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October 20, 2015

Mr. Keith Bredehoeft
Public Works Director
City of Prairie Village
7700 Mission Road
Prairie Village, KS 66208

RE: Meadowbrook Redevelopment
Traffic Impact Study Review Comments
Prairie Village, Kansas

Dear Mr. Bredehoeft:

In response to your request, TranSystems has reviewed the traffic impact study for the Meadowbrook Redevelopment, dated July 29, 2015. The following is a list of our review comments.

General Traffic Study Comments:

1. There is no discussion of queuing in the study, however it is likely that queues exceed the available storage capacity of turn lanes at several study intersections.

2. There is no discussion of sight lines, especially at new or reconfigured intersections.

3. There needs to be some discussion about the new streets internal to the site and how they will function.

4. The main access drive on Nall Avenue will introduce southbound left-turn movements on Nall. Southbound traffic on Nall waiting to make left-turns will impede through traffic on this heavily traveled arterial street. A center left-turn lane should be considered on Nall Avenue.

5. The park access drive creates an offset intersection with Roe and 91st Street, which is undesirable. The park access drive should be aligned to intersect Roe at the 91st Street intersection. If that is not possible, the drive should be shifted as far north as possible to maximize the separation between the intersections.

6. There are several existing driveways on Rosewood Drive, just north of 95th Street. Southbound queuing is anticipated to block these drives. Additional analysis of this potential conflict is needed.

Detailed Traffic Study Comments:

7. The trip distribution on Page 4 in Tables 3 and 4 is specific. The distributions vary between the peak hours and for exiting versus entering traffic. Explanation is needed as to why there are differences.

8. Page 7 identifies allowing permissive left-turns at 95th & Nall. The potential consequences of that change related to safety should be addressed. Are there reasons why protected only left-turn phasing is used today?

9. Page 7 identifies adding a northbound right-turn lane. Is that improvement possible given the proximity of the development in the southeast corner of the intersection? If not, the lane should not be included in the analysis.

10. Table 8 on page 8 presents results for the Nall Avenue intersections by movement. This presentation is different than in Table 7 for the previous scenario which presents results by lane.

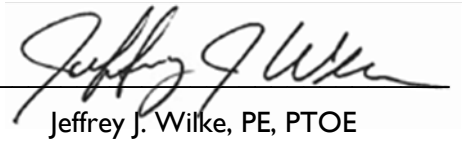
11. Table 8 shows 11 seconds of delay for the northbound left/thru lane at 91st and Roe during the AM peak hour. There is not a northbound left-turn movement at this intersection.

12. Table 10 on Page 11 indicates that operations at 91st & Roe improve from the previous scenario, but additional traffic is added. Is this correct?

13. The discussion on page 11 indicates that the parking lot drive intersection is within the queue length for northbound traffic on Nall. Should a raised median be considered on Nall to restrict left-turns?

We appreciate the opportunity to be of service to you and will be available to discuss these comments at your convenience.

Sincerely,
TRANSYSTEMS

By: 
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July 29, 2015

Ms. Leah Gitzgerald
VanTrust Real Estate, LLC
4900 Main Street, Suite 400
Kansas City, MO 64112

RE: Traffic Impact Study
Meadowbrook Redevelopment
Overland Park, KS

Dear Ms. Fitzgerald

In response to your request and authorization, Wilson & Company has completed a traffic impact study for the proposed development on the old Meadowbrook Country Club in Prairie Village, Kansas. The proposed development consists of a variety of land uses encompassing roughly 138 acres.

This report summarizes the results of our traffic study. This study is focused on the impact of the proposed development on the surrounding intersections in Overland Park, Kansas, during the A.M. and P.M. peak hours of a typical weekday. Included in this study are trip generation projections, volume/capacity analyses, and improvement to the street system to mitigate the impact of the proposed development.

PROPOSED DEVELOPMENT AND STUDY AREA

The proposed development is located in Prairie Village, Kansas, at the location of the old Meadowbrook Country Club. ***Figure A-1*** in ***Appendix A*** shows the location of the proposed development and its relationship with the surrounding streets. The proposed development is bounded by Nall Avenue on the west and 95th Street and 94th Terrace on the south. The remainder of the development is bounded by residences along Somerset Drive, 90th Street, and Roe Avenue on the north and east.

The proposed land use condition includes 330 units of senior housing, 280 units of apartments, 68 units of townhomes, 57 single family home units, a 50 room Inn, and 87 acres of public park. For analysis purposes, the proposed development was further broken down into two scenarios; All of the Proposed Development Without the Park (Development), and All Proposed Development Including the Park (Development Plus Park).

Access to the proposed development is to be provided from a main entrance at the intersection of Nall Avenue and 92nd Terrace. Secondary driveways on 94th Terrace and just north of the existing intersection of Roe Avenue and 91st Street also provide access to the site. A copy of the site plan showing driveway locations is included on ***Figure A-2.***

95th Street is an east/west road with two-lanes in each direction and left turn lanes at various intersections. The posted speed is 35 mph adjacent to the development. Nall Avenue is a north/south road with two-lanes in each direction, and left turn lanes at its intersections with 95th Street and Somerset Drive. The posted speed is 35 mph adjacent to the development. Somerset Drive and 90th Street are both east/west streets with posted speed limits of 30 and 25 mph, respectively. Roe Avenue is a north/south roadway with a posted speed limit of 35 mph.

To assess the impacts of the proposed development, several intersections were identified for study during the peak hours. The intersections are located in the immediate area of the site and include:

- Nall Avenue and 92nd Terrace
- Nall Avenue and 94th Terrace
- Rosewood and 95th Street
- Roe Avenue and 91st Street
- Nall Avenue and 91st Street and Somerset Drive
- Nall Avenue and 95th Street
- Roe Avenue and 95th Street
- Roe Avenue and 93rd Street
- Roe Avenue and 92nd Terrace
- Roe Avenue and 90th Street

Traffic counts were taken at the intersection on typical weekdays from March 31 to April 1, 2015 from 7:00 A.M. – 9:00 A.M. and 4:00 P.M. – 6:00 P.M. The existing lane configurations and peak hour traffic volumes are shown on ***Figures A-3 and A-4.***

ANALYSIS

The analysis of the proposed development's impact includes calculations of vehicle trip generation, distribution of trips onto the street network, and analyses of peak hour operations. Each of these analysis techniques and their results are described below.

TRIP GENERATION

The vehicle trips generated by the proposed development were calculated using the Institute of Transportation Engineers' Trip Generation, 9th Edition. The estimated daily, A.M. and P.M. peak hour traffic volumes associated with this development are shown on the following page in **Table 1** and the estimated traffic volumes associated with the Park in **Table 2.**

Table 1: Trip Generation Proposed Development								
Land Use	Intensity	Daily	A.M. Peak Hour			P.M. Peak Hour		
			In	Out	Total	In	Out	Total
Luxury Apartments	280	1,820	28	113	141	112	60	172
CCRC	330	792	40	21	61	29	36	65
Single Family Dwelling Unit	57	626	12	37	50	40	23	63
Townhomes (East)	34	252	4	18	22	17	8	25
Townhomes (West)	34	252	4	18	22	17	8	25
Inn	50	302	8	15	23	13	11	24
TOTAL		**4,043**	**96**	**222**	**318**	**228**	**146**	**374**

Due to limited and relatively volatile data available, a more rigorous procedure was used to project the trip generation of the proposed 87 acres of Park area. As of the date of this document the final plan for the Park has not been established, but the following is the plan at this time:

1. The existing clubhouse will remain and will be used on an interim basis as a local meeting space. Typical meetings may be: quarterly homes association meetings, holiday parties, wedding receptions, art classes, etc. The kitchen appliances in the facility will be removed.
2. The swimming pool will be removed.
3. There are four existing tennis courts. Two of the courts will be removed, two will remain.

ITE's Land Use: 412, County Park was used to calculate the trips generated by the Park area. ITE's description of the land use is as follows:

> "County parks are owned and operated by a county. The county parks surveyed vary widely as to location, type and number of facilities, including boating or swimming facilities, ball fields, soccer fields, camp sites, picnic facilities and general open space."

Based on ITE's description, it appears that the ancillary facilities of the County Park land use will generate more traffic than the meeting space and tennis courts of the Meadowbrook site. Therefore, the county park trip generation rate was used for the entire Park area and appears to be a conservative analysis. Further, since there is substantial variability in the data, for both the AM and PM peak hours a trip generation rate for an actual data point was used instead of the average rate. The data points used can be seen on the attached figures. The data points represent a park with an area slightly less than 50 acres. Based on these sources, **Table 2** shows the Park area of the Meadowbrook Redevelopment trip generation:

Table 2: Trip Generation Park Only								
Land Use	Intensity	Daily	A.M. Peak Hour			P.M. Peak Hour		
			In	Out	Total	In	Out	Total
County Park	86.7	198	17	11	28	84	53	137
TOTAL		**198**	**17**	**11**	**28**	**84**	**53**	**137**

More detailed information on trip generation calculations are included in ***Appendix B.***

TRIP DISTRIBUTION

The estimated peak hour trips generated by the Proposed Development were distributed onto the street system based on existing travel patterns and expected service area of the development. **Table 3** illustrated the general distribution patterns used in this study for Development only. **Table** 4 shows the general distribution patterns for the Park. The detailed distribution patterns through the study intersections are documented in ***Appendices B.***

Table 3: Development Trip Distribution				
To/From Direction & Route	Entering		Exiting	
	AM	PM	AM	PM
North on Nall Avenue	20%	10%	15%	15%
West on 91st Street	5%	5%	5%	5%
Northeast on Somerset Drive	5%	10%	5%	10%
West on 95th Street	15%	20%	20%	15%
South on Nall Avenue	25%	20%	15%	20%
South on Roe Avenue	5%	10%	15%	10%
East on 95th Street	15%	15%	15%	20%
North on Roe Avenue	10%	10%	10%	5%
TOTAL	**100%**	**100%**	**100%**	**100%**

Table 4: Park Only Distribution		
To/From Direction & Route	Entering	Exiting
	AM & PM	AM & PM
North on Nall Avenue	18%	19%
West on 91st Street	0%	0%
Northeast on Somerset Drive	13%	13%
West on Somerset Drive	19%	18%
West on 95th Street	14%	15%
South on Nall Avenue	16%	15%
South on Roe Avenue	6%	6%
East om 90th Street	4%	4%
East on 95th Street	6%	6%
North on Roe Avenue	4%	4%
TOTAL	**100%**	**100%**

TRAFFIC OPERATION ASSESSMENT

The operating characteristics of study area intersections were analyzed using Synchro 8.0, using methodologies from the 2010 Highway Capacity Manual (HCM) [TRB Special Report 209, 2000]. Intersection turning movement counts, the number of lanes and traffic control were used to determine existing and future levels of service. Level of service (LOS) ranges from A to F and describes traffic conditions at an intersection or on a roadway. LOS A, the highest grade, indicates a condition of little or no congestion and LOS F a condition with severe congestion, unstable traffic flow, and stop-and-go conditions. **Table 5** shows the Highway Capacity Manual definitions for LOS and the corresponding delay for unsignalized and signalized intersections.

Table 5: Intersection Level of Service Delay Thresholds

Level of Service (LOS)	Signalized	Unsignalized
A	< 10 Seconds	< 10 Seconds
B	< 20 Seconds	< 15 Seconds
C	< 35 Seconds	< 25 Seconds
D	< 55 Seconds	< 35 Seconds
E	< 80 Seconds	< 50 Seconds
F	≥ 80 Seconds	≥ 50 Seconds

For intersections, LOS is based on the average delay experienced by all traffic using the intersection during the busiest (peak) 15-minute period. LOS A through D is generally considered acceptable. Each of the aforementioned scenarios was analyzed during the weekday AM and PM peak hours. Under the existing scenario, existing cycle lengths, splits, and offsets were used in each of the time periods analyzed to reflect actual traffic operations, with signals currently being coordinated and some being fully actuated. Under the build scenarios, cycle lengths, splits, and offsets were optimized to reflect a completely coordinated signal system. The results are presented in the following summaries, and supporting calculations are presented in **Appendix C**.

Level of Service (LOS) analyses were performed using the Synchro software, which uses methodologies from the 2010 Highway Capacity Manual (HCM). The LOS values reported in this document are the HCM values.

EXISTING CONDITIONS

The results of the intersection analysis for the A.M. and P.M. peak hour existing conditions are summarized in **Table 6.** The study intersections were evaluated with the existing traffic volumes, traffic controls and lane configurations shown on ***Figures A-3 and A-4.***

Table 6: Existing Conditions				
Intersection	**A.M. Peak Hour**		**P.M. Peak Hour**	
Movement	**LOS[1]**	**Delay[2]**	**LOS[1]**	**Delay[2]**
Nall Avenue/Somerset Drive/91st Street				
All Movements (Signalized)	C	20.9	C	27.2
Nall Avenue/Main Access/92nd Terrace				
EB Left/Thru/Right	C	24.5	C	16.6
NB Left/Thru	B	10.9	A	0.3
Nall Avenue/94th Terrace				
WB Left/Thru/Right	C	16.5	**F**	68.8
SB Left/Thru	A	1.3	B	0.6
Nall Avenue/95th Street				
All Movements (Signalized)	D	47.5	**E**	77.2
Rosewood Drive/95th Street				
All Movements (Signalized)	A	5.9	A	5.4
Roe Avenue/95th Street				
All Movements (Signalized)	D	37.0	D	45.3
Roe Avenue/93rd Street				
WB Left/Thru/Right	B	14.4	B	14.7
SB Left/Thru	A	7.9	A	0.1
Roe Avenue/92nd Terrace				
WB Left/Thru/Right	B	14.8	C	16.6
SB Left/Thru	A	0.2	A	0
Roe Avenue/Eastern Access/91st Street				
WB Left/Thru/Right	B	11.4	B	12.5
SB Left/Thru	A	0	A	0.4
Roe Avenue/90th Street				
NB Left/Thru	A	0.5	A	0.5
EB Left/Thru/Right	C	16.1	C	21.1
WB Left/Thru/Right	C	15.5	C	17.9
SB Left/Thru	A	0.3	A	0.3

1 - Level of Service

2 - Delay in Seconds per Vehicle

The results indicate that all study intersections currently operate at an acceptable LOS with the exception of two intersection during the PM peak hour: Nall Avenue/94th Terrace and Nall Avenue/95th Street.

At the Nall Avenue/94th Terrace intersection the WB Left/Thru/Right was analyzed to operate at LOS F. Since the traffic volumes at this intersection do not approach the levels needed to meet traffic signal warrants, our recommendation for the westbound approach is to add a separate left-turn lane. This turn lane will isolate the unacceptable LOS to only the left-turn movement. Note that traffic on 94th Terrace, headed to destinations south, does have other, less direct, options that avoid the difficult left turn at Nall Avenue/94th Terrace. Also, based on field observations of existing traffic patterns, traffic signals on Nall

Avenue north and south of 94th Terrace, at 91st Street and 95th Street, platoon Nall Avenue traffic such that there are numerous traffic gaps that will accommodate the left-turning traffic.

At the Nall Avenue/95th Street intersection the overall intersection LOS was projected to operate at LOS E. Improvements identified to improve the overall intersection LOS are as follows:

1. Add a permissive phase to all approaches to the intersection. The existing signal has only protected left-turn phases.
2. Add a northbound right-turn lane.

With these improvements the overall operations at the intersection improve to LOS D.

The results of the intersection analysis for the A.M. and P.M. peak hour with improved geometric conditions are summarized in **Table 7.**

Table 7: Improvements to Existing Conditions

Intersection / Movement	A.M. Peak Hour LOS[1]	A.M. Peak Hour Delay[2]	P.M. Peak Hour LOS[1]	P.M. Peak Hour Delay[2]
Nall Avenue/94th Terrace	A			
NB Left	A	0	A	0
EB Left/Thru/Right	E	0	A	0
WB Left	B	48.1	F	118.4
WB Thru/Right	A	11	C	15.7
SB Left	A	9.5	B	11.4
SB Thru/Right		0	A	0.8
Nall Avenue/95th Street				
EB	C	20.6	C	27.2
WB	C	25.4	C	34.3
NB	B	12.1	C	20.8
SB	B	14.7	C	23.3
All Movements (Signalized)	B	18.3	C	25.3

Appendix C contains the output files from Synchro.

EXISTING PLUS DEVELOPMENT CONDITIONS

The results of the intersection analysis for the A.M. and P.M. peak hour existing plus development conditions are summarized in **Table 8**. Both the Nall Avenue/94th Terrace and Nall Avenue/95th Street intersections were analyzed using the improvements identified to be needed in the Existing condition. The study intersections were evaluated with the existing plus development traffic volumes, traffic controls and lane configurations shown on ***Figures A-5 and A-6.***

Table 8: Existing Plus Development Without Park Condition				
Intersection	**A.M. Peak Hour**		**P.M. Peak Hour**	
Movement	**LOS[1]**	**Delay[2]**	**LOS[1]**	**Delay[2]**
Nall Avenue/Somerset Drive/91st Street				
All Movements (Signalized)	C	29.9	D	38.7
Nall Avenue/Main Access/92nd Terrace				
NB Left	B	11	A	10
NB Thru	A	0	A	0.2
EB Left/Thru/Right	D	28.7	C	20.4
WB Left/Thru/Right	D	34.9	**F**	133.5
SB Left	A	9.1	B	12.7
SB Thru	A	0.3	A	1.1
Nall Avenue/94th Terrace				
NB Left/Thru/Right	A	0	A	0
EB Left/Thru/Right	A	0	A	0
WB Left	F	62.1	**F**	196.1
WB Thru/Right	D	11.2	**C**	16.5
SB Left	A	9.6	B	11.8
SB Thru	A	1	A	0.7
Nall Avenue/95th Street				
All Movements (Signalized)	C	29.5	D	47.6
Secondary Access/94th Terrace				
SB Left/Right	B	10.4	B	10.4
EB Left/Thru	A	0.6	A	1.4
WB Thru/Right	A	0	A	0
Rosewood Drive/95th Street				
All Movements (Signalized)	A	7.0	A	5.5
Roe Avenue/95th Street				
All Movements (Signalized)	D	37.5	D	38.8
Roe Avenue/93rd Street				
NB Thru/Right	A	0	A	0
WB Left/Right	B	14.8	C	15.2
SB Left/Thru	A	0.1	A	0.1
Roe Avenue/92nd Terrace				
NB Thru/Right	A	0	A	0
WB Left/Right	C	15.2	C	17
SB Left/Thru	A	0.2	A	0.2
Roe Avenue/91st Street				
NB Left/Thru	B	11	A	0
WB Left/Thru/Right	D	34.9	B	12.8
SB Left/Thru	A	0	A	0.4
Roe Avenue/East Access				
NB Left/Thru	A	0.1	A	0.4
EB Left/Right	B	13.8	B	14.2
SB Thru/Right	A	0	A	0

Table 8: Existing Plus Development Without Park Condition-Cont.				
Intersection	**A.M. Peak Hour**		**P.M. Peak Hour**	
Movement	**LOS[1]**	**Delay[2]**	**LOS[1]**	**Delay[2]**
Roe Avenue/90th Street				
NB Left/Thru	A	0.5	A	0.5
EB Left/Thru/Right	C	16.6	C	22
WB Left/Thru/Right	C	16.1	C	18.5
SB Left/Thru	A	0.3	A	0.3

1 - Level of Service

2 - Delay in Seconds per Vehicle

The results indicate that all study intersections will operate at an acceptable LOS with the exception of one intersection during the PM peak hour: Nall Avenue/Main Access/92nd Terrace.

At the Nall Avenue/Main Access/92nd Terrace intersection a single lane westbound approach was analyzed to operate at LOS F. Since the Build traffic volumes at this intersection do not approach the levels needed to meet traffic signal warrants, the recommendation for the westbound approach is to add a separate left-turn lane. This turn lane will isolate the unacceptable LOS to only the left-turn movement. Note that westbound traffic on the Main Access, headed to destinations south, does have other, less direct options that avoid the difficult left turn at Nall Avenue/ Main Access/92nd Terrace. Also, based on field observations of existing traffic patterns, traffic signals on Nall Avenue north and south of Main Access/92nd Terrace, at 91st Street and 95th Street, platoon Nall Avenue traffic such that there are numerous traffic gaps that will accommodate the relatively low volume of left-turning traffic.

The results of the intersection analysis for the A.M. and P.M. peak hour with improved geometric conditions are summarized in **Table 9.**

Table 9: Improvements to Existing Plus Development Without Park Condition				
Intersection	**A.M. Peak Hour**		**P.M. Peak Hour**	
Movement	**LOS[1]**	**Delay[2]**	**LOS[1]**	**Delay[2]**
Nall Avenue/Main Access/92nd Terrace				
NB Left	B	11	A	10
NB Thru	A	0	A	0.2
EB Left/Thru/Right	D	28.7	C	20.4
WB Left	F	56.1	F	227.2
WB Thru/Right	B	11	B	14.9
SB Left	A	9.1	B	12.7
SB Thru	A	0.3	A	1.1

Appendix C contains the output files from Synchro.

EXISTING PLUS DEVELOPMENT PLUS PARK CONDITIONS

The results of the intersection analysis for the A.M. and P.M. peak hour existing plus development plus park conditions are summarized in **Table 10**. The study intersections were evaluated with the existing plus development plus park traffic volumes, traffic controls and lane configurations shown on ***Figures A-7 and A-8.***

Table 10: Existing Plus Development Plus Park Condition

Intersection / *Movement*	A.M. Peak Hour LOS[1]	A.M. Peak Hour Delay[2]	P.M. Peak Hour LOS[1]	P.M. Peak Hour Delay[2]
Somerset Drive/Parking Lot Driveway				
NB Left/Right	B	11.7	C	15.1
WB Left/Thru	A	7.8	A	8.6
EB Thru/Right	A	0	A	0
Nall Avenue/Somerset Drive/91st Street				
All Movements (Signalized)	C	30.0	D	41.7
Nall Avenue/Parking Lot Driveway				
WB Left/Right	C	19.2	**E**	35.8
NB Thru/Right	A	9.1	A	0.3
SB Left/Thru	A	0	B	11.6
Nall Avenue/Main Access/92nd Terrace				
NB Left	B	11	B	10
NB Thru	A	0	A	0.2
EB Left/Thru/Right	A	29.3	C	21.3
WB Left	F	57.6	**F**	331.9
AB Thru/Right	B	11	**C**	15.2
SB Left	A	9.2	B	13
SB Thru	A	0.4	A	1.4
Nall Avenue/94th Terrace				
NB Left/Thru/Right	A	0	A	0
EB Left/Thru/Right	A	0	A	0
WB Left	F	64	**F**	249.2
WB Thru/Right	B	11.6	C	16.9
SB Left	A	9.6	B	12
SB Thru	A	1	A	0.8
Nall Avenue/95th Street				
All Movements (Signalized)	C	29.8	D	49.1
Secondary Access/94th Terrace				
SB Left/Right	B	10.5	B	10.6
EB Left/Thru	A	7.5	A	7.6
WB Thru/Right	A	0	A	0
Rosewood Drive/95th Street				
All Movements (Signalized)	A	7.1	A	5.6
Roe Avenue/95th Street				
All Movements (Signalized)	D	37.5	D	38.9

Table 10: Existing Plus Development Plus Park Condition-Cont.				
Intersection	**A.M. Peak Hour**		**P.M. Peak Hour**	
Movement	**LOS[1]**	**Delay[2]**	**LOS[1]**	**Delay[2]**
Roe Avenue/93rd Street				
NB Thru/Right	A	0	A	0
WB Left/Right	B	14.8	C	15.3
SB Left/Thru	A	7.9	A	8.5
Roe Avenue/92nd Terrace				
NB Thru/Right	A	0	A	0
WB Left/Right	C	15.2	C	17.5
SB Left/Thru	A	8	A	8.5
Roe Avenue/91st Street				
NB Left/Thru	A	0	A	0
WB Left/Thru/Right	B	11.6	B	12.9
SB Left/Thru	A	0.3	A	0.4
Roe Avenue/East Access				
NB Left/Thru	A	0.2	A	8.4
EB Left/Right	B	13.9	C	15.4
SB Thru/Right	A	0	A	0
Roe Avenue/90th Street				
NB Left/Thru	A	8.4	A	8.4
EB Left/Thru/Right	C	16.6	C	22.2
WB Left/Thru/Right	C	16.4	C	19.8
SB Left/Thru	A	8	A	8.4

1 - Level of Service

2 - Delay in Seconds per Vehicle

Results from the analysis indicate all but the Nall Avenue/Parking Lot Driveway operates at an acceptable level of service. This intersection is close to the Nall Ave/Somerset Drive intersection and falls within the northbound queue length. Since the parking lot has low volumes, and the intersection does not warrant a traffic signal, our recommendation is to leave the intersection as-is.

Appendix C contains the output files from Synchro.

WALKABILITY ASSESSMENT

The purpose of the Walkability Assessment is to review the pedestrian access to and around the perimeter of the property. ***Figure A-9*** shows the project location and the perimeter locations within the property where sidewalk currently exists and where sidewalk will be added.

CRASH HISTORY

As part of the review of the Eastern Access/Roe Avenue connection, the crash history of the immediate area or Roe Avenue was reviewed. **Table 11** shows the reported crashes during the most recent 5-years' worth of records.

Table 11: Roe Avenue Crashes								
	PDO		Injury		Fatal		Sequence of Events	
	SB	NB	SB	NB	SB	NB	1st Crash in Row	2nd Crash in Row
2010	1	0	0	0	0	0	Ran off Road Right, Hit Fixed Object	
2011	0	0	0	0	0	0		
2012	0	0	0	0	0	0		
2013	0	1*	0	1	0	0	Hit Fixed Object	Ran off Road Right, Hit Fixed Object, Overturned
2014	0	0	1*	0	0	0	Hit Fixed Object, Ran off Road Left, Hit Fixed Object	

*Indicates DUI

There were a total of four crashes in a five-year span with two being property damage only and two injury. Of those four crashes, two were marked dui. The locations of three of the four crashes is south of the intersection of Roe Avenue and W 91st street. The last crash is located at the intersection.

SUMMARY

This study documents the traffic impact of the proposed Redevelopment of the Meadowbrook Country Club on the roadway network in the vicinity of 91st Street, 95th Street, Nall Avenue and Roe Avenue in Prairie Village, Kansas. This report includes the analysis of the intersections adjacent to and surrounding the proposed development for Existing and Existing Plus Development scenarios. The Development scenario was further broken down into All Proposed Development Without the Park (Development), and All Proposed Development Including the Park (Development Plus Park).

The operational analysis of existing traffic volumes shows that the existing roadway network operates within desirable levels of service with the exception of the following intersections:

- Nall Avenue/94th Terrace – addition of a westbound left-turn lane will isolate the poor LOS to only the left-turn.
- Nall Avenue/95th Street – addition of permissive left-turn to all approaches and addition of a northbound right-turn lane will improve overall intersection operations to LOS D.

The operational analysis of existing plus proposed development traffic volumes shows that the roadway network needed to accommodate existing traffic volumes operates within desirable levels of service with the exception of the following intersection:

- Nall Avenue/Main Access/92nd Terrace – addition of a westbound left-turn lane will isolate the poor LOS to only the left-turn.

Development plus Park scenario was analyzed and the following intersection fell below an acceptable level of service:

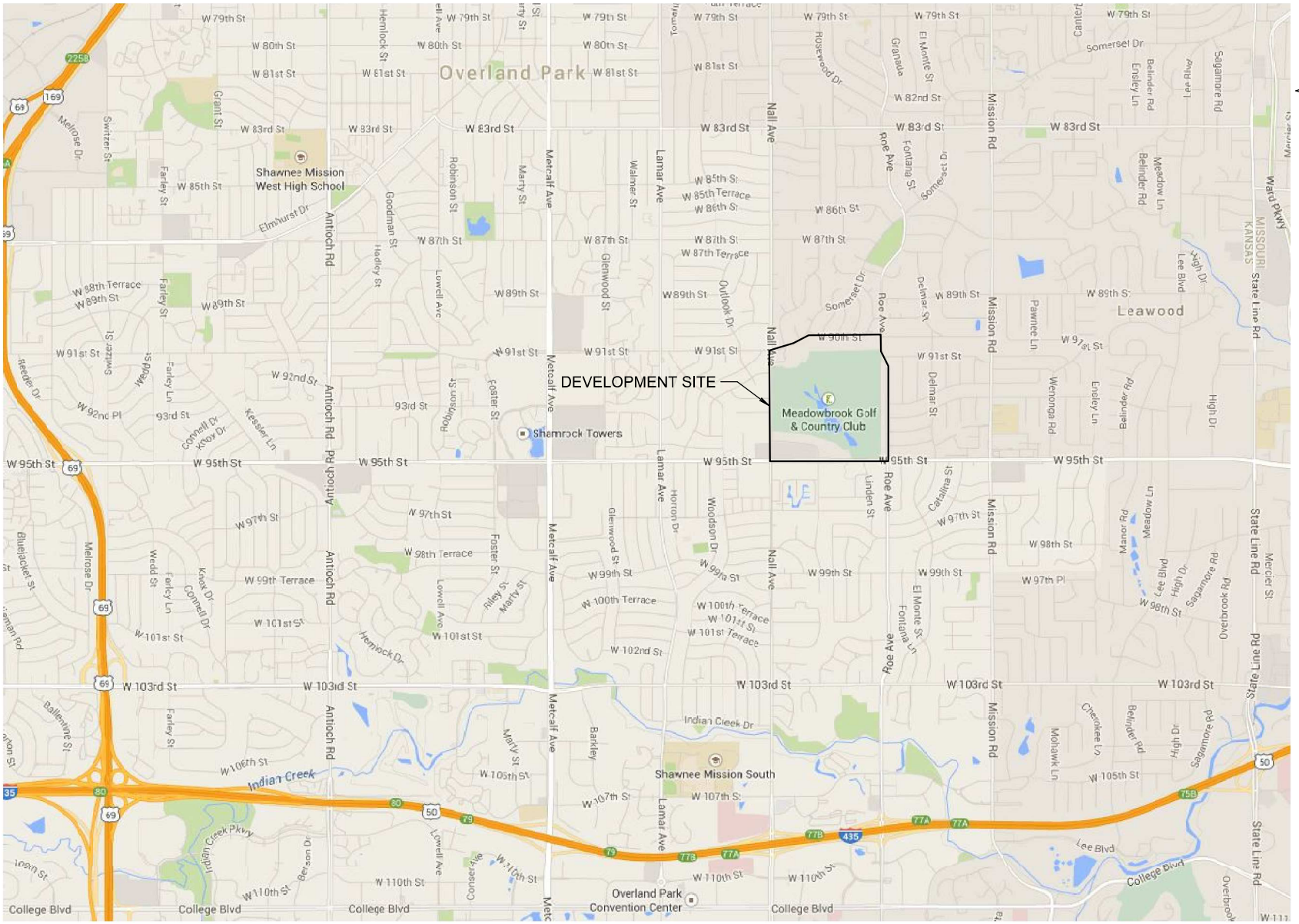
- Nall Avenue/Parking Lot – leave as-is since the volume from the parking lot is low and there are gaps due to the signal platooning vehicles.

Date: 7/10/2015 File: M:\TRN\15-100-038-00\2__Disciplines__SHEETS\3__Sheets - roadway\A-2__Site Plan.dgn By: AABrucker

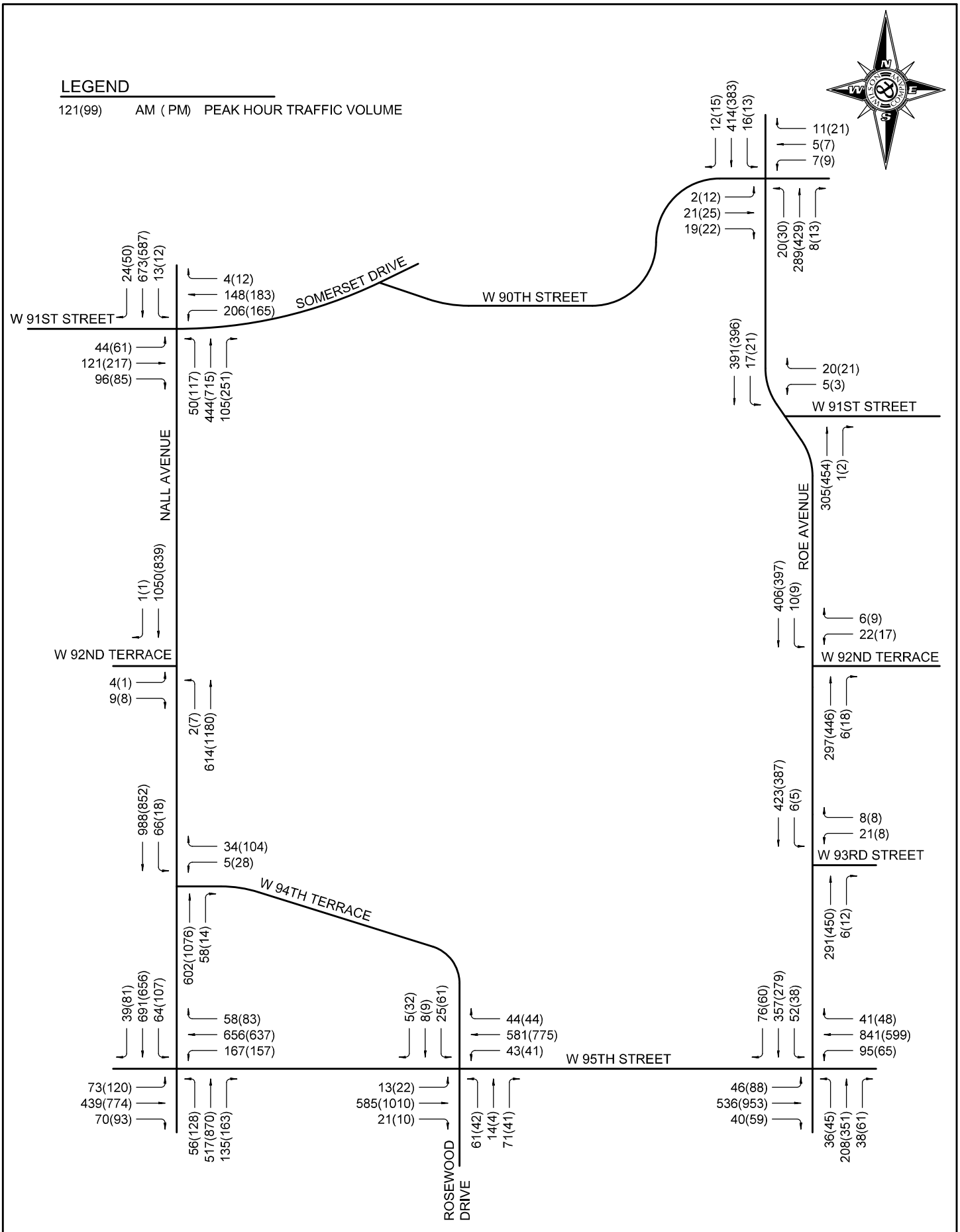
Area Calculations
December 22, 2014

WILSON & COMPANY	SITE PLAN	MEADOWBROOK DEVELOPMENT PRAIRIE VILLAGE, KANSAS	JULY 2015 NO SCALE FIGURE A-2

Date: 7/10/2015 File: M:\TRN\15-100-038-00\2__Disciplines__SHEETS\3__Sheets - roadway\A-1__Location Map.dgn By: AABrucker



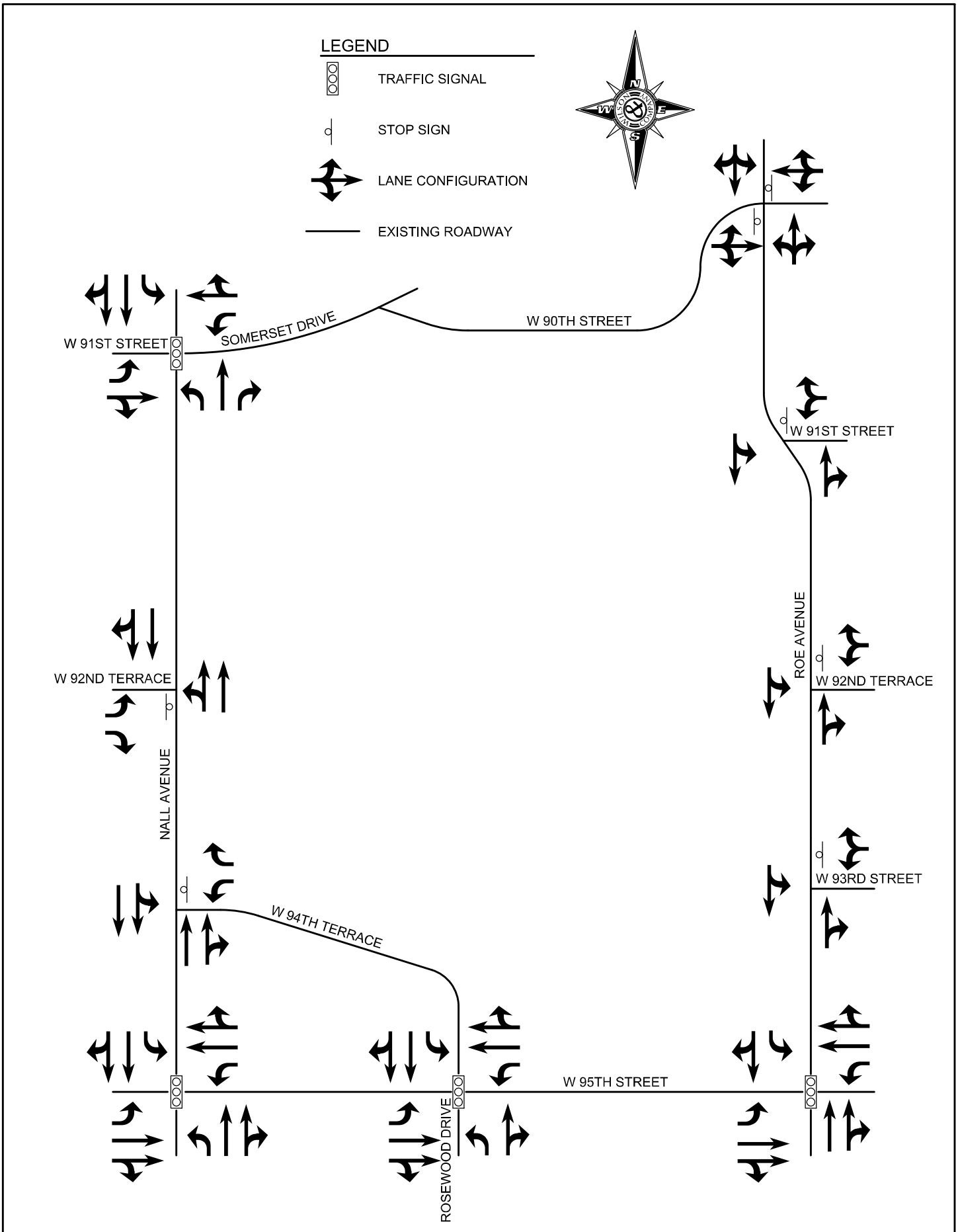
WILSON & COMPANY	LOCATION MAP	MEADOWBROOK DEVELOPMENT PRAIRIE VILLAGE, KANSAS	JULY 2015 NO SCALE FIGURE A-1



WILSON & COMPANY	EXISTING PEAK HOUR TRAFFIC COUNTS	MEADOWBROOK DEVELOPMENT PRAIRIE VILLIAGE, KANSAS	JULY 2015
			NO SCALE
			FIGURE A-3

Date: 7/10/2015
By: AABrucker

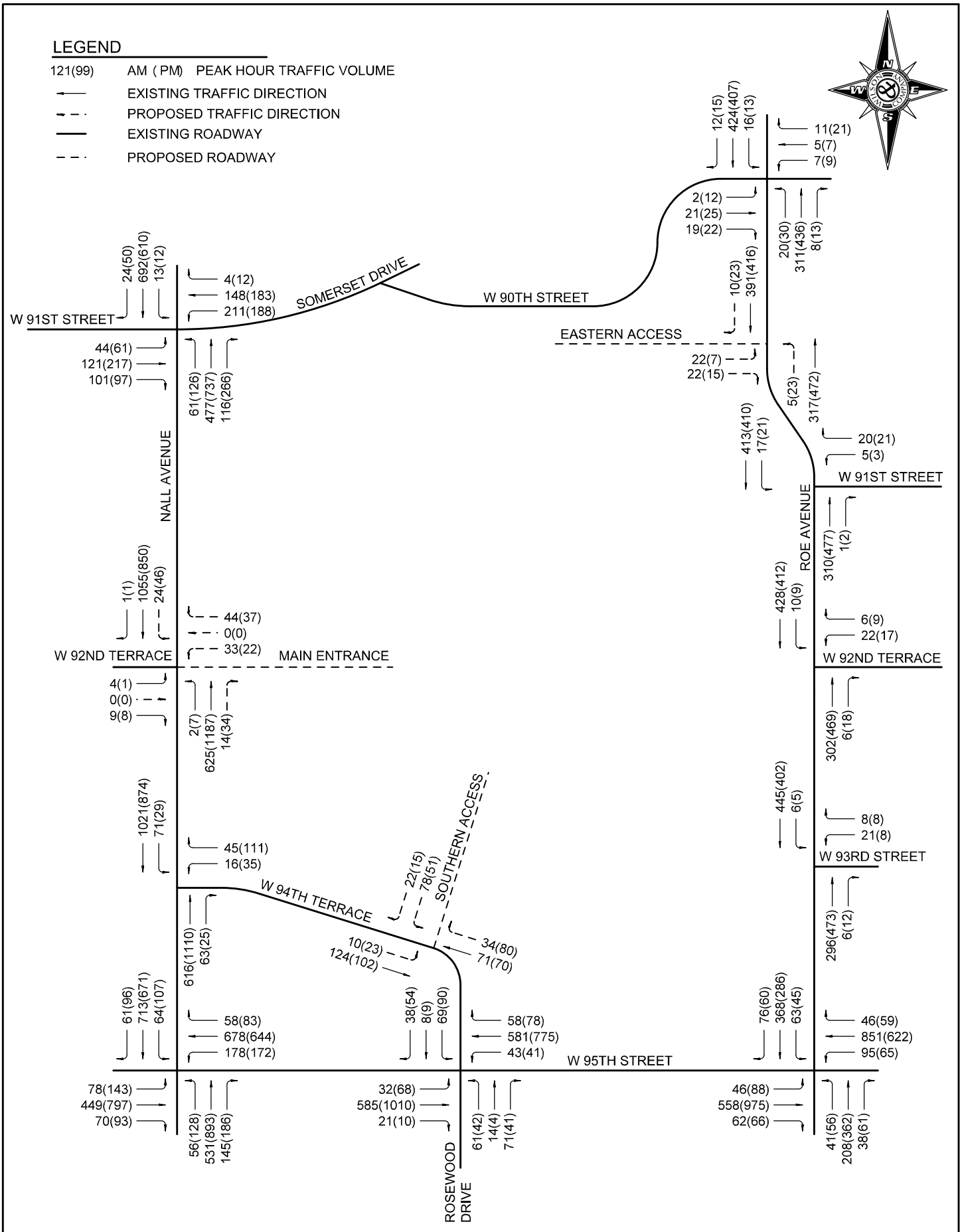
File: M:\TRN\15-100-038-00\2__Disciplines__SHEETS\3__Sheets - roadway\A-3__Existing Peak Hour Traffic Volumes.dgn



WILSON & COMPANY	EXISTING LANE CONFIGURATIONS	MEADOWBROOK DEVELOPMENT PRAIRIE VILLIAGE, KANSAS	JULY 2015
			NO SCALE
			FIGURE A-4

Date: 7/10/2015
By: AABrucker

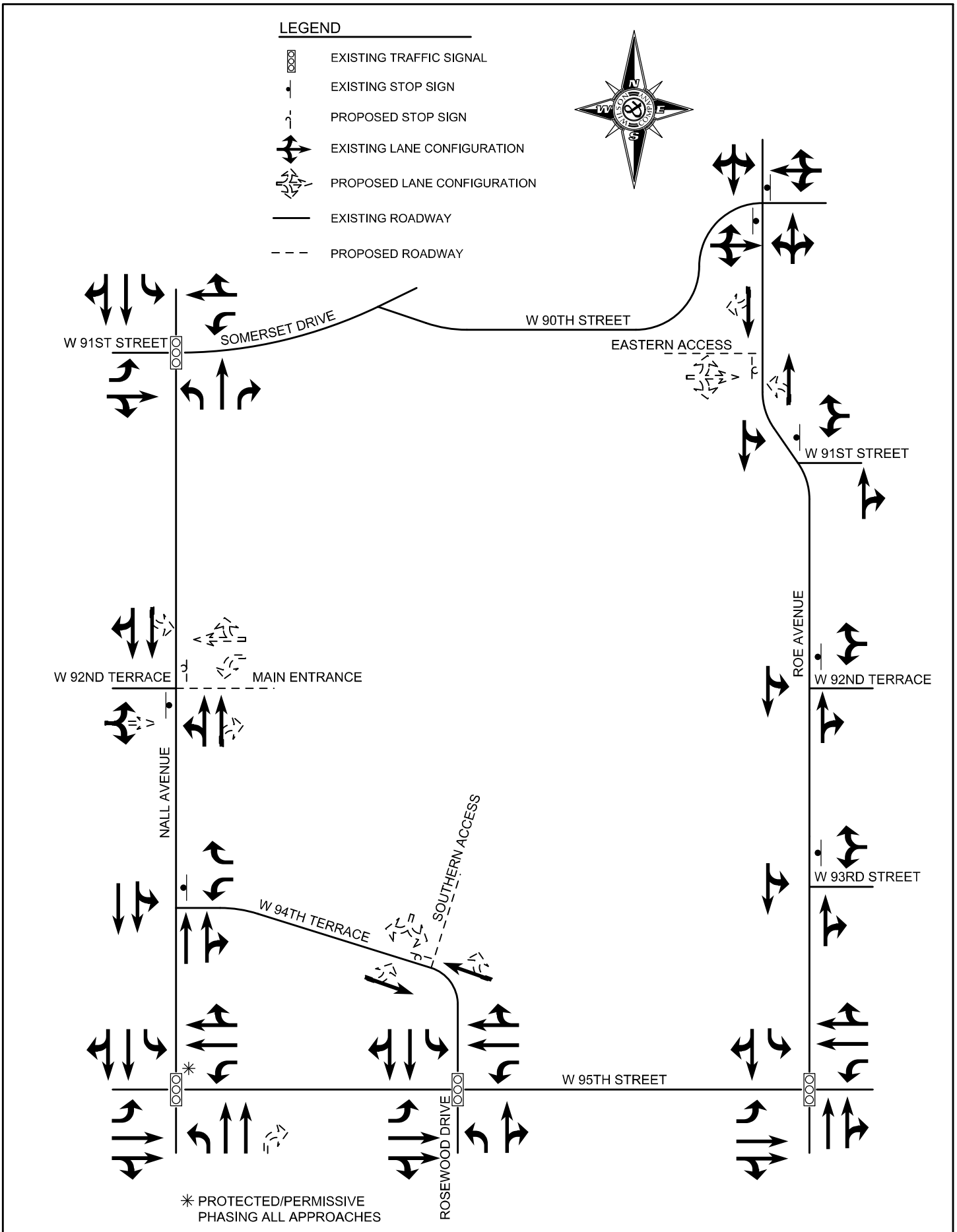
File: M:\TRN\15-100-038-00\2__Disciplines__SHEETS\3__Sheets - roadway\A-4__Existing lane configurations.dgn



WILSON & COMPANY	EXISTING PLUS DEVELOPMENT PEAK HOUR TRAFFIC COUNTS	MEADOWBROOK DEVELOPMENT PRAIRIE VILLIAGE, KANSAS	JULY 2015
			NO SCALE
			FIGURE A-5

Date: 7/10/2015
By: AABrucker

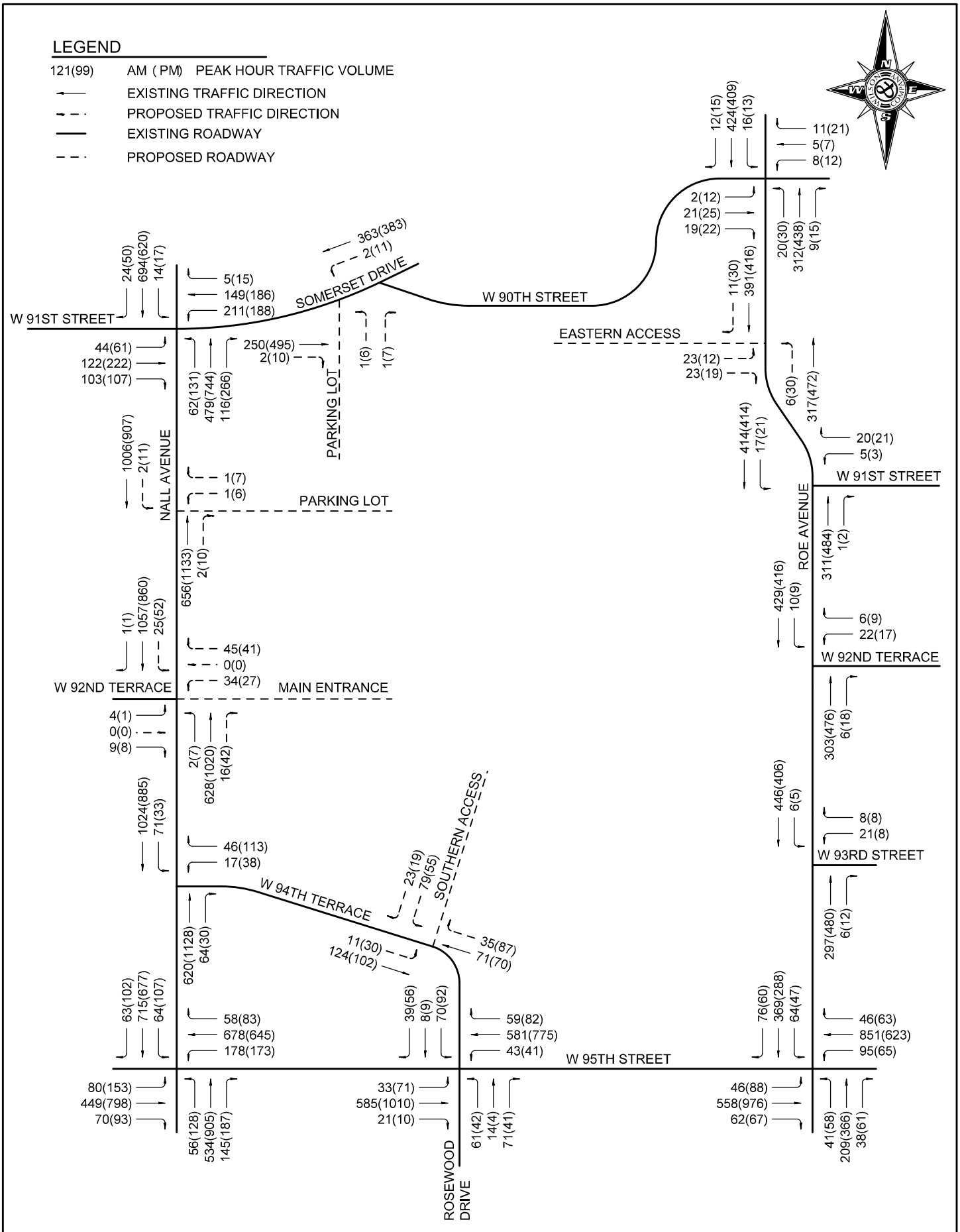
File: M:\TRN\15-100-038-00\2__Disciplines__SHEETS\3__Sheets - roadway\A-5__Existing Plus Developement Peak Hour Traffic Volumes2015__07__09.dgn



WILSON & COMPANY	EXISTING PLUS DEVELOPMENT LANE CONFIGURATIONS	MEADOWBROOK DEVELOPMENT PRAIRIE VILLIAGE, KANSAS	JULY 2015 NO SCALE FIGURE A-6

Date: 7/10/2015
By: AABrucker

File: M:\TRN\15-100-038-00\2__Disciplines__SHEETS\3__Sheets - roadway\A-6__Existing Plus Development Lane Configurations__V2.dgn



WILSON & COMPANY

EXISTING PLUS DEVELOPMENT PLUS PARK PEAK HOUR TRAFFIC COUNTS

MEADOWBROOK DEVELOPMENT
PRAIRIE VILLIAGE, KANSAS

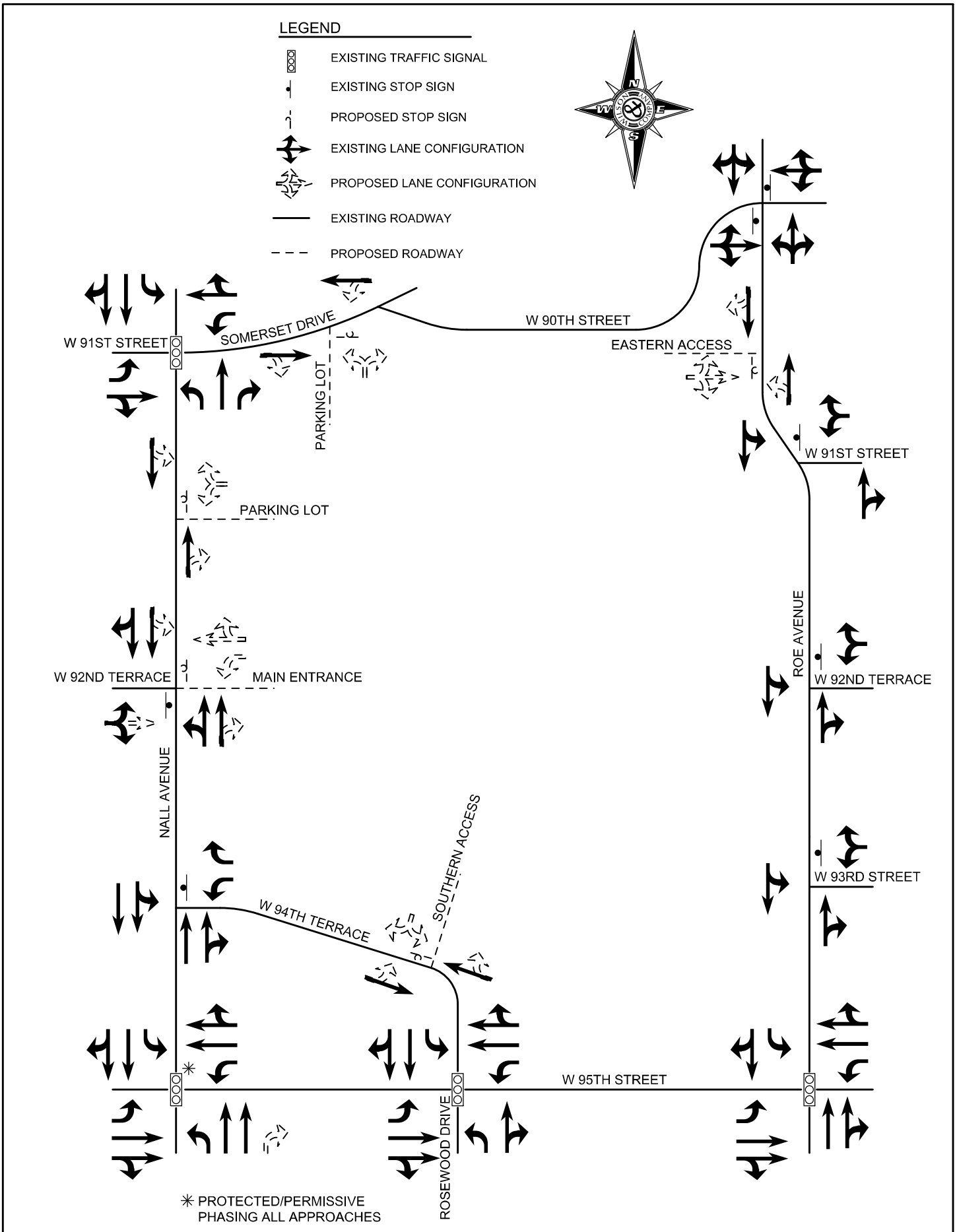
JULY 2015

NO SCALE

FIGURE A-7

Date: 7/22/2015
By: AABrucker

File: M:\TRN\15-100-038-00\2__Disciplines__SHEETS\3__Sheets - roadway\A-7__Developement Plus Park Peak Hour Traffic Volumes2015__07__09.dgn

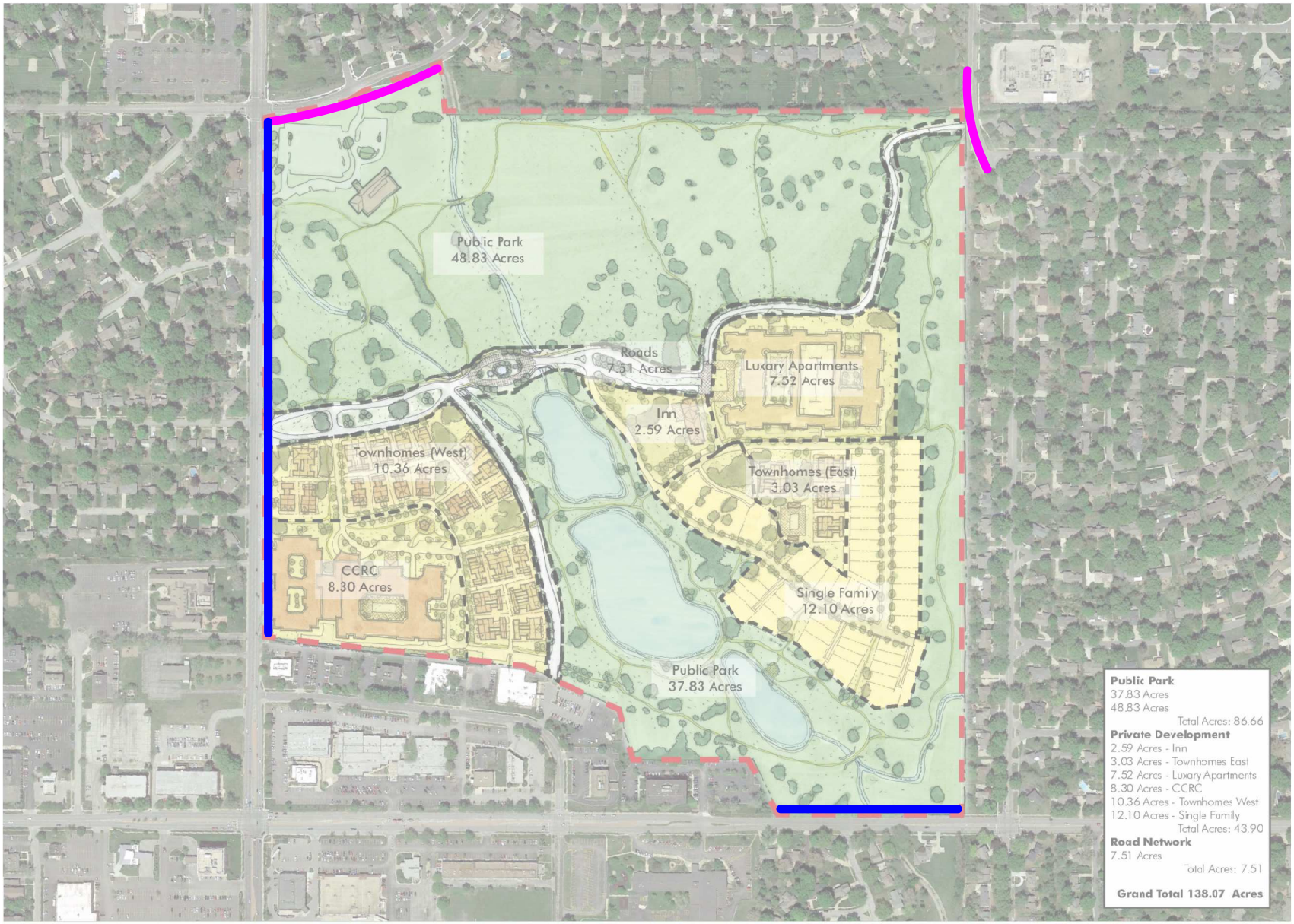


WILSON & COMPANY	EXISTING PLUS DEVELOPMENT PLUS PARK LANE CONFIGURATIONS	MEADOWBROOK DEVELOPMENT PRAIRIE VILLIAGE, KANSAS	JULY 2015 NO SCALE FIGURE A-8

Date: 7/22/2015
By: AABrucker

File: M:\TRN\15-100-038-00\2__Disciplines__SHEETS\3__Sheets - roadway\A-8__Development Plus Park Lane Configurations__V2.dgn

Date: 7/10/2015 File: M:\TRN\15-100-038-00\2__Disciplines__SHEETS\3__Sheets - roadway\A-9__Walkability.dgn By: AABrucker



WILSON & COMPANY	WALKABILITY	MEADOWBROOK DEVELOPMENT PRAIRIE VILLAGE, KANSAS	JULY 2015 NO SCALE FIGURE A-9