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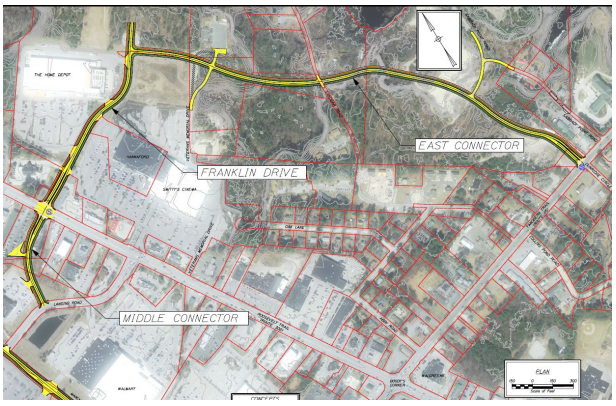
MEMORANDUM
DOWNTOWN EVALUATION
WINDHAM, ME
June 12, 2024

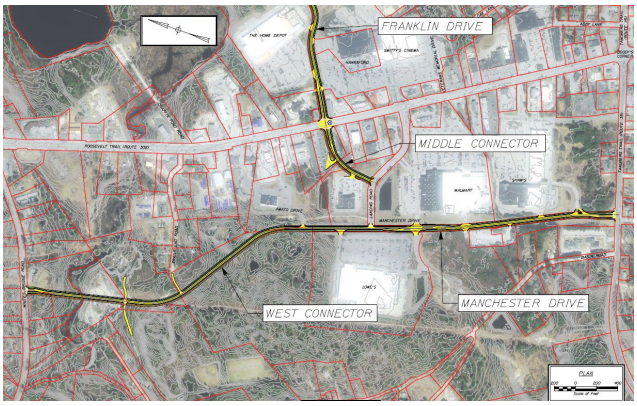
EVALUATION UNDERSTANDING

A North Windham Moves: Regional Mobility, Local Access Transportation Planning & Feasibility Study was completed by Gorrill Palmer for the Town of Windham with the Final Report dated January 10, 2022. As identified in that study, the purpose of the study was;

"…to evaluate, analyze and improve local mobility and accessibility for the North Windham Downtown District while also providing for safety and mobility improvements for regional users along the Route 302 corridor."

As part of that study, several new alternative routes were explored to fulfill the desired purpose for the area. These alternative routes included an East Connector, West Connector, and a Middle Connector as shown below:





The purpose of this evaluation is to qualify the traffic impacts of recently/currently proposed development occurring in the area and compare that impact to what was assumed in the previous North Windham Moves study.

The following summarizes the data and information used, the methodology, and the conclusions of the evaluation.

POTENTIAL DEVELOPMENT TRIPS

Based on discussions with the Town, there are five potential developments within the immediate vicinity of the Route 302 study area. With exception of development "A" (described below), traffic studies were not available for the potential developments. Therefore, for those projects, trip generation was calculated using ITE Trip Generation Manual (11th Edition) or other methods based on discussions with the Town. Hand calculations are attached. Trip distribution was based on our knowledge of the area and traffic patterns as identified from traffic counts that were provided in the North Windham Moves study. The following provides a description of each of the developments:

A. Located near Manchester Drive: 172 residential units are proposed to be built. This development is forecast to generate 69 AM & 88 PM Peak Hour trip ends.

B. At the end of Turning Leaf Road: Assumed 80 condos. This development is forecast to generate 32 AM & 41 PM Peak Hour trip ends.

C. Microtel Inn & Suites: Assumed to add 100 keys to their existing building. This development is forecast to generate 46 AM & 59 PM Peak Hour trip ends.

D. Behind Home Depot: Assumed hotel with 100 keys and 300 residential units. This development is forecast to generate 166 AM & 212 PM Peak Hour trip ends.

E. Behind Dugout Ice Cream down Enterprise Drive: Assumed two hotels with 150 keys each and 400 units of multifamily housing. Based on discussions with the Town, this development was assumed to generate 4,500 vehicles per day. Using ITE as a measure to proportionately figure AM & PM peak hour trip ends, the resulting peak hour trip generations were 264 AM & 339 PM trip ends.

A location map and trip assignments and distributions for each project individually, as well as a summary figure, are attached.

YEARLY / OTHER DEVELOPMENT TRAFFIC GROWTH

Assumed Growth for North Windham Moves Study

To determine a reasonable growth factor in the North Windham Moves study, an assessment of planned development was completed including projects approved but not yet built, projects in the approval pipeline, projects that have obtained a MaineDOT Traffic Movement Permit and projects that in the Town's judgement should be considered in the 20-year planning horizon. Finally, historic traffic growth was reviewed and considered in the assessment. After considering the above factors and coordination with MaineDOT planning, the study team selected an annual growth factor of 0.5% per year for 20 years, for an overall growth factor of 1.10. The study future design year that was chosen was 2040.

Current Growth for North Windham Moves

To determine the current growth for the defined study area, five MaineDOT AADT (Annual Average Daily Traffic) locations were reviewed. The following Table 1 summarizes the results of the review.

Table 1 - Route 302 AADT Summary

From	To	2019 AADT	2022 AADT	% Growth / year
Turning Leaf	Boody's Corner	23,220	23,430	0.3 %
Boody's Corner	Shaw's / Plaza	25,460	28,400	3.9 %
Shaw's Plaza	Landing Road	24,530	26,910	3.2 %
Landing Road	Franklin Drive	23,380	24,540	1.7 %
Trails End Road	Whites Bridge Rd	23,000	23,820	1.2 %

In reviewing the data in Table 1, it should be noted that the three highest percentages are located in the densest portion of the downtown area. As one moves out of the downtown area the growth rate decreases. The current average growth rate for Route 302 within the study area is approximately 2%. This indicates that Windham is currently experiencing a growth higher than what was forecast (0.5%) when the North Windham Moves Study was completed. It should be noted that the 0.5% / year growth was consistent up to the design year 2040. If Windham should experience a plateau in growth or a negative growth between now and 2040, the average yearly growth from now to 2040 may decrease from 2% closer to the 0.5%, or more likely somewhere in between.

Forecasted Growth for North Windham Moves Study Area (MaineDOT)

For this evaluation, Gorrill Palmer reached out to MaineDOT about the forecasted growth for Route 302. According to MaineDOT, regressions and statewide models continue to show an

average growth rate of 0.50% per year on Route 302 between Boody's Corner and the intersection with Whites Bridge Road. This growth rate aligns with the growth rate used in the North Windham Moves Study, but appears to be less than the current growth trend.

Other Development

Trip Generation was completed for the potential five other development projects that may be built along Route 302. A total other development figure provided in Attachment A shows the forecast additional traffic on Route 302 that may result from that potential development. Three key intersections were reviewed and the currently proposed other development was compared to the other development that was assumed in the North Windham Moves Study. The comparison is for the total entering volume for the AM and PM peak hours.

Table 2 – Other Development Comparison

Route 302 Intersection with:	North Windham Moves		Current Potential		Net Change	
	AM	PM	AM	PM	AM	PM
Boody's Corner	192	166	263	311	+71	+145
Landing Road	237	180	216	245	-21	+65
Whites Bridge	178	166	276	338	+98	+172

As can be seen from the "Net Change" columns, the currently proposed projects are forecast to generate more traffic into the intersections than originally forecast in the previous study.

CONCLUSION OF IMPACTS

Based on the above annual growth and other development evaluations, the current overall development growth (both background and local development) is exceeding that forecast in the North Windham Moves Study. This means that the forecasted 2040 corridor traffic volumes will be experienced sooner than 2040. The exact timing is difficult to approximate due to the variables involved, but it will definitely be sooner than 2040 on its current growth and development path.

CAPACITY ANALYSIS REVIEW

The following Table 3 summarizes the forecast level of service in the design year of 2040 for three key intersections along Route 302, as provided in the North Windham Moves Study. These levels of service represent the results with the East and West Connectors in place with existing phasing and optimized timings. It is our understanding that the corridor has or will receive improved software and hardware to improve corridor coordination, which should further improve the results identified below.

Table 3 – Level of Service

Route 302 Intersection with:	North Windham Moves	
	AM	PM
Boody's Corner	C	D
Landing Road	B	B
Whites Bridge	A	B

As can be seen from the results of the capacity analysis as provided in the North Windham Moves Study, the overall intersection levels of service are forecast to operate relatively well in 2040 with the construction of the East and West connectors. These levels of service will be further improved with new signal software and hardware being installed along the Route 302 corridor.

CONCLUSION

Based on this evaluation, both regional background growth as well as local development growth appear to be higher than was forecast or assumed in the North Windham Moves Study. This means that Route 302 corridor traffic volumes would reach the 2040 design hourly volumes earlier than 2040 if the existing growth trends continue.

Even though the traffic volumes are increasing quicker than originally forecast or assumed, the recommended East and West alternatives identified in the North Windham Moves Study are forecast to provide acceptable levels of service. Since the originally forecast levels of service were relatively high, there appears to be some considerable allowance for increasing traffic volumes and still maintaining acceptable levels of service throughout the corridor. The one exception along the corridor may be Boody's Corner. This intersection level of service was forecast to be low (but acceptable) in 2040 with the construction of the East and West Connectors. It should be noted that in addition to the connectors, there were safety recommendations proposed for this intersection which should also improve the operations of the intersection and the benefits of those safety improvements are not represented in the levels of service results.

Based on this evaluation, it is our opinion that even though overall traffic volumes for the corridor are increasing faster than forecast, the recommended connectors should maintain overall acceptable levels of service, and in fact make the recommended connectors even more critical to maintaining the mobility and safety of the corridor than originally envisioned.

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Attachment A

OTHER DEVELOPMENT LEGEND

Figure No. 1

DOWNTOWN EVALUATION
WINDHAM, MAINE

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JOB 4031.07
SHEET NO. 1 OF 4
CALCULATED BY ____ DATE ____
CHECKED BY ____ DATE ____
SCALE ____

Developments

- Near Dugout Ice Cream
  - 2 Hotels (150 Key Each)
  - 400 Resid Units
  - Per Windham Request,
  - → Assume 4500 veh/day Per Town Request

Per Hotel (LUC 310 - Hotel)

	Enter	Exit	Total
AM Adj	39	30	69
PM Adj	45	44	89
Weekday	599	600	1199

Residential (LUC 220 - Multi Family Housing (Low Rise))

	Enter	Exit	Total
AM Adj	38	122	160
PM Adj	129	75	204
Weekday	1348	1348	2696

Using percentages and requested 4500 veh/day

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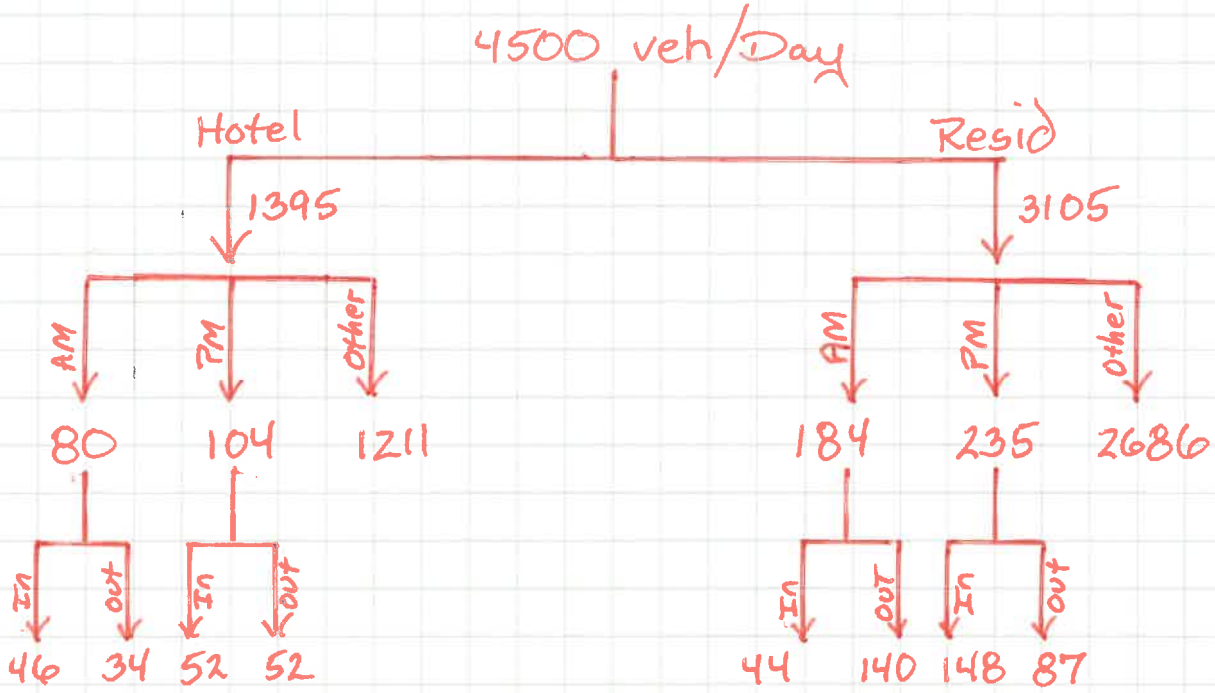
JOB
SHEET NO. 2 OF 4
CALCULATED BY DATE
CHECKED BY DATE
SCALE



Total	
AM	PM
In 90 / Out 174	In 200 / Out 139

- Back of Home Depot - 300 Resid Units
  Hotel (100 Key)

Hotel (LUC 310 - Hotel)

	Enter	Exit	Total
AM Adj	26	20	46
PM Adj	30	29	59

Residential (LUC 220 - Multi Family Housing (Low Rise))

	Enter	Exit	Total
AM Adj	29	91	120
PM Adj	96	57	153

Total			
AM		PM	
In	Out	In	Out
55	111	126	86

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JOB
SHEET NO. 4 OF 4
CALCULATED BY DATE
CHECKED BY DATE
SCALE

- Microtel Inn & Suites - Add 100 Keys

Hotel (LUC 310 - Hotel)

	Enter	Exit	Total
AM Adj	26	20	46
PM Adj	30	29	59

- Condos - (End of Turning Leaf) - 80 Condos

Condominium (LUC 220 - Multi Family Housing (Low Rise))

	Enter	Exit	Total
AM Adj	8	24	32
PM Adj	26	15	41

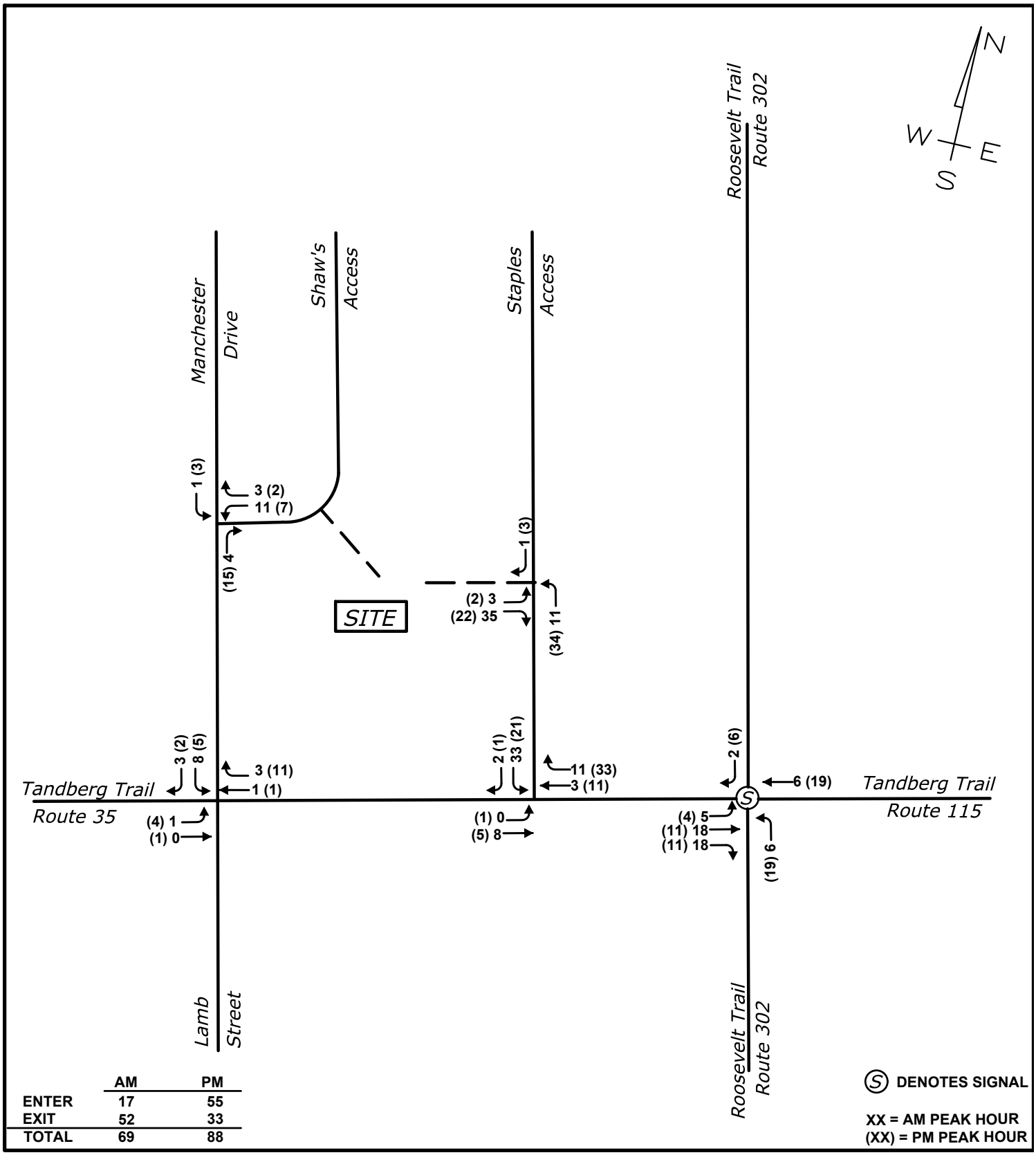
- Residential Dev. (GP) - 172 Resid Units (LUC 220)

Based on February 21, 2024 Due Diligence

	Enter	Exit	Total
AM Adj	17	52	69
PM Adj	55	33	88

A-RESIDENTIAL DEVELOPMENT

Figure No. 2



	AM	PM
ENTER	17	55
EXIT	52	33
TOTAL	69	88

DOWNTOWN EVALUATION
WINDHAM, MAINE

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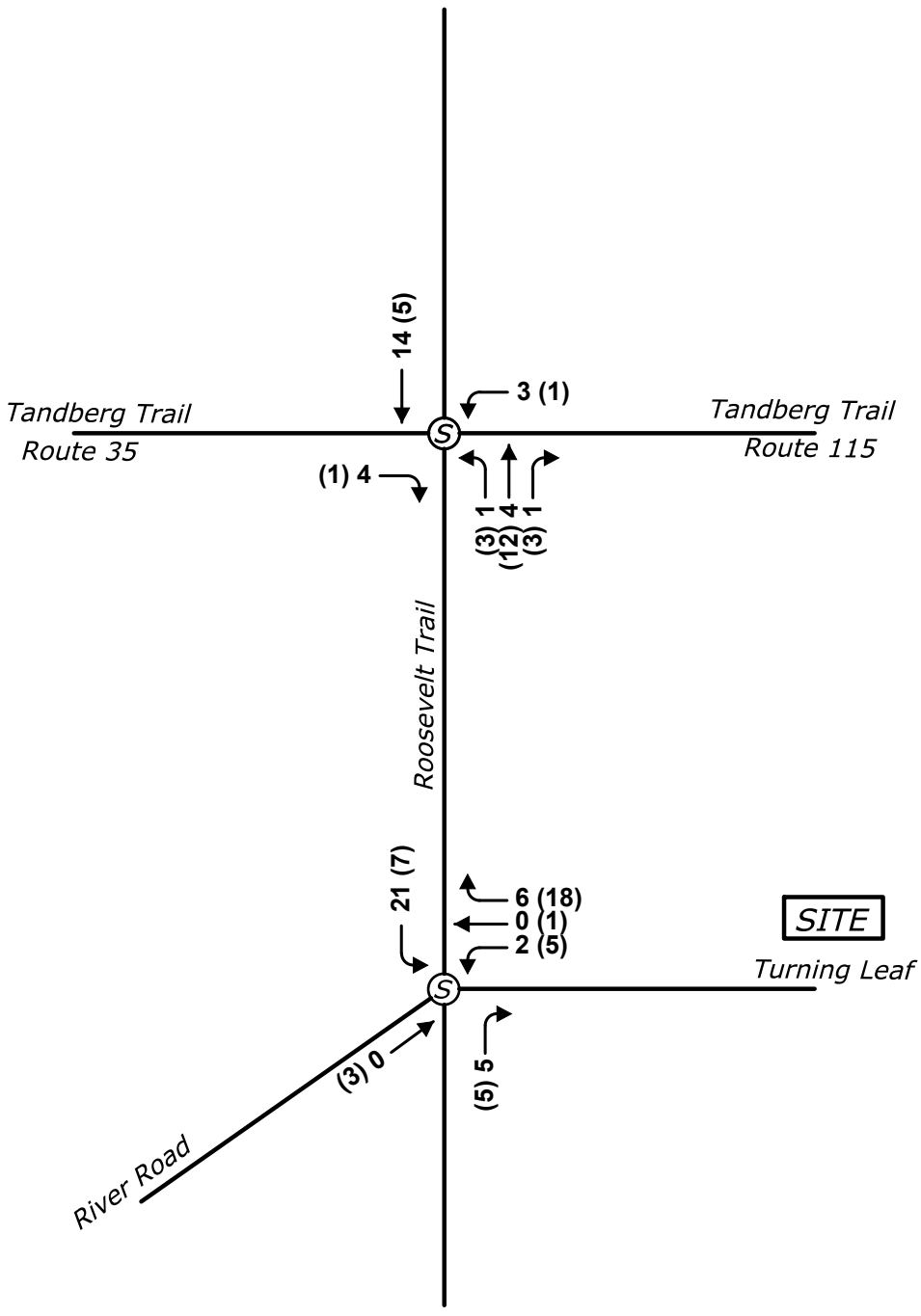
B-CONDOS

Figure No. 3



	AM	PM
ENTER	8	26
EXIT	24	15
TOTAL	32	41

S DENOTES SIGNAL

XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

DOWNTOWN EVALUATION
WINDHAM, MAINE

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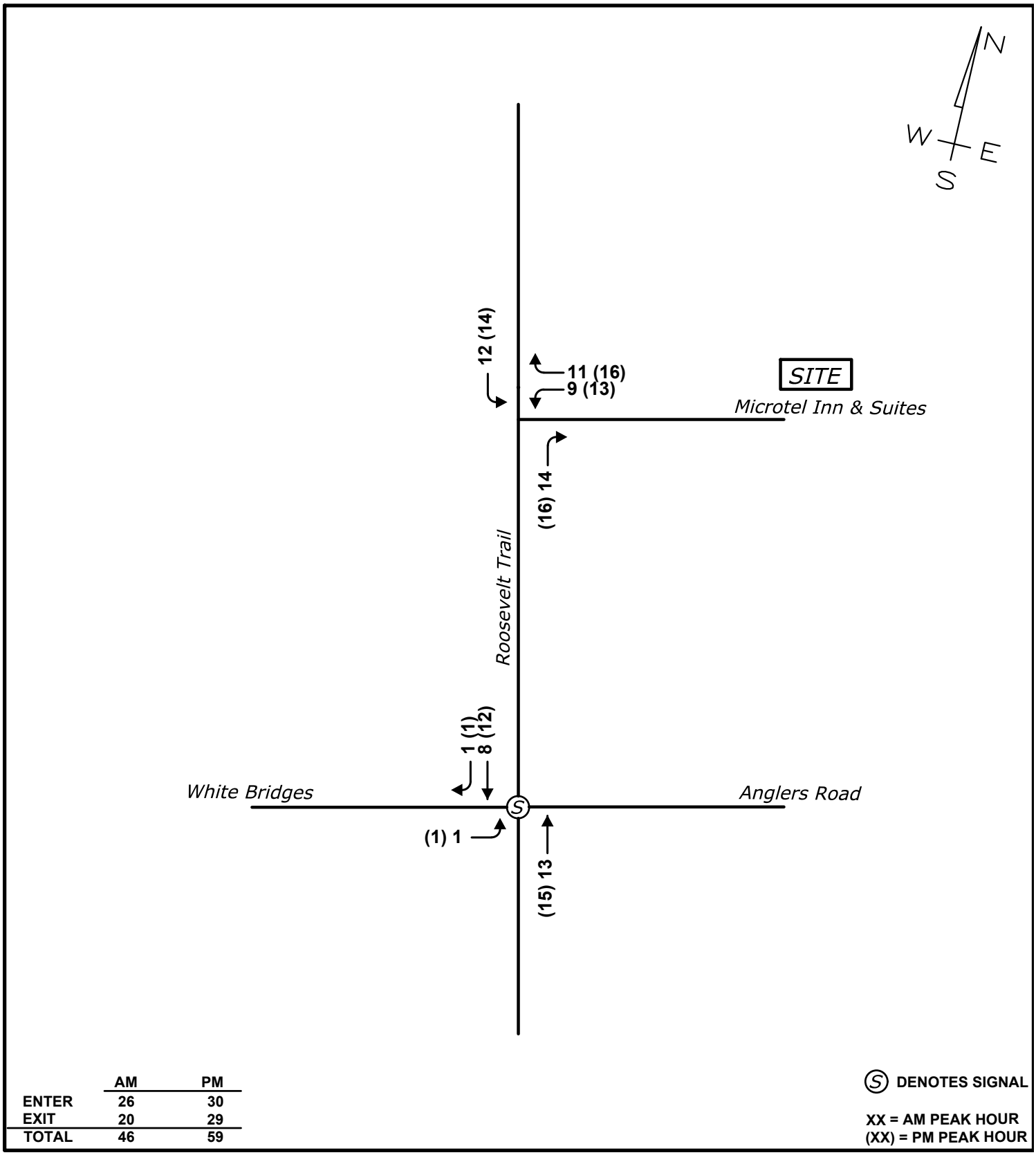
C-MICROTEL INN & SUITES

Figure No. 4



	AM	PM
ENTER	26	30
EXIT	20	29
TOTAL	46	59

DOWNTOWN EVALUATION
WINDHAM, MAINE

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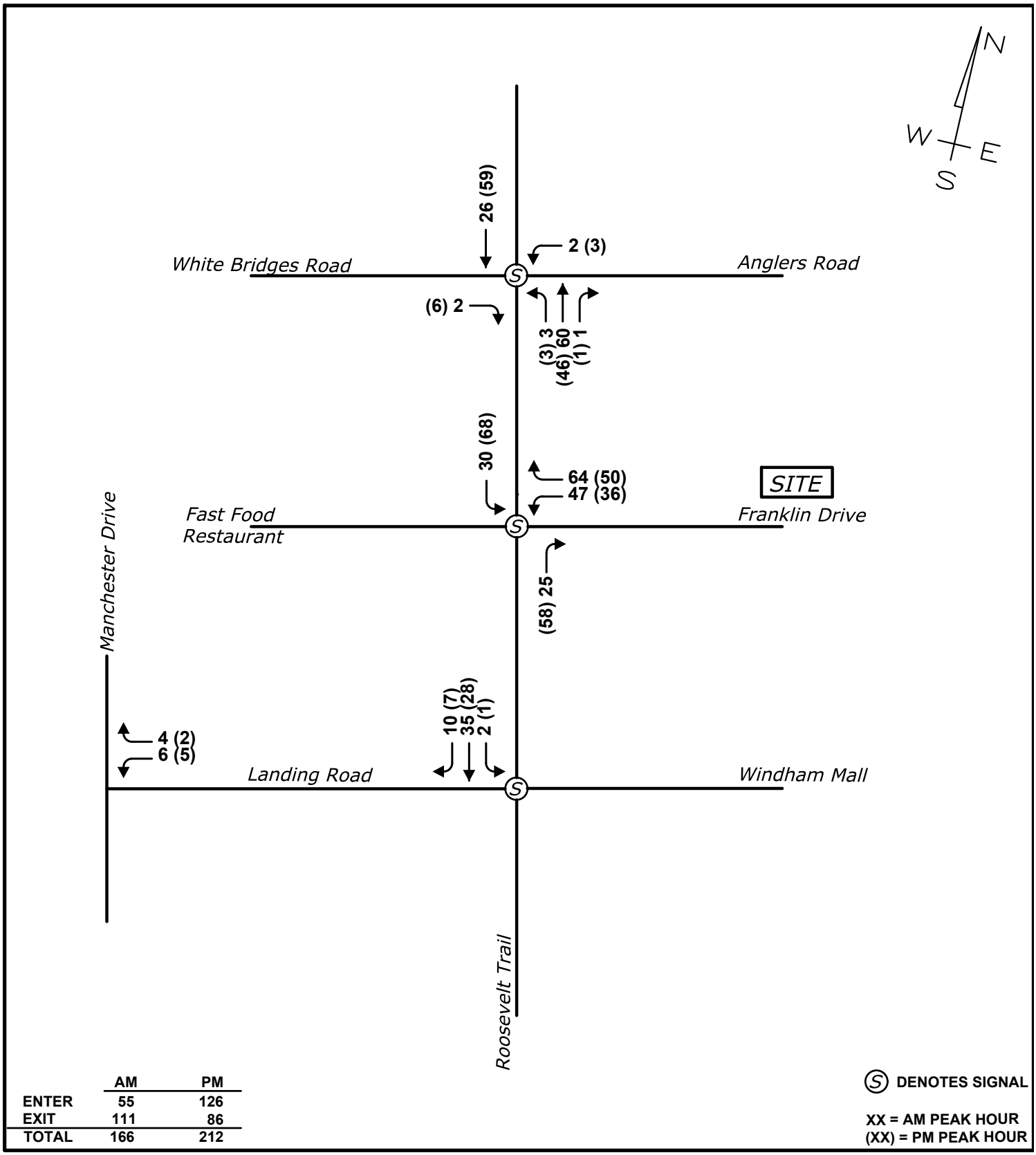
D-RESIDENTIAL DEVELOPMENT

Figure No. 5



	AM	PM
ENTER	55	126
EXIT	111	86
TOTAL	166	212

(S) DENOTES SIGNAL

XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

DOWNTOWN EVALUATION
WINDHAM, MAINE

Design: KJB Scale: NONE
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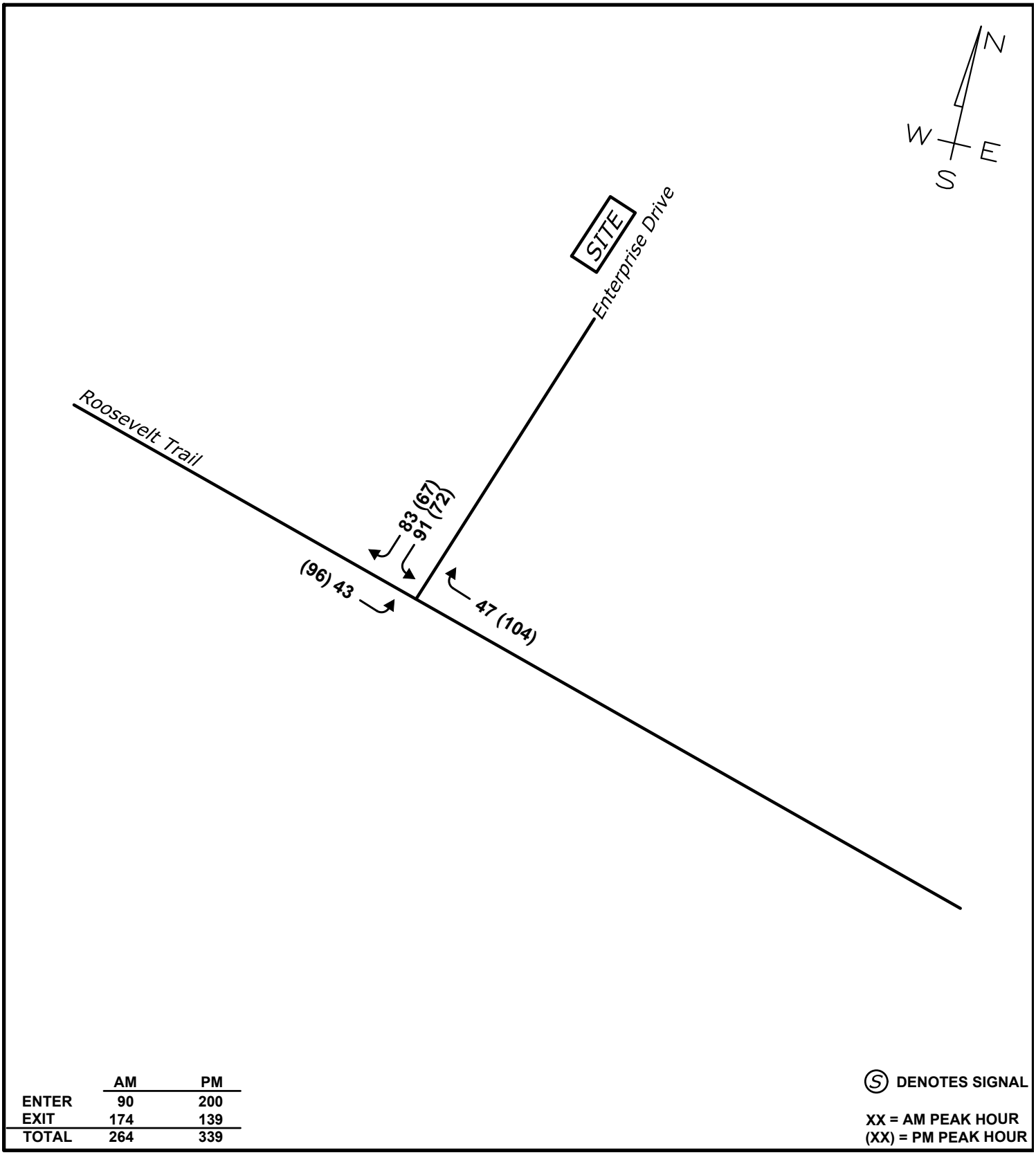
E-HOTEL & RESIDENTIAL DEVELOPMENT

Figure No. 6



	AM	PM
ENTER	90	200
EXIT	174	139
TOTAL	264	339

Ⓢ DENOTES SIGNAL

XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

DOWNTOWN EVALUATION
WINDHAM, MAINE

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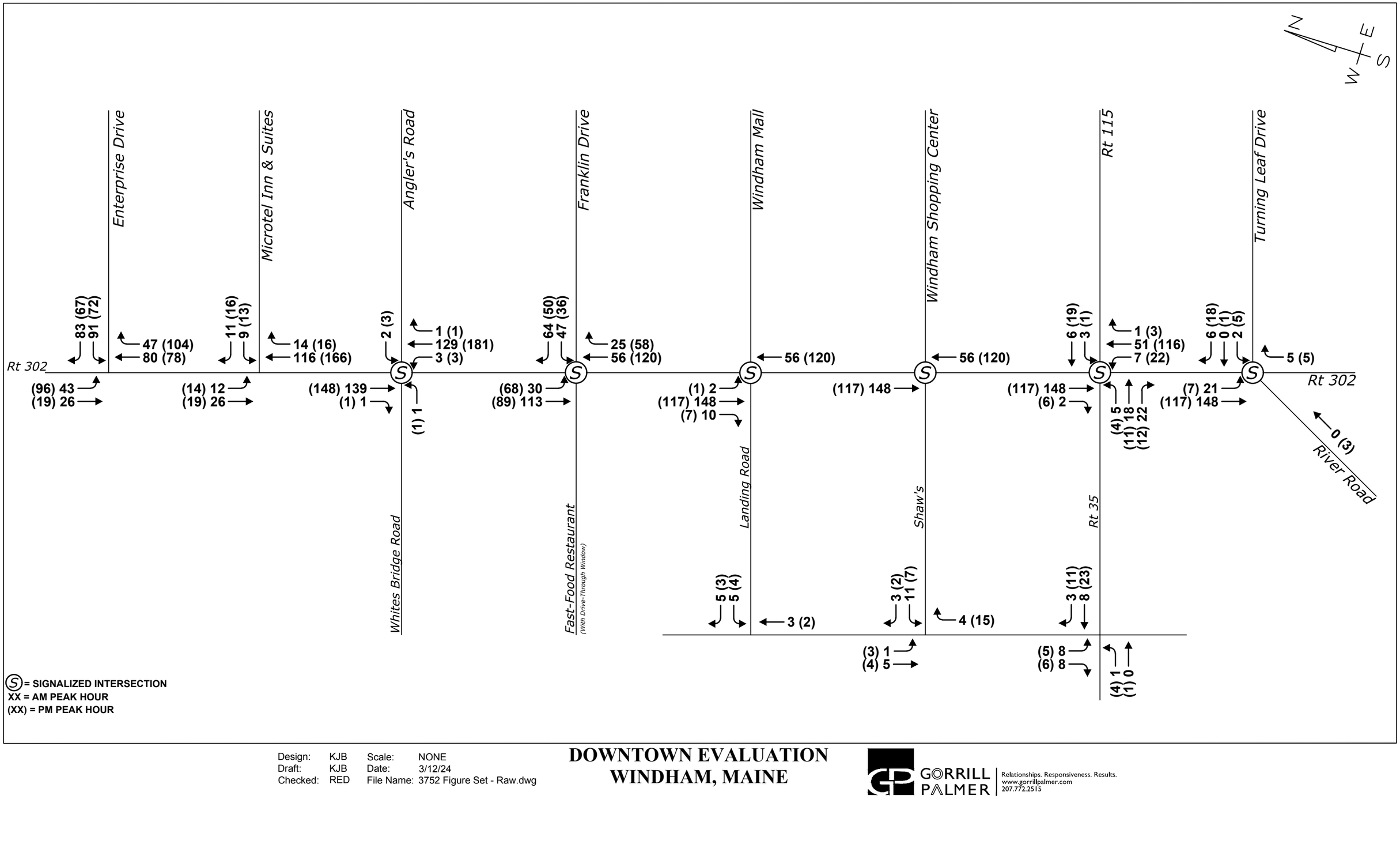
TOTAL OTHER DEVELOPMENT



S = SIGNALIZED INTERSECTION
XX = AM PEAK HOUR
(XX) = PM PEAK HOUR

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DOWNTOWN EVALUATION
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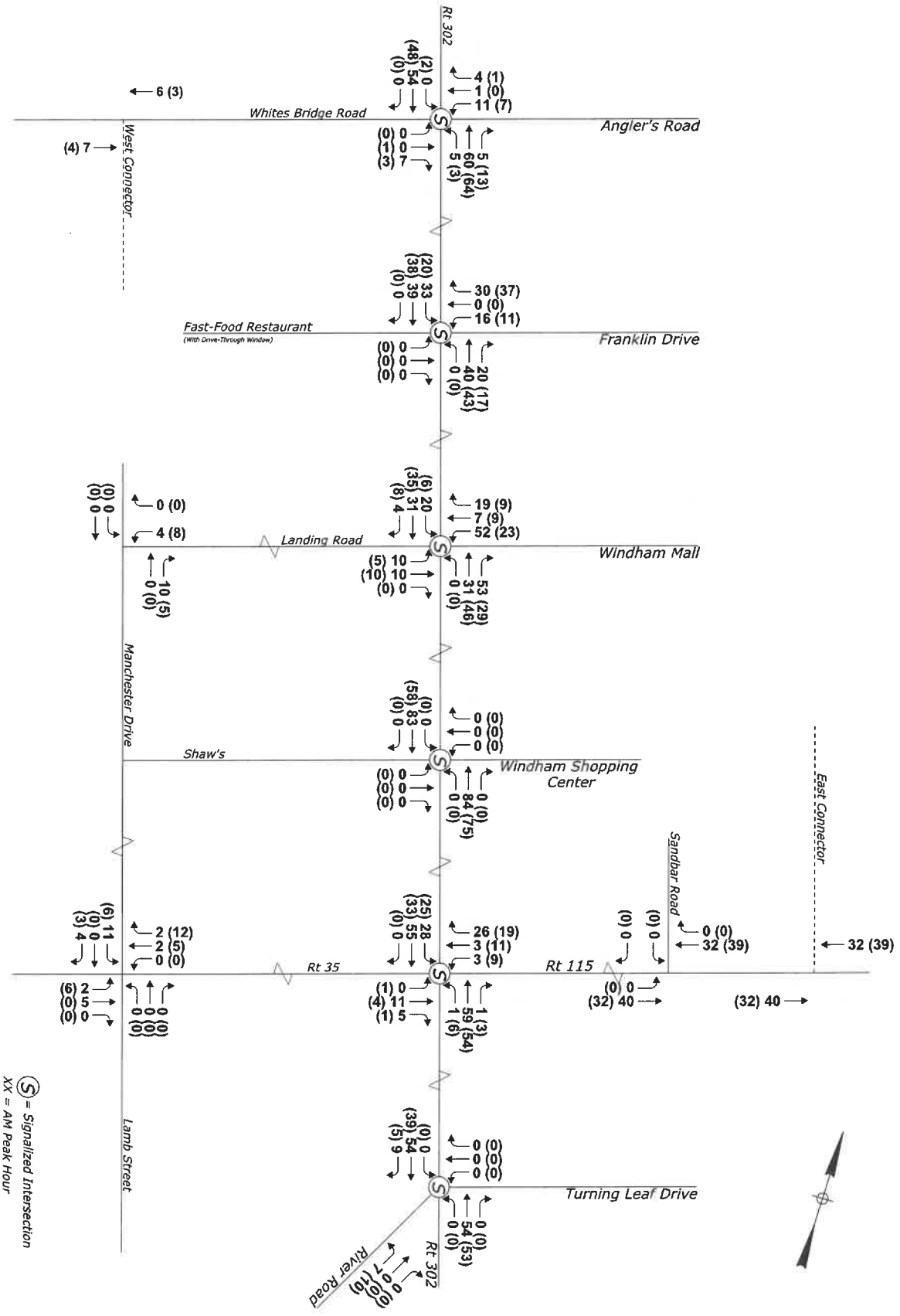

SHEET NUMBER 5 OF 14	NORTH WINDHAM MOVES STUDY OTHER DEVELOPMENT VOLUMES	PROJ. MANAGER	BY	DATE	TOWN OF WINDHAM
		DESIGN-DETAILED TLW	TLW	07\21	
		CHECKED-REVIEWED RED	-	07\21	SIGNATURE
		DESIGN2-DETAILED2 -	-	-	
		DESIGN3-DETAILED3 -	-	-	P.E. NUMBER
		REVISIONS 1 -		-	
		REVISIONS 2 -		-	DATE
		REVISIONS 3 -		-	
		REVISIONS 4 -		-	WIN 24833.00
		FIELD CHANGES		-	