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McMahon / Unser Mixed-use Development
(SW Corner)

Access Evaluation Study

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**McMahon / Unser Development
(Southwest Corner)
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Introduction

The purpose of this study is to evaluate the proposed right-in, right-out, left-in only unsignalized access to the proposed McMahon / Unser Development at the southeast corner of McMahon Blvd. / Unser Blvd. and demonstrate the benefit, if any, to permitting the access. The proposed access is located along the west side of Unser Blvd. approximately 650 feet south of McMahon Blvd. (centerline to centerline). It will provide needed access to the retail commercial component of the proposed McMahon / Unser Mixed Use Development. This report is to be considered as a companion report to the Traffic Impact Study for the McMahon / Unser Mixed Use Development at the southwest corner of McMahon Blvd. / Unser Blvd. This study is for review and approval by City of Albuquerque Transportation Development Section of the Planning Department and then subsequently the Mid-Region Council of Governments' Roadway Access Committee (R.A.C.) and Transportation Coordinating Committee (T.C.C.).

Study Procedures

The evaluation of the alternative access scenarios for the project considers the signalized intersection of Bandelier Dr. / Unser Blvd., the proposed access at Bandelier Dr. / Sagittarius Ave., and the proposed unsignalized driveway which is the subject of this report. The proposed unsignalized driveway is a right-in, right-out, left-in only located on the west side of Unser Blvd. directly across from the existing right-in, right-out, left-in only driveway into the CVS Pharmacy at the southeast corner of McMahon Blvd. / Unser Blvd.

The alternative access scenarios evaluated in this report are:

- 1) Case "Y" – a right-in, right-out, left-in only unsignalized driveway along the west side of Unser Blvd. approximately 650 feet south of McMahon Blvd. (centerline to centerline).
- 2) Case "N" – no driveway on the west side of Unser Blvd. between McMahon Blvd. and Bandelier Rd.

The intersections impacted were evaluated to estimate level-of-service, delay, and 95th percentile queue length for each intersection and each movement associated with the two Cases evaluated.

Intersection capacity analyses were performed in accordance with the procedures for signalized and unsignalized intersections utilized in the Synchro (Version 10, Build 10.3.151) as required by the New Mexico Department of Transportation and other local governments.

Intersections targeted for analysis in this study include Bandelier Dr. / Unser Blvd., Bandelier Dr. / Sagittarius Ave., and Driveway “B” / Unser Blvd.

The results of the analyses of Case “Y” and Case “N” were then compared to determine the benefits, if any, of one Case over the other.

Description of Proposed Development

The subject area of land targeted for the site development plan consists of an approximately 19-acre tract of land to be developed with approximately 10 acres of retail commercial and approximately 9 acres of residential apartments. The proposed conceptual site development plan consists of the following approximate land uses:

- Approximately 75,000 S.F. Retail Commercial floor space
- A 256-unit apartment complex

See the conceptual site development plan on Page A-3 in the Appendix of this report to acquire more detailed information about the proposed development. This site plan is conceptual at this point in time and is subject to some changes as progress takes place in the design process. The plan should, however, provide a reliable basis upon which to analyze the impact of the development on the adjacent transportation system and provide guidelines for mitigating the impact and establishing access criteria. The conceptual site plan as it is shown in this report proposes full access driveways along Bandelier Dr. at Sagittarius Ave. (retail commercial access), Aquarius Ave. (residential apartments access), and Driveway “A”. Partial access driveways are at McMahon Blvd. / Pinon Verde Rd. (right-in, right-out only), and Driveway “B” (CVS Driveway) proposed as a right-in, right-out, left-in only driveway.

If approved by the Transportation Coordinating Committee, Driveway “B” (CVS Driveway) will allow access to the project site off Unser Blvd. as a new right-in, right-out, left-in only unsignalized driveway.

Trip Generation Rates

Projected trips were calculated from data in the Institute of Transportation Engineers Trip Generation report (10th Edition). Trips for the development were determined based on land uses defined on the Conceptual Site Development Plan on Page A-3 in the Appendix of this report. Adjustments for internal capture (as per NCHRP 684) and pass-by trips were incorporated into the trip generation rate calculations.

The resulting number of trips generated for the proposed development are summarized in the following table:

McMahon / Unser Mixed Use Development (SW Corner)

Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)		24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.		
COMMENT	DESCRIPTION	GROSS	ENTER	EXIT	ENTER	EXIT	
Summary Sheet		Units					
Lot 1	Multifamily Housing (Low-Rise)	256	1,895	27	90	89	53
Lot 2	Drive-In Bank (912)	4	499	22	14	53	55
Lot 3	Shopping Center (820)	8.31	314	5	3	15	16
Lot 4	High Turnover (Sit-Down) Restaurant (932)	16.47	1,847	90	74	100	61
Lot 5	Shopping Center (820)	6.00	227	3	2	11	12
Lot 6	Shopping Center (820)	8.62	325	5	3	16	17
Lot 7	Gas Station Supermart (960)	20	4,610	281	281	230	230
Lot 8	Shopping Center (820)	11.96	452	7	4	22	24
Lot 9	Shopping Center (820)	11.31	427	7	4	21	22
Subtotal			10,596	447	475	557	490
Retail Commercial Trips (Raw)			8,701	420	385	468	437
Internal Capture (based on NCHRP 684)				(23)	(6)	(71)	(87)
Retail Commercial Trips (Adjusted for Internal Capture)				397	379	397	350
<i>Pass-By Trips 30%</i>				<i>-119</i>	<i>-114</i>	<i>-119</i>	<i>-105</i>
Total Primary Commercial Trips				278	265	278	245
Total Residential Trips				27	90	89	53
Internal Capture (based on NCHRP 684)				(2)	(19)	(35)	(19)
Total Primary Commercial Trips				25	71	54	34

See Appendix Pages A-4 thru A-13 for Individual Trip Generation Worksheets.

Trip Distribution / Trip Assignments

Primary and Diverted Linked Trips:

Trips were distributed as follows:

Commercial Land Uses / Residential Land Uses

The trip distribution model for both residential and retail commercial land uses are the same for this study as utilized in the companion Traffic Impact Study for this project.

Trip Assignment

Trip Assignments for the Access Evaluation Study are the same for Case "Y" as those utilized in the Traffic Impact Study for this project. The Trip Assignments were adjusted for Case "N" to account for the absence of the proposed right-in, right-out, left-in access on Unser Blvd.

Background Traffic Growth

Background traffic growth rates utilized in the Access Evaluation Study are the same as those utilized in the companion Traffic Impact Study.

Projected Peak Hour Turning Movements for 2024 and 2040 Buildout

Only the BUILD conditions (MITIGATED) will be evaluated to evaluate the proposed access in this Report. This Report will compare the operational analysis of the signalized intersection of Bandelier Dr. / Unser Blvd. and the unsignalized intersection of Bandelier Dr. / Sagittarius Ave. to see what, if any, benefit can be derived by approving and implementing the new right-in, right-out, left-in only on Unser Blvd. approximately 650 feet south of McMahon Blvd. (centerline to centerline).

Case “Y” and Case “N” Analyses

Classification of levels-of-service and delay for signalized and unsignalized intersections will be made based on criteria established by Synchro, Version 10 (BUILD 10.3.151.0) computer modeling software which approximates the Highway Capacity Manual, 6th Edition methodology. The average control delay is calculated for each intersection and for each lane group of each leg of the intersection. The control delay determines the level-of-service based on the following tables:

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

<u>Average Delay</u> <u>(secs)</u>	<u>Level-of-Service</u>
≤ 10	A
> 10 and ≤ 20	B
> 20 and ≤ 35	C
> 35 and ≤ 55	D
> 55 and ≤ 80	E
> 80	F

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

<u>Average Delay</u> <u>(secs)</u>	<u>Level-of-Service</u>
≤ 10	A
> 10 and ≤ 15	B
> 15 and ≤ 25	C
> 25 and ≤ 35	D
> 35 and ≤ 50	E
> 50	F

Generally speaking, a Level-of-Service D or better is an acceptable parameter for design purposes.

Following is a summary of the results of the Synchro Analysis for each of the intersections targeted for evaluation in this report:

Intersection #3 – Bandelier Rd. / Unser Blvd. - Pages A-44 thru A-59

The following table provides a summary of the Levels-of-Service / delays associated with the 2024 AM Peak Hour and PM Peak Hour BUILD Conditions associated with each of the two cases analyzed in this study:

Bandelier Dr. / Unser Blvd. 2024 BUILD Conditions	EB (Bandelier Dr.)			WB (Bandelier Dr.)			NB (Unser Blvd.)			SB (Unser Blvd.)		
	L	T	R	L	T	R	L	T	R	L	T	R
Mitigated Lane Geometry	1	1>	1	1	1	1	1	2	1	1	2	1
AM Peak Hour												
Case "Y" - Access to Unser Blvd.	108	28	466	177	10	124	80	971	80	53	2,053	1
V/C Ratio	0.33	0.00	0.85	0.88	0.06	0.91	0.76	0.50	0.09	0.19	1.06	0.00
Level-of-Service	D	A	D	E	D	E	D	B	A	B	F	A
Control Delay (Seconds)	46.8	0.0	36.6	79.1	53.5	64.1	35.4	14.1	3.5	11.1	64.6	1.6
Intersection LOS	D - 47.2											
95th Percentile Queue (veh)	6.3	0.0	11.3	12.3	0.6	8.3	2.9	11.1	0.9	1.2	56.1	0.0
Case "N" - NO Access to Unser Blvd.	108	28	527	177	15	119	144	907	80	48	1,992	139
V/C Ratio	0.27	0.00	0.88	0.52	0.04	0.36	0.86	0.54	0.09	0.19	1.30	0.18
Level-of-Service	D	A	E	D	D	D	D	C	B	B	F	B
Control Delay (Seconds)	35.7	0.0	55.9	37.1	38.7	42.4	46.2	20.7	10.7	17.7	172.0	14.9
Intersection LOS	F - 98.0											
95th Percentile Queue (veh)	5.4	0.0	15.4	8.8	0.8	6.5	7.5	12.8	1.9	1.5	85.5	0.2
PM Peak Hour												
Case "Y" - Access to Unser Blvd.	84	31	134	56	15	52	266	1,350	132	110	1,210	71
V/C Ratio	0.33	0.16	0.84	0.25	0.09	0.37	0.91	0.67	0.14	0.52	0.63	0.08
Level-of-Service	D	D	E	D	D	E	D	B	A	B	B	A
Control Delay (Seconds)	48.4	52.2	66.2	49.5	53.3	56.2	35.3	14.8	6.6	16.0	17.3	7.3
Intersection LOS	C - 21.2											
95th Percentile Queue (veh)	5.0	1.9	9.2	3.4	0.9	3.4	10.4	17.8	2.4	2.5	18.8	1.4
Case "N" - NO Access to Unser Blvd.	84	36	190	56	20	47	330	1,286	132	106	1,153	210
V/C Ratio	0.37	0.00	0.37	0.28	0.16	0.45	0.94	0.60	0.13	0.42	0.60	0.22
Level-of-Service	D	A	D	D	E	E	D	B	A	B	B	A
Control Delay (Seconds)	51.6	0.0	44.8	52.8	57.1	60.6	46.6	11.8	5.5	11.8	17.2	8.9
Intersection LOS	C - 20.6											
95th Percentile Queue (veh)	5.1	0.0	6.0	3.4	1.3	3.1	18.4	14.7	2.1	2.4	17.5	4.7

The above table demonstrates that there is a significant improvement gained during the 2024 AM Peak Hour conditions by approving and implementing the proposed Driveway "B" (CVS Driveway) as a right-in, right-out, left-in only driveway on Unser Blvd. There is no such improvement during the PM Peak Hour but there is not a significant penalty either.

The following table provides a summary of the Levels-of-Service / delays associated with the 2040 AM Peak Hour and PM Peak Hour BUILD Conditions associated with each of the two cases analyzed in this study:

Bandelier Dr. / Unser Blvd. 2040 BUILD Conditions [MITIGATED]	EB (Bandelier Dr.)			WB (Bandelier Dr.)			NB (Unser Blvd.)			SB (Unser Blvd.)		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Lane Geometry	1	1>	1	1	1	1	1	2	1	1	2	1
AM Peak Hour												
Case "Y" - Access to Unser Blvd.	133	31	527	204	11	142	90	1,338	112	55	2,131	1
V/C Ratio	0.36	0.00	0.87	0.90	0.06	0.93	0.78	0.70	0.12	0.29	1.13	0.00
Level-of-Service	D	A	D	F	D	E	C	B	A	B	F	A
Control Delay (Seconds)	45.1	0.0	35.7	81.9	52.5	64.3	33.6	18.9	3.9	17.3	94.4	1.8
Intersection LOS	E - 59.3											
95th Percentile Queue (veh)	7.5	0.0	12.1	13.9	0.7	9.0	2.5	16.8	1.1	1.3	66.8	0.0
Case "N" - NO Access to Unser Blvd.	133	35	588	204	16	137	154	1,274	112	55	2,070	139
V/C Ratio	0.34	0.00	0.79	0.90	0.09	0.92	0.87	0.68	0.12	0.28	1.21	0.14
Level-of-Service	D	A	C	F	D	E	D	B	A	B	F	A
Control Delay (Seconds)	43.7	0.0	29.4	83.0	53.0	64.0	44.4	19.6	4.3	17.9	130.0	2.7
Intersection LOS	E - 72.1											
95th Percentile Queue (veh)	7.3	0.0	12.2	14.0	0.9	8.8	6.7	16.2	1.2	1.5	75.7	1.1
PM Peak Hour												
Case "Y" - Access to Unser Blvd.	94	35	148	64	17	59	340	1,873	184	114	1,255	75
V/C Ratio	0.39	0.76	0.30	0.40	0.13	0.53	0.94	0.86	0.18	0.73	0.65	0.08
Level-of-Service	D	E	D	D	E	E	C	B	A	C	B	A
Control Delay (Seconds)	50.9	64.3	43.4	53.2	56.4	61.5	33.7	17.2	5.8	33.7	19.3	8.1
Intersection LOS	C - 22.8											
95th Percentile Queue (veh)	5.5	8.0	5.0	3.9	1.0	3.9	14.1	24.2	2.3	4.6	19.7	1.5
Case "N" - NO Access to Unser Blvd.	94	40	204	64	22	54	404	1,809	184	110	1,198	214
V/C Ratio	0.40	0.00	0.37	0.30	0.17	0.50	1.11	0.83	0.18	0.67	0.63	0.23
Level-of-Service	D	A	D	D	E	E	F	B	A	C	B	A
Control Delay (Seconds)	51.1	0.0	43.5	52.3	56.8	60.9	84.4	16.3	5.8	29.8	19.0	9.6
Intersection LOS	C - 26.3											
95th Percentile Queue (veh)	5.5	0.0	6.3	3.8	1.4	3.5	22.0	22.3	2.3	4.3	18.7	5.0

The above table demonstrates that there is a significant improvement gained during the 2040 AM Peak Hour conditions by approving and implementing the proposed Driveway "B" (CVS Driveway) as a right-in, right-out, left-in only driveway on Unser Blvd. There is a moderate improvement during the PM Peak Hour.

Intersection #5 – Bandelier Dr. / Sagittarius Ave. - Pages A-44 thru A-59

The following table provides a summary of the Levels-of-Service / delays associated with the 2024 AM Peak Hour and PM Peak Hour BUILD Conditions associated with each of the two cases analyzed in this study:

Bandelier Dr. / Sagittarius Ave. 2024 BUILD Conditions	EB (Bandelier Dr.)			WB (Bandelier Dr.)			NB (Sagittarius Ave.)			SB (Sagittarius Ave.)		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Lane Geometry	0	<1>	0	1	2>	0	0	<1>	0	0	<1>	0
AM Peak Hour												
Case "Y" - Access to Unser Blvd.	8	278	5	22	36	43	50	3	250	73	3	8
V/C Ratio	0.01			0.02				0.50			0.35	
Level-of-Service	A	A		A				C			D	
Control Delay (Seconds)	7.4	0.0		8.0				15.4			25.3	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.1				2.8			1.5	
Case "N" - NO Access to Unser Blvd.	8	278	5	22	36	251	50	3	250	138	3	8
V/C Ratio	0.01			0.02				0.50			0.77	
Level-of-Service	A	A		A				C			F	
Control Delay (Seconds)	7.9	0.0		8.0				15.5			62.8	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.1				2.8			5.4	
PM Peak Hour												
Case "Y" - Access to Unser Blvd.	8	84	10	151	175	56	10	3	99	69	3	7
V/C Ratio	0.01			0.12				0.16			0.34	
Level-of-Service	A	A		A				B			D	
Control Delay (Seconds)	7.8	0.0		7.8				10.4			25.4	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.4				0.6			1.4	
Case "N" - NO Access to Unser Blvd.	8	84	10	151	175	264	10	3	98	128	3	7
V/C Ratio	0.01			0.11				0.16			0.70	
Level-of-Service	A	A		A				B			F	
Control Delay (Seconds)	8.4	0.0		7.7				10.5			52.1	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.4				0.6			4.5	

The above table demonstrates that there is a significant improvement gained during the 2024 AM Peak Hour and 2024 PM Peak Hour conditions by approving and implementing the proposed Driveway "B" (CVS Driveway) as a right-in, right-out, left-in only driveway on Unser Blvd. Absence of the proposed Driveway "B" (CVS Driveway) as a right-in, right-out, left-in only driveway on Unser Blvd. will cause the access at Bandelier Dr. / Sagittarius Ave. to operate at LOS "F". Approval and construction of proposed Driveway "B" will provide badly needed relief to the alternate retail commercial driveway at Bandelier Dr. / Sagittarius Ave.

The following table provides a summary of the Levels-of-Service / delays associated with the 2040 AM Peak Hour and PM Peak Hour BUILD Conditions associated with each of the two cases analyzed in this study:

Bandelier Dr. / Sagittarius Ave. 2040 BUILD Conditions [MITIGATED]	EB (Bandelier Dr.)			WB (Bandelier Dr.)			NB (Sagittarius Ave.)			SB (Sagittarius Ave.)		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Lane Geometry	0	<1>	0	1	2>	0	0	<1>	0	0	<1>	0
AM Peak Hour												
Case "Y" - Access to Unser Blvd.	8	317	5	23	37	43	50	3	297	73	3	8
V/C Ratio	0.01			0.02				0.58			0.43	
Level-of-Service	A	A		A				C			D	
Control Delay (Seconds)	7.4	0.0		8.1				18.0			34.0	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.1				3.8			2.0	
Case "N" - NO Access to Unser Blvd.	8	317	5	23	37	251	50	3	297	138	3	8
V/C Ratio	0.01			0.02				0.59			0.96	
Level-of-Service	A	A		A				C			F	
Control Delay (Seconds)	7.9	0.0		8.1				18.1			113.0	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.1				3.8			7.4	

PM Peak Hour												
Case "Y" - Access to Unser Blvd.	8	95	10	154	185	56	10	3	116	68	3	7
V/C Ratio	0.01			0.11				0.17			0.33	
Level-of-Service	A	A		A				B			D	
Control Delay (Seconds)	7.8	0.0		7.8				10.4			25.5	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.4				0.6			1.4	
Case "N" - NO Access to Unser Blvd.	8	95	10	154	185	264	10	3	116	128	3	7
V/C Ratio	0.01			0.11				0.18			0.72	
Level-of-Service	A	A		A				B			F	
Control Delay (Seconds)	8.4	0.0		7.8				10.5			56.7	
Intersection LOS	TWSC											
95th Percentile Queue (veh)	0.0			0.4				0.6			4.7	

Similar to the implementation year (2024) analysis, the 2040 horizon year analysis demonstrates that the proposed Driveway "B" on Unser Blvd. will provide badly needed relief to the driveway at Bandelier Dr. / Sagittarius Ave. to allow it to operate at an acceptable level-of-service especially during the PM Peak Hour period.

Intersection #10 – Driveway "B" / Unser Blvd. - Pages A-44 thru A-59

Driveway "B" (CVS Driveway), if approved as a right-in, right-out, left-in only driveway on the west side of Unser Blvd., will need to operate at an acceptable level-of-service. The following table summarizes the calculated operational characteristics of Driveway "B" based on the implementation year (2024) AM and PM Peak Hour Periods:

CVS Driveway / Unser Blvd. 2024 Conditions	EB (CVS Driveway)			WB (CVS Driveway)			NB (Unser Blvd.)			SB (Unser Blvd.)		
	L	T	R	L	T	R	L	T	R	L	T	R
Proposed Lane Geometry	0	0	1	0	0	1	1	2	1	1	2	1
AM Peak Hour												
2024 BUILD Volumes	0	0	113	0	0	66	74	912	210	70	1,718	188
V/C Ratio			0.36			0.10	0.20			0.10		
Level-of-Service			C			B	C			B		
Control Delay (Seconds)			20.7			10.6	16.1			10.0		
Intersection LOS	TWSC											
95th Percentile Queue (veh)			1.6			0.3	0.7			0.3		

PM Peak Hour												
2024 BUILD Volumes	0	0	100	0	0	133	86	1,333	264	108	1,241	183
V/C Ratio			0.20			0.29	0.16			0.25		
Level-of-Service			B			B	B			B		
Control Delay (Seconds)			12.9			14.7	11.9			14.8		
Intersection LOS	TWSC											
95th Percentile Queue (veh)			0.7			1.2	0.6			1.0		

The following table provides a summary of the Levels-of-Service / delays associated with the 2040 AM Peak Hour and PM Peak Hour BUILD Conditions associated with Driveway “B”:

CVS Driveway / Unser Blvd. 2040 Conditions	EB (CVS Driveway)			WB (CVS Driveway)			NB (Unser Blvd.)			SB (Unser Blvd.)		
	L	T	R	L	T	R	L	T	R	L	T	R
Proposed Lane Geometry	0	0	1	0	0	1	1	2	1	1	2	1
AM Peak Hour												
2040 BUILD Conditions Volumes	0	0	113	0	0	63	74	1,332	242	80	1,913	188
V/C Ratio			0.44			0.13	0.24			0.15		
Level-of-Service			D			B	C			B		
Control Delay (Seconds)			27.4			13.0	18.8			12.2		
Intersection LOS	TWSC											
95th Percentile Queue (veh)			2.1			0.5	0.9			0.5		

PM Peak Hour												
2040 BUILD Conditions Volumes	0	0	100	0	0	128	86	1,968	305	125	1,382	183
V/C Ratio			0.22			0.54	0.15			0.69		
Level-of-Service			B			D	B			F		
Control Delay (Seconds)			14.3			34.4	11.6			56.1		
Intersection LOS	TWSC											
95th Percentile Queue (veh)			0.8			3.0	0.5			4.3		

The tables above demonstrate that the proposed Driveway “B” on the west side of Unser Blvd. approximately 650 feet south of McMahon Blvd. will operate at acceptable levels-of-service for all conditions analyzed in this Study. The southbound left turn movement into the east leg is projected to experience long delays during the PM Peak Hour by the year 2040. That particular access has already been approved and constructed and has been in operation for about eight years. It is probably the case that the long delays for the southbound left turn movement will improve when a third northbound thru lane is constructed on Unser Blvd. along this segment.

Findings and Conclusions

This Study finds that the implementation of the requested right-in, right-out, left-in only driveway (known as Driveway “B” or CVS Driveway) along the west side of Unser Blvd. approximately 650 feet south of McMahon Blvd. (centerline to centerline) will provide a significant benefit to the nearby adjacent transportation system, specifically at the signalized intersection of Bandelier Dr. / Unser Blvd. and the unsignalized intersection of Bandelier Dr. / Sagittarius Ave. which serves as access to the retail commercial component to the McMahon / Unser Mixed Used Development.

Additionally, the operation of the proposed Driveway “B” as a right-in, right-out, left-in driveway is projected to be acceptable for all conditions analyzed through the Horizon Year (2040).

Recommendations

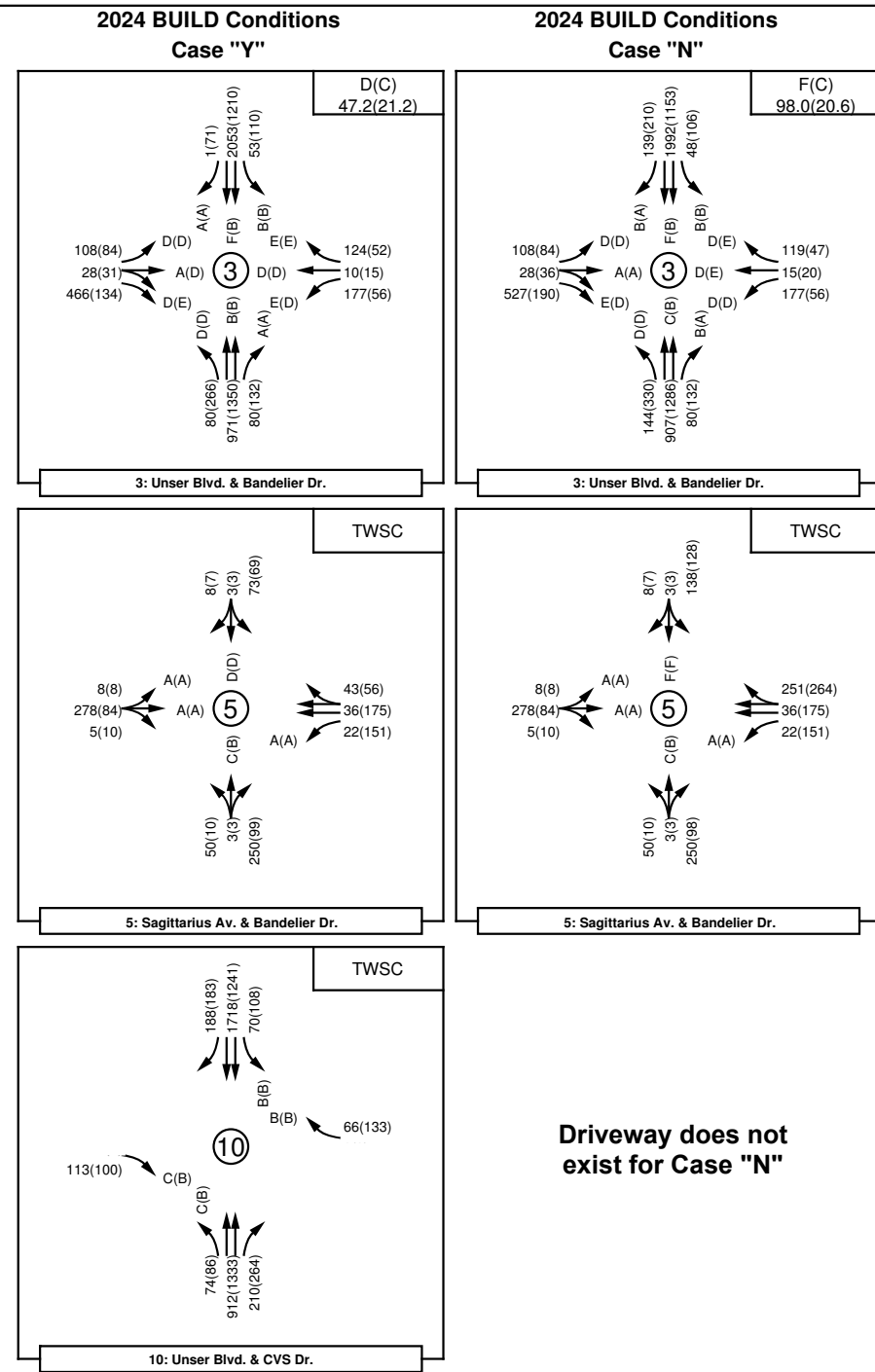
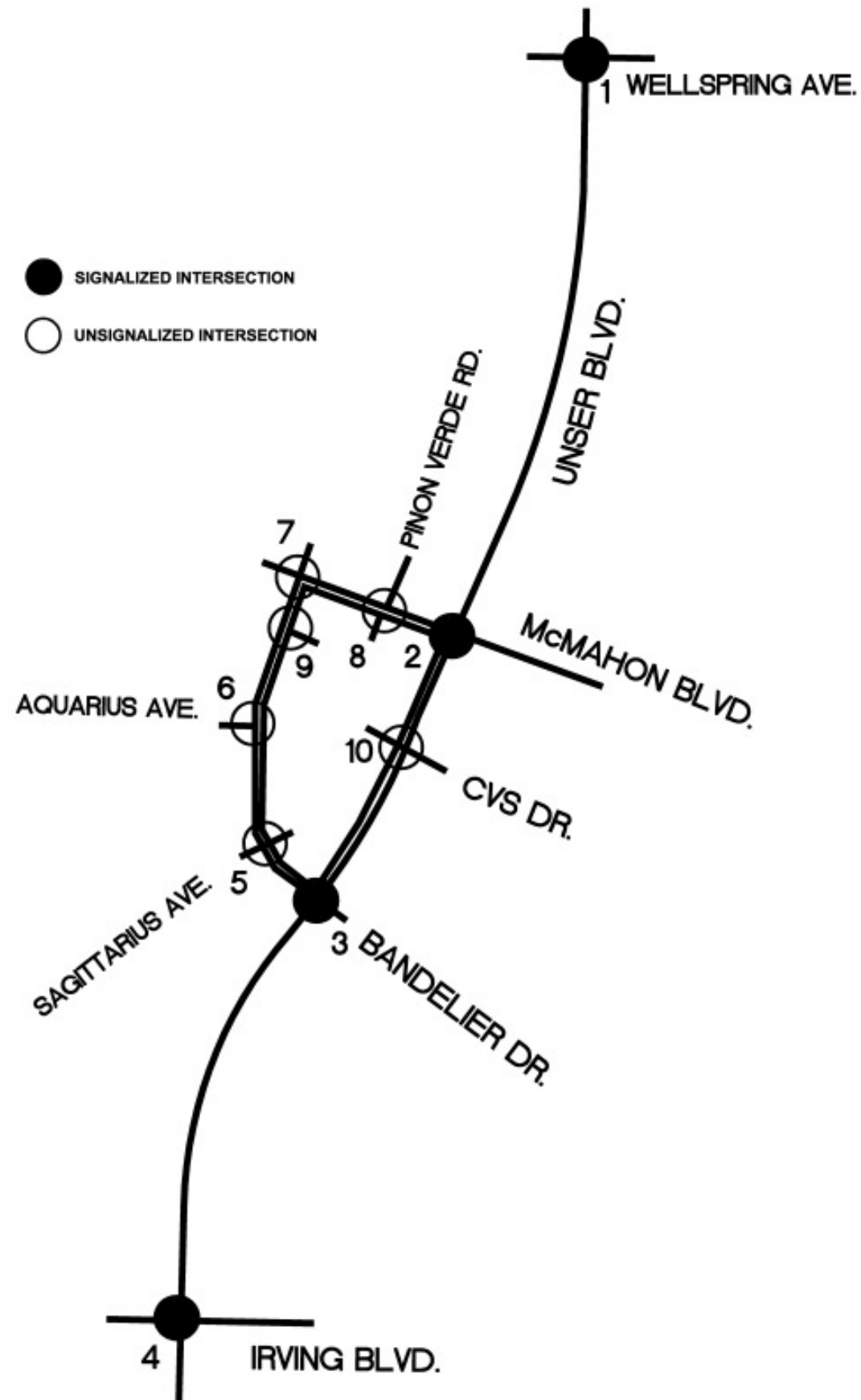
All constructed improvements to proposed driveways and existing intersections shall be designed and built to maintain adequate safe sight distances to the degree possible.

Recommendations for improvements to the adjacent transportation system include:

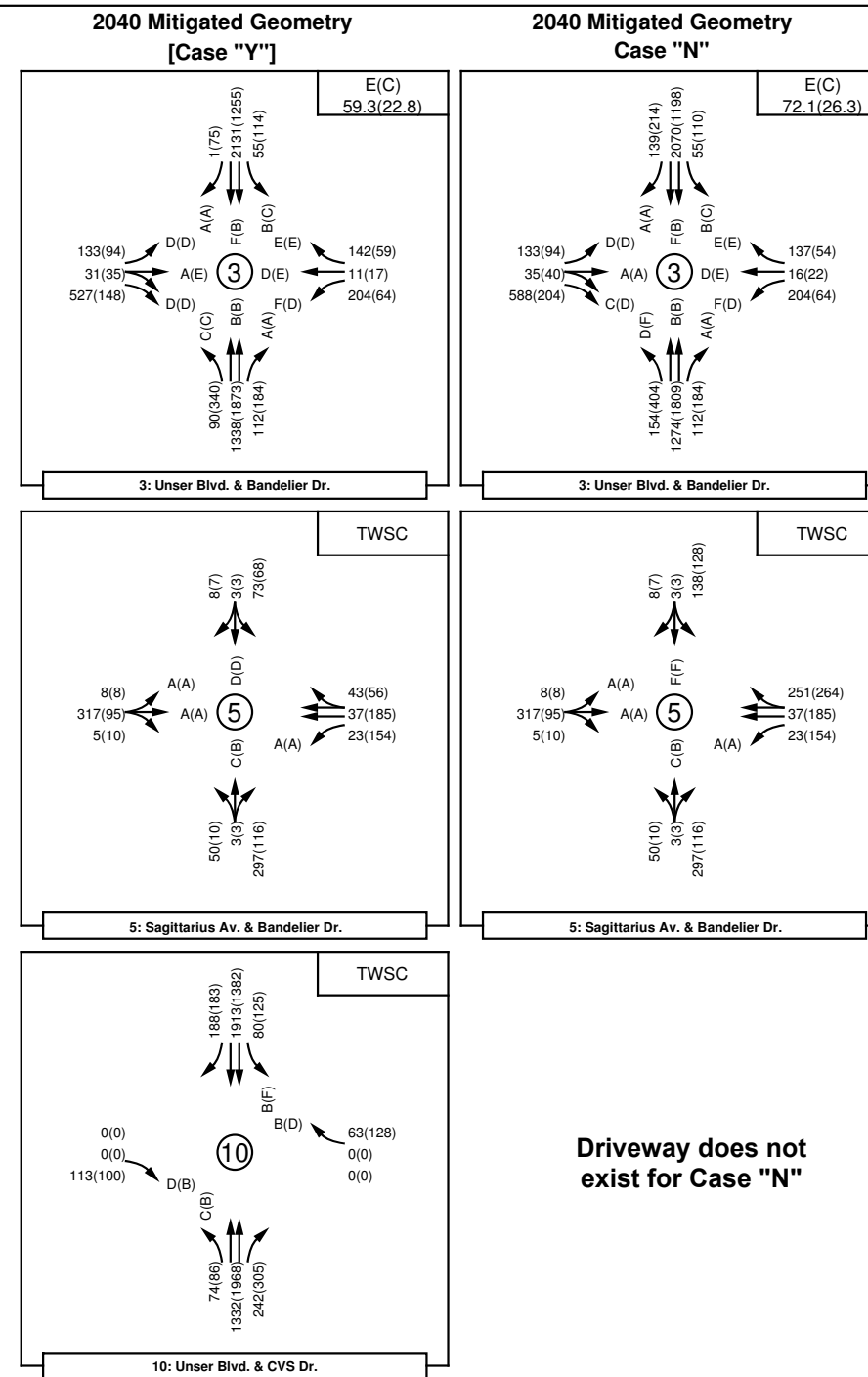
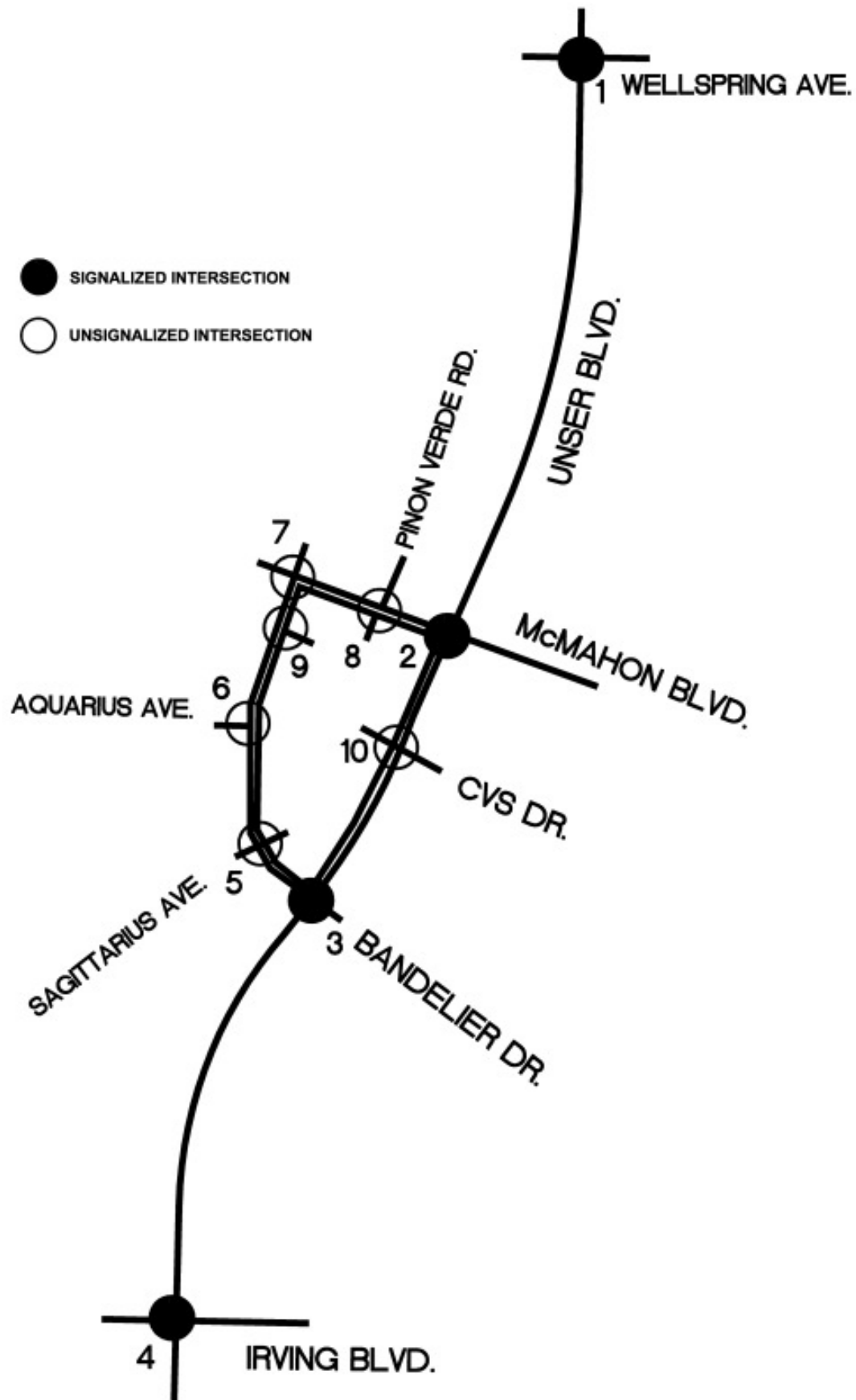
Access – it is recommended that Driveway “B” be approved and constructed as a right-in, right-out, left-in only unsignalized driveway approximately 650 feet south of McMahon Blvd. (centerline to centerline). Driveway “B” should be designed and constructed to either align with the existing CVS Driveway on the east side of Unser Blvd. or be slightly offset to the south of the CVS Driveway so as to avoid left turn overlapping on Unser Blvd.



- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION



McMahon / Unser Mixed Used Development
(Southwest Corner)
LOS / Volume Analysis Map



Appendix

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For more details about the Integrated Development Ordinance visit: <http://www.cabq.gov/planning/codes-policies-regulations/integrated-development-ordinance>

A-1

McMahon / Unser Mixed Use Development (SW Corner)

Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

COMMENT	USE (ITE CODE)	DESCRIPTION	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.		
			GROSS	ENTER	EXIT	ENTER	EXIT	
Summary Sheet								
		Units						
Lot 1		Multifamily Housing (Low-Rise)	256	1,895	27	90	89	53
Lot 2		Drive-In Bank (912)	4	499	22	14	53	55
Lot 3		Shopping Center (820)	8.31	1,108	97	59	41	45
Lot 4		High Turnover (Sit-Down) Restaurant (932)	16.47	1,847	90	74	100	61
Lot 5		Shopping Center (820)	6.00	887	96	59	33	35
Lot 6		Shopping Center (820)	8.62	1,136	97	59	43	46
Lot 7		Gasoline / Service Station w/ Convenience Market (945)	20	4,107	145	139	143	137
Lot 8		Shopping Center (820)	11.96	1,419	98	60	54	59
Lot 9		Shopping Center (820)	11.31	1,366	98	60	52	56
Subtotal				14,264	770	614	608	547
Retail Commercial Trips (Raw)				12,369	743	524	519	494
Pass-By Trips			30%		-223	-157	-156	-148
Total Primary Commercial Trips					520	367	363	346
Total Residential Trips					27	90	89	53

McMahon / Unser Mixed Use Development (SW Corner)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A.M. PEAK HOUR		P.M. PEAK HOUR
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
256					
Dwelling Units					
Multifamily Housing (Low-Rise)					
1,895		27	90	89	53

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = 50\% \text{ Enter, } 7.56 (X) + 50\% \text{ Exit, } -40.86$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR

$$\text{Ln}(T) = 23\% \text{ Enter, } 0.95 \text{ Ln}(X) + 23\% \text{ Exit, } -0.51$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR

$$\text{Ln}(T) = 63\% \text{ Enter, } 0.89 \text{ Ln}(X) + 63\% \text{ Exit, } 0.02$$

Comments:

Lot 1

Based on ITE Trip Generation Manual - 10th Edition

McMahon / Unser Mixed Use Development (SW Corner)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
Units						
4						
Drive-In Bank (912)						
GROSS		22	14	53	55	
Drive-In Lanes						

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \frac{124.76 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$T = \frac{8.83 (X) + 0}{61\% \text{ Enter, } 39\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \frac{27.15 (X) + 0}{49\% \text{ Enter, } 51\% \text{ Exit}}$$

Comments:

Lot 2

Based on ITE Trip Generation Manual - 10th Edition

McMahon / Unser Mixed Use Development (SW Corner)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A.M. PEAK HOUR		P.M. PEAK HOUR
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
Shopping Center (820)	1,108	97	59	41	45
8.31					
1,000 S.F.					

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$\ln(T) = 0.68 \ln(X) + 5.57$$

50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR

$$T = 0.5 (X) + 151.78$$

62% Enter, 38% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR

$$\ln(T) = 0.74 \ln(X) + 2.89$$

48% Enter, 52% Exit

Comments:

Lot 3

Based on ITE Trip Generation Manual - 10th Edition

McMahon / Unser Mixed Use Development (SW Corner) Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A.M. PEAK HOUR		P.M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT	EXIT
Units						
High Turnover (Sit-Down) Restaurant (932)	1,847	90	74	100	61	
16.47 1,000 S.F.						

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \frac{112.18 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$T = \frac{9.94 (X) + 0}{55\% \text{ Enter, } 45\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \frac{9.77 (X) + 0}{62\% \text{ Enter, } 38\% \text{ Exit}}$$

Comments:

Lot 4

Based on ITE Trip Generation Manual - 10th Edition

McMahon / Unser Mixed Use Development (SW Corner)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A.M. PEAK HOUR		P.M. PEAK HOUR
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
Shopping Center (820)	887	96	59	33	35
6.00 1,000 S.F.					

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$\ln(T) = 0.68 \ln(X) + 5.57$$

50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR

$$T = 0.5 (X) + 151.78$$

62% Enter, 38% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR

$$\ln(T) = 0.74 \ln(X) + 2.89$$

48% Enter, 52% Exit

Comments:

Lot 5

Based on ITE Trip Generation Manual - 10th Edition

McMahon / Unser Mixed Use Development (SW Corner)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A. M. PEAK HOUR		P. M. PEAK HOUR
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
Shopping Center (820)	1,136	97	59	43	46
8.62 1,000 S.F.					

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$\ln(T) = 0.68 \ln(X) + 5.57$$

50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR

$$T = 0.5 (X) + 151.78$$

62% Enter, 38% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR

$$\ln(T) = 0.74 \ln(X) + 2.89$$

48% Enter, 52% Exit

Comments:

Lot 6

Based on ITE Trip Generation Manual - 10th Edition

McMahon / Unser Mixed Use Development (SW Corner) *Trip Generation Data (ITE Trip Generation Manual - 10th Edition)*

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
Units						
Gasoline / Service Station w/ Convenience Market (945)						
	GROSS	4,107	145	139	143	137
Fueling Positions						
		20				

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \frac{205.36 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$T = \frac{19 (X) + -96.53}{51\% \text{ Enter, } 49\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \frac{13.99 (X) + 0}{51\% \text{ Enter, } 49\% \text{ Exit}}$$

Comments:

Lot 7

Based on ITE Trip Generation Manual - 10th Edition

McMahon / Unser Mixed Use Development (SW Corner)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A.M. PEAK HOUR		P.M. PEAK HOUR
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
11.96					
1,000 S.F.					
Shopping Center (820)					
		1,419	98	60	54
					59

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$\text{Ln}(T) = \begin{matrix} 0.68 & \text{Ln}(X) + & 5.57 \\ 50\% & \text{Enter,} & 50\% \text{ Exit} \end{matrix}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR

$$T = \begin{matrix} 0.5 & (X) + & 151.78 \\ 62\% & \text{Enter,} & 38\% \text{ Exit} \end{matrix}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR

$$\text{Ln}(T) = \begin{matrix} 0.74 & \text{Ln}(X) + & 2.89 \\ 48\% & \text{Enter,} & 52\% \text{ Exit} \end{matrix}$$

Comments:

Lot 8

Based on ITE Trip Generation Manual - 10th Edition

McMahon / Unser Mixed Use Development (SW Corner)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A.M. PEAK HOUR		P.M. PEAK HOUR
	GROSS	ENTER	EXIT	ENTER	EXIT
Shopping Center (820)	1,366	98	60	52	56
Units 11.31 1,000 S.F.					

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$\ln(T) = 0.68 \ln(X) + 5.57$$

50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR

$$T = 0.5 (X) + 151.78$$

62% Enter, 38% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR

$$\ln(T) = 0.74 \ln(X) + 2.89$$

48% Enter, 52% Exit

Comments:

Lot 9

Based on ITE Trip Generation Manual - 10th Edition

McMahon / Unser Commercial Dev.

(SW Corner)

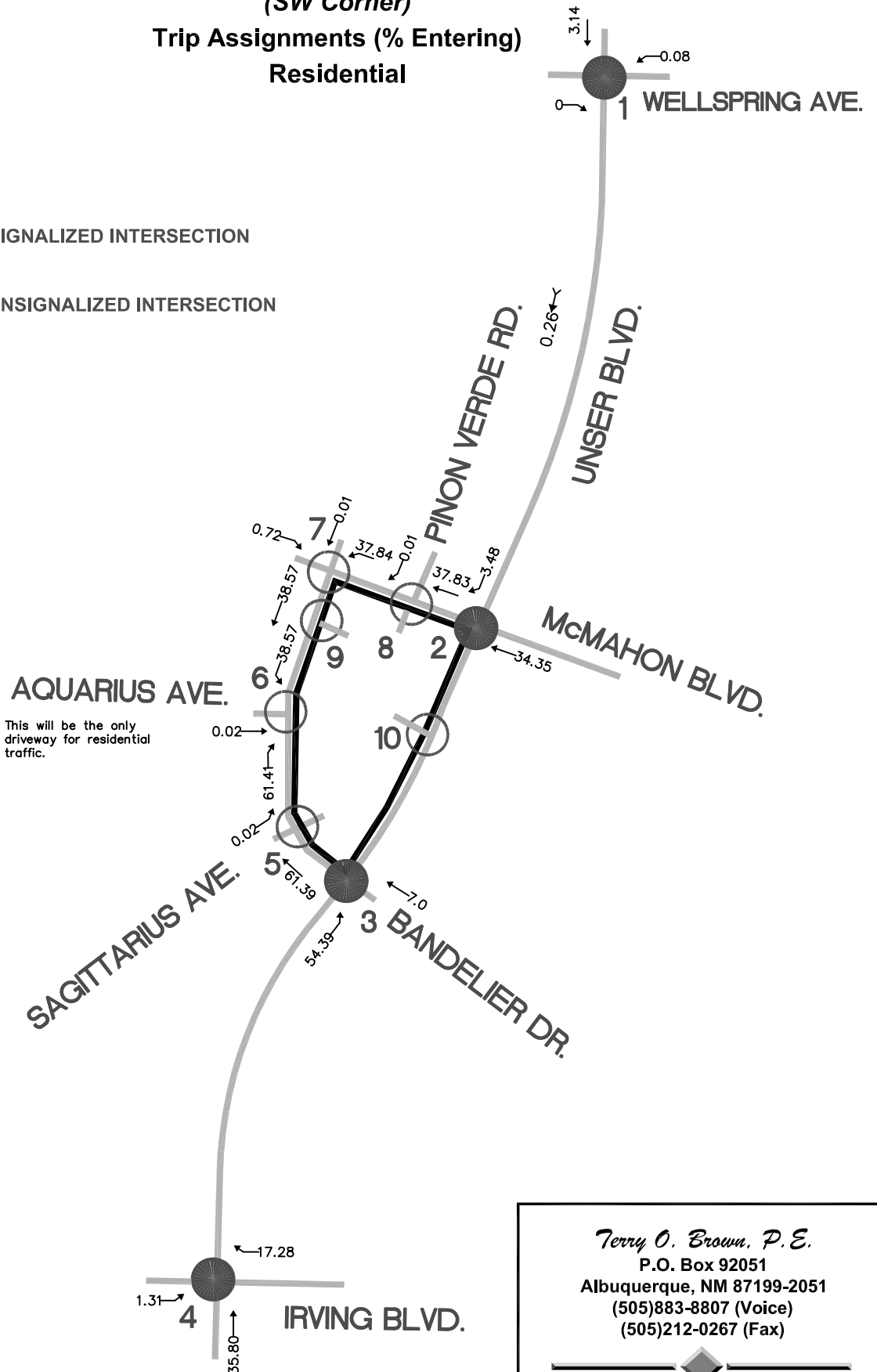
Trip Assignments (% Entering)

Residential



NTS

-  SIGNALIZED INTERSECTION
-  UNSIGNALIZED INTERSECTION



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 Albuquerque, NM 87199-2051
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McMahon / Unser Commercial Dev.

(SW Corner)

Trip Assignments (% Exiting)

Residential



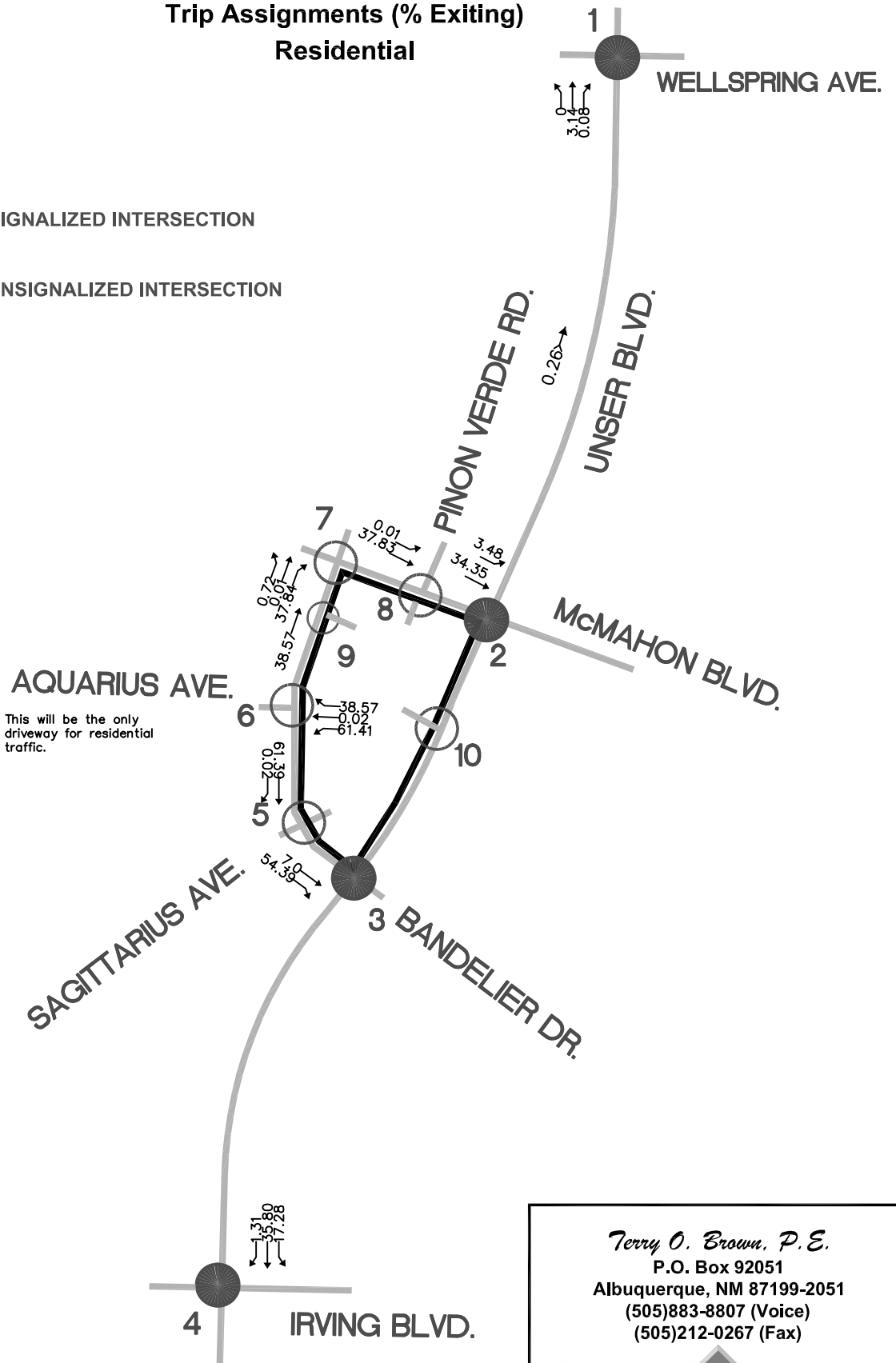
NTS



SIGNALIZED INTERSECTION



UNSIGNALIZED INTERSECTION



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(SW Corner)

Trip Assignments (% Entering)

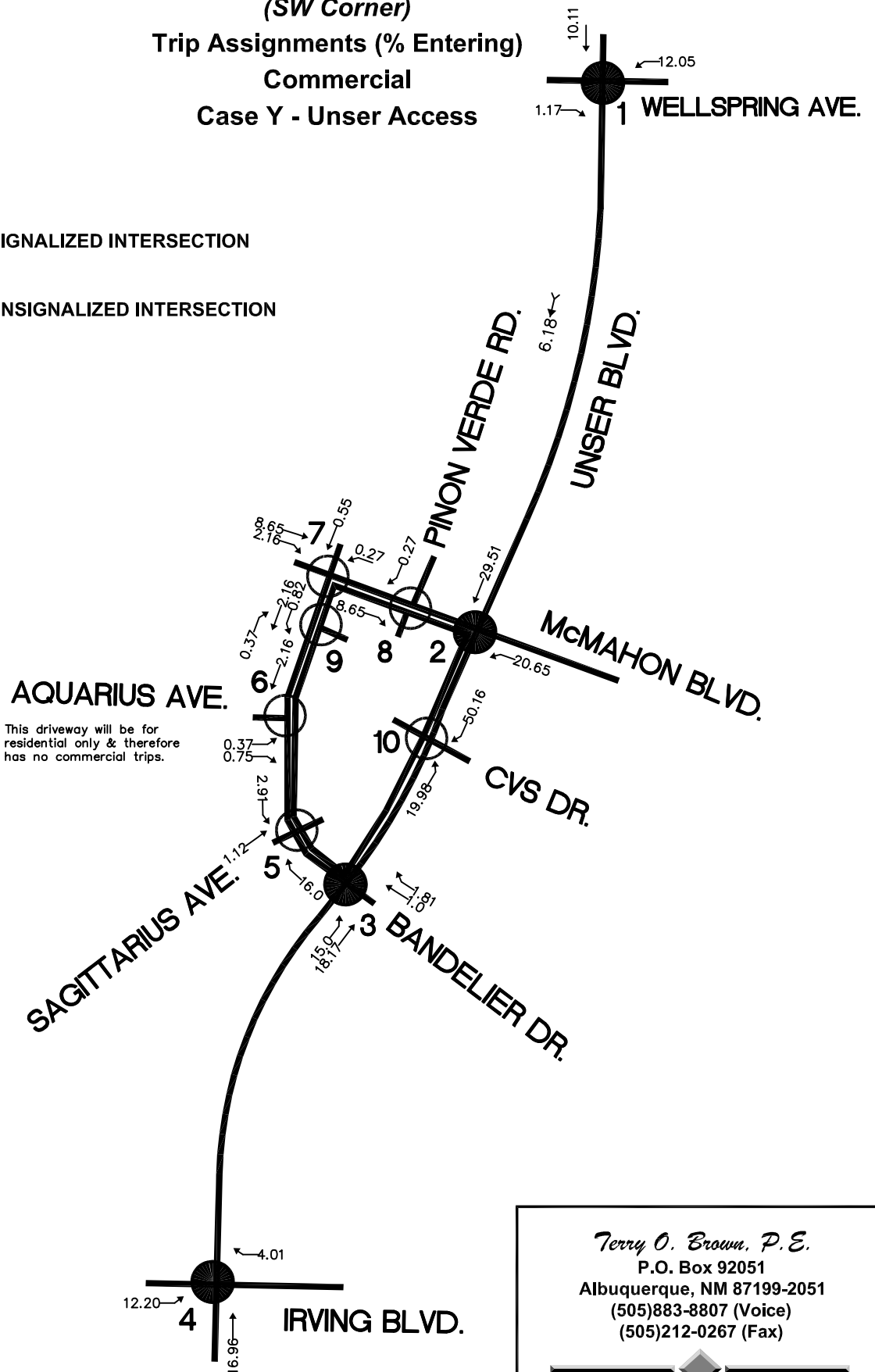
Commercial

Case Y - Unser Access



NTS

-  SIGNALIZED INTERSECTION
-  UNSIGNALIZED INTERSECTION



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McMahon / Unser Commercial Dev.

(SW Corner)

Trip Assignments (% Exiting)

Commercial

Case Y - Unser Access



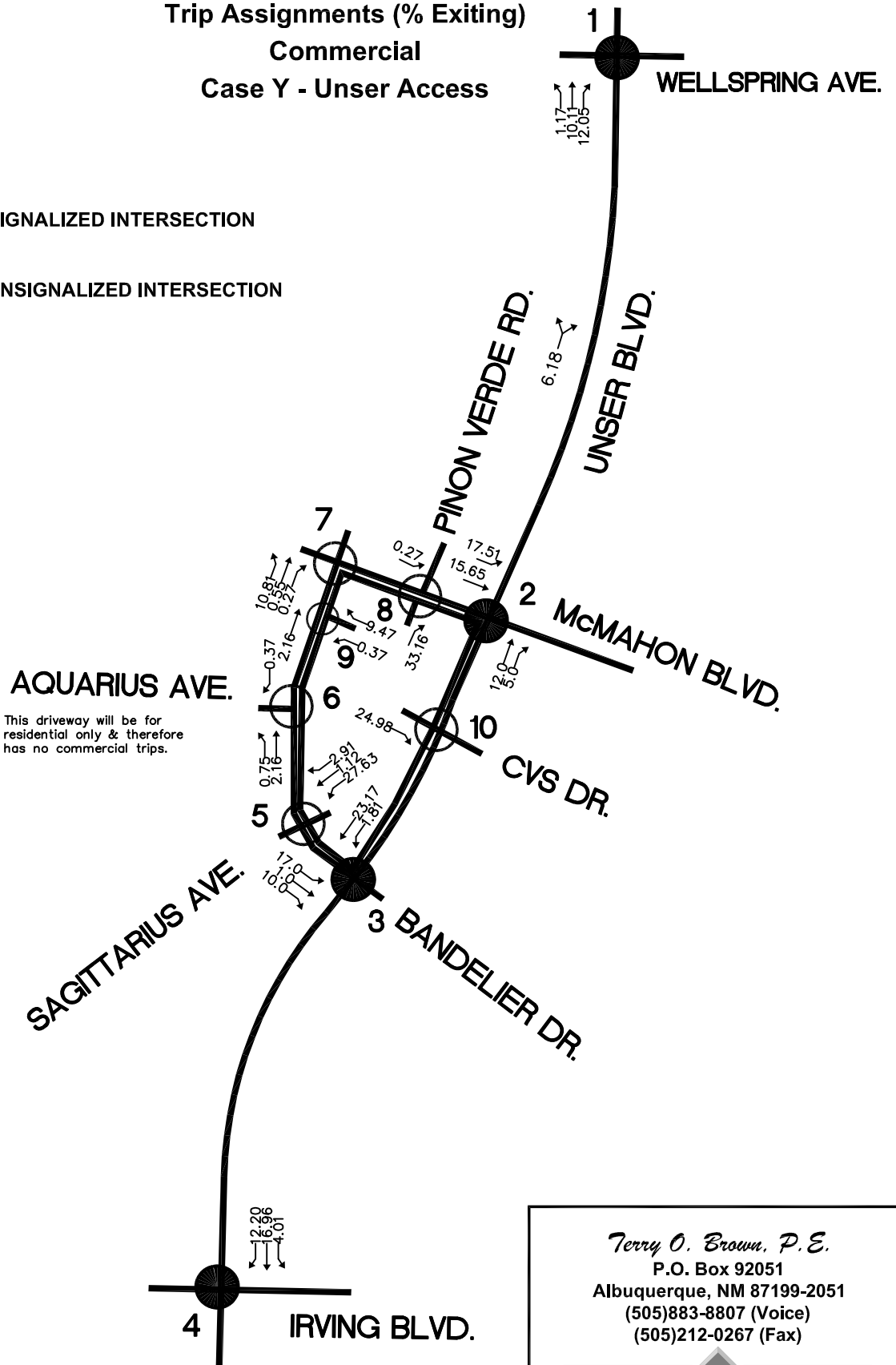
NTS



SIGNALIZED INTERSECTION



UNSIGNALIZED INTERSECTION



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McMahon / Unser Commercial Dev.

(SW Corner)

Trip Assignments (% Entering)

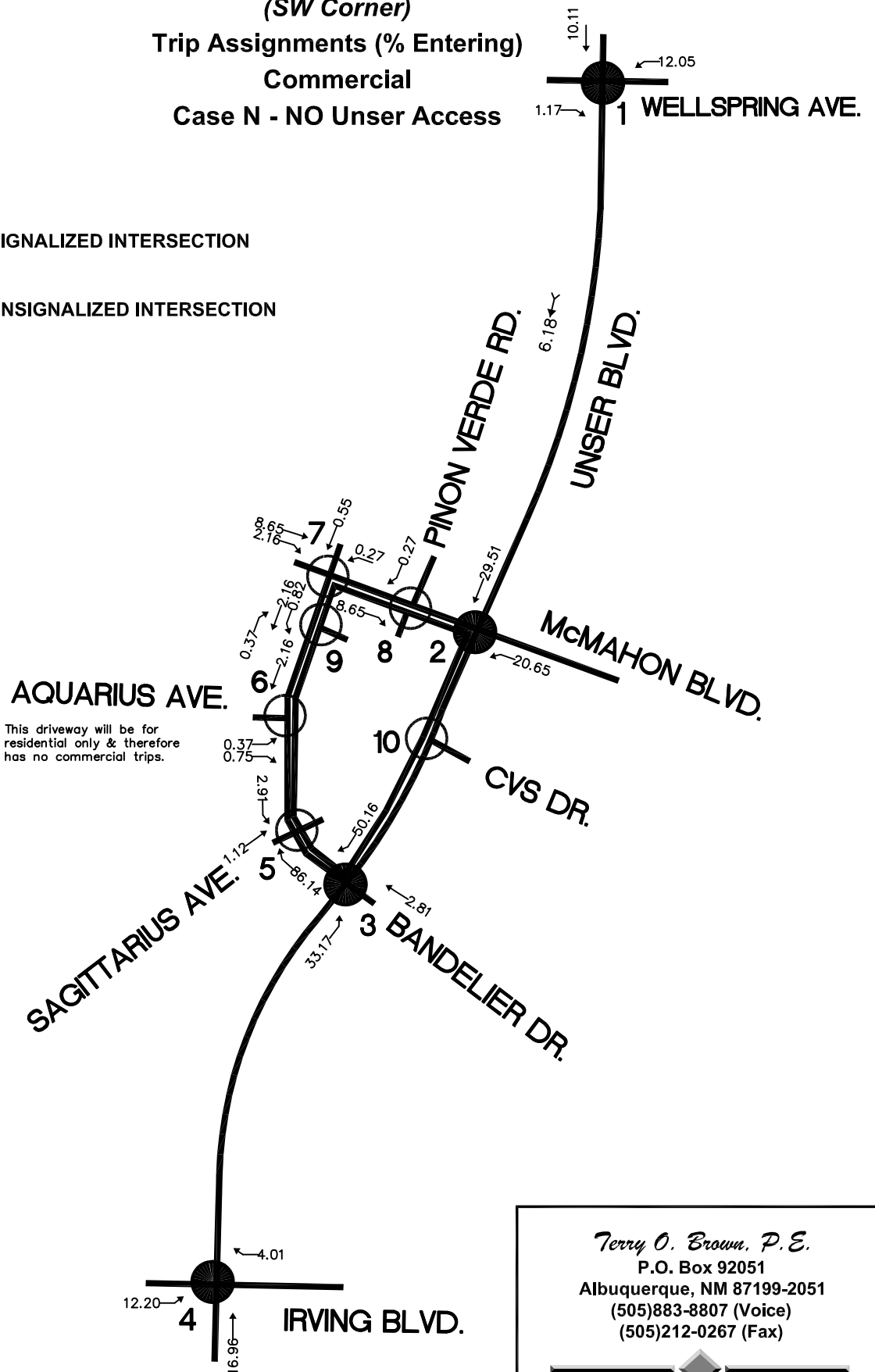
Commercial

Case N - NO Unser Access



NTS

-  SIGNALIZED INTERSECTION
-  UNSIGNALIZED INTERSECTION



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McMahon / Unser Commercial Dev.

(SW Corner)

Trip Assignments (% Exiting)

Commercial

Case N - NO Unser Access



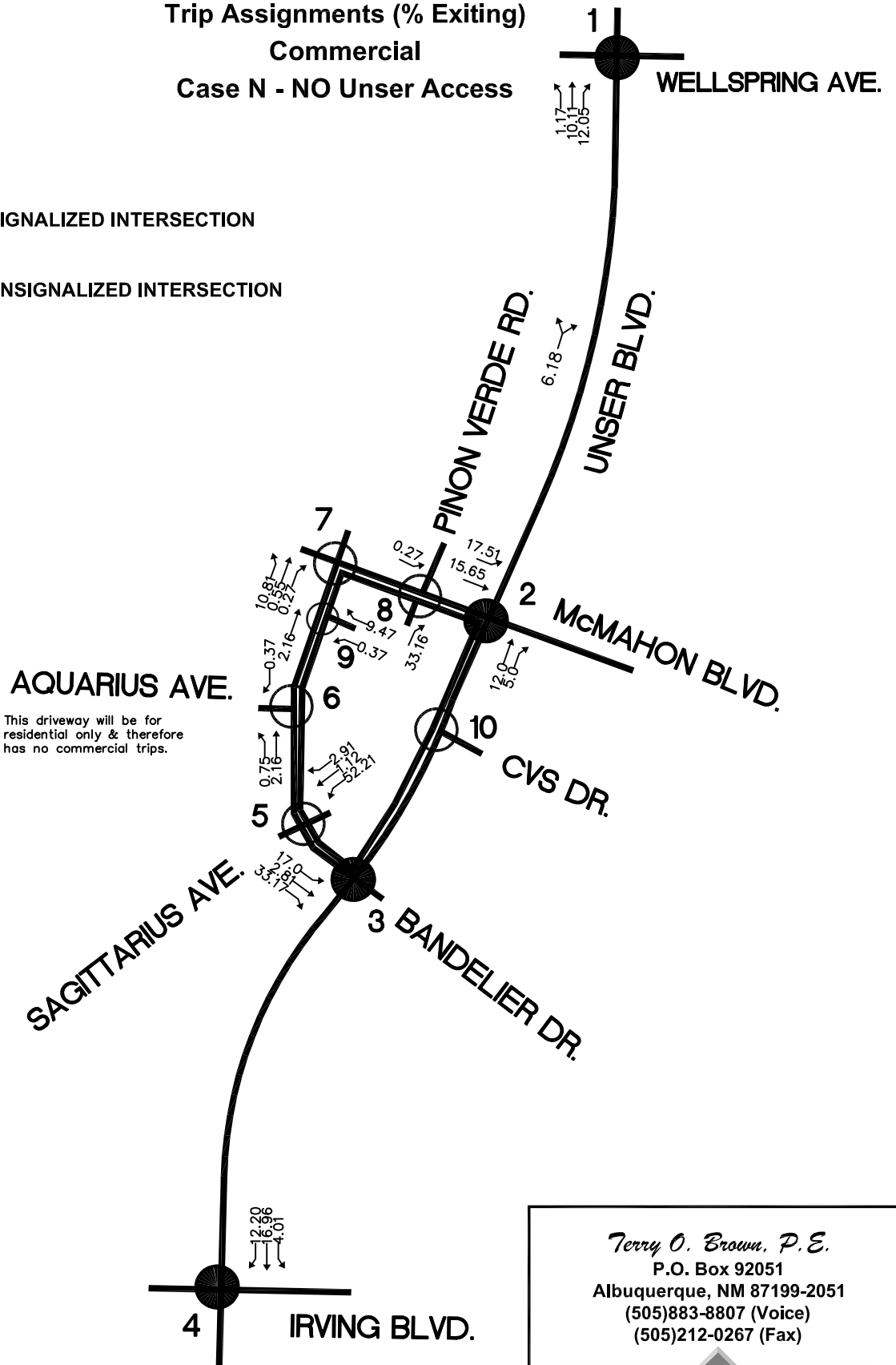
NTS



SIGNALIZED INTERSECTION



UNSIGNALIZED INTERSECTION



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McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2024) - 100% Development

Case "Y" - Unser Access

INTERSECTION:

Summary

Bandelier Dr. / Unser Blvd.

(3)

3.0% Truck

Existing (2020)**2024 (NO BUILD - A.M.)****2024 (BUILD - A.M.)**

0.90			0.90			0.90			0.90			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
157	19	385	171	5	114	23	815	71	42	1,768	10	
163	20	400	177	5	119	26	919	80	48	1,994	12	
108	28	466	177	10	124	80	971	80	53	2,053	0	

Existing (2020)**2024 (NO BUILD - P.M.)****2024 (BUILD - P.M.)**

0.90			0.90			0.90			0.90			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
65	26	88	54	8	45	163	1,162	117	94	1,027	90	
67	27	91	56	8	47	184	1,311	132	106	1,158	101	
84	31	134	56	15	52	266	1,350	132	110	1,210	71	

Irving Blvd. / Unser Blvd.

(4)

3.0% Truck

Existing (2020)**2024 (NO BUILD - A.M.)****2024 (BUILD - A.M.)**

0.90			0.90			0.90			0.90			PHF
Eastbound (Irving Blvd.)			Westbound (Irving Blvd.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
139	291	39	81	56	88	26	848	52	385	1,391	100	
145	302	41	84	58	91	29	959	59	435	1,569	113	
179	302	41	84	58	106	29	1,015	59	458	1,639	146	

Existing (2020)**2024 (NO BUILD - P.M.)****2024 (BUILD - P.M.)**

0.90			0.90			0.90			0.90			PHF
Eastbound (Irving Blvd.)			Westbound (Irving Blvd.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
77	94	27	195	569	292	69	1,037	41	83	905	103	
80	98	28	203	591	303	78	1,174	47	93	1,021	117	
115	98	28	203	591	323	78	1,240	47	109	1,075	147	

CVS Drive / Unser Blvd.

(10)

3.0% Truck

Existing (2020)**2024 (NO BUILD - A.M.)****2024 (BUILD - A.M.)**

0.85			0.85			0.90			0.90			PHF
Eastbound (CVS Drive)			Westbound (CVS Drive)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	63	0	0	202	67	0	0	
0	0	0	0	0	66	0	942	210	70	1,767	0	
0	0	113	0	0	66	74	912	210	70	1,718	188	

Existing (2020)**2024 (NO BUILD - P.M.)****2024 (BUILD - P.M.)**

0.85			0.85			0.90			0.90			PHF
Eastbound (CVS Drive)			Westbound (CVS Drive)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	128	0	0	254	104	0	0	
0	0	0	0	0	133	0	1,388	264	108	1,285	0	
0	0	100	0	0	133	86	1,333	264	108	1,241	183	

McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements Worksheet

Bandelier Dr. / Unser Blvd.**INTERSECTION :**E-W Street: **Bandelier Dr.**
N-S Street: **Unser Blvd.**

(3)

Year of Existing Counts
Implementation Year2019
2024

Growth Rates

1.00%

1.00%

3.30%

3.30%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Subtotal AM Pk Hr. BUILD Volumes

Pass-by Trip Adjustments

Total AM Peak Hour BUILD Volumes

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
155	19	381	169	5	113	22	789	69	41	1,712	10
8	1	19	8	0	6	4	130	11	7	282	2
163	20	400	177	5	119	26	919	80	48	1,994	12
0.00%	0.00%	0.00%	0.00%	7.00%	0.00%	54.39%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	7.00%	54.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	1.00%	1.81%	10.00%	23.17%	0.00%	0.00%	0.00%	0.00%
17.00%	1.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.81%	23.17%	0.00%
0	0	0	0	0	0	0	0	0	0	0	(12)
(100)	0	0	0	0	0	0	0	0	0	0	0
45	8	66	0	5	5	42	64	0	5	61	0
108	28	466	177	10	124	68	983	80	53	2,055	0
0	0	0	0	0	0	12	-12	0	0	-2	0
108	28	466	177	10	124	80	971	80	53	2,053	0

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Subtotal PM Pk Hr. BUILD Volumes

Pass-by Trip Adjustments

Total PM Peak Hour BUILD Volumes

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
64	26	87	53	8	45	158	1,125	113	91	994	87
3	1	4	3	0	2	26	186	19	15	164	14
67	27	91	56	8	47	184	1,311	132	106	1,158	101
0.00%	0.00%	0.00%	0.00%	7.00%	0.00%	54.39%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	7.00%	54.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	1.00%	1.81%	10.00%	23.17%	0.00%	0.00%	0.00%	0.00%
17.00%	1.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.81%	23.17%	0.00%
0	0	0	0	0	0	0	0	0	0	0	(30)
(25)	0	0	0	0	0	0	0	0	0	0	0
42	4	43	0	7	5	57	64	0	4	57	0
84	31	134	56	15	52	241	1,375	132	110	1,215	71
0	0	0	0	0	0	25	-25	0	0	-5	0
84	31	134	56	15	52	266	1,350	132	110	1,210	71

Number of Residential Trips Generated

Entering 25
Exiting 71

A.M.

100% Residential Development

Number of Commercial Trips Generated

54 34
278 265
278 245

P.M.

100% Commercial Development

Pass-by Trip Calculations:**AM Pass-by Trips**

Percent Entering

Volume Entering

Percent Exiting

Volume Exiting

Net AM Passby Trips

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	-10.00%	0.00%	0.00%	-41.00%	0.00%
0	0	0	0	0	0	12	-12	0	0	-49	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	41.00%	0.00%
0	0	0	0	0	0	0	0	0	0	47	0
0	0	0	0	0	0	12	-12	0	0	-2	0

PM Pass-by Trips

Percent Entering

Volume Entering

Percent Exiting

Volume Exiting

Net PM Passby Trips

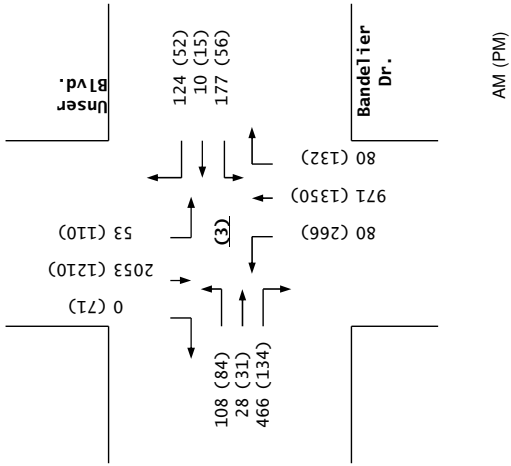
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.00%	-21.00%	0.00%	0.00%	-37.00%	0.00%
0	0	0	0	0	0	25	-25	0	0	-44	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	37.00%	0.00%
0	0	0	0	0	0	0	0	0	0	39	0
0	0	0	0	0	0	25	-25	0	0	-5	0

Entering 119
Exiting 114 AM

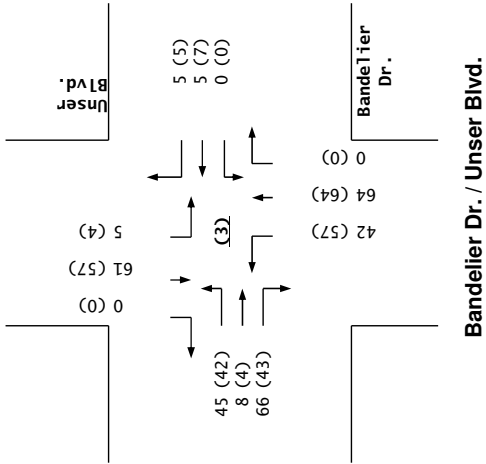
119 105 PM

Pass-by Trips

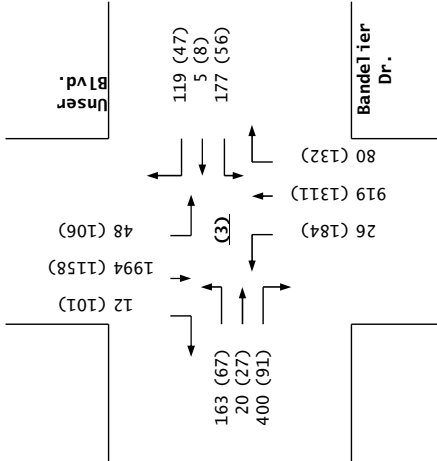
2024
BUILD



Trips



2024
NO BUILD



McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements Worksheet

Bandelier Dr. / Sagittarius Ave.**INTERSECTION :**E-W Street: **Bandelier Dr.**
N-S Street: **Sagittarius Ave.**

(5)

Year of Existing Counts: 2019
Implementation Year: 2024

Growth Rates

1.00%

1.00%

1.00%

1.00%

Existing Volumes

Subtotal (NO BUILD - A.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	266	0	19	18	0	0	0	287	0	0	0
0	283	0	22	21	0	0	0	300	0	0	0
0.00%	0.00%	0.00%	0.00%	61.39%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	61.39%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2.91%	0.00%	0.00%	0.00%	0.00%	11.00%	0.00%	1.12%	0.00%	0.00%	0.00%	0.00%
0.00%	0.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	27.63%	1.12%	2.91%
0	0	5	0	0	0	0	0	0	0	0	0
0	(50)	0	0	0	0	50	0	(50)	0	0	0
8	45	0	0	15	31	0	3	0	73	3	8
8	278	5	22	36	43	50	3	250	73	3	8

Existing Volumes

Subtotal (NO BUILD - P.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	73	0	127	126	0	0	0	104	0	0	0
0	77	0	151	142	0	0	0	108	0	0	0
0.00%	0.00%	0.00%	0.00%	61.39%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	61.39%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2.91%	0.00%	0.00%	0.00%	0.00%	11.00%	0.00%	1.12%	0.00%	0.00%	0.00%	0.00%
0.00%	0.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	27.63%	1.12%	2.91%
0	0	10	0	0	0	0	0	0	0	0	0
0	(15)	0	0	0	0	10	0	(10)	0	0	0
8	22	0	0	33	31	0	3	0	68	3	7
8	84	10	151	175	56	10	3	98	68	3	7

Entering Exiting

Number of Residential Trips Generated

25

71

A.M.

100% Residential Development

54

34

P.M.

Number of Commercial Trips Generated

278

265

A.M.

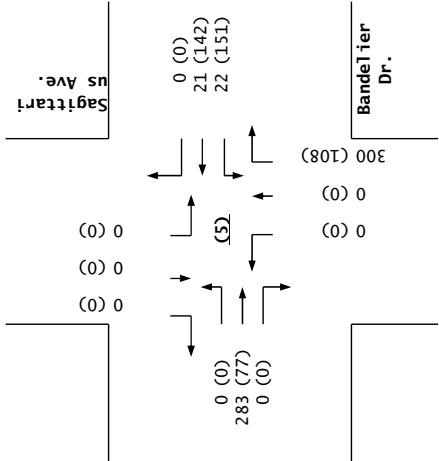
100% Commercial Development

278

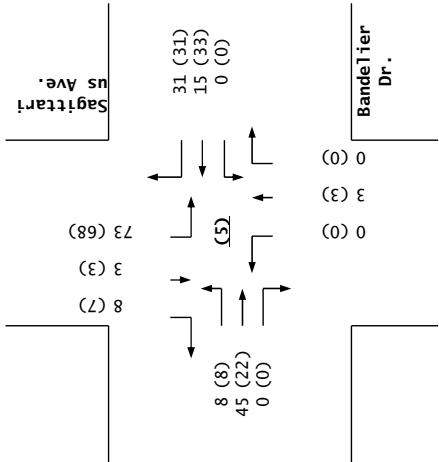
245

P.M.

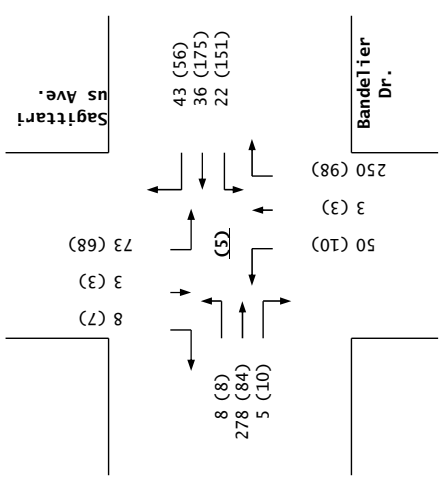
2024
NO BUILD



Trips



2024
BUILD



AM (PM)

Bandelier Dr. / Sagittarius Ave.

McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements Worksheet

CVS Drive / Unser Blvd.

INTERSECTION: E-W Street: **CVS Drive**
N-S Street: **Unser Blvd.**

(10)

Year of Existing Counts: 2020
Implementation Year: 2024

Growth Rates

1.00%

1.00%

1.00%

1.00%

	Eastbound (CVS Drive)			Westbound (CVS Drive)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	63	0	0	202	67	0	0
Background Traffic Growth	0	0	0	0	0	3	0	0	8	3	0	0
Subtotal (NO BUILD - A.M.)	0	0	0	0	0	66	0	942	210	70	1,767	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.98%	0.00%	0.00%	0.00%	0.00%	50.16%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	24.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	66	0	0	0	56	0	0	0	0	139
Subtotal AM Pk Hr. BUILD Volumes	0	0	66	0	0	66	56	942	210	70	1,767	139
Pass-by Trip Adjustments	0	0	47	0	0	0	18	-30	0	0	-49	49
Total AM Peak Hour BUILD Volumes	0	0	113	0	0	66	74	912	210	70	1,718	188

	Eastbound (CVS Drive)			Westbound (CVS Drive)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	128	0	0	254	104	0	0
Background Traffic Growth	0	0	0	0	0	5	0	0	10	4	0	0
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	133	0	1,388	264	108	1,285	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.98%	0.00%	0.00%	0.00%	0.00%	50.16%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	24.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	61	0	0	0	56	0	0	0	0	139
Subtotal PM Pk Hr. BUILD Volumes	0	0	61	0	0	133	56	1,388	264	108	1,285	139
Pass-by Trip Adjustments	0	0	39	0	0	0	30	-55	0	0	-44	44
Total PM Peak Hour BUILD Volumes	0	0	100	0	0	133	86	1,333	264	108	1,241	183

Number of Commercial Trips Generated

Entering	278	265	A.M.	100% Commercial Development
Exiting	278	245	P.M.	

Pass-by Trip Calculations:

AM Pass-by Trips

Percent Entering

Volume Entering

Percent Exiting

Volume Exiting

Net AM Passby Trips

	Eastbound (CVS Drive)			Westbound (CVS Drive)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	-25.00%	0.00%	0.00%	-41.00%	41.00%
Volume Entering	0	0	0	0	0	0	18	-30	0	0	-49	49
Percent Exiting	0.00%	0.00%	41.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	47	0	0	0	0	0	0	0	0	0
Net AM Passby Trips	0	0	47	0	0	0	18	-30	0	0	-49	49

PM Pass-by Trips

Percent Entering

Volume Entering

Percent Exiting

Volume Exiting

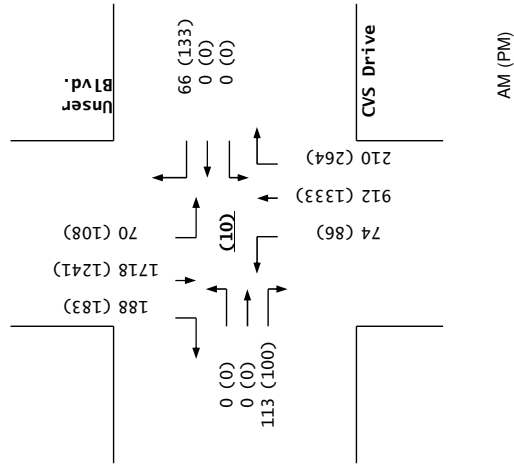
Net PM Passby Trips

	Eastbound (CVS Drive)			Westbound (CVS Drive)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	-46.00%	0.00%	0.00%	-37.00%	37.00%
Volume Entering	0	0	0	0	0	0	30	-55	0	0	-44	44
Percent Exiting	0.00%	0.00%	37.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	39	0	0	0	0	0	0	0	0	0
Net PM Passby Trips	0	0	39	0	0	0	30	-55	0	0	-44	44

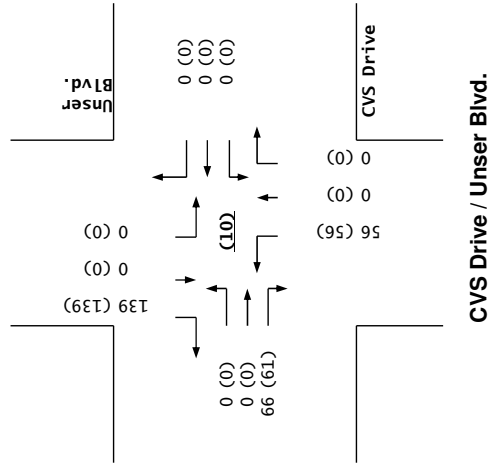
Pass-by Trips

Entering	119	114	AM
Exiting	119	105	PM

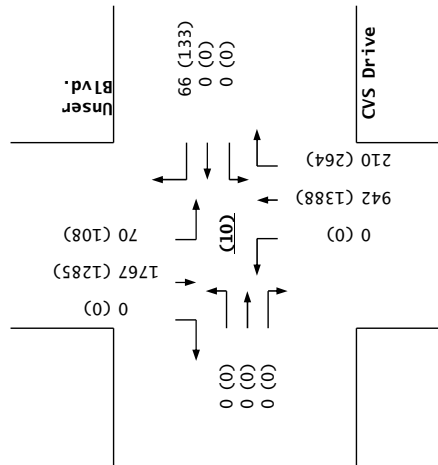
2024
BUILD



Trips



2024
NO BUILD



McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2024) - 100% Development

Case "N" - NO Unser Access

INTERSECTION:

Summary

Bandelier Dr. / Unser Blvd.

(3)

3.0% Truck

Existing (2020)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.90			0.90			0.90			0.90			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
157	19	385	171	5	114	23	815	71	42	1,768	10	
163	20	400	177	5	119	26	919	80	48	1,994	12	
108	32	527	177	15	119	144	907	80	48	1,992	139	

Existing (2020)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.90			0.90			0.90			0.90			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
65	26	88	54	8	45	163	1,162	117	94	1,027	90	
67	27	91	56	8	47	184	1,311	132	106	1,158	101	
84	36	190	56	20	47	330	1,286	132	106	1,153	210	

Bandelier Dr. / Sagittarius Ave.

(5)

3.0% Truck

Existing (2020)

2024 (NO BUILD - A.M.)

2024 (BUILD - A.M.)

0.85			0.85			0.85			0.85			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	269	0	19	18	0	0	0	290	0	0	0	
0	283	0	22	21	0	0	0	300	0	0	0	
8	278	5	22	36	251	50	3	250	138	3	8	

Existing (2020)

2024 (NO BUILD - P.M.)

2024 (BUILD - P.M.)

0.85			0.85			0.85			0.85			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	74	0	128	127	0	0	0	105	0	0	0	
0	77	0	151	142	0	0	0	108	0	0	0	
8	84	10	151	175	264	10	3	98	128	3	7	

McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements Worksheet

Bandelier Dr. / Unser Blvd.

Case "N" - NO Unser Access

(3)

INTERSECTION :

E-W Street: **Bandelier Dr.**N-S Street: **Unser Blvd.**

Year of Existing Counts

2019

Implementation Year

2024

Growth Rates

1.00%

1.00%

3.30%

3.30%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Subtotal AM Pk Hr. BUILD Volumes

Pass-by Trip Adjustments

Total AM Peak Hour BUILD Volumes

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
155	19	381	169	5	113	22	789	69	41	1,712	10
8	1	19	8	0	6	4	130	11	7	282	2
163	20	400	177	5	119	26	919	80	48	1,994	12
0.00%	0.00%	0.00%	0.00%	7.00%	0.00%	54.39%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	7.00%	54.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	2.81%	0.00%	33.17%	0.00%	0.00%	0.00%	0.00%	50.16%
17.00%	2.81%	33.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	0	0	(12)
(100)	0	0	0	0	0	0	0	0	0	0	0
45	12	127	0	10	0	106	0	0	0	0	139
108	32	527	177	15	119	132	919	80	48	1,994	139
0	0	0	0	0	0	12	-12	0	0	-2	0
108	32	527	177	15	119	144	907	80	48	1,992	139

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Subtotal PM Pk Hr. BUILD Volumes

Pass-by Trip Adjustments

Total PM Peak Hour BUILD Volumes

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
64	26	87	53	8	45	158	1,125	113	91	994	87
3	1	4	3	0	2	26	186	19	15	164	14
67	27	91	56	8	47	184	1,311	132	106	1,158	101
0.00%	0.00%	0.00%	0.00%	7.00%	0.00%	54.39%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	7.00%	54.39%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	2.81%	0.00%	33.17%	0.00%	0.00%	0.00%	0.00%	50.16%
17.00%	2.81%	33.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	0	0	(30)
(25)	0	0	0	0	0	0	0	0	0	0	0
42	9	99	0	12	0	121	0	0	0	0	139
84	36	190	56	20	47	305	1,311	132	106	1,158	210
0	0	0	0	0	0	25	-25	0	0	-5	0
84	36	190	56	20	47	330	1,286	132	106	1,153	210

Entering Exiting

Number of Residential Trips Generated

25

71

A.M.

100% Residential Development

54

34

P.M.

Number of Commercial Trips Generated

278

265

A.M.

100% Commercial Development

278

245

P.M.

Pass-by Trip Calculations:

AM Pass-by Trips

Percent Entering

Volume Entering

Percent Exiting

Volume Exiting

Net AM Passby Trips

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	-10.00%	0.00%	0.00%	-41.00%	0.00%
0	0	0	0	0	0	12	-12	0	0	-49	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	41.00%	0.00%
0	0	0	0	0	0	0	0	0	0	47	0
0	0	0	0	0	0	12	-12	0	0	-2	0

PM Pass-by Trips

Percent Entering

Volume Entering

Percent Exiting

Volume Exiting

Net PM Passby Trips

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.00%	-21.00%	0.00%	0.00%	-37.00%	0.00%
0	0	0	0	0	0	25	-25	0	0	-44	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	37.00%	0.00%
0	0	0	0	0	0	0	0	0	0	39	0
0	0	0	0	0	0	25	-25	0	0	-5	0

Entering Exiting

Pass-by Trips

119

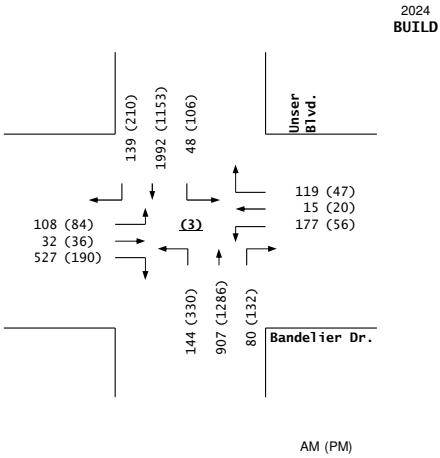
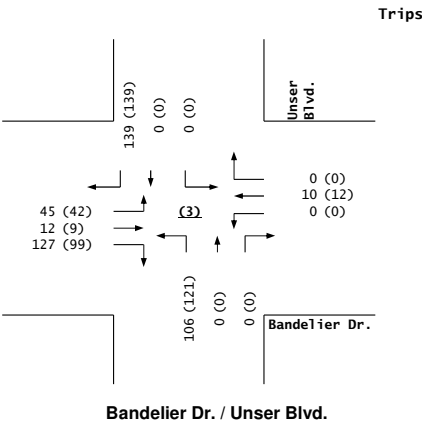
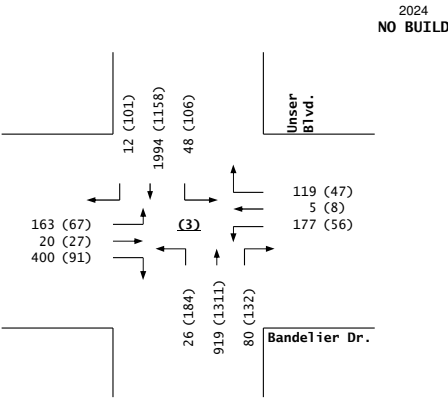
114

AM

119

105

PM



McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements Worksheet

Bandelier Dr. / Sagittarius Ave.

Case "N" - NO Unser Access

(5)

INTERSECTION :

E-W Street: **Bandelier Dr.**N-S Street: **Sagittarius Ave.**

Year of Existing Counts

2019

Implementation Year

2024

Growth Rates

1.00%

1.00%

1.00%

1.00%

Existing Volumes

Subtotal (NO BUILD - A.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	266	0	19	18	0	0	0	287	0	0	0
0	283	0	22	21	0	0	0	300	0	0	0
0.00%	0.00%	0.00%	0.00%	61.39%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	61.39%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2.91%	0.00%	0.00%	0.00%	0.00%	86.14%	0.00%	1.12%	0.00%	0.00%	0.00%	0.00%
0.00%	0.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	52.21%	1.12%	2.91%
0	0	5	0	0	0	0	0	0	0	0	0
0	(50)	0	0	0	0	50	0	(50)	0	0	0
8	45	0	0	15	239	0	3	0	138	3	8
8	278	5	22	36	251	50	3	250	138	3	8

Existing Volumes

Subtotal (NO BUILD - P.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	73	0	127	126	0	0	0	104	0	0	0
0	77	0	151	142	0	0	0	108	0	0	0
0.00%	0.00%	0.00%	0.00%	61.39%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	61.39%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2.91%	0.00%	0.00%	0.00%	0.00%	86.14%	0.00%	1.12%	0.00%	0.00%	0.00%	0.00%
0.00%	0.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	52.21%	1.12%	2.91%
0	0	10	0	0	0	0	0	0	0	0	0
0	(15)	0	0	0	0	10	0	(10)	0	0	0
8	22	0	0	33	239	0	3	0	128	3	7
8	84	10	151	175	264	10	3	98	128	3	7

Number of Residential Trips Generated

Entering

25

71

A.M.

100% Residential Development

Number of Commercial Trips Generated

54

34

P.M.

278

265

A.M.

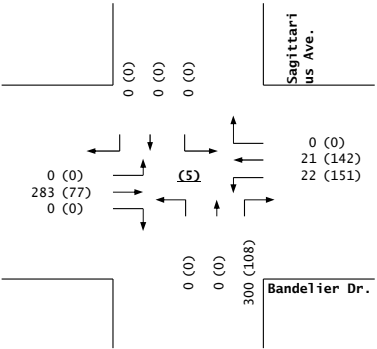
100% Commercial Development

278

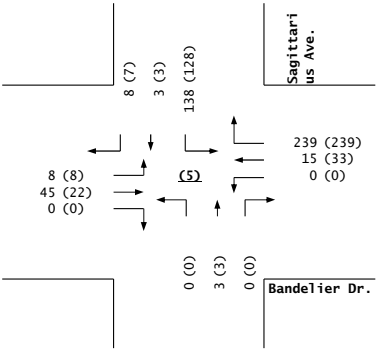
245

P.M.

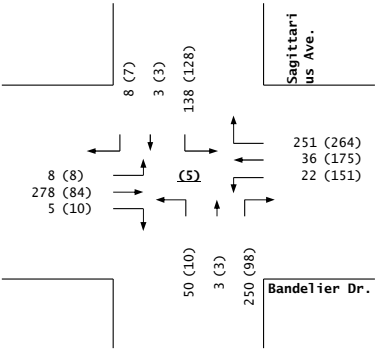
2024
NO BUILD



Trips



2024
BUILD



AM (PM)

McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2040) - 100% Development

Case "Y" - Unser Access

INTERSECTION:

Summary

Bandelier Dr. / Unser Blvd.

(3)

3.0% Truck

Existing (2020)

2040 (NO BUILD - A.M.)

2040 (BUILD - A.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
157	19	385	171	5	114	23	813	71	41	1,729	10	
188	23	461	204	6	137	36	1,286	112	50	2,072	12	
133	31	527	204	11	142	90	1,338	112	55	2,131	0	

Existing (2020)

2040 (NO BUILD - P.M.)

2040 (BUILD - P.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
65	26	88	54	8	45	163	1,159	116	92	1,004	88	
77	31	105	64	10	54	258	1,834	184	110	1,203	105	
94	35	148	64	17	59	340	1,873	184	114	1,255	75	

Bandelier Dr. / Sagittarius Ave.

(5)

3.0% Truck

Existing (2020)

2040 (NO BUILD - A.M.)

2040 (BUILD - A.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	269	0	19	18	0	0	0	290	0	0	0	
0	322	0	23	22	0	0	0	347	0	0	0	
8	317	5	23	37	43	50	3	297	73	3	8	

Existing (2020)

2040 (NO BUILD - P.M.)

2040 (BUILD - P.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	74	0	128	127	0	0	0	105	0	0	0	
0	88	0	154	152	0	0	0	126	0	0	0	
8	95	10	154	185	56	10	3	116	68	3	7	

CVS Drive / Unser Blvd.

(10)

3.0% Truck

Existing (2020)

2040 (NO BUILD - A.M.)

2040 (BUILD - A.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (CVS Drive)			Westbound (CVS Drive)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	63	0	0	202	67	0	0	
0	0	0	0	0	63	0	1,362	242	80	1,962	0	
0	0	113	0	0	63	74	1,332	242	80	1,913	188	

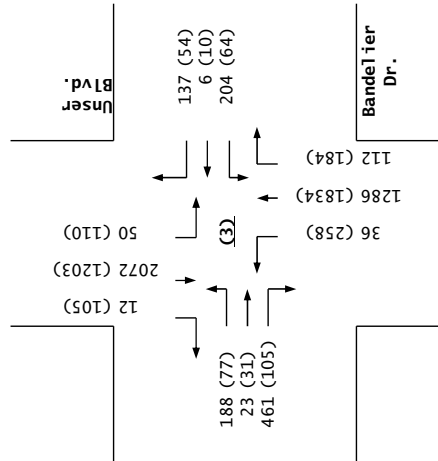
Existing (2020)

2040 (NO BUILD - P.M.)

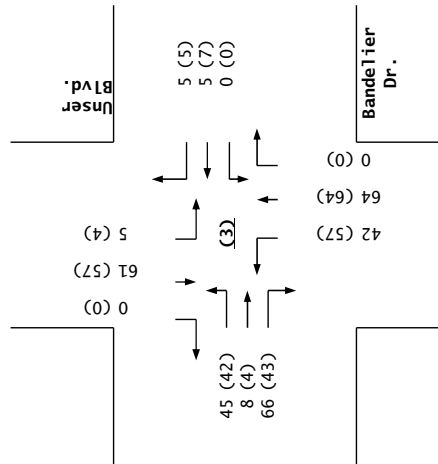
2040 (BUILD - P.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (CVS Drive)			Westbound (CVS Drive)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	128	0	0	254	104	0	0	
0	0	0	0	0	128	0	2,023	305	125	1,426	0	
0	0	100	0	0	128	86	1,968	305	125	1,382	183	

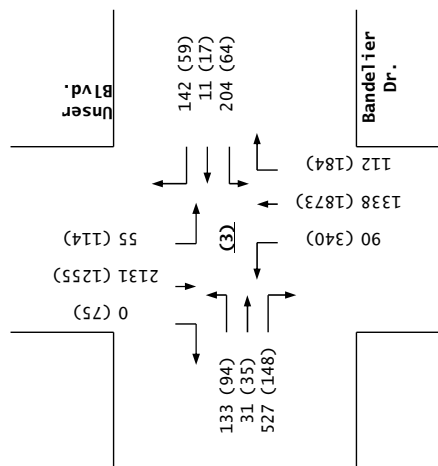
2040
NO BUILD



Trips



2040
BUILD



AM (PM)

Bandelier Dr. / Unser Blvd.

McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements Worksheet

Bandelier Dr. / Sagittarius Ave.**INTERSECTION :**E-W Street: **Bandelier Dr.**
N-S Street: **Sagittarius Ave.**

(5)

Year of Existing Counts

2019

Horizon Year

2040

Growth Rates

1.00%

1.00%

1.00%

1.00%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Subtotal AM Pk Hr. BUILD Volumes**Total AM Peak Hour BUILD Volumes**

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	266	0	19	18	0	0	0	287	0	0	0
0	56	0	4	4	0	0	0	60	0	0	0
0	322	0	23	22	0	0	0	347	0	0	0
0.00%	0.00%	0.00%	0.00%	61.39%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	61.39%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2.91%	0.00%	0.00%	0.00%	0.00%	11.00%	0.00%	1.12%	0.00%	0.00%	0.00%	0.00%
0.00%	0.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	27.63%	1.12%	2.91%
0	0	5	0	0	0	0	0	0	0	0	0
0	(50)	0	0	0	0	50	0	(50)	0	0	0
8	45	0	0	15	31	0	3	0	73	3	8
8	317	5	23	37	31	50	3	297	73	3	8
8	317	5	23	37	43	50	3	297	73	3	8

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Subtotal PM Pk Hr. BUILD Volumes**Total PM Peak Hour BUILD Volumes**

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	73	0	127	126	0	0	0	104	0	0	0
0	15	0	27	26	0	0	0	22	0	0	0
0	88	0	154	152	0	0	0	126	0	0	0
0.00%	0.00%	0.00%	0.00%	61.39%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	61.39%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2.91%	0.00%	0.00%	0.00%	0.00%	11.00%	0.00%	1.12%	0.00%	0.00%	0.00%	0.00%
0.00%	0.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	27.63%	1.12%	2.91%
0	0	10	0	0	0	0	0	0	0	0	0
0	(15)	0	0	0	0	10	0	(10)	0	0	0
8	22	0	0	33	31	0	3	0	68	3	7
8	95	10	154	185	31	10	3	116	68	3	7
8	95	10	154	185	56	10	3	116	68	3	7

Entering Exiting

Number of Residential Trips Generated

25

71

A.M.

100% Residential Development

54

34

P.M.

Number of Commercial Trips Generated

278

265

A.M.

100% Commercial Development

278

245

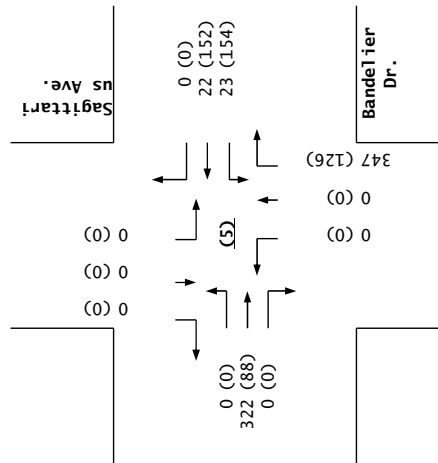
P.M.

2020 AM Peak Hr. Volumes

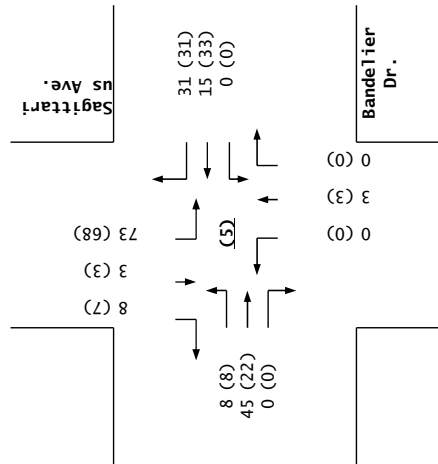
2020 PM Peak Hr. Volumes

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	269	0	19	18	0	0	0	290	0	0	0
0	74	0	128	127	0	0	0	105	0	0	0

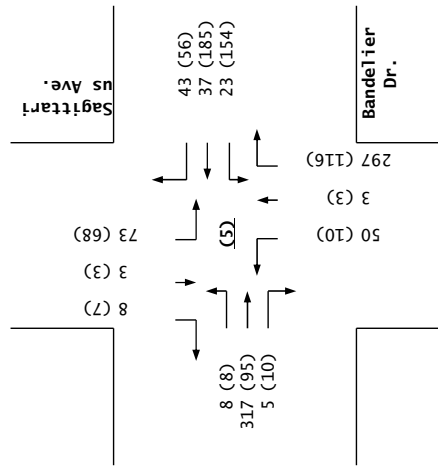
2040
NO BUILD



Trips



2040
BUILD



AM (PM)

Bandelier Dr. / Sagittarius Ave.

McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements Worksheet

CVS Drive / Unser Blvd.

INTERSECTION :

E-W Street: **CVS Drive**
N-S Street: **Unser Blvd.**

(10)

Year of Existing Counts 2020
Horizon Year 2040

Growth Rates

0.00%

0.00%

1.00%

1.00%

	Eastbound (CVS Drive)			Westbound (CVS Drive)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	63	0	0	202	67	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	40	13	0	0
Subtotal (NO BUILD - A.M.)	0	0	0	0	0	63	0	1,362	242	80	1,962	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.98%	0.00%	0.00%	0.00%	0.00%	50.16%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	24.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	66	0	0	0	56	0	0	0	0	139
Subtotal AM Pk Hr. BUILD Volumes	0	0	66	0	0	63	56	1,362	242	80	1,962	139
Pass-by Trip Adjustments	0	0	47	0	0	0	18	-30	0	0	-49	49
Total AM Peak Hour BUILD Volumes	0	0	113	0	0	63	74	1,332	242	80	1,913	188

	Eastbound (CVS Drive)			Westbound (CVS Drive)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	128	0	0	254	104	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	51	21	0	0
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	128	0	2,023	305	125	1,426	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.98%	0.00%	0.00%	0.00%	0.00%	50.16%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	24.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	61	0	0	0	56	0	0	0	0	139
Subtotal PM Pk Hr. BUILD Volumes	0	0	61	0	0	128	56	2,023	305	125	1,426	139
Pass-by Trip Adjustments	0	0	39	0	0	0	30	-55	0	0	-44	44
Total PM Peak Hour BUILD Volumes	0	0	100	0	0	128	86	1,968	305	125	1,382	183

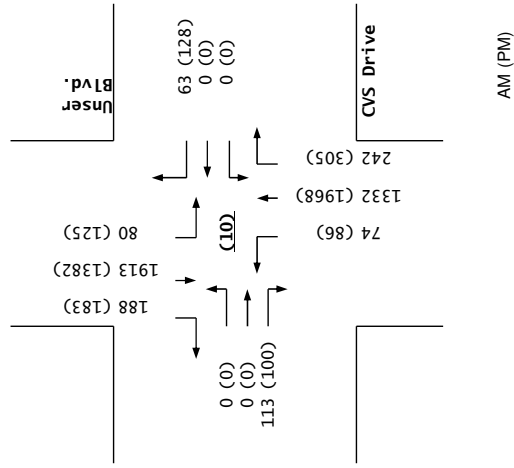
Number of Commercial Trips Generated

Entering	Exiting		
278	265	A.M.	100% Commercial Development
278	245	P.M.	

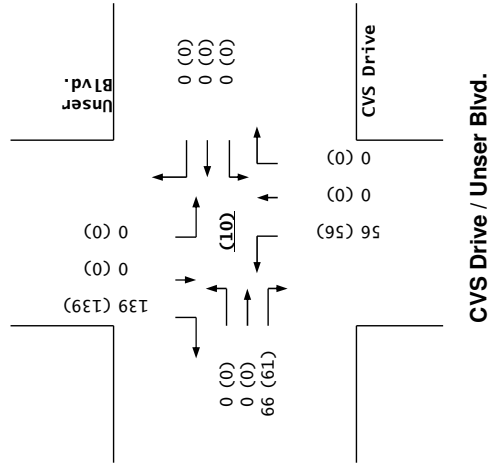
2020 AM Peak Hr. Volumes
2020 PM Peak Hr. Volumes

	Eastbound (CVS Drive)			Westbound (CVS Drive)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2020 AM Peak Hr. Volumes	0	0	0	0	0	63	0	0	202	67	0	0
2020 PM Peak Hr. Volumes	0	0	0	0	0	128	0	0	254	104	0	0

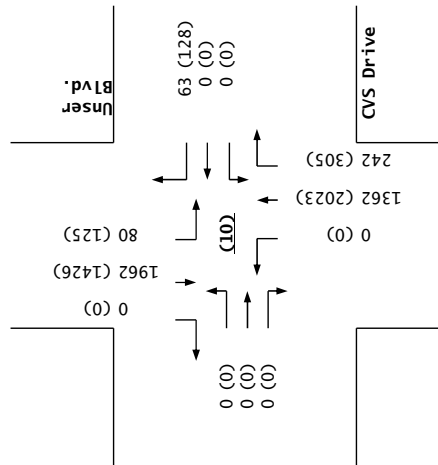
2040
BUILD



Trips



2040
NO BUILD



McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2040) - 100% Development

Case "N" - NO Unser Access

INTERSECTION:

Summary

Bandelier Dr. / Unser Blvd.

(3)

3.0% Truck

Existing (2020)

2040 (NO BUILD - A.M.)

2040 (BUILD - A.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
157	19	385	171	5	114	23	813	71	41	1,729	10	
188	23	461	204	6	137	36	1,286	112	50	2,072	12	
133	35	588	204	16	137	154	1,274	112	50	2,070	139	

Existing (2020)

2040 (NO BUILD - P.M.)

2040 (BUILD - P.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
65	26	88	54	8	45	163	1,159	116	92	1,004	88	
77	31	105	64	10	54	258	1,834	184	110	1,203	105	
94	40	204	64	22	54	404	1,809	184	110	1,198	214	

Bandelier Dr. / Sagittarius Ave.

(5)

3.0% Truck

Existing (2020)

2040 (NO BUILD - A.M.)

2040 (BUILD - A.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	269	0	19	18	0	0	0	290	0	0	0	
0	322	0	23	22	0	0	0	347	0	0	0	
8	317	5	23	37	251	50	3	297	138	3	8	

Existing (2020)

2040 (NO BUILD - P.M.)

2040 (BUILD - P.M.)

0.92			0.92			0.92			0.92			PHF
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	74	0	128	127	0	0	0	105	0	0	0	
0	88	0	154	152	0	0	0	126	0	0	0	
8	95	10	154	185	264	10	3	116	128	3	7	

McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements Worksheet

Bandelier Dr. / Unser Blvd.Case "N" - NO Unser Access
(3)**INTERSECTION:**E-W Street: **Bandelier Dr.**
N-S Street: **Unser Blvd.**Year of Existing Counts
Horizon Year2019
2040**Growth Rates**

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Subtotal AM Pk Hr. BUILD Volumes

Pass-by Trip Adjustments

Total AM Peak Hour BUILD Volumes

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Subtotal PM Pk Hr. BUILD Volumes

Pass-by Trip Adjustments

Total PM Peak Hour BUILD Volumes

Number of Residential Trips Generated

Number of Commercial Trips Generated

Entering Exiting

25 71 A.M.

54 34 P.M.

278 265 A.M.

278 245 P.M.

100% Residential Development

100% Commercial Development

2020 AM Peak Hr. Volumes
2020 PM Peak Hr. Volumes

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
157	19	385	171	5	114	23	813	71	41	1,729	10
65	26	88	54	8	45	163	1,159	116	92	1,004	88

MRCOG Forecast Volumes Worksheet**Based on 2019 Traffic Count**

2019 AM Link Volume 555 287 880 1,763

2019 PM Link Volume 177 106 1,396 1,172

Based on MRCOG Model (2040 Data Set)

2012 AM Link Volume 370 327 1248 1049

2012 PM Link Volume 313 1024 1058 1246

2040 AM Link Volume 463 307 2043 1193

2040 PM Link Volume 285 415 2308 1271

Growth Rate to Apply to Existing Counts to Match 2040 Forecasts

2019-2040 AM Growth Rates -0.79% 0.33% 6.29% -1.54%

2019-2040 PM Growth Rates 2.91% 13.88% 3.11% 0.40%

Growth Rate to Apply to 2012 Model Volumes to Match 2025 Forecasts

2012-2040 AM Growth Rates 0.90% -0.22% 2.28% 0.49%

2012-2040 PM Growth Rates -0.32% -2.12% 4.22% 0.07%

Pass-by Trip Calculations:**AM Pass-by Trips**

Percent Entering

Volume Entering

Percent Exiting

Volume Exiting

Net AM Passby Trips**PM Pass-by Trips**

Percent Entering

Volume Entering

Percent Exiting

Volume Exiting

Net PM Passby Trips

Pass-by Trips

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	-10.00%	0.00%	0.00%	-41.00%	0.00%
0	0	0	0	0	0	12	-12	0	0	-49	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	41.00%	0.00%
0	0	0	0	0	0	0	0	0	0	47	0
0	0	0	0	0	0	12	-12	0	0	-2	0

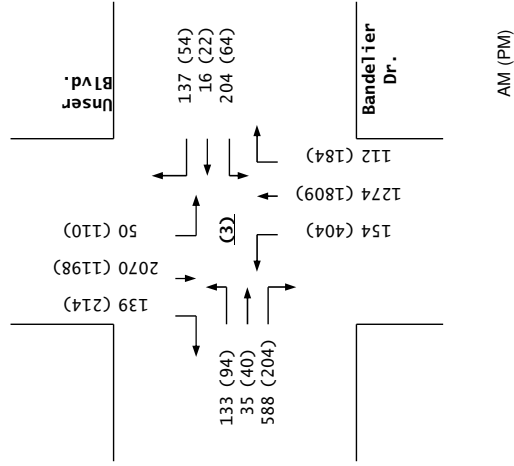
Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Unser Blvd.)			Southbound (Unser Blvd.)		
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.00%	-21.00%	0.00%	0.00%	-37.00%	0.00%
0	0	0	0	0	0	25	-25	0	0	-44	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	37.00%	0.00%
0	0	0	0	0	0	0	0	0	0	39	0
0	0	0	0	0	0	25	-25	0	0	-5	0

Entering Exiting

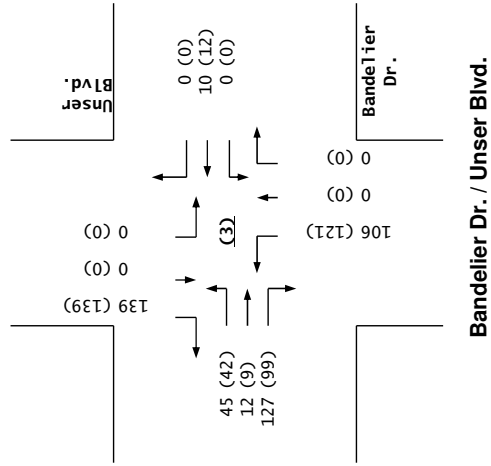
119 114 AM

119 105 PM

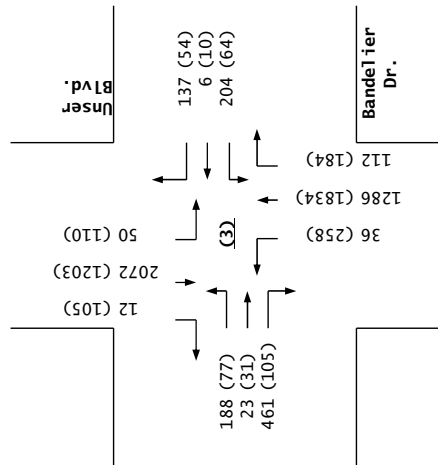
2040
BUILD



Trips



2040
NO BUILD



McMahon / Unser Commercial Development (SW Corner)

Projected Turning Movements Worksheet

Bandelier Dr. / Sagittarius Ave.

Case "N" - NO Unser Access

(5)

INTERSECTION :

E-W Street: **Bandelier Dr.**N-S Street: **Sagittarius Ave.**

Year of Existing Counts

2019

Horizon Year

2040

Growth Rates

1.00%

1.00%

1.00%

1.00%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Subtotal AM Pk Hr. BUILD Volumes**Total AM Peak Hour BUILD Volumes**

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	266	0	19	18	0	0	0	287	0	0	0
0	56	0	4	4	0	0	0	60	0	0	0
0	322	0	23	22	0	0	0	347	0	0	0
0.00%	0.00%	0.00%	0.00%	61.39%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	61.39%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2.91%	0.00%	0.00%	0.00%	0.00%	86.14%	0.00%	1.12%	0.00%	0.00%	0.00%	0.00%
0.00%	0.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	52.21%	1.12%	2.91%
0	0	5	0	0	0	0	0	0	0	0	0
0	(50)	0	0	0	0	50	0	(50)	0	0	0
8	45	0	0	15	239	0	3	0	138	3	8
8	317	5	23	37	239	50	3	297	138	3	8
8	317	5	23	37	251	50	3	297	138	3	8

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Residential Trips Generated(Entering)

Percent Residential Trips Generated(Exiting)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

BUILD adj. for McMahon / Bandelier conn.(Entering)

BUILD adj. for McMahon / Bandelier conn.(Exiting)

Total Trips Generated

Subtotal PM Pk Hr. BUILD Volumes**Total PM Peak Hour BUILD Volumes**

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	73	0	127	126	0	0	0	104	0	0	0
0	15	0	27	26	0	0	0	22	0	0	0
0	88	0	154	152	0	0	0	126	0	0	0
0.00%	0.00%	0.00%	0.00%	61.39%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	61.39%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2.91%	0.00%	0.00%	0.00%	0.00%	86.14%	0.00%	1.12%	0.00%	0.00%	0.00%	0.00%
0.00%	0.37%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	52.21%	1.12%	2.91%
0	0	10	0	0	0	0	0	0	0	0	0
0	(15)	0	0	0	0	10	0	(10)	0	0	0
8	22	0	0	33	239	0	3	0	128	3	7
8	95	10	154	185	239	10	3	116	128	3	7
8	95	10	154	185	264	10	3	116	128	3	7

Entering Exiting

Number of Residential Trips Generated

25

71

A.M.

100% Residential Development

54

34

P.M.

Number of Commercial Trips Generated

278

265

A.M.

100% Commercial Development

278

245

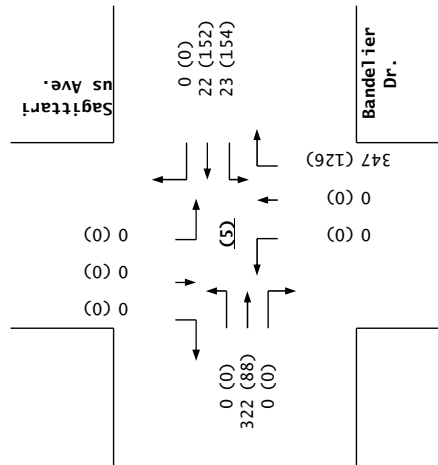
P.M.

2020 AM Peak Hr. Volumes

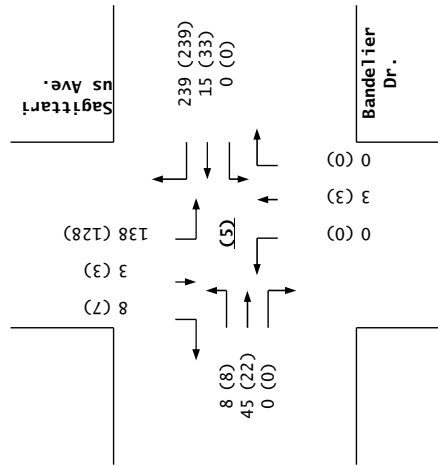
2020 PM Peak Hr. Volumes

Eastbound (Bandelier Dr.)			Westbound (Bandelier Dr.)			Northbound (Sagittarius Ave.)			Southbound (Sagittarius Ave.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	269	0	19	18	0	0	0	290	0	0	0
0	74	0	128	127	0	0	0	105	0	0	0

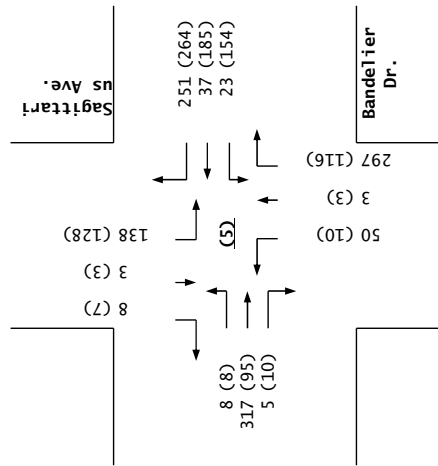
2040
NO BUILD



Trips



2040
BUILD



AM (PM)

Bandelier Dr. / Sagittarius Ave.

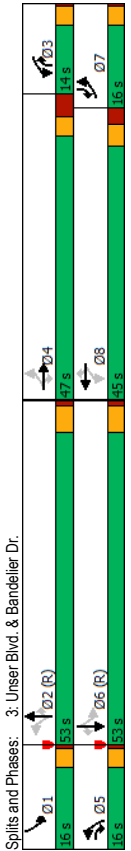
Timings

3: Unsers Blvd. & Bandelier Dr.

Terry O. Brown, PE
12/12/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	108	28	466	177	10	124	80	971	80	53	2053	1
Traffic Volume (vph)	108	28	466	177	10	124	80	971	80	53	2053	1
Future Volume (vph)	108	28	466	177	10	124	80	971	80	53	2053	1
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8	5	2	3	1	6	7
Permitted Phases	4	4	4	8	8	8	5	2	3	1	6	7
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	8.0	3.0	24.0	3.0	3.0	24.0	3.0
Minimum Split (s)	11.5	22.5	11.5	11.5	22.5	22.5	11.5	29.0	11.5	11.5	29.0	11.5
Total Split (s)	16.0	47.0	16.0	14.0	45.0	45.0	16.0	53.0	14.0	16.0	53.0	16.0
Total Split (%)	12.3%	36.2%	12.3%	10.8%	34.6%	34.6%	12.3%	40.8%	10.8%	12.3%	40.8%	12.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.5	3.5	0.5	0.5	2.5	2.5	0.5	1.0	0.5	0.5	1.0	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.5	3.5	3.5	6.0	6.0	3.5	5.0	3.5	3.5	5.0	3.5
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 107.9 (83%) Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated



2024 AM Peak BUILD Conditions - MITGATED - Case "Y" - Unsers Access

Synchro 10 Report
2024AB_MIT-CaseY.syn

HCM 6th Signalized Intersection Summary
3: Unsers Blvd. & Bandelier Dr.

Terry O. Brown, PE
12/12/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	108	28	466	177	10	124	80	971	80	53	2053	1
Traffic Volume (veh/h)	108	28	466	177	10	124	80	971	80	53	2053	1
Future Volume (veh/h)	108	28	466	177	10	124	80	971	80	53	2053	1
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	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	120	0	539	197	11	138	89	1079	89	59	2281	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	364	0	633	224	179	151	117	2167	1043	318	2143	1148
Arrive On Green	0.12	0.00	0.17	0.05	0.10	0.10	0.04	0.61	0.61	0.03	0.61	0.61
Sat Flow, veh/h	1767	0	3145	1767	1856	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	120	0	539	197	11	138	89	1079	89	59	2281	1
Grip Sat Flow(s), veh/h/ln	1767	0	1572	1767	1856	1572	1767	1763	1572	1767	1763	1572
Q Serve(g, s)	0.0	0.0	17.4	4.1	0.7	10.0	2.5	22.1	0.4	1.6	79.0	0.0
Cycle Q Clear(g, c), s	0.0	0.0	17.4	4.1	0.7	10.0	2.5	22.1	0.4	1.6	79.0	0.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	364	0	633	224	179	151	117	2167	1043	318	2143	1148
V/C Ratio(X)	0.33	0.00	0.85	0.88	0.06	0.91	0.76	0.50	0.09	0.19	1.06	0.00
Avail Cap(c, a), veh/h	364	0	1090	281	557	472	225	2167	1043	437	2143	1148
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(l)	1.00	0.00	1.00	1.00	1.00	1.00	0.26	0.26	0.26	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	0.0	33.2	56.7	53.4	45.9	32.7	13.9	3.4	10.9	25.5	1.6
Incr Delay (d2), s/veh	0.5	0.0	3.4	22.3	0.1	18.2	2.6	0.2	0.0	0.3	39.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	6.3	0.0	11.3	12.3	0.6	8.3	2.9	11.1	0.9	1.2	56.1	0.0
Unsig. Movement Delay, s/veh	46.8	0.0	36.6	79.1	53.5	64.1	35.4	14.1	3.5	11.1	64.6	1.6
LnGrp Delay(d), s/veh	46.8	0.0	36.6	79.1	53.5	64.1	35.4	14.1	3.5	11.1	64.6	1.6
LnGrp LOS	D	A	D	E	D	E	D	B	A	B	F	A
Approach Vol, veh/h	659	38.4	1257	346	72.3	14.9	1257	633	2341	633	2341	633
Approach Delay, s/veh	38.4	72.3	14.9	72.3	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
Approach LOS	D	D	D	E	E	E	B	B	A	B	F	A
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	84.9	9.8	28.1	8.1	84.0	19.4	18.5				
Change Period (Y+Rc), s	3.5	5.0	3.5	6.5	3.5	5.0	3.5	6.0				
Max Green Setting (Gmax), s	12.5	48.0	10.5	40.5	12.5	48.0	12.5	39.0				
Max Q Clear Time (g, c+11), s	3.6	24.1	6.1	19.4	4.5	81.0	2.0	12.0				
Green Ext Time (p, c), s	0.1	12.1	0.2	2.2	0.1	0.0	0.2	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	47.2											
HCM 6th LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												

2024 AM Peak BUILD Conditions - MITGATED - Case "Y" - Unsers Access

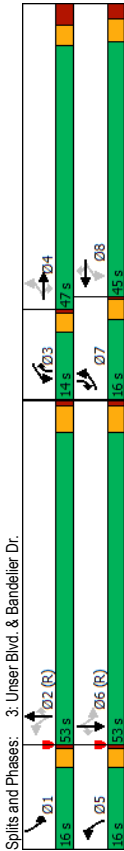
Synchro 10 Report
2024AB_MIT-CaseY.syn

Intersection												
Int Delay, s/veh	9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	278	5	22	36	43	50	3	250	73	3	8
Future Vol, veh/h	8	278	5	22	36	43	50	3	250	73	3	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	309	6	24	40	48	56	3	278	81	3	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	88	0	0	315	0	0	400	466	312	583	445	44
Stage 1	-	-	-	-	-	-	330	330	-	112	112	-
Stage 2	-	-	-	-	-	-	70	136	-	471	333	-
Critical Hdwy	4.145	-	-	4.145	-	-	7.345	6.545	6.245	7.345	6.545	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.145	5.545	-	6.545	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.545	5.545	-	6.145	5.545	-
Follow-up Hdwy	2.2285	-	-	2.2285	-	-	3.5285	4.0285	3.3285	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	1500	-	-	1237	-	-	545	492	725	408	505	1014
Stage 1	-	-	-	-	-	-	680	643	-	879	800	-
Stage 2	-	-	-	-	-	-	930	781	-	570	641	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1500	-	-	1237	-	-	526	479	725	245	492	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	526	479	-	245	492	-
Stage 1	-	-	-	-	-	-	675	638	-	873	785	-
Stage 2	-	-	-	-	-	-	900	766	-	347	637	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			1.7			15.4			25.3		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	679	1500	-	-	1237	-	-	269				
HCM Lane V/C Ratio	0.496	0.006	-	-	0.02	-	-	0.347				
HCM Control Delay (s)	15.4	7.4	0	-	8	-	-	25.3				
HCM Lane LOS	C	A	A	-	A	-	-	D				
HCM 95th %tile Q(veh)	2.8	0	-	-	0.1	-	-	1.5				

Timings Terry O. Brown, PE
3: Unsers Blvd. & Bandeller Dr. 12/15/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	108	28	527	177	15	119	144	907	80	48	1992	139
Traffic Volume (vph)	108	28	527	177	15	119	144	907	80	48	1992	139
Future Volume (vph)	108	28	527	177	15	119	144	907	80	48	1992	139
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4	3	8	3	8	5	2	3	1	6	7
Permitted Phases	4	4	4	8	8	8	5	2	2	6	6	7
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	8.0	3.0	8.0	8.0	3.0	24.0	3.0	3.0	24.0	3.0
Minimum Split (s)	11.5	22.5	22.5	11.5	22.5	22.5	11.5	29.0	11.5	11.5	29.0	11.5
Total Split (s)	16.0	47.0	47.0	14.0	45.0	45.0	16.0	53.0	14.0	16.0	53.0	16.0
Total Split (%)	12.3%	36.2%	36.2%	10.8%	34.6%	34.6%	12.3%	40.8%	10.8%	12.3%	40.8%	12.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.5	3.5	3.5	0.5	2.5	2.5	0.5	1.0	0.5	0.5	1.0	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.5	6.5	3.5	6.0	6.0	3.5	5.0	3.5	3.5	5.0	3.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes						
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Max	Min	Min	C-Max	Min

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 107.9 (83%) Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated



HCM 6th Signalized Intersection Summary Terry O. Brown, PE
3: Unsers Blvd. & Bandeller Dr. 12/15/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	108	28	527	177	15	119	144	907	80	48	1992	139
Traffic Volume (veh/h)	108	28	527	177	15	119	144	907	80	48	1992	139
Future Volume (veh/h)	108	28	527	177	15	119	144	907	80	48	1992	139
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	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	120	0	607	197	17	132	160	1008	89	53	2213	154
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	445	0	690	375	431	365	186	1857	955	282	1704	867
Arrive On Green	0.07	0.00	0.22	0.08	0.23	0.23	0.07	0.53	0.53	0.03	0.48	0.48
Sat Flow, veh/h	1767	0	3145	1767	1856	1572	1767	3526	1572	1767	3526	1572
Grip Volume (v), veh/h	120	0	607	197	17	132	160	1008	89	53	2213	154
Grip Sat Flow (s), veh/h/ln	1767	0	1572	1767	1856	1572	1767	1763	1572	1767	1763	1572
Q Serve (g, s)	6.7	0.0	24.3	10.5	0.9	9.1	7.5	24.6	3.1	2.0	62.8	6.3
Cycle Q Clear (g, s)	6.7	0.0	24.3	10.5	0.9	9.1	7.5	24.6	3.1	2.0	62.8	6.3
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap (c), veh/h	445	0	690	375	431	365	186	1857	955	282	1704	867
V/C Ratio (X)	0.27	0.00	0.88	0.52	0.04	0.36	0.86	0.54	0.09	0.19	1.30	0.18
Avail Cap (c, a), veh/h	495	0	980	375	557	472	225	1857	955	397	1704	867
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 (l)	1.00	0.00	1.00	1.00	1.00	1.00	0.26	0.26	0.26	0.26	1.00	1.00
Uniform Delay (d), s/veh	35.4	0.0	49.1	35.7	38.7	41.8	38.7	20.4	10.6	17.4	33.6	14.5
Incr Delay (d2), s/veh	0.3	0.0	6.8	1.3	0.0	0.6	7.5	0.3	0.1	0.3	138.7	0.4
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	5.4	0.0	15.4	8.8	0.8	6.5	7.5	12.8	1.9	1.5	85.5	0.2
Unsig. Movement Delay, s/veh	35.7	0.0	55.9	37.1	38.7	42.4	46.2	20.7	10.7	17.7	172.3	14.9
LnGrp Delay (d), s/veh	35.7	0.0	55.9	37.1	38.7	42.4	46.2	20.7	10.7	17.7	172.3	14.9
LnGrp LOS	D	A	E	D	D	D	D	C	B	B	F	B
Approach Vol, veh/h	727	52.5	52.5	346	39.2	39.2	1257	23.2	15.9	24.0	15.9	24.0
Approach Delay, s/veh	52.5	52.5	52.5	39.2	39.2	39.2	23.2	23.2	15.9	15.9	15.9	15.9
Approach LOS	D	D	D	D	D	D	C	C	F	F	F	F
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	73.5	14.0	35.0	13.1	67.8	12.3	36.7				
Change Period (Y+Rc), s	3.5	5.0	3.5	6.5	3.5	5.0	3.5	*6.5				
Max Green Setting (Gmax), s	12.5	48.0	10.5	40.5	12.5	48.0	12.5	*39				
Max Q Clear Time (g, c+11), s	4.0	26.6	12.5	26.3	9.5	64.8	8.7	11.1				
Green Ext Time (p, c), s	0.0	10.5	0.0	2.3	0.1	0.0	0.1	0.5				
Intersection Summary												
HCM 6th Ctrl Delay				98.0								
HCM 6th LOS				F								

Notes
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

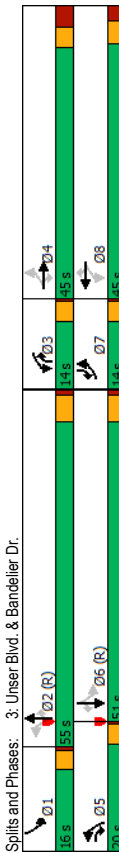
Intersection												
Int Delay, s/veh	13.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↙	↕			↕			↕	
Traffic Vol, veh/h	8	278	5	22	36	251	50	3	250	138	3	8
Future Vol, veh/h	8	278	5	22	36	251	50	3	250	138	3	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	309	6	24	40	279	56	3	278	153	3	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	319	0	0	315	0	0	400	697	312	699	561	160
Stage 1	-	-	-	-	-	-	330	330	-	228	228	-
Stage 2	-	-	-	-	-	-	70	367	-	471	333	-
Critical Hdwy	4.145	-	-	4.145	-	-	7.345	6.545	6.245	7.345	6.545	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.145	5.545	-	6.545	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.545	5.545	-	6.145	5.545	-
Follow-up Hdwy	2.2285	-	-	2.2285	-	-	3.5285	4.0285	3.3285	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	1233	-	-	1237	-	-	545	362	725	339	434	855
Stage 1	-	-	-	-	-	-	680	643	-	752	713	-
Stage 2	-	-	-	-	-	-	930	619	-	570	641	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1233	-	-	1237	-	-	524	352	725	203	422	855
Mov Cap-2 Maneuver	-	-	-	-	-	-	524	352	-	203	422	-
Stage 1	-	-	-	-	-	-	674	637	-	745	699	-
Stage 2	-	-	-	-	-	-	898	607	-	347	635	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.6			15.5			62.8		
HCM LOS							C			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	675	1233	-	-	1237	-	-	214				
HCM Lane V/C Ratio	0.499	0.007	-	-	0.02	-	-	0.774				
HCM Control Delay (s)	15.5	7.9	0	-	8	-	-	62.8				
HCM Lane LOS	C	A	A	-	A	-	-	F				
HCM 95th %tile Q(veh)	2.8	0	-	-	0.1	-	-	5.4				

Timings
3: Unsers Blvd. & Bandeller Dr.

Terry O. Brown, PE
12/12/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	84	31	134	56	15	52	266	1350	132	110	1210	71
Traffic Volume (vph)	84	31	134	56	15	52	266	1350	132	110	1210	71
Future Volume (vph)	84	31	134	56	15	52	266	1350	132	110	1210	71
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8	5	2	3	1	6	7
Permitted Phases	4	4	8	8	8	8	5	2	2	6	6	6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	8.0	3.0	24.0	3.0	3.0	24.0	3.0
Minimum Split (s)	11.5	22.5	11.5	11.5	22.5	22.5	11.5	29.0	11.5	11.5	29.0	11.5
Minimum Split (%)	14.0	45.0	20.0	14.0	45.0	45.0	20.0	55.0	14.0	16.0	51.0	14.0
Total Split (%)	10.8%	34.6%	15.4%	10.8%	34.6%	34.6%	15.4%	42.3%	10.8%	12.3%	39.2%	10.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.5	3.5	0.5	0.5	2.5	2.5	0.5	1.0	0.5	0.5	1.0	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.5	3.5	3.5	6.0	6.0	3.5	5.0	3.5	3.5	5.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?					Yes	Yes						
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Max	Min	Min	C-Max	Min

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 107.9 (83%) Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated



HCM 6th Signalized Intersection Summary
3: Unsers Blvd. & Bandeller Dr.

Terry O. Brown, PE
12/12/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	84	31	134	56	15	52	266	1350	132	110	1210	71
Traffic Volume (veh/h)	84	31	134	56	15	52	266	1350	132	110	1210	71
Future Volume (veh/h)	84	31	134	56	15	52	266	1350	132	110	1210	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	0.99	1.00	1.00	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	93	0	172	62	17	58	296	1500	147	122	1344	79
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	239	0	468	215	116	99	349	2440	1164	264	2328	1139
Arrive On Green	0.06	0.00	0.08	0.05	0.06	0.06	0.07	0.69	0.69	0.04	0.66	0.66
Sat Flow, veh/h	1767	0	3125	1767	1856	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	93	0	172	62	17	58	296	1500	147	122	1344	79
Grip Sat Flow(s), veh/h/ln	1767	0	1562	1767	1856	1572	1767	1763	1572	1767	1763	1572
Q Serve(g, s), s	6.3	0.0	6.4	4.2	1.1	4.7	6.6	29.6	3.5	2.9	27.2	1.9
Cycle Q Clear(g, c), s	6.3	0.0	6.4	4.2	1.1	4.7	6.6	29.6	3.5	2.9	27.2	1.9
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	239	0	468	215	116	99	349	2440	1164	264	2328	1139
V/C Ratio(X)	0.39	0.00	0.37	0.29	0.15	0.59	0.85	0.61	0.13	0.46	0.58	0.07
Avail Cap(c, a), veh/h	269	0	1148	273	557	472	448	2440	1164	365	2328	1139
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(l)	1.00	0.00	1.00	1.00	1.00	1.00	0.56	0.56	0.56	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	49.8	53.3	57.6	59.3	18.0	10.7	4.8	10.5	12.1	5.2
Incr Delay (d2), s/veh	1.0	0.0	0.5	0.7	0.6	5.5	6.9	0.7	0.1	1.3	1.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	5.1	0.0	4.6	3.5	1.0	3.6	10.3	15.0	2.0	2.0	15.9	1.1
Unsig. Movement Delay, s/veh	52.9	0.0	50.3	54.0	58.2	64.8	24.9	11.4	5.0	11.8	13.2	5.3
LnGrp Delay(d), s/veh	52.9	0.0	50.3	54.0	58.2	64.8	24.9	11.4	5.0	11.8	13.2	5.3
LnGrp LOS	D	A	D	D	E	E	C	B	A	B	B	A
Approach Vol, veh/h	265											
Approach Delay, s/veh	51.2											
Approach LOS	D											
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.6	95.0	9.7	16.7	12.7	90.9	11.8	14.6				
Change Period (Y+Rc), s	3.5	5.0	3.5	6.5	3.5	5.0	3.5	*6.5				
Max Green Setting (Gmax), s	12.5	50.0	10.5	38.5	16.5	46.0	10.5	*39				
Max Q Clear Time (g, c+11), s	4.9	31.6	6.2	8.4	8.6	29.2	8.3	6.7				
Green Ext Time (p, c), s	0.2	13.9	0.0	0.7	0.6	11.7	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	17.1											
HCM 6th LOS	B											

Notes
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	8	84	10	151	175	56	10	3	99	69	3	7
Future Vol, veh/h	8	84	10	151	175	56	10	3	99	69	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	93	11	168	194	62	11	3	110	77	3	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	256	0	0	104	0	0	552	709	99	734	683	128
Stage 1	-	-	-	-	-	-	117	117	-	561	561	-
Stage 2	-	-	-	-	-	-	435	592	-	173	122	-
Critical Hdwy	4.145	-	-	4.145	-	-	7.345	6.545	6.245	7.345	6.545	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.145	5.545	-	6.545	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.545	5.545	-	6.145	5.545	-
Follow-up Hdwy	2.2285	-	-	2.2285	-	-	3.5285	4.0285	3.3285	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	1301	-	-	1480	-	-	428	357	953	320	369	896
Stage 1	-	-	-	-	-	-	884	796	-	478	507	-
Stage 2	-	-	-	-	-	-	568	491	-	826	792	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1301	-	-	1480	-	-	382	314	953	255	325	896
Mov Cap-2 Maneuver	-	-	-	-	-	-	382	314	-	255	325	-
Stage 1	-	-	-	-	-	-	878	790	-	475	449	-
Stage 2	-	-	-	-	-	-	495	435	-	722	786	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			3.1			10.3			24.1		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	802	1301	-	-	1480	-	-	275				
HCM Lane V/C Ratio	0.155	0.007	-	-	0.113	-	-	0.319				
HCM Control Delay (s)	10.3	7.8	0	-	7.7	-	-	24.1				
HCM Lane LOS	B	A	A	-	A	-	-	C				
HCM 95th %tile Q(veh)	0.5	0	-	-	0.4	-	-	1.3				

Timings

3: Unser Blvd. & Bandelier Dr.

Terry O. Brown, PE
12/15/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	84	36	190	56	20	47	330	1286	132	106	1153	210
Traffic Volume (vph)	84	36	190	56	20	47	330	1286	132	106	1153	210
Future Volume (vph)	84	36	190	56	20	47	330	1286	132	106	1153	210
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8	5	2	3	1	6	7
Permitted Phases	4	4	4	8	8	8	5	2	2	6	6	6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	8.0	3.0	24.0	3.0	3.0	24.0	3.0
Minimum Split (s)	11.5	22.5	11.5	11.5	22.5	22.5	11.5	29.0	11.5	11.5	29.0	11.5
Total Split (s)	14.0	45.0	20.0	14.0	45.0	45.0	20.0	55.0	14.0	16.0	51.0	14.0
Total Split (%)	10.8%	34.6%	15.4%	10.8%	34.6%	34.6%	15.4%	42.3%	10.8%	12.3%	39.2%	10.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.5	3.5	0.5	0.5	2.5	2.5	0.5	1.0	0.5	0.5	1.0	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.5	3.5	3.5	6.0	6.0	3.5	5.0	3.5	3.5	5.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?					Yes	Yes						
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Max	Min	Min	C-Max	Min

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 107.9 (83%) Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Unser Blvd. & Bandelier Dr.



Intersection												
Int Delay, s/veh	10.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↙	↕			↕			↕	
Traffic Vol, veh/h	8	84	10	151	175	264	10	3	98	128	3	7
Future Vol, veh/h	8	84	10	151	175	264	10	3	98	128	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	93	11	168	194	293	11	3	109	142	3	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	487	0	0	104	0	0	552	940	99	850	799	244
Stage 1	-	-	-	-	-	-	117	117	-	677	677	-
Stage 2	-	-	-	-	-	-	435	823	-	173	122	-
Critical Hdwy	4.145	-	-	4.145	-	-	7.345	6.545	6.245	7.345	6.545	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.145	5.545	-	6.545	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.545	5.545	-	6.145	5.545	-
Follow-up Hdwy	2.2285	-	-	2.2285	-	-	3.5285	4.0285	3.3285	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	1068	-	-	1480	-	-	428	262	953	265	316	755
Stage 1	-	-	-	-	-	-	884	796	-	408	449	-
Stage 2	-	-	-	-	-	-	568	385	-	826	792	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1068	-	-	1480	-	-	380	230	953	211	277	755
Mov Cap-2 Maneuver	-	-	-	-	-	-	380	230	-	211	277	-
Stage 1	-	-	-	-	-	-	876	789	-	404	398	-
Stage 2	-	-	-	-	-	-	494	341	-	722	785	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			2			10.5			52.1		
HCM LOS							B			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	781	1068	-	-	1480	-	-	220				
HCM Lane V/C Ratio	0.158	0.008	-	-	0.113	-	-	0.697				
HCM Control Delay (s)	10.5	8.4	0	-	7.7	-	-	52.1				
HCM Lane LOS	B	A	A	-	A	-	-	F				
HCM 95th %tile Q(veh)	0.6	0	-	-	0.4	-	-	4.5				

Timings

3: Unsers Blvd. & Bandeller Dr.

Terry O. Brown, PE
12/12/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	133	31	527	204	11	142	90	1338	112	55	2131	1
Traffic Volume (vph)	133	31	527	204	11	142	90	1338	112	55	2131	1
Future Volume (vph)	133	31	527	204	11	142	90	1338	112	55	2131	1
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8	5	2	3	1	6	7
Permitted Phases	4	4	8	8	8	8	5	2	3	1	6	7
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	8.0	3.0	24.0	3.0	3.0	24.0	3.0
Minimum Split (s)	11.5	22.5	11.5	11.5	22.5	22.5	11.5	29.0	11.5	11.5	29.0	11.5
Total Split (s)	16.0	47.0	16.0	14.0	45.0	45.0	16.0	53.0	14.0	16.0	53.0	16.0
Total Split (%)	12.3%	36.2%	12.3%	10.8%	34.6%	34.6%	12.3%	40.8%	10.8%	12.3%	40.8%	12.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.5	3.5	0.5	0.5	2.5	2.5	0.5	1.0	0.5	0.5	1.0	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.5	3.5	3.5	6.0	6.0	3.5	5.0	3.5	3.5	5.0	3.5
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes						
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Max	Min	Min	C-Max	Min

Intersection Summary

Cycle Length: 130

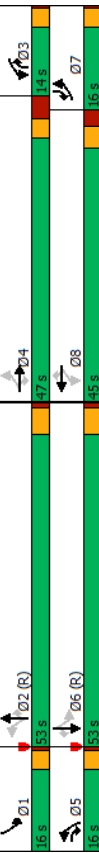
Actuated Cycle Length: 130

Offset: 107.9 (83%) Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Splits and Phases: 3: Unsers Blvd. & Bandeller Dr.



HCM 6th Signalized Intersection Summary
3: Unsers Blvd. & Bandeller Dr.

Terry O. Brown, PE
12/12/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	133	31	527	204	11	142	90	1338	112	55	2131	1
Traffic Volume (veh/h)	133	31	527	204	11	142	90	1338	112	55	2131	1
Future Volume (veh/h)	133	31	527	204	11	142	90	1338	112	55	2131	1
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	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	145	0	596	222	12	154	98	1454	122	60	2316	1
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	400	0	686	248	196	166	125	2077	1021	205	2042	1127
Arrive On Green	0.14	0.00	0.18	0.06	0.11	0.11	0.04	0.59	0.59	0.03	0.58	0.58
Sat Flow, veh/h	1767	0	3145	1767	1856	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	145	0	596	222	12	154	98	1454	122	60	2316	1
Grip Sat Flow(s), veh/h/ln	1767	0	1572	1767	1856	1572	1767	1767	1767	1767	1767	1572
Q Serve(g, s), s	0.0	0.0	18.8	5.7	0.8	11.2	3.0	37.5	0.6	1.8	75.3	0.0
Cycle Q Clear(g, c), s	0.0	0.0	18.8	5.7	0.8	11.2	3.0	37.5	0.6	1.8	75.3	0.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	400	0	686	248	196	166	125	2077	1021	205	2042	1127
V/C Ratio(X)	0.36	0.00	0.87	0.90	0.06	0.93	0.78	0.70	0.12	0.29	1.13	0.00
Avail Cap(c, a), veh/h	400	0	1104	284	557	472	225	2077	1021	322	2042	1127
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(l)	1.00	0.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	0.0	31.2	55.6	52.3	45.2	32.6	18.7	3.9	16.5	27.3	1.8
Incr Delay (d2), s/veh	0.6	0.0	4.5	26.3	0.1	19.1	0.0	0.2	0.0	0.8	67.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	7.5	0.0	12.1	13.9	0.7	9.0	2.5	16.8	1.1	1.3	66.8	0.0
Unsig. Movement Delay, s/veh	45.1	0.0	35.7	81.9	52.5	64.3	33.6	18.9	3.9	17.3	94.4	1.8
LnGrp Delay(d), s/veh	45.1	0.0	35.7	81.9	52.5	64.3	33.6	18.9	3.9	17.3	94.4	1.8
LnGrp LOS	D	A	D	F	D	E	C	B	A	B	F	A
Approach Vol, veh/h	741	37.5	741	388	740	388	1674	186	37.5	2377	92.4	F
Approach Delay, s/veh	37.5	37.5	37.5	74.0	74.0	74.0	186	186	37.5	2377	92.4	F
Approach LOS	D	D	D	E	E	E	B	B	A	B	F	A
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	81.6	11.3	29.7	8.6	80.3	21.4	19.7				
Change Period (Y+Rc), s	3.5	5.0	3.5	6.5	3.5	5.0	3.5	6.0				
Max Green Setting (Gmax), s	12.5	48.0	10.5	40.5	12.5	48.0	12.5	39.0				
Max Q Clear Time (g, c+11), s	3.8	39.5	7.7	20.8	5.0	77.3	2.0	13.2				
Green Ext Time (p, c), s	0.1	7.0	0.2	2.5	0.1	0.0	0.3	0.5				
Intersection Summary												
HCM 6th Ctrl Delay												
HCM 6th LOS												
Notes												
User approved volume balancing among the lanes for turning movement.												

2040 AM Peak BUILD Conditions - MITIGATED - Case "Y" - Unsers Access
Synchro 10 Report
2040AB_MIT-CaseY.syn

2040 AM Peak BUILD Conditions - MITIGATED - Case "Y" - Unsers Access
Synchro 10 Report
2040AB_MIT-CaseY.syn

Intersection												
Int Delay, s/veh	10.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	8	317	5	23	37	43	50	3	297	73	3	8
Future Vol, veh/h	8	317	5	23	37	43	50	3	297	73	3	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	345	5	25	40	47	54	3	323	79	3	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	87	0	0	350	0	0	438	503	348	643	482	44
Stage 1	-	-	-	-	-	-	366	366	-	114	114	-
Stage 2	-	-	-	-	-	-	72	137	-	529	368	-
Critical Hdwy	4.145	-	-	4.145	-	-	7.345	6.545	6.245	7.345	6.545	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.145	5.545	-	6.545	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.545	5.545	-	6.145	5.545	-
Follow-up Hdwy	2.2285	-	-	2.2285	-	-	3.5285	4.0285	3.3285	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	1501	-	-	1201	-	-	513	468	692	370	481	1014
Stage 1	-	-	-	-	-	-	650	620	-	876	799	-
Stage 2	-	-	-	-	-	-	927	781	-	530	619	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1501	-	-	1201	-	-	495	455	692	192	468	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	495	455	-	192	468	-
Stage 1	-	-	-	-	-	-	645	616	-	870	782	-
Stage 2	-	-	-	-	-	-	896	765	-	279	615	-

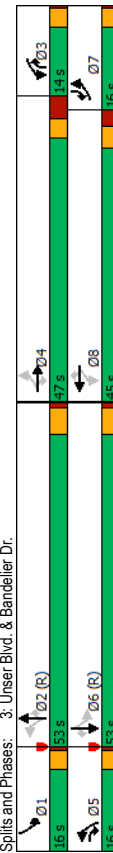
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			1.8			18			34		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	652	1501	-	-	1201	-	-	213
HCM Lane V/C Ratio	0.583	0.006	-	-	0.021	-	-	0.429
HCM Control Delay (s)	18	7.4	0	-	8.1	-	-	34
HCM Lane LOS	C	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	3.8	0	-	-	0.1	-	-	2

Timings Terry O. Brown, PE
3: Unser Blvd. & Bandelier Dr. 12/15/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	133	35	588	204	16	137	154	1274	112	55	2070	139
Traffic Volume (vph)	133	35	588	204	16	137	154	1274	112	55	2070	139
Future Volume (vph)	133	35	588	204	16	137	154	1274	112	55	2070	139
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8	5	2	3	1	6	7
Permitted Phases	4	4	8	8	8	8	5	2	3	1	6	7
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	8.0	3.0	24.0	3.0	3.0	24.0	3.0
Minimum Split (s)	11.5	22.5	11.5	11.5	22.5	22.5	11.5	29.0	11.5	11.5	29.0	11.5
Total Split (s)	16.0	47.0	16.0	14.0	45.0	45.0	16.0	53.0	14.0	16.0	53.0	16.0
Total Split (%)	12.3%	36.2%	12.3%	10.8%	34.6%	34.6%	12.3%	40.8%	10.8%	12.3%	40.8%	12.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.5	3.5	0.5	0.5	2.5	2.5	0.5	1.0	0.5	0.5	1.0	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.5	3.5	3.5	6.0	6.0	3.5	5.0	3.5	3.5	5.0	3.5
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 107.9 (83%) Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated



HCM 6th Signalized Intersection Summary Terry O. Brown, PE
3: Unser Blvd. & Bandelier Dr. 12/15/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	133	35	588	204	16	137	154	1274	112	55	2070	139
Traffic Volume (veh/h)	133	35	588	204	16	137	154	1274	112	55	2070	139
Future Volume (veh/h)	133	35	588	204	16	137	154	1274	112	55	2070	139
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	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	145	0	664	222	17	149	167	1385	122	60	2250	151
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	422	0	836	247	190	161	193	2024	1004	214	1860	1071
Arrive On Green	0.15	0.00	0.19	0.06	0.10	0.10	0.08	0.57	0.57	0.03	0.53	0.53
Sat Flow, veh/h	1767	0	3145	1767	1856	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	145	0	664	222	17	149	167	1385	122	60	2250	151
Grip Sat Flow(s), veh/h/ln	1767	0	1572	1767	1856	1572	1767	1763	1572	1767	1763	1572
Q Serve(g, s), s	0.0	0.0	19.7	6.2	1.1	10.8	8.0	35.8	0.6	2.0	68.6	1.4
Cycle Q Clear(g, c), s	0.0	0.0	19.7	6.2	1.1	10.8	8.0	35.8	0.6	2.0	68.6	1.4
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	422	0	836	247	190	161	193	2024	1004	214	1860	1071
V/C Ratio(X)	0.34	0.00	0.79	0.90	0.09	0.92	0.87	0.68	0.12	0.28	1.21	0.14
Avail Cap(c, a), veh/h	422	0	1224	277	557	472	225	2024	1004	328	1860	1071
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(l)	1.00	0.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	0.0	27.1	55.6	52.8	45.1	41.3	19.4	4.2	17.2	30.7	2.4
Incr Delay (d2), s/veh	0.5	0.0	2.3	27.5	0.2	18.8	3.1	0.2	0.0	0.7	99.7	0.3
Initial Q Delay(Q3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	7.3	0.0	12.2	14.0	0.9	8.8	6.7	16.2	1.2	1.5	75.7	1.1
Unsig. Movement Delay, s/veh	43.7	0.0	29.4	83.0	53.0	64.0	44.4	19.6	4.3	17.9	130.4	2.7
LnGrp Delay(d), s/veh	43.7	0.0	29.4	83.0	53.0	64.0	44.4	19.6	4.3	17.9	130.4	2.7
LnGrp LOS	D	A	C	F	D	E	D	B	A	B	F	A
Approach Vol, veh/h	809	31.9	388	74.4	388	74.4	1674	210	198	2461	1198	846
Approach Delay, s/veh	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9
Approach LOS	C	C	C	E	E	E	C	C	C	C	F	F
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	79.6	11.9	30.9	13.6	73.6	23.5	19.3				
Change Period (Y+Rc), s	3.5	5.0	3.5	6.5	3.5	5.0	3.5	6.0				
Max Green Setting (Gmax), s	12.5	48.0	10.5	40.5	12.5	48.0	12.5	39.0				
Max Q Clear Time (g, c+11), s	4.0	37.8	8.2	21.7	10.0	70.6	2.0	12.8				
Green Ext Time (p, c), s	0.1	8.0	0.1	2.8	0.1	0.0	0.3	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	72.1											
HCM 6th LOS	E											
Notes												
User approved volume balancing among the lanes for turning movement.												

Intersection												
Int Delay, s/veh	10.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕↔			↕			↕	
Traffic Vol, veh/h	8	84	10	151	175	264	10	3	98	128	3	7
Future Vol, veh/h	8	84	10	151	175	264	10	3	98	128	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	93	11	168	194	293	11	3	109	142	3	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	487	0	0	104	0	0	552	940	99	850	799	244
Stage 1	-	-	-	-	-	-	117	117	-	677	677	-
Stage 2	-	-	-	-	-	-	435	823	-	173	122	-
Critical Hdwy	4.145	-	-	4.145	-	-	7.345	6.545	6.245	7.345	6.545	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.145	5.545	-	6.545	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.545	5.545	-	6.145	5.545	-
Follow-up Hdwy	2.2285	-	-	2.2285	-	-	3.5285	4.0285	3.3285	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	1068	-	-	1480	-	-	428	262	953	265	316	755
Stage 1	-	-	-	-	-	-	884	796	-	408	449	-
Stage 2	-	-	-	-	-	-	568	385	-	826	792	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1068	-	-	1480	-	-	380	230	953	211	277	755
Mov Cap-2 Maneuver	-	-	-	-	-	-	380	230	-	211	277	-
Stage 1	-	-	-	-	-	-	876	789	-	404	398	-
Stage 2	-	-	-	-	-	-	494	341	-	722	785	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			2			10.5			52.1		
HCM LOS							B			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	781	1068	-	-	1480	-	-	220				
HCM Lane V/C Ratio	0.158	0.008	-	-	0.113	-	-	0.697				
HCM Control Delay (s)	10.5	8.4	0	-	7.7	-	-	52.1				
HCM Lane LOS	B	A	A	-	A	-	-	F				
HCM 95th %tile Q(veh)	0.6	0	-	-	0.4	-	-	4.5				

Timings

3: Unser Blvd. & Bandelier Dr.

Terry O. Brown, PE
12/12/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	94	35	148	64	17	59	340	1873	184	114	1255	75
Traffic Volume (vph)	94	35	148	64	17	59	340	1873	184	114	1255	75
Future Volume (vph)	94	35	148	64	17	59	340	1873	184	114	1255	75
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8	5	2	3	1	6	7
Permitted Phases	4	4	5	3	8	8	5	2	3	1	6	7
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	8.0	3.0	24.0	3.0	3.0	24.0	3.0
Minimum Split (s)	11.5	22.5	11.5	11.5	22.5	22.5	11.5	29.0	11.5	11.5	29.0	11.5
Total Split (s)	14.0	45.0	20.0	14.0	45.0	45.0	20.0	55.0	14.0	16.0	51.0	14.0
Total Split (%)	10.8%	34.6%	15.4%	10.8%	34.6%	34.6%	15.4%	42.3%	10.8%	12.3%	39.2%	10.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.5	3.5	0.5	0.5	2.5	2.5	0.5	1.0	0.5	0.5	1.0	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.5	3.5	3.5	6.0	6.0	3.5	5.0	3.5	3.5	5.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?					Yes	Yes						
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Max	Min	Min	C-Max	Min

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 107.9 (83%) Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 3: Unser Blvd. & Bandelier Dr.



HCM 6th Signalized Intersection Summary

3: Unser Blvd. & Bandelier Dr.

Terry O. Brown, PE
12/12/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	94	35	148	64	17	59	340	1873	184	114	1255	75
Traffic Volume (veh/h)	94	35	148	64	17	59	340	1873	184	114	1255	75
Future Volume (veh/h)	94	35	148	64	17	59	340	1873	184	114	1255	75
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	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	102	130	100	70	18	64	370	2036	200	124	1364	82
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	263	171	336	174	141	120	393	2361	1134	170	2087	1037
Arrive On Green	0.07	0.09	0.09	0.05	0.08	0.08	0.12	0.67	0.67	0.04	0.59	0.59
Sat Flow, veh/h	1767	1856	1567	1767	1856	1572	1767	3526	1572	1767	3526	1572
Grip Volume(v), veh/h	102	130	100	70	18	64	370	2036	200	124	1364	82
Grip Sat Flow(s), veh/h/ln	1767	1856	1567	1767	1856	1572	1767	3526	1572	1767	3526	1572
Q Serve(g, s)	6.8	8.9	7.0	4.7	1.2	5.1	13.7	58.7	5.3	3.6	33.5	2.4
Cycle Q Clear(g, c), s	6.8	8.9	7.0	4.7	1.2	5.1	13.7	58.7	5.3	3.6	33.5	2.4
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	263	171	336	174	141	120	393	2361	1134	170	2087	1037
V/C Ratio(X)	0.39	0.76	0.30	0.40	0.13	0.53	0.94	0.86	0.18	0.73	0.65	0.08
Avail Cap(c, a), veh/h	286	950	656	225	557	472	402	2361	1134	262	2087	1037
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(l)	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	50.0	57.6	42.9	51.7	56.0	57.8	28.8	16.8	5.8	27.8	17.6	7.9
Incr Delay (d2), s/veh	0.9	6.7	0.5	1.5	0.4	3.7	4.9	0.4	0.0	5.9	1.6	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/ln	5.5	8.0	5.0	3.9	1.0	3.9	14.1	24.2	2.3	4.6	19.7	1.5
Unsig. Movement Delay, s/veh	50.9	64.3	43.4	53.2	56.4	61.5	33.7	17.2	5.8	33.7	19.3	8.1
LnGrp Delay(d), s/veh	50.9	64.3	43.4	53.2	56.4	61.5	33.7	17.2	5.8	33.7	19.3	8.1
LnGrp LOS	D	E	D	D	E	E	C	B	A	C	B	A
Approach Vol, veh/h	332	332	332	332	332	332	332	332	332	332	332	332
Approach Delay, s/veh	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9
Approach LOS	D	D	D	D	D	D	D	D	D	D	D	D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	9.2	10.2	18.5	19.3	82.0	12.3	16.4				
Change Period (Y+Rc), s	3.5	5.0	3.5	6.5	3.5	5.0	3.5	*6.5				
Max Green Setting (Gmax), s	12.5	50.0	10.5	38.5	16.5	46.0	10.5	*39				
Max Q Clear Time (g, c+11), s	5.6	60.7	6.7	10.9	15.7	35.5	8.8	7.1				
Green Ext Time (p, c), s	0.2	0.0	0.0	1.0	0.1	8.1	0.0	0.3				

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

2040 PM Peak BUILD Conditions - MITIGATED - Case "Y" - Unser Access
Synchro 10 Report
2040PB_MIT-CaseY.syn

2040 PM Peak BUILD Conditions - MITIGATED - Case "Y" - Unser Access
Synchro 10 Report
2040PB_MIT-CaseY.syn

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	8	95	10	154	185	56	10	3	116	68	3	7
Future Vol, veh/h	8	95	10	154	185	56	10	3	116	68	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	103	11	167	201	61	11	3	126	74	3	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	262	0	0	114	0	0	563	723	109	757	698	131
Stage 1	-	-	-	-	-	-	127	127	-	566	566	-
Stage 2	-	-	-	-	-	-	436	596	-	191	132	-
Critical Hdwy	4.145	-	-	4.145	-	-	7.345	6.545	6.245	7.345	6.545	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.145	5.545	-	6.545	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.545	5.545	-	6.145	5.545	-
Follow-up Hdwy	2.2285	-	-	2.2285	-	-	3.5285	4.0285	3.3285	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	1294	-	-	1467	-	-	421	350	941	308	362	892
Stage 1	-	-	-	-	-	-	874	788	-	475	504	-
Stage 2	-	-	-	-	-	-	567	489	-	807	784	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1294	-	-	1467	-	-	376	308	941	240	319	892
Mov Cap-2 Maneuver	-	-	-	-	-	-	376	308	-	240	319	-
Stage 1	-	-	-	-	-	-	868	782	-	472	447	-
Stage 2	-	-	-	-	-	-	495	433	-	691	779	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	3	10.4	25.5
HCM LOS			B	D

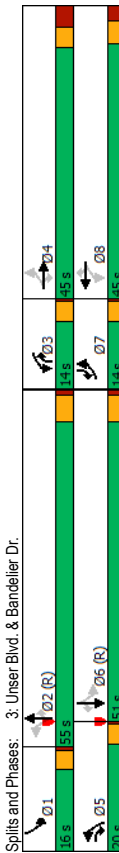
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	808	1294	-	-	1467	-	-	259
HCM Lane V/C Ratio	0.174	0.007	-	-	0.114	-	-	0.327
HCM Control Delay (s)	10.4	7.8	0	-	7.8	-	-	25.5
HCM Lane LOS	B	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	0.6	0	-	-	0.4	-	-	1.4

Timings
3: Unsers Blvd. & Bandeller Dr.

Terry O. Brown, PE
12/15/2020

Lane Group	EBL	EBT	EBL	WBL	WBT	WBL	NBL	NBT	NBL	SBL	SBT	SBR
Lane Configurations	94	40	204	64	22	54	404	1809	184	110	1198	214
Traffic Volume (vph)	94	40	204	64	22	54	404	1809	184	110	1198	214
Future Volume (vph)	94	40	204	64	22	54	404	1809	184	110	1198	214
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4	5	3	8	8	5	2	3	1	6	7
Permitted Phases	4	4	8	8	8	8	5	2	2	6	6	6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	8.0	3.0	3.0	8.0	8.0	3.0	24.0	3.0	3.0	24.0	3.0
Minimum Split (s)	11.5	22.5	11.5	11.5	22.5	22.5	11.5	29.0	11.5	11.5	29.0	11.5
Total Split (s)	14.0	45.0	20.0	14.0	45.0	45.0	20.0	55.0	14.0	16.0	51.0	14.0
Total Split (%)	10.8%	34.6%	15.4%	10.8%	34.6%	34.6%	15.4%	42.3%	10.8%	12.3%	39.2%	10.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.5	3.5	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	0.5	3.5	0.5	0.5	2.5	2.5	0.5	1.0	0.5	0.5	1.0	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.5	3.5	3.5	6.0	6.0	3.5	5.0	3.5	3.5	5.0	3.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?					Yes	Yes						
Recall Mode	Min	Min	Min	Min	Min	Min	Min	C-Max	Min	Min	C-Max	Min

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 107.9 (83%) Referenced to phase 2: NBT and 6: SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated



2040 PM Peak BUILD Conditions - MITTIGATED - Case "N" - NO Unsers Access
Synchro 10 Report
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HCM 6th Signalized Intersection Summary
3: Unsers Blvd. & Bandeller Dr.

Terry O. Brown, PE
12/15/2020

Movement	EBL	EBT	EBL	WBL	WBT	WBL	NBL	NBT	NBL	SBL	SBT	SBR
Lane Configurations	94	40	204	64	22	54	404	1809	184	110	1198	214
Traffic Volume (veh/h)	94	40	204	64	22	54	404	1809	184	110	1198	214
Future Volume (veh/h)	94	40	204	64	22	54	404	1809	184	110	1198	214
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A _{pbt})	1.00	0.99	1.00	1.00	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	102	0	251	70	24	59	439	1966	200	120	1302	233
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	258	0	686	231	140	119	396	2365	1136	179	2071	1030
Arrive On Green	0.07	0.00	0.09	0.05	0.08	0.08	0.13	0.67	0.67	0.04	0.59	0.59
Sat Flow, veh/h	1767	0	3128	1767	1856	1572	1767	3526	1572	1767	3526	1572
Grip Volume (v), veh/h	102	0	251	70	24	59	439	1966	200	120	1302	233
Grip Sat Flow (s), veh/h/ln	1767	0	1564	1767	1856	1572	1767	3526	1572	1767	3526	1572
Q Serve (g, s)	6.8	0.0	8.9	4.7	1.6	4.7	16.5	53.9	5.3	3.5	31.4	7.8
Cycle Q Clear (g, s)	6.8	0.0	8.9	4.7	1.6	4.7	16.5	53.9	5.3	3.5	31.4	7.8
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap (c), veh/h	258	0	686	231	140	119	396	2365	1136	179	2071	1030
V/C Ratio (X)	0.40	0.00	0.37	0.30	0.17	0.50	1.11	0.83	0.18	0.67	0.63	0.23
Avail Cap (c, a), veh/h	281	0	1325	283	557	472	396	2365	1136	272	2071	1030
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 (l)	1.00	0.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	0.0	43.1	51.5	56.3	57.7	31.4	15.9	5.7	25.5	17.6	9.1
Incr Delay (d2), s/veh	1.0	0.0	0.3	0.7	0.6	3.2	53.1	0.3	0.0	4.3	1.5	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(95%), veh/ln	5.5	0.0	6.3	3.8	1.4	3.5	22.0	22.3	2.3	4.3	18.7	5.0
Unsig. Movement Delay, s/veh	51.1	0.0	43.5	52.3	56.8	60.9	84.4	16.3	5.8	29.8	19.0	9.6
LnGrp Delay (d), s/veh	51.1	0.0	43.5	52.3	56.8	60.9	84.4	16.3	5.8	29.8	19.0	9.6
LnGrp LOS	D	A	D	D	E	E	F	B	A	C	B	A
Approach Vol, veh/h	353							2605				1655
Approach Delay, s/veh	45.7							26.9				18.5
Approach LOS	D							C				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	92.2	10.2	18.4	20.0	81.4	12.3	16.3				
Change Period (Y+Rc), s	3.5	5.0	3.5	6.5	3.5	5.0	3.5	*6.5				
Max Green Setting (Gmax), s	12.5	50.0	10.5	38.5	16.5	46.0	10.5	*39				
Max Q Clear Time (g, c+11), s	5.5	55.9	6.7	10.9	18.5	33.4	8.8	6.7				
Green Ext Time (p, c), s	0.1	0.0	0.0	1.0	0.0	9.5	0.0	0.3				

Intersection Summary
HCM 6th Ctrl Delay
HCM 6th LOS
Notes
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

2040 PM Peak BUILD Conditions - MITTIGATED - Case "N" - NO Unsers Access
Synchro 10 Report
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Intersection												
Int Delay, s/veh	10.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	8	95	10	154	185	264	10	3	116	128	3	7
Future Vol, veh/h	8	95	10	154	185	264	10	3	116	128	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	103	11	167	201	287	11	3	126	139	3	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	488	0	0	114	0	0	563	949	109	870	811	244
Stage 1	-	-	-	-	-	-	127	127	-	679	679	-
Stage 2	-	-	-	-	-	-	436	822	-	191	132	-
Critical Hdwy	4.145	-	-	4.145	-	-	7.345	6.545	6.245	7.345	6.545	6.945
Critical Hdwy Stg 1	-	-	-	-	-	-	6.145	5.545	-	6.545	5.545	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.545	5.545	-	6.145	5.545	-
Follow-up Hdwy	2.2285	-	-	2.2285	-	-	3.5285	4.0285	3.3285	3.5285	4.0285	3.3285
Pot Cap-1 Maneuver	1067	-	-	1467	-	-	421	258	941	257	311	755
Stage 1	-	-	-	-	-	-	874	788	-	407	448	-
Stage 2	-	-	-	-	-	-	567	385	-	807	784	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1067	-	-	1467	-	-	375	227	941	200	273	755
Mov Cap-2 Maneuver	-	-	-	-	-	-	375	227	-	200	273	-
Stage 1	-	-	-	-	-	-	866	781	-	403	397	-
Stage 2	-	-	-	-	-	-	493	341	-	690	777	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			2			10.5			56.7		
HCM LOS							B			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	791	1067	-	-	1467	-	-	209				
HCM Lane V/C Ratio	0.177	0.008	-	-	0.114	-	-	0.718				
HCM Control Delay (s)	10.5	8.4	0	-	7.8	-	-	56.7				
HCM Lane LOS	B	A	A	-	A	-	-	F				
HCM 95th %tile Q(veh)	0.6	0	-	-	0.4	-	-	4.7				