	9	**272**	-	97	99	12	0	7	**215**	-	1407
% Lights	100%	98.7%	100%	0%	100%	**98.9%**	-	98.0%	99.0%	92.3%	0%	100%	**98.2%**	-	98.7%
Articulated Trucks and Single-Unit Trucks	0	1	0	0	0	**1**	-	2	1	1	0	0	**4**	-	16
% Articulated Trucks and Single-Unit Trucks	0%	0.4%	0%	0%	0%	**0.4%**	-	2.0%	1.0%	7.7%	0%	0%	**1.8%**	-	1.1%
Buses	0	2	0	0	0	**2**	-	0	0	0	0	0	**0**	-	3
% Buses	0%	0.9%	0%	0%	0%	**0.7%**	-	0%	0%	0%	0%	0%	**0%**	-	0.2%
Pedestrians	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Gun Club Rd/Newburg Rd - TMC
Tue May 22, 2018
Full Length (7AM-9AM, 4PM-6PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 528448, Location: 40.715695, -75.355807

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road, Coatesville, PA, 19320, US

Leg	Newburg Road						Newburg Road						Werner Road						Gun Club Road						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2018-05-22 7:00AM	0	85	0	0	85	0	0	39	5	0	44	0	0	0	1	0	1	0	3	0	7	0	10	0	140
7:15AM	1	116	0	0	117	0	1	62	1	0	64	0	0	0	2	0	2	0	4	0	4	0	8	0	191
7:30AM	0	106	0	0	106	0	1	71	2	0	74	0	0	0	0	0	0	0	4	0	12	0	16	0	196
7:45AM	2	63	0	0	65	0	1	63	3	0	67	0	0	0	4	0	4	0	8	1	7	0	16	0	152
Hourly Total	3	370	0	0	373	0	3	235	11	0	249	0	0	0	7	0	7	0	19	1	30	0	50	0	679
8:00AM	0	60	0	0	60	0	0	57	4	0	61	0	0	0	1	0	1	0	0	1	7	0	8	0	130
8:15AM	4	69	0	0	73	0	0	52	1	0	53	0	0	0	1	0	1	0	2	0	2	0	4	0	131
8:30AM	1	79	0	0	80	0	1	45	1	0	47	0	0	0	0	0	0	0	0	0	3	0	3	0	130
8:45AM	1	83	0	0	84	0	0	39	0	0	39	0	0	0	2	0	2	0	4	0	4	0	8	0	133
Hourly Total	6	291	0	0	297	0	1	193	6	0	200	0	0	0	4	0	4	0	6	1	16	0	23	0	524
9:00AM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00PM	2	75	0	0	77	0	3	93	2	0	98	0	0	0	0	0	0	0	6	0	5	0	11	0	186
4:15PM	2	80	0	0	82	0	0	93	3	0	96	0	1	0	2	0	3	0	2	0	6	0	8	0	189
4:30PM	1	106	0	0	107	0	3	109	2	0	114	0	0	0	0	0	0	0	3	0	4	0	7	0	228
4:45PM	6	108	0	0	114	0	2	106	5	0	113	0	0	0	0	0	0	0	3	0	3	0	6	0	233
Hourly Total	11	369	0	0	380	0	8	401	12	0	421	0	1	0	2	0	3	0	14	0	18	0	32	0	836
5:00PM	2	92	0	0	94	0	0	109	5	0	114	0	0	0	0	0	0	0	4	0	1	0	5	0	213
5:15PM	9	94	0	0	103	0	1	91	1	0	93	0	1	0	0	0	1	0	2	0	4	0	6	0	203
5:30PM	2	82	0	0	84	0	1	86	3	0	90	0	0	0	2	0	2	0	2	0	5	0	7	0	183
5:45PM	2	67	1	0	70	0	3	86	2	0	91	0	0	0	2	0	2	0	1	0	5	0	6	0	169
Hourly Total	15	335	1	0	351	0	5	372	11	0	388	0	1	0	4	0	5	0	9	0	15	0	24	0	768
6:00PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hourly Total	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	35	1365	1	0	1401	0	17	1203	40	0	1260	0	2	0	17	0	19	0	48	2	79	0	129	0	2809
% Approach	2.5%	97.4%	0.1%	0%	-	-	1.3%	95.5%	3.2%	0%	-	-	10.5%	0%	89.5%	0%	-	-	37.2%	1.6%	61.2%	0%	-	-	-
% Total	1.2%	48.6%	0%	0%	49.9%	-	0.6%	42.8%	1.4%	0%	44.9%	-	0.1%	0%	0.6%	0%	0.7%	-	1.7%	0.1%	2.8%	0%	4.6%	-	-
Lights	33	1313	1	0	1347	-	17	1150	37	0	1204	-	2	0	14	0	16	-	48	1	73	0	122	-	2689
% Lights	94.3%	96.2%	100%	0%	96.1%	-	100%	95.6%	92.5%	0%	95.6%	-	100%	0%	82.4%	0%	84.2%	-	100%	50.0%	92.4%	0%	94.6%	-	95.7%
Articulated Trucks and Single-Unit Trucks	2	37	0	0	39	-	0	35	3	0	38	-	0	0	3	0	3	-	0	1	3	0	4	-	84
% Articulated Trucks and Single-Unit Trucks	5.7%	2.7%	0%	0%	2.8%	-	0%	2.9%	7.5%	0%	3.0%	-	0%	0%	17.6%	0%	15.8%	-	0%	50.0%	3.8%	0%	3.1%	-	3.0%
Buses	0	15	0	0	15	-	0	18	0	0	18	-	0	0	0	0	0	-	0	0	3	0	3	-	36
% Buses	0%	1.1%	0%	0%	1.1%	-	0%	1.5%	0%	0%	1.4%	-	0%	0%	0%	0%	0%	-	0%	0%	3.8%	0%	2.3%	-	1.3%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Gun Club Rd/Newburg Rd - TMC
Tue May 22, 2018
Forced Peak (7:15AM - 8:15AM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 528448, Location: 40.715695, -75.355807

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US

Leg	Newburg Road						Newburg Road						Werner Road						Gun Club Road						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2018-05-22 7:15AM	1	116	0	0	117	0	1	62	1	0	64	0	0	0	2	0	2	0	4	0	4	0	8	0	191
7:30AM	0	106	0	0	106	0	1	71	2	0	74	0	0	0	0	0	0	0	4	0	12	0	16	0	196
7:45AM	2	63	0	0	65	0	1	63	3	0	67	0	0	0	4	0	4	0	8	1	7	0	16	0	152
8:00AM	0	60	0	0	60	0	0	57	4	0	61	0	0	0	1	0	1	0	0	1	7	0	8	0	130
Total	3	345	0	0	348	0	3	253	10	0	266	0	0	0	7	0	7	0	16	2	30	0	48	0	669
% Approach	0.9%	99.1%	0%	0%	-	-	1.1%	95.1%	3.8%	0%	-	-	0%	0%	100%	0%	-	-	33.3%	4.2%	62.5%	0%	-	-	-
% Total	0.4%	51.6%	0%	0%	52.0%	-	0.4%	37.8%	1.5%	0%	39.8%	-	0%	0%	1.0%	0%	1.0%	-	2.4%	0.3%	4.5%	0%	7.2%	-	-
PHF	0.375	0.744	-	-	0.744	-	0.750	0.891	0.625	-	0.899	-	-	-	0.438	-	0.438	-	0.500	0.500	0.625	-	0.750	-	0.853
Lights	3	318	0	0	321	-	3	234	8	0	245	-	0	0	5	0	5	-	16	1	27	0	44	-	615
% Lights	100%	92.2%	0%	0%	92.2%	-	100%	92.5%	80.0%	0%	92.1%	-	0%	0%	71.4%	0%	71.4%	-	100%	50.0%	90.0%	0%	91.7%	-	91.9%
Articulated Trucks and Single-Unit Trucks	0	17	0	0	17	-	0	10	2	0	12	-	0	0	2	0	2	-	0	1	1	0	2	-	33
% Articulated Trucks and Single-Unit Trucks	0%	4.9%	0%	0%	4.9%	-	0%	4.0%	20.0%	0%	4.5%	-	0%	0%	28.6%	0%	28.6%	-	0%	50.0%	3.3%	0%	4.2%	-	4.9%
Buses	0	10	0	0	10	-	0	9	0	0	9	-	0	0	0	0	0	-	0	0	2	0	2	-	21
% Buses	0%	2.9%	0%	0%	2.9%	-	0%	3.6%	0%	0%	3.4%	-	0%	0%	0%	0%	0%	-	0%	0%	6.7%	0%	4.2%	-	3.1%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Gun Club Rd/Newburg Rd - TMC
Tue May 22, 2018
Forced Peak (4:15PM - 5:15PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 528448, Location: 40.715695, -75.355807

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US

Leg	Newburg Road Eastbound						Newburg Road Westbound						Werner Road Northbound						Gun Club Road Southbound						
Direction	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2018-05-22 4:15PM	2	80	0	0	82	0	0	93	3	0	96	0	1	0	2	0	3	0	2	0	6	0	8	0	189
4:30PM	1	106	0	0	107	0	3	109	2	0	114	0	0	0	0	0	0	0	3	0	4	0	7	0	228
4:45PM	6	108	0	0	114	0	2	106	5	0	113	0	0	0	0	0	0	0	3	0	3	0	6	0	233
5:00PM	2	92	0	0	94	0	0	109	5	0	114	0	0	0	0	0	0	0	4	0	1	0	5	0	213
Total	11	386	0	0	397	0	5	417	15	0	437	0	1	0	2	0	3	0	12	0	14	0	26	0	863
% Approach	2.8%	97.2%	0%	0%	-	-	1.1%	95.4%	3.4%	0%	-	-	33.3%	0%	66.7%	0%	-	-	46.2%	0%	53.8%	0%	-	-	-
% Total	1.3%	44.7%	0%	0%	46.0%	-	0.6%	48.3%	1.7%	0%	50.6%	-	0.1%	0%	0.2%	0%	0.3%	-	1.4%	0%	1.6%	0%	3.0%	-	-
PHF	0.458	0.894	-	-	0.871	-	0.417	0.956	0.750	-	0.958	-	0.250	-	0.250	-	0.250	-	0.750	-	0.583	-	0.813	-	0.926
Lights	10	380	0	0	390	-	5	406	14	0	425	-	1	0	2	0	3	-	12	0	14	0	26	-	844
% Lights	90.9%	98.4%	0%	0%	98.2%	-	100%	97.4%	93.3%	0%	97.3%	-	100%	0%	100%	0%	100%	-	100%	0%	100%	0%	100%	-	97.8%
Articulated Trucks and Single-Unit Trucks	1	5	0	0	6	-	0	8	1	0	9	-	0	0	0	0	0	-	0	0	0	0	0	-	15
% Articulated Trucks and Single-Unit Trucks	9.1%	1.3%	0%	0%	1.5%	-	0%	1.9%	6.7%	0%	2.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	1.7%
Buses	0	1	0	0	1	-	0	3	0	0	3	-	0	0	0	0	0	-	0	0	0	0	0	-	4
% Buses	0%	0.3%	0%	0%	0.3%	-	0%	0.7%	0%	0%	0.7%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.5%
Pedestrians						0						0						0						0	
% Pedestrians					-	-					-	-					-	-					-	-	-
Bicycles on Crosswalk						0						0						0						0	
% Bicycles on Crosswalk					-	-					-	-					-	-					-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40' 73010.0000 North

Start Time	5/17/2018 Thu	EB	WB	Total
12:00 AM		*	*	*
12:15		*	*	*
12:30		*	*	*
12:45		*	*	*
01:00		*	*	*
01:15		*	*	*
01:30		*	*	*
01:45		*	*	*
02:00		*	*	*
02:15		*	*	*
02:30		*	*	*
02:45		*	*	*
03:00		*	*	*
03:15		*	*	*
03:30		*	*	*
03:45		*	*	*
04:00		*	*	*
04:15		*	*	*
04:30		*	*	*
04:45		*	*	*
05:00		*	*	*
05:15		*	*	*
05:30		*	*	*
05:45		*	*	*
06:00		*	*	*
06:15		*	*	*
06:30		*	*	*
06:45		*	*	*
07:00		*	*	*
07:15		*	*	*
07:30		*	*	*
07:45		*	*	*
08:00		*	*	*
08:15		*	*	*
08:30		*	*	*
08:45		*	*	*
09:00		*	*	*
09:15		*	*	*
09:30		*	*	*
09:45		*	*	*
10:00		*	*	*
10:15		*	*	*
10:30		*	*	*
10:45		*	*	*
11:00		**43**	**49**	**92**
11:15		**45**	**43**	**88**
11:30		**59**	**54**	**113**
11:45		**61**	**47**	**108**
Total		208	193	401
Percent		51.9%	48.1%	
Peak	-	11:00	11:00	11:00
Vol.	-	208	193	401
P.H.F.		0.852	0.894	0.887

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40' 73010.0000 North

Start Time	5/17/2018 Thu	EB	WB							Total
12:00 PM		52	56							108
12:15		42	40							82
12:30		52	60							112
12:45		45	64							109
01:00		68	56							124
01:15		61	63							124
01:30		57	55							112
01:45		72	54							126
02:00		64	43							107
02:15		79	67							146
02:30		78	67							145
02:45		85	69							154
03:00		88	67							155
03:15		73	**72**							145
03:30		91	**67**							158
03:45		**106**	**81**							**187**
04:00		**90**	**78**							**168**
04:15		**115**	64							**179**
04:30		**94**	73							**167**
04:45		83	70							153
05:00		107	75							182
05:15		93	65							158
05:30		85	70							155
05:45		71	68							139
06:00		73	59							132
06:15		59	37							96
06:30		53	42							95
06:45		44	32							76
07:00		67	43							110
07:15		42	35							77
07:30		33	29							62
07:45		50	36							86
08:00		55	33							88
08:15		55	30							85
08:30		28	17							45
08:45		34	27							61
09:00		30	16							46
09:15		28	15							43
09:30		23	23							46
09:45		17	15							32
10:00		24	15							39
10:15		7	12							19
10:30		20	16							36
10:45		23	6							29
11:00		13	15							28
11:15		16	2							18
11:30		13	5							18
11:45		6	4							10
Total		2664	2108							4772
Percent		55.8%	44.2%							
Peak	-	15:45	15:15	-	-	-	-	-	-	15:45
Vol.	-	405	298	-	-	-	-	-	-	701
P.H.F.		0.880	0.920							0.937

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40' 73010.0000 North

Start Time	5/18/2018 Fri	EB	WB	Total
12:00 AM		8	2	10
12:15		5	1	6
12:30		7	3	10
12:45		9	3	12
01:00		6	3	9
01:15		2	9	11
01:30		2	4	6
01:45		7	7	14
02:00		3	4	7
02:15		3	2	5
02:30		4	8	12
02:45		4	7	11
03:00		5	4	9
03:15		1	6	7
03:30		1	5	6
03:45		4	11	15
04:00		2	10	12
04:15		6	14	20
04:30		10	16	26
04:45		6	16	22
05:00		6	28	34
05:15		11	44	55
05:30		25	36	61
05:45		20	41	61
06:00		32	65	97
06:15		37	85	122
06:30		39	82	121
06:45		43	**86**	129
07:00		42	**82**	**124**
07:15		43	**80**	**123**
07:30		49	**96**	**145**
07:45		62	71	**133**
08:00		52	69	121
08:15		36	64	100
08:30		42	66	108
08:45		25	75	100
09:00		42	62	104
09:15		49	55	104
09:30		51	62	113
09:45		53	59	112
10:00		62	45	107
10:15		48	55	103
10:30		64	59	123
10:45		45	58	103
11:00		**47**	52	99
11:15		**58**	58	116
11:30		**64**	66	130
11:45		**67**	59	126
Total		1309	1895	3204
Percent		40.9%	59.1%	
Peak	-	11:00	06:45	- - - - - - 07:00
Vol.	-	236	344	- - - - - - 525
P.H.F.		0.881	0.896	0.905

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40° 73010.0000 North

Start Time	5/18/2018 Fri	EB	WB	Total
12:00 PM		71	63	134
12:15		70	56	126
12:30		55	54	109
12:45		60	47	107
01:00		61	69	130
01:15		51	36	87
01:30		59	62	121
01:45		74	55	129
02:00		65	60	125
02:15		69	59	128
02:30		76	63	139
02:45		75	56	131
03:00		98	76	174
03:15		95	75	170
03:30		94	87	181
03:45		80	87	167
04:00		102	65	167
04:15		105	85	190
04:30		78	70	148
04:45		96	69	165
05:00		105	72	177
05:15		102	64	166
05:30		81	83	164
05:45		62	62	124
06:00		70	83	153
06:15		63	60	123
06:30		61	46	107
06:45		56	33	89
07:00		41	29	70
07:15		48	30	78
07:30		57	33	90
07:45		53	42	95
08:00		41	30	71
08:15		37	25	62
08:30		41	24	65
08:45		32	24	56
09:00		45	29	74
09:15		20	24	44
09:30		24	18	42
09:45		14	19	33
10:00		29	20	49
10:15		14	28	42
10:30		15	16	31
10:45		33	16	49
11:00		29	16	45
11:15		18	7	25
11:30		10	6	16
11:45		11	9	20
Total		2746	2242	4988
Percent		55.1%	44.9%	
Peak	-	16:15	15:00	15:30
Vol.	-	384	325	705
P.H.F.		0.914	0.934	0.928

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40° 73010.0000 North

Start Time	5/19/2018 Sat	EB	WB	Total
12:00 AM		5	4	9
12:15		4	5	9
12:30		5	5	10
12:45		5	8	13
01:00		5	5	10
01:15		5	8	13
01:30		3	1	4
01:45		7	3	10
02:00		3	5	8
02:15		2	5	7
02:30		5	2	7
02:45		6	3	9
03:00		2	7	9
03:15		3	3	6
03:30		6	5	11
03:45		3	2	5
04:00		5	2	7
04:15		0	4	4
04:30		4	5	9
04:45		1	4	5
05:00		5	10	15
05:15		10	18	28
05:30		6	10	16
05:45		8	19	27
06:00		12	16	28
06:15		7	27	34
06:30		6	41	47
06:45		13	18	31
07:00		19	27	46
07:15		16	30	46
07:30		23	34	57
07:45		28	27	55
08:00		21	36	57
08:15		19	32	51
08:30		24	40	64
08:45		27	47	74
09:00		46	44	90
09:15		36	37	73
09:30		40	49	89
09:45		37	55	92
10:00		46	55	101
10:15		49	**56**	105
10:30		47	**51**	98
10:45		44	**58**	**102**
11:00		**48**	**67**	**115**
11:15		**54**	49	**103**
11:30		**62**	56	**118**
11:45		**48**	40	88
Total		880	1135	2015
Percent		43.7%	56.3%	
Peak	-	11:00	10:15	- - - - - - 10:45
Vol.	-	212	232	- - - - - - 438
P.H.F.		0.855	0.866	0.928

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40° 73010.0000 North

Start Time	5/19/2018 Sat	EB	WB	Total
12:00 PM		66	53	119
12:15		62	53	115
12:30		78	55	133
12:45		58	48	106
01:00		61	53	114
01:15		48	50	98
01:30		45	43	88
01:45		63	48	111
02:00		52	54	106
02:15		40	54	94
02:30		63	62	125
02:45		48	31	79
03:00		54	51	105
03:15		64	42	106
03:30		35	51	86
03:45		57	53	110
04:00		38	42	80
04:15		39	43	82
04:30		54	54	108
04:45		64	63	127
05:00		54	57	111
05:15		39	47	86
05:30		56	47	103
05:45		50	49	99
06:00		39	36	75
06:15		31	39	70
06:30		46	31	77
06:45		34	42	76
07:00		32	37	69
07:15		31	28	59
07:30		30	23	53
07:45		35	29	64
08:00		32	23	55
08:15		33	23	56
08:30		28	28	56
08:45		34	16	50
09:00		29	13	42
09:15		30	19	49
09:30		15	14	29
09:45		20	11	31
10:00		23	15	38
10:15		25	16	41
10:30		18	19	37
10:45		22	11	33
11:00		14	11	25
11:15		9	9	18
11:30		8	3	11
11:45		9	11	20
Total		1915	1710	3625
Percent		52.8%	47.2%	
Peak	-	12:00	16:30	12:00
Vol.	-	264	221	473
P.H.F.		0.846	0.877	0.889

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40° 73010.0000 North

Start Time	5/20/2018 Sun	EB	WB	Total
12:00 AM		8	2	10
12:15		1	3	4
12:30		9	7	16
12:45		9	8	17
01:00		6	6	12
01:15		6	2	8
01:30		5	3	8
01:45		7	1	8
02:00		5	5	10
02:15		3	2	5
02:30		3	3	6
02:45		3	2	5
03:00		0	1	1
03:15		3	2	5
03:30		2	1	3
03:45		0	1	1
04:00		2	1	3
04:15		0	2	2
04:30		2	1	3
04:45		1	5	6
05:00		3	4	7
05:15		7	10	17
05:30		8	11	19
05:45		8	13	21
06:00		5	16	21
06:15		7	11	18
06:30		12	25	37
06:45		19	18	37
07:00		24	19	43
07:15		9	12	21
07:30		13	25	38
07:45		19	22	41
08:00		16	13	29
08:15		25	25	50
08:30		29	36	65
08:45		20	36	56
09:00		28	45	73
09:15		25	46	71
09:30		20	35	55
09:45		37	51	88
10:00		37	58	95
10:15		33	44	77
10:30		45	56	101
10:45		47	47	94
11:00		**41**	**47**	**88**
11:15		**47**	**58**	**105**
11:30		**63**	**59**	**122**
11:45		**57**	**72**	**129**
Total		779	972	1751
Percent		44.5%	55.5%	
Peak	-	11:00	11:00	- - - - - - 11:00
Vol.	-	208	236	- - - - - - 444
P.H.F.		0.825	0.819	0.860

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40° 73010.0000 North

Start Time	5/20/2018 Sun	EB	WB	Total
12:00 PM		65	72	137
12:15		57	63	120
12:30		68	71	139
12:45		53	77	130
01:00		60	52	112
01:15		47	57	104
01:30		58	58	116
01:45		59	52	111
02:00		50	38	88
02:15		57	44	101
02:30		81	54	135
02:45		71	54	125
03:00		64	45	109
03:15		53	58	111
03:30		58	45	103
03:45		44	46	90
04:00		49	54	103
04:15		44	47	91
04:30		61	38	99
04:45		60	40	100
05:00		52	52	104
05:15		42	46	88
05:30		54	39	93
05:45		40	43	83
06:00		46	31	77
06:15		47	43	90
06:30		30	29	59
06:45		29	30	59
07:00		41	20	61
07:15		30	22	52
07:30		41	28	69
07:45		33	42	75
08:00		39	22	61
08:15		33	26	59
08:30		21	23	44
08:45		27	13	40
09:00		24	18	42
09:15		16	18	34
09:30		14	14	28
09:45		16	12	28
10:00		6	12	18
10:15		6	19	25
10:30		6	11	17
10:45		14	8	22
11:00		6	9	15
11:15		4	5	9
11:30		5	3	8
11:45		11	5	16
Total		1892	1708	3600
Percent		52.6%	47.4%	
Peak	-	14:15	12:00	12:00
Vol.	-	273	283	526
P.H.F.		0.843	0.919	0.946

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40' 73010.0000 North

Start Time	5/21/2018 Mon	EB	WB	Total
12:00 AM		1	4	5
12:15		3	4	7
12:30		1	4	5
12:45		2	3	5
01:00		3	4	7
01:15		1	5	6
01:30		2	2	4
01:45		2	1	3
02:00		1	3	4
02:15		2	3	5
02:30		4	4	8
02:45		5	9	14
03:00		1	2	3
03:15		3	2	5
03:30		1	12	13
03:45		3	6	9
04:00		1	9	10
04:15		4	17	21
04:30		9	16	25
04:45		4	22	26
05:00		12	30	42
05:15		17	45	62
05:30		22	37	59
05:45		24	39	63
06:00		28	70	98
06:15		34	87	121
06:30		43	83	126
06:45		43	83	126
07:00		47	**83**	**130**
07:15		50	**83**	**133**
07:30		51	**92**	**143**
07:45		54	**89**	**143**
08:00		55	63	118
08:15		34	56	90
08:30		38	68	106
08:45		30	50	80
09:00		48	43	91
09:15		38	49	87
09:30		37	51	88
09:45		37	54	91
10:00		42	43	85
10:15		39	56	95
10:30		34	49	83
10:45		**53**	59	112
11:00		**52**	65	117
11:15		**48**	44	92
11:30		**64**	55	119
11:45		50	68	118
Total		1177	1826	3003
Percent		39.2%	60.8%	
Peak	-	10:45	07:00	07:00
Vol.	-	217	347	549
P.H.F.		0.848	0.943	0.960

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt: 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40° 73010.0000 North

Start Time	5/21/2018 Mon	EB	WB	Total
12:00 PM		40	46	86
12:15		54	64	118
12:30		39	58	97
12:45		51	65	116
01:00		49	63	112
01:15		49	65	114
01:30		45	72	117
01:45		64	71	135
02:00		70	73	143
02:15		63	64	127
02:30		89	81	170
02:45		67	78	145
03:00		105	66	171
03:15		99	69	168
03:30		107	86	193
03:45		82	84	166
04:00		88	93	181
04:15		86	70	156
04:30		79	62	141
04:45		96	68	164
05:00		108	75	183
05:15		74	79	153
05:30		77	71	148
05:45		63	73	136
06:00		63	39	102
06:15		49	48	97
06:30		53	35	88
06:45		37	44	81
07:00		58	33	91
07:15		44	32	76
07:30		50	36	86
07:45		45	32	77
08:00		43	34	77
08:15		36	37	73
08:30		40	25	65
08:45		34	20	54
09:00		29	22	51
09:15		32	18	50
09:30		22	18	40
09:45		15	18	33
10:00		25	15	40
10:15		11	19	30
10:30		12	24	36
10:45		19	8	27
11:00		19	11	30
11:15		17	4	21
11:30		8	2	10
11:45		8	6	14
Total		2513	2276	4789
Percent		52.5%	47.5%	
Peak	-	15:00	15:30	15:15
Vol.	-	393	333	708
P.H.F.		0.918	0.895	0.917

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40' 73010.0000 North

Start Time	5/22/2018 Tue	EB	WB	Total
12:00 AM		9	4	13
12:15		9	1	10
12:30		3	4	7
12:45		6	4	10
01:00		6	1	7
01:15		3	3	6
01:30		8	0	8
01:45		3	3	6
02:00		3	10	13
02:15		3	4	7
02:30		1	5	6
02:45		1	9	10
03:00		4	3	7
03:15		1	3	4
03:30		3	7	10
03:45		3	6	9
04:00		2	9	11
04:15		9	13	22
04:30		4	16	20
04:45		12	19	31
05:00		10	25	35
05:15		11	52	63
05:30		18	38	56
05:45		20	33	53
06:00		30	68	98
06:15		27	90	117
06:30		40	95	135
06:45		43	61	104
07:00		43	**82**	**125**
07:15		**43**	**97**	**140**
07:30		**53**	**93**	**146**
07:45		**49**	**77**	**126**
08:00		**50**	56	106
08:15		43	62	105
08:30		49	52	101
08:45		36	52	88
09:00		28	58	86
09:15		39	55	94
09:30		45	45	90
09:45		47	52	99
10:00		40	46	86
10:15		25	56	81
10:30		46	45	91
10:45		37	51	88
11:00		36	53	89
11:15		36	55	91
11:30		56	43	99
11:45		49	47	96
Total		1142	1763	2905
Percent		39.3%	60.7%	
Peak	-	07:15	07:00	07:00
Vol.	-	195	349	537
P.H.F.		0.920	0.899	0.920

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40° 73010.0000 North

Start Time	5/22/2018 Tue	EB	WB	Total
12:00 PM		40	42	82
12:15		52	44	96
12:30		44	52	96
12:45		55	50	105
01:00		61	48	109
01:15		58	69	127
01:30		53	56	109
01:45		61	60	121
02:00		68	63	131
02:15		71	55	126
02:30		58	63	121
02:45		71	60	131
03:00		86	58	144
03:15		82	47	129
03:30		80	73	153
03:45		85	84	169
04:00		101	77	178
04:15		91	91	182
04:30		90	71	161
04:45		93	70	163
05:00		98	88	186
05:15		76	56	132
05:30		85	90	175
05:45		61	49	110
06:00		64	51	115
06:15		45	54	99
06:30		42	37	79
06:45		52	44	96
07:00		52	47	99
07:15		46	30	76
07:30		43	30	73
07:45		55	28	83
08:00		44	35	79
08:15		33	17	50
08:30		41	27	68
08:45		24	18	42
09:00		29	29	58
09:15		23	28	51
09:30		19	22	41
09:45		29	19	48
10:00		24	22	46
10:15		7	15	22
10:30		10	15	25
10:45		22	18	40
11:00		7	7	14
11:15		8	1	9
11:30		12	7	19
11:45		3	2	5
Total		2454	2119	4573
Percent		53.7%	46.3%	
Peak	-	16:00	15:30	16:15
Vol.	-	375	325	692
P.H.F.		0.928	0.893	0.930

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40' 73010.0000 North

Start Time	5/23/2018 Wed	EB	WB	Total
12:00 AM		4	4	8
12:15		5	3	8
12:30		5	2	7
12:45		6	4	10
01:00		6	4	10
01:15		7	3	10
01:30		5	7	12
01:45		2	3	5
02:00		4	7	11
02:15		3	4	7
02:30		2	8	10
02:45		3	9	12
03:00		8	6	14
03:15		5	8	13
03:30		7	11	18
03:45		0	4	4
04:00		6	10	16
04:15		4	11	15
04:30		10	19	29
04:45		8	22	30
05:00		8	21	29
05:15		9	56	65
05:30		24	39	63
05:45		25	38	63
06:00		20	81	101
06:15		33	110	143
06:30		32	86	118
06:45		43	**93**	136
07:00		48	**90**	138
07:15		**60**	**104**	**164**
07:30		**55**	**95**	**150**
07:45		**67**	89	**156**
08:00		**50**	89	**139**
08:15		51	70	121
08:30		52	86	138
08:45		45	77	122
09:00		34	70	104
09:15		52	66	118
09:30		52	66	118
09:45		53	67	120
10:00		40	62	102
10:15		57	61	118
10:30		55	68	123
10:45		47	64	111
11:00		42	90	132
11:15		54	68	122
11:30		73	67	140
11:45		43	54	97
Total		1324	2176	3500
Percent		37.8%	62.2%	
Peak	-	07:15	06:45	07:15
Vol.	-	232	382	609
P.H.F.		0.866	0.918	0.928

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40.73010.0000 North

Start Time	5/23/2018 Wed	EB	WB	Total
12:00 PM		55	66	121
12:15		50	59	109
12:30		54	69	123
12:45		54	76	130
01:00		63	90	153
01:15		55	78	133
01:30		61	74	135
01:45		80	84	164
02:00		69	83	152
02:15		75	83	158
02:30		84	90	174
02:45		86	70	156
03:00		101	84	185
03:15		96	100	196
03:30		103	102	205
03:45		100	110	210
04:00		109	95	204
04:15		87	98	185
04:30		115	102	217
04:45		89	105	194
05:00		96	101	197
05:15		95	87	182
05:30		93	99	192
05:45		78	80	158
06:00		60	77	137
06:15		66	67	133
06:30		56	66	122
06:45		58	67	125
07:00		56	66	122
07:15		73	53	126
07:30		43	56	99
07:45		48	51	99
08:00		65	64	129
08:15		59	57	116
08:30		44	38	82
08:45		26	34	60
09:00		40	34	74
09:15		31	30	61
09:30		22	24	46
09:45		22	21	43
10:00		31	24	55
10:15		14	15	29
10:30		14	21	35
10:45		17	17	34
11:00		19	15	34
11:15		15	11	26
11:30		11	8	19
11:45		9	2	11
Total		2847	3003	5850
Percent		48.7%	51.3%	
Peak		15:45	15:15	15:45
Vol.		411	407	816
P.H.F.		0.893	0.925	0.940

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40' 73010.0000 North

Start Time	5/24/2018 Thu	EB	WB	Total
12:00 AM		2	5	7
12:15		2	3	5
12:30		5	7	12
12:45		4	6	10
01:00		6	3	9
01:15		0	6	6
01:30		4	6	10
01:45		1	2	3
02:00		2	2	4
02:15		4	7	11
02:30		4	8	12
02:45		2	4	6
03:00		5	9	14
03:15		2	6	8
03:30		1	11	12
03:45		6	9	15
04:00		4	12	16
04:15		9	18	27
04:30		14	22	36
04:45		13	30	43
05:00		12	29	41
05:15		9	52	61
05:30		26	54	80
05:45		33	51	84
06:00		19	**85**	104
06:15		39	**122**	161
06:30		50	**105**	155
06:45		36	**87**	123
07:00		37	84	121
07:15		44	94	138
07:30		**64**	99	**163**
07:45		**57**	86	**143**
08:00		**59**	82	**141**
08:15		**59**	87	**146**
08:30		48	90	138
08:45		32	85	117
09:00		33	66	99
09:15		41	81	122
09:30		40	81	121
09:45		33	67	100
10:00		35	51	86
10:15		55	55	110
10:30		47	69	116
10:45		52	69	121
11:00		55	66	121
11:15		57	70	127
11:30		58	64	122
11:45		42	60	102
Total		1262	2267	3529
Percent		35.8%	64.2%	
Peak	-	07:30	06:00	07:30
Vol.	-	239	399	593
P.H.F.		0.934	0.818	0.910

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40° 73010.0000 North

Start Time	5/24/2018 Thu	EB	WB	Total
12:00 PM		40	69	109
12:15		53	56	109
12:30		69	72	141
12:45		43	70	113
01:00		49	73	122
01:15		47	75	122
01:30		59	95	154
01:45		78	78	156
02:00		95	84	179
02:15		90	89	179
02:30		75	86	161
02:45		95	81	176
03:00		99	75	174
03:15		86	84	170
03:30		89	83	172
03:45		95	87	182
04:00		110	111	221
04:15		91	100	191
04:30		108	111	219
04:45		91	88	179
05:00		78	107	185
05:15		64	115	179
05:30		86	95	181
05:45		64	103	167
06:00		84	78	162
06:15		49	65	114
06:30		75	59	134
06:45		33	47	80
07:00		73	77	150
07:15		55	44	99
07:30		46	39	85
07:45		44	33	77
08:00		70	54	124
08:15		36	37	73
08:30		50	34	84
08:45		49	46	95
09:00		41	39	80
09:15		30	27	57
09:30		32	30	62
09:45		24	22	46
10:00		28	24	52
10:15		18	27	45
10:30		12	26	38
10:45		20	10	30
11:00		22	20	42
11:15		10	9	19
11:30		11	9	20
11:45		6	3	9
Total		2772	2946	5718
Percent		48.5%	51.5%	
Peak	-	15:45	16:30	15:45
Vol.	-	404	421	813
P.H.F.		0.918	0.915	0.920

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Rt. 248
Location: 300 ft E of Gun Club Rd
Counter: AQ88

Site Code: 000000000001
Station ID: 000000000000
A to B EB

Latitude: 40' 73010.0000 North

Start Time	5/25/2018 Fri	EB	WB	Total
12:00 AM		7	8	15
12:15		12	11	23
12:30		4	3	7
12:45		5	3	8
01:00		5	4	9
01:15		3	4	7
01:30		4	4	8
01:45		4	4	8
02:00		2	3	5
02:15		5	4	9
02:30		4	10	14
02:45		4	8	12
03:00		9	9	18
03:15		6	11	17
03:30		4	10	14
03:45		6	9	15
04:00		5	12	17
04:15		11	14	25
04:30		10	18	28
04:45		13	25	38
05:00		12	32	44
05:15		13	59	72
05:30		23	43	66
05:45		21	44	65
06:00		23	66	89
06:15		35	102	137
06:30		42	**113**	155
06:45		46	**101**	**147**
07:00		59	**88**	**147**
07:15		**50**	**114**	**164**
07:30		**52**	111	**163**
07:45		**46**	80	126
08:00		**62**	90	152
08:15		24	47	71
08:30		*	*	*
08:45		*	*	*
09:00		*	*	*
09:15		*	*	*
09:30		*	*	*
09:45		*	*	*
10:00		*	*	*
10:15		*	*	*
10:30		*	*	*
10:45		*	*	*
11:00		*	*	*
11:15		*	*	*
11:30		*	*	*
11:45		*	*	*
Total		631	1264	1895
Percent		33.3%	66.7%	
Peak	-	07:15	06:30	- - - - - - 06:45
Vol.	-	210	416	- - - - - - 621
P.H.F.		0.847	0.912	0.947
Total		28515	31603	60118
Percent		47.4%	52.6%	

ADT ADT 7,637 AADT 7,637

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40° 72612.0000 North

Start Time	5/17/2018 Thu	NB	SB	Total
12:00 AM				
12:15				
12:30				
12:45				
01:00				
01:15				
01:30				
01:45				
02:00				
02:15				
02:30				
02:45				
03:00				
03:15				
03:30				
03:45				
04:00				
04:15				
04:30				
04:45				
05:00				
05:15				
05:30				
05:45				
06:00				
06:15				
06:30				
06:45				
07:00				
07:15				
07:30				
07:45				
08:00				
08:15				
08:30				
08:45				
09:00				
09:15				
09:30				
09:45				
10:00		0	0	0
10:15		0	0	0
10:30		0	0	0
10:45		0	0	0
11:00		0	0	0
11:15		2	1	3
11:30		0	2	2
11:45		0	4	4
Total		2	7	9
Percent		22.2%	77.8%	
Peak	-	10:30	11:00	11:00
Vol.	-	2	7	9
P.H.F.		0.250	0.438	0.563

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40' 72612.0000 North

Start Time	5/17/2018 Thu	NB	SB	Total
12:00 PM		4	0	4
12:15		2	2	4
12:30		1	2	3
12:45		4	4	8
01:00		4	0	4
01:15		2	7	9
01:30		1	1	2
01:45		4	4	8
02:00		3	2	5
02:15		5	4	9
02:30		4	10	14
02:45		5	7	12
03:00		3	5	8
03:15		2	5	7
03:30		5	4	9
03:45		3	6	9
04:00		4	2	6
04:15		4	3	7
04:30		5	6	11
04:45		3	3	6
05:00		4	4	8
05:15		1	5	6
05:30		5	4	9
05:45		3	8	11
06:00		2	4	6
06:15		2	2	4
06:30		2	2	4
06:45		1	2	3
07:00		4	2	6
07:15		2	1	3
07:30		0	1	1
07:45		0	2	2
08:00		1	0	1
08:15		3	2	5
08:30		0	1	1
08:45		1	1	2
09:00		0	0	0
09:15		1	1	2
09:30		1	0	1
09:45		1	1	2
10:00		0	1	1
10:15		0	3	3
10:30		0	0	0
10:45		1	0	1
11:00		0	1	1
11:15		1	0	1
11:30		0	0	0
11:45		0	0	0
Total		104	125	229
Percent		45.4%	54.6%	
Peak	-	14:00	14:30	14:15
Vol.	-	17	27	43
P.H.F.		0.850	0.675	0.768

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40° 72612.0000 North

Start Time	5/18/2018 Fri	NB	SB	Total
12:00 AM		0	1	1
12:15		0	0	0
12:30		1	0	1
12:45		0	0	0
01:00		0	1	1
01:15		0	2	2
01:30		0	0	0
01:45		1	1	2
02:00		1	1	2
02:15		1	2	3
02:30		0	1	1
02:45		0	0	0
03:00		0	0	0
03:15		0	0	0
03:30		0	0	0
03:45		1	1	2
04:00		1	2	3
04:15		2	0	2
04:30		1	3	4
04:45		0	0	0
05:00		2	1	3
05:15		2	0	2
05:30		5	1	6
05:45		3	3	6
06:00		4	1	5
06:15		6	3	9
06:30		8	3	11
06:45		4	3	7
07:00		4	3	7
07:15		7	6	13
07:30		4	3	7
07:45		9	3	12
08:00		5	3	8
08:15		4	2	6
08:30		3	0	3
08:45		1	5	6
09:00		2	2	4
09:15		3	2	5
09:30		1	5	6
09:45		3	2	5
10:00		1	2	3
10:15		2	2	4
10:30		3	1	4
10:45		7	7	14
11:00		2	0	2
11:15		6	5	11
11:30		4	4	8
11:45		7	3	10
Total		121	90	211
Percent		57.3%	42.7%	
Peak	-	07:15	10:45	07:15
Vol.	-	25	16	40
P.H.F.		0.694	0.571	0.769

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40' 72612.0000 North

Start Time	5/18/2018 Fri	NB	SB	Total
12:00 PM		3	5	8
12:15		4	5	9
12:30		4	2	6
12:45		4	4	8
01:00		3	3	6
01:15		5	1	6
01:30		2	3	5
01:45		6	3	9
02:00		5	5	10
02:15		3	5	8
02:30		6	8	14
02:45		7	4	11
03:00		6	5	11
03:15		5	11	16
03:30		6	7	13
03:45		6	9	15
04:00		3	9	12
04:15		5	2	7
04:30		7	6	13
04:45		4	10	14
05:00		3	6	9
05:15		1	2	3
05:30		2	3	5
05:45		6	4	10
06:00		0	1	1
06:15		3	4	7
06:30		2	3	5
06:45		2	3	5
07:00		1	5	6
07:15		3	3	6
07:30		1	3	4
07:45		3	3	6
08:00		0	2	2
08:15		1	0	1
08:30		0	1	1
08:45		0	2	2
09:00		1	0	1
09:15		0	1	1
09:30		0	0	0
09:45		0	1	1
10:00		0	0	0
10:15		0	2	2
10:30		2	0	2
10:45		2	2	4
11:00		0	3	3
11:15		0	0	0
11:30		0	0	0
11:45		0	1	1
Total		127	162	289
Percent		43.9%	56.1%	
Peak	-	14:30	15:15	15:15
Vol.	-	24	36	56
P.H.F.		0.857	0.818	0.875

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40' 72612.0000 North

Start Time	5/19/2018 Sat	NB	SB	Total
12:00 AM		0	0	0
12:15		1	2	3
12:30		0	0	0
12:45		1	1	2
01:00		0	1	1
01:15		0	0	0
01:30		1	0	1
01:45		0	0	0
02:00		0	0	0
02:15		0	0	0
02:30		0	1	1
02:45		0	0	0
03:00		0	0	0
03:15		0	0	0
03:30		0	0	0
03:45		0	0	0
04:00		0	0	0
04:15		0	0	0
04:30		0	0	0
04:45		0	0	0
05:00		2	0	2
05:15		1	0	1
05:30		1	0	1
05:45		0	1	1
06:00		1	2	3
06:15		0	0	0
06:30		3	0	3
06:45		1	1	2
07:00		0	1	1
07:15		0	0	0
07:30		0	1	1
07:45		1	0	1
08:00		0	0	0
08:15		0	1	1
08:30		0	0	0
08:45		1	1	2
09:00		4	2	6
09:15		2	1	3
09:30		1	0	1
09:45		1	4	5
10:00		4	1	5
10:15		1	2	3
10:30		4	2	6
10:45		0	4	4
11:00		1	0	1
11:15		3	0	3
11:30		2	4	6
11:45		0	1	1
Total		37	34	71
Percent		52.1%	47.9%	
Peak	-	09:45	09:45	09:45
Vol.	-	10	9	19
P.H.F.		0.625	0.563	0.792

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40' 72612.0000 North

Start Time	5/19/2018 Sat	NB	SB							Total
12:00 PM		4	4							8
12:15		0	1							1
12:30		0	2							2
12:45		0	0							0
01:00		3	2							5
01:15		0	1							1
01:30		2	2							4
01:45		1	3							4
02:00		2	4							6
02:15		1	1							2
02:30		4	1							5
02:45		1	0							1
03:00		1	1							2
03:15		3	1							4
03:30		0	2							2
03:45		2	5							7
04:00		2	0							2
04:15		2	1							3
04:30		1	1							2
04:45		1	1							2
05:00		1	0							1
05:15		3	0							3
05:30		2	1							3
05:45		2	0							2
06:00		2	0							2
06:15		2	1							3
06:30		0	2							2
06:45		2	3							5
07:00		0	5							5
07:15		1	1							2
07:30		1	0							1
07:45		1	2							3
08:00		1	1							2
08:15		0	2							2
08:30		0	0							0
08:45		0	1							1
09:00		2	1							3
09:15		0	0							0
09:30		0	0							0
09:45		0	1							1
10:00		0	1							1
10:15		0	0							0
10:30		0	0							0
10:45		0	1							1
11:00		0	0							0
11:15		0	0							0
11:30		0	0							0
11:45		0	3							3
Total		50	59							109
Percent		45.9%	54.1%							
Peak	-	14:30	18:15	-	-	-	-	-	-	13:45
Vol.	-	9	11	-	-	-	-	-	-	17
P.H.F.		0.563	0.550							0.708

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40° 72612.0000 North

Start Time	5/20/2018 Sun	NB	SB	Total
12:00 AM		0	0	0
12:15		0	1	1
12:30		0	0	0
12:45		1	1	2
01:00		2	1	3
01:15		0	1	1
01:30		0	0	0
01:45		0	0	0
02:00		0	0	0
02:15		0	0	0
02:30		0	0	0
02:45		0	0	0
03:00		0	0	0
03:15		0	0	0
03:30		0	1	1
03:45		0	0	0
04:00		1	0	1
04:15		0	0	0
04:30		0	1	1
04:45		0	0	0
05:00		0	0	0
05:15		0	1	1
05:30		0	0	0
05:45		0	0	0
06:00		0	0	0
06:15		0	0	0
06:30		1	0	1
06:45		0	2	2
07:00		0	1	1
07:15		0	0	0
07:30		1	0	1
07:45		1	0	1
08:00		1	0	1
08:15		1	0	1
08:30		3	0	3
08:45		1	0	1
09:00		0	0	0
09:15		0	0	0
09:30		0	1	1
09:45		1	1	2
10:00		1	1	2
10:15		1	3	4
10:30		3	1	4
10:45		3	2	5
11:00		3	0	3
11:15		2	2	4
11:30		1	3	4
11:45		1	1	2
Total		29	25	54
Percent		53.7%	46.3%	
Peak	-	10:30	10:00	10:15
Vol.	-	11	7	16
P.H.F.		0.917	0.583	0.800

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40° 72612.0000 North

Start Time	5/20/2018 Sun	NB	SB							Total
12:00 PM		1	4							5
12:15		4	**2**							**6**
12:30		1	**5**							**6**
12:45		0	**1**							**1**
01:00		4	**5**							**9**
01:15		1	1							2
01:30		1	2							3
01:45		2	0							2
02:00		2	6							8
02:15		0	2							2
02:30		3	2							5
02:45		4	3							7
03:00		2	0							2
03:15		3	5							8
03:30		1	1							2
03:45		0	0							0
04:00		3	3							6
04:15		1	2							3
04:30		1	1							2
04:45		0	1							1
05:00		**8**	0							8
05:15		**1**	1							2
05:30		**2**	1							3
05:45		**5**	1							6
06:00		2	1							3
06:15		0	2							2
06:30		0	0							0
06:45		1	2							3
07:00		2	0							2
07:15		0	1							1
07:30		1	0							1
07:45		1	1							2
08:00		1	1							2
08:15		1	0							1
08:30		2	2							4
08:45		1	1							2
09:00		0	0							0
09:15		0	2							2
09:30		0	0							0
09:45		0	0							0
10:00		1	0							1
10:15		0	2							2
10:30		0	0							0
10:45		0	0							0
11:00		0	1							1
11:15		0	0							0
11:30		0	0							0
11:45		0	0							0
Total		63	65							128
Percent		49.2%	50.8%							
Peak	-	17:00	12:15	-	-	-	-	-	-	12:15
Vol.	-	16	13	-	-	-	-	-	-	22
P.H.F.		0.500	0.650							0.611

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40° 72612.0000 North

Start Time	5/21/2018 Mon	NB	SB	Total
12:00 AM		0	0	0
12:15		0	0	0
12:30		1	0	1
12:45		0	0	0
01:00		0	0	0
01:15		0	0	0
01:30		0	0	0
01:45		0	0	0
02:00		0	0	0
02:15		1	0	1
02:30		0	1	1
02:45		1	1	2
03:00		0	0	0
03:15		0	0	0
03:30		0	0	0
03:45		0	0	0
04:00		0	0	0
04:15		0	0	0
04:30		3	0	3
04:45		1	2	3
05:00		1	1	2
05:15		0	1	1
05:30		4	1	5
05:45		4	0	4
06:00		7	1	8
06:15		3	3	6
06:30		7	3	10
06:45		5	1	6
07:00		**9**	**5**	**14**
07:15		**6**	**0**	**6**
07:30		**10**	**3**	**13**
07:45		**6**	**8**	**14**
08:00		3	4	7
08:15		3	1	4
08:30		3	3	6
08:45		4	2	6
09:00		6	1	7
09:15		3	2	5
09:30		2	7	9
09:45		7	5	12
10:00		1	2	3
10:15		2	2	4
10:30		2	1	3
10:45		5	2	7
11:00		4	1	5
11:15		0	3	3
11:30		5	4	9
11:45		6	6	12
Total		125	77	202
Percent		61.9%	38.1%	
Peak	-	07:00	07:00	07:00
Vol.	-	31	16	47
P.H.F.		0.775	0.500	0.839

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40' 72612.0000 North

Start Time	5/21/2018 Mon	NB	SB	Total
12:00 PM		3	3	6
12:15		4	4	8
12:30		2	7	9
12:45		3	2	5
01:00		2	6	8
01:15		4	0	4
01:30		4	4	8
01:45		2	2	4
02:00		3	3	6
02:15		1	6	7
02:30		8	6	14
02:45		6	7	13
03:00		1	5	6
03:15		3	10	13
03:30		2	6	8
03:45		0	7	7
04:00		2	9	11
04:15		4	3	7
04:30		6	7	13
04:45		1	2	3
05:00		2	6	8
05:15		2	2	4
05:30		1	6	7
05:45		3	2	5
06:00		0	3	3
06:15		0	2	2
06:30		1	0	1
06:45		3	2	5
07:00		5	2	7
07:15		1	3	4
07:30		4	6	10
07:45		1	2	3
08:00		2	1	3
08:15		2	0	2
08:30		1	1	2
08:45		0	1	1
09:00		2	0	2
09:15		2	2	4
09:30		2	3	5
09:45		0	4	4
10:00		1	0	1
10:15		0	3	3
10:30		0	0	0
10:45		0	1	1
11:00		0	0	0
11:15		0	0	0
11:30		0	0	0
11:45		0	0	0
Total		96	151	247
Percent		38.9%	61.1%	
Peak	-	14:00	15:15	14:30
Vol.	-	18	32	46
P.H.F.		0.563	0.800	0.821

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40° 72612.0000 North

Start Time	5/22/2018 Tue	NB	SB	Total
12:00 AM		0	0	0
12:15		0	0	0
12:30		0	0	0
12:45		0	0	0
01:00		0	0	0
01:15		0	0	0
01:30		1	0	1
01:45		0	1	1
02:00		0	1	1
02:15		0	0	0
02:30		0	0	0
02:45		1	0	1
03:00		0	0	0
03:15		0	0	0
03:30		1	0	1
03:45		0	0	0
04:00		1	1	2
04:15		3	1	4
04:30		1	3	4
04:45		1	2	3
05:00		1	0	1
05:15		1	1	2
05:30		1	0	1
05:45		4	0	4
06:00		3	2	5
06:15		4	0	4
06:30		8	3	11
06:45		7	3	10
07:00		6	2	8
07:15		5	3	8
07:30		7	3	10
07:45		5	5	10
08:00		3	0	3
08:15		1	2	3
08:30		3	2	5
08:45		8	1	9
09:00		0	2	2
09:15		4	4	8
09:30		2	1	3
09:45		4	1	5
10:00		1	2	3
10:15		1	1	2
10:30		1	2	3
10:45		1	1	2
11:00		3	1	4
11:15		1	5	6
11:30		3	0	3
11:45		5	1	6
Total		102	57	159
Percent		64.2%	35.8%	
Peak		06:30	07:00	06:30
Vol.		26	13	37
P.H.F.		0.813	0.650	0.841

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
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Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40' 72612.0000 North

Start Time	5/22/2018 Tue	NB	SB							Total
12:00 PM		0	6							6
12:15		4	2							6
12:30		2	2							4
12:45		2	3							5
01:00		5	1							6
01:15		6	8							14
01:30		3	5							8
01:45		4	2							6
02:00		1	2							3
02:15		2	3							5
02:30		4	10							14
02:45		3	5							8
03:00		3	1							4
03:15		2	5							7
03:30		3	8							11
03:45		3	11							14
04:00		0	3							3
04:15		2	4							6
04:30		3	5							8
04:45		2	6							8
05:00		2	3							5
05:15		3	5							8
05:30		2	4							6
05:45		3	5							8
06:00		2	0							2
06:15		0	1							1
06:30		1	1							2
06:45		3	2							5
07:00		3	2							5
07:15		0	1							1
07:30		0	3							3
07:45		0	5							5
08:00		1	0							1
08:15		0	1							1
08:30		5	0							5
08:45		0	0							0
09:00		0	2							2
09:15		1	1							2
09:30		0	1							1
09:45		0	0							0
10:00		0	0							0
10:15		0	2							2
10:30		0	0							0
10:45		0	0							0
11:00		0	0							0
11:15		1	0							1
11:30		0	1							1
11:45		0	1							1
Total		81	133							214
Percent		37.9%	62.1%							
Peak	-	13:00	15:15	-	-	-	-	-	-	15:00
Vol.	-	18	27	-	-	-	-	-	-	36
P.H.F.		0.750	0.614							0.643

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40° 72612.0000 North

Start Time	5/23/2018 Wed	NB	SB	Total
12:00 AM		0	0	0
12:15		0	0	0
12:30		0	0	0
12:45		0	0	0
01:00		0	1	1
01:15		0	0	0
01:30		0	0	0
01:45		0	0	0
02:00		0	0	0
02:15		0	0	0
02:30		1	1	2
02:45		2	2	4
03:00		0	0	0
03:15		0	0	0
03:30		0	0	0
03:45		0	0	0
04:00		1	0	1
04:15		1	4	5
04:30		4	0	4
04:45		2	4	6
05:00		3	3	6
05:15		0	0	0
05:30		5	2	7
05:45		3	1	4
06:00		3	0	3
06:15		2	3	5
06:30		5	1	6
06:45		6	5	11
07:00		6	1	7
07:15		5	5	10
07:30		7	2	9
07:45		6	2	8
08:00		2	2	4
08:15		4	4	8
08:30		4	1	5
08:45		1	6	7
09:00		5	1	6
09:15		4	2	6
09:30		2	1	3
09:45		5	4	9
10:00		5	5	10
10:15		3	6	9
10:30		2	2	4
10:45		4	2	6
11:00		3	5	8
11:15		6	5	11
11:30		6	4	10
11:45		1	1	2
Total		119	88	207
Percent		57.5%	42.5%	
Peak	-	06:45	09:45	06:45
Vol.	-	24	17	37
P.H.F.		0.857	0.708	0.841

Tri-State Traffic Data

184 Baker Rd.
Coatesville, PA
tstdata.com

Road: Gun Club Rd
Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40' 72612.0000 North

Start Time	5/23/2018 Wed	NB	SB	Total
12:00 PM		3	5	8
12:15		1	5	6
12:30		5	1	6
12:45		3	0	3
01:00		1	6	7
01:15		2	3	5
01:30		5	2	7
01:45		2	1	3
02:00		2	3	5
02:15		3	7	10
02:30		10	13	23
02:45		6	3	9
03:00		1	3	4
03:15		3	7	10
03:30		3	4	7
03:45		4	12	16
04:00		5	5	10
04:15		1	0	1
04:30		4	9	13
04:45		4	2	6
05:00		4	6	10
05:15		4	4	8
05:30		4	4	8
05:45		3	3	6
06:00		2	3	5
06:15		2	4	6
06:30		3	2	5
06:45		3	2	5
07:00		3	1	4
07:15		4	3	7
07:30		0	0	0
07:45		0	1	1
08:00		1	1	2
08:15		2	4	6
08:30		1	1	2
08:45		1	3	4
09:00		2	1	3
09:15		0	1	1
09:30		0	1	1
09:45		2	3	5
10:00		1	0	1
10:15		0	1	1
10:30		0	0	0
10:45		0	0	0
11:00		0	1	1
11:15		0	0	0
11:30		0	0	0
11:45		1	0	1
Total		111	141	252
Percent		44.0%	56.0%	
Peak	-	14:00	15:15	14:00
Vol.	-	21	28	47
P.H.F.		0.525	0.538	0.511

Tri-State Traffic Data

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Coatesville, PA
tstdata.com

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Location: 0.25 mi S of Rt. 248
Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40' 72612.0000 North

Start Time	5/24/2018 Thu	NB	SB	Total
12:00 AM		0	0	0
12:15		0	0	0
12:30		0	1	1
12:45		0	0	0
01:00		0	0	0
01:15		1	0	1
01:30		0	0	0
01:45		0	0	0
02:00		0	1	1
02:15		1	0	1
02:30		0	1	1
02:45		0	0	0
03:00		0	0	0
03:15		0	0	0
03:30		0	0	0
03:45		0	0	0
04:00		0	0	0
04:15		0	0	0
04:30		5	4	9
04:45		0	1	1
05:00		3	0	3
05:15		2	2	4
05:30		3	1	4
05:45		7	3	10
06:00		3	1	4
06:15		6	0	6
06:30		4	1	5
06:45		3	4	7
07:00		3	1	4
07:15		4	4	8
07:30		8	5	13
07:45		4	2	6
08:00		3	1	4
08:15		2	2	4
08:30		6	1	7
08:45		4	2	6
09:00		2	9	11
09:15		1	5	6
09:30		3	0	3
09:45		4	1	5
10:00		1	2	3
10:15		2	3	5
10:30		2	2	4
10:45		3	5	8
11:00		4	0	4
11:15		7	5	12
11:30		1	3	4
11:45		0	1	1
Total		102	74	176
Percent		58.0%	42.0%	
Peak	-	05:45	08:30	- - - - - - 06:45
Vol.	-	20	17	- - - - - - 32
P.H.F.		0.714	0.472	0.615

Tri-State Traffic Data

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Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40' 72612.0000 North

Start Time	5/24/2018 Thu	NB	SB	Total
12:00 PM		5	6	11
12:15		5	3	8
12:30		2	3	5
12:45		2	5	7
01:00		2	3	5
01:15		6	1	7
01:30		4	4	8
01:45		3	2	5
02:00		4	4	8
02:15		4	7	11
02:30		4	10	14
02:45		9	3	12
03:00		0	3	3
03:15		4	6	10
03:30		6	4	10
03:45		1	6	7
04:00		3	9	12
04:15		2	3	5
04:30		3	5	8
04:45		4	3	7
05:00		5	11	16
05:15		3	13	16
05:30		6	7	13
05:45		3	4	7
06:00		0	4	4
06:15		2	3	5
06:30		3	4	7
06:45		2	2	4
07:00		1	1	2
07:15		4	1	5
07:30		4	0	4
07:45		0	0	0
08:00		6	1	7
08:15		1	3	4
08:30		0	3	3
08:45		1	2	3
09:00		1	1	2
09:15		0	2	2
09:30		1	1	2
09:45		0	0	0
10:00		0	0	0
10:15		0	4	4
10:30		0	1	1
10:45		1	0	1
11:00		0	0	0
11:15		2	0	2
11:30		0	0	0
11:45		0	0	0
Total		119	158	277
Percent		43.0%	57.0%	
Peak	-	14:00	17:00	16:45
Vol.	-	21	35	52
P.H.F.		0.583	0.673	0.813

Tri-State Traffic Data

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Counter: CM87

Site Code: 000000000002
Station ID: 000000000000
A to B NB

Latitude: 40° 72612.0000 North

Start Time	5/25/2018 Fri	NB	SB	Total
12:00 AM		0	0	0
12:15		1	0	1
12:30		0	0	0
12:45		0	0	0
01:00		0	0	0
01:15		0	1	1
01:30		1	0	1
01:45		1	1	2
02:00		0	1	1
02:15		1	1	2
02:30		0	1	1
02:45		1	0	1
03:00		2	1	3
03:15		0	1	1
03:30		0	0	0
03:45		0	0	0
04:00		1	0	1
04:15		3	2	5
04:30		1	2	3
04:45		2	1	3
05:00		1	1	2
05:15		5	5	10
05:30		3	0	3
05:45		3	0	3
06:00		1	0	1
06:15		4	1	5
06:30		7	1	8
06:45		7	3	10
07:00		4	6	10
07:15		3	2	5
07:30		9	2	11
07:45		2	6	8
08:00		2	2	4
08:15		2	1	3
08:30		4	2	6
08:45		5	1	6
09:00		*	*	*
09:15		*	*	*
09:30		*	*	*
09:45		*	*	*
10:00		*	*	*
10:15		*	*	*
10:30		*	*	*
10:45		*	*	*
11:00		*	*	*
11:15		*	*	*
11:30		*	*	*
11:45		*	*	*
Total		76	45	121
Percent		62.8%	37.2%	
Peak	-	06:45	07:00	06:45
Vol.	-	23	16	36
P.H.F.		0.639	0.667	0.818
Total		1464	1491	2955
Percent		49.5%	50.5%	

ADT ADT 372 AADT 372

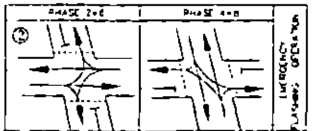
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	NORTHAMPTON	SR 0248		

UPPER NAZARETH

PERMIT NO 48-215-002 | PAGE: 2 of 3

DATE ISSUED: 10-2-96 | DATE REVISED 6-12-17

PHASING, TIMING AND COLOR SEQUENCE CHART



	PHASE 2+6 INTERVALS				PHASE 4+8 INTERVALS				EMERGENCY FLASHING OPERATION
SIGNALS	1	2	3	4	5	6	7	8	
1,2,3,4	G	G	Y	R	R	R	R	R	Y
5,6,7,8	R	R	R	R	G	G	Y	R	R
① 9,10,11,12	W	FH	H	H	H	H	H	H	OFF
① 13,14,15,16	H	H	H	H	W	FH	H	H	OFF
FIXED TIME			5	1			4.5	1.5	
MINIMUM	12				3				
SEC./ACT	4								
MAX. INITIAL	29								
PASSAGE	7				7				
TO REDUCE	10								
BEFORE RED	30								
MIN. GAP	3								
MAXIMUM I	30				28				70 SEC
MAXIMUM II	34				34				80 SEC
MAXIMUM I	42				26				80 SEC
PEDESTRIAN ①	13	12			10	7			
MEMORY	NR				N				

① UPON PEDESTRIAN ACTUATION ONLY, OTHERWISE HAND

② VOLUME DENSITY TIMINGS TO BEGIN AFTER SIDE STREET ACTUATION

GENERAL NOTES

Installation, operation and maintenance of this traffic signal to be in accordance with Pennsylvania Department of Transportation Regulations on Official Traffic Control Devices.

No modifications of this installation are permitted unless prior approval is granted, in writing, by the department.

All maintenance necessary for proper visibility of the signals, including trimming trees, is the responsibility of the Permittee.

All signs and pavement markings indicated on this drawing are considered part of the permit and are to be installed and maintained by the Permittee, unless otherwise indicated, except the longitudinal pavement markings on State highways which will be maintained by the department.

Install post mounted signals with the signal heads a minimum of 2 feet behind the face of the curb or edge of the shoulder. Support poles for overhead signals will have a minimum horizontal clearance of 2 feet.

The bottom of signal heads and signs erected over the roadway are not to be less than 15 feet nor more than 19 feet above the roadway. The bottom of post mounted signal heads are to be not less than 8 feet nor more than 15 feet above the sidewalk or pavement grade.

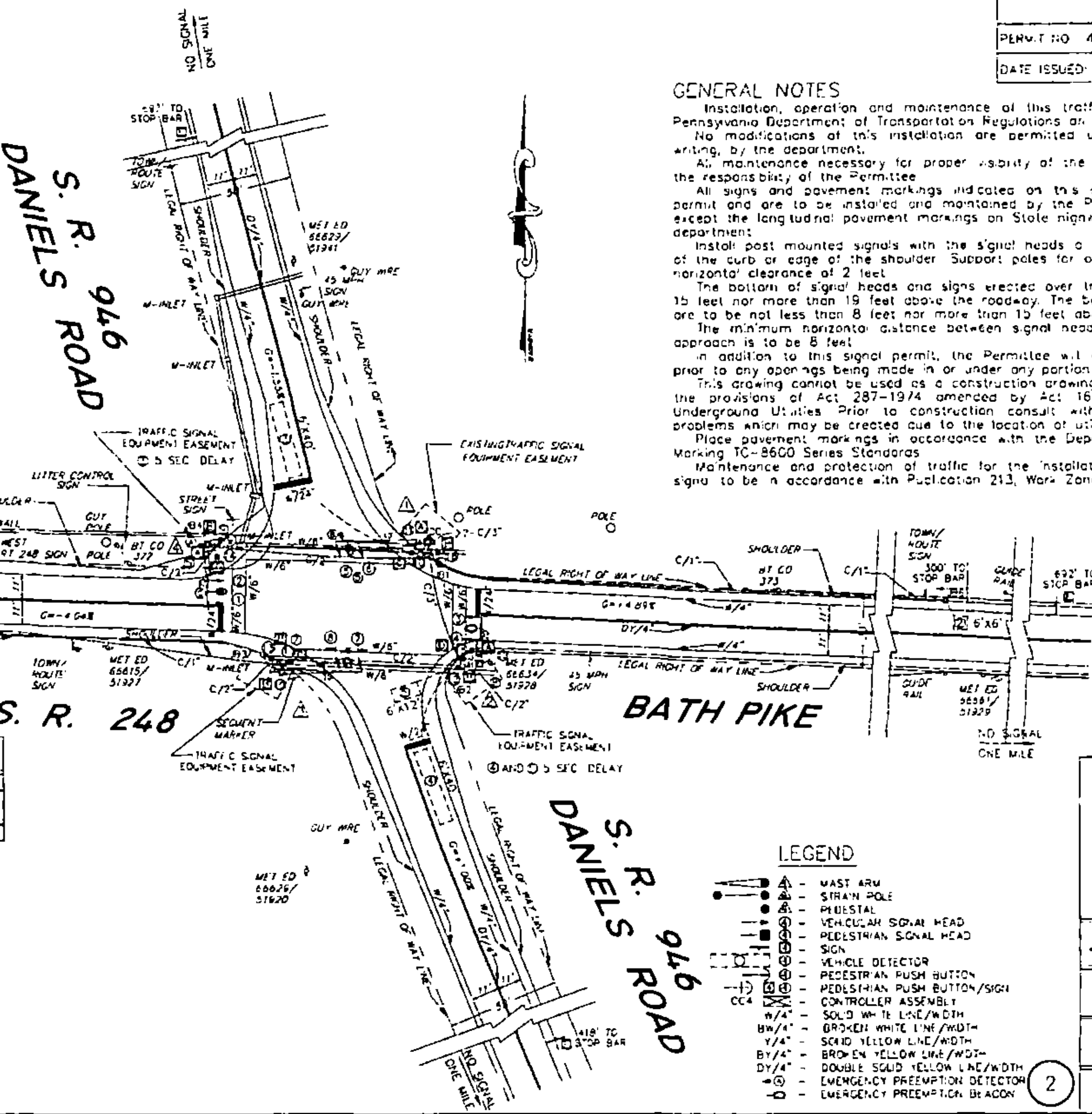
The minimum horizontal distance between signal heads measured at right angles to the approach is to be 8 feet.

In addition to this signal permit, the Permittee will obtain a Highway Occupancy Permit prior to any openings being made in or under any portion of a State Highway, if applicable.

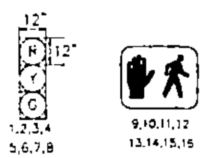
This drawing cannot be used as a construction drawing unless the Permittee complies with the provisions of Act 287-1974 amended by Act 160-2016, Prevention of Damage to Underground Utilities. Prior to construction consult with utility companies to resolve any problems which may be created due to the location of utilities.

Place pavement markings in accordance with the Department of Transportation Pavement Marking TC-8600 Series Standards.

Maintenance and protection of traffic for the installation and maintenance of this traffic signal to be in accordance with Publication 213, Work Zone Traffic Control.



SIGNAL INDICATION



SIGNALS 1,2,3 AND 4 TO BE EQUIPPED WITH BACKPLATES

PROGRAM CHART

PROG NO.	M	T	W	T	F	S	S	TIME	CYCLE	OFFSET (SECONDS)	REMARKS
1	•	•	•	•	•			06:00:00	80	----	MAX 2
2	•	•	•	•	•			09:00:00	70	----	MAX 1
3	•	•	•	•	•			15:00:00	80	----	MAX 3
4	•	•	•	•	•			18:00:00	70	----	MAX 1

SIGN TABULATION

PLAN SYMBOL	SERIES	SIZE	QTY	MESSAGE
	R10-3B	9x12	3	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL ⟶
	R10-3B	9x12	5	⟵ EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL
•	D3-4	60x18	2	Bath Pk
•	D3-4	78x16	2	Daniels Rd
	W3-3	36x36	4	SIGNAL AHEAD SIGN

• Overhead street name signs to be structure mounted flat sheet aluminum with stiffeners. Overhead street name signs to consist of white legend and border on green background.

•• All signs to utilize retroreflectorized Type III, IV, VII, VIII, IX, or X sheeting for legend, border, and background.

LEGEND

- MAST ARM
- STRAIN POLE
- PEDESTAL
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SIGN
- VEHICLE DETECTOR
- PEDESTRIAN PUSH BUTTON
- PEDESTRIAN PUSH BUTTON/SIGN
- CC4 – CONTROLLER ASSEMBLY
- W/4" – SOLID WHITE LINE/WIDTH
- BW/4" – BROKEN WHITE LINE/WIDTH
- Y/4" – SOLID YELLOW LINE/WIDTH
- BY/4" – BROKEN YELLOW LINE/WIDTH
- DY/4" – DOUBLE SOLID YELLOW LINE/WIDTH
- EMERGENCY PREEMPTION DETECTOR
- EMERGENCY PREEMPTION BEACON

(2)

County: NORTHAMPTON

Municipality: UPPER NAZARETH TOWNSHIP

Intersection:
ROUTE 248 (BATH PIKE)
ROUTE 946 (DANIELS ROAD)

Reviewed: [signature] Municipal Official — Date 6/1/17

Reviewed: [signature] District Traffic Signals Div — Date 6/7/17

Recommended: [signature] District Traffic Engineer — Date 6/12/17

Scale 25 0 25 50

MASER CONSULTING P.A.

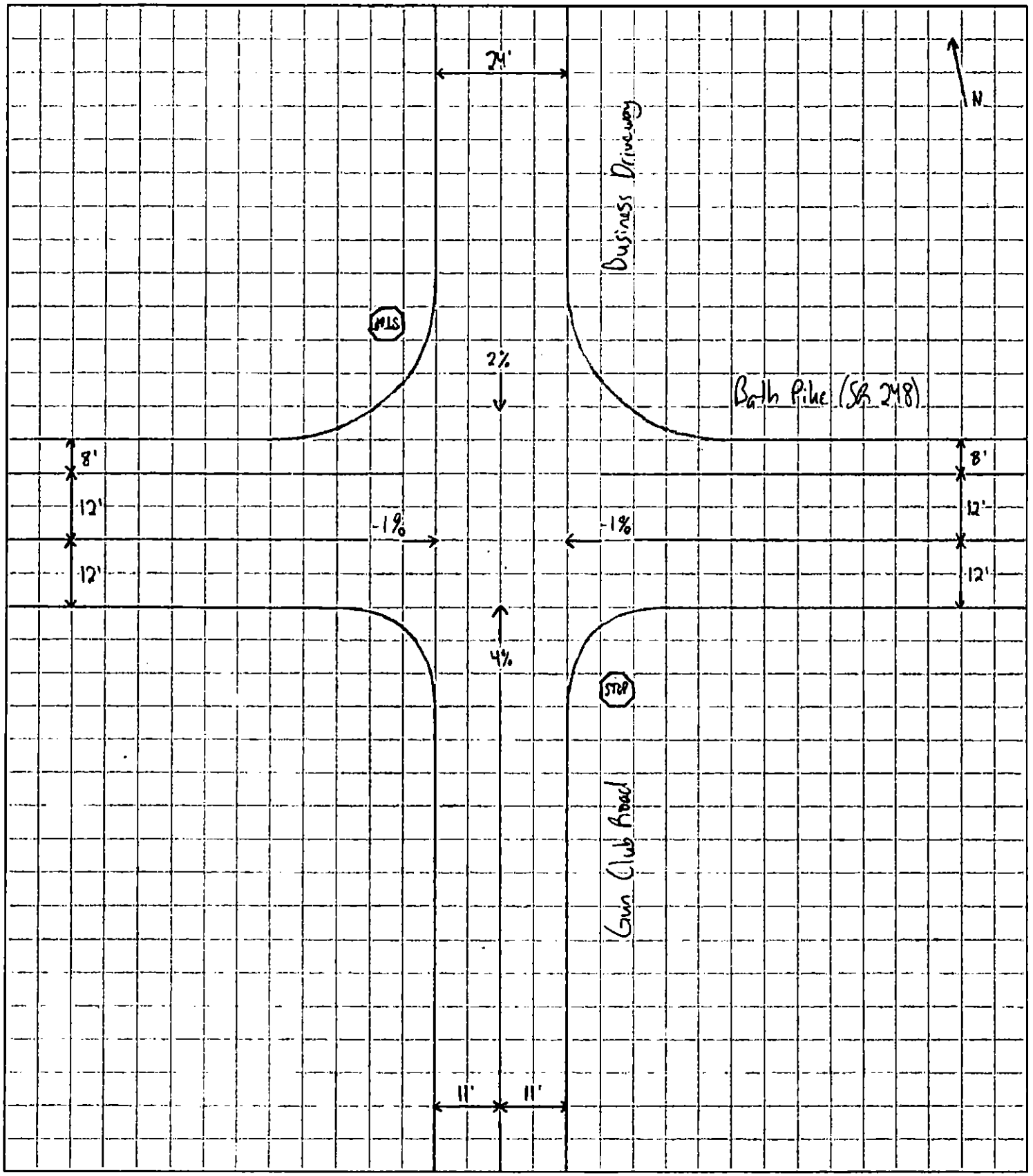
Project: _____

Project#: 18000145 Sheet#: _____ of _____ Scale: _____

Calculated By: _____ Date: _____ Checked By: _____ Date: _____

Office Submitted By: _____ Date: _____

Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists



MASER CONSULTING P.A.

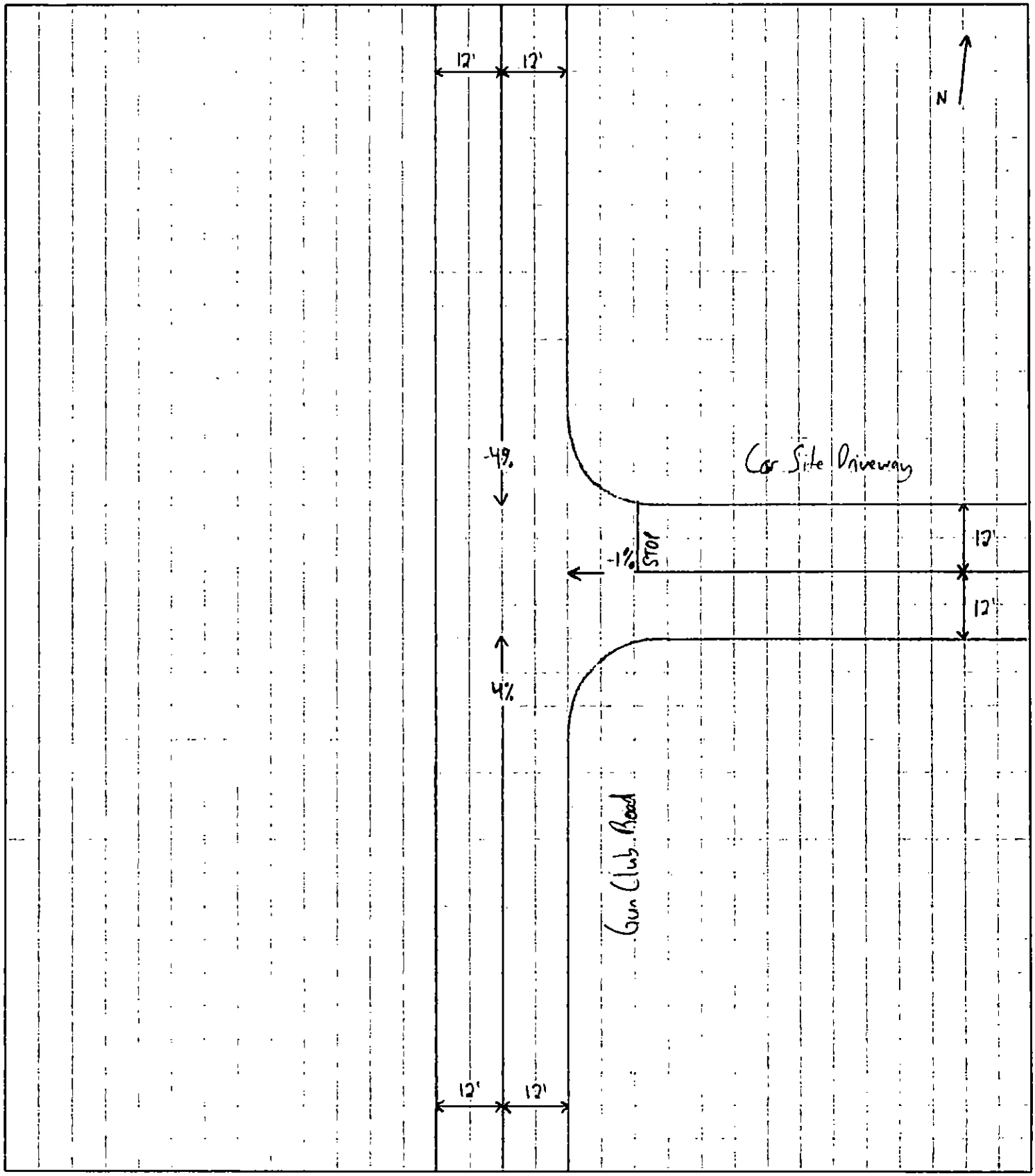
Project:

Project#: 18000495 Sheet#: of Scale:

Calculated By: Date: Checked By: Date:

Office Submitted By: Date:

Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists



MASER CONSULTING P.A.

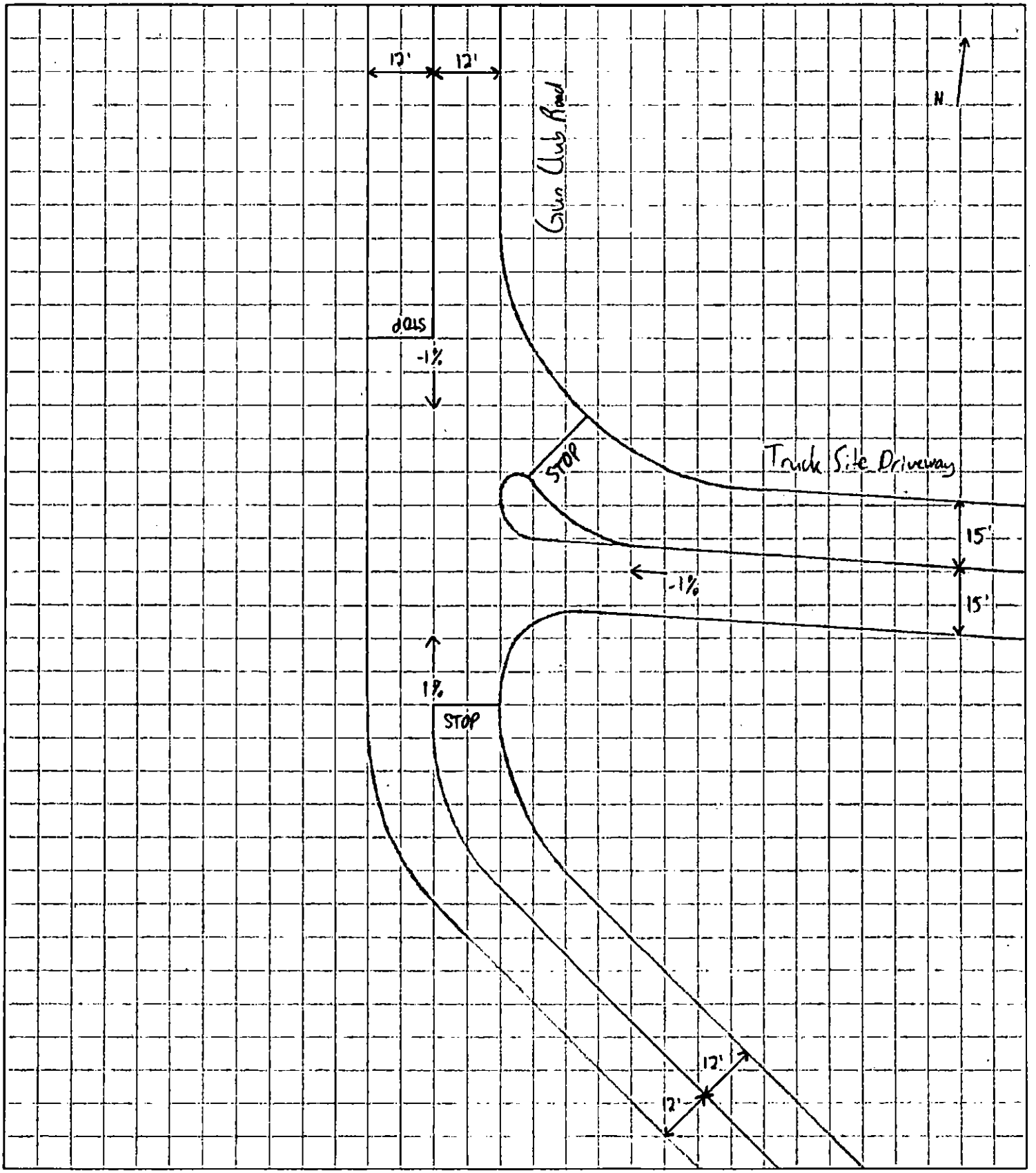
Project: _____

Project#: 18000145 Sheet#: _____ of _____ Scale: _____

Calculated By: _____ Date: _____ Checked By: _____ Date: _____

Office Submitted By: _____ Date: _____

Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists



MASER CONSULTING P.A.

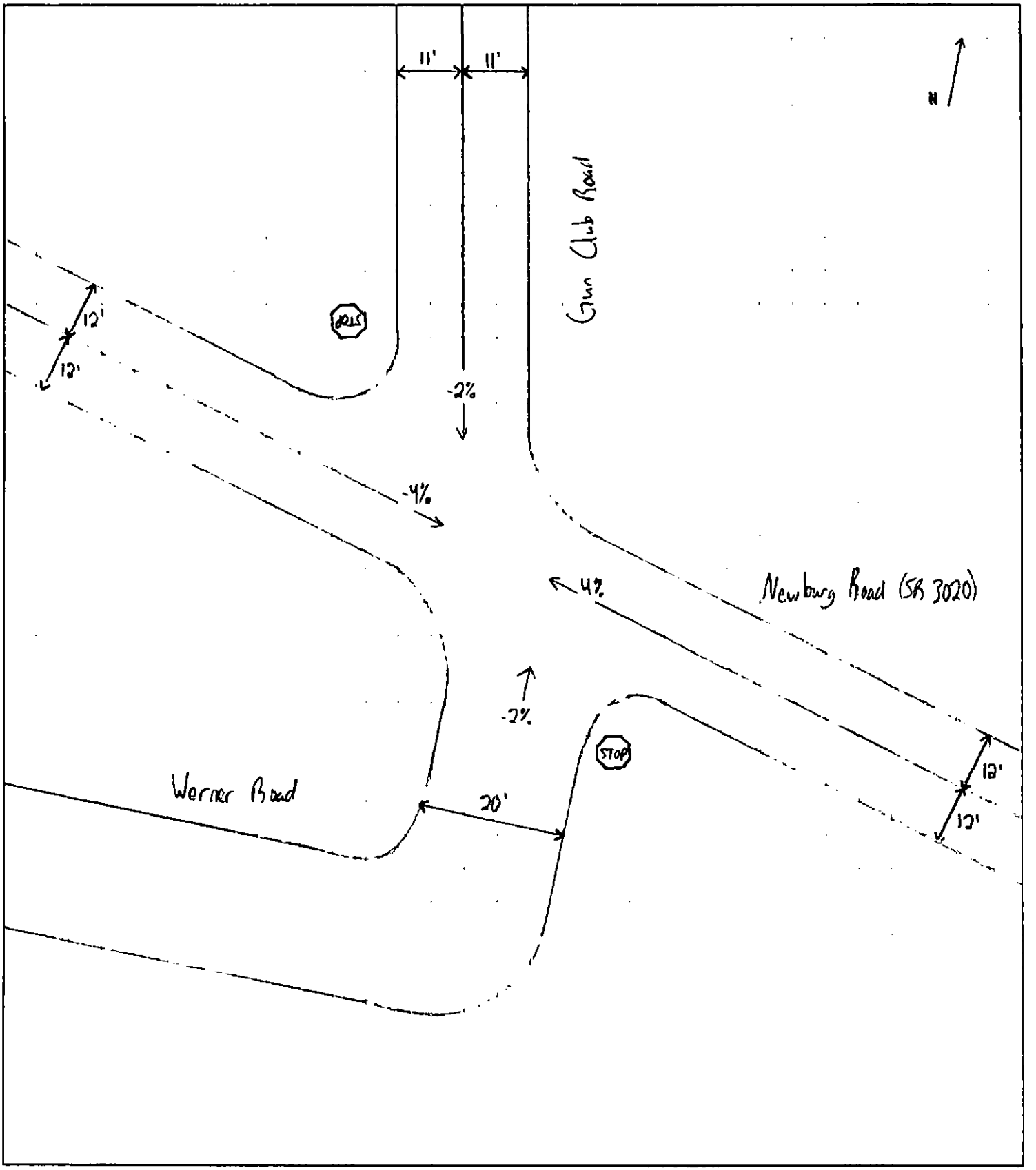
Project:

Project#: 18000145 Sheet#: of Scale:

Calculated By: Date: Checked By: Date:

Office Submitted By: Date:

Engineers | Planners | Surveyors | Landscape Architects | Environmental Scientists



PROJECT TADMOR

TRAFFIC IMPACT ASSESSMENT

APPENDIX D

TRIP GENERATION

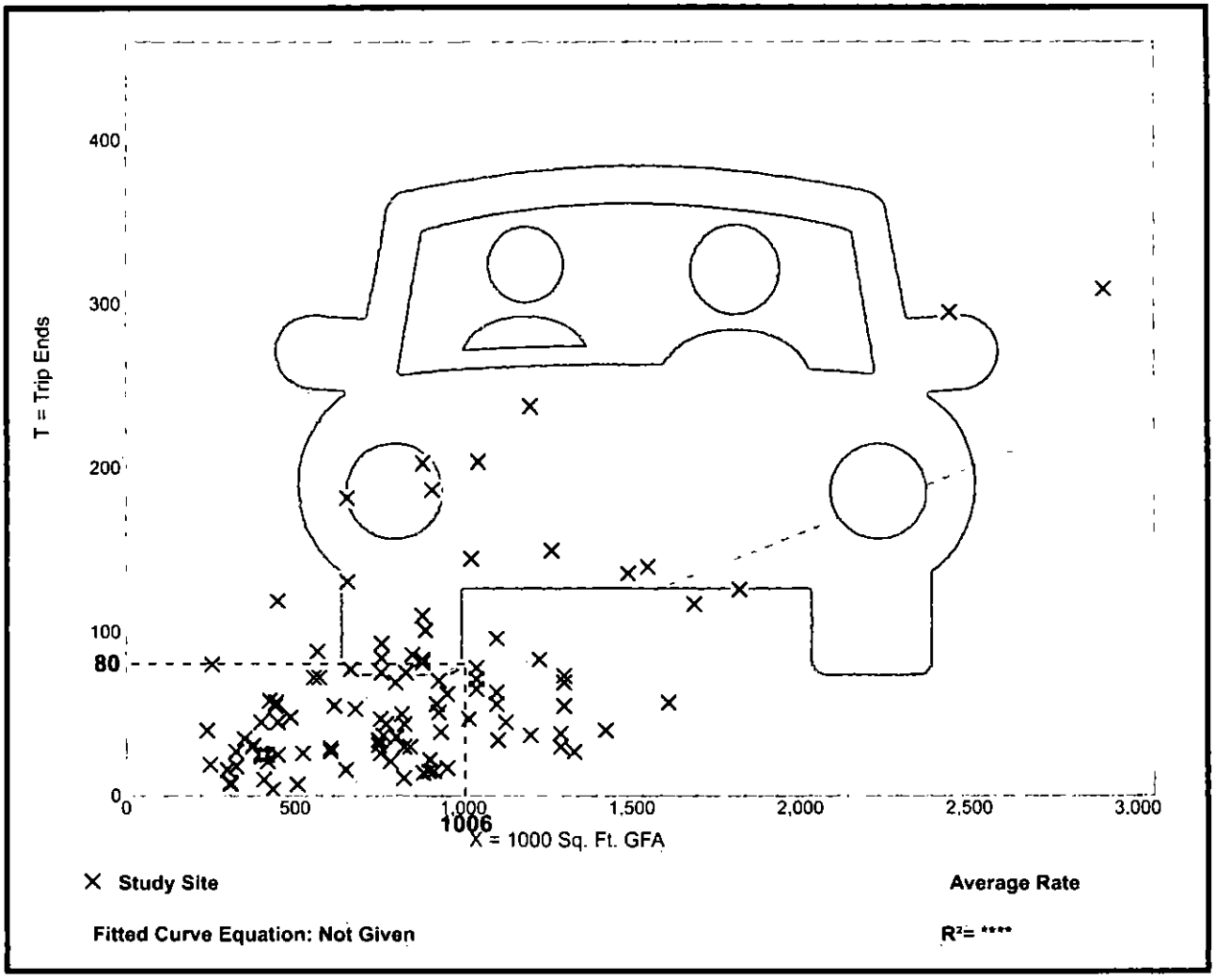
High-Cube Transload and Short-Term Storage Warehouse
(154)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 102
Avg. 1000 Sq. Ft. GFA: 846
Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.08	0.01 - 0.31	0.05

Data Plot and Equation



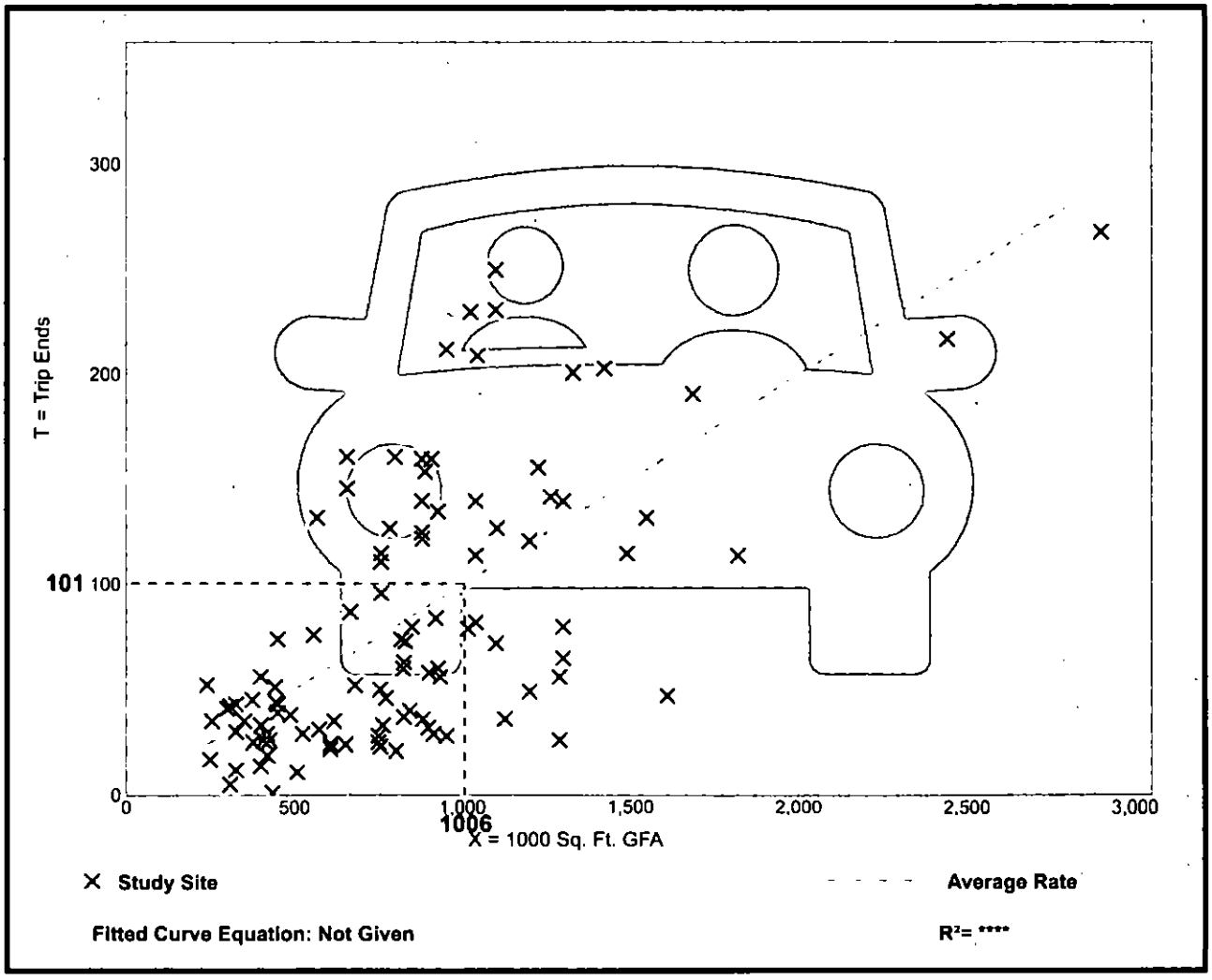
High-Cube Transload and Short-Term Storage Warehouse
(154)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 103
Avg. 1000 Sq. Ft. GFA: 840
Directional Distribution: 28% entering, 72% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.10	0.00 - 0.25	0.06

Data Plot and Equation



High-Cube Transload and Short-Term Storage Warehouse
(154)

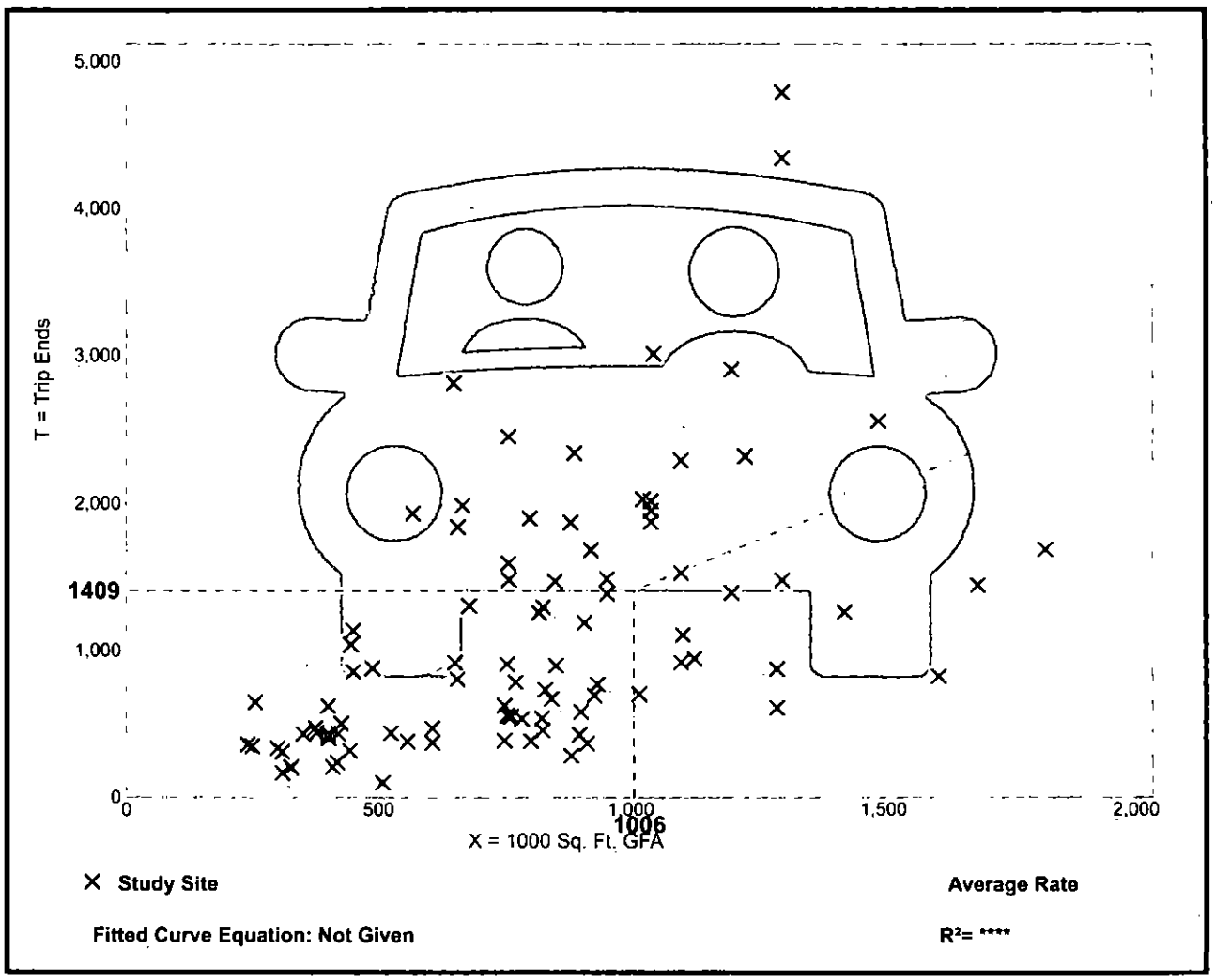
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 91
Avg. 1000 Sq. Ft. GFA: 798
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.40	0.20 - 4.32	0.86

Data Plot and Equation



PROJECT TADMOR

TRAFFIC IMPACT ASSESSMENT

APPENDIX E

TURN WARRANT ANALYSES

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Nazareth Township	Analysis Date:	2/4/2021
County:	Northampton County	Conducted By:	ABZ
PennDOT Engineering District:	5	Checked By:	JMF
		Agency/Company Name:	Maser Consulting

Intersection & Approach Description: Bath Pike (SR 248) Eastbound at Gun Club Road

Analysis Period:	2020 Build	Number of Approach Lanes:	1
Design Hour:	AM Peak	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	45		Type of Analysis
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No		0.0%	N/A
	Through	-		0.0%	N/A
	Right	No		0.0%	N/A
Opposing	Left	No		0.0%	N/A
	Through	-		0.0%	N/A
	Right	No		0.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	4	50.0%	7
	Through	-	354	4.0%	376
	Right	-	18	15.0%	23

Advancing Volume:	406
Right Turn Volume:	23

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 10

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	23
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	-

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

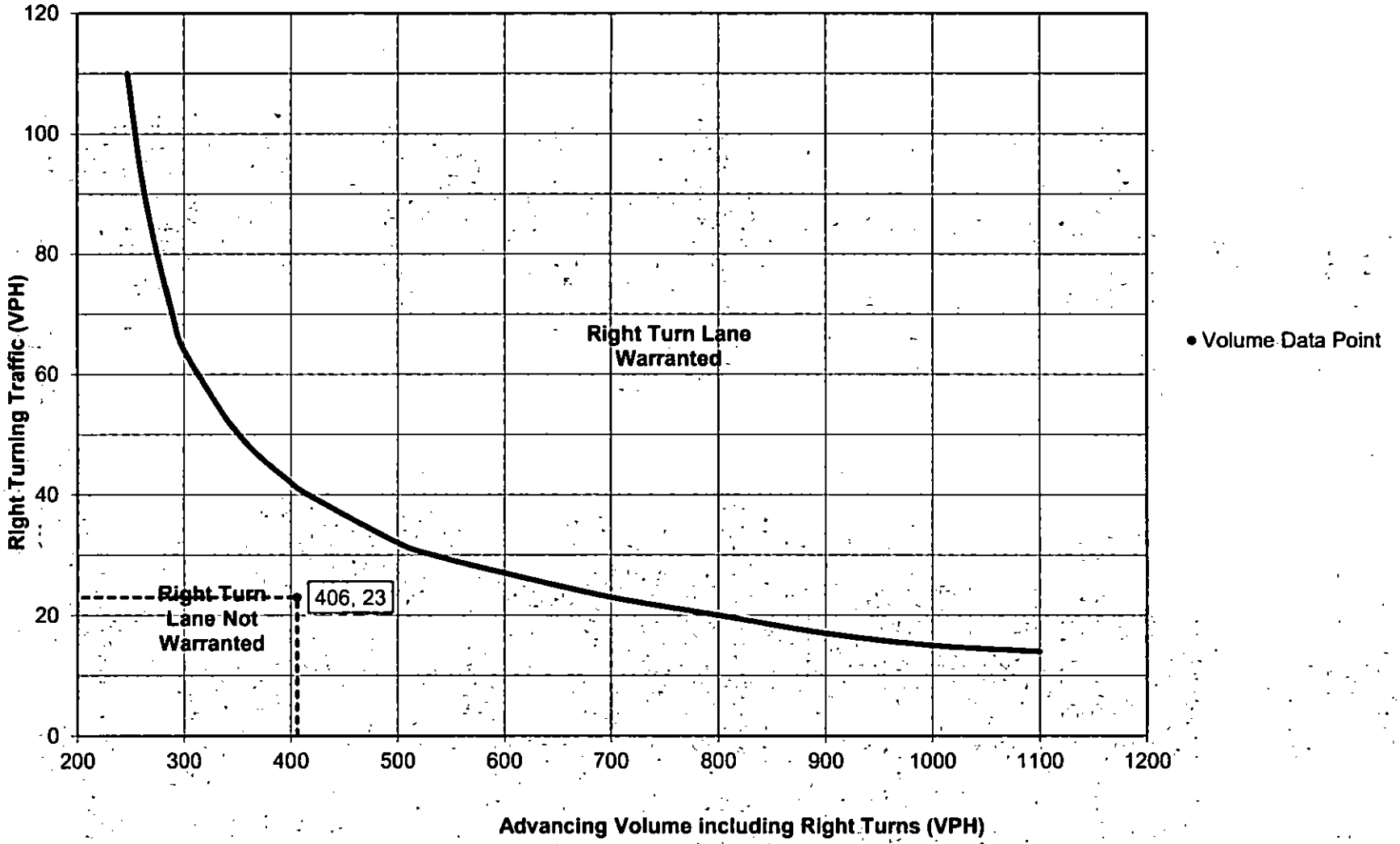
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 10. Warrant for right turn lanes on two-lane roadways (45 mph or greater speeds, unsignalized and signalized intersections)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Nazareth Township	Analysis Date:	2/4/2021
County:	Northampton County	Conducted By:	ABZ
PennDOT Engineering District:	5	Checked By:	JMF
		Agency/Company Name:	Maser Consulting

Intersection & Approach Description: Bath Pike (SR 248) Eastbound at Gun Club Road

Analysis Period:	2020 Build	Number of Approach Lanes:	1
Design Hour:	PM Peak	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	45		Type of Analysis
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No		0.0%	N/A
	Through	-		0.0%	N/A
	Right	No		0.0%	N/A
Opposing	Left	No		0.0%	N/A
	Through	-		0.0%	N/A
	Right	No		0.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	2	0.0%	2
	Through	-	293	3.0%	307
	Right	-	7	0.0%	7

Advancing Volume:	316
Right Turn Volume:	7

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 10

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	7
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	-

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

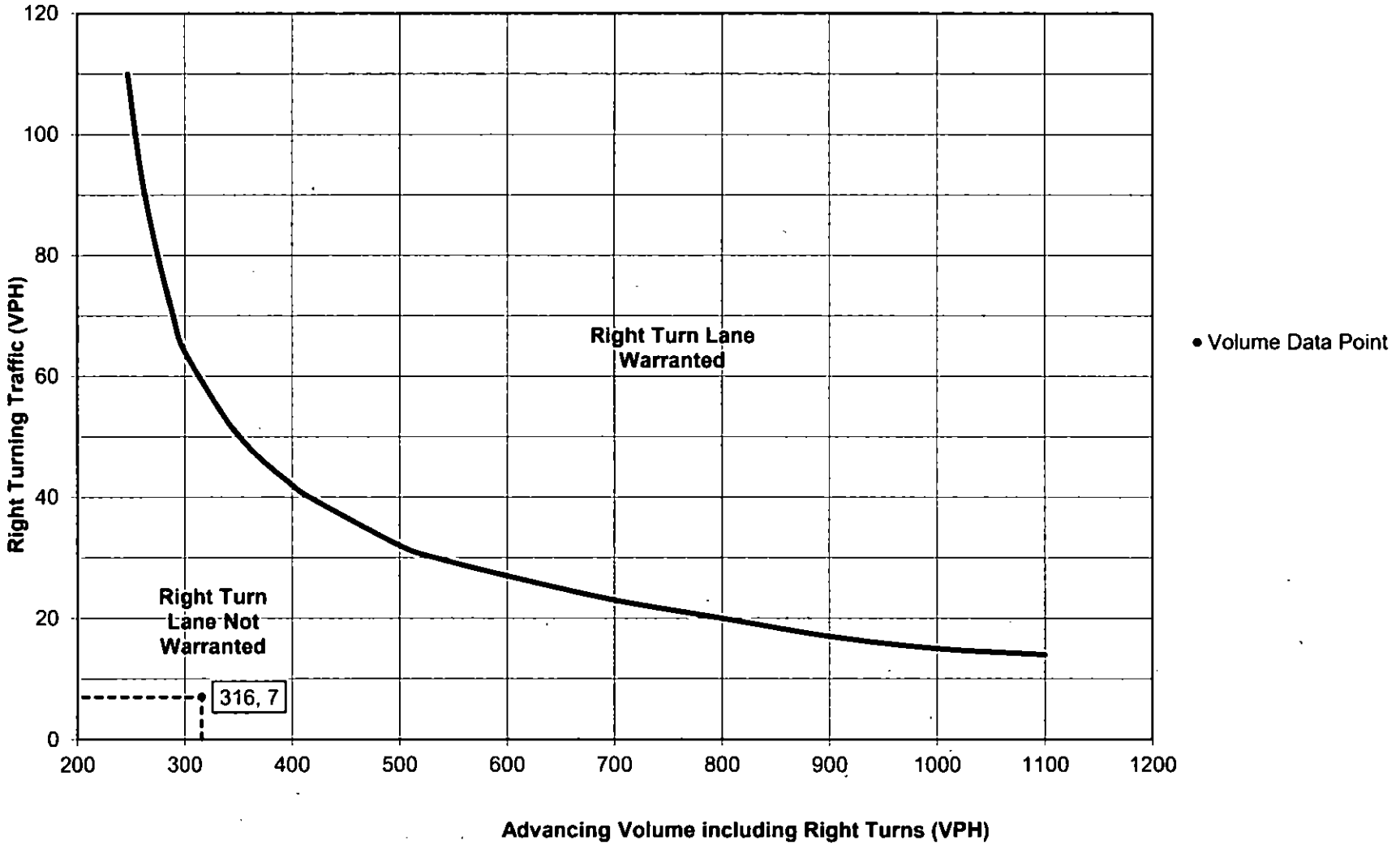
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 10. Warrant for right turn lanes on two-lane roadways (45 mph or greater speeds, unsignalized and signalized intersections)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Nazareth Township	Analysis Date:	2/4/2021
County:	Northampton County	Conducted By:	ABZ
PennDOT Engineering District:	5	Checked By:	JMF
		Agency/Company Name:	Maser Consulting

Intersection & Approach Description: Bath Pike (SR 248) Westbound at Gun Club Road

Analysis Period:	2020 Build	Number of Approach Lanes:	1
Design Hour:	AM Peak	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	45		Type of Analysis
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	51	30.0%	74
	Through	-	193	8.0%	217
	Right	Yes	1	100.0%	3
Opposing	Left	Yes	4	50.0%	7
	Through	-	354	4.0%	376
	Right	Yes	18	15.0%	23

Advancing Volume:	294
Opposing Volume:	406
Left Turn Volume:	74
% Left Turns in Advancing Volume:	25.17%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	-	0	0.0%	N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 3**

Warrant Met?: **Yes**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	74
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	-

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

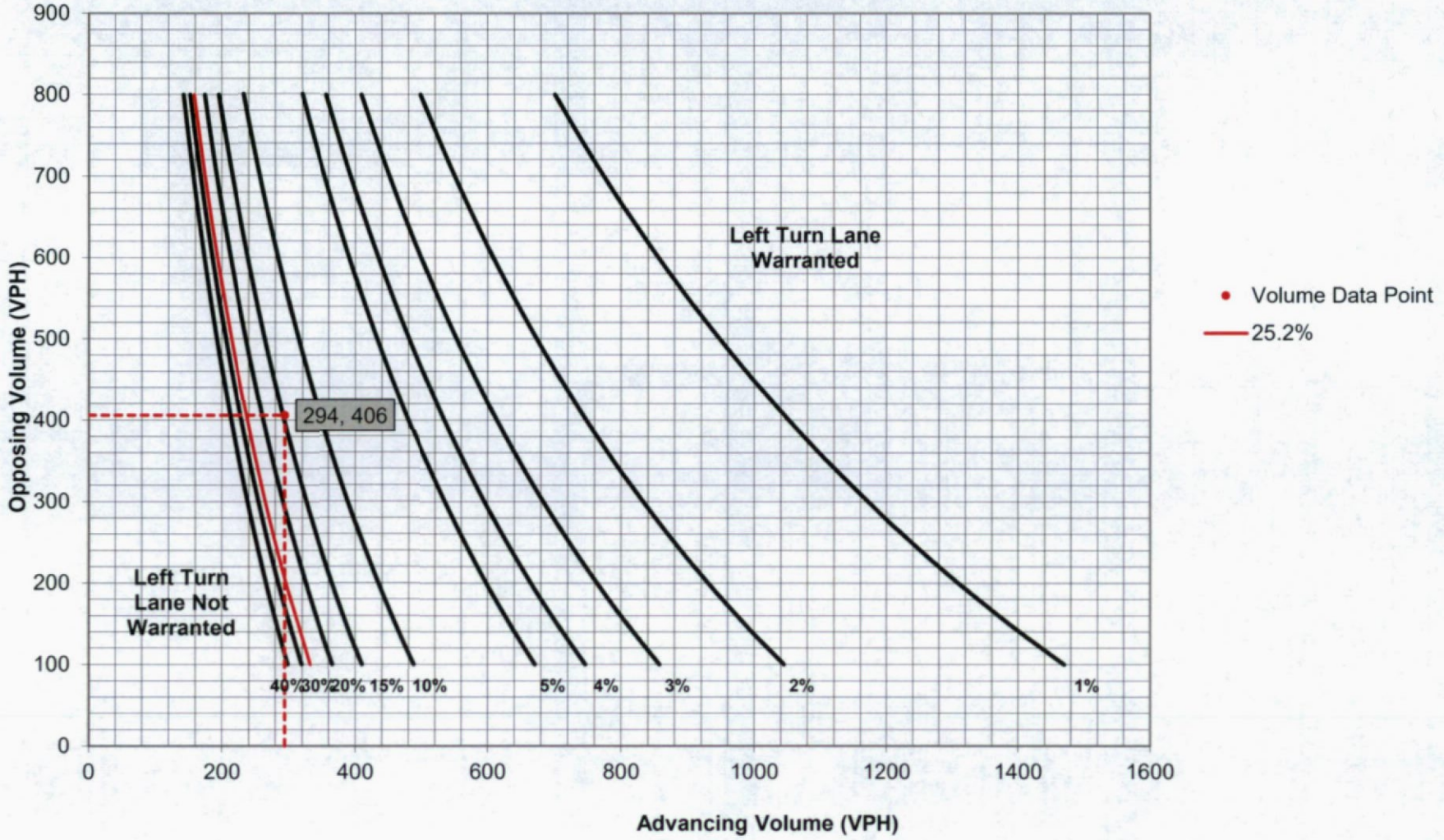
Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	150	Feet
Required Left Turn Lane Storage Length:	150	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 3. Warrant for left turn lanes on two-lane highways (45 mph speed, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis
Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Nazareth Township	Analysis Date:	2/4/2021
County:	Northampton County	Conducted By:	ABZ
PennDOT Engineering District:	5	Checked By:	JMF
		Agency/Company Name:	Maser Consulting

Intersection & Approach Description: Bath Pike (SR 248) Westbound at Gun Club Road

Analysis Period:	2020 Build	Number of Approach Lanes:	1
Design Hour:	PM Peak	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	45		Type of Analysis
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	22	0.0%	22
	Through	-	376	2.0%	388
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	2	0.0%	2
	Through	-	293	3.0%	307
	Right	Yes	7	0.0%	7

Advancing Volume:	410
Opposing Volume:	316
Left Turn Volume:	22
% Left Turns in Advancing Volume:	5.37%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	-	0	0.0%	N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 3**

Warrant Met?: **No**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	22
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	-

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

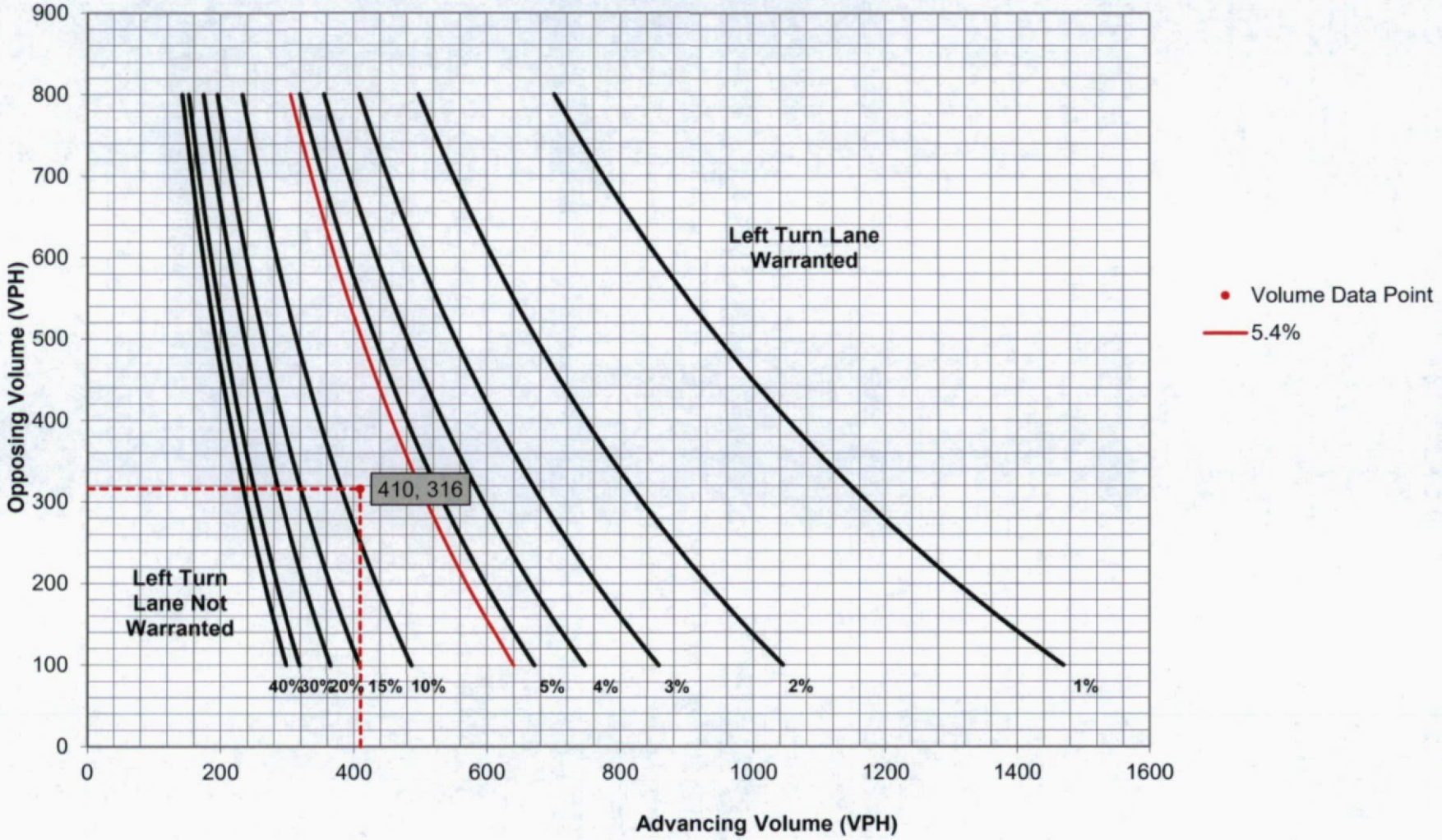
Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	N/A	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 3. Warrant for left turn lanes on two-lane highways (45 mph speed, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Nazareth Township	Analysis Date:	2/4/2021
County:	Northampton County	Conducted By:	ABZ
PennDOT Engineering District:	5	Checked By:	JMF
		Agency/Company Name:	Maser Consulting

Intersection & Approach Description: Gun Club Road Northbound at Bath Pike (SR 248)

Analysis Period:	2020 Build	Number of Approach Lanes:	1
Design Hour:	AM Peak	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		Type of Analysis
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	7	40.0%	12
	Through	-	1	0.0%	1
	Right	Yes	20	43.0%	33
Opposing	Left	Yes	5	80.0%	11
	Through	-	25	0.0%	25
	Right	Yes	1	0.0%	1

Advancing Volume:	46
Opposing Volume:	37
Left Turn Volume:	12
% Left Turns in Advancing Volume:	26.09%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No			N/A
	Through	-			N/A
	Right	-			N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **No**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	12
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	-

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

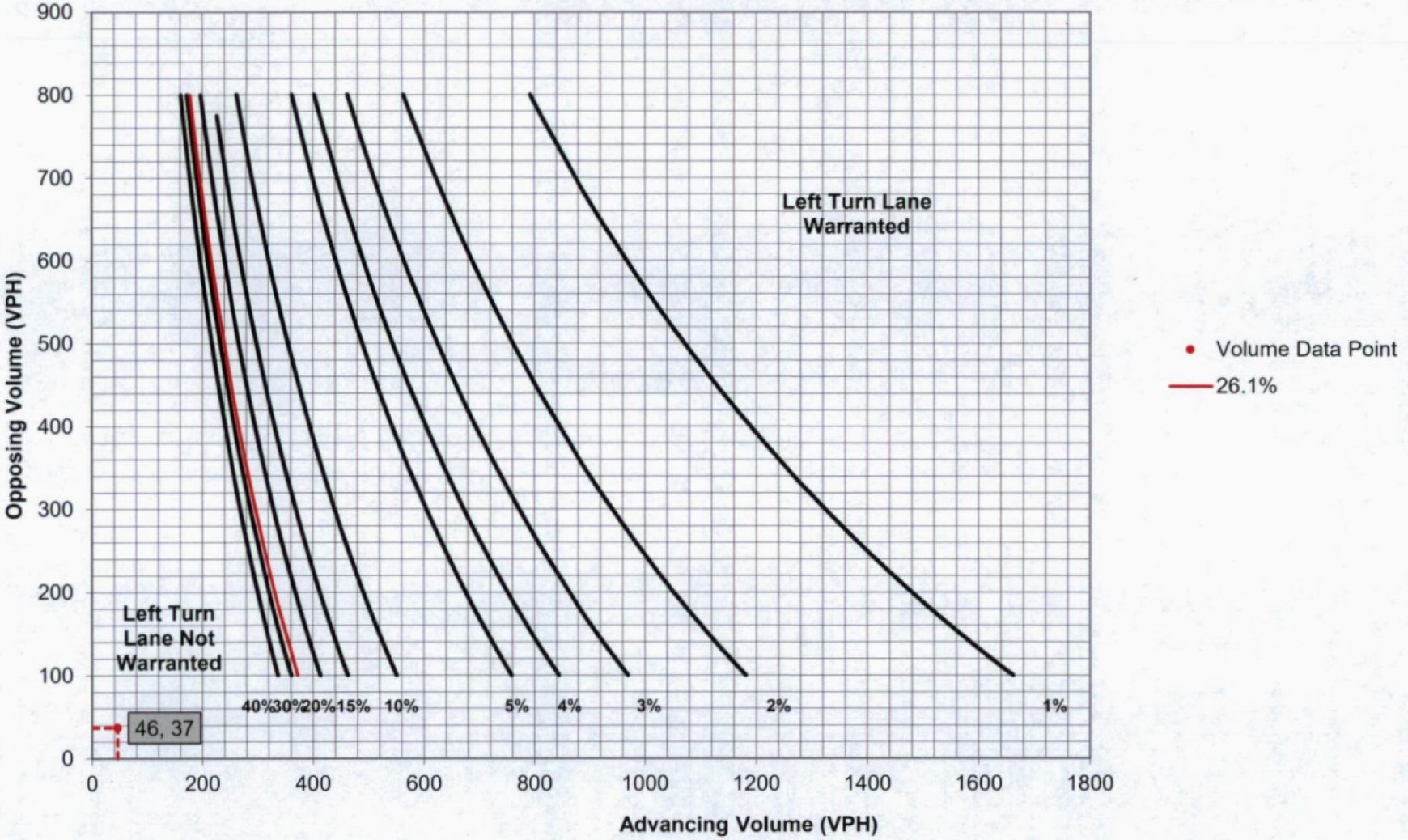
Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	N/A	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Nazareth Township	Analysis Date:	2/4/2021
County:	Northampton County	Conducted By:	ABZ
PennDOT Engineering District:	5	Checked By:	JMF
		Agency/Company Name:	Maser Consulting

Intersection & Approach Description: Gun Club Road Northbound at Bath Pike (SR 248)

Analysis Period:	2020 Build	Number of Approach Lanes:	1
Design Hour:	PM Peak	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		Type of Analysis
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	20	7.0%	23
	Through	-	8	0.0%	8
	Right	Yes	54	0.0%	54
Opposing	Left	Yes	5	0.0%	5
	Through	-	18	0.0%	18
	Right	Yes	4	0.0%	4

Advancing Volume:	85
Opposing Volume:	27
Left Turn Volume:	23
% Left Turns in Advancing Volume:	27.06%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No			N/A
	Through	-			N/A
	Right	-			N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **No**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	23
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	-

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

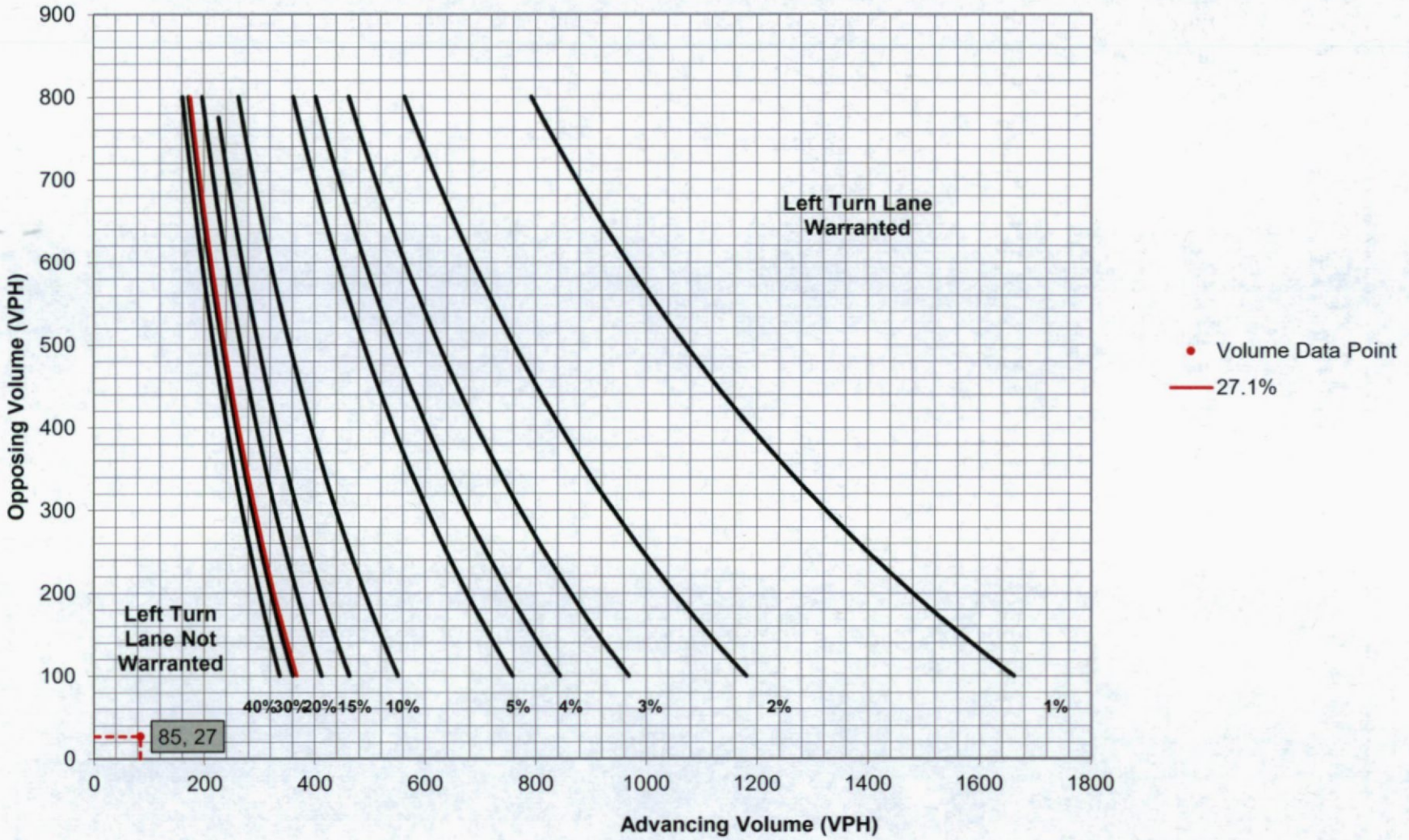
Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	N/A	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



PROJECT TADMOR

TRAFFIC IMPACT ASSESSMENT

APPENDIX F

TRAFFIC SIGNAL WARRANT ANALYSIS

Project Tadmor
Signal Warrant Calculations

MC Project No. 18000145B
Upper Nazareth Township, Northampton County, Pennsylvania

Existing Count Data - 5/22/18

Start Time	Bath Pike (SR 248)		Gun Club Road	Business Driveway
	EB	WB	NB	SB
6:00 AM	53	26	1	4
6:15 AM	68	23	1	1
6:30 AM	93	34	1	5
6:45 AM	83	35	3	3
7:00 AM	79	51	1	1
7:15 AM	86	33	3	0
7:30 AM	100	51	3	1
7:45 AM	92	55	2	1
8:00 AM	69	54	4	4
8:15 AM	53	47	0	2
8:30 AM	59	41	4	2
8:45 AM	56	41	1	0
9:00 AM	50	32	1	0
9:15 AM	53	31	3	2
9:30 AM	50	46	4	1
9:45 AM	57	39	1	1
10:00 AM	46	48	3	1
10:15 AM	45	32	1	0
10:30 AM	57	34	1	0
10:45 AM	46	39	1	2
11:00 AM	55	36	2	5
11:15 AM	47	42	2	2
11:30 AM	46	41	3	0
11:45 AM	54	57	4	2
12:00 PM	37	43	0	2
12:15 PM	44	46	7	2
12:30 PM	42	48	2	5
12:45 PM	54	48	2	2
1:00 PM	46	55	1	1
1:15 PM	53	52	5	3
1:30 PM	60	50	7	2
1:45 PM	64	66	1	2
2:00 PM	52	63	4	7
2:15 PM	55	68	7	2
2:30 PM	51	68	8	1
2:45 PM	66	50	8	4
3:00 PM	49	99	3	0
3:15 PM	58	73	1	1
3:30 PM	54	87	8	0
3:45 PM	67	83	10	1
4:00 PM	74	88	7	1
4:15 PM	69	102	4	4
4:30 PM	67	83	3	3
4:45 PM	59	97	6	1
5:00 PM	83	92	6	2
5:15 PM	74	86	6	0
5:30 PM	59	94	1	2
5:45 PM	72	63	5	1
6:00 PM	53	63	3	0
6:15 PM	50	56	1	1
6:30 PM	47	42	0	1
6:45 PM	35	41	1	0

Baseline - Background Growth (0.54%)

Start Time	Bath Pike (SR 248)		Gun Club Road	Business Driveway
	EB	WB	NB	SB
6:00 AM	1	0	0	0
6:15 AM	1	0	0	0
6:30 AM	1	0	0	0
6:45 AM	1	0	0	0
7:00 AM	1	1	0	0
7:15 AM	1	0	0	0
7:30 AM	1	1	0	0
7:45 AM	1	1	0	0
8:00 AM	1	1	0	0
8:15 AM	1	1	0	0
8:30 AM	1	0	0	0
8:45 AM	1	0	0	0
9:00 AM	1	0	0	0
9:15 AM	1	0	0	0
9:30 AM	1	0	0	0
9:45 AM	1	0	0	0
10:00 AM	0	1	0	0
10:15 AM	0	0	0	0
10:30 AM	1	0	0	0
10:45 AM	0	0	0	0
11:00 AM	1	0	0	0
11:15 AM	1	0	0	0
11:30 AM	0	0	0	0
11:45 AM	1	1	0	0
12:00 PM	0	0	0	0
12:15 PM	0	0	0	0
12:30 PM	0	1	0	0
12:45 PM	1	1	0	0
1:00 PM	0	1	0	0
1:15 PM	1	1	0	0
1:30 PM	1	1	0	0
1:45 PM	1	1	0	0
2:00 PM	1	1	0	0
2:15 PM	1	1	0	0
2:30 PM	1	1	0	0
2:45 PM	1	1	0	0
3:00 PM	1	1	0	0
3:15 PM	1	1	0	0
3:30 PM	1	1	0	0
3:45 PM	1	1	0	0
4:00 PM	1	1	0	0
4:15 PM	1	1	0	0
4:30 PM	1	1	0	0
4:45 PM	1	1	0	0
5:00 PM	1	1	0	0
5:15 PM	1	1	0	0
5:30 PM	1	1	0	0
5:45 PM	1	1	0	0
6:00 PM	1	1	0	0
6:15 PM	1	1	0	0
6:30 PM	1	0	0	0
6:45 PM	0	0	0	0

Project Tadmor
Signal Warrant Calculations

MC Project No. 18000145B
Upper Nazareth Township, Northampton County, Pennsylvania

Hourly Distribution of Daily Trips

Start Time	Hourly Dist (%)
6:00 AM	1.6%
6:15 AM	1.6%
6:30 AM	1.4%
6:45 AM	1.3%
7:00 AM	1.2%
7:15 AM	1.1%
7:30 AM	1.2%
7:45 AM	1.2%
8:00 AM	1.1%
8:15 AM	1.1%
8:30 AM	1.2%
8:45 AM	1.3%
9:00 AM	1.5%
9:15 AM	1.7%
9:30 AM	1.8%
9:45 AM	1.7%
10:00 AM	1.7%
10:15 AM	1.6%
10:30 AM	1.5%
10:45 AM	1.3%
11:00 AM	1.1%
11:15 AM	1.0%
11:30 AM	1.0%
11:45 AM	1.1%
12:00 PM	1.3%
12:15 PM	1.4%
12:30 PM	1.4%
12:45 PM	1.5%
1:00 PM	1.5%
1:15 PM	1.5%
1:30 PM	1.5%
1:45 PM	1.4%
2:00 PM	1.4%
2:15 PM	1.5%
2:30 PM	1.6%
2:45 PM	1.7%
3:00 PM	1.8%
3:15 PM	1.7%
3:30 PM	1.6%
3:45 PM	1.4%
4:00 PM	1.3%
4:15 PM	1.2%
4:30 PM	1.3%
4:45 PM	1.3%
5:00 PM	1.3%
5:15 PM	1.3%
5:30 PM	1.2%
5:45 PM	1.2%
6:00 PM	1.2%
6:15 PM	1.3%
6:30 PM	1.4%
6:45 PM	1.6%

Proposed Development

Start Time	Bath Pike (SR 248)		Gun Club Road	Business Driveway
	EB	WB	NB	SB
6:00 AM	1	8	9	0
6:15 AM	1	8	9	0
6:30 AM	1	7	7	0
6:45 AM	1	6	7	0
7:00 AM	1	6	6	0
7:15 AM	1	5	6	0
7:30 AM	1	6	6	0
7:45 AM	1	6	6	0
8:00 AM	1	5	6	0
8:15 AM	1	5	6	0
8:30 AM	1	6	6	0
8:45 AM	1	6	7	0
9:00 AM	1	7	8	0
9:15 AM	1	8	9	0
9:30 AM	1	9	10	0
9:45 AM	1	8	9	0
10:00 AM	1	8	9	0
10:15 AM	1	8	9	0
10:30 AM	1	7	8	0
10:45 AM	1	6	7	0
11:00 AM	1	5	6	0
11:15 AM	1	5	5	0
11:30 AM	1	5	5	0
11:45 AM	1	5	6	0
12:00 PM	1	6	7	0
12:15 PM	1	7	7	0
12:30 PM	1	7	7	0
12:45 PM	1	7	8	0
1:00 PM	1	7	8	0
1:15 PM	1	7	8	0
1:30 PM	1	7	8	0
1:45 PM	1	7	7	0
2:00 PM	1	7	7	0
2:15 PM	1	7	8	0
2:30 PM	1	8	9	0
2:45 PM	1	8	9	0
3:00 PM	1	9	10	0
3:15 PM	1	8	9	0
3:30 PM	1	8	9	0
3:45 PM	1	7	7	0
4:00 PM	1	6	7	0
4:15 PM	1	6	6	0
4:30 PM	1	6	7	0
4:45 PM	1	6	7	0
5:00 PM	1	6	7	0
5:15 PM	1	6	7	0
5:30 PM	1	6	6	0
5:45 PM	1	6	6	0
6:00 PM	1	6	6	0
6:15 PM	1	6	7	0
6:30 PM	1	7	7	0
6:45 PM	1	8	9	0

Car	Daily Trips	1127
	% Trips at Intersection	70.0%
	Daily Trips at Intersection	789
Truck	Daily Trips	282
	% Trips at Intersection	100%
	Daily Trips at Intersection	282

Build Volumes

Start Time	Bath Pike (SR 248)		Gun Club Road	Business Driveway
	EB	WB	NB	SB
6:00 AM	55	34	10	4
6:15 AM	70	31	10	1
6:30 AM	95	41	8	5
6:45 AM	85	41	10	3
7:00 AM	81	58	7	1
7:15 AM	88	38	9	0
7:30 AM	102	58	9	1
7:45 AM	94	62	8	1
8:00 AM	71	60	10	4
8:15 AM	55	53	6	2
8:30 AM	61	47	10	2
8:45 AM	58	47	8	0
9:00 AM	52	39	9	0
9:15 AM	55	39	12	2
9:30 AM	52	55	14	1
9:45 AM	59	47	10	1
10:00 AM	47	57	12	1
10:15 AM	46	40	10	0
10:30 AM	59	41	9	0
10:45 AM	47	45	8	2
11:00 AM	57	41	8	5
11:15 AM	49	47	7	2
11:30 AM	47	46	8	0
11:45 AM	56	63	10	2
12:00 PM	38	49	7	2
12:15 PM	45	53	14	2
12:30 PM	43	56	9	5
12:45 PM	56	56	10	2
1:00 PM	47	63	9	1
1:15 PM	55	60	13	3
1:30 PM	62	58	15	2
1:45 PM	66	74	8	2
2:00 PM	54	71	11	7
2:15 PM	57	76	15	2
2:30 PM	53	77	17	1
2:45 PM	68	59	17	4
3:00 PM	51	109	13	0
3:15 PM	60	82	10	1
3:30 PM	56	96	17	0
3:45 PM	69	91	17	1
4:00 PM	76	95	14	1
4:15 PM	71	109	10	4
4:30 PM	69	90	10	3
4:45 PM	61	104	13	1
5:00 PM	85	99	13	2
5:15 PM	76	93	13	0
5:30 PM	61	101	7	2
5:45 PM	74	70	11	1
6:00 PM	55	70	9	0
6:15 PM	52	63	8	1
6:30 PM	49	49	7	1
6:45 PM	36	49	10	0

Warrants Summary Report

1: Bath Pike (SR 248) & Gun Club Road

Intersection Information

	Major Street	Minor Street
Street Name	Bath Pike (SR 248)	Business Driveway
Direction	EB/WB	NB/SB
Number of Lane:	2	1
Approach Speed	45	35

Warrant	Met?	Notes
Warrant 1, Eight-Hour Vehicular Volume		
	No	
Condition A or B Met'	No	1 Hours met (8 required)
Condition A and B M	No	0 Hours met (8 required)
Warrant 2, Four-Hour Vehicular Volume		
	No	0 Hours met (4 required)
Warrant 3, Peak Hour		
	No	
Condition A Met?	No	0 Hours met (1 required)
Condition B Met?	No	0 Hours met (1 required)
Warrant 4, Pedestrian Volume		
	No	
Condition A Met?	No	0 Hours met (4 required)
Condition B Met?	No	0 Hours met (1 required)
Warrant 5, School Crossing		
	No	

Warrant 6, Coordinated Signal System

No

Warrant 7, Crash Experience

No

Traffic Volume Condi	No	4 Hours met (8 required)
Ped Condition?	No	0 Hours met (8 required)

Warrant 8, Roadway Network

No

Warrant 9, Intersection Near a Grade Crossing

No

AWSC Warrant, Multiway Stop Application

No

Condition A Met?	No
Condition B Met?	No
Condition C Met?	No

Warrant 1: Eight-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

Intersection Information

Major Street Name:	Bath Pike (SR 248)
Major Street Direction:	EB/WB
Minor Street Direction:	NB/SB

WARRANT 1 MET? No

Details:

Condition A Met?	No	1 Hours met (8 required)
Condition B Met?	No	0 Hours met (8 required)

Hour	Major Street Vehicles (Total of Both Approaches)		High Volume Minor Approach Vehicles		70% Standard Met? Cond. A OR Cond. B		56% Standard Met? Cond. A AND Cond. B	
					Condition A 70% Column	Condition B 70% Column	Condition A 56% Column	Condition B 56% Column
06:00 to 07:00	**452**		**38**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	No				
06:15 to 07:15	**502**		**35**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	No				
06:30 to 07:30	**527**		**34**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	Yes	Volume >= 56% column (42)?	No				

Warrant 1: Eight-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

06:45 to 07:45	**551**		**35**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	Yes	Volume >= 56% column (42)?	No				

07:00 to 08:00	**581**		**33**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	Yes	Volume >= 56% column (42)?	No				

07:15 to 08:15	**573**		**36**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	Yes	Volume >= 56% column (42)?	No				

07:30 to 08:30	**555**		**33**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	Yes	Volume >= 56% column (42)?	No				

07:45 to 08:45	**503**		**34**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	No				

Warrant 1: Eight-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

08:00 to 09:00	**452**		**34**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				
08:15 to 09:15	**412**		**33**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				
08:30 to 09:30	**398**		**39**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				
08:45 to 09:45	**397**		**43**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	Yes				
09:00 to 10:00	**398**		**45**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	Yes				

Warrant 1: Eight-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

09:15 to 10:15	411		48		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	Yes				

09:30 to 10:30	403		46		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	Yes				

09:45 to 10:45	396		41		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	No				

10:00 to 11:00	382		39		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	No				

10:15 to 11:15	376		35		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	No				

Warrant 1: Eight-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

10:30 to 11:30	**386**		**32**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				
10:45 to 11:45	**379**		**31**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				
11:00 to 12:00	**406**		**33**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				
11:15 to 12:15	**395**		**32**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				
11:30 to 12:30	**397**		**39**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

11:45 to 12:45	403		40		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	No				

12:00 to 13:00	396		40		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	No				

12:15 to 13:15	419		42		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	Yes				

12:30 to 13:30	436		41		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	No				

12:45 to 13:45	457		47		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	Volume >= 70% column (630)?	No	Volume >= 70% column (53)?	No				
	Volume >= 56% column (504)?	No	Volume >= 56% column (42)?	Yes				

Warrant 1: Eight-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

13:00 to 14:00	**485**		**45**		No	No	No	No	
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No					
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No					
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	Yes					
13:15 to 14:15	**500**		**47**		No	No	No	No	
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No					
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No					
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	Yes					
13:30 to 14:30	**518**		**49**		No	No	No	Yes	
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No					
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes					
13:45 to 14:45	**528**		**51**		No	No	No	Yes	
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No					
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes					
14:00 to 15:00	**515**		**60**		No	No	No	Yes	
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No					
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No					
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	Yes					
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes					

Warrant 1: Eight-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

14:15 to 15:15	**550**		**62**		No	No	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:30 to 15:30	**559**		**57**		No	No	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				
14:45 to 15:45	**581**		**57**		No	No	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:00 to 16:00	**614**		**57**		No	No	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:15 to 16:15	**625**		**58**		No	No	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				

Warrant 1: Eight-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

15:30 to 16:30	**663**		**58**		No	Yes*	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (53)?**	Yes				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				
15:45 to 16:45	**670**		**51**		No	No	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				
16:00 to 17:00	**675**		**47**		No	No	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				
16:15 to 17:15	**688**		**46**		No	No	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				
16:30 to 17:30	**677**		**49**		No	No	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				

Warrant 1: Eight-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

16:45 to 17:45	**680**		**46**		No	No	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				
17:00 to 18:00	**659**		**44**		No	No	No	Yes
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	Yes	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	Yes				
17:15 to 18:15	**600**		**40**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	No				
17:30 to 18:30	**546**		**35**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	Yes	**Volume >= 56% column (42)?**	No				
17:45 to 18:45	**482**		**35**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				

Warrant 1: Eight-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

18:00 to 19:00	**423**		**34**		No	No	No	No
Condition A	Volume >= 70% column (420)?	Yes	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	Yes	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				
18:15 to 19:15	**298**		**25**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	No	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				
18:30 to 19:30	**183**		**17**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	No	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				
18:45 to 19:45	**85**		**10**		No	No	No	No
Condition A	Volume >= 70% column (420)?	No	Volume >= 70% column (630)?	No				
	Volume >= 56% column (336)?	No	Volume >= 56% column (504)?	No				
Condition B	**Volume >= 70% column (630)?**	No	**Volume >= 70% column (53)?**	No				
	Volume >= 56% column (504)?	No	**Volume >= 56% column (42)?**	No				

Warrant 2: Four-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

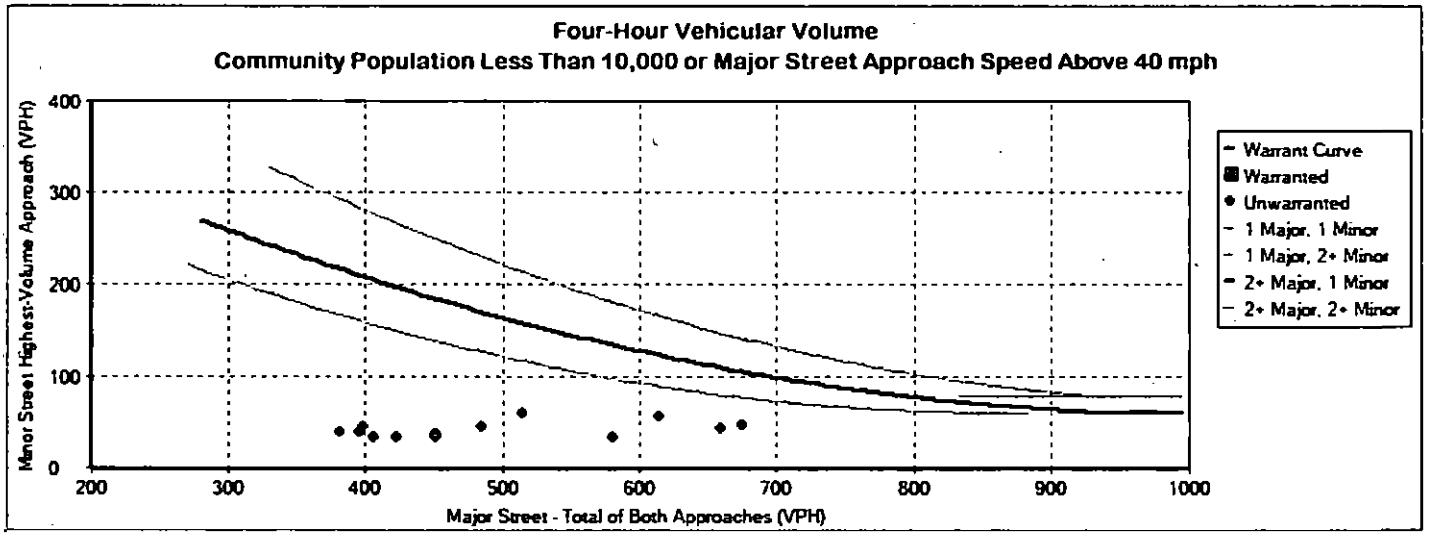
Intersection Information

	Major Street	Minor Street
Street Name	Bath Pike (SR 248)	Business Driveway
Direction	EB/WB	NB/SB
Number of Lane:	2	1
Approch Speed	45	35

Warrant 2 Met? No

Details:

Notes	0 Hours met (4 required)
Low populatior	No



Warrant 2: Four-hour Vehicular Volume

1: Bath Pike (SR 248) & Gun Club Road

Hourly Volumes

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
00:00:00 - 01:00:00	0	0
01:00:00 - 02:00:00	0	0
02:00:00 - 03:00:00	0	0
03:00:00 - 04:00:00	0	0
04:00:00 - 05:00:00	0	0
05:00:00 - 06:00:00	0	0
06:00:00 - 07:00:00	452	38
07:00:00 - 08:00:00	581	33
08:00:00 - 09:00:00	452	34
09:00:00 - 10:00:00	398	45
10:00:00 - 11:00:00	382	39
11:00:00 - 12:00:00	406	33
12:00:00 - 13:00:00	396	40
13:00:00 - 14:00:00	485	45
14:00:00 - 15:00:00	515	60
15:00:00 - 16:00:00	614	57
16:00:00 - 17:00:00	675	47
17:00:00 - 18:00:00	659	44
18:00:00 - 19:00:00	423	34
19:00:00 - 20:00:00	0	0
20:00:00 - 21:00:00	0	0
21:00:00 - 22:00:00	0	0
22:00:00 - 23:00:00	0	0

1: Bath Pike (SR 248) & Gun Club Road

23:00:00 - 00:00:00	0	0

Warranted Hours

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)

Note: Only data of hours warranted is represented in the above table.

Warrant 3: Peak Hour

1: Bath Pike (SR 248) & Gun Club Road

Intersection Information

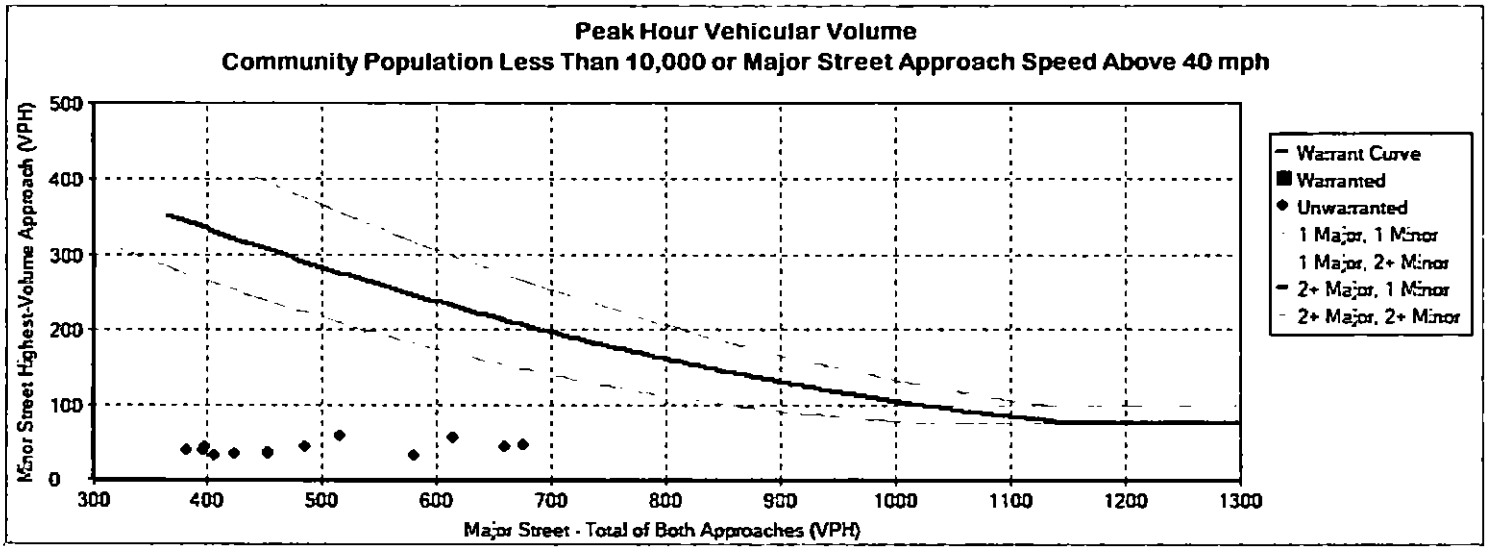
	Major Street	Minor Street
Street Name	Bath Pike (SR 248)	Business Driveway
Direction	EB/WB	NB/SB
Number of Lane:	2	1
Approch Speed	45	35

Warrant 3 Met? [No]

Details

Low Population'	No		
Condition A Met'	No	**Condition B Met'**	No
Notes	0 Hours met (1 required)	**Notes**	0 Hours met (1 required)

Minor Approach Time Delay Condition Met?	Not Met
Minor Approach Volume Condition Met?	Met
Total Entering Intersection Volume Condition Met?	Not Met



Warrant 3: Peak Hour

1: Bath Pike (SR 248) & Gun Club Road

Hour	Major Street Total All Approaches (vph)	Minor Street Highest Volume Approach (vph)
6:00	452	38
7:00	581	33
8:00	452	34
9:00	398	45
10:00	382	39
11:00	406	33
12:00	396	40
13:00	485	45
14:00	515	60
15:00	614	57
16:00	675	47
17:00	659	44
18:00	423	34

PROJECT TADMOR

TRAFFIC IMPACT ASSESSMENT

APPENDIX G

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	354	13	10	193	1	5	1	7	5	25	1
Future Vol, veh/h	4	354	13	10	193	1	5	1	7	5	25	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	-1	-	-	4	-	-	2	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	50	4	15	30	8	100	40	0	43	80	0	0
Mvmt Flow	4	393	14	11	214	1	6	1	8	6	28	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	215	0	0	407	0	0	659	645	400	650	652	215
Stage 1	-	-	-	-	-	-	408	408	-	237	237	-
Stage 2	-	-	-	-	-	-	251	237	-	413	415	-
Critical Hdwy	4.8	-	-	4.6	-	-	7.2	7.3	6.6	6.8	6.9	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	6.3	-	7.3	5.9	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.3	6.3	-	7.3	5.9	-
Follow-up Hdwy	3.5	-	-	3.3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	856	-	-	777	-	-	417	341	659	455	363	868
Stage 1	-	-	-	-	-	-	619	548	-	818	694	-
Stage 2	-	-	-	-	-	-	799	676	-	614	569	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	856	-	-	777	-	-	385	333	659	441	355	868
Mov Cap-2 Maneuver	-	-	-	-	-	-	385	333	-	441	355	-
Stage 1	-	-	-	-	-	-	615	545	-	813	683	-
Stage 2	-	-	-	-	-	-	753	665	-	602	566	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	12.6	15.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	488	856	-	-	777	-	-	374
HCM Lane V/C Ratio	0.03	0.005	-	-	0.014	-	-	0.092
HCM Control Delay (s)	12.6	9.2	0	-	9.7	0	-	15.6
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕		↕		↕
Traffic Volume (vph)	12	339	26	175	6	64	193	214
Future Volume (vph)	12	339	26	175	6	64	193	214
Lane Group Flow (vph)	0	425	0	306	0	131	0	500
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	12.0	12.0	12.0	12.0	3.0	3.0	3.0	3.0
Minimum Split (s)	18.0	18.0	18.0	18.0	9.0	9.0	9.0	9.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
v/c Ratio		0.79		0.65		0.19		0.80
Control Delay		30.4		23.8		8.0		26.6
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		30.4		23.8		8.0		26.6
Queue Length 50th (ft)		140		87		15		136
Queue Length 95th (ft)		238		163		50		#345
Internal Link Dist (ft)		484		402		143		201
Turn Bay Length (ft)								
Base Capacity (vph)		998		849		896		814
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.43		0.36		0.15		0.61

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 59.2

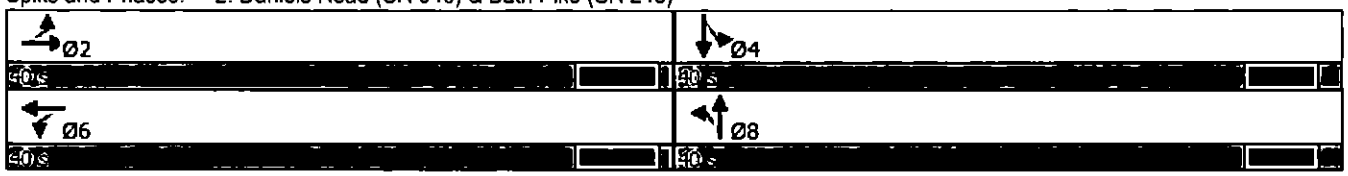
Natural Cycle: 60

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Daniels Road (SR 946) & Bath Pike (SR 248)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	12	339	15	26	175	63	6	64	43	193	214	23
Future Volume (veh/h)	12	339	15	26	175	63	6	64	43	193	214	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1878	1878	1878	1520	1520	1520	1640	1640	1640	1846	1846	1846
Adj Flow Rate, veh/h	14	394	17	30	203	73	7	74	50	224	249	27
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	5	5	5	10	10	10	11	11	11	2	2	2
Cap, veh/h	84	663	28	105	380	127	86	348	220	355	321	33
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	22	1755	74	66	1005	335	23	921	582	658	850	86
Grp Volume(v), veh/h	425	0	0	306	0	0	131	0	0	500	0	0
Grp Sat Flow(s),veh/h/ln	1851	0	0	1406	0	0	1526	0	0	1594	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.9	0.0	0.0
Cycle Q Clear(g_c), s	9.0	0.0	0.0	8.1	0.0	0.0	2.9	0.0	0.0	13.8	0.0	0.0
Prop In Lane	0.03		0.04	0.10		0.24	0.05		0.38	0.45		0.05
Lane Grp Cap(c), veh/h	775	0	0	612	0	0	654	0	0	708	0	0
V/C Ratio(X)	0.55	0.00	0.00	0.50	0.00	0.00	0.20	0.00	0.00	0.71	0.00	0.00
Avail Cap(c_a), veh/h	1350	0	0	1037	0	0	1122	0	0	1197	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.3	0.0	0.0	12.0	0.0	0.0	10.4	0.0	0.0	13.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.9	0.0	0.0	0.2	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.2	0.0	0.0	3.7	0.0	0.0	1.3	0.0	0.0	7.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.2	0.0	0.0	12.9	0.0	0.0	10.6	0.0	0.0	15.5	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		425			306			131			500	
Approach Delay, s/veh		13.2			12.9			10.6			15.5	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		24.6		24.6		24.6		24.6				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		34.0		34.0		34.0		34.0				
Max Q Clear Time (g_c+I1), s		11.0		15.8		10.1		4.9				
Green Ext Time (p_c), s		7.5		2.8		5.4		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			13.7									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	1.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	349	1	3	256	10	1	1	7	16	2	30
Future Vol, veh/h	3	349	1	3	256	10	1	1	7	16	2	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	4	-	-	-2	-	-	-2	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	8	0	0	8	20	0	0	29	0	50	10
Mvmt Flow	4	411	1	4	301	12	1	1	8	19	2	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	313	0	0	412	0	0	754	741	412	739	735	307
Stage 1	-	-	-	-	-	-	420	420	-	315	315	-
Stage 2	-	-	-	-	-	-	334	321	-	424	420	-
Critical Hdwy	4.3	-	-	4.3	-	-	6	6.1	6	6	6.1	6
Critical Hdwy Stg 1	-	-	-	-	-	-	5.7	5.1	-	5.7	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.7	5.1	-	5.7	5.6	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	938	-	-	867	-	-	460	376	694	469	379	792
Stage 1	-	-	-	-	-	-	731	621	-	829	653	-
Stage 2	-	-	-	-	-	-	810	679	-	728	586	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	938	-	-	867	-	-	433	371	694	458	374	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	433	371	-	458	374	-
Stage 1	-	-	-	-	-	-	727	617	-	824	649	-
Stage 2	-	-	-	-	-	-	766	675	-	714	582	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	11.1	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	596	938	-	-	867	-	-	614
HCM Lane V/C Ratio	0.018	0.004	-	-	0.004	-	-	0.092
HCM Control Delay (s)	11.1	8.9	0	-	9.2	0	-	11.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Intersection												
Int Delay, s/veh	1.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	293	5	3	376	1	14	8	4	5	18	4
Future Vol, veh/h	2	293	5	3	376	1	14	8	4	5	18	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	-1	-	-	4	-	-	2	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	3	0	0	2	0	7	0	0	0	0	0
Mvmt Flow	2	315	5	3	404	1	15	9	4	5	19	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	405	0	0	320	0	0	744	733	318	739	735	405
Stage 1	-	-	-	-	-	-	322	322	-	411	411	-
Stage 2	-	-	-	-	-	-	422	411	-	328	324	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.2	7.3	6.6	6.8	6.9	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.97	6.3	-	6.5	5.9	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.97	6.3	-	6.5	5.9	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	872	-	-	933	-	-	364	298	741	398	322	670
Stage 1	-	-	-	-	-	-	733	609	-	675	572	-
Stage 2	-	-	-	-	-	-	629	546	-	759	630	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	872	-	-	933	-	-	343	296	741	385	320	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	343	296	-	385	320	-
Stage 1	-	-	-	-	-	-	731	607	-	673	570	-
Stage 2	-	-	-	-	-	-	601	544	-	742	628	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	16	15.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	355	872	-	-	933	-	-	359
HCM Lane V/C Ratio	0.079	0.002	-	-	0.003	-	-	0.081
HCM Control Delay (s)	16	9.1	0	-	8.9	0	-	15.9
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.3

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕		↕		↕
Traffic Volume (vph)	24	268	30	349	10	228	100	101
Future Volume (vph)	24	268	30	349	10	228	100	101
Lane Group Flow (vph)	0	311	0	659	0	285	0	228
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	12.0	12.0	12.0	12.0	3.0	3.0	3.0	3.0
Minimum Split (s)	18.0	18.0	18.0	18.0	9.0	9.0	9.0	9.0
Total Split (s)	48.0	48.0	48.0	48.0	32.0	32.0	32.0	32.0
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	40.0%	40.0%	40.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
v/c Ratio		0.42		0.88		0.55		0.61
Control Delay		12.3		27.6		22.6		26.7
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		12.3		27.6		22.6		26.7
Queue Length 50th (ft)		63		168		77		63
Queue Length 95th (ft)		140		#386		184		165
Internal Link Dist (ft)		484		402		143		201
Turn Bay Length (ft)								
Base Capacity (vph)		1214		1180		831		604
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.26		0.56		0.34		0.38

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 57.9

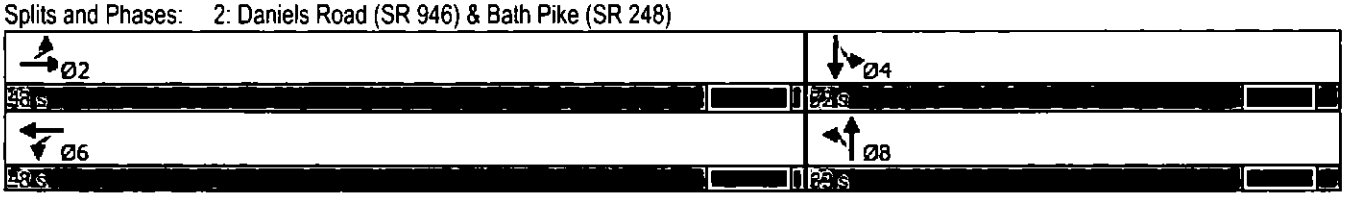
Natural Cycle: 55

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Daniels Road (SR 946) & Bath Pike (SR 248)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	24	268	10	30	349	260	10	228	39	100	101	20
Future Volume (veh/h)	24	268	10	30	349	260	10	228	39	100	101	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1921	1921	1921	1646	1646	1646	1780	1780	1780	1860	1860	1860
Adj Flow Rate, veh/h	25	276	10	31	360	268	10	235	40	103	104	21
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	108	982	34	87	497	354	72	311	52	205	164	28
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	67	1709	59	34	865	616	24	1466	243	526	773	132
Grp Volume(v), veh/h	311	0	0	659	0	0	285	0	0	228	0	0
Grp Sat Flow(s),veh/h/ln	1835	0	0	1515	0	0	1734	0	0	1431	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.6	0.0	0.0	18.0	0.0	0.0	8.7	0.0	0.0	8.4	0.0	0.0
Prop In Lane	0.08		0.03	0.05		0.41	0.04		0.14	0.45		0.09
Lane Grp Cap(c), veh/h	1123	0	0	937	0	0	434	0	0	396	0	0
V/C Ratio(X)	0.28	0.00	0.00	0.70	0.00	0.00	0.66	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	1426	0	0	1197	0	0	865	0	0	759	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.1	0.0	0.0	8.9	0.0	0.0	20.9	0.0	0.0	20.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.7	0.0	0.0	2.4	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.0	0.0	7.2	0.0	0.0	5.9	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	0.0	0.0	10.6	0.0	0.0	23.3	0.0	0.0	22.4	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		311			659			285			228	
Approach Delay, s/veh		6.3			10.6			23.3			22.4	
Approach LOS		A			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.2		17.9		38.2		17.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		42.0		26.0		42.0		26.0				
Max Q Clear Time (g_c+I1), s		6.6		10.4		20.0		10.7				
Green Ext Time (p_c), s		6.5		1.1		12.2		1.2				
Intersection Summary												
HCM 6th Ctrl Delay			13.9									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	0.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	390	1	5	422	15	1	1	2	12	1	14
Future Vol, veh/h	11	390	1	5	422	15	1	1	2	12	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	4	-	-	-2	-	-	-2	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	9	2	0	0	3	7	0	0	0	0	0	0
Mvmt Flow	12	419	1	5	454	16	1	1	2	13	1	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	470	0	0	420	0	0	924	924	420	917	916	462
Stage 1	-	-	-	-	-	-	444	444	-	472	472	-
Stage 2	-	-	-	-	-	-	480	480	-	445	444	-
Critical Hdwy	4.4	-	-	4.3	-	-	6	6.1	6	6	6.1	6
Critical Hdwy Stg 1	-	-	-	-	-	-	5.7	5.1	-	5.7	5.1	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.7	5.1	-	5.7	5.1	-
Follow-up Hdwy	3.1	-	-	3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	795	-	-	861	-	-	369	301	687	372	304	652
Stage 1	-	-	-	-	-	-	711	608	-	687	593	-
Stage 2	-	-	-	-	-	-	681	588	-	710	608	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	795	-	-	861	-	-	352	293	687	362	295	652
Mov Cap-2 Maneuver	-	-	-	-	-	-	352	293	-	362	295	-
Stage 1	-	-	-	-	-	-	697	596	-	673	588	-
Stage 2	-	-	-	-	-	-	659	583	-	692	596	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	13.3	13.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	436	795	-	-	861	-	-	465
HCM Lane V/C Ratio	0.01	0.015	-	-	0.006	-	-	0.062
HCM Control Delay (s)	13.3	9.6	0	-	9.2	0	-	13.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Intersection												
Int Delay, s/veh	2.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Vol, veh/h	4	354	18	51	193	1	7	1	20	5	25	1
Future Vol, veh/h	4	354	18	51	193	1	7	1	20	5	25	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	-1	-	-	4	-	-	2	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	50	4	15	30	8	100	40	0	43	80	0	0
Mvmt Flow	4	393	20	57	214	1	8	1	22	6	28	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	215	0	0	413	0	0	754	740	403	752	750	215
Stage 1	-	-	-	-	-	-	411	411	-	329	329	-
Stage 2	-	-	-	-	-	-	343	329	-	423	421	-
Critical Hdwy	4.8	-	-	4.6	-	-	7.2	7.3	6.6	6.8	6.9	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	7.3	6.3	-	7.3	5.9	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.3	6.3	-	7.3	5.9	-
Follow-up Hdwy	3.5	-	-	3.3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	856	-	-	773	-	-	358	294	657	390	315	868
Stage 1	-	-	-	-	-	-	616	546	-	704	627	-
Stage 2	-	-	-	-	-	-	688	604	-	604	565	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	856	-	-	773	-	-	311	270	657	353	290	868
Mov Cap-2 Maneuver	-	-	-	-	-	-	311	270	-	353	290	-
Stage 1	-	-	-	-	-	-	612	543	-	700	581	-
Stage 2	-	-	-	-	-	-	606	559	-	579	562	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.1	12.8	18.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	494	856	-	-	773	-	-	305
HCM Lane V/C Ratio	0.063	0.005	-	-	0.073	-	-	0.113
HCM Control Delay (s)	12.8	9.2	0	-	10	-	-	18.3
HCM Lane LOS	B	A	A	-	B	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.2	-	-	0.4

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕		↕		↕
Traffic Volume (vph)	13	350	26	209	8	64	193	214
Future Volume (vph)	13	350	26	209	8	64	193	214
Lane Group Flow (vph)	0	441	0	346	0	133	0	506
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	12.0	12.0	12.0	12.0	3.0	3.0	3.0	3.0
Minimum Split (s)	18.0	18.0	18.0	18.0	9.0	9.0	9.0	9.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
v/c Ratio		0.80		0.72		0.19		0.81
Control Delay		30.9		26.7		8.7		28.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		30.9		26.7		8.7		28.5
Queue Length 50th (ft)		152		109		16		144
Queue Length 95th (ft)		247		190		54		#370
Internal Link Dist (ft)		484		402		143		201
Turn Bay Length (ft)								
Base Capacity (vph)		971		836		869		793
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.45		0.41		0.15		0.64

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 60.8

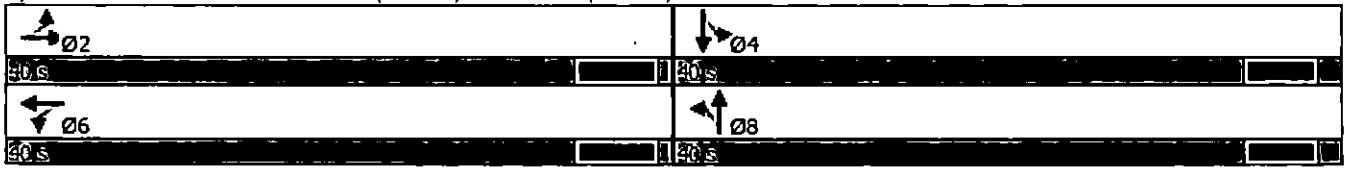
Natural Cycle: 60

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Daniels Road (SR 946) & Bath Pike (SR 248)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	13	350	16	26	209	63	8	64	43	193	214	28
Future Volume (veh/h)	13	350	16	26	209	63	8	64	43	193	214	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1878	1878	1878	1520	1520	1520	1640	1640	1640	1846	1846	1846
Adj Flow Rate, veh/h	15	407	19	30	243	73	9	74	50	224	249	33
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	5	5	5	10	10	10	11	11	11	2	2	2
Cap, veh/h	83	669	31	100	406	115	88	350	218	350	318	39
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	24	1745	80	59	1059	299	32	922	574	652	838	104
Grp Volume(v), veh/h	441	0	0	346	0	0	133	0	0	506	0	0
Grp Sat Flow(s),veh/h/ln	1848	0	0	1417	0	0	1528	0	0	1594	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	0.0	0.0
Cycle Q Clear(g_c), s	9.7	0.0	0.0	9.7	0.0	0.0	3.0	0.0	0.0	14.4	0.0	0.0
Prop In Lane	0.03		0.04	0.09		0.21	0.07		0.38	0.44		0.07
Lane Grp Cap(c), veh/h	782	0	0	621	0	0	656	0	0	707	0	0
V/C Ratio(X)	0.56	0.00	0.00	0.56	0.00	0.00	0.20	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	1307	0	0	1015	0	0	1088	0	0	1161	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.6	0.0	0.0	12.6	0.0	0.0	10.7	0.0	0.0	14.1	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	1.1	0.0	0.0	0.2	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	0.0	0.0	4.5	0.0	0.0	1.4	0.0	0.0	7.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	0.0	0.0	13.7	0.0	0.0	10.9	0.0	0.0	16.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		441			346			133			506	
Approach Delay, s/veh		13.5			13.7			10.9			16.0	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		25.4		25.2		25.4		25.2				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		34.0		34.0		34.0		34.0				
Max Q Clear Time (g_c+I1), s		11.7		16.4		11.7		5.0				
Green Ext Time (p_c), s		7.7		2.8		6.0		0.7				
Intersection Summary												
HCM 6th Ctrl Delay			14.2									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	349	1	3	256	15	1	1	7	17	2	33
Future Vol, veh/h	13	349	1	3	256	15	1	1	7	17	2	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	4	-	-	-2	-	-	-2	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	8	0	0	8	20	0	0	29	0	50	10
Mvmt Flow	15	411	1	4	301	18	1	1	8	20	2	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	319	0	0	412	0	0	781	769	412	764	760	310
Stage 1	-	-	-	-	-	-	442	442	-	318	318	-
Stage 2	-	-	-	-	-	-	339	327	-	446	442	-
Critical Hdwy	4.3	-	-	4.3	-	-	6	6.1	6	6	6.1	6
Critical Hdwy Stg 1	-	-	-	-	-	-	5.7	5.1	-	5.7	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.7	5.1	-	5.7	5.6	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	934	-	-	867	-	-	444	364	694	454	368	789
Stage 1	-	-	-	-	-	-	712	609	-	826	651	-
Stage 2	-	-	-	-	-	-	805	675	-	709	573	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	934	-	-	867	-	-	412	354	694	438	358	789
Mov Cap-2 Maneuver	-	-	-	-	-	-	412	354	-	438	358	-
Stage 1	-	-	-	-	-	-	697	596	-	809	647	-
Stage 2	-	-	-	-	-	-	758	671	-	685	561	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	11.2	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	587	934	-	-	867	-	-	603
HCM Lane V/C Ratio	0.018	0.016	-	-	0.004	-	-	0.101
HCM Control Delay (s)	11.2	8.9	0	-	9.2	0	-	11.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	11	17	15	34	61
Future Vol, veh/h	4	11	17	15	34	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-1	-	4	-	-	-4
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	50	0	0	34
Mvmt Flow	4	12	18	16	37	66

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	166	26	0	0	34	0
Stage 1	26	-	-	-	-	-
Stage 2	140	-	-	-	-	-
Critical Hdwy	6.2	6.1	-	-	4.3	-
Critical Hdwy Stg 1	5.2	-	-	-	-	-
Critical Hdwy Stg 2	5.2	-	-	-	-	-
Follow-up Hdwy	3	3.1	-	-	3	-
Pot Cap-1 Maneuver	965	1124	-	-	1169	-
Stage 1	1168	-	-	-	-	-
Stage 2	1039	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	933	1124	-	-	1169	-
Mov Cap-2 Maneuver	933	-	-	-	-	-
Stage 1	1129	-	-	-	-	-
Stage 2	1039	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	2.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1066	1169	-
HCM Lane V/C Ratio	-	-	0.015	0.032	-
HCM Control Delay (s)	-	-	8.4	8.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0.1	-

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	4	28	0	12	53
Future Vol, veh/h	0	4	28	0	12	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	100	15	100	100	8
Mvmt Flow	0	4	30	0	13	58
Number of Lanes	0	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.3	7.4	9.4
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	18%
Vol Thru, %	100%	0%	82%
Vol Right, %	0%	100%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	28	4	65
LT Vol	0	0	12
Through Vol	28	0	53
RT Vol	0	4	0
Lane Flow Rate	30	4	71
Geometry Grp	1	1	1
Degree of Util (X)	0.036	0.006	0.111
Departure Headway (Hd)	4.216	5.287	5.668
Convergence, Y/N	Yes	Yes	Yes
Cap	845	681	635
Service Time	2.26	3.287	3.68
HCM Lane V/C Ratio	0.036	0.006	0.112
HCM Control Delay	7.4	8.3	9.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0	0.4

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	2	293	7	22	376	1	20	8	54	5	18	4
Future Vol, veh/h	2	293	7	22	376	1	20	8	54	5	18	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	-1	-	-	4	-	-	2	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	3	0	0	2	0	7	0	0	0	0	0
Mvmt Flow	2	315	8	24	404	1	22	9	58	5	19	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	405	0	0	323	0	0	787	776	319	810	780	405
Stage 1	-	-	-	-	-	-	323	323	-	453	453	-
Stage 2	-	-	-	-	-	-	464	453	-	357	327	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.2	7.3	6.6	6.8	6.9	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.97	6.3	-	6.5	5.9	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.97	6.3	-	6.5	5.9	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	872	-	-	931	-	-	339	278	740	357	302	670
Stage 1	-	-	-	-	-	-	732	609	-	636	545	-
Stage 2	-	-	-	-	-	-	589	518	-	728	628	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	872	-	-	931	-	-	313	270	740	314	293	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	313	270	-	314	293	-
Stage 1	-	-	-	-	-	-	730	607	-	634	531	-
Stage 2	-	-	-	-	-	-	549	505	-	659	626	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	13.9	17.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	492	872	-	-	931	-	-	324
HCM Lane V/C Ratio	0.179	0.002	-	-	0.025	-	-	0.09
HCM Control Delay (s)	13.9	9.1	0	-	9	-	-	17.2
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0.3

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕		↕		↕
Traffic Volume (vph)	30	309	30	365	11	228	100	101
Future Volume (vph)	30	309	30	365	11	228	100	101
Lane Group Flow (vph)	0	363	0	675	0	286	0	230
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		2		6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	12.0	12.0	12.0	12.0	3.0	3.0	3.0	3.0
Minimum Split (s)	18.0	18.0	18.0	18.0	9.0	9.0	9.0	9.0
Total Split (s)	48.0	48.0	48.0	48.0	32.0	32.0	32.0	32.0
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	40.0%	40.0%	40.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	None	None	None	None
v/c Ratio		0.48		0.89		0.56		0.62
Control Delay		13.2		28.6		23.3		28.1
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		13.2		28.6		23.3		28.1
Queue Length 50th (ft)		79		182		82		68
Queue Length 95th (ft)		168		#455		186		166
Internal Link Dist (ft)		484		402		143		201
Turn Bay Length (ft)								
Base Capacity (vph)		1169		1149		804		577
Starvation Cap Reductn		0		0		0		0
Spillback Cap Reductn		0		0		0		0
Storage Cap Reductn		0		0		0		0
Reduced v/c Ratio		0.31		0.59		0.36		0.40

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 59.8

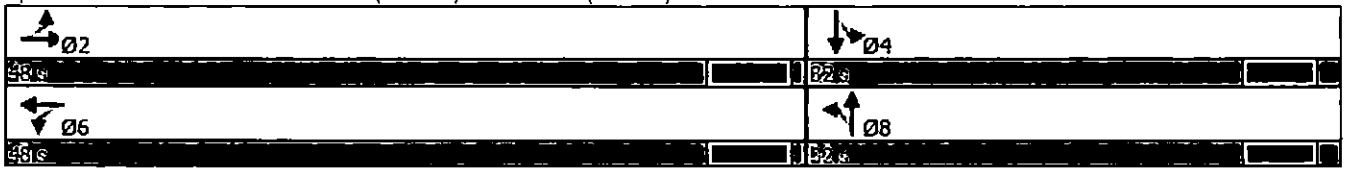
Natural Cycle: 55

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Daniels Road (SR 946) & Bath Pike (SR 248)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	30	309	13	30	365	260	11	228	39	100	101	22
Future Volume (veh/h)	30	309	13	30	365	260	11	228	39	100	101	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1921	1921	1921	1646	1646	1646	1780	1780	1780	1860	1860	1860
Adj Flow Rate, veh/h	31	319	13	31	376	268	11	235	40	103	104	23
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	112	978	38	85	510	348	71	309	51	201	161	30
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	75	1690	66	33	880	602	28	1465	243	518	760	142
Grp Volume(v), veh/h	363	0	0	675	0	0	286	0	0	230	0	0
Grp Sat Flow(s),veh/h/ln	1830	0	0	1515	0	0	1735	0	0	1421	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.9	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.7	0.0	0.0	19.0	0.0	0.0	8.8	0.0	0.0	8.8	0.0	0.0
Prop In Lane	0.09		0.04	0.05		0.40	0.04		0.14	0.45		0.10
Lane Grp Cap(c), veh/h	1128	0	0	943	0	0	432	0	0	391	0	0
V/C Ratio(X)	0.32	0.00	0.00	0.72	0.00	0.00	0.66	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	1397	0	0	1176	0	0	849	0	0	743	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.3	0.0	0.0	9.0	0.0	0.0	21.3	0.0	0.0	21.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.9	0.0	0.0	2.5	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	0.0	0.0	7.6	0.0	0.0	6.0	0.0	0.0	4.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	0.0	0.0	11.0	0.0	0.0	23.8	0.0	0.0	23.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		363			675			286			230	
Approach Delay, s/veh		6.5			11.0			23.8			23.0	
Approach LOS		A			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		39.1		18.1		39.1		18.1				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		42.0		26.0		42.0		26.0				
Max Q Clear Time (g_c+I1), s		7.7		10.8		21.0		10.8				
Green Ext Time (p_c), s		7.7		1.1		12.1		1.2				
Intersection Summary												
HCM 6th Ctrl Delay			14.1									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	0.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	390	1	5	422	17	1	1	2	17	1	26
Future Vol, veh/h	16	390	1	5	422	17	1	1	2	17	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	4	-	-	-2	-	-	-2	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	9	2	0	0	3	7	0	0	0	0	0	0
Mvmt Flow	17	419	1	5	454	18	1	1	2	18	1	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	472	0	0	420	0	0	942	936	420	928	927	463
Stage 1	-	-	-	-	-	-	454	454	-	473	473	-
Stage 2	-	-	-	-	-	-	488	482	-	455	454	-
Critical Hdwy	4.4	-	-	4.3	-	-	6	6.1	6	6	6.1	6
Critical Hdwy Stg 1	-	-	-	-	-	-	5.7	5.1	-	5.7	5.1	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.7	5.1	-	5.7	5.1	-
Follow-up Hdwy	3.1	-	-	3	-	-	3	4	3.1	3	4	3.1
Pot Cap-1 Maneuver	794	-	-	861	-	-	360	296	687	367	300	651
Stage 1	-	-	-	-	-	-	702	602	-	687	592	-
Stage 2	-	-	-	-	-	-	674	587	-	702	602	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	794	-	-	861	-	-	334	285	687	355	289	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	334	285	-	355	289	-
Stage 1	-	-	-	-	-	-	682	585	-	668	587	-
Stage 2	-	-	-	-	-	-	639	582	-	679	585	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	13.6	13.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	425	794	-	-	861	-	-	482
HCM Lane V/C Ratio	0.01	0.022	-	-	0.006	-	-	0.098
HCM Control Delay (s)	13.6	9.6	0	-	9.2	0	-	13.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	41	41	7	15	32
Future Vol, veh/h	17	41	41	7	15	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-1	-	4	-	-	-4
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	33	0	0	16
Mvmt Flow	18	45	45	8	16	35

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	116	49	0	0	53	0
Stage 1	49	-	-	-	-	-
Stage 2	67	-	-	-	-	-
Critical Hdwy	6.2	6.1	-	-	4.3	-
Critical Hdwy Stg 1	5.2	-	-	-	-	-
Critical Hdwy Stg 2	5.2	-	-	-	-	-
Follow-up Hdwy	3	3.1	-	-	3	-
Pot Cap-1 Maneuver	1031	1091	-	-	1151	-
Stage 1	1141	-	-	-	-	-
Stage 2	1120	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1017	1091	-	-	1151	-
Mov Cap-2 Maneuver	1017	-	-	-	-	-
Stage 1	1125	-	-	-	-	-
Stage 2	1120	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	2.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1068	1151	-
HCM Lane V/C Ratio	-	-	0.059	0.014	-
HCM Control Delay (s)	-	-	8.6	8.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑			↰
Traffic Vol, veh/h	0	15	33	0	6	43
Future Vol, veh/h	0	15	33	0	6	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	100	8	100	100	2
Mvmt Flow	0	16	36	0	7	47
Number of Lanes	0	1	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.4	7.3	9.2
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	12%
Vol Thru, %	100%	0%	88%
Vol Right, %	0%	100%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	33	15	49
LT Vol	0	0	6
Through Vol	33	0	43
RT Vol	0	15	0
Lane Flow Rate	36	16	53
Geometry Grp	1	1	1
Degree of Util (X)	0.041	0.023	0.084
Departure Headway (Hd)	4.103	5.155	5.68
Convergence, Y/N	Yes	Yes	Yes
Cap	868	687	632
Service Time	2.152	3.244	3.706
HCM Lane V/C Ratio	0.041	0.023	0.084
HCM Control Delay	7.3	8.4	9.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.1	0.3

Per PennDOT's Publication 282 – Highway Occupancy Permit Operations Manual, Appendix A – Policies and Procedures for Transportation Impact Studies, Step 10 – Level of Service (LOS) Requirements, an overall LOS for unsignalized intersections should be calculated by using a weighted average of approach delays. Figure 5 of said Appendix provides the following formula:

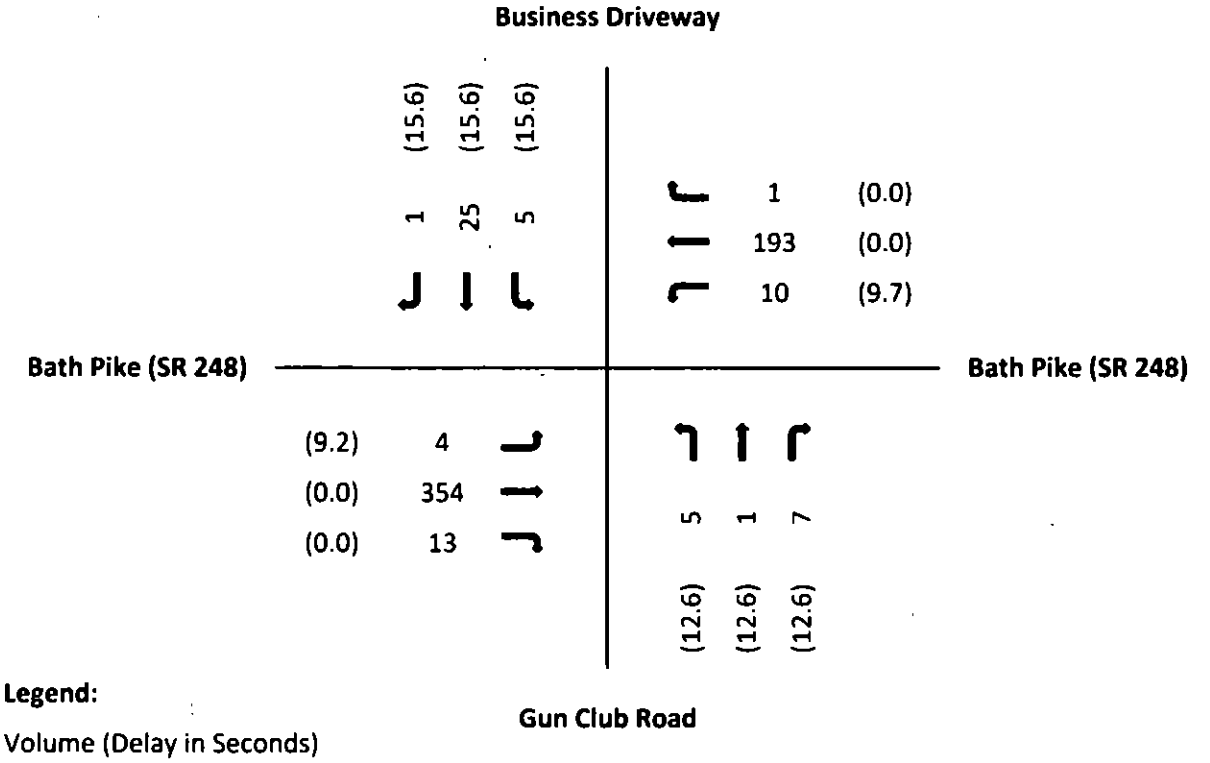
$$Average\ Intersection\ Delay = \frac{\sum(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Bath Pike (SR 248) & Gun Club Road/Business Driveway

2020 No-Build

AM Peak

Average Intersection Delay
= [(4 veh. × 9.2 sec.) + (354 veh. × 0.0 sec.) + (13 veh. × 0.0 sec.)
+ (10 veh. × 9.7 sec.) + (193 veh. × 0.0 sec.) + (1 veh. × 0.0 sec.)
+ (5 veh. × 12.6 sec.) + (1 veh. × 12.6 sec.) + (7 veh. × 12.6 sec.)
+ (5 veh. × 15.6 sec.) + (25 veh. × 15.6 sec.) + (1 veh. × 15.6 sec.)]/619 veh.
Average Intersection Delay = 1.3 sec.



Legend:
Volume (Delay in Seconds)

Per PennDOT's Publication 282 – Highway Occupancy Permit Operations Manual, Appendix A – Policies and Procedures for Transportation Impact Studies, Step 10 – Level of Service (LOS) Requirements, an overall LOS for unsignalized intersections should be calculated by using a weighted average of approach delays. Figure 5 of said Appendix provides the following formula:

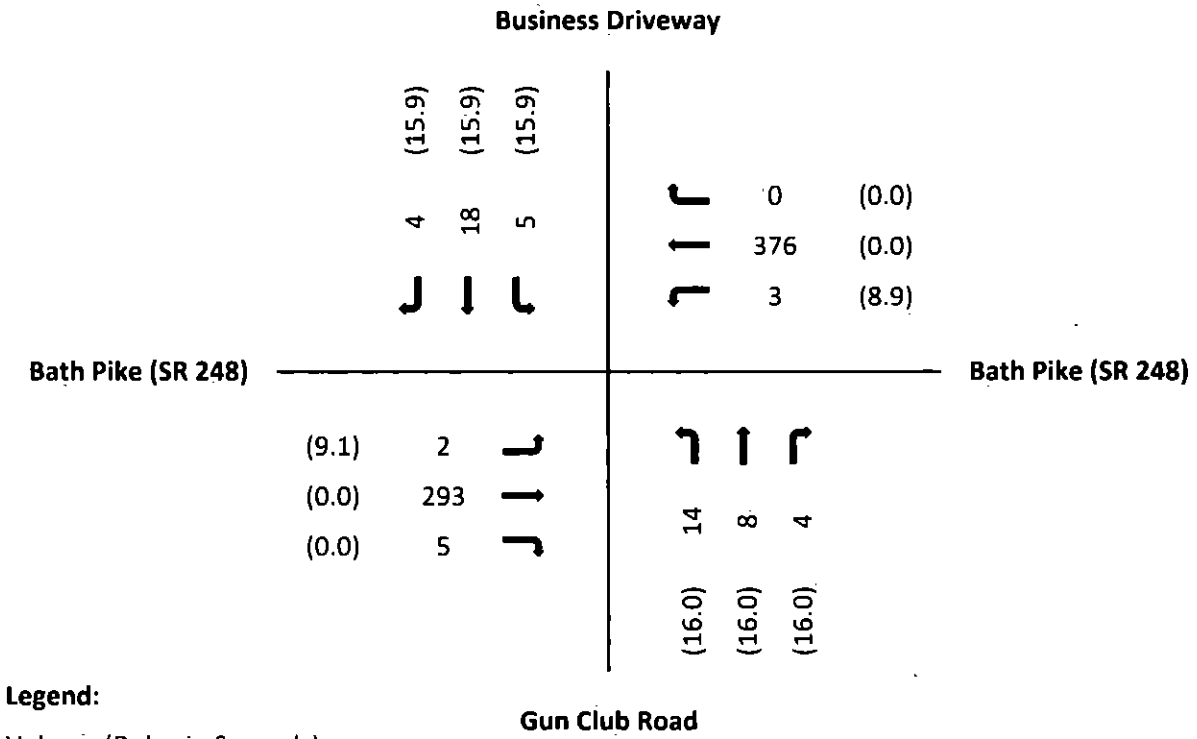
$$Average\ Intersection\ Delay = \frac{\sum(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Bath Pike (SR 248) & Gun Club Road/Business Driveway

2020 No-Build

PM Peak

Average Intersection Delay
= [(2 veh. × 9.1 sec.) + (293 veh. × 0.0 sec.) + (5 veh. × 0.0 sec.)
+ (3 veh. × 8.9 sec.) + (376 veh. × 0.0 sec.) + (0 veh. × 0.0 sec.)
+ (14 veh. × 16.0 sec.) + (8 veh. × 16.0 sec.) + (4 veh. × 16.0 sec.)
+ (5 veh. × 15.9 sec.) + (18 veh. × 15.9 sec.) + (4 veh. × 15.9 sec.)]/732 veh.
Average Intersection Delay = 1.2 sec.



Legend:

Volume (Delay in Seconds)

Per PennDOT's Publication 282 – Highway Occupancy Permit Operations Manual, Appendix A – Policies and Procedures for Transportation Impact Studies, Step 10 – Level of Service (LOS) Requirements, an overall LOS for unsignalized intersections should be calculated by using a weighted average of approach delays. Figure 5 of said Appendix provides the following formula:

$$Average\ Intersection\ Delay = \frac{\sum(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Newburg Road (SR 3020) & Werner Road/Gun Club Road

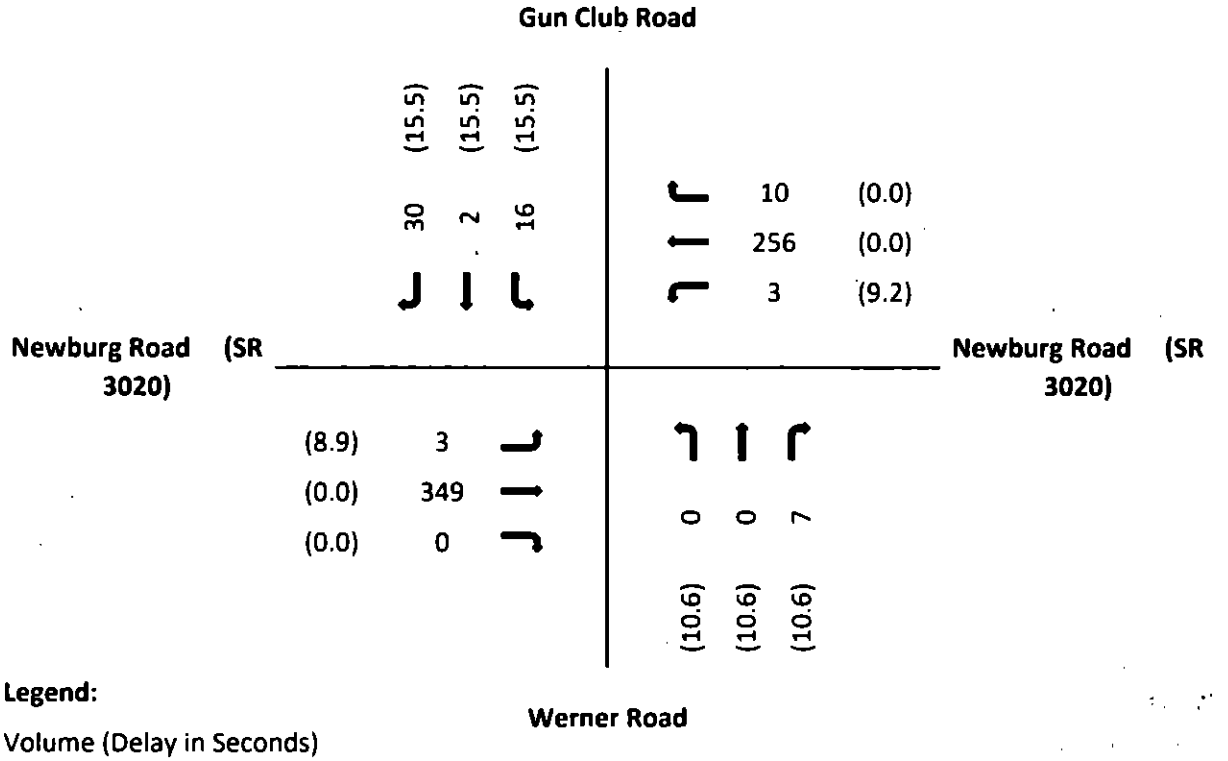
2020 No-Build

AM Peak

Average Intersection Delay

= [(3 veh. × 8.9 sec.) + (349 veh. × 0.0 sec.) + (0 veh. × 0.0 sec.)
+ (3 veh. × 9.2 sec.) + (256 veh. × 0.0 sec.) + (10 veh. × 0.0 sec.)
+ (0 veh. × 10.6 sec.) + (0 veh. × 10.6 sec.) + (7 veh. × 10.6 sec.)
+ (16 veh. × 15.5 sec.) + (2 veh. × 15.5 sec.) + (30 veh. × 15.5 sec.)]/676 veh.

Average Intersection Delay = 1.3 sec.



Legend:

Volume (Delay in Seconds)

Per PennDOT's Publication 282 – Highway Occupancy Permit Operations Manual, Appendix A – Policies and Procedures for Transportation Impact Studies, Step 10 – Level of Service (LOS) Requirements, an overall LOS for unsignalized intersections should be calculated by using a weighted average of approach delays. Figure 5 of said Appendix provides the following formula:

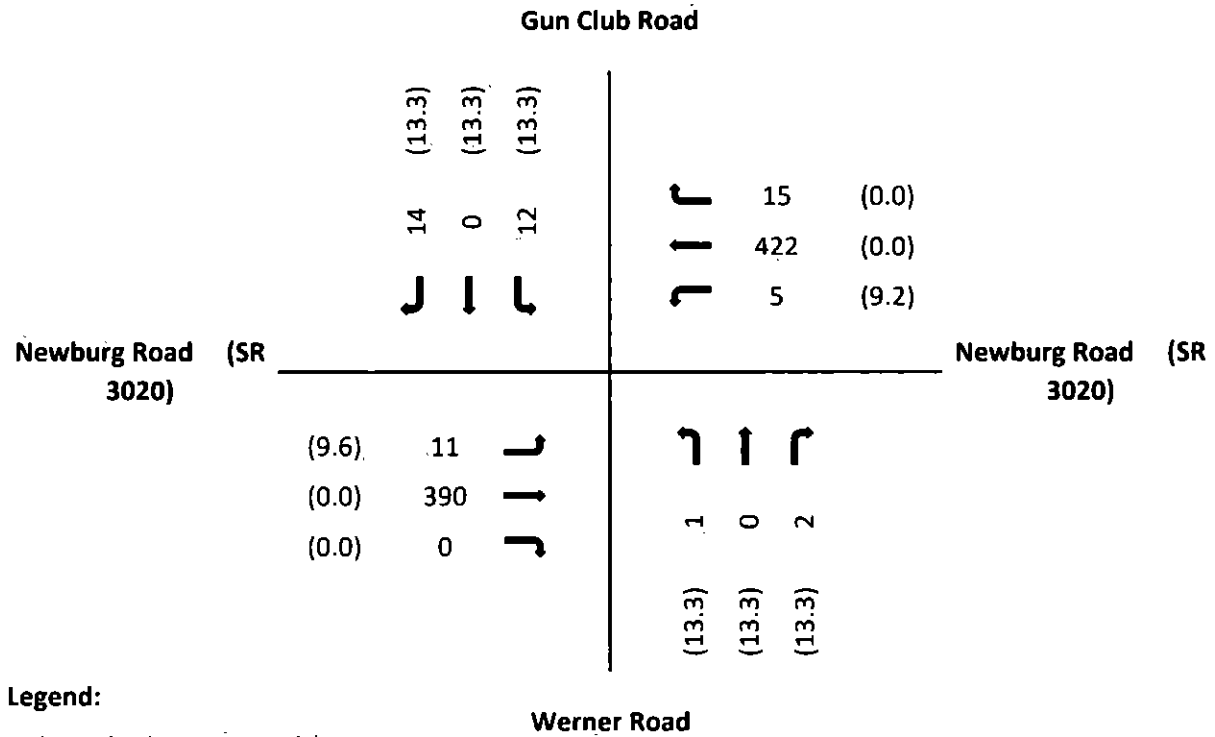
$$Average\ Intersection\ Delay = \frac{\sum(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Newburg Road (SR 3020) & Werner Road/Gun Club Road

2020 No-Build

PM Peak

Average Intersection Delay
= [(11 veh. × 9.6 sec.) + (390 veh. × 0.0 sec.) + (0 veh. × 0.0 sec.)
+ (5 veh. × 9.2 sec.) + (422 veh. × 0.0 sec.) + (15 veh. × 0.0 sec.)
+ (1 veh. × 13.3 sec.) + (0 veh. × 13.3 sec.) + (2 veh. × 13.3 sec.)
+ (12 veh. × 13.3 sec.) + (0 veh. × 13.3 sec.) + (14 veh. × 13.3 sec.)]/872 veh.
Average Intersection Delay = 0.6 sec.



Legend:

Volume (Delay in Seconds)

Per PennDOT's Publication 282 – Highway Occupancy Permit Operations Manual, Appendix A – Policies and Procedures for Transportation Impact Studies, Step 10 – Level of Service (LOS) Requirements, an overall LOS for unsignalized intersections should be calculated by using a weighted average of approach delays. Figure 5 of said Appendix provides the following formula:

$$Average\ Intersection\ Delay = \frac{\sum(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Bath Pike (SR 248) & Gun Club Road/Business Driveway

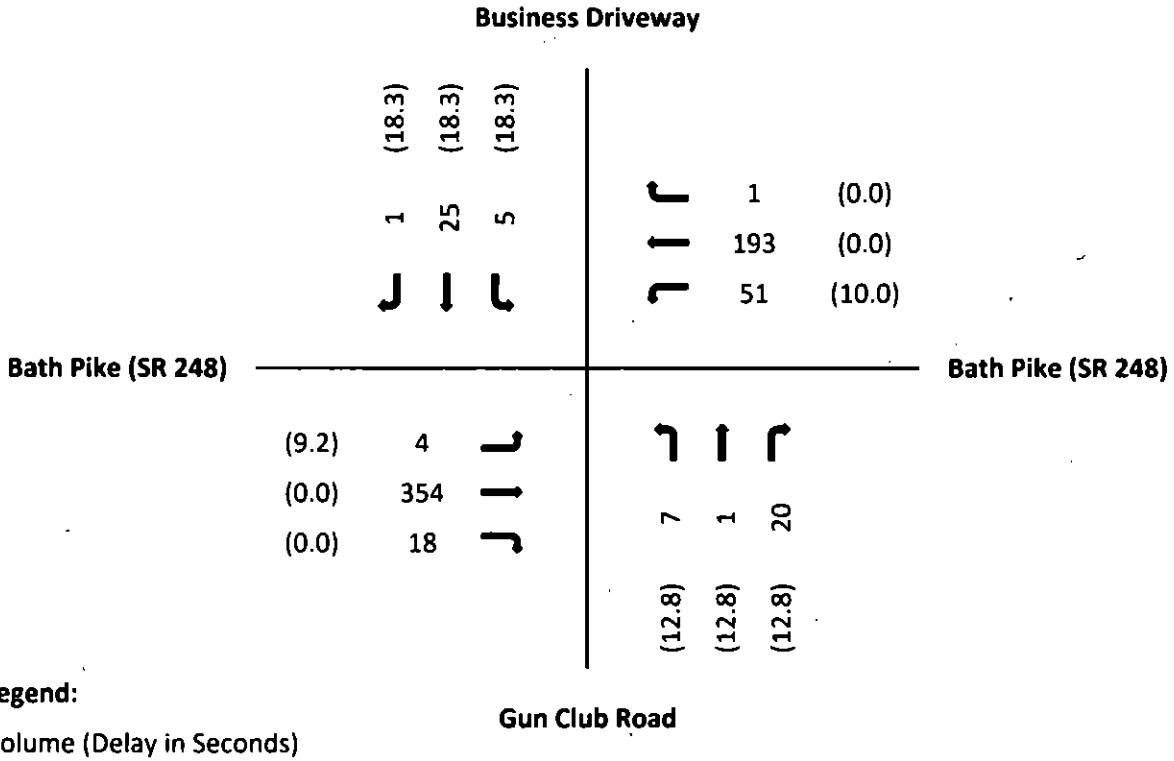
2020 Build

AM Peak

AAverage Intersection Delay

= [(4 veh. × 9.2 sec.) + (354 veh. × 0.0 sec.) + (18 veh. × 0.0 sec.)
+ (51 veh. × 10.0 sec.) + (193 veh. × 0.0 sec.) + (1 veh. × 0.0 sec.)
+ (7 veh. × 12.8 sec.) + (1 veh. × 12.8 sec.) + (20 veh. × 12.8 sec.)
+ (5 veh. × 18.3 sec.) + (25 veh. × 18.3 sec.) + (1 veh. × 18.3 sec.)]/680 veh.

Average Intersection Delay = 2.2 sec.



Legend:

Volume (Delay in Seconds)

Per PennDOT's Publication 282 – Highway Occupancy Permit Operations Manual, Appendix A – Policies and Procedures for Transportation Impact Studies, Step 10 – Level of Service (LOS) Requirements, an overall LOS for unsignalized intersections should be calculated by using a weighted average of approach delays. Figure 5 of said Appendix provides the following formula:

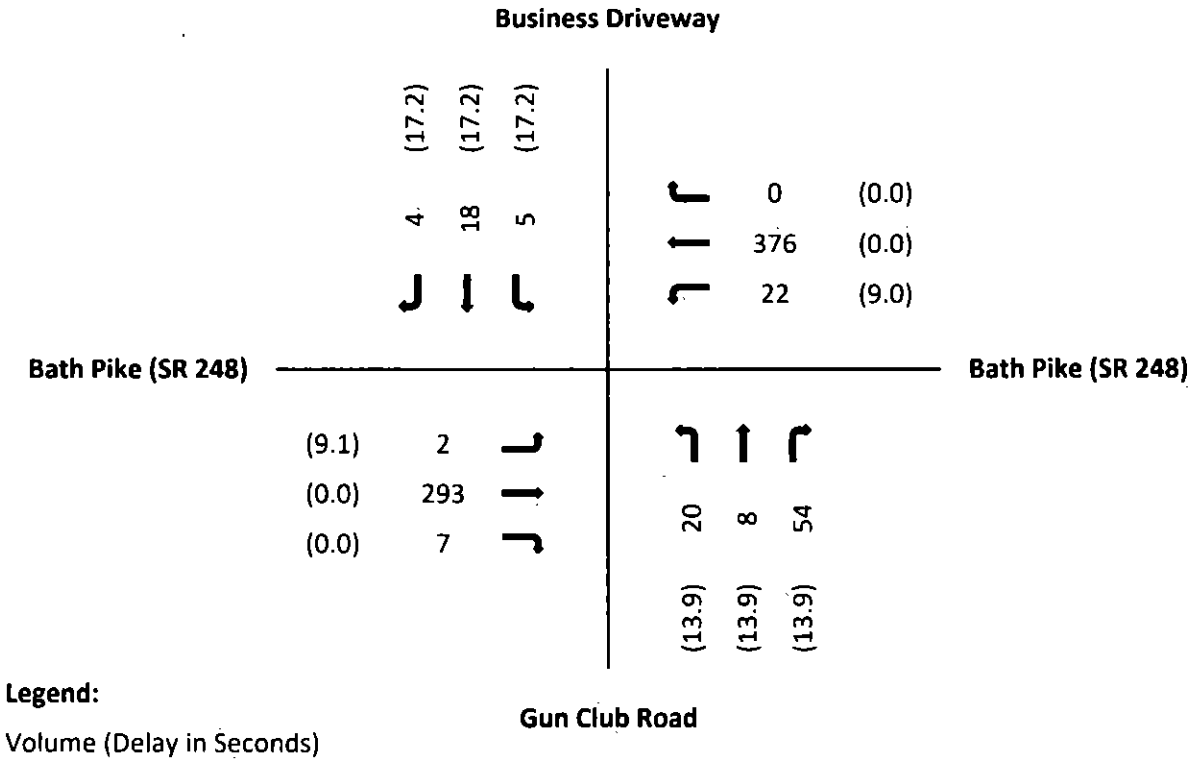
$$Average\ Intersection\ Delay = \frac{\sum(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Bath Pike (SR 248) & Gun Club Road/Business Driveway

2020 Build

PM Peak

Average Intersection Delay
= [(2 veh. × 9.1 sec.) + (293 veh. × 0.0 sec.) + (7 veh. × 0.0 sec.)
+ (22 veh. × 9.0 sec.) + (376 veh. × 0.0 sec.) + (0 veh. × 0.0 sec.)
+ (20 veh. × 13.9 sec.) + (8 veh. × 13.9 sec.) + (54 veh. × 13.9 sec.)
+ (5 veh. × 17.2 sec.) + (18 veh. × 17.2 sec.) + (4 veh. × 17.2 sec.)]/809 veh.
Average Intersection Delay = 2.3 sec.



Legend:
Volume (Delay in Seconds)

Per PennDOT's Publication 282 – Highway Occupancy Permit Operations Manual, Appendix A – Policies and Procedures for Transportation Impact Studies, Step 10 – Level of Service (LOS) Requirements, an overall LOS for unsignalized intersections should be calculated by using a weighted average of approach delays. Figure 5 of said Appendix provides the following formula:

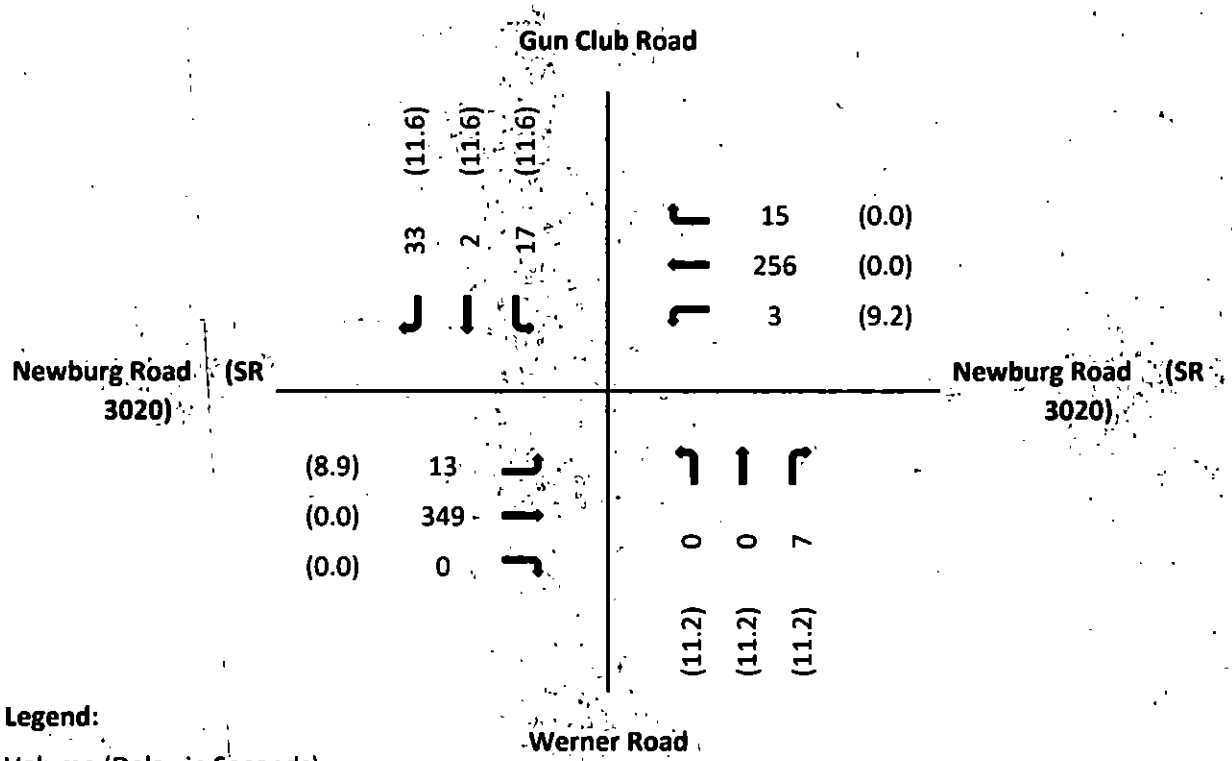
$$Average\ Intersection\ Delay = \frac{\Sigma(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Newburg Road (SR 3020) & Werner Road/Gun Club Road

2020 Build

AM Peak

Average Intersection Delay
= [(13 veh. × 8.9 sec.) + (349 veh. × 0.0 sec.) + (0 veh. × 0.0 sec.)
+ (3 veh. × 9.2 sec.) + (256 veh. × 0.0 sec.) + (15 veh. × 0.0 sec.)
+ (0 veh. × 11.2 sec.) + (0 veh. × 11.2 sec.) + (7 veh. × 11.2 sec.)
+ (17 veh. × 11.6 sec.) + (2 veh. × 11.6 sec.) + (33 veh. × 11.6 sec.)]/695 veh.
Average Intersection Delay = 1.2 sec.



Legend:
Volume (Delay in Seconds)

Per PennDOT's Publication 282 – Highway Occupancy Permit Operations Manual, Appendix A – Policies and Procedures for Transportation Impact Studies, Step 10 – Level of Service (LOS) Requirements, an overall LOS for unsignalized intersections should be calculated by using a weighted average of approach delays. Figure 5 of said Appendix provides the following formula:

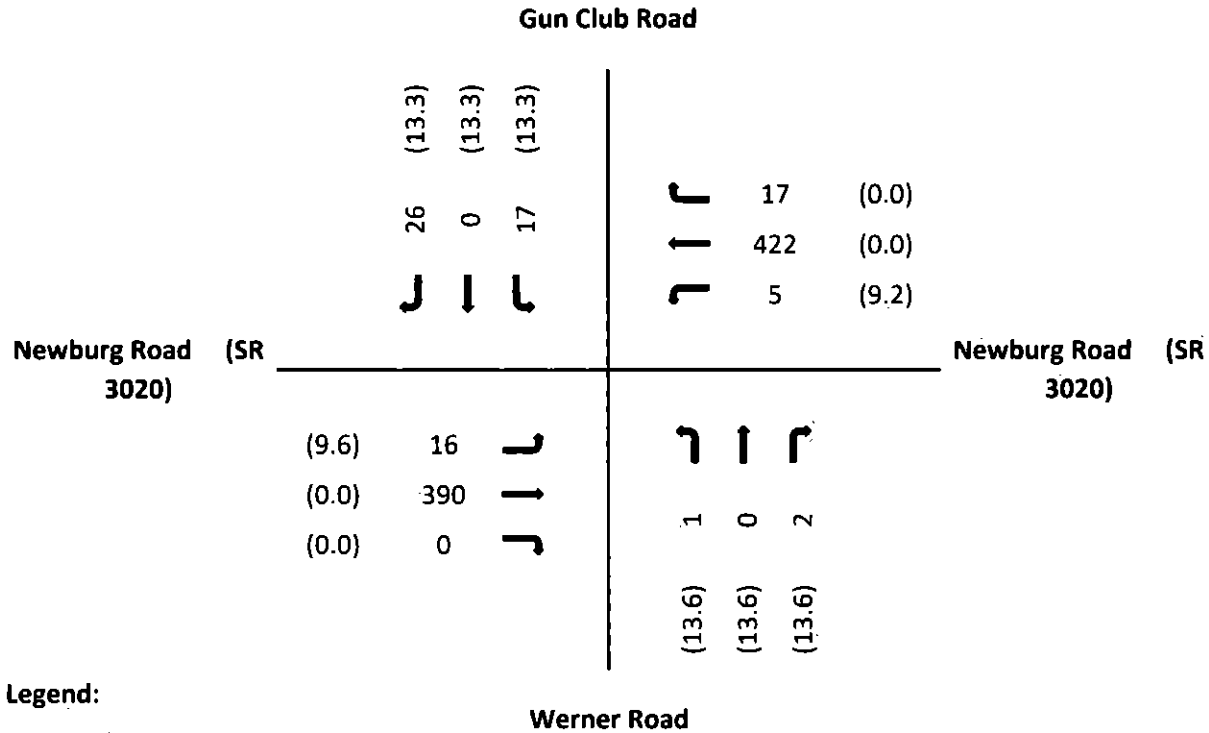
$$Average\ Intersection\ Delay = \frac{\sum(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Newburg Road (SR 3020) & Werner Road/Gun Club Road

2020 Build

PM Peak

Average Intersection Delay
= [(16 veh. × 9.6 sec.) + (390 veh. × 0.0 sec.) + (0 veh. × 0.0 sec.)
+ (5 veh. × 9.2 sec.) + (422 veh. × 0.0 sec.) + (17 veh. × 0.0 sec.)
+ (1 veh. × 13.6 sec.) + (0 veh. × 13.6 sec.) + (2 veh. × 13.6 sec.)
+ (17 veh. × 13.3 sec.) + (0 veh. × 13.3 sec.) + (26 veh. × 13.3 sec.)]/896 veh.
Average Intersection Delay = 0.9 sec.



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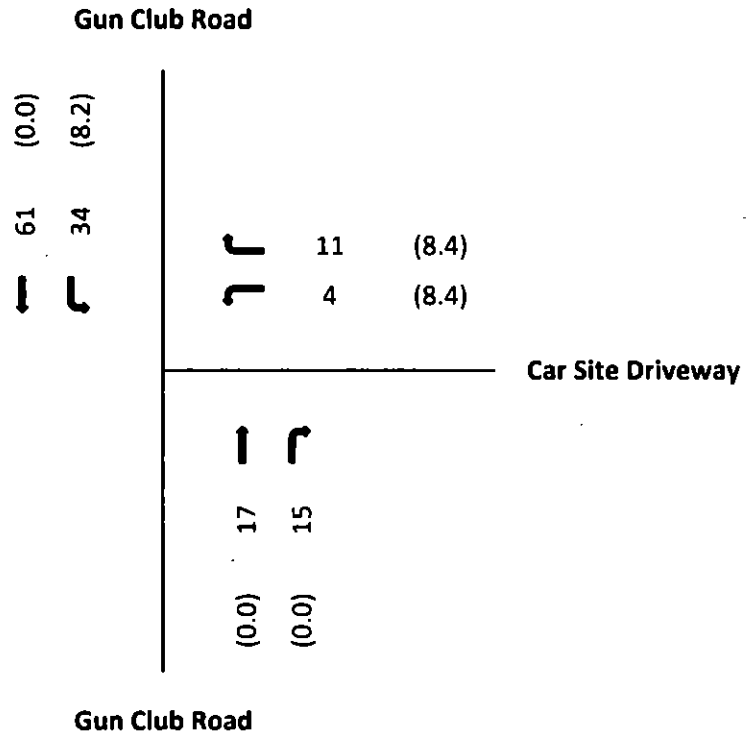
$$Average\ Intersection\ Delay = \frac{\sum(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Car Site Driveway & Gun Club Road

2020 Build

AM Peak

Average Intersection Delay
= [(4 veh. × 8.4 sec.) + (11 veh. × 8.4 sec.) + (17 veh. × 0.0 sec.)
+ (15 veh. × 0.0 sec.) + (34 veh. × 8.2 sec.) + (61 veh. × 0.0 sec.)]/142 veh.
Average Intersection Delay = 2.9 sec.



Legend:

Volume (Delay in Seconds)

Per PennDOT's Publication 282 – Highway Occupancy Permit Operations Manual, Appendix A – Policies and Procedures for Transportation Impact Studies, Step 10 – Level of Service (LOS) Requirements, an overall LOS for unsignalized intersections should be calculated by using a weighted average of approach delays. Figure 5 of said Appendix provides the following formula:

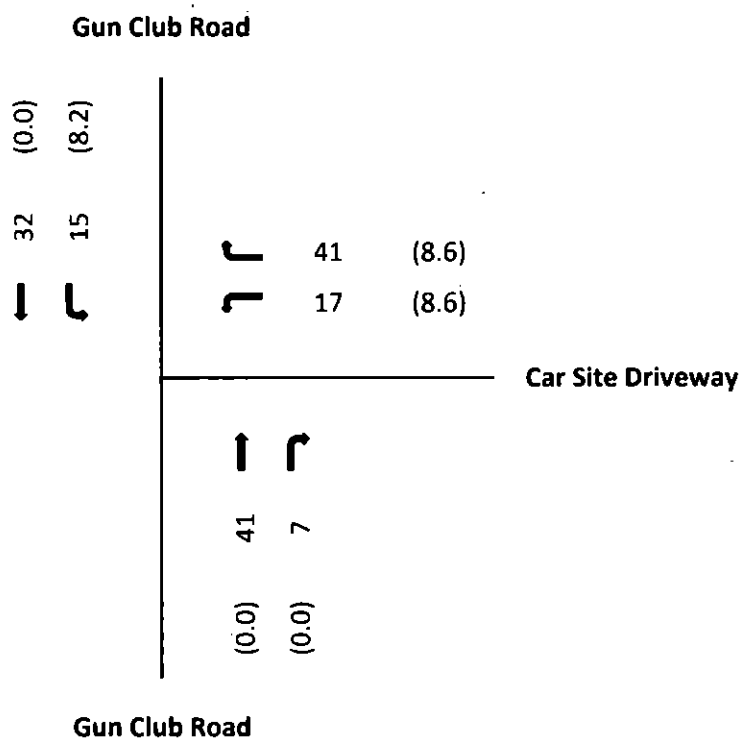
$$Average\ Intersection\ Delay = \frac{\sum(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Car Site Driveway & Gun Club Road

2020 Build

PM Peak

Average Intersection Delay
= [(17 veh. × 8.6 sec.) + (41 veh. × 8.6 sec.) + (41 veh. × 0.0 sec.)
+ (7 veh. × 0.0 sec.) + (15 veh. × 8.2 sec.) + (32 veh. × 0.0 sec.)]/153 veh.
Average Intersection Delay = 4.1 sec.



Legend:

Volume (Delay in Seconds)

Per PennDOT's Publication 282 – Highway Occupancy Permit Operations Manual, Appendix A – Policies and Procedures for Transportation Impact Studies, Step 10 – Level of Service (LOS) Requirements, an overall LOS for unsignalized intersections should be calculated by using a weighted average of approach delays. Figure 5 of said Appendix provides the following formula:

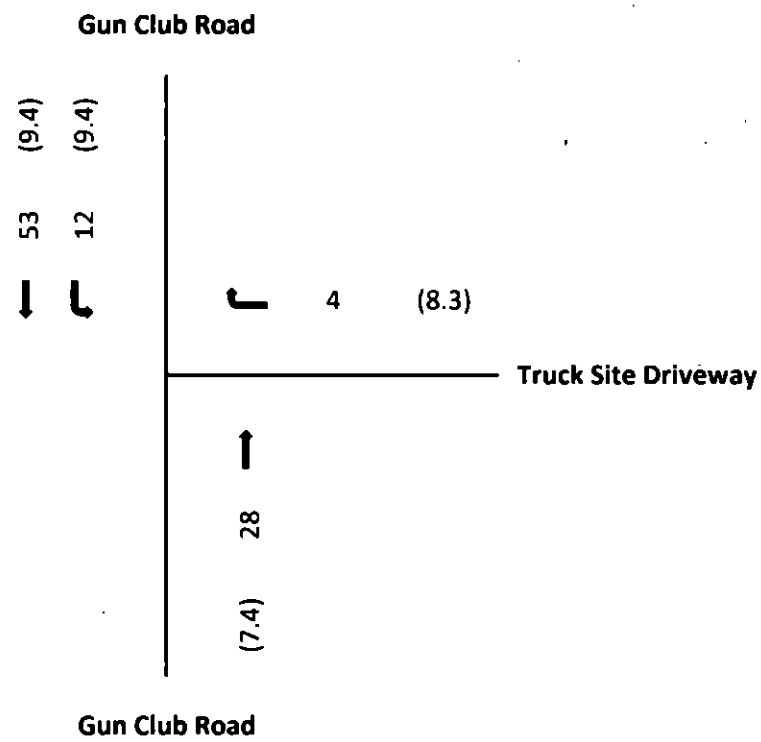
$$Average\ Intersection\ Delay = \frac{\sum(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Truck Site Driveway & Gun Club Road

2020 Build

AM Peak

Average Intersection Delay
= [(4 veh. × 8.3 sec.) + (28 veh. × 7.4 sec.) + (12 veh. × 9.4 sec.)
+ (53 veh. × 9.4 sec.)]/97 veh.
Average Intersection Delay = 8.8 sec.



Legend:
Volume (Delay in Seconds)

Per PennDOT's Publication 282 – Highway Occupancy Permit Operations Manual, Appendix A – Policies and Procedures for Transportation Impact Studies, Step 10 – Level of Service (LOS) Requirements, an overall LOS for unsignalized intersections should be calculated by using a weighted average of approach delays. Figure 5 of said Appendix provides the following formula:

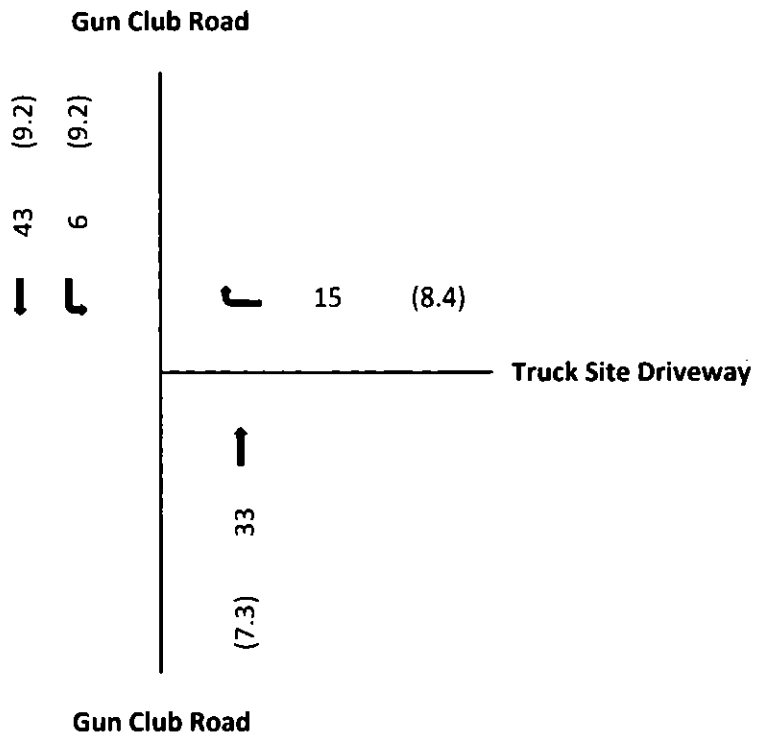
$$Average\ Intersection\ Delay = \frac{\sum(Volume \times Delay)}{Total\ Intersection\ Volume}$$

Truck Site Driveway & Gun Club Road

2020 Build

PM Peak

Average Intersection Delay
= [(15 veh. × 8.4 sec.) + (33 veh. × 7.3 sec.) + (6 veh. × 9.2 sec.)
+ (43 veh. × 9.2 sec.)]/97 veh.
Average Intersection Delay = 8.4 sec.



Legend:
Volume (Delay in Seconds)

PROJECT TADMOR

TRAFFIC IMPACT ASSESSMENT

APPENDIX H

HEADWAY FACTOR CALCULATIONS

18000145B - Project Tadmor
Headway Factor Calculations

Bath Pike (SR 248) & Gun Club Road/Business Driveway - AM Peak Hour

Intersection Movement			Calculated Values		Variables							
			t_c (s)	t_f (s)	$t_{c,base}$	$t_{f,base}$	$t_{c,HV}$	$t_{f,HV}$	P_{HV}	$t_{c,G}$	G	$t_{3,LT}$
Bath Pike (SR 248)	EB	L	**4.8**	**3.5**	4.3	3.0	1.0	0.9	0.50	0.0	-1	0.0
	WB	L	**4.6**	**3.3**	4.3	3.0	1.0	0.9	0.30	0.0	-1	0.0
Gun Club Road	NB	L	**7.2**	**3.0**	7.1	3.0	0.0	0.0	0.40	0.2	4	0.7
		T	**7.3**	**4.0**	6.5	4.0	0.0	0.0	0.00	0.2	4	0.0
		R	**6.6**	**3.1**	6.2	3.1	0.0	0.0	0.43	0.1	4	0.0
Business Driveway	SB	L	**6.8**	**3.0**	7.1	3.0	0.0	0.0	0.80	0.2	2	0.7
		T	**6.9**	**4.0**	6.5	4.0	0.0	0.0	0.00	0.2	2	0.0
		R	**6.4**	**3.1**	6.2	3.1	0.0	0.0	0.00	0.1	2	0.0

Bath Pike (SR 248) & Gun Club Road/Business Driveway - PM Peak Hour

Intersection Movement			Calculated Values		Variables							
			t_c (s)	t_f (s)	$t_{c,base}$	$t_{f,base}$	$t_{c,HV}$	$t_{f,HV}$	P_{HV}	$t_{c,G}$	G	$t_{3,LT}$
Bath Pike (SR 248)	EB	L	**4.3**	**3.0**	4.3	3.0	1.0	0.9	0.00	0.0	-1	0.0
	WB	L	**4.3**	**3.0**	4.3	3.0	1.0	0.9	0.00	0.0	-1	0.0
Gun Club Road	NB	L	**7.2**	**3.0**	7.1	3.0	0.0	0.0	0.07	0.2	4	0.7
		T	**7.3**	**4.0**	6.5	4.0	0.0	0.0	0.00	0.2	4	0.0
		R	**6.6**	**3.1**	6.2	3.1	0.0	0.0	0.00	0.1	4	0.0
Business Driveway	SB	L	**6.8**	**3.0**	7.1	3.0	0.0	0.0	0.00	0.2	2	0.7
		T	**6.9**	**4.0**	6.5	4.0	0.0	0.0	0.00	0.2	2	0.0
		R	**6.4**	**3.1**	6.2	3.1	0.0	0.0	0.00	0.1	2	0.0

18000145B - Project Tadmor
Headway Factor Calculations

Newburg Road (SR 3020) & Werner Road/Gun Club Road - AM Peak Hour

Intersection Movement			Calculated Values		Variables							
			t_c (s)	t_f (s)	$t_{c,base}$	$t_{f,base}$	$t_{c,HV}$	$t_{f,HV}$	P_{HV}	$t_{c,G}$	G	$t_{3,LT}$
Newburg Road (SR 3020)	EB	L	**4.3**	**3.0**	4.3	3.0	1.0	0.9	0.00	0.0	-4	0.0
	WB	L	**4.3**	**3.0**	4.3	3.0	1.0	0.9	0.00	0.0	4	0.0
Werner Road	NB	L	**6.0**	**3.0**	7.1	3.0	0.0	0.0	0.00	0.2	-2	0.7
		T	**6.1**	**4.0**	6.5	4.0	0.0	0.0	0.00	0.2	-2	0.0
		R	**6.0**	**3.1**	6.2	3.1	0.0	0.0	0.29	0.1	-2	0.0
Gun Club Road	SB	L	**6.0**	**3.0**	7.1	3.0	0.0	0.0	0.00	0.2	-2	0.7
		T	**6.1**	**4.0**	6.5	4.0	0.0	0.0	0.50	0.2	-2	0.0
		R	**6.0**	**3.1**	6.2	3.1	0.0	0.0	0.10	0.1	-2	0.0

Newburg Road (SR 3020) & Werner Road/Gun Club Road - PM Peak Hour

Intersection Movement			Calculated Values		Variables							
			t_c (s)	t_f (s)	$t_{c,base}$	$t_{f,base}$	$t_{c,HV}$	$t_{f,HV}$	P_{HV}	$t_{c,G}$	G	$t_{3,LT}$
Newburg Road (SR 3020)	EB	L	**4.4**	**3.1**	4.3	3.0	1.0	0.9	0.09	0.0	-4	0.0
	WB	L	**4.3**	**3.0**	4.3	3.0	1.0	0.9	0.00	0.0	4	0.0
Werner Road	NB	L	**6.0**	**3.0**	7.1	3.0	0.0	0.0	0.00	0.2	-2	0.7
		T	**6.1**	**4.0**	6.5	4.0	0.0	0.0	0.00	0.2	-2	0.0
		R	**6.0**	**3.1**	6.2	3.1	0.0	0.0	0.00	0.1	-2	0.0
Gun Club Road	SB	L	**6.0**	**3.0**	7.1	3.0	0.0	0.0	0.00	0.2	-2	0.7
		T	**6.1**	**4.0**	6.5	4.0	0.0	0.0	0.00	0.2	-2	0.0
		R	**6.0**	**3.1**	6.2	3.1	0.0	0.0	0.00	0.1	-2	0.0

18000145B - Project Tadmor
Headway Factor Calculations

Gun Club Road & Car Site Driveway - AM Peak Hour

Intersection Movement			Calculated Values		Variables							
			t_c (s)	t_f (s)	$t_{c,base}$	$t_{f,base}$	$t_{c,HV}$	$t_{f,HV}$	P_{HV}	$t_{c,G}$	G	$t_{3,LT}$
Car Site Driveway	WB	L	**6.2**	**3.0**	7.1	3.0	0.0	0.0	0.00	0.2	-1	0.7
		R	**6.1**	**3.1**	6.2	3.1	0.0	0.0	0.00	0.1	-1	0.0
Gun Club Road	SB	L	**4.3**	**3.0**	4.3	3.0	1.0	0.9	0.00	0.0	-4	0.0

Gun Club Road & Car Site Driveway - PM Peak Hour

Intersection Movement			Calculated Values		Variables							
			t_c (s)	t_f (s)	$t_{c,base}$	$t_{f,base}$	$t_{c,HV}$	$t_{f,HV}$	P_{HV}	$t_{c,G}$	G	$t_{3,LT}$
Car Site Driveway	WB	L	**6.2**	**3.0**	7.1	3.0	0.0	0.0	0.00	0.2	-1	0.7
		R	**6.1**	**3.1**	6.2	3.1	0.0	0.0	0.00	0.1	-1	0.0
Gun Club Road	SB	L	**4.3**	**3.0**	4.3	3.0	1.0	0.9	0.00	0.0	-4	0.0

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the foregoing document upon the participants, listed below, in accordance with the requirements of 52 Pa. Code §1.54 et seq. *(relating to service by participant)*:

The Secretary of the Commission
Pennsylvania Public Utility Commission
400 North Street
Harrisburg, PA 17120

Norfolk Southern Railway Company
Attn.: Shawn Starling, P.E.
Senior Engineer Public Improvements
Engineering – Design & Construction
650 West Peachtree Street NW – Box 45
Atlanta, GA 30308
Project Ref: "PUC Application - Upper Nazareth Twp PA CX0120675 SE-13.35 Gun Club Road 851943H - Task 941"

Upper Nazareth Township
Attn. Lisa Klem, Township Manager
100 Newport Avenue
Nazareth, PA 18064

Pennsylvania Department of Transportation
Bureau of Design, ROW and Utility Design Division, Grade Crossing Unit
PO Box 3362
Harrisburg, PA 17105-3362

Pennsylvania Department of Transportation
Office of Chief Counsel
PO Box 8212
Harrisburg, PA 17105-8212

Pennsylvania Department of Transportation
Office of the District Portfolio Manager
Engineering District 5-0
1002 Hamilton Street
Allentown, PA 18101

Crossroads XOX, LLC
c/o JVI, LLC
Attn: James A. Vozar
1265 Miller Road
Wind Gap, PA 18091

NP Gun Club Building I, LLC
c/o NorthPoint Development
Attn: Dan Zuk
3010 Highland Parkway, Suite 440
Downers Grove, IL 60515

UGI Utilities
2121 City Line Road
Bethlehem, PA 18017-2187

FirstEnergy Corp (MetEd)
76 S Main Street
Akron, OH 44309-1890

Northampton County
669 Washington Street
Easton, PA 18042

Date: 5-3-23

Kim Mutarelli

Kim Mutarelli
Upper Nazareth Township Secretary

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