

TECHNICAL APPENDICES
YORK DRIVE INDEPENDENT LIVING PROJECT
San Diego County, California
May 22, 2025

LLG Ref. 3-21-3385

APPENDIX A

SCOPING AGREEMENT

**Scoping Agreement for Transportation Studies****General Project Information and Description****Project Information****Project Name:****Project PDS Number:****Project Location:****Project Description****Land Uses and Intensities:****Gross and Developable Acreage:****Number of Vehicle Parking Spaces:****Bicycle Storage Capacity:****Motorcycle Spaces:****Consultant****Name of Firm:****Project Manager:****Address:****Telephone:****Trip Generation****Source:****Pass-by Trips:****Total Daily Trips:****Diverted Trips:****Internal Capture Rate:****Trip Credit:****Alternative Modes:****Net Daily Trips:****General Plan Consistency****Is this project consistent with the General Plan?** ☐ Yes ☐ No**Site Plan****Attach 11x17 copies of the project location/vicinity map and site plan containing the following:**

- Driveway locations and access type
- Pedestrian access, bicycle access, and on-site pedestrian circulation
- Location and distance to closest existing transit stop (measure as walking distance to project entrance or middle of parcel)
- Location of any planned trails identified in the Community Trails Master Plan (CTMP) within ¼ mile of the project location

CEQA Transportation Analysis Screening

Project Type Screening

1) Select the Land Uses that apply to your project 2) Answer the questions for each Land Use that applies to your project (if "Yes" in any land use category below then that land use (or a portion of the land use) is screened from CEQA Transportation Analysis)		Screened Out	Not Screened Out
		Yes	No
☐	1. Small Projects: a. Does the project result in 110 daily trips or less?	☐	☐
☐	2. Small Service/Retail Project: a. Is the project less than 50,000 square feet?	☐	☐
☐	3. Mixed-Use Project: a. Is the project location screened out based on the SANDAG screening map for VMT/service population?	☐	☐
☐	4. Locally Serving Retail/Public Facility/Recreational a. Is the project locally serving: Retail OR Public Facility OR Recreational?	☐	☐
☐	5. Redevelopment Project: a. Does the project result in a net decrease in total Project VMT than the existing use? b. If the project is to redevelop an affordable housing site, are all proposed units affordable housing units? Mark "No" for projects that replace affordable housing with market rate units	☐ ☐	☐ ☐

Project Location Screening (if not screened based on project type) – Part 1

Is this project located within a grey area (area with little to no existing land use) on the applicable County screening maps for the project land use type?	☐ Yes	☐ No
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If "yes", the project cannot be screened based on location. If "No", proceed to Part 2.

Project Location Screening (if not screened based on project type) – Part 2

1) Select the Land Uses that apply to your project 2) Answer the questions for each Land Use that applies to your project (if "Yes" in any land use category below then that land use (or a portion of the land use) is screened from CEQA Transportation Analysis)		Screened Out	Not Screened Out
		Yes	No
☐	1. Residential a. Is the project location screened out using the County screening maps for VMT/resident?	☐	☐
☐	2. Employment a. Is the project location screened out using the County screening maps for VMT/employee or VMT/service population?	☐	☐
☐	3. Retail/Public Facility/Recreational a. Is the project location screened out using the County screening maps for VMT/service population?	☐	☐

Local Mobility Analysis

Type of Local Mobility Analysis (LMA)

☐ Site Access Study	249 daily trips or less
☐ Focused LMA	250 to 499 daily trips and consistent with the General Plan
☐ Full LMA	500 or greater daily trips and consistent with the General Plan, or 250 or greater daily trips and inconsistent with the General Plan

Trip Distribution

☐ Select Zone (Model Series _____)	Projects that generate greater than 1,000 daily trips
☐ Manual Estimation	Site Access Studies, Focused LMAs, or project's that generate less than 1,000 daily trips

Provide exhibit detailing trip distribution and trip assignment for review.

Study Intersections (and Roadway Segments) (NOTE: Subject to change based of staff review)

1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

Attach a separate page if the number of study locations exceeds 10.

Other Jurisdictions

Is this project located within one mile of another Local Jurisdiction? ☐ **Yes** ☐ **No**

If so, name of Jurisdiction:

Specific Issues to be addressed within the Study

(in addition to requirements described in the Guidelines – to be filled out by County Staff)

1.
2.
3.
4.
5.

Recommended by:

Consultant's Representative

Date

Scoping Agreement Submitted on

Date

Scoping Agreement Re-submitted on

Date

Approved Scoping Agreement:

County of San Diego
Transportation Specialist

Date

LEGEND:

	PROJECT BOUNDARY
	PROPOSED PAD ELEVATION
	EXISTING EASEMENT
	EXISTING WATER LINE
	EXISTING SEWER LINE
	EXISTING CONTOURS

OWNERS STATEMENT

I HEREBY CERTIFY THAT THE RECORD OWNERS OF THE PROPERTY SHOWN ON THIS SITE PLAN AND THAT SAID MAP SHOWS OUR ENTIRE CONTIGUOUS OWNERSHIP (EXCLUDING SUBDIVISION LOTS). WE UNDERSTAND THAT PROPERTY IS CONSIDERED CONTIGUOUS EVEN IF IT IS SEPARATED BY ROADS, STREETS, UTILITY EASEMENTS OR RAILROADS RIGHTS-OF-WAY.

TIMED INVESTMENT, LLC
3189 AIRWAY AVENUE, UNIT D
COSTA MESA, CA 92626
949-903-4445

HARRY C. CROWEL DATE

ENGINEER OF WORK:

bha, Inc.
land planning, civil engineering, surveying

5115 AVENIDA ENCINAS
SUITE "L"
CARLSBAD, CA. 92008-4387
(760) 931-8700



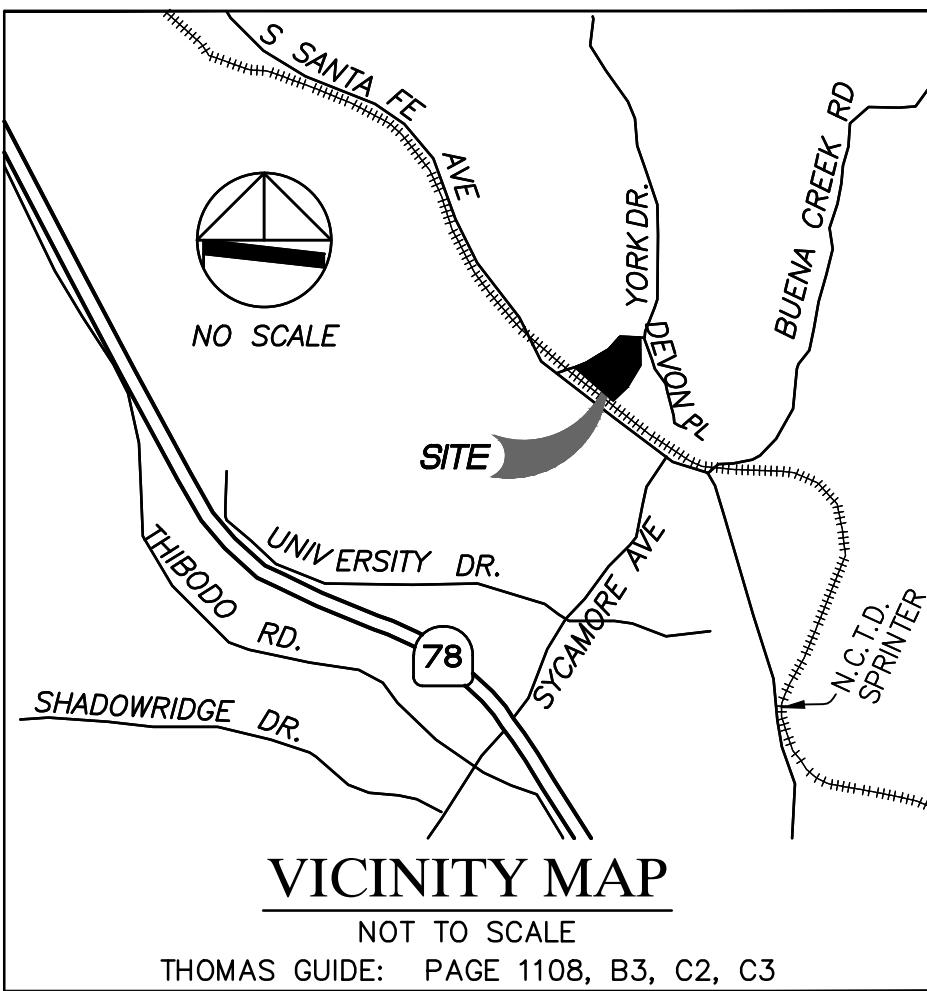
RONALD L. HOLLOWAY RCE 29271 EXP. 3-31-23 DATE

ASSESSOR'S PARCEL NUMBERS/TAX RATE AREA

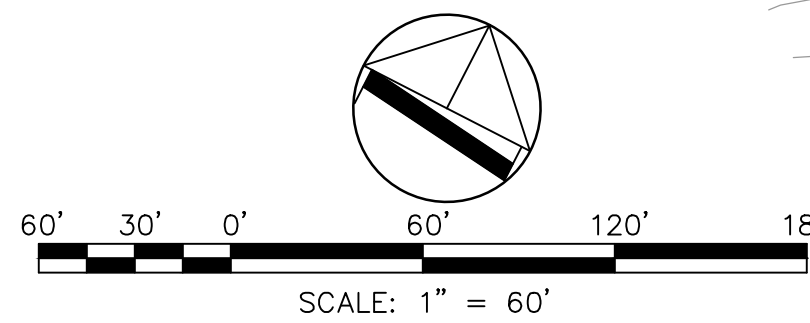
184-040-18, 184-040-19, 184-040-20, 184-040-21, 184-040-22, 184-040-04
TAX RATE CODE:

LEGAL DESCRIPTION

PORTION OF LOT 1 & ALL OF LOT 2 OF KEW GARDENS, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 2046, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 15, 1927.



KEY MAP



UNIT TABULATION

STUDIO	121 UNITS
1 BEDROOM	51 UNITS
2 BEDROOM	11 UNITS
TOTAL	183 UNITS

PARKING TABULATION

	REQUIRED	PROVIDED
STUDIO	121	-
1 BEDROOM	51	-
2 BEDROOM	22	-
TOTAL	194	168

ADDITIONAL PARKING TABULATION

	REQUIRED	PROVIDED
HANDICAPPED	-	2
VISITOR	-	-
LOADING	-	-
TOTAL	-	-

GENERAL NOTES:

- ALL INTERNAL STREETS WILL BE PRIVATE.
- GRADING AND IMPROVEMENTS SHALL BE IN ACCORDANCE WITH COUNTY OF SAN DIEGO STANDARDS.
- EASEMENTS OF RECORD NOT SHOWN HEREON SHALL BE HONORED, ABANDONED AND/OR RELOCATED TO THE SATISFACTION OF ALL INTERESTED PARTIES, AND PUBLIC UTILITY EASEMENTS NECESSARY TO SERVE THIS PROJECT WILL BE COORDINATED WITH SERVING UTILITY COMPANIES.
- LOT DIMENSIONS AND AREAS SHOWN HEREON ARE APPROXIMATE. THE DIMENSIONS MAY BE ADJUSTED TO BE CONSISTENT WITH THE FINAL MAP.
- ZONING REQUIREMENTS:

	ZONE	EXISTING	PROPOSED
USE REGULATIONS		RR	
ANIMAL REGULATIONS		J	
LOT SIZE		0.5 ACRE	
BUILDING TYPE		C	
MAXIMUM FLOOR AREA			
FLOOR AREA RATIO			
HEIGHT		G	
LOT COVERAGE		G	
SETBACK			
OPEN SPACE			
SPECIAL AREA REGULATIONS		C	

- THIS PLAN IS PROVIDED TO ALLOW FOR FULL AND ADEQUATE DISCRETIONARY REVIEW OF THE PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING SHOWN HEREON, AND AGREES TO OBTAIN VALID GRADING PERMISSIONS BEFORE COMMENCING SUCH ACTIVITY.

ACREAGE: 4.27 ACRES GROSS / 4.27 ACRES NET
NO. SENIOR APARTMENTS: 183
EXISTING GENERAL PLAN: VILLAGE RESIDENTIAL
REGIONAL CATEGORY: VILLAGE
COMMUNITY PLAN: NORTH COUNTY METRO
PROPOSED USE: SENIOR APARTMENTS

DISTRICTS:

SEWER: BUENA SANITATION DISTRICT
WATER: VISTA IRRIGATION DISTRICT
SCHOOLS: VISTA UNIFIED SCHOOL DISTRICT
FIRE: VISTA FIRE PROTECTION DISTRICT
TELEPHONE: AT&T
GAS & ELECTRIC: SAN DIEGO GAS & ELECTRIC CO.

- ALL CUT SLOPES ARE SHOWN AT 2:1 UNLESS OTHERWISE SHOWN ON THIS PLAN.

SETBACKS:

FRONT: 50' FROM CL
SIDE: 10'
REAR: 25'

- BUILDING HEIGHT:
35' (2 STORY) PERMITTED
45' (4 STORY) PROPOSED

- DENSITY: SENIOR HOUSING EXEMPTIONS

- USABLE OPEN SPACE:

ACCESS

ACCESS IS FROM A PUBLIC ROAD KNOWN AS YORK DRIVE.

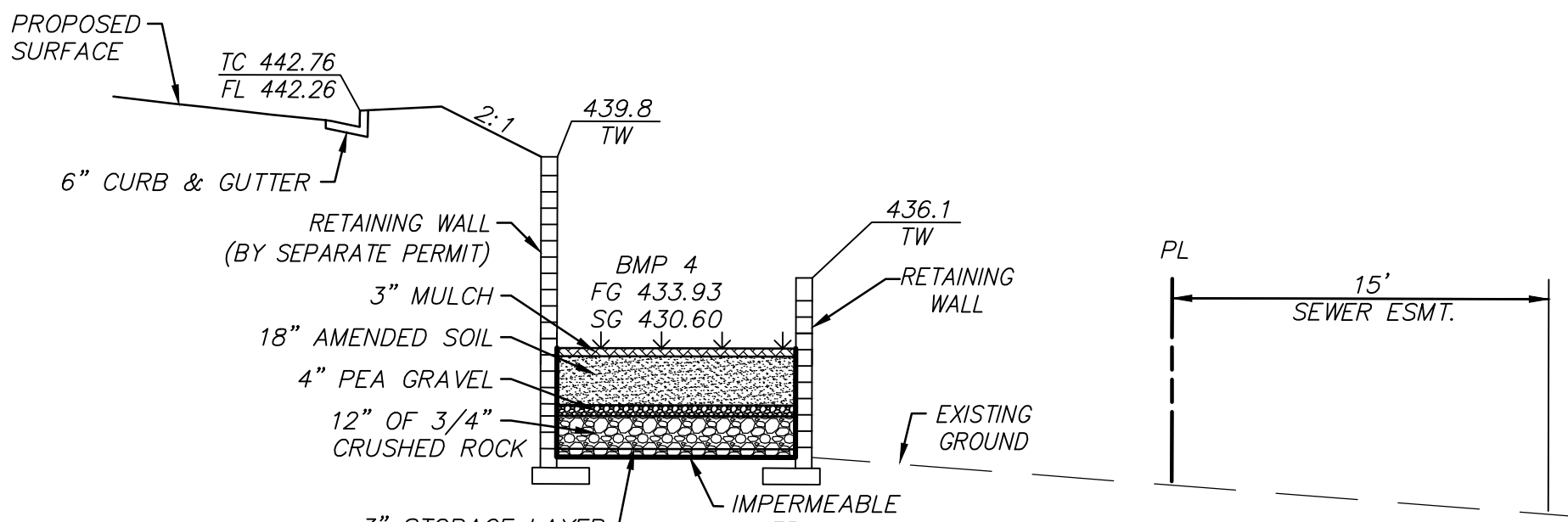
EASEMENTS

EXIST. EASEMENT FOR COUNTY
HIGHWAY PER DOC. NO. 2007-0650352

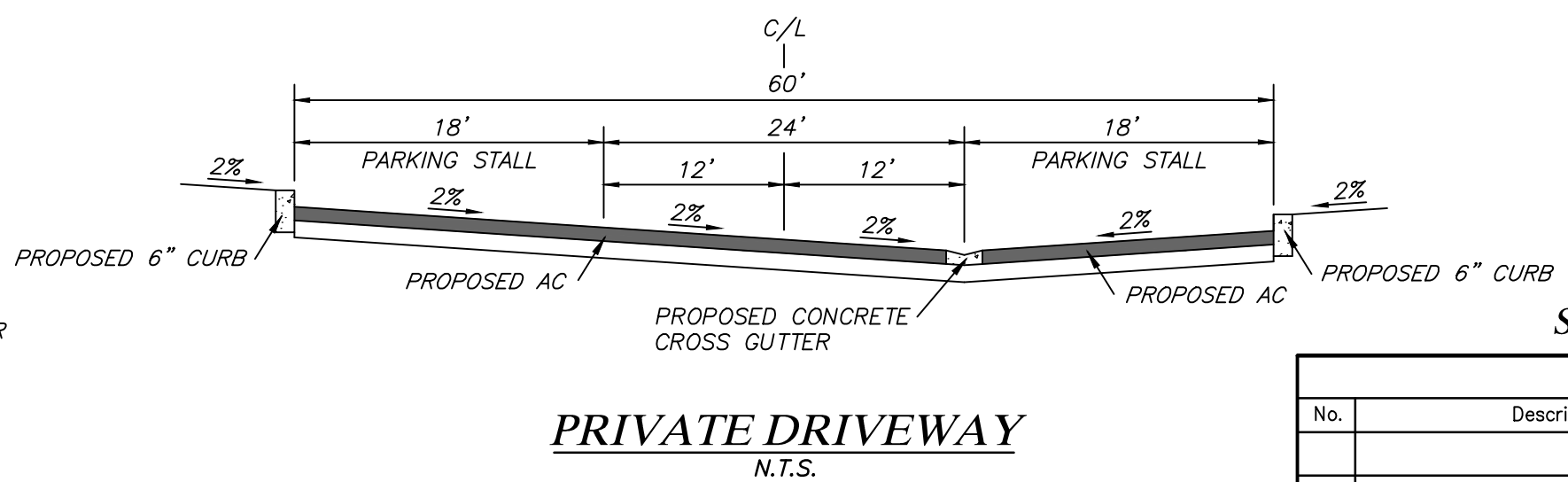
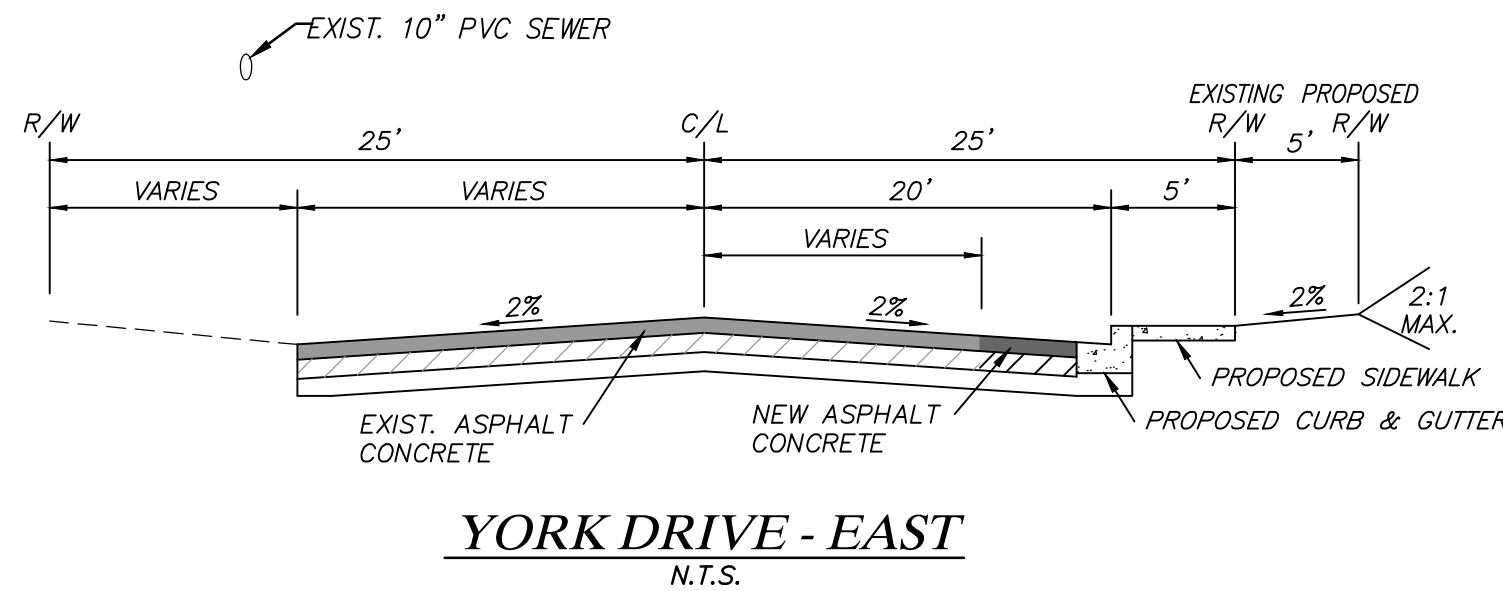
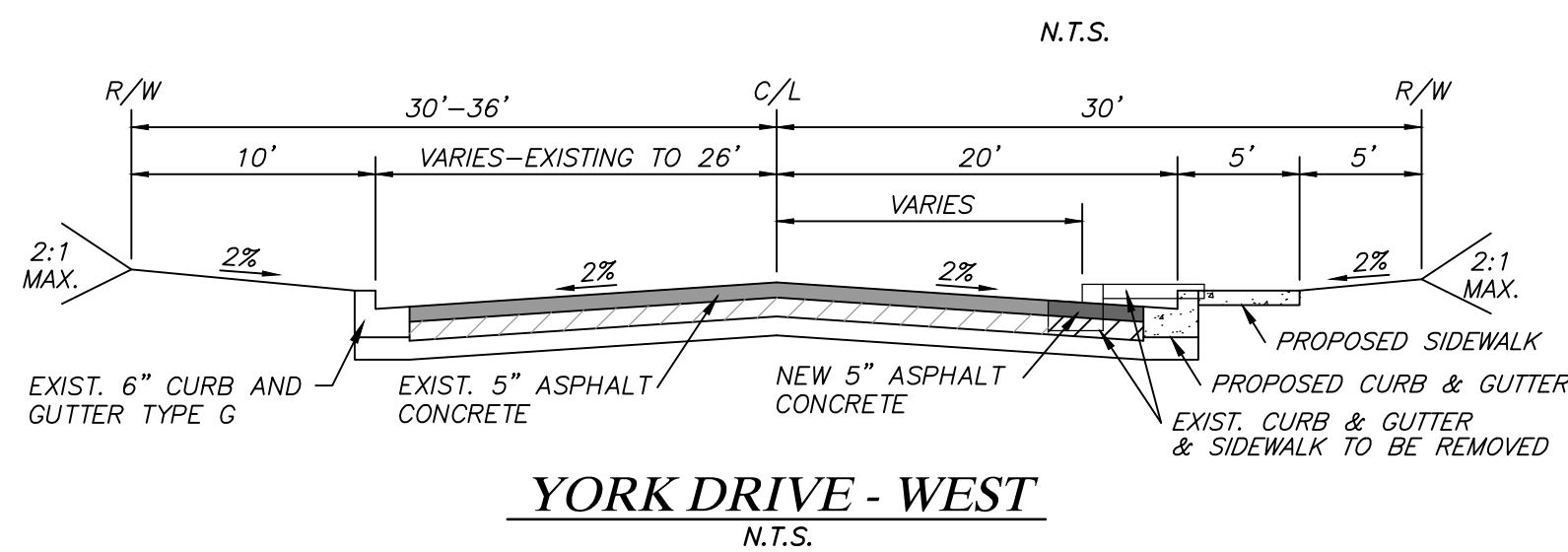
EXIST. SEWER EASEMENT TO BUENA
SANITATION DISTRICT PER DOC. NO.
1965-202741 REC. 11-8-65

EARTHWORK

EXCAVATION: 1,350 CY
FILL: 53,010 CY
WASTE/IMPORT: 51,660 CY WASTE

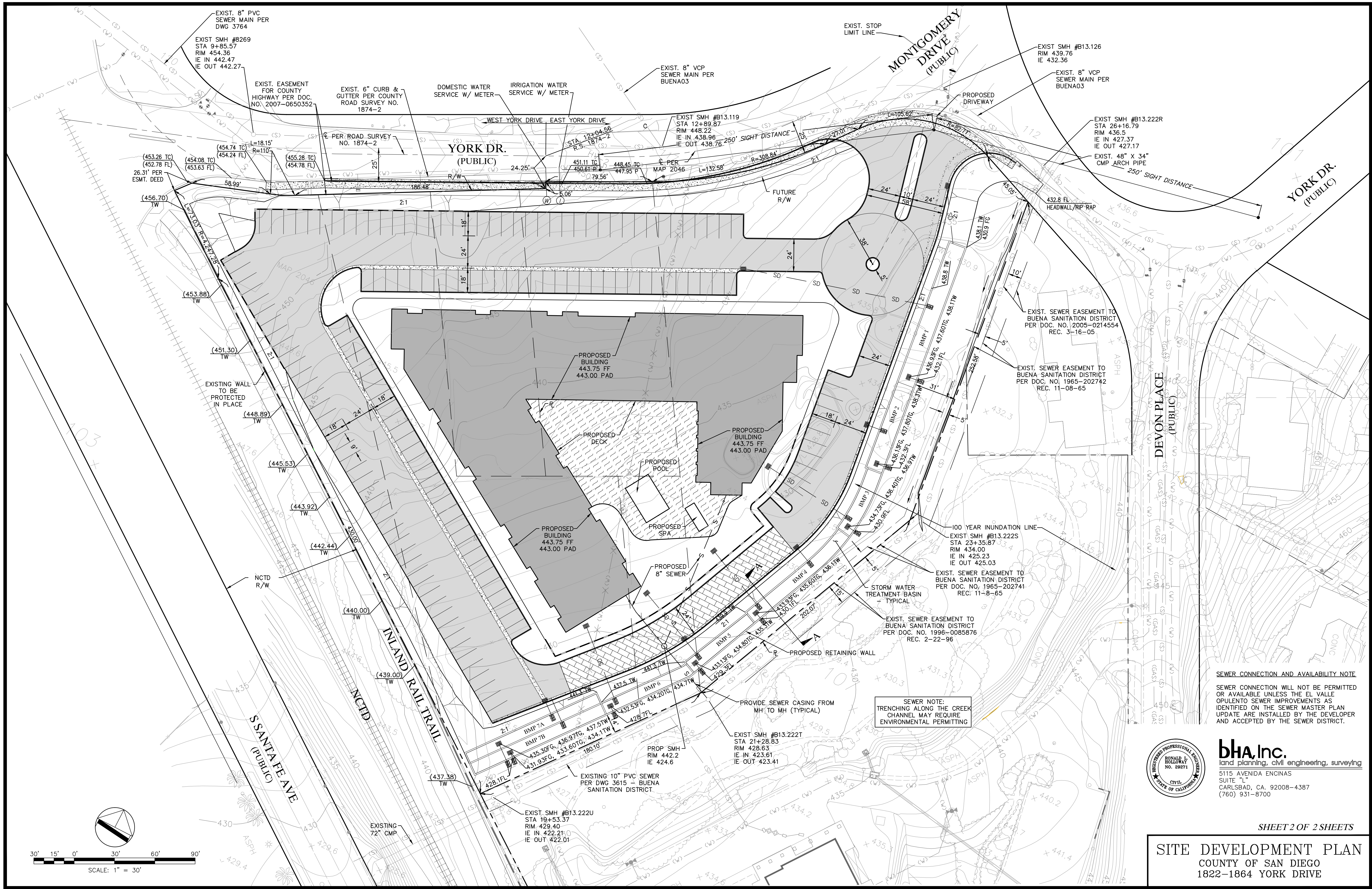


TYPICAL BIOFILTRATION BASIN SECTION A-A (BMP 4)



SHEET 1 OF 2 SHEETS

REVISIONS			
No.	Description	Approved by	Date



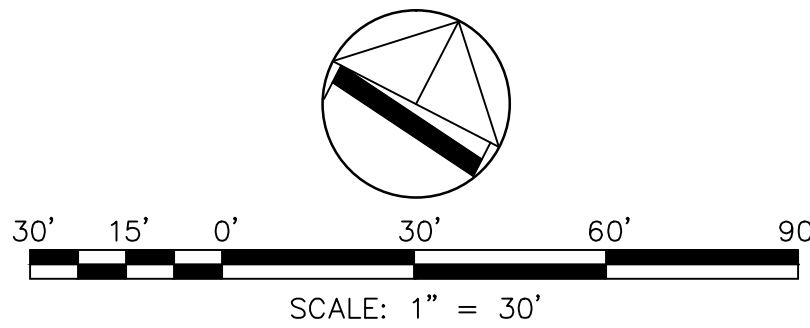
SEWER CONNECTION AND AVAILABILITY NOTE
SEWER CONNECTION WILL NOT BE PERMITTED OR AVAILABLE UNLESS THE EL VALLE OPULENTO SEWER IMPROVEMENTS AS IDENTIFIED ON THE SEWER MASTER PLAN UPDATE ARE INSTALLED BY THE DEVELOPER AND ACCEPTED BY THE SEWER DISTRICT.



bha, inc.
land planning, civil engineering, surveying
5115 AVENIDA ENCINAS
SUITE "L"
CARLSBAD, CA. 92008-4387
(760) 931-8700

SHEET 2 OF 2 SHEETS

SITE DEVELOPMENT PLAN
COUNTY OF SAN DIEGO
1822-1864 YORK DRIVE



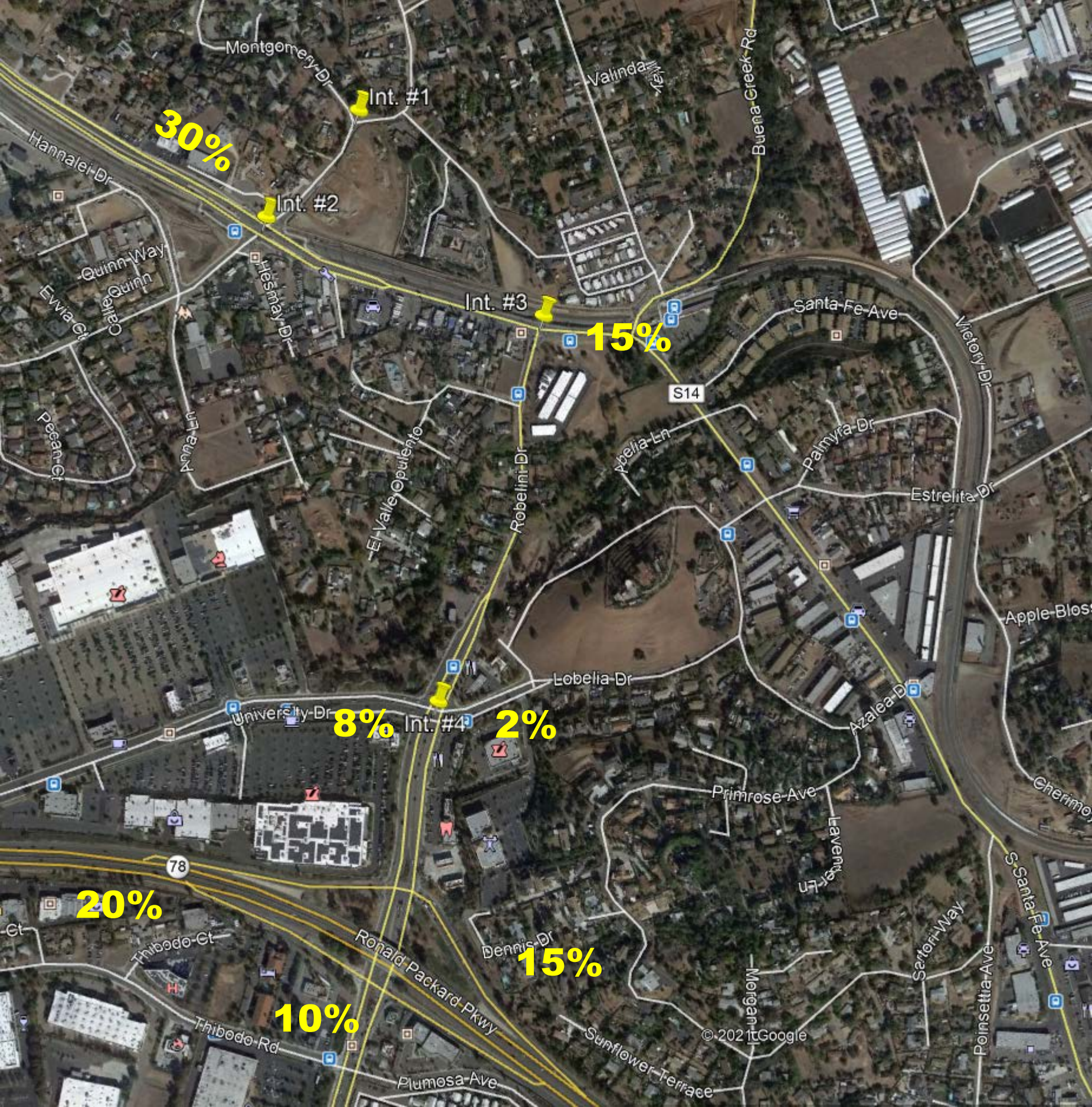
York Drive Independent Living Trip Generation Summary
May-21

Land Use	Quantity	Daily Volumes		AM Peak Hour					PM Peak Hour				
		Rate ^a	Volume	Rate	Split	In	Out	Total	Rate	Split	In	Out	Total
Senior Adult Housing (252)	183 /DU	3.7 /DU	677	0.20	35% : 65%	13	24	37	0.26	55% : 45%	26	22	48
<i>Transit Reduction</i>	<i>5%</i>		<i>-34</i>			<i>-1</i>	<i>-1</i>	<i>-2</i>			<i>-1</i>	<i>-1</i>	<i>-2</i>
Total			643			12	23	35			25	21	46

Footnotes:

a. Trip rates based on ITE Trip Generation Manual (10th Edition).

b. Per SANDAG, a 5% daily trip reduction for land uses with transit access or near transit stations accessible within 1/4 mile.
Project site is immediately adjacent to stops for NCTD Route 305. Buena Creek Station (SPRINTER) is within 1/2 mile.



30%

15%

8%

2%

20%

15%

10%

APPENDIX B

INTERSECTION COUNT SHEETS & CALTRANS PEMS

Intersection Turning Movement - Peak Hour Vehicle Count

**LINSCOTT
LAW &
GREENSPAN**
engineers

Location: #01
Intersection: York Drive & Montgomery Drive
Date of Count: Wednesday, June 2, 2021

File Name: ITM-21-026-01
Project: LLG Ref. 3-21-3385
York Dr Active Senior Living

AM	Montgomery Drive Southbound			York Drive Westbound			- Northbound			York Drive Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	1	0	4	0	18	1	0	0	0	1	5	0	30
7:15	1	0	5	0	17	0	0	0	0	0	10	0	33
7:30	1	0	6	0	17	0	0	0	0	0	6	0	30
7:45	3	0	1	0	25	2	0	0	0	1	15	0	47
8:00	1	0	2	0	20	1	0	0	0	1	7	0	32
8:15	3	0	1	0	20	0	0	0	0	2	5	0	31
8:30	0	0	8	0	13	0	0	0	0	0	5	0	26
8:45	0	0	3	0	13	0	0	0	0	4	14	0	34
Total	10	0	30	0	143	4	0	0	0	9	67	0	263
Approach%	25.0	-	75.0	-	97.3	2.7	-	-	-	11.8	88.2	-	
Total%	3.8	-	11.4	-	54.4	1.5	-	-	-	3.4	25.5	-	

AM Intersection Peak Hour: 07:15 to 08:15

Volume	6	-	14	-	79	3	-	-	-	2	38	-	142
Approach%	30.0	-	70.0	-	96.3	3.7	-	-	-	5.0	95.0	-	
Total%	4.2	-	9.9	-	55.6	2.1	-	-	-	1.4	26.8	-	
PHF			0.71			0.76			#DIV/0!			0.63	0.76

PM	Montgomery Drive Southbound			York Drive Westbound			- Northbound			York Drive Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	0	2	0	13	2	0	0	0	2	15	0	34
16:15	0	0	2	0	13	1	0	0	0	3	12	0	31
16:30	1	0	0	0	16	0	0	0	0	6	12	0	35
16:45	2	0	2	0	13	1	0	0	0	3	20	0	41
17:00	2	0	4	0	16	0	0	0	0	1	26	0	49
17:15	0	0	1	0	9	0	0	0	0	4	26	0	40
17:30	1	0	2	0	11	2	0	0	0	5	7	0	28
17:45	1	0	3	0	14	1	0	0	0	3	15	0	37
Total	7	0	16	0	105	7	0	0	0	27	133	0	295
Approach%	30.4	-	69.6	-	93.8	6.3	-	-	-	16.9	83.1	-	
Total%	2.4	-	5.4	-	35.6	2.4	-	-	-	9.2	45.1	-	

PM Intersection Peak Hour: 16:30 to 17:30

Volume	5	-	7	-	54	1	-	-	-	14	84	-	165
Approach%	41.7	-	58.3	-	98.2	1.8	-	-	-	14.3	85.7	-	
Total%	3.0	-	4.2	-	32.7	0.6	-	-	-	8.5	50.9	-	
PHF			0.50			0.86			#DIV/0!			0.82	0.84

Intersection Turning Movement - Bicycle & Pedestrian Count



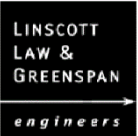
Location: #01
 Intersection: York Drive & Montgomery Drive
 Date of Count: Wednesday, June 2, 2021

File Name: ITM-21-026-01
 Project: LLG Ref. 3-21-3385
 York Dr Active Senior Living

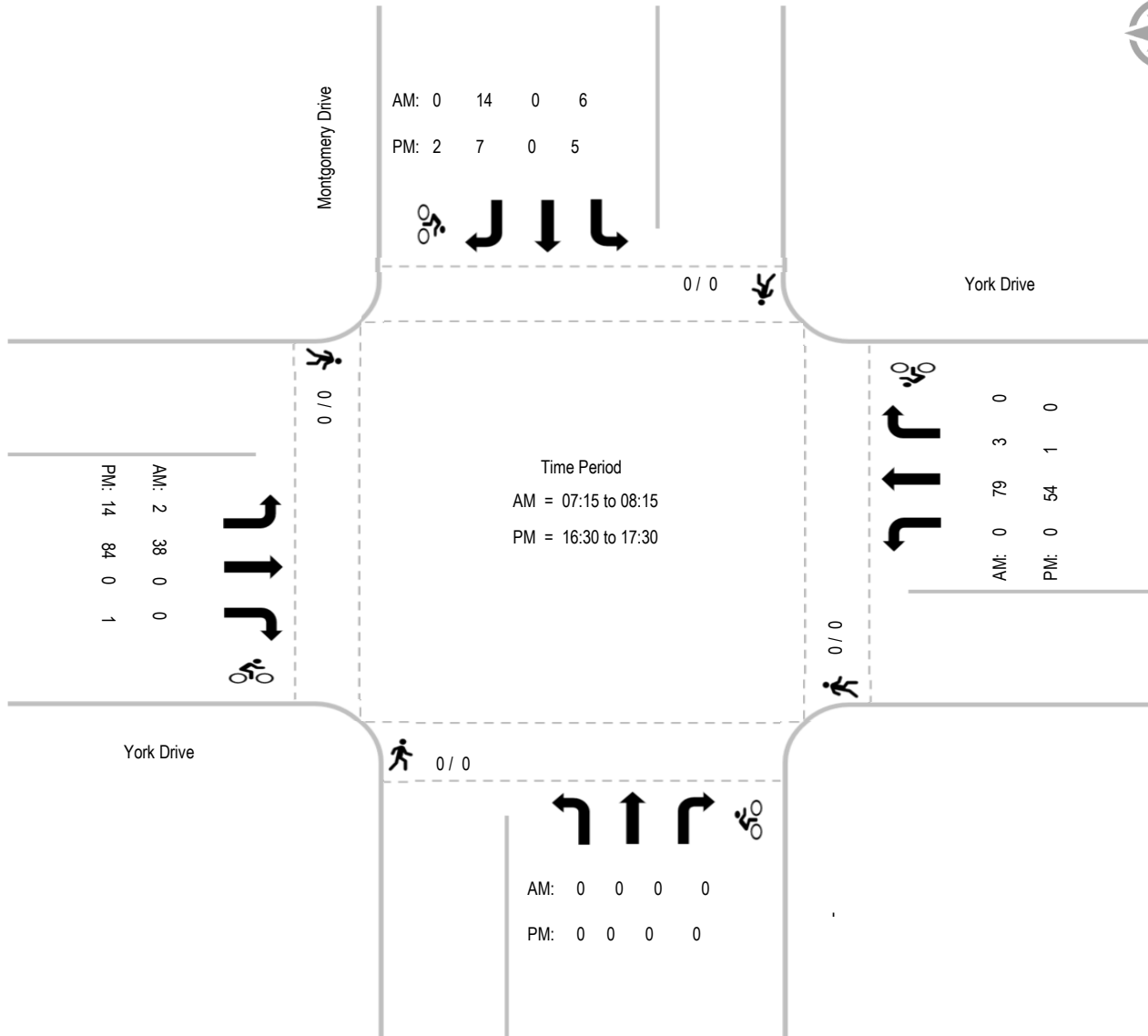
AM	Montgomery Drive Southbound				York Drive Westbound				- Northbound				York Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

PM	Montgomery Drive Southbound				York Drive Westbound				- Northbound				York Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
17:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		1	0	1		0	0	0		0	0	0		1	0	0		3

Intersection Turning Movement - Peak Hour Summary



Location: #01	File Name: ITM-21-026-01
Intersection: York Drive & Montgomery Drive	Project: LLG Ref. 3-21-3385
Date of Count: Wednesday, June 2, 2021	York Dr Active Senior Living



Intersection Turning Movement - Peak Hour Vehicle Count

**LINSCOTT
LAW &
GREENSPAN**
engineers

Location: #02
Intersection: South Santa Fe Avenue & York Drive/Woodland Drive
Date of Count: Wednesday, June 2, 2021

File Name: ITM-21-026-02
Project: LLG Ref. 3-21-3385
York Dr Active Senior Living

AM	S. Santa Fe Avenue Southbound			York Drive Westbound			S. Santa Fe Avenue Northbound			Woodland Drive Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	0	77	2	18	4	2	3	30	6	2	0	14	158
7:15	0	65	5	16	7	1	11	42	9	1	1	12	170
7:30	3	99	11	21	3	2	21	40	3	3	2	24	232
7:45	3	80	10	20	1	8	23	38	11	6	5	50	255
8:00	2	67	4	14	3	3	10	41	6	3	1	20	174
8:15	6	77	3	16	3	7	4	41	6	4	3	15	185
8:30	3	77	1	15	2	3	16	49	10	3	1	14	194
8:45	3	71	1	17	1	1	7	61	19	1	0	7	189
Total	20	613	37	137	24	27	95	342	70	23	13	156	1557
Approach%	3.0	91.5	5.5	72.9	12.8	14.4	18.7	67.5	13.8	12.0	6.8	81.3	
Total%	1.3	39.4	2.4	8.8	1.5	1.7	6.1	22.0	4.5	1.5	0.8	10.0	

AM Intersection Peak Hour: 07:30 to 08:30

Volume	14	323	28	71	10	20	58	160	26	16	11	109	846
Approach%	3.8	88.5	7.7	70.3	9.9	19.8	23.8	65.6	10.7	11.8	8.1	80.1	
Total%	1.7	38.2	3.3	8.4	1.2	2.4	6.9	18.9	3.1	1.9	1.3	12.9	
PHF			0.81			0.87			0.85			0.56	0.83

PM	S. Santa Fe Avenue Southbound			York Drive Westbound			S. Santa Fe Avenue Northbound			Woodland Drive Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	6	76	5	12	1	6	7	110	14	7	3	22	269
16:15	7	95	6	15	1	2	14	97	15	4	2	14	272
16:30	10	95	1	12	3	4	21	120	19	7	0	18	310
16:45	7	98	7	9	3	3	13	112	15	5	3	23	298
17:00	12	95	3	19	1	6	19	104	19	4	4	14	300
17:15	10	85	4	13	2	2	17	134	28	3	2	14	314
17:30	11	94	4	7	2	5	15	138	11	6	0	21	314
17:45	9	96	7	13	4	6	22	116	12	3	3	17	308
Total	72	734	37	100	17	34	128	931	133	39	17	143	2385
Approach%	8.5	87.1	4.4	66.2	11.3	22.5	10.7	78.1	11.2	19.6	8.5	71.9	
Total%	3.0	30.8	1.6	4.2	0.7	1.4	5.4	39.0	5.6	1.6	0.7	6.0	

PM Intersection Peak Hour: 17:00 to 18:00

Volume	42	370	18	52	9	19	73	492	70	16	9	66	1,236
Approach%	9.8	86.0	4.2	65.0	11.3	23.8	11.5	77.5	11.0	17.6	9.9	72.5	
Total%	3.4	29.9	1.5	4.2	0.7	1.5	5.9	39.8	5.7	1.3	0.7	5.3	
PHF			0.96			0.77			0.89			0.84	0.98

Intersection Turning Movement - Bicycle & Pedestrian Count



Location: #02
 Intersection: South Santa Fe Avenue & York Drive/Woodland Drive
 Date of Count: Wednesday, June 2, 2021

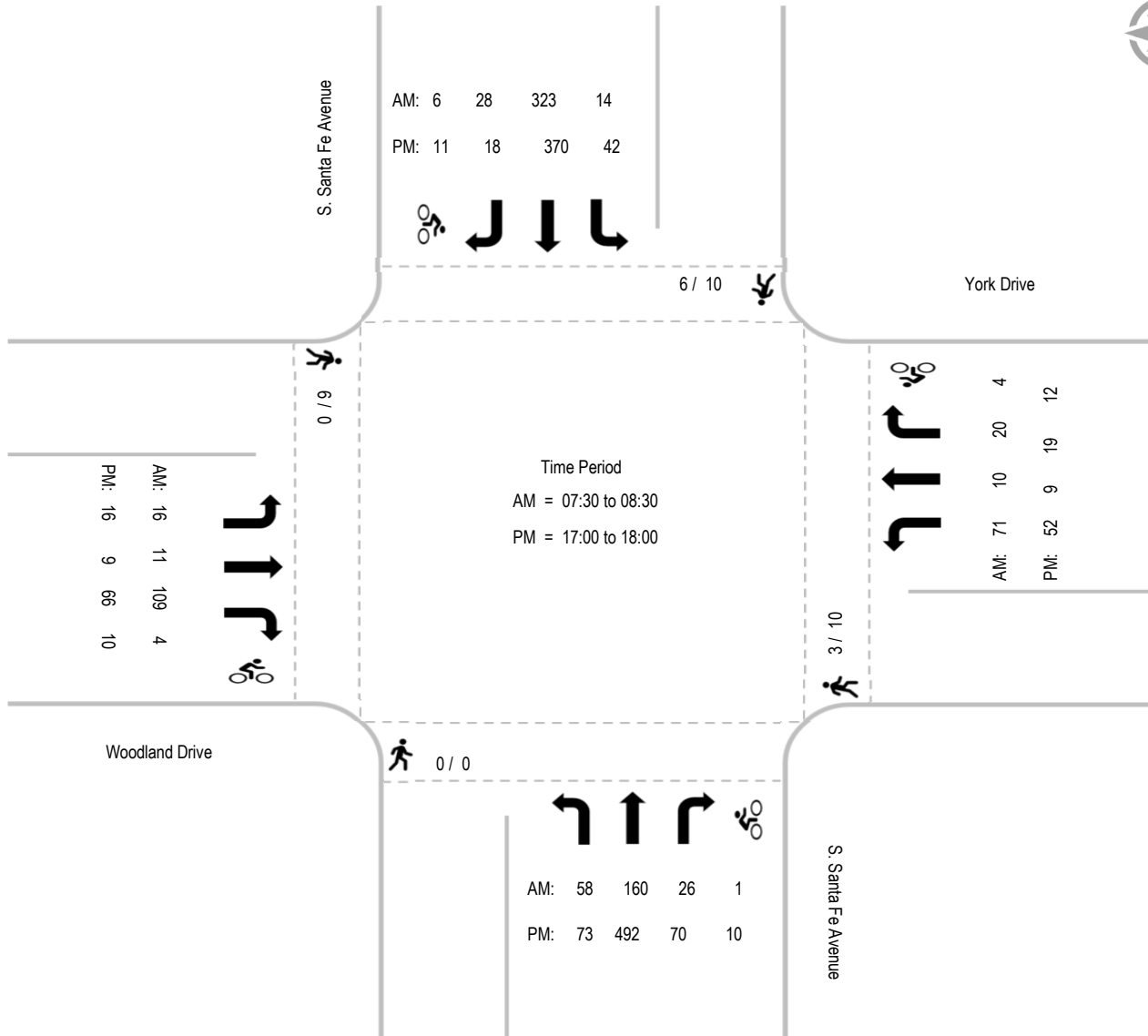
File Name: ITM-21-026-02
 Project: LLG Ref. 3-21-3385
 York Dr Active Senior Living

AM	S. Santa Fe Avenue Southbound				York Drive Westbound				S. Santa Fe Avenue Northbound				Woodland Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	2
7:15	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
7:30	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3	1
7:45	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0
8:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4
8:15	0	0	1	0	0	2	0	0	0	0	1	0	0	0	0	0	0	4
8:30	0	0	1	0	2	0	1	0	0	0	0	0	1	0	0	0	3	2
8:45	1	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	4	1
Ped Total	6				3				0				6				15	
Bike Total		0	6	0		2	1	1		0	1	0		0	4	0		15

PM	S. Santa Fe Avenue Southbound				York Drive Westbound				S. Santa Fe Avenue Northbound				Woodland Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	2	0	3	0	2	0	4	0	0	0	1	0	0	0	3	0	4	11
16:30	0	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	5
16:45	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
17:00	4	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	5	2
17:15	1	0	1	0	1	0	4	0	0	0	3	0	0	0	2	0	2	10
17:30	3	1	3	0	4	0	1	0	0	0	1	0	0	0	3	0	7	9
17:45	0	0	1	0	2	0	1	0	0	0	1	0	0	0	1	0	2	4
Ped Total	10				10				0				0				20	
Bike Total		1	10	0		0	12	0		0	10	0		0	10	0		43

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers	Location: #02	File Name: ITM-21-026-02
	Intersection: South Santa Fe Avenue & York Drive/Woodland Drive	Project: LLG Ref. 3-21-3385
	Date of Count: Wednesday, June 2, 2021	York Dr Active Senior Living



Intersection Turning Movement - Peak Hour Vehicle Count



Location: #03
 Intersection: South Santa Fe Avenue & Robelini Drive
 Date of Count: Wednesday, June 2, 2021

File Name: ITM-21-026-03
 Project: LLG Ref. 3-21-3385
 York Dr Active Senior Living

AM	S. Santa Fe Avenue Southbound			- Westbound			S. Santa Fe Avenue Northbound			Robelini Drive Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	0	45	64	0	0	0	116	29	0	17	0	26	297
7:15	0	38	56	0	0	0	118	30	0	27	0	41	310
7:30	0	49	83	0	0	0	127	44	0	23	0	53	379
7:45	0	76	91	0	0	0	112	47	0	20	0	41	387
8:00	0	40	62	0	0	0	123	35	0	28	0	52	340
8:15	0	40	61	0	0	0	127	22	0	36	0	46	332
8:30	0	42	69	0	0	0	118	39	0	28	0	46	342
8:45	0	46	61	0	0	0	90	48	0	38	0	34	317
Total	0	376	547	0	0	0	931	294	0	217	0	339	2704
Approach%	-	40.7	59.3	-	-	-	76.0	24.0	-	39.0	-	61.0	
Total%	-	13.9	20.2	-	-	-	34.4	10.9	-	8.0	-	12.5	

AM Intersection Peak Hour: 07:30 to 08:30

Volume	-	205	297	-	-	-	489	148	-	107	-	192	1,438
Approach%	-	40.8	59.2	-	-	-	76.8	23.2	-	35.8	-	64.2	
Total%	-	14.3	20.7	-	-	-	34.0	10.3	-	7.4	-	13.4	
PHF			0.75			#DIV/0!			0.93			0.91	0.93

PM	S. Santa Fe Avenue Southbound			- Westbound			S. Santa Fe Avenue Northbound			Robelini Drive Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	53	54	0	0	0	79	57	0	68	0	146	457
16:15	0	76	68	0	0	0	66	61	0	77	0	142	490
16:30	0	67	54	0	0	0	73	75	0	78	0	120	467
16:45	0	66	70	0	0	0	67	68	0	76	0	149	496
17:00	0	70	63	0	0	0	62	46	0	89	0	153	483
17:15	0	54	61	0	0	0	65	82	0	85	0	111	458
17:30	0	65	54	0	0	0	63	61	0	81	0	109	433
17:45	0	70	63	0	0	0	80	74	0	73	0	127	487
Total	0	521	487	0	0	0	555	524	0	627	0	1057	3771
Approach%	-	51.7	48.3	-	-	-	51.4	48.6	-	37.2	-	62.8	
Total%	-	13.8	12.9	-	-	-	14.7	13.9	-	16.6	-	28.0	

PM Intersection Peak Hour: 16:15 to 17:15

Volume	-	279	255	-	-	-	268	250	-	320	-	564	1,936
Approach%	-	52.2	47.8	-	-	-	51.7	48.3	-	36.2	-	63.8	
Total%	-	14.4	13.2	-	-	-	13.8	12.9	-	16.5	-	29.1	
PHF			0.93			#DIV/0!			0.88			0.91	0.98

Intersection Turning Movement - Bicycle & Pedestrian Count



Location: #03
 Intersection: South Santa Fe Avenue & Robelini Drive
 Date of Count: Wednesday, June 2, 2021

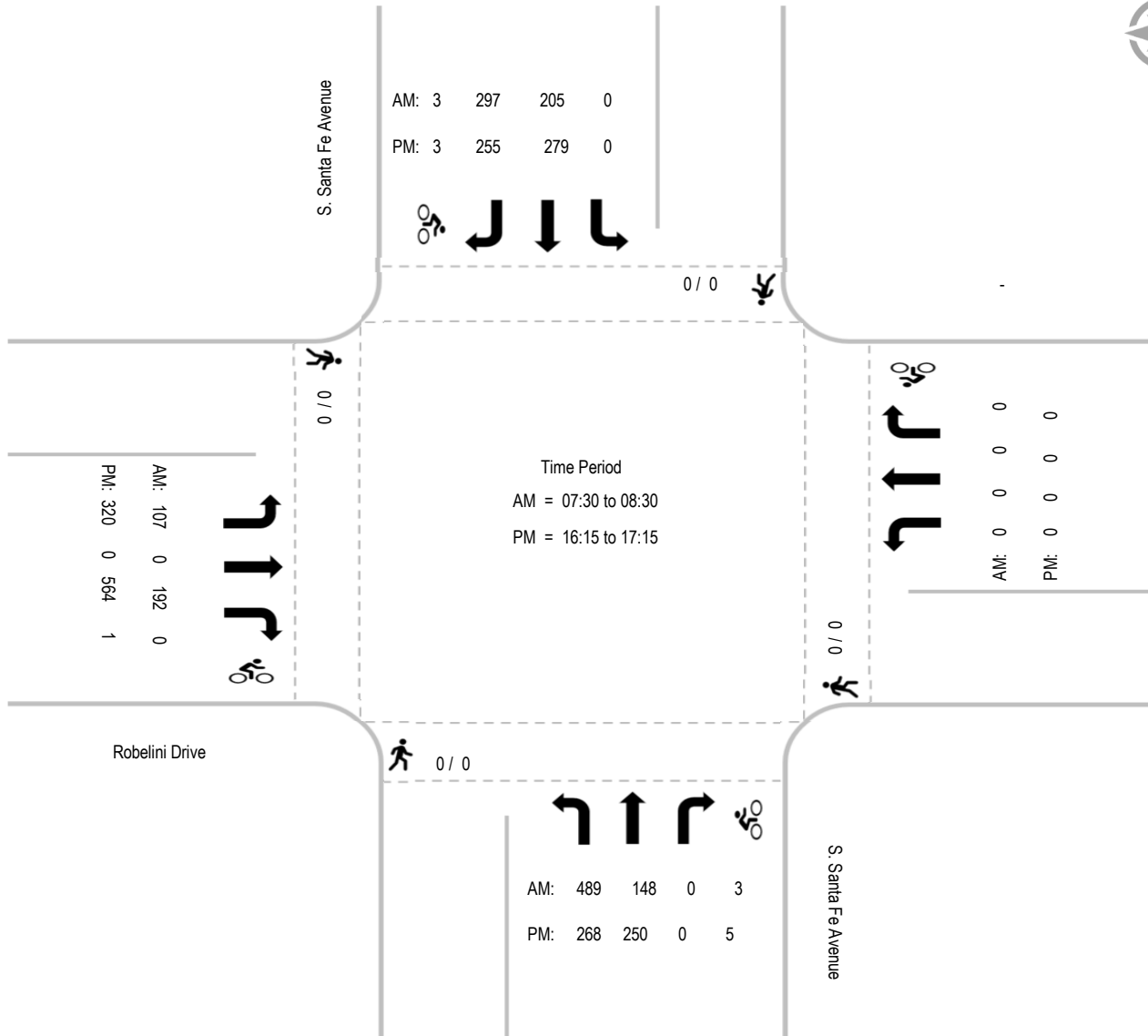
File Name: ITM-21-026-03
 Project: LLG Ref. 3-21-3385
 York Dr Active Senior Living

AM	S. Santa Fe Avenue Southbound				- Westbound				S. Santa Fe Avenue Northbound				Robelini Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ped Total	0				0				0				0				0	
Bike Total		0	2	1		0	0	0		0	3	0		0	0	0		6

PM	S. Santa Fe Avenue Southbound				- Westbound				S. Santa Fe Avenue Northbound				Robelini Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
16:15	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	0				0				0				0				0	
Bike Total		0	2	1		0	0	0		3	2	0		1	0	0		9

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers	Location: #03	File Name: ITM-21-026-03
	Intersection: South Santa Fe Avenue & Robelini Drive	Project: LLG Ref. 3-21-3385
	Date of Count: Wednesday, June 2, 2021	York Dr Active Senior Living



Intersection Turning Movement - Peak Hour Vehicle Count



Location: #04
Intersection: Sycamore Avenue & University Drive
Date of Count: Wednesday, June 2, 2021

File Name: ITM-21-026-04R
Project: LLG Ref. 3-21-3385
York Dr Active Senior Living

AM	Sycamore Avenue Southbound			University Drive Westbound			Sycamore Avenue Northbound			University Drive Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	47	38	25	30	6	1	5	154	18	4	2	37	367
7:15	55	59	24	56	12	1	3	143	26	14	4	72	469
7:30	31	68	19	55	4	2	3	197	25	11	4	63	482
7:45	75	46	46	57	7	0	6	178	25	8	11	52	511
8:00	66	58	25	68	9	3	6	158	33	16	7	70	519
8:15	90	57	31	58	19	0	6	124	50	17	6	82	540
8:30	94	62	38	29	7	2	7	150	31	15	10	82	527
8:45	90	74	29	46	15	0	7	123	33	14	7	66	504
Total	548	462	237	399	79	9	43	1227	241	99	51	524	3919
Approach%	43.9	37.0	19.0	81.9	16.2	1.8	2.8	81.2	15.9	14.7	7.6	77.7	
Total%	14.0	11.8	6.0	10.2	2.0	0.2	1.1	31.3	6.1	2.5	1.3	13.4	

AM Intersection Peak Hour: 07:45 to 08:45

Volume	325	223	140	212	42	5	25	610	139	56	34	286	2,097
Approach%	47.2	32.4	20.3	81.9	16.2	1.9	3.2	78.8	18.0	14.9	9.0	76.1	
Total%	15.5	10.6	6.7	10.1	2.0	0.2	1.2	29.1	6.6	2.7	1.6	13.6	
PHF			0.89			0.81			0.93			0.88	0.97

PM	Sycamore Avenue Southbound			University Drive Westbound			Sycamore Avenue Northbound			University Drive Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	152	191	61	60	22	5	9	94	30	49	21	140	834
16:15	167	196	39	60	23	9	18	92	36	27	22	121	810
16:30	134	171	50	63	22	8	9	80	29	29	25	123	743
16:45	146	185	58	55	16	4	11	79	43	30	30	125	782
17:00	134	181	60	61	23	8	5	87	28	40	26	124	777
17:15	168	172	36	49	16	4	13	87	32	54	24	125	780
17:30	171	171	38	51	17	2	8	85	29	34	22	140	768
17:45	192	145	37	55	24	8	13	77	35	54	25	132	797
Total	1264	1412	379	454	163	48	86	681	262	317	195	1030	6291
Approach%	41.4	46.2	12.4	68.3	24.5	7.2	8.4	66.2	25.5	20.6	12.6	66.8	
Total%	20.1	22.4	6.0	7.2	2.6	0.8	1.4	10.8	4.2	5.0	3.1	16.4	

PM Intersection Peak Hour: 16:00 to 17:00

Volume	599	743	208	238	83	26	47	345	138	135	98	509	3,169
Approach%	38.6	47.9	13.4	68.6	23.9	7.5	8.9	65.1	26.0	18.2	13.2	68.6	
Total%	18.9	23.4	6.6	7.5	2.6	0.8	1.5	10.9	4.4	4.3	3.1	16.1	
PHF			0.96			0.93			0.91			0.88	0.95

Intersection Turning Movement - Bicycle & Pedestrian Count



Location: #04
 Intersection: Sycamore Avenue & University Drive
 Date of Count: Wednesday, June 2, 2021

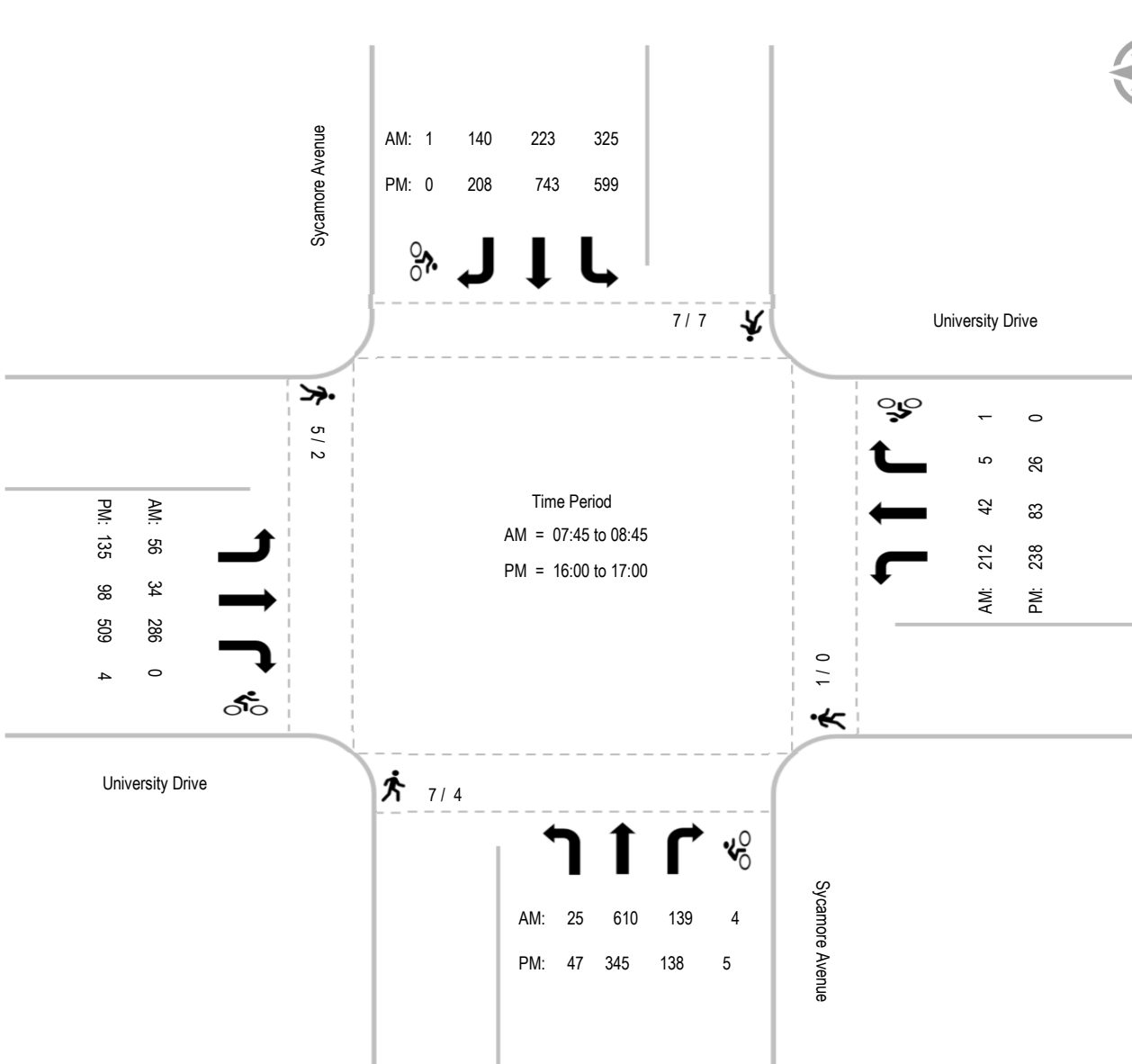
File Name: ITM-21-026-04R
 Project: LLG Ref. 3-21-3385
 York Dr Active Senior Living

AM	Sycamore Avenue Southbound				University Drive Westbound				Sycamore Avenue Northbound				University Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0
7:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:45	2	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	2
8:00	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	4	0
8:15	0	0	0	0	0	0	0	0	4	0	3	0	1	0	0	0	5	3
8:30	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
8:45	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	4	0
Ped Total	7				1				7				5				20	
Bike Total		0	1	0		0	1	0		0	4	0		0	0	0		6

PM	Sycamore Avenue Southbound				University Drive Westbound				Sycamore Avenue Northbound				University Drive Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	0	0	0	0	0	0	0	0	2	0	0	0	2	0	1	1	4	2
16:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:30	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
16:45	1	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	2	2
17:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	4	1
17:45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Ped Total	7				0				4				2				13	
Bike Total		0	0	0		0	0	0		1	4	0		1	1	2		9

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers	Location: #04	File Name: ITM-21-026-04R
	Intersection: Sycamore Avenue & University Drive	Project: LLG Ref. 3-21-3385
	Date of Count: Wednesday, June 2, 2021	York Dr Active Senior Living



SR-78 EB @ SYCAMORE

Starting Month	2019	2020	2021
Jan	51,333	51,904	43,894
Feb	53,001	53,236	49,132
Mar	54,345	44,648	50,321
Apr	56,272	29,227	52,403
May	55,261	40,472	52,167
Jun	56,520	45,635	0
Jul	56,575	0	0
Aug	57,037	49,131	0
Sep	53,525	48,224	0
Oct	55,460	48,463	0
Nov	52,133	47,074	0
Dec	52,147	45,275	0

SR-78 WB @ SYCAMORE

Starting Month	2019	2020	2021
Jan	52,110	53,250	44,877
Feb	53,962	55,416	49,766
Mar	56,020	45,338	51,858
Apr	58,023	29,574	54,386
May	56,893	40,806	54,179
Jun	57,670	45,898	0
Jul	57,748	0	0
Aug	58,206	50,406	0
Sep	55,602	49,547	0
Oct	57,467	50,679	0
Nov	54,197	47,672	0
Dec	53,569	45,808	0

SR-78 @ SYCAMORE (BOTH DIRECTIONS)

MADT	2019	2020	2021
May	112,154	81,278	106,346
vs. 2019	-	-28%	-5%

Source: Caltrans Performance Measurement System (Pe

APPENDIX C
EXISTING PEAK HOUR INTERSECTION LOS
& QUEUE ANALYSIS WORKSHEETS

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	42	87	3	7	15
Future Vol, veh/h	2	42	87	3	7	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	63	63	76	76	71	71
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	67	114	4	10	21
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	118	0	-	0	189	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	73	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1464	-	-	-	798	934
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	947	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1464	-	-	-	796	934
Mov Cap-2 Maneuver	-	-	-	-	796	-
Stage 1	-	-	-	-	904	-
Stage 2	-	-	-	-	947	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		9.2		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1464	-	-	-	885	
HCM Lane V/C Ratio	0.002	-	-	-	0.035	
HCM Control Delay (s)	7.5	0	-	-	9.2	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Existing AM
2: S. Santa Fe Ave & Woodland Dr/York Dr

York Drive Independent Living Project

10/26/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	12	120	78	11	22	64	176	29	15	355	31
Future Volume (veh/h)	18	12	120	78	11	22	64	176	29	15	355	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484
Adj Flow Rate, veh/h	32	21	214	90	13	25	75	207	34	19	438	38
Peak Hour Factor	0.56	0.56	0.56	0.87	0.87	0.87	0.85	0.85	0.85	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	41	27	274	121	133	255	86	709	114	26	655	57
Arrive On Green	0.03	0.24	0.24	0.09	0.30	0.30	0.06	0.29	0.29	0.02	0.25	0.25
Sat Flow, veh/h	1414	112	1145	1414	447	860	1414	2423	391	1414	2617	226
Grp Volume(v), veh/h	32	0	235	90	0	38	75	119	122	19	235	241
Grp Sat Flow(s),veh/h/ln	1414	0	1257	1414	0	1308	1414	1410	1404	1414	1410	1433
Q Serve(g_s), s	1.1	0.0	8.8	3.1	0.0	1.1	2.6	3.3	3.4	0.7	7.5	7.6
Cycle Q Clear(g_c), s	1.1	0.0	8.8	3.1	0.0	1.1	2.6	3.3	3.4	0.7	7.5	7.6
Prop In Lane	1.00		0.91	1.00		0.66	1.00		0.28	1.00		0.16
Lane Grp Cap(c), veh/h	41	0	301	121	0	388	86	412	411	26	353	359
V/C Ratio(X)	0.79	0.00	0.78	0.75	0.00	0.10	0.88	0.29	0.30	0.72	0.67	0.67
Avail Cap(c_a), veh/h	149	0	782	405	0	1051	239	827	824	183	771	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	0.0	17.9	22.5	0.0	12.8	23.4	13.7	13.8	24.5	16.9	17.0
Incr Delay (d2), s/veh	27.8	0.0	4.4	8.8	0.0	0.1	22.9	0.4	0.4	31.2	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.6	1.3	0.0	0.3	1.3	0.9	0.9	0.4	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	0.0	22.3	31.2	0.0	12.9	46.3	14.1	14.2	55.8	19.1	19.2
LnGrp LOS	D	A	C	C	A	B	D	B	B	E	B	B
Approach Vol, veh/h		267			128			316			495	
Approach Delay, s/veh		25.8			25.8			21.8			20.5	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	17.9	5.6	19.1	5.5	20.0	8.5	16.3				
Change Period (Y+Rc), s	4.6	5.3	* 4.2	* 4.2	4.6	5.3	* 4.2	* 4.2				
Max Green Setting (Gmax), s	8.5	27.5	* 5.3	* 40	6.5	29.5	* 14	* 31				
Max Q Clear Time (g_c+I1), s	4.6	9.6	3.1	3.1	2.7	5.4	5.1	10.8				
Green Ext Time (p_c), s	0.0	2.3	0.0	0.2	0.0	1.2	0.1	1.4				
Intersection Summary												
HCM 6th Ctrl Delay			22.6									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	118	211	538	163	226	327
Future Volume (veh/h)	118	211	538	163	226	327
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	130	232	578	175	301	436
Peak Hour Factor	0.91	0.91	0.93	0.93	0.75	0.75
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	481	977	617	1140	405	762
Arrive On Green	0.27	0.27	0.35	0.61	0.22	0.22
Sat Flow, veh/h	1767	1572	1767	1856	1856	1533
Grp Volume(v), veh/h	130	232	578	175	301	436
Grp Sat Flow(s), veh/h/ln	1767	1572	1767	1856	1856	1533
Q Serve(g_s), s	5.0	5.7	27.6	3.5	13.2	17.7
Cycle Q Clear(g_c), s	5.0	5.7	27.6	3.5	13.2	17.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	481	977	617	1140	405	762
V/C Ratio(X)	0.27	0.24	0.94	0.15	0.74	0.57
Avail Cap(c_a), veh/h	481	977	688	1201	405	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	7.3	27.4	7.2	31.8	15.8
Incr Delay (d2), s/veh	1.4	0.6	19.3	0.1	7.3	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.2	1.7	13.8	1.1	6.3	9.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	26.3	7.9	46.7	7.2	39.1	16.9
LnGrp LOS	C	A	D	A	D	B
Approach Vol, veh/h	362			753	737	
Approach Delay, s/veh	14.5			37.5	25.9	
Approach LOS	B			D	C	
Timer - Assigned Phs	2	3	4		8	
Phs Duration (G+Y+Rc), s	29.0	34.5	23.6		58.1	
Change Period (Y+Rc), s	5.3	4.1	* 4.6		4.6	
Max Green Setting (Gmax), s	23.7	33.9	* 19		56.4	
Max Q Clear Time (g_c+I1), s	7.7	29.6	19.7		5.5	
Green Ext Time (p_c), s	1.0	0.9	0.0		0.9	
Intersection Summary						
HCM 6th Ctrl Delay			28.4			
HCM 6th LOS			C			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

Existing AM
4: Sycamore Ave & University Dr/Lobelia Dr

York Drive Independent Living Project
10/26/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↱	↑↑	↱	↰↱	↑	↱	↰↱	↑↑↑	↱	↰	↑↑↑	↱
Traffic Volume (veh/h)	62	37	315	233	46	6	358	245	154	153	671	28
Future Volume (veh/h)	62	37	315	233	46	6	358	245	154	153	671	28
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		0.96	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	70	42	0	288	57	7	385	263	166	172	754	31
Peak Hour Factor	0.88	0.88	0.88	0.81	0.81	0.81	0.93	0.93	0.93	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	192	478		405	367	299	521	1423	435	219	1281	478
Arrive On Green	0.06	0.14	0.00	0.12	0.20	0.20	0.15	0.28	0.28	0.12	0.25	0.25
Sat Flow, veh/h	3428	3526	1572	3428	1856	1511	3428	5066	1547	1767	5066	1543
Grp Volume(v), veh/h	70	42	0	288	57	7	385	263	166	172	754	31
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1856	1511	1714	1689	1547	1767	1689	1543
Q Serve(g_s), s	1.2	0.7	0.0	5.1	1.6	0.2	6.8	2.5	5.5	6.0	8.3	0.9
Cycle Q Clear(g_c), s	1.2	0.7	0.0	5.1	1.6	0.2	6.8	2.5	5.5	6.0	8.3	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	478		405	367	299	521	1423	435	219	1281	478
V/C Ratio(X)	0.36	0.09		0.71	0.16	0.02	0.74	0.18	0.38	0.79	0.59	0.06
Avail Cap(c_a), veh/h	623	2096		623	1103	898	900	2619	800	464	2619	886
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	23.9	0.0	26.9	21.0	20.5	25.6	17.2	18.3	26.9	20.7	15.4
Incr Delay (d2), s/veh	1.2	0.1	0.0	2.3	0.2	0.0	2.1	0.1	0.6	6.1	0.4	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(50%),veh/ln	0.5	0.3	0.0	2.0	0.7	0.1	2.6	0.8	1.8	2.6	2.9	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	24.0	0.0	29.2	21.2	20.5	27.7	17.3	18.9	33.0	21.2	15.5
LnGrp LOS	C	C		C	C	C	C	B	B	C	C	B
Approach Vol, veh/h	112			352			814			957		
Approach Delay, s/veh	27.7			27.7			22.5			23.1		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.2	23.2	12.9	14.0	15.0	21.4	8.9	17.9				
Change Period (Y+Rc), s	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4				
Max Green Setting (Gmax), s	10.6	32.7	11.5	37.6	16.6	32.7	11.5	37.6				
Max Q Clear Time (g_c+I), s	10.0	7.5	7.1	2.7	8.8	10.3	3.2	3.6				
Green Ext Time (p_c), s	0.3	2.1	0.4	0.2	0.8	5.0	0.1	0.3				

Intersection Summary

HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Notes

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

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	92	59	1	6	8
Future Vol, veh/h	15	92	59	1	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	86	86	50	50
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	18	112	69	1	12	16
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	70	0	-	0	218	70
Stage 1	-	-	-	-	70	-
Stage 2	-	-	-	-	148	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1524	-	-	-	768	990
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	877	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1524	-	-	-	758	990
Mov Cap-2 Maneuver	-	-	-	-	758	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	877	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		9.3		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1524	-	-	-	875	
HCM Lane V/C Ratio	0.012	-	-	-	0.032	
HCM Control Delay (s)	7.4	0	-	-	9.3	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Existing PM
2: S. Santa Fe Ave & Woodland Dr/York Dr

York Drive Independent Living Project

10/26/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	10	73	57	10	21	80	541	77	46	407	20
Future Volume (veh/h)	18	10	73	57	10	21	80	541	77	46	407	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484
Adj Flow Rate, veh/h	21	12	87	74	13	27	90	608	87	48	424	21
Peak Hour Factor	0.84	0.84	0.84	0.77	0.77	0.77	0.89	0.89	0.89	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	29	17	126	114	73	151	104	886	126	57	891	44
Arrive On Green	0.02	0.12	0.12	0.08	0.18	0.18	0.07	0.36	0.36	0.04	0.33	0.33
Sat Flow, veh/h	1414	151	1095	1414	417	865	1414	2465	352	1414	2733	135
Grp Volume(v), veh/h	21	0	99	74	0	40	90	347	348	48	218	227
Grp Sat Flow(s),veh/h/ln	1414	0	1246	1414	0	1282	1414	1410	1406	1414	1410	1457
Q Serve(g_s), s	0.7	0.0	3.5	2.3	0.0	1.2	2.8	9.5	9.5	1.5	5.6	5.6
Cycle Q Clear(g_c), s	0.7	0.0	3.5	2.3	0.0	1.2	2.8	9.5	9.5	1.5	5.6	5.6
Prop In Lane	1.00		0.88	1.00		0.68	1.00		0.25	1.00		0.09
Lane Grp Cap(c), veh/h	29	0	143	114	0	224	104	507	506	57	460	475
V/C Ratio(X)	0.72	0.00	0.69	0.65	0.00	0.18	0.87	0.68	0.69	0.85	0.47	0.48
Avail Cap(c_a), veh/h	166	0	915	379	0	1135	294	942	940	194	843	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	0.0	19.2	20.2	0.0	15.9	20.7	12.3	12.3	21.6	12.1	12.2
Incr Delay (d2), s/veh	28.6	0.0	5.8	6.2	0.0	0.4	18.5	1.6	1.7	27.3	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.1	0.9	0.0	0.3	1.3	2.3	2.3	0.9	1.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	0.0	25.0	26.3	0.0	16.2	39.2	13.9	14.0	48.9	12.9	12.9
LnGrp LOS	D	A	C	C	A	B	D	B	B	D	B	B
Approach Vol, veh/h		120			114			785			493	
Approach Delay, s/veh		29.5			22.8			16.9			16.4	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.9	20.0	5.1	12.1	6.4	21.5	7.8	9.4				
Change Period (Y+Rc), s	4.6	5.3	* 4.2	* 4.2	4.6	5.3	* 4.2	* 4.2				
Max Green Setting (Gmax), s	9.4	27.0	* 5.3	* 40	6.2	30.2	* 12	* 33				
Max Q Clear Time (g_c+I1), s	4.8	7.6	2.7	3.2	3.5	11.5	4.3	5.5				
Green Ext Time (p_c), s	0.1	2.2	0.0	0.2	0.0	3.7	0.1	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			18.2									
HCM 6th LOS			B									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	352	620	295	275	307	281
Future Volume (veh/h)	352	620	295	275	307	281
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	387	681	335	312	330	302
Peak Hour Factor	0.91	0.91	0.88	0.88	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	623	891	378	923	411	894
Arrive On Green	0.35	0.35	0.21	0.50	0.22	0.22
Sat Flow, veh/h	1767	1572	1767	1856	1856	1533
Grp Volume(v), veh/h	387	681	335	312	330	302
Grp Sat Flow(s), veh/h/ln	1767	1572	1767	1856	1856	1533
Q Serve(g_s), s	12.0	21.9	12.2	6.7	11.1	6.9
Cycle Q Clear(g_c), s	12.0	21.9	12.2	6.7	11.1	6.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	623	891	378	923	411	894
V/C Ratio(X)	0.62	0.76	0.89	0.34	0.80	0.34
Avail Cap(c_a), veh/h	623	891	382	1033	534	995
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	11.0	25.2	10.0	24.4	7.5
Incr Delay (d2), s/veh	4.6	6.2	21.1	0.2	6.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	6.8	6.7	2.2	5.1	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.3	17.1	46.3	10.2	31.0	7.7
LnGrp LOS	C	B	D	B	C	A
Approach Vol, veh/h	1068			647	632	
Approach Delay, s/veh	19.0			28.9	19.9	
Approach LOS	B			C	B	
Timer - Assigned Phs	2	3	4		8	
Phs Duration (G+Y+Rc), s	28.6	18.2	19.2		37.5	
Change Period (Y+Rc), s	5.3	4.1	* 4.6		4.6	
Max Green Setting (Gmax), s	23.3	14.3	* 19		36.8	
Max Q Clear Time (g_c+I1), s	23.9	14.2	13.1		8.7	
Green Ext Time (p_c), s	0.0	0.0	1.5		1.7	
Intersection Summary						
HCM 6th Ctrl Delay		22.0				
HCM 6th LOS		C				
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

Existing PM
4: Sycamore Ave & University Dr/Lobelia Dr

York Drive Independent Living Project
10/26/2022



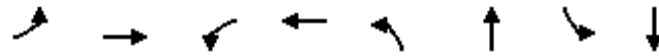
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↱	↑↑	↰	↰↱	↑	↰	↰↱	↑↑↑	↰	↰	↑↑↑	↰
Traffic Volume (veh/h)	149	108	560	262	91	29	659	817	229	152	380	52
Future Volume (veh/h)	149	108	560	262	91	29	659	817	229	152	380	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	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	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	169	123	0	282	98	31	724	898	252	158	396	54
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.91	0.91	0.91	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	270	442		393	299	248	898	1561	477	204	818	377
Arrive On Green	0.08	0.13	0.00	0.11	0.16	0.16	0.26	0.31	0.31	0.12	0.16	0.16
Sat Flow, veh/h	3428	3526	1572	3428	1856	1538	3428	5066	1548	1767	5066	1567
Grp Volume(v), veh/h	169	123	0	282	98	31	724	898	252	158	396	54
Grp Sat Flow(s), veh/h/ln	1714	1763	1572	1714	1856	1538	1714	1689	1548	1767	1689	1567
Q Serve(g_s), s	3.1	2.0	0.0	5.1	3.0	1.1	12.7	9.6	8.6	5.6	4.6	1.7
Cycle Q Clear(g_c), s	3.1	2.0	0.0	5.1	3.0	1.1	12.7	9.6	8.6	5.6	4.6	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	442		393	299	248	898	1561	477	204	818	377
V/C Ratio(X)	0.63	0.28		0.72	0.33	0.12	0.81	0.58	0.53	0.78	0.48	0.14
Avail Cap(c_a), veh/h	598	2033		566	1053	873	1368	2881	880	531	2384	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	25.4	0.0	27.4	23.8	23.0	22.2	18.7	18.3	27.6	24.5	19.2
Incr Delay (d2), s/veh	2.4	0.3	0.0	2.5	0.6	0.2	2.1	0.3	0.9	6.2	0.4	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	0.8	0.0	2.0	1.3	0.4	4.7	3.2	2.8	2.5	1.7	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.0	25.8	0.0	29.9	24.5	23.3	24.3	19.0	19.3	33.8	24.9	19.4
LnGrp LOS	C	C		C	C	C	C	B	B	C	C	B
Approach Vol, veh/h	292		411		1874		608					
Approach Delay, s/veh	28.8		28.1		21.1		26.7					
Approach LOS	C		C		C		C					
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.8	25.2	12.8	13.4	22.2	15.8	10.4	15.8				
Change Period (Y+Rc), s	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4				
Max Green Setting (Gmax), s	19.3	36.5	10.6	37.0	25.6	30.2	11.2	36.4				
Max Q Clear Time (g_c+I1), s	17.6	11.6	7.1	4.0	14.7	6.6	5.1	5.0				
Green Ext Time (p_c), s	0.3	7.2	0.3	0.7	2.1	2.6	0.2	0.6				

Intersection Summary

HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	235	90	38	75	241	19	476
v/c Ratio	0.26	0.68	0.43	0.08	0.44	0.24	0.14	0.60
Control Delay	46.6	37.9	41.4	18.1	47.0	21.3	42.5	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	37.9	41.4	18.1	47.0	21.3	42.5	30.2
Queue Length 50th (ft)	15	100	39	12	34	36	8	106
Queue Length 95th (ft)	31	114	100	34	#102	90	32	171
Internal Link Dist (ft)		416		599		1245		498
Turn Bay Length (ft)	200		110		210		340	
Base Capacity (vph)	122	644	331	793	195	1340	149	1246
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.36	0.27	0.05	0.38	0.18	0.13	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	130	232	578	175	301	436
v/c Ratio	0.27	0.20	0.91	0.16	0.81	0.55
Control Delay	27.5	1.9	47.2	7.5	51.9	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	1.9	47.2	7.5	51.9	11.9
Queue Length 50th (ft)	59	10	300	37	162	96
Queue Length 95th (ft)	108	30	#496	64	204	122
Internal Link Dist (ft)	1214			358	1245	
Turn Bay Length (ft)	150		80			
Base Capacity (vph)	490	1206	700	1228	413	799
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.19	0.83	0.14	0.73	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

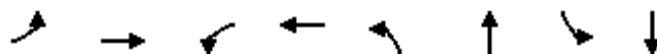
Existing AM
4: Sycamore Ave & University Dr/Lobelia Dr

York Drive Independent Living Project
10/26/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	70	42	358	288	57	7	385	263	166	172	754	31
v/c Ratio	0.17	0.08	0.23	0.53	0.16	0.02	0.58	0.19	0.30	0.55	0.57	0.05
Control Delay	38.5	29.8	0.3	37.7	28.6	0.2	34.9	23.6	6.7	40.3	27.4	0.1
Queue Delay	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 Delay	38.5	29.8	0.3	37.7	28.6	0.2	34.9	23.6	6.7	40.3	27.4	0.1
Queue Length 50th (ft)	14	8	0	60	22	0	79	32	0	70	108	0
Queue Length 95th (ft)	48	25	0	#158	55	0	#221	81	53	#218	222	0
Internal Link Dist (ft)	715			364			585			501		
Turn Bay Length (ft)	240		240	130			490		320	250		250
Base Capacity (vph)	589	1986	1546	589	1048	914	850	2481	844	438	2481	712
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.02	0.23	0.49	0.05	0.01	0.45	0.11	0.20	0.39	0.30	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	99	74	40	90	695	48	445
v/c Ratio	0.16	0.38	0.36	0.10	0.44	0.51	0.32	0.38
Control Delay	41.9	30.7	38.7	19.6	42.9	22.2	44.2	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	30.7	38.7	19.6	42.9	22.2	44.2	23.4
Queue Length 50th (ft)	9	39	29	11	36	133	20	81
Queue Length 95th (ft)	35	80	76	32	#131	#306	#81	182
Internal Link Dist (ft)		416		599		1245		500
Turn Bay Length (ft)	200		110		210		340	
Base Capacity (vph)	133	710	305	832	236	1454	156	1349
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.14	0.24	0.05	0.38	0.48	0.31	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	387	681	335	313	330	302
v/c Ratio	0.63	0.69	0.90	0.34	0.76	0.32
Control Delay	24.7	9.7	56.2	11.0	35.5	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	9.7	56.2	11.0	35.5	4.0
Queue Length 50th (ft)	134	92	138	71	126	25
Queue Length 95th (ft)	231	206	#281	116	209	52
Internal Link Dist (ft)	1188			358	1245	
Turn Bay Length (ft)	150		80			
Base Capacity (vph)	610	991	374	1015	524	934
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.69	0.90	0.31	0.63	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Existing PM
4: Sycamore Ave & University Dr/Lobelia Dr

York Drive Independent Living Project

10/26/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	169	123	636	282	98	31	724	898	252	158	396	54
v/c Ratio	0.33	0.24	0.41	0.66	0.34	0.08	0.70	0.55	0.38	0.60	0.46	0.09
Control Delay	41.0	33.5	0.8	48.0	36.5	0.4	34.5	27.8	5.6	47.7	35.0	0.3
Queue Delay	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 Delay	41.0	33.5	0.8	48.0	36.5	0.4	34.5	27.8	5.6	47.7	35.0	0.3
Queue Length 50th (ft)	40	29	0	68	45	0	154	133	0	72	66	0
Queue Length 95th (ft)	104	61	0	#210	105	0	#448	277	62	195	129	0
Internal Link Dist (ft)	715			364			585			522		
Turn Bay Length (ft)	240		240	130			490		320	250		250
Base Capacity (vph)	552	1531	1546	425	793	744	1027	2170	808	399	1795	594
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.08	0.41	0.66	0.12	0.04	0.70	0.41	0.31	0.40	0.22	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

APPENDIX D

**OPENING YEAR PEAK HOUR INTERSECTION LOS
& QUEUE ANALYSIS WORKSHEETS**

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	50	100	5	10	20
Future Vol, veh/h	5	50	100	5	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	63	63	76	76	71	71
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	8	79	132	7	14	28
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	139	0	-	0	231	136
Stage 1	-	-	-	-	136	-
Stage 2	-	-	-	-	95	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1438	-	-	-	755	910
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1438	-	-	-	750	910
Mov Cap-2 Maneuver	-	-	-	-	750	-
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	926	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		9.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1438	-	-	-	850	
HCM Lane V/C Ratio	0.006	-	-	-	0.05	
HCM Control Delay (s)	7.5	0	-	-	9.5	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

Opening Year (Year 2023) AM
2: S. Santa Fe Ave & Woodland Dr/York Dr

York Drive Independent Living Project

10/26/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	15	130	85	15	25	70	200	30	20	400	35
Future Volume (veh/h)	20	15	130	85	15	25	70	200	30	20	400	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484
Adj Flow Rate, veh/h	36	27	232	98	17	29	82	235	35	25	494	43
Peak Hour Factor	0.56	0.56	0.56	0.87	0.87	0.87	0.85	0.85	0.85	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	43	34	288	119	150	256	96	761	112	33	693	60
Arrive On Green	0.03	0.26	0.26	0.08	0.31	0.31	0.07	0.31	0.31	0.02	0.26	0.26
Sat Flow, veh/h	1414	131	1129	1414	486	829	1414	2460	361	1414	2616	227
Grp Volume(v), veh/h	36	0	259	98	0	46	82	133	137	25	265	272
Grp Sat Flow(s),veh/h/ln	1414	0	1260	1414	0	1315	1414	1410	1410	1414	1410	1433
Q Serve(g_s), s	1.4	0.0	10.7	3.8	0.0	1.4	3.2	4.0	4.1	1.0	9.5	9.6
Cycle Q Clear(g_c), s	1.4	0.0	10.7	3.8	0.0	1.4	3.2	4.0	4.1	1.0	9.5	9.6
Prop In Lane	1.00		0.90	1.00		0.63	1.00		0.26	1.00		0.16
Lane Grp Cap(c), veh/h	43	0	321	119	0	405	96	436	436	33	374	379
V/C Ratio(X)	0.83	0.00	0.81	0.82	0.00	0.11	0.86	0.31	0.31	0.77	0.71	0.72
Avail Cap(c_a), veh/h	134	0	708	365	0	953	216	747	747	165	696	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	19.5	25.1	0.0	13.8	25.7	14.7	14.7	27.1	18.5	18.6
Incr Delay (d2), s/veh	31.2	0.0	4.8	13.2	0.0	0.1	19.0	0.4	0.4	30.5	2.5	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	3.2	1.6	0.0	0.4	1.4	1.1	1.1	0.6	2.8	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.0	0.0	24.2	38.3	0.0	13.9	44.7	15.1	15.1	57.6	21.1	21.1
LnGrp LOS	E	A	C	D	A	B	D	B	B	E	C	C
Approach Vol, veh/h		295			144			352			562	
Approach Delay, s/veh		28.3			30.5			22.0			22.7	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	20.1	5.9	21.4	5.9	22.5	8.9	18.4				
Change Period (Y+Rc), s	4.6	5.3	* 4.2	* 4.2	4.6	5.3	* 4.2	* 4.2				
Max Green Setting (Gmax), s	8.5	27.5	* 5.3	* 40	6.5	29.5	* 14	* 31				
Max Q Clear Time (g_c+I1), s	5.2	11.6	3.4	3.4	3.0	6.1	5.8	12.7				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.2	0.0	1.3	0.1	1.5				
Intersection Summary												
HCM 6th Ctrl Delay			24.6									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	230	590	190	260	360
Future Volume (veh/h)	130	230	590	190	260	360
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	143	253	634	204	347	480
Peak Hour Factor	0.91	0.91	0.93	0.93	0.75	0.75
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	463	999	660	1166	390	734
Arrive On Green	0.26	0.26	0.37	0.63	0.21	0.21
Sat Flow, veh/h	1767	1572	1767	1856	1856	1533
Grp Volume(v), veh/h	143	253	634	204	347	480
Grp Sat Flow(s), veh/h/ln	1767	1572	1767	1856	1856	1533
Q Serve(g_s), s	5.9	6.3	31.7	4.2	16.4	19.0
Cycle Q Clear(g_c), s	5.9	6.3	31.7	4.2	16.4	19.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	463	999	660	1166	390	734
V/C Ratio(X)	0.31	0.25	0.96	0.17	0.89	0.65
Avail Cap(c_a), veh/h	463	999	662	1166	390	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	7.2	27.7	7.0	34.7	17.6
Incr Delay (d2), s/veh	1.7	0.6	25.6	0.1	21.6	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.6	1.9	16.7	1.3	9.3	10.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	28.5	7.8	53.3	7.1	56.4	19.7
LnGrp LOS	C	A	D	A	E	B
Approach Vol, veh/h	396			838	827	
Approach Delay, s/veh	15.3			42.0	35.1	
Approach LOS	B			D	D	
Timer - Assigned Phs	2	3	4			8
Phs Duration (G+Y+Rc), s	29.0	37.9	23.6			61.5
Change Period (Y+Rc), s	5.3	4.1	* 4.6			4.6
Max Green Setting (Gmax), s	23.7	33.9	* 19			56.4
Max Q Clear Time (g_c+I1), s	8.3	33.7	21.0			6.2
Green Ext Time (p_c), s	1.1	0.1	0.0			1.1
Intersection Summary						
HCM 6th Ctrl Delay			34.1			
HCM 6th LOS			C			
Notes						

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

Opening Year (Year 2023) AM
4: Sycamore Ave & University Dr/Lobelia Dr

York Drive Independent Living Project
10/26/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑	↱	↰	↑↑↑	↱	↰	↑↑↑	↱
Traffic Volume (veh/h)	65	40	320	250	50	10	370	250	160	160	720	30
Future Volume (veh/h)	65	40	320	250	50	10	370	250	160	160	720	30
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		0.96	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No		No				No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	74	45	0	309	62	12	398	269	172	180	809	34
Peak Hour Factor	0.88	0.88	0.88	0.81	0.81	0.81	0.93	0.93	0.93	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	193	470		421	371	302	528	1458	445	227	1328	493
Arrive On Green	0.06	0.13	0.00	0.12	0.20	0.20	0.15	0.29	0.29	0.13	0.26	0.26
Sat Flow, veh/h	3428	3526	1572	3428	1856	1511	3428	5066	1547	1767	5066	1543
Grp Volume(v), veh/h	74	45	0	309	62	12	398	269	172	180	809	34
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1856	1511	1714	1689	1547	1767	1689	1543
Q Serve(g_s), s	1.4	0.7	0.0	5.7	1.8	0.4	7.3	2.6	5.9	6.5	9.2	1.0
Cycle Q Clear(g_c), s	1.4	0.7	0.0	5.7	1.8	0.4	7.3	2.6	5.9	6.5	9.2	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	470		421	371	302	528	1458	445	227	1328	493
V/C Ratio(X)	0.38	0.10		0.73	0.17	0.04	0.75	0.18	0.39	0.79	0.61	0.07
Avail Cap(c_a), veh/h	598	2011		598	1059	862	863	2513	768	445	2513	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.0	25.1	0.0	27.9	21.8	21.3	26.7	17.7	18.8	27.9	21.4	15.7
Incr Delay (d2), s/veh	1.2	0.1	0.0	2.8	0.2	0.1	2.2	0.1	0.5	6.2	0.5	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(50%),veh/ln	0.6	0.3	0.0	2.3	0.7	0.1	2.8	0.9	1.9	2.9	3.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	25.2	0.0	30.7	22.0	21.3	28.9	17.7	19.4	34.0	21.8	15.7
LnGrp LOS	C	C		C	C	C	C	B	B	C	C	B
Approach Vol, veh/h	119				383		839				1023	
Approach Delay, s/veh	28.9				29.0		23.3				23.8	
Approach LOS	C				C		C				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	24.4	13.5	14.2	15.6	22.7	9.1	18.6				
Change Period (Y+Rc), s	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4				
Max Green Setting (Gmax), s	10.6	32.7	11.5	37.6	16.6	32.7	11.5	37.6				
Max Q Clear Time (g_c+I), s	10.5	7.9	7.7	2.7	9.3	11.2	3.4	3.8				
Green Ext Time (p_c), s	0.3	2.2	0.4	0.2	0.8	5.3	0.1	0.3				

Intersection Summary

HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

Notes

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

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	105	80	5	10	10
Future Vol, veh/h	20	105	80	5	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	86	86	50	50
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	128	93	6	20	20
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	99	0	-	0	272	96
Stage 1	-	-	-	-	96	-
Stage 2	-	-	-	-	176	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1488	-	-	-	715	958
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	852	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1488	-	-	-	703	958
Mov Cap-2 Maneuver	-	-	-	-	703	-
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	852	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.2	0		9.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1488	-	-	-	811	
HCM Lane V/C Ratio	0.016	-	-	-	0.049	
HCM Control Delay (s)	7.5	0	-	-	9.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	80	65	10	25	90	610	80	50	500	20
Future Volume (veh/h)	20	10	80	65	10	25	90	610	80	50	500	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484
Adj Flow Rate, veh/h	24	12	95	84	13	32	101	685	90	52	521	21
Peak Hour Factor	0.84	0.84	0.84	0.77	0.77	0.77	0.89	0.89	0.89	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	32	17	136	118	68	167	119	942	124	59	925	37
Arrive On Green	0.02	0.12	0.12	0.08	0.18	0.18	0.08	0.38	0.38	0.04	0.33	0.33
Sat Flow, veh/h	1414	140	1105	1414	368	906	1414	2495	327	1414	2761	111
Grp Volume(v), veh/h	24	0	107	84	0	45	101	387	388	52	266	276
Grp Sat Flow(s),veh/h/ln	1414	0	1245	1414	0	1274	1414	1410	1412	1414	1410	1462
Q Serve(g_s), s	0.8	0.0	4.0	2.8	0.0	1.5	3.4	11.5	11.5	1.8	7.6	7.6
Cycle Q Clear(g_c), s	0.8	0.0	4.0	2.8	0.0	1.5	3.4	11.5	11.5	1.8	7.6	7.6
Prop In Lane	1.00		0.89	1.00		0.71	1.00		0.23	1.00		0.08
Lane Grp Cap(c), veh/h	32	0	154	118	0	235	119	533	533	59	472	490
V/C Ratio(X)	0.75	0.00	0.70	0.71	0.00	0.19	0.85	0.73	0.73	0.89	0.56	0.56
Avail Cap(c_a), veh/h	153	0	845	350	0	1042	272	871	872	179	778	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	0.0	20.6	21.8	0.0	16.9	22.1	13.1	13.1	23.3	13.3	13.3
Incr Delay (d2), s/veh	28.4	0.0	5.6	7.7	0.0	0.4	15.1	1.9	1.9	32.1	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.3	1.1	0.0	0.4	1.5	2.9	2.9	1.0	1.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	26.1	29.5	0.0	17.3	37.2	15.0	15.0	55.4	14.4	14.4
LnGrp LOS	D	A	C	C	A	B	D	B	B	E	B	B
Approach Vol, veh/h		131			129			876			594	
Approach Delay, s/veh		30.9			25.3			17.5			18.0	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	21.7	5.3	13.2	6.6	23.8	8.3	10.2				
Change Period (Y+Rc), s	4.6	5.3	* 4.2	* 4.2	4.6	5.3	* 4.2	* 4.2				
Max Green Setting (Gmax), s	9.4	27.0	* 5.3	* 40	6.2	30.2	* 12	* 33				
Max Q Clear Time (g_c+I1), s	5.4	9.6	2.8	3.5	3.8	13.5	4.8	6.0				
Green Ext Time (p_c), s	0.1	2.7	0.0	0.2	0.0	4.1	0.1	0.6				

Intersection Summary

HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

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



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	380	680	320	370	350	310
Future Volume (veh/h)	380	680	320	370	350	310
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	418	747	364	420	376	333
Peak Hour Factor	0.91	0.91	0.88	0.88	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	606	870	372	949	447	909
Arrive On Green	0.34	0.34	0.21	0.51	0.24	0.24
Sat Flow, veh/h	1767	1572	1767	1856	1856	1534
Grp Volume(v), veh/h	418	747	364	420	376	333
Grp Sat Flow(s), veh/h/ln	1767	1572	1767	1856	1856	1534
Q Serve(g_s), s	13.8	23.3	13.9	9.7	13.1	7.8
Cycle Q Clear(g_c), s	13.8	23.3	13.9	9.7	13.1	7.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	606	870	372	949	447	909
V/C Ratio(X)	0.69	0.86	0.98	0.44	0.84	0.37
Avail Cap(c_a), veh/h	606	870	372	1004	519	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	12.9	26.7	10.5	24.6	7.5
Incr Delay (d2), s/veh	6.3	10.8	41.0	0.3	10.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	9.6	9.4	3.2	6.4	4.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.6	23.7	67.7	10.8	35.1	7.8
LnGrp LOS	C	C	E	B	D	A
Approach Vol, veh/h	1165			784	709	
Approach Delay, s/veh	24.4			37.2	22.3	
Approach LOS	C			D	C	
Timer - Assigned Phs	2	3	4		8	
Phs Duration (G+Y+Rc), s	28.6	18.4	21.0		39.4	
Change Period (Y+Rc), s	5.3	4.1	* 4.6		4.6	
Max Green Setting (Gmax), s	23.3	14.3	* 19		36.8	
Max Q Clear Time (g_c+I1), s	25.3	15.9	15.1		11.7	
Green Ext Time (p_c), s	0.0	0.0	1.3		2.4	
Intersection Summary						
HCM 6th Ctrl Delay			27.6			
HCM 6th LOS			C			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

Opening Year (Year 2023) PM
4: Sycamore Ave & University Dr/Lobelia Dr

York Drive Independent Living Project
10/26/2022



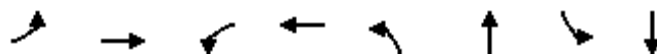
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑	↱	↰	↑↑↑	↱	↰	↑↑↑	↱
Traffic Volume (veh/h)	150	110	580	280	100	30	680	840	240	160	390	55
Future Volume (veh/h)	150	110	580	280	100	30	680	840	240	160	390	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	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			
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	170	125	0	301	108	32	747	923	264	167	406	57
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.91	0.91	0.91	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	270	437		410	306	254	917	1546	472	214	803	372
Arrive On Green	0.08	0.12	0.00	0.12	0.16	0.16	0.27	0.31	0.31	0.12	0.16	0.16
Sat Flow, veh/h	3428	3526	1572	3428	1856	1539	3428	5066	1548	1767	5066	1567
Grp Volume(v), veh/h	170	125	0	301	108	32	747	923	264	167	406	57
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1856	1539	1714	1689	1548	1767	1689	1567
Q Serve(g_s), s	3.1	2.1	0.0	5.5	3.4	1.2	13.3	10.1	9.3	6.0	4.8	1.9
Cycle Q Clear(g_c), s	3.1	2.1	0.0	5.5	3.4	1.2	13.3	10.1	9.3	6.0	4.8	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	437		410	306	254	917	1546	472	214	803	372
V/C Ratio(X)	0.63	0.29		0.73	0.35	0.13	0.81	0.60	0.56	0.78	0.51	0.15
Avail Cap(c_a), veh/h	587	1996		556	1033	857	1343	2829	864	522	2341	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.2	26.0	0.0	27.8	24.2	23.3	22.4	19.3	19.0	27.9	25.2	19.7
Incr Delay (d2), s/veh	2.4	0.4	0.0	3.3	0.7	0.2	2.6	0.4	1.0	6.1	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.8	0.0	2.3	1.4	0.4	5.0	3.5	3.1	2.6	1.8	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	26.4	0.0	31.1	24.9	23.5	25.0	19.7	20.1	34.0	25.6	19.9
LnGrp LOS	C	C		C	C	C	C	B	C	C	C	B
Approach Vol, veh/h	295				441		1934				630	
Approach Delay, s/veh	29.4				29.0		21.8				27.4	
Approach LOS	C				C		C				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.3	25.3	13.2	13.5	22.9	15.8	10.5	16.2				
Change Period (Y+Rc), s	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4				
Max Green Setting (Gmax), s	19.3	36.5	10.6	37.0	25.6	30.2	11.2	36.4				
Max Q Clear Time (g_c+I), s	10.0	12.1	7.5	4.1	15.3	6.8	5.1	5.4				
Green Ext Time (p_c), s	0.3	7.4	0.3	0.7	2.1	2.6	0.2	0.6				

Intersection Summary

HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	259	98	46	82	270	25	537
v/c Ratio	0.30	0.72	0.46	0.09	0.48	0.27	0.19	0.68
Control Delay	50.2	40.4	44.3	18.6	51.0	22.1	45.3	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	40.4	44.3	18.6	51.0	22.1	45.3	32.8
Queue Length 50th (ft)	18	121	47	16	41	45	12	132
Queue Length 95th (ft)	34	125	108	39	#114	100	38	194
Internal Link Dist (ft)		416		599		1245		498
Turn Bay Length (ft)	200		110		210		340	
Base Capacity (vph)	119	622	325	763	192	1346	147	1226
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.42	0.30	0.06	0.43	0.20	0.17	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	143	253	634	204	347	480
v/c Ratio	0.31	0.22	0.97	0.18	0.91	0.62
Control Delay	28.7	2.9	57.0	7.6	63.9	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	2.9	57.0	7.6	63.9	15.3
Queue Length 50th (ft)	65	21	346	44	193	129
Queue Length 95th (ft)	117	44	#569	74	#253	155
Internal Link Dist (ft)	1233			358	1245	
Turn Bay Length (ft)	150		80			
Base Capacity (vph)	467	1146	668	1171	394	777
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.22	0.95	0.17	0.88	0.62

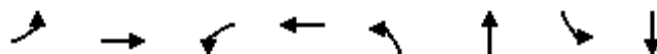
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	74	45	364	309	62	12	398	269	172	180	809	34
v/c Ratio	0.22	0.09	0.24	0.50	0.18	0.03	0.61	0.20	0.32	0.58	0.62	0.06
Control Delay	40.0	30.5	0.4	36.9	29.7	0.2	36.4	24.3	6.7	41.9	29.0	0.7
Queue Delay	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 Delay	40.0	30.5	0.4	36.9	29.7	0.2	36.4	24.3	6.7	41.9	29.0	0.7
Queue Length 50th (ft)	16	10	0	67	25	0	84	34	0	75	119	0
Queue Length 95th (ft)	51	26	0	#176	59	0	#232	83	54	#234	240	3
Internal Link Dist (ft)	715			364			585			479		
Turn Bay Length (ft)	240		240	130			490		320	250		250
Base Capacity (vph)	555	1870	1546	633	987	867	801	2337	808	413	2337	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.02	0.24	0.49	0.06	0.01	0.50	0.12	0.21	0.44	0.35	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	107	84	45	101	775	52	542
v/c Ratio	0.22	0.44	0.45	0.12	0.55	0.58	0.41	0.52
Control Delay	44.9	34.1	43.3	20.6	49.9	24.6	50.0	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	34.1	43.3	20.6	49.9	24.6	50.0	25.1
Queue Length 50th (ft)	11	48	38	14	46	158	24	106
Queue Length 95th (ft)	39	86	84	34	#150	#365	#90	226
Internal Link Dist (ft)		416		599		1245		500
Turn Bay Length (ft)	200		110		210		340	
Base Capacity (vph)	111	624	253	773	196	1382	129	1123
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.17	0.33	0.06	0.52	0.56	0.40	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	418	747	364	420	376	333
v/c Ratio	0.70	0.78	0.99	0.44	0.81	0.36
Control Delay	27.6	14.6	76.5	12.2	39.5	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	14.6	76.5	12.2	39.5	4.8
Queue Length 50th (ft)	155	146	~162	103	148	33
Queue Length 95th (ft)	#260	#311	#311	161	#270	64
Internal Link Dist (ft)	1098			358	1245	
Turn Bay Length (ft)	150		80			
Base Capacity (vph)	599	957	367	996	514	936
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.78	0.99	0.42	0.73	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	170	125	659	301	108	32	747	923	264	167	406	57
v/c Ratio	0.46	0.24	0.43	0.72	0.36	0.08	0.74	0.57	0.39	0.62	0.46	0.11
Control Delay	44.7	33.8	0.9	50.7	36.8	0.4	36.0	28.4	5.6	48.6	35.0	0.4
Queue Delay	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 Delay	44.7	33.8	0.9	50.7	36.8	0.4	36.0	28.4	5.6	48.6	35.0	0.4
Queue Length 50th (ft)	40	30	0	74	50	0	163	142	0	77	69	0
Queue Length 95th (ft)	104	62	0	#229	114	0	#468	286	63	205	132	0
Internal Link Dist (ft)		715			364			585			612	
Turn Bay Length (ft)	240		240	130			490		320	250		250
Base Capacity (vph)	444	1513	1546	420	784	737	1016	2145	809	394	1775	555
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.08	0.43	0.72	0.14	0.04	0.74	0.43	0.33	0.42	0.23	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX E
OPENING YEAR + PROJECT PEAK HOUR INTERSECTION LOS
& QUEUE ANALYSIS WORKSHEETS

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	50	12	0	100	5	23	0	0	10	0	20
Future Vol, veh/h	5	50	12	0	100	5	23	0	0	10	0	20
Peak Hour Factor	0.63	0.63	0.92	0.92	0.76	0.76	0.92	0.92	0.92	0.71	0.92	0.71
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	8	79	13	0	132	7	25	0	0	14	0	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	8	7.9	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	7%	0%	33%
Vol Thru, %	0%	75%	95%	0%
Vol Right, %	0%	18%	5%	67%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	67	105	30
LT Vol	23	5	0	10
Through Vol	0	50	100	0
RT Vol	0	12	5	20
Lane Flow Rate	25	100	138	42
Geometry Grp	1	1	1	1
Degree of Util (X)	0.033	0.114	0.158	0.049
Departure Headway (Hd)	4.718	4.081	4.116	4.168
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	763	868	863	864
Service Time	2.72	2.155	2.181	2.169
HCM Lane V/C Ratio	0.033	0.115	0.16	0.049
HCM Control Delay	7.9	7.7	8	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.6	0.2

Opening Year (Year 2023)+Project AM
2: S. Santa Fe Ave & Woodland Dr/York Dr

York Drive Independent Living Project

10/26/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	15	130	101	15	31	70	200	38	24	400	35
Future Volume (veh/h)	20	15	130	101	15	31	70	200	38	24	400	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484
Adj Flow Rate, veh/h	36	27	232	116	17	36	82	235	45	30	494	43
Peak Hour Factor	0.56	0.56	0.56	0.87	0.87	0.87	0.85	0.85	0.85	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	43	33	286	141	135	286	96	716	135	37	685	59
Arrive On Green	0.03	0.25	0.25	0.10	0.32	0.32	0.07	0.30	0.30	0.03	0.26	0.26
Sat Flow, veh/h	1414	131	1129	1414	418	885	1414	2360	443	1414	2616	227
Grp Volume(v), veh/h	36	0	259	116	0	53	82	139	141	30	265	272
Grp Sat Flow(s),veh/h/ln	1414	0	1260	1414	0	1304	1414	1410	1393	1414	1410	1433
Q Serve(g_s), s	1.5	0.0	11.1	4.6	0.0	1.7	3.3	4.4	4.5	1.2	9.9	10.0
Cycle Q Clear(g_c), s	1.5	0.0	11.1	4.6	0.0	1.7	3.3	4.4	4.5	1.2	9.9	10.0
Prop In Lane	1.00		0.90	1.00		0.68	1.00		0.32	1.00		0.16
Lane Grp Cap(c), veh/h	43	0	319	141	0	420	96	428	423	37	370	375
V/C Ratio(X)	0.84	0.00	0.81	0.82	0.00	0.13	0.86	0.32	0.33	0.80	0.72	0.72
Avail Cap(c_a), veh/h	130	0	684	353	0	913	208	721	713	159	672	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	20.2	25.5	0.0	13.8	26.6	15.5	15.6	27.9	19.3	19.4
Incr Delay (d2), s/veh	32.4	0.0	4.9	11.4	0.0	0.1	18.6	0.4	0.5	31.2	2.6	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.4	1.9	0.0	0.5	1.5	1.2	1.2	0.7	3.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.2	0.0	25.2	36.9	0.0	13.9	45.2	16.0	16.0	59.1	22.0	22.0
LnGrp LOS	E	A	C	D	A	B	D	B	B	E	C	C
Approach Vol, veh/h		295			169			362			567	
Approach Delay, s/veh		29.4			29.7			22.6			24.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.5	20.4	6.0	22.8	6.1	22.8	9.9	18.8				
Change Period (Y+Rc), s	4.6	5.3	* 4.2	* 4.2	4.6	5.3	* 4.2	* 4.2				
Max Green Setting (Gmax), s	8.5	27.5	* 5.3	* 40	6.5	29.5	* 14	* 31				
Max Q Clear Time (g_c+I1), s	5.3	12.0	3.5	3.7	3.2	6.5	6.6	13.1				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.3	0.0	1.4	0.2	1.5				
Intersection Summary												
HCM 6th Ctrl Delay			25.5									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↱	↱	↰
Traffic Volume (veh/h)	137	230	590	192	263	373
Future Volume (veh/h)	137	230	590	192	263	373
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	151	253	634	206	351	497
Peak Hour Factor	0.91	0.91	0.93	0.93	0.75	0.75
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	463	999	660	1166	390	734
Arrive On Green	0.26	0.26	0.37	0.63	0.21	0.21
Sat Flow, veh/h	1767	1572	1767	1856	1856	1533
Grp Volume(v), veh/h	151	253	634	206	351	497
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1856	1856	1533
Q Serve(g_s), s	6.2	6.3	31.7	4.2	16.7	19.0
Cycle Q Clear(g_c), s	6.2	6.3	31.7	4.2	16.7	19.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	463	999	660	1166	390	734
V/C Ratio(X)	0.33	0.25	0.96	0.18	0.90	0.68
Avail Cap(c_a), veh/h	463	999	662	1166	390	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	7.2	27.7	7.0	34.8	17.6
Incr Delay (d2), s/veh	1.9	0.6	25.6	0.1	23.3	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	1.9	16.7	1.4	9.6	11.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.8	7.8	53.3	7.1	58.1	20.1
LnGrp LOS	C	A	D	A	E	C
Approach Vol, veh/h	404			840	848	
Approach Delay, s/veh	15.6			41.9	35.8	
Approach LOS	B			D	D	
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	29.0		37.9	23.6	61.5	
Change Period (Y+Rc), s	5.3		4.1	* 4.6	4.6	
Max Green Setting (Gmax), s	23.7		33.9	* 19	56.4	
Max Q Clear Time (g_c+I1), s	8.3		33.7	21.0	6.2	
Green Ext Time (p_c), s	1.1		0.1	0.0	1.1	
Intersection Summary						
HCM 6th Ctrl Delay			34.4			
HCM 6th LOS			C			
Notes						

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

Opening Year (Year 2023)+Project AM
4: Sycamore Ave & University Dr/Lobelia Dr

York Drive Independent Living Project

10/26/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	40	320	250	50	10	370	255	160	160	731	32
Future Volume (veh/h)	66	40	320	250	50	10	370	255	160	160	731	32
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		0.96	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	75	45	0	309	62	12	398	274	172	180	821	36
Peak Hour Factor	0.88	0.88	0.88	0.81	0.81	0.81	0.93	0.93	0.93	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	194	469		420	369	301	527	1470	449	227	1340	497
Arrive On Green	0.06	0.13	0.00	0.12	0.20	0.20	0.15	0.29	0.29	0.13	0.26	0.26
Sat Flow, veh/h	3428	3526	1572	3428	1856	1511	3428	5066	1547	1767	5066	1544
Grp Volume(v), veh/h	75	45	0	309	62	12	398	274	172	180	821	36
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1856	1511	1714	1689	1547	1767	1689	1544
Q Serve(g_s), s	1.4	0.7	0.0	5.8	1.8	0.4	7.4	2.7	5.9	6.5	9.4	1.1
Cycle Q Clear(g_c), s	1.4	0.7	0.0	5.8	1.8	0.4	7.4	2.7	5.9	6.5	9.4	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	469		420	369	301	527	1470	449	227	1340	497
V/C Ratio(X)	0.39	0.10		0.74	0.17	0.04	0.75	0.19	0.38	0.79	0.61	0.07
Avail Cap(c_a), veh/h	595	2001		595	1053	858	859	2500	764	443	2500	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	25.2	0.0	28.0	22.0	21.4	26.8	17.6	18.8	28.0	21.4	15.6
Incr Delay (d2), s/veh	1.3	0.1	0.0	2.9	0.2	0.1	2.2	0.1	0.5	6.2	0.5	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(50%),veh/ln	0.6	0.3	0.0	2.3	0.8	0.1	2.9	0.9	1.9	2.9	3.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	25.3	0.0	30.9	22.2	21.5	29.1	17.7	19.3	34.2	21.8	15.7
LnGrp LOS	C	C		C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		120			383			844			1037	
Approach Delay, s/veh		29.1			29.2			23.4			23.8	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	24.6	13.5	14.2	15.6	22.9	9.1	18.6				
Change Period (Y+Rc), s	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4				
Max Green Setting (Gmax), s	16.6	32.7	11.5	37.6	16.6	32.7	11.5	37.6				
Max Q Clear Time (g_c+I1), s	8.5	7.9	7.8	2.7	9.4	11.4	3.4	3.8				
Green Ext Time (p_c), s	0.3	2.2	0.4	0.2	0.8	5.4	0.1	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			24.8									
HCM 6th LOS			C									

Notes

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

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	105	25	0	80	5	21	0	0	10	0	10
Future Vol, veh/h	20	105	25	0	80	5	21	0	0	10	0	10
Peak Hour Factor	0.82	0.82	0.92	0.92	0.86	0.86	0.92	0.92	0.92	0.50	0.92	0.50
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	24	128	27	0	93	6	23	0	0	20	0	20
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	7.8	8	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	13%	0%	50%
Vol Thru, %	0%	70%	94%	0%
Vol Right, %	0%	17%	6%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	150	85	20
LT Vol	21	20	0	10
Through Vol	0	105	80	0
RT Vol	0	25	5	10
Lane Flow Rate	23	180	99	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.03	0.203	0.114	0.049
Departure Headway (Hd)	4.804	4.062	4.162	4.385
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	749	875	849	822
Service Time	2.806	2.13	2.246	2.385
HCM Lane V/C Ratio	0.031	0.206	0.117	0.049
HCM Control Delay	8	8.2	7.8	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.8	0.4	0.2

Opening Year (Year 2023)+Project PM
2: S. Santa Fe Ave & Woodland Dr/York Dr

York Drive Independent Living Project

10/26/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	80	80	10	31	90	610	98	58	500	20
Future Volume (veh/h)	20	10	80	80	10	31	90	610	98	58	500	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484
Adj Flow Rate, veh/h	24	12	95	104	13	40	101	685	110	60	521	21
Peak Hour Factor	0.84	0.84	0.84	0.77	0.77	0.77	0.89	0.89	0.89	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	32	17	137	128	59	183	119	921	148	66	946	38
Arrive On Green	0.02	0.12	0.12	0.09	0.19	0.19	0.08	0.38	0.38	0.05	0.34	0.34
Sat Flow, veh/h	1414	140	1106	1414	310	954	1414	2421	388	1414	2761	111
Grp Volume(v), veh/h	24	0	107	104	0	53	101	399	396	60	266	276
Grp Sat Flow(s),veh/h/ln	1414	0	1245	1414	0	1265	1414	1410	1399	1414	1410	1462
Q Serve(g_s), s	0.9	0.0	4.2	3.7	0.0	1.8	3.6	12.5	12.5	2.2	7.8	7.8
Cycle Q Clear(g_c), s	0.9	0.0	4.2	3.7	0.0	1.8	3.6	12.5	12.5	2.2	7.8	7.8
Prop In Lane	1.00		0.89	1.00		0.75	1.00		0.28	1.00		0.08
Lane Grp Cap(c), veh/h	32	0	154	128	0	242	119	536	532	66	483	501
V/C Ratio(X)	0.75	0.00	0.69	0.81	0.00	0.22	0.85	0.74	0.74	0.91	0.55	0.55
Avail Cap(c_a), veh/h	147	0	810	335	0	991	260	834	827	172	746	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	0.0	21.4	22.8	0.0	17.4	23.0	13.7	13.7	24.2	13.6	13.6
Incr Delay (d2), s/veh	29.1	0.0	5.5	11.5	0.0	0.4	14.8	2.1	2.1	32.2	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.4	1.6	0.0	0.5	1.5	3.2	3.2	1.2	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	0.0	27.0	34.3	0.0	17.9	37.8	15.7	15.8	56.4	14.6	14.5
LnGrp LOS	D	A	C	C	A	B	D	B	B	E	B	B
Approach Vol, veh/h		131			157			896			602	
Approach Delay, s/veh		31.9			28.7			18.2			18.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	22.8	5.4	14.0	7.0	24.7	8.8	10.5				
Change Period (Y+Rc), s	4.6	5.3	* 4.2	* 4.2	4.6	5.3	* 4.2	* 4.2				
Max Green Setting (Gmax), s	9.4	27.0	* 5.3	* 40	6.2	30.2	* 12	* 33				
Max Q Clear Time (g_c+l1), s	5.6	9.8	2.9	3.8	4.2	14.5	5.7	6.2				
Green Ext Time (p_c), s	0.1	2.7	0.0	0.3	0.0	4.1	0.1	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↱	↱	↱
Traffic Volume (veh/h)	394	680	320	374	353	322
Future Volume (veh/h)	394	680	320	374	353	322
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	433	747	364	425	380	346
Peak Hour Factor	0.91	0.91	0.88	0.88	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	604	868	371	952	451	910
Arrive On Green	0.34	0.34	0.21	0.51	0.24	0.24
Sat Flow, veh/h	1767	1572	1767	1856	1856	1534
Grp Volume(v), veh/h	433	747	364	425	380	346
Grp Sat Flow(s),veh/h/ln	1767	1572	1767	1856	1856	1534
Q Serve(g_s), s	14.6	23.3	14.0	9.9	13.3	8.2
Cycle Q Clear(g_c), s	14.6	23.3	14.0	9.9	13.3	8.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	604	868	371	952	451	910
V/C Ratio(X)	0.72	0.86	0.98	0.45	0.84	0.38
Avail Cap(c_a), veh/h	604	868	371	1002	517	965
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	13.0	26.8	10.5	24.6	7.6
Incr Delay (d2), s/veh	7.1	10.9	41.7	0.3	10.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	9.6	9.5	3.2	6.5	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.7	24.0	68.5	10.8	35.5	7.8
LnGrp LOS	C	C	E	B	D	A
Approach Vol, veh/h	1180			789	726	
Approach Delay, s/veh	25.0			37.4	22.3	
Approach LOS	C			D	C	
Timer - Assigned Phs	2		3	4	8	
Phs Duration (G+Y+Rc), s	28.6		18.4	21.1	39.5	
Change Period (Y+Rc), s	5.3		4.1	* 4.6	4.6	
Max Green Setting (Gmax), s	23.3		14.3	* 19	36.8	
Max Q Clear Time (g_c+I1), s	25.3		16.0	15.3	11.9	
Green Ext Time (p_c), s	0.0		0.0	1.3	2.4	
Intersection Summary						
HCM 6th Ctrl Delay			27.9			
HCM 6th LOS			C			
Notes						

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

Opening Year (Year 2023)+Project PM
4: Sycamore Ave & University Dr/Lobelia Dr

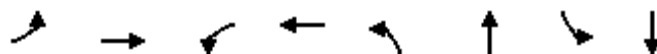
York Drive Independent Living Project

10/26/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	110	580	280	100	31	680	851	240	160	400	57
Future Volume (veh/h)	152	110	580	280	100	31	680	851	240	160	400	57
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		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	173	125	0	301	108	33	747	935	264	167	417	59
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.91	0.91	0.91	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	273	437		410	304	252	917	1547	473	214	805	374
Arrive On Green	0.08	0.12	0.00	0.12	0.16	0.16	0.27	0.31	0.31	0.12	0.16	0.16
Sat Flow, veh/h	3428	3526	1572	3428	1856	1539	3428	5066	1548	1767	5066	1567
Grp Volume(v), veh/h	173	125	0	301	108	33	747	935	264	167	417	59
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1714	1856	1539	1714	1689	1548	1767	1689	1567
Q Serve(g_s), s	3.2	2.1	0.0	5.5	3.4	1.2	13.3	10.3	9.3	6.0	4.9	1.9
Cycle Q Clear(g_c), s	3.2	2.1	0.0	5.5	3.4	1.2	13.3	10.3	9.3	6.0	4.9	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	437		410	304	252	917	1547	473	214	805	374
V/C Ratio(X)	0.63	0.29		0.73	0.36	0.13	0.81	0.60	0.56	0.78	0.52	0.16
Avail Cap(c_a), veh/h	587	1995		556	1033	856	1342	2827	864	521	2339	849
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.2	26.0	0.0	27.8	24.3	23.4	22.4	19.3	19.0	27.9	25.2	19.7
Incr Delay (d2), s/veh	2.4	0.4	0.0	3.3	0.7	0.2	2.6	0.4	1.0	6.1	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.8	0.0	2.3	1.4	0.4	5.0	3.5	3.1	2.6	1.8	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	26.4	0.0	31.1	25.0	23.6	25.0	19.7	20.1	34.1	25.7	19.9
LnGrp LOS	C	C		C	C	C	C	B	C	C	C	B
Approach Vol, veh/h		298			442			1946			643	
Approach Delay, s/veh		29.4			29.1			21.8			27.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.3	25.4	13.2	13.5	22.9	15.8	10.6	16.1				
Change Period (Y+Rc), s	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4				
Max Green Setting (Gmax), s	19.3	36.5	10.6	37.0	25.6	30.2	11.2	36.4				
Max Q Clear Time (g_c+I1), s	8.0	12.3	7.5	4.1	15.3	6.9	5.2	5.4				
Green Ext Time (p_c), s	0.3	7.5	0.3	0.7	2.1	2.7	0.2	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			24.5									
HCM 6th LOS			C									

Notes

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	259	116	53	82	280	30	537
v/c Ratio	0.31	0.71	0.52	0.11	0.49	0.29	0.23	0.69
Control Delay	50.9	40.0	46.2	18.7	51.9	22.5	46.4	33.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	40.0	46.2	18.7	51.9	22.5	46.4	33.4
Queue Length 50th (ft)	18	124	57	18	42	48	15	136
Queue Length 95th (ft)	34	125	124	44	#114	103	43	194
Internal Link Dist (ft)		416		599		1245		498
Turn Bay Length (ft)	200		110		210		340	
Base Capacity (vph)	116	617	317	751	187	1305	143	1193
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.42	0.37	0.07	0.44	0.21	0.21	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	151	253	634	206	351	497
v/c Ratio	0.32	0.22	0.97	0.18	0.91	0.64
Control Delay	29.0	2.9	57.1	7.6	64.9	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	2.9	57.1	7.6	64.9	16.0
Queue Length 50th (ft)	69	21	346	45	196	137
Queue Length 95th (ft)	123	45	#569	74	#257	164
Internal Link Dist (ft)	1143			358	1245	
Turn Bay Length (ft)	150		80			
Base Capacity (vph)	466	1144	667	1170	394	777
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.22	0.95	0.18	0.89	0.64

Intersection Summary

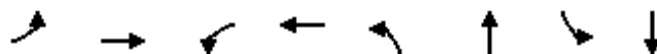
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	75	45	364	309	62	12	398	274	172	180	821	36
v/c Ratio	0.22	0.09	0.24	0.50	0.18	0.03	0.61	0.20	0.31	0.58	0.63	0.06
Control Delay	40.0	30.6	0.4	37.0	29.9	0.2	36.4	24.3	6.6	42.1	29.1	1.0
Queue Delay	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 Delay	40.0	30.6	0.4	37.0	29.9	0.2	36.4	24.3	6.6	42.1	29.1	1.0
Queue Length 50th (ft)	16	10	0	68	25	0	84	34	0	75	121	0
Queue Length 95th (ft)	51	26	0	#176	59	0	#232	84	54	#234	243	4
Internal Link Dist (ft)	715				364				585		564	
Turn Bay Length (ft)	240		240		130		490		320		250	
Base Capacity (vph)	552	1862	1546	631	982	863	797	2326	804	411	2326	694
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.02	0.24	0.49	0.06	0.01	0.50	0.12	0.21	0.44	0.35	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	107	104	53	101	795	60	542
v/c Ratio	0.22	0.45	0.53	0.14	0.56	0.59	0.48	0.51
Control Delay	45.4	34.8	46.2	20.8	51.2	25.2	53.7	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	34.8	46.2	20.8	51.2	25.2	53.7	25.1
Queue Length 50th (ft)	11	49	47	17	47	170	29	110
Queue Length 95th (ft)	39	86	101	39	#150	#381	#105	226
Internal Link Dist (ft)		416		599		1245		500
Turn Bay Length (ft)	200		110		210		340	
Base Capacity (vph)	107	605	245	744	190	1356	125	1089
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.18	0.42	0.07	0.53	0.59	0.48	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	433	747	364	425	380	346
v/c Ratio	0.72	0.78	0.99	0.45	0.82	0.37
Control Delay	28.8	14.8	76.8	12.3	40.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	14.8	76.8	12.3	40.0	4.9
Queue Length 50th (ft)	163	147	~162	104	150	36
Queue Length 95th (ft)	#292	#316	#311	163	#274	68
Internal Link Dist (ft)	1147			358	1245	
Turn Bay Length (ft)	150		80			
Base Capacity (vph)	598	955	367	995	514	936
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.78	0.99	0.43	0.74	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	173	125	659	301	108	33	747	935	264	167	417	59
v/c Ratio	0.47	0.24	0.43	0.72	0.36	0.09	0.74	0.58	0.39	0.62	0.46	0.11
Control Delay	45.0	34.0	0.9	51.1	37.1	0.5	36.3	28.5	5.6	48.7	34.9	0.4
Queue Delay	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 Delay	45.0	34.0	0.9	51.1	37.1	0.5	36.3	28.5	5.6	48.7	34.9	0.4
Queue Length 50th (ft)	42	30	0	75	51	0	168	145	0	78	71	0
Queue Length 95th (ft)	105	62	0	#229	114	0	#468	290	63	205	135	0
Internal Link Dist (ft)		715			364			585			559	
Turn Bay Length (ft)	240		240	130			490		320	250		250
Base Capacity (vph)	442	1506	1546	418	780	734	1011	2135	806	392	1766	559
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.08	0.43	0.72	0.14	0.04	0.74	0.44	0.33	0.43	0.24	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX F

SITE ACCESS REVIEW MEMO

MEMORANDUM

To:	Joe Balbas Balbas Construction	Date:	September 27, 2023
From:	John A. Boarman, PE & Román Lopez, PTP LLG, Engineers	LLG Ref:	3-21-3385
Subject:	York Drive Active Senior Living Project – Access Review (PDS2021-MPA-001)		

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Linscott, Law & Greenspan, Engineers (LLG) has prepared the following technical memo to review the proposed vehicular access for the York Drive Active Senior Living project (“Project”).

PROJECT DESCRIPTION, LOCATION, & ACCESS

The Project is located at 1822, 1844, and 1864 York Drive, south of York Drive and east of S. Santa Fe Avenue. The project would construct one four-story building with 183 senior apartment units which will be deed-restricted to ages 62 and above.

Vehicular access to the Project site is proposed via one (1) driveway on the south side of York Drive, near the eastern edge of the Project site, generally aligned opposite Montgomery Drive.

EXISTING CONDITIONS

York Drive is an unclassified two-lane undivided roadway with narrow shoulders that does not provide curbside parking. York Drive is generally oriented east-west in the vicinity of the Project and Project driveway. The posted speed limit is 25 mph.

Montgomery Drive is an unclassified two-lane undivided roadway with narrow shoulders that does not provide curbside parking. Montgomery Drive is generally oriented north-south in the vicinity of the Project and currently terminates in the southbound direction in a T-intersection at York Drive north of the proposed Project driveway.

The existing southbound Montgomery Drive approach to York Drive is yield-controlled. The existing York Drive approaches to Montgomery Drive and the proposed Project driveway in the eastbound and westbound directions are uncontrolled.

DRIVEWAY SIGHT DISTANCE

Driveway sight distance was reviewed for all approaches. As illustrated in the attached exhibit provided by the Civil Engineer (**Attachment A**), sight distance from southbound Montgomery Drive is provided. The 300’ sight distance was based on a 30 mph design speed, which is the minimum design speed for County public roadways.

However, in the westbound and eastbound directions of travel on York Drive approaching Montgomery Drive there is not adequate sight distance due to the

horizontal curvature of the roadway and existing obstructions outside the right-of-way including trees and chain link fence.

PROPOSED DESIGN TO ADDRESS SIGHT DISTANCE DEFICIENCY

The Project will address this existing stop sight distance deficiency by providing all-way stop control at the York Drive / Montgomery Drive / Project Driveway intersection as illustrated in *Attachment A*. Advance warning “Stop Ahead” signage will be installed for the westbound approach where sight distance was not provided. At the stop lines, clear line of sight between all vehicles will be provided as demonstrated in *Attachment A*.

To further review the proposed stop control, line of sight from all approaches were reviewed. As shown in *Attachment A*, clear line of sight between vehicles at the approach stop bar are visible in all directions.

MULTI-MODAL CONSIDERATIONS

Provision of all-way stop control at the Project driveway also supports non-auto (i.e., pedestrian, bicycle) modes of travel. The County’s General Plan Mobility Element has several policies that promote active transportation options for County residents. The primary objectives, goals, and policies of the Mobility Element include:

- Accommodate all users of the road right-of-way;
- Road design, operation, and maintenance that reflect community character and the Community Plan, and;
- Construct complete streets that balance vehicular needs with pedestrian, bicycle, and transit facilities to meet the needs of all users.

The County has also prepared an Active Transportation Plan (ATP) that serves as a master plan and policy document for the County of San Diego to implement active transportation projects and pursue funding opportunities for new or improved facilities. The proposed design supports the goals of the Mobility Element and ATP in the following ways.

The stop control addresses existing intersection deficiencies that have implications to both vehicle and active transportation travel.

Further, the Project will also complete frontage improvements along York Drive including curb, gutter, and sidewalk connecting to existing sidewalks on the south side of York Drive which ultimately connect to S. Santa Fe Avenue. At S. Santa Fe Avenue there is access to the Inland Rail Trail, a Class I bikeway that parallels the North County Transit District (NCTD) rail right-of-way. NCTD bus routes 305 and 332 also provide stops located at the intersection of York Drive / S. Santa Fe Avenue. Thus, the frontage improvements provide key link in extending multi-modal access to not only the Project site itself but also to the existing local area.

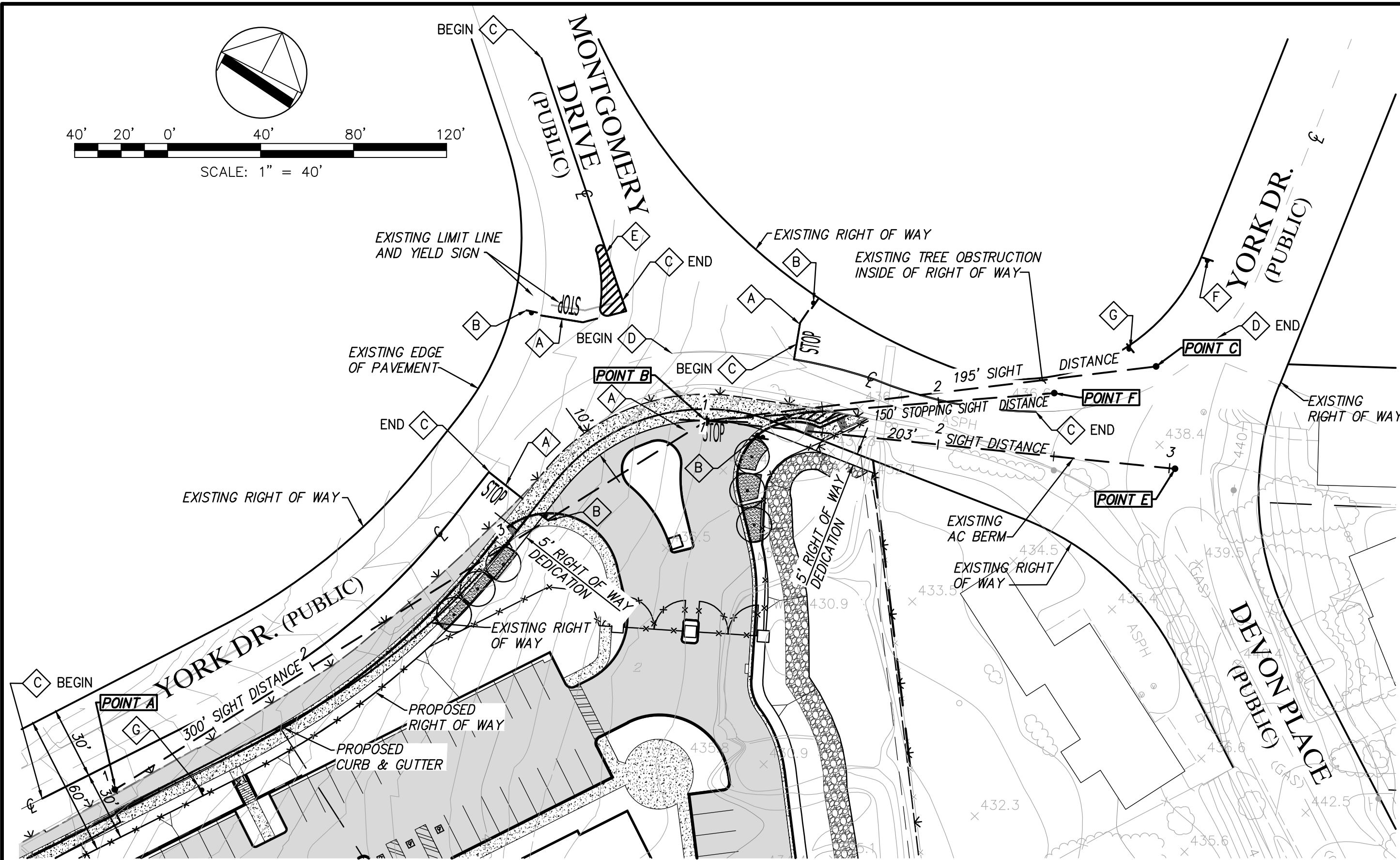
RECOMMENDATIONS

The following transportation considerations are recommended:

- Regardless of the proposed stop control, provide adequate sight distance for the following approaches to the satisfaction of the County engineer. Field verify prior to Certificate of Occupancy.
 - Southbound Montgomery Drive
- Maximize the sight distance provided for the westbound and eastbound York Drive to the extent possible. It is recommended at a minimum; Stopping Sight Distance be provided to the satisfaction of the County engineer. Field verify prior to Certificate of Occupancy.
- To address existing deficiencies in the eastbound and westbound direction, provide stop control with advance warning to the satisfaction of the County engineer.
- Maintain clear line of sight at the stop bar for all approaches to the satisfaction of the County engineer. Field verify prior to Certificate of Occupancy.

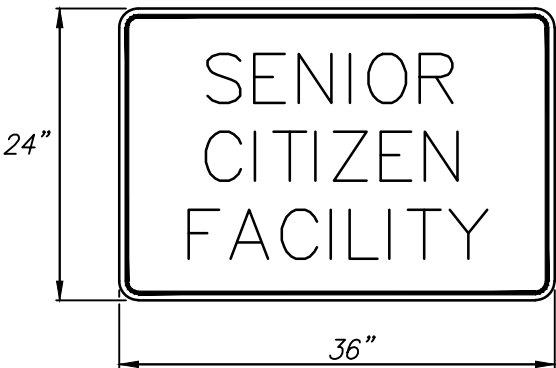
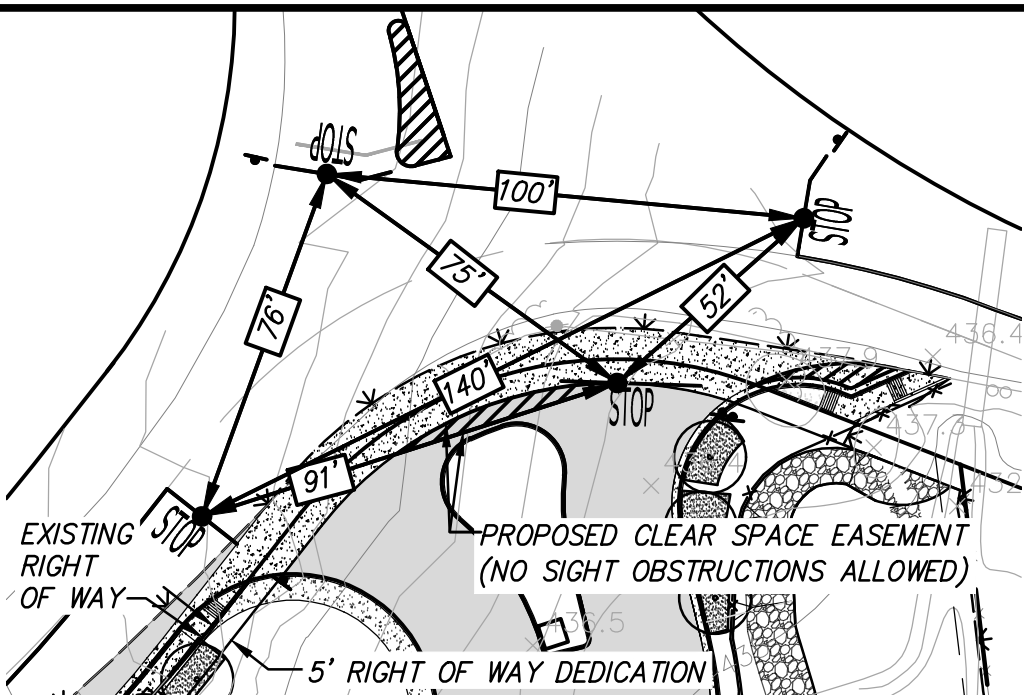
cc: County of San Diego
File

ATTACHMENT A
SIGHT DISTANCE EXHIBIT



NOTES

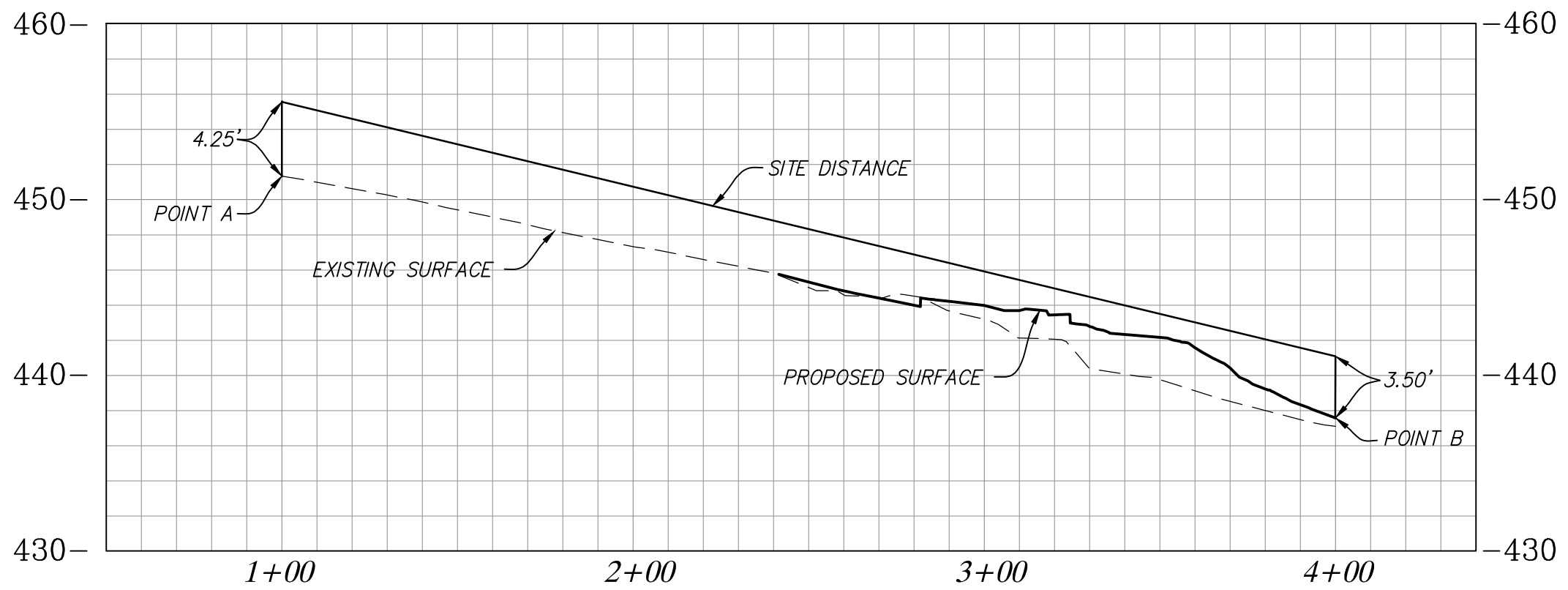
- 1. YORK DRIVE'S POSTED SPEED IS 25 MPH.
- 2. SITE DISTANCE PER C.O.S.D. DS-20A.
- 3. THERE ARE EXISTING OBSTRUCTIONS INSIDE OF RIGHT OF WAY, (TREE) ALONG THE NORTH SIDE OF YORK DRIVE.
- 4. SITE DISTANCE DESIGN IN EASTBOUND DIRECTION IS BASED ON 30 MPH.
- 5. SITE DISTANCE DESIGN IN WESTBOUND DIRECTION IS BASED ON 30 MPH.
- 6. ALL PROJECT FRONTAGE ALONG YORK DRIVE WILL BE RECONSTRUCTED. ALL BRUSH AND ADJACENT STRUCTURES WILL BE REMOVED.



"SENIOR CITIZEN FACILITY" SIGN SW50 PER CALTRANS STANDARD PLANS

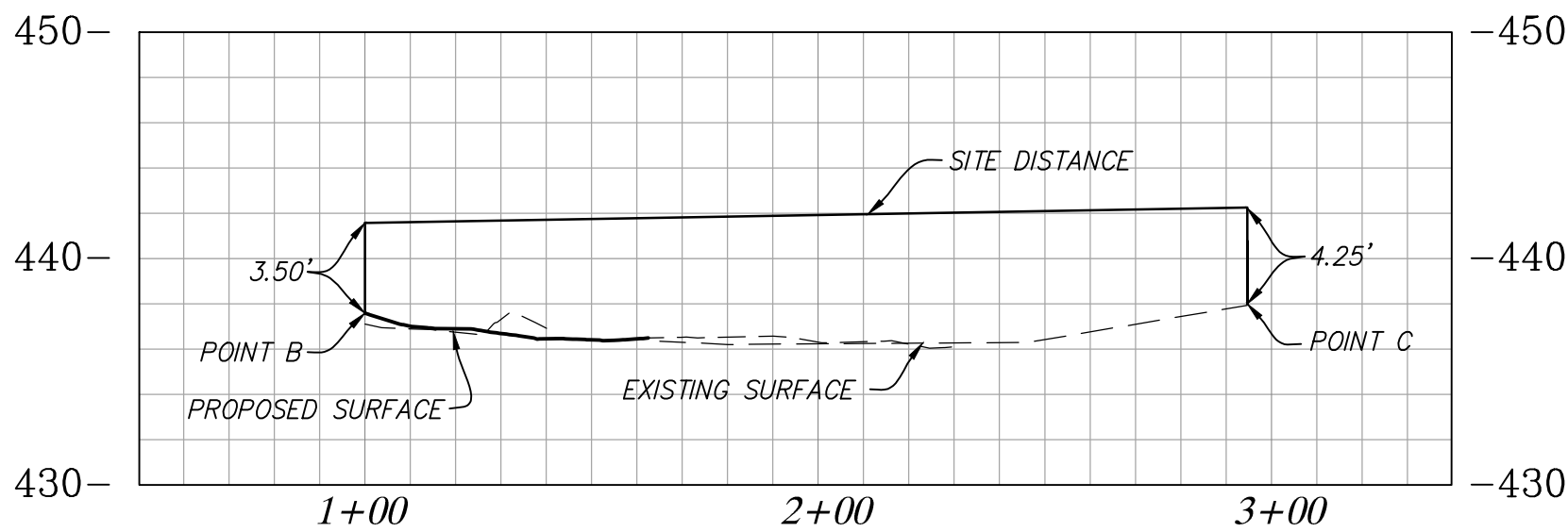
LEGEND

- A STOP PAVEMENT LEGEND PER A24D AND STOP LINE PER A24E PER CALTRANS STANDARD PLANS.
- B R1-1 STOP SIGN PER CALTRANS STANDARD PLANS.
- C CENTERLINE STRIPING PER A20A DETAIL 22 CALTRANS STANDARD PLANS.
- D REMOVE EXISTING STRIPING.
- E PAINTED MEDIAN PER CALTRANS STANDARD PLANS.
- F STOP AHEAD SIGN W3-1 PER CALTRANS STANDARD PLANS.
- G SENIOR CITIZEN FACILITY SIGN SW50 PER PER CALTRANS STANDARD PLANS. SEE DETAIL THIS SHEET.
- 100 CLEAR LINE OF SIGHT BETWEEN VEHICLES AT STOP LINES.



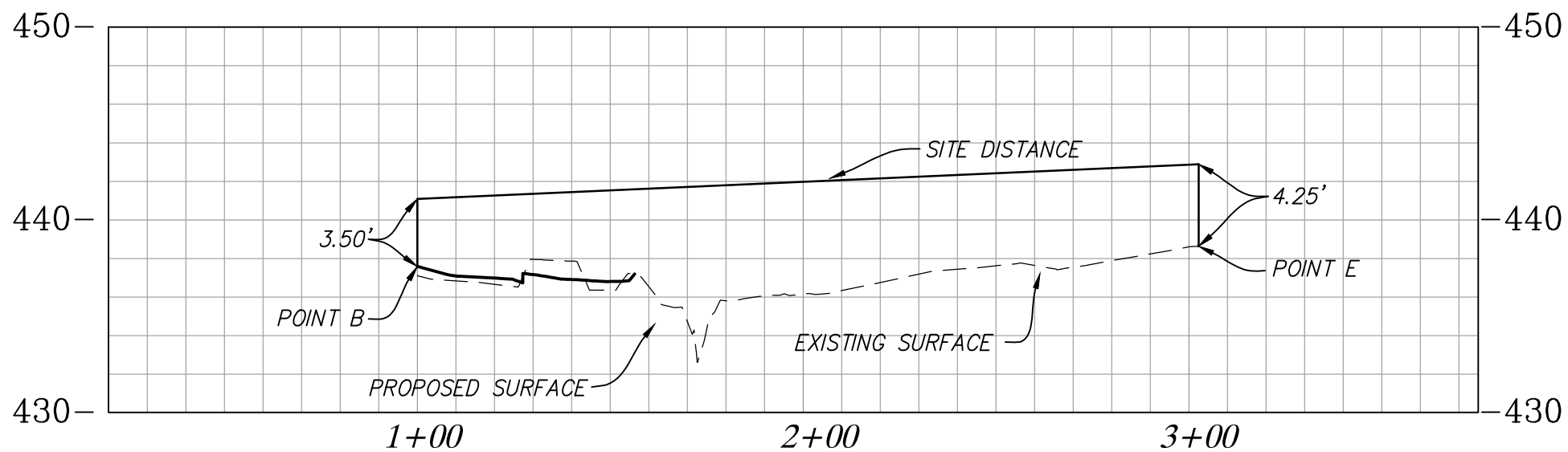
AT POINT B LOOKING AT POINT A

SCALES: HORIZONTAL: 1"=40'
VERTICAL: 1"=8'



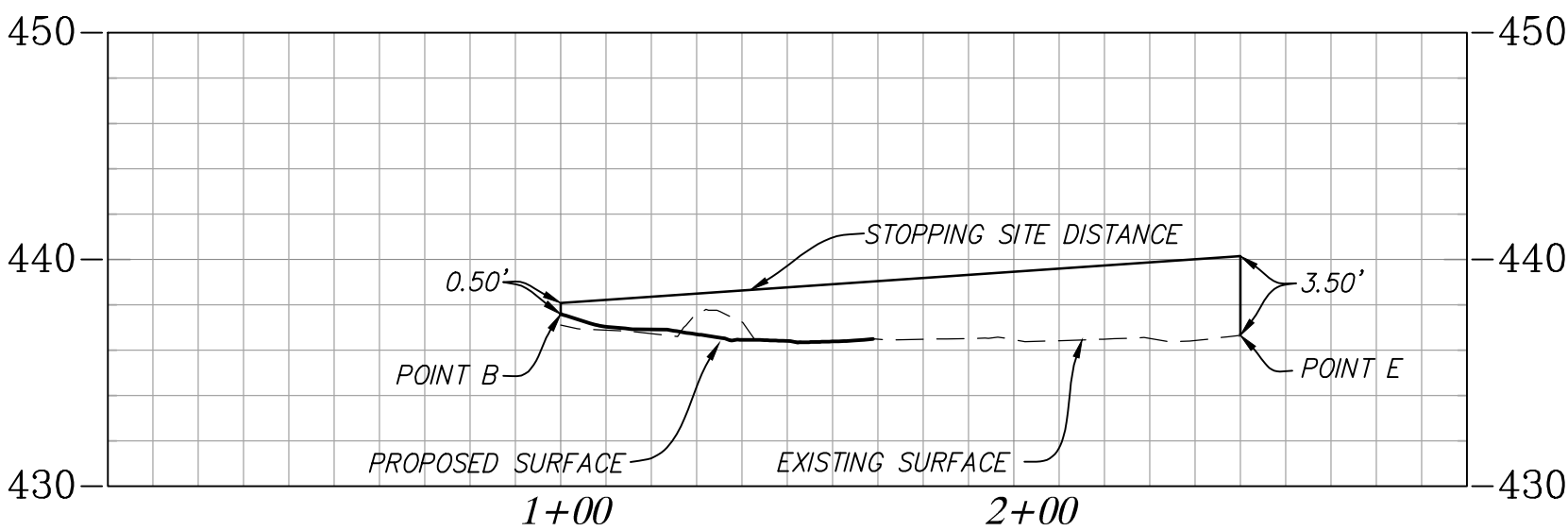
AT POINT B LOOKING AT POINT C

SCALES: HORIZONTAL: 1"=40'
VERTICAL: 1"=8'



AT POINT B LOOKING AT POINT E

SCALES: HORIZONTAL: 1"=40'
VERTICAL: 1"=8'



AT POINT B LOOKING AT POINT F

SCALES: HORIZONTAL: 1"=40'
VERTICAL: 1"=8'

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COUNTY OF SAN DIEGO
1822-1864 YORK DRIVE
PDS2021-MUP-21-008, PDS2021-ER-21-08-008
SIGHT DISTANCE EXHIBIT



NEAR POINT A LOOKING AT POINT B



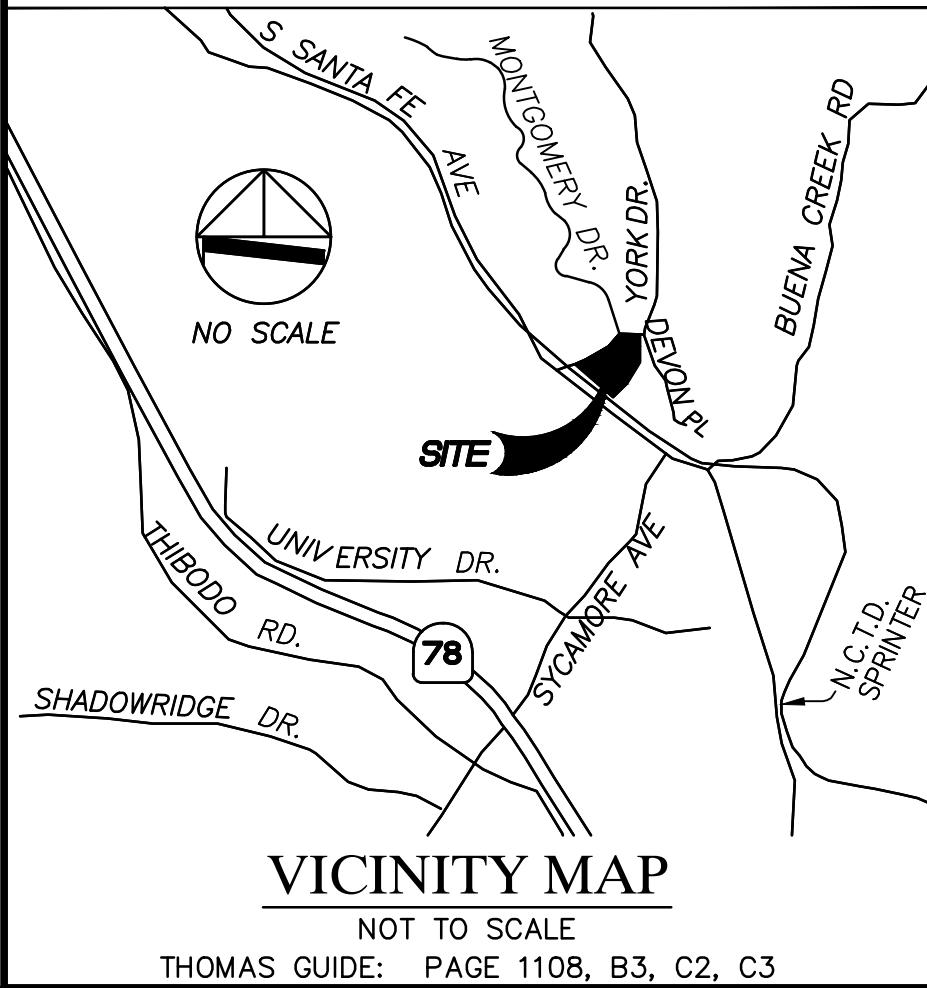
NEAR POINT B LOOKING AT POINT C



NEAR MONTGOMERY DRIVE LOOKING TOWARDS POINT C AND DEVON PLACE



NEAR DEVON PLACE LOOKING TOWARDS POINT B



LOOKING SOUTHERLY TOWARDS DEVON PLACE



AT MONTGOMERY DRIVE LOOKING TOWARDS POINT B



NEAR POINT B LOOKING TOWARDS MONTGOMERY DRIVE

APPENDIX G

PARKING ENTRANCE QUEUEING METHODOLOGY



INSTITUTE OF TRANSPORTATION ENGINEERS



TRAFFIC ENGINEERING

HANDBOOK

SEVENTH EDITION

7

WILEY

Table 13-5. Parking Equipment Service Rates		
	veh/hr	sec/veh
Prepaid Frequent Parker Entry or Exit		
Insertion Card	435	8.3
Proximity Card	600	6.0
Automatic Vehicle ID	800	4.5
Pay per Use Patron Vehicular Entry		
Push Button Ticket	400	9.0
Auto Spit Ticket	450	8.0
Pay on Entry—flat fee, gated, ticketed	200	18.0
Pay on Entry—flat fee, not gated/ticketed	300	12.0
Pay per Use Patron Vehicular Exits		
Cash to Cashier—Variable Rate	138	26.0
Insertion Ticket for POF Validation	360	10.0
Credit Card for POF Overcharge	150	24.0
Pay in Lane to Automated Machine	67	54.0
POF Central Pay to Machine		
Cash to APS—Variable Rate	75	48.0

Source: *Parking Structures*, 3rd ed. (Chrest et al., 2001), supplemented by more recent data collected by Walker Parking Consultants.

picking one. If that lane moves slowly, and there is a shorter queue, some automobiles will redistribute themselves to other lanes.

Experience using this methodology is that the single-channel equations are too conservative when two adjacent lanes are identically equipped. At lightly loaded lanes, the queues are not that much different and single-channel equations are not excessively conservative. For more heavily loaded lanes, the curves diverge quite a bit. For example, at 80% traffic intensity (expected volume/service rate), the average queue with one lane only will be 3.2 automobiles per lane; with two lanes each at 80% intensity, the average queue will be 1.4 automobiles per lane; with three lanes the average queue is 0.86 automobile per lane. Therefore, it is generally recommended that multichannel equations be used where there are groups of identically equipped lanes.

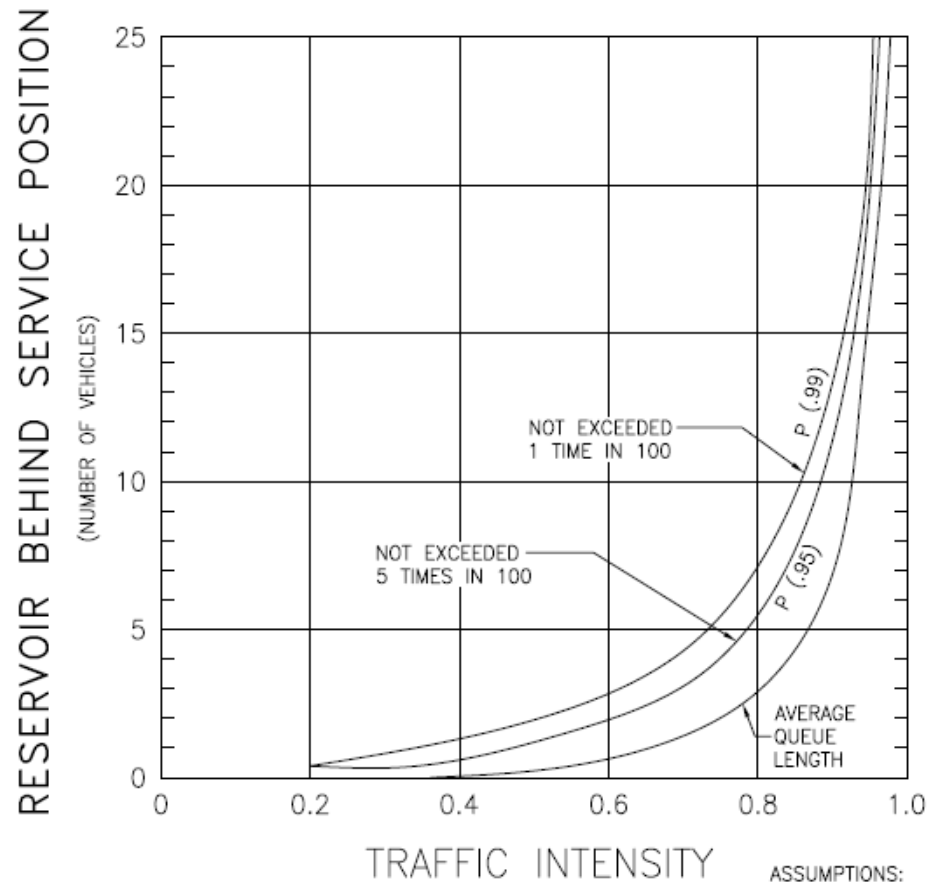
The queuing equations are complicated and require an iterative process. To assist in quickly determining the average and design queues, a graphical method initially proposed by Robert Crommelin in 1972 (Crommelin, 1972) is employed in *Parking Structures*.

It is not adequate to simply divide the volume by the service rate and round up the result for the required number of lanes. For example, the design queue for a single lane loaded to 70% of the service rate is seven vehicles. This would not be acceptable in the vast majority of cases.

If a traffic signal controls the flow of traffic into a parking facility, it can create pulses of traffic that are not random. Similarly, it is important for there to be an adequate reservoir of space between exit gates and the signal so that the signal time for the exiting movements is fully used. Therefore, the design of entry/exit gates close to the signal may require coordination with signal timing. Unfortunately, that also means that subsequent changes in signal timing can severely impact the operation of parking entry/exits.

Typically, a length of 25 ft (7.6 m) per vehicle is used for queued vehicles; 10 ft (3.0 m) between curbs is considered standard for gated entry/exit lane widths, but it is a "one size fits all" possible conditions standard. Ten feet are needed when there is a relatively sharp turn into lanes. When there is a straight approach to a lane, 10 ft is actually generous,

RESERVOIR NEEDS VS TRAFFIC INTENSITY



(AVERAGE ARRIVAL RATE / AVERAGE SERVICE RATE)

ASSUMPTIONS:

1. ARRIVALS FOLLOW A POISSON DISTRIBUTION
2. SERVICE RATE CAN BE REPRESENTED BY AN EXPONENTIAL PROBABILITY FUNCTION.
3. FLOW IS EQUALLY DIVIDED BETWEEN EACH LANE IF MORE THAN ONE IS AVAILABLE.

1