

**Traffic Impact Study
For
New Office, Shop, and Plant for
Kansas Sand and Concrete
at
NE Corner of NW 25th St. & NW Stina Ct.**

Project Location:

Northeast corner of NW 25th St. & Stina Ct.
Topeka, KS

Client:

Kansas Sand & Concrete Inc.
531 SW Tyler St.
Topeka, KS 66608

Report Prepared by:



SBB Engineering, LLC

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Date:

October 16, 2020

SBB Project No. 20-174

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Submitted By:



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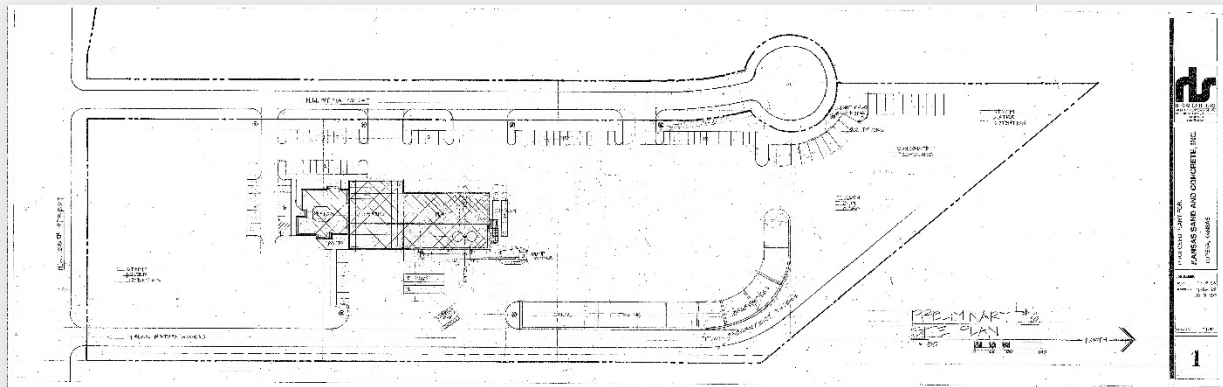
Introduction

Kansas Sand and Concrete, Inc. is developing 10.2 acres at the northeast corner of NW 25th St. and NW Stina Ct. The area being developed is zoned as I2 – Heavy Industrial District. This Traffic Impact Study (TIS) will estimate the traffic impact of this development on the adjacent road network and make recommendations for geometric improvements or changes in intersection control, if warranted.



Kansas Sand and Concrete Project Location

The study area of the traffic impact study includes the intersection of NW 25th & Stover Rd., NW 25th St. & NW Stina Ct., and the proposed accesses for the development along NW Stina Ct. and NW 25th St.



Kansas Sand and Concrete Preliminary Site Plan showing proposed access points.

Existing Conditions

The study area has the following characteristics -

NW 25th St. & Stover Rd. –

NW Stover Rd. is a four-lane divided roadway that was once a portion of US-75. The intersection at NW 25th St. & Stover Rd. is a T-intersection with the northbound approach being stop controlled. There are turn lanes for both the right turn and left turn movements. NW 25th St is a two-lane asphalt road and has uncontrolled eastbound and westbound approaches without turn lanes. NW Stover Rd. does not have a posted speed limit. NW 25th St. has a posted speed limit of 45 mph.

NW 25th St. & Stina Ct. –

NW Stina Ct. is a 2-lane road with a cul-de-sac approximately 1000-feet north of NW 25th St. NW Stina Ct. at 25th Street is stop controlled and does not have turn lanes while the eastbound and westbound approaches on NW 25th St. are uncontrolled. At the time of this study, NW Stina Ct. only served one industrial property, which is Hoyt Trailer Center. NW Stina Ct. does not have a posted speed limit.

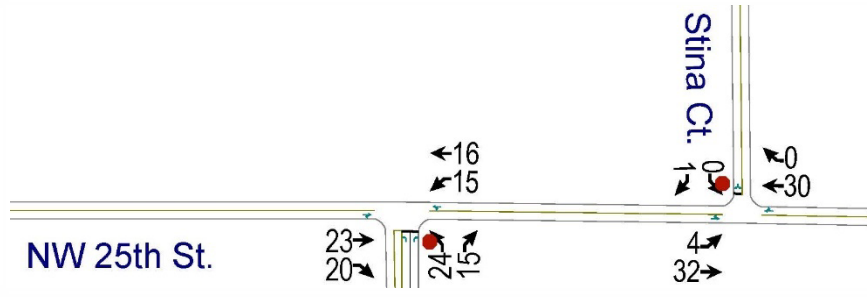


NW 25th & Stover Rd. (looking west)

Existing Traffic Analysis

Morning and afternoon peak hour counts were performed at NW 25th & Stover Rd. and NW 25th & Stina Ct. on Tuesday, October 6. The AM count was performed between 7:00am-9:00am and the PM count was performed between 4:00pm-6:00pm. The AM peak hour occurred between 7:30am and 8:30am and the PM peak hour occurred between 4:00pm and 5:00pm. The traffic count data is provided in Appendix A.

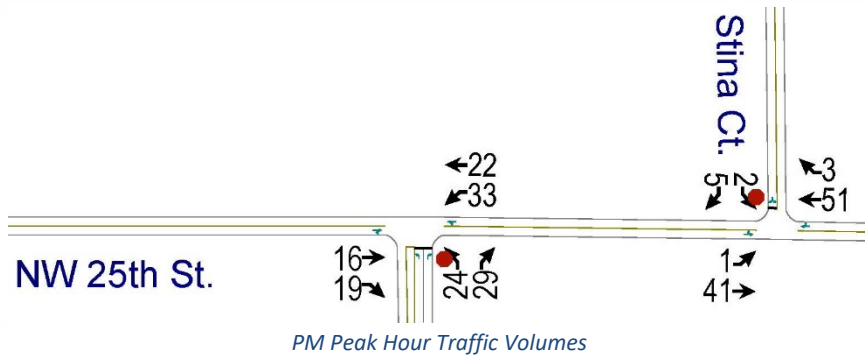
The AM and PM peak hour data was entered into Synchro traffic modeling software to determine the existing intersection Level of Service. The results for the AM and PM peak hour are shown in the tables below. The Synchro results which are based on the Highway Capacity Manual (6th Edition) formulas show both intersections operating at Level of Service (LOS) A in both the AM and PM peak hours. All movements are LOS A and there are no queuing concerns at any of the approaches.



AM Peak Hour Traffic Volumes

Level of Service (LOS) Results NW 25th & Stover Rd. AM Peak Hour - Existing Traffic							
Approach	Approach Delay (s)	Approach LOS	Movement	Lane Group Delay (s)	Movement LOS	Average (50%) Queue (veh)	95% Queue (veh)
EB	0.0	A	Left	N/A	N/A	N/A	N/A
			Thru	0.0	A	0	0
			Right	0.0	A	0	0
WB	3.6	A	Left	7.5	A	0	0
			Thru	0.0	A	0	0
			Right	N/A	N/A	N/A	N/A
NB	9.2	A	Left	9.4	A	0.1	0.1
			Thru	N/A	N/A	N/A	N/A
			Right	8.8	A	0.1	0.1
SB	N/A	N/A	Left	N/A	N/A	N/A	N/A
			Thru	N/A	N/A	N/A	N/A
			Right	N/A	N/A	N/A	N/A
Intersection Delay			4.2	Intersection LOS			A

Level of Service (LOS) Results NW 25th & Stina Ct. AM Peak Hour - Existing Traffic							
Approach	Approach Delay (s)	Approach LOS	Movement	Lane Group Delay (s)	Movement LOS	Average (50%) Queue (veh)	95% Queue (veh)
EB	0.8	A	Left	7.4	A	0	0
			Thru	0.0	A	0	0
			Right	N/A	N/A	N/A	N/A
WB	0.0	A	Left	N/A	N/A	N/A	N/A
			Thru	0.0	A	0	0
			Right	0.0	A	0	0
NB	N/A	N/A	Left	N/A	N/A	N/A	N/A
			Thru	N/A	N/A	N/A	N/A
			Right	N/A	N/A	N/A	N/A
SB	8.6	A	Left	8.6	A	0	0
			Thru	N/A	N/A	N/A	N/A
			Right	0.0	A	0	0
Intersection Delay			0.6	Intersection LOS			A



Level of Service (LOS) Results NW 25th & Stover Rd. PM Peak Hour - Existing Traffic							
Approach	Approach Delay (s)	Approach LOS	Movement	Lane Group Delay (s)	Movement LOS	Average (50%) Queue (veh)	95% Queue (veh)
EB	0.0	A	Left	N/A	N/A	N/A	N/A
			Thru	0.0	A	0	0
			Right	0.0	A	0	0
WB	4.5	A	Left	7.5	A	0.1	0.1
			Thru	0.0	A	0	0
			Right	N/A	N/A	N/A	N/A
NB	9.1	A	Left	9.6	A	0.1	0.1
			Thru	N/A	N/A	N/A	N/A
			Right	8.7	A	0.1	0.1
SB	N/A	N/A	Left	N/A	N/A	N/A	N/A
			Thru	N/A	N/A	N/A	N/A
			Right	N/A	N/A	N/A	N/A
Intersection Delay			5.1	Intersection LOS			A

Level of Service (LOS) Results NW 25th & Stina Ct. PM Peak Hour - Existing Traffic							
Approach	Approach Delay (s)	Approach LOS	Movement	Lane Group Delay (s)	Movement LOS	Average (50%) Queue (veh)	95% Queue (veh)
EB	0.2	A	Left	7.4	A	0	0
			Thru	0.0	A	0	0
			Right	N/A	N/A	N/A	N/A
WB	0.0	A	Left	N/A	N/A	N/A	N/A
			Thru	0.0	A	0	0
			Right	0.0	A	0	0
NB	N/A	N/A	Left	N/A	N/A	N/A	N/A
			Thru	N/A	N/A	N/A	N/A
			Right	N/A	N/A	N/A	N/A
SB	8.8	A	Left	8.8	A	0	0
			Thru	N/A	N/A	N/A	N/A
			Right	0.0	A	0	0
Intersection Delay			0.7	Intersection LOS			A

Proposed Development

The proposed development will be 10.2 acres of I2-Heavy Industrial Zoning. The proposed building will be a 22,900 square foot building of combined office, plant, and shop space for servicing and loading cement trucks.

There will be five new accesses for the plant. One access will be for ingress only for returning concrete truck traffic and raw material deliveries. This access will be spaced approximately 310 feet east of NW Stina Ct. on NW 25th St. This distance meets the minimum corner clearance distance for a minor arterial from the City of Topeka Design Criteria 1.2.5.1.2. There will be four access points on NW Stina Ct. The first driveway is approximately 240-feet north of NW 25th Street. This is greater than the 80-foot corner clearance required for a local road. The remaining driveway spacings are approximately 110-feet, 65-feet, and 140-feet. City of Topeka Design Criteria allows 1 driveway for the first 135-feet of frontage and additional driveways for each additional 300-feet of frontage. The proposed development has 1,120 feet of frontage, including the cul-de-sac, so the number of proposed driveways meets the City of Topeka Design Criteria 1.2.5.1.1 for non-residential driveways on a local street.

The 65-foot driveway spacing between the second and third driveways does not meet the minimum 80-foot spacing required by the City of Topeka Design Criteria. However, the 65-foot spacing for these driveways was designed to align with the truck service bays and material delivery vehicle paths to allow for better on-site traffic circulation. A variance is requested to allow the 65-foot driveway spacing as shown in the preliminary site plan. This variance request is based on NW Stina Ct. being a cul-de-sac local street serving only two low volume industrial developments.

Trip Generation

The Institute of Transportation Engineer’s (ITE) Trip Generation Handbook, 10th Edition, was used to estimate the total number of trips generated by the proposed development on the street network. The development is zoned I2 – Heavy Industrial. The ITE Land Use Codes 110 ‘General Light Industrial’ and 140 ‘Manufacturing’ are similar land uses in the Trip Generation Handbook that were used to estimate the volume of traffic that will enter and leave the site.

Trip Generation										
Gross Floor Area	22,900 SF		Vehicle Trips per Gross Floor Area							
Acres	10.2	Land Use	AM Peak Hour			PM Peak Hour				
		Code	Weekday	Total	Inbound	Outbound	Total	Inbound	Outbound	
		General Light Industrial	110	114	16	14	2	14	1	13
		Manufacturing	140	90	14	11	3	15	4	11
		Estimates from KS Sand	N/A	242	39	29	10	39	10	29

These land uses and associated trip generation estimates were compared to the estimates provided by Kansas Sand & Concrete based on their past data. The user provided data includes:

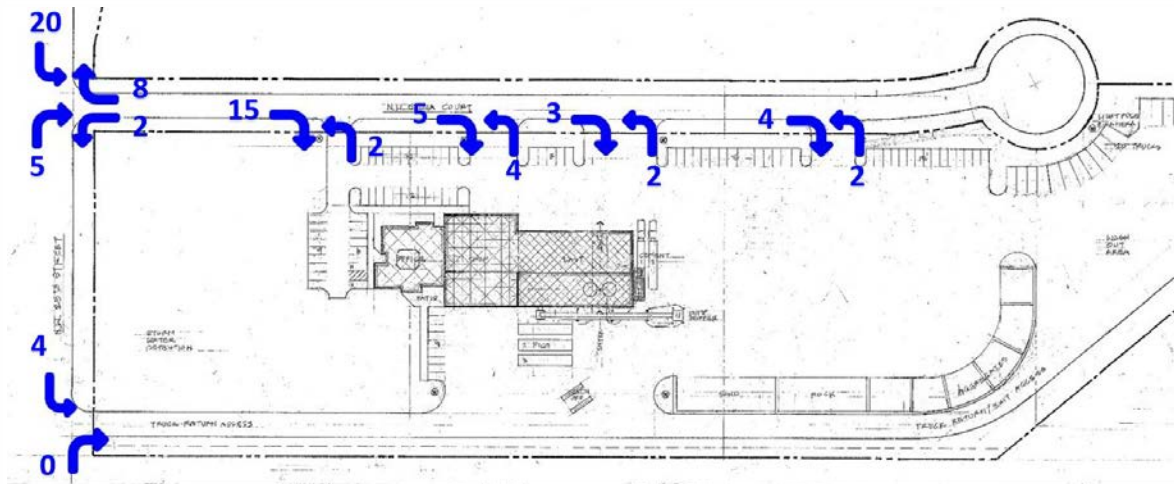
Estimated Average Vehicle Trips

- 1) Ready Mix Concrete Trucks (Outgoing) 47 Loads @ average total weight of 60,000 lbs. (Max weight of 74,000)
- 2) Cement Truck/Trailers (Inbound) 7 loads @ average total weight of 80,000 lbs.
- 3) Aggregate End – Dumps (inbound) 32 loads @ average total weight of 80,000 lbs.
- 4) 35 employee vehicles – 70 daily trips

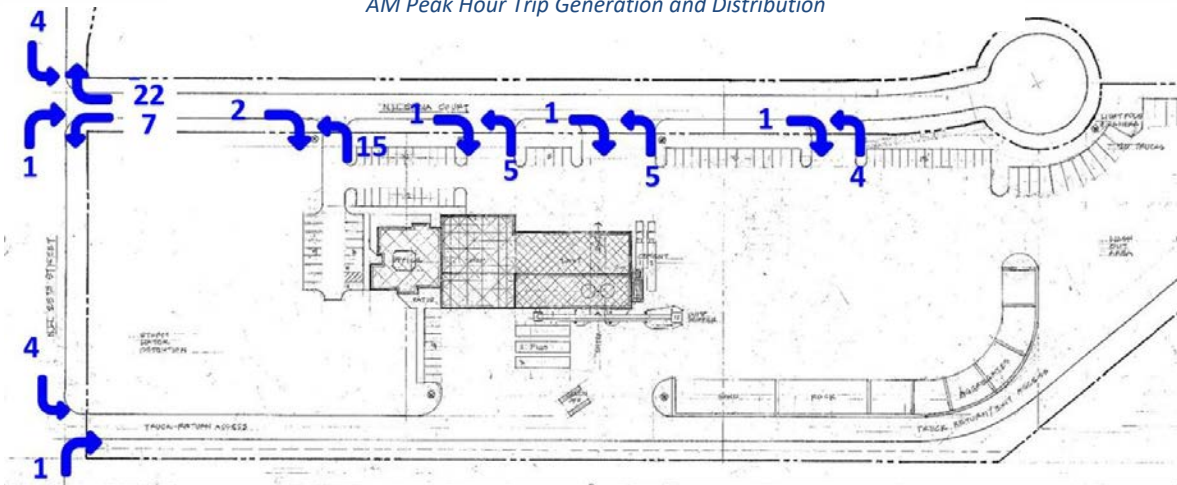
The result of the developer provided data of 172 trucks and 70 passenger car trips totals 242 daily trips for the site. This volume is higher than the estimated traffic from the ITE Trip Generation Handbook and therefore will be the volume used for Existing + Development traffic analysis scenario.

Trip Distribution

The AM and PM peak hour traffic was added to the existing traffic to determine the Existing + Development Traffic scenario. The distribution of the 39 peak hour generated vehicles was estimated using engineering judgment and through correspondence with the plant manager. The AM and PM peak hour distributions were estimated as shown in the figures below.



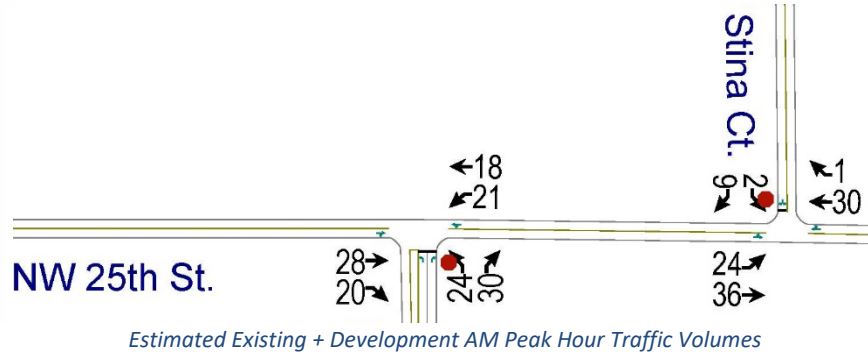
AM Peak Hour Trip Generation and Distribution



PM Peak Hour Trip Generation and Distribution

Existing + Development Traffic Analysis

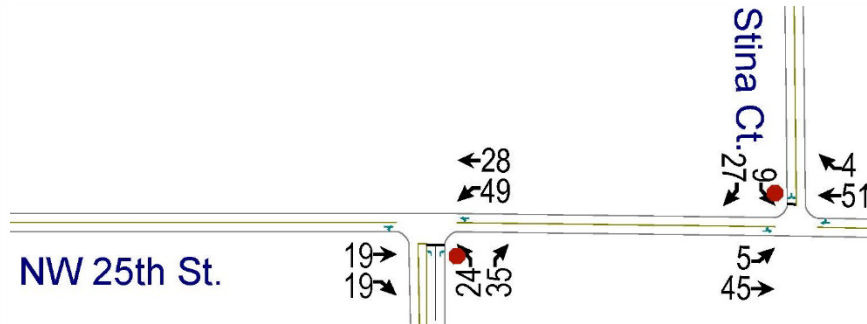
The existing traffic was added to the site generated traffic to determine the Existing + Development traffic scenario. The resulting volumes and Synchro model analysis for the Existing + Development AM peak hour are shown in the figure and tables below.



Level of Service (LOS) Results NW 25th & Stover Rd. AM Peak Hour - Existing + Development Traffic							
Approach	Approach Delay (s)	Approach LOS	Movement	Lane Group Delay (s)	Movement LOS	Average (50%) Queue (veh)	95% Queue (veh)
EB	0.0	A	Left	N/A	N/A	N/A	N/A
			Thru	0.0	A	0	0
			Right	0.0	A	0	0
WB	4.1	A	Left	7.5	A	0	0
			Thru	0.0	A	0	0
			Right	N/A	N/A	N/A	N/A
NB	9.2	A	Left	9.6	A	0.1	0.1
			Thru	N/A	N/A	N/A	N/A
			Right	8.9	A	0.1	0.1
SB	N/A	N/A	Left	N/A	N/A	N/A	N/A
			Thru	N/A	N/A	N/A	N/A
			Right	N/A	N/A	N/A	N/A
Intersection Delay			4.7	Intersection LOS			A

Level of Service (LOS) Results NW 25th & Stina Ct. AM Peak Hour - Existing + Development Traffic							
Approach	Approach Delay (s)	Approach LOS	Movement	Lane Group Delay (s)	Movement LOS	Average (50%) Queue (veh)	95% Queue (veh)
EB	3.0	A	Left	7.4	A	0	0.1
			Thru	0.0	A	0	0
			Right	N/A	N/A	N/A	N/A
WB	0.0	A	Left	N/A	N/A	N/A	N/A
			Thru	0.0	A	0	0
			Right	0.0	A	0	0
NB	N/A	N/A	Left	N/A	N/A	N/A	N/A
			Thru	N/A	N/A	N/A	N/A
			Right	N/A	N/A	N/A	N/A
SB	8.8	A	Left	8.8	A	0	0
			Thru	N/A	N/A	N/A	N/A
			Right	0.0	A	0	0
Intersection Delay			2.7	Intersection LOS			A

The resulting volumes and Synchro model analysis for the Existing + Development PM peak hour are shown in the figures below.



Estimated Existing + Development PM Peak Hour Traffic Volumes

Level of Service (LOS) Results NW 25th & Stover Rd. PM Peak Hour - Existing + Development Traffic							
Approach	Approach Delay (s)	Approach LOS	Movement	Lane Group Delay (s)	Movement LOS	Average (50%) Queue (veh)	95% Queue (veh)
EB	0.0	A	Left	N/A	N/A	N/A	N/A
			Thru	0.0	A	0	0
			Right	0.0	A	0	0
WB	4.8	A	Left	7.5	A	0.1	0.1
			Thru	0.0	A	0	0
			Right	N/A	N/A	N/A	N/A
NB	9.2	A	Left	9.9	A	0.1	0.1
			Thru	N/A	N/A	N/A	N/A
			Right	8.8	A	0.1	0.1
SB	N/A	N/A	Left	N/A	N/A	N/A	N/A
			Thru	N/A	N/A	N/A	N/A
			Right	N/A	N/A	N/A	N/A
Intersection Delay			5.2	Intersection LOS			A

Level of Service (LOS) Results NW 25th & Stina Ct. PM Peak Hour - Existing + Development Traffic							
Approach	Approach Delay (s)	Approach LOS	Movement	Lane Group Delay (s)	Movement LOS	Average (50%) Queue (veh)	95% Queue (veh)
EB	0.7	A	Left	7.4	A	0	0.1
			Thru	0.0	A	0	0
			Right	N/A	N/A	N/A	N/A
WB	0.0	A	Left	N/A	N/A	N/A	N/A
			Thru	0.0	A	0	0
			Right	0.0	A	0	0
NB	N/A	N/A	Left	N/A	N/A	N/A	N/A
			Thru	N/A	N/A	N/A	N/A
			Right	N/A	N/A	N/A	N/A
SB	9.0	A	Left	9.0	A	0	0.1
			Thru	N/A	N/A	N/A	N/A
			Right	9.0	A	0	0.1
Intersection Delay			2.5	Intersection LOS			A

The traffic analysis for both the AM and PM peak hour show both intersections operating at LOS A. There are no capacity or queuing concerns at any of the approaches.

Turn Lane Analysis

The City of Topeka Design Criteria 1.2.5.2.8 provides warrants for Right and Left Turn Deceleration Lanes.

Right Turn Deceleration Lane – A right turn deceleration lanes shall be required if:

- 1) The street's ADT exceeds 10,000 vehicles per day,
- 2) The street's operating speeds equal or exceed 35 mph,
- 3) The driveway's volume equals or exceeds 1,000 vehicles per day,
and
- 4) The driveway's right turn ingress movements equal or exceed 40 vehicles per hour.

At both the westbound approaches to the proposed driveway on NW 25th St. and NW Stina Ct., none of the above criteria is met and therefore a right turn lane is not required.

Left Turn Deceleration Lane – A left turn deceleration lane shall be required if:

- 1) The street's ADT exceeds 10,000 vehicles per day,
- 2) The street's operating speeds equal or exceeds 35 mph,
- 3) The driveway's volume equals or exceeds 1,000 vehicles per day,
and
- 4) The driveway's left turn ingress movements exceed 10 percent of the street's peak period traffic volume or 100 vehicles per hour.

At both the eastbound approaches to the proposed driveway on NW 25th St. and NW Stina Ct., none of the above criteria is met and therefore a left turn lane is not required.

Sight Distance Analysis

The minimum intersection sight distance at NW 25th & Stina Ct. is the stopping sight distance for 45 mph which is 360-feet. The intersection sight distance for both the east and westbound egress movement at NW Stina Ct. well exceeds 360-feet and therefore the minimum intersection sight distance is met. Any monument signs that may be constructed for the development should be placed outside of the intersection sight distance area/triangle at the site.

Summary and Recommendations

The proposed Kansas Sand and Concrete development at the northeast corner of NW 25th & Stina Ct. will add approximately 39 AM and PM peak hour vehicles to adjacent street network along NW 25th Street including the intersection at NW Stover Rd. The additional vehicles will not adversely impact the capacity or traffic operations at either of the two study area intersections. All approaches at both intersections operate at LOS A in existing conditions and will continue to operate at LOS A after the proposed development. Changes to intersection control or geometric improvements are not required.

The 65-foot driveway spacing between the second and third driveway on NW Stina Ct. does not meet the minimum 80-foot spacing required by the City of Topeka Design Criteria. However, the 65-foot spacing for these driveways was designed to align with the truck service bays and material delivery vehicle paths to allow for better on-site traffic circulation. A variance is requested to allow the 65-foot driveway spacing as shown in the preliminary site plan.

APPENDIX A

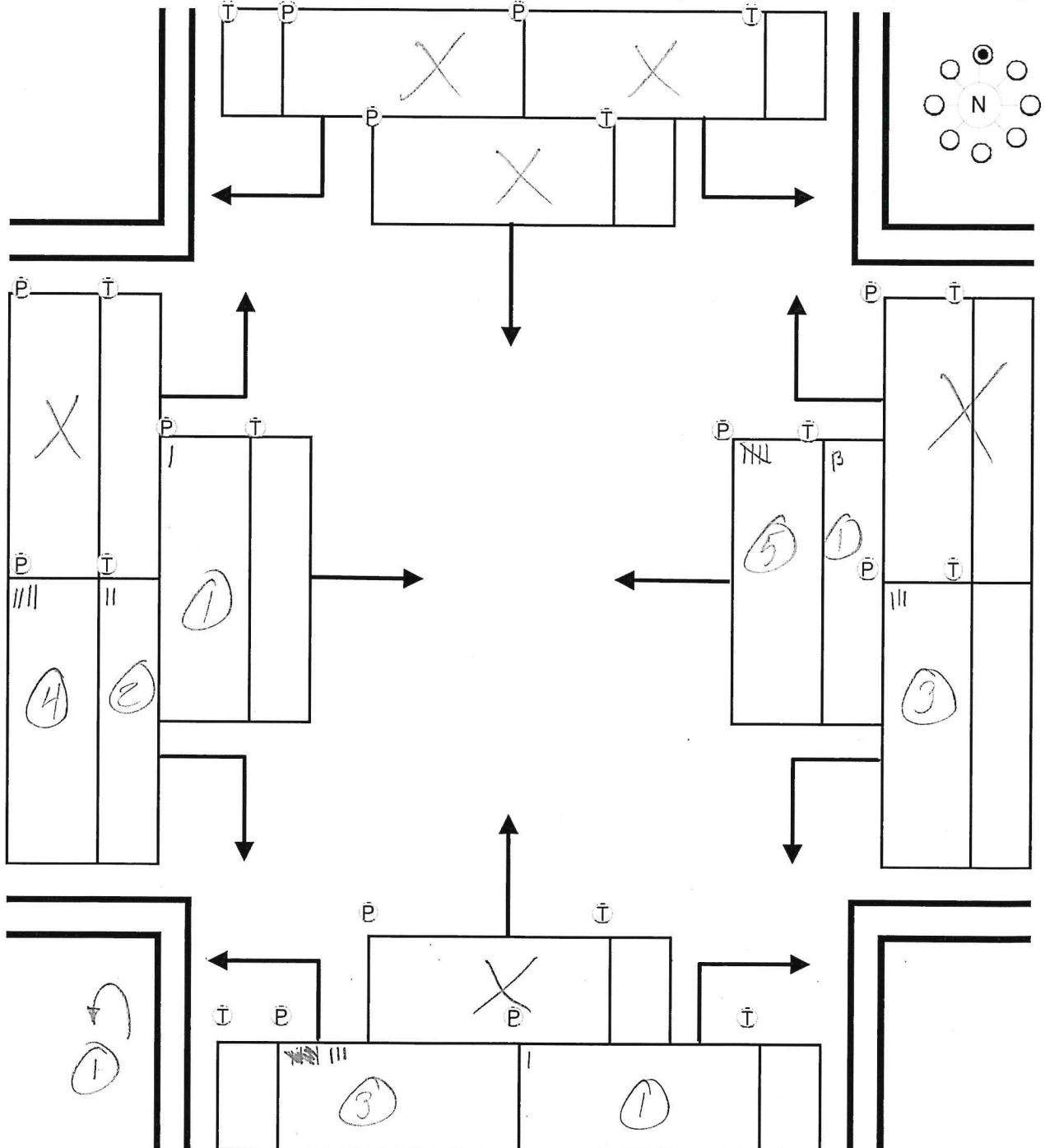
Traffic Data

State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information	Site Information
Analyst/Observer: <u>Brian Avard</u>	Location ID: _____
Agency or Company: <u>SBB Engineering</u>	City: <u>Tapelea</u>
Date Performed: <u>10/2/25</u>	County: <u>Shawnee</u>
Time Period From: <u>7:00 AM</u> To: <u>7:15 AM</u>	N/S Street: <u>STOVER RD</u>
Weather/Road Condition: <u>Clear 57°</u>	E/W Street: <u>NW 25th St.</u>
Remarks: <u>BTA</u>	

P = passenger cars, stationwagons, motorcycles, pick-up trucks T = other trucks (Record any school bus as SB; other buses as B).



VEHICLE TURNING MOVEMENT COUNTS

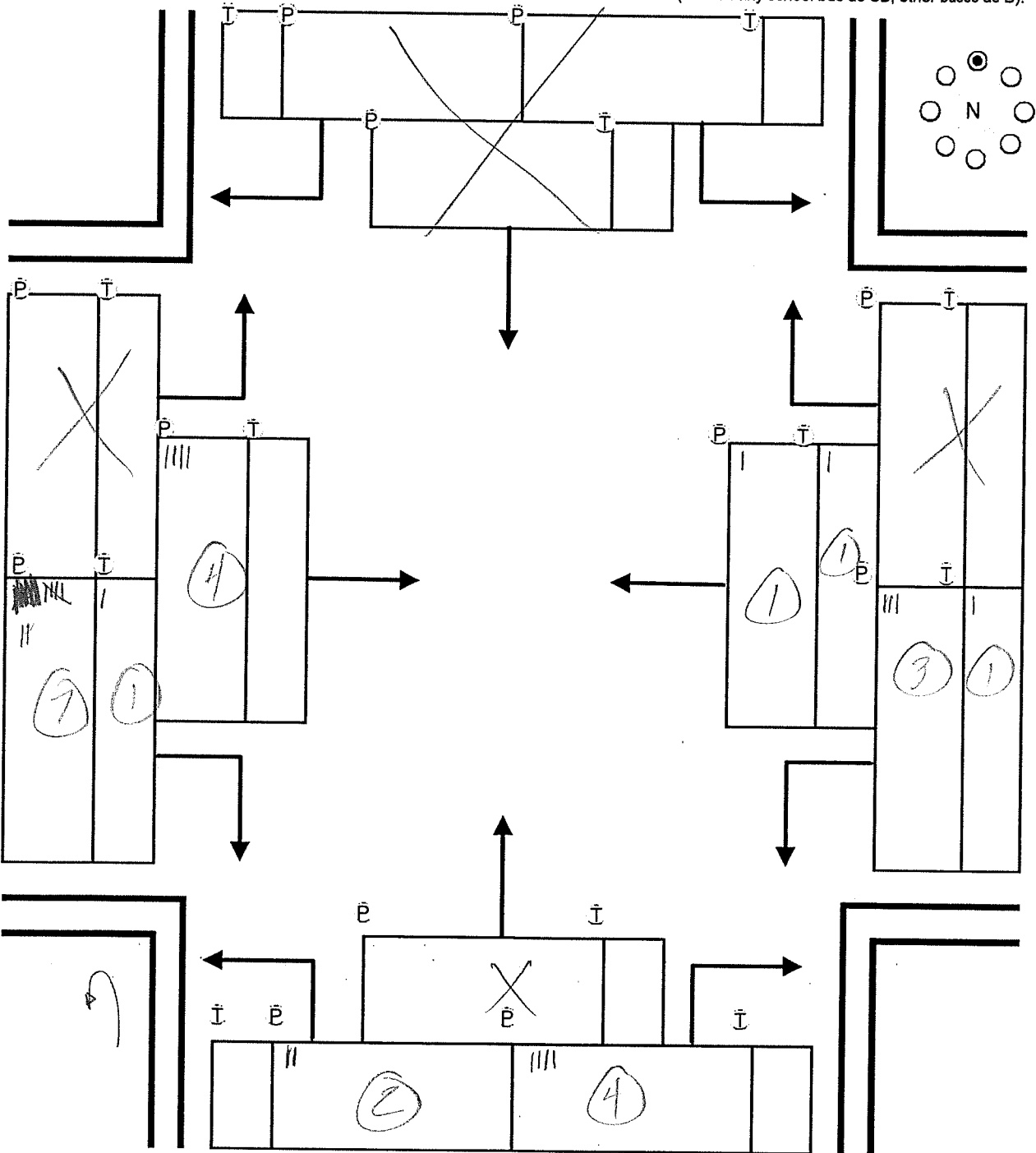
General Information

Site Information

Analyst/Observer: David Ansel
 Agency or Company: SBB Engineering
 Date Performed: 10/6/20
 Time Period From: 7:15 am To: 7:30 am
 Weather/Road Condition: Clear, 51°
 Remarks: BTA

Location ID: _____
 City: Tapelea
 County: Shawnee
 N/S Street: SPUR RD
 E/W Street: NW 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

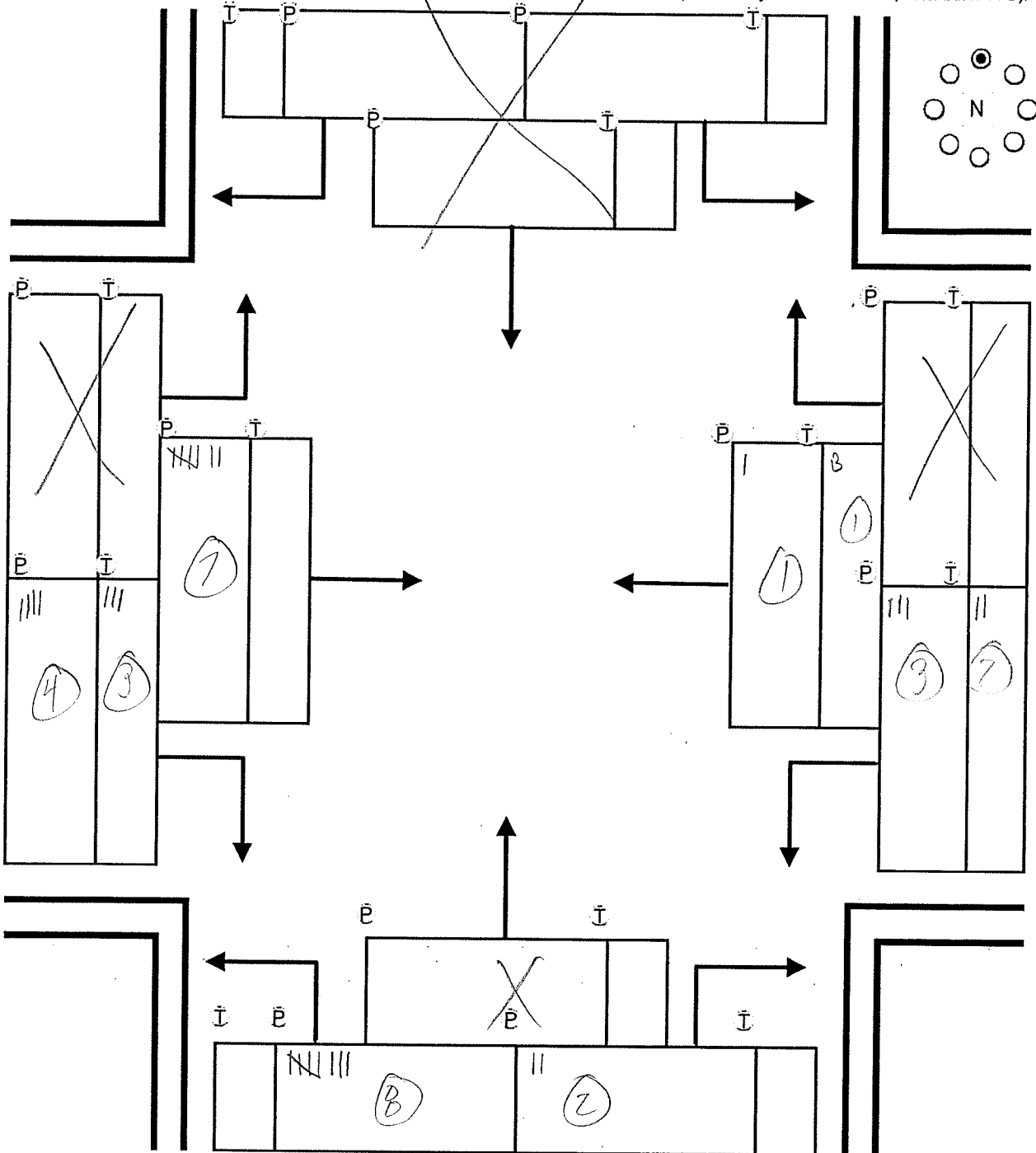
General Information

Site Information

Analyst/Observer: David Ansel
 Agency or Company: SBB Engineering
 Date Performed: 10/16/20
 Time Period From: 7:30am To: 7:45am
 Weather/Road Condition: clear, 90°
 Remarks: BTP

Location ID: _____
 City: Tapelea
 County: Shawnee
 N/S Street: STOVER RD
 E/W Street: NW 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information

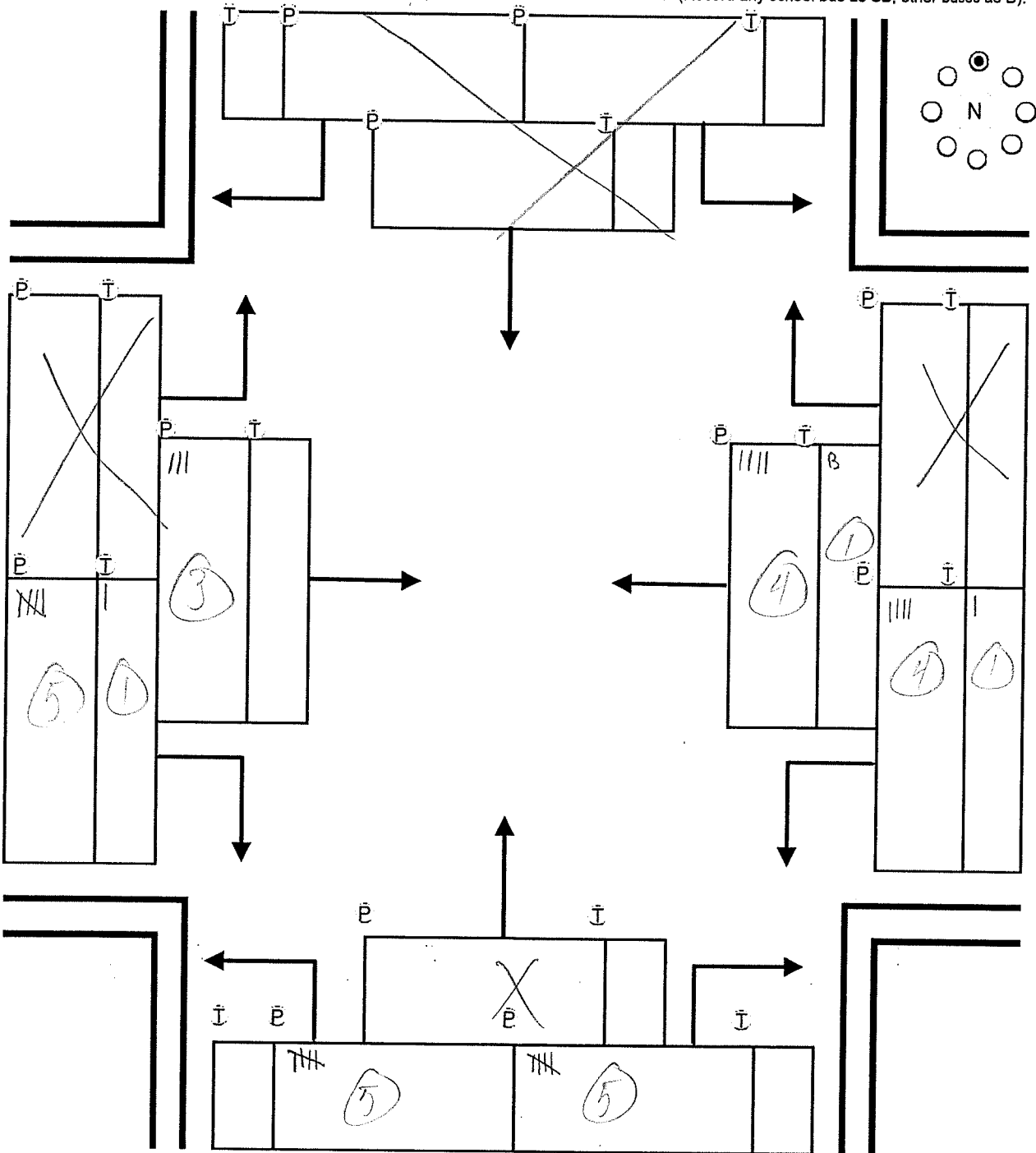
Site Information

Analyst/Observer: Paired Aerial
 Agency or Company: SBB Engineering
 Date Performed: 10/16/20
 Time Period From: 7:45am To: 8:00am
 Weather/Road Condition: Clear, 80
 Remarks: BTA

Location ID: _____
 City: Tapelea
 County: Shawnee
 N/S Street: STOVER RD
 E/W Street: NW 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks

T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information

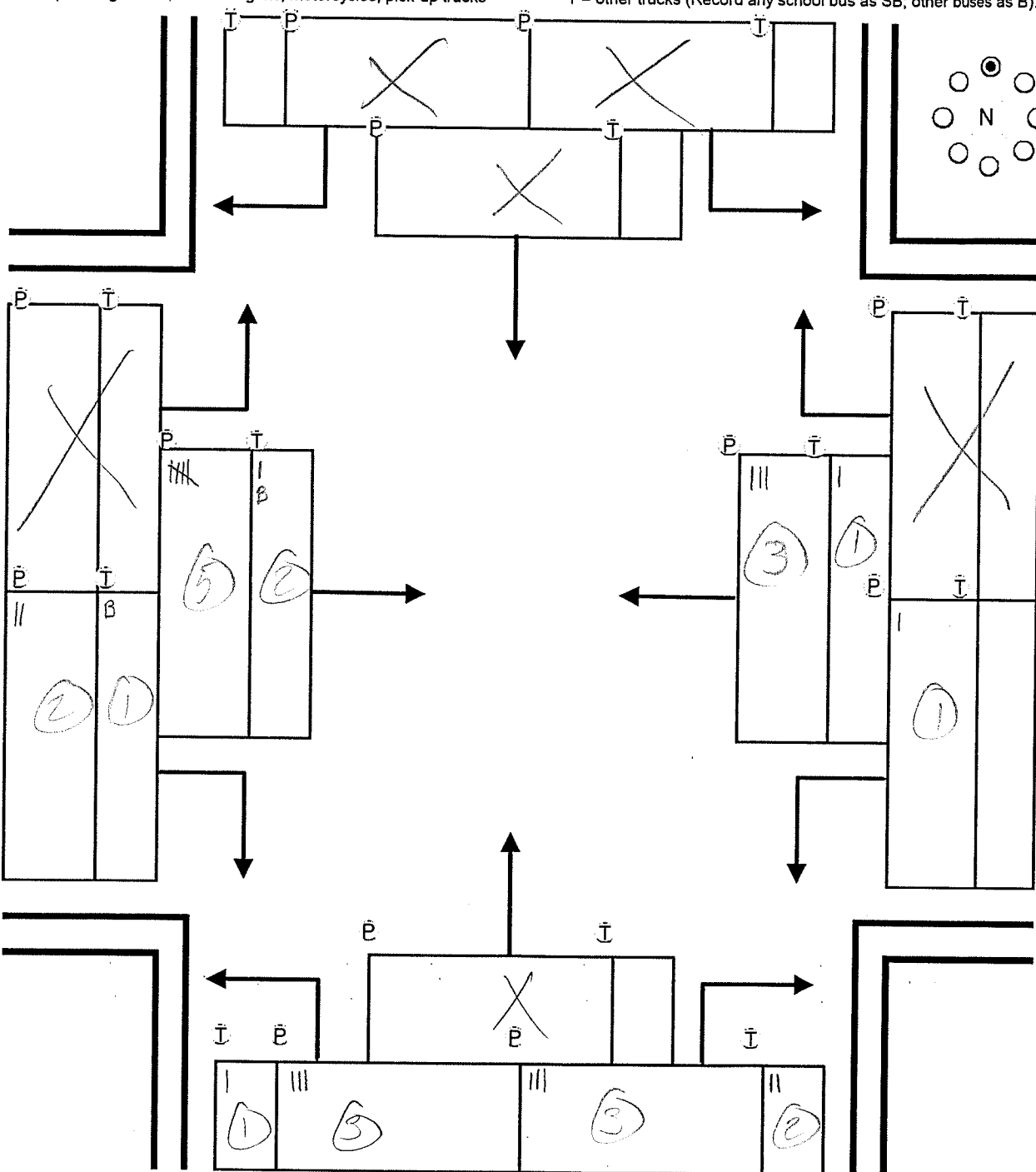
Site Information

Analyst/Observer: David Anselmi
 Agency or Company: SBB Engineering
 Date Performed: 10/6/20
 Time Period From: 8:00am To: 8:15am
 Weather/Road Condition: Clear, 57°
 Remarks: BTA

Location ID: _____
 City: Tapelee
 County: Shawnee
 N/S Street: STOVER RD
 E/W Street: NW 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks

T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

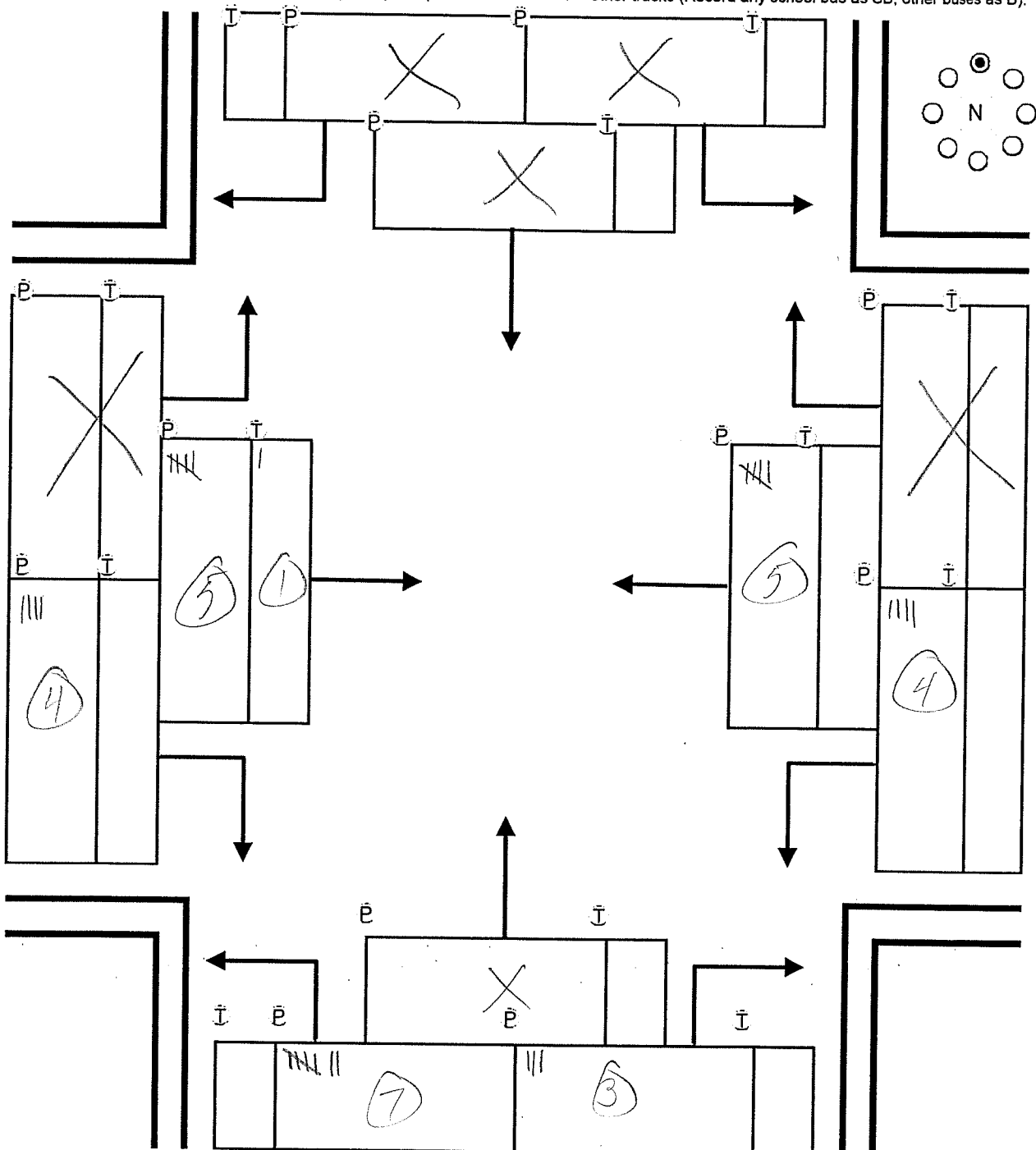
General Information

Site Information

Analyst/Observer: Prasad Anand
 Agency or Company: SBB Engineering
 Date Performed: 10/6/20
 Time Period From: 8:15am To: 8:30am
 Weather/Road Condition: Clear, 57°
 Remarks: BTA

Location ID: _____
 City: Tapelea
 County: Shawnee
 N/S Street: SPRINGER RD
 E/W Street: NW 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).

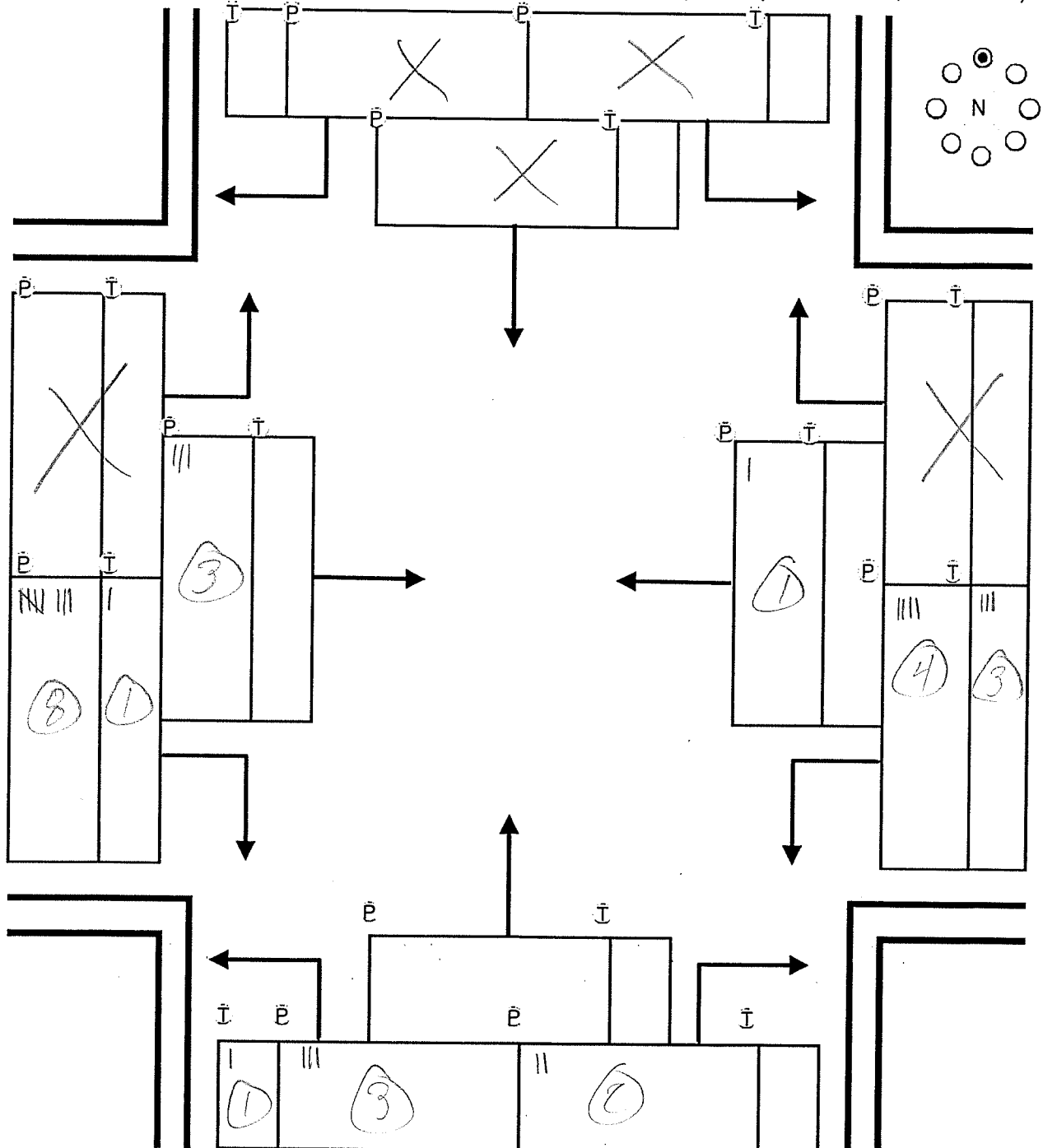


State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
TRAFFIC ENGINEERING
10/15

General Information	Site Information
Analyst/Observer: <u>David Ansel</u>	Location ID: _____
Agency or Company: <u>3BB Engineering</u>	City: <u>Tapelea</u>
Date Performed: <u>10/6/20</u>	County: <u>Shawnee</u>
Time Period From: <u>8:30am</u> To: <u>8:45am</u>	N/S Street: <u>STOVER RD</u>
Weather/Road Condition: <u>Clear, 53°</u>	E/W Street: <u>NW 25th St.</u>
Remarks: <u>BTA</u>	

P = passenger cars, stationwagons, motorcycles, pick-up trucks T = other trucks (Record any school bus as SB; other buses as B).

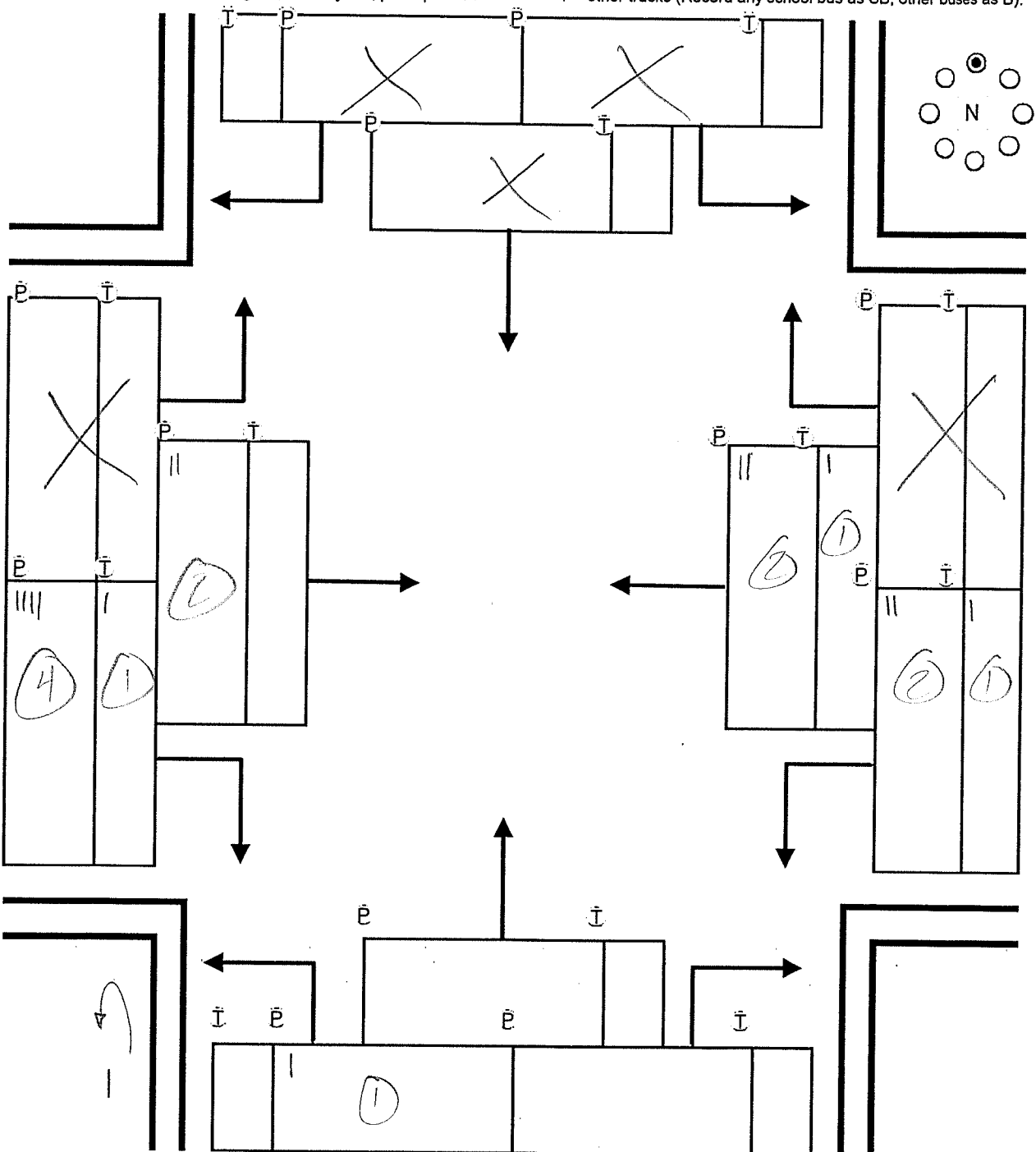


State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information	Site Information
Analyst/Observer: <u>David Auvral</u>	Location ID: _____
Agency or Company: <u>SBB Engineering</u>	City: <u>Tampa</u>
Date Performed: <u>10/6/20</u>	County: <u>Shawnee</u>
Time Period From: <u>8:45am</u> To: <u>9:00am</u>	N/S Street: <u>SPUR RD</u>
Weather/Road Condition: <u>Clear, 55°</u>	E/W Street: <u>NW 25th St.</u>
Remarks: <u>BTR</u>	

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).

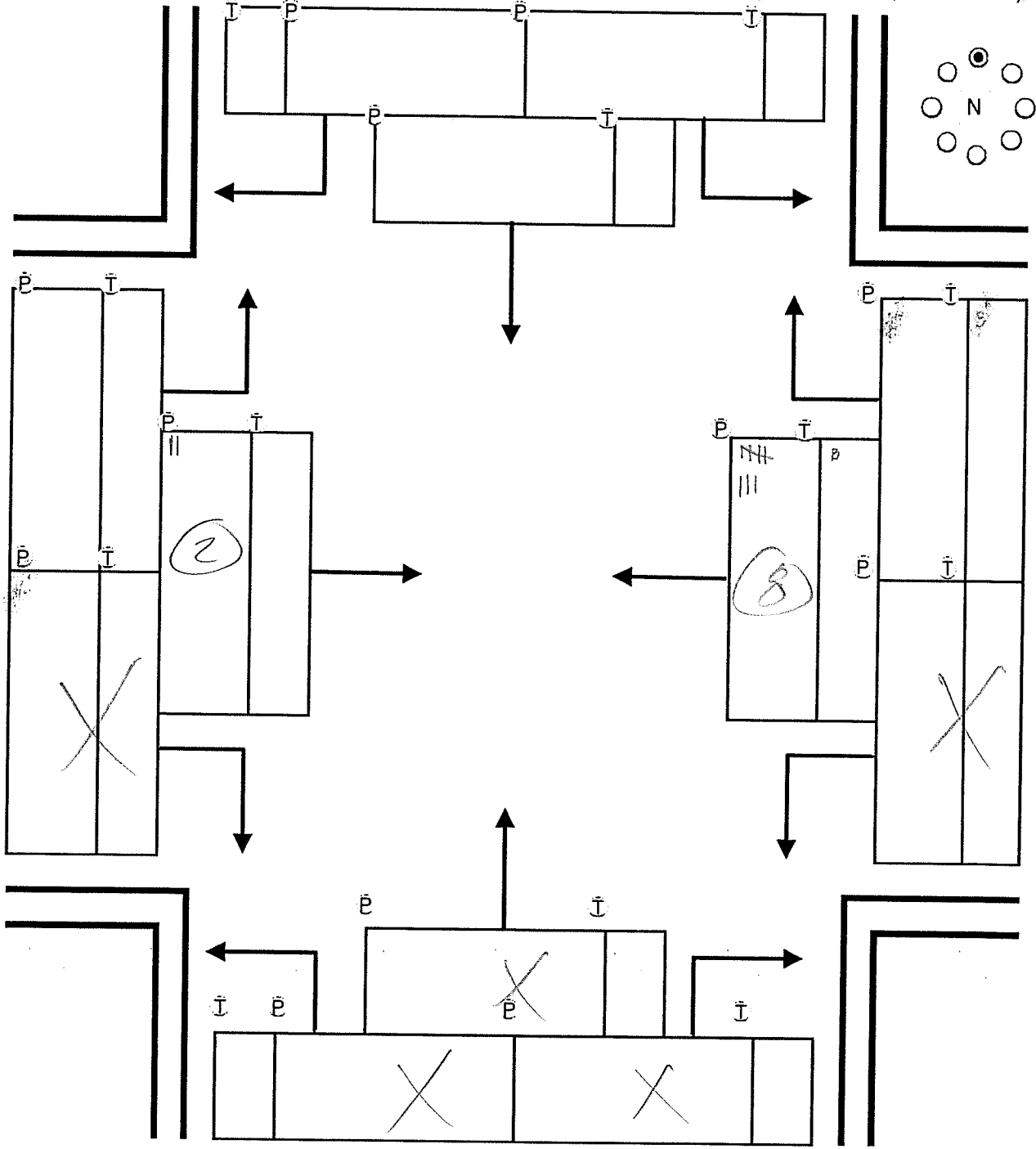


State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information	Site Information
Analyst/Observer: <u>Brian Averil</u>	Location ID: _____
Agency or Company: <u>SBB Engineering</u>	City: <u>TAPPA</u>
Date Performed: <u>10/6/20</u>	County: <u>Shawnee</u>
Time Period From: <u>7:00am</u> To: <u>7:15am</u>	N/S Street: <u>NW Shula St</u>
Weather/Road Condition: <u>Clear, 51°</u>	E/W Street: <u>NW 25th St</u>
Remarks: <u>BTA</u>	

P = passenger cars, station wagons, motorcycles, pick-up trucks T = other trucks (Record any school bus as SB; other buses as B).



Source: Revised from Exhibit E-6 of the ITE Manual of Transportation Engineering Studies, 2nd Edition

State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information

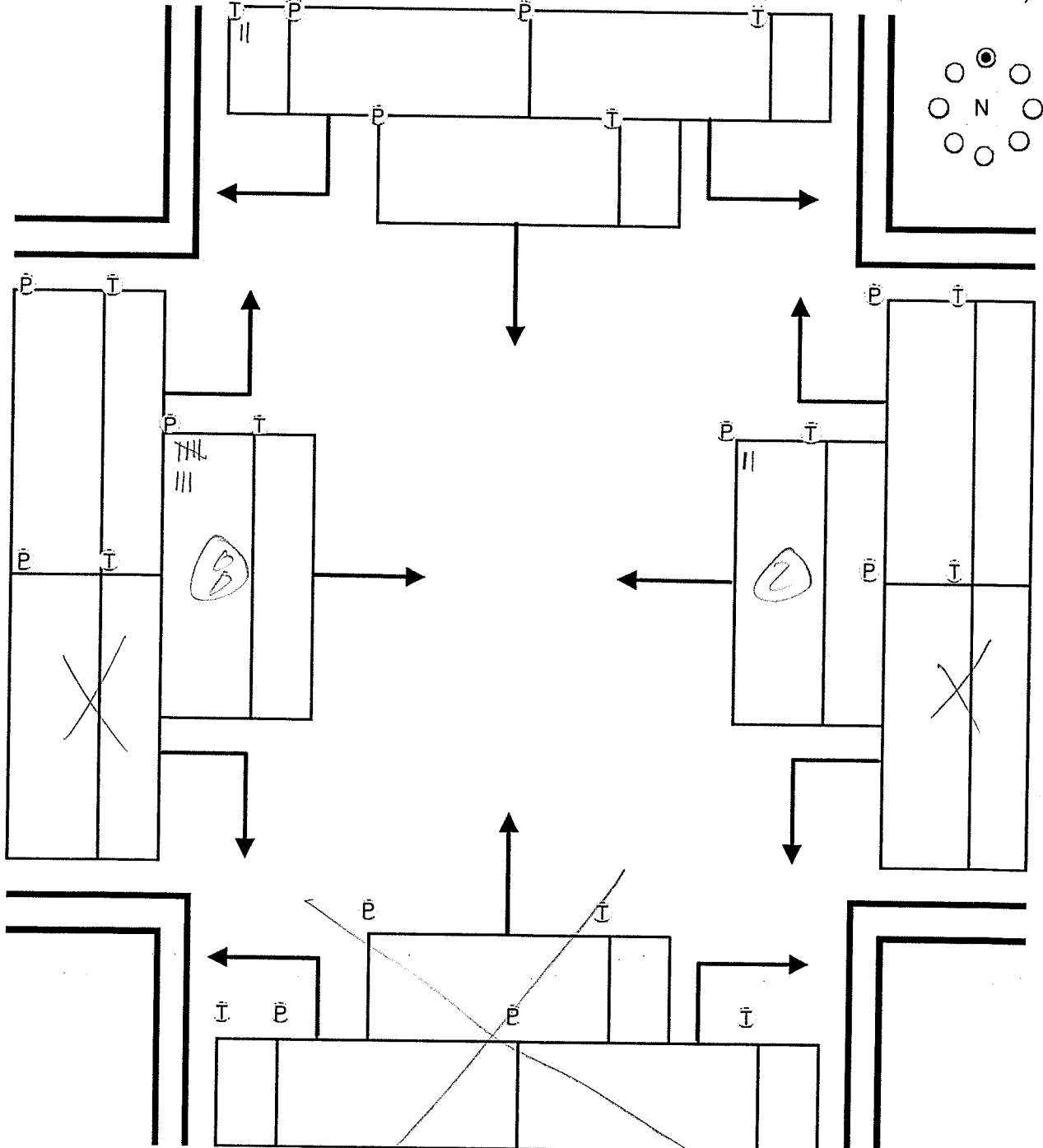
Site Information

Analyst/Observer: Brian Arnold
 Agency or Company: SBP Engineering
 Date Performed: 10/6/20
 Time Period From: 7:15am To: 7:30am
 Weather/Road Condition: clear 51°
 Remarks: DTA

Location ID: _____
 City: TAPPEKA
 County: Shawnee
 N/S Street: NW Shua St
 E/W Street: NW 25th St

P = passenger cars, stationwagons, motorcycles, pick-up trucks

T = other trucks (Record any school bus as SB; other buses as B).

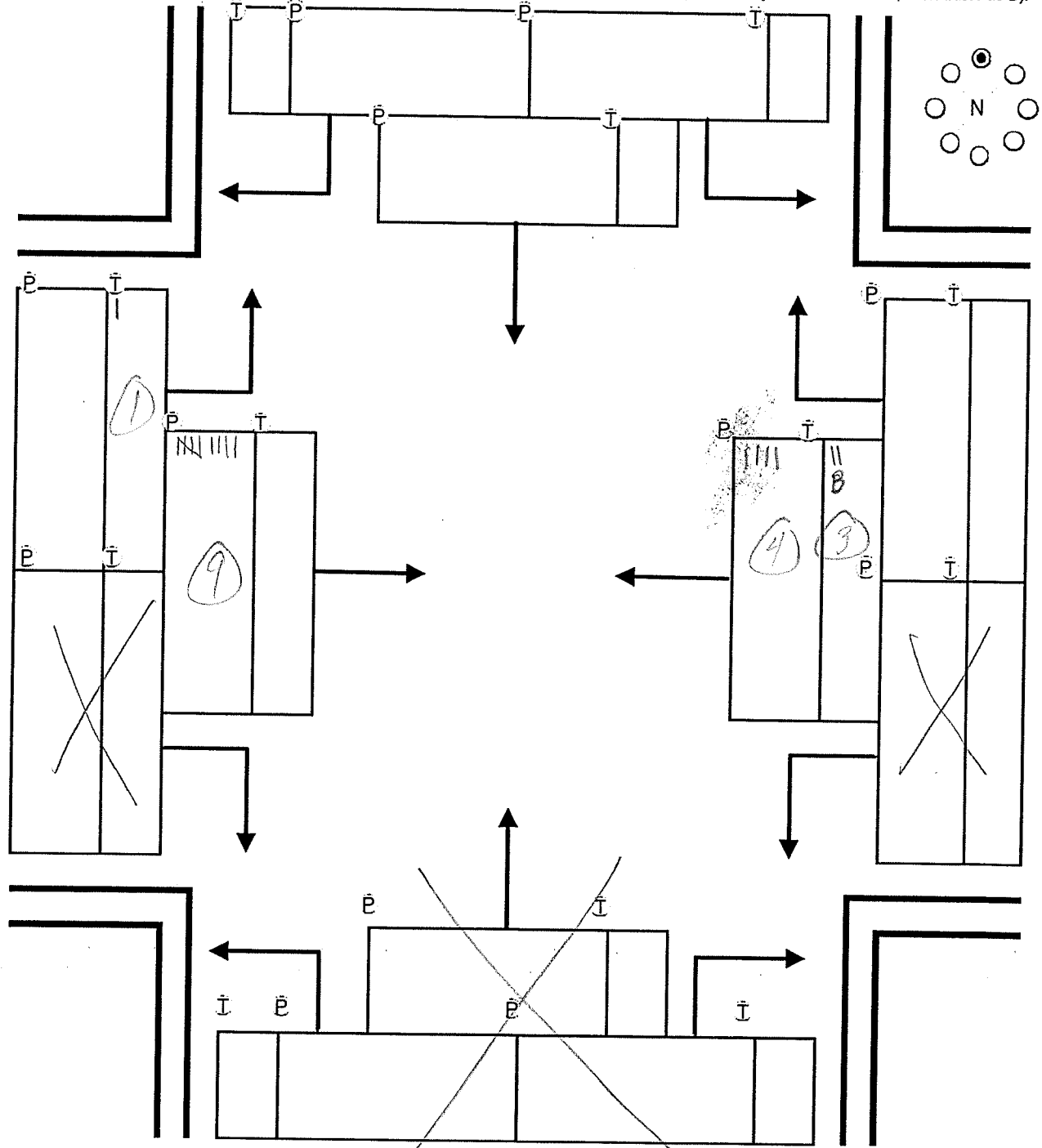


State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information	Site Information
Analyst/Observer: <u>Brian Averil</u>	Location ID: _____
Agency or Company: <u>SBB Engineering</u>	City: <u>TAPPA</u>
Date Performed: <u>10/1/20</u>	County: <u>Shawnee</u>
Time Period From: <u>7:30 am</u> To: <u>7:45 am</u>	N/S Street: <u>NW 5th St</u>
Weather/Road Condition: <u>Clear 57°</u>	E/W Street: <u>NW 25th St</u>
Remarks: <u>OTA</u>	

P = passenger cars, station wagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).



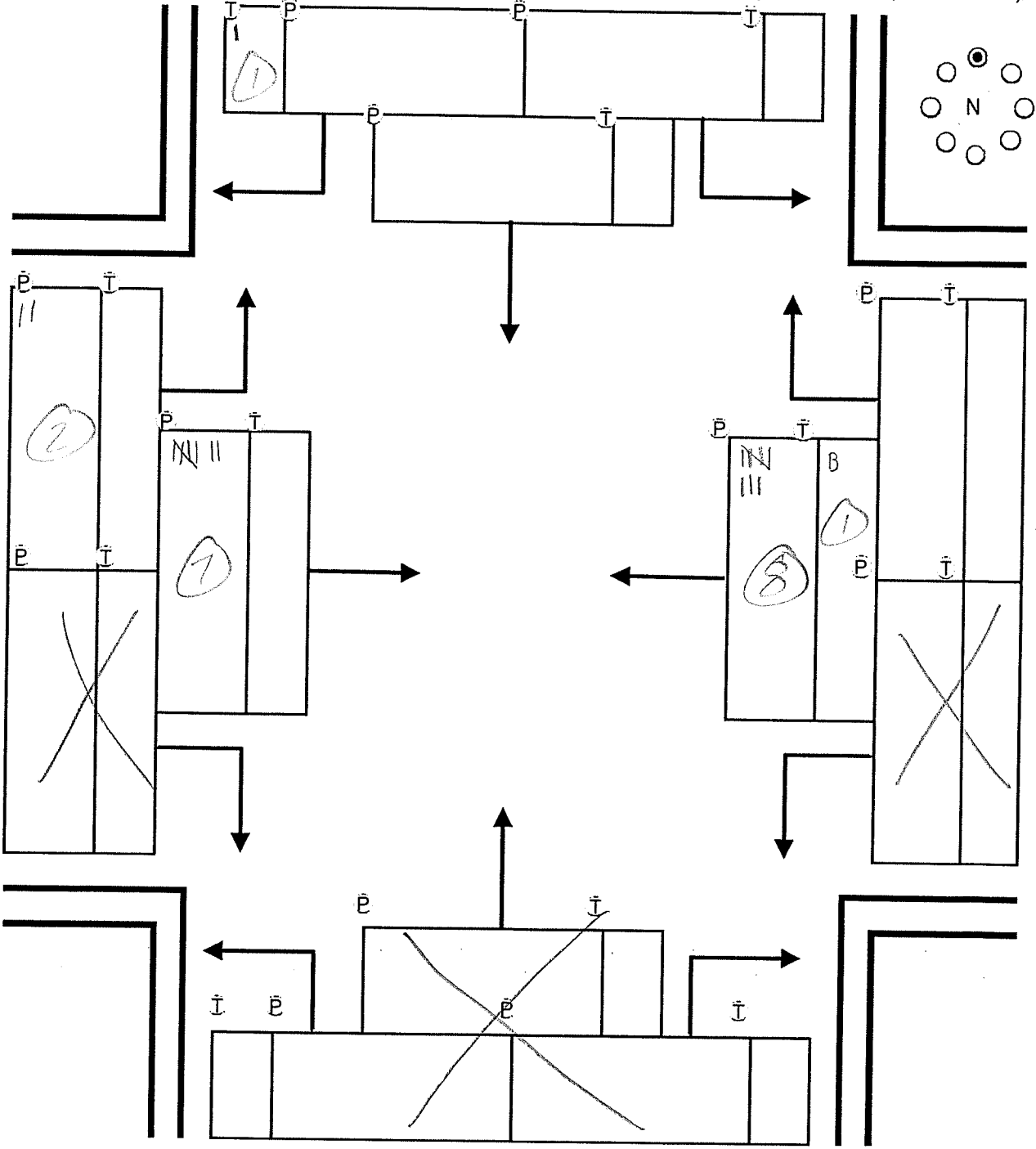
Source: Revised from Exhibit E-6 of the ITE Manual of Transportation Engineering Studies, 2nd Edition

State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
TRAFFIC ENGINEERING
10/15

General Information	Site Information
Analyst/Observer: <u>Brian Averil</u>	Location ID: _____
Agency or Company: <u>SBB Engineering</u>	City: <u>Tampa</u>
Date Performed: <u>10/16/20</u>	County: <u>Shawnee</u>
Time Period From: <u>7:45 AM</u> To: <u>8:20</u>	N/S Street: <u>NW Anna St</u>
Weather/Road Condition: <u>Clear, 51°</u>	E/W Street: <u>NW 25th St</u>
Remarks: <u>BTA</u>	

P = passenger cars, station wagons, motorcycles, pick-up trucks T = other trucks (Record any school bus as SB; other buses as B).



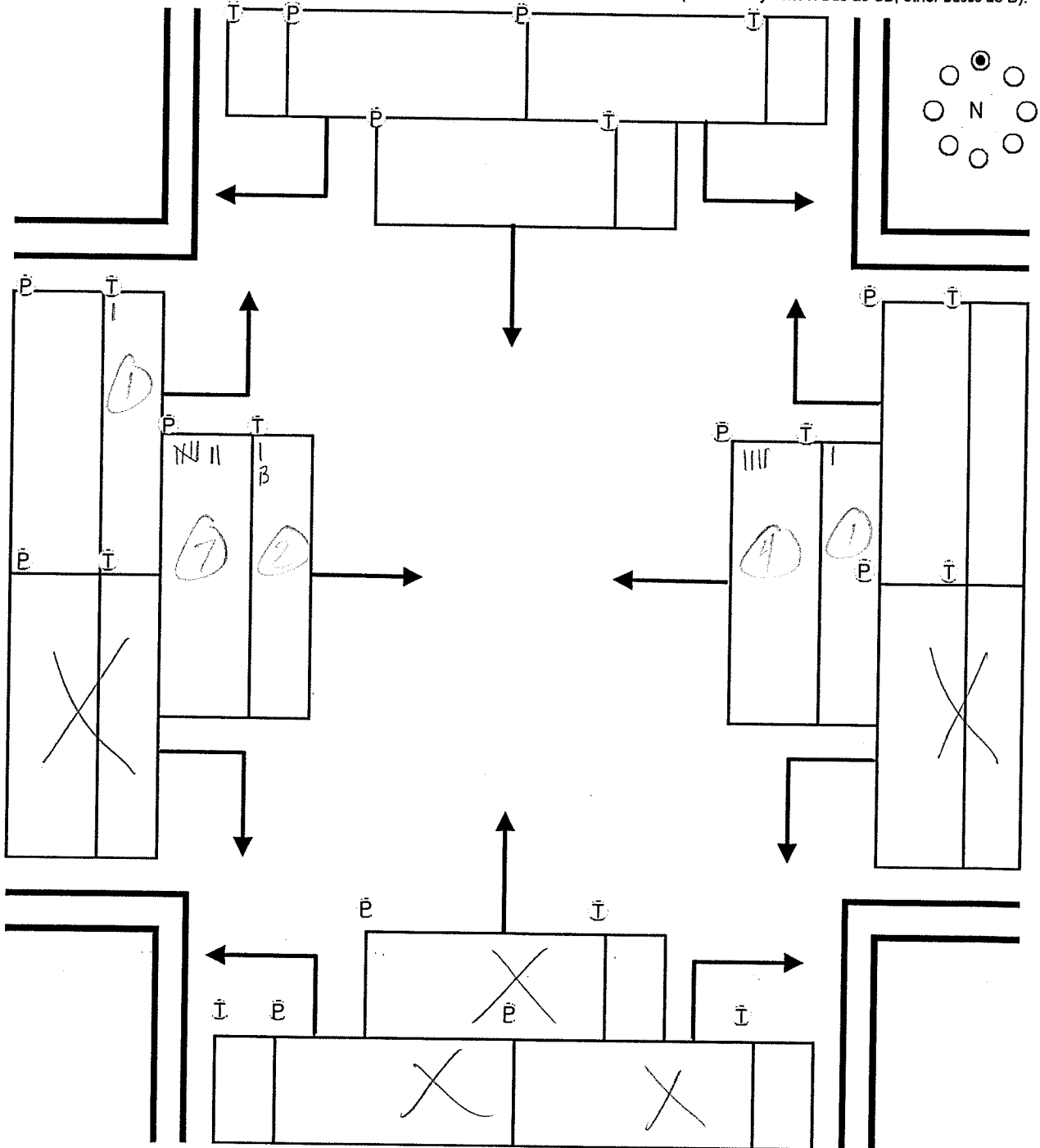
Source: Revised from Exhibit E-6 of the ITE Manual of Transportation Engineering Studies, 2nd Edition

State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
TRAFFIC ENGINEERING
10/15

General Information	Site Information
Analyst/Observer: <u>Brian Averil</u>	Location ID: _____
Agency or Company: <u>SBB Engineering</u>	City: <u>Tampa</u>
Date Performed: <u>10/16/20</u>	County: <u>Shawnee</u>
Time Period From: <u>8:00 am</u> To: <u>8:15 am</u>	N/S Street: <u>NW Anna St</u>
Weather/Road Condition: <u>Clear, SP</u>	E/W Street: <u>NW 25th St</u>
Remarks: <u>BTA</u>	

P = passenger cars, station wagons, motorcycles, pick-up trucks T = other trucks (Record any school bus as SB; other buses as B).



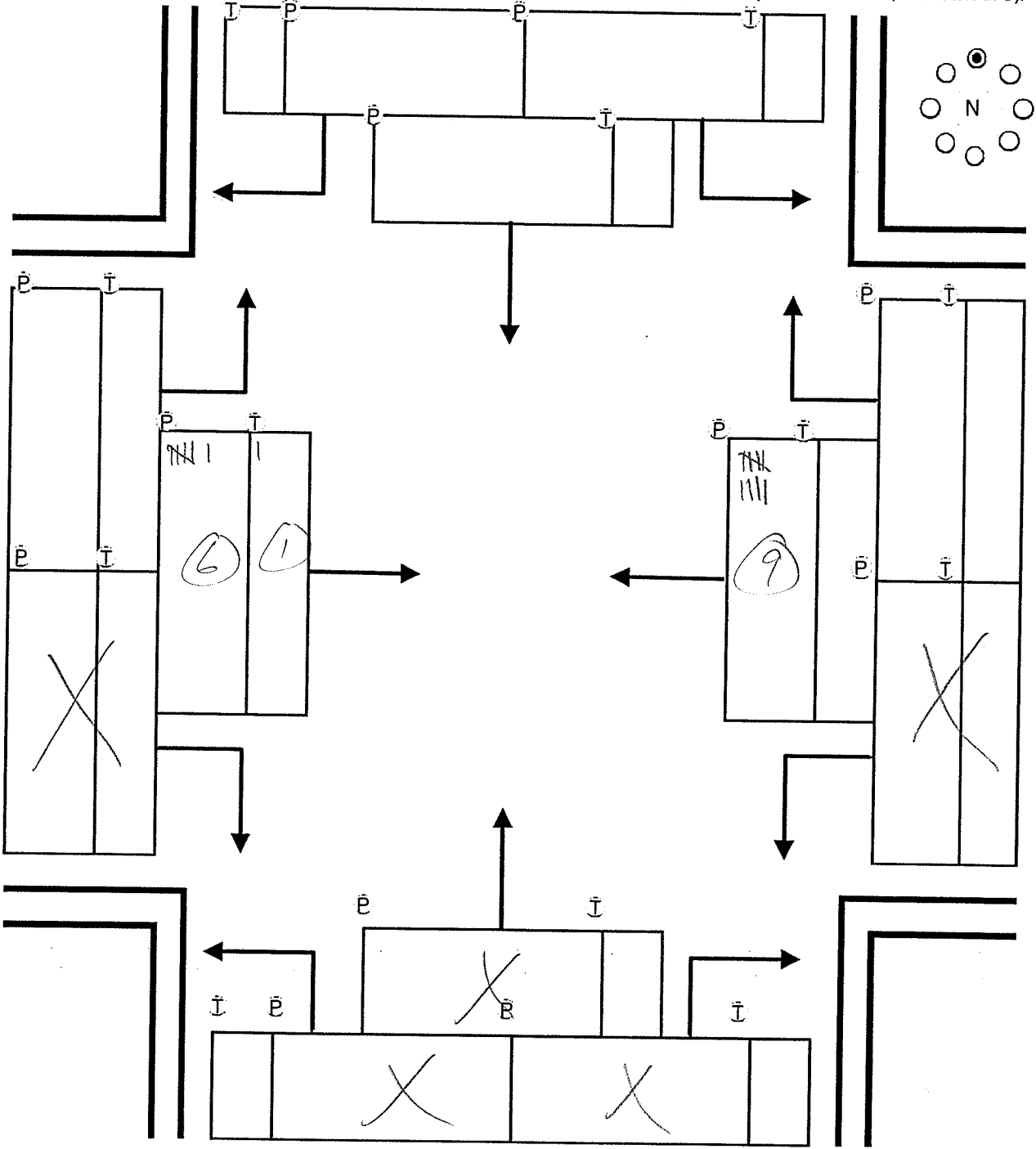
Source: Revised from Exhibit E-6 of the ITE Manual of Transportation Engineering Studies, 2nd Edition

State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information	Site Information
Analyst/Observer: <u>Brian Averil</u>	Location ID: _____
Agency or Company: <u>SBB Engineering</u>	City: <u>TOPICKA</u>
Date Performed: <u>10/16/20</u>	County: <u>Shawnee</u>
Time Period From: <u>8:15am</u> To: <u>8:30am</u>	N/S Street: <u>NW Shua St</u>
Weather/Road Condition: <u>Clear, 51°</u>	E/W Street: <u>NW 25th St</u>
Remarks: <u>BTA</u>	

P = passenger cars, station wagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).



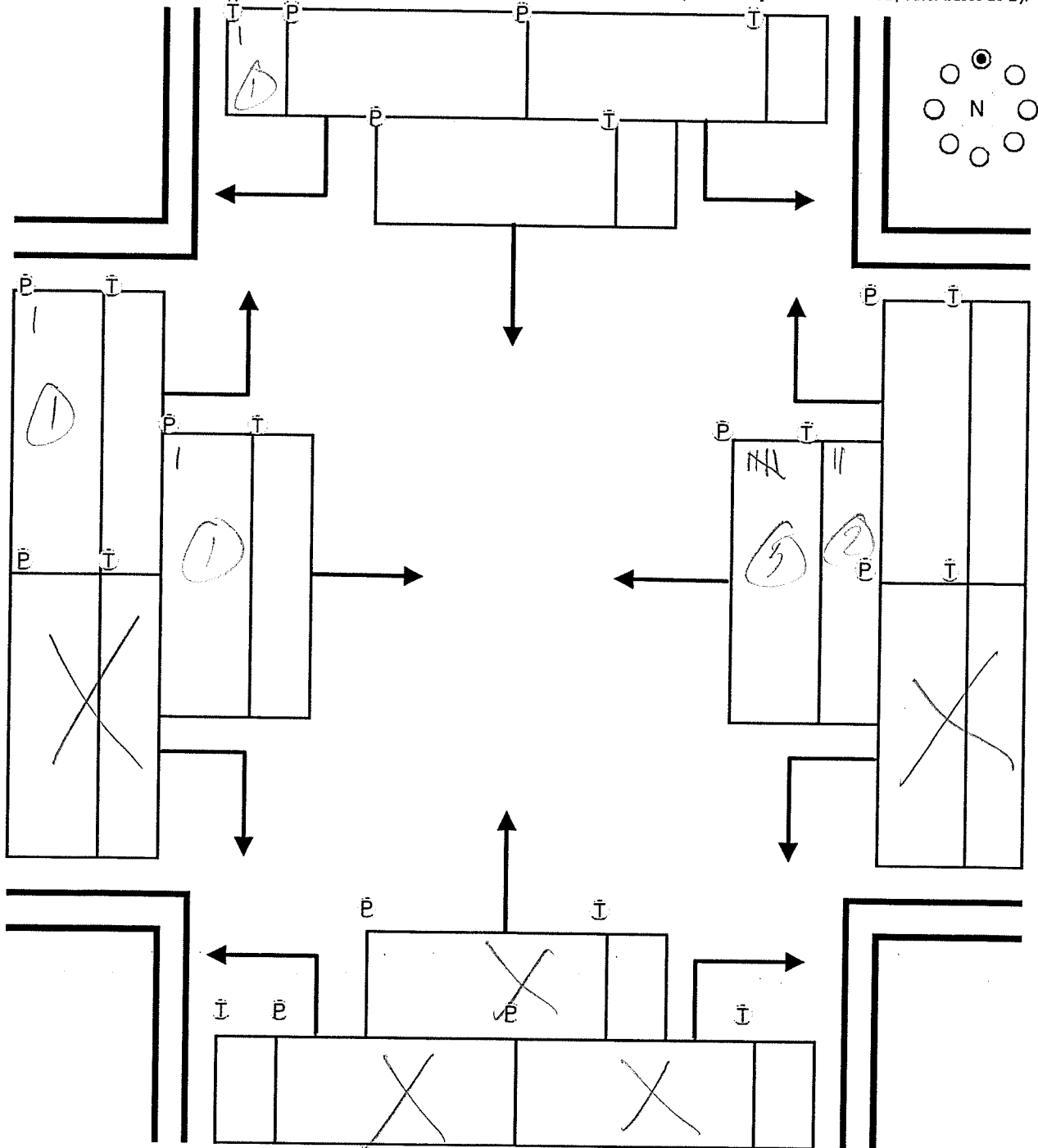
Source: Revised from Exhibit E-6 of the ITE Manual of Transportation Engineering Studies, 2nd Edition

State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information	Site Information
Analyst/Observer: <u>Brian Averil</u>	Location ID: _____
Agency or Company: <u>SBB Engineering</u>	City: <u>TOPKAT</u>
Date Performed: <u>10/6/80</u>	County: <u>Shawnee</u>
Time Period From: <u>8:30am</u> To: <u>8:45am</u>	N/S Street: <u>NW 2nd St</u>
Weather/Road Condition: <u>clear, 93°</u>	E/W Street: <u>NW 25th St</u>
Remarks: _____	

P = passenger cars, stationwagons, motorcycles, pick-up trucks T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

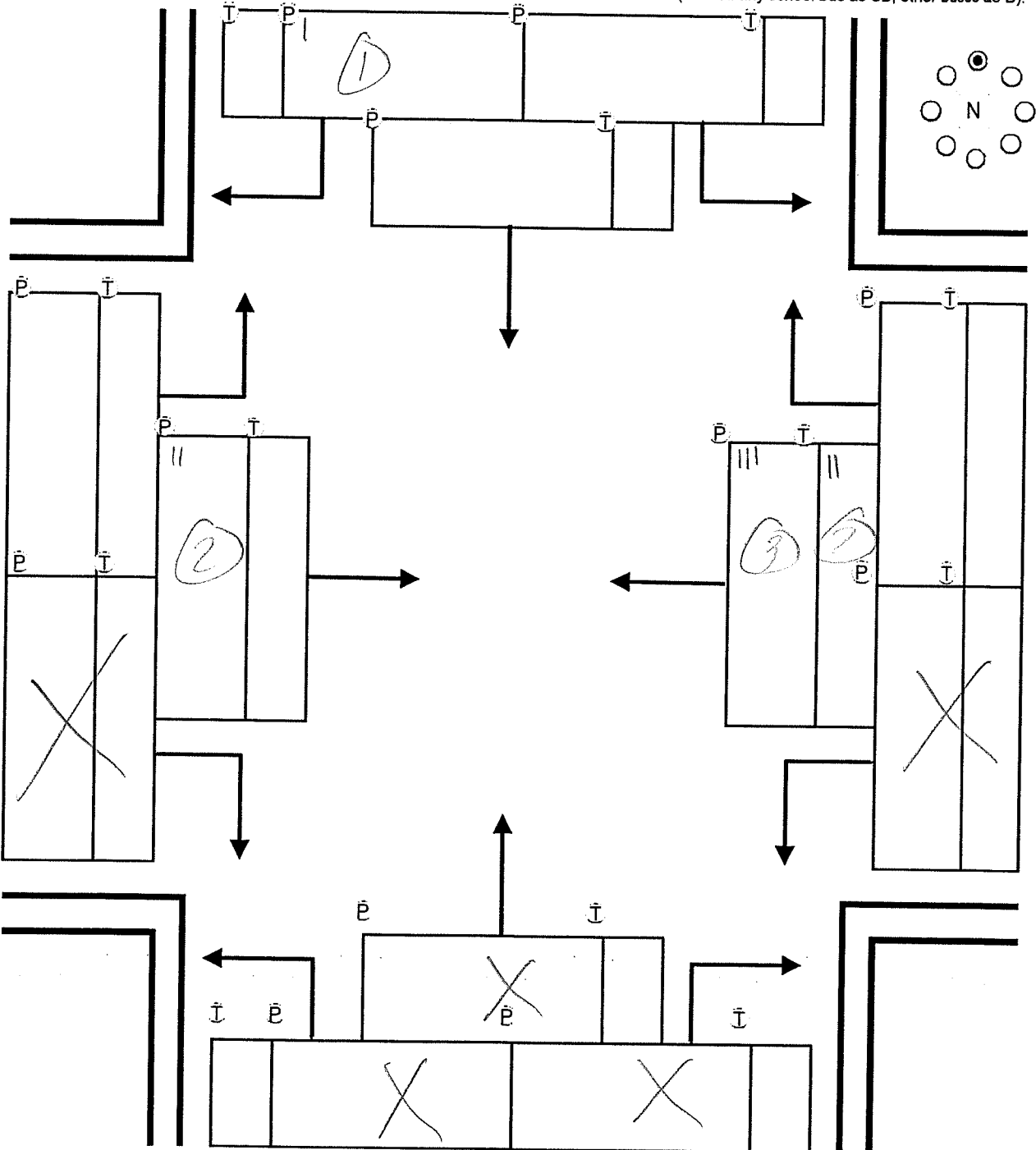
General Information

Site Information

Analyst/Observer: Brian Averil
 Agency or Company: SBB Engineering
 Date Performed: 10/16/20
 Time Period From: 8:45am To: 9:00 am
 Weather/Road Condition: Clear, 55°
 Remarks: BTA

Location ID: _____
 City: TOPKA
 County: Shawnee
 N/S Street: NW 34th St
 E/W Street: NW 25th St

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

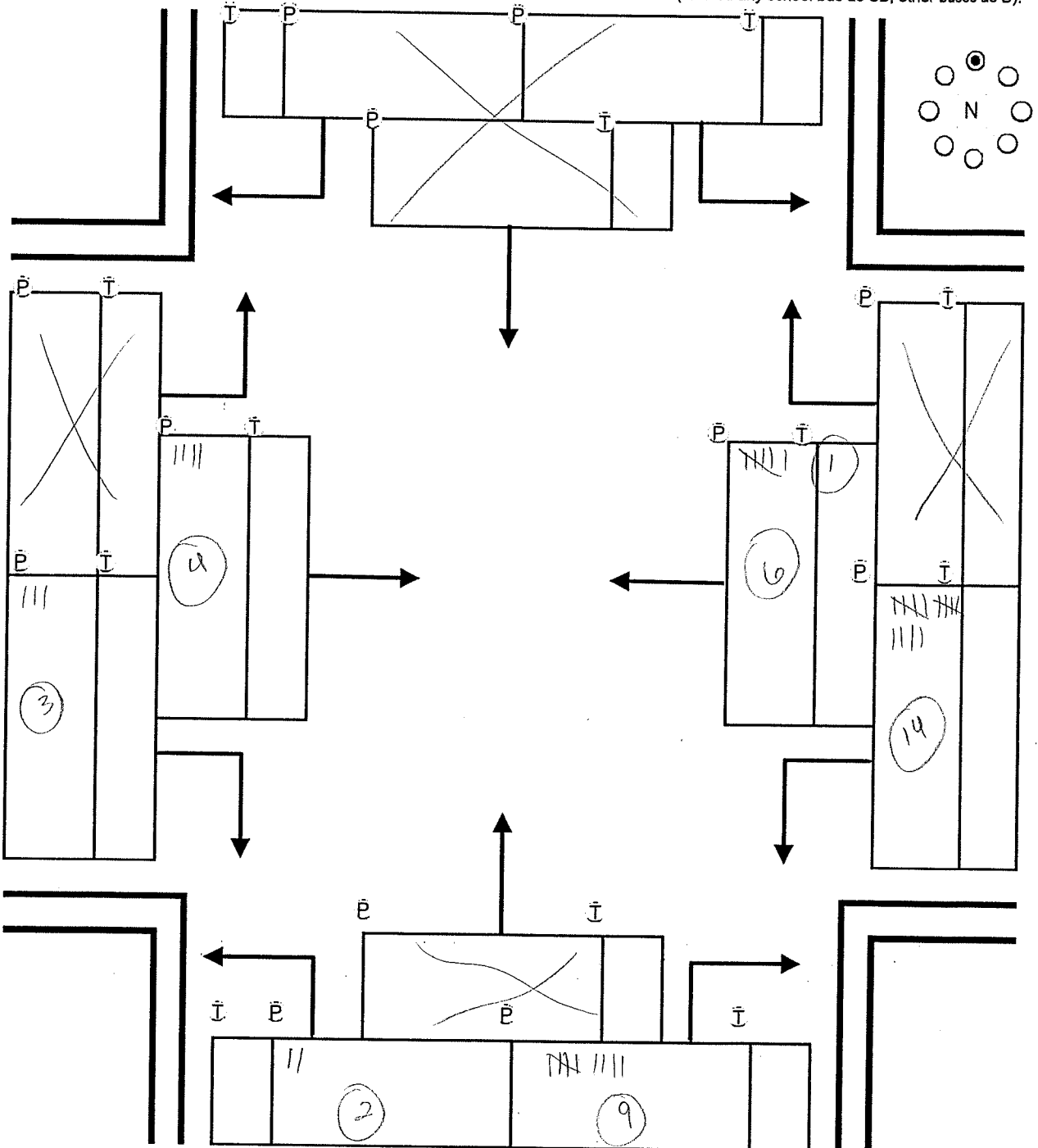
General Information

Site Information

Analyst/Observer: Prasad Anand LBO
 Agency or Company: SBB Engineering
 Date Performed: 10/10/20
 Time Period From: 4:00 pm To: 4:15 pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: Tapelea
 County: Shawnee
 N/S Street: SPUR RD
 E/W Street: NW 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B)



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

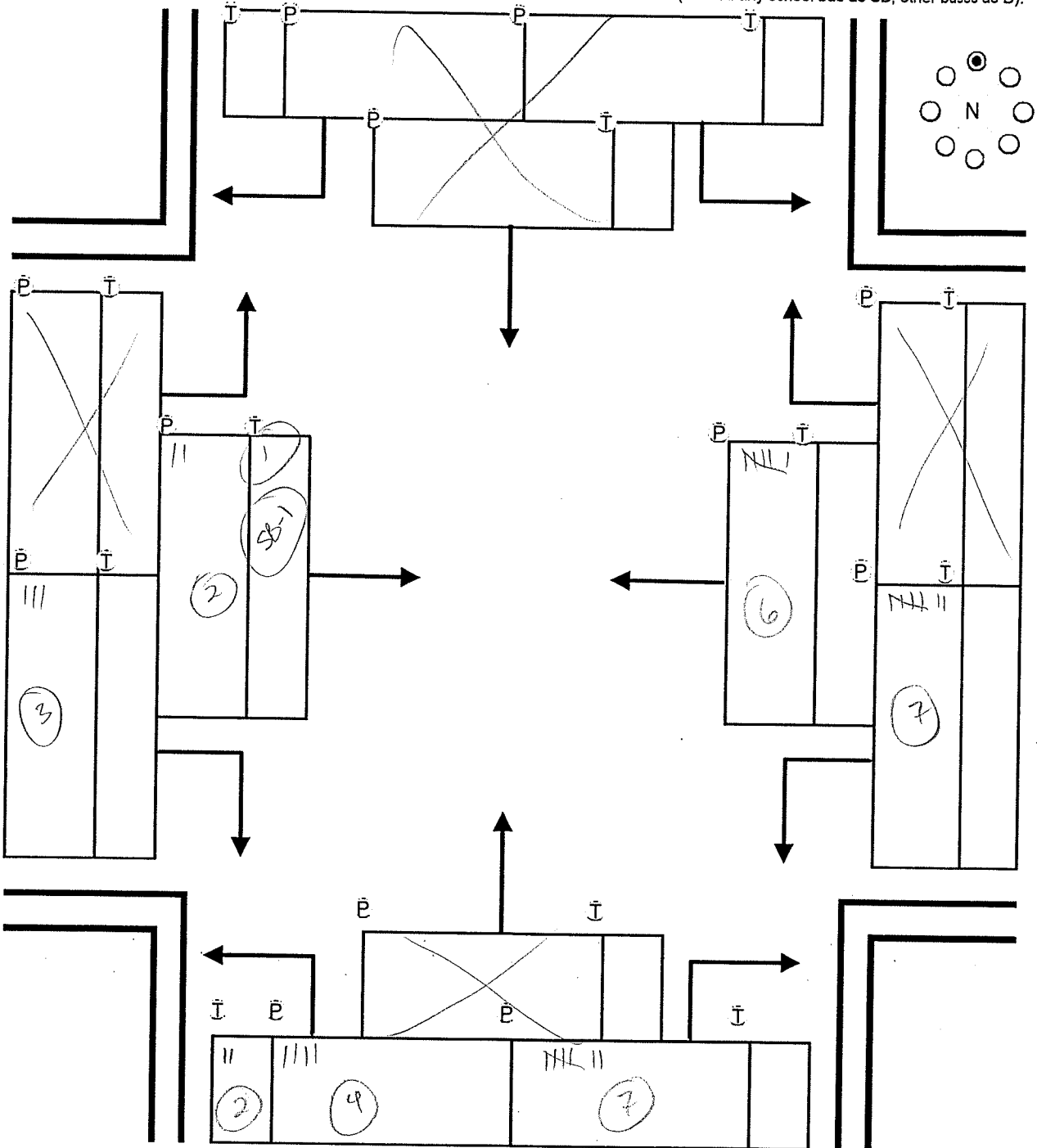
General Information

Site Information

Analyst/Observer: Basant Anand / LBD
 Agency or Company: SBB Engineering
 Date Performed: 10/16/20
 Time Period From: 4:15pm To: 4:30pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: Tapelea
 County: Shawnee
 N/S Street: SPUR RD
 E/W Street: NW 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

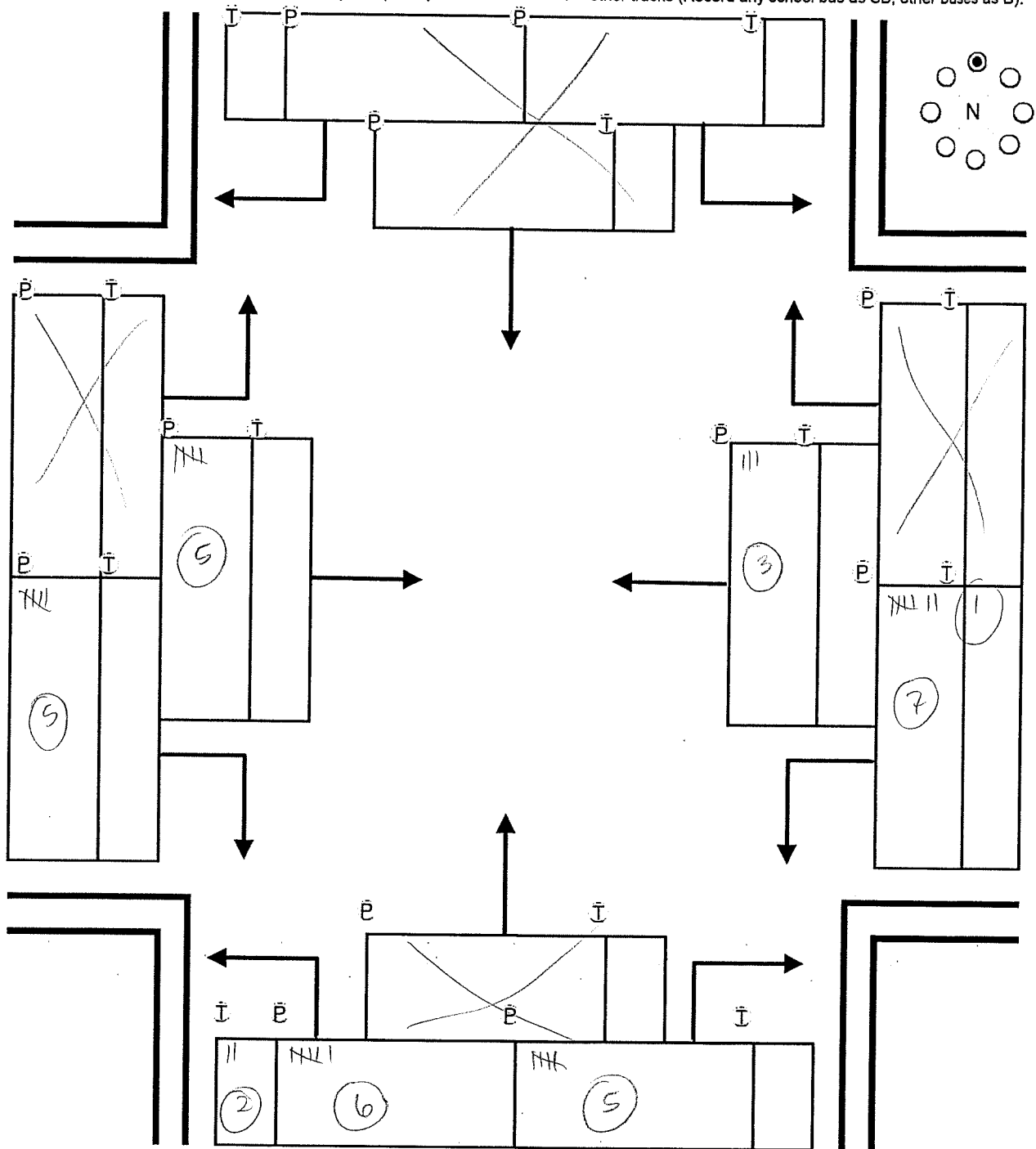
General Information

Site Information

Analyst/Observer: Prasad Anand
 Agency or Company: SBB Engineering
 Date Performed: 10/10/2020
 Time Period From: 4:30 pm To: 4:45 pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: Tampa
 County: Shawnee
 N/S Street: STUBB RD
 E/W Street: HWY 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks T = other trucks (Record any school bus as SB; other buses as B).



Source: Revised from Exhibit E-6 of the ITE Manual of Transportation Engineering Studies, 2nd Edition

State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

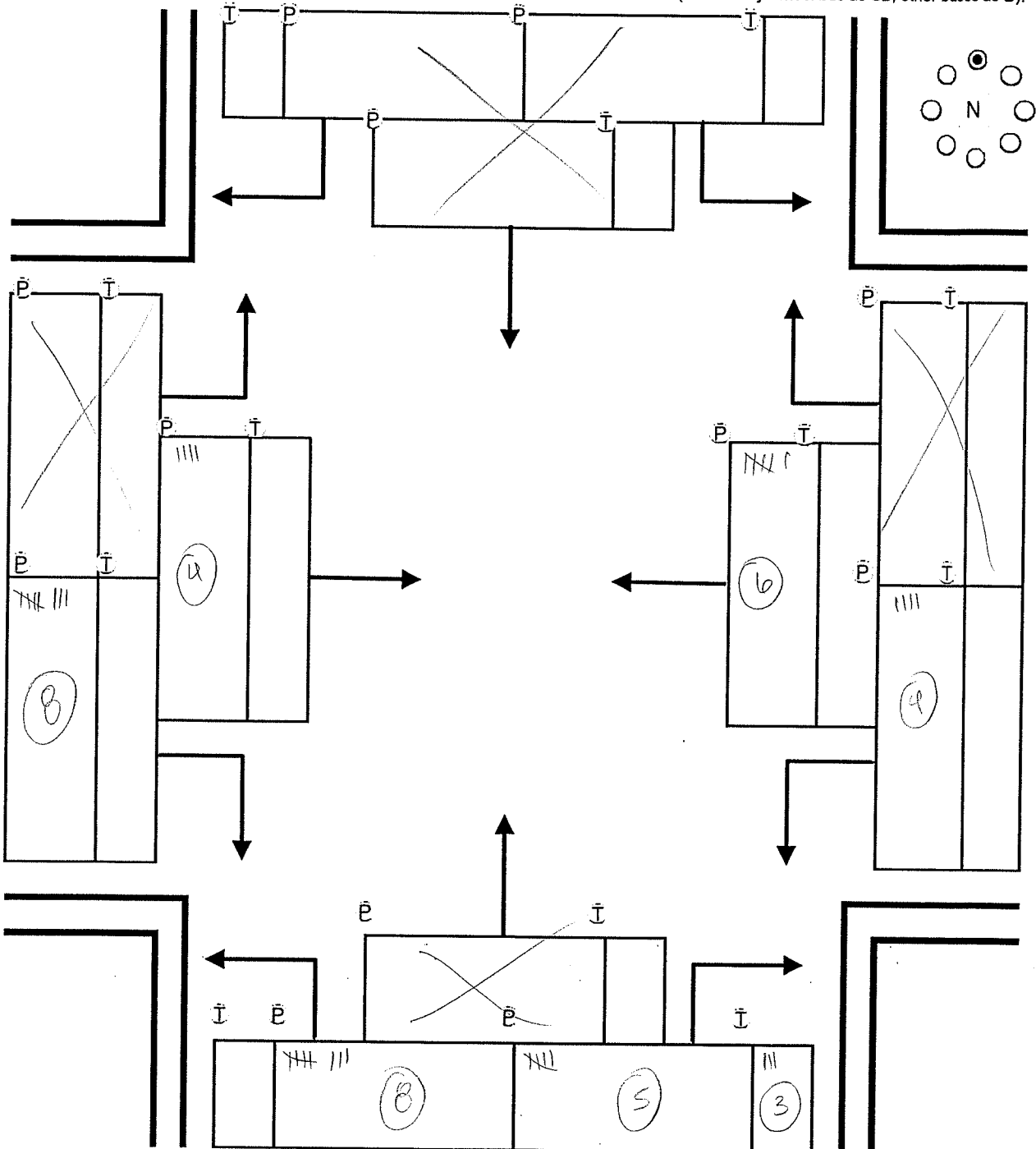
General Information

Site Information

Analyst/Observer: David Auerbach / LBO
 Agency or Company: SBB Engineering
 Date Performed: 10/16/20
 Time Period From: 4:45 pm To: 5:00 pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: Tampa
 County: Shawnee
 N/S Street: STANFORD RD
 E/W Street: HWY 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).



VEHICLE TURNING MOVEMENT COUNTS

General Information

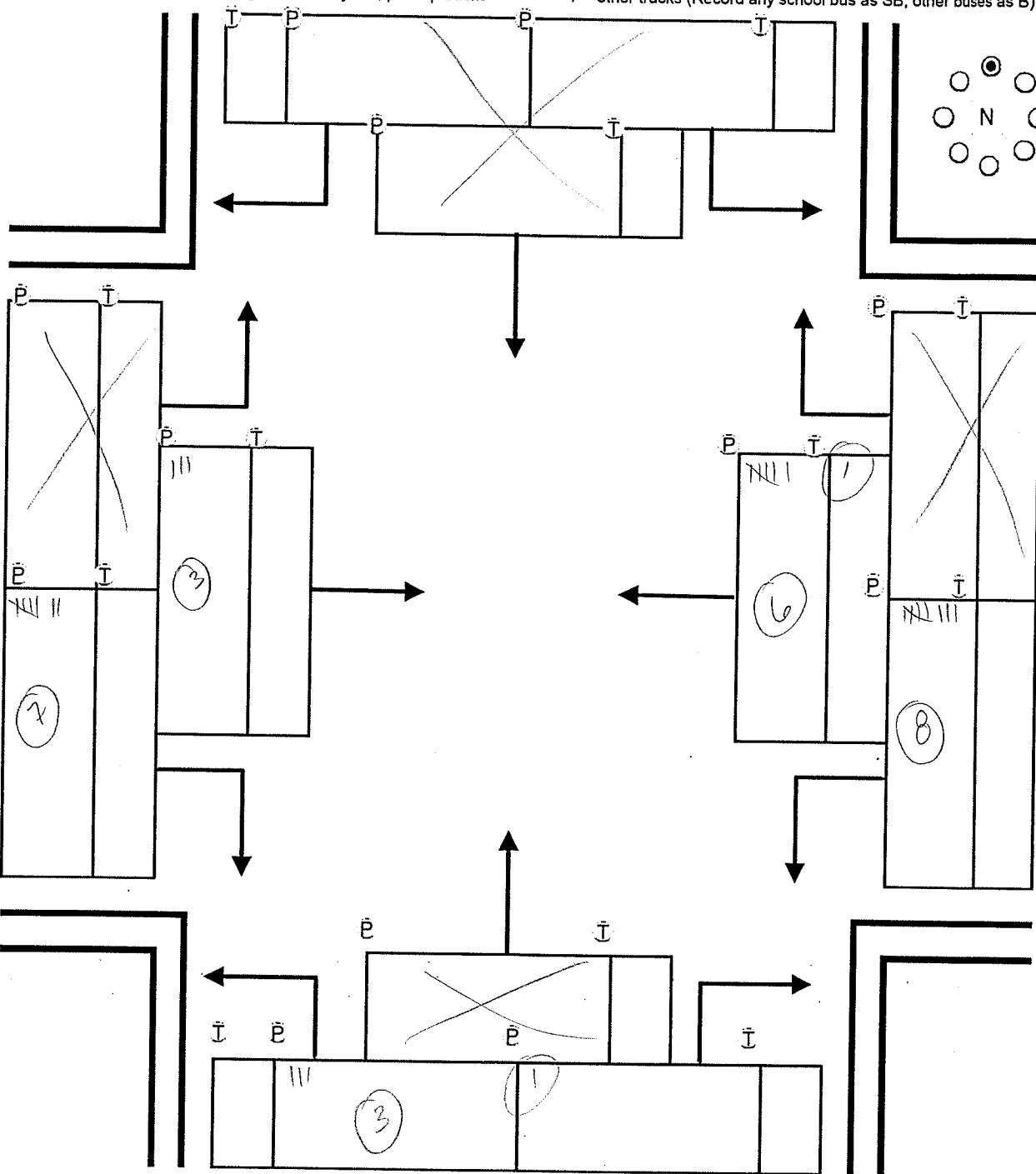
Site Information

Analyst/Observer: Prasad Anand / LBO
 Agency or Company: SBB Engineering
 Date Performed: 10/16/20
 Time Period From: 5:00 pm To: 5:15 pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: Tapelea
 County: Shawnee
 N/S Street: STOVER RD
 E/W Street: NW 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks

T = other trucks (Record any school bus as SB; other buses as B).

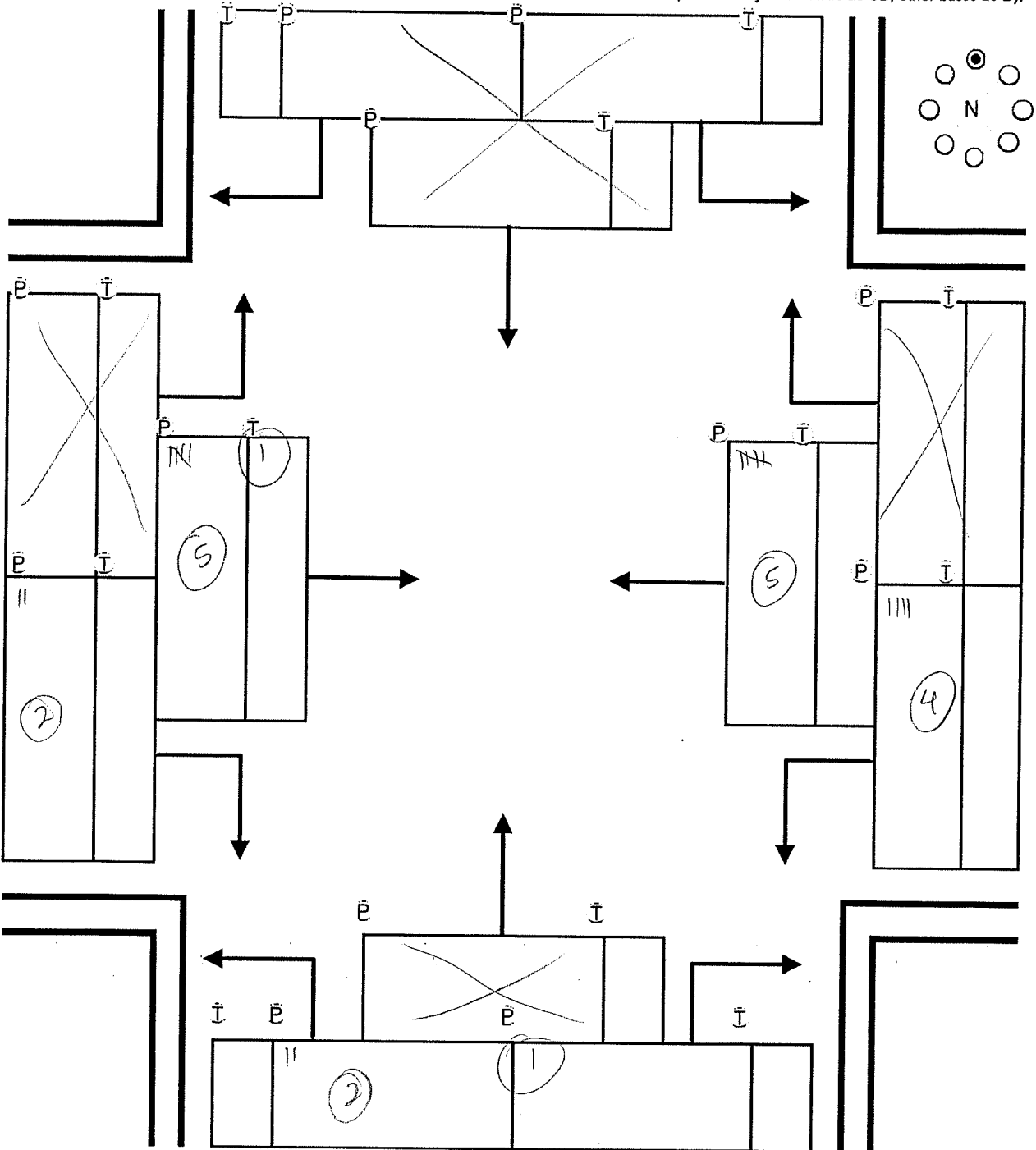


State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information	Site Information
Analyst/Observer: <u>Basant Anand / LEO</u>	Location ID: _____
Agency or Company: <u>SBB Engineering</u>	City: <u>Tapelea</u>
Date Performed: <u>10/16/2020</u>	County: <u>Shawnee</u>
Time Period From: <u>5:15 pm</u> To: <u>5:30 pm</u>	N/S Street: <u>SPUR RD</u>
Weather/Road Condition: _____	E/W Street: <u>NW 25th St.</u>
Remarks: _____	

P = passenger cars, stationwagons, motorcycles, pick-up trucks T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information

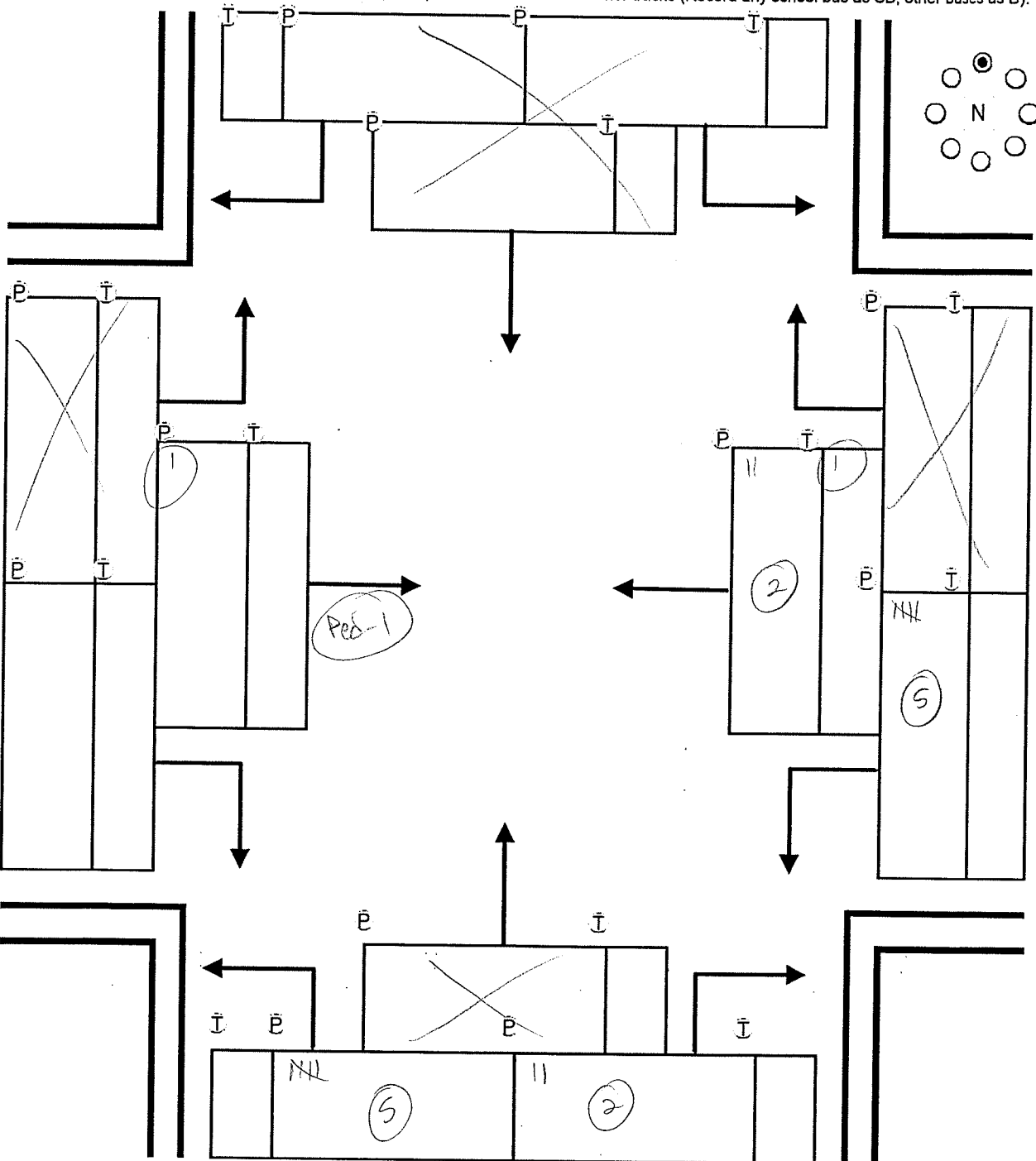
Site Information

Analyst/Observer: David Auvral / LBD
 Agency or Company: SBB Engineering
 Date Performed: 10/16/20
 Time Period From: 5:30 pm To: 5:45 pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: Tapelea
 County: Shawnee
 N/S Street: SPUR RD
 E/W Street: NW 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks

T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
TRAFFIC ENGINEERING
10/15

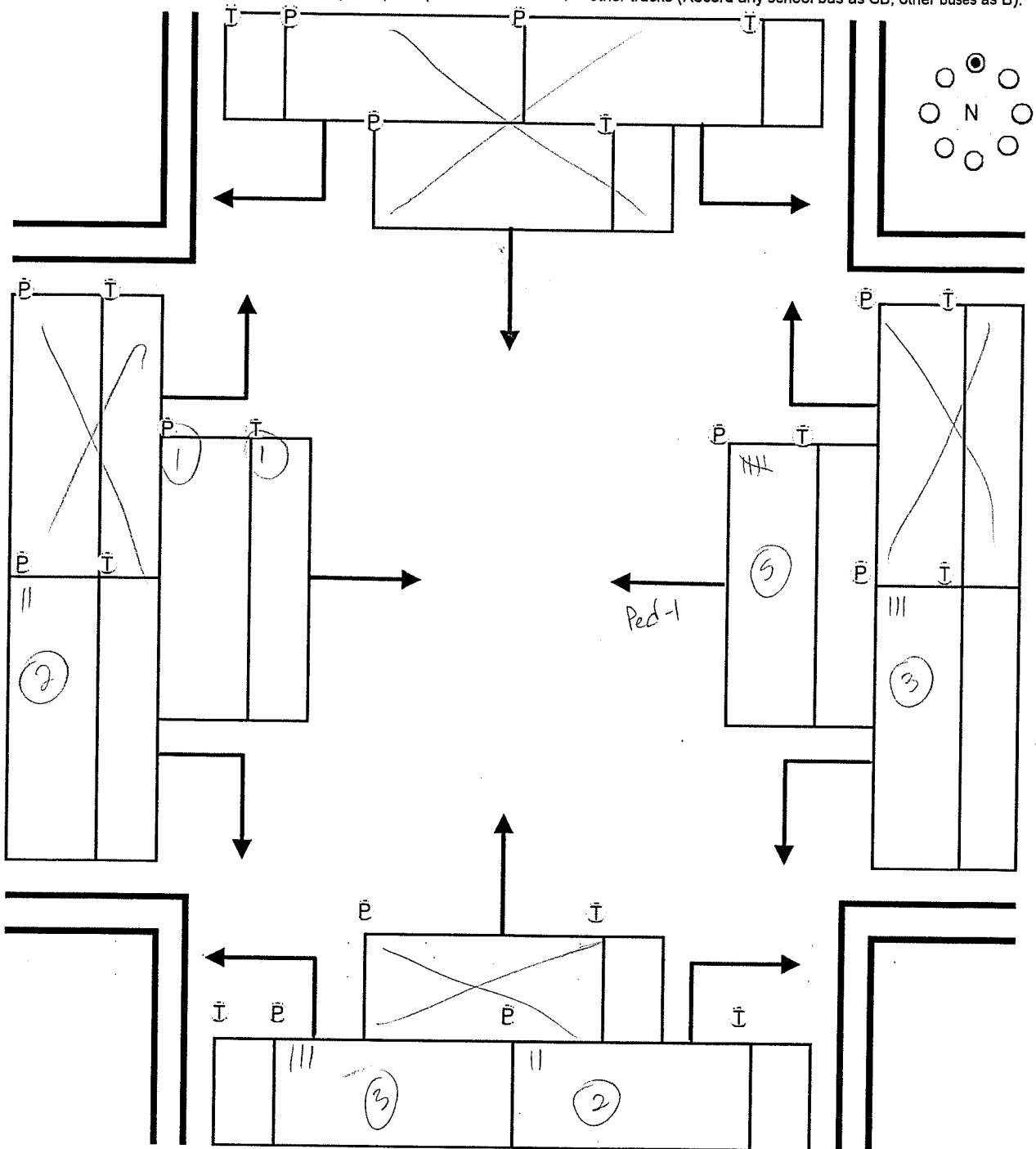
General Information

Site Information

Analyst/Observer: Prasad Anand / LBD
 Agency or Company: SBB Engineering
 Date Performed: 10/10/20
 Time Period From: 5:45 pm To: 6:00 pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: Tapelea
 County: Shawnee
 N/S Street: SPUR RD
 E/W Street: NW 25th St.

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

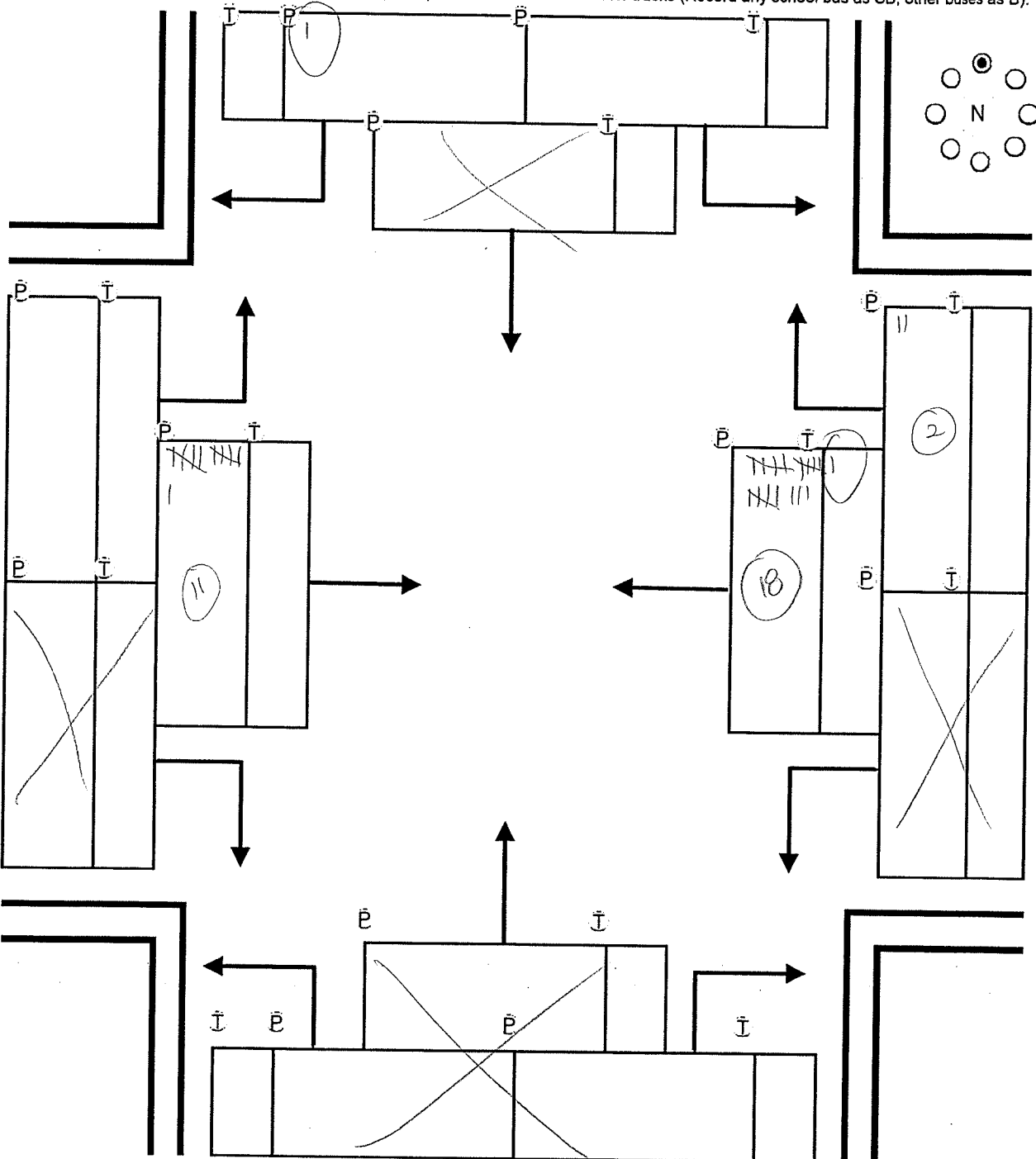
General Information

Site Information

Analyst/Observer: Brian Averil / LBO
 Agency or Company: SBB Engineering
 Date Performed: 10/16/2020
 Time Period From: 4:00 pm To: 4:15 pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: TAPPA
 County: Shawnee
 N/S Street: NW 5th St
 E/W Street: NW 25th St

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).

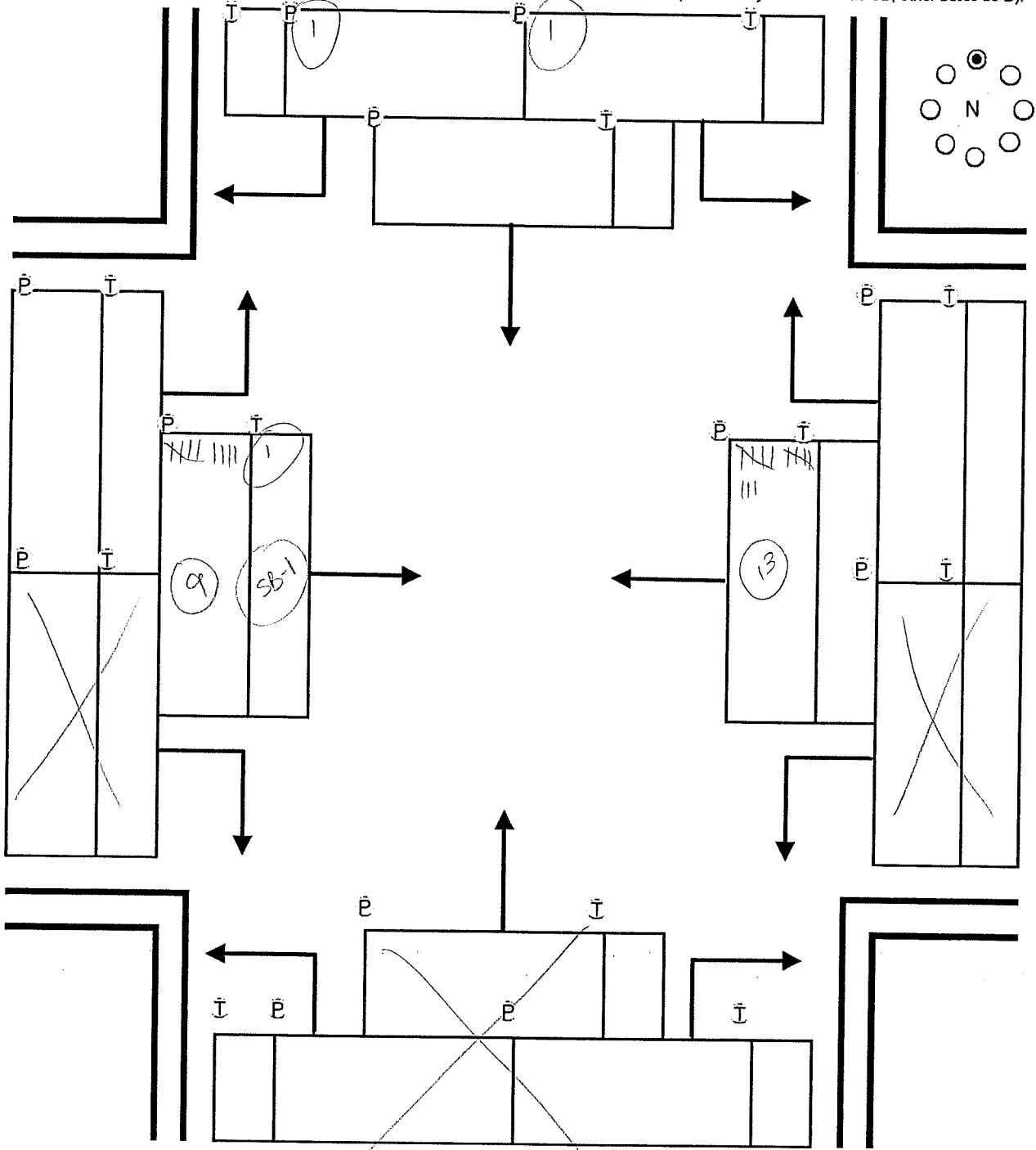


State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information	Site Information
Analyst/Observer: <u>Brian Averil / LEO</u>	Location ID: _____
Agency or Company: <u>SBB Engineering</u>	City: <u>TAPPA</u>
Date Performed: <u>10/16/20</u>	County: <u>Shawnee</u>
Time Period From: <u>4:15pm</u> To: <u>4:30pm</u>	N/S Street: <u>NW 34th St</u>
Weather/Road Condition: _____	E/W Street: <u>NW 25th St</u>
Remarks: _____	

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).



Source: Revised from Exhibit E-6 of the ITE Manual of Transportation Engineering Studies, 2nd Edition

State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

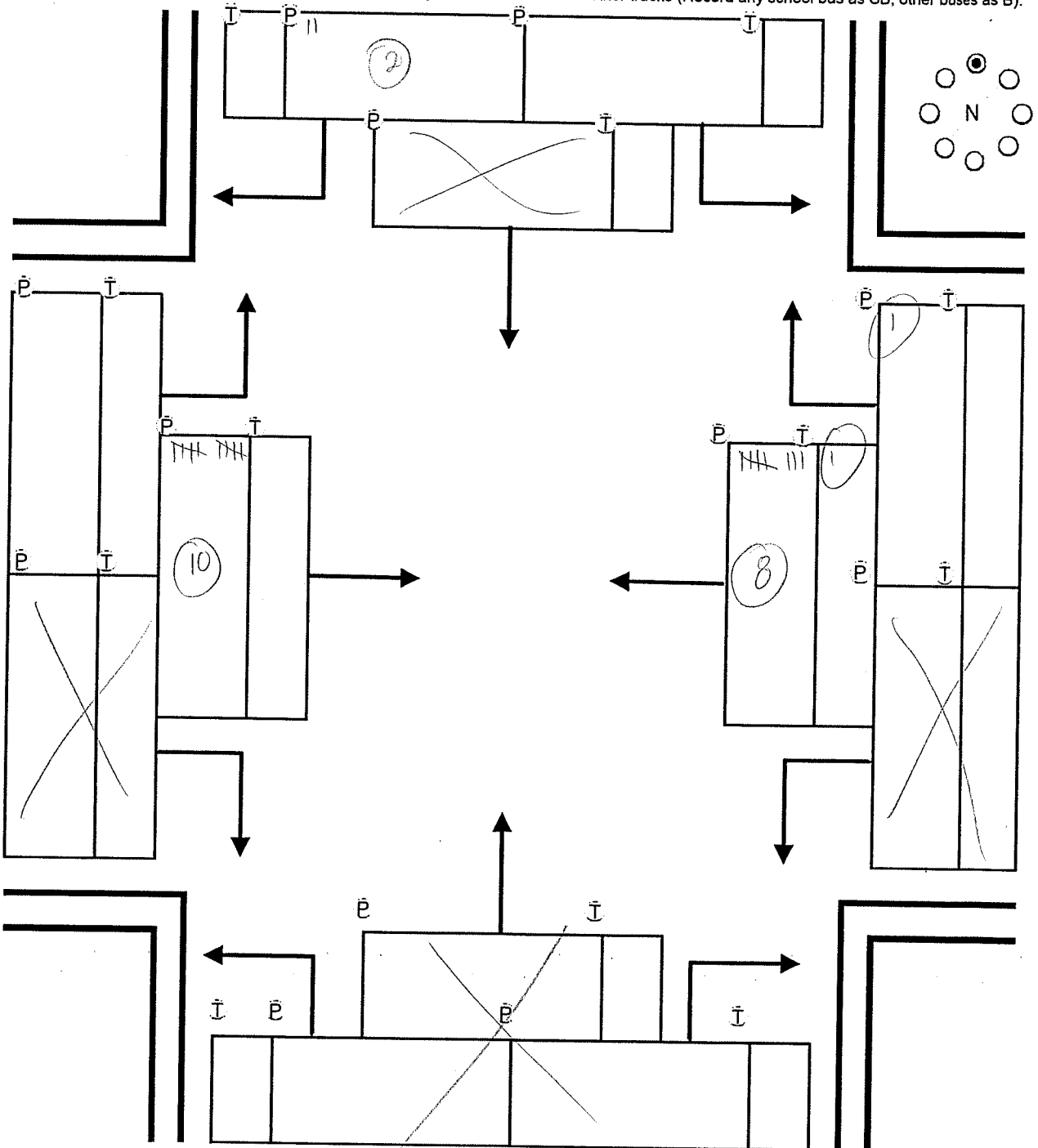
General Information

Site Information

Analyst/Observer: Brian Austin / LBD
 Agency or Company: SBB ENGINEERS
 Date Performed: 10/16/2020
 Time Period From: 4:30pm To: 4:45pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: TOPKA
 County: Shawnee
 N/S Street: NW 34th St
 E/W Street: NW 25th St

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

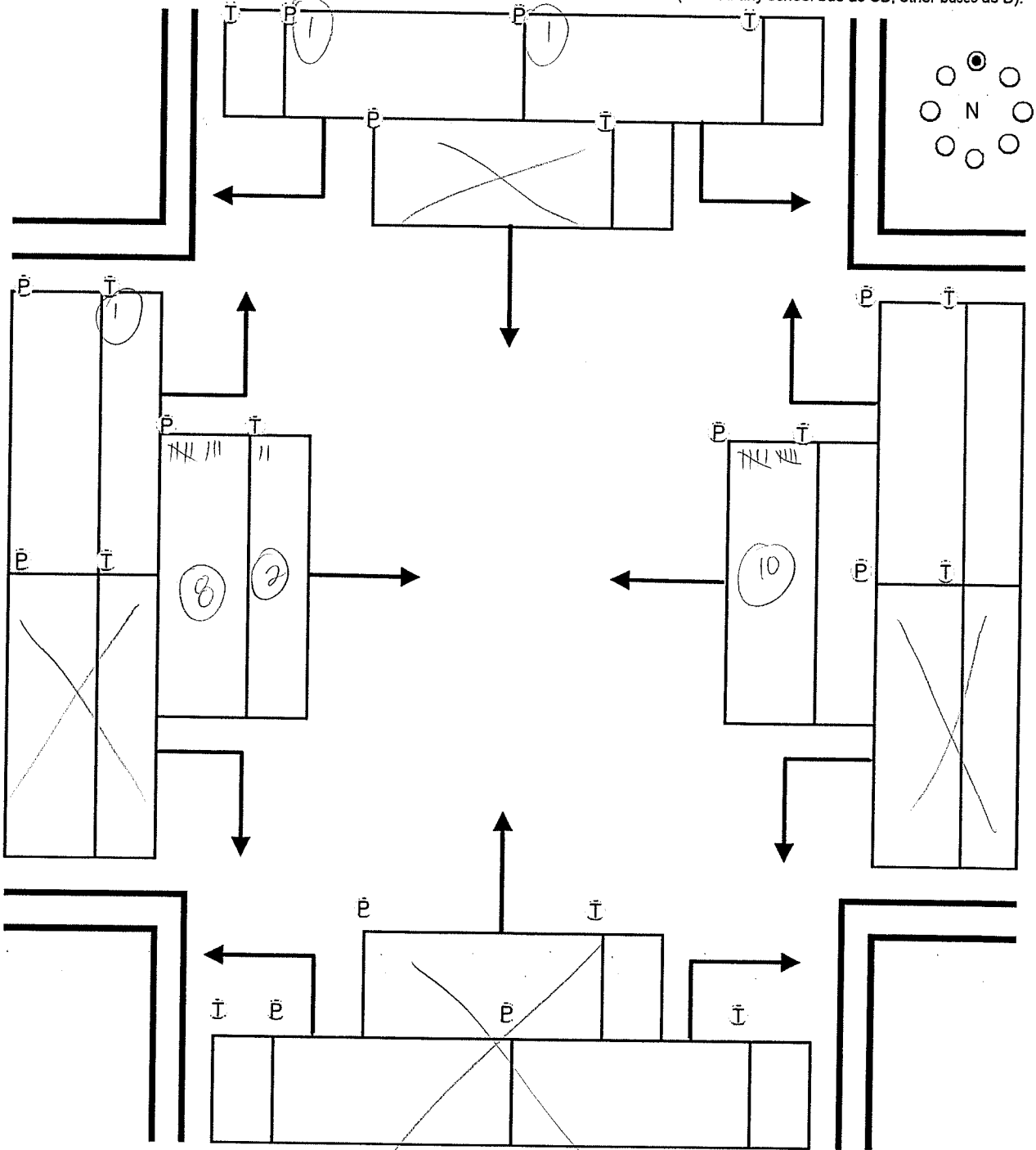
General Information

Site Information

Analyst/Observer: Brian Averil / LBO
 Agency or Company: SBB Engineering
 Date Performed: 10/16/20
 Time Period From: 4:45 pm To: 5:00 pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: TAPPA
 County: Shawnee
 N/S Street: NW 34th St
 E/W Street: NW 25th St

P = passenger cars, stationwagons, motorcycles, pick-up trucks T = other trucks (Record any school bus as SB; other buses as B).



State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

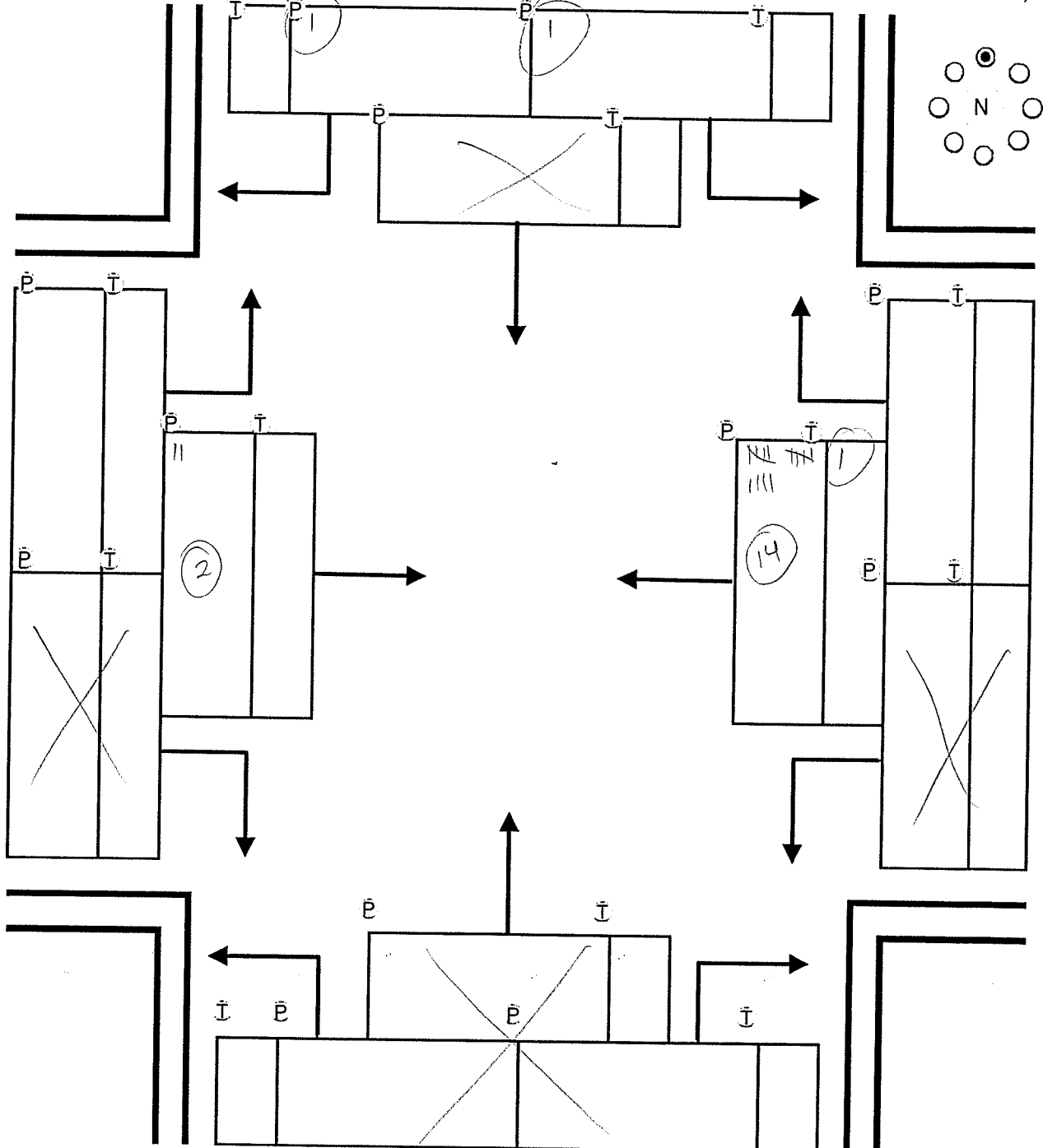
General Information

Site Information

Analyst/Observer: Brian Austin / LBO
 Agency or Company: 3BB Engineering
 Date Performed: 10/10/20
 Time Period From: 5:00pm To: 5:15pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: TEPICA
 County: SHARVANCE
 N/S Street: NW 5th St
 E/W Street: NW 25th St

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).



Source: Revised from Exhibit E-6 of the ITE Manual of Transportation Engineering Studies, 2nd Edition

State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

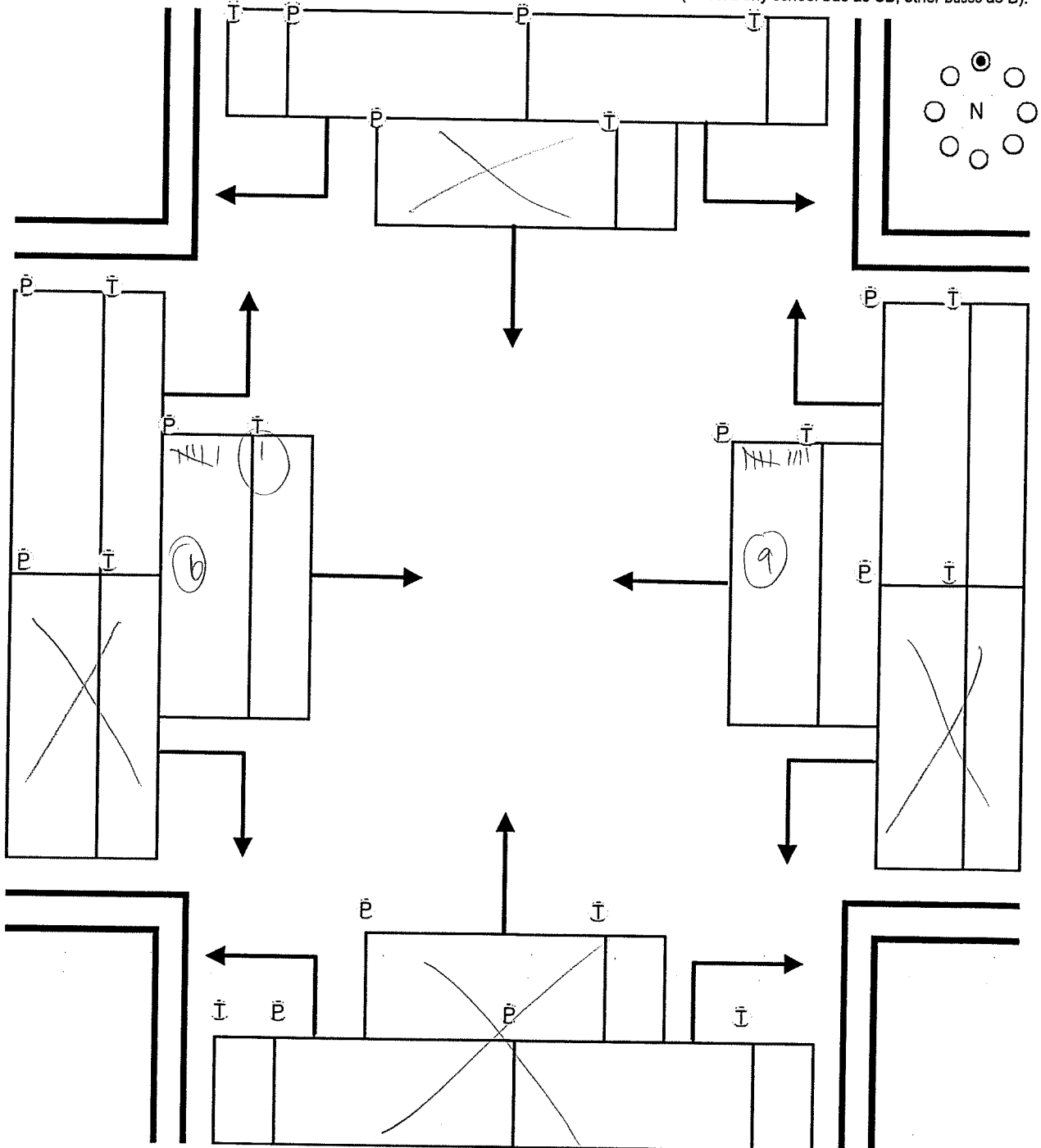
General Information

Site Information

Analyst/Observer: Brian Averil / LBO
 Agency or Company: SBB Engineering Inc
 Date Performed: 10/16/20
 Time Period From: 5:15pm To: 5:30pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: TOPKA
 County: Shawnee
 N/S Street: NW 5th St
 E/W Street: NW 25th St

P = passenger cars, stationwagons, motorcycles, pick-up trucks
 T = other trucks (Record any school bus as SB; other buses as B).

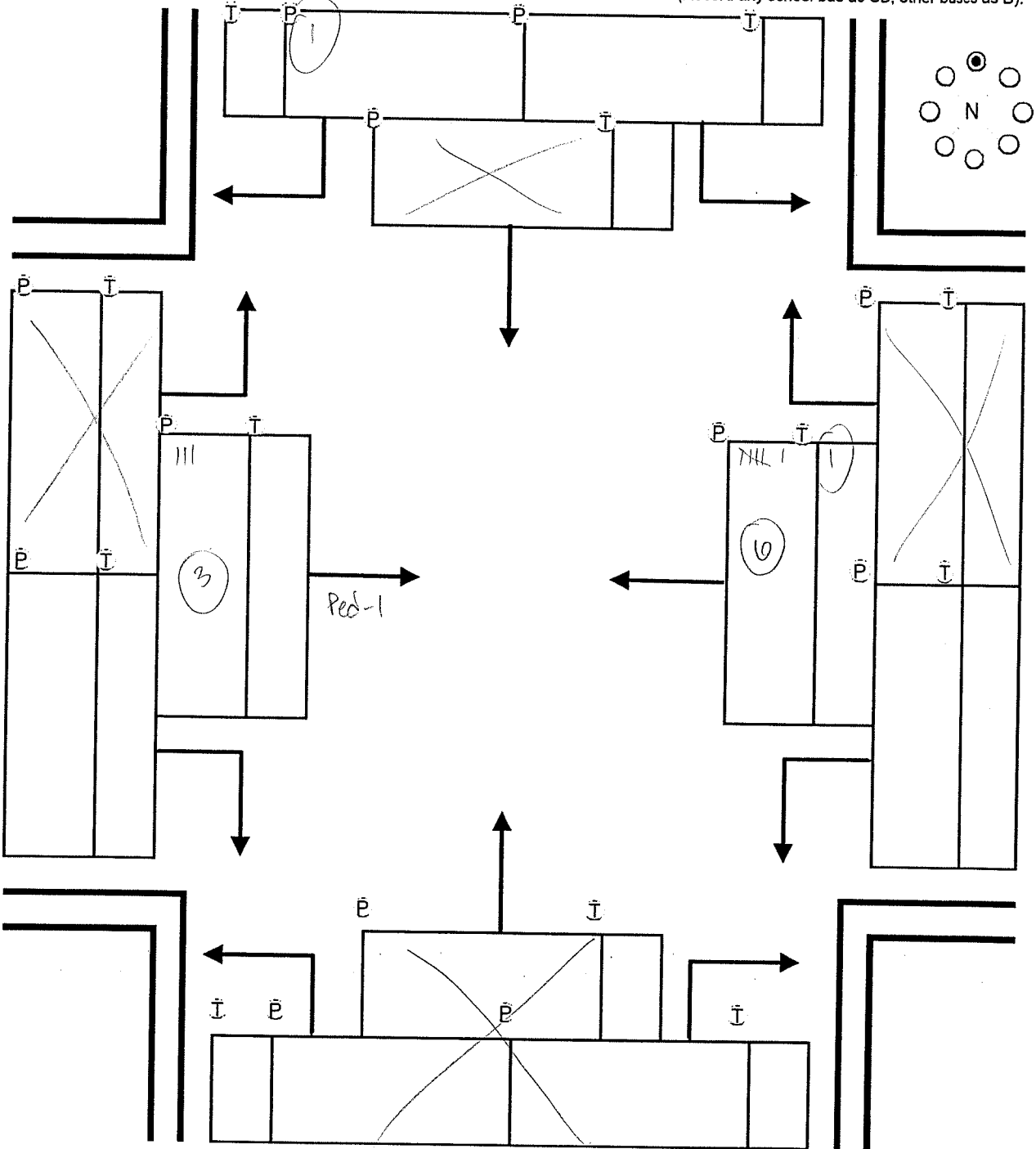


State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

General Information	Site Information
Analyst/Observer: <u>Brian Averill / LBO</u>	Location ID: _____
Agency or Company: <u>SBB Engineering</u>	City: <u>TOPKAT</u>
Date Performed: <u>10/16/20</u>	County: <u>Shawnee</u>
Time Period From: <u>5:30 pm</u> To: <u>5:45 pm</u>	N/S Street: <u>NW Shea Ct</u>
Weather/Road Condition: _____	E/W Street: <u>NW 25th St</u>
Remarks: _____	

P = passenger cars, stationwagons, motorcycles, pick-up trucks T = other trucks (Record any school bus as SB; other buses as B).



Source: Revised from Exhibit E-6 of the ITE Manual of Transportation Engineering Studies, 2nd Edition

State of Florida Department of Transportation
VEHICLE TURNING MOVEMENT COUNTS

Form 750-020-03
 TRAFFIC ENGINEERING
 10/15

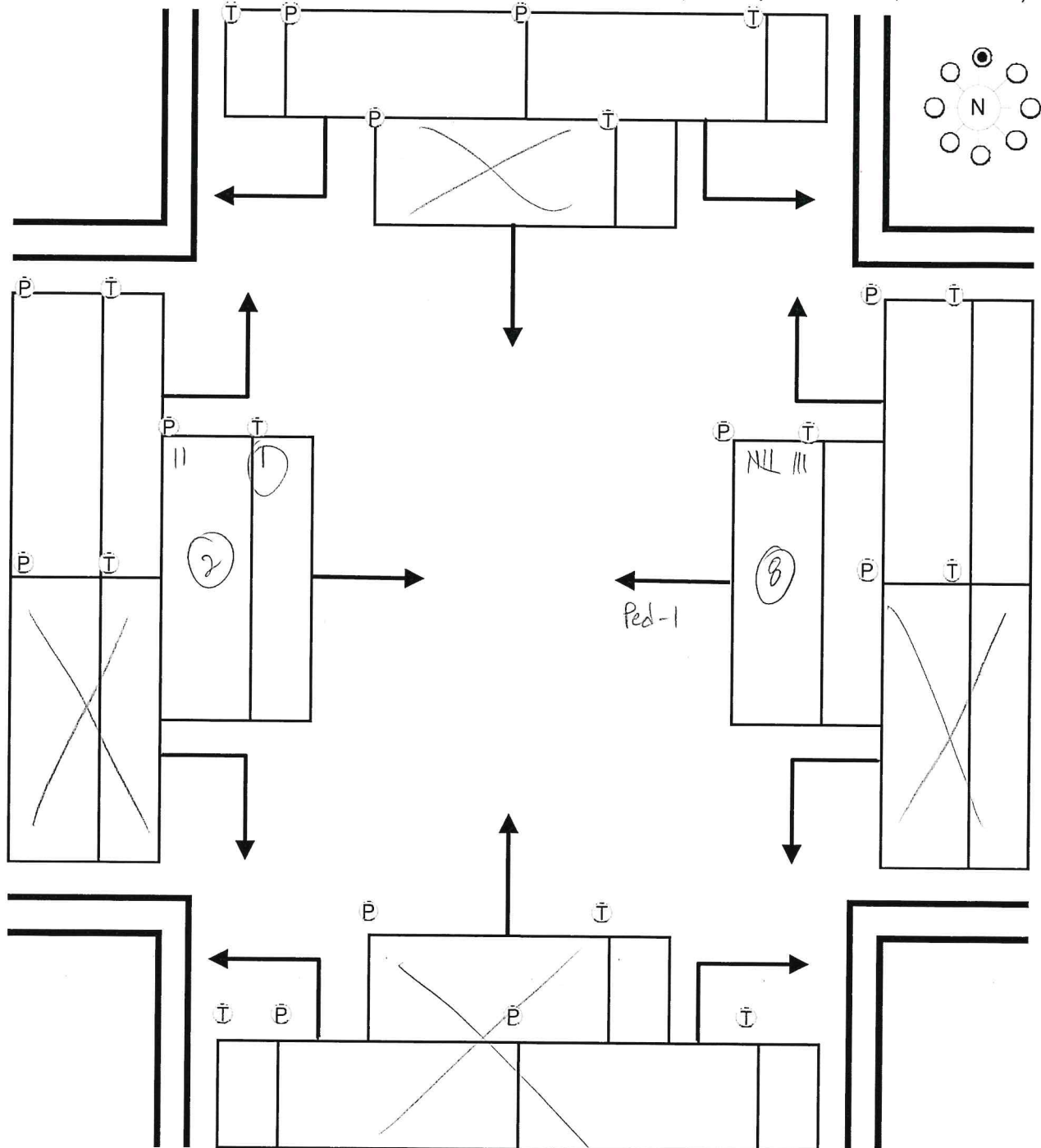
General Information

Site Information

Analyst/Observer: Brian Aubrey / LBO
 Agency or Company: SB Engineering Inc
 Date Performed: 10/6/20
 Time Period From: 5:45pm To: 10:00pm
 Weather/Road Condition: _____
 Remarks: _____

Location ID: _____
 City: Tampa
 County: Shannon
 N/S Street: NW 5th St
 E/W Street: NW 25th St

P = passenger cars, station wagons, motorcycles, pick-up trucks T = other trucks (Record any school bus as SB; other buses as B).



APPENDIX B

Synchro Reports

Intersection						
Int Delay, s/veh	4.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	20	15	16	24	15
Future Vol, veh/h	23	20	15	16	24	15
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	14	14	14	14	14	14
Mvmt Flow	26	23	17	18	27	17

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	62	0	103
Stage 1	-	-	-	-	51
Stage 2	-	-	-	-	52
Critical Hdwy	-	-	4.24	-	6.54
Critical Hdwy Stg 1	-	-	-	-	5.54
Critical Hdwy Stg 2	-	-	-	-	5.54
Follow-up Hdwy	-	-	2.326	-	3.626
Pot Cap-1 Maneuver	-	-	1468	-	867
Stage 1	-	-	-	-	942
Stage 2	-	-	-	-	941
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1450	-	846
Mov Cap-2 Maneuver	-	-	-	-	846
Stage 1	-	-	-	-	931
Stage 2	-	-	-	-	930

Approach	EB	WB	NB
HCM Control Delay, s	0	3.6	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	846	972	-	-	1450	-
HCM Lane V/C Ratio	0.032	0.018	-	-	0.012	-
HCM Control Delay (s)	9.4	8.8	-	-	7.5	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	4	32	30	0	0	1
Future Vol, veh/h	4	32	30	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	15	15	15	15	15	15
Mvmt Flow	4	36	33	0	0	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	33	0	-	0	77 33
Stage 1	-	-	-	-	33 -
Stage 2	-	-	-	-	44 -
Critical Hdwy	4.25	-	-	-	6.55 6.35
Critical Hdwy Stg 1	-	-	-	-	5.55 -
Critical Hdwy Stg 2	-	-	-	-	5.55 -
Follow-up Hdwy	2.335	-	-	-	3.635 3.435
Pot Cap-1 Maneuver	1499	-	-	-	895 1004
Stage 1	-	-	-	-	957 -
Stage 2	-	-	-	-	946 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1499	-	-	-	892 1004
Mov Cap-2 Maneuver	-	-	-	-	892 -
Stage 1	-	-	-	-	954 -
Stage 2	-	-	-	-	946 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1499	-	-	-	1004
HCM Lane V/C Ratio	0.003	-	-	-	0.001
HCM Control Delay (s)	7.4	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	5.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	16	19	33	22	24	29
Future Vol, veh/h	16	19	33	22	24	29
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	18	21	36	24	26	32

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	52	0	138 42
Stage 1	-	-	-	-	42 -
Stage 2	-	-	-	-	96 -
Critical Hdwy	-	-	4.17	-	6.47 6.27
Critical Hdwy Stg 1	-	-	-	-	5.47 -
Critical Hdwy Stg 2	-	-	-	-	5.47 -
Follow-up Hdwy	-	-	2.263	-	3.563 3.363
Pot Cap-1 Maneuver	-	-	1522	-	844 1015
Stage 1	-	-	-	-	968 -
Stage 2	-	-	-	-	915 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1503	-	814 1002
Mov Cap-2 Maneuver	-	-	-	-	814 -
Stage 1	-	-	-	-	956 -
Stage 2	-	-	-	-	893 -

Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	814	1002	-	-	1503	-
HCM Lane V/C Ratio	0.032	0.032	-	-	0.024	-
HCM Control Delay (s)	9.6	8.7	-	-	7.5	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	1	41	51	3	2	5
Future Vol, veh/h	1	41	51	3	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	1	51	64	4	3	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	68	0	-	0	119
Stage 1	-	-	-	-	66
Stage 2	-	-	-	-	53
Critical Hdwy	4.16	-	-	-	6.46
Critical Hdwy Stg 1	-	-	-	-	5.46
Critical Hdwy Stg 2	-	-	-	-	5.46
Follow-up Hdwy	2.254	-	-	-	3.554
Pot Cap-1 Maneuver	1508	-	-	-	867
Stage 1	-	-	-	-	947
Stage 2	-	-	-	-	959
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1508	-	-	-	866
Mov Cap-2 Maneuver	-	-	-	-	866
Stage 1	-	-	-	-	946
Stage 2	-	-	-	-	959

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1508	-	-	-	949
HCM Lane V/C Ratio	0.001	-	-	-	0.009
HCM Control Delay (s)	7.4	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	4.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	20	21	18	24	30
Future Vol, veh/h	28	20	21	18	24	30
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	14	14	14	14	14	14
Mvmt Flow	32	23	24	20	27	34

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	68	0	125
Stage 1	-	-	-	-	57
Stage 2	-	-	-	-	68
Critical Hdwy	-	-	4.24	-	6.54
Critical Hdwy Stg 1	-	-	-	-	5.54
Critical Hdwy Stg 2	-	-	-	-	5.54
Follow-up Hdwy	-	-	2.326	-	3.626
Pot Cap-1 Maneuver	-	-	1460	-	842
Stage 1	-	-	-	-	936
Stage 2	-	-	-	-	925
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1442	-	818
Mov Cap-2 Maneuver	-	-	-	-	818
Stage 1	-	-	-	-	925
Stage 2	-	-	-	-	909

Approach	EB	WB	NB
HCM Control Delay, s	0	4.1	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	818	964	-	-	1442	-
HCM Lane V/C Ratio	0.033	0.035	-	-	0.017	-
HCM Control Delay (s)	9.6	8.9	-	-	7.5	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	24	36	30	1	2	9
Future Vol, veh/h	24	36	30	1	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	15	15	15	15	15	15
Mvmt Flow	27	40	33	1	2	10

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	34	0	-	0	128 34
Stage 1	-	-	-	-	34 -
Stage 2	-	-	-	-	94 -
Critical Hdwy	4.25	-	-	-	6.55 6.35
Critical Hdwy Stg 1	-	-	-	-	5.55 -
Critical Hdwy Stg 2	-	-	-	-	5.55 -
Follow-up Hdwy	2.335	-	-	-	3.635 3.435
Pot Cap-1 Maneuver	1497	-	-	-	836 1003
Stage 1	-	-	-	-	956 -
Stage 2	-	-	-	-	898 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1497	-	-	-	821 1003
Mov Cap-2 Maneuver	-	-	-	-	821 -
Stage 1	-	-	-	-	939 -
Stage 2	-	-	-	-	898 -

Approach	EB	WB	SB
HCM Control Delay, s	3	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1497	-	-	-	964
HCM Lane V/C Ratio	0.018	-	-	-	0.013
HCM Control Delay (s)	7.4	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0

Intersection						
Int Delay, s/veh	5.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	19	49	28	24	35
Future Vol, veh/h	19	19	49	28	24	35
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	21	21	54	31	26	38

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	55	0	184
Stage 1	-	-	-	-	45
Stage 2	-	-	-	-	139
Critical Hdwy	-	-	4.17	-	6.47
Critical Hdwy Stg 1	-	-	-	-	5.47
Critical Hdwy Stg 2	-	-	-	-	5.47
Follow-up Hdwy	-	-	2.263	-	3.563
Pot Cap-1 Maneuver	-	-	1519	-	794
Stage 1	-	-	-	-	965
Stage 2	-	-	-	-	876
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1500	-	755
Mov Cap-2 Maneuver	-	-	-	-	755
Stage 1	-	-	-	-	953
Stage 2	-	-	-	-	844

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	755	998	-	-	1500	-
HCM Lane V/C Ratio	0.035	0.039	-	-	0.036	-
HCM Control Delay (s)	9.9	8.8	-	-	7.5	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	5	45	51	4	9	27
Future Vol, veh/h	5	45	51	4	9	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	6	56	64	5	11	34

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	69	0	-	0	135
Stage 1	-	-	-	-	67
Stage 2	-	-	-	-	68
Critical Hdwy	4.16	-	-	-	6.46
Critical Hdwy Stg 1	-	-	-	-	5.46
Critical Hdwy Stg 2	-	-	-	-	5.46
Follow-up Hdwy	2.254	-	-	-	3.554
Pot Cap-1 Maneuver	1507	-	-	-	849
Stage 1	-	-	-	-	946
Stage 2	-	-	-	-	945
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1507	-	-	-	846
Mov Cap-2 Maneuver	-	-	-	-	846
Stage 1	-	-	-	-	942
Stage 2	-	-	-	-	945

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1507	-	-	-	946
HCM Lane V/C Ratio	0.004	-	-	-	0.048
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1