

TECHNICAL APPENDIX

APPENDIX A

NCDOT TIA SCOPING CHECKLIST



NCDOT Traffic Impact Analysis Need Screening / Scoping Request



Additional Comments:

The TIA need decision is made by the NCDOT Division 12 District 1 on _____.

NCDOT District Representative's Signature

Print Name

Email concurrence may be used in lieu of the signature.



NCDOT TIA Scoping Checklist



Project Name: Dallas Stanley Highway Residential

TIA Scoping Date: 5/3/24

TIA Need Screening Forms are Attached. Project Reference #: _____ Decision Date: _____

Site Plan and Access

Provide a site plan illustrating site access, internal and external roadways, buildings and land uses.
Refer to NCDOT's [Policy on Street and Driveway Access to North Carolina Highways](#) pages 14 and 15 for site plan requirements.

Identify site access.

New Access	On Road	Access Type		Driveway Spacing		
	Road Name	Permitted Movements	Traffic Control	Distance (ft)	Direction	Nearest Intersection / Access
Access A	Dallas Stanley Hwy	Conventional Full-Mvmt	2-Way Stop	1500	West	Kiser Dairy Rd
Access B	Kaiser Dairy Rd	Conventional Full-Mvmt	2-Way Stop	600	North	Dallas Stanley Hwy
Access C						
Access D						
Access E						
Access F						
Access G						
Access H						
Existing Access	Existing Intersection of		Access Modification	Proposed Interconnectivity (If Applicable)		
	Road A	Road B		Connector #	Road Connected	Adjacent Development
Access 1				Connector 1		
Access 2				Connector 2		
Access 3				Connector 3		
Access 4				Connector 4		

Additional access clarifications and provisions (e.g., proposed control-of-access or median breaks, modifications of existing access, loading/unloading area access, bike/pedestrian accommodation).

Proposed K-12 School Site

- NCDOT [MSTA School Traffic Calculator](#) for Select School Type shall be used.
- Peak Hour Factors (PHFs) shall be adjusted/weighted for new school trips (0.5 PHF by default).
- Internal school circulation analysis is required, and should be submitted in advance or concurrent with the TIA submittal.
- Clarify traffic operation plans (e.g. traffic circulation pattern, pedestrian access, drop-off/pick-up zone location and configuration, queue storage area and, if applicable, staggered start times).



NCDOT TIA Scoping Checklist



Trip Distribution

- Trip distribution diagrams are submitted concurrently with this document (attach separate sheets).
- Trip distribution diagrams will be submitted separately, along with supporting information, to the District Engineer for review and approval prior to capacity analysis. The trip distribution shall be based on the current and anticipated traffic patterns, as well as instructions noted below.

If required by the District Engineer, the following additional diagrams shall also be submitted:

- Mixed-Use Developments (separate diagrams for residential, commercial, and office trips)
- Inter-Development Trips (if 'internal' trips cross public streets)
- Pass-By Trips
- Diverted Trips
- Each Analysis Period

Mode Split

- Provide Data Source and Justification

Mode \ Period	Auto		
AM Peak	%	%	%
PM Peak	%	%	%
Daily	%	%	%
	%	%	%

- Identify proper infrastructure and accommodation for other modes of travel.

Analysis Peak Periods:

- Weekday AM Peak 7:00-9:00 AM
- Weekday PM Peak 4:00-6:00 PM
- Weekday Midday Peak _____
- Weekday PM School Peak _____
- Weekend _____ Peak _____
- Other _____



NCDOT TIA Scoping Checklist



Study Area Intersections and Data Collection

The study area shall include the site access intersections (both new and existing) identified under “Site Plan and Access” on page 1, as well as the following external and, if applicable, internal intersections.

External Intersection	Intersection of		Traffic Control	Intersection Turning Movement Counts			Notes
	Road A	Road B		New / Existing	Date of Counts	Growth Adjustment	
#1	Dallas Stanley Hy	Kiser Dairy Rd	Signal	Require New Counts			
#2							
#3							
#4							
#5							
#6							
#7							
#8							
#9							
#10							
#11							
#12							

Internal Intersection	Intersection of		Access Type		Intersection Spacing		
	Road A	Road B	Traffic Control	Permitted Movements	Distance (ft)	Direction	Nearest Intersection
#101							
#102							
#103							
#104							
#105							

The following data will be collected:

- New traffic turning movement counts in 15-min intervals 5-min intervals (near schools)
 Unless otherwise noted above, new traffic counts shall be collected at the existing study intersections during the analysis periods. Weekday counts shall avoid Mondays, Fridays, holidays, school breaks, road closures, and major weather events.
- To account for the impact of existing and/or proposed school traffic, PHFs will be adjusted for:
 intersections numbered: _____
 and access points numbered: _____
- Traffic Forecast Data for TIP: _____
- Roadway/Intersection Configuration & Traffic Control
- Traffic Signal Phasing & Timing Data
- Crash Data: _____ Period: _____
- Other: _____



NCDOT TIA Scoping Checklist



Future Year Conditions

Project Build-Out Year: _____ 2028 _____

Future Analysis Year(s): _____

Identify below any funded/committed future transportation improvements, as well as any approved but incomplete developments near the site.

Funded STIP / Local CIP Project	Project Description		Year Complete
Nearby Approved Development	Location	Future Land Use (exclude any completed phases)	Committed Improvements

Annual Growth Factor: 2 %

Justification/Data Source: NCDOT ADTs

Local Comprehensive Transportation Plan Compliance

Identify Applicable Local Transportation Planning Documents

Identify Applicable Roadways inside the Study Area

Road Name	Classification	Speed Limit	Proposed Cross-Section	Proposed Right-of-Way	Compliance Requirements	Affect Study Intersection #



NCDOT TIA Scoping Checklist



Study Method

The traffic analysis shall follow the current [NCDOT Congestion Management Capacity Analysis Guidelines](#), [Policy on Street and Driveway Access to North Carolina Highways](#), and use the current approved version of analysis software (e.g. Synchro/SimTraffic, HCS, Sidra Intersection, TransModeler).

The study shall include the following analysis scenarios for each analysis period.

1. Existing Conditions
2. Future No-Build Conditions (existing + background growth + approved developments + committed or funded improvements)
3. Future Build Conditions (future no-build + site trips)
4. Future Build with Improvements Conditions (future build traffic with improvements to mitigate the proposed development's impacts) and, if applicable:
5. TIP Design Year Analysis _____
6. Alternative Access Scenario (without proposed control-of-access or median break / modification)

The following additional analysis/outputs should be provided as warranted:

- Signal Warrant Analysis for accesses/intersections _____
- Multi-Modal Level of Service Analysis
- School Loading Zone Traffic Simulation
- Phasing Analysis (scope separately as needed)
- Safety/Crash Analysis
- Control-of-Access Modification Justification
- Median Break / Modification Justification
- Other _____

Submittals

In addition to the hardcopies required below, the TIA Consultant shall provide the District Engineer and, if required, the local government an electronic copy of the study documents, including the latest site plan, figures and appendices, in searchable PDF files and the original traffic analysis files (e.g., Synchro, HCS).

To expedite review, the NCDOT electronic submittals shall also be delivered concurrently to:

- Div. Traffic Engr Regional Traffic Engr Congestion Management Other _____

Submittals	NCDOT		Local Government	
	Electronic	Hardcopy	Electronic	Hardcopy
Trip Generation & Distribution	Required	1	Required	1
Draft TIA Report	Required	1	Required	1
Final Sealed TIA Report	Required	1	Required	1

- Additional Comments** (municipal TIA requirements, approved variations from NCDOT guidelines)



NCDOT TIA Scoping Checklist



Agreement by All Parties

The undersigned agree to the contents and methodology described above for completing the required traffic impact analysis for the proposed development identified herein. Any changes to the above methodology contemplated by the Applicant or the TIA Consultant must be submitted to the District Engineer in writing. If approved by NCDOT, then such changes may be accepted for the TIA report. Subsequent revisions to the development plan (e.g. land use, density, site access, or schedule) may require additional scoping and analysis, and may modify the TIA requirements.

This agreement shall become effective on the date approved by NCDOT, and shall expire ____ months after the effective date or upon significant changes to the roadway network and/or development assumptions, whichever occurs first. Once expired, renewal or re-scoping will be required for subsequent TIA submittals.

APPLICANT

<u><i>Brice Dimitruk</i></u>	Brice Dimitruk	5/3/24
Signature	Print Name	Date

TIA CONSULTANT

<u><i>Nicholas E. Burns</i></u>	Nicholas E. Burns, PE	5/3/24
Signature	Print Name	Date

LOCAL GOVERNMENT REPRESENTATIVE (If Applicable)

_____	_____	_____
Signature	Print Name	Date

Email concurrence may be used in lieu of the signature.

NCDOT DISTRICT REPRESENTATIVE

Reviewed and approved by the NCDOT Division 12 District 1 on _____.

_____	_____
Signature	Print Name

Email concurrence may be used in lieu of the signature.

APPENDIX B

TRAFFIC COUNT DATA



TRAFFIC DATA COLLECTION

File Name : Dallas(NC-275 & Kiser Dairy Road)
 Site Code :
 Start Date : 5/16/2024
 Page No : 1

Groups Printed- Cars + - Trucks

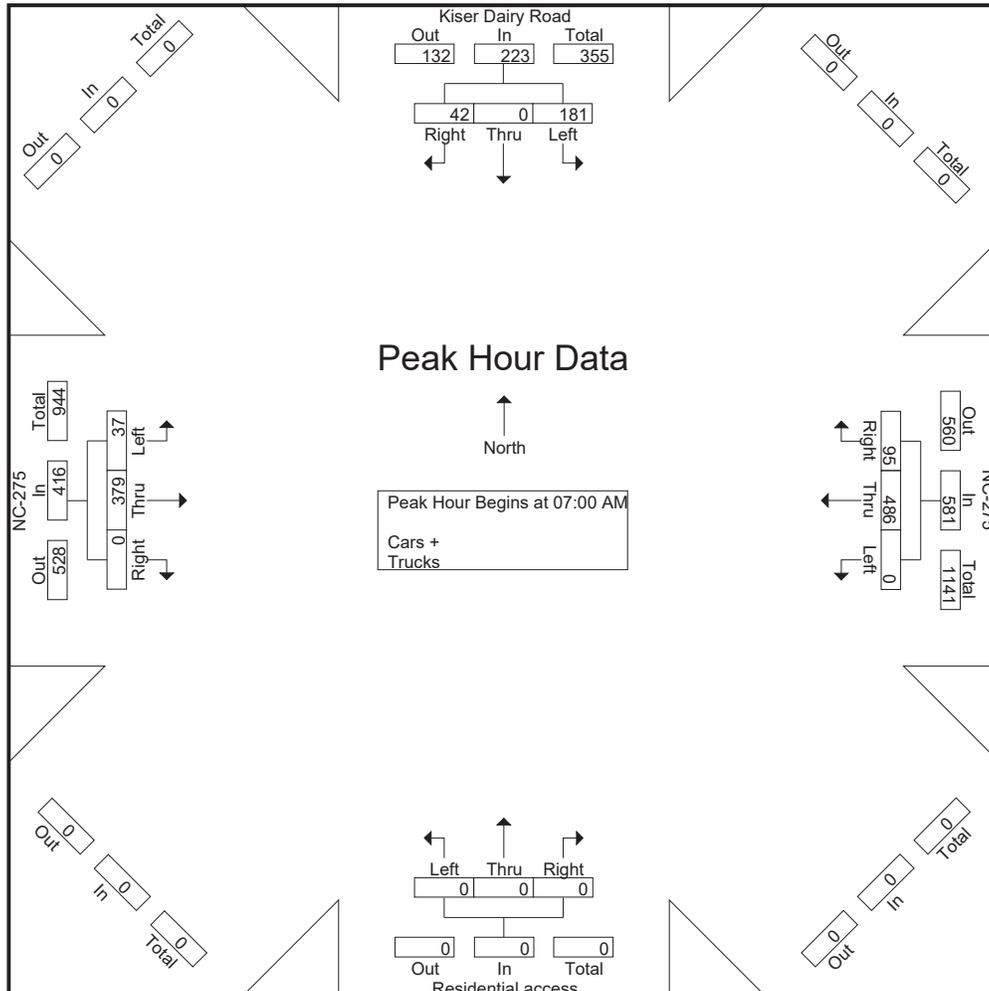
Start Time	Kiser Dairy Road Southbound				NC-275 Westbound				Residential access Northbound				NC-275 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	38	0	10	48	0	102	15	117	0	0	0	0	7	103	0	110	275
07:15 AM	43	0	11	54	0	118	26	144	0	0	0	0	7	91	0	98	296
07:30 AM	46	0	9	55	0	138	27	165	0	0	0	0	11	86	0	97	317
07:45 AM	54	0	12	66	0	128	27	155	0	0	0	0	12	99	0	111	332
Total	181	0	42	223	0	486	95	581	0	0	0	0	37	379	0	416	1220
08:00 AM	40	0	10	50	0	95	26	121	0	0	0	0	3	91	0	94	265
08:15 AM	36	0	12	48	0	93	18	111	0	0	0	0	12	75	0	87	246
08:30 AM	31	0	13	44	0	74	15	89	0	0	0	0	7	67	0	74	207
08:45 AM	25	0	10	35	0	77	11	88	0	0	0	0	6	51	0	57	180
Total	132	0	45	177	0	339	70	409	0	0	0	0	28	284	0	312	898
Grand Total	313	0	87	400	0	825	165	990	0	0	0	0	65	663	0	728	2118
Apprch %	78.2	0	21.8		0	83.3	16.7		0	0	0		8.9	91.1	0		
Total %	14.8	0	4.1	18.9	0	39	7.8	46.7	0	0	0	0	3.1	31.3	0	34.4	
Cars +	304	0	78	382	0	799	159	958	0	0	0	0	52	637	0	689	2029
% Cars +	97.1	0	89.7	95.5	0	96.8	96.4	96.8	0	0	0	0	80	96.1	0	94.6	95.8
Trucks	9	0	9	18	0	26	6	32	0	0	0	0	13	26	0	39	89
% Trucks	2.9	0	10.3	4.5	0	3.2	3.6	3.2	0	0	0	0	20	3.9	0	5.4	4.2



TRAFFIC DATA COLLECTION

File Name : Dallas(NC-275 & Kiser Dairy Road)
 Site Code :
 Start Date : 5/16/2024
 Page No : 2

Start Time	Kiser Dairy Road Southbound				NC-275 Westbound				Residential access Northbound				NC-275 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	38	0	10	48	0	102	15	117	0	0	0	0	7	103	0	110	275
07:15 AM	43	0	11	54	0	118	26	144	0	0	0	0	7	91	0	98	296
07:30 AM	46	0	9	55	0	138	27	165	0	0	0	0	11	86	0	97	317
07:45 AM	54	0	12	66	0	128	27	155	0	0	0	0	12	99	0	111	332
Total Volume	181	0	42	223	0	486	95	581	0	0	0	0	37	379	0	416	1220
% App. Total	81.2	0	18.8		0	83.6	16.4		0	0	0		8.9	91.1	0		
PHF	.838	.000	.875	.845	.000	.880	.880	.880	.000	.000	.000	.000	.771	.920	.000	.937	.919





TRAFFIC DATA COLLECTION

File Name : Dallas(NC-275 & Kiser Dairy Road)
 Site Code :
 Start Date : 5/16/2024
 Page No : 1

Groups Printed- Cars + - Trucks

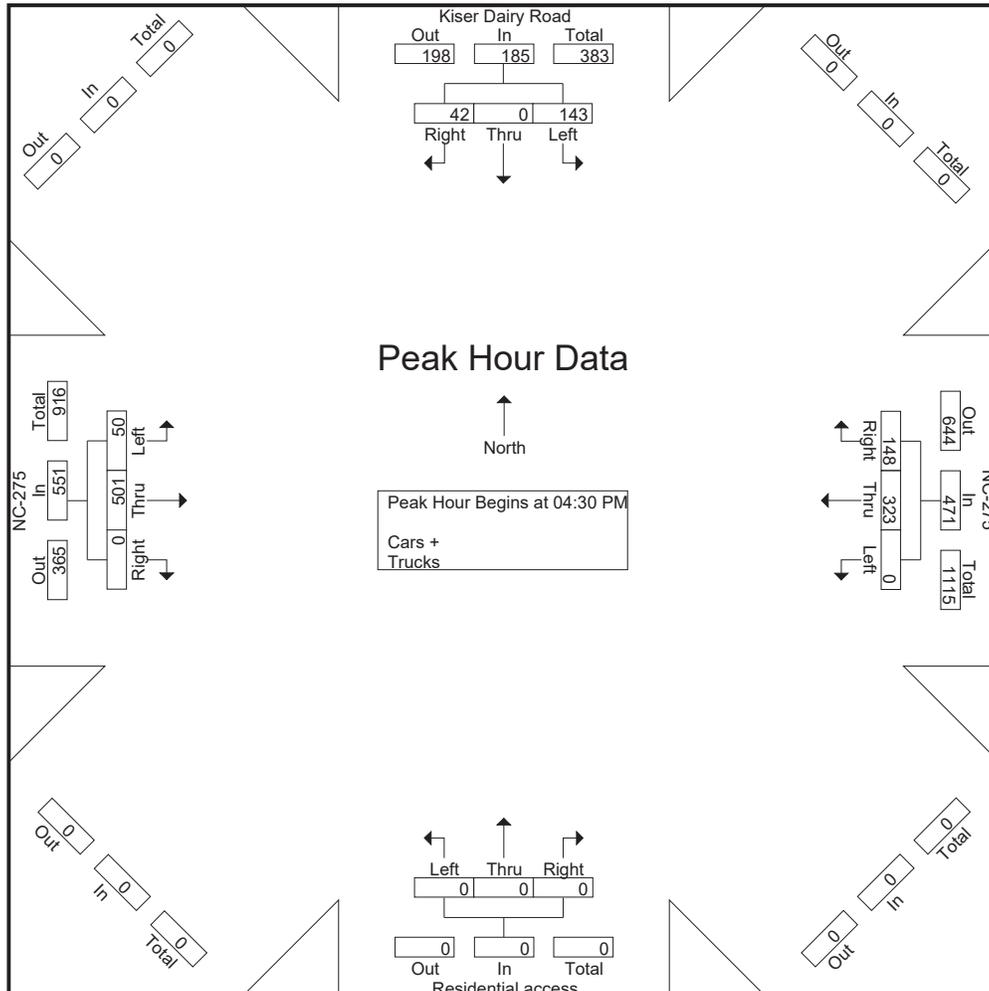
Start Time	Kiser Dairy Road Southbound				NC-275 Westbound				Residential access Northbound				NC-275 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	40	0	4	44	0	99	38	137	0	0	0	0	10	102	0	112	293
04:15 PM	18	0	12	30	0	90	29	119	0	0	0	0	7	100	0	107	256
04:30 PM	35	0	14	49	0	60	30	90	0	0	0	0	16	124	0	140	279
04:45 PM	38	0	8	46	0	73	50	123	0	0	0	0	11	137	0	148	317
Total	131	0	38	169	0	322	147	469	0	0	0	0	44	463	0	507	1145
05:00 PM	30	0	10	40	0	92	34	126	0	0	0	0	10	112	0	122	288
05:15 PM	40	0	10	50	0	98	34	132	0	0	0	0	13	128	0	141	323
05:30 PM	45	0	4	49	0	69	49	118	0	0	0	0	8	86	0	94	261
05:45 PM	20	0	10	30	0	106	59	165	0	0	0	0	10	129	0	139	334
Total	135	0	34	169	0	365	176	541	0	0	0	0	41	455	0	496	1206
Grand Total	266	0	72	338	0	687	323	1010	0	0	0	0	85	918	0	1003	2351
Apprch %	78.7	0	21.3		0	68	32		0	0	0		8.5	91.5	0		
Total %	11.3	0	3.1	14.4	0	29.2	13.7	43	0	0	0	0	3.6	39	0	42.7	
Cars +	258	0	70	328	0	672	319	991	0	0	0	0	83	900	0	983	2302
% Cars +	97	0	97.2	97	0	97.8	98.8	98.1	0	0	0	0	97.6	98	0	98	97.9
Trucks	8	0	2	10	0	15	4	19	0	0	0	0	2	18	0	20	49
% Trucks	3	0	2.8	3	0	2.2	1.2	1.9	0	0	0	0	2.4	2	0	2	2.1



TRAFFIC DATA COLLECTION

File Name : Dallas(NC-275 & Kiser Dairy Road)
 Site Code :
 Start Date : 5/16/2024
 Page No : 2

Start Time	Kiser Dairy Road Southbound				NC-275 Westbound				Residential access Northbound				NC-275 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	35	0	14	49	0	60	30	90	0	0	0	0	16	124	0	140	279
04:45 PM	38	0	8	46	0	73	50	123	0	0	0	0	11	137	0	148	317
05:00 PM	30	0	10	40	0	92	34	126	0	0	0	0	10	112	0	122	288
05:15 PM	40	0	10	50	0	98	34	132	0	0	0	0	13	128	0	141	323
Total Volume	143	0	42	185	0	323	148	471	0	0	0	0	50	501	0	551	1207
% App. Total	77.3	0	22.7		0	68.6	31.4		0	0	0	0	9.1	90.9	0		
PHF	.894	.000	.750	.925	.000	.824	.740	.892	.000	.000	.000	.000	.781	.914	.000	.931	.934



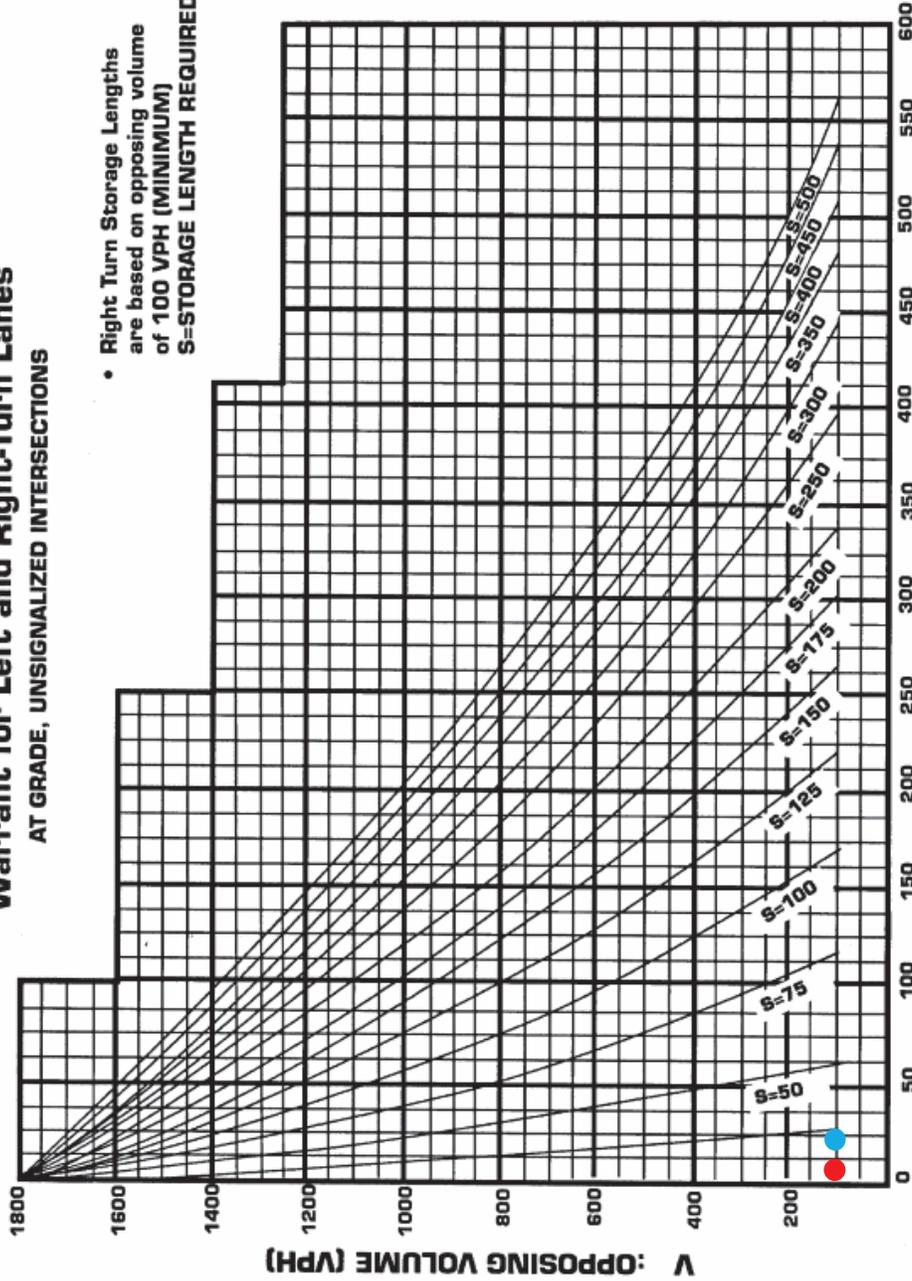
APPENDIX C

TURN LANE WARRANT ANALYSIS

Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

2028
Dallas Stanley Hwy & Access A
Westbound Right Turn

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
- S=STORAGE LENGTH REQUIRED



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

V_L: LEFT TURNING VOLUME (VPH)
V_R: RIGHT TURNING VOLUME (VPH)

- AM (VR=7, VO=100)
- PM (VR=24, VO=100)

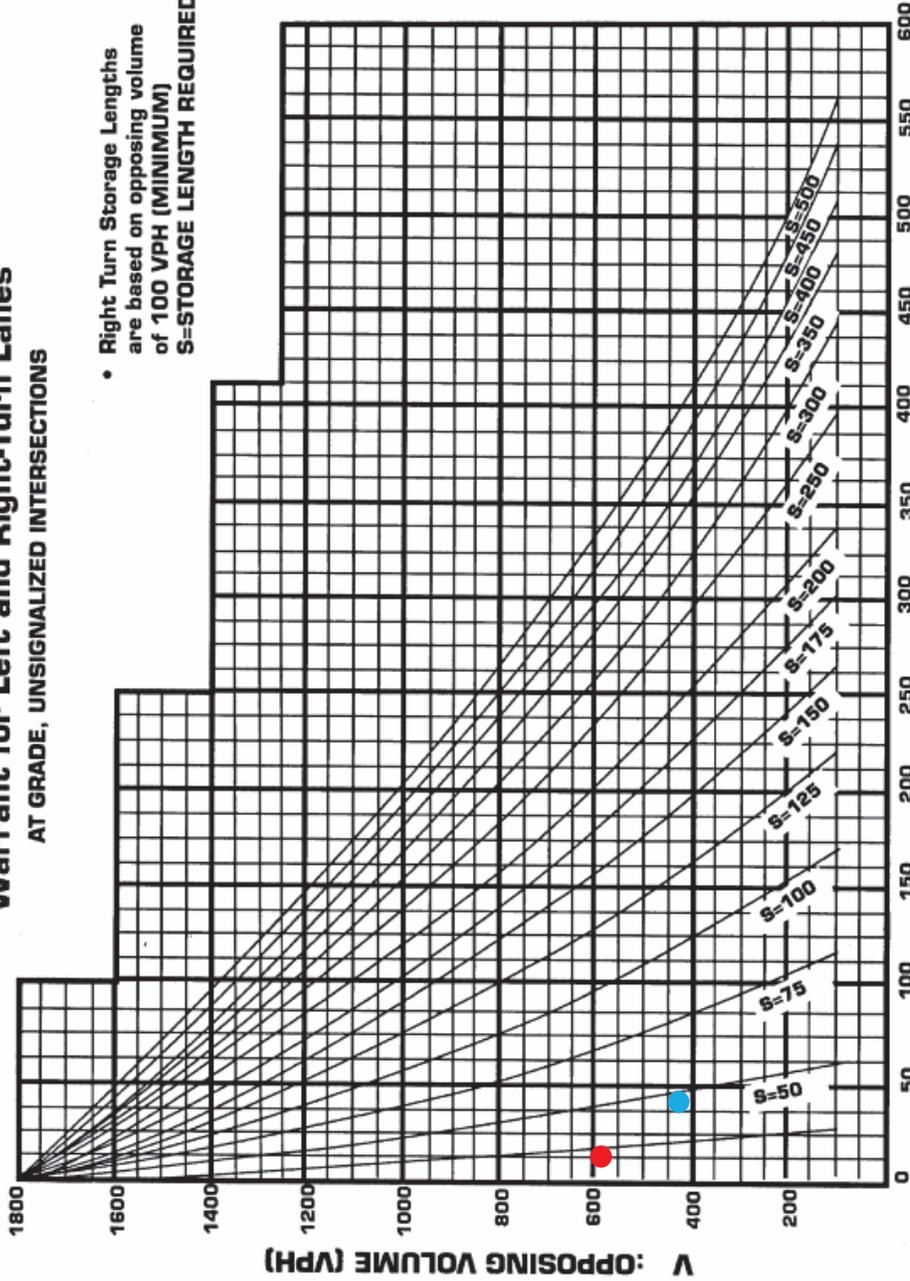
Warrant for Left and Right-Turn Lanes

AT GRADE, UNSIGNALIZED INTERSECTIONS

2028

Dallas Stanley Hwy & Access A
Eastbound Left Turn

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
- S=STORAGE LENGTH REQUIRED



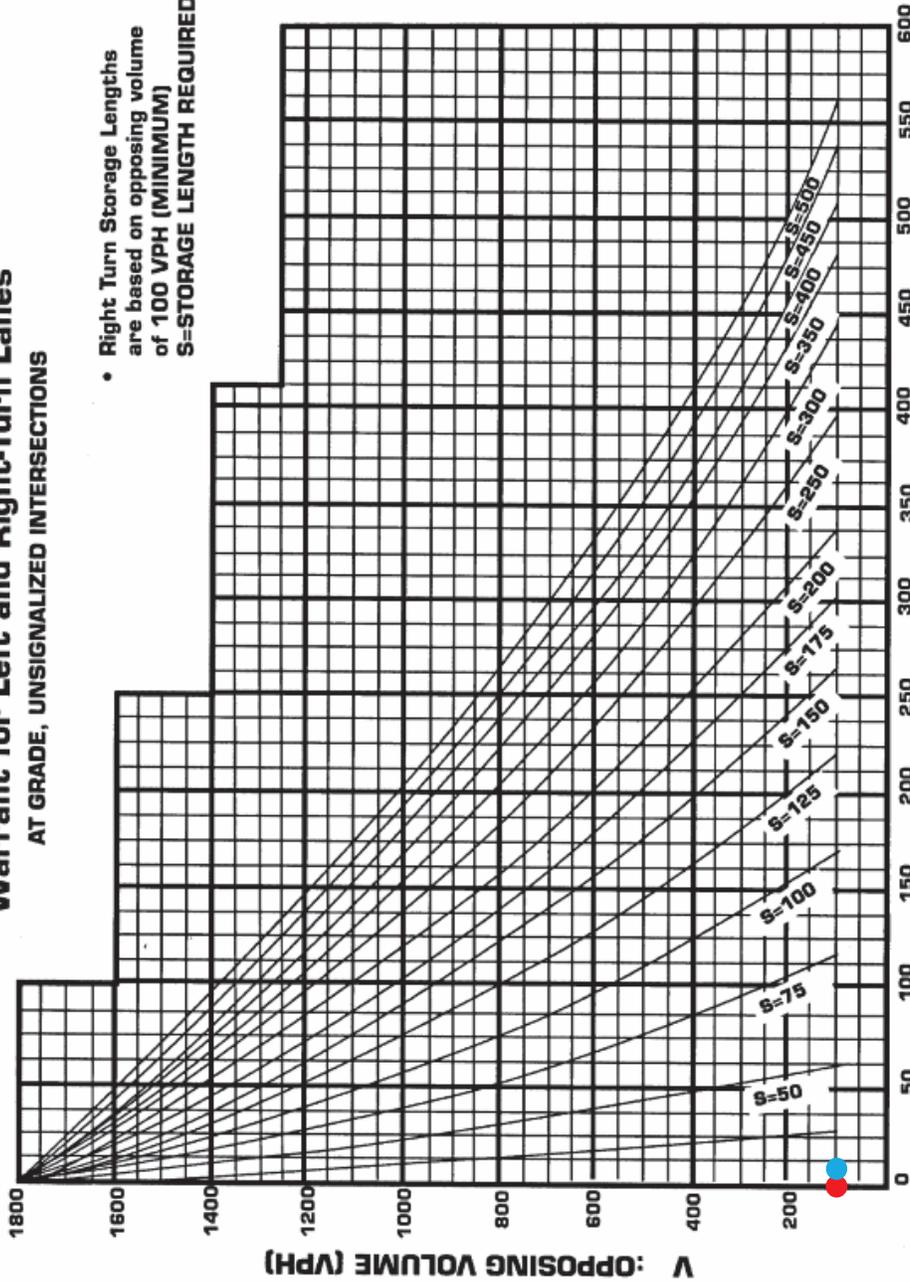
Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

V_L: LEFT TURNING VOLUME (VPH)
V_R: RIGHT TURNING VOLUME (VPH)

- AM (VL=13, VO=582)
- PM (VL=43, VO=422)

Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
S=STORAGE LENGTH REQUIRED



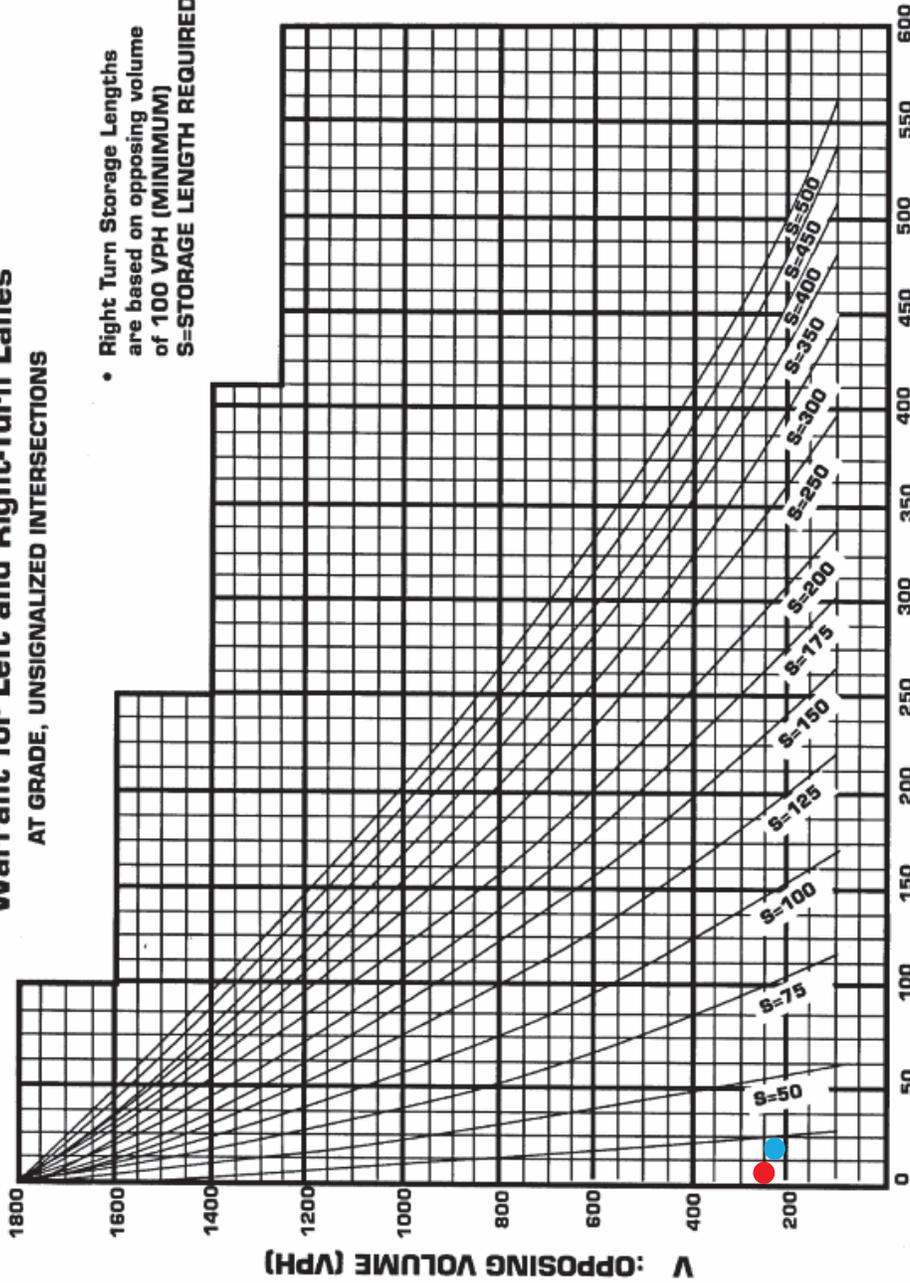
Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

V_L: LEFT TURNING VOLUME (VPH)
V_R: RIGHT TURNING VOLUME (VPH)

2028
Kiser Dairy Road & Access B
Southbound Right Turn

- AM (VR=3, VO=100)
- PM (VR=10, VO=100)

Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS



Note: Where adjacent signalization may provide opportunities for gaps in the traffic stream a reduction in the above storage values can be considered on a case by case basis.

V_L: LEFT TURNING VOLUME (VPH)
V_R: RIGHT TURNING VOLUME (VPH)

2028
Kiser Dairy Road & Access B
Northbound Left Turn

● AM (VL=5, VO=244)

● PM (VL=19, VO=210)

APPENDIX D

SYNCHRO CAPACITY ANALYSIS REPORTS

Lanes, Volumes, Timings
3: Dallas Stanley Highway & Kiser Dairy Road

Existing (2024) AM
Dallas Stanley Highway Residential TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	37	379	486	95	181	42
Future Volume (vph)	37	379	486	95	181	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.978		0.974	
Flt Protected		0.996			0.961	
Satd. Flow (prot)	0	1855	1822	0	1744	0
Flt Permitted		0.902			0.961	
Satd. Flow (perm)	0	1680	1822	0	1744	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		1496	1220		557	
Travel Time (s)		22.7	18.5		8.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	41	421	540	106	201	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	462	646	0	248	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	
Detector Template	Left					
Leading Detector (ft)	20	426	426		60	
Trailing Detector (ft)	0	110	110		0	
Detector 1 Position(ft)	0	110	110		0	
Detector 1 Size(ft)	20	6	6		60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		420	420			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		3.5	3.5			
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	12.0	12.0	12.0		7.0	

Lanes, Volumes, Timings
 3: Dallas Stanley Highway & Kiser Dairy Road

Existing (2024) AM
 Dallas Stanley Highway Residential TIS

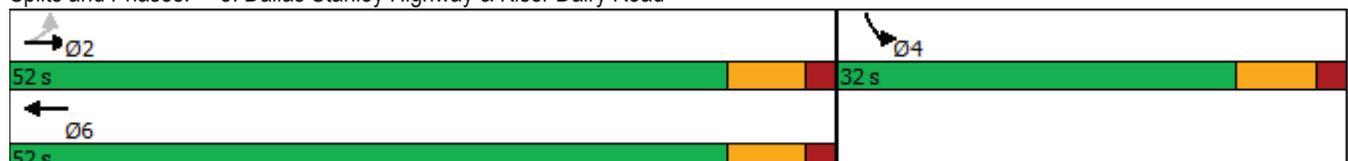


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	19.0	19.0	19.0		14.0	
Total Split (s)	52.0	52.0	52.0		32.0	
Total Split (%)	61.9%	61.9%	61.9%		38.1%	
Maximum Green (s)	45.0	45.0	45.0		25.0	
Yellow Time (s)	5.0	5.0	5.0		5.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	Min	Min	Min		None	
Act Effect Green (s)		26.1	26.1		14.0	
Actuated g/C Ratio		0.51	0.51		0.28	
v/c Ratio		0.54	0.69		0.52	
Control Delay		11.2	14.1		21.9	
Queue Delay		0.0	0.0		0.0	
Total Delay		11.2	14.1		21.9	
LOS		B	B		C	
Approach Delay		11.2	14.1		21.9	
Approach LOS		B	B		C	
Queue Length 50th (ft)		75	117		57	
Queue Length 95th (ft)		189	289		163	
Internal Link Dist (ft)		1416	1140		477	
Turn Bay Length (ft)						
Base Capacity (vph)		1490	1616		1000	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.31	0.40		0.25	

Intersection Summary

Area Type: Other
 Cycle Length: 84
 Actuated Cycle Length: 50.9
 Natural Cycle: 45
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 14.5
 Intersection LOS: B
 Intersection Capacity Utilization 71.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: Dallas Stanley Highway & Kiser Dairy Road



Lanes, Volumes, Timings
3: Dallas Stanley Highway & Kiser Dairy Road

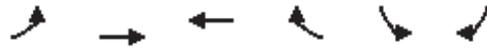
Existing (2024) PM
Dallas Stanley Highway Residential TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	50	501	323	148	143	42
Future Volume (vph)	50	501	323	148	143	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.958		0.969	
Flt Protected		0.995			0.963	
Satd. Flow (prot)	0	1853	1785	0	1738	0
Flt Permitted		0.919			0.963	
Satd. Flow (perm)	0	1712	1785	0	1738	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		1496	1220		557	
Travel Time (s)		22.7	18.5		8.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	56	557	359	164	159	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	613	523	0	206	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	
Detector Template	Left					
Leading Detector (ft)	20	426	426		60	
Trailing Detector (ft)	0	110	110		0	
Detector 1 Position(ft)	0	110	110		0	
Detector 1 Size(ft)	20	6	6		60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		420	420			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		3.5	3.5			
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	12.0	12.0	12.0		7.0	

Lanes, Volumes, Timings
 3: Dallas Stanley Highway & Kiser Dairy Road

Existing (2024) PM
 Dallas Stanley Highway Residential TIS

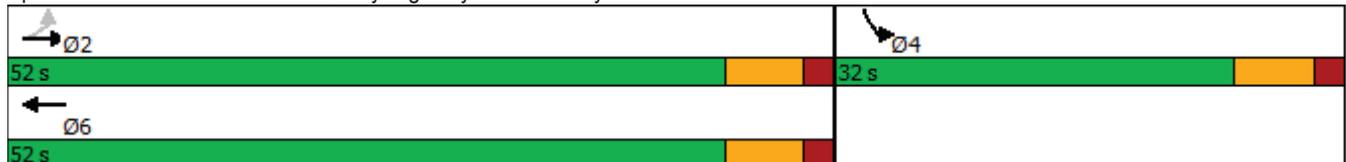


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	19.0	19.0	19.0		14.0	
Total Split (s)	52.0	52.0	52.0		32.0	
Total Split (%)	61.9%	61.9%	61.9%		38.1%	
Maximum Green (s)	45.0	45.0	45.0		25.0	
Yellow Time (s)	5.0	5.0	5.0		5.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	Min	Min	Min		None	
Act Effect Green (s)		26.9	26.9		12.6	
Actuated g/C Ratio		0.54	0.54		0.25	
v/c Ratio		0.67	0.55		0.47	
Control Delay		12.8	10.3		21.3	
Queue Delay		0.0	0.0		0.0	
Total Delay		12.8	10.3		21.3	
LOS		B	B		C	
Approach Delay		12.8	10.3		21.3	
Approach LOS		B	B		C	
Queue Length 50th (ft)		104	80		45	
Queue Length 95th (ft)		254	195		132	
Internal Link Dist (ft)		1416	1140		477	
Turn Bay Length (ft)						
Base Capacity (vph)		1550	1616		984	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.40	0.32		0.21	

Intersection Summary

Area Type: Other
 Cycle Length: 84
 Actuated Cycle Length: 50
 Natural Cycle: 45
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 13.2
 Intersection LOS: B
 Intersection Capacity Utilization 78.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: Dallas Stanley Highway & Kiser Dairy Road



Lanes, Volumes, Timings
3: Dallas Stanley Highway & Kiser Dairy Road

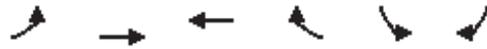
No-Build (2028) AM
Dallas Stanley Highway Residential TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	410	526	103	196	45
Future Volume (vph)	40	410	526	103	196	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.978		0.975	
Flt Protected		0.996			0.961	
Satd. Flow (prot)	0	1855	1822	0	1745	0
Flt Permitted		0.841			0.961	
Satd. Flow (perm)	0	1567	1822	0	1745	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		1496	1220		557	
Travel Time (s)		22.7	18.5		8.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	456	584	114	218	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	500	698	0	268	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	
Detector Template	Left					
Leading Detector (ft)	20	426	426		60	
Trailing Detector (ft)	0	110	110		0	
Detector 1 Position(ft)	0	110	110		0	
Detector 1 Size(ft)	20	6	6		60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		420	420			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		3.5	3.5			
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	12.0	12.0	12.0		7.0	

Lanes, Volumes, Timings
 3: Dallas Stanley Highway & Kiser Dairy Road

No-Build (2028) AM
 Dallas Stanley Highway Residential TIS

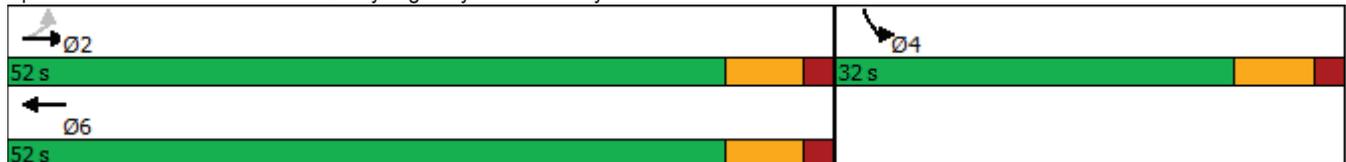


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	19.0	19.0	19.0		14.0	
Total Split (s)	52.0	52.0	52.0		32.0	
Total Split (%)	61.9%	61.9%	61.9%		38.1%	
Maximum Green (s)	45.0	45.0	45.0		25.0	
Yellow Time (s)	5.0	5.0	5.0		5.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	Min	Min	Min		None	
Act Effect Green (s)		28.7	28.7		15.2	
Actuated g/C Ratio		0.52	0.52		0.28	
v/c Ratio		0.61	0.73		0.55	
Control Delay		12.9	15.5		24.2	
Queue Delay		0.0	0.0		0.0	
Total Delay		12.9	15.5		24.2	
LOS		B	B		C	
Approach Delay		12.9	15.5		24.2	
Approach LOS		B	B		C	
Queue Length 50th (ft)		93	144		71	
Queue Length 95th (ft)		228	338		186	
Internal Link Dist (ft)		1416	1140		477	
Turn Bay Length (ft)						
Base Capacity (vph)		1320	1535		941	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.38	0.45		0.28	

Intersection Summary

Area Type: Other
 Cycle Length: 84
 Actuated Cycle Length: 54.9
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 16.2
 Intersection LOS: B
 Intersection Capacity Utilization 76.7%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: Dallas Stanley Highway & Kiser Dairy Road



Lanes, Volumes, Timings
3: Dallas Stanley Highway & Kiser Dairy Road

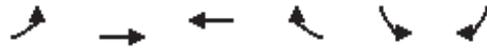
No-Build (2028) PM
Dallas Stanley Highway Residential TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Volume (vph)	54	542	350	160	155	45
Future Volume (vph)	54	542	350	160	155	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.958		0.970	
Flt Protected		0.995			0.963	
Satd. Flow (prot)	0	1853	1785	0	1740	0
Flt Permitted		0.913			0.963	
Satd. Flow (perm)	0	1701	1785	0	1740	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		1496	1220		557	
Travel Time (s)		22.7	18.5		8.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	60	602	389	178	172	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	662	567	0	222	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	
Detector Template	Left					
Leading Detector (ft)	20	426	426		60	
Trailing Detector (ft)	0	110	110		0	
Detector 1 Position(ft)	0	110	110		0	
Detector 1 Size(ft)	20	6	6		60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		420	420			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		3.5	3.5			
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	12.0	12.0	12.0		7.0	

Lanes, Volumes, Timings
 3: Dallas Stanley Highway & Kiser Dairy Road

No-Build (2028) PM
 Dallas Stanley Highway Residential TIS

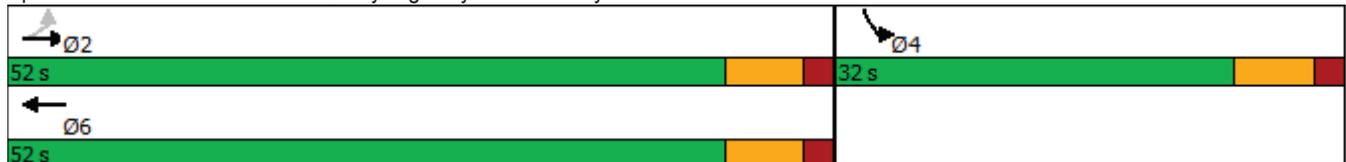


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	19.0	19.0	19.0		14.0	
Total Split (s)	52.0	52.0	52.0		32.0	
Total Split (%)	61.9%	61.9%	61.9%		38.1%	
Maximum Green (s)	45.0	45.0	45.0		25.0	
Yellow Time (s)	5.0	5.0	5.0		5.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	Min	Min	Min		None	
Act Effct Green (s)		29.7	29.7		13.7	
Actuated g/C Ratio		0.55	0.55		0.25	
v/c Ratio		0.71	0.58		0.50	
Control Delay		14.1	10.9		23.9	
Queue Delay		0.0	0.0		0.0	
Total Delay		14.1	10.9		23.9	
LOS		B	B		C	
Approach Delay		14.1	10.9		23.9	
Approach LOS		B	B		C	
Queue Length 50th (ft)		127	97		55	
Queue Length 95th (ft)		297	223		155	
Internal Link Dist (ft)		1416	1140		477	
Turn Bay Length (ft)						
Base Capacity (vph)		1465	1538		928	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.45	0.37		0.24	

Intersection Summary

Area Type: Other
 Cycle Length: 84
 Actuated Cycle Length: 54
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 14.4
 Intersection LOS: B
 Intersection Capacity Utilization 83.5%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 3: Dallas Stanley Highway & Kiser Dairy Road



Lanes, Volumes, Timings
3: Dallas Stanley Highway & Kiser Dairy Road

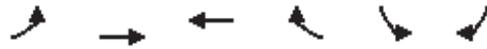
Build (2028) AM
Dallas Stanley Highway Residential TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Volume (vph)	41	431	533	107	209	49
Future Volume (vph)	41	431	533	107	209	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.977		0.975	
Flt Protected		0.996			0.961	
Satd. Flow (prot)	0	1855	1820	0	1745	0
Flt Permitted		0.814			0.961	
Satd. Flow (perm)	0	1516	1820	0	1745	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		1496	1220		557	
Travel Time (s)		22.7	18.5		8.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	46	479	592	119	232	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	525	711	0	286	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	
Detector Template	Left					
Leading Detector (ft)	20	426	426		60	
Trailing Detector (ft)	0	110	110		0	
Detector 1 Position(ft)	0	110	110		0	
Detector 1 Size(ft)	20	6	6		60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		420	420			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		3.5	3.5			
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	12.0	12.0	12.0		7.0	

Lanes, Volumes, Timings
 3: Dallas Stanley Highway & Kiser Dairy Road

Build (2028) AM
 Dallas Stanley Highway Residential TIS

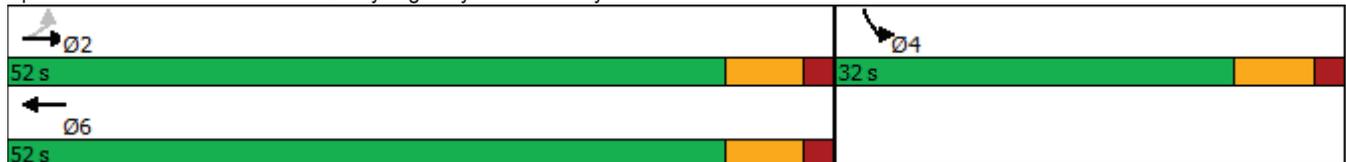


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	19.0	19.0	19.0		14.0	
Total Split (s)	52.0	52.0	52.0		32.0	
Total Split (%)	61.9%	61.9%	61.9%		38.1%	
Maximum Green (s)	45.0	45.0	45.0		25.0	
Yellow Time (s)	5.0	5.0	5.0		5.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	Min	Min	Min		None	
Act Effct Green (s)		29.6	29.6		15.9	
Actuated g/C Ratio		0.52	0.52		0.28	
v/c Ratio		0.66	0.75		0.58	
Control Delay		14.8	16.4		25.0	
Queue Delay		0.0	0.0		0.0	
Total Delay		14.8	16.4		25.0	
LOS		B	B		C	
Approach Delay		14.8	16.4		25.0	
Approach LOS		B	B		C	
Queue Length 50th (ft)		107	156		79	
Queue Length 95th (ft)		264	365		198	
Internal Link Dist (ft)		1416	1140		477	
Turn Bay Length (ft)						
Base Capacity (vph)		1254	1505		914	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.42	0.47		0.31	

Intersection Summary

Area Type: Other
 Cycle Length: 84
 Actuated Cycle Length: 56.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 17.5
 Intersection LOS: B
 Intersection Capacity Utilization 79.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: Dallas Stanley Highway & Kiser Dairy Road



Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	13	451	575	7	21	37
Future Vol, veh/h	13	451	575	7	21	37
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	501	639	8	23	41

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	647	0	-	0	1172 643
Stage 1	-	-	-	-	643 -
Stage 2	-	-	-	-	529 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	939	-	-	-	213 473
Stage 1	-	-	-	-	523 -
Stage 2	-	-	-	-	591 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	939	-	-	-	209 473
Mov Cap-2 Maneuver	-	-	-	-	209 -
Stage 1	-	-	-	-	512 -
Stage 2	-	-	-	-	591 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	939	-	-	-	325
HCM Lane V/C Ratio	0.015	-	-	-	0.198
HCM Control Delay (s)	8.9	0	-	-	18.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	8	17	5	143	241	4
Future Vol, veh/h	8	17	5	143	241	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	19	6	159	268	4

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	441	270	272	0	-	0
Stage 1	270	-	-	-	-	-
Stage 2	171	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	574	769	1291	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	859	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	571	769	1291	-	-	-
Mov Cap-2 Maneuver	571	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	859	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1291	-	692	-	-
HCM Lane V/C Ratio	0.004	-	0.04	-	-
HCM Control Delay (s)	7.8	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lanes, Volumes, Timings
3: Dallas Stanley Highway & Kiser Dairy Road

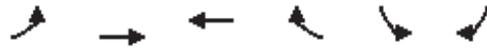
Build (2028) PM
Dallas Stanley Highway Residential TIS



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	59	556	374	174	163	48
Future Volume (vph)	59	556	374	174	163	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.957		0.969	
Flt Protected		0.995			0.963	
Satd. Flow (prot)	0	1853	1783	0	1738	0
Flt Permitted		0.900			0.963	
Satd. Flow (perm)	0	1676	1783	0	1738	0
Right Turn on Red				No		No
Satd. Flow (RTOR)						
Link Speed (mph)		45	45		45	
Link Distance (ft)		1496	1220		557	
Travel Time (s)		22.7	18.5		8.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	66	618	416	193	181	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	684	609	0	234	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	
Detector Template	Left					
Leading Detector (ft)	20	426	426		60	
Trailing Detector (ft)	0	110	110		0	
Detector 1 Position(ft)	0	110	110		0	
Detector 1 Size(ft)	20	6	6		60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(ft)		420	420			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		3.5	3.5			
Turn Type	Perm	NA	NA		Prot	
Protected Phases		2	6		4	
Permitted Phases	2					
Detector Phase	2	2	6		4	
Switch Phase						
Minimum Initial (s)	12.0	12.0	12.0		7.0	

Lanes, Volumes, Timings
 3: Dallas Stanley Highway & Kiser Dairy Road

Build (2028) PM
 Dallas Stanley Highway Residential TIS

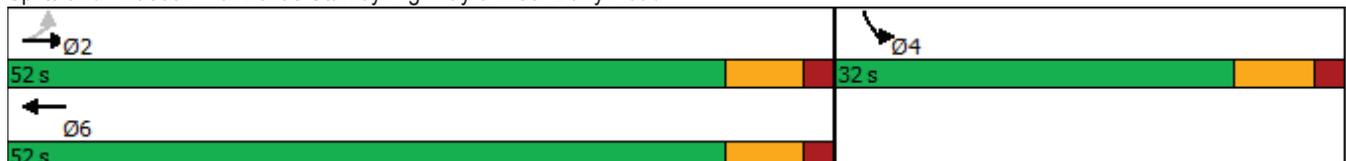


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	19.0	19.0	19.0		14.0	
Total Split (s)	52.0	52.0	52.0		32.0	
Total Split (%)	61.9%	61.9%	61.9%		38.1%	
Maximum Green (s)	45.0	45.0	45.0		25.0	
Yellow Time (s)	5.0	5.0	5.0		5.0	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		-2.0	-2.0		-2.0	
Total Lost Time (s)		5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		1.0	
Recall Mode	Min	Min	Min		None	
Act Effct Green (s)		34.0	34.0		14.6	
Actuated g/C Ratio		0.57	0.57		0.25	
v/c Ratio		0.71	0.60		0.55	
Control Delay		14.3	11.2		27.0	
Queue Delay		0.0	0.0		0.0	
Total Delay		14.3	11.2		27.0	
LOS		B	B		C	
Approach Delay		14.3	11.2		27.0	
Approach LOS		B	B		C	
Queue Length 50th (ft)		148	118		70	
Queue Length 95th (ft)		328	256		163	
Internal Link Dist (ft)		1416	1140		477	
Turn Bay Length (ft)						
Base Capacity (vph)		1357	1443		844	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.50	0.42		0.28	

Intersection Summary

Area Type: Other
 Cycle Length: 84
 Actuated Cycle Length: 59.2
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 15.0
 Intersection LOS: B
 Intersection Capacity Utilization 87.3%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 3: Dallas Stanley Highway & Kiser Dairy Road



Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	43	601	398	24	14	24
Future Vol, veh/h	43	601	398	24	14	24
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	668	442	27	16	27

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	469	0	-	0	1220 456
Stage 1	-	-	-	-	456 -
Stage 2	-	-	-	-	764 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1093	-	-	-	199 604
Stage 1	-	-	-	-	638 -
Stage 2	-	-	-	-	460 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1093	-	-	-	185 604
Mov Cap-2 Maneuver	-	-	-	-	185 -
Stage 1	-	-	-	-	593 -
Stage 2	-	-	-	-	460 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	17.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1093	-	-	-	329
HCM Lane V/C Ratio	0.044	-	-	-	0.128
HCM Control Delay (s)	8.4	0	-	-	17.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	6	11	19	214	200	10
Future Vol, veh/h	6	11	19	214	200	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	12	21	238	222	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	508	228	233	0	-	0
Stage 1	228	-	-	-	-	-
Stage 2	280	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	525	811	1335	-	-	-
Stage 1	810	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	516	811	1335	-	-	-
Mov Cap-2 Maneuver	516	-	-	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1335	-	675	-	-
HCM Lane V/C Ratio	0.016	-	0.028	-	-
HCM Control Delay (s)	7.7	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	451	575	7	21	37
Future Vol, veh/h	13	451	575	7	21	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	501	639	8	23	41

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	647	0	-	0	1172 643
Stage 1	-	-	-	-	643 -
Stage 2	-	-	-	-	529 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	939	-	-	-	213 473
Stage 1	-	-	-	-	523 -
Stage 2	-	-	-	-	591 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	939	-	-	-	210 473
Mov Cap-2 Maneuver	-	-	-	-	210 -
Stage 1	-	-	-	-	515 -
Stage 2	-	-	-	-	591 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	939	-	-	-	325
HCM Lane V/C Ratio	0.015	-	-	-	0.198
HCM Control Delay (s)	8.9	-	-	-	18.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	601	398	24	14	24
Future Vol, veh/h	43	601	398	24	14	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	668	442	27	16	27

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	469	0	-	0	1220 456
Stage 1	-	-	-	-	456 -
Stage 2	-	-	-	-	764 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1093	-	-	-	199 604
Stage 1	-	-	-	-	638 -
Stage 2	-	-	-	-	460 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1093	-	-	-	190 604
Mov Cap-2 Maneuver	-	-	-	-	190 -
Stage 1	-	-	-	-	610 -
Stage 2	-	-	-	-	460 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1093	-	-	-	335
HCM Lane V/C Ratio	0.044	-	-	-	0.126
HCM Control Delay (s)	8.4	-	-	-	17.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

APPENDIX E

SIMTRAFFIC QUEUING ANALYSIS REPORTS

Intersection: 3: Dallas Stanley Highway & Kiser Dairy Road

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	287	236	156
Average Queue (ft)	101	106	69
95th Queue (ft)	204	186	126
Link Distance (ft)	1452	1167	473
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Dallas Stanley Highway & Kiser Dairy Road

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	353	187	136
Average Queue (ft)	124	87	59
95th Queue (ft)	243	153	110
Link Distance (ft)	1452	1167	473
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Dallas Stanley Highway & Kiser Dairy Road

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	410	271	177
Average Queue (ft)	135	126	81
95th Queue (ft)	295	215	142
Link Distance (ft)	1452	1167	473
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Dallas Stanley Highway & Kiser Dairy Road

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	578	218	166
Average Queue (ft)	190	99	68
95th Queue (ft)	477	177	128
Link Distance (ft)	1452	1167	473
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Dallas Stanley Highway & Kiser Dairy Road

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	475	280	193
Average Queue (ft)	158	134	92
95th Queue (ft)	370	229	160
Link Distance (ft)	1446	1167	478
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Dallas Stanley Highway & Access A

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	62	62
Average Queue (ft)	8	30
95th Queue (ft)	37	56
Link Distance (ft)	1295	1102
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Kiser Dairy Road & Access B

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	36	27
Average Queue (ft)	19	1
95th Queue (ft)	44	11
Link Distance (ft)	1092	478
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Dallas Stanley Highway & Kiser Dairy Road

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	601	223	169
Average Queue (ft)	210	105	76
95th Queue (ft)	478	182	141
Link Distance (ft)	1446	1167	478
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Dallas Stanley Highway & Access A

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	95	53
Average Queue (ft)	19	24
95th Queue (ft)	64	50
Link Distance (ft)	1295	1102
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Kiser Dairy Road & Access B

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	36	33
Average Queue (ft)	14	3
95th Queue (ft)	40	19
Link Distance (ft)	1092	478
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Dallas Stanley Highway & Kiser Dairy Road

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	477	276	198
Average Queue (ft)	157	133	91
95th Queue (ft)	367	228	162
Link Distance (ft)	1446	1167	478
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Dallas Stanley Highway & Access A

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	32	64
Average Queue (ft)	5	30
95th Queue (ft)	22	56
Link Distance (ft)		1096
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	50	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 6: Kiser Dairy Road & Access B

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	36	21
Average Queue (ft)	19	1
95th Queue (ft)	44	10
Link Distance (ft)	1092	478
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Dallas Stanley Highway & Kiser Dairy Road

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	615	229	166
Average Queue (ft)	217	106	76
95th Queue (ft)	487	183	142
Link Distance (ft)	1446	1167	478
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Dallas Stanley Highway & Access A

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	44	59
Average Queue (ft)	11	24
95th Queue (ft)	37	51
Link Distance (ft)		1096
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	50	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	1	

Intersection: 6: Kiser Dairy Road & Access B

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	36	34
Average Queue (ft)	14	3
95th Queue (ft)	40	20
Link Distance (ft)	1092	478
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1

APPENDIX F

EXISTING SIGNAL PLANS AND TIMINGS

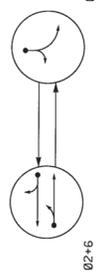
OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

LOOP	INDUCTIVE LOOPS		DETECTOR PROGRAMMING			
	SIZE (FT)	DISTANCE FROM STRIPING (FT)	TURNS	PHASE	CAUSING	EXTENSION
2A	6X6	420	5	2 Y Y	-	-
2B	6X6	110	4	2 Y Y	3.5	-
4A	6X6	0	2-4-2	4 Y Y	-	10
6A	6X6	420	5	6 Y Y	3.5	-
6B	6X6	110	4	6 Y Y	-	-

TABLE OF OPERATION

SIGNAL FACE	PHASE	
	1	2
21, 22	G R Y	G R Y
41, 42	G R Y	G R Y
61, 62	G R Y	G R Y

PHASING DIAGRAM



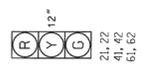
04

PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNIALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

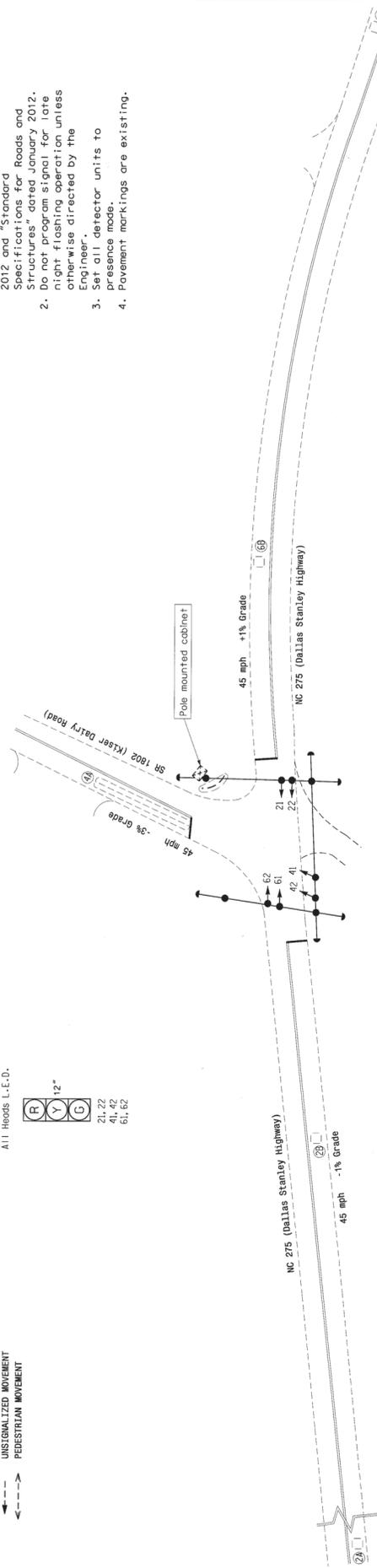
SIGNAL FACE I.D.

All Heads L-E-D.



NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Set all detector units to presence mode.
- Pavement markings are existing.



LEGEND

- | | |
|--|--|
| PROPOSED | EXISTING |
| Traffic Signal Head | Traffic Signal Head |
| Modified Signal Head | Modified Signal Head |
| Pedestrian Signal Head With Push Button & Sign | Pedestrian Signal Head With Push Button & Sign |
| Signal Pole with Guy | Signal Pole with Guy |
| Signal Pole with Sidewalk Guy | Signal Pole with Sidewalk Guy |
| Inductive Loop Detector Controller & Cabinet | Inductive Loop Detector Controller & Cabinet |
| Junction Box | Junction Box |
| 2-in Underground Conduit | 2-in Underground Conduit |
| Right of Way | Right of Way |
| Directional Arrow | Directional Arrow |

Plan of Record

PREPARED BY: C. PIERCE (T.M.) DATE: August 2013
 REVIEWED BY: T. WILLIAMS DATE: August 2013
 STAMPERS: T. Williams DATE: 8/21/13

Upgrade equipment to 2070

This plan of record was prepared for a condition as shown. It is not to be used for any other purpose. This plan may have been modified from the original design.

OASIS 2070L TIMING CHART

FEATURE	PHASE			
	2	4	6	6
Min Green 1*	14	7	14	14
Extension 1*	2.0	1.0	2.0	2.0
Max Green 1*	45	25	45	45
Yellow Clearance	5.1	4.0	5.1	5.1
Red Clearance	1.4	2.1	1.4	1.4
Red Recall	2.0	2.0	2.0	2.0
Walk 1*	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	-	-	-	-
Max Variable Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reboot *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	MIN RECALL	-	MIN RECALL	-
Vehicle Call Memory	YELLOW	-	YELLOW	-
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 4 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

Plan of Record

REVISION SEAL

DATE: 8/21/13

BY: T. Williams

SEAL

Professional Engineer

State of North Carolina

Professional No. 27262

SEAL

Not a certified document. This document was prepared, issued and sealed by Gene G. Murr, Jr., P.E. 14543 on 02/27/13. This document shall be considered a certified document.

NC 275 (Dallas Stanley Highway) at SR 1802 (Kiser Dairy Road)

DIVISION 12 - GASTON COUNTY NE of Dallas

DATE: OCTOBER 1993 REVISION BY: D. BERTLES

PREPARED BY: C. PIERCE

SCALE: 1" = 30'

12-1243