MEMO

To: Plainfield Plan Commission

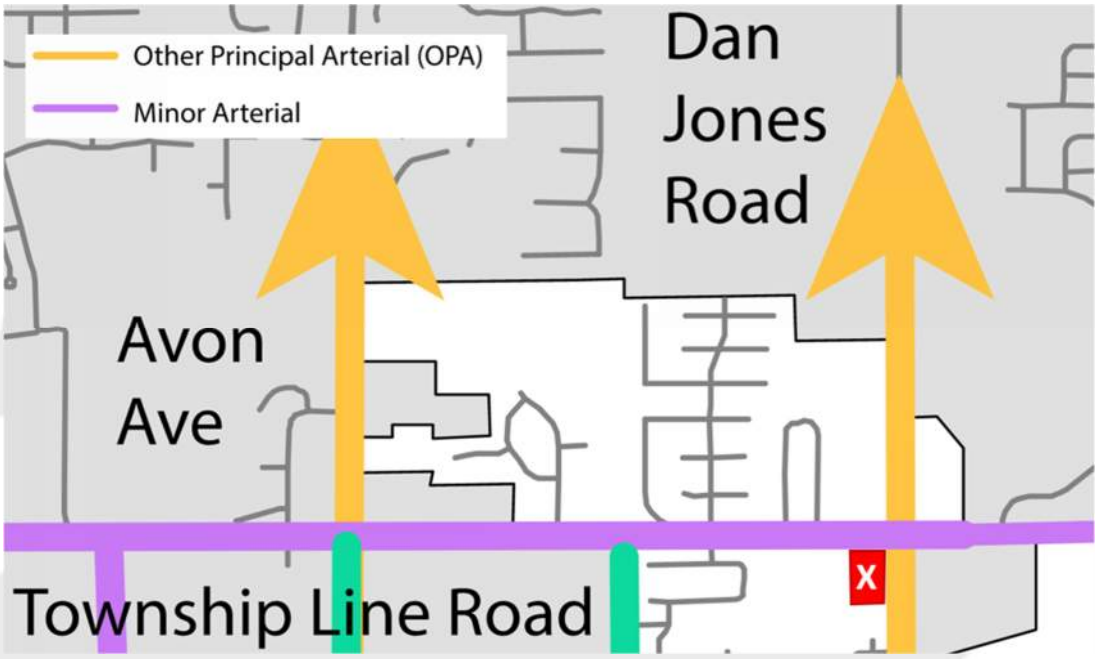
From: Scott Singleton, Director of Transportation

cc: Tim Belcher, Executive Director of Development Services
Andrew Klinger, Town Manager

Date: November 1st, 2023

RE: RZ-23-065; PP-23-065, VAC-23-065, DP-23-065
Transportation Comments on Lakhan Commercial Proposal

The development is proposed at the southwest corner of an intersection between two arterial level roadways. Dan Jones has effectively been constructed to its final, expected 4-lane capacity. Township Line Road still leaves room for future expansion in the years to come. The east approach accommodates the overall 4-lane thru-capacity but narrows to 2-lanes on the westside of the intersection. Given these existing conditions, Staff advised the Petitioner that intersection improvements, though not currently planned, should be expected in the future.



As part of an effort to anticipate the likely future improvements, and how they should be expected to impact the proposed site, the Town Council approved a technical review of the intersection that would forecast the Town's expected growth through the year 2045. The Town contracted Butler, Fairman, & Seufert to complete a traffic study that correlated several past efforts and projected traffic volumes into the intersection that resulted in some high-level recommendations that will be considered the basis for any future improvements. A copy of the BF&S study is attached for the Commission's review.

This effort relates to the proposed Development Plan by providing a level of increased confidence that future intersection improvements can be accomplished without severely hindering the proposed development plan. As you can see from the submitted site plan, there is a significant area near the

intersection that is proposed to be dedicated by this project in order to accommodate the expected future improvements, whether that be a roundabout design or expanded turn lanes.

Relatedly, the land parcels encumbered by the development plan abuts an existing platted right-of-way from Fenter's Green Acres Section1 subdivision that was established in 1955 (highlighted in yellow). Since that time, the dedicated right-of-way was never used for that intended purpose and is no longer viewed to offer beneficial use by the public.

At the request of Staff, the Petitioner has submitted a Letter of Intent indicating its willingness to enter into a land swap agreement with the Town Council. The agreement will dedicate the area described above for the future intersection improvements in exchange for the remnant right-of-way from the Green Acres subdivision, subject to determining any needed utility easements. A copy of the Letter of Intent, filed by Banning Engineering on behalf of the Petitioner, is included for the Commission's consideration.

Determining the accommodations as outlined above were critical in considering the feasibility of providing access to the proposed development plan. The proximity of the development to a major intersection creates traffic concerns that are recommended to be addressed through the addition of concrete center medians constructed along Township Line Road and Dan Jones Road in order to restrict access to the requested driveways for the site. The limits of these medians are conceptually illustrated as part of the Petitioner's initial submission. The medians are expected to limit the access to Township Line Road as a right-in/right-out drive only and the proposed drive-thru to exit southbound only. The proposed driveway at the south limit of the project is proposed to remain full access at this time. Concerns about the proximity of the south drive with the existing drive to the church should be considered, though Staff recognizes they are at least somewhat mitigated by the different land uses and the extra drive available to the church property further south.

Design details such as signing and striping will be better developed as part of the Town's Civil Plan Review. These items are important because they will include signing for 'No U-Turns' at the limits of the median dividers, though history has shown that many drivers will likely ignore these restrictions. Due to site limitations and construction phasing, the Petitioner has been insistent that the north building include a drive-thru window. It is likely that a number of drivers using this service will desire to travel somewhere other than the southbound option provided only, which may result in attempted U-turns on Dan Jones Road. Signing will indicate this as an illegal maneuver.

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This site is not without its challenges due to its proximity to a major intersection and limited ability to derive access sufficiently away from the expected intersection influence area. The end users can have a dramatic effect on the trip intensity that may result from the development and to some degree, should be reflective of the limited access that's being requested.

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Dan Jones Road and Township Line Road Traffic Study

September 11, 2023

Purpose of Study

The purpose of this study is to investigate how potential future intersection improvements at the intersection of Dan Jones Road and Township Line Road may affect development in the southwest corner of the intersection. The town would like to ensure that future development in the southwest parcel would not impede future intersection improvements and that future intersection improvements would not affect the functional operation of development in that quadrant. Future analysis of the intersection will be warranted once the Town of Plainfield decides to move forward with an intersection improvement project.

Previous Study Information Summary

Kimley Horn conducted a traffic impact study for a potential Integrity Learning Center expansion in September 2021. The Kimley Horn study provides horizon traffic volumes at Dan Jones and Township Line Road for the year 2045. This volume relies on model projections from the Indianapolis Metropolitan Planning Organization to predict the 2045 peak hour turning movement volumes. This projection uses projected average daily traffic (ADT) volumes from the MPO and estimates the peak hour volumes using K-values from INDOT's Traffic Count Database System (TCDS). These volumes are distributed between the different movements (left, through, and right) using the same distribution that has been observed in the current intersection counts. SIDRA Intersection software was used to model a roundabout intersection at Dan Jones and Township Line Road. The results indicate that both a two lane and a three lane roundabout will operate at an unsatisfactory LOS in 2045.

A&F Engineering published a traffic impact study for Olthof Homes' proposed residential development in October 2021. The A&F Enginnering Study provides horizon volumes at Dan Jones and Township Line Road for the year 2031. This volume uses a turning movement count taken during a weekday in July 2021 that is grown with a 1% growth rate for 10 years. Additionally, traffic generated from the proposed subdivision development is added to what this report refers to as the background traffic volume. Synchro software was used to model the Dan Jones and Township Line Road intersection in its current configuration. The results indicate that the current intersection configuration will opperate at a satisfactory LOS in 2031 even when considering the additional traffic generated by the subdivision development.

Traffic Projections and Assumptions

In this analysis, INDOT's Traffic Count Database System was used to gather historic traffic volume data from nearby locations to develop an area growth rate. The average of several nearby growth rates from

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between 2018 and 2021 were found to be 2%. Combining this rate with the 2031 A&F projections for the intersection, the 2031 volumes were grown out to the year 2045. Comparatively, these volumes take into account residential development to the east of the Township Line and Dan Jones intersection and are still lower than that of the Kimley Horn study volumes which do not take into account the residential development to the east.

ITE Trip Generation was also used to project peak hour traffic volumes that could be anticipated as a result of the planned development on the southwest corner of Township Line and Dan Jones. It was assumed that this new development produces all new trips and that there would be no overlap in the produced trips and those already anticipated in the turning movement projection.

Using the A&F 2031 projection, grown with a 2% growth rate to 2045, the trips generated as a part of the development were added to the turning movement count projection. These volumes were used in Synchro software to model the existing signalized intersection and Sidra software to model a potential roundabout intersection.

Capacity Analysis

An intersection capacity analysis is performed in order to determine the level of service (LOS). The 2010 Highway Capacity Manual (2010 HCM) provides a detailed set of procedures used to perform the capacity analysis of an intersection. The traffic volumes, number of lanes along each of the intersection's approaches, the traffic control and in the case of signalized intersections, traffic signal timing, are all components used to perform a capacity analysis. The LOS for an intersection is primarily based on the delay (in seconds) that a typical vehicle would experience at the intersection. Table 3 summarizes the range of delays as listed in the 2010 HCM that are associated with each LOS letter for signalized and un-signalized intersections. Un-signalized intersections include one-way stop signs, two-way stop signs, all-way stop signs and roundabout intersections. According to the INDOT Design Manual, a LOS "D" is the minimum required standard, while a LOS "C" is desired.

Table 1 – Level of Service Descriptions for Intersections

Level of Service	Delay Range (Seconds per Vehicle)	
	Signalized	Unsignalized (Stop Control or Roundabout)
A	0-10	0-10
B	>10-20	>10-15
C	>20-35	>15-25
D	>35-55	>25-35
E	>55-80	>35-50
F	>80	>50

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Results

A capacity analysis was performed for the Dan Jones and Township Line intersection using Synchro 11 software. The program provides delay, LOS, volume to capacity ratio, and 95th percentile queue length for each individual intersection. These parameters provide an overview of how the intersection functions. The full results of the analysis can be found in Appendix A. Table 2 provides an operations summary of the existing intersection and Table 3 provides an operations summary of the intersection with added turn lanes.

In a similar manner, Sidra Intersection software was utilized to analyze the operations of a 2 lane roundabout at this intersection. The program provides the same parameters for a study intersection and are shown in Table 4.

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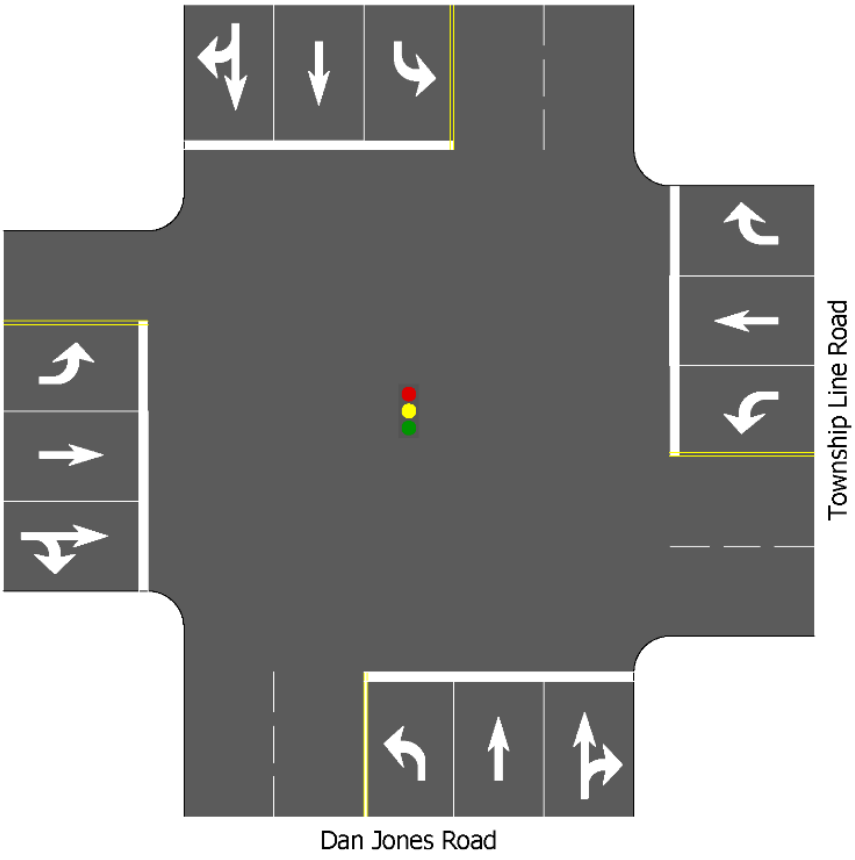

Figure 1 – Dan Jones and Township Line Existing Lane Configuration

Table 2 – Existing Lane Configuration 2045 PM Peak Results

Approach	Average Delay (sec/veh)	LOS	v/c	95th % Queue (LFT)
Eastbound	34.4	C	0.66	253
Westbound	43.1	D	0.95	979
Northbound	44.6	D	0.91	679
Southbound	54.8	D	0.95	1286

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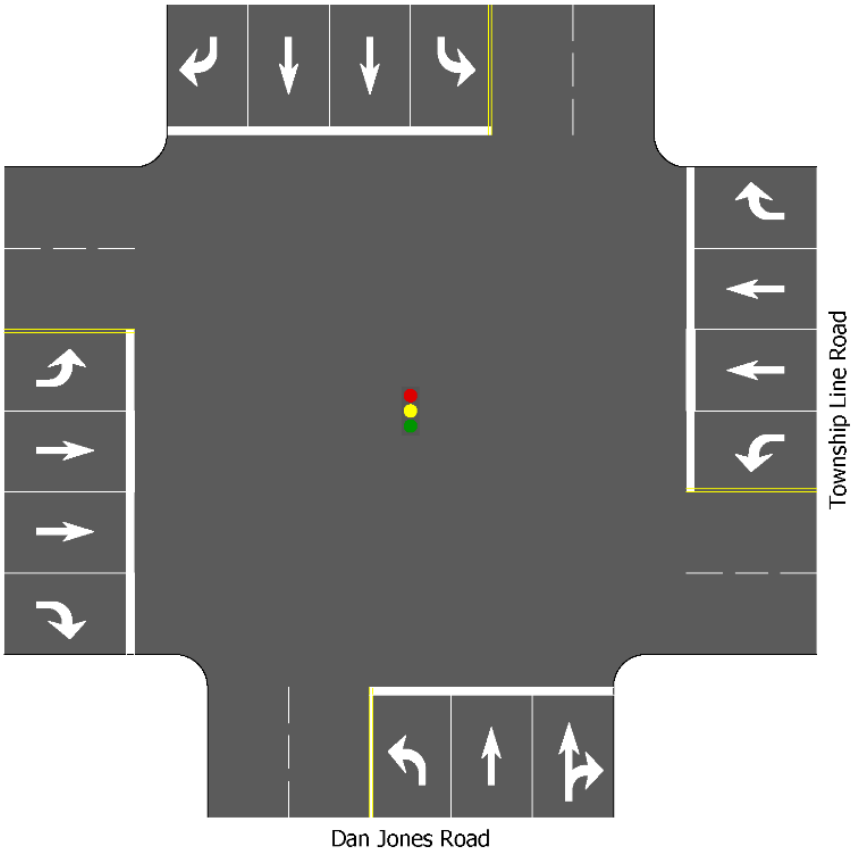

Figure 2 – Dan Jones and Township Line Added Lane Configuration

Table 3 – Intersection Added Lanes 2045 PM Peak Results

Approach	Average Delay (sec/veh)	LOS	v/c	95th % Queue (LFT)
Eastbound	25.0	C	0.46	139
Westbound	30.6	C	0.76	488
Northbound	30.2	C	0.83	847
Southbound	23.8	C	0.75	346

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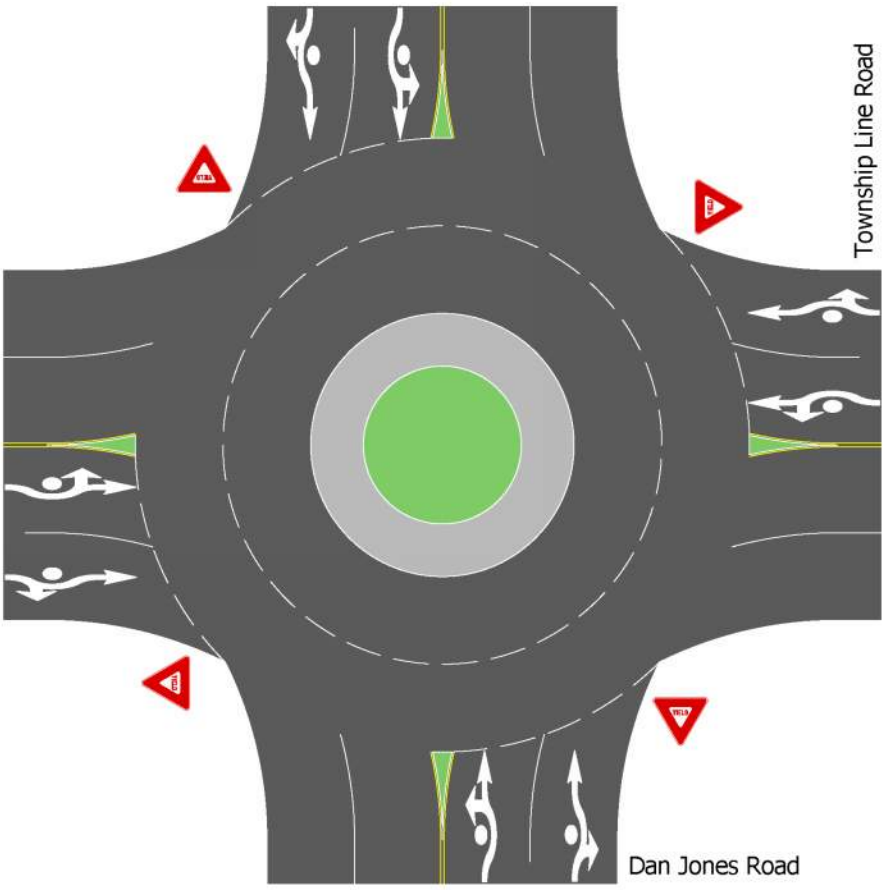

Figure 3 – Dan Jones and Township Line 2 Lane Roundabout Configuration

Table 4 – 2 Lane Roundabout 2045 PM Peak Results

Approach	Average Delay (sec/veh)	LOS	v/c	95th % Queue (LFT)
Eastbound	10.1	B	0.53	93
Westbound	14.5	B	0.80	199
Northbound	9.5	A	0.72	173
Southbound	22.7	C	0.93	361

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Conclusion

In order to best accommodate the projected 2045 volumes, a two lane roundabout at the Dan Jones Road and Township Line Road intersection is recommended.

However, a signalized intersection with additional lanes as shown in Figure 2 will operate at a satisfactory level of service in the design year 2045. The existing intersection configuration has approaches that operate with a volume-to-capacity (v/c) of greater than 0.90. This indicates that these approaches are operating at or near their capacity in the 2045 design year. Additionally, the intersection shows lengthy queues in both the westbound and southbound directions. These queues are shortened significantly with the introduction of dedicated right turn lanes in the eastbound and southbound approaches as well as a second westbound through lane and subsequent receiving lane. However, even with these improvements, the northbound queue length is still projected to reach nearly 850 feet during the worst 15-30 minutes of the PM peak hour. For comparison, the roundabout intersection will operate with significantly shorter queue lengths that will not exceed 370 feet during the PM peak of 2045.

In addition to how each intersection layout operates, it is important to acknowledge the effects of future developments in the southwest quadrant. The proposed placement of a future development as shown in Appendix A, appears to accommodate both an intersection with added lanes and a two-lane roundabout within the available right of way. Additionally, the restriction of left turn entrances into this parcel ensures that these intersection improvements would not affect the operation of traffic entering and exiting the development. This allows the Town to maintain flexibility as to what improvements can be made to the intersection in the future.

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Appendix A: Traffic Data and Results

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1. Peak Hour Turning Movement Counts

2031 Housing Development Volumes (2031 A&F Study Projection)

	Location			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
9	Dan Jones Rd & Township Line Rd	AM Peak	Volume	62	253	166	116	97	107	61	372	78	99	350	44
			HV %												
		PM Peak	Volume	67	197	125	165	366	177	199	546	177	160	604	103
			HV %												

20 yr Housing Development Projection (2031 A&F Study Projection + 14 yr standard 2% growth rate)

	Location			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
10	Dan Jones Rd & Township Line Rd	AM Peak	Volume	82	334	219	153	128	141	80	491	103	131	462	58
			HV %												
		PM Peak	Volume	88	260	165	218	483	234	263	720	234	211	797	136
			HV %												

New Development Trip Generation

	Location			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
12	Dan Jones Rd & Township Line Rd	AM Peak	Volume		46		48			37	37			38	
			HV %												
		PM Peak	Volume		32		33			26	26			27	
			HV %												

2045 Housing Development Projection + New Development Trip Gen (2% GR)

	Location			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
14	Dan Jones Rd & Township Line Rd	AM Peak	Volume	82	380	219	201	128	141	118	528	103	131	500	58
					681			470			749			689	
		PM Peak	Volume	88	292	165	251	483	234	288	746	234	211	824	136
					545			968			1268			1171	

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2. New Development Trip Generation

AM Peak - weekday, peak hour, one hour between 7 & 9

Area	ITE Code	Category	X (Units)	X	% Entering	% Exiting	R^2	Avg. Rate	Fitted Curve: ln(T) = m*ln(X) + b m	Fitted Curve: ln(T) = m*ln(X) + b b	Fitted Curve: T = m*X + b m	Fitted Curve: T = m*X + b b	T (Total Trips)	Entry	Exit
1	937	Coffee/Donut Shop with Drive-Through Window	1000 Sq. Ft. GFA	2.5	51%	49%		85.88					215	109	105
2	930	Fast Casual Restaurant	1000 Sq. Ft. GFA	2.5	50%	50%		1.43					4	2	2
3	876	Apparel Store	1000 Sq. Ft. GFA	2.5	80%	20%		1.00					3	2	1
4	851	Convenience Store	1000 Sq. Ft. GFA	2.5	50%	50%		62.54					156	78	78
5													0	0	0
6													0	0	0
7													0	0	0
8													0	0	0
9													0	0	0
10													0	0	0

PM Peak - weekday, peak hour, one hour between 4 & 6

Area	ITE Code	Category	X (Units)	X	% Entering	% Exiting	R^2	Avg. Rate	Fitted Curve: ln(T) = m*ln(X) + b m	Fitted Curve: ln(T) = m*ln(X) + b b	Fitted Curve: T = m*X + b m	Fitted Curve: T = m*X + b b	T (Total Trips)	Entry	Exit
1	937	Coffee/Donut Shop with Drive-Through Window	1000 Sq. Ft. GFA	2.5	50%	50%		38.99					97	49	49
2	930	Fast Casual Restaurant	1000 Sq. Ft. GFA	2.5	55%	45%	0.65	12.55			17.96	15.94	31	17	14
3	876	Apparel Store	1000 Sq. Ft. GFA	2.5	51%	49%		4.12					10	5	5
4	851	Convenience Store	1000 Sq. Ft. GFA	2.5	51%	49%		49.11					123	63	60
5													0	0	0
6													0	0	0
7													0	0	0
8													0	0	0
9													0	0	0
10													0	0	0

Note: If R^2 is greater than 0.90, then the fitted curve equation is used to calculate total trips. Otherwise, the average rate is used. ITE Trip Generation uses two different kinds of fitted curves (logarithmic and linear) depending on the scenario. Make special note that the fitted curve for each scenario is entered in the correct column and the fitted curve not used in that row is empty. ITE Trip Gen will only provide one fitted curve type per scenario.

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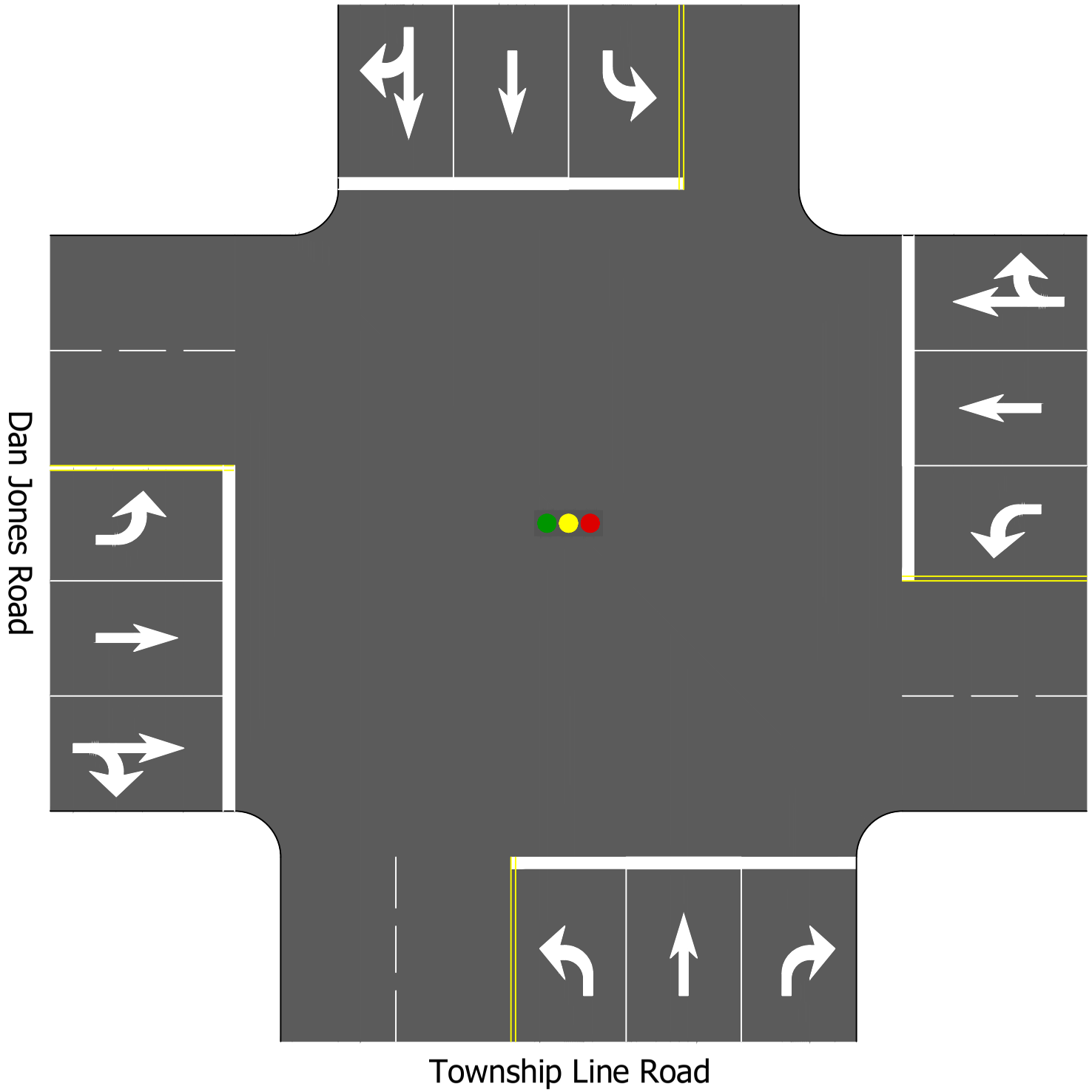
3. Existing Lane Configuration


Dan Jones Road
Township Line Road

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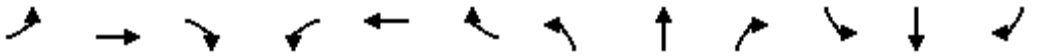
4. Existing Intersection 2045 Results



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	380	219	201	128	141	118	528	103	131	500	58
Future Volume (veh/h)	82	380	219	201	128	141	118	528	103	131	500	58
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	413	238	218	139	153	128	574	112	142	543	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	455	524	299	323	498	422	379	890	173	356	984	114
Arrive On Green	0.06	0.24	0.24	0.09	0.27	0.27	0.07	0.30	0.30	0.08	0.31	0.31
Sat Flow, veh/h	1781	2180	1243	1781	1870	1585	1781	2966	577	1781	3209	371
Grp Volume(v), veh/h	89	336	315	218	139	153	128	343	343	142	300	306
Grp Sat Flow(s),veh/h/ln	1781	1777	1647	1781	1870	1585	1781	1777	1766	1781	1777	1804
Q Serve(g_s), s	2.3	10.9	11.1	5.5	3.6	4.8	3.0	10.3	10.4	3.3	8.7	8.7
Cycle Q Clear(g_c), s	2.3	10.9	11.1	5.5	3.6	4.8	3.0	10.3	10.4	3.3	8.7	8.7
Prop In Lane	1.00		0.75	1.00		1.00	1.00		0.33	1.00		0.21
Lane Grp Cap(c), veh/h	455	427	396	323	498	422	379	533	530	356	545	553
V/C Ratio(X)	0.20	0.79	0.80	0.68	0.28	0.36	0.34	0.64	0.65	0.40	0.55	0.55
Avail Cap(c_a), veh/h	486	518	480	323	561	475	395	533	530	360	545	553
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	21.9	22.0	17.6	17.9	18.4	13.8	18.7	18.8	14.0	17.8	17.9
Incr Delay (d2), s/veh	0.2	6.5	7.6	5.5	0.3	0.5	0.5	5.9	6.0	0.7	4.0	4.0
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(50%),veh/ln	0.8	4.9	4.7	2.6	1.5	1.7	1.1	4.6	4.7	1.2	3.8	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.0	28.4	29.6	23.1	18.2	18.9	14.3	24.6	24.8	14.7	21.8	21.8
LnGrp LOS	B	C	C	C	B	B	B	C	C	B	C	C
Approach Vol, veh/h		740			510			814			748	
Approach Delay, s/veh		27.4			20.5			23.1			20.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	23.0	10.0	19.3	8.9	23.4	8.4	20.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.5	18.0	5.0	18.5	5.0	18.5
Max Q Clear Time (g_c+I1), s	5.3	12.4	7.5	13.1	5.0	10.7	4.3	6.8
Green Ext Time (p_c), s	0.0	2.1	0.0	1.7	0.0	2.2	0.0	0.9

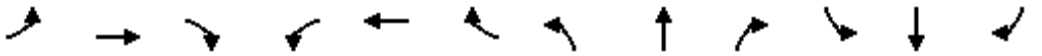
Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Intersection: 3: Dan Jones Road & Township Line Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	95	221	221	141	112	170	98	200	167	158	166	153
Average Queue (ft)	40	120	129	87	57	51	61	116	103	62	104	83
95th Queue (ft)	83	182	198	138	101	100	95	173	151	117	156	136
Link Distance (ft)		1171	1171		1606	1606		1164	1164		1112	1112
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	115			215			375			275		
Storage Blk Time (%)		7										
Queuing Penalty (veh)		6										

Network Summary

Network wide Queuing Penalty: 6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	292	165	251	483	234	288	746	234	211	824	136
Future Volume (veh/h)	88	292	165	251	483	234	288	746	234	211	824	136
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	317	179	273	525	254	313	811	254	229	896	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	493	272	388	551	467	342	932	292	291	939	155
Arrive On Green	0.06	0.22	0.22	0.13	0.29	0.29	0.14	0.35	0.35	0.10	0.31	0.31
Sat Flow, veh/h	1781	2209	1219	1781	1870	1585	1781	2663	834	1781	3052	504
Grp Volume(v), veh/h	96	254	242	273	525	254	313	541	524	229	522	522
Grp Sat Flow(s),veh/h/ln	1781	1777	1651	1781	1870	1585	1781	1777	1720	1781	1777	1780
Q Serve(g_s), s	3.7	11.6	12.0	10.2	24.8	12.1	10.9	25.6	25.6	7.9	25.9	25.9
Cycle Q Clear(g_c), s	3.7	11.6	12.0	10.2	24.8	12.1	10.9	25.6	25.6	7.9	25.9	25.9
Prop In Lane	1.00		0.74	1.00		1.00	1.00		0.48	1.00		0.28
Lane Grp Cap(c), veh/h	194	397	369	388	551	467	342	622	602	291	547	548
V/C Ratio(X)	0.49	0.64	0.66	0.70	0.95	0.54	0.91	0.87	0.87	0.79	0.95	0.95
Avail Cap(c_a), veh/h	194	397	369	388	551	467	342	622	602	291	547	548
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	31.7	31.8	22.4	31.1	26.7	22.2	27.3	27.3	22.0	30.5	30.5
Incr Delay (d2), s/veh	1.9	3.4	4.2	5.6	27.0	1.3	28.2	15.3	15.8	13.4	28.6	28.6
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(50%),veh/ln	1.6	5.2	5.1	4.6	14.7	4.6	6.9	12.9	12.5	4.1	14.8	14.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	35.1	36.0	28.1	58.2	28.0	50.4	42.7	43.1	35.4	59.1	59.1
LnGrp LOS	C	D	D	C	E	C	D	D	D	D	E	E
Approach Vol, veh/h		592			1052			1378			1273	
Approach Delay, s/veh		34.4			43.1			44.6			54.8	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	36.0	16.0	24.6	17.2	32.2	9.6	31.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.9	31.5	11.5	20.1	12.7	27.7	5.1	26.5
Max Q Clear Time (g_c+I1), s	9.9	27.6	12.2	14.0	12.9	27.9	5.7	26.8
Green Ext Time (p_c), s	0.0	2.3	0.0	1.5	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	45.9
HCM 6th LOS	D

Intersection: 3: Dan Jones Road & Township Line Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	214	288	280	315	1262	1214	475	727	653	375	1164	1164
Average Queue (ft)	119	145	153	262	498	173	431	442	308	353	833	817
95th Queue (ft)	212	245	253	388	979	679	518	679	532	472	1286	1268
Link Distance (ft)		1171	1171		1606	1606		1164	1164		1112	1112
Upstream Blk Time (%)											28	26
Queuing Penalty (veh)											0	0
Storage Bay Dist (ft)	115			215			375			275		
Storage Blk Time (%)	27	14		14	44		59	0		6	72	
Queuing Penalty (veh)	43	14		74	119		238	1		25	164	

Network Summary

Network wide Queuing Penalty: 677

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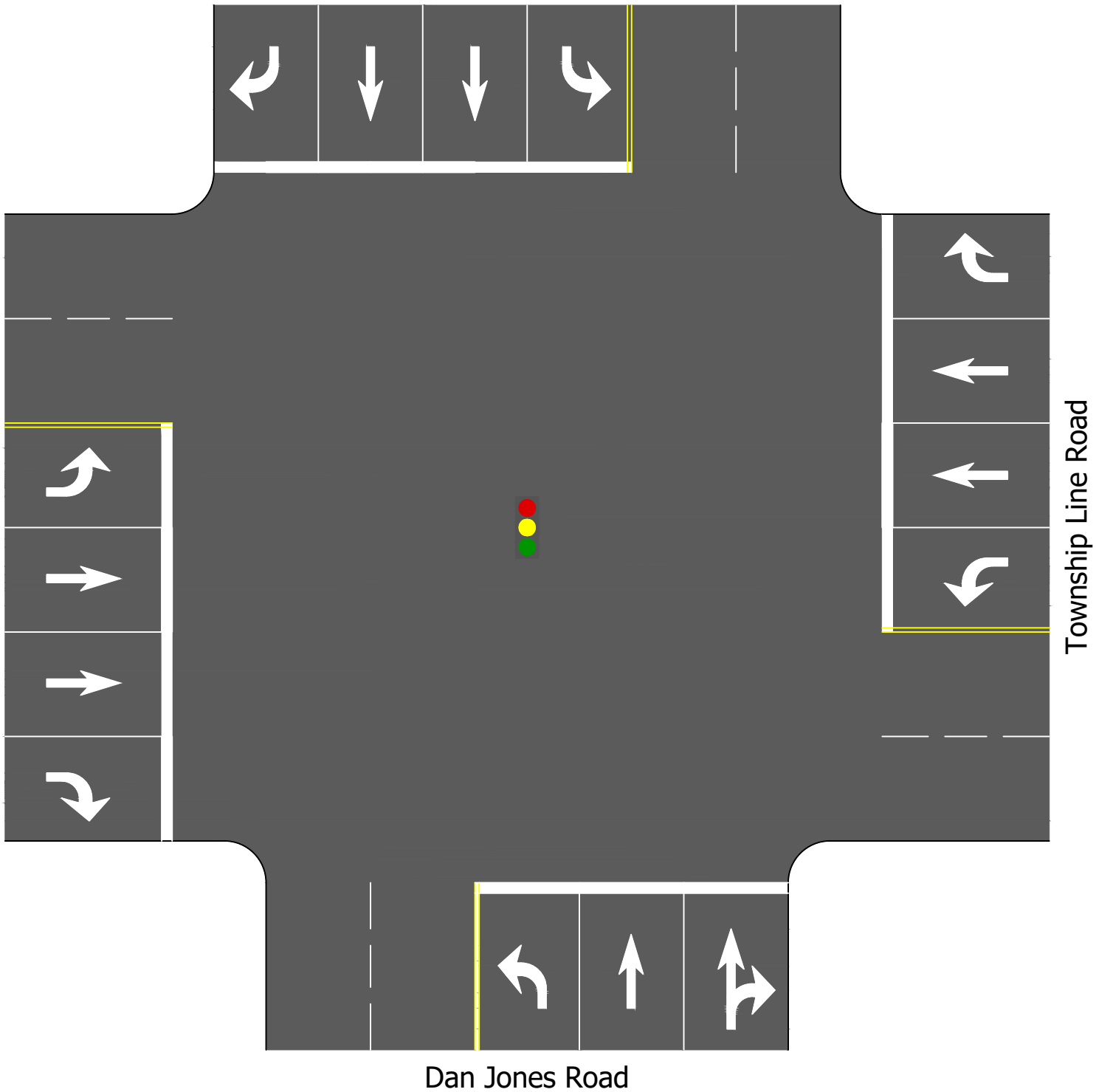
5. Added Lanes Intersection Configuration


Township Line Road
Dan Jones Road

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317.713.4615
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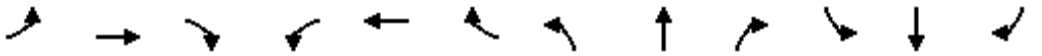
6. Added Lanes 2045 Results



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	380	219	201	128	141	118	528	103	131	500	58
Future Volume (veh/h)	82	380	219	201	128	141	118	528	103	131	500	58
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	413	0	218	139	153	128	574	112	142	543	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	625		380	760	339	428	952	185	388	1149	513
Arrive On Green	0.07	0.18	0.00	0.10	0.21	0.21	0.08	0.32	0.32	0.08	0.32	0.32
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	2966	577	1781	3554	1585
Grp Volume(v), veh/h	89	413	0	218	139	153	128	343	343	142	543	63
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1766	1781	1777	1585
Q Serve(g_s), s	2.2	6.1	0.0	5.7	1.8	4.7	2.6	9.2	9.2	2.9	6.9	1.6
Cycle Q Clear(g_c), s	2.2	6.1	0.0	5.7	1.8	4.7	2.6	9.2	9.2	2.9	6.9	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	438	625		380	760	339	428	571	567	388	1149	513
V/C Ratio(X)	0.20	0.66		0.57	0.18	0.45	0.30	0.60	0.60	0.37	0.47	0.12
Avail Cap(c_a), veh/h	477	1135		380	1192	531	450	571	567	405	1149	513
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	21.7	0.0	17.1	18.1	19.3	11.5	16.1	16.1	11.9	15.2	13.4
Incr Delay (d2), s/veh	0.2	1.2	0.0	2.1	0.1	0.9	0.4	4.6	4.7	0.6	1.4	0.5
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(50%),veh/ln	0.8	2.4	0.0	2.2	0.7	1.6	0.9	3.9	3.9	1.0	2.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	22.9	0.0	19.2	18.2	20.2	11.9	20.7	20.8	12.5	16.6	13.9
LnGrp LOS	B	C		B	B	C	B	C	C	B	B	B
Approach Vol, veh/h		502			510			814			748	
Approach Delay, s/veh		21.9			19.2			19.4			15.6	
Approach LOS		C			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	22.6	10.4	14.4	8.8	22.7	8.3	16.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.1	5.9	18.0	5.0	18.1	5.0	18.9
Max Q Clear Time (g_c+I1), s	4.9	11.2	7.7	8.1	4.6	8.9	4.2	6.7
Green Ext Time (p_c), s	0.0	2.3	0.0	1.8	0.0	2.5	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection: 3: Dan Jones Road & Township Line Road

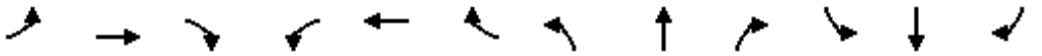
Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (ft)	77	168	124	114	200	71	71	92	140	185	221	90
Average Queue (ft)	35	101	55	13	98	35	30	40	58	123	96	45
95th Queue (ft)	64	162	101	63	183	65	65	66	108	182	167	76
Link Distance (ft)		1160	1160			1606	1606			1165	1165	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	115			115	215			215	375			275
Storage Blk Time (%)		3	0	0	0							
Queuing Penalty (veh)		3	0	0	0							

Intersection: 3: Dan Jones Road & Township Line Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	170	142	56
Average Queue (ft)	105	59	13
95th Queue (ft)	149	108	33
Link Distance (ft)	1100	1100	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			200
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	292	165	251	483	234	288	746	234	211	824	136
Future Volume (veh/h)	88	292	165	251	483	234	288	746	234	211	824	136
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	317	0	273	525	254	313	811	254	229	896	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	682		361	745	332	412	974	305	343	1187	529
Arrive On Green	0.06	0.19	0.00	0.08	0.21	0.21	0.14	0.37	0.37	0.11	0.33	0.33
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	2663	834	1781	3554	1585
Grp Volume(v), veh/h	96	317	0	273	525	254	313	541	524	229	896	148
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1720	1781	1777	1585
Q Serve(g_s), s	3.0	5.6	0.0	5.5	9.7	10.6	7.9	19.6	19.6	5.8	15.8	4.8
Cycle Q Clear(g_c), s	3.0	5.6	0.0	5.5	9.7	10.6	7.9	19.6	19.6	5.8	15.8	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	260	682		361	745	332	412	650	629	343	1187	529
V/C Ratio(X)	0.37	0.46		0.76	0.70	0.76	0.76	0.83	0.83	0.67	0.75	0.28
Avail Cap(c_a), veh/h	281	907		361	927	414	426	650	629	343	1187	529
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	25.3	0.0	25.2	25.8	26.2	15.0	20.4	20.4	15.8	20.9	17.3
Incr Delay (d2), s/veh	0.9	0.5	0.0	8.9	1.8	6.5	7.5	11.9	12.3	4.9	4.5	1.3
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(50%),veh/ln	1.2	2.3	0.0	2.5	4.0	4.3	3.6	9.4	9.2	2.5	6.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	25.8	0.0	34.1	27.7	32.8	22.5	32.3	32.7	20.7	25.4	18.6
LnGrp LOS	C	C		C	C	C	C	C	C	C	C	B
Approach Vol, veh/h		413			1052			1378			1273	
Approach Delay, s/veh		25.0			30.6			30.2			23.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	30.3	10.0	18.0	14.4	28.1	8.7	19.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.7	25.8	5.5	18.0	10.5	23.0	5.1	18.4
Max Q Clear Time (g_c+I1), s	7.8	21.6	7.5	7.6	9.9	17.8	5.0	12.6
Green Ext Time (p_c), s	0.0	2.5	0.0	1.4	0.1	2.8	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection: 3: Dan Jones Road & Township Line Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	TR	L
Maximum Queue (ft)	181	142	144	91	315	506	470	133	475	840	806	344
Average Queue (ft)	60	86	48	17	235	254	183	61	359	429	377	121
95th Queue (ft)	134	139	98	60	362	488	396	106	583	847	716	240
Link Distance (ft)		1160	1160			1606	1606			1165	1165	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	115			115	215			215	375			275
Storage Blk Time (%)	9	2	1		47	1	0		49	1		0
Queuing Penalty (veh)	15	2	1		122	1	0		197	3		0

Intersection: 3: Dan Jones Road & Township Line Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	381	390	299
Average Queue (ft)	238	230	47
95th Queue (ft)	346	341	131
Link Distance (ft)	1100	1100	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			200
Storage Blk Time (%)	5	18	
Queuing Penalty (veh)	12	27	

Network Summary

Network wide Queuing Penalty: 381

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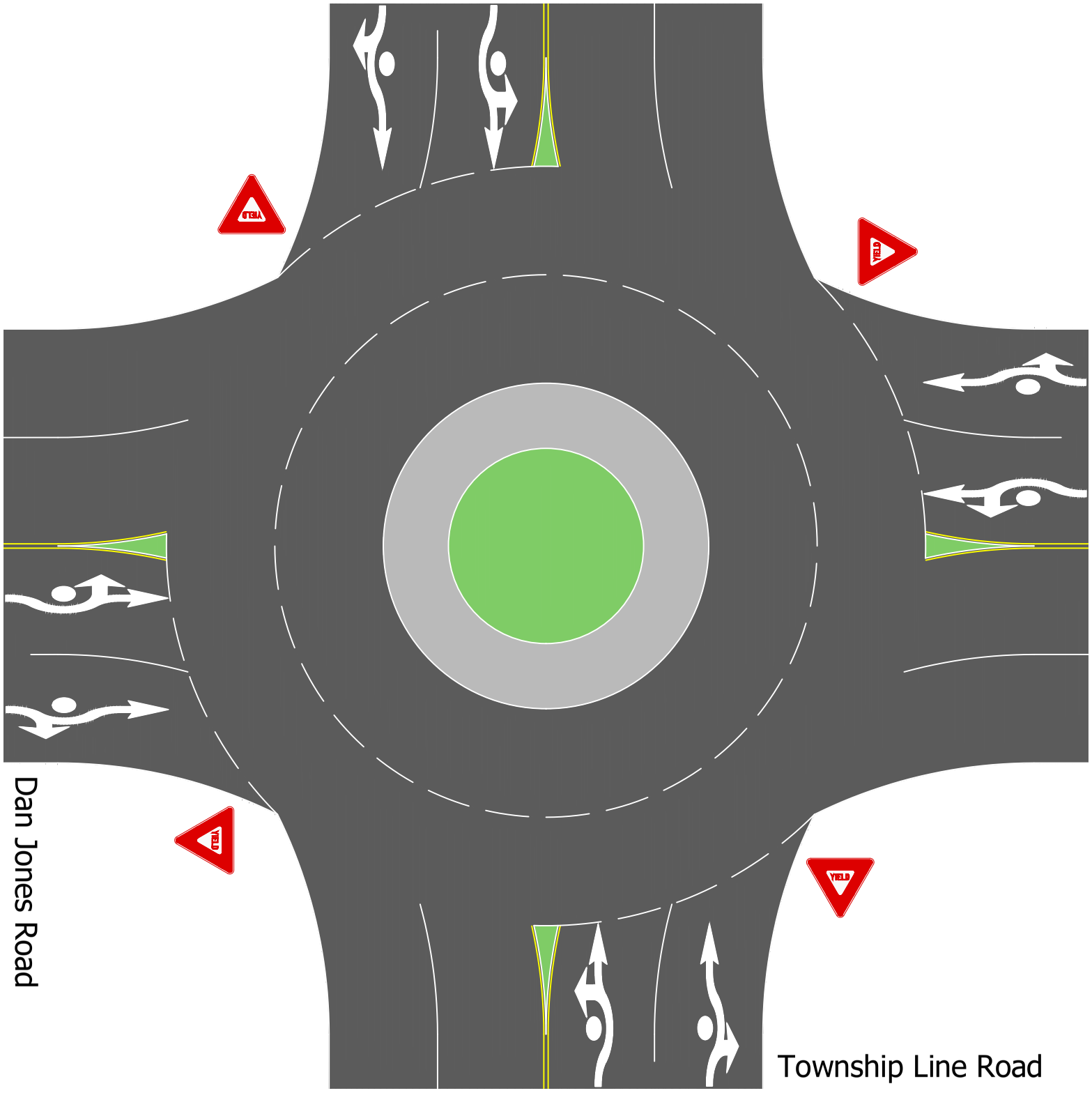
7. 2 Lane Roundabout Configuration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YIELD
Dan Jones Road
Township Line Road

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8. 2 Lane Roundabout Results

LANE SUMMARY

Site: 101 [2045 AM Peak (A&F Study + 2% GR + Development) (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Dan Jones Road													
Lane 1	403	3.0	778	0.518	100	8.8	LOS A	3.2	82.4	Full	1600	0.0	0.0
Lane 2[d]	411	3.0	793	0.518	100	7.0	LOS A	3.2	82.8	Full	1600	0.0	0.0
Approach	814	3.0		0.518		7.9	LOS A	3.2	82.8				
East: Township Line Road													
Lane 1	250	3.0	707	0.354	100	11.1	LOS B	1.7	43.3	Full	1600	0.0	0.0
Lane 2[d]	261	3.0	735	0.354	100	6.1	LOS A	1.7	43.6	Full	1600	0.0	0.0
Approach	511	3.0		0.354		8.6	LOS A	1.7	43.6				
North: Dan Jones Road													
Lane 1	374	3.0	885	0.423	100	7.5	LOS A	2.2	56.5	Full	1600	0.0	0.0
Lane 2[d]	374	3.0	885	0.423	100	5.4	LOS A	2.2	56.5	Full	1600	0.0	0.0
Approach	749	3.0		0.423		6.4	LOS A	2.2	56.5				
West: Township Line Road													
Lane 1	360	3.0	673	0.534	100	9.7	LOS A	3.1	80.4	Full	1600	0.0	0.0
Lane 2[d]	381	3.0	712	0.534	100	8.2	LOS A	3.2	81.7	Full	1600	0.0	0.0
Approach	740	3.0		0.534		8.9	LOS A	3.2	81.7				
Intersection	2814	3.0		0.534		7.9	LOS A	3.2	82.8				

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
South: Dan Jones Road										
Lane 1	128	275	-	403	3.0	778	0.518	100	NA	NA
Lane 2	-	299	112	411	3.0	793	0.518	100	NA	NA
Approach	128	574	112	814	3.0		0.518			
East: Township Line Road										

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	218	32	-	250	3.0	707	0.354	100	NA	NA
Lane 2	-	107	153	261	3.0	735	0.354	100	NA	NA
Approach	218	139	153	511	3.0		0.354			
North: Dan Jones Road										
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	142	232	-	374	3.0	885	0.423	100	NA	NA
Lane 2	-	311	63	374	3.0	885	0.423	100	NA	NA
Approach	142	543	63	749	3.0		0.423			
West: Township Line Road										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	89	271	-	360	3.0	673	0.534	100	NA	NA
Lane 2	-	142	238	381	3.0	712	0.534	100	NA	NA
Approach	89	413	238	740	3.0		0.534			

	Total	%HV	Deg.Satn (v/c)
Intersection	2814	3.0	0.534

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Dan Jones Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Township Line Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
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Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Township Line Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

LANE SUMMARY

Site: 101 [2045 PM Peak (A&F Study + 2% GR + Development) (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Dan Jones Road													
Lane 1	630	3.0	874	0.721	100	11.5	LOS B	6.4	164.3	Full	1600	0.0	0.0
Lane 2[d]	748	3.0	1038	0.721	100	7.8	LOS A	6.8	172.9	Full	1600	0.0	0.0
Approach	1378	3.0		0.721		9.5	LOS A	6.8	172.9				
East: Township Line Road													
Lane 1	455	3.0	567	0.803	100	17.6	LOS B	6.8	175.0	Full	1600	0.0	0.0
Lane 2[d]	597	3.0	744	0.803	100	12.1	LOS B	7.8	198.8	Full	1600	0.0	0.0
Approach	1052	3.0		0.803		14.5	LOS B	7.8	198.8				
North: Dan Jones Road													
Lane 1	557	3.0	602	0.925	100	25.7	LOS D	12.3	313.8	Full	1600	0.0	0.0
Lane 2[d]	716	3.0	774	0.925	100	20.4	LOS D	14.1	361.3	Full	1600	0.0	0.0
Approach	1273	3.0		0.925		22.7	LOS C	14.1	361.3				
West: Township Line Road													
Lane 1	252	3.0	474	0.531	100	12.1	LOS B	3.2	81.6	Full	1600	0.0	0.0
Lane 2[d]	341	3.0	641	0.531	100	8.7	LOS A	3.6	92.9	Full	1600	0.0	0.0
Approach	592	3.0		0.531		10.1	LOS B	3.6	92.9				
Intersection	4296	3.0		0.925		14.7	LOS B	14.1	361.3				

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
South: Dan Jones Road										
Lane 1	313	317	-	630	3.0	874	0.721	100	NA	NA
Lane 2	-	494	254	748	3.0	1038	0.721	100	NA	NA
Approach	313	811	254	1378	3.0		0.721			
East: Township Line Road										

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	273	182	-	455	3.0	567	0.803	100	NA	NA
Lane 2	-	343	254	597	3.0	744	0.803	100	NA	NA
Approach	273	525	254	1052	3.0		0.803			
North: Dan Jones Road										
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	229	328	-	557	3.0	602	0.925	100	NA	NA
Lane 2	-	568	148	716	3.0	774	0.925	100	NA	NA
Approach	229	896	148	1273	3.0		0.925			
West: Township Line Road										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	96	156	-	252	3.0	474	0.531	100	NA	NA
Lane 2	-	161	179	341	3.0	641	0.531	100	NA	NA
Approach	96	317	179	592	3.0		0.531			
	Total	%HV	Deg.Satn (v/c)							
Intersection	4296	3.0		0.925						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
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West Exit: Township Line Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

8450 Westfield Blvd, Suite 300
Indianapolis, IN 46240
317.713.4615
bfsengr.com

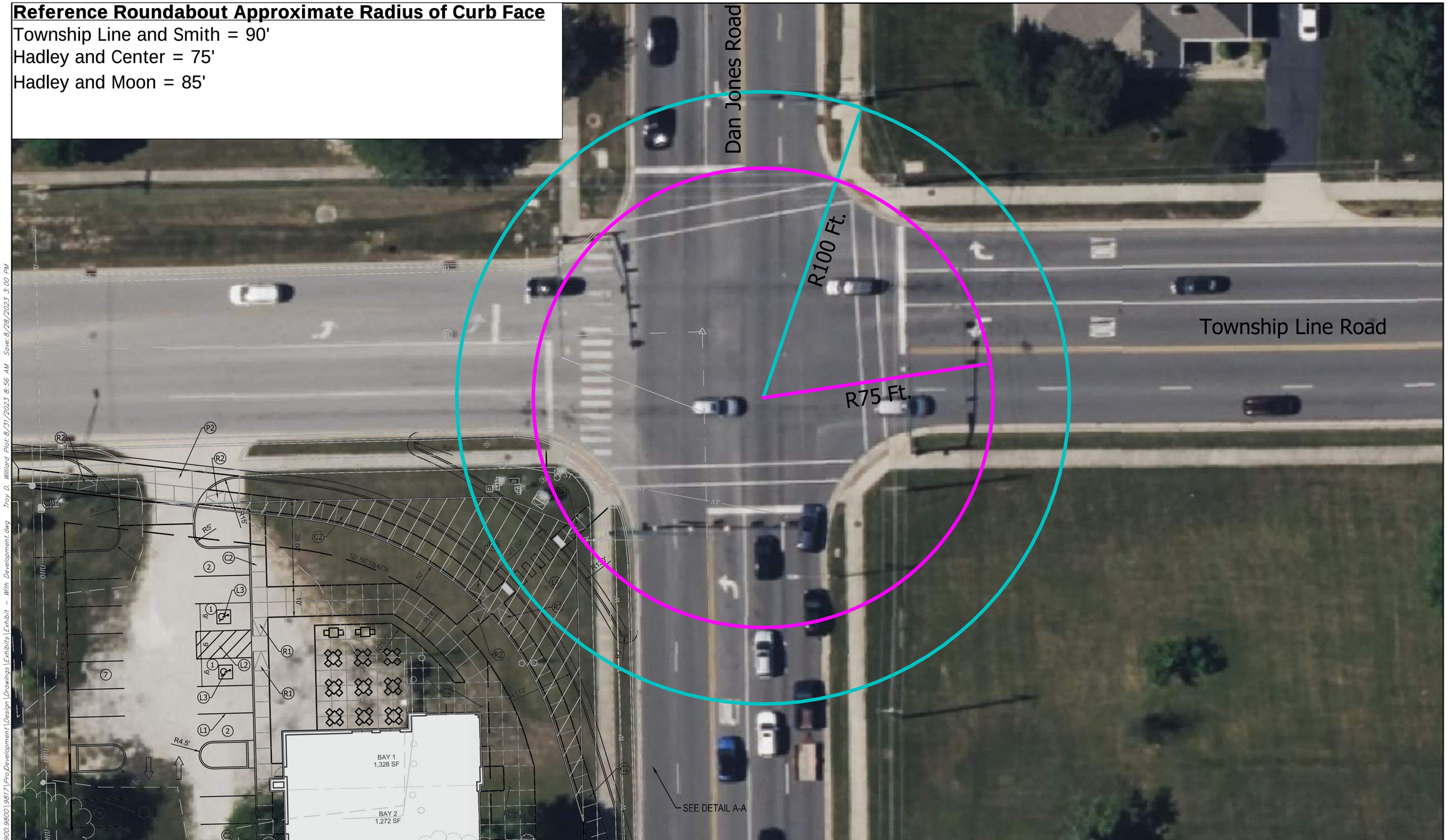
9. Current Proposed Site Plan Impacts

Reference Roundabout Approximate Radius of Curb Face

Township Line and Smith = 90'

Hadley and Center = 75'

Hadley and Moon = 85'



RECOMMENDED FOR APPROVAL: _____ DESIGN ENGINEER DATE	DAN JONES ROAD AND TOWNSHIP LINE ROAD ANTICIPATED DEVELOPMENT FOOTPRINT TOWN OF PLAINFIELD INDIANA	HORIZONTAL SCALE	BRIDGE FILE
		VERTICAL SCALE	DESIGNATION
DESIGNED: _____ DRAWN: _____ CHECKED: _____ CHECKED: _____		SURVEY BOOK	SHEET OF
		CONTRACT	PROJECT

Headquarters
8450 WESTFIELD BLVD., SUITE 300
INDIANAPOLIS, IN. 46240-8302
TEL 317-713-4615
FAX 317-713-4616
www.BFSEngr.com

BF&S CIVIL ENGINEERS

Branch Locations
FORT WAYNE 260-459-1532
LOUISVILLE 502-593-1996
LAFAYETTE 765-423-5602
MERRILLVILLE 219-769-2333
PLAINFIELD 317-839-3242
SOUTH BEND 574-288-5727

BFS NO.

BANNING ENGINEERING

853 Columbia Road, Suite 101, Plainfield, IN 46168
Phone: (317) 707-3700 | Fax: (317) 707-3800

September 15, 2023

Plainfield Town Council
206 W. Main Street
Plainfield, IN. 46168

Re: Letter of Intent
Lakhan Neighborhood Retail
SWC of Dan Jones and Township Line Road

Dear Council,

The Town of Plainfield has indicated that a right-of-way grant of approximately 0.068 acres in size off the northeast corner of the property located at the southwest corner of the intersection of Dan Jones Road and Township Line Road, owned by the petitioner and a part of his proposed neighborhood retail development would be of future need to the Town for creation of roadway improvements at the intersection. The area of right-of-way need is shown on Exhibit A.

The Town currently owns a parcel of approximately 0.21 acres in size immediately adjacent to the south end of the project and currently shown as being included within and being developed as a part of the project as shown on Exhibit B.

It is the intent of the developer, Sandeep Lakhan to convey the necessary right-of-way shown on Exhibit A to the Town of Plainfield in exchange for the parcel shown on Exhibit B.

This conveyance of property would be contingent upon approval of the proposed project and granting of easement on utility lines which may be located within the Town owned parcel.

Respectfully,

Steven A. Brehob
Representative for the Petitioner – Sandeep Lakhan

EXHIBIT A

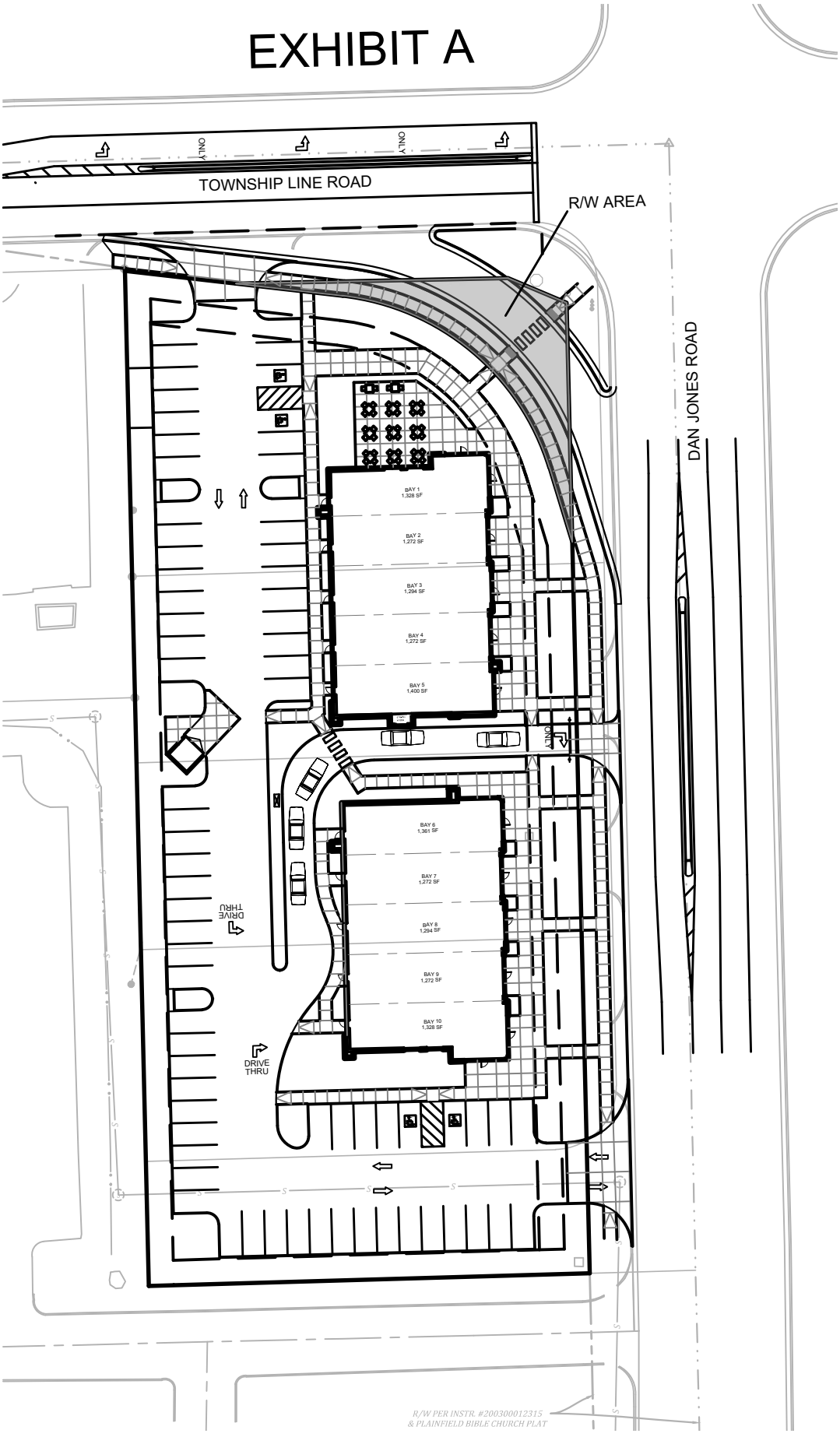
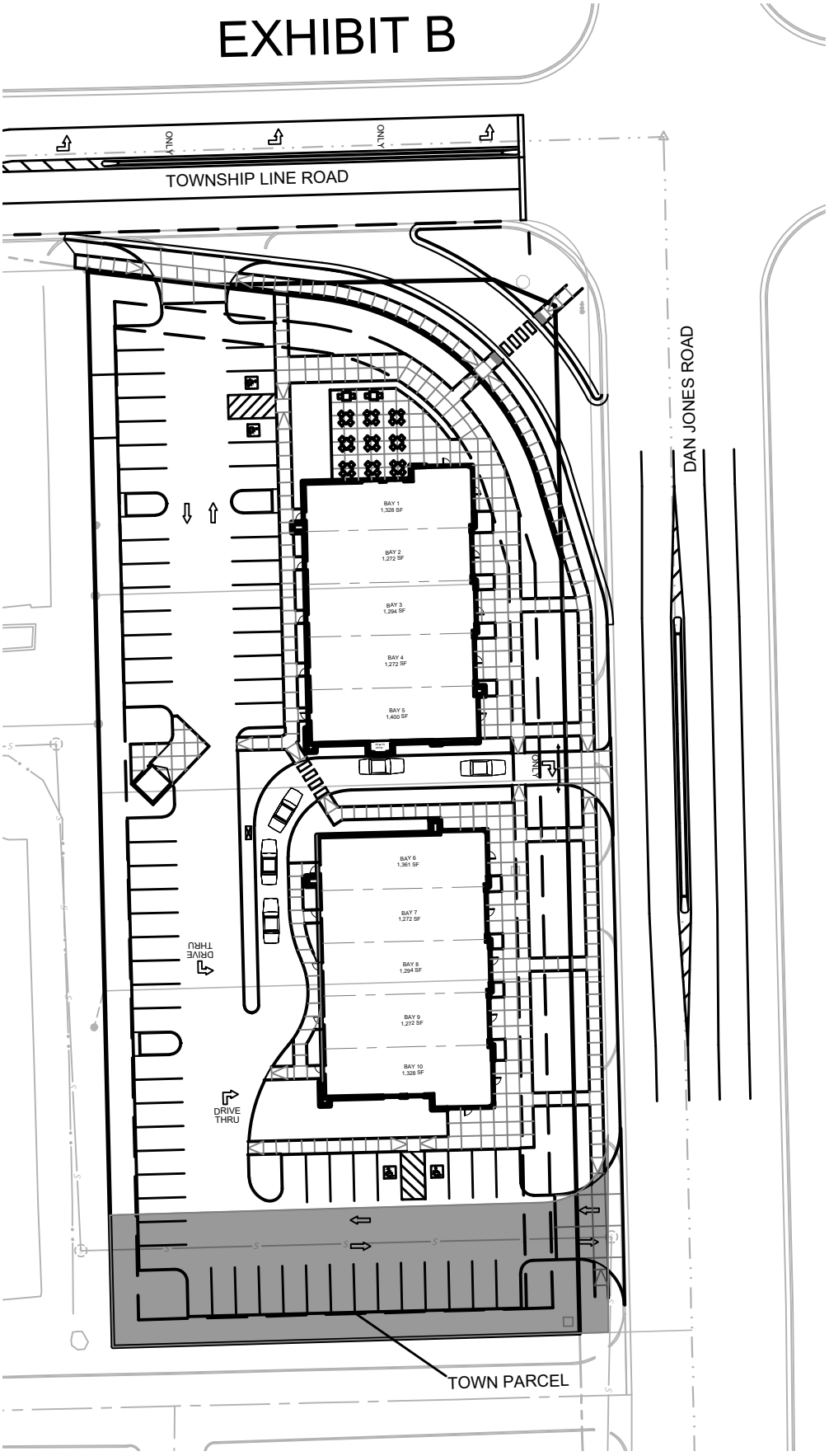
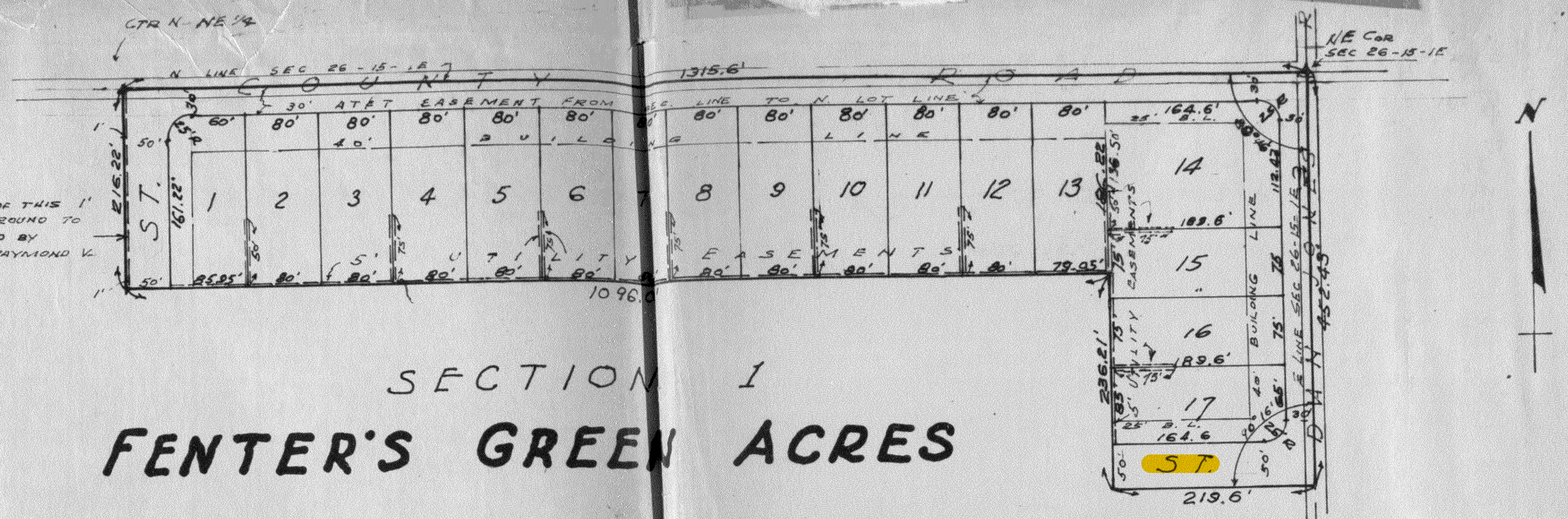

TOWNSHIP LINE ROAD
R/W AREA
DAN JONES ROAD
BAY 1
1,328 SF
BAY 2
1,272 SF
BAY 3
1,294 SF
BAY 4
1,272 SF
BAY 5
1,400 SF
BAY 6
1,361 SF
BAY 7
1,272 SF
BAY 8
1,294 SF
BAY 9
1,272 SF
BAY 10
1,328 SF
DRIVE THRU
DRIVE THRU
R/W PER INSTR. #200300012315
& PLAINFIELD BIBLE CHURCH PLAT

EXHIBIT B


TOWNSHIP LINE ROAD
ONLY
ONLY
DAN JONES ROAD
BAY 1
1,328 SF
BAY 2
1,272 SF
BAY 3
1,294 SF
BAY 4
1,272 SF
BAY 5
1,400 SF
ONLY
BAY 6
1,361 SF
BAY 7
1,272 SF
BAY 8
1,294 SF
BAY 9
1,272 SF
BAY 10
1,328 SF
DRIVE THRU
DRIVE THRU
TOWN PARCEL

#8035 July 11-1955
For Declaration of Covenants
See Misc. Rec. 34 P. 305-6

87



SECTION 1
FENTER'S GREEN ACRES

I, JOHN W. SCATTERDAY, REGISTERED ENGINEER NO 3644, STATE OF INDIANA, DO HEREBY CERTIFY THAT THE PLAT OF FENTER'S GREEN ACRES SUBDIVISION, SECTION 1, IS A TRUE REPRESENTATION OF A SUBDIVISION OF A PORTION OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 26, TOWNSHIP 15 NORTH, RANGE 1 EAST, HENDRICKS COUNTY, INDIANA, BOUNDED AND DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF SECTION 26; THENCE SOUTH ON AND ALONG THE EAST SECTION LINE 452.43 FEET; THENCE WEST PARALLEL WITH THE NORTH SECTION LINE 219.6 FEET; THENCE NORTH PARALLEL WITH THE EAST SECTION LINE 336.21 FEET; THENCE WEST PARALLEL WITH THE NORTH SECTION LINE 1,096.0 FEET; THENCE NORTH PARALLEL WITH EAST SECTION LINE 216.22 FEET TO THE NORTH SECTION LINE; THENCE EAST ON AND ALONG THE NORTH SECTION LINE 1315.6 FEET TO THE PLACE OF BEGINNING, ESTIMATED TO CONTAIN 8.23 ACRES, MORE OR LESS, SUBJECT TO ALL LEGAL HIGHWAYS OR RIGHTS OF WAY.

SAID SUBDIVISION CONSISTS OF 17 LOTS NUMBERED FROM 1 TO 17 INCLUSIVE. THE LOCATION AND DIMENSIONS OF THE LOTS AND LOCATION AND WIDTH OF THE STREETS ARE INDICATED ON THE ANNEXED PLAT IN FIGURES DENOTING FEET AND DECIMAL PARTS THEREOF

CERTIFIED THIS 4th DAY OF JUNE, 1955.

John W. Scatterday
JOHN W. SCATTERDAY
REGISTERED ENGINEER NO. 3644

THE UNDERSIGNED, RAYMOND V. FENTER AND CARRIE MAY FENTER, HUSBAND AND WIFE, AS OWNERS OF THE ABOVE DESCRIBED REAL ESTATE WITH THE EXCEPTION OF LOTS 1 AND 17 AS SHOWN ON THE PLAT AND ROBERT A. STILLWELL AND VIOLA M. STILLWELL HUSBAND AND WIFE, AS OWNERS OF LOT No. 1 AS PER THE PLAT AND JAMES O. HODSHIRE AND MARY MARIE HODSHIRE, HUSBAND AND WIFE, OWNERS OF LOT No. 17 AS PER THE PLAT, DO HEREBY CERTIFY THAT THEY HAVE LAID OUT, PLATTED AND SUBDIVIDED AND HEREBY LAY OUT, PLAT AND SUBDIVIDE THE SAID LAND INTO LOTS IN ACCORDANCE WITH THE ANNEXED PLAT.

THEY CERTIFY THAT ALL STREETS DEPICTED ON SAID PLAT ARE HEREBY DEDICATED TO THE PUBLIC FOR ITS USE AS SUCH. THERE ARE STRIPS OF LAND FIVE (5) FEET WIDE AS SHOWN ON THE PLAT WHICH ARE RESERVED FOR PUBLIC UTILITY COMPANIES, NOT INCLUDING TRANSPORTATION COMPANIES, FOR THE INSTALLATION OF POLES, LINES, DUCTS, GAS AND WATER LINES, LATERALS AND SEWERS SUBJECT AT ALL TIMES TO THE PUBLIC AUTHORITIES AND TO THE EASEMENT HEREIN RESERVED, BUT ALL SUCH UTILITY INSTALLATIONS SHALL BE MADE SUCH THAT NO PROPERTY LINE OR CORNER BE OBSTRUCTED. NO PERMANENT OR OTHER STRUCTURES ARE TO BE ERECTED AND MAINTAINED ON SUCH STRIP.

THE OWNERS, MR & MRS FENTER, RETAIN OWNERSHIP OF A STRIP OF LAND ONE (1) FOOT WIDE AND 216.22 FEET LONG ON AND ALONG THE WEST LINE OF THIS SUBDIVISION.

PROTECTIVE COVENANTS AND RESTRICTIONS ARE SUBMITTED SEPARATELY HEREWITH.

SAID SUBDIVISION SHALL BE HEREINAFTER KNOWN AS FENTER'S GREEN ACRES, SECTION 1

IN WITNESS WHEREOF, THE SAID PARTIES AS OWNERS OF THE ABOVE DESCRIBED SUBDIVISION HAVE HEREUNTO SET THEIR HANDS AND SEALS THIS 18TH DAY OF JUNE, 1955.

Raymond V. Fenter
RAYMOND V. FENTER

Robert A. Stillwell
ROBERT A. STILLWELL

James O. Hodshire
JAMES O. HODSHIRE

Carrie May Fenter
CARRIE MAY FENTER

Viola M. Stillwell
VIOLA M. STILLWELL

Mary Marie Hodshire
MARY MARIE HODSHIRE

STATE OF INDIANA)
COUNTY OF HENDRICKS) SS

BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, WITHIN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED RAYMOND V. FENTER AND CARRIE MAY FENTER, ROBERT A. STILLWELL AND VIOLA M. STILLWELL AND JAMES O. HODSHIRE AND MARY MARIE HODSHIRE, OWNERS OF THE ABOVE DESCRIBED SUBDIVISION, AND ACKNOWLEDGED THE EXECUTION OF THE ABOVE AND FOREGOING CERTIFICATE AND ANNEXED PLAT TO BE THEIR VOLUNTARY ACT AND DEED

WITNESS MY HAND AND NOTARIAL SEAL THIS 18th DAY OF JUNE, 1955.

Norman S. Comer
(NORMAN S. COMER)

MY COMMISSION EXPIRES: JAN. 17, 1959

UNDER AUTHORITY PROVIDED BY CHAPTER 174 ACTS OF 1947 ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF INDIANA AND ORDNANCE ADOPTED BY THE BOARD OF COUNTY COMMISSIONERS OF THE COUNTY OF HENDRICKS, INDIANA, THIS PLAT WAS GIVEN APPROVAL BY THE COUNTY OF HENDRICKS AS FOLLOWS:

APPROVED BY COUNTY PLAN COMMISSION AT A MEETING HELD THIS THE 5th DAY OF JULY, 1955.

Frank Jessup
FRANK JESSUP - PRESIDENT

Norman S. Comer
NORMAN S. COMER - SECRETARY

Duly Entered for Taxation
This 11th day of July 1955
Chester J. Barker

#8034

ENTERED FOR RECORD
BOOK 4 JUL 11 1955 At 2:04 Page 87
Maude E. Ryneram
Recorder Hendricks County