



McDonough & Rea Associates, Inc.

Traffic and Transportation Consulting

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Scott T. Kennel

July 17, 2020

Franklin Township
475 Demott Lane
Somerset, New Jersey 08873

Re: Traffic Impact Study
Preliminary/Final Site Plan (Parking Lot Expansion)
150 Pierce Street, LLC
Block 468.08, Lot 2.02
Franklin Township, Somerset County, NJ
MRA File No. 15-191

Dear Board Members:

McDonough & Rea Associates (MRA) has prepared this *Traffic Impact Study* pursuant to plans prepared by Stires Associates (SA) for a proposed building addition and parking lot expansion at the existing commercial building occupied by Thomas Edison Energy Smart Charter School and Pharmscript located at 150 Pierce Street in Franklin Township, Somerset County, NJ. The subject property is located along the south side of Pierce Street at the southwest corner of the signalized intersection of Pierce Street and World's Fair Drive, as shown in Figure 1, Site Location Map, in the appendix. The site is located in the M-2 Light Manufacturing zone.

EXISTING TRAFFIC & ROADWAY CONDITIONS

MRA conducted a detailed field investigation of existing traffic and roadway conditions in the vicinity of the site. Pierce Street and World's Fair Drive is a four-way intersection with Pierce Street (two-lane roadway) running in a general east/west direction with a posted speed limit of 40 miles per hour and World's Fair Drive approaching from the north. An access roadway to the subject property (on the south side of the intersection) forms the fourth leg of the intersection. Therefore, exiting movements from the site have the opportunity to access Pierce Street by using the existing traffic signal at World's Fair Drive.

Please reply to:

- 1431 Lakewood Road, Suite C, Manasquan, NJ 08736 • (732) 528-7076 • Fax (732) 528-6673
- 105 Elm Street, Lower Level, Westfield, NJ 07090 • (908) 789-7180 • Fax (908) 789-7181



Franklin Township

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July 17, 2020

The intersection of Pierce Street and World's Fair Drive includes a single, over-sized approach lane along both eastbound and westbound Pierce Street and two-lane approaches along southbound World's Fair Drive and the northbound site exit consisting of an exclusive left-turn lane and a shared thru/right-turn lane. The traffic signal includes crosswalks and push buttons for pedestrian movements. The traffic signal has a basic two-phase operation (one phase for east/west movements, one phase for north/south movements) with a 70 to 90 second variable cycle length, depending on traffic demand. The traffic signal dwells in a "green" phase for Pierce Street traffic and changes only if there is traffic demand along World's Fair Drive and/or the site exit. Video detection cameras are used to detect the presence of traffic.

There are mostly commercial uses surrounding the site including Mary Kay to the west, The Shoppes at Pierce Street to the north and Candlewood Suites to the northeast. There is an existing residential use (Cedar Manor) located to the east. The site has a second point of access to the west along Pierce Street, adjacent to the Mary Kay site. In general, the existing school utilizes the eastern portion of the site parking areas and Pharmscript utilizes the western portion of the site parking areas.

EXISTING 2020 TRAFFIC VOLUMES

MRA conducted manual turning movement traffic counts at the Pierce Street intersections with World's Fair Drive, the easterly site driveway and the westerly site driveway (Pharmscript) during the critical weekday morning (AM) and weekday afternoon (PM) peak traffic periods in February 2020 under good weather conditions when schools were in session. The traffic counts were conducted from 7:00 to 9:00 AM and 2:30 to 6:00 PM at Pierce Street and World's Fair Drive/easterly site driveway in order to capture the school peak hour. The counts at Pierce Street and the westerly site driveway (Pharmscript) were conducted from 7:00 to 9:00 AM and 4:00 to 6:30 PM. These are the critical time periods for analysis when the combination of existing and site generated traffic will be at a maximum. The weekday AM peak hour of existing traffic is generally occurring from 7:30 to 8:30 AM and the weekday PM peak hour of existing traffic is generally occurring from 4:45 to 5:45 PM. There is also a secondary peak hour in the afternoon from 3:15 to 4:15 PM, which is consistent with dismissal at the school. Figures 2, 3 and 4 in the appendix show existing weekday AM, weekday PM (school) and weekday PM (street) peak hour traffic volumes and copies of the traffic count reports are included in the appendix.



SITE GENERATED TRAFFIC

Site generated traffic has been calculated based on a 20% increase in existing traffic activity at the school since there is a proposed building addition for the school and the school staff will be increased from 75 to 90 (20% increase). Existing traffic entering and exiting the site (as shown in Figures 2, 3 and 4) was used in order to prepare the following estimates of additional site generated traffic, as shown in Table 1.

**TABLE 1
ADDITIONAL SITE GENERATED TRAFFIC
150 PIERCE STREET, LLC**

	<u>Enter</u>	<u>Exit</u>	<u>Total</u>
AM Peak Hour	62	36	98
PM School Peak Hour	25	63	88
PM Street Peak Hour	10	26	36

The additional peak hourly site generated traffic shown in Table 1 has been distributed to the adjacent roadway network in accordance with the distribution pattern of existing site generated traffic. Figures 5, 6 and 7 in the appendix show weekday AM school/street peak hour, weekday PM school peak hour and weekday PM street peak hour site generated traffic volumes.

FUTURE 2021 TRAFFIC VOLUMES

Future traffic volumes have been projected for a design year of 2021. Existing traffic volumes were expanded by applying an annual growth rate of 1.0% over one year in accordance with traffic growth factors published by the New Jersey Department of Transportation (NJDOT) for roadways in Somerset County in order to account for traffic increases due to general background growth. The additional site generated traffic shown in Figures 5, 6 and 7 was added to the expanded existing traffic volumes in order to project the future 2021 AM school/street, PM school and PM street peak hour build traffic volumes that are shown in Figures 8, 9 and 10 in the appendix.



FUTURE 2021 TRAFFIC CONDITIONS

Future 2021 traffic conditions have been analyzed through completion of level of service calculations using procedures outlined in the Highway Capacity Manual published by the Transportation Research Board. Levels of service are calculated based on average vehicular delay and range from “A” to “F” with “A” being the highest or best level of service and “F” being the lowest or worst level of service. The results of the level of service calculations are summarized below and copies of the level of service calculations are provided in the appendix.

Future 2021 No Build and Build Levels of Service

Intersection	Direction/ Movement		AM Peak School/Street Peak Hour		PM School Peak Hour		PM Street Peak Hour	
			Existing	Build	Existing	Build	Existing	Build
Pierce St. & World's Fair Drive/Site Drive East	EB	LTR	A(10)	A(10)	A(9)	A(10)	B(15)	B(16)
	WB	LTR	D(42)	E(58)	A(10)	B(10)	A(9)	A(9)
	NB	Left	D(48)	D(52)	D(37)	D(40)	C(33)	C(33)
	NB	Thru/Right	C(26)	C(27)	C(31)	C(33)	C(27)	C(27)
	SB	Left	C(29)	C(29)	C(32)	C(34)	D(48)	D(52)
	SB	Thru/Right	E(63)	E(69)	C(28)	C(28)	C(32)	C(32)
	Overall		D(42)	D(53)	B(19)	C(20)	C(23)	C(24)
Pierce St. & Site Dr West	WB	Left	a(8)	a(8)			a(9)	a(9)
	NB	Left/Right	d(30)	e(36)			c(21)	c(22)

A(#) = signalized movement level of service (delay in seconds)

a(#) = stop control movement level of service (delay in seconds)

PARKING AND ON-SITE TRAFFIC CIRCULATION

The site has a perimeter roadway that begins at the signalized intersection of Pierce Street and World's Fair Drive. This on-site roadway extends south and around the perimeter of the property in a “U” pattern before terminating at the second ingress/egress point along Pierce Street to the west, adjacent to the Mary Kay site. This roadway provides adequate on-site traffic and access capacity for both the charter school and Pharmscript.



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Franklin Township

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July 17, 2020

The plans prepared by Stires Associates show additional parking that is proposed in order to accommodate the charter school expansion and Pharmscript. The distribution of parking is favorable with the charter school occupying the eastern portion of the site and Pharmscript occupying the western portion. This will continue to provide for a good separation of the two uses on site.

CONCLUSIONS

Based on the analysis contained in the body of this report, it is concluded that the additional traffic and parking activity that will be generated by the charter school expansion at 150 Pierce Street can be accommodated at the site. The site provides for good separation of the charter school and Pharmscript in terms of parking distribution and multiple access points to Pierce Street. In addition, the school use has a favorable traffic pattern since it does not generate a heavy impact during the critical weekday late afternoon peak hour due to earlier afternoon staggered dismissal times. Traffic movements generated by the charter school have a safe means of ingress and egress to/from the property due to the existing site access to the signalized intersection of Pierce Street and World's Fair Drive.

Very truly yours,

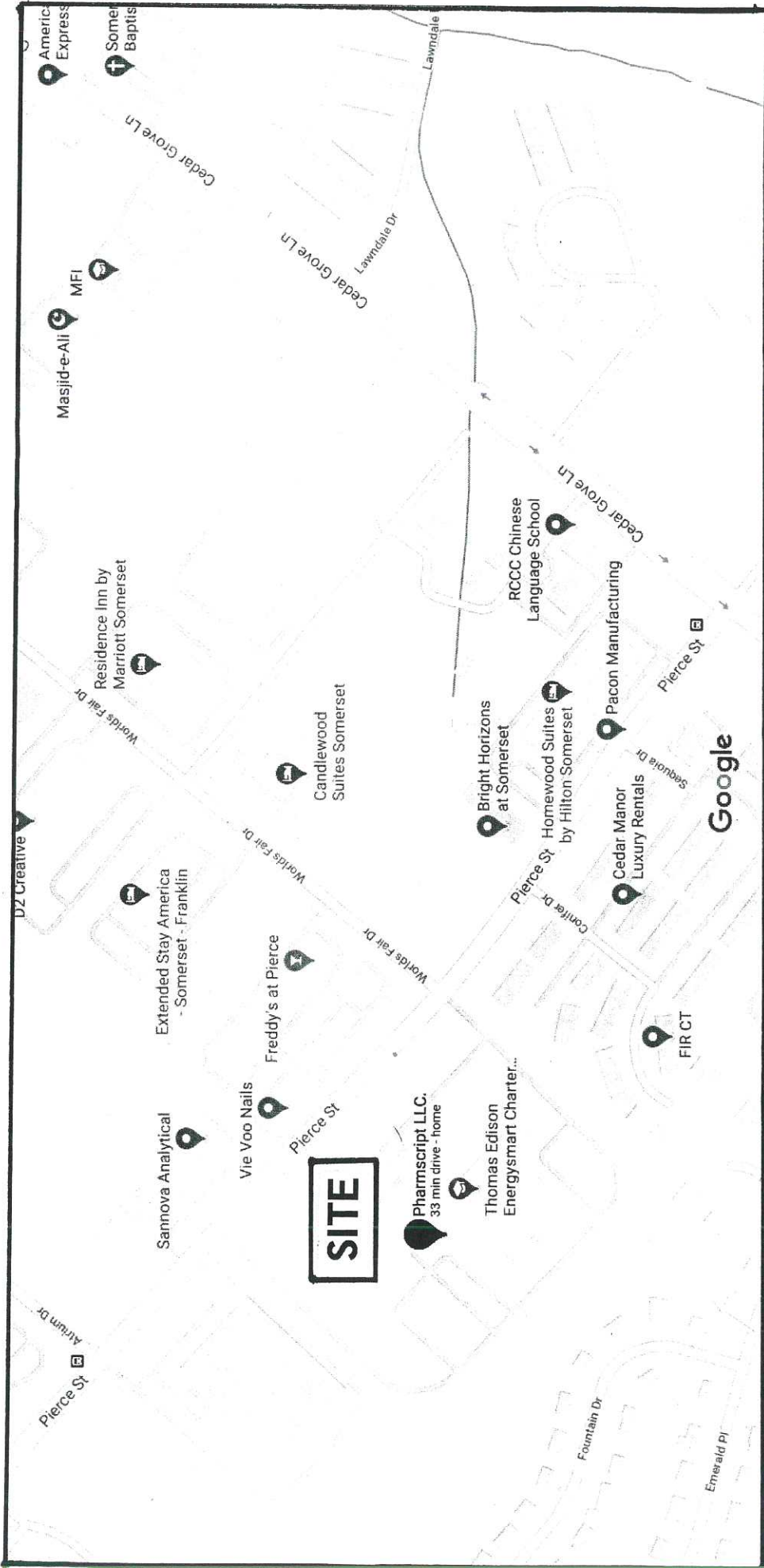
Jay S. Troutman Jr., PE

Attachments

APPENDIX

Google Maps

Figure 1, Site Location Map



Map data ©2020 200 ft



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TRAFFIC AND TRANSPORTATION CONSULTING

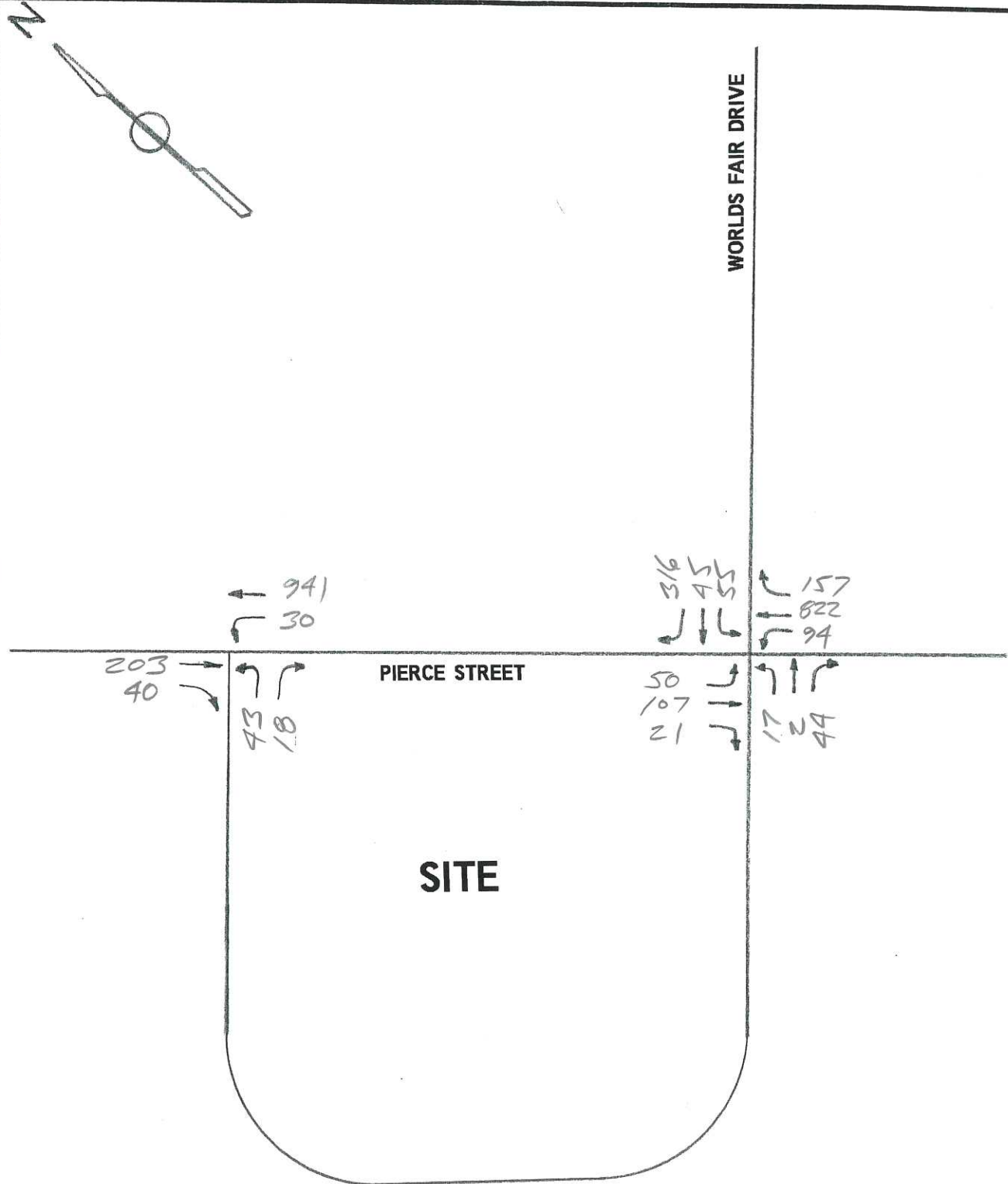
FIGURE 2

JOB No:
15-191

DATE:
MARCH 2020

SUBJECT: 150 PIERCE STREET LLC, FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

EXISTING 2020 WEEKDAY AM STREET/SCHOOL PEAK HOUR TRAFFIC VOLUMES





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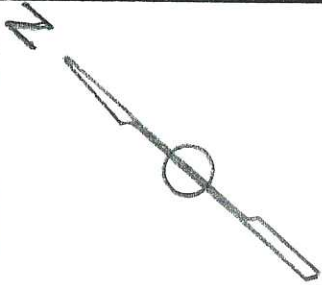
FIGURE 3

JOB No:
15-191

DATE:
MARCH 2020

SUBJECT: 150 PIERCE STREET LLC, FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

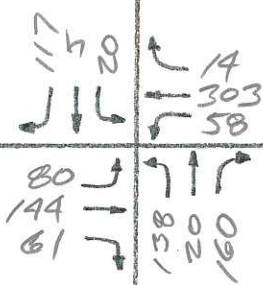
EXISTING 2020 WEEKDAY PM SCHOOL PEAK HOUR TRAFFIC VOLUMES



WORLDS FAIR DRIVE

PIERCE STREET

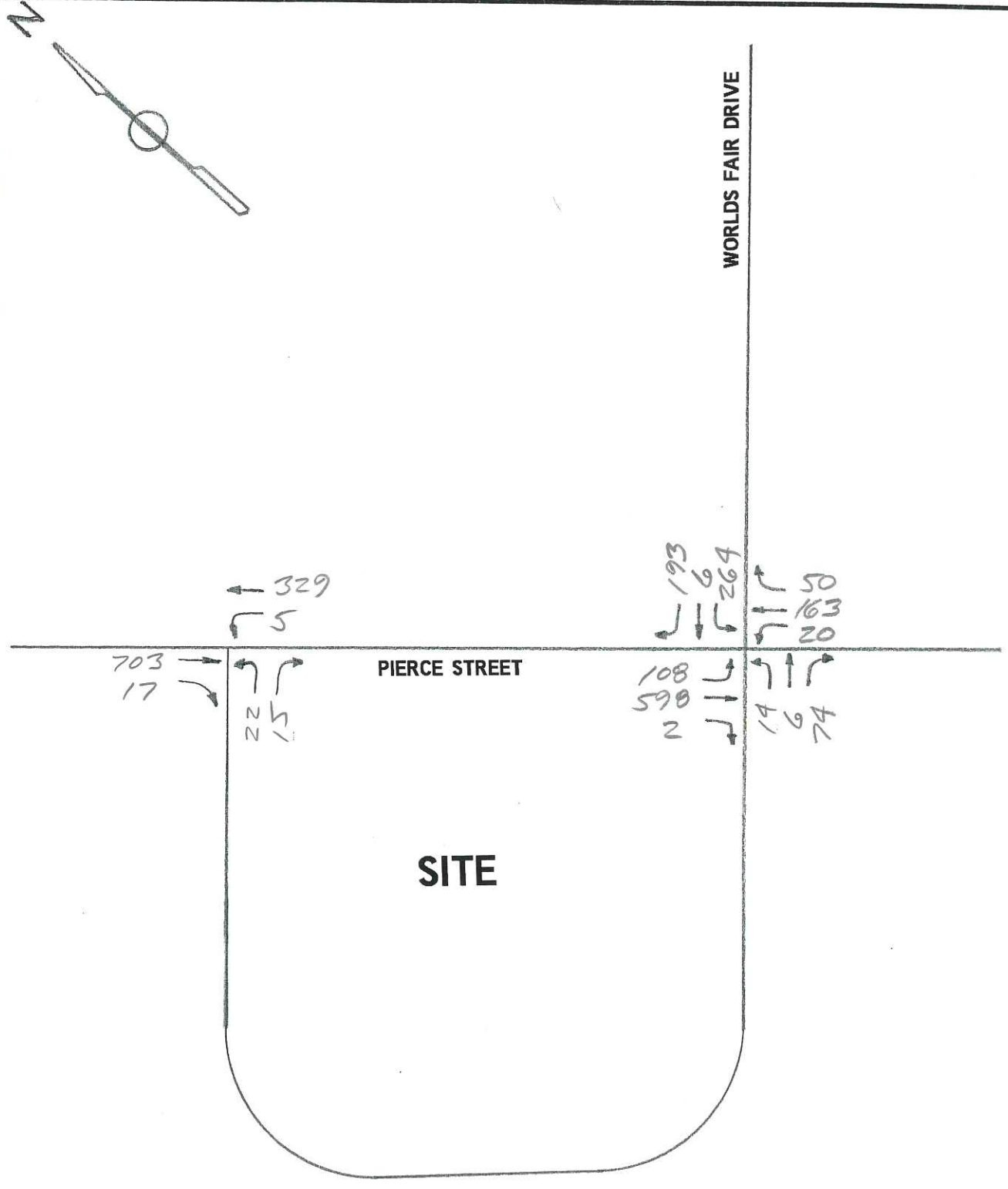
SITE





SUBJECT: 150 PIERCE STREET LLC, FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

EXISTING 2020 WEEKDAY PM STREET PEAK HOUR TRAFFIC VOLUMES





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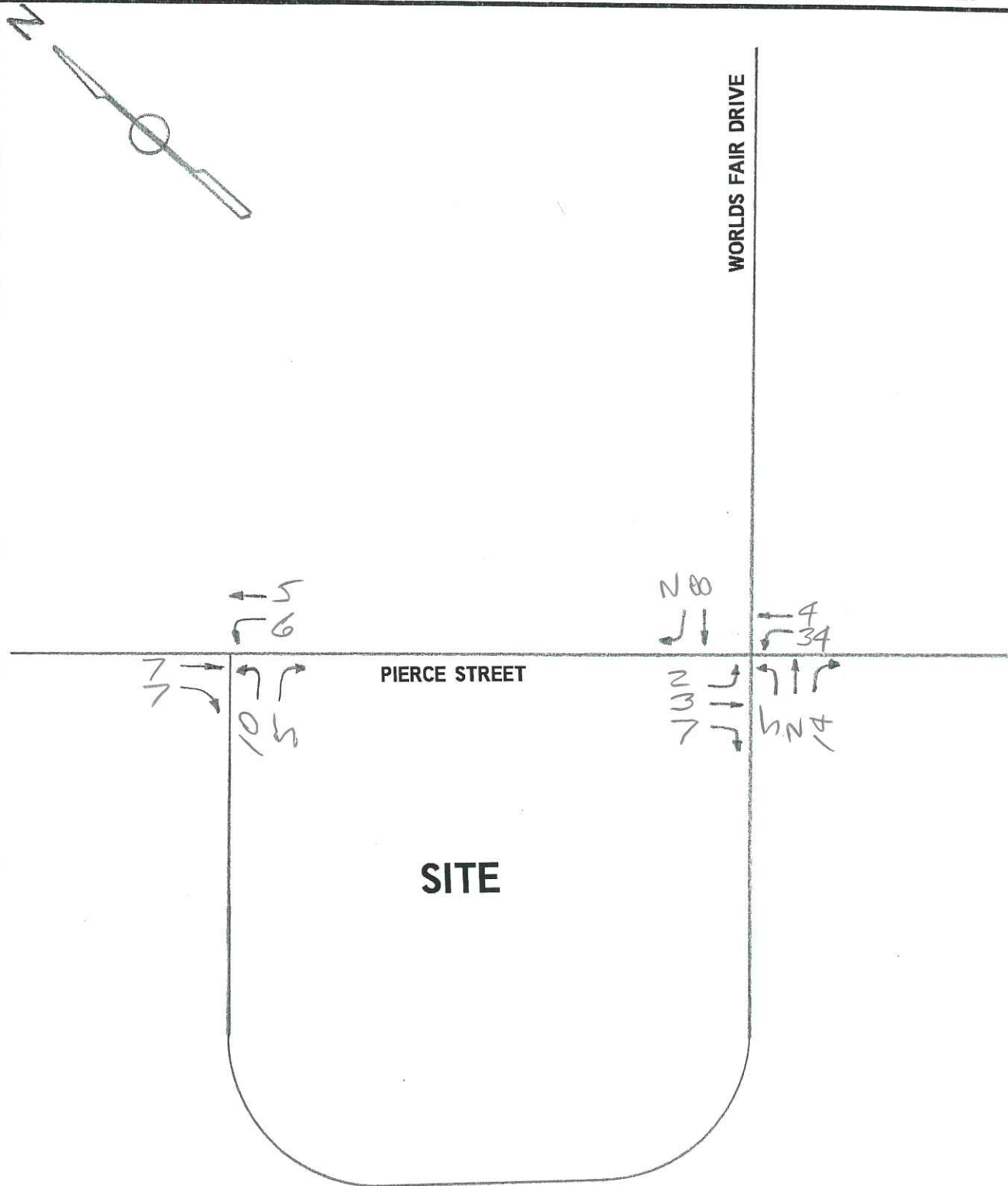
FIGURE 5

JOB No:
15-191

DATE:
MARCH 2020

SUBJECT: 150 PIERCE STREET LLC, FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

ADDITIONAL WEEKDAY AM STREET/SCHOOL PEAK HOUR SITE GENERATED TRAFFIC VOLUMES





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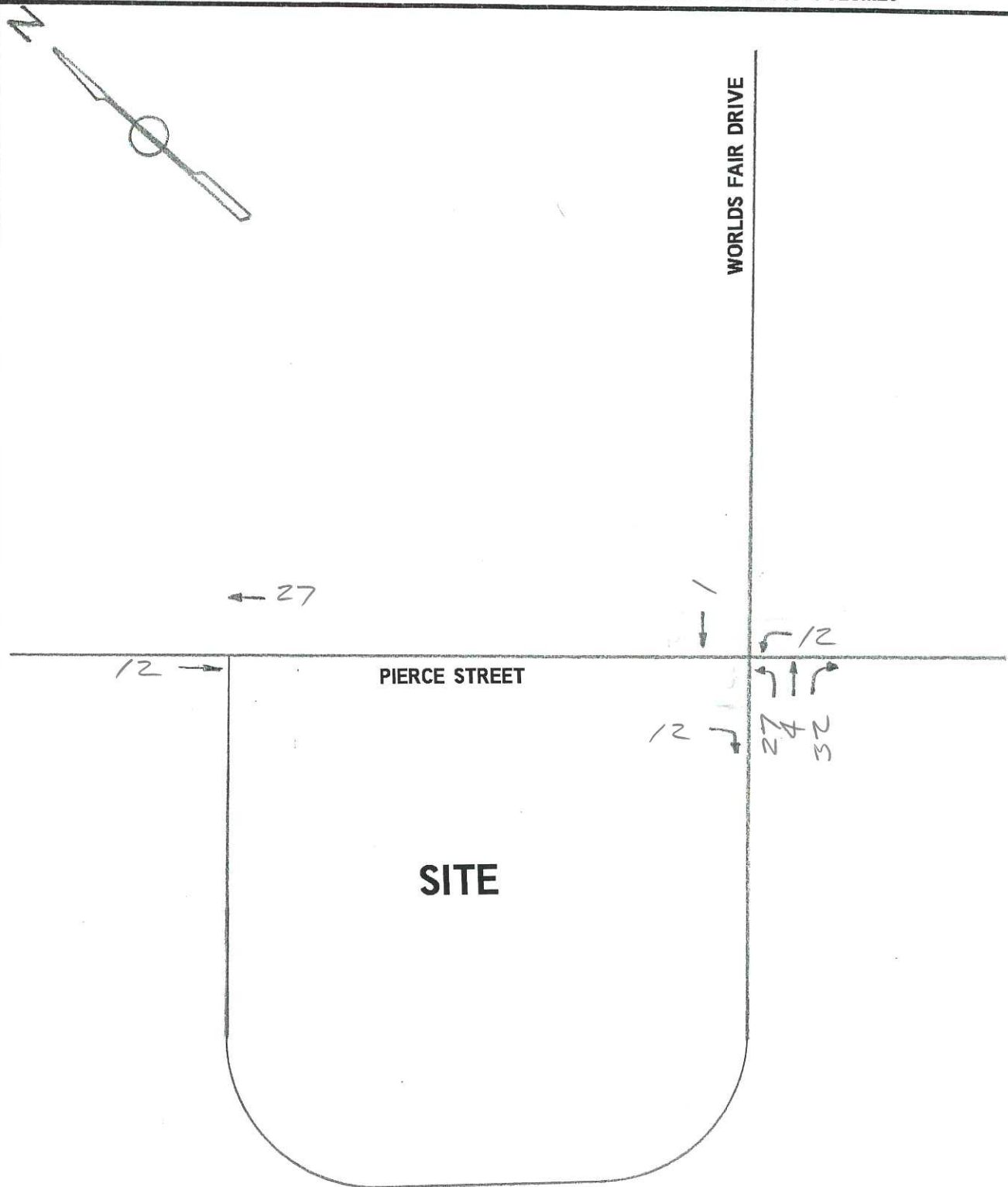
FIGURE 6

JOB No:
15-191

DATE:
MARCH 2020

SUBJECT: 150 PIERCE STREET LLC, FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

ADDITIONAL WEEKDAY PM SCHOOL PEAK HOUR SITE GENERATED TRAFFIC VOLUMES





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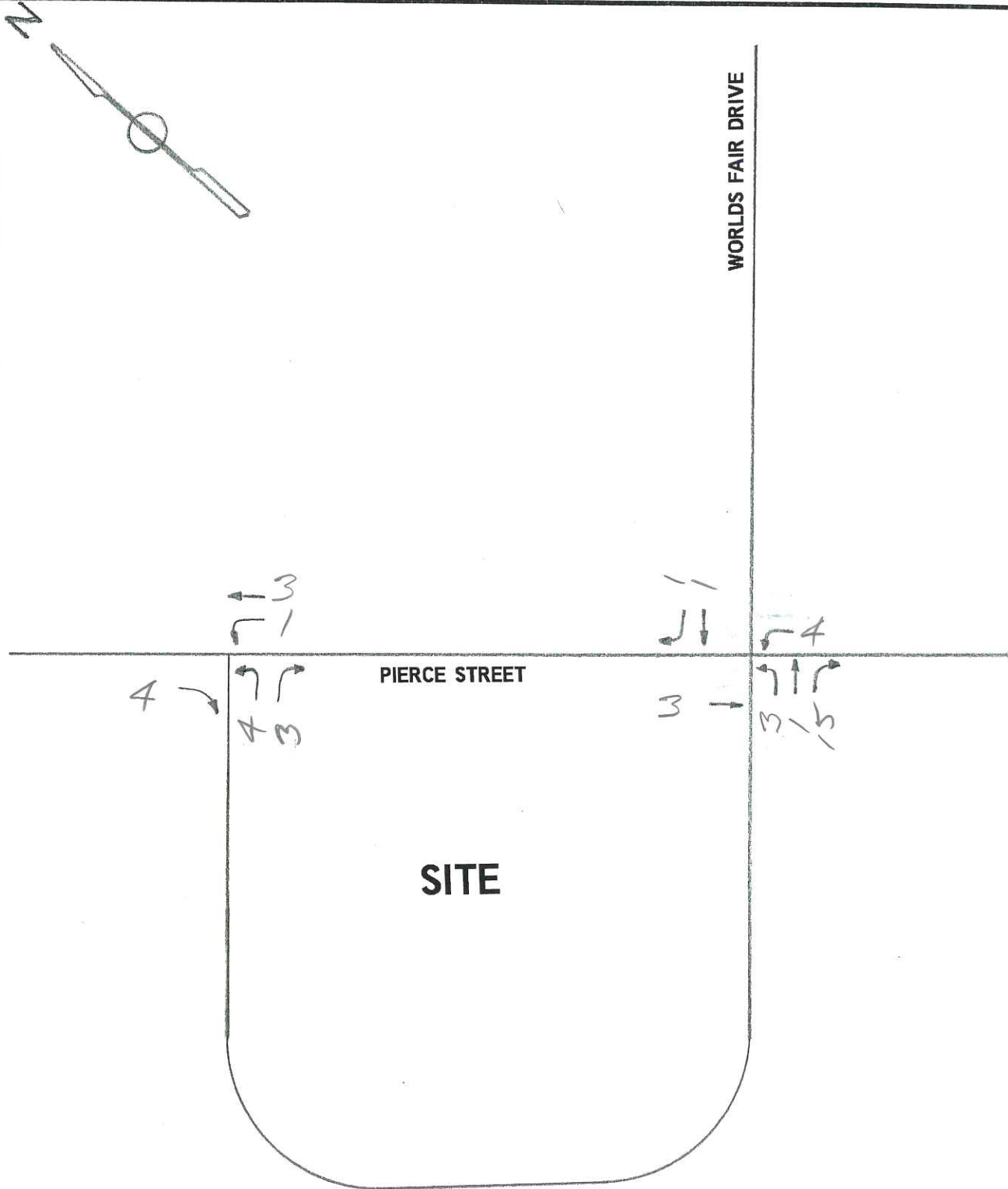
FIGURE 7

JOB No:
15-191

DATE:
MARCH 2020

SUBJECT: 150 PIERCE STREET LLC, FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

ADDITIONAL WEEKDAY PM STREET PEAK HOUR SITE GENERATED TRAFFIC VOLUMES





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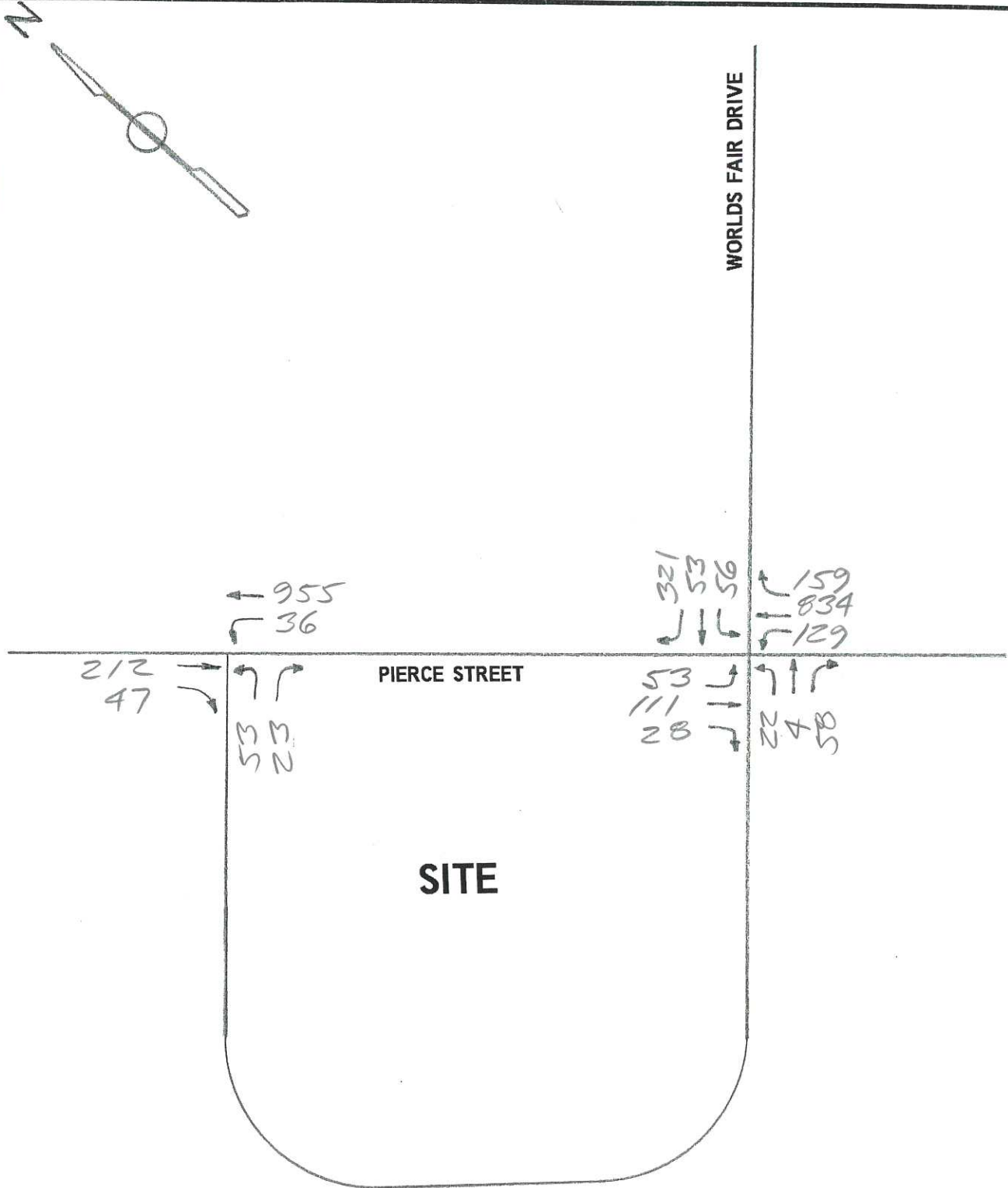
FIGURE 8

JOB No:
15-191

DATE:
MARCH 2020

SUBJECT: 150 PIERCE STREET LLC, FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

FUTURE 2021 WEEKDAY AM STREET/SCHOOL PEAK HOUR BUILD TRAFFIC VOLUMES





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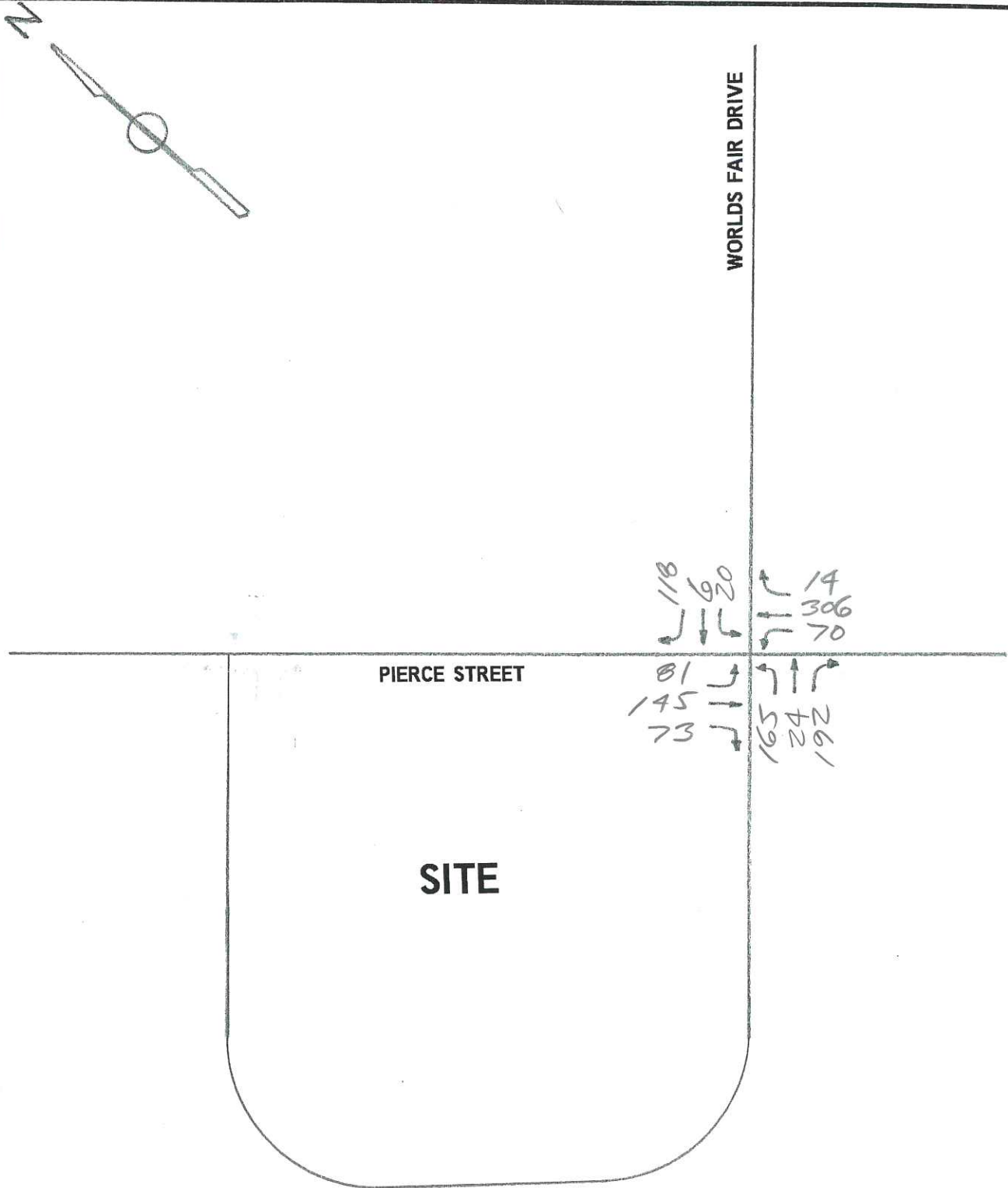
FIGURE 9

JOB No:
15-191

DATE:
MARCH 2020

SUBJECT: 150 PIERCE STREET LLC, FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

FUTURE 2021 WEEKDAY PM SCHOOL PEAK HOUR BUILD TRAFFIC VOLUMES



PIERCE STREET

WORLDS FAIR DRIVE

SITE



McDONOUGH & REA ASSOCIATES
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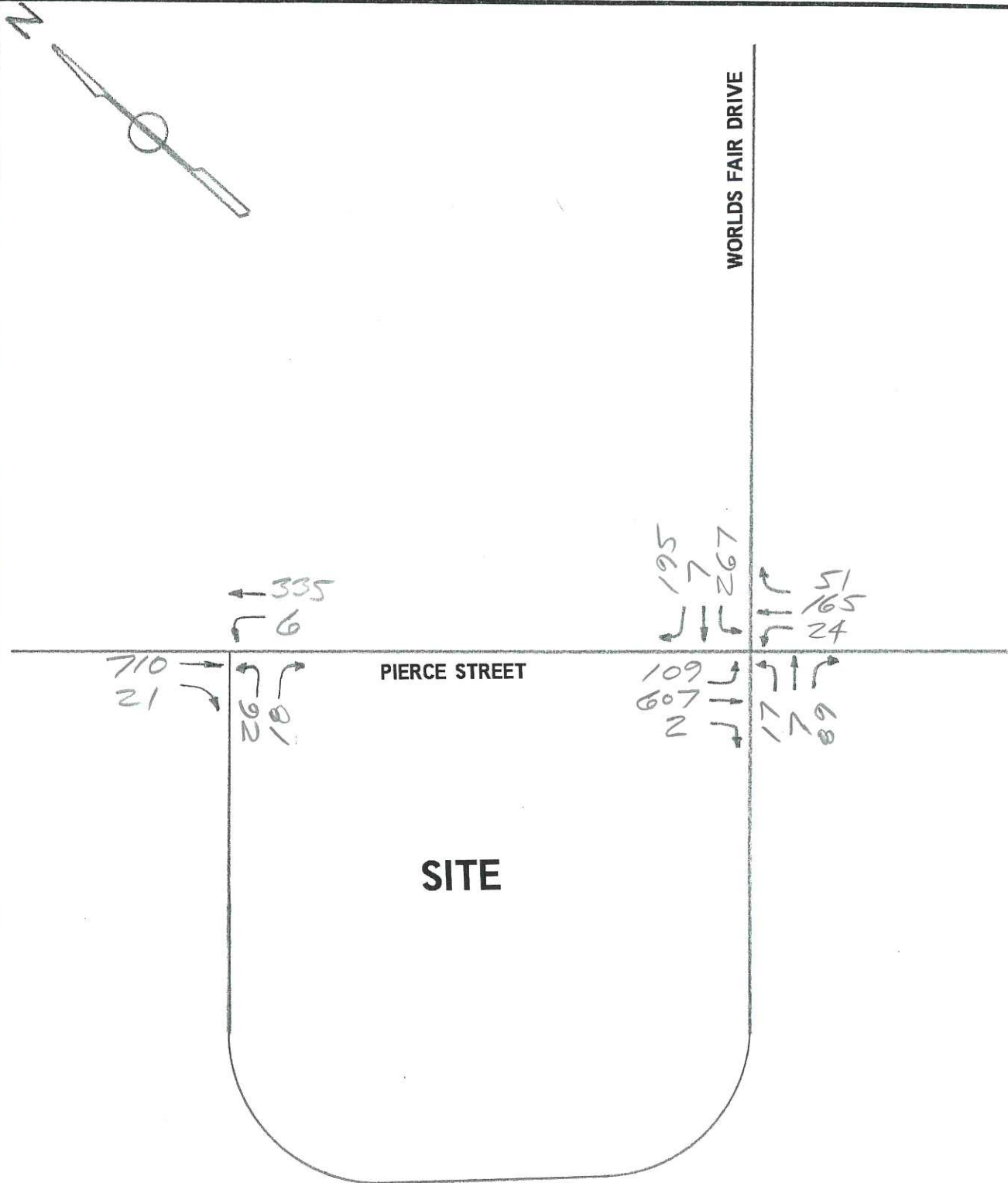
FIGURE 10

JOB No:
15-191

DATE:
MARCH 2020

SUBJECT: 150 PIERCE STREET LLC, FRANKLIN TOWNSHIP, SOMERSET COUNTY, NJ

FUTURE 2021 WEEKDAY PM STREET PEAK HOUR BUILD TRAFFIC VOLUMES



McDonough & Rea Associates
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File Name : 15191 worlds fair & pierce am1
 Site Code : 00015191
 Start Date : 2/4/2020
 Page No : 1

150 PIERCE STREET
 PIERCE STREET & WORLD'S FAIR DRIVE
 FRANKLIN TOWNSHIP, SOMERSET COUNTY
 MRA JOB 15-191 TUESDAY AM COUNT

Groups Printed- CARS - TRUCKS - SCHOOL BUS

Start Time	World's Fair Drive Southbound				Pierce Street Westbound				150 Pierce St Exit Northbound				Pierce Street Eastbound							
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total
07:00 AM	9	9	16	11	45	15	107	15	1	138	1	1	0	1	3	10	24	0	0	34
07:15 AM	7	9	32	20	68	32	125	14	1	172	5	0	1	3	9	3	32	5	1	41
07:30 AM	8	12	39	8	67	74	149	26	3	252	7	6	14	11	38	14	30	7	0	51
07:45 AM	17	8	60	12	97	56	179	23	6	264	14	1	17	21	53	7	39	10	9	65
Total	41	38	147	51	277	177	560	78	11	826	27	8	32	36	103	34	125	22	10	191
08:00 AM	13	12	82	8	115	9	210	38	3	260	2	1	1	1	5	14	23	0	1	38
08:15 AM	13	11	67	6	97	14	225	32	8	279	0	0	1	3	4	14	16	0	1	31
08:30 AM	12	14	71	10	107	15	208	44	3	270	1	0	0	0	1	15	29	0	0	44
08:45 AM	14	8	59	29	110	8	167	32	5	212	1	0	3	1	5	20	23	0	0	43
Total	52	45	279	53	429	46	810	146	19	1021	4	1	5	5	15	63	91	0	2	156
Grand Total	93	83	426	104	706	223	1370	224	30	1847	31	9	37	41	118	97	216	22	12	347
Approch %	13.2	11.8	60.3	14.7		12.1	74.2	12.1	1.6		26.3	7.6	31.4	34.7		28.0	62.2	6.3	3.5	
Total %	3.1	2.8	14.1	3.4	23.4	7.4	45.4	7.4	1.0	61.2	1.0	0.3	1.2	1.4	3.9	3.2	7.2	0.7	0.4	11.5

Start Time	World's Fair Drive Southbound				Pierce Street Westbound				150 Pierce St Exit Northbound				Pierce Street Eastbound								
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	
07:45 AM	55	45	280	36	416	94	822	137	20	1073	17	2	19	25	63	50	107	10	11	178	
07:45 Volume	13.2	10.8	67.3	8.7		8.8	76.6	12.8	1.9		27.0	3.2	30.2	39.7		28.1	60.1	5.6	6.2		
07:45 Percent	17	8	60	12	97	56	179	23	6	264	14	1	17	21	53	7	39	10	9	65	
07:45 Peak Factor	08:00 AM					08:15 AM					07:45 AM					07:45 AM					
High Int. Volume	13	12	82	8	115	14	225	32	8	279	14	1	17	21	53	7	39	10	9	65	
Peak Factor					0.904					0.961					0.297						0.685

McDonough & Rea Associates
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 (732) 528-7076

File Name : 15191 pierce & west access am1
 Site Code : 00015191
 Start Date : 2/5/2020
 Page No : 1

150 PIERCE STREET
 PIERCE STREET & 150 PIERCE ACCESS
 FRANKLIN TOWNSHIP, SOMERSET COUNTY
 MRA JOB 15-191 WEDNESDAY AM COUNT

Groups Printed- CARS - TRUCKS - SCHOOL BUS

Start Time	Pierce Street Westbound			150 Pierce St West Exit			Pierce Street Eastbound		
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total
07:00 AM	3	96	99	1	0	1	31	4	35
07:15 AM	3	154	157	8	5	13	38	3	41
07:30 AM	7	185	192	20	7	27	52	16	68
07:45 AM	12	261	273	20	11	31	53	10	63
Total	25	696	721	49	23	72	174	33	207
08:00 AM	6	189	195	2	0	2	46	8	54
08:15 AM	5	259	264	1	0	1	52	6	58
08:30 AM	3	232	235	2	0	2	40	2	42
08:45 AM	3	246	249	0	1	1	58	7	65
Total	17	926	943	5	1	6	196	23	219
Grand Total	42	1622	1664	54	24	78	370	56	426
Approch %	2.5	97.5	76.8	69.2	30.8	3.6	86.9	13.1	19.6
Total %	1.9	74.8		2.5	1.1		17.1	2.6	

Start Time	Pierce Street Westbound			150 Pierce St West Exit			Pierce Street Eastbound		
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1									
Intersection 07:30 AM	30	894	924	43	18	61	203	40	243
Volume Percent	3.2	96.8	273	70.5	29.5	31	83.5	16.5	63
07:45 Volume Peak Factor	12	261		20	11		53	10	
High Int. 07:45 AM				07:45 AM		07:30 AM			0.837
Volume Peak Factor	12	261	273	20	11	31	52	16	68
			0.846			0.492			0.893

McDonough & Rea Associates
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 Manasquan NJ 08736
 (732) 528-7076

File Name : 15191 worlds fair & pierce pm1
 Site Code : 00015191
 Start Date : 2/5/2020
 Page No : 1

150 PIERCE STREET
 PIERCE STREET & WORLD'S FAIR DRIVE
 FRANKLIN TOWNSHIP, SOMERSET COUNTY
 MRA JOB 15-191 WEDNESDAY PM COUNT

Groups Printed- CARS - TRUCKS - SCHOOL BUS

Start Time	World's Fair Drive Southbound					Pierce Street Westbound					150 Pierce St Exit Northbound					Pierce Street Eastbound				
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total
	02:30 PM	1	3	4	10	18	11	65	2	4	82	11	10	13	17	51	12	39	14	0
02:45 PM	4	4	4	10	22	13	54	2	1	70	16	4	18	23	61	6	54	25	4	89
Total	5	7	8	20	40	24	119	4	5	152	27	14	31	40	112	18	93	39	4	154
03:00 PM	0	1	5	6	12	11	53	3	1	68	27	2	23	18	70	5	28	12	4	49
03:15 PM	3	0	3	4	10	12	55	1	1	69	27	4	17	17	65	6	43	18	1	68
03:30 PM	5	1	13	13	32	13	76	1	1	91	32	6	19	24	81	9	32	11	1	53
03:45 PM	2	0	9	4	15	14	56	6	0	76	33	9	21	16	79	39	33	9	3	84
Total	10	2	30	27	69	50	240	11	3	304	119	21	80	75	295	59	136	50	9	254
04:00 PM	10	4	46	25	85	19	116	4	0	139	46	1	24	22	93	26	36	14	4	80
04:15 PM	41	0	15	19	75	7	59	7	5	78	13	1	10	15	39	13	57	4	0	74
04:30 PM	75	4	21	30	130	7	40	11	8	66	2	2	21	8	33	24	116	1	1	142
04:45 PM	56	0	20	22	98	4	39	11	0	54	1	2	8	9	20	16	121	2	0	139
Total	182	8	102	96	388	37	254	33	13	337	62	6	63	54	185	79	330	21	5	435
05:00 PM	87	4	37	28	156	6	33	15	1	55	6	2	19	11	38	26	157	0	0	183
05:15 PM	67	2	15	28	112	4	37	9	2	52	3	0	7	6	16	35	152	0	0	367
05:30 PM	54	0	20	23	97	6	54	10	2	72	4	2	8	6	20	31	168	0	0	199
05:45 PM	37	1	15	20	73	6	40	7	4	57	2	1	3	4	10	16	103	1	0	120
Total	245	7	87	99	438	22	164	41	9	236	15	5	37	27	84	108	580	1	0	689
Grand Total	442	24	227	242	935	133	777	89	30	1029	223	46	211	196	676	264	1139	111	18	1532
Approch %	47.3	2.6	24.3	25.9	12.9	75.5	8.6	2.9	0.7	24.7	33.0	6.8	31.2	29.0	17.2	74.3	7.2	1.2	1.2	36.7
Total %	10.6	0.6	5.4	5.8	22.4	3.2	18.6	2.1	0.7	24.7	5.3	1.1	5.1	4.7	16.2	6.3	27.3	2.7	0.4	36.7

Start Time	World's Fair Drive Southbound					Pierce Street Westbound					150 Pierce St Exit Northbound					Pierce Street Eastbound				
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total
	05:00 PM	87	4	37	28	156	6	33	15	1	55	6	2	19	11	38	26	157	0	0
05:15 PM	67	2	15	28	112	4	37	9	2	52	3	0	7	6	16	35	152	0	0	367
05:30 PM	54	0	20	23	97	6	54	10	2	72	4	2	8	6	20	31	168	0	0	199
05:45 PM	37	1	15	20	73	6	40	7	4	57	2	1	3	4	10	16	103	1	0	120
Total	245	7	87	99	438	22	164	41	9	236	15	5	37	27	84	108	580	1	0	689
Grand Total	442	24	227	242	935	133	777	89	30	1029	223	46	211	196	676	264	1139	111	18	1532
Approch %	47.3	2.6	24.3	25.9	12.9	75.5	8.6	2.9	0.7	24.7	33.0	6.8	31.2	29.0	17.2	74.3	7.2	1.2	1.2	36.7
Total %	10.6	0.6	5.4	5.8	22.4	3.2	18.6	2.1	0.7	24.7	5.3	1.1	5.1	4.7	16.2	6.3	27.3	2.7	0.4	36.7

Start Time	World's Fair Drive Southbound					Pierce Street Westbound					150 Pierce St Exit Northbound					Pierce Street Eastbound				
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total
	05:00 PM	87	4	37	28	156	6	33	15	1	55	6	2	19	11	38	26	157	0	0
05:15 PM	67	2	15	28	112	4	37	9	2	52	3	0	7	6	16	35	152	0	0	367
05:30 PM	54	0	20	23	97	6	54	10	2	72	4	2	8	6	20	31	168	0	0	199
05:45 PM	37	1	15	20	73	6	40	7	4	57	2	1	3	4	10	16	103	1	0	120
Total	245	7	87	99	438	22	164	41	9	236	15	5	37	27	84	108	580	1	0	689
Grand Total	442	24	227	242	935	133	777	89	30	1029	223	46	211	196	676	264	1139	111	18	1532
Approch %	47.3	2.6	24.3	25.9	12.9	75.5	8.6	2.9	0.7	24.7	33.0	6.8	31.2	29.0	17.2	74.3	7.2	1.2	1.2	36.7
Total %	10.6	0.6	5.4	5.8	22.4	3.2	18.6	2.1	0.7	24.7	5.3	1.1	5.1	4.7	16.2	6.3	27.3	2.7	0.4	36.7

Peak Hour From 02:30 PM to 05:45 PM - Peak 1 of 1
 Intersection 04:45 PM
 Volume 264
 Percent 57.0
 Peak Factor 0.867
 High Int. 05:00 PM
 Volume 87
 Peak Factor 0.889

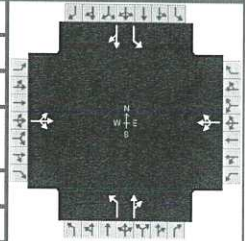
HCS7 Signalized Intersection Results Summary

General Information

Agency	McDonough & Rea Associates		
Analyst	Jay Troutman	Analysis Date	3/24/2020
Jurisdiction	Franklin Twp, Somerset County	Time Period	AM Peak Hour Existing
Urban Street	Pierce Street	Analysis Year	2020
Intersection	Pierce St & Worlds Fair/...	File Name	piwf20am.xus
Project Description	15-191 150 Pierce St. LLC		

Intersection Information

Duration, h	0.25
Area Type	Other
PHF	0.92
Analysis Period	1 > 7:00



Demand Information

Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	50	107	21	94	822	157	17	2	44	55	45	316

Signal Information

Cycle, s	90.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	55.0	23.0	0.0	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0		
				Red	2.0	2.0	0.0	0.0	0.0	0.0		

Timer Results

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		6.0		6.0
Phase Duration, s		61.0		61.0		29.0		29.0
Change Period, (Y+R _c), s		6.0		6.0		6.0		6.0
Max Allow Headway (MAH), s		0.0		0.0		3.3		3.3
Queue Clearance Time (g _s), s						24.7		23.0
Green Extension Time (g _e), s		0.0		0.0		0.0		0.0
Phase Call Probability						1.00		1.00
Max Out Probability						1.00		1.00

Movement Group Results

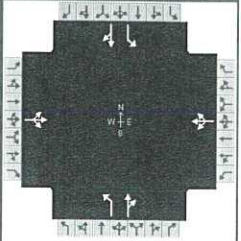
Approach Movement	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	193			1166			18	50		60	392	
Adjusted Saturation Flow Rate (s), veh/h/ln	772			1861			1007	1621		1376	1641	
Queue Service Time (g _s), s	0.0			45.3			1.6	2.1		3.1	21.0	
Cycle Queue Clearance Time (g _c), s	3.9			55.0			22.7	2.1		5.3	21.0	
Green Ratio (g/C)	0.61			0.61			0.26	0.26		0.26	0.26	
Capacity (c), veh/h	523			1181			102	414		399	419	
Volume-to-Capacity Ratio (X)	0.370			0.988			0.181	0.121		0.150	0.935	
Back of Queue (Q), ft/ln (50 th percentile)	41.4			691.2			12.7	21.4		26.9	285.3	
Back of Queue (Q), veh/ln (50 th percentile)	1.7			27.6			0.5	0.9		1.1	11.4	
Queue Storage Ratio (RQ) (50 th percentile)	0.00			0.00			0.00	0.00		0.00	0.00	
Uniform Delay (d ₁), s/veh	7.6			18.0			43.9	25.7		27.8	32.8	
Incremental Delay (d ₂), s/veh	2.0			23.4			3.9	0.6		0.8	30.4	
Initial Queue Delay (d ₃), s/veh	0.0			0.0			0.0	0.0		0.0	0.0	
Control Delay (d), s/veh	9.6			41.5			47.8	26.3		28.6	63.2	
Level of Service (LOS)	A			D			D	C		C	E	
Approach Delay, s/veh / LOS	9.6	A		41.5	D		32.1	C		58.6	E	
Intersection Delay, s/veh / LOS	42.0						D					

Multimodal Results

	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.87	B	1.87	B	1.70	B	1.70	B
Bicycle LOS Score / LOS	0.81	A	2.41	B	0.60	A	1.23	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	McDonough & Rea Associates			Duration, h	0.25		
Analyst	Jay Troutman	Analysis Date	3/24/2020	Area Type	Other		
Jurisdiction	Franklin Twp, Somerset County	Time Period	AM Peak Hour Build	PHF	0.92		
Urban Street	Pierce Street	Analysis Year	2021	Analysis Period	1 > 7:00		
Intersection	Pierce St & Worlds Fair/...	File Name	piwf21da.xus				
Project Description	15-191 150 Pierce St. LLC						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	53	111	28	129	834	159	22	4	58	56	53	321

Signal Information				Signal Timing										
Cycle, s	90.0	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	No	Simult. Gap E/W	On	Green	55.0	23.0	0.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
				Red	2.0	2.0	0.0	0.0	0.0	0.0				

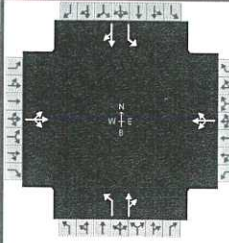
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		6.0		6.0
Phase Duration, s		61.0		61.0		29.0		29.0
Change Period, (Y+R _c), s		6.0		6.0		6.0		6.0
Max Allow Headway (MAH), s		0.0		0.0		3.3		3.3
Queue Clearance Time (g _s), s						25.0		24.0
Green Extension Time (g _e), s		0.0		0.0		0.0		0.0
Phase Call Probability						1.00		1.00
Max Out Probability						1.00		1.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	209			1220			24	67		61	407	
Adjusted Saturation Flow Rate (s), veh/h/ln	850			1834			994	1626		1355	1646	
Queue Service Time (g _s), s	0.0			48.7			1.0	2.9		3.3	22.0	
Cycle Queue Clearance Time (g _c), s	4.3			55.0			23.0	2.9		6.2	22.0	
Green Ratio (g/C)	0.61			0.61			0.26	0.26		0.26	0.26	
Capacity (c), veh/h	571			1165			91	416		383	421	
Volume-to-Capacity Ratio (X)	0.366			1.046			0.262	0.162		0.159	0.967	
Back of Queue (Q), ft/ln (50 th percentile)	44.4			855.3			17.3	29.2		28	312	
Back of Queue (Q), veh/ln (50 th percentile)	1.8			34.2			0.7	1.2		1.1	12.5	
Queue Storage Ratio (RQ) (50 th percentile)	0.00			0.00			0.00	0.00		0.00	0.00	
Uniform Delay (d ₁), s/veh	7.6			18.4			44.8	26.0		28.4	33.1	
Incremental Delay (d ₂), s/veh	1.8			39.4			6.9	0.8		0.9	36.3	
Initial Queue Delay (d ₃), s/veh	0.0			0.0			0.0	0.0		0.0	0.0	
Control Delay (d), s/veh	9.4			57.8			51.6	26.9		29.3	69.4	
Level of Service (LOS)	A			F			D	C		C	E	
Approach Delay, s/veh / LOS	9.4	A		57.8	E		33.3	C		64.2	E	
Intersection Delay, s/veh / LOS	53.1						D					

Multimodal Results	EB		WB		NB		SB	
	Pedestrian LOS Score / LOS	1.87	B	1.87	B	1.70	B	1.70
Bicycle LOS Score / LOS	0.83	A	2.50	B	0.64	A	1.26	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	McDonough & Rea Associates			Duration, h	0.25		
Analyst	Jay Troutman	Analysis Date	3/24/2020	Area Type	Other		
Jurisdiction	Franklin Twp, Somerset County	Time Period	PM School Peak Hour Existing	PHF	0.92		
Urban Street	Pierce Street	Analysis Year	2020	Analysis Period	1 > 7:00		
Intersection	Pierce St & Worlds Fair/...	File Name	piwf20ps.xus				
Project Description	15-191 150 Pierce St. LLC						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	80	144	61	58	303	14	138	20	160	20	5	117

Signal Information				Signal Phases									
Cycle, s	90.0	Reference Phase	2	EB		WB		NB		SB		SB	
Offset, s	0	Reference Point	End	Green		Yellow		Red		Green		Yellow	
Uncoordinated	No	Simult. Gap E/W	On	54.0	24.0	0.0	0.0	0.0	0.0	1	2	3	4
Force Mode	Fixed	Simult. Gap N/S	On	4.0	4.0	0.0	0.0	0.0	0.0	5	6	7	8
				2.0	2.0	0.0	0.0	0.0	0.0				

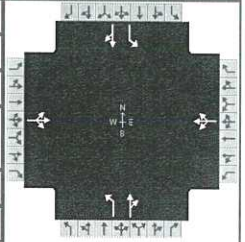
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		6.0		6.0
Phase Duration, s		60.0		60.0		30.0		30.0
Change Period, (Y+R _c), s		6.0		6.0		6.0		6.0
Max Allow Headway (MAH), s		0.0		0.0		3.3		3.3
Queue Clearance Time (g _s), s						17.4		12.3
Green Extension Time (g _e), s		0.0		0.0		0.7		0.9
Phase Call Probability						1.00		1.00
Max Out Probability						0.16		0.01

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	310			408			150	196		22	133	
Adjusted Saturation Flow Rate (s), veh/h/ln	1599			1827			1277	1638		1206	1620	
Queue Service Time (g _s), s	0.0			0.0			9.6	9.0		1.4	5.9	
Cycle Queue Clearance Time (g _c), s	7.4			9.4			15.4	9.0		10.3	5.9	
Green Ratio (g/C)	0.60			0.60			0.27	0.27		0.27	0.27	
Capacity (c), veh/h	1011			1143			337	437		282	432	
Volume-to-Capacity Ratio (X)	0.307			0.357			0.445	0.448		0.077	0.307	
Back of Queue (Q), ft/ln (50 th percentile)	66.8			92.1			80.5	93.3		10.7	59.7	
Back of Queue (Q), veh/ln (50 th percentile)	2.7			3.7			3.2	3.7		0.4	2.4	
Queue Storage Ratio (RQ) (50 th percentile)	0.00			0.00			0.00	0.00		0.00	0.00	
Uniform Delay (d ₁), s/veh	8.6			9.1			32.5	27.5		31.8	26.4	
Incremental Delay (d ₂), s/veh	0.8			0.9			4.2	3.3		0.5	1.8	
Initial Queue Delay (d ₃), s/veh	0.0			0.0			0.0	0.0		0.0	0.0	
Control Delay (d), s/veh	9.4			10.0			36.7	30.8		32.3	28.2	
Level of Service (LOS)	A			A			D	C		C	C	
Approach Delay, s/veh / LOS	9.4	A		10.0	A		33.4	C		28.8	C	
Intersection Delay, s/veh / LOS	18.9						B					

Multimodal Results	EB	WB	NB	SB
Pedestrian LOS Score / LOS	1.88	B	1.70	B
Bicycle LOS Score / LOS	1.00	A	1.06	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	McDonough & Rea Associates			Duration, h	0.25		
Analyst	Jay Troutman	Analysis Date	3/24/2020	Area Type	Other		
Jurisdiction	Franklin Twp, Somerset County	Time Period	PM School Peak Hour Build	PHF	0.92		
Urban Street	Pierce Street	Analysis Year	2021	Analysis Period	1> 7:00		
Intersection	Pierce St & Worlds Fair/...	File Name	piwf21dps.xus				
Project Description	15-191 150 Pierce St. LLC						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	81	145	73	70	306	14	165	24	192	20	6	118

Signal Information													
Cycle, s	90.0	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	No	Simult. Gap E/W	On	Green	54.0	24.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0			
				Red	2.0	2.0	0.0	0.0	0.0	0.0			

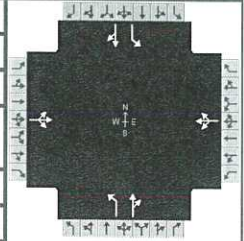
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		6.0		6.0
Phase Duration, s		60.0		60.0		30.0		30.0
Change Period, (Y+R _c), s		6.0		6.0		6.0		6.0
Max Allow Headway (MAH), s		0.0		0.0		3.3		3.3
Queue Clearance Time (g _s), s						19.8		14.5
Green Extension Time (g _e), s		0.0		0.0		0.6		1.0
Phase Call Probability						1.00		1.00
Max Out Probability						0.62		0.04

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	325			424			179	235		22	135	
Adjusted Saturation Flow Rate (s), veh/h/ln	1602			1797			1275	1638		1164	1622	
Queue Service Time (g _s), s	0.0			0.9			11.8	11.0		1.5	6.0	
Cycle Queue Clearance Time (g _c), s	7.9			10.0			17.8	11.0		12.5	6.0	
Green Ratio (g/C)	0.60			0.60			0.27	0.27		0.27	0.27	
Capacity (c), veh/h	1012			1125			335	437		248	433	
Volume-to-Capacity Ratio (X)	0.321			0.377			0.535	0.538		0.088	0.312	
Back of Queue (Q), ft/ln (50 th percentile)	71.1			97.6			100.9	116.8		11.2	60.6	
Back of Queue (Q), veh/ln (50 th percentile)	2.8			3.9			4.0	4.7		0.4	2.4	
Queue Storage Ratio (RQ) (50 th percentile)	0.00			0.00			0.00	0.00		0.00	0.00	
Uniform Delay (d ₁), s/veh	8.7			9.2			33.5	28.2		33.6	26.4	
Incremental Delay (d ₂), s/veh	0.8			1.0			6.0	4.7		0.7	1.9	
Initial Queue Delay (d ₃), s/veh	0.0			0.0			0.0	0.0		0.0	0.0	
Control Delay (d), s/veh	9.6			10.1			39.5	32.9		34.3	28.3	
Level of Service (LOS)	A			B			D	C		C	C	
Approach Delay, s/veh / LOS	9.6	A		10.1	B		35.8	D		29.1	C	
Intersection Delay, s/veh / LOS	20.3						C					

Multimodal Results	EB			WB			NB			SB		
	Pedestrian LOS Score / LOS	1.88	B		1.88	B		1.70	B		1.70	B
Bicycle LOS Score / LOS	1.02	A		1.19	A		1.17	A		0.75	A	

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	McDonough & Rea Associates			Duration, h	0.25
Analyst	Jay Troutman	Analysis Date	3/24/2020	Area Type	Other
Jurisdiction	Franklin Twp, Somerset County	Time Period	PM Street Peak Hour Existing	PHF	0.92
Urban Street	Pierce Street	Analysis Year	2020	Analysis Period	1> 7:00
Intersection	Pierce St & Worlds Fair/...	File Name	piwf20pm.xus		
Project Description	15-191 150 Pierce St. LLC				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	108	598	2	20	163	50	14	6	74	264	6	193

Signal Information														
Cycle, s	90.0	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	No	Simult. Gap E/W	On	Green	54.0	24.0	0.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0				
				Red	2.0	2.0	0.0	0.0	0.0	0.0				

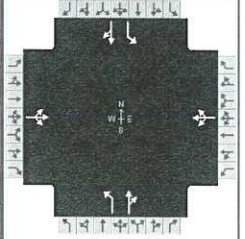
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		6.0		6.0
Phase Duration, s		60.0		60.0		30.0		30.0
Change Period, (Y+R _c), s		6.0		6.0		6.0		6.0
Max Allow Headway (MAH), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g _s), s						13.2		24.9
Green Extension Time (g _e), s		0.0		0.0		1.1		0.0
Phase Call Probability						1.00		1.00
Max Out Probability						0.02		1.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	770			253			15	87	287		216	
Adjusted Saturation Flow Rate (s), veh/h/ln	1828			1783			1183	1629	1331		1618	
Queue Service Time (g _s), s	17.6			0.0			1.0	3.7	19.2		10.2	
Cycle Queue Clearance Time (g _c), s	25.5			5.5			11.2	3.7	22.9		10.2	
Green Ratio (g/C)	0.60			0.60			0.27	0.27	0.27		0.27	
Capacity (c), veh/h	1143			1113			262	434	380		431	
Volume-to-Capacity Ratio (X)	0.673			0.228			0.058	0.200	0.755		0.501	
Back of Queue (Q), ft/ln (50 th percentile)	241.7			52.2			7.6	37.5	181.2		105.8	
Back of Queue (Q), veh/ln (50 th percentile)	9.7			2.1			0.3	1.5	7.2		4.2	
Queue Storage Ratio (RQ) (50 th percentile)	0.00			0.00			0.00	0.00	0.00		0.00	
Uniform Delay (d ₁), s/veh	12.1			8.3			32.7	25.6	34.4		27.9	
Incremental Delay (d ₂), s/veh	3.2			0.5			0.4	1.0	13.1		4.1	
Initial Queue Delay (d ₃), s/veh	0.0			0.0			0.0	0.0	0.0		0.0	
Control Delay (d), s/veh	15.3			8.8			33.1	26.6	47.5		32.1	
Level of Service (LOS)	B			A			C	C	D		C	
Approach Delay, s/veh / LOS	15.3	B		8.8	A		27.6	C		40.9	D	
Intersection Delay, s/veh / LOS	23.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.88	B	1.70	B	1.70	B
Bicycle LOS Score / LOS	1.76	B	0.91	A	0.66	A	1.32	A

HCS7 Signalized Intersection Results Summary

General Information					Intersection Information		
Agency	McDonough & Rea Associates				Duration, h	0.25	
Analyst	Jay Troutman	Analysis Date	3/24/2020		Area Type	Other	
Jurisdiction	Franklin Twp, Somerset County	Time Period	PM Street Peak Hour Build		PHF	0.92	
Urban Street	Pierce Street	Analysis Year	2021		Analysis Period	1 > 7:00	
Intersection	Pierce St & Worlds Fair/...	File Name	piwf21dp.xus				
Project Description	15-191 150 Pierce St. LLC						



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	109	607	2	24	165	51	17	7	89	267	7	195

Signal Information												
Cycle, s	90.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	54.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
				Red	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		8.0		6.0		6.0
Phase Duration, s		60.0		60.0		30.0		30.0
Change Period, (Y+R _c), s		6.0		6.0		6.0		6.0
Max Allow Headway (MAH), s		0.0		0.0		3.3		3.3
Queue Clearance Time (g _s), s						13.6		26.0
Green Extension Time (g _e), s		0.0		0.0		1.1		0.0
Phase Call Probability						1.00		1.00
Max Out Probability						0.03		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	780			261			18	104		290	220	
Adjusted Saturation Flow Rate (s), veh/h/ln	1827			1756			1180	1628		1310	1619	
Queue Service Time (g _s), s	18.3			0.0			1.2	4.5		19.5	10.4	
Cycle Queue Clearance Time (g _c), s	26.2			5.7			11.6	4.5		24.0	10.4	
Green Ratio (g/C)	0.60			0.60			0.27	0.27		0.27	0.27	
Capacity (c), veh/h	1142			1097			259	434		364	432	
Volume-to-Capacity Ratio (X)	0.683			0.238			0.071	0.240		0.798	0.509	
Back of Queue (Q), ft/ln (50th percentile)	248.5			54.3			9.4	45.6		193.4	107.7	
Back of Queue (Q), veh/ln (50th percentile)	9.9			2.2			0.4	1.8		7.7	4.3	
Queue Storage Ratio (RQ) (50th percentile)	0.00			0.00			0.00	0.00		0.00	0.00	
Uniform Delay (d ₁), s/veh	12.3			8.3			32.9	25.9		35.5	28.0	
Incremental Delay (d ₂), s/veh	3.3			0.5			0.5	1.3		16.6	4.2	
Initial Queue Delay (d ₃), s/veh	0.0			0.0			0.0	0.0		0.0	0.0	
Control Delay (d), s/veh	15.6			8.9			33.4	27.2		52.0	32.2	
Level of Service (LOS)	B			A			C	C		D	C	
Approach Delay, s/veh / LOS	15.6	B		8.9	A		28.1	C		43.5	D	
Intersection Delay, s/veh / LOS	24.0						C					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	1.88	B		1.88	B		1.70	B		1.70	B	
Bicycle LOS Score / LOS	1.78	B		0.92	A		0.69	A		1.33	A	

HCS7 Two-Way Stop-Control Report

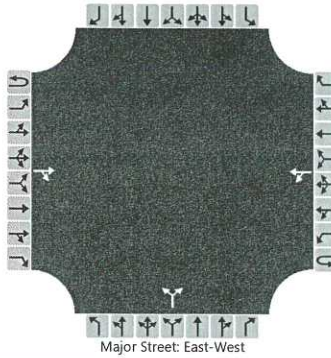
General Information

Analyst	Jay Troutman
Agency/Co.	McDonough & Rea Assoc.
Date Performed	3/24/2020
Analysis Year	2020
Time Analyzed	AM Peak Hour Existing
Intersection Orientation	East-West
Project Description	15-191 150 Pierce St. LLC

Site Information

Intersection	Pierce & West Site Drive
Jurisdiction	Franklin Twp Somerset Cty
East/West Street	Pierce Street
North/South Street	Westerly Site Driveway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0	0	1	0		0	0	0	
Configuration				TR		LT					LR					
Volume (veh/h)			203	40		30	941			43		18				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)					4.1					7.1		6.2			
Critical Headway (sec)					4.13					6.43		6.23			
Base Follow-Up Headway (sec)					2.2					3.5		3.3			
Follow-Up Headway (sec)					2.23					3.53		3.33			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)					33					66						
Capacity, c (veh/h)					1294					209						
v/c Ratio					0.03					0.32						
95% Queue Length, Q ₉₅ (veh)					0.1					1.3						
Control Delay (s/veh)					7.9					30.0						
Level of Service (LOS)					A					D						
Approach Delay (s/veh)					0.7				30.0							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

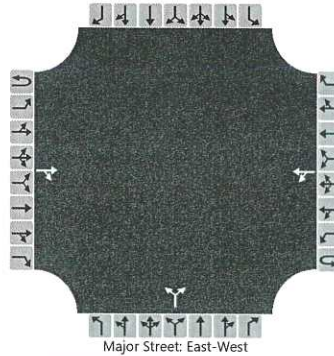
General Information

Analyst	Jay Troutman
Agency/Co.	McDonough & Rea Assoc.
Date Performed	3/24/2020
Analysis Year	2021
Time Analyzed	AM Peak Hour Build
Intersection Orientation	East-West
Project Description	15-191 150 Pierce St. LLC

Site Information

Intersection	Pierce & West Site Drive
Jurisdiction	Franklin Twp Somerset Cty
East/West Street	Pierce Street
North/South Street	Westerly Site Driveway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			212	47		36	955			53		23				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.1		6.2			
Critical Headway (sec)						4.13					6.43		6.23			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.23					3.53		3.33			

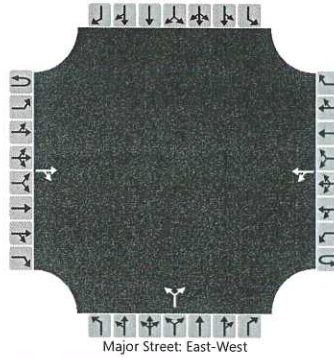
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						39						83				
Capacity, c (veh/h)						1275						197				
v/c Ratio						0.03						0.42				
95% Queue Length, Q ₉₅ (veh)						0.1						1.9				
Control Delay (s/veh)						7.9						36.0				
Level of Service (LOS)						A						E				
Approach Delay (s/veh)					0.8				36.0							
Approach LOS									E							

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Jay Troutman			Intersection	Pierce & West Site Drive		
Agency/Co.	McDonough & Rea Assoc.			Jurisdiction	Franklin Twp Somerset Cty		
Date Performed	3/24/2020			East/West Street	Pierce Street		
Analysis Year	2020			North/South Street	Westerly Site Driveway		
Time Analyzed	PM Peak Hour Existing			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	15-191 150 Pierce St. LLC						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0
Configuration				TR		LT					LR					
Volume (veh/h)			703	17		5	329			22		15				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

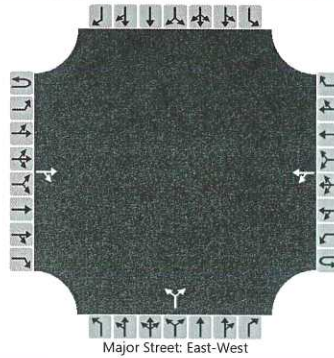
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						5						40				
Capacity, c (veh/h)						831						268				
v/c Ratio						0.01						0.15				
95% Queue Length, Q ₉₅ (veh)						0.0						0.5				
Control Delay (s/veh)						9.4						20.8				
Level of Service (LOS)						A						C				
Approach Delay (s/veh)					0.2				20.8							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	Jay Troutman			Intersection	Pierce & West Site Drive		
Agency/Co.	McDonough & Rea Assoc.			Jurisdiction	Franklin Twp Somerset Cty		
Date Performed	3/24/2020			East/West Street	Pierce Street		
Analysis Year	2021			North/South Street	Westerly Site Driveway		
Time Analyzed	PM Peak Hour Build			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	15-191 150 Pierce St. LLC						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	0	1	0	0	0	1	0	0	1	0		0	0	0	
Configuration				TR		LT					LR					
Volume (veh/h)			710	21		6	335			26		18				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						7					48					
Capacity, c (veh/h)						822					262					
v/c Ratio						0.01					0.18					
95% Queue Length, Q ₉₅ (veh)						0.0					0.7					
Control Delay (s/veh)						9.4					21.8					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.3				21.8							
Approach LOS									C							