

October 29, 2019

Mr. Chad Boardman
Eastland Partners, Inc.
217 West Central Street, Suite 3
Natick, MA 01760

RE: Additional Intersection Analyses
Clearview Country Club related Traffic

Dear Mr. Boardman:

In response to your request, I am pleased to forward this memorandum that contains my additional evaluation of the intersections of Park Hill Avenue with Holman Road and Clearview Country Club driveway. This additional evaluation should address the Millbury Planning Board members' concerns relative to additional traffic and its impacts on these two intersections. In support of the application for definitive site plans to the Town of Millbury Planning Board, I am submitting the following analyses.

It should be noted that, based on engineering judgment, these two intersections were assumed not to be significantly impacted by the traffic expected to be generated by the proposed development, thus, they were not analyzed in the original traffic study. However, in response to the concerns expressed by the Millbury Planning Board members, peak hour traffic volumes were collected and analyzed below.

Turning movement traffic counts were collected on an average weekday for two intersections of Park Hill Avenue with Holman Road and the Clearview Country Club driveway on Tuesday, October 8, 2019. These counts have captured traffic to and from the New England Carpenters Training Center, residential properties on Holman Road, and the Clearview Country Club golf course during both AM and PM peak traffic periods. The data were then seasonally adjusted to reflect annual average for existing conditions. They were then projected into future to represent future no-build conditions. Finally, trips expected to be generated by the proposed development were added to the no-build conditions traffic to reflect future build conditions. All of the above-mentioned data are shown in the attachments in the form of raw data and graphically.

Intersection of Park Hill Avenue and Holman Road – As stated earlier, the original traffic study did not consider traffic impacts of the proposed development to be significant enough to warrant the analysis of this intersection. However, the Millbury Planning Board members have since expressed concerns relative to the traffic associated with the proposed development and its impact on Park Hill Avenue at this intersection. Therefore, a new set of turning movements traffic counts were collected for this intersection. The data were then adjusted, projected into the future without the proposed development, and added to the traffic expected to be generated by the proposed development. The resultant data were then analyzed. The analysis showed that this intersection is currently operating at Level Of Service (LOS) “A”, and will continue to operate at LOS “A” in the future with or without the proposed development in place. The following table 1 shows the trip

generation for the site of the proposed condominium development. The analyses results are shown in the following table 2.

Intersection of Park Hill Avenue and Clearview Country Club Driveway – This intersection was also the source of safety concerns by the Millbury Planning Board members due to the introduction of new traffic associated with the proposed development. The intersection turning movements traffic counts were adjusted, expanded to the future, and finally added to the traffic anticipated from the existing driveway of the proposed development. Similar to the Holman Road intersection, the analyses showed that this intersection is currently operating at LOS “A”, and will continue to operate at the same LOS “A” in the future with or without the proposed residential development. The following table 2 also shows the results of these analyses. Finally, all analysis sheets are shown in the attachments.

Table 1

140 Units Condominium Housing - Attached LU Code 252

Daily	%In	%Out	AM Pk	%In	%Out	PM Pk	%In	%Out
7.32	50%	50%	0.46	23%	77%	0.56	63%	37%
1023	512	513	64	15	49	78	49	29

Table 2

Intersection Analysis

Intersection of Park Hill Ave and Holman Rd - AM Peak						
Controlled Approach	Existing Conditions		No Build Conditions		Build Conditions	
	Approach	Level of	Approach	Level of	Approach	Level of
	Delay	Service	Delay	Service	Delay	Service
EB	8.9	A	8.9	A	9.1	A
WB					9.4	A
NB						
SB					0.3	A
Intersection	0.4	A	0.4	A	1.5	A

Intersection of Park Hill Ave and Holman Rd - PM Peak						
EB	9.2	A	9.3	A	10.2	B
WB					9.6	A
NB	0.3	A	0.3	A	0.2	A
SB					1.3	A
Intersection	0.7	A	1.5	A	1.7	A

Intersection of Park Hill Ave and Clearview Country Club - AM Peak						
WB	9.4	A	9.5	A	9.8	A
SB	0.6	A	0.5	A	0.7	A
Intersection	0.4	A	0.4	A	3.5	A

Intersection of Park Hill Ave and Clearview Country Club - PM Peak						
WB	9.3	A	9.3	A	9.5	A
SB	0.5	A	0.5	A	1.5	A
Intersection	0.9	A	0.8	A	2.2	A

Mr. Chad Boardman
Eastland Partners, Inc.

In conclusion, the results of these analyses confirm the assumption made in the original traffic study, that is, these two intersections were not expected to be impacted by the new trips associated with the proposed condominium development. It further validates the fact that the Park Hill Avenue and Holman Road traffic volumes are not significant enough to warrant any concerns due to the additional traffic from the condominium site.

I trust the above responses will suffice. Please feel free to contact me if you should have any questions.

Sincerely,
Ali R. Khorasani
Ali R. Khorasani

Attachments

Accurate Counts
978-664-2565

N/S Street : Park Hill Avenue
E/W Street: Holman Road
City/State : Millbury, MA
Weather : Clear

File Name : 18350001
Site Code : 18350001
Start Date : 10/8/2019
Page No : 2

	Park Hill Ave From North			Park Hill Ave From South			Holman Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	11	0	11	0	24	24	0	0	0	35
07:15 AM	17	0	17	0	23	23	0	2	2	42
07:30 AM	12	0	12	0	20	20	0	0	0	32
07:45 AM	15	1	16	0	16	16	1	0	1	33
Total Volume	55	1	56	0	83	83	1	2	3	142
% App. Total	98.2	1.8		0	100		33.3	66.7		
PHF	.809	.250	.824	.000	.865	.865	.250	.250	.375	.845
Cars	55	1	56	0	81	81	1	2	3	140
% Cars	100	100	100	0	97.6	97.6	100	100	100	98.6
Trucks	0	0	0	0	2	2	0	0	0	2
% Trucks	0	0	0	0	2.4	2.4	0	0	0	1.4

Accurate Counts
978-664-2565

N/S Street : Park Hill Avenue
E/W Street: Holman Road
City/State : Millbury, MA
Weather : Clear

File Name : 18350001
Site Code : 18350001
Start Date : 10/8/2019
Page No : 2

	Park Hill Ave From North			Park Hill Ave From South			Holman Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	14	0	14	1	19	20	1	0	1	35
04:30 PM	21	0	21	0	17	17	0	0	0	38
04:45 PM	13	1	14	1	10	11	0	0	0	25
05:00 PM	22	0	22	0	13	13	2	0	2	37
Total Volume	70	1	71	2	59	61	3	0	3	135
% App. Total	98.6	1.4		3.3	96.7		100	0		
PHF	.795	.250	.807	.500	.776	.763	.375	.000	.375	.888
Cars	70	1	71	2	58	60	3	0	3	134
% Cars	100	100	100	100	98.3	98.4	100	0	100	99.3
Trucks	0	0	0	0	1	1	0	0	0	1
% Trucks	0	0	0	0	1.7	1.6	0	0	0	0.7

Accurate Counts
978-664-2565

N/S Street : Park Hill Avenue
E/W Street: Clearview Country Club
City/State : Millbury, MA
Weather : Clear

File Name : 18350002
Site Code : 18350002
Start Date : 10/8/2019
Page No : 2

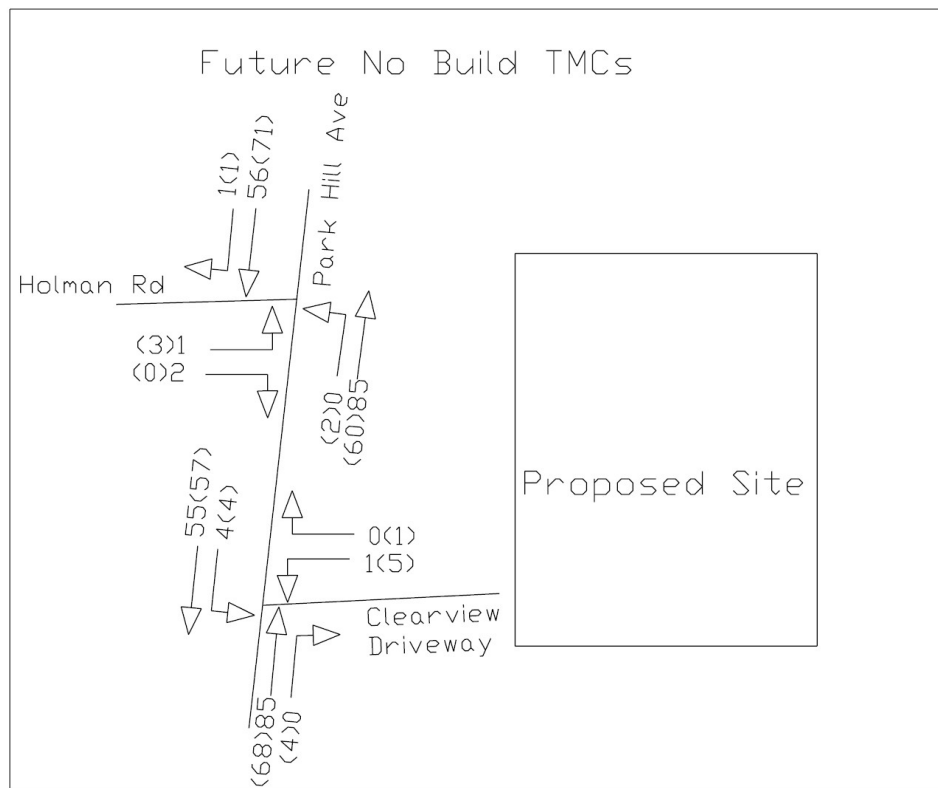
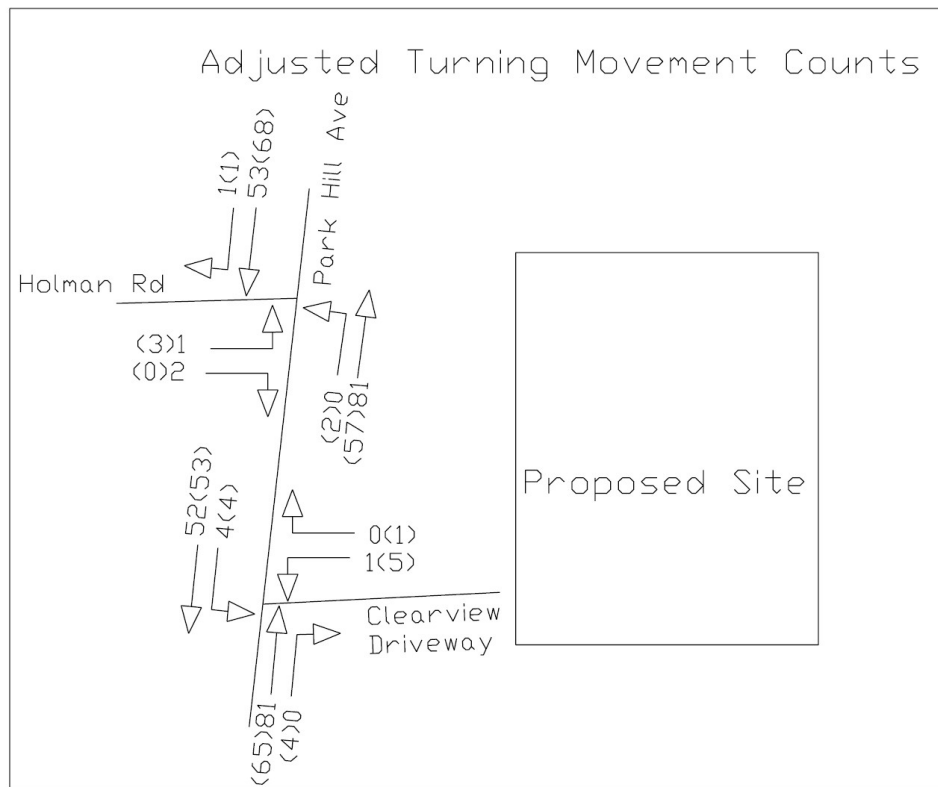
	Park Hill Ave From North			Country Club Dwy From East			Park Hill Ave From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	11	11	0	0	0	24	0	24	35
07:15 AM	0	19	19	0	0	0	25	0	25	44
07:30 AM	2	10	12	1	0	1	17	0	17	30
07:45 AM	2	14	16	0	0	0	18	0	18	34
Total Volume	4	54	58	1	0	1	84	0	84	143
% App. Total	6.9	93.1		100	0		100	0		
PHF	.500	.711	.763	.250	.000	.250	.840	.000	.840	.813
Cars	4	54	58	1	0	1	82	0	82	141
% Cars	100	100	100	100	0	100	97.6	0	97.6	98.6
Trucks	0	0	0	0	0	0	2	0	2	2
% Trucks	0	0	0	0	0	0	2.4	0	2.4	1.4

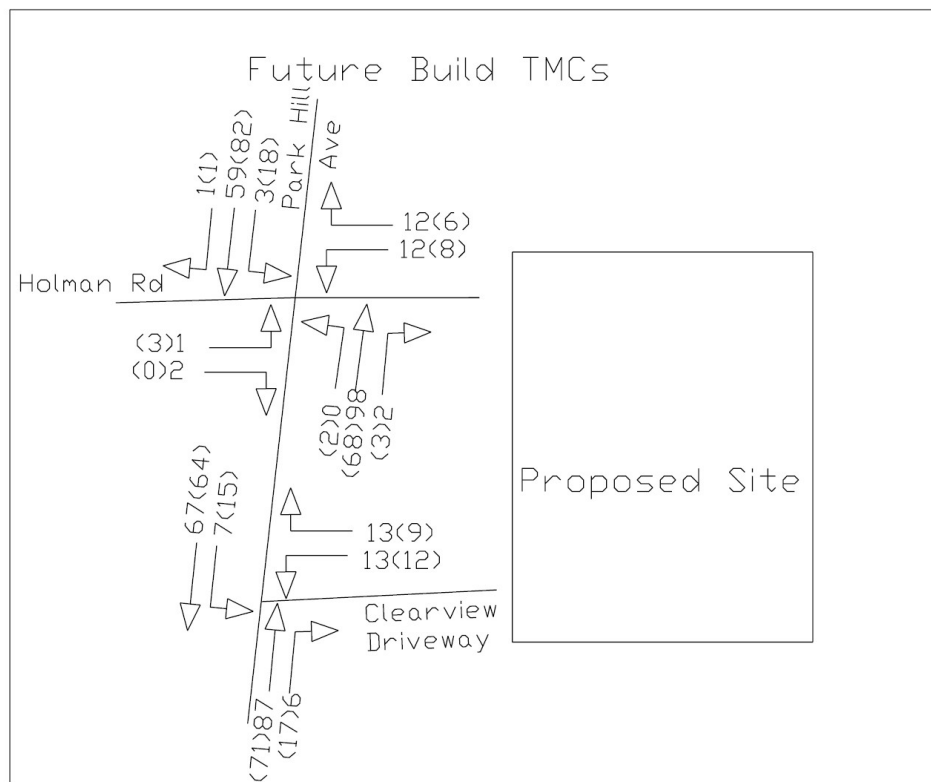
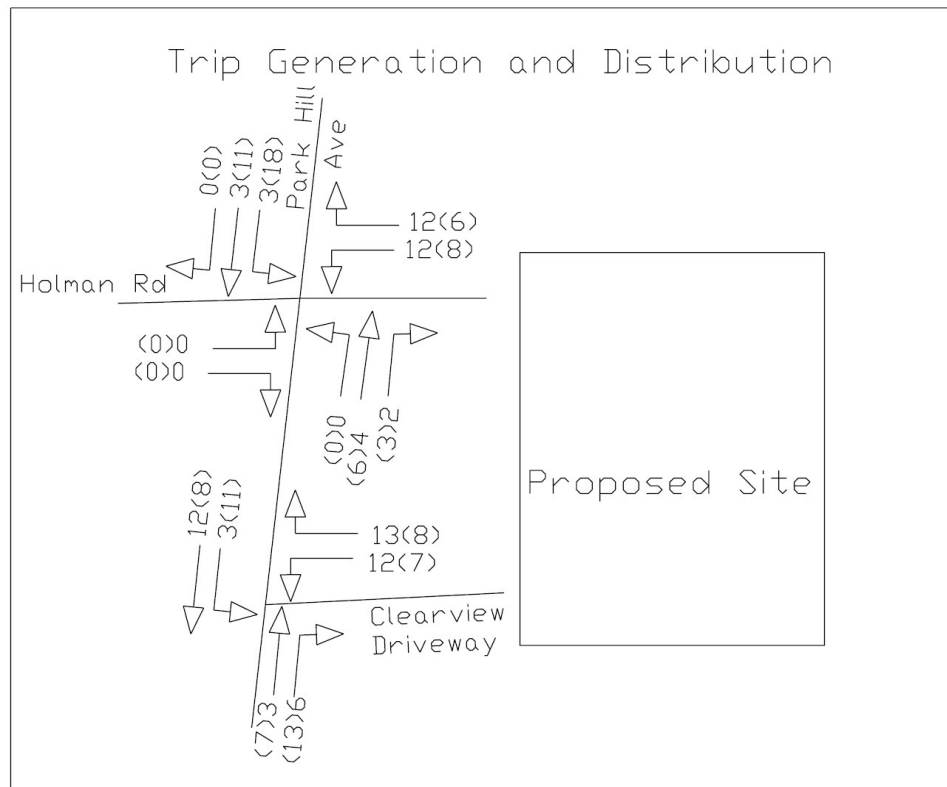
Accurate Counts
978-664-2565

N/S Street : Park Hill Avenue
E/W Street: Clearview Country Club
City/State : Millbury, MA
Weather : Clear

File Name : 18350002
Site Code : 18350002
Start Date : 10/8/2019
Page No : 2

	Park Hill Ave From North			Country Club Dwy From East			Park Hill Ave From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	12	12	2	0	2	21	1	22	36
04:15 PM	2	13	15	1	0	1	18	0	18	34
04:30 PM	2	17	19	2	1	3	16	2	18	40
04:45 PM	0	13	13	0	0	0	12	1	13	26
Total Volume	4	55	59	5	1	6	67	4	71	136
% App. Total	6.8	93.2		83.3	16.7		94.4	5.6		
PHF	.500	.809	.776	.625	.250	.500	.798	.500	.807	.850
Cars	4	55	59	5	1	6	66	4	70	135
% Cars	100	100	100	100	100	100	98.5	100	98.6	99.3
Trucks	0	0	0	0	0	0	1	0	1	1
% Trucks	0	0	0	0	0	0	1.5	0	1.4	0.7














Park Hill at Country Club Driveway Existing Conditions AM Peak

1: Int










10/27/2019

									
Movement	WBL	WBR	NBT	NBR	SBL	SBT			
Lane Configurations									
Sign Control	Stop		Free			Free			
Grade	0%		0%			0%			
Volume (veh/h)	1	0	81	0	4	52			
Peak Hour Factor	0.25	0.25	0.82	0.82	0.76	0.76			
Hourly flow rate (veh/h)	4	0	99	0	5	68			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type	None								
Median storage (veh)									
vC, conflicting volume	178	99			99				
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
tC, single (s)	6.4	6.2			4.1				
tC, 2 stage (s)									
tF (s)	3.5	3.3			2.2				
p0 queue free %	100	100			100				
cM capacity (veh/h)	814	963			1507				
Direction, Lane #	WB 1	NB 1	SB 1						
Volume Total	4	99	74						
Volume Left	4	0	5						
Volume Right	0	0	0						
cSH	814	1700	1507						
Volume to Capacity	0.00	0.06	0.00						
Queue Length (ft)	0	0	0						
Control Delay (s)	9.4	0.0	0.6						
Lane LOS	A		A						
Approach Delay (s)	9.4	0.0	0.6						
Approach LOS	A								
Intersection Summary									
Average Delay		0.4							
Intersection Capacity Utilization		15.2%	ICU Level of Service	A					

Park Hill at Country Club Driveway Existing Conditions PM Peak

1: Int










10/27/2019

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	5	1	65	4	4	53
Peak Hour Factor	0.50	0.50	0.81	0.81	0.78	0.78
Hourly flow rate (veh/h)	10	2	80	5	5	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	161	83			85	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	832	982			1524	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	12	85	73			
Volume Left	10	0	5			
Volume Right	2	5	0			
cSH	854	1700	1524			
Volume to Capacity	0.01	0.05	0.00			
Queue Length (ft)	1	0	0			
Control Delay (s)	9.3	0.0	0.5			
Lane LOS	A		A			
Approach Delay (s)	9.3	0.0	0.5			
Approach LOS	A					
Intersection Summary						
Average Delay		0.9				
Intersection Capacity Utilization		14.5%	ICU Level of Service	A		

Park Hill at Holman Existing Conditions AM Peak

1: Int










10/27/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	2	0	81	53	1
Peak Hour Factor	0.38	0.38	0.87	0.87	0.82	0.82
Hourly flow rate (veh/h)	3	5	0	93	65	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	158	65	66			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	837	1004	1536			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	8	93	66			
Volume Left	3	0	0			
Volume Right	5	0	1			
cSH	942	1536	1700			
Volume to Capacity	0.01	0.00	0.04			
Queue Length (ft)	1	0	0			
Control Delay (s)	8.9	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.9	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization		14.9%		ICU Level of Service		A

Park Hill at Holman Existing Conditions PM Peak

1: Int










10/29/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	2	57	68	1
Peak Hour Factor	0.38	0.38	0.76	0.76	0.81	0.81
Hourly flow rate (veh/h)	8	3	3	75	84	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	165	85	85			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	829	980	1511			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	11	78	85			
Volume Left	8	3	0			
Volume Right	3	0	1			
cSH	862	1511	1700			
Volume to Capacity	0.01	0.00	0.05			
Queue Length (ft)	1	0	0			
Control Delay (s)	9.2	0.3	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.2	0.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.7					
Intersection Capacity Utilization	14.5%		ICU Level of Service		A	

Park Hill at Country Club Driveway Future No Build AM Peak

1: Int










10/27/2019

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	1	0	85	0	4	55
Peak Hour Factor	0.25	0.25	0.82	0.82	0.76	0.76
Hourly flow rate (veh/h)	4	0	104	0	5	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	187	104			104	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	804	957			1501	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	4	104	78			
Volume Left	4	0	5			
Volume Right	0	0	0			
cSH	804	1700	1501			
Volume to Capacity	0.00	0.06	0.00			
Queue Length (ft)	0	0	0			
Control Delay (s)	9.5	0.0	0.5			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	0.5			
Approach LOS	A					
Intersection Summary						
Average Delay		0.4				
Intersection Capacity Utilization		15.5%		ICU Level of Service		A

Park Hill at Country Club Driveway Future No Build PM Peak

1: Int










10/27/2019

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	5	1	68	4	4	57
Peak Hour Factor	0.50	0.50	0.81	0.81	0.78	0.78
Hourly flow rate (veh/h)	10	2	84	5	5	73
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	170	86			89	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	822	978			1519	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	12	89	78			
Volume Left	10	0	5			
Volume Right	2	5	0			
cSH	845	1700	1519			
Volume to Capacity	0.01	0.05	0.00			
Queue Length (ft)	1	0	0			
Control Delay (s)	9.3	0.0	0.5			
Lane LOS	A		A			
Approach Delay (s)	9.3	0.0	0.5			
Approach LOS	A					
Intersection Summary						
Average Delay		0.8				
Intersection Capacity Utilization		14.7%		ICU Level of Service		A

Park Hill at Holman Future No Build AM Peak

1: Int










10/27/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	2	0	85	56	1
Peak Hour Factor	0.38	0.38	0.87	0.87	0.82	0.82
Hourly flow rate (veh/h)	3	5	0	98	68	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	167	69	70			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	829	1000	1531			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	8	98	70			
Volume Left	3	0	0			
Volume Right	5	0	1			
cSH	935	1531	1700			
Volume to Capacity	0.01	0.00	0.04			
Queue Length (ft)	1	0	0			
Control Delay (s)	8.9	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.9	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization		15.1%		ICU Level of Service		A

Park Hill at Holman Future No Build PM Peak

1: Int

















10/27/2019

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	1	2	60	71	1
Peak Hour Factor	0.38	0.38	0.76	0.76	0.81	0.81
Hourly flow rate (veh/h)	8	3	3	79	88	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	172	88	89			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	821	975	1507			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	11	82	89			
Volume Left	8	3	0			
Volume Right	3	0	1			
cSH	855	1507	1700			
Volume to Capacity	0.01	0.00	0.05			
Queue Length (ft)	1	0	0			
Control Delay (s)	9.3	0.3	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.3	0.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.7				
Intersection Capacity Utilization		14.7%		ICU Level of Service		A

Park Hill at Holman Future Build AM Peak

1: Int

















10/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	2	12	0	12	0	98	2	3	59	1
Peak Hour Factor	0.38	0.92	0.38	0.92	0.92	0.92	0.87	0.87	0.92	0.92	0.82	0.82
Hourly flow rate (veh/h)	3	0	5	13	0	13	0	113	2	3	72	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
vC, conflicting volume	206	194	73	198	193	114	73			115		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	98	100	99	100			100		
cM capacity (veh/h)	744	700	995	755	700	939	1527			1474		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	8	26	115	76								
Volume Left	3	13	0	3								
Volume Right	5	13	2	1								
cSH	895	837	1527	1474								
Volume to Capacity	0.01	0.03	0.00	0.00								
Queue Length (ft)	1	2	0	0								
Control Delay (s)	9.1	9.4	0.0	0.3								
Lane LOS	A	A		A								
Approach Delay (s)	9.1	9.4	0.0	0.3								
Approach LOS	A	A										
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			16.1%				ICU Level of Service			A		

Park Hill at Holman Future Build PM Peak

1: Int










10/27/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	0	0	8	0	6	2	68	2	18	82	1
Peak Hour Factor	0.38	0.92	0.38	0.92	0.92	0.92	0.76	0.76	0.92	0.92	0.81	0.81
Hourly flow rate (veh/h)	8	0	0	9	0	7	3	89	2	20	101	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
vC, conflicting volume	243	238	102	237	237	91	102			92		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	99	100	99	100			99		
cM capacity (veh/h)	702	653	959	710	654	967	1490			1503		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	8	15	94	122								
Volume Left	8	9	3	20								
Volume Right	0	7	2	1								
cSH	702	801	1490	1503								
Volume to Capacity	0.01	0.02	0.00	0.01								
Queue Length (ft)	1	1	0	1								
Control Delay (s)	10.2	9.6	0.2	1.3								
Lane LOS	B	A	A	A								
Approach Delay (s)	10.2	9.6	0.2	1.3								
Approach LOS	B	A										
Intersection Summary												
Average Delay			1.7									
Intersection Capacity Utilization			18.0%		ICU Level of Service					A		

Park Hill at Country Club Driveway Future Build AM Peak

1: Int







10/27/2019

									
Movement	WBL	WBR	NBT	NBR	SBL	SBT			
Lane Configurations									
Sign Control	Stop		Free			Free			
Grade	0%		0%			0%			
Volume (veh/h)	13	13	87	6	7	67			
Peak Hour Factor	0.25	0.25	0.82	0.82	0.76	0.76			
Hourly flow rate (veh/h)	52	52	106	7	9	88			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type	None								
Median storage (veh)									
vC, conflicting volume	216	110			113				
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
tC, single (s)	6.4	6.2			4.1				
tC, 2 stage (s)									
tF (s)	3.5	3.3			2.2				
p0 queue free %	93	95			99				
cM capacity (veh/h)	772	949			1488				
Direction, Lane #	WB 1	NB 1	SB 1						
Volume Total	104	113	97						
Volume Left	52	0	9						
Volume Right	52	7	0						
cSH	851	1700	1488						
Volume to Capacity	0.12	0.07	0.01						
Queue Length (ft)	10	0	0						
Control Delay (s)	9.8	0.0	0.7						
Lane LOS	A		A						
Approach Delay (s)	9.8	0.0	0.7						
Approach LOS	A								
Intersection Summary									
Average Delay		3.5							
Intersection Capacity Utilization		18.8%	ICU Level of Service	A					

Park Hill at Country Club Driveway Future Build PM Peak

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10/27/2019

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	12	9	71	17	15	64
Peak Hour Factor	0.50	0.50	0.81	0.81	0.78	0.78
Hourly flow rate (veh/h)	24	18	88	21	19	82
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume	219	98			109	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	98			99	
cM capacity (veh/h)	764	963			1494	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	42	109	101			
Volume Left	24	0	19			
Volume Right	18	21	0			
cSH	838	1700	1494			
Volume to Capacity	0.05	0.06	0.01			
Queue Length (ft)	4	0	1			
Control Delay (s)	9.5	0.0	1.5			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	1.5			
Approach LOS	A					
Intersection Summary						
Average Delay		2.2				
Intersection Capacity Utilization		16.4%		ICU Level of Service		A