TRAFFIC OPERATIONS TECHNICAL MEMORANDUM

I-40/I-440/U.S. 1/U.S. 64 INTERCHANGE RECONSTRUCTION
STIP NUMBER I-5703
WAKE COUNTY

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1. Introduction

TIP Project I-5703 is proposing to reconstruct the existing interchange of I-40 (Tom Bradshaw Freeway) with I-440/U.S. 1/U.S. 64 (Cliff Benson Beltline) in Wake County. This interchange is located approximately 1,000 feet north of the U.S. 1/U.S. 64 interchange with Walnut Street and Crossroads Boulevard, to which it is directly connected via a collector/distributor system along U.S. 1/U.S. 64 southbound. It is anticipated that any new design of the I-40/I-440 interchange will have to consider these two interchanges as one complex, interconnected interchange to safely and satisfactorily accommodate traffic operations at these two locations.

The adjacent interchanges in each direction along I-40 and I-440/U.S. 1/U.S. 64 are also included in the study area to satisfy the requirements of completing the necessary analysis for an anticipated Interstate Access Request (IAR). Thus, the modelled area also includes the following adjacent interchanges:

- I-440/U.S. 1/U.S. 64 and Jones Franklin Road
- I-440/U.S. 1/U.S. 64 and SE Cary Parkway
- I-40 and Cary Towne Boulevard
- I-40 and Gorman Street

Additionally, Atkins is also working on the concurrent TIP Project I-5701, which is proposing to add lanes in both directions of I-40 from the I-440/U.S. 1/U.S. 64 interchange to Lake Wheeler Road. The study area was expanded one interchange to the east along I-40 to include the interchange with Lake Wheeler Road and adequately capture the improvements associated with I-5701 so that a single model could be used for both projects.

To ensure the VISSIM model developed for I-5703 and I-5701 contains an adequate amount of the surface street network to effectively evaluate and identify possible impacts to local roadway systems, the 2018 existing conditions model also includes the following intersections:

- SE Cary Parkway / Kirkshire Circle at U.S. 1/U.S. 64 Westbound Ramps
- SE Cary Parkway at U.S. 1/U.S. 64 Eastbound Ramps
- SR 1313 (Walnut Street) at Lawrence Road / Nottingham Drive
- SR 1313 (Walnut Street) at U.S. 1/ U.S. 64 Westbound Ramps / Donaldson Drive
- SR 1313 (Walnut Street) at SR 1315 (Buck Jones Road)
- SR 1313 (Walnut Street) at U.S. 1/ U.S. 64 Eastbound Ramps
- SR 1313 (Walnut Street) at Meeting Street
- SR 1315 (Buck Jones Road) at U.S. 1/ U.S. 64 Westbound Off-Ramp
- Crossroads Boulevard / U.S. 1/ U.S. 64 Ramps at Caitboo Avenue
- Meeting Street at Caitboo Avenue
- SR 5039 (Jones Franklin Road) at Fort Sumter Road
- SR 5039 (Jones Franklin Road) at I-440 Westbound Rams / Appleton Drive
- SR 5039 (Jones Franklin Road) at I-440 Eastbound Ramps
- SR 1497 (Cary Towne Boulevard) at I-40 Eastbound Ramps
- SR 1497 (Cary Towne Boulevard) at I-40 Westbound Ramps
- SR 1497 (Cary Towne Boulevard) / Western Boulevard at Farm Gate Road
- SR 1571 (Gorman Street) at SR 1009 (Tryon Road)
- SR 1571 (Gorman Street) at I-40 Eastbound Ramps
- SR 1571 (Gorman Street) at I-40 Westbound Ramps

- SR 1571 (Gorman Street) at Thistledown Drive
- SR 1375 (Lake Wheeler Road) at I-40 Eastbound Ramps
- SR 1375 (Lake Wheeler Road) at I-40 Westbound Ramps
- SR 1375 (Lake Wheeler Road) at Centennial Parkway

Atkins developed a VISSIM model of the proposed study area, shown in Figure 6, using version 9.0.11 of the software. A comprehensive data collection effort was undertaken to gain an understanding of the existing traffic level and composition, travel patterns, and driving behaviour. The VISSIM model was then calibrated to reflect the existing traffic operations of the study area network. For more information on the data collection efforts and methodology for calibration and validation of the base year AM and PM peak period VISSIM models, please refer to the *VISSIM Calibration Technical Memorandum for Project I-5703 (Atkins, April 2021).*

After the existing conditions model was calibrated and validated, it was determined that highway operations in the future year No-Build and Build models would experience significant impacts due to congestion from the surface street network spilling back onto the highway network. In particular, the Crossroads Boulevard flyover from U.S. 1/U.S. 64 would cause queueing and congestion which would impact the interchange of I-40 and I-440/U.S. 1/U.S. 64 as well as mainline operations on I-40. In coordination with NCDOT and FHWA, the modified analysis approach was to separately analyze the surface street network and the highway network. This overall traffic operations analysis isolates the freeway operations in the study area for the No-Build and Build Alternatives to facilitate comparison of the build options for the central interchange. An additional traffic operations analysis was completed around the Walnut Street/Crossroads Plaza shopping center using TransModeler to identify reasonable solutions to mitigate the predicted traffic queues on the surface street network. For more information on the surface streets traffic operations analysis, results, and recommendations, please refer to the *Local Streets Analysis Technical Memorandum for Project I-5703 (Atkins, April 2021).*

The Cary Parkway interchange with U.S. 1/U.S. 64 was also observed to experience significant congestion issues as U.S. 1/U.S. 64 southbound drops from six total lanes (including collector-distributor lanes) near the Walnut Street interchange to three lanes through the Cary Parkway interchange. These queues would back up to and impact the central interchange with I-40, especially as the build alternatives would allow more efficient flow of traffic volumes from I-40 eastbound and westbound to U.S. 1/U.S. 64 southbound and lesson the constraint from the ramps compared to the 2035 No-Build conditions. Based on discussion with NCDOT and FHWA on July 30, 2019, this interchange was removed from the models for the 2035 No-Build and Build conditions and U.S. 1/ U.S. 64 southbound was kept at four lanes north of Cary Parkway to facilitate useful comparisons. The updated study area for this highways traffic analysis is shown in Figure 7. Observed model conditions at the interchange are documented in Section 3.4 for future recommendations.

In coordination with NCDOT, FHWA, CAMPO, the Town of Cary, and other stakeholders, three build scenarios, shown in Figure 8, were developed to improve operations of the heaviest movements at the central interchange while considering budgetary constraints, constructability, and minimization of impacts to surrounding areas. Traffic operations analysis was performed for the following alternatives:

- 2018 Existing Conditions
- 2035 No-Build Alternative
- 2035 Build Alternative 1 (Box Interchange)
- 2035 Build Alternative 2 (Turbine Interchange)
- 2035 Build Alternative 3 (Two Loop Partial Turbine Interchange)

Traffic forecast information was available for 2035 and 2045. The build year evaluated was 2035 due to the multiple traffic congestion issues present throughout the study area already occurring in the 2035 conditions analysis. These congestion issues would worsen by 2045, removing the ability to make meaningful comparisons between the No-Build alternative and the Build alternatives and amongst the Build alternatives. Traffic forecast information for both years is provided in the *Traffic Forecast Report for Project I-5703 (Atkins, September 2018).*

2. Traffic Volume and Characteristics

Based on existing conditions speed data and queueing observations, it was determined that a 4-hour analysis from 6:00 AM to 10:00 AM and a 3.5-hour analysis from 3:30 PM to 7:00 PM capture the peak periods of both the I-40 and I-440/U.S. 1/U.S. 64 corridors. Hourly traffic volumes for each hour of the analysis period were collected using traffic count data including turning movement counts for each ramp terminal and major surface street intersection as well as mainline volume and classification tube counts on the freeways. Peak hour traffic volumes along the freeway and major cross streets were calculated and then balanced throughout the network. Volume data was summarized separately for cars and trucks. The balanced peak hour volumes for the 2018 existing conditions are shown in Figures 9a-g.

Origin-destination (OD) data from Streetlight Data was also used to create separate passenger car and truck OD matrices for each analysis hour for the existing conditions. For each zone in the OD matrix, the hourly volumes at origins and destinations were calculated from the traffic counts. These volumes were then used as targets and the OD matrix developed from the raw Streetlight data was iterated until the total origin and destination volumes closely matched the target volumes. These refined OD matrices were used to develop route inputs and compositions for the VISSIM model. For more information on data collection efforts, data review, and volume development for the existing conditions analysis, please refer to the *VISSIM Calibration Technical Memorandum for Project I-5703*.

Volumes for the 2035 No-Build network were developed using growth factors from the I-5703 traffic forecast to grow the intersection turning movement volumes as well as link target volumes for each segment within the network from the 2018 existing conditions volumes. After balancing, these projected target volumes were input into TransModeler along with initial OD seed matrices developed from the 2018 existing conditions OD matrices. A simplified network was developed in TransModeler to represent the 2035 No-Build condition and the Origin-Destination Matrix Estimation (ODME) process was run to develop an estimated OD matrix for each peak hour. The estimated 2035 No-Build OD matrices were then iterated to develop final OD matrices for the 2035 No-Build conditions. The balanced peak hour volumes for the 2035 No-Build conditions are shown in Figures 10a-g and the final OD matrices as well as route inputs and compositions for the VISSIM model for the 2035 No-Build network are presented in Appendix B.

Volumes for the 2035 Build network were developed using diversion factors from the I-5703 traffic forecast to adjust the intersection turning movement volumes as well as link target volumes for each segment within the network from the 2035 No-Build conditions volumes. After balancing, these adjusted target volumes were input into TransModeler along with initial OD matrices developed from the 2035 No-Build conditions OD matrices. A simplified network was developed in TransModeler to represent the 2035 Build condition and the ODME process was run to develop an estimated OD matrix for each peak hour. The estimated 2035 Build OD matrices were then iterated to develop final OD matrices for the 2035 Build conditions. The balanced peak hour volumes for the 2035 Build Alternatives are shown in Figures 11a-g and the final OD matrices as well as route inputs and compositions for the VISSIM models for the 2035 Build network are presented in Appendix B. The balanced peak hour volumes shown for the 2035 Build Alternatives figures also contain a portion of the surface street network around the Walnut Street/Crossroads Plaza shopping center separately evaluated as part of the local street analysis in TransModeler. These hourly volumes reflect the 2035 Build conditions with no additional improvements made to the surface street network in the area. For additional information related to the traffic volume development and operational analysis for the surface street network around the Walnut Street/Crossroads Plaza shopping center, please refer to the *Local Streets Analysis Technical Memorandum for Project I-5703.*

Volumes were also developed for the 2045 No-Build and Build conditions using the same methodology and growth and diversion factors from the I-5703 traffic forecast. The balanced peak hour volumes for the 2045 No-Build and Build conditions are shown in Appendix B. No additional

traffic operations analyses were completed for the 2045 conditions due to the multiple traffic congestion issues present throughout the study area already in the 2035 conditions analyses. These congestion issues would worsen by 2045, removing the ability to make meaningful comparisons between alternatives in the analysis.

3. Traffic Analysis Methodology

VISSIM Version 9.00, Build 12 was used to model the AM peak 4-hour period and the PM peak 3.5-hour period. As mentioned previously, the study area network included the I-40 and I-440/U.S. 1 mainlines, ramps, ramp terminal intersections, and interchange crossroads. The study area for the 2035 No-Build and Build conditions is shown in Figure 7. The same VISSIM model settings and parameters for intersection control, driver behavior, and freeway operations from the calibrated existing model were used for the 2035 No-Build and Build models. For more information on the VISSIM settings and parameters used to calibrate and validate the existing model, please refer to the *VISSIM Calibration Technical Memorandum.*

3.1. Geometry

The model was constructed by coding the roadway network over scaled aerial photography and schematics for the build alternatives. As recommended by PTV (makers of VISSIM), acceleration lanes were coded as separate links with the number of lanes equal to the number of mainline lanes plus the acceleration lane(s). In addition, for the acceleration lanes, lane changes were prohibited from the adjacent mainline lane to the acceleration lane. The length of the link was determined by measuring from the gore point to the end of the acceleration lane taper. Roadway geometry including the number of lanes, location of on- and off-ramps, location of lane additions and drops, along with speed limits, were considered as part of base model development.

3.2. Vehicles

The North American default file containing vehicle characteristics for each vehicle type, most important of which are size and acceleration and deceleration capabilities, was used as the basis for this model. This provides a more localized set of default driving conditions and capabilities, ensuring a more realistic model for North American networks. Using the North American default file is significant because the range of vehicle types and capabilities in other regions, such as Europe or Asia, can differ substantially.

3.3. Measures of Effectiveness

The 2018 existing conditions and 2035 No-Build and Build alternatives were analyzed using their respective volume inputs and compositions based on the OD matrices developed for each peak hour. Each analysis was based on ten simulation runs using the same random seed numbers for each alternative. The MOEs used to evaluate the operations in the study area and make comparisons between the interchange alternatives were travel times along the freeway segments and freeway/ramp level of service (LOS) calculated based on density. The 95th percentile worst case was used for the MOEs based on the ten simulation runs.

3.4. Additional Considerations

To identify reasonable solutions to mitigate predicted traffic queues from the U.S. 1/U.S. 64 southbound flyover to Crossroads Boulevard and the new U.S. 1/U.S. 64 northbound ramps to Piney Plains Road and Dillard Drive, which would otherwise impact the central I-40/I-440/U.S. 1/U.S. 64 interchange, a separate surface street analysis was conducted in TransModeler. For more information on the traffic operations analysis and recommendations, please refer to the *Local Streets Analysis Memorandum for Project I-5703*.

The Cary Parkway interchange with U.S. 1/U.S. 64 was also observed to experience significant congestion issues as U.S. 1/U.S. 64 southbound drops from six total lanes (including collector-distributor lanes) near the Walnut Street interchange to three lanes through the Cary Parkway interchange. The majority of traffic on U.S. 1/U.S. 64 southbound is through-traffic destined beyond the Cary Parkway interchange, but volumes traveling from the I-40 and Walnut Street interchanges

are forced to change three lanes within a short distance to continue southbound, causing queueing which would back up to and impact the central interchange with I-40 and the proposed ramps.

To alleviate the queueing on U.S. 1/U.S. 64 southbound in the future, potential solutions include reducing the number of lane changes required for through-traffic by maintaining a fourth through lane beyond the Cary Parkway interchange.

Based on discussion with NCDOT and FHWA on July 30, 2019, this interchange was removed from the models for the 2035 No-Build and Build conditions and U.S. 1/ U.S. 64 southbound was kept at four lanes north of Cary Parkway to facilitate useful comparisons. The observed conditions on U.S. 1/U.S. 64 southbound in the Cary Parkway interchange area and the impact of the proposed future solution are documented in Appendix C.

4. Build Alternatives Development

The existing lane geometry was used for the 2035 No-Build Alternative, with the existing ramp connections to U.S. 1/U.S. 64 northbound at both Walnut Street and Crossroads Boulevard maintained. For the 2035 No-Build and Build alternatives, the I-40 mainline was widened to five lanes in each direction from west of Cary Towne Boulevard to east of Lake Wheeler Road. There were four lanes in each direction within each interchange along I-40 due to auxiliary lanes dropping and resuming. I-440 north of the I-40 interchange was also widened to four lanes in each direction, continuing to three lanes in each direction north of the Jones Franklin Road interchange based on the ongoing U-2719 project improvements to I-440.

Three build scenarios, shown in Figures 8a-d, were developed to improve operations of the heaviest movements at the central interchange while staying within budgetary and constructability constraints and minimizing impacts to surrounding areas. The heaviest movements at the central interchange were from U.S. 1/U.S. 64 northbound to both I-40 eastbound and I-40 westbound in the AM peak period and from I-40 eastbound and I-40 westbound to U.S. 1/U.S. 64 southbound in the PM peak period.

To improve traffic operations along U.S. 1/U.S. 64 northbound and alleviate heavy concentrated weaving movements, all three 2035 Build Alternatives would remove the Crossroads Boulevard entrance ramp to U.S. 1/U.S. 64 northbound while also relocating the U.S. 1/U.S. 64 northbound entrance and exit ramps at Walnut Street to the intersection of Dillard Drive/Piney Plains Road.

To improve traffic operations along U.S. 1/U.S. 64 southbound, the existing southbound collector-distributor (C-D) system would be maintained in all three 2035 Build Alternatives with additional refinements to reduce conflicts and weaving movements. Traffic exiting from I-40 eastbound to U.S. 1/U.S. 64 southbound would have the option to merge onto the southbound C-D lanes for local access to the Crossroads Boulevard and Buck Jones Road exits or merge onto additional divided lanes separated from both the existing local access C-D lanes and the U.S. 1/U.S. 64 southbound mainline lanes. This additional southbound segment would then merge with the southbound C-D lanes after the Crossroads exit ramps, providing access to the Walnut Street exit ramp and subsequently merging back onto the U.S. 1/U.S. 64 southbound mainline.

The interchange and freeway improvements common to the 2035 Build Alternatives are shown in Figure 8d. In addition to these improvements, each build alternative would reconfigure the central interchange with additional improvements to streamline operations and reduce congestion.

In Build Alternative 1, shown in Figure 8a, a box interchange design would add dedicated flyovers for the heaviest northbound to westbound and westbound to southbound movements, reducing conflict points and potential bottleneck areas. All four existing loop ramps would be maintained with their weaving sections, however the heavy volumes on two of the loops would be substantially reduced with the redundant flyover movements. The two flyover ramps would have nontraditional left-side entrances and exits to and from the freeway mainlines. The box interchange configuration in Build Alternative 1 would maintain local access while separating all major movements.

In Build Alternative 2, shown in Figure 8b, a turbine interchange design would add dedicated flyovers for the same freeway movements as Build Alternative 1, but with traditional right-side entrances and exits. The existing loop from U.S. 1/U.S. 64 northbound to I-40 westbound would be removed, which would also eliminate two of the existing loop weaving sections. The turbine interchange configuration in Build Alternative 2 would maintain local access while separating through movements.

In Build Alternative 3, shown in Figure 8c, a two loop partial turbine interchange design would add dedicated flyovers for the same freeway movements as Build Alternatives 1 and 2, in addition to a third flyover ramp for traffic traveling from I-440 southbound to I-40 eastbound. Two of the redundant loop ramps would be removed, which would also remove all weaving sections from the loop ramps. The partial turbine interchange configuration in Build Alternative 3 would maintain local access while separating through movements.

5. Operation Analysis Results

The travel time and level of service results for freeways and ramps within the central interchange as well as on the freeway mainlines within the study area are discussed below for the 2018 existing conditions and 2035 No-Build and Build Alternatives. Heat maps showing LOS results along the freeway mainlines are shown in Appendix A. More detailed analysis results showing the average densities from the ten simulation runs for each alternative are shown in Appendix D. Summary comparison tables for the LOS and travel time results of all alternatives are shown in Tables 11 and 12 in Section 6.

5.1. 2018 Existing Conditions

For the 2018 existing conditions, the existing ramp configuration at the central interchange and the connected Walnut Street/Crossroads Boulevard interchange was analyzed using the calibrated existing conditions model.

AM Peak Period

During the AM peak period, the central interchange would operate at LOS E or F on the U.S. 1/U.S. 64 northbound ramp to I-40 eastbound as well as the U.S. 1/U.S. 64 northbound loop to I-40 westbound for most of the peak period, shown in Figure 1 at locations 1 and 2 and shown in the heat diagram in Table 1. The I-40 westbound loop to U.S. 1/U.S. 64 southbound would also operate at LOS E or F for most of the AM peak period, shown at location 12. In addition, the C-D merge and diverge points to and from the I-40 westbound mainline would operate at LOS E or F for large portions of the AM peak period, shown at locations 10 and 13. The C-D merge point onto the I-40 eastbound mainline would also operate at LOS E or F for several hours of the AM peak period, shown at location 9.

For the freeway mainlines, LOS heat maps are shown in Appendix A. During the AM peak period, the I-40 eastbound mainline would operate at LOS D or better throughout the study area from west of Cary Towne Boulevard to east of Lake Wheeler Road for almost all segments throughout the entire AM peak period. The westbound I-40 mainline would operate at LOS E or F from approximately 7:30-9:15 AM for much of the study area segments from Cary Towne Boulevard through the central interchange to Lake Wheeler Road. In addition, I-40 westbound segments between the Cary Towne Boulevard and central interchanges as well as east of the central interchange would operate at LOS E or F from 6:15-7:30 AM. The northbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F from 6:45-8:30 AM for most of the corridor from north of Jones Franklin Road to south of Walnut Street and would continue to operate at LOS F from the central interchange and to the south throughout the rest of the AM peak period. The southbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS D or better throughout the study area for the entire AM peak period, with the exception of LOS E operations for a small portion of the mainline north of the Jones Franklin Road exit ramp from 7:30-8:45 AM.

Travel times are shown in Table 11 in Section 6. During the AM peak period, average travel time on the I-440/U.S. 1/U.S. 64 northbound mainline through the study area would range from about four to seven minutes. Travel time on the I-440/U.S. 1/U.S. 64 southbound mainline would be about four minutes throughout the AM peak period. Average travel time on the I-40 eastbound mainline throughout the study area would stay fairly consistent just below seven minutes throughout the AM peak period, and average travel times on the I-40 westbound mainline would range from about seven to thirteen minutes. Travel times for the ramps within the central interchange generally were within one to two minutes throughout the AM peak period, however the U.S. 1/U.S. 64 northbound loop to I-40 westbound had average travel times of three to almost five minutes during some AM hours and the I-40 westbound to U.S. 1/U.S. 64 southbound loop also had travel times above three minutes for two of the AM hours.

PM Peak Period

During the PM peak period, the central interchange would operate at LOS E or F on several of the ramps for most of the peak period, shown in Figure 1 and Table 2. The U.S. 1/U.S. 64 northbound ramp to I-40 eastbound and the U.S. 1/U.S. 64 northbound loop to I-40 westbound, as well as the I-40 westbound loop to U.S. 1/U.S. 64 southbound and the I-40 eastbound ramp to U.S. 1/U.S. 64 southbound would all operate at LOS E or F for much of the peak period, shown at locations 1, 2, 7 and 12. In addition, the collector-distributor merge and diverge points to and from the I-40 eastbound and westbound mainlines would operate at LOS E or F for portions of the PM peak period, shown at locations 6, 9, 10 and 13.

For the freeway mainlines, LOS heat maps are shown in Appendix A. During the PM peak period, the I-40 eastbound mainline would operate at LOS E or F in concentrated areas adjacent to the Lake Wheeler Road and Gorman Street interchanges for most of the peak period, as well as from west of the central interchange to Cary Towne Boulevard and further to the west for most of the peak period. The I-40 westbound mainline would operate mostly at LOS D or better west of the central interchange, but would operate at LOS E or F east of the central interchange for most of the PM peak period and extending further east to Gorman Street and Lake Wheeler Road later in the peak period. The northbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F at the central interchange and extending south of Walnut Street for most of the peak period, also operating at LOS E or F from 4:45-5:45 PM from north of Jones Franklin Road extending south to the central interchange. Finally, the southbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS D or better within the central interchange and to the south for most of the peak period. The southbound mainline would operate mostly at LOS E or F throughout the PM peak period north of the central interchange extending past Jones Franklin Road, as well as operating mostly at LOS F south of the Walnut Street entrance ramps from 5:00-5:45 PM.

Travel times are shown in Table 12 in Section 6. During the PM peak period, average travel time on the I-440/U.S. 1/U.S. 64 northbound mainline through the study area would range from about four to seven minutes. Travel time on the I-440/U.S. 1/U.S. 64 southbound mainline range from about four to five minutes. Average travel time on the I-40 eastbound mainline throughout the study area would range from about seven to eight minutes during the PM peak period, and average travel time on the I-40 westbound mainline would also range from about seven to eight minutes. Travel times for the ramps within the central interchange generally were within one to two minutes throughout the PM peak period, however the U.S. 1/U.S. 64 northbound loop to I-40 westbound had average travel times over three minutes during some PM hours and the I-40 westbound to U.S. 1/U.S. 64 southbound loop also had travel times of three to four minutes for some of the PM hours.

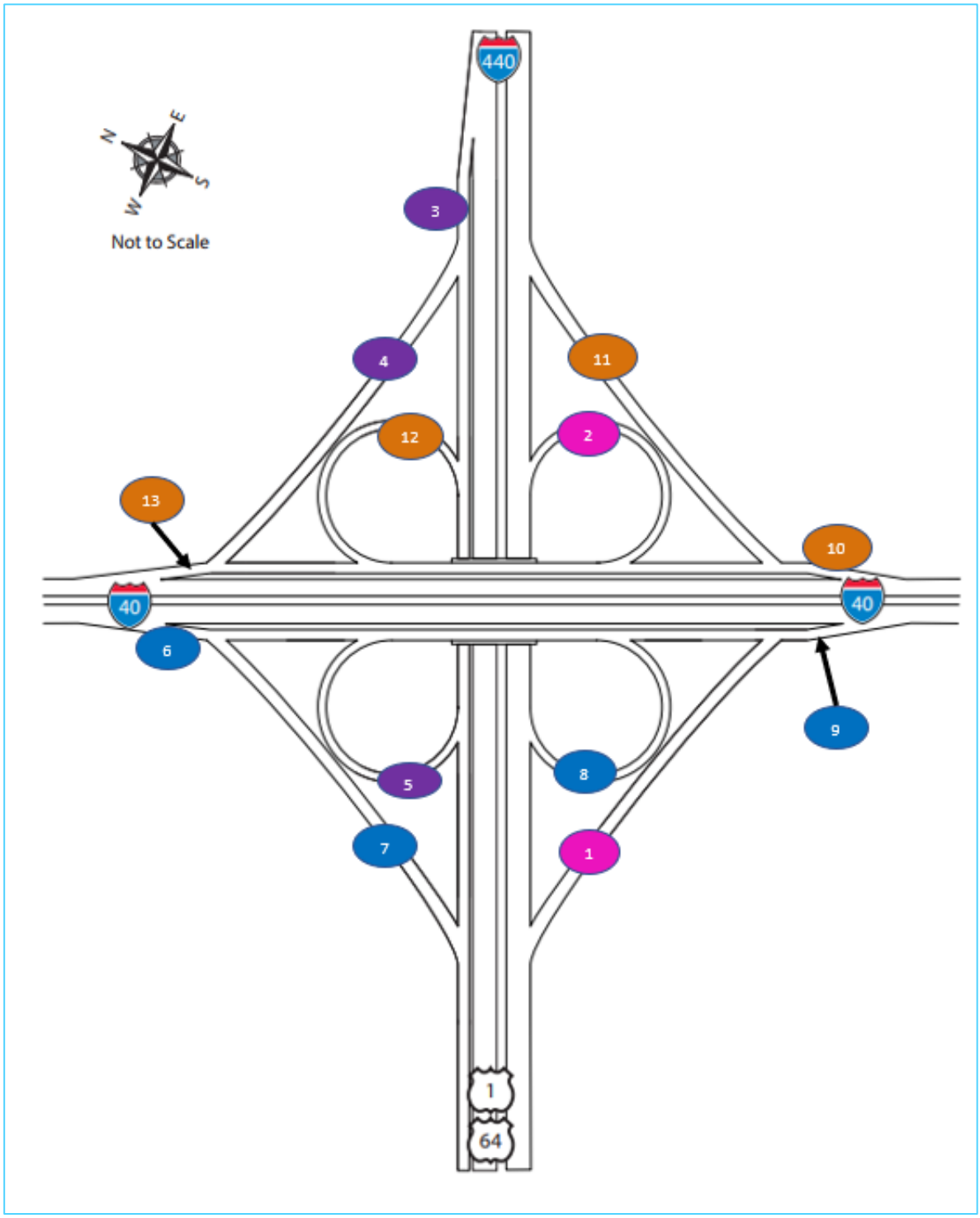
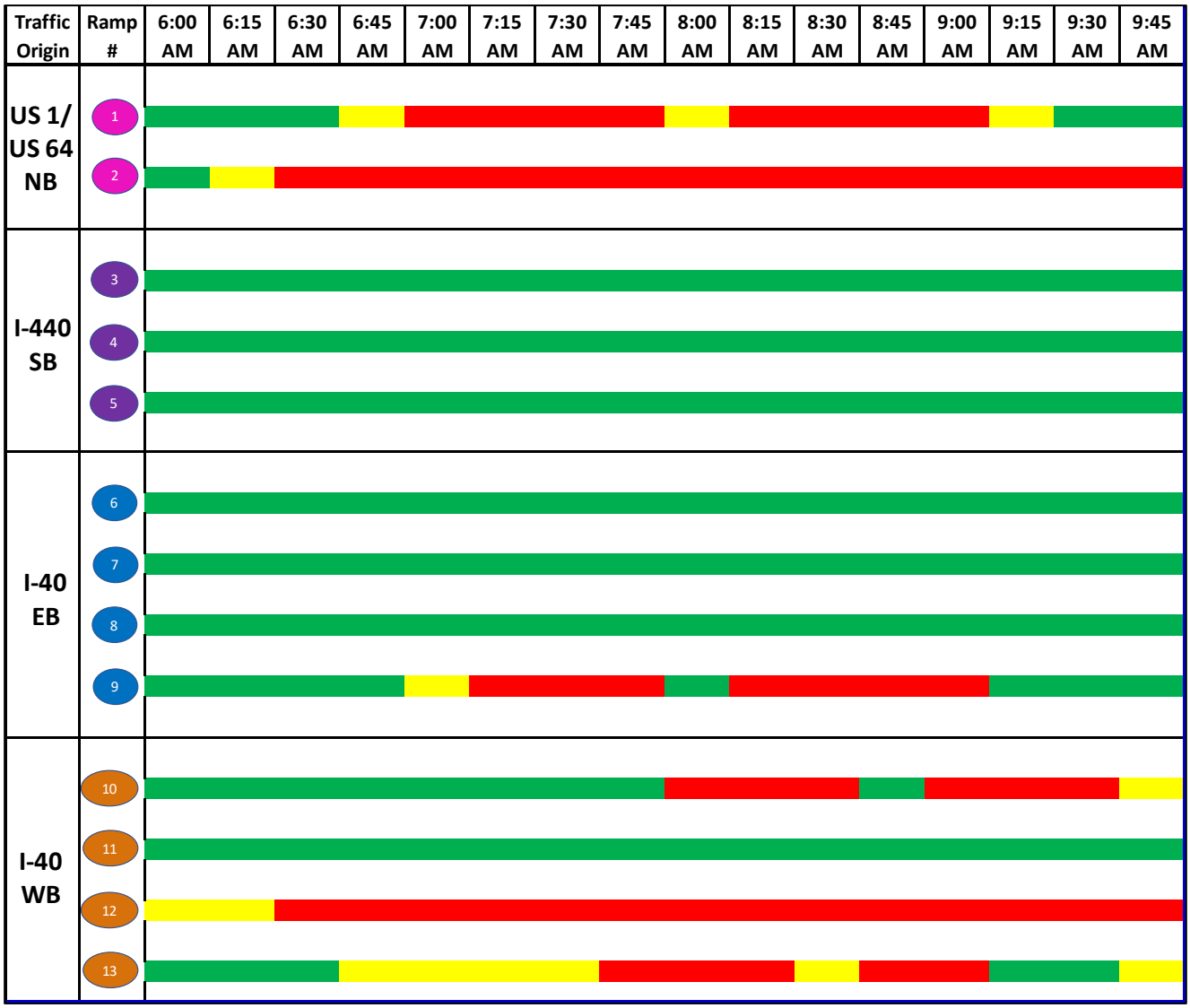


Figure 1. 2018 Existing Conditions Central Interchange LOS Diagram

Table 1. 2018 Existing Conditions Central Interchange LOS (AM)



Green = LOS D or better (density <35 pc/mi/lane)
Yellow = LOS E (density 35-45 pc/mi/lane)
Red = LOS F (density >45 pc/mi/lane)

Table 2. 2018 Existing Conditions Central Interchange LOS (PM)

Traffic Origin	Ramp #	3:30 PM	3:45 PM	4:00 PM	4:15 PM	4:30 PM	4:45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM	6:00 PM	6:15 PM	6:30 PM	6:45 PM
US 1/ US 64 NB	1														
	2														
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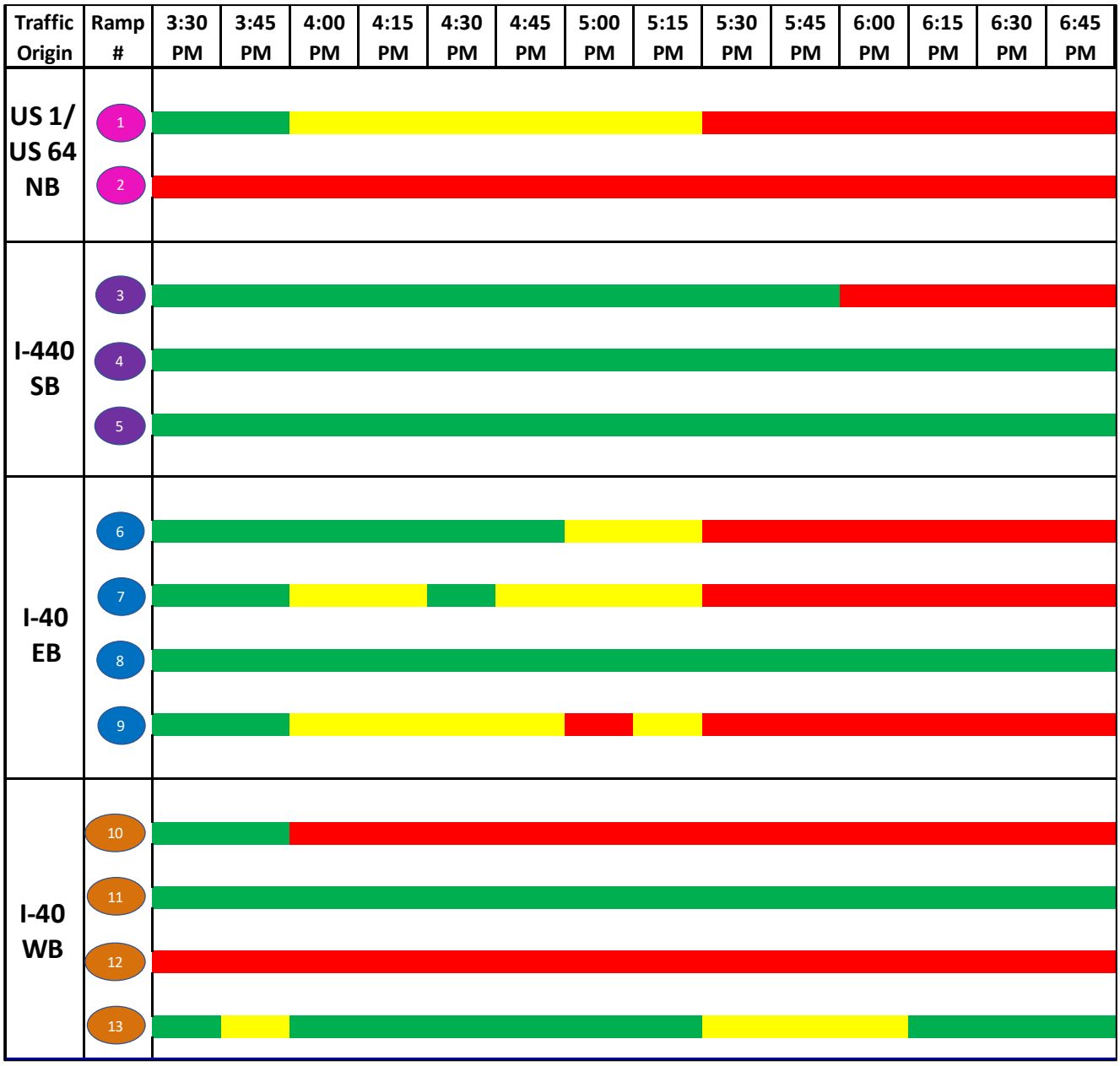


Green = LOS D or better (density <35 pc/mi/lane)
Yellow = LOS E (density 35-45 pc/mi/lane)
Red = LOS F (density >45 pc/mi/lane)

5.2. 2035 No-Build Alternative

For the 2035 No-Build conditions, the existing ramp configuration at the central interchange and the connected Walnut Street/Crossroads Boulevard interchange was analyzed. The I-40 and I-440 corridors were widened by one lane in each direction in most locations compared to the 2018 existing conditions as described in Section 4.

AM Peak Period

During the AM peak period, the central interchange would operate at LOS F on the U.S. 1/U.S. 64 northbound loop to I-40 westbound for almost the entire peak period, shown in Figure 2 at location 2 and shown in the heat diagram in Table 3. The U.S. 1/U.S. 64 northbound ramp to I-40 eastbound would operate at LOS E or F for the second half of the AM peak period, from 8:00-10:00 AM, shown at location 1. The I-40 westbound loop to U.S. 1/U.S. 64 southbound would also operate at LOS F for the entire AM peak period, shown at location 12. In addition, the I-40 eastbound ramp to U.S. 1/U.S. 64 southbound would operate at LOS E from 7:15-9:15 AM, shown at location 7. Finally, the collector/distributor merge and diverge points to and from the I-40 westbound mainline would operate at LOS E or F for most of the AM peak period, shown at locations 10 and 13. The C-D merge and diverge points to and from the I-40 eastbound mainline would also operate at LOS E or F for several hours of the AM peak period, shown at locations 6 and 9.

For the freeway mainlines, LOS heat maps are shown in Appendix A. During the AM peak period, the I-40 eastbound mainline would operate at LOS E or F for most of the peak period east of the central interchange as well as from the Cary Towne Boulevard exit ramp to the central interchange. Within the central interchange, the I-40 eastbound mainline would operate at LOS E around 9:45 AM. The westbound I-40 mainline would operate at LOS E or F for almost the entire peak period throughout most of the entire corridor from west of Cary Towne Boulevard to east of Lake Wheeler Road. The northbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F within the central interchange and stretching south past Walnut Street starting at about 6:30 AM and lasting the rest of the AM peak period. The southbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F south of the Walnut Street interchange for almost the entire AM peak period as well as north of the central interchange from 7:30-9:00 AM.

Travel times are shown in Table 11 in Section 6. During the AM peak period, average travel time on the I-440/U.S. 1/U.S. 64 northbound mainline through the study area would range from about six to seventeen minutes. Travel time on the I-440/U.S. 1/U.S. 64 southbound mainline would be about five minutes throughout the AM peak period. Average travel time on the I-40 eastbound mainline through the study area would range from about ten to thirteen minutes, and average travel times on the I-40 westbound mainline would also range from about ten to thirteen minutes. Travel times for the ramps within the central interchange generally were within two to four minutes throughout the AM peak period, however the U.S. 1/U.S. 64 northbound loop to I-40 westbound had average travel times of over six minutes during some AM hours and the I-40 westbound to U.S. 1/U.S. 64 southbound loop also had travel times above six minutes for several of the AM hours.

PM Peak Period

During the PM peak period, the central interchange would operate at LOS E or F on many of the ramps for most of the peak period, shown in Figure 2 and Table 4. The U.S. 1/U.S. 64 northbound ramp to I-40 eastbound and the U.S. 1/U.S. 64 northbound loop to I-40 westbound, as well as the I-40 westbound loop to U.S. 1/U.S. 64 southbound and the I-40 eastbound ramp to U.S. 1/U.S. 64 southbound would all operate at LOS E or F for much of the peak period, shown at locations 1, 2, 7 and 12. In addition, the C-D merge and diverge points to and from the I-40 eastbound and westbound mainlines would operate at LOS E or F for most of the PM peak period, shown at locations 6, 9, 10 and 13.

For the freeway mainlines, LOS heat maps are shown in Appendix A. During the PM peak period, the I-40 eastbound mainline would operate at LOS E or F throughout the entire corridor from 4:00 PM through the rest of the peak period. The I-40 westbound mainline would also operate at LOS E or F

throughout the corridor starting around 4:00-4:15 PM and remaining through the rest of the PM peak period. The northbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F at the central interchange and extending south of Walnut Street starting from 4:00 PM through the rest of the peak period, also operating at LOS E from north of Jones Franklin Road extending south to the central interchange from 4:15 PM through the rest of the peak period. Finally, the southbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS D or better within the central interchange for most of the peak period. The southbound mainline would operate at LOS E or F north of the central interchange extending past Jones Franklin Road from 4:00-6:30 PM, as well as operating mostly at LOS F south of the Walnut Street entrance ramps from 4:00 PM through the rest of the peak period.

Travel times are shown in Table 12 in Section 6. During the PM peak period, average travel time on the I-440/U.S. 1/U.S. 64 northbound mainline through the study area would range from about five to eleven minutes. Travel time on the I-440/U.S. 1/U.S. 64 southbound mainline would remain consistent at about five minutes. Average travel time on the I-40 eastbound mainline through the study area would range from about ten to eleven minutes during the PM peak period, and average travel time on the I-40 westbound mainline would range from about ten to thirty minutes. Travel times for the ramps within the central interchange generally were within one to three minutes throughout the PM peak period, however both the U.S. 1/U.S. 64 northbound loop to I-40 westbound and the I-40 westbound ramp to I-440 northbound had average travel times over four minutes during some PM hours. The I-40 westbound to U.S. 1/U.S. 64 southbound loop also had travel times of six to seven minutes for some of the PM hours.

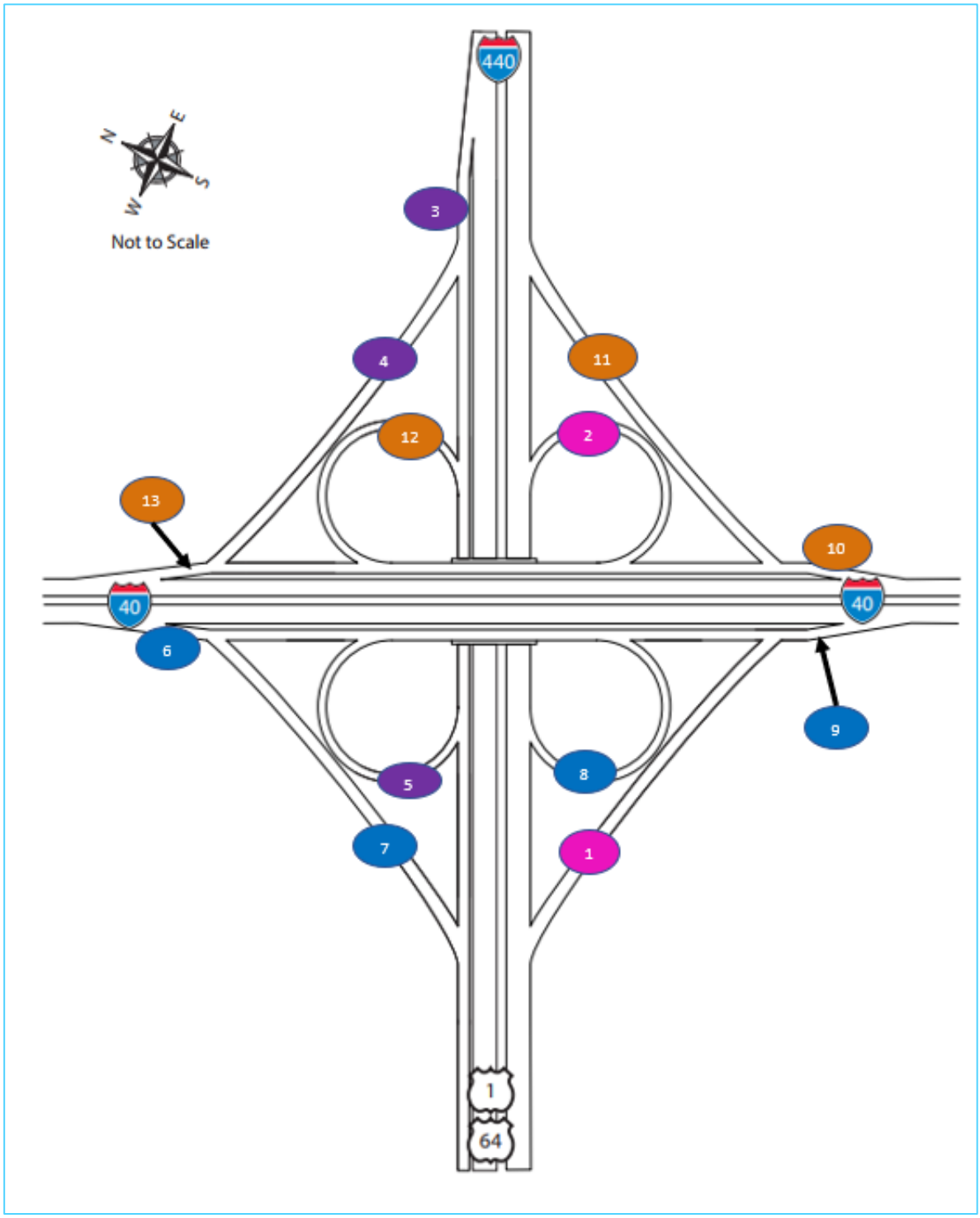
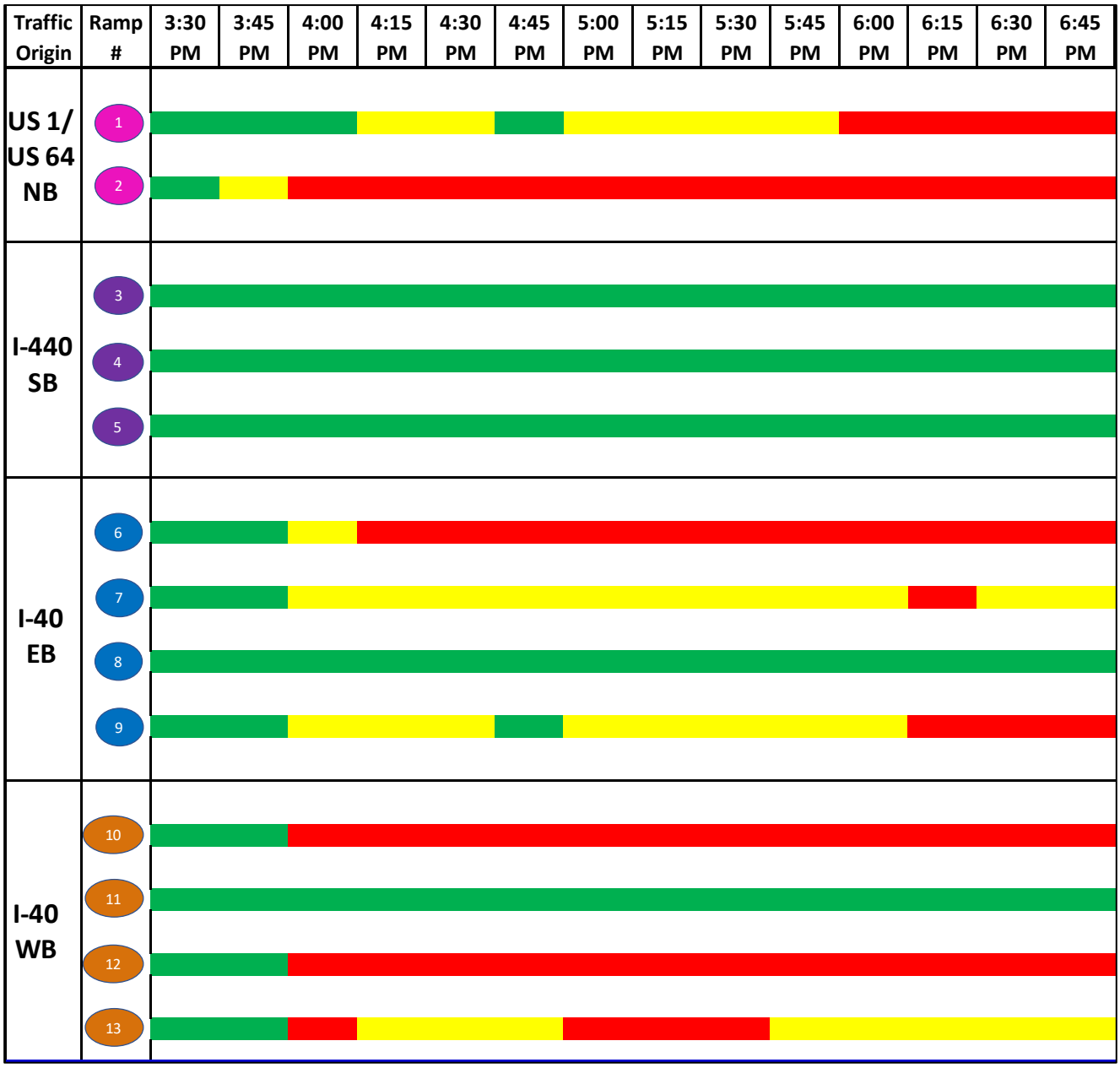


Figure **2**. 2035 No-Build Alternative Central Interchange LOS Diagram

Table 3. 2035 No-Build Alternative Central Interchange LOS (AM)

Green = LOS D or better (density <35 pc/mi/lane)
Yellow = LOS E (density 35-45 pc/mi/lane)
Red = LOS F (density >45 pc/mi/lane)

Table 4. 2035 No-Build Alternative Central Interchange LOS (PM)



Green = LOS D or better (density <35 pc/mi/lane)
Yellow = LOS E (density 35-45 pc/mi/lane)
Red = LOS F (density >45 pc/mi/lane)

5.3. 2035 Build Alternative 1

For 2035 Build Alternative 1, shown in Figure 8a, the geometry from the 2035 No-Build conditions was reconfigured at the central interchange using a box interchange design to add dedicated flyovers with left-side entrances and exits for the heaviest northbound to westbound and westbound to southbound movements while maintaining all four existing loop ramps. In addition, the Crossroads Boulevard entrance ramp to U.S. 1/U.S. 64 northbound was removed and the U.S. 1/U.S. 64 northbound entrance and exit ramps at Walnut Street were relocated to Dillard Drive/Piney Plains Road.

AM Peak Period

During the AM peak period, the central interchange would operate at LOS D or better at most ramp locations throughout the peak period, shown in Figure 3 and in the heat diagram in Table 5. The U.S. 1/U.S. 64 northbound ramp to I-40 eastbound would operate at LOS E or F for most of the peak period, in addition to the merge point from the I-40 eastbound C-D Road onto the I-40 eastbound mainline; shown in Figure 3 at locations 1 and 11, respectively.

For the freeway mainlines, LOS heat maps are shown in Appendix A. During the AM peak period, the I-40 eastbound mainline would operate at LOS E or F for most of the peak period east of the central interchange as well as from east of the Cary Towne Boulevard interchange to the central interchange. Within the central interchange, the I-40 eastbound mainline would operate at LOS D or better throughout the peak period. The westbound I-40 mainline would operate at LOS E or F for almost the entire peak period from west of the central interchange and past Cary Towne Boulevard as well as at concentrated locations east of the exit ramps for the central interchange, Gorman Street interchange, and Lake Wheeler Road interchange. Within the central interchange, the I-40 westbound mainline would operate at LOS D or better for almost the entire peak period. The northbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F south of the central interchange and stretching south past Walnut Street/Dillard Drive starting at about 6:15 AM and lasting the rest of the AM peak period. The northbound mainline would also operate at LOS E or F from north of Jones Franklin Road through the central interchange from about 6:45-8:15 AM. The southbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F south of the central interchange with I-40 from about 6:45-9:15 AM as well as south of the Walnut Street ramps from about 6:30 AM through the rest of the AM peak period. The southbound mainline would also operate at LOS E or F north of the Jones Franklin Road interchange from about 7:15-9:15 AM.

Travel times are shown in Table 11 in Section 6. During the AM peak period, average travel time on the I-440/U.S. 1/U.S. 64 northbound mainline through the study area would range from about five to six minutes. Travel time on the I-440/U.S. 1/U.S. 64 southbound mainline would be about five minutes throughout the AM peak period. Average travel time on the I-40 eastbound mainline through the study area would remain fairly consistent just under ten minutes, and average travel times on the I-40 westbound mainline would perform the same. Travel times for the ramps within the central interchange were all under three minutes throughout the AM peak period.

PM Peak Period

During the PM peak period, the central interchange would operate at LOS D or better at most of the ramps throughout the peak period, shown in Figure 3 and Table 6. The C-D merge and diverge points to and from the I-40 eastbound mainline would operate at LOS E or F for most of the PM peak period, shown at locations 7 and 11.

For the freeway mainlines, LOS heat maps are shown in Appendix A. During the PM peak period, the I-40 eastbound mainline would operate at LOS E or F throughout the entire corridor from 4:00 PM through the rest of the peak period. Within the central interchange, the I-40 eastbound mainline would operate between LOS E and LOS D or higher throughout the peak period. The I-40 westbound mainline would operate at LOS E or F east of the central interchange starting around 4:00-4:15 PM and remaining through the rest of the PM peak period. The I-40 westbound corridor would operate at LOS D or better within the central interchange throughout the PM peak period, while operating at

LOS E west of the Cary Towne Boulevard interchange for most of the period. The northbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F south of the central interchange and extending south of Walnut Street/Dillard Drive starting from 4:00 PM through the rest of the peak period. The northbound mainline would also operate at LOS E from north of Jones Franklin Road extending south to the central interchange from 4:45-5:30 PM and within parts of the central interchange from 4:15 PM through the rest of the period. Finally, the southbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS D or better within the central interchange for most of the peak period with a few time intervals operating at LOS E. The southbound mainline would operate at LOS E or F north of the central interchange extending past Jones Franklin Road from 4:00 PM through the rest of the peak period, as well as operating mostly at LOS F south of the central interchange from 4:00 PM through the rest of the peak period.

Travel times are shown in Table 12 in Section 6. During the PM peak period, average travel time on the I-440/U.S. 1/U.S. 64 northbound mainline through the study area would range from about five to six minutes. Travel time on the I-440/U.S. 1/U.S. 64 southbound mainline would also range from about five to six minutes. Average travel time on the I-40 eastbound mainline through the study area would range remain fairly consistent just under ten minutes during the PM peak period, and average travel time on the I-40 westbound mainline would perform the same. Travel times for the ramps within the central interchange were all under three minutes throughout the PM peak period.

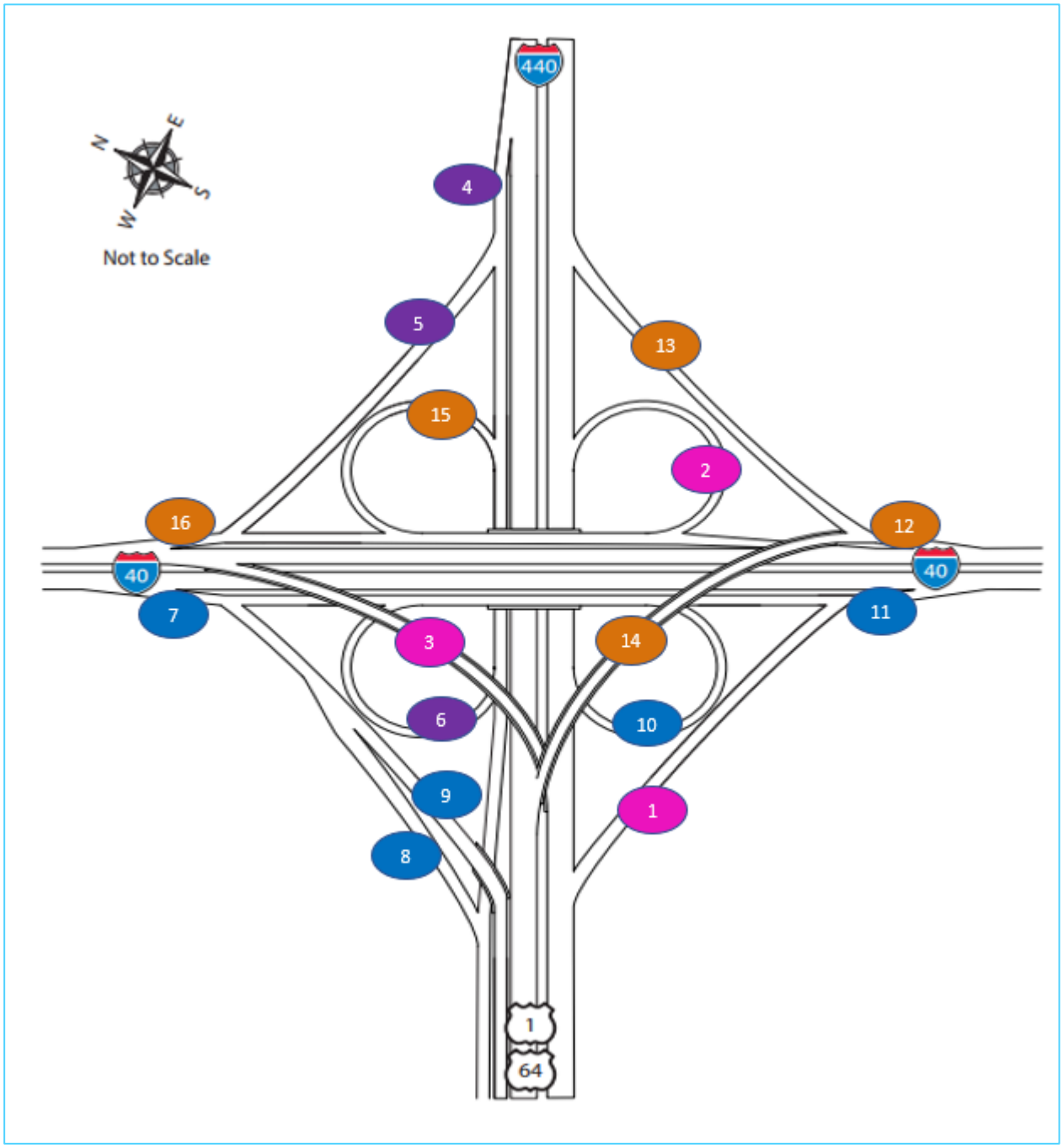
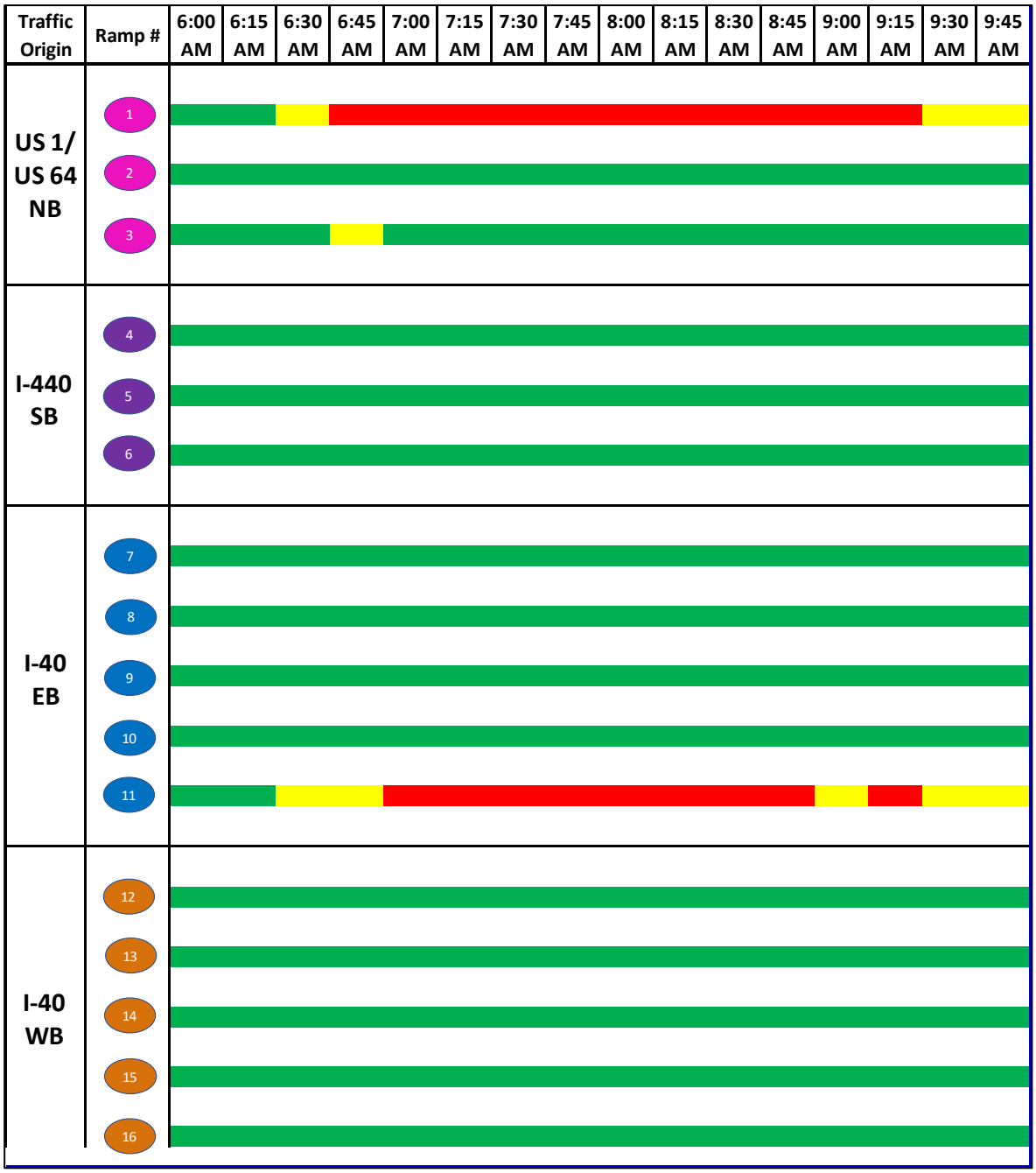


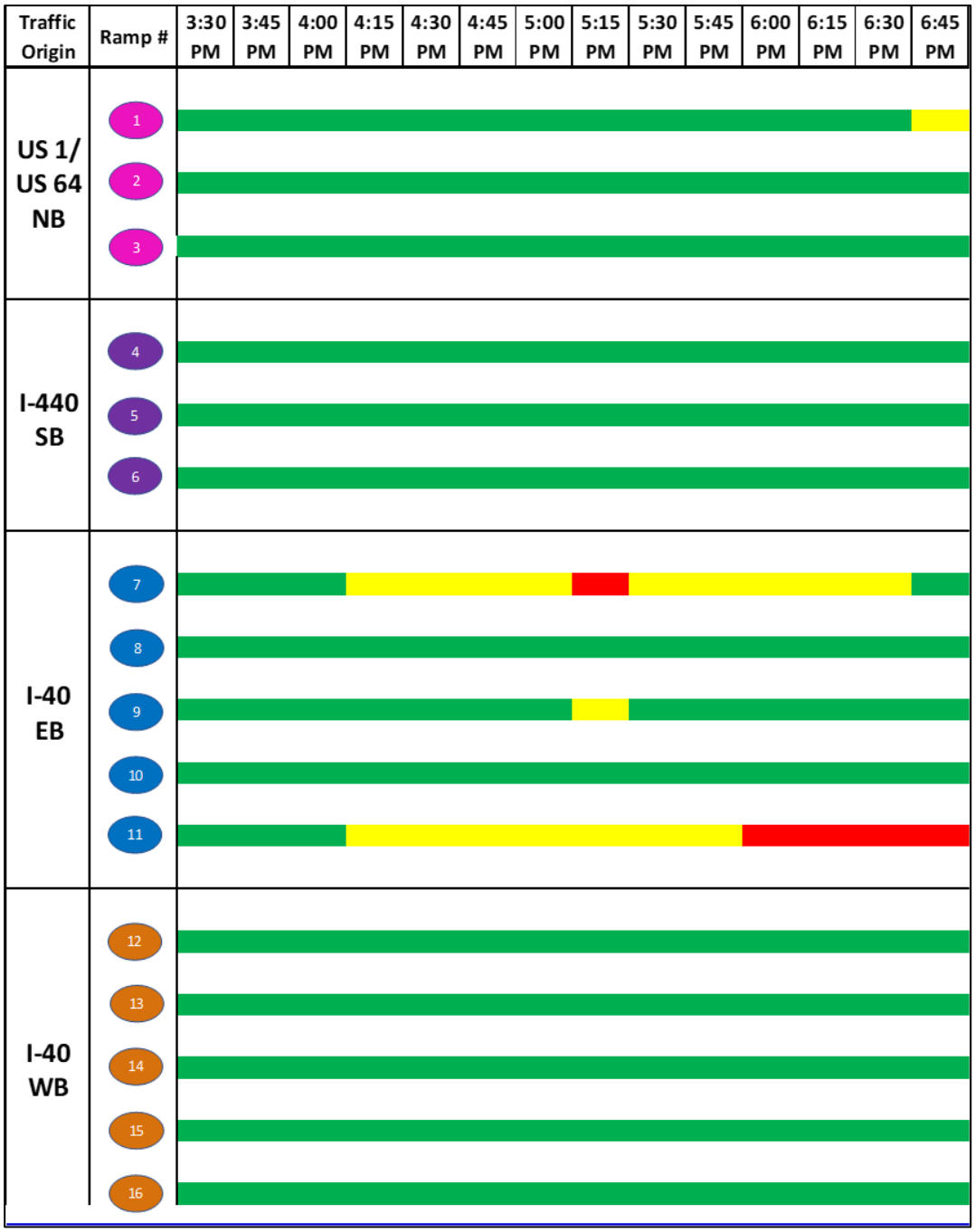
Figure 3. 2035 Build Alternative 1 Central Interchange LOS Diagram

Table 5. 2035 Build Alternative 1 Central Interchange LOS (AM)



Green = LOS D or better (density <35 pc/mi/lane)
Yellow = LOS E (density 35-45 pc/mi/lane)
Red = LOS F (density >45 pc/mi/lane)

Table 6. 2035 Build Alternative 1 Central Interchange LOS (PM)



Green = LOS D or better (density <35 pc/mi/lane)
Yellow = LOS E (density 35-45 pc/mi/lane)
Red = LOS F (density >45 pc/mi/lane)

5.4. 2035 Build Alternative 2

For 2035 Build Alternative 2, shown in Figure 8b, the geometry from the 2035 No-Build conditions was reconfigured at the central interchange using a turbine interchange design to add dedicated right-side flyovers for the heaviest northbound to westbound and westbound to southbound movements while maintaining three of the existing loop ramps and removing the loop from U.S. 1/U.S. 64 northbound to I-40 westbound. In addition, the Crossroads Boulevard entrance ramp to U.S. 1/U.S. 64 northbound was removed and the U.S. 1/U.S. 64 northbound entrance and exit ramps at Walnut Street were relocated to Dillard Drive/Piney Plains Road.

AM Peak Period

During the AM peak period, the central interchange would operate at LOS D or better at most ramp locations throughout the peak period, shown in Figure 4 and in the heat diagram in Table 7. The U.S. 1/U.S. 64 northbound ramp to I-40 eastbound would operate at LOS E or F for most of the peak period, in addition to the merge point from the I-40 eastbound collector/distributor onto the I-40 eastbound mainline; shown in Figure 4 at locations 1, 2, and 12. In addition, the I-40 westbound collector/distributor merge onto the westbound mainline would operate at LOS E or F for most of the AM peak period, shown at location 18. The diverge point from the I-40 eastbound mainline onto the eastbound collector/distributor would also operate at LOS E for about an hour, shown at location 7.

For the freeway mainlines, LOS heat maps are shown in Appendix A. During the AM peak period, the I-40 eastbound mainline would operate at LOS E or F for most of the peak period east of the central interchange as well as from east of the Cary Towne Boulevard interchange to the central interchange. Within the central interchange, the I-40 eastbound mainline would operate at LOS D or better throughout the peak period. The westbound I-40 mainline would operate at LOS E or F for almost the entire peak period from west of the central interchange and past Cary Towne Boulevard as well as at concentrated locations east of the exit ramps for the central interchange, Gorman Street interchange, and Lake Wheeler Road interchange. Within the central interchange, the I-40 westbound mainline would operate at LOS D or better for the entire peak period. The northbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F south of the central interchange and stretching south past Walnut Street/Dillard Drive starting at about 6:30 AM and lasting the rest of the AM peak period. The northbound mainline would also operate at LOS E or F from north of Jones Franklin Road through the central interchange from about 6:45-8:15 AM and at 9:15 AM. The southbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F south of the central interchange with I-40 from about 6:45-9:00 AM as well as south of the Walnut Street ramps from about 6:30 AM through the rest of the AM peak period. The southbound mainline would also operate at LOS E or F north of the Jones Franklin Road interchange from about 7:15-9:00 AM.

Travel times are shown in Table 11 in Section 6. During the AM peak period, average travel time on the I-440/U.S. 1/U.S. 64 northbound mainline through the study area would range from about five to six minutes. Travel time on the I-440/U.S. 1/U.S. 64 southbound mainline would be about five minutes throughout the AM peak period. Average travel time on the I-40 eastbound mainline through the study area would remain fairly consistent just under ten minutes, and average travel times on the I-40 westbound mainline would perform the same. Travel times for the ramps within the central interchange were all under three minutes throughout the AM peak period.

PM Peak Period

During the PM peak period, the central interchange would operate at LOS E or F at several of the ramp locations during most of the peak period, shown in Figure 4 and Table 8. The U.S. 1/U.S. 64 northbound ramp to I-40 eastbound would operate at LOS E or F for most of the peak period, shown at locations 1 and 2. The C-D merge and diverge points to and from the I-40 eastbound mainline would also operate at LOS E or F for most of the PM peak period, shown at locations 7 and 11. The I-40 eastbound ramp to U.S. 1/U.S. 64 southbound (non-local C-D) would operate at LOS E or F for most of the peak period, shown at locations 8 and 10. In addition, the I-40 westbound ramp to U.S. 1/U.S. 64 southbound would operate at LOS E or F for most of the peak period, shown at location 15.

Finally, the I-40 westbound C-D merge onto the westbound mainline would operate at LOS F for most of the PM peak period, shown at location 18.

For the freeway mainlines, LOS heat maps are shown in Appendix A. During the PM peak period, the I-40 eastbound mainline would operate at LOS E or F throughout the entire corridor from 4:00 PM through the rest of the peak period. Within the central interchange, the I-40 eastbound mainline would operate between LOS E and LOS D or higher throughout the peak period. The I-40 westbound mainline would operate at LOS E or F east of the central interchange starting around 4:00-4:15 PM and remaining through the rest of the PM peak period. The I-40 westbound corridor would operate at LOS D or better within the central interchange throughout the PM peak period, while operating at LOS E or F west of the central interchange for most of the period. The northbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F south of the central interchange and extending south of Walnut Street/Dillard Drive starting from 4:00 PM through the rest of the peak period. The northbound mainline would also operate at LOS E from north of Jones Franklin Road extending south to the central interchange from 4:45-5:30 PM and within portions of the central interchange from 4:00 PM through the rest of the period. Finally, the southbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS D or better within the central interchange for most of the peak period with a few time intervals operating at LOS E. The southbound mainline would operate at LOS E or F north of the central interchange extending past Jones Franklin Road from 4:00 PM through the rest of the peak period, as well as operating mostly at LOS F south of the central interchange from 4:00 PM through the rest of the peak period.

Travel times are shown in Table 12 in Section 6. During the PM peak period, average travel time on the I-440/U.S. 1/U.S. 64 northbound mainline through the study area would range from about five to six minutes. Travel time on the I-440/U.S. 1/U.S. 64 southbound mainline would also range from about five to six minutes. Average travel time on the I-40 eastbound mainline through the study area would range remain fairly consistent just under ten minutes during the PM peak period, and average travel time on the I-40 westbound mainline would perform the same. Travel times for the ramps within the central interchange were all under three minutes throughout the PM peak period.

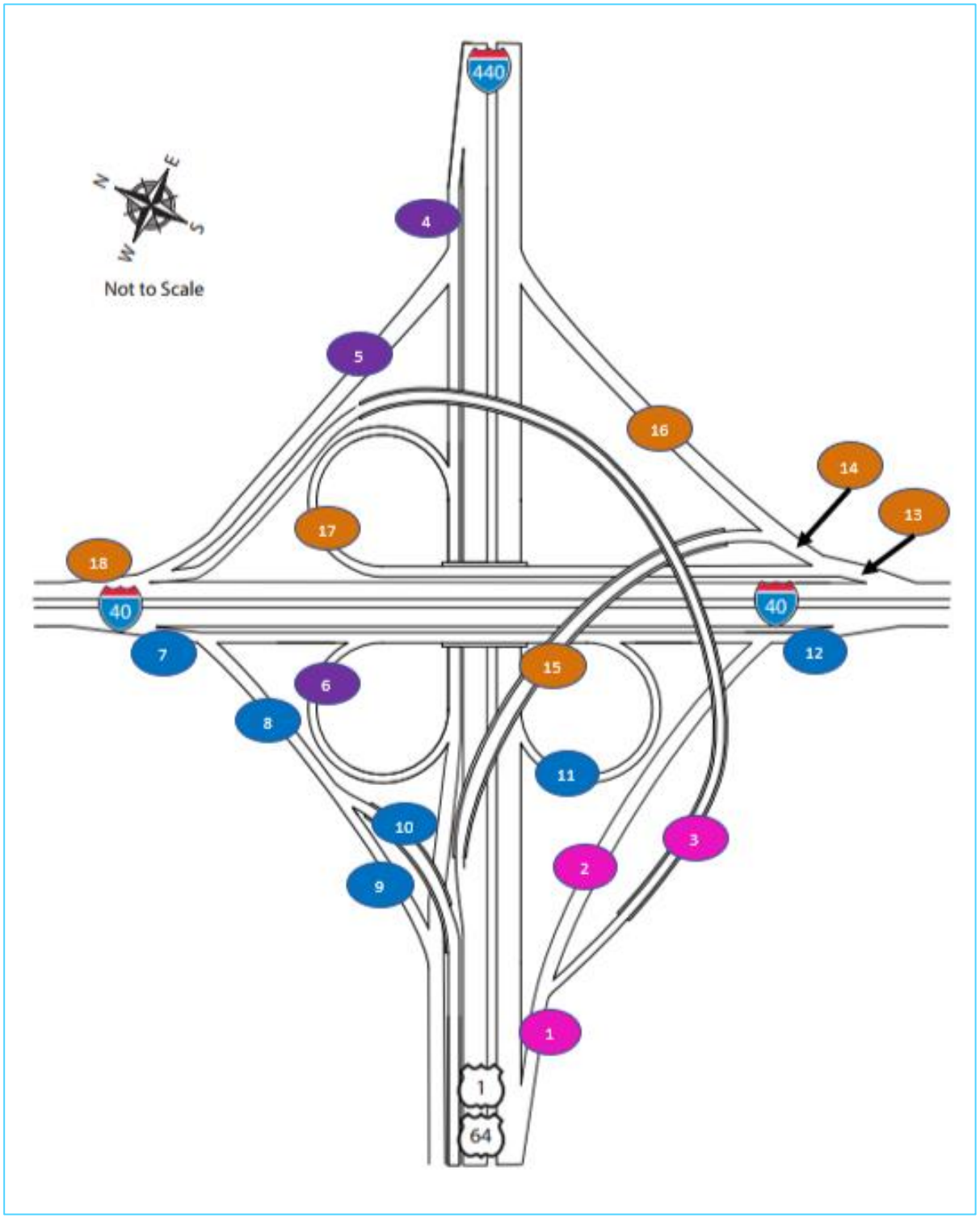
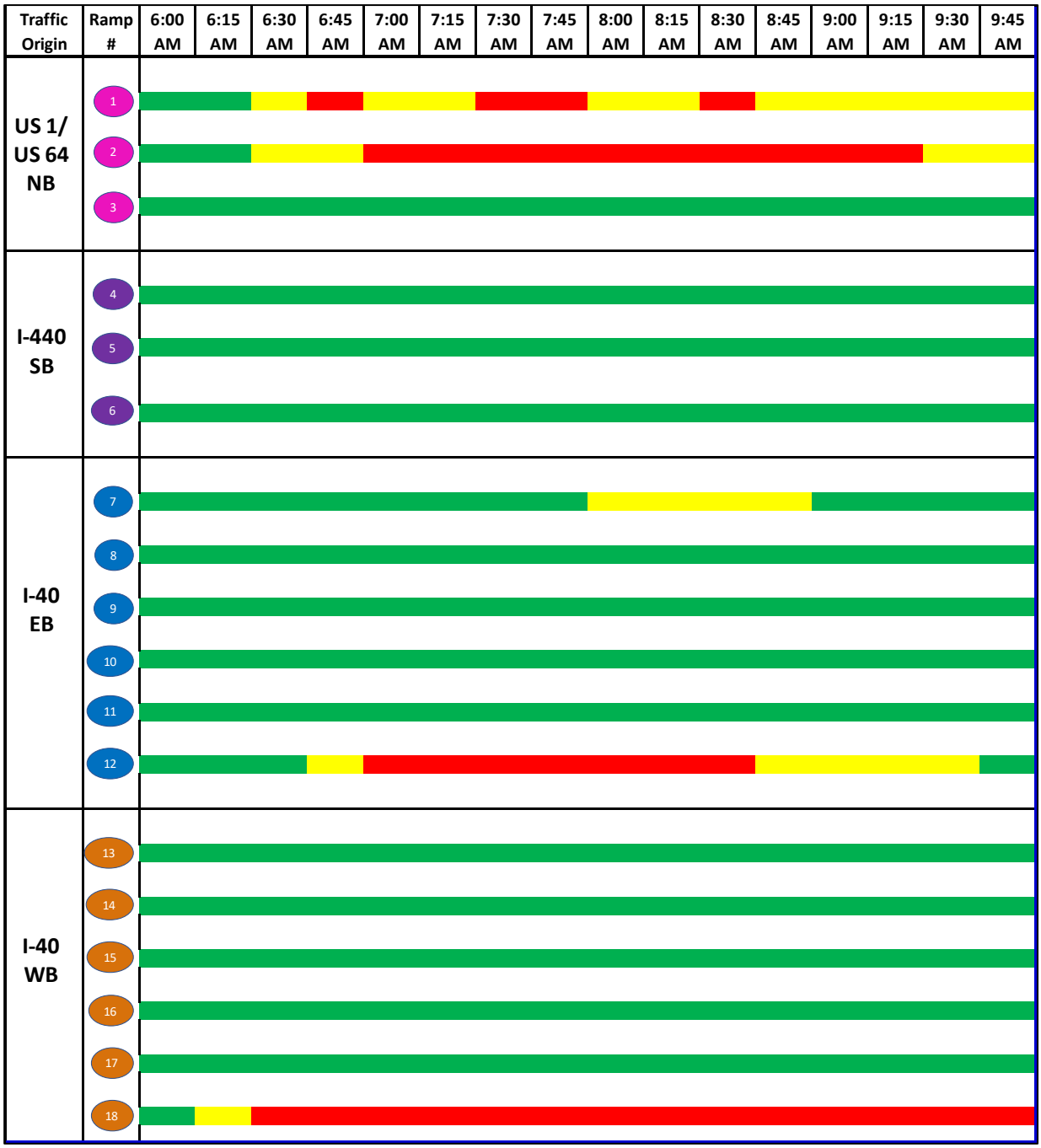


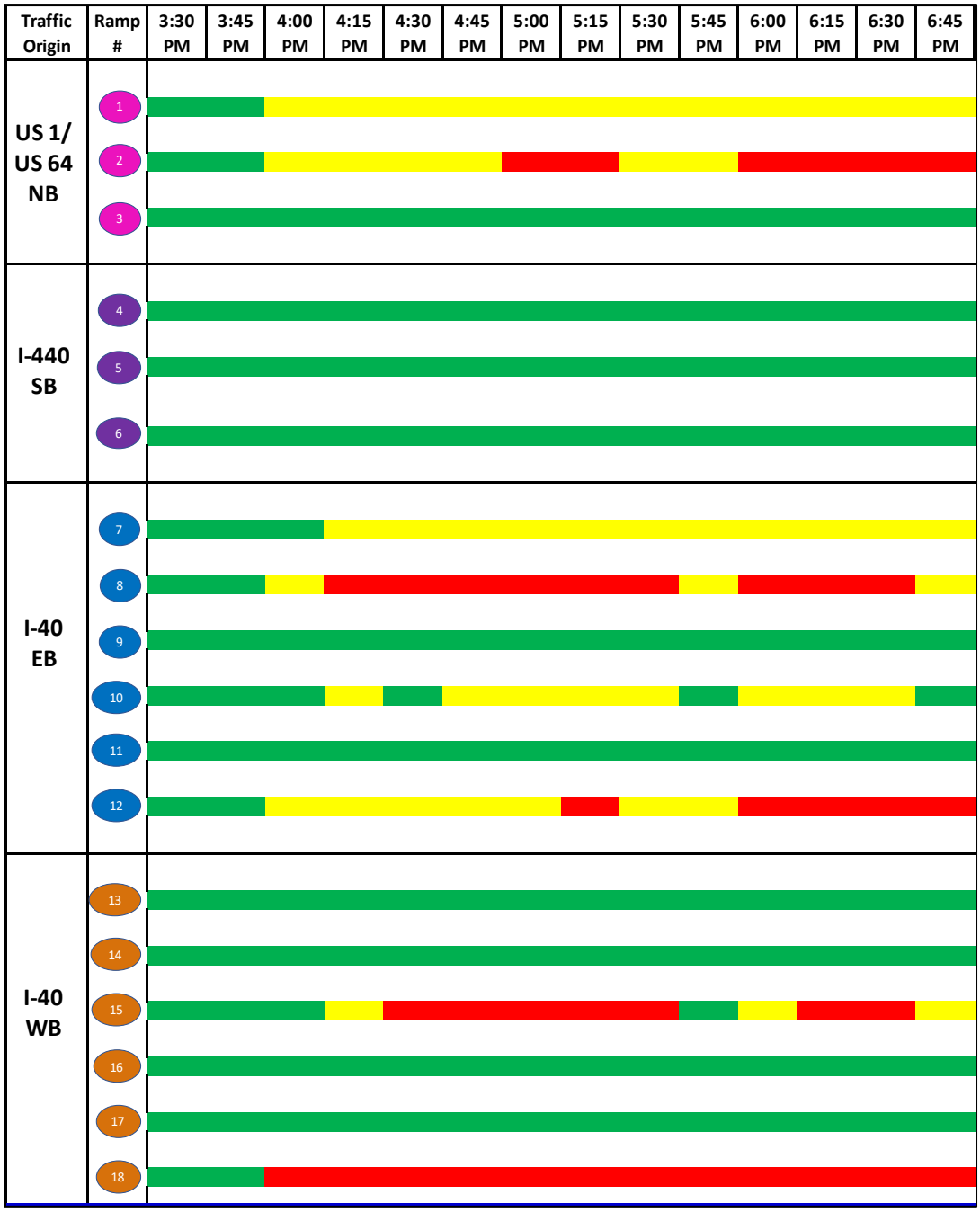
Figure 4. 2035 Build Alternative 2 Central Interchange LOS Diagram

Table 7. 2035 Build Alternative 2 Central Interchange LOS (AM)



Green = LOS D or better (density <35 pc/mi/lane)
Yellow = LOS E (density 35-45 pc/mi/lane)
Red = LOS F (density >45 pc/mi/lane)

Table 8. 2035 Build Alternative 2 Central Interchange LOS (PM)



Green = LOS D or better (density <35 pc/mi/lane)
Yellow = LOS E (density 35-45 pc/mi/lane)
Red = LOS F (density >45 pc/mi/lane)

5.5. 2035 Build Alternative 3

For 2035 Build Alternative 3, shown in Figure 8c, the geometry from the 2035 No-Build conditions was reconfigured at the central interchange using a two loop partial turbine interchange design to add dedicated flyovers for the same freeway movements as Build Alternatives 1 and 2, in addition to a third flyover ramp for traffic traveling from I-440 southbound to I-40 eastbound. The loop ramps from U.S. 1/U.S. 64 northbound to I-40 westbound as well as from U.S. 1/U.S. 64 southbound to I-40 eastbound were removed. In addition, the Crossroads Boulevard entrance ramp to U.S. 1/U.S. 64 northbound was removed and the U.S. 1/U.S. 64 northbound entrance and exit ramps at Walnut Street were relocated to Dillard Drive/Piney Plains Road.

AM Peak Period

During the AM peak period, the central interchange would operate at LOS D or better at most ramp locations throughout the peak period, shown in Figure 5 and in the heat diagram in Table 9. The U.S. 1/U.S. 64 northbound ramp to I-40 eastbound would operate at LOS E or F for most of the peak period, in addition to the merge point from the I-40 eastbound C-D onto the I-40 eastbound mainline for some of the peak period, shown at locations 1, 2, and 11. In addition, the U.S. 1/U.S. 64 northbound ramp to I-40 westbound would operate at LOS E for less than an hour, in addition to the merge point from the I-40 westbound collector/distributor onto the I-40 westbound mainline, shown at locations 3 and 17.

For the freeway mainlines, LOS heat maps are shown in Appendix A. During the AM peak period, the I-40 eastbound mainline would operate at LOS E or F for most of the peak period east of the central interchange as well as from the Cary Towne Boulevard interchange to west. Within the central interchange, the I-40 eastbound mainline would operate at LOS D or better throughout the peak period. The westbound I-40 mainline would operate at LOS E or F for almost the entire peak period from west of the central interchange and past Cary Towne Boulevard as well as at concentrated locations east of the exit ramps for the central interchange, Gorman Street interchange, and Lake Wheeler Road interchange. Within the central interchange, the I-40 westbound mainline would operate at LOS D or better for the entire peak period. The northbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F south of the central interchange and stretching south past Walnut Street/Dillard Drive starting at about 6:30 AM and lasting the rest of the AM peak period. The northbound mainline would also operate at LOS E from north of Jones Franklin Road through the central interchange from about 6:45-8:15 AM. The southbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F south of the central interchange with I-40 from about 6:45-8:45 AM as well as south of the Walnut Street ramps from about 6:30 AM through the rest of the AM peak period. The southbound mainline would also operate at LOS E or F north of the central interchange from about 6:45-9:15 AM.

Travel times are shown in Table 11 in Section 6. During the AM peak period, average travel time on the I-440/U.S. 1/U.S. 64 northbound mainline through the study area would range from about five to six minutes. Travel time on the I-440/U.S. 1/U.S. 64 southbound mainline would be about five minutes throughout the AM peak period. Average travel time on the I-40 eastbound mainline through the study area would remain fairly consistent just under ten minutes, and average travel times on the I-40 westbound mainline would perform the same. Travel times for the ramps within the central interchange were all under three minutes throughout the AM peak period.

PM Peak Period

During the PM peak period, the central interchange would operate at LOS D or better at most of the ramps throughout the peak period, shown in Figure 5 and Table 10. The U.S. 1/U.S. 64 northbound ramp to I-40 westbound would operate at LOS E or F for most of the PM peak period, shown at locations 1 and 3. The collector/distributor merge and diverge points to and from the I-40 eastbound mainline would operate at LOS E for some of the PM peak period, shown at locations 7 and 11.

For the freeway mainlines, LOS heat maps are shown in Appendix A. During the PM peak period, the I-40 eastbound mainline would operate at LOS E or F throughout the entire corridor from 4:00 PM

through the rest of the peak period. Within the central interchange, the I-40 eastbound mainline would operate mostly at LOS D or higher throughout the peak period. The I-40 westbound mainline would operate at LOS E or F east of the central interchange starting around 4:00-4:15 PM and remaining through the rest of the PM peak period. The I-40 westbound corridor would operate at LOS D or better within the central interchange throughout the PM peak period, while operating at LOS E or F west of the central interchange for most of the period. The northbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E or F south of the central interchange and extending south of Walnut Street/Dillard Drive starting from 4:00 PM through the rest of the peak period. The northbound mainline would also operate at LOS E north of Jones Franklin Road from 4:15-6:30 PM and within parts of the central interchange from 4:00 PM through the rest of the period. Finally, the southbound I-440/U.S. 1/U.S. 64 mainline would operate at LOS E within the central interchange for most of the peak period. The southbound mainline would operate at LOS E or F north of the central interchange extending past Jones Franklin Road from 4:00 PM through the rest of the peak period, as well as operating mostly at LOS F south of the central interchange from 4:00 PM through the rest of the peak period.

Travel times are shown in Table 12 in Section 6. During the PM peak period, average travel time on the I-440/U.S. 1/U.S. 64 northbound mainline through the study area would range from about five to six minutes. Travel time on the I-440/U.S. 1/U.S. 64 southbound mainline would remain consistent at about five minutes. Average travel time on the I-40 eastbound mainline through the study area would range remain fairly consistent just under ten minutes during the PM peak period, and average travel time on the I-40 westbound mainline would perform the same. Travel times for the ramps within the central interchange were all under three minutes throughout the PM peak period.

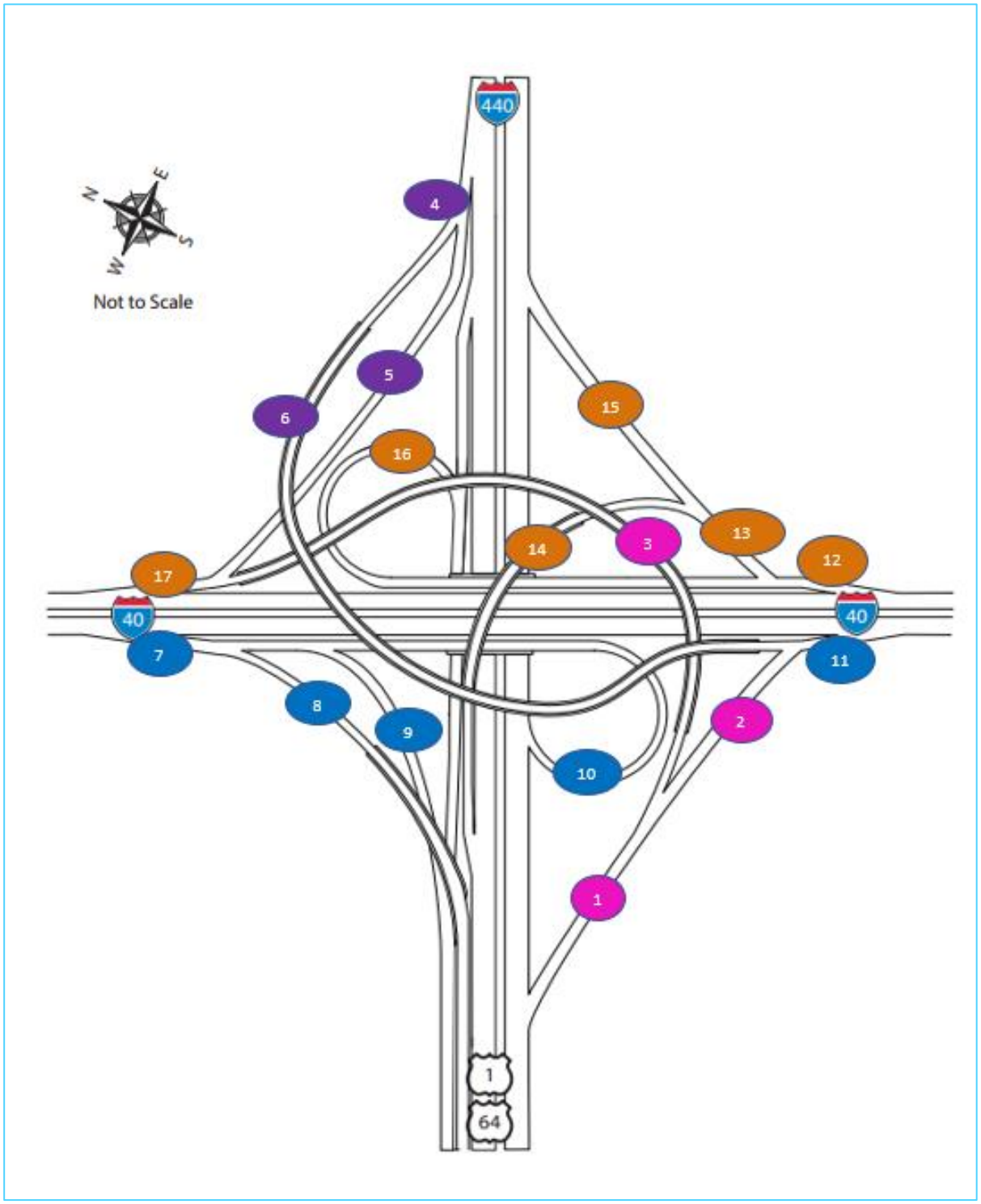
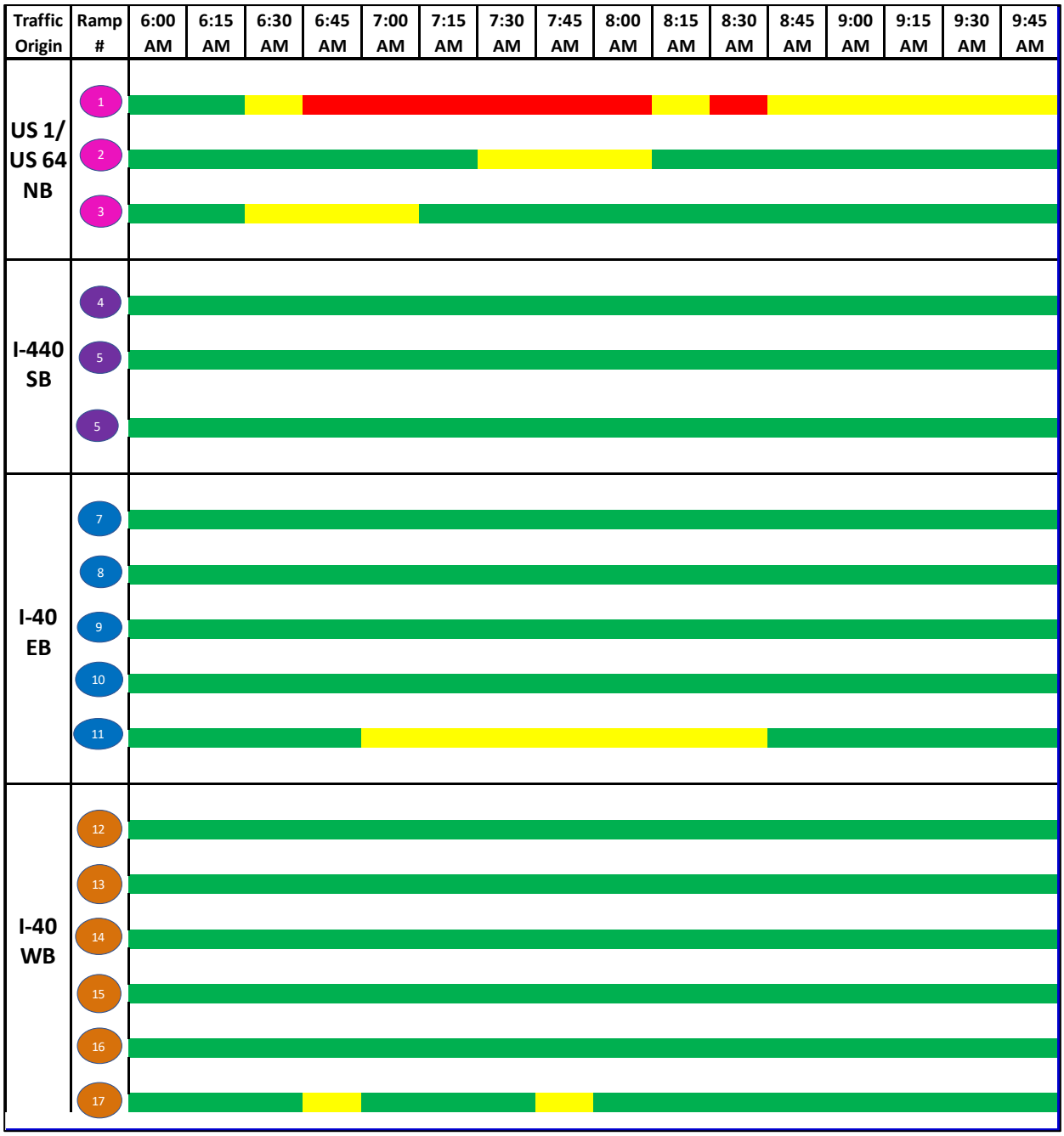


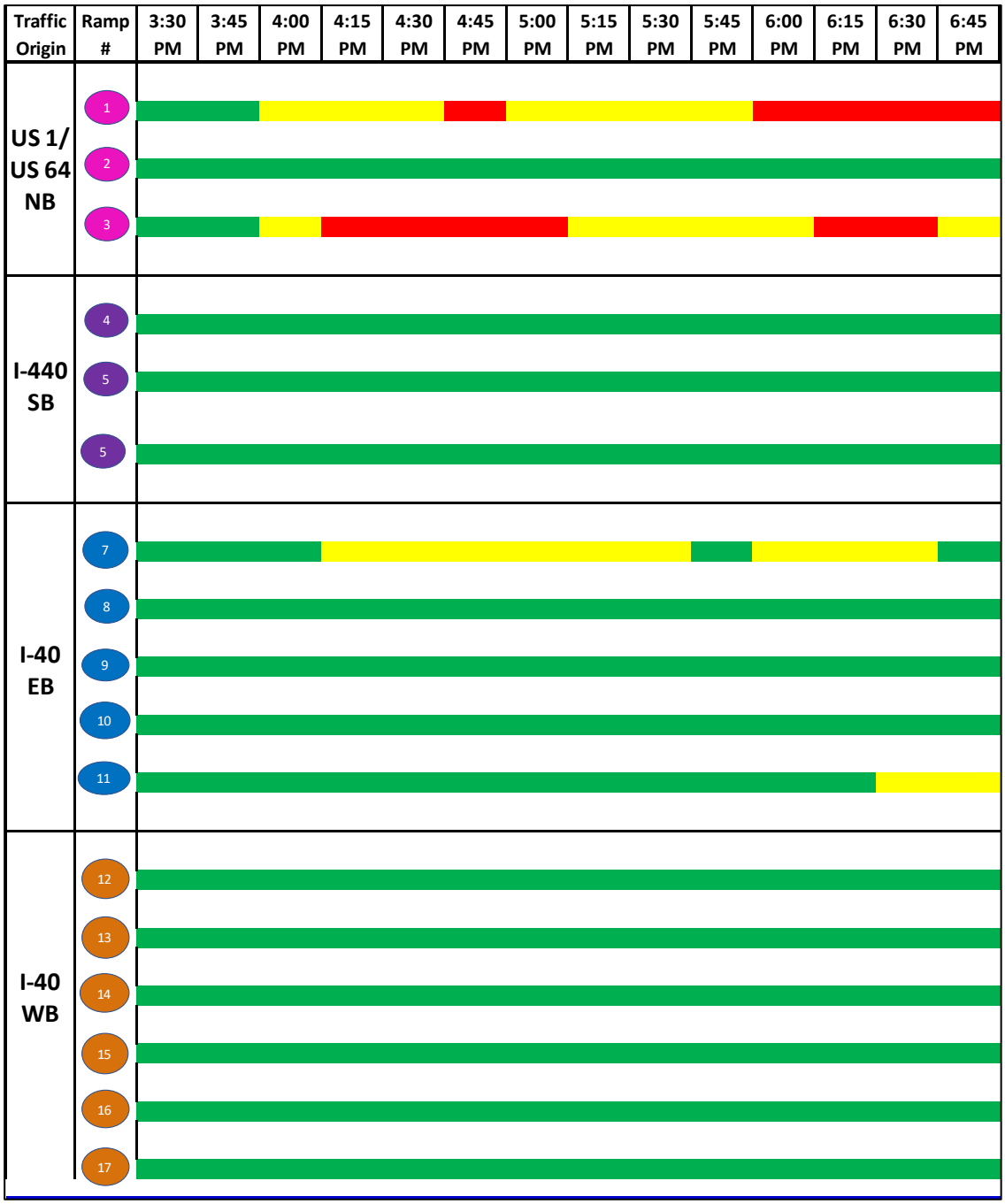
Figure 5. 2035 Build Alternative 3 Central Interchange LOS Diagram

Table 9. 2035 Build Alternative 3 Central Interchange LOS (AM)



Green = LOS D or better (density <35 pc/mi/lane)
Yellow = LOS E (density 35-45 pc/mi/lane)
Red = LOS F (density >45 pc/mi/lane)

Table 10. 2035 Build Alternative 3 Central Interchange LOS (PM)



Green = LOS D or better (density <35 pc/mi/lane)
Yellow = LOS E (density 35-45 pc/mi/lane)
Red = LOS F (density >45 pc/mi/lane)

6. Recommendations

Summary comparison tables for the 2018 existing conditions and 2035 No-Build and Build Alternatives are shown below in Tables 11 and 12 for the average travel time results for the freeway mainline and central interchange ramp segments. The 2035 Build Alternatives are compared to the 2035 No-Build travel time results in the shaded rows. The darker blue shaded cells indicate travel time savings over one minute compared to the 2035 No-Build Alternative.

Based on the LOS and travel time results of this analysis, all three build alternatives substantially improve operations within the central interchange area both for freeway mainline operations and interchange ramp operations. All three build alternatives would improve LOS and travel time results about the same compared to the 2035 No-Build conditions, both for I-40 and I-440/U.S. 1/U.S. 64 mainline operations as well as the central interchange ramp operations.

Operational issues on the surface street network in the Walnut Street/Crossroads Plaza area related to the relocation of the U.S. 1/U.S. 64 northbound ramps from Walnut Street to Dillard Drive/Piney Plains Road and the removal of the U.S. 1/U.S. 64 entrance ramp from Crossroads Boulevard were reviewed and mitigation strategies were recommended separately in the *Local Streets Analysis Technical Memorandum for Project I-5703.* Additionally, operational issues on U.S. 1/U.S. 64 southbound near the Cary Parkway interchange were also documented with possible future solutions in Appendix C.

Table 11. AM Peak Period Travel Time Comparison (minutes)

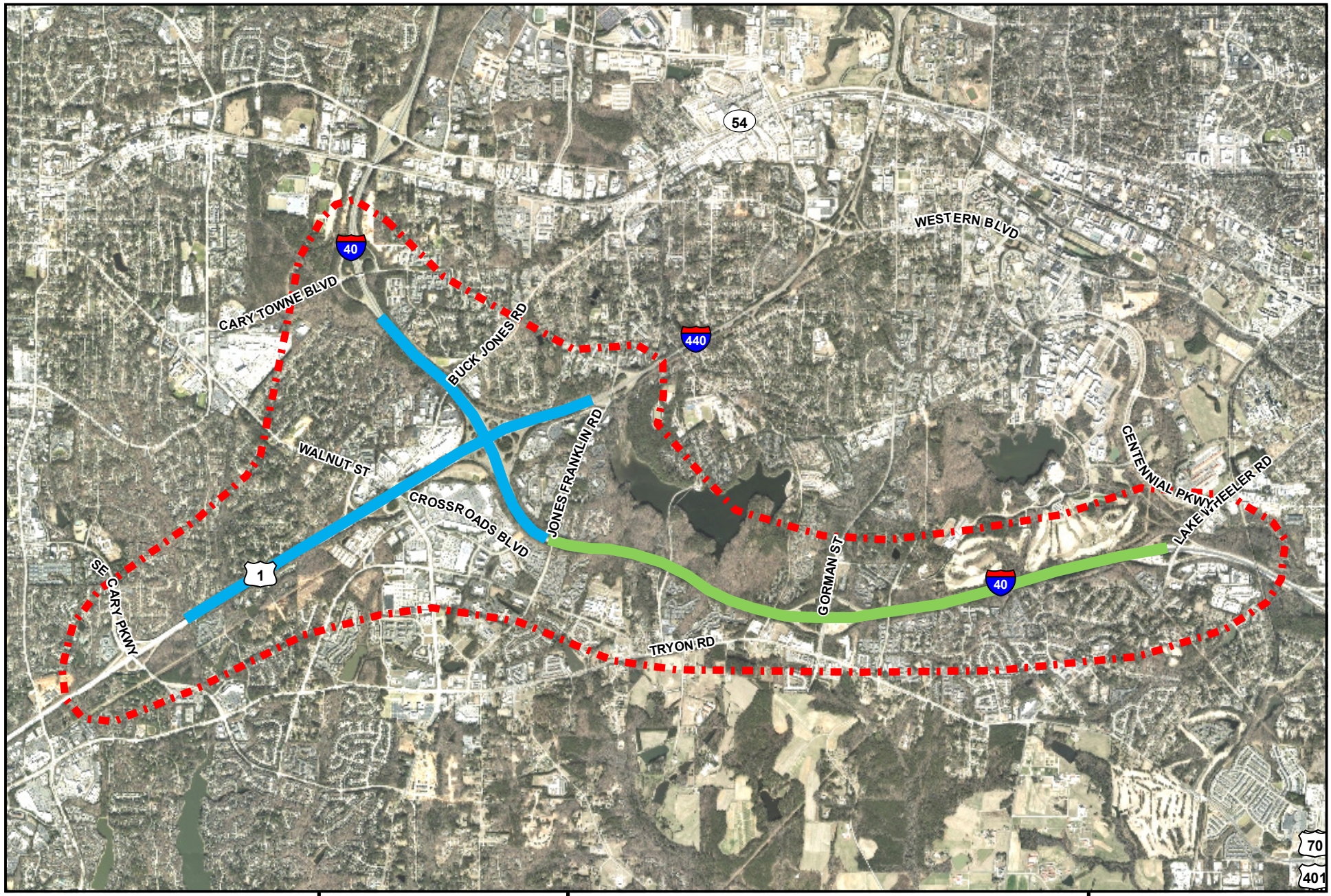
Corridor	Year 2018 No-Build				Year 2035 No-Build				Year 2035 Build Alternative 1				Year 2035 Build Alternative 2				Year 2035 Build Alternative 3			
	6:00 AM	7:00 AM	8:00 AM	9:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM
I-440 Northbound (Walnut St to Jones Franklin Rd)	3.99	5.07	6.98	4.46	6.29	17.36	14.97	14.97	5.32	5.85	5.77	5.38	5.31	5.84	5.93	5.49	5.29	5.85	5.70	5.38
	-	-	-	-	-	-	-	-	0.97	11.51	9.20	9.59	0.98	11.52	9.04	9.49	1.00	11.51	9.28	9.59
I-440 Southbound (Jones Franklin Rd to Walnut St)	3.94	4.05	4.07	3.97	5.26	5.29	5.30	5.27	5.28	5.28	5.32	5.30	5.29	5.31	5.31	5.29	5.25	5.27	5.31	5.28
	-	-	-	-	-	-	-	-	-0.02	0.01	-0.02	-0.03	-0.03	-0.02	-0.01	-0.02	0.01	0.02	-0.01	-0.01
I-40 Eastbound (Lake Wheeler Rd to Cary Towne Blvd)	6.72	6.89	6.89	6.81	9.75	9.81	10.36	13.28	9.74	9.79	9.79	9.76	9.76	9.80	9.80	9.78	9.76	9.79	9.79	9.76
	-	-	-	-	-	-	-	-	0.01	0.03	0.57	3.52	-0.02	0.01	0.56	3.49	-0.02	0.02	0.57	3.52
I-40 Westbound (Cary Towne Blvd to Lake Wheeler Rd)	7.48	12.99	13.28	7.45	9.75	11.43	13.08	12.41	9.60	9.59	9.55	9.51	9.63	9.60	9.61	9.54	9.78	9.76	9.79	9.67
	-	-	-	-	-	-	-	-	0.14	1.85	3.53	2.90	0.12	1.83	3.47	2.86	-0.03	1.67	3.29	2.73
U.S. 1/64 NB to I-40 EB	1.46	1.63	2.52	1.70	2.12	3.40	3.35	3.90	1.54	1.56	1.57	1.55	2.20	2.19	2.19	2.19	1.62	1.62	1.63	1.62
	-	-	-	-	-	-	-	-	0.57	1.84	1.78	2.35	-0.08	1.21	1.16	1.71	0.50	1.78	1.72	2.28
I-40 EB to I-440 NB	1.95	2.20	2.47	2.12	2.60	3.02	3.13	3.12	2.46	2.48	2.48	2.47	2.47	2.49	2.49	2.49	2.51	2.49	2.49	2.49
	-	-	-	-	-	-	-	-	0.14	0.54	0.65	0.64	0.13	0.52	0.64	0.63	0.10	0.52	0.64	0.63
U.S. 1/64 NB to I-40 WB (Left Ramp)	2.47	3.02	4.63	3.40	3.68	6.10	6.06	6.23	2.05	2.05	2.05	2.05	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	1.62	4.05	4.01	4.19								
U.S. 1/64 NB to I-40 WB (Right Ramp)	2.47	3.02	4.63	3.40	3.68	6.10	6.06	6.23	2.66	2.49	2.49	2.67	2.64	2.65	2.65	2.64	2.10	2.10	2.10	2.10
	-	-	-	-	-	-	-	-	1.02	3.61	3.57	3.57	1.03	3.45	3.41	3.59	1.58	4.00	3.96	4.14
I-40 WB to I-440 NB	1.32	1.42	1.60	1.50	1.85	4.26	4.06	3.73	1.71	1.71	1.71	1.71	1.55	1.56	1.56	1.56	1.70	1.70	1.70	1.70
	-	-	-	-	-	-	-	-	0.14	2.55	2.35	2.02	0.30	2.71	2.50	2.17	0.15	2.56	2.36	2.03
I-440 SB to I-40 WB	1.74	2.00	2.29	1.87	2.26	2.27	2.33	2.34	2.02	2.02	2.02	2.02	2.27	2.27	2.27	2.26	2.14	2.14	2.14	2.14
	-	-	-	-	-	-	-	-	0.24	0.25	0.30	0.33	-0.01	0.00	0.06	0.08	0.12	0.13	0.18	0.21
I-40 WB to U.S. 1/64 SB (South of Walnut Street)	2.56	2.66	3.10	3.08	3.60	6.92	6.60	6.21	2.54	2.54	2.54	2.54	2.45	2.46	2.46	2.45	2.63	2.63	2.63	2.63
	-	-	-	-	-	-	-	-	1.06	4.38	4.05	3.67	1.15	4.47	4.14	3.76	0.98	4.29	3.97	3.58
I-40 WB to U.S. 1/64 SB (Crossroads Blvd Diverge)	1.93	2.02	2.46	2.45	2.80	6.11	5.77	5.40	2.51	2.88	2.48	2.43	2.25	2.75	2.26	2.15	2.45	2.94	2.45	2.35
	-	-	-	-	-	-	-	-	0.29	3.23	3.29	2.97	0.55	3.36	3.51	3.25	0.35	3.17	3.31	3.05
I-440 SB to I-40 EB	2.16	2.23	2.35	2.22	2.77	2.77	2.78	3.22	2.74	2.75	2.75	2.75	2.63	2.63	2.64	2.64	2.48	2.48	2.49	2.48
	-	-	-	-	-	-	-	-	0.02	0.02	0.03	0.48	0.13	0.14	0.14	0.59	0.29	0.29	0.29	0.74
I-40 EB to U.S. 1/64 SB (South of Walnut St)	1.87	1.92	1.92	1.90	2.44	2.48	2.54	2.47	2.36	2.37	2.37	2.37	2.41	2.42	2.42	2.41	2.36	2.34	2.34	2.34
	-	-	-	-	-	-	-	-	0.07	0.11	0.17	0.10	0.03	0.06	0.12	0.05	0.07	0.14	0.20	0.13
I-40 EB to U.S. 1/64 SB (Crossroads Blvd Diverge)	1.24	1.28	1.29	1.27	1.63	1.66	1.71	1.65	1.64	1.65	1.65	1.64	1.40	1.40	1.40	1.40	1.41	1.41	1.41	1.41
	-	-	-	-	-	-	-	-	-0.01	0.02	0.06	0.01	0.24	0.26	0.30	0.26	0.22	0.26	0.30	0.25

For the Build Alternatives, the second row for each corridor location shows the difference in travel times compared to the No-Build Alternative. Differences greater than one minute are highlighted.

Table 12. PM Peak Period Travel Time Comparison (minutes)

Corridor	Year 2018 No-Build				Year 2035 No-Build				Year 2035 Build Alternative 1				Year 2035 Build Alternative 2				Year 2035 Build Alternative 3			
	3:30 PM	4:00 PM	5:00 PM	6:00 PM	3:30 PM	4:00 PM	5:00 PM	6:00 PM	3:30 PM	4:00 PM	5:00 PM	6:00 PM	3:30 PM	4:00 PM	5:00 PM	6:00 PM	3:30 PM	4:00 PM	5:00 PM	6:00 PM
I-440 Northbound (Walnut St to Jones Franklin Rd)	3.98	4.41	6.75	4.54	5.23	8.48	11.03	9.17	5.30	5.34	5.34	5.76	5.28	5.33	5.34	5.75	5.27	5.31	5.32	5.72
	-	-	-	-	-	-	-	-	-0.08	3.15	5.69	3.41	-0.05	3.16	5.69	3.42	-0.04	3.17	5.70	3.44
I-440 Southbound (Jones Franklin Rd to Walnut St)	4.07	4.11	4.86	4.30	5.26	5.32	5.33	5.28	5.26	5.33	5.82	5.49	5.28	5.38	5.78	5.54	5.24	5.30	5.32	5.33
	-	-	-	-	-	-	-	-	-0.01	-0.01	-0.49	-0.20	-0.02	-0.06	-0.45	-0.25	0.02	0.02	0.01	-0.05
I-40 Eastbound (Lake Wheeler Rd to Cary Towne Blvd)	7.39	7.47	7.73	7.93	9.75	10.59	10.79	10.88	9.74	9.84	9.88	9.91	9.76	9.84	9.93	9.98	9.73	9.81	9.82	9.83
	-	-	-	-	-	-	-	-	0.01	0.75	0.91	0.97	-0.01	0.74	0.85	0.90	0.01	0.78	0.96	1.05
I-40 Westbound (Cary Towne Blvd to Lake Wheeler Rd)	6.82	7.24	8.26	7.54	9.47	10.92	29.14	29.75	9.46	9.51	9.51	9.53	9.46	9.52	9.53	9.56	9.62	9.66	9.66	9.67
	-	-	-	-	-	-	-	-	0.01	1.41	19.63	20.22	0.01	1.40	19.61	20.19	-0.15	1.26	19.48	20.08
U.S. 1/64 NB to I-40 EB	1.49	1.57	1.86	1.87	1.88	2.24	2.48	2.37	1.54	1.55	1.56	1.57	2.20	2.19	2.19	2.20	1.61	1.63	1.63	1.64
	-	-	-	-	-	-	-	-	0.35	0.69	0.92	0.80	-0.32	0.05	0.29	0.16	0.27	0.61	0.85	0.73
I-40 EB to I-440 NB	2.01	2.11	2.80	2.32	2.47	2.87	2.98	2.96	2.45	2.47	2.49	2.48	2.45	2.48	2.49	2.49	2.48	2.49	2.49	2.49
	-	-	-	-	-	-	-	-	0.01	0.40	0.49	0.48	0.01	0.40	0.49	0.47	-0.01	0.38	0.48	0.47
U.S. 1/64 NB to I-40 WB (Left Ramp)	2.56	3.14	3.73	2.95	2.92	4.21	4.81	4.51	2.04	2.05	2.05	2.06	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	0.88	2.15	2.76	2.45								
U.S. 1/64 NB to I-40 WB (Right Ramp)	2.56	3.14	3.73	2.95	2.92	4.21	4.81	4.51	2.47	2.49	2.49	2.57	2.63	2.65	2.65	2.66	2.09	2.11	2.10	2.11
	-	-	-	-	-	-	-	-	0.44	1.71	2.32	1.94	0.29	1.56	2.16	1.85	0.83	2.10	2.71	2.40
I-40 WB to I-440 NB	1.28	1.70	2.11	1.46	1.59	2.79	4.80	4.29	1.70	1.71	1.71	1.72	1.55	1.56	1.56	1.56	1.70	1.70	1.70	1.70
	-	-	-	-	-	-	-	-	-0.11	1.08	3.08	2.57	0.04	1.23	3.24	2.72	-0.11	1.09	3.10	2.59
I-440 SB to I-40 WB	1.71	1.70	1.71	1.92	2.25	2.27	2.27	2.26	2.01	2.02	2.02	2.02	2.25	2.27	2.27	2.27	2.13	2.15	2.15	2.15
	-	-	-	-	-	-	-	-	0.24	0.25	0.25	0.24	0.00	0.00	0.00	0.02	0.12	0.12	0.12	0.10
I-40 WB to U.S. 1/64 SB (South of Walnut Street)	2.64	3.49	4.01	3.13	3.06	4.89	7.25	6.60	2.54	2.57	2.96	2.68	2.45	2.51	2.86	2.69	2.63	2.67	2.65	2.66
	-	-	-	-	-	-	-	-	0.52	2.33	4.29	3.92	0.61	2.38	4.39	3.91	0.43	2.23	4.60	3.94
I-40 WB to U.S. 1/64 SB (Crossroads Blvd Diverge)	2.01	2.85	3.24	2.37	2.25	4.05	6.34	5.76	2.45	2.43	2.42	2.44	2.19	2.16	2.16	2.16	2.41	2.35	2.36	2.35
	-	-	-	-	-	-	-	-	-0.20	1.61	3.92	3.32	0.06	1.89	4.19	3.60	-0.16	1.70	3.99	3.41
I-440 SB to I-40 EB	2.23	2.25	2.33	2.61	2.77	2.79	2.79	2.78	2.78	2.80	2.80	2.81	2.68	2.68	2.68	2.68	2.47	2.49	2.49	2.50
	-	-	-	-	-	-	-	-	-0.01	-0.01	-0.01	-0.03	0.09	0.11	0.11	0.10	0.30	0.30	0.30	0.28
I-40 EB to U.S. 1/64 SB (South of Walnut St)	1.90	1.91	2.21	2.27	2.44	2.68	2.75	2.71	2.36	2.39	2.59	2.44	2.41	2.44	2.59	2.48	2.34	2.35	2.35	2.35
	-	-	-	-	-	-	-	-	0.07	0.28	0.16	0.27	0.03	0.24	0.16	0.23	0.10	0.33	0.40	0.36
I-40 EB to U.S. 1/64 SB (Crossroads Blvd Diverge)	1.26	1.27	1.44	1.51	1.63	1.83	1.84	1.87	1.64	1.66	1.67	1.67	1.40	1.42	1.43	1.43	1.40	1.41	1.41	1.41
	-	-	-	-	-	-	-	-	-0.02	0.17	0.17	0.20	0.23	0.41	0.41	0.44	0.22	0.42	0.43	0.46

For the Build Alternatives, the second row for each corridor location show the difference in travel times compared to the No-Build Alternative. Differences greater than one minute are highlighted.



I-5703_Calib_StudyArea.mxd AKB 2019.01.30

I-40/I-440 Interchange Improvements

STIP Project No. I-5703

Wake County, North Carolina

0 2,000 4,000 Feet

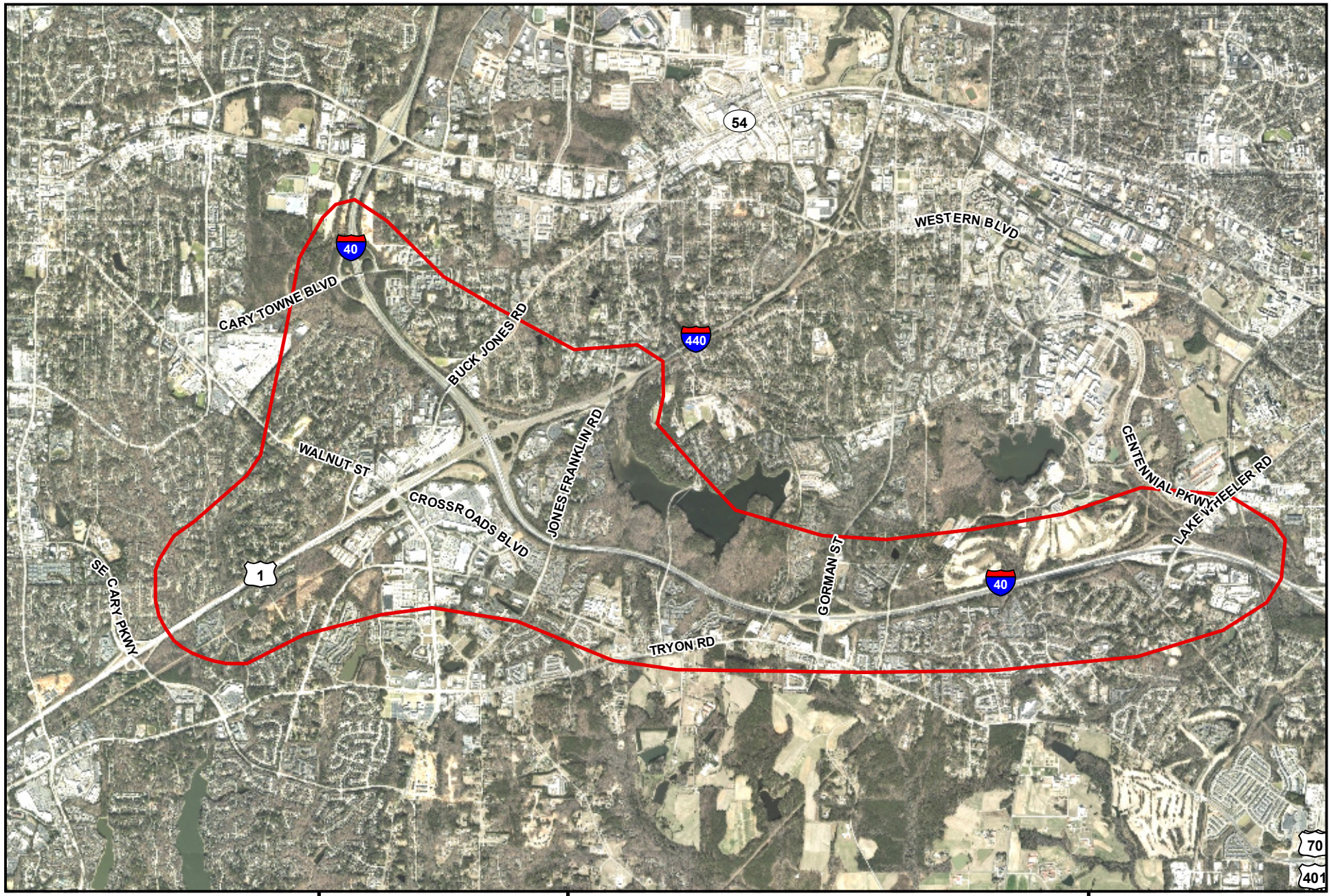
Source: Wake County GIS, NCDOT GIS, ESRI

Legend

- I-5703 & I-5701 Study Area
- Project I-5703
- Project I-5701

I-5703 & I-5701 STUDY AREA

Figure 6



I-5703_Traffic_StudyArea_HwyAnls.mxd AKB 2021.04.14

I-40/I-440 Interchange Improvements

STIP Project No. I-5703

Wake County, North Carolina

NOT TO SCALE

Source: Wake County GIS, NCDOT GIS, ESRI

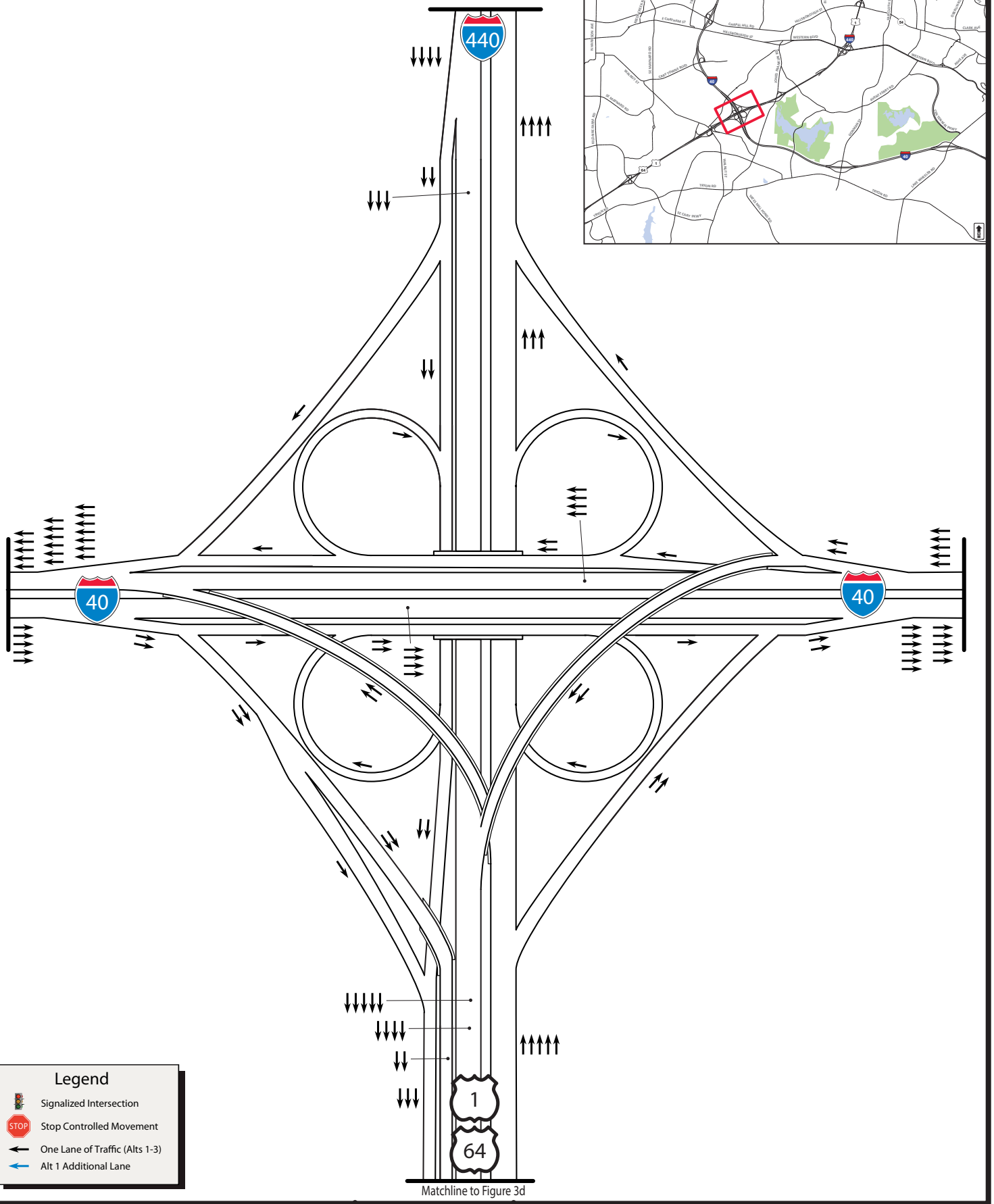
Legend

I-5703 Study Area for Operations Analysis of the 2035 No-Build and Build Conditions

Highway Analysis

STUDY AREA

Figure 7



I-5703_Traffic_BuildCondGeo.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

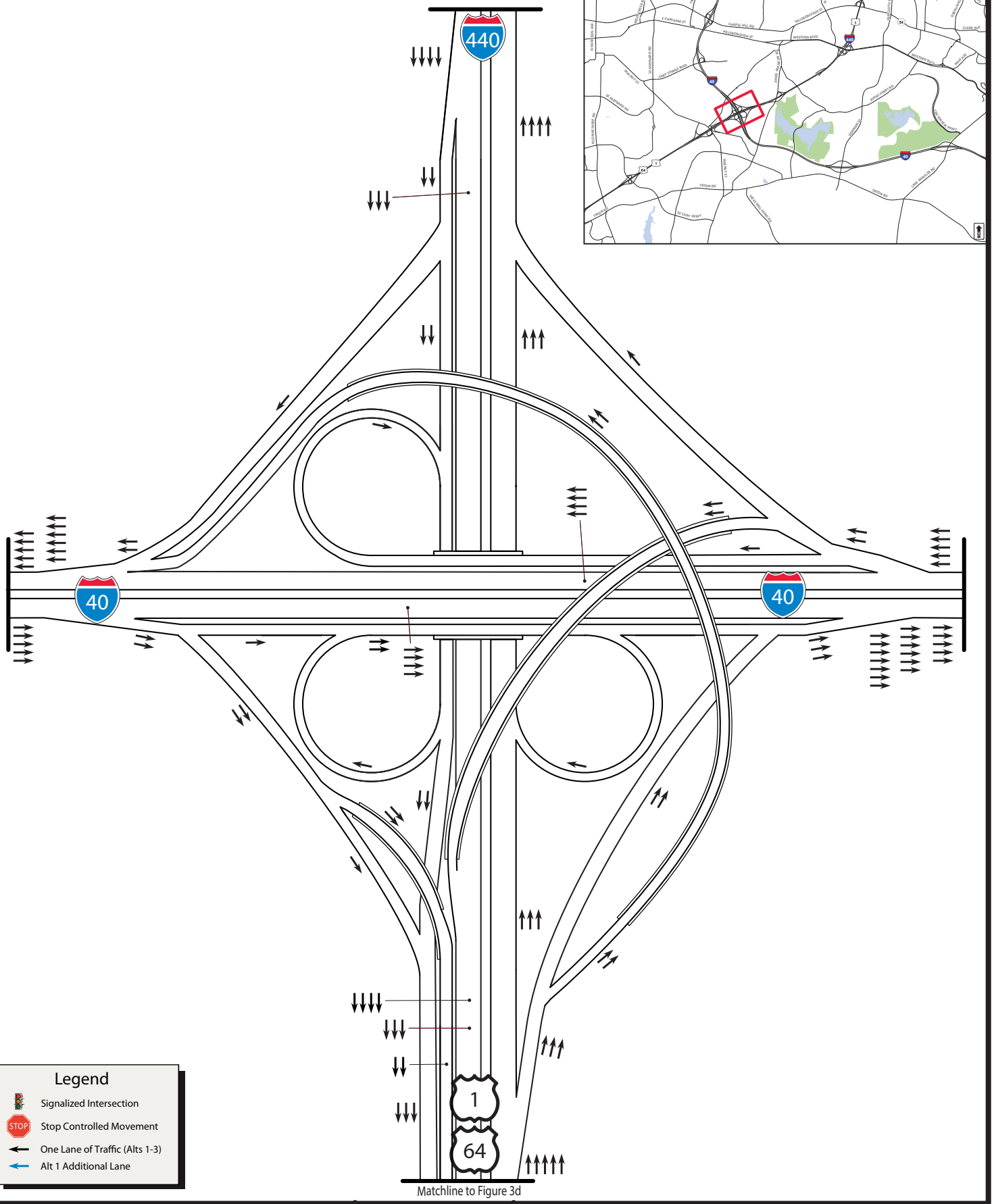
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE BUILD CONDITIONS GEOMETRY

FIGURE 8a-Alt 1



I-5703_Traffic_BuildCondGeo.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

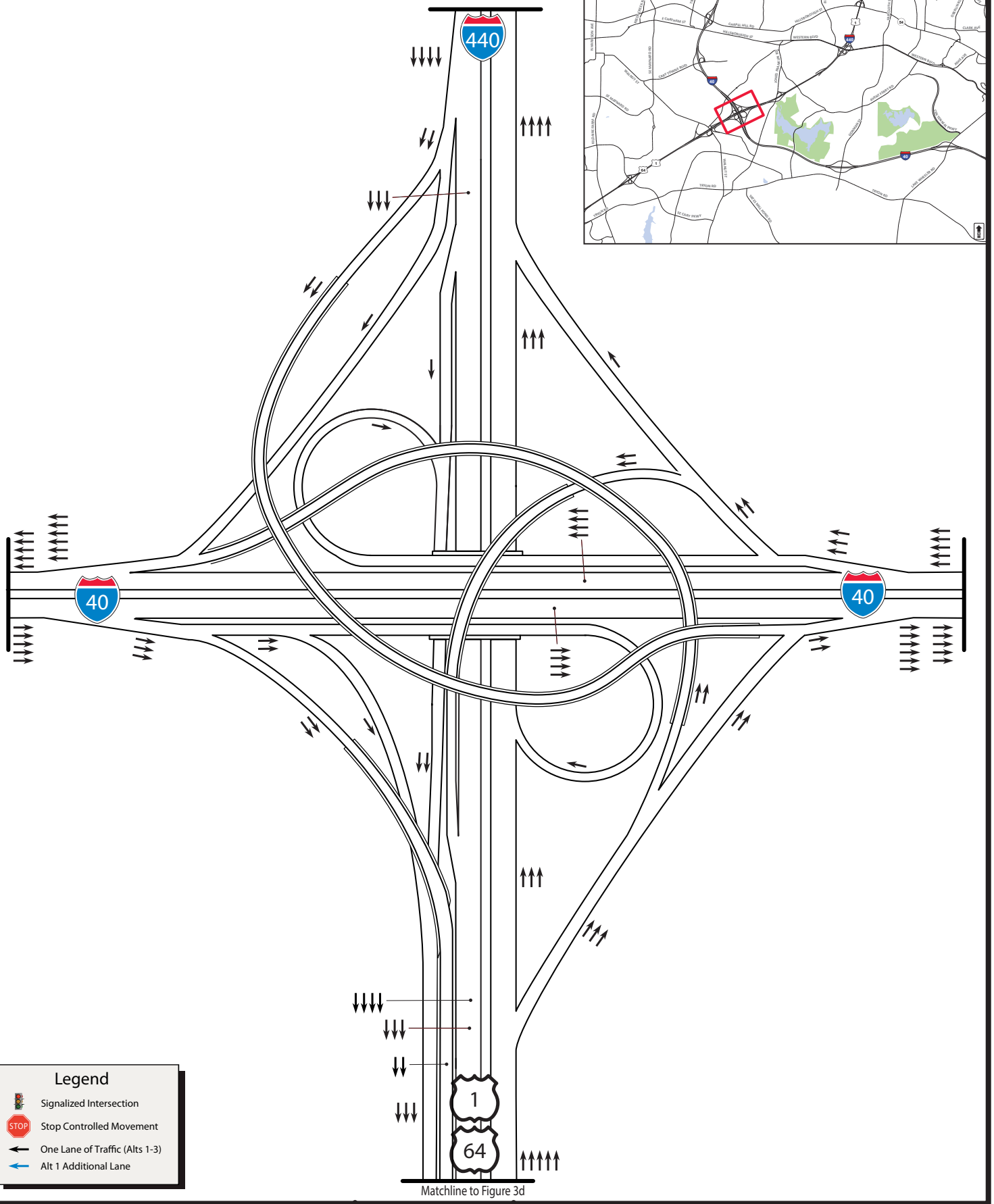
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE BUILD CONDITIONS GEOMETRY

FIGURE 8b-Alt 2



I-5703_Traffic_BuildCondGeo.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

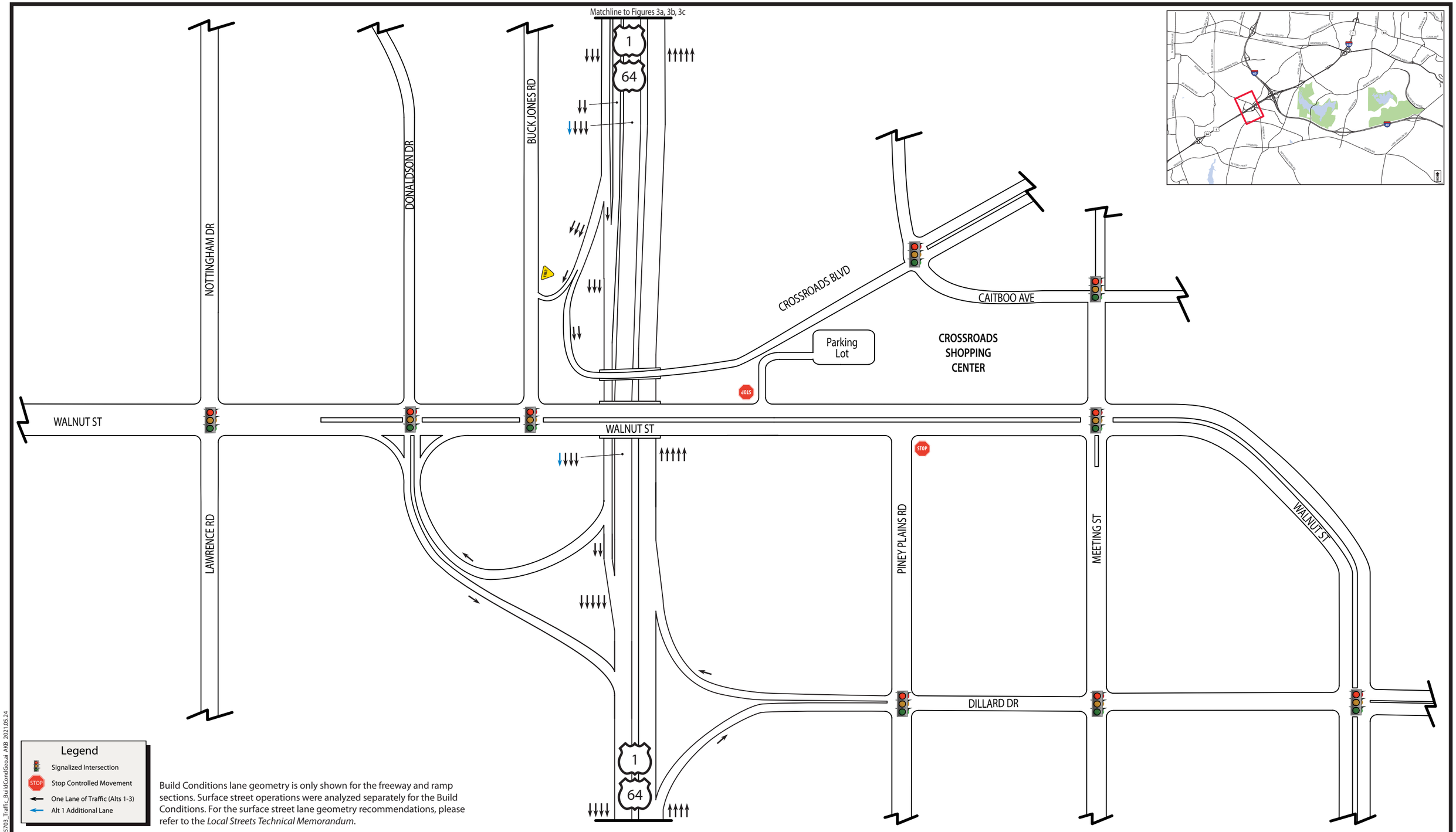
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE BUILD CONDITIONS GEOMETRY

FIGURE 8c-Alt 3



Build Conditions lane geometry is only shown for the freeway and ramp sections. Surface street operations were analyzed separately for the Build Conditions. For the surface street lane geometry recommendations, please refer to the *Local Streets Technical Memorandum*.

I-5703_Traffic_BuildCondGeo.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

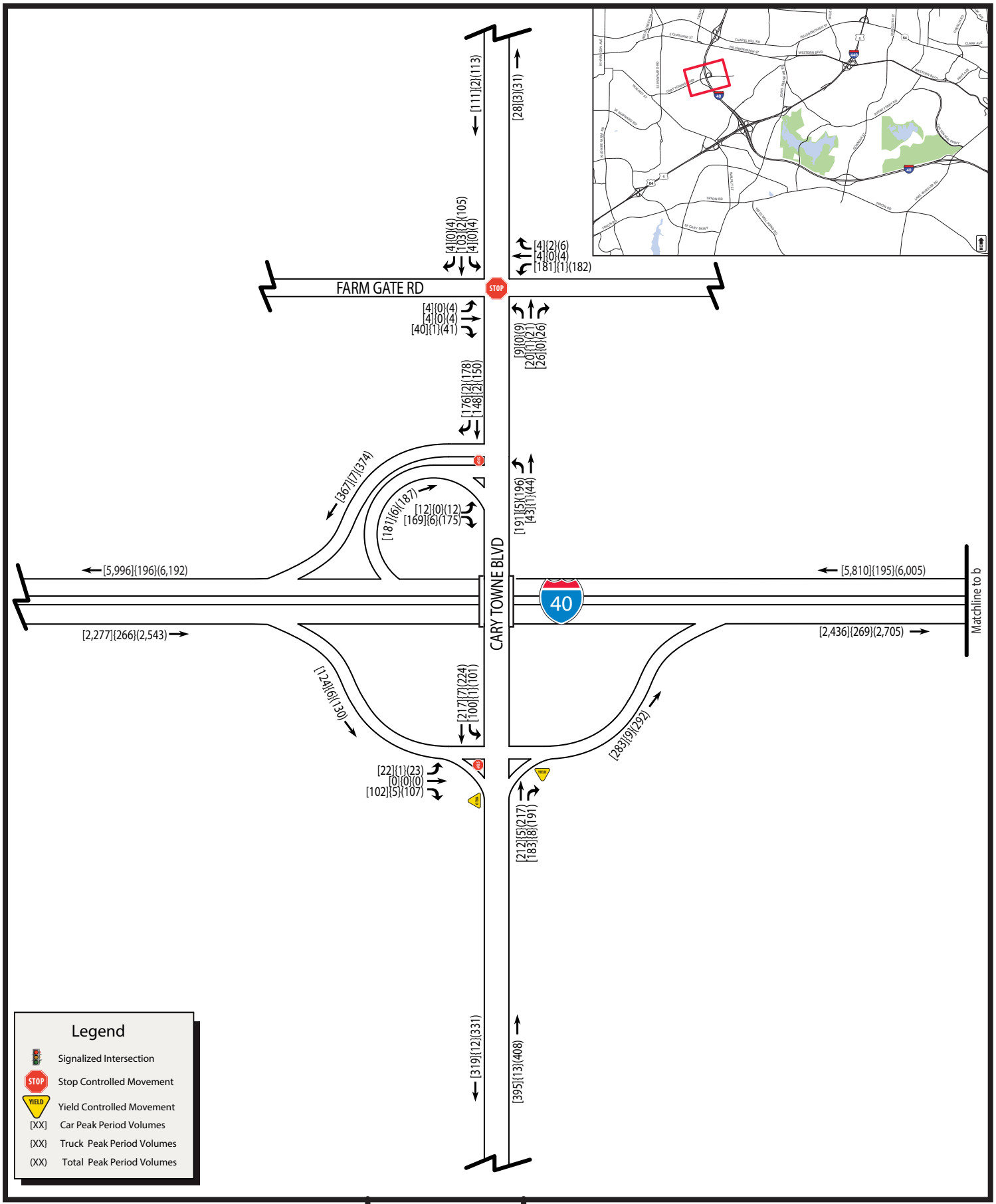
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE BUILD CONDITIONS GEOMETRY

FIGURE 8d



I-5703_TOTM_2018ExVol_ALL_am6-7.ai AKB 2021.04.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

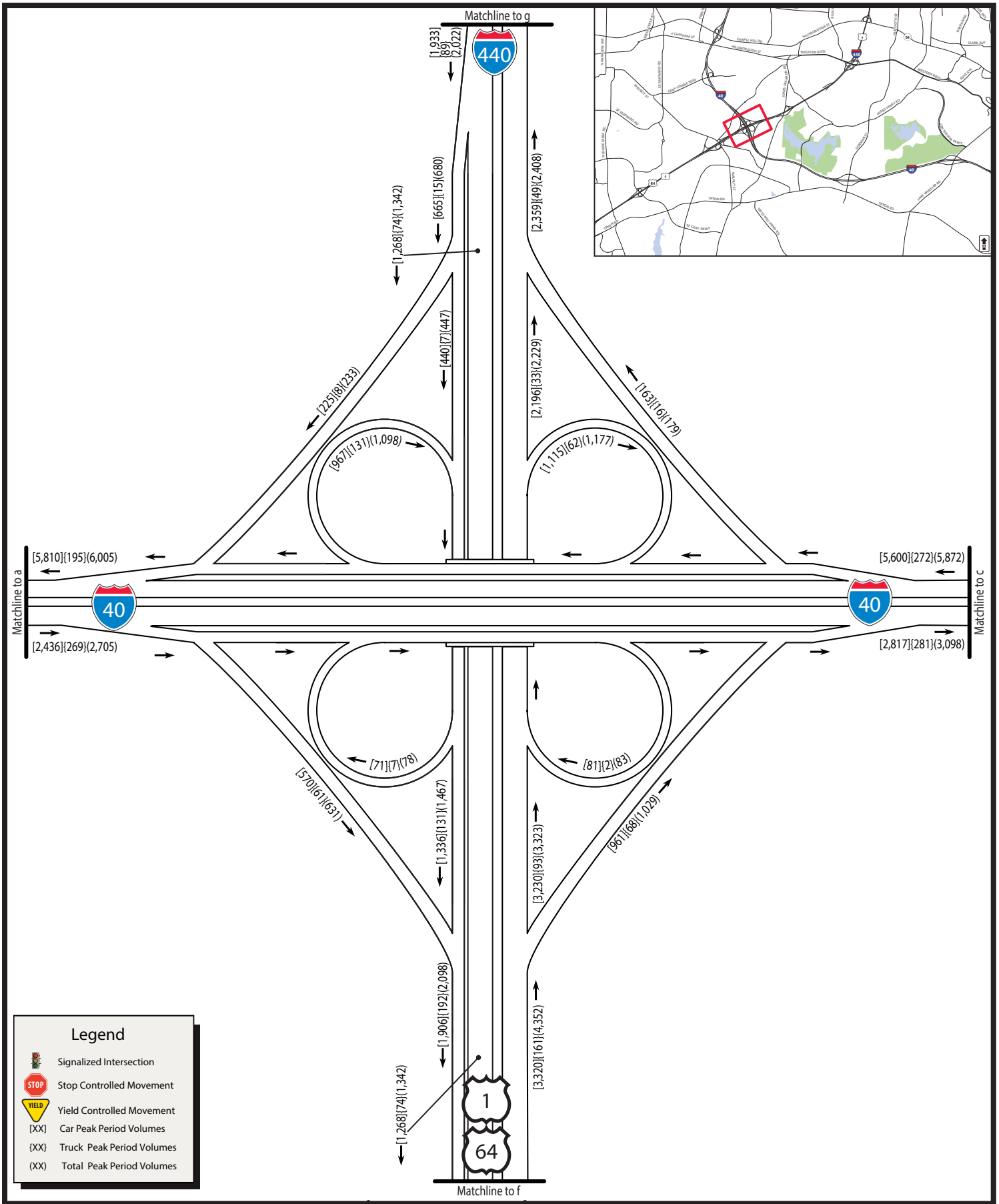
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 9a



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2018ExVol_ALL_am6-7.ai AKB 2021.04.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

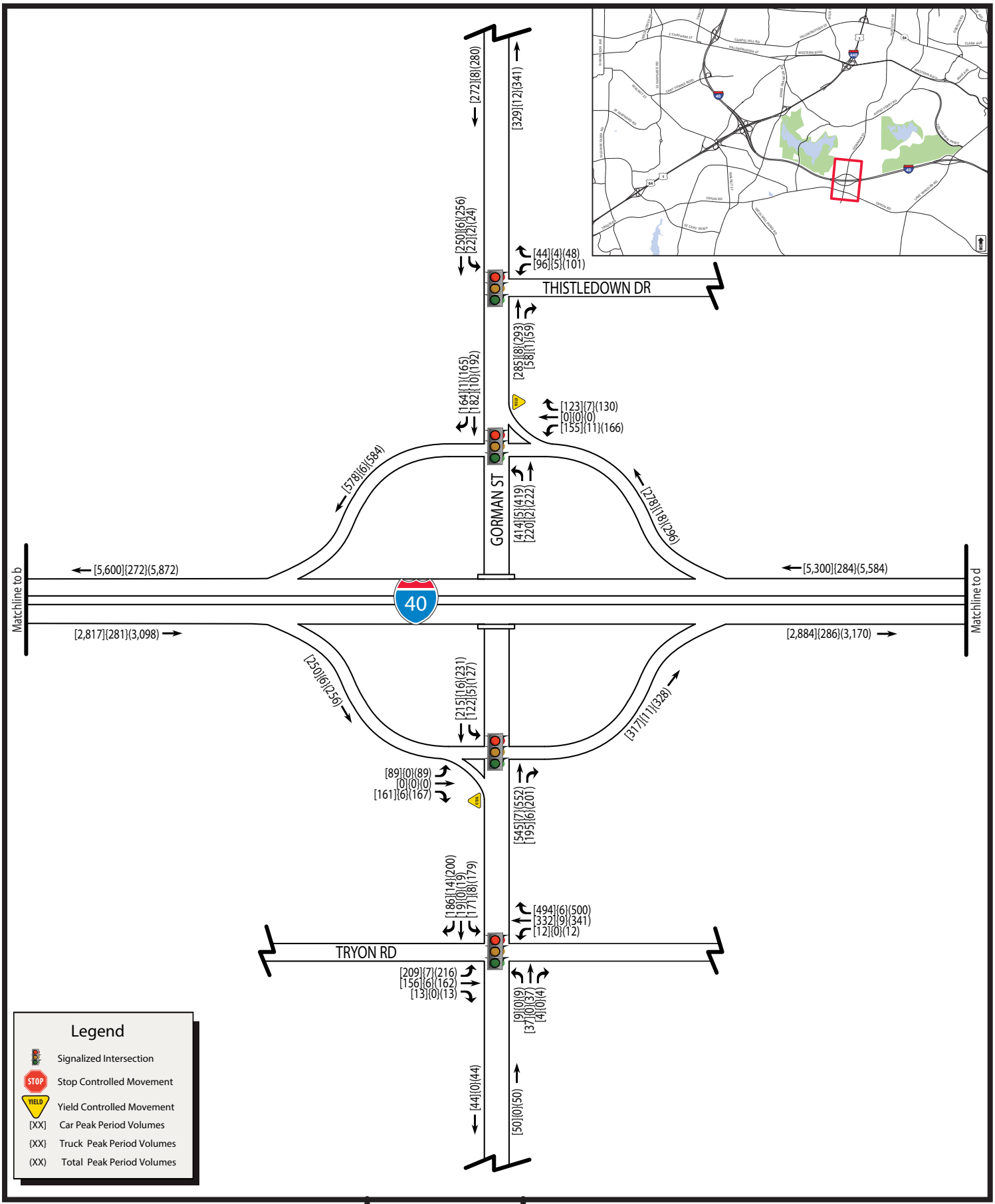
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 6am-7am

FIGURE 9b



I-5703_TOTM_2018ExVol_ALL_am6-7.ai AKB 2021.04.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

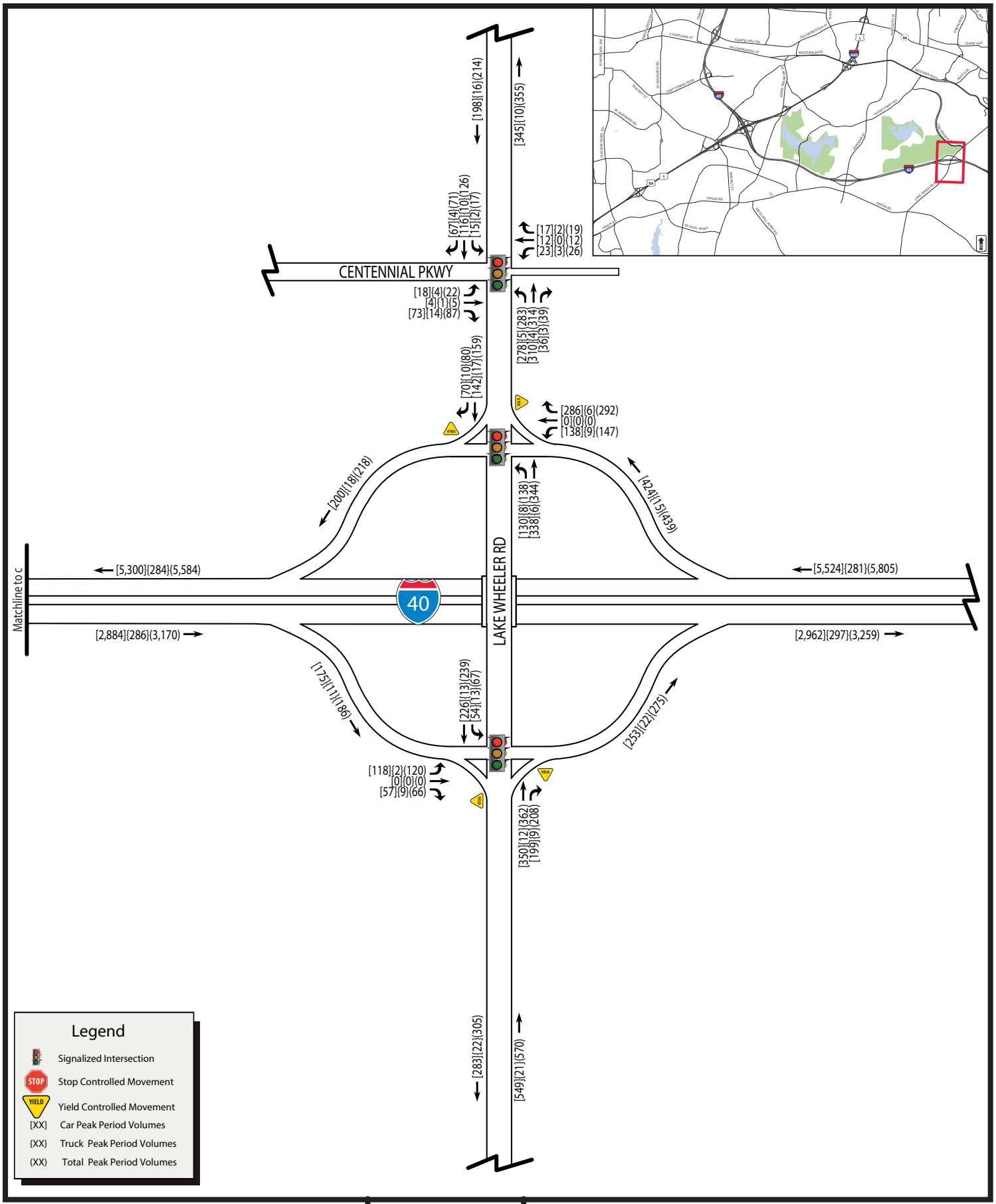
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 9c



I-5703_TOTM_2018ExVol_ALL_am6-7.ai AKB 2021.04.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

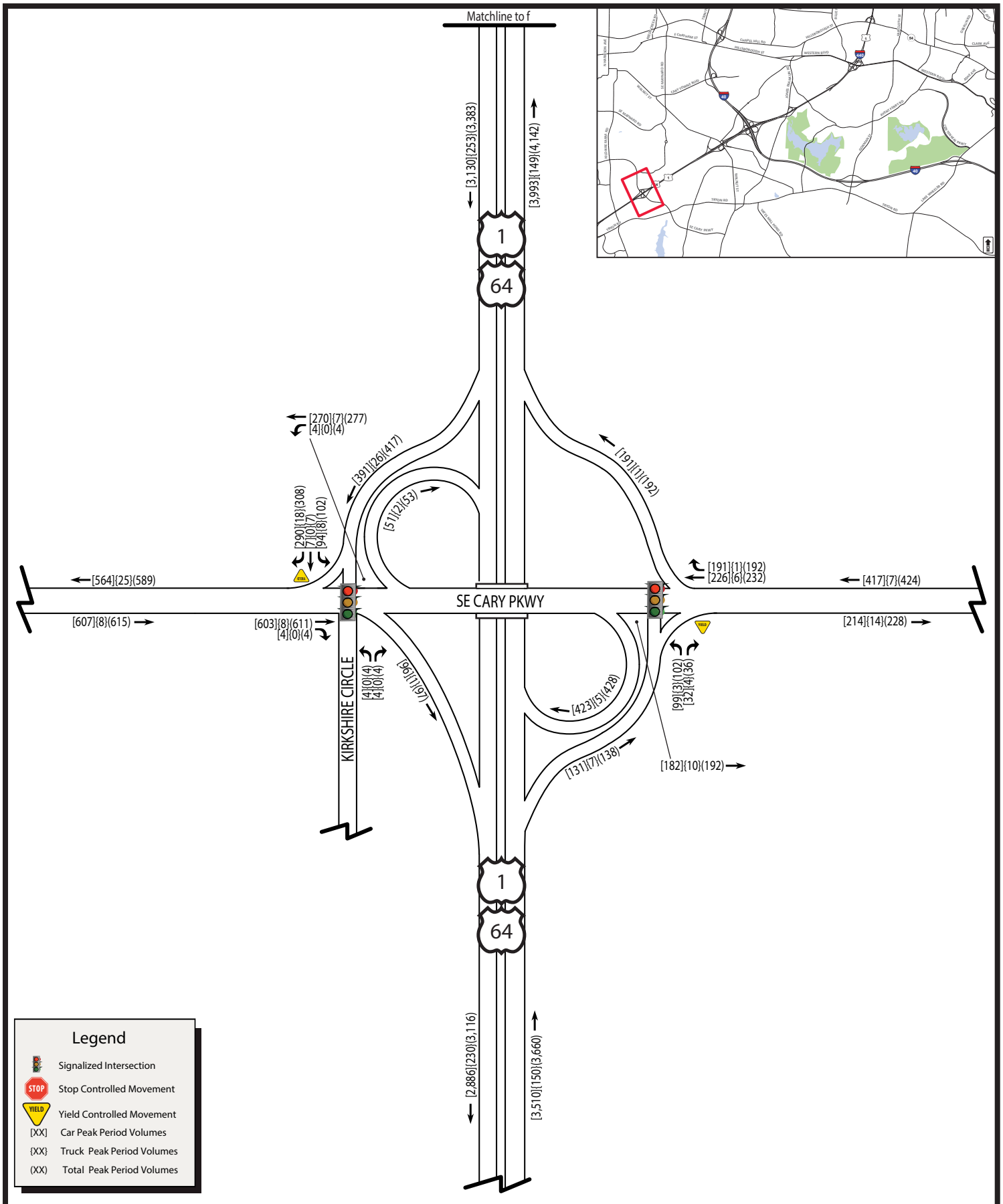
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 9d



I-5703_TOTM_2018ExVol_ALL_am6-7.ai AKB 2021.04.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

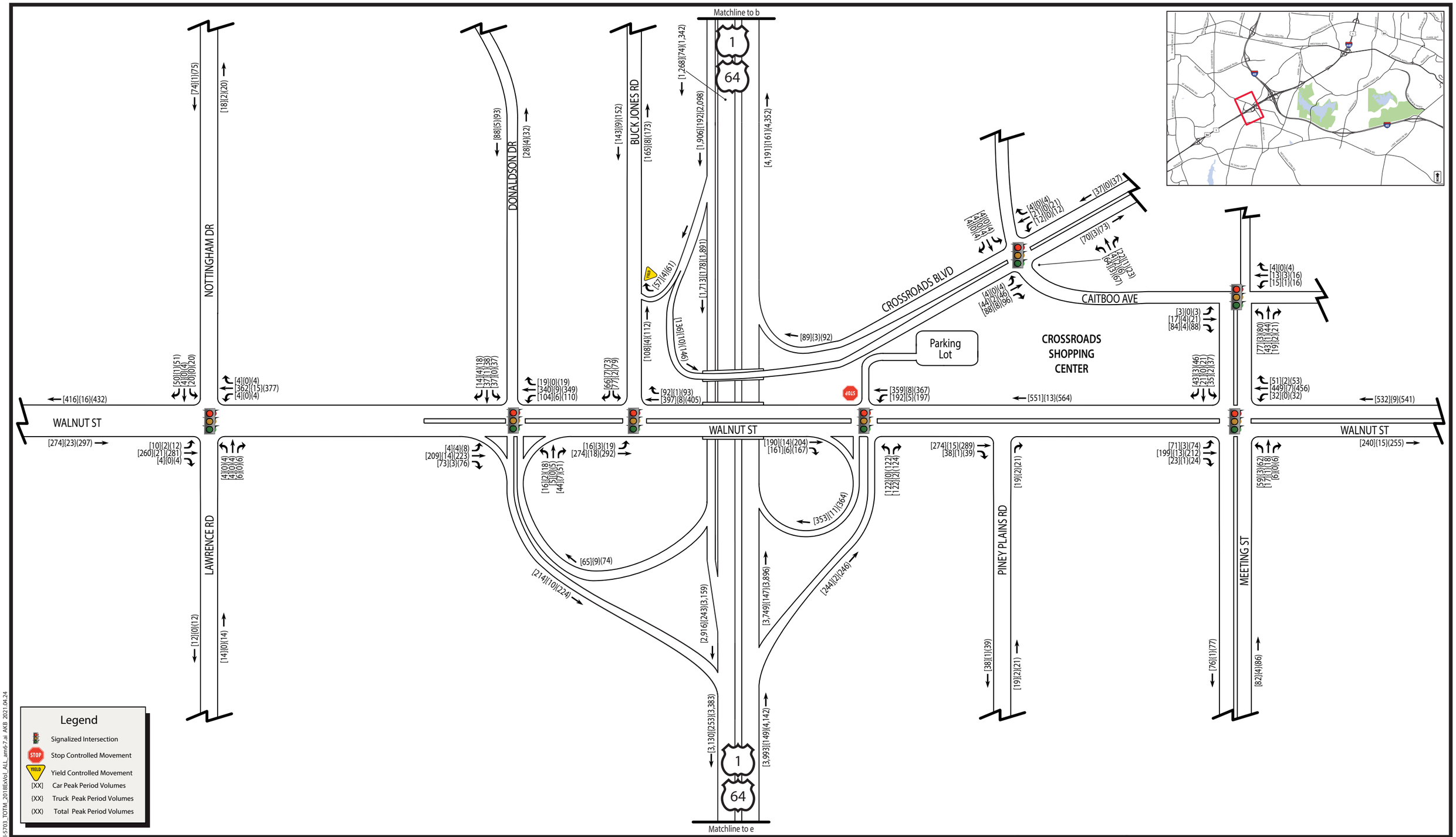
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 9e



I-5703_TOTM_2018EvVol_ALL_am6-7.ai AKB 2021.04.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

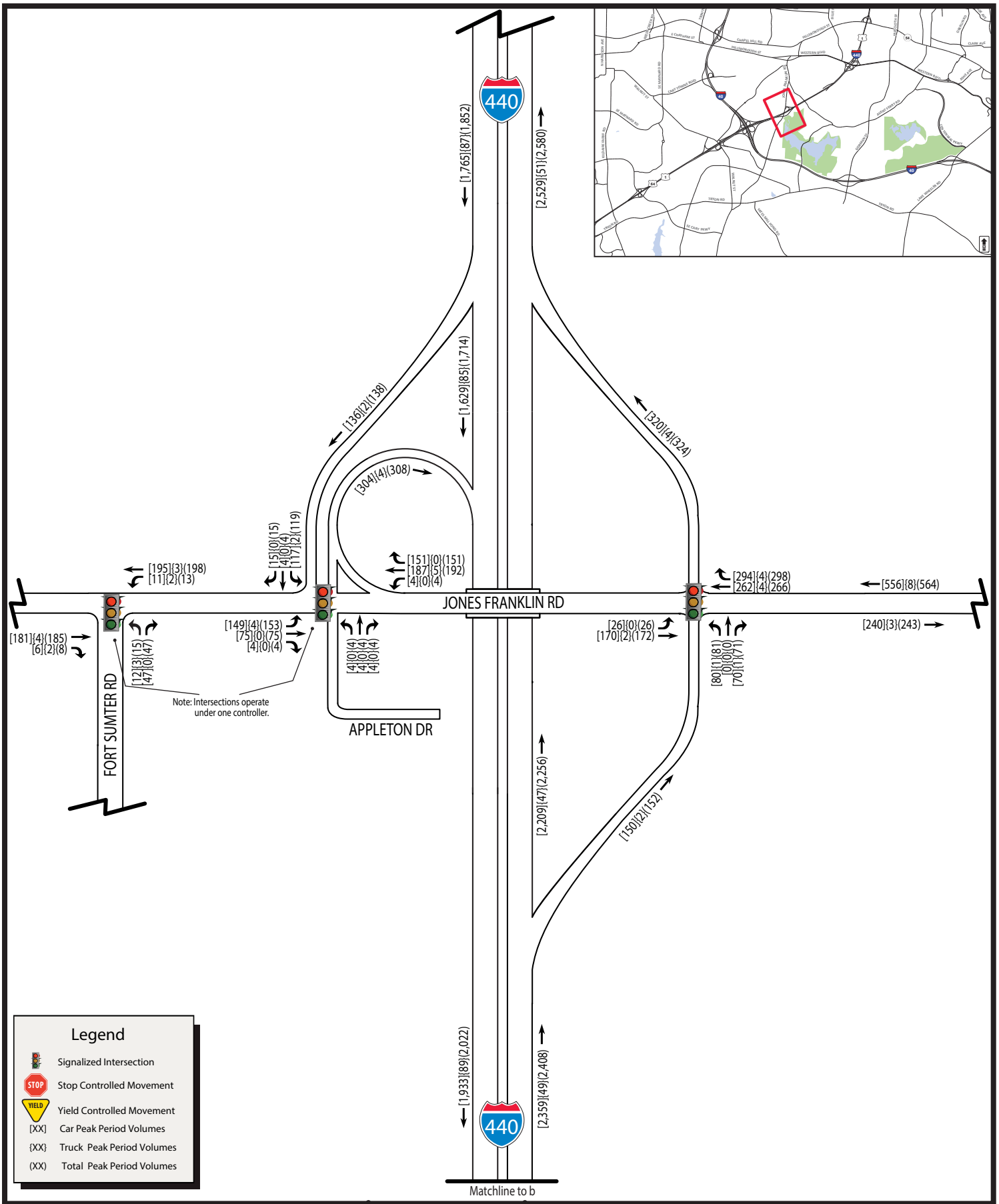
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 9f



I-5703_TOTM_2018ExVol_ALL_am6-7.ai AKB 2021.04.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

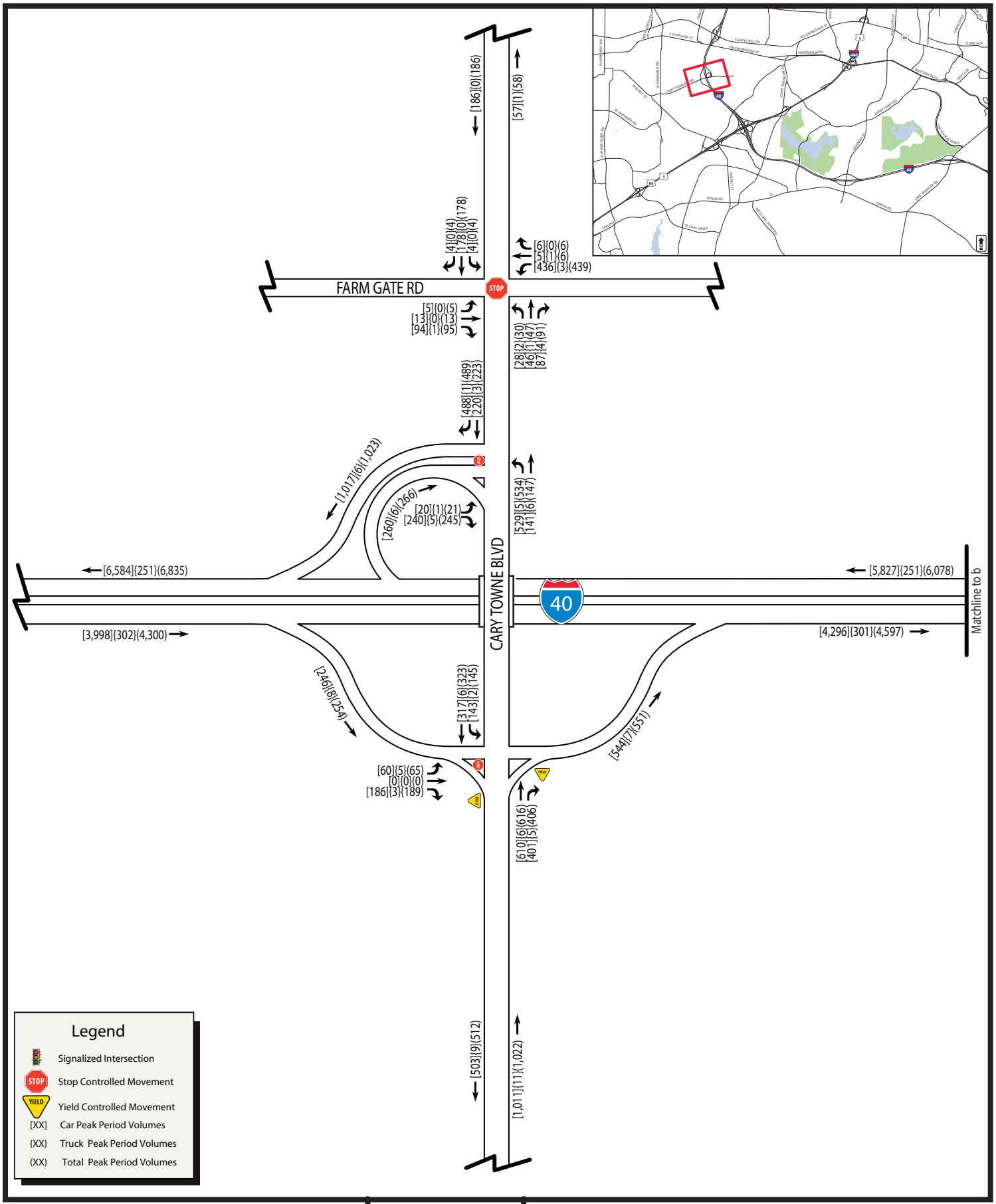
Wake County, North Carolina

N E W S

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 9g



I-5703_TOTM_2018ExVol_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

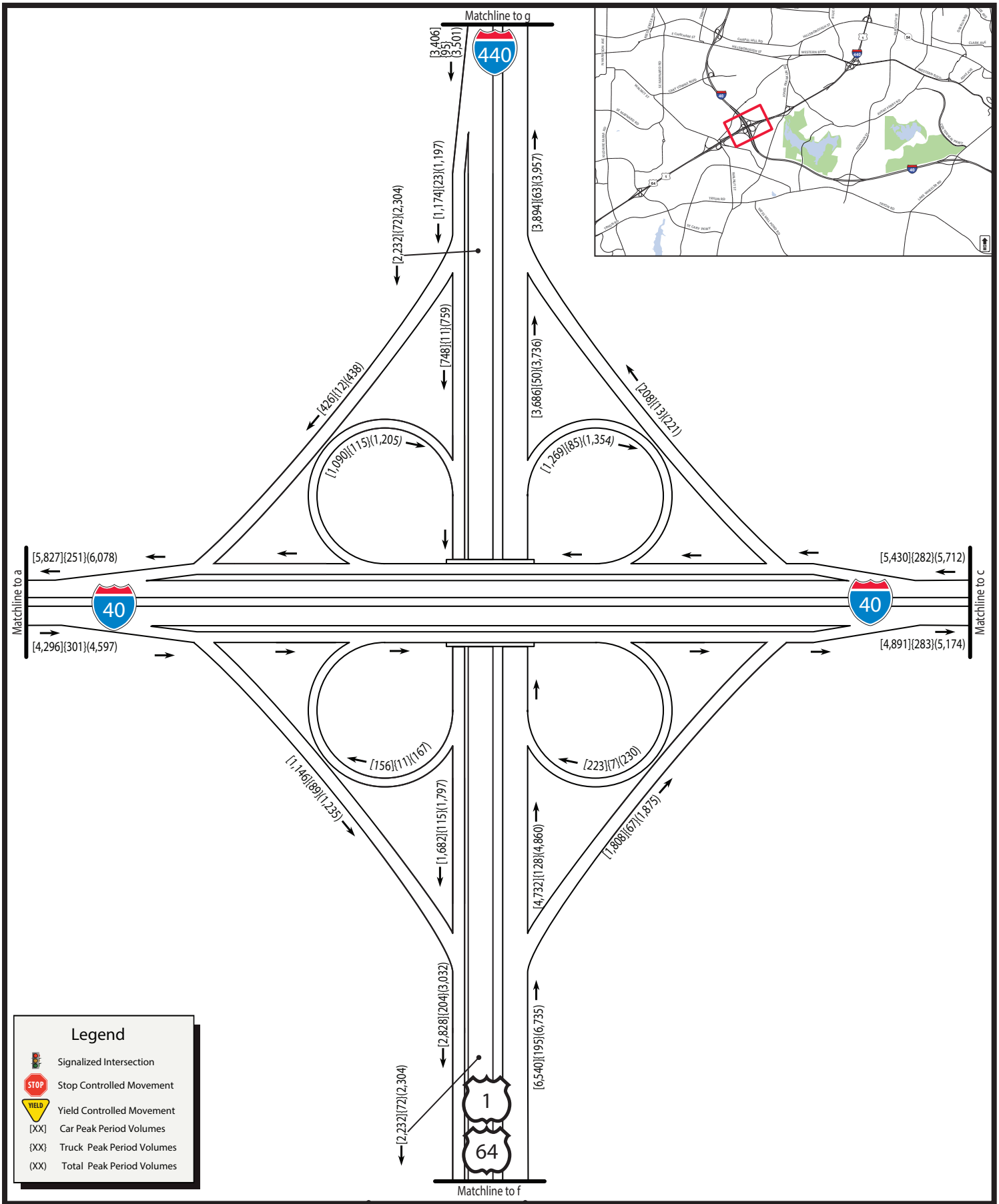
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 9a



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2018ExVol_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

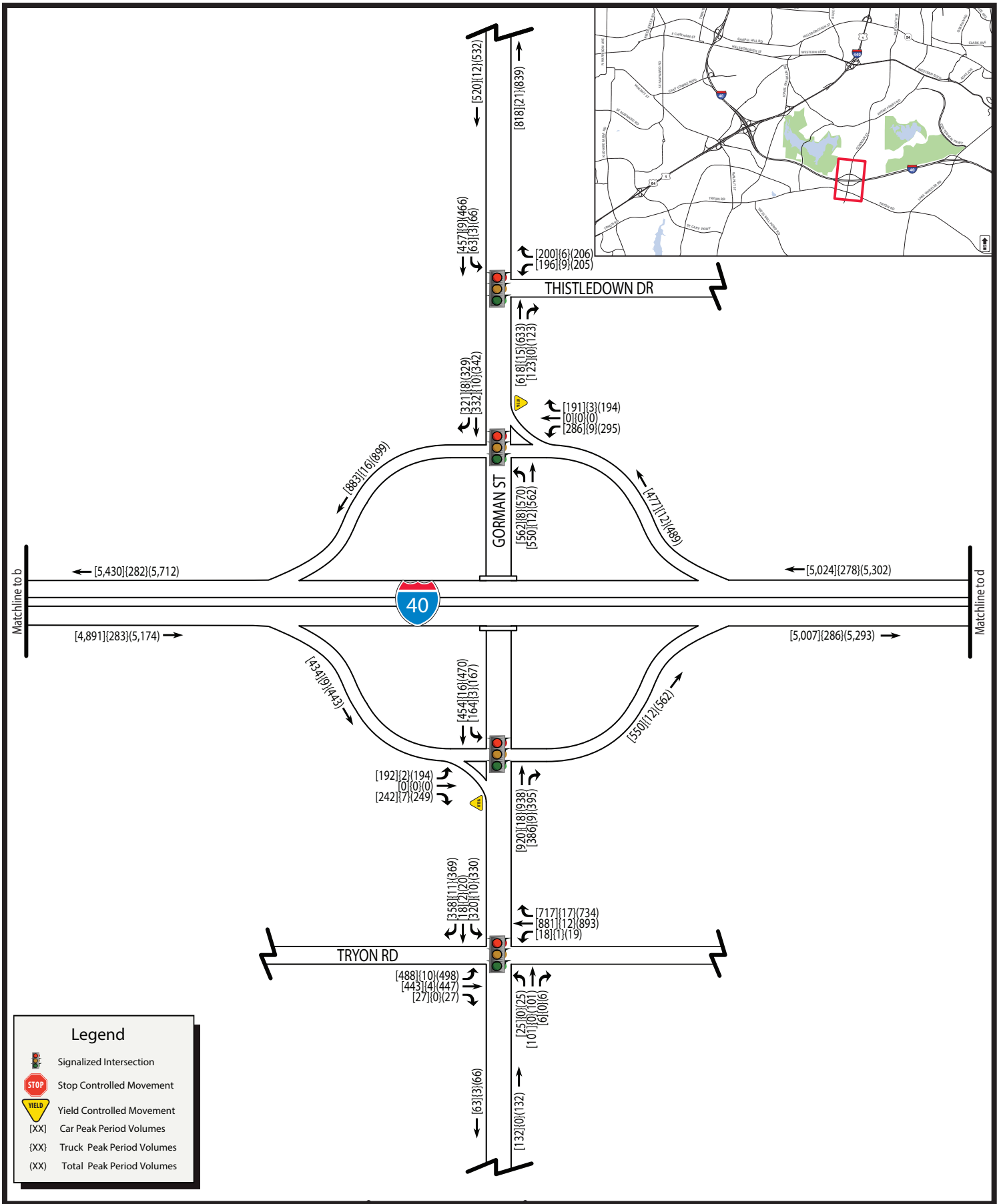
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 7am-8am

FIGURE 9b



I-5703_TOTM_2018ExVol_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

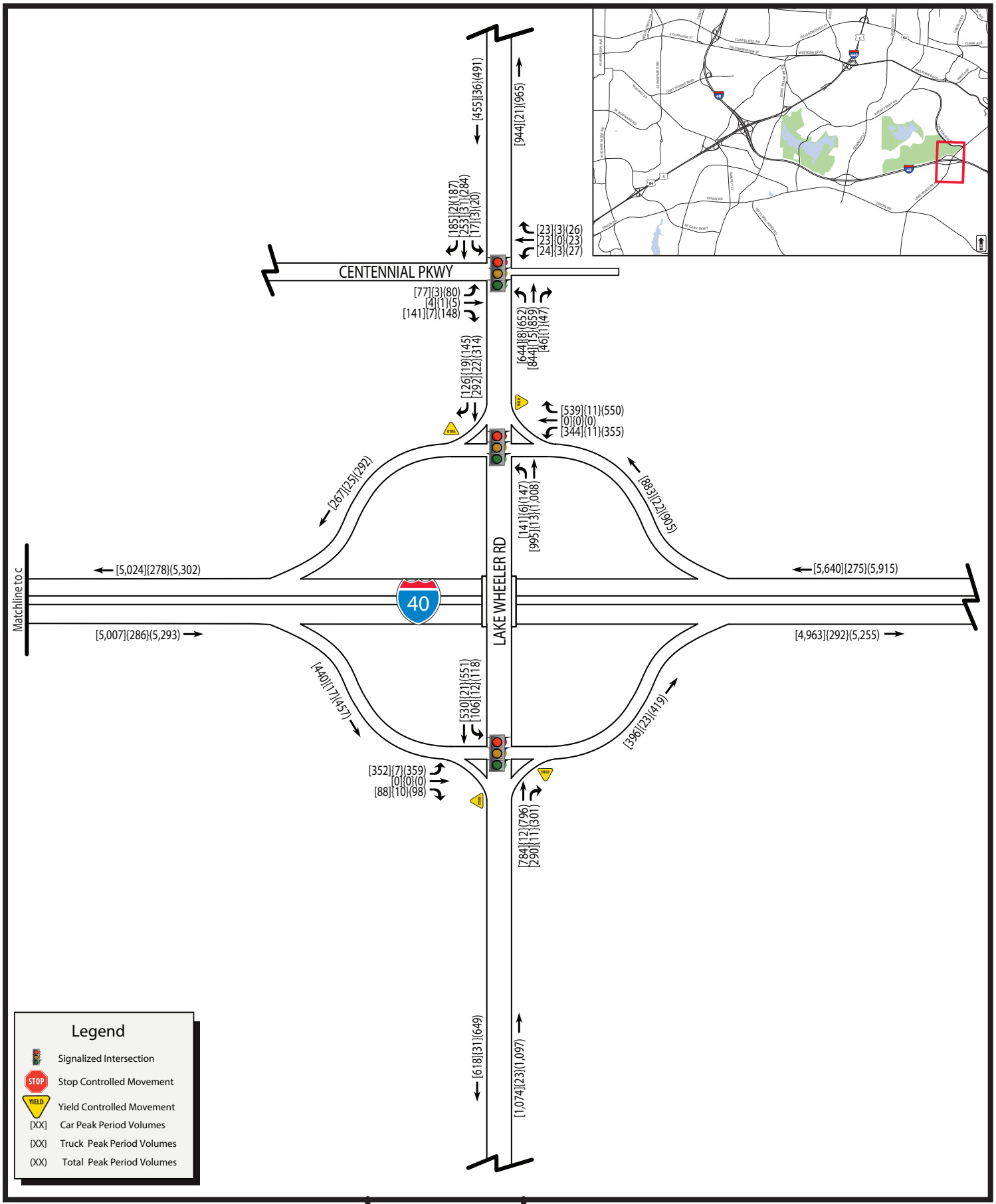
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 9c



I-5703_TOTM_2018ExVol_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

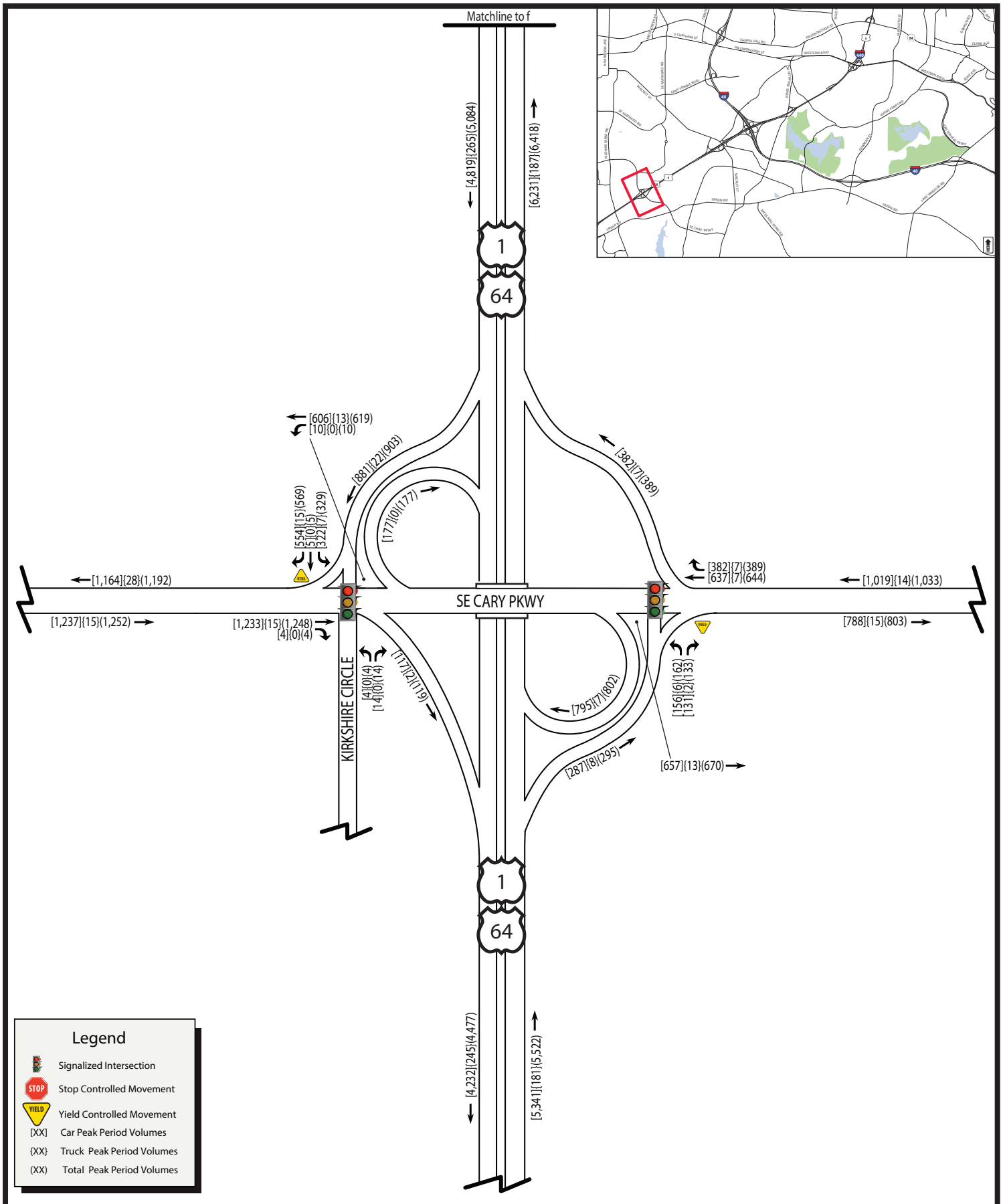
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 9d



I-5703_TOTM_2018ExVol_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

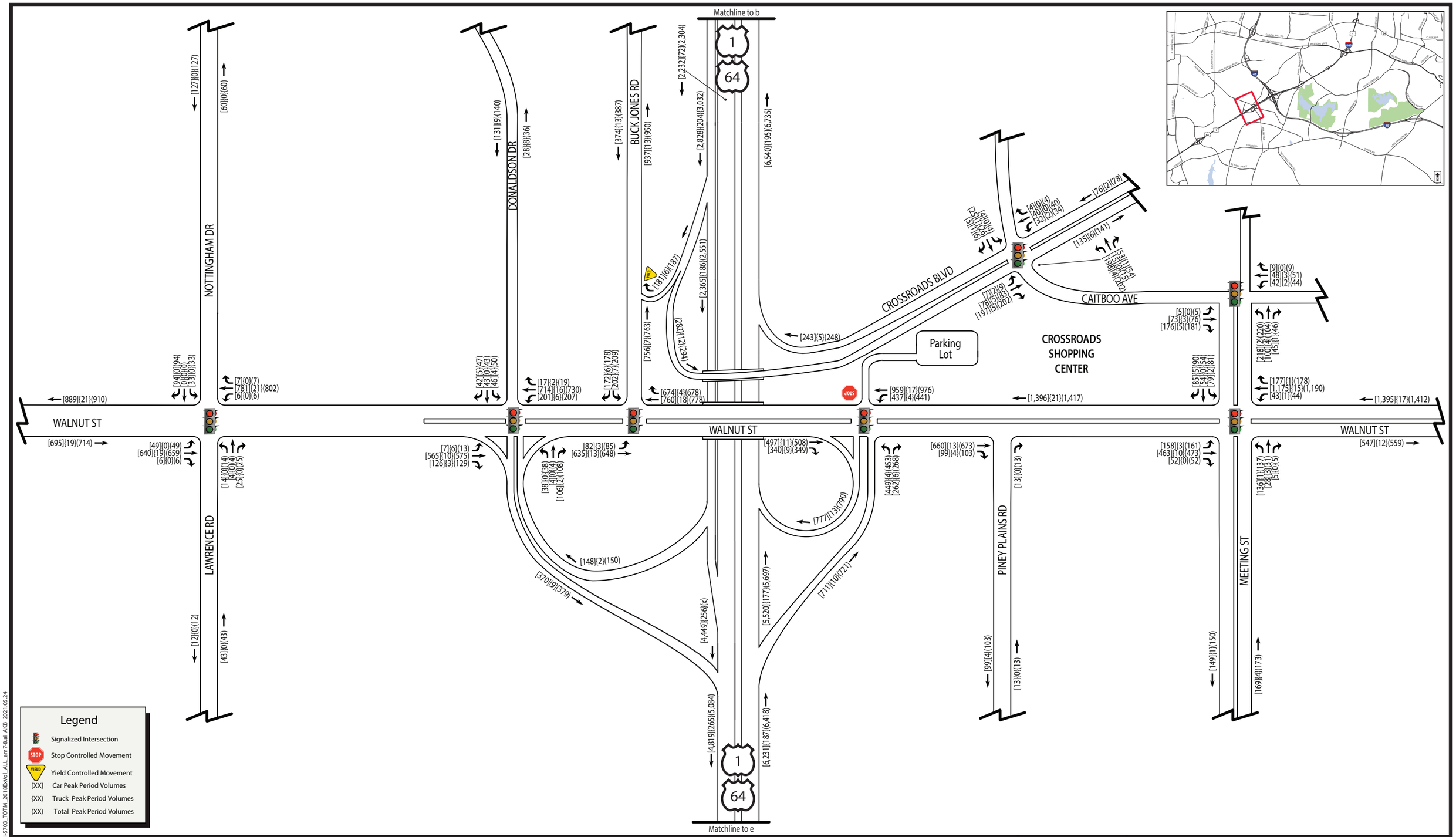
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 9e



I-5703_TOTM_2018EvVol_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

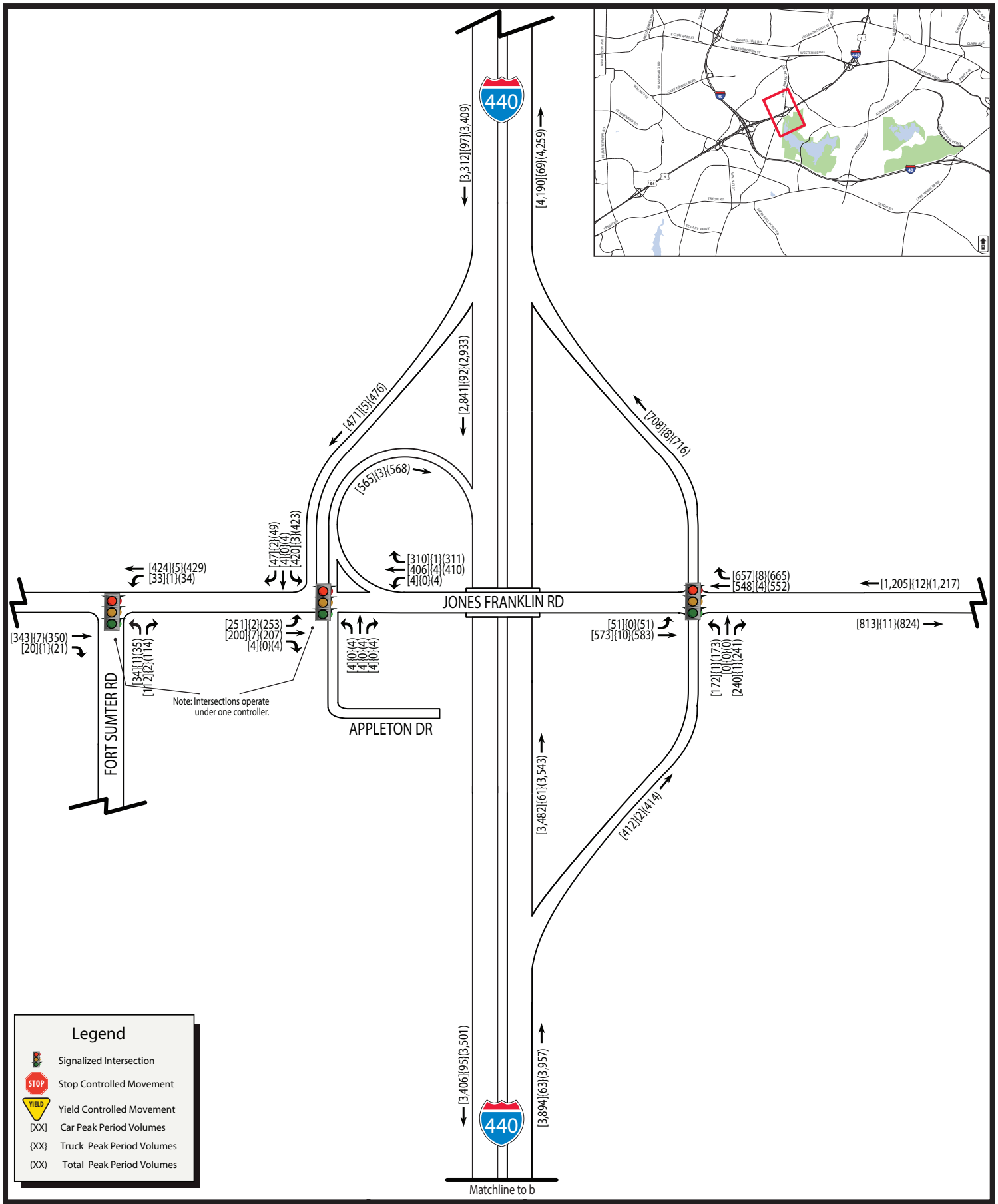
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 9f



I-5703_TOTM_2018ExVol_ALL_am7-8.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

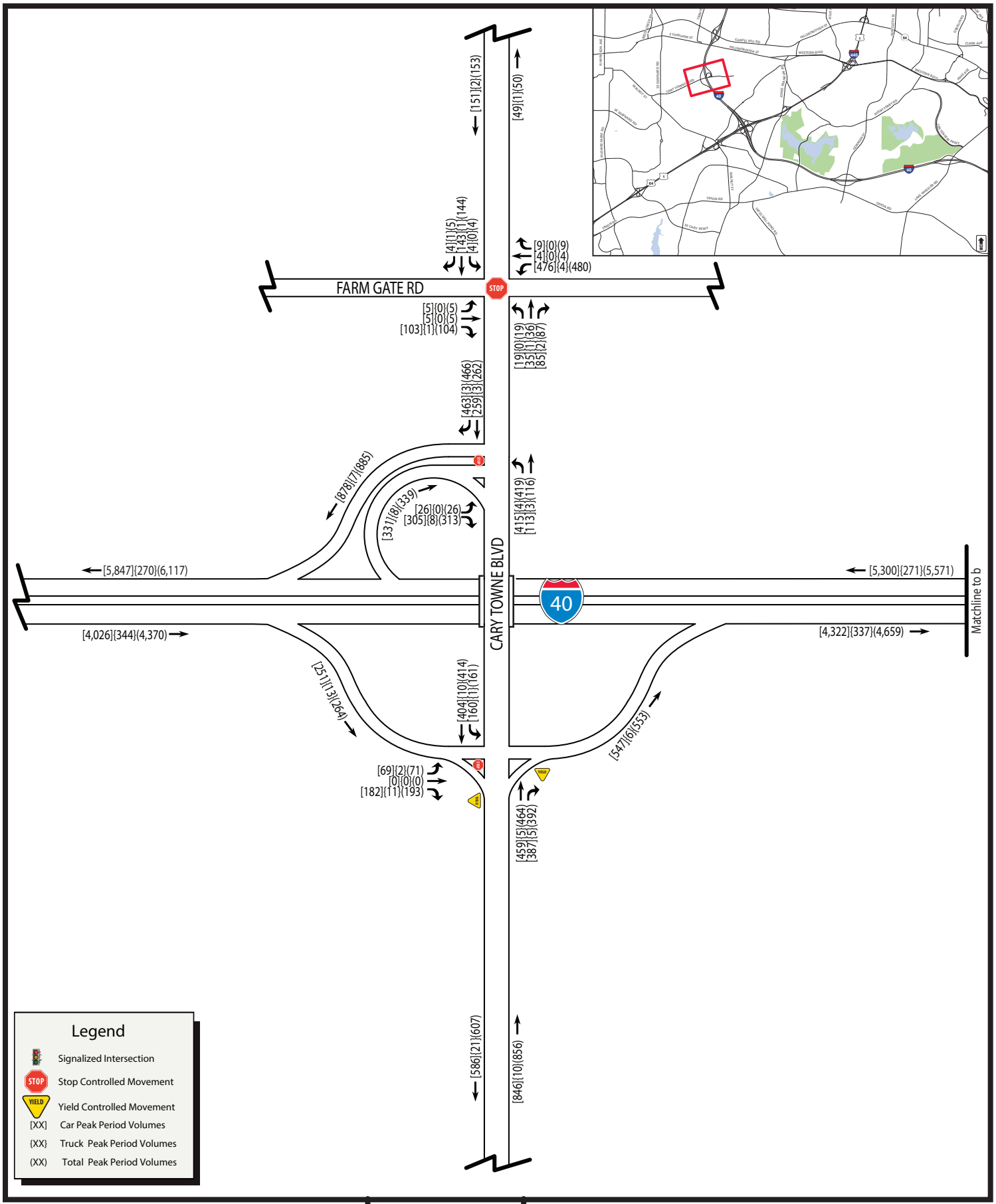
Wake County, North Carolina

N E S W

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 9g



I-5703_TOTM_2018ExVol_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

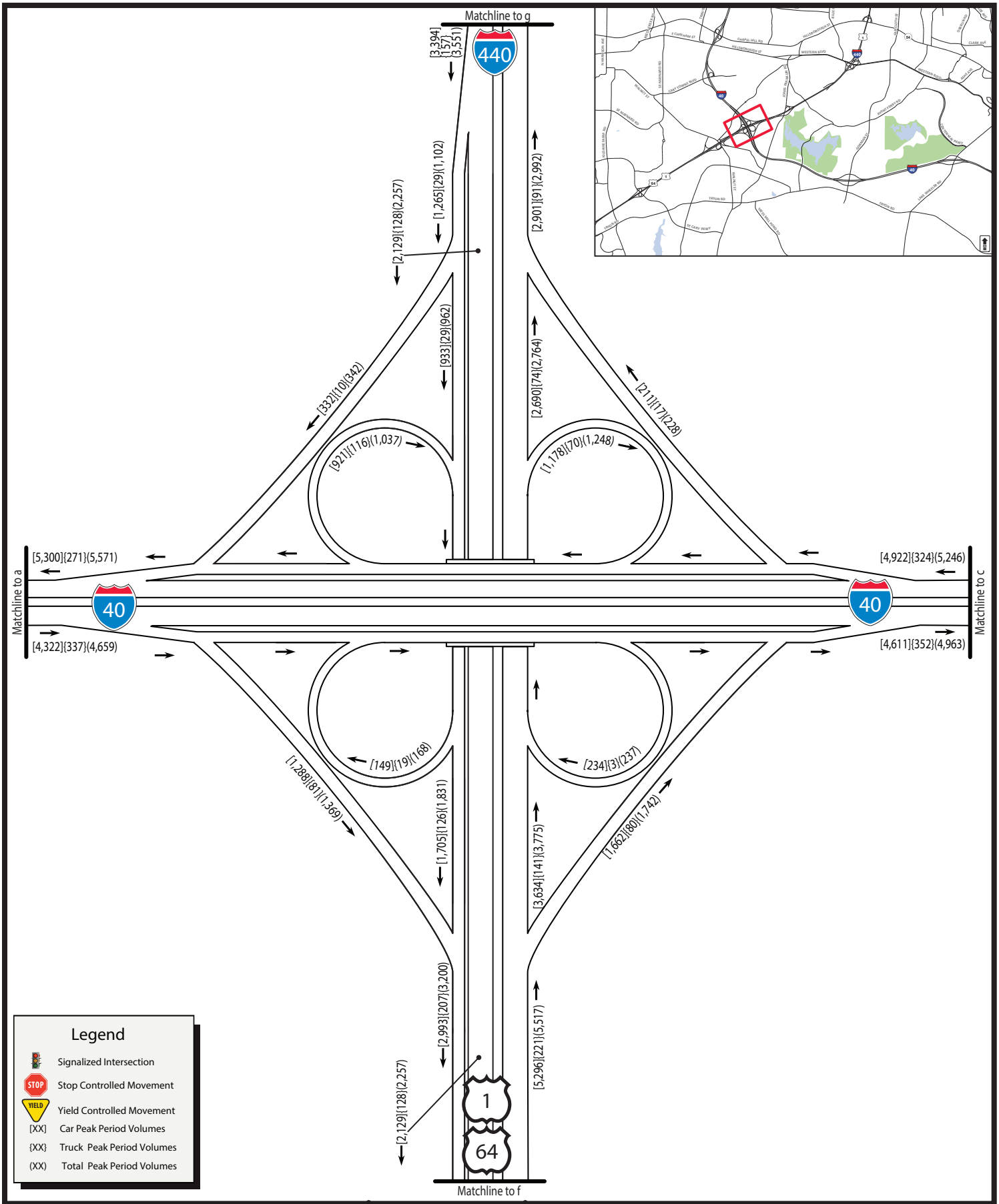
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE 2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 8am-9am

FIGURE 9a



I-5703_TOTM_2018ExVol_ALL_amB-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

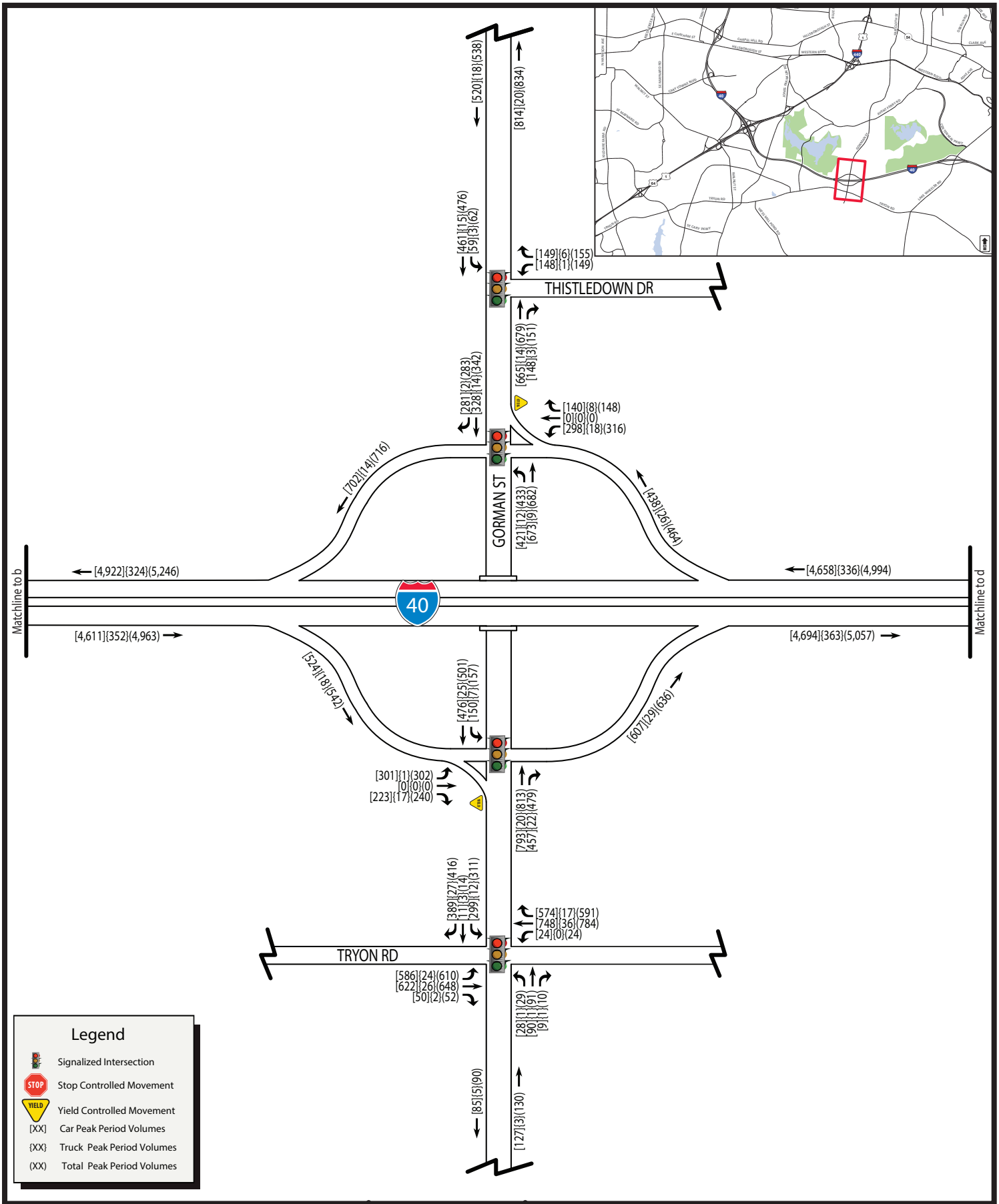
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 8am-9am

FIGURE 9b



I-5703_TOTM_2018ExVol_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

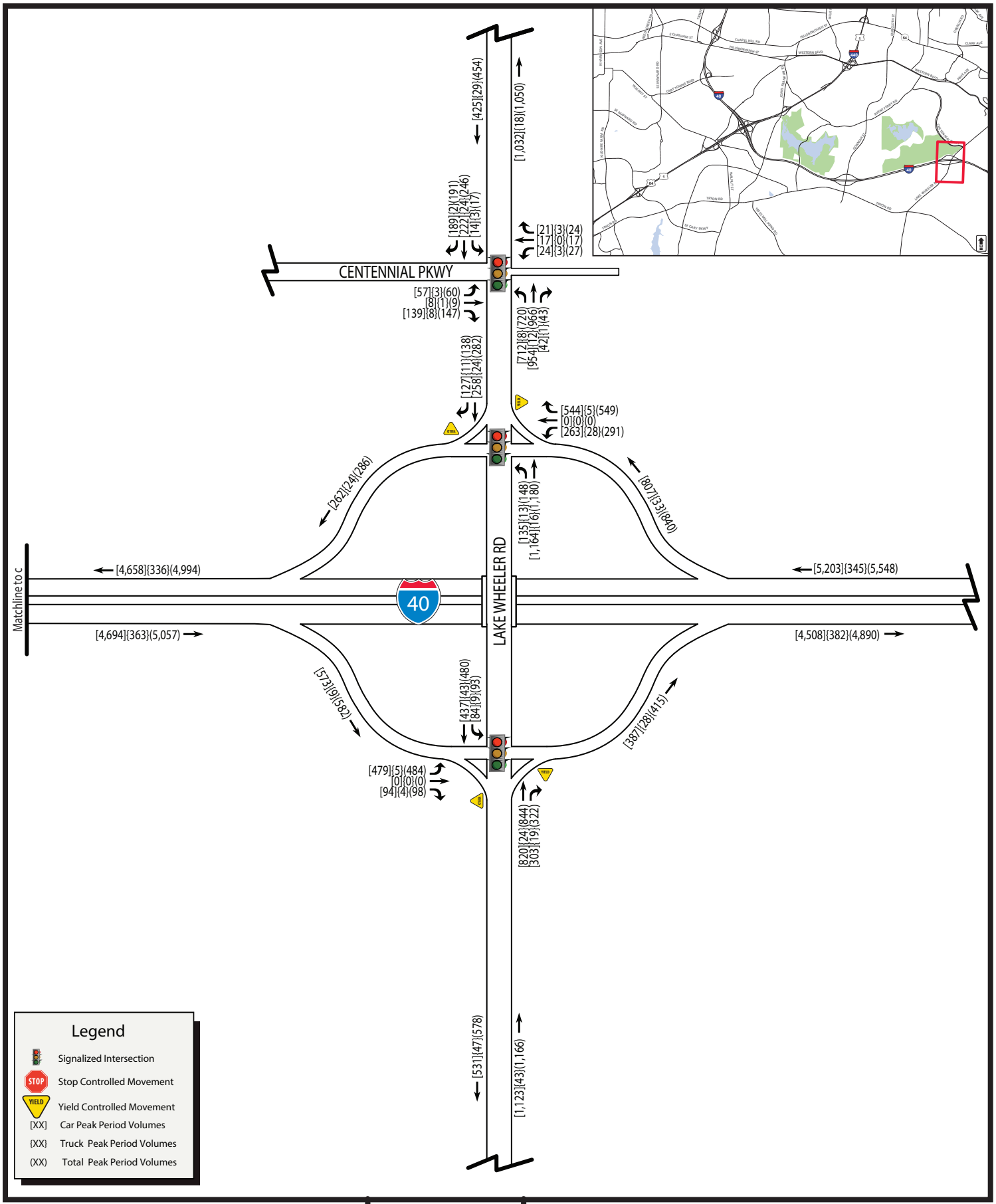
Wake County, North Carolina

N W E S

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 9c



I-5703_TOTM_2018ExVol_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

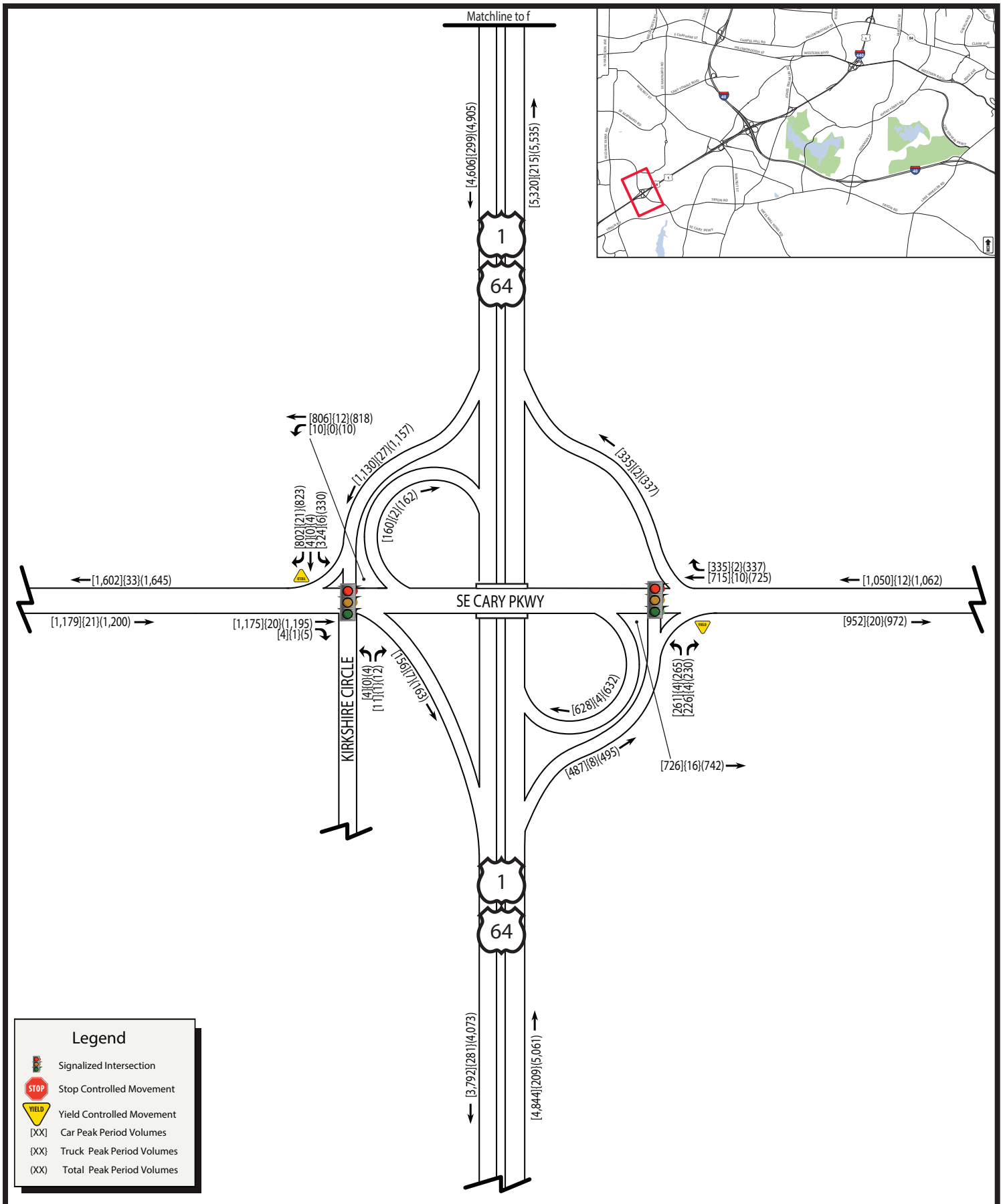
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 9d



I-5703_TOTM_2018ExVol_ALL_am9-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

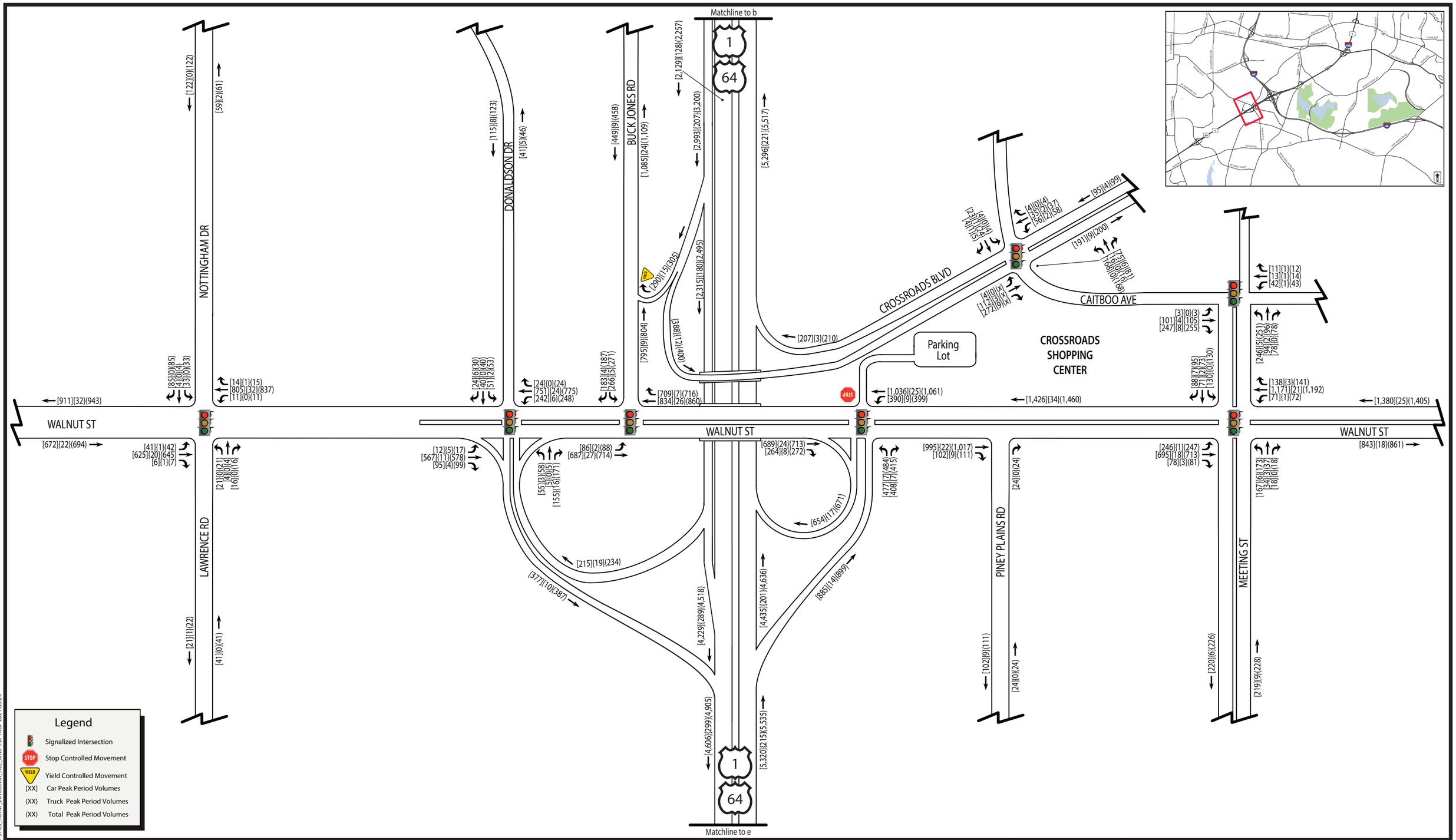
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 9e



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2018EvVol_ALL_am8-9.sd AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

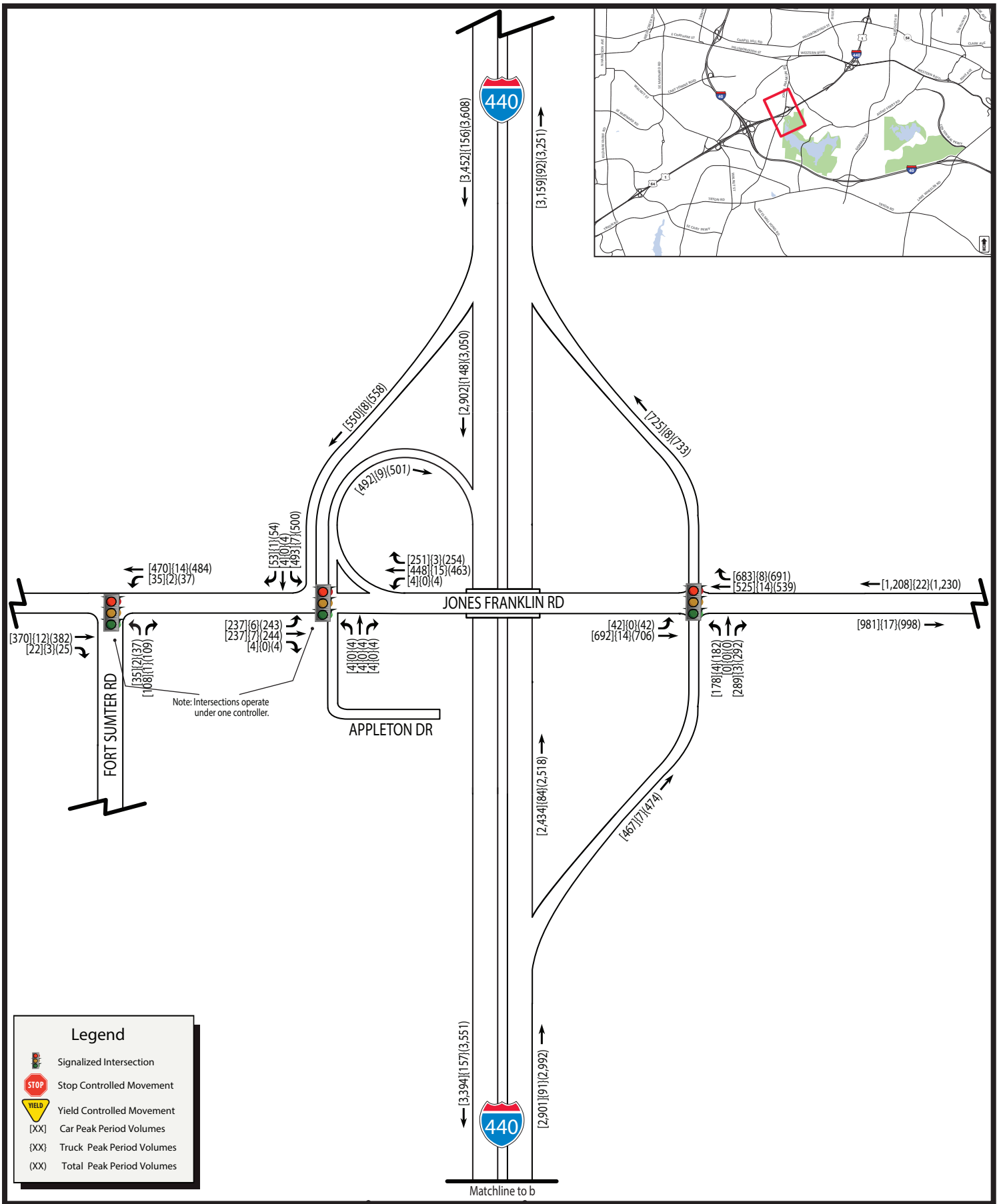
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 9f



I-5703_TOTM_2018ExVol_ALL_am9-9.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

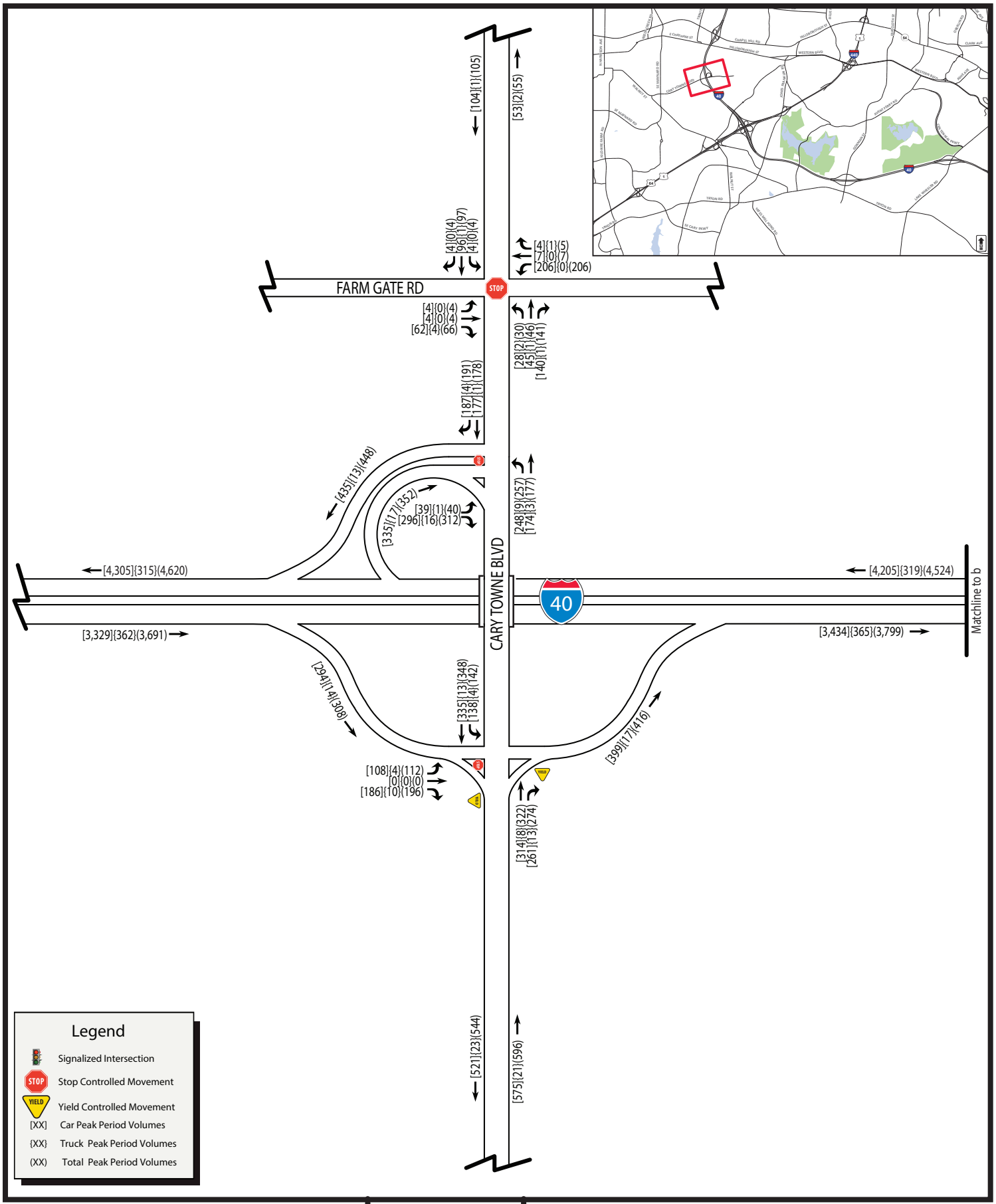
Wake County, North Carolina

N E W S

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 9g



I-5703_TOTM_2018ExVol_ALL_am9-10.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

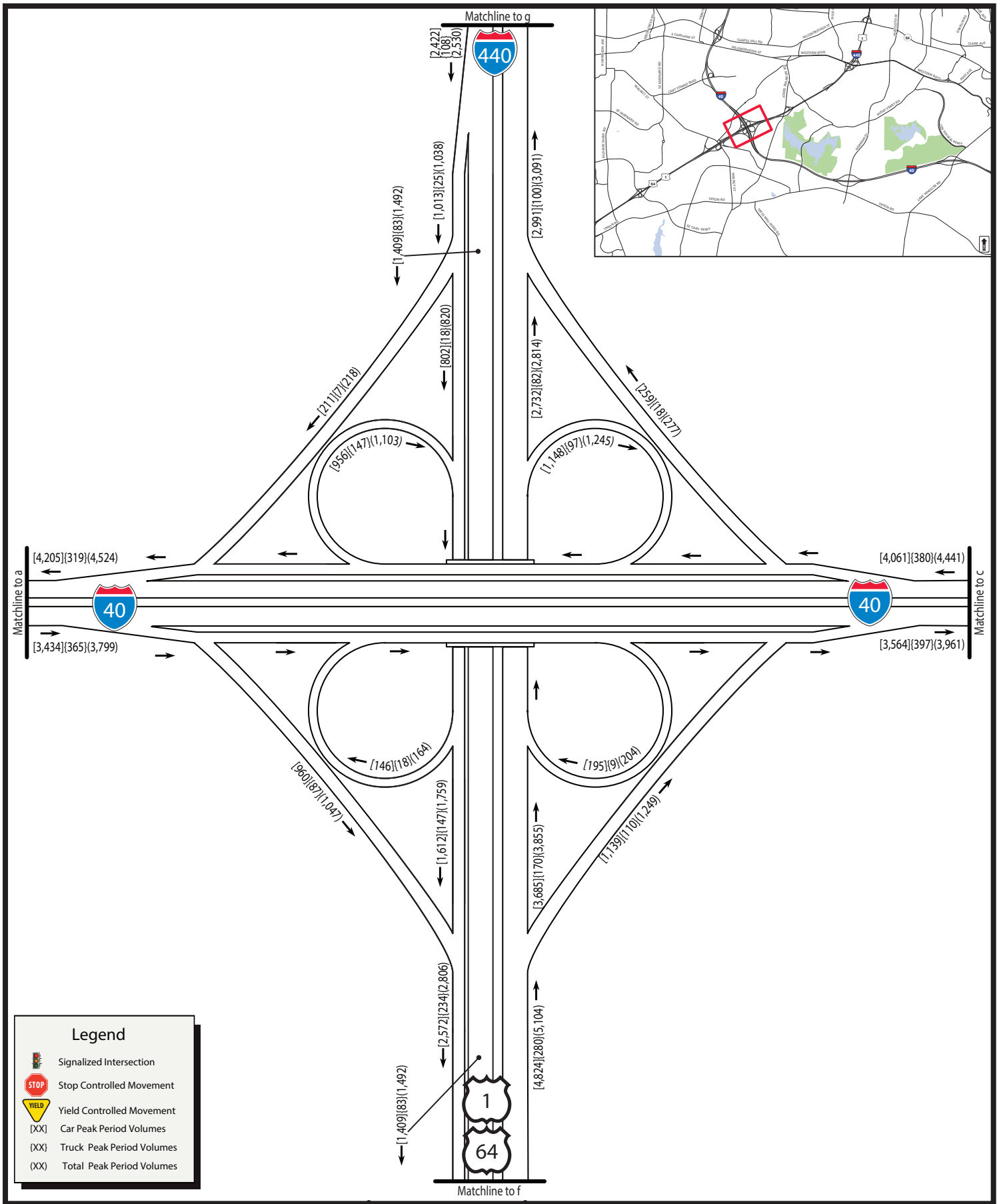
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 9a



I-5703_TOTM_2018ExVol_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

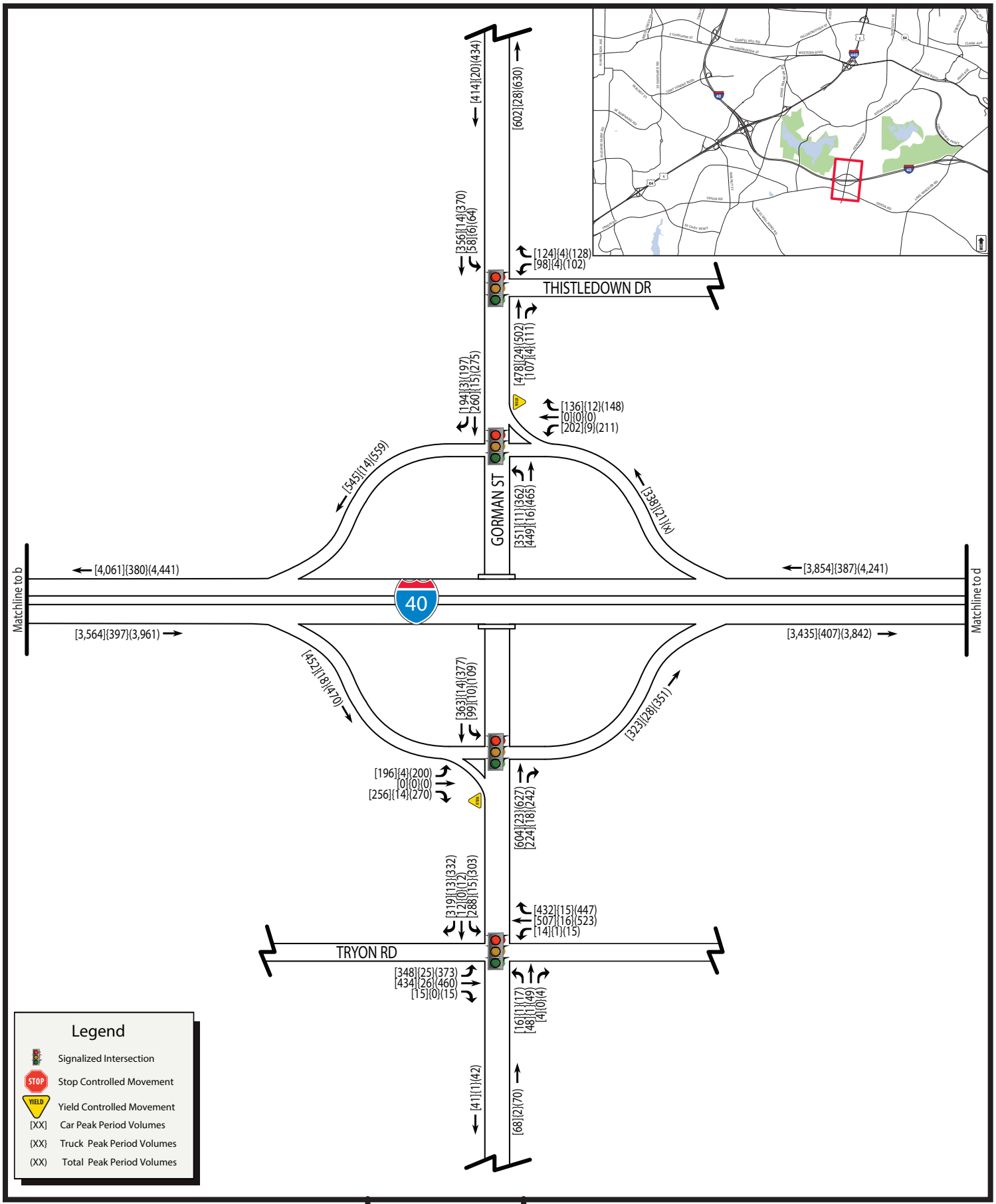
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 9b



I-5703_TOTM_2018ExVol_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

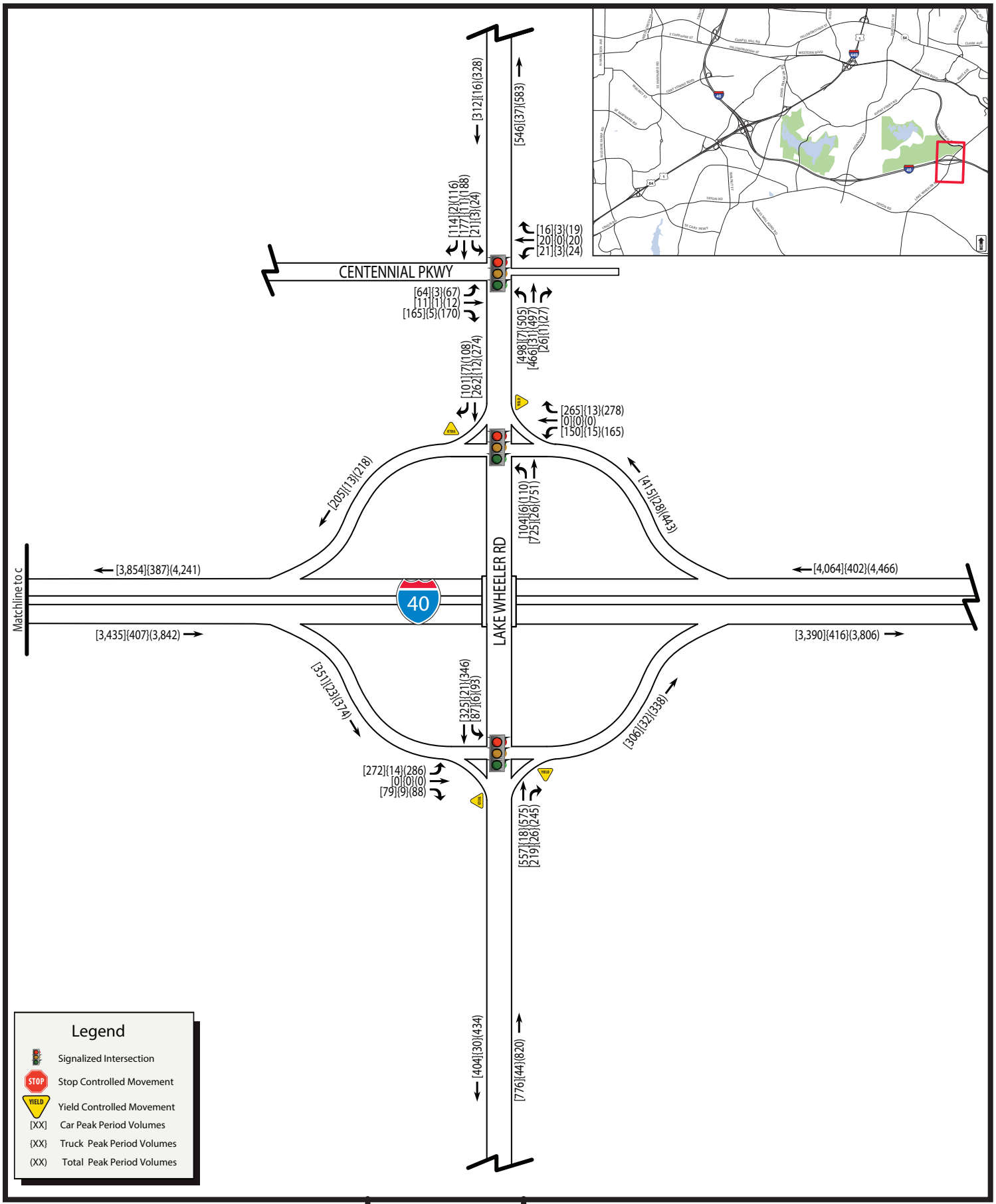
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 9c



I-5703_TOTM_2018ExVol_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

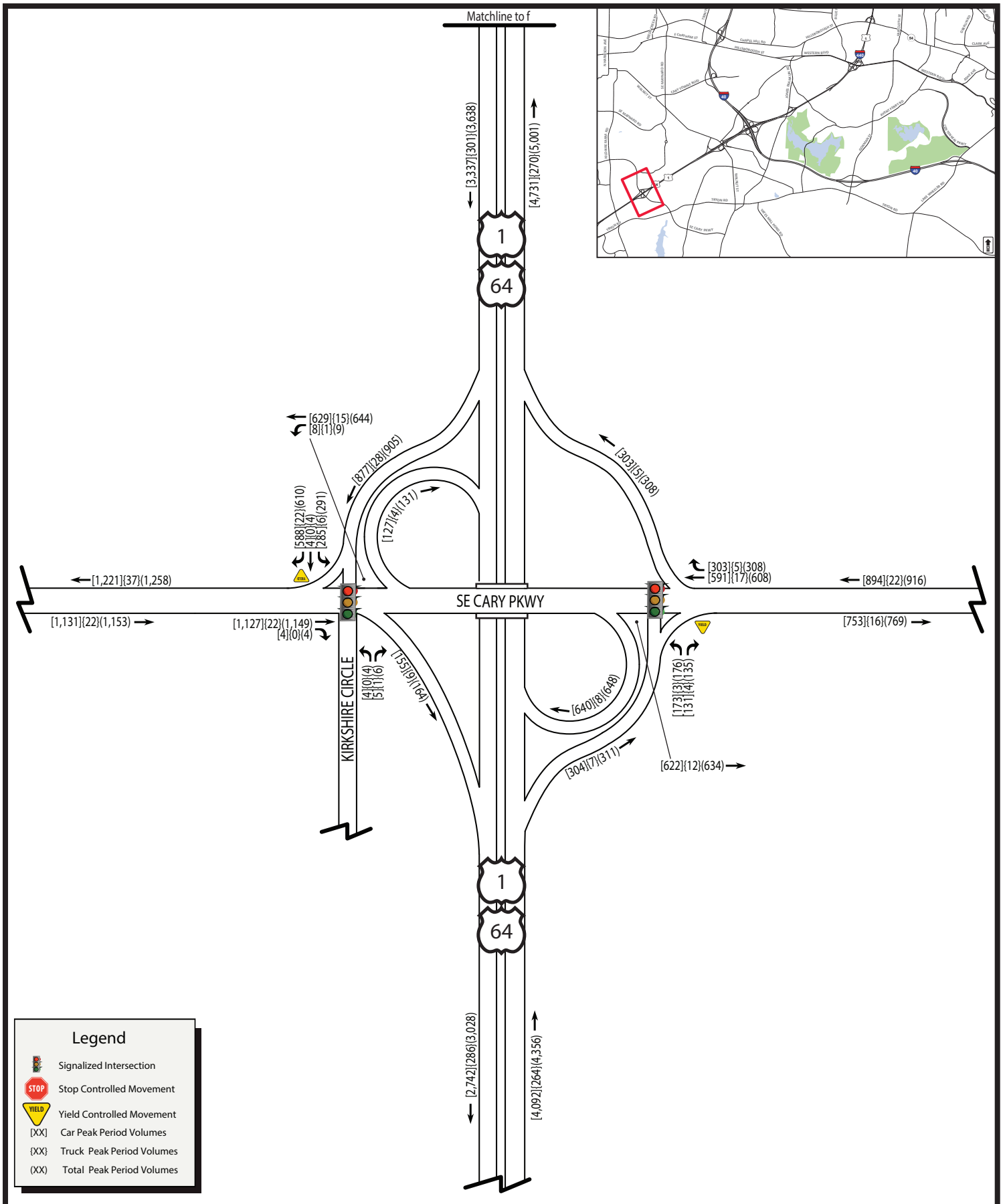
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 9d



I-5703_TOTM_2018ExVol_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

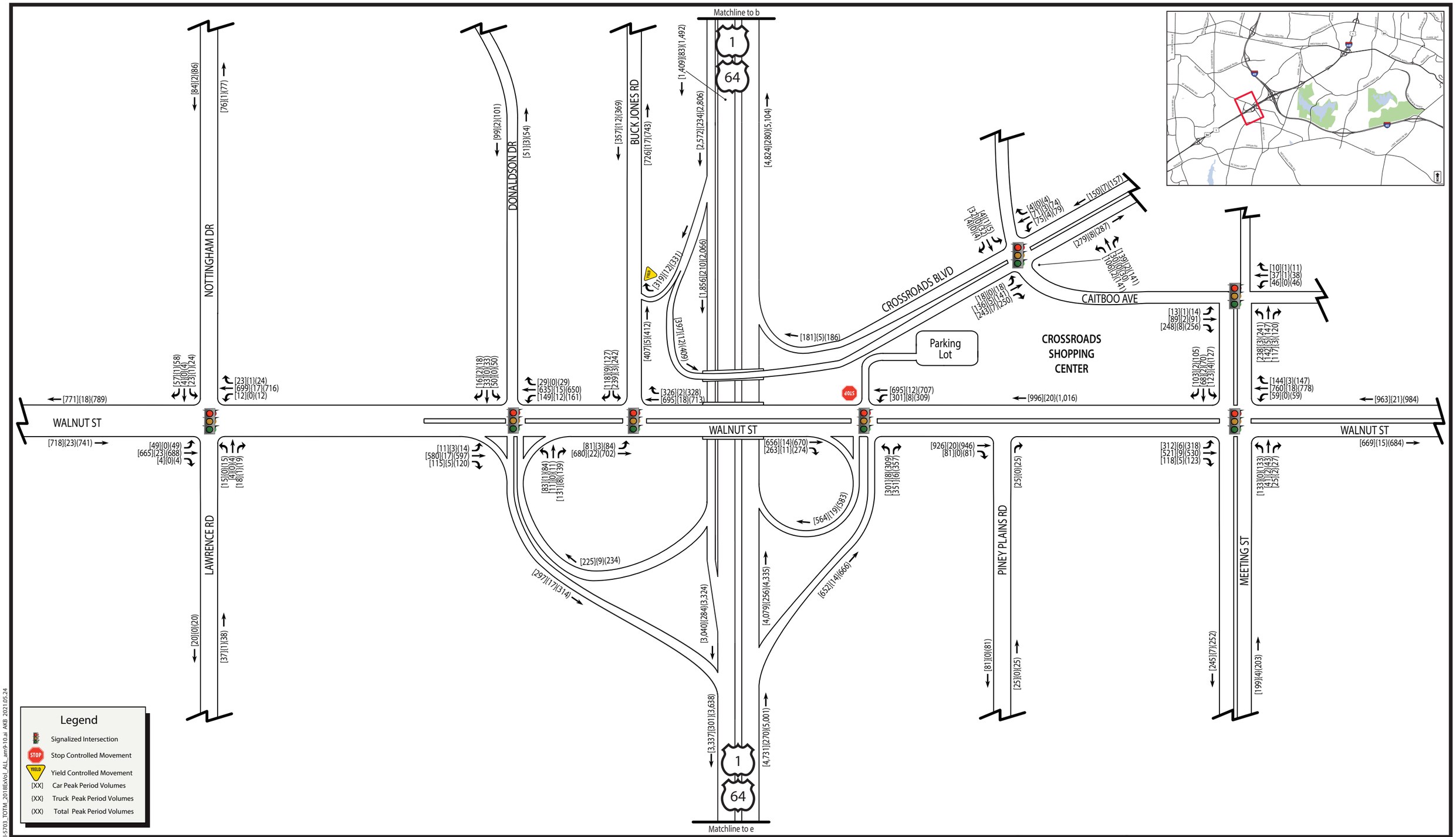
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 9e



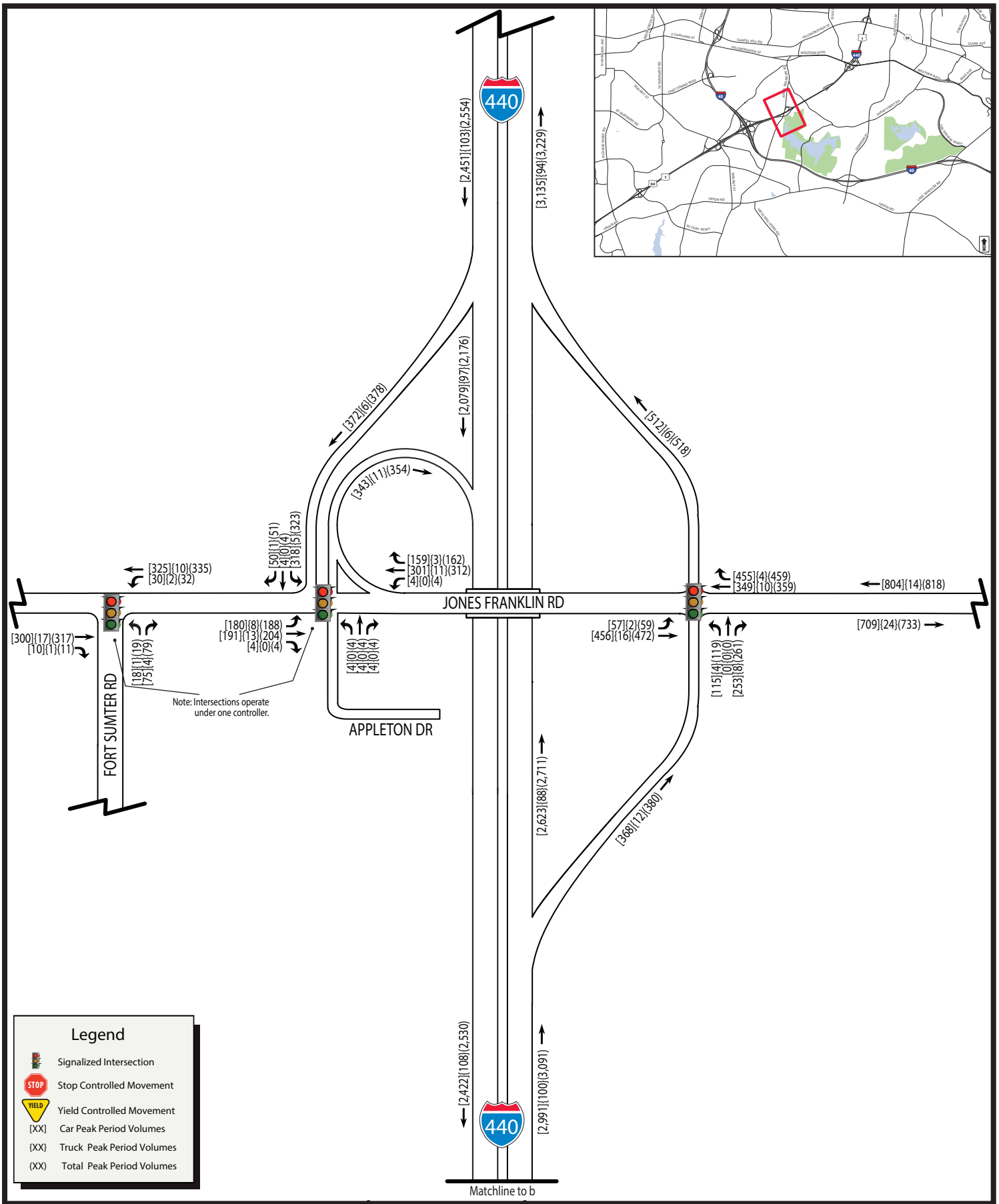
I-5703_TOTM_2018EvVol_ALL_am9-10.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64
Interchange Reconstruction
STIP PROJECT NO. I-5703
Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am
FIGURE 9f



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2018ExVol_ALL_am9-10.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

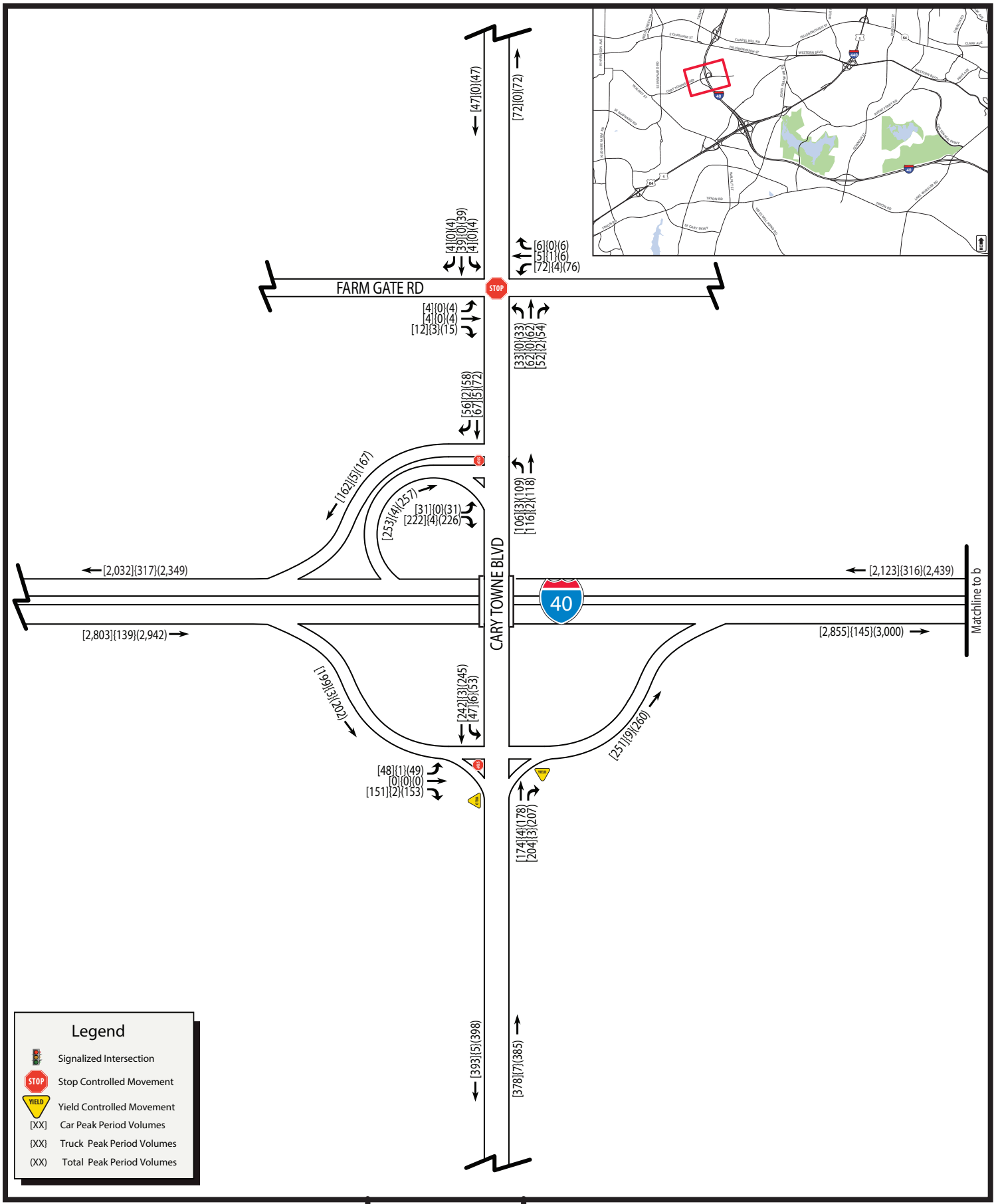
Wake County, North Carolina

N E S W

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE 2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 9am-10am

FIGURE 9g



I-5703_TOTM_2018ExVol_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

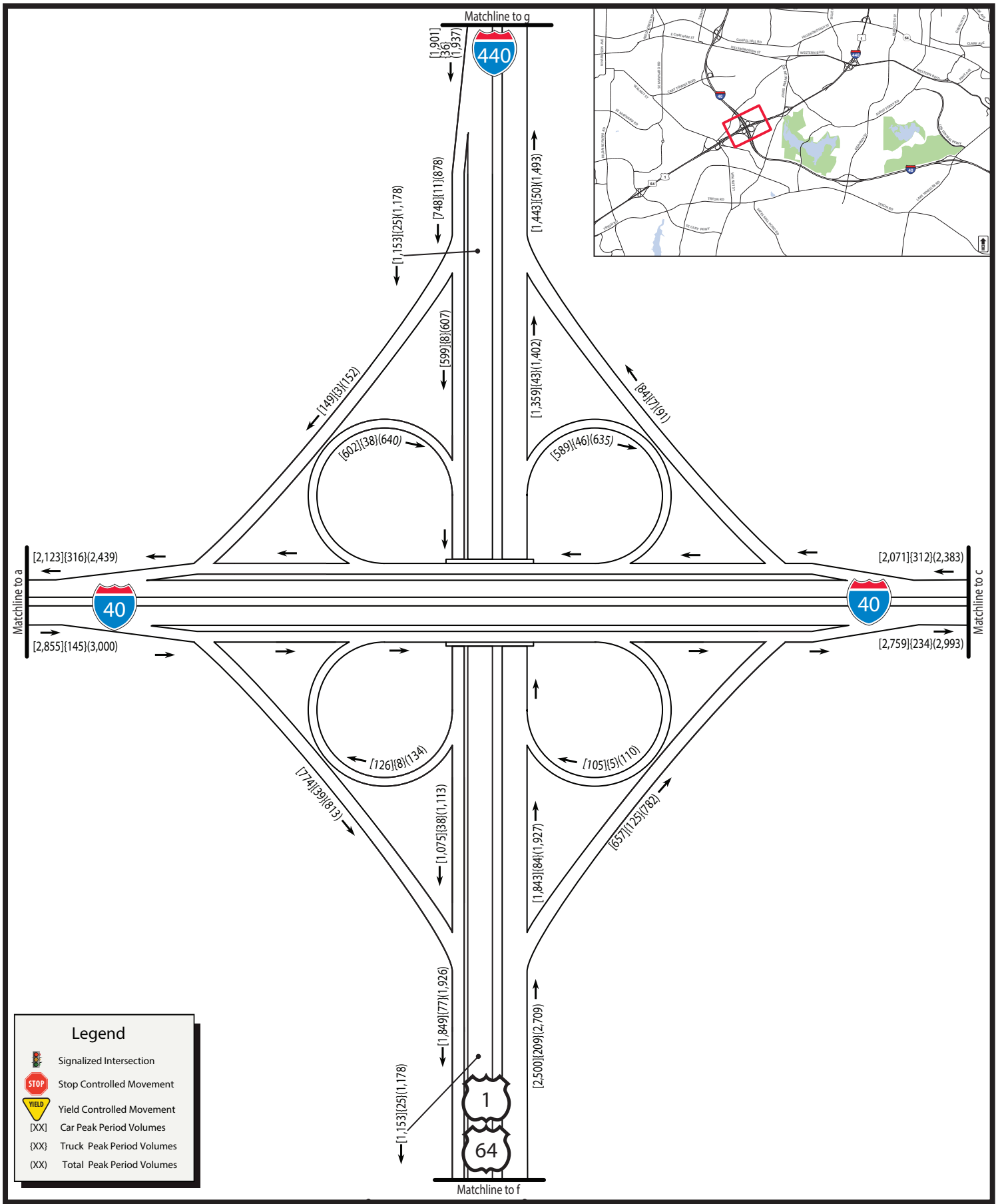
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE 2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 3:30pm-4pm

FIGURE 9a



I-5703_TOTM_2018ExVol_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

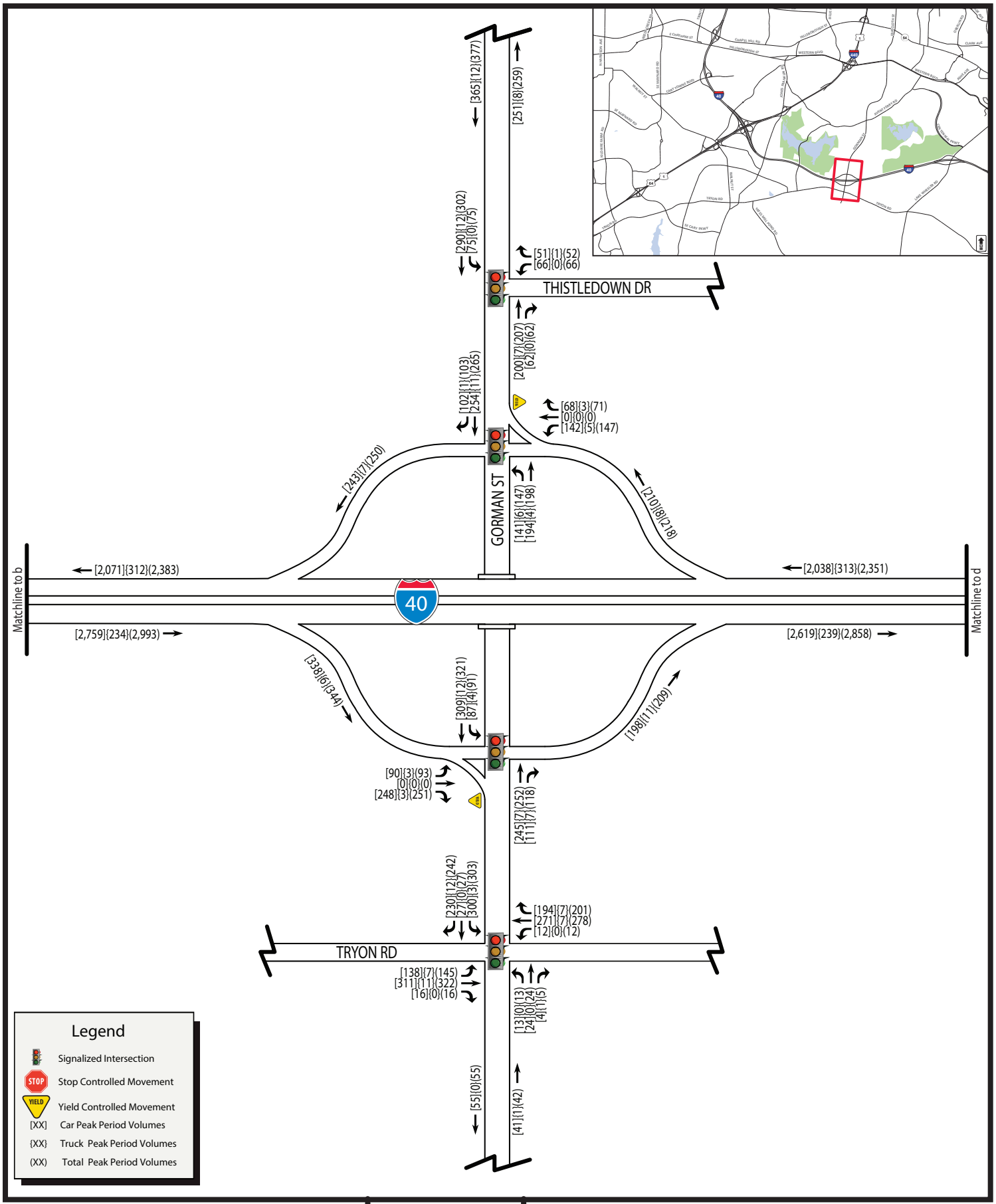
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 9b



I-5703_TOTM_2018ExVol_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

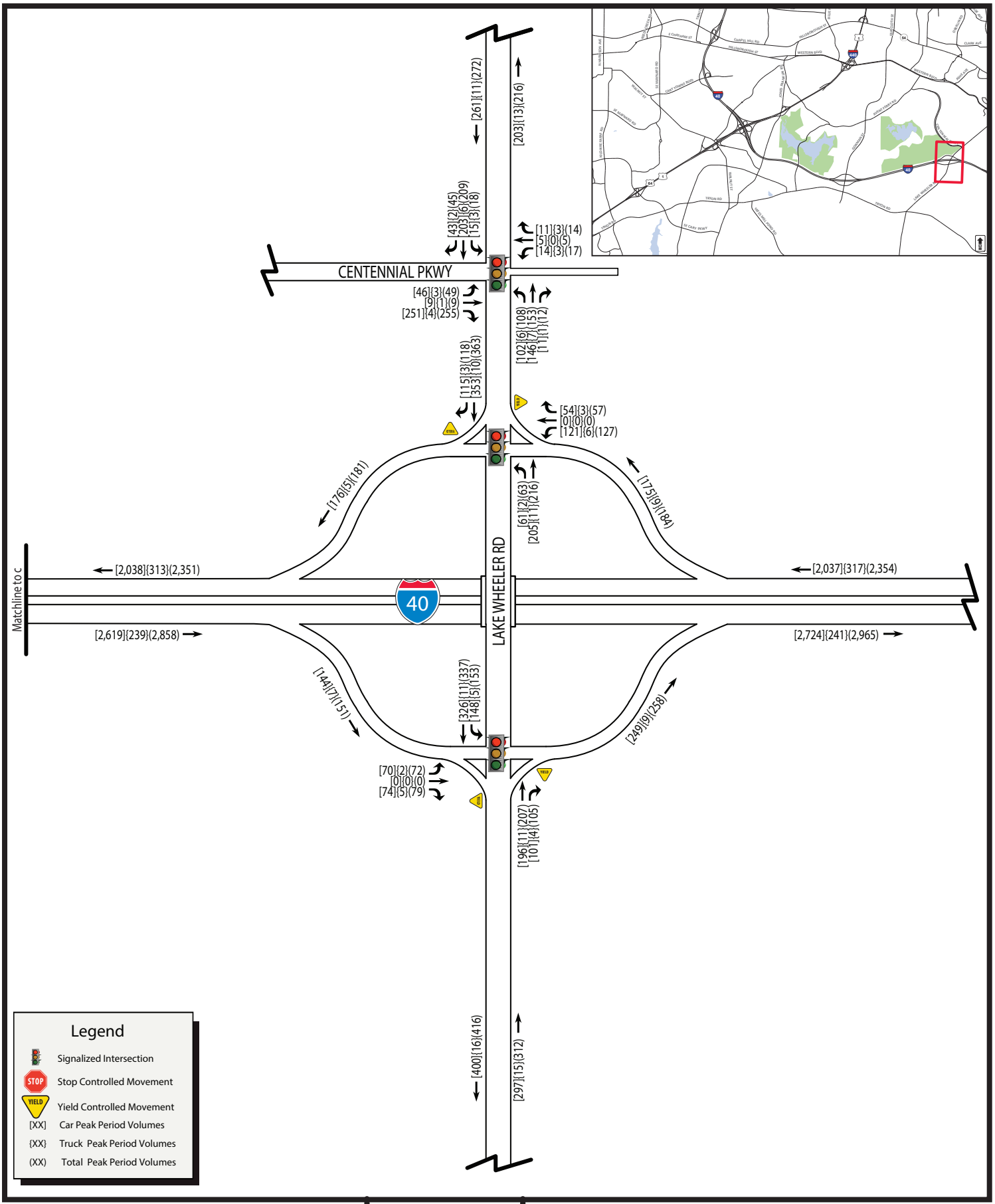
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 3:30pm-4pm

FIGURE 9c



I-5703_TOTM_2018ExVol_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

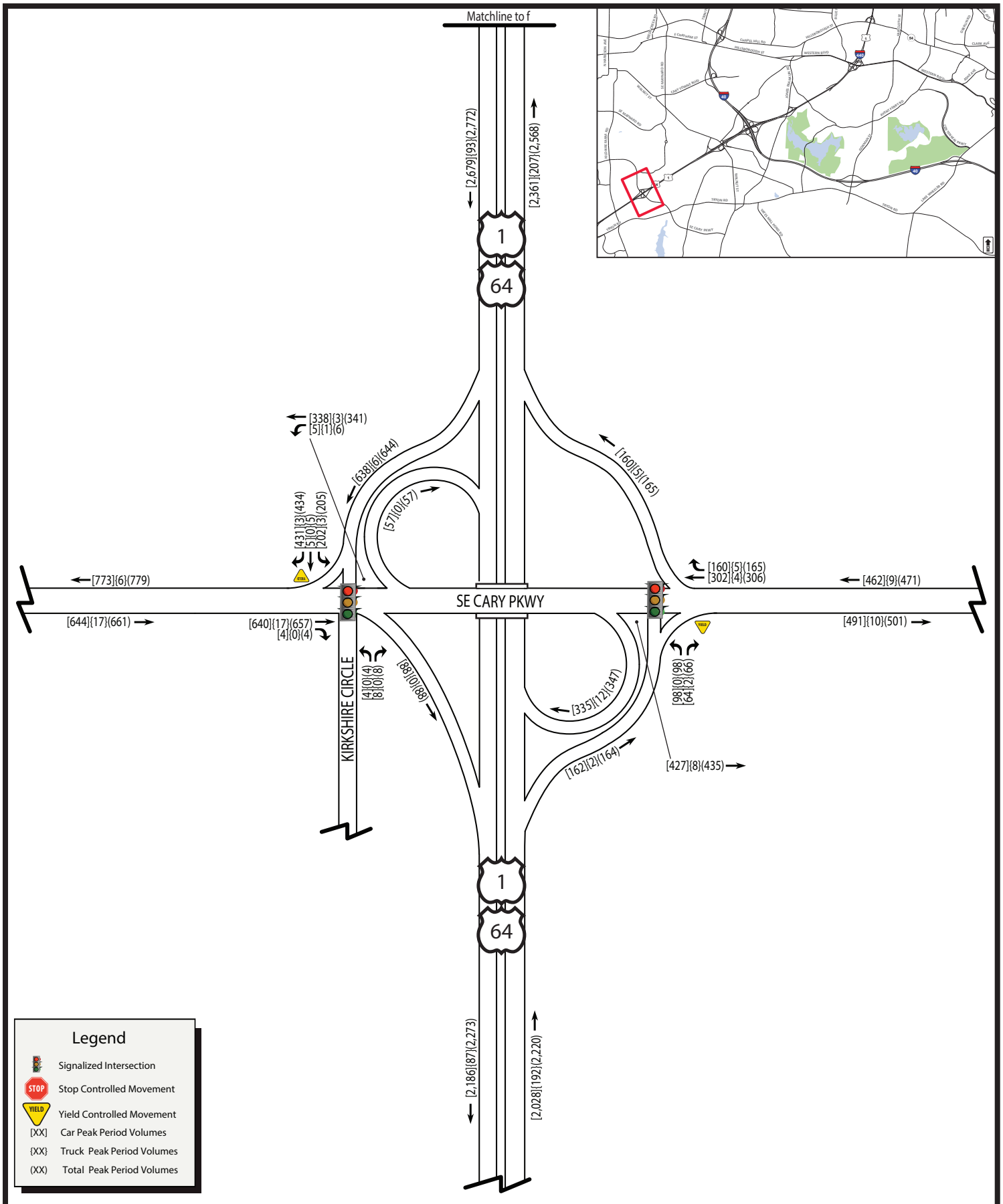
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 9d



I-5703_TOTM_2018ExVol_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

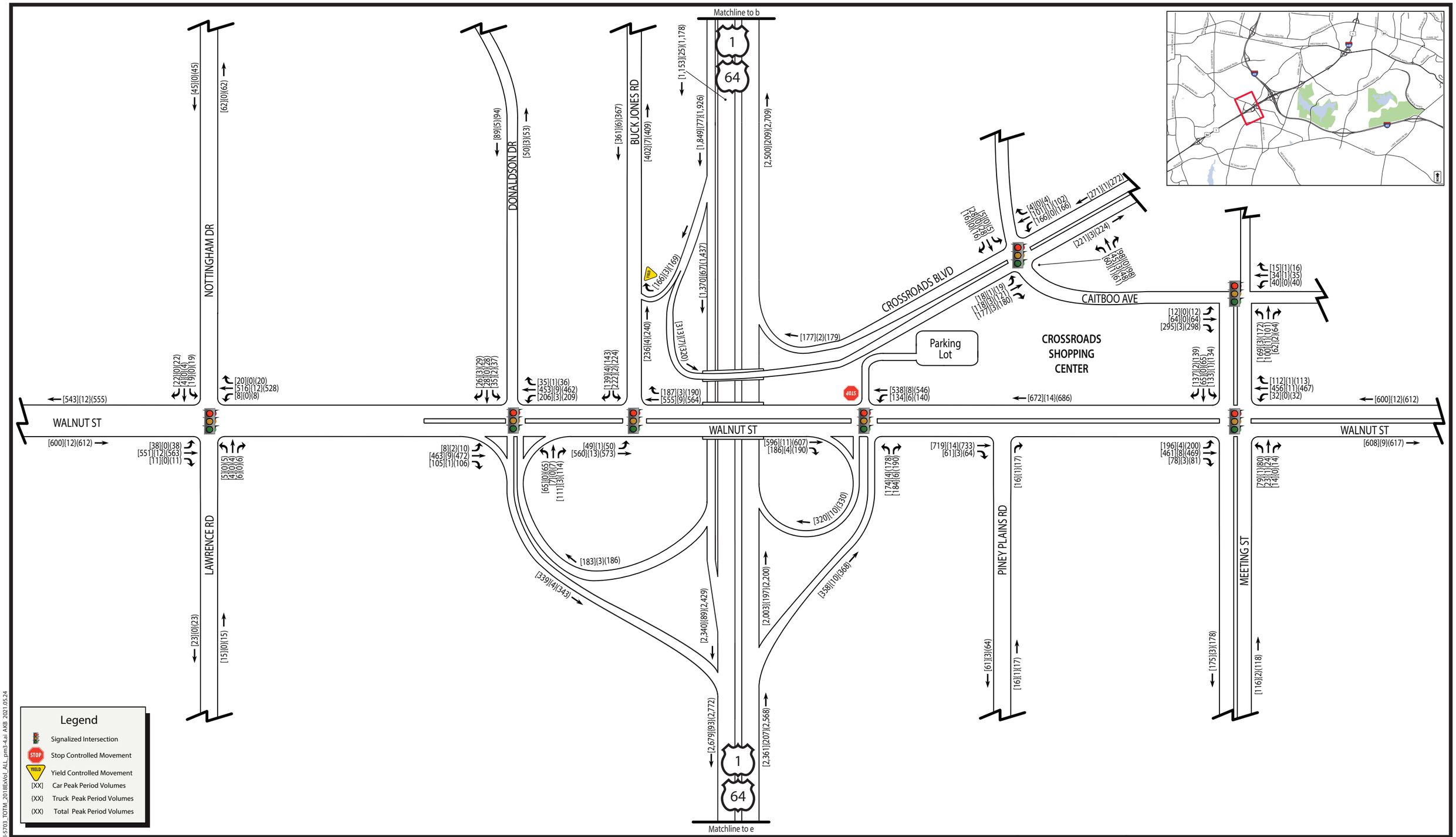
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 9e



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2018EvVol_ALL_pm3-4a1 AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

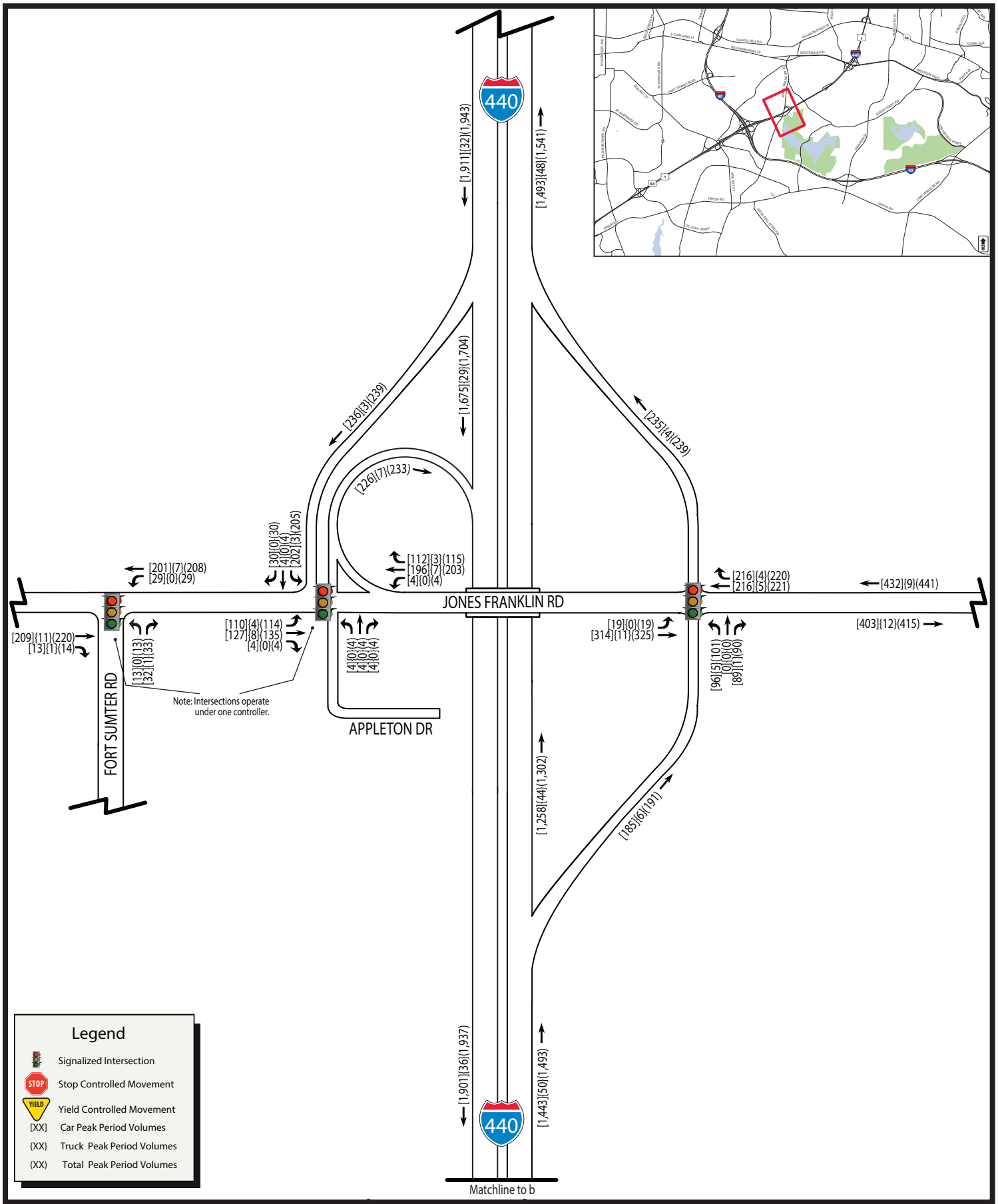
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 9f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2018ExVol_ALL_pm3-4.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

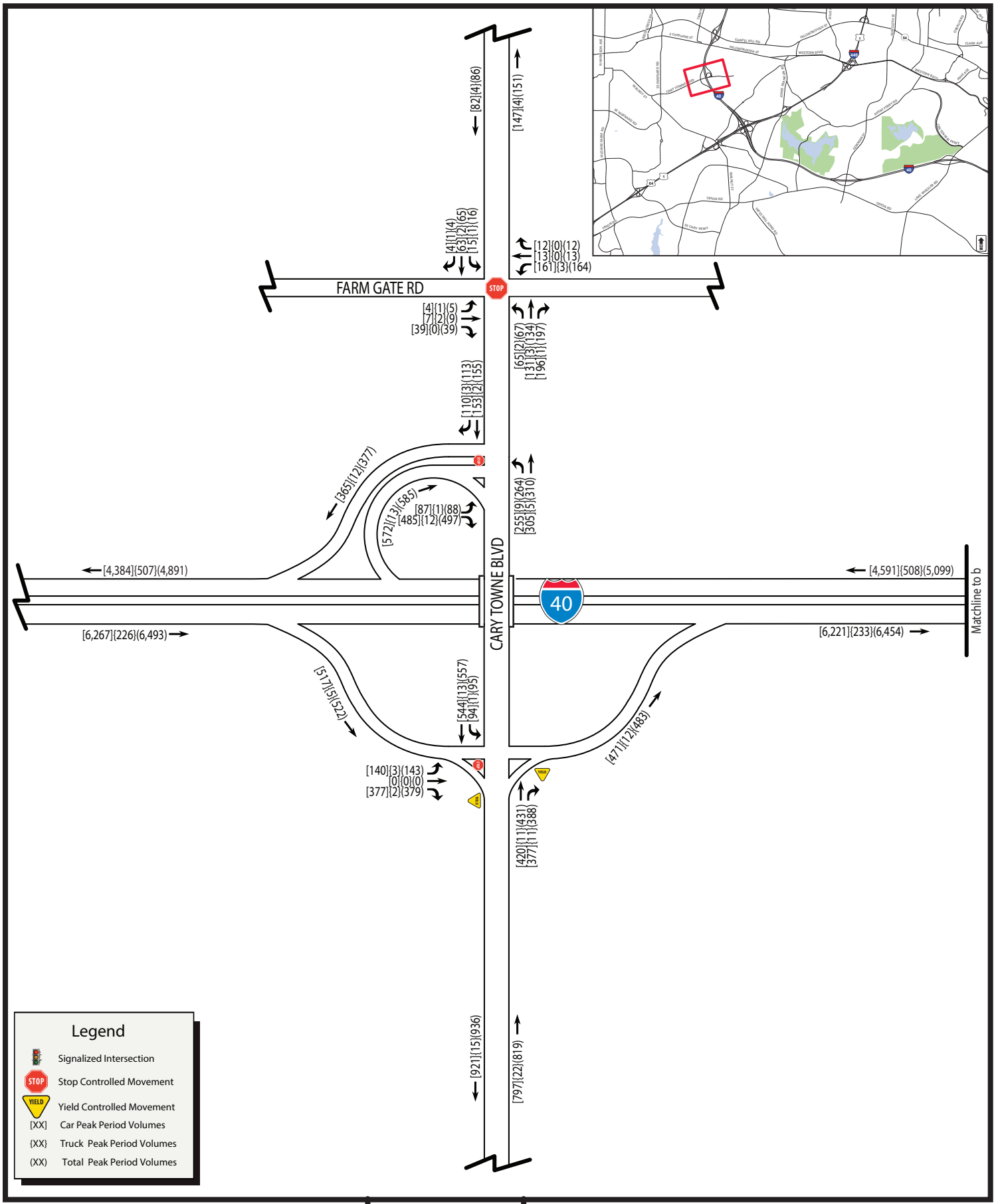
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE 2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 3:30pm-4pm

FIGURE 9g



I-5703_TOTM_2018ExVol_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

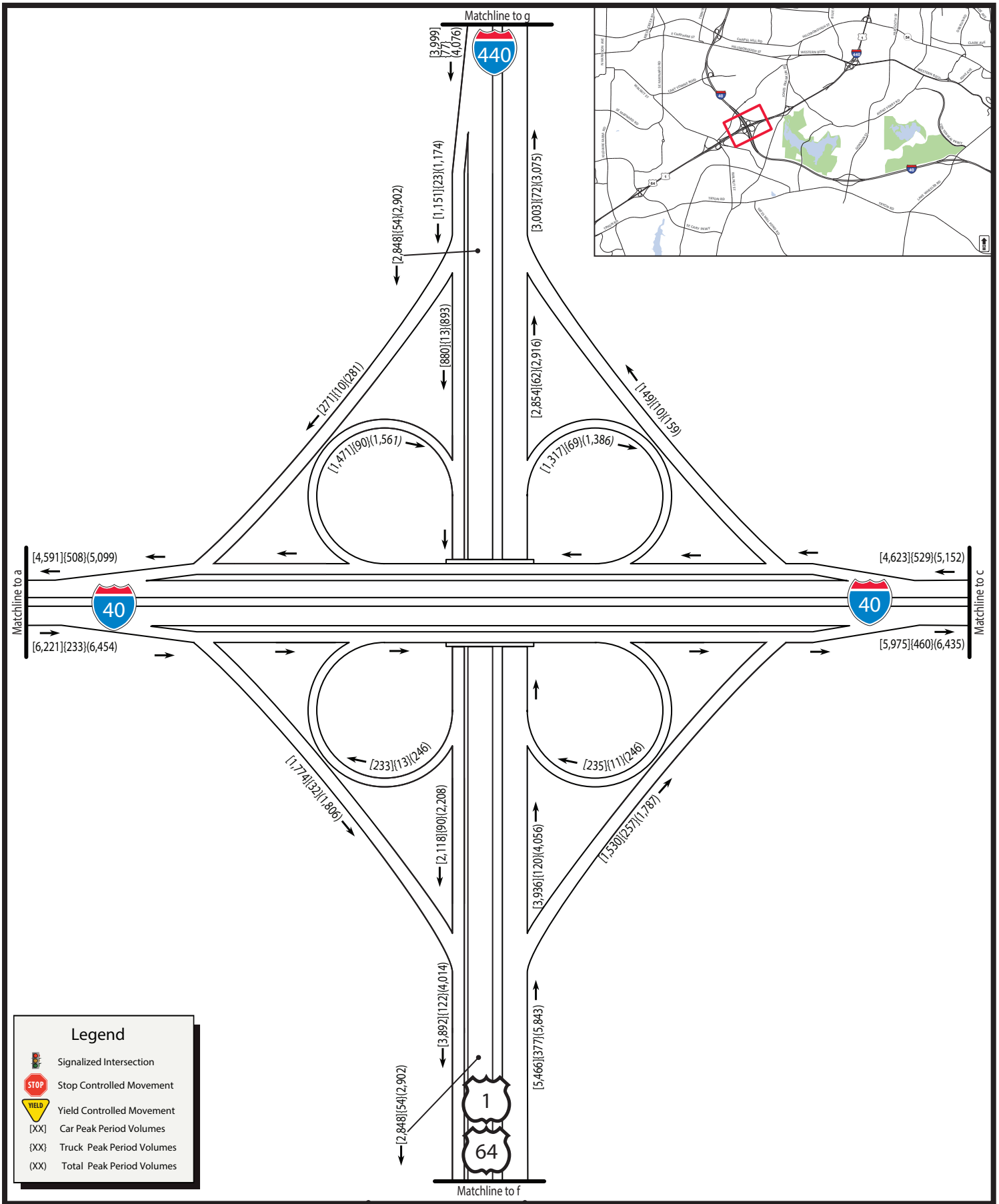
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 9a



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2018ExVol_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

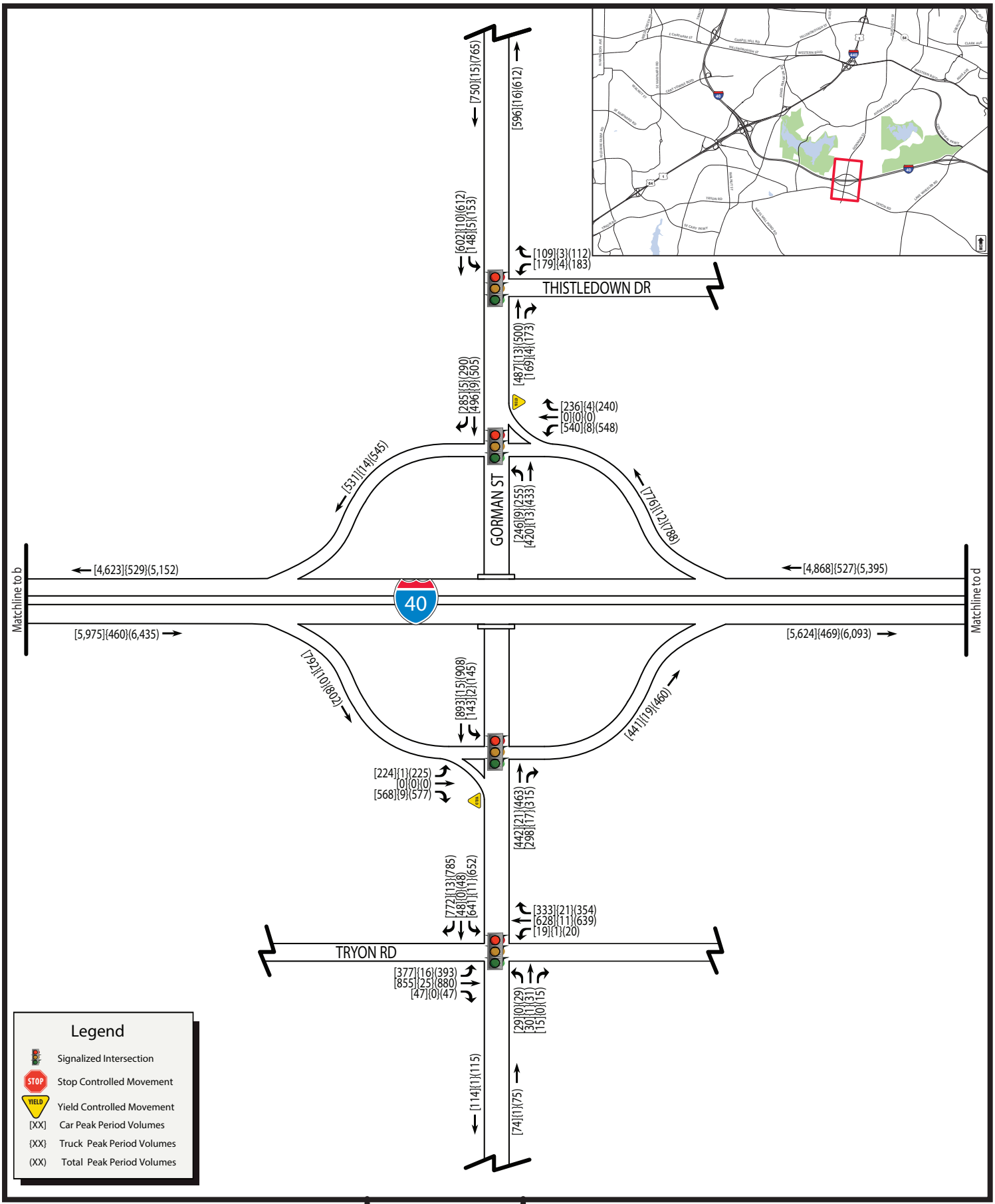
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 4pm-5pm

FIGURE 9b



I-5703_TOTM_2018ExVol_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

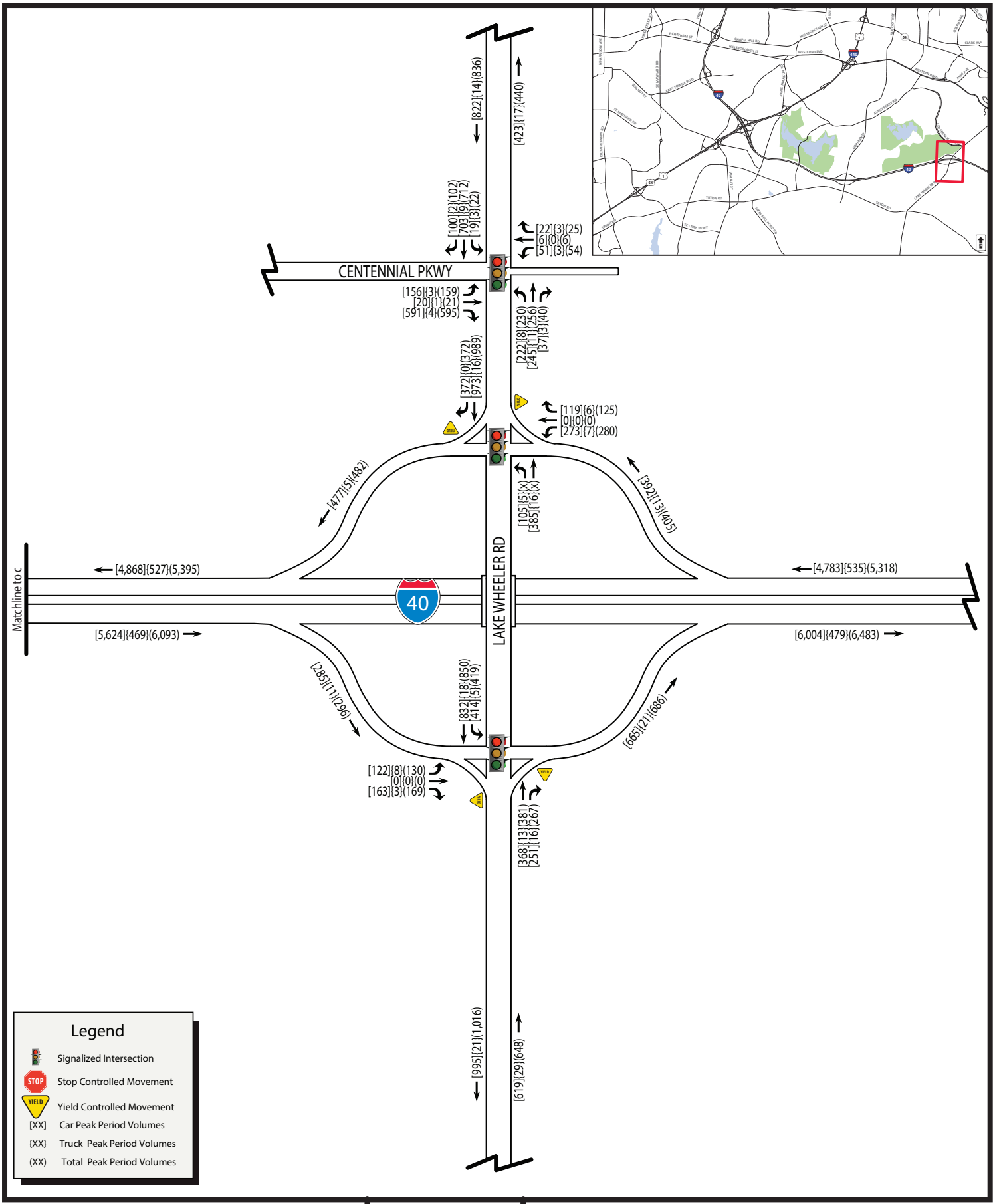
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 9c



I-5703_TOTM_2018ExVol_ALL_pm4-5.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

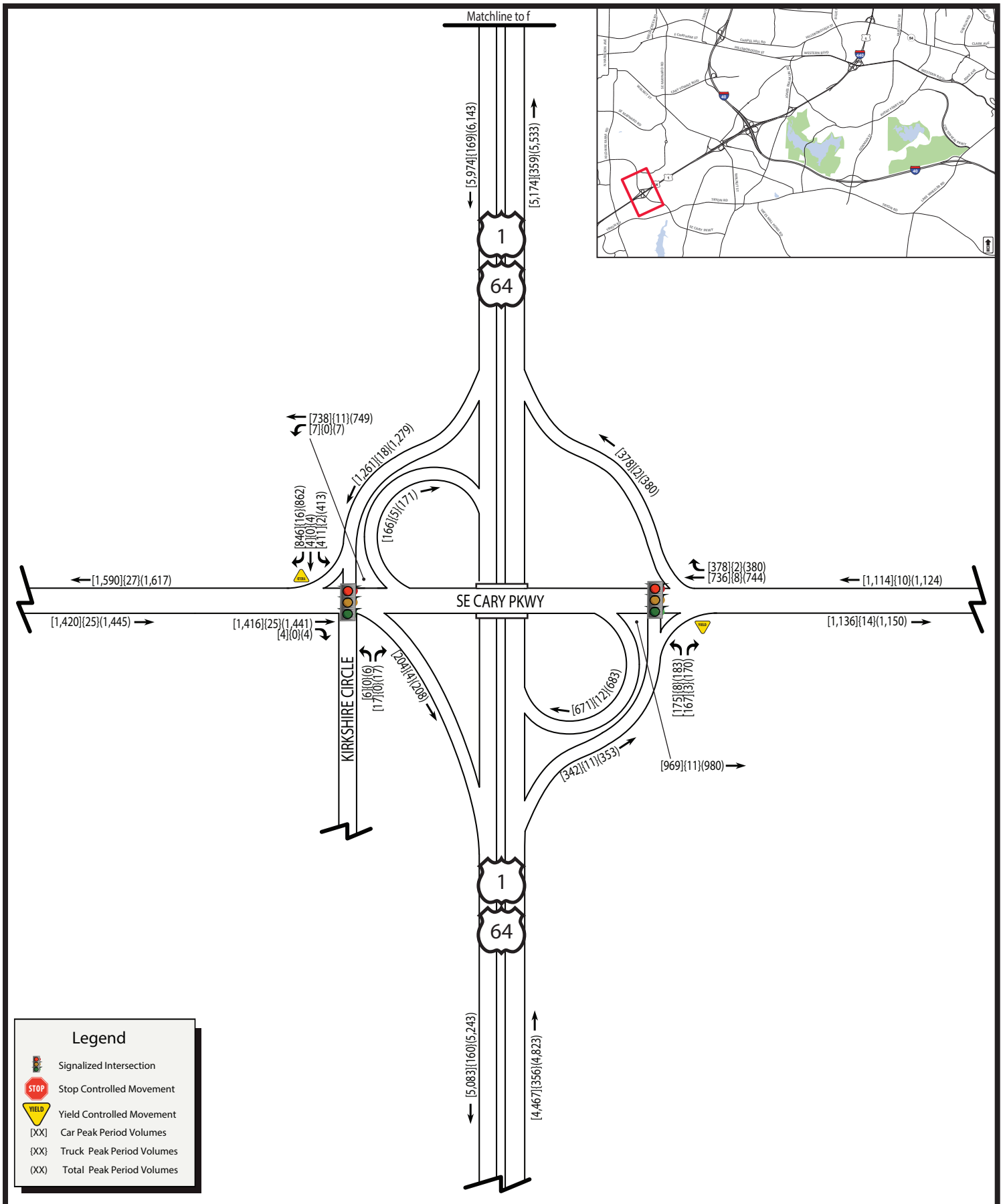
Wake County, North Carolina

N W E S

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 9d



I-5703_TOTM_2018ExVol_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

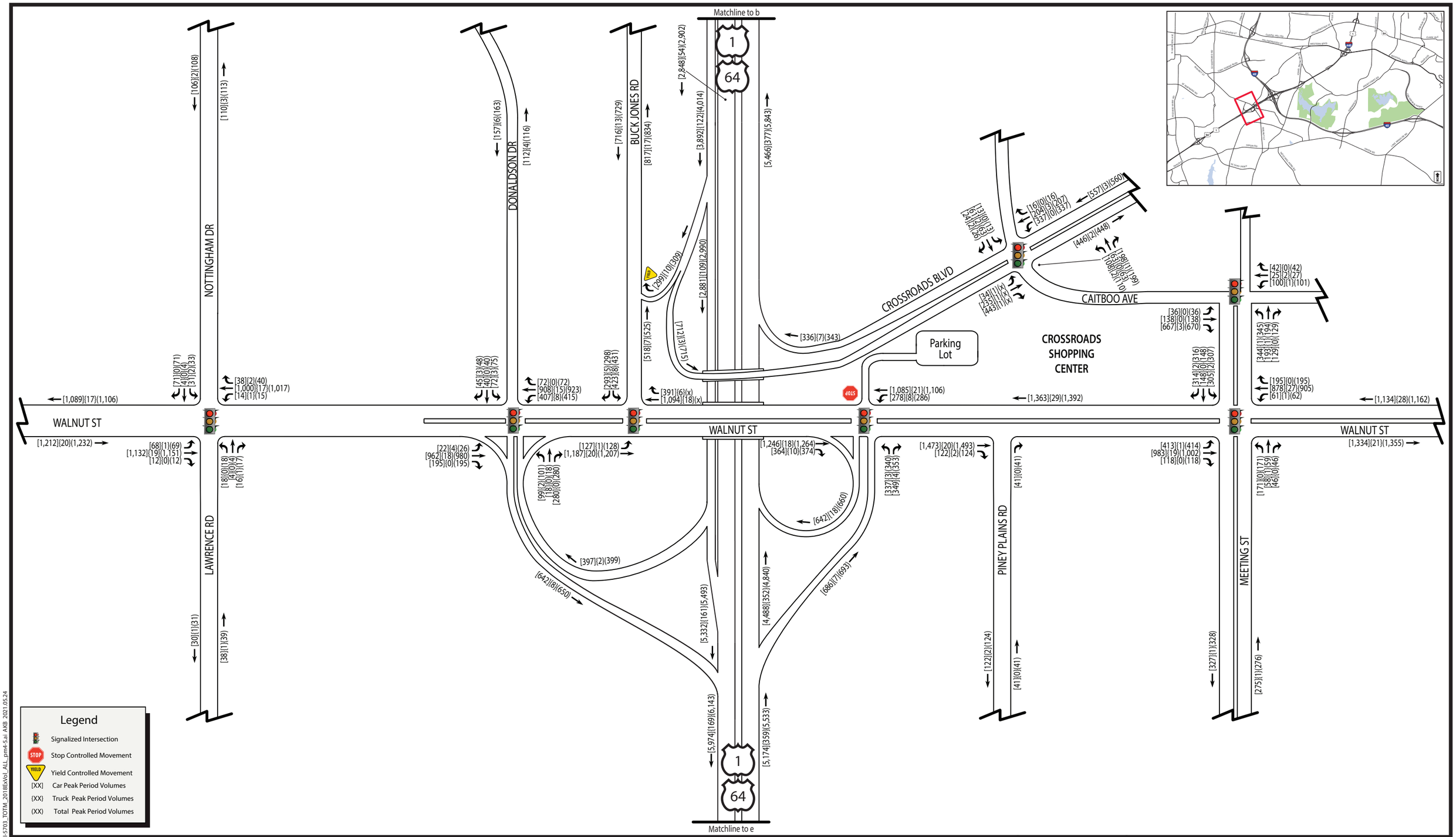
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 9e



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2018EvVol_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

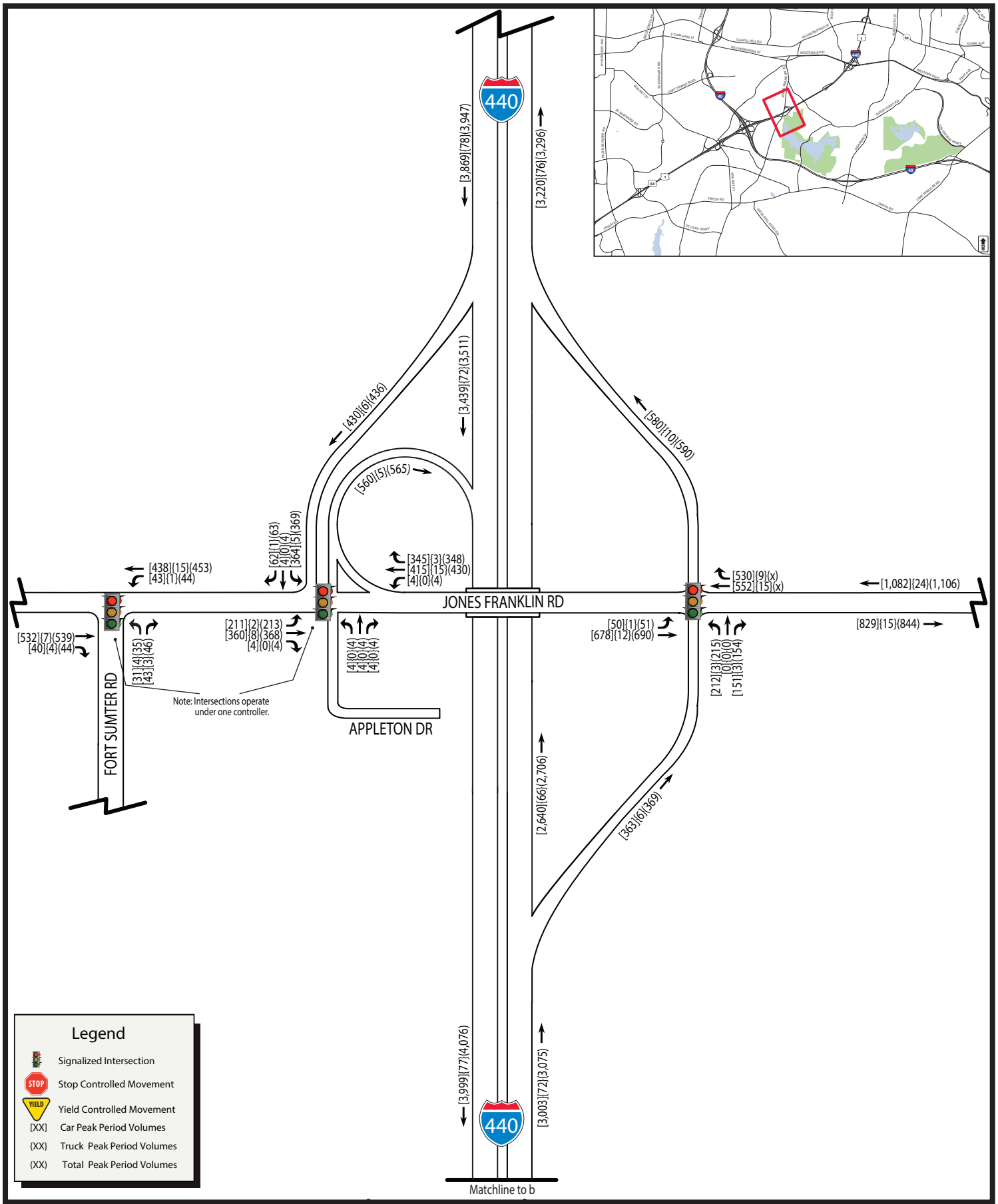
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 9f



I-5703_TOTM_2018ExVol_ALL_pm4-5.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

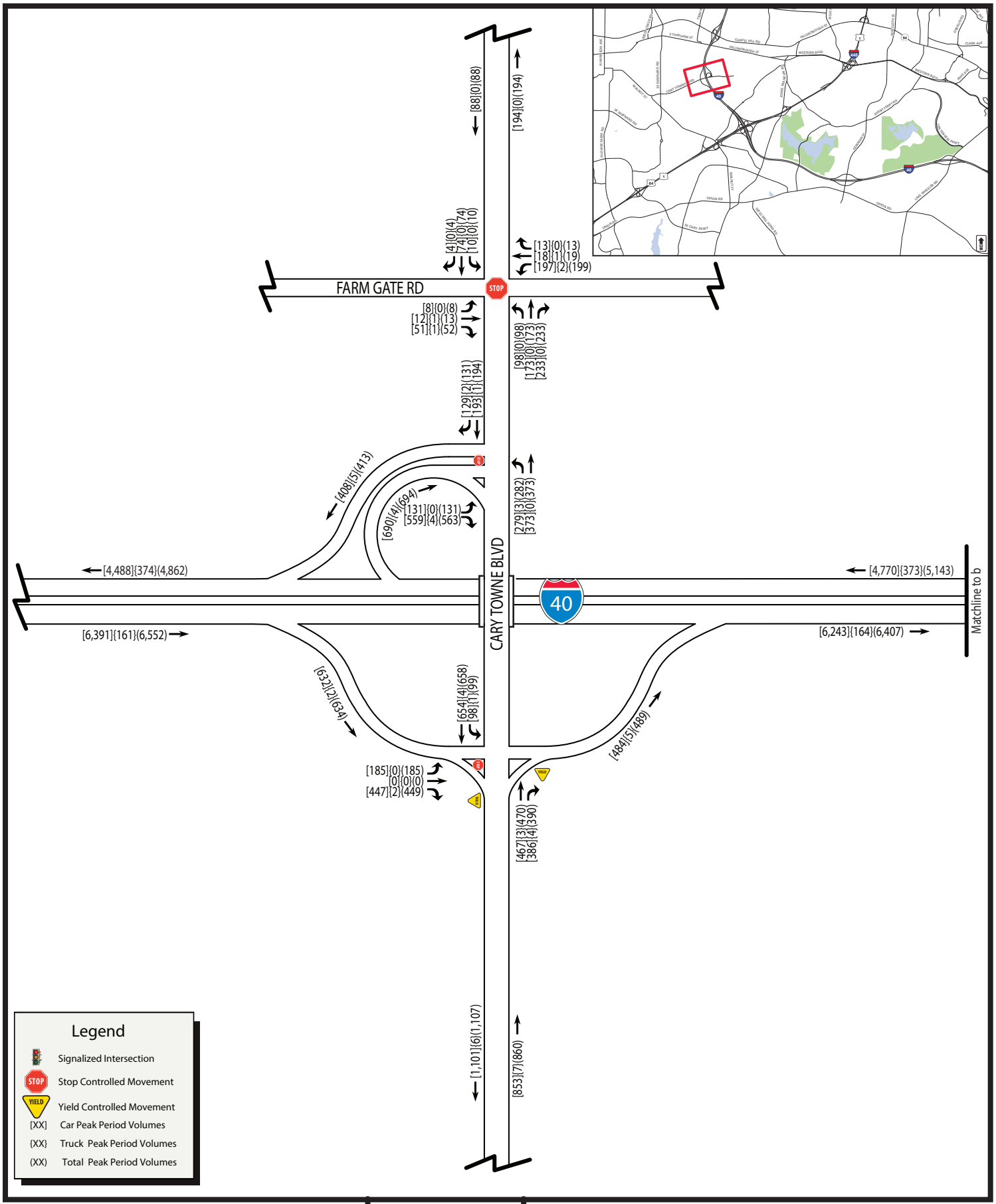
Wake County, North Carolina

N E S W

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 4pm-5pm

FIGURE 9g



I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

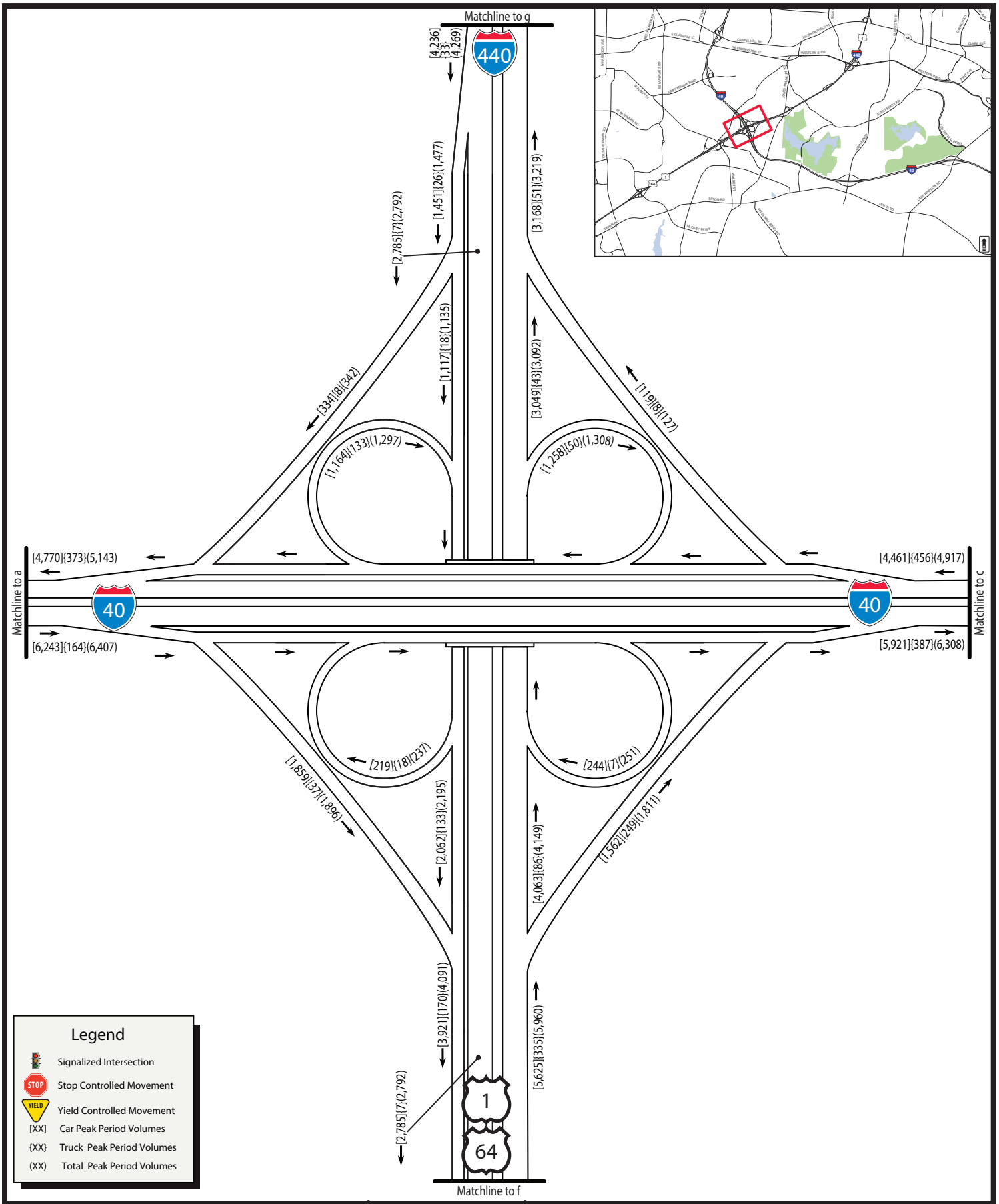
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 9a



I-5703_TOTM_2018ExVol_ALL_pm5-6.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

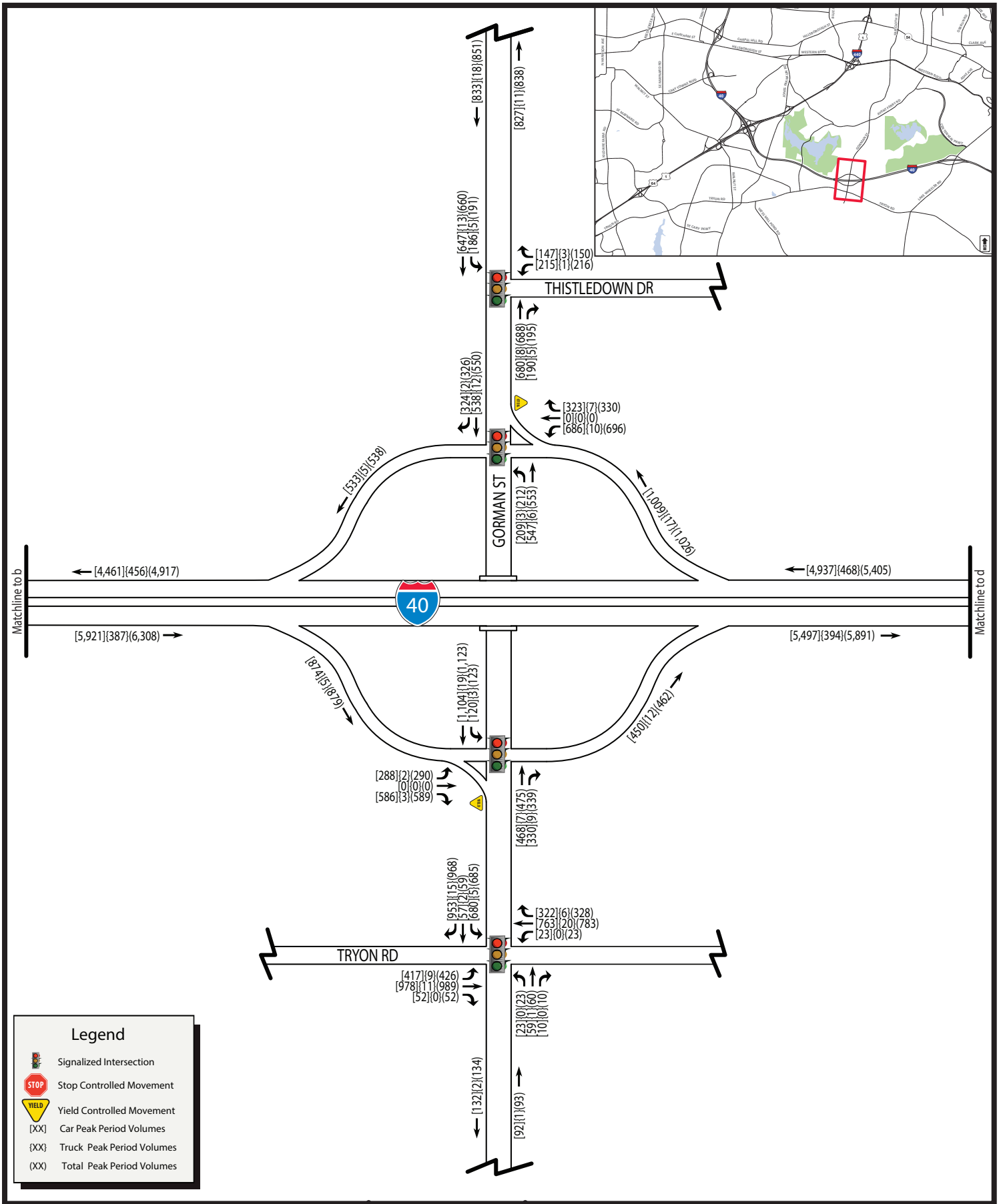
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 9b



I-5703_TOTM_2018ExVol_ALL_pm5-6.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

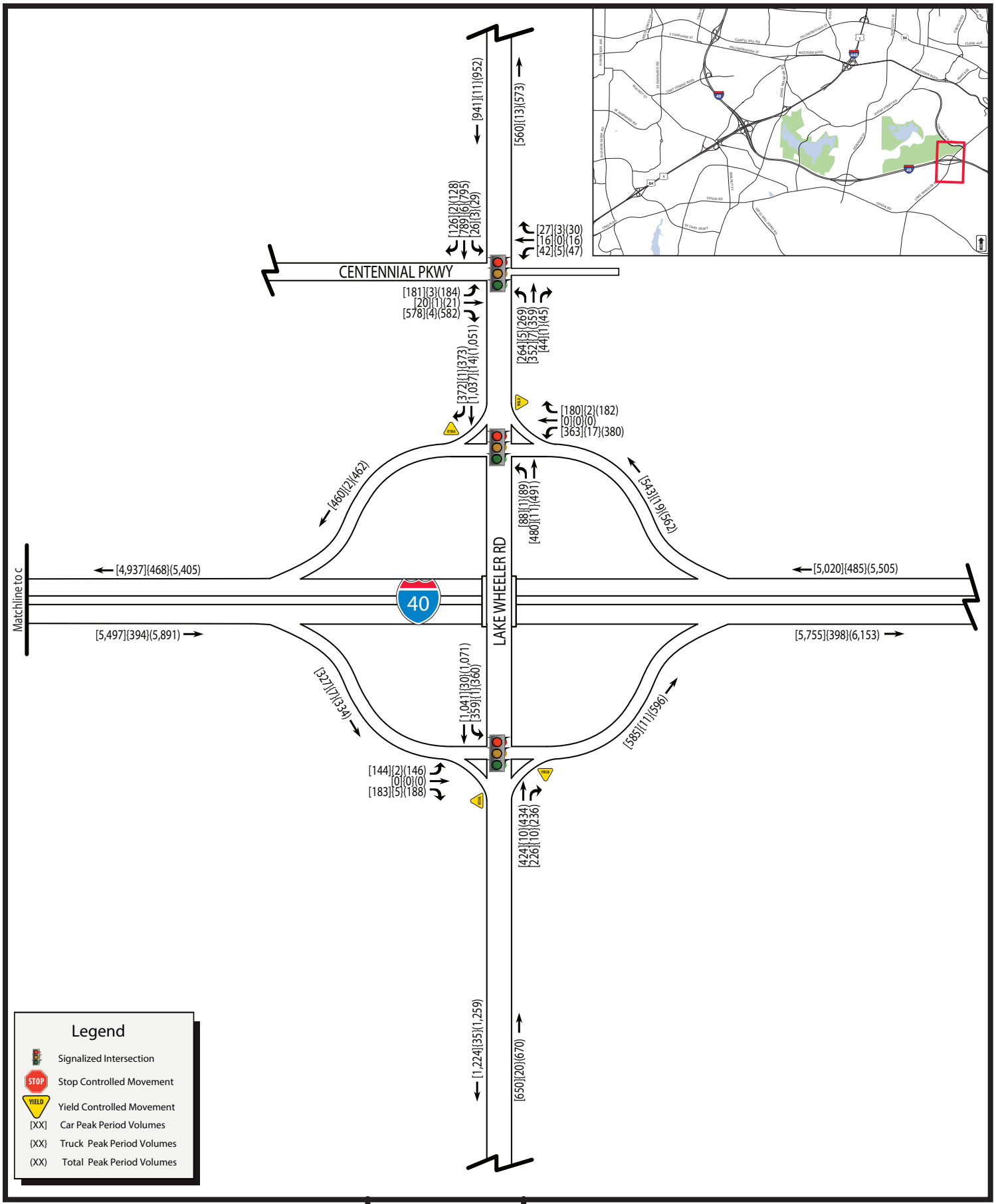
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 9c



I-5703_TOTM_2018ExVol_ALL_pm5-6.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

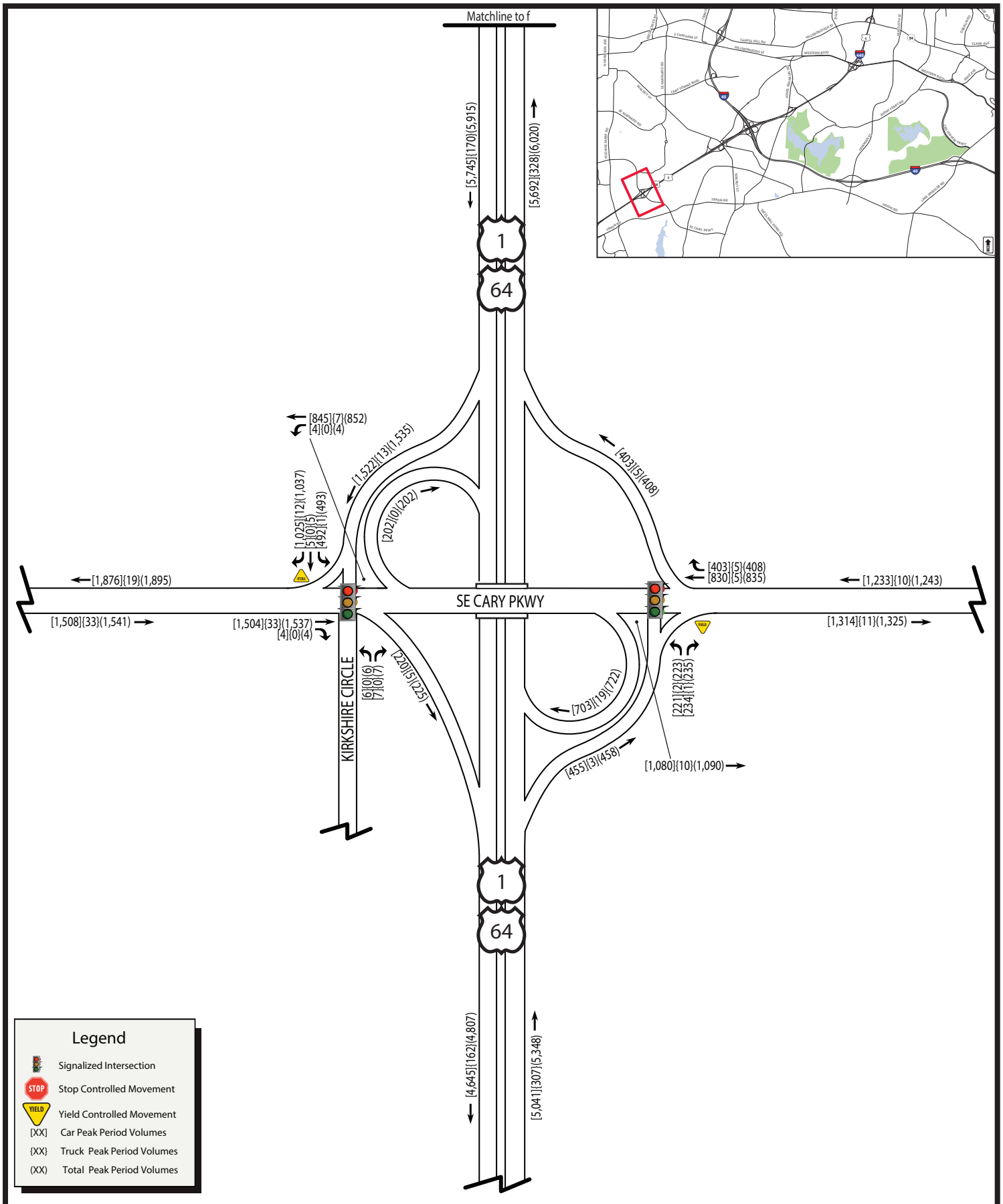
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 9d



I-5703_TOTM_2018ExVol_ALL_pm5-6.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

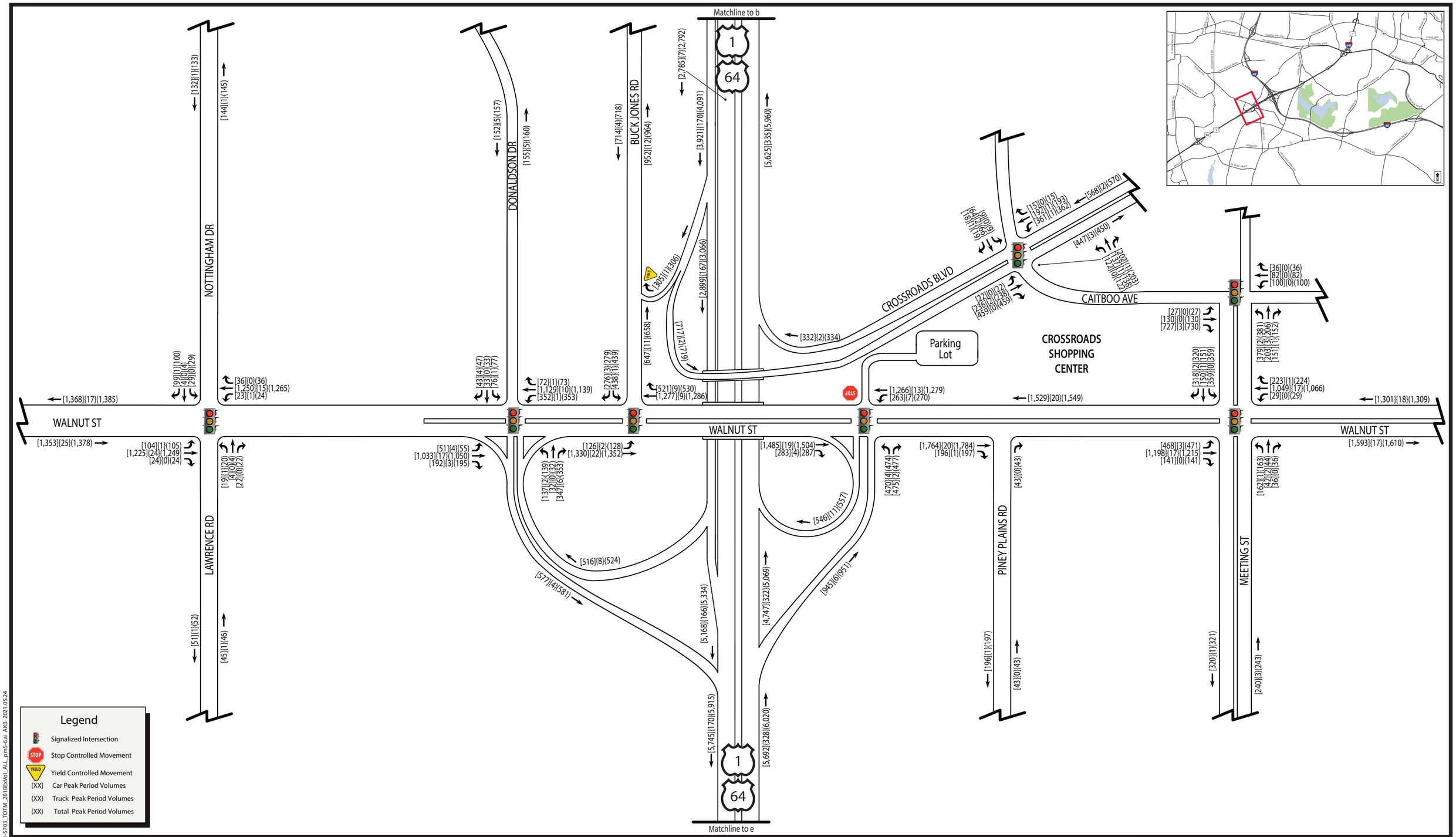
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 9e



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2018EvVol_ALL_pm5-6a.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

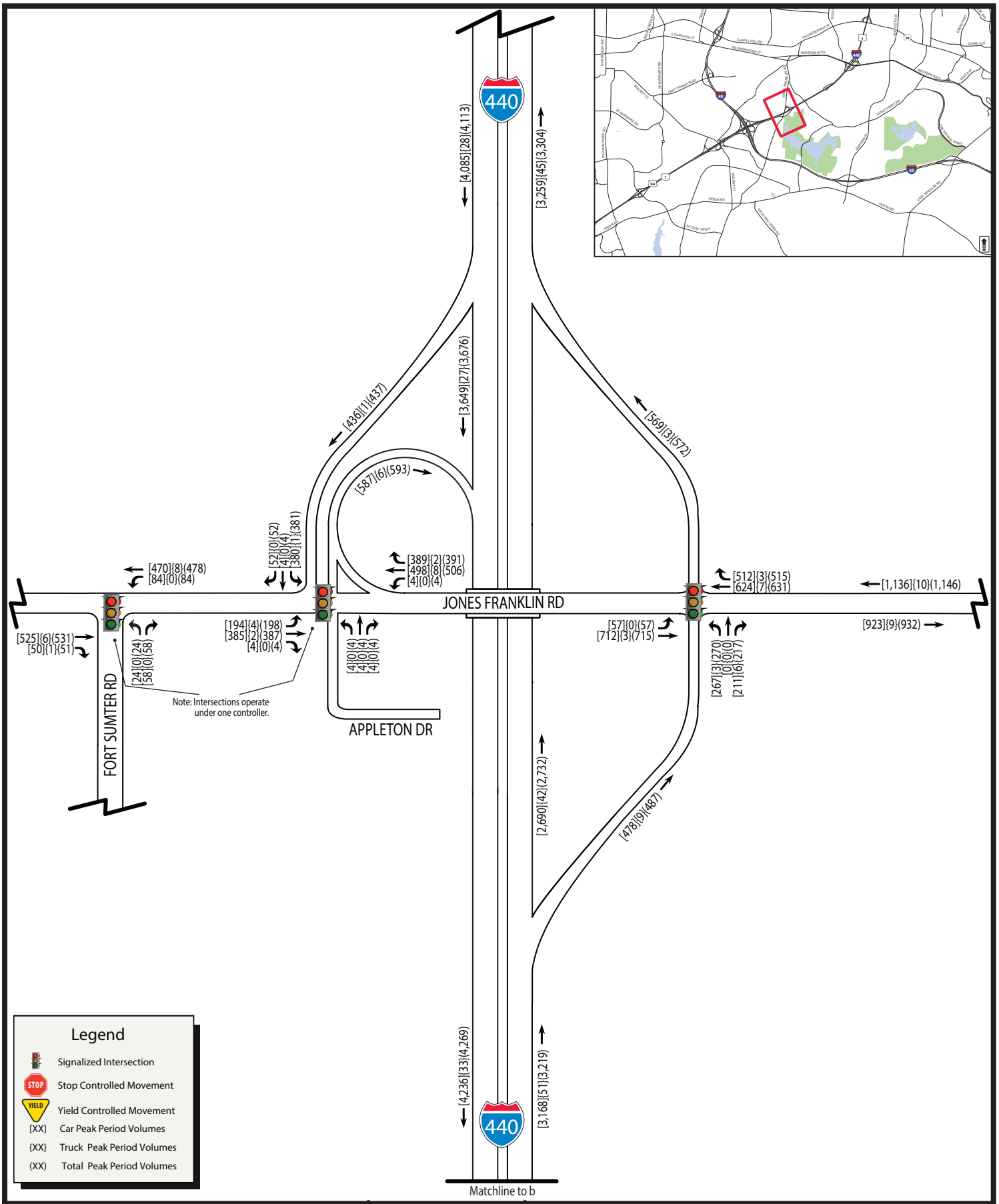
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 9f



I-5703_TOTM_2018ExVol_ALL_pm5-6.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

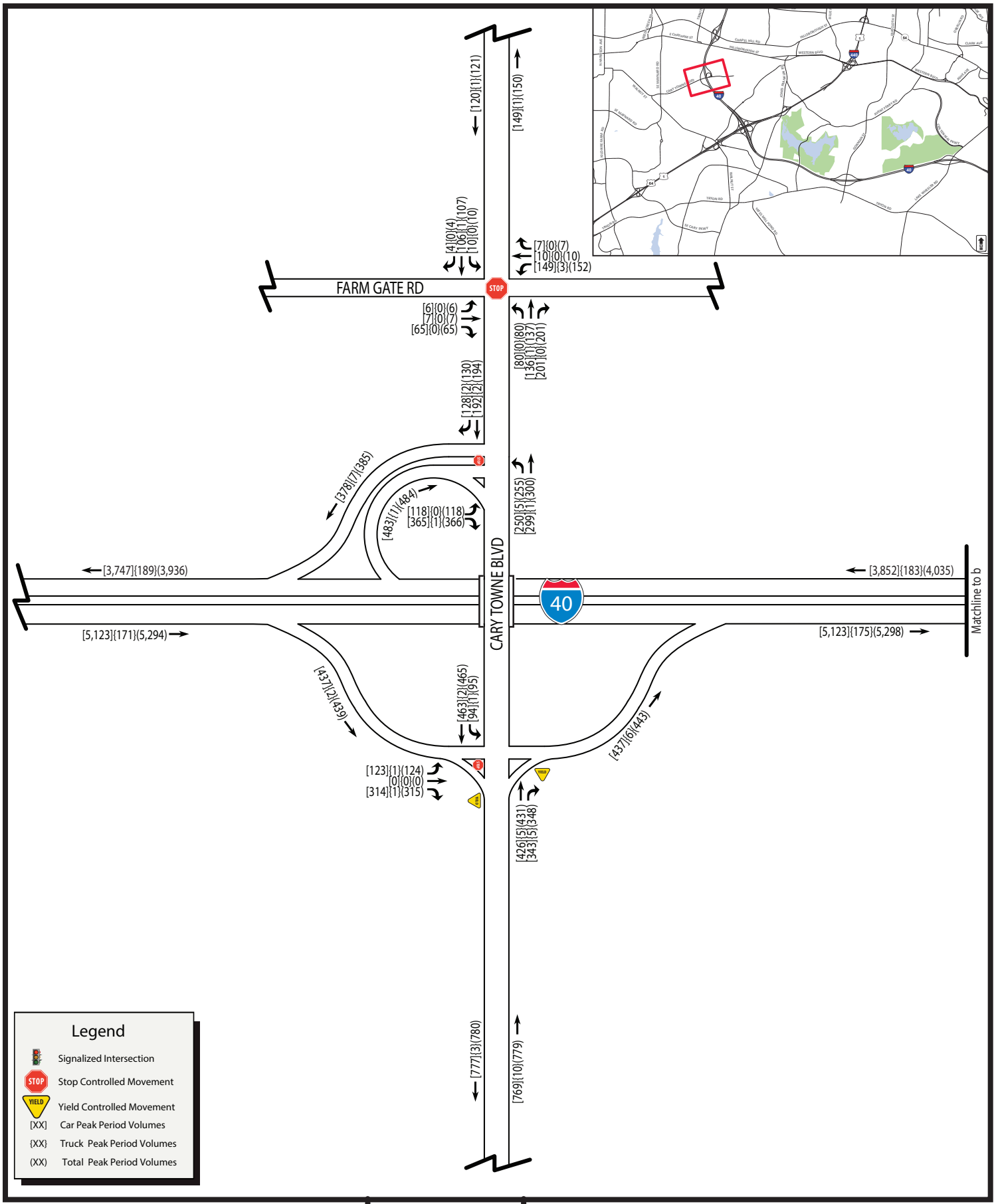
Wake County, North Carolina

N E W S

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE 2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 5pm-6pm

FIGURE 9g



I-5703_TOTM_2018ExVol_ALL_pm6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

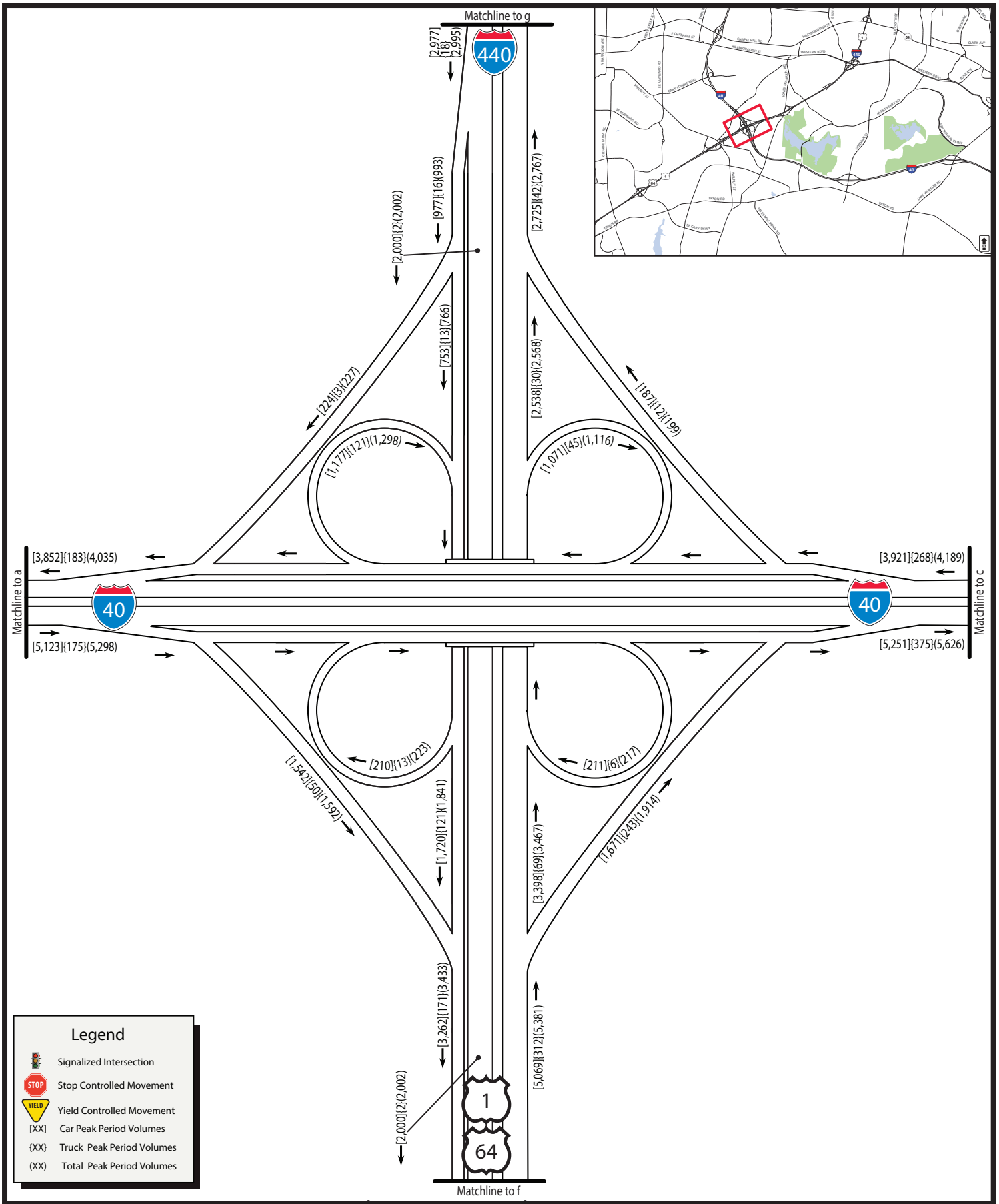
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 9a



I-5703_TOTM_2018ExVol_ALL_pm6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

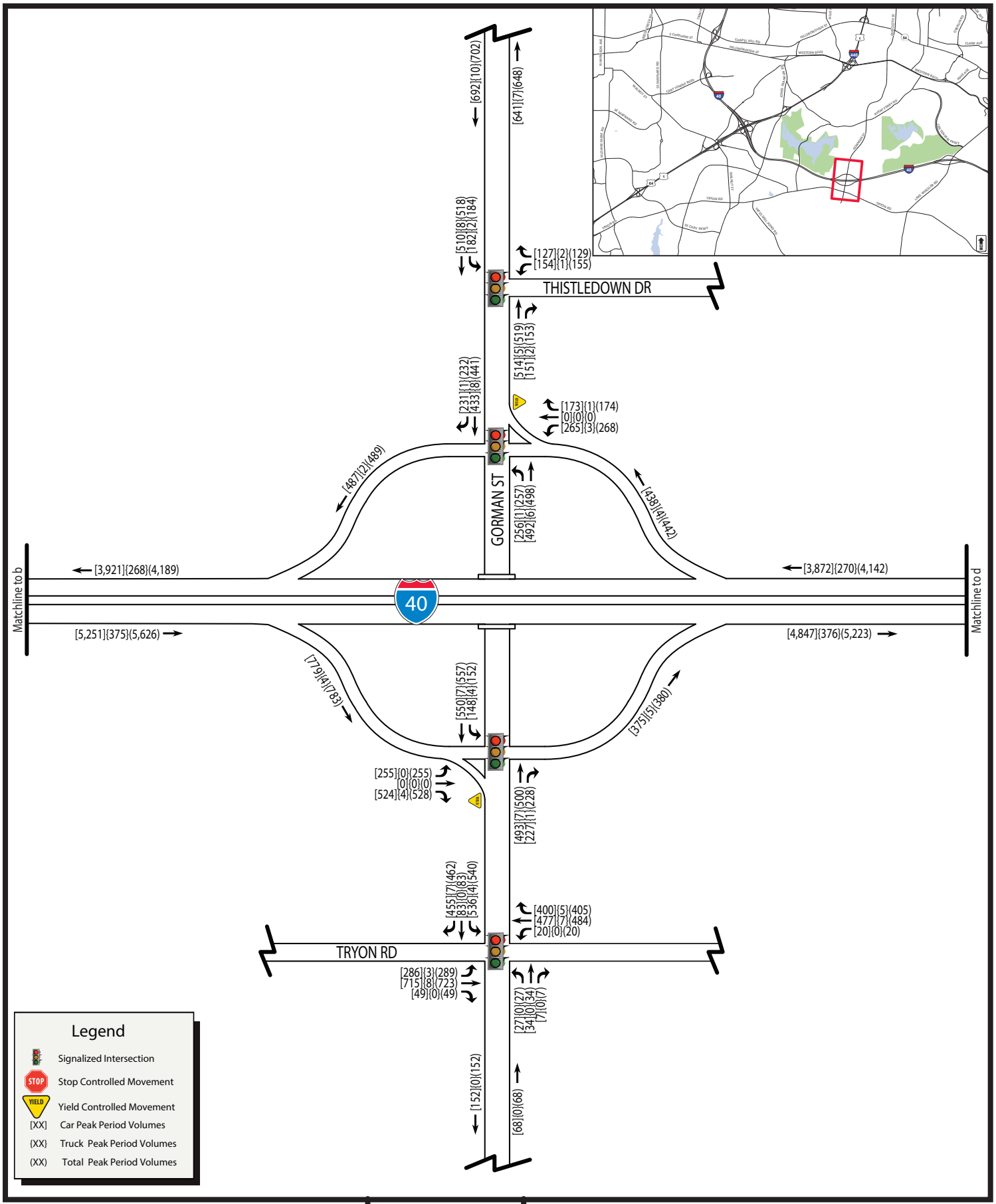
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 9b



I-5703_TOTM_2018ExVol_ALL_pm6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

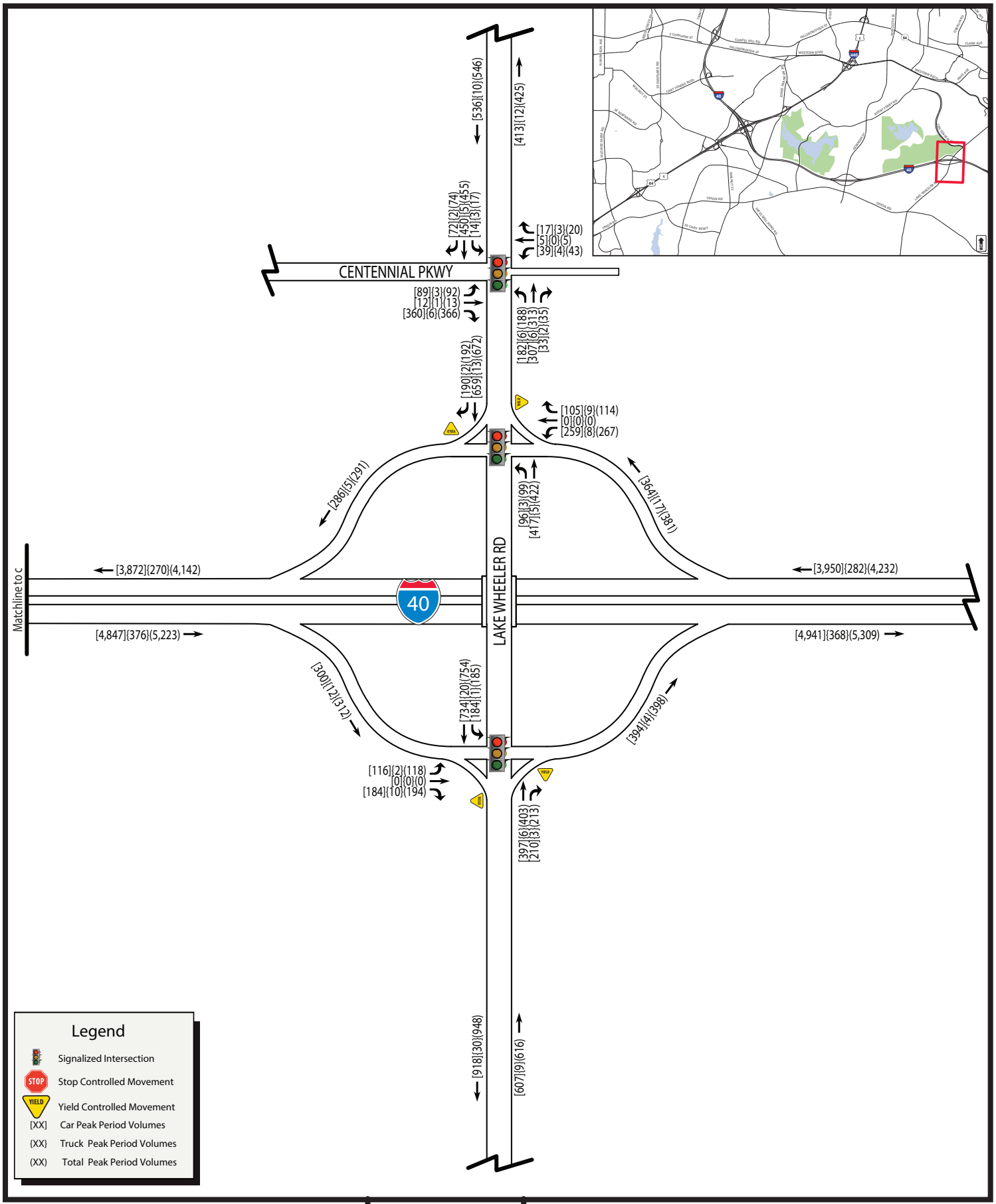
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE 2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 6pm-7pm

FIGURE 9c



I-5703_TOTM_2018ExVol_ALL_pm6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

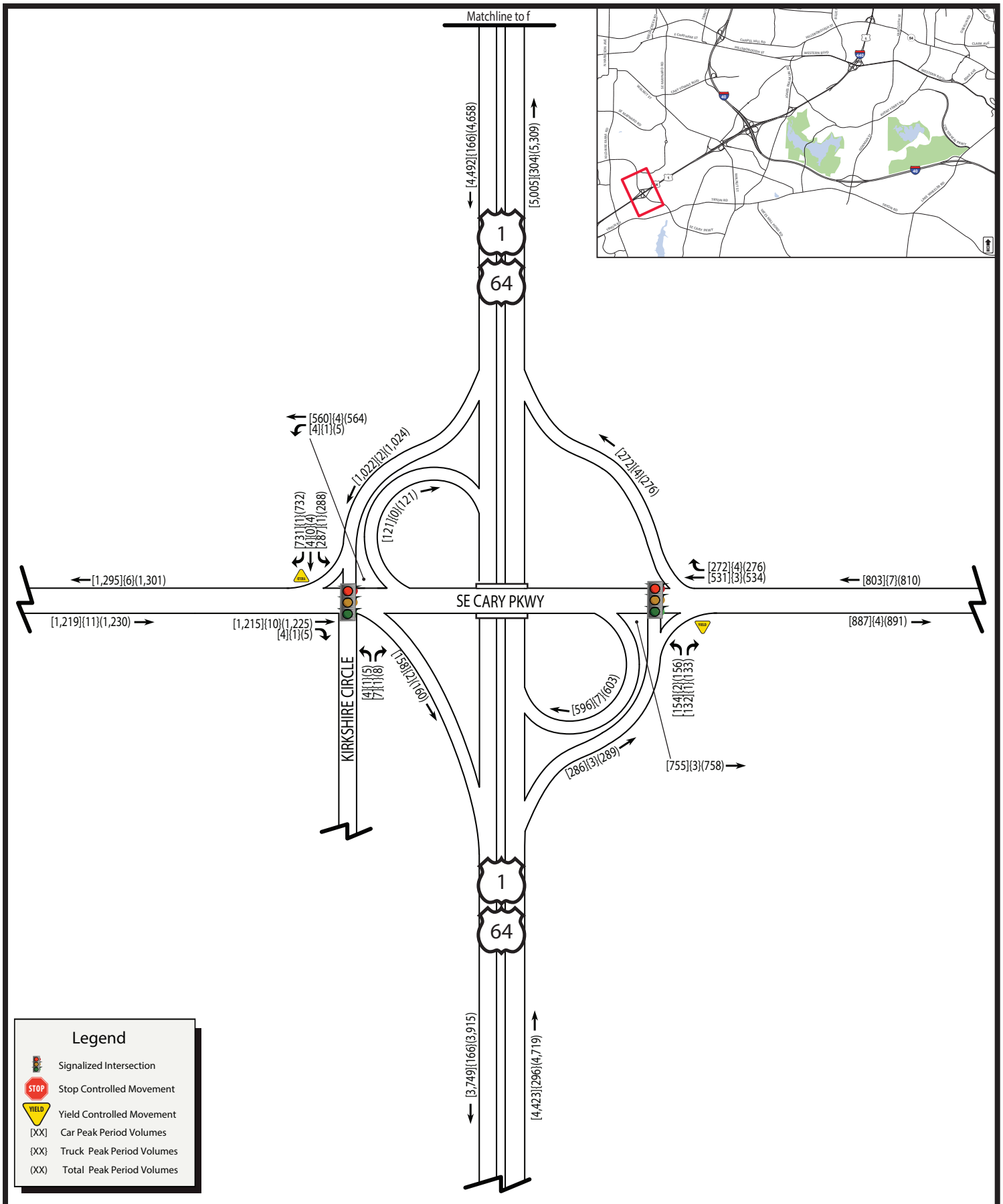
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 9d

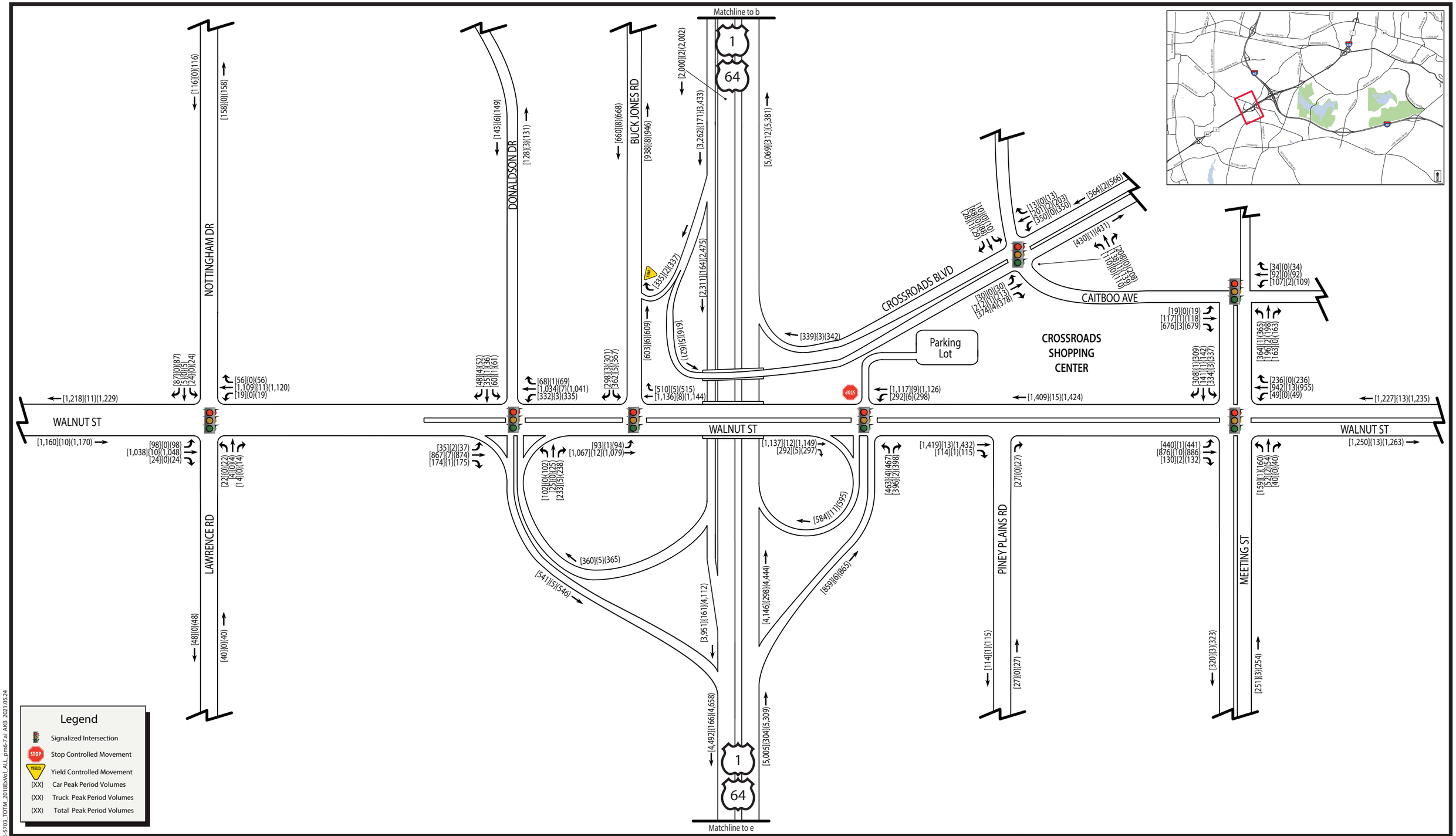


I-5703_TOTM_2018ExVol_ALL_pm6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64
Interchange Reconstruction
STIP PROJECT NO. I-5703
Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm
FIGURE 9e



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2018ExVol_ALL_pm6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

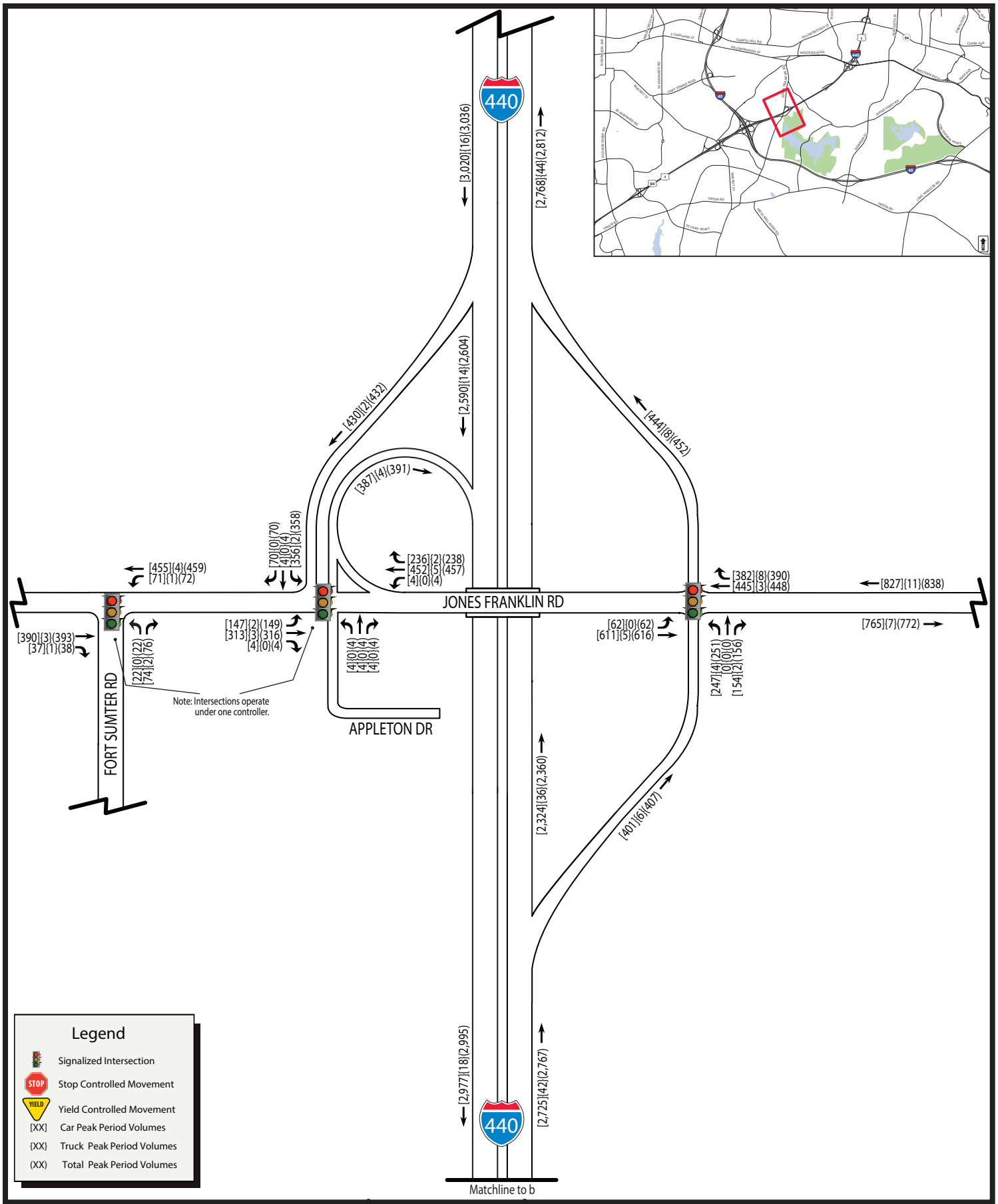
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2018 EXISTING VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 9f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2018ExVol_ALL_pm6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

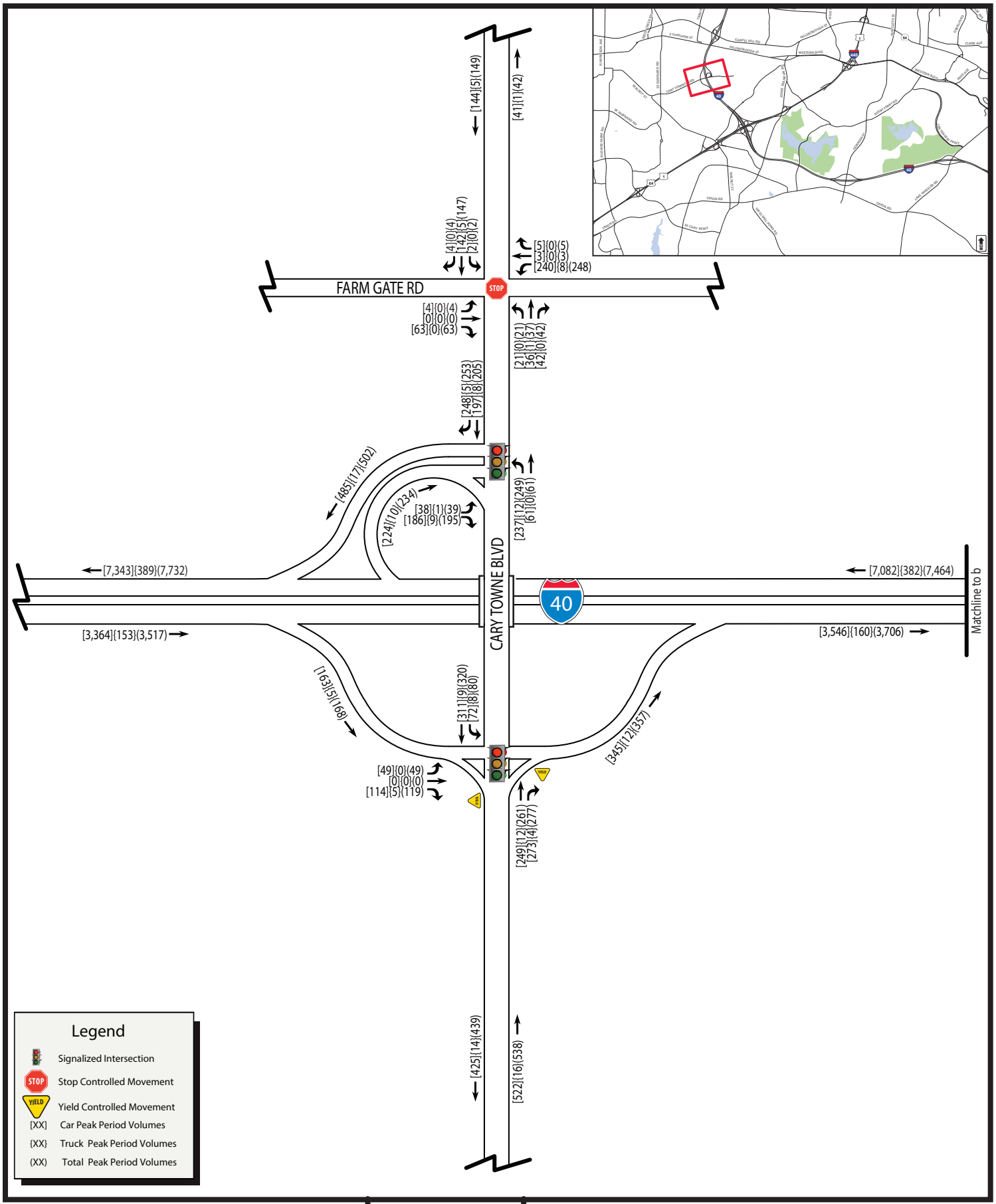
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE 2018 EXISTING VOLUMES FROM FIELD COUNT: ALL VEHICLES 6pm-7pm

FIGURE 9g



I-5703_TOTM_2035NB_ALL_am6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

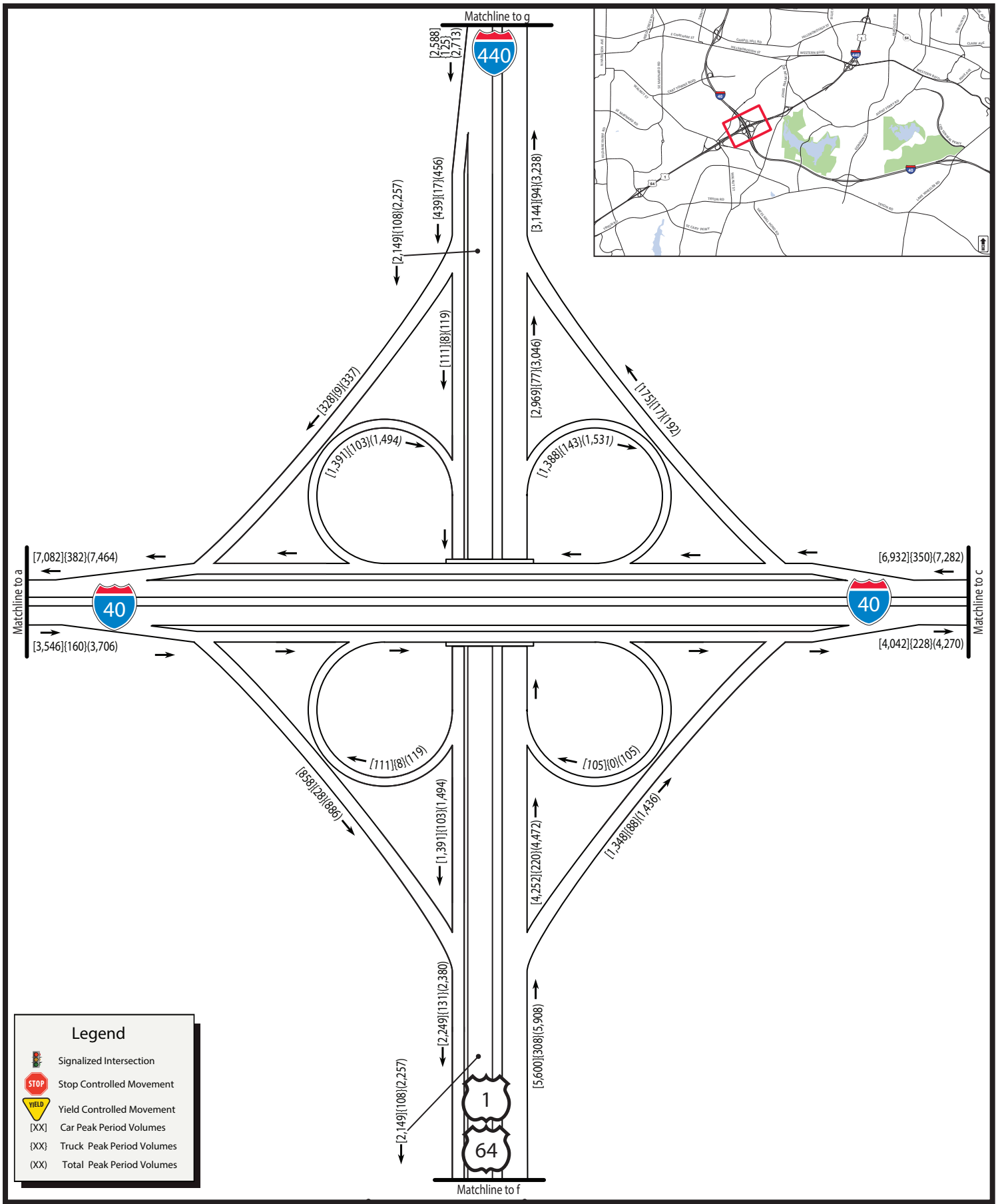
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6am-7am

FIGURE 10a



I-5703_TOTM_2035NB_ALL_am6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

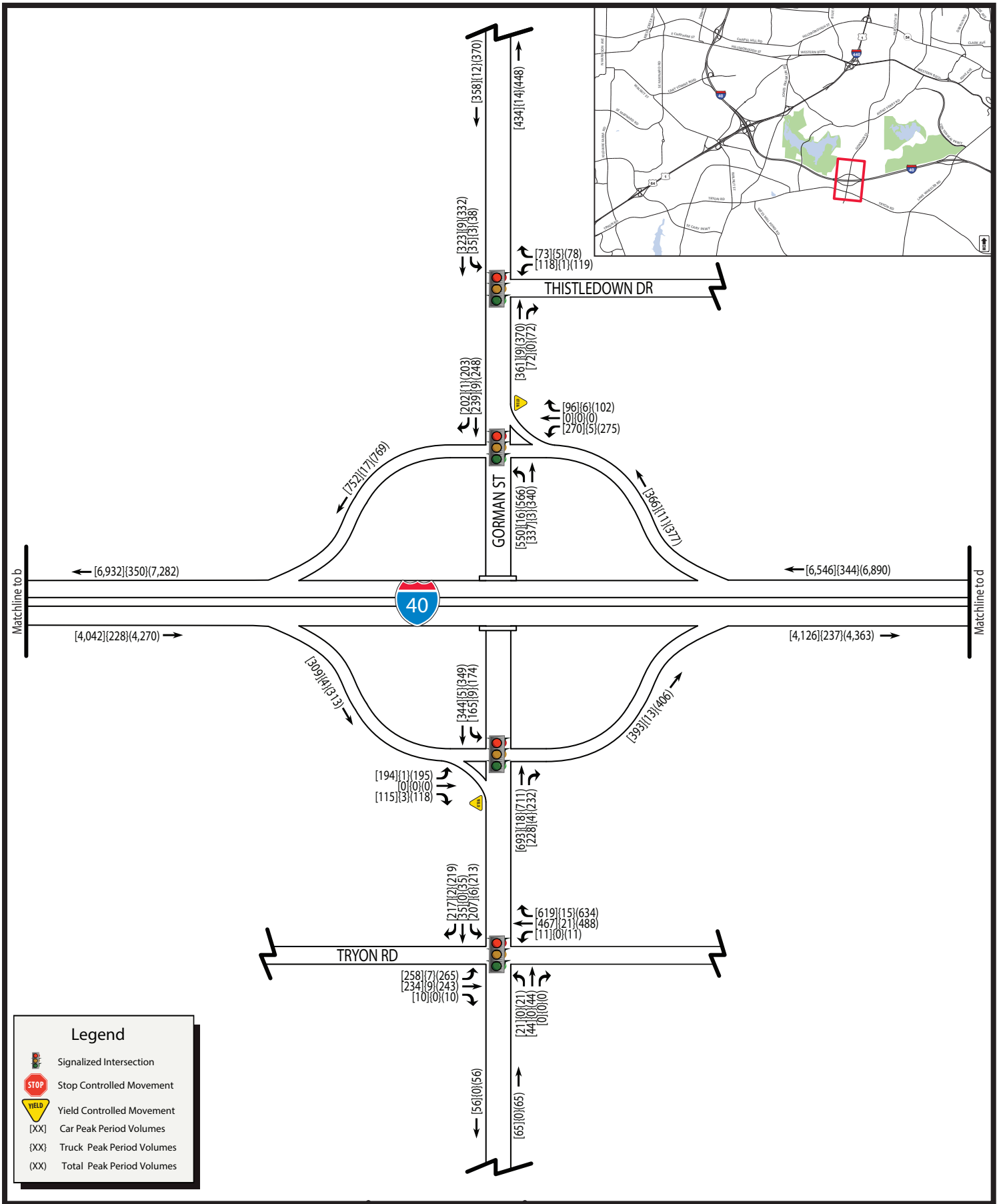
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6am-7am

FIGURE 10b



I-5703_TOTM_2035NB_ALL_am6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

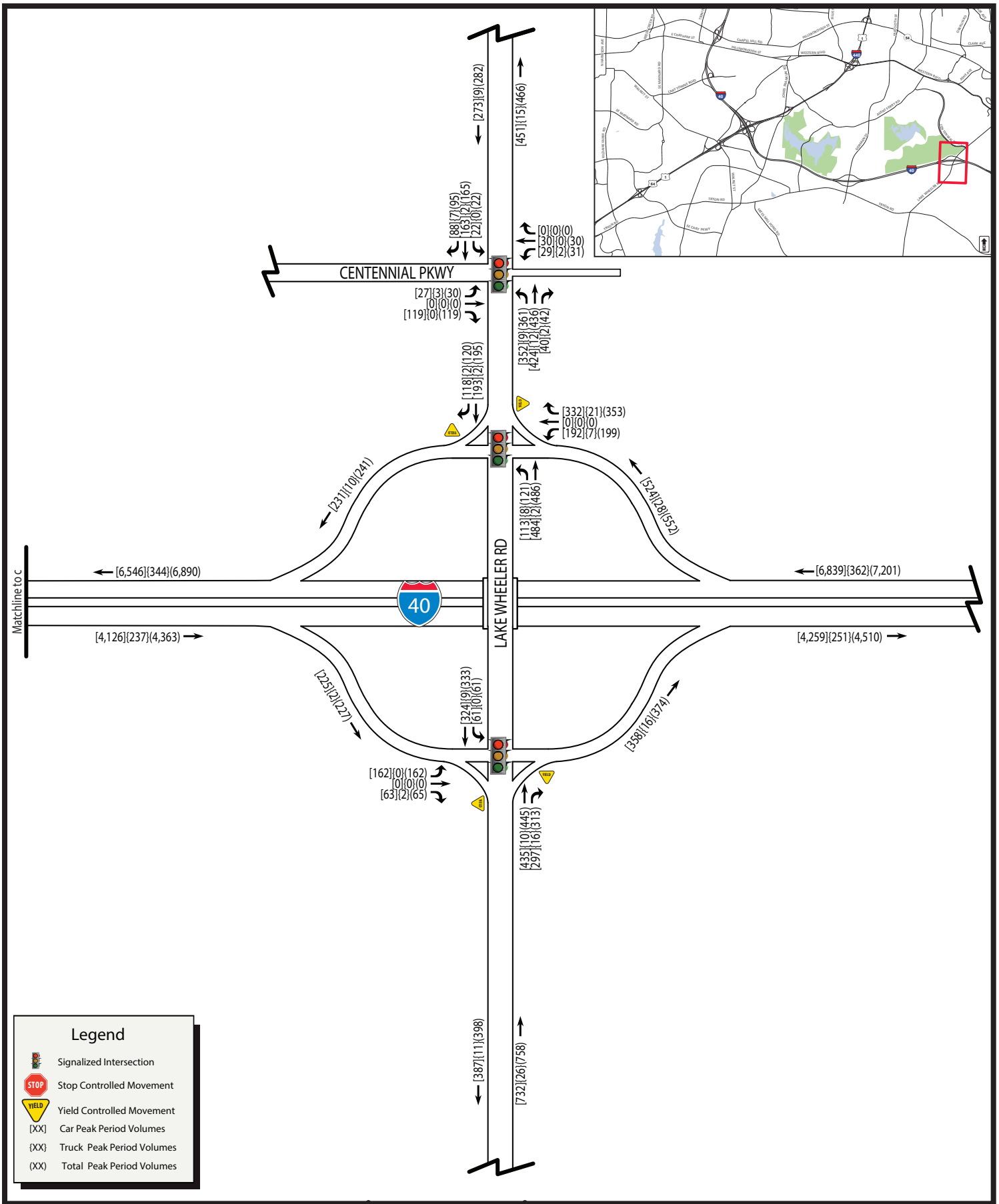
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 10c



I-5703_TOTM_2035NB_ALL_am6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

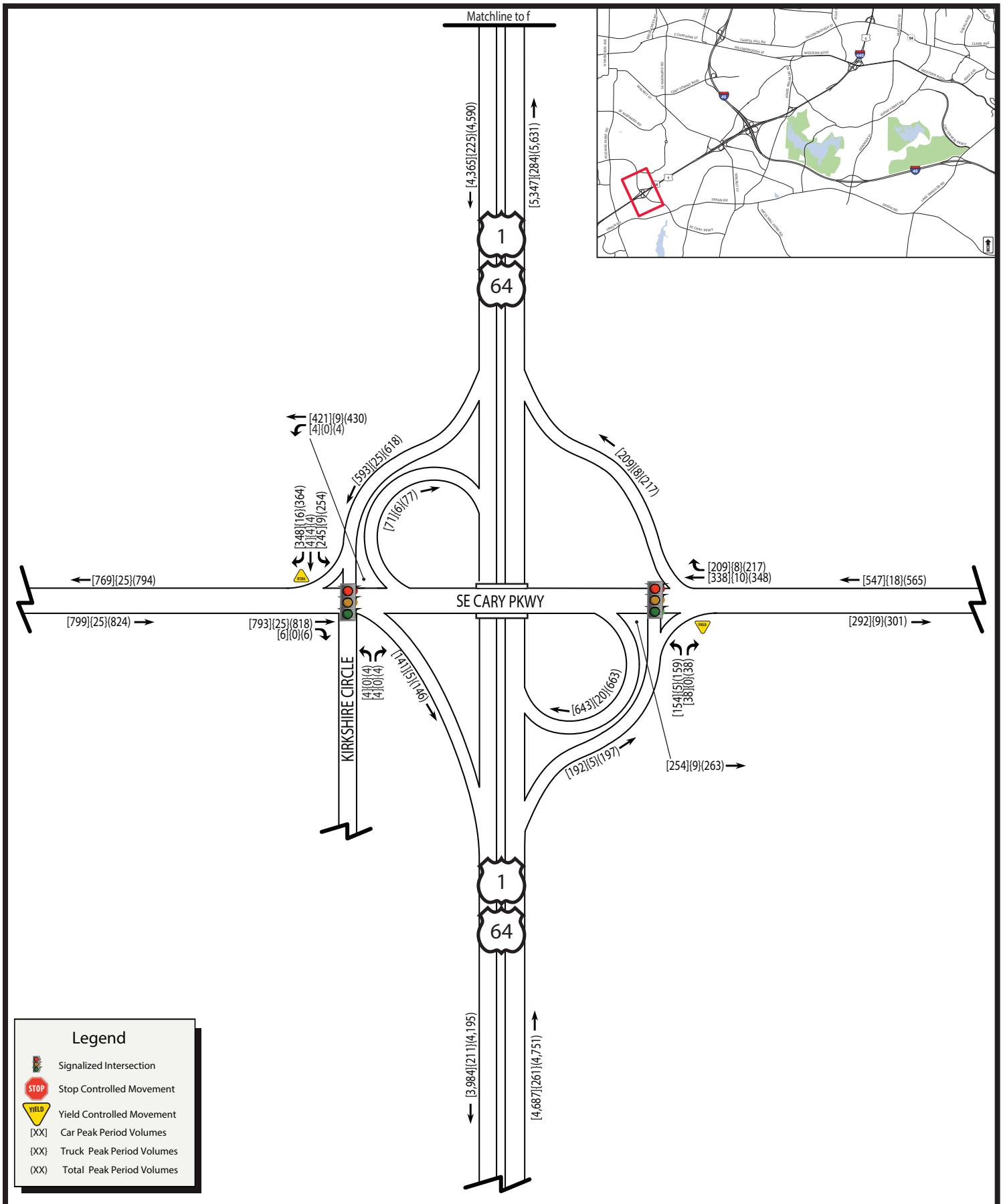
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 10d



I-5703_TOTM_2035NB_ALL_am6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

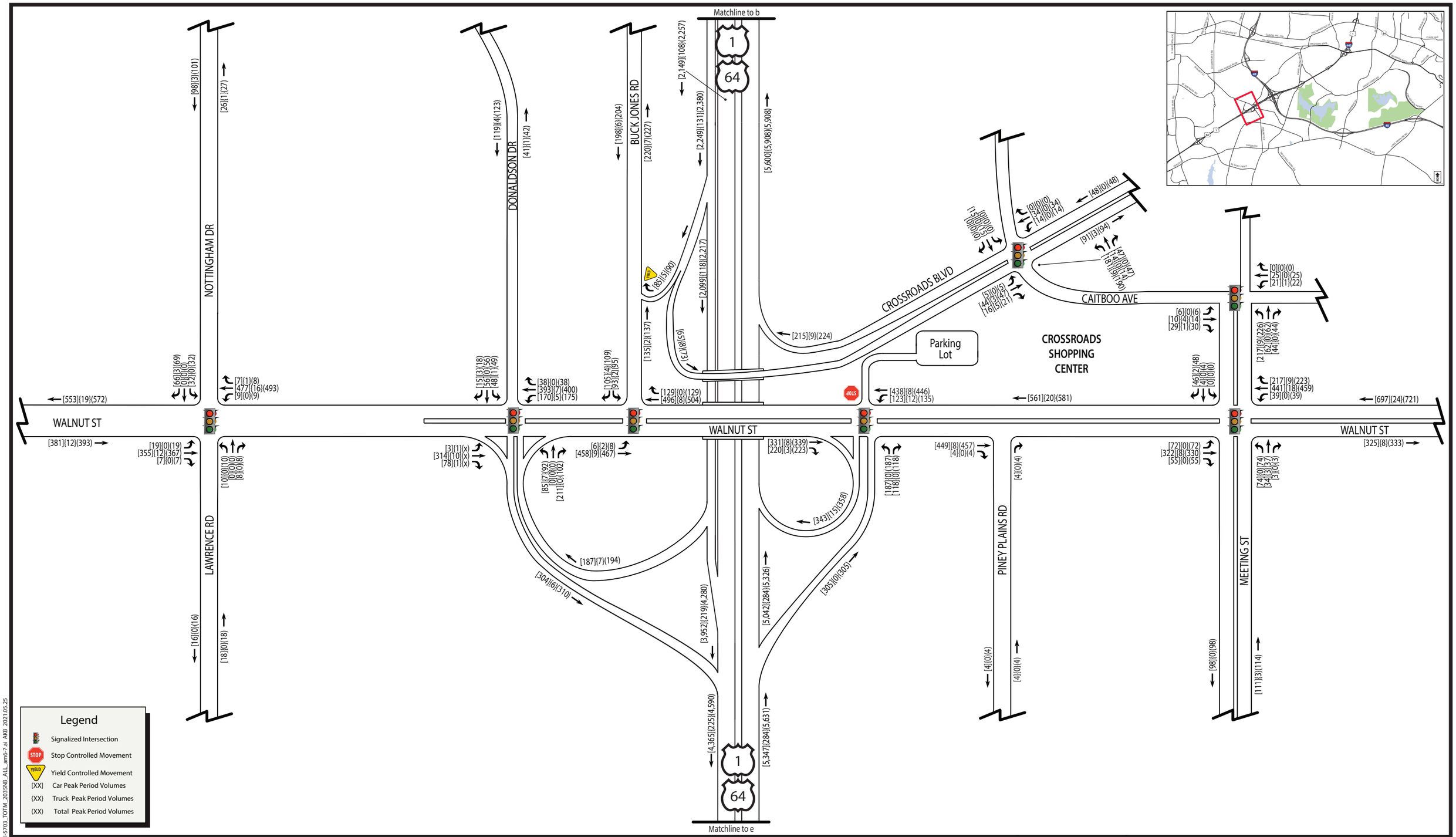
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 10e



I-5703_TOTM_2035NB_ALL_am6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

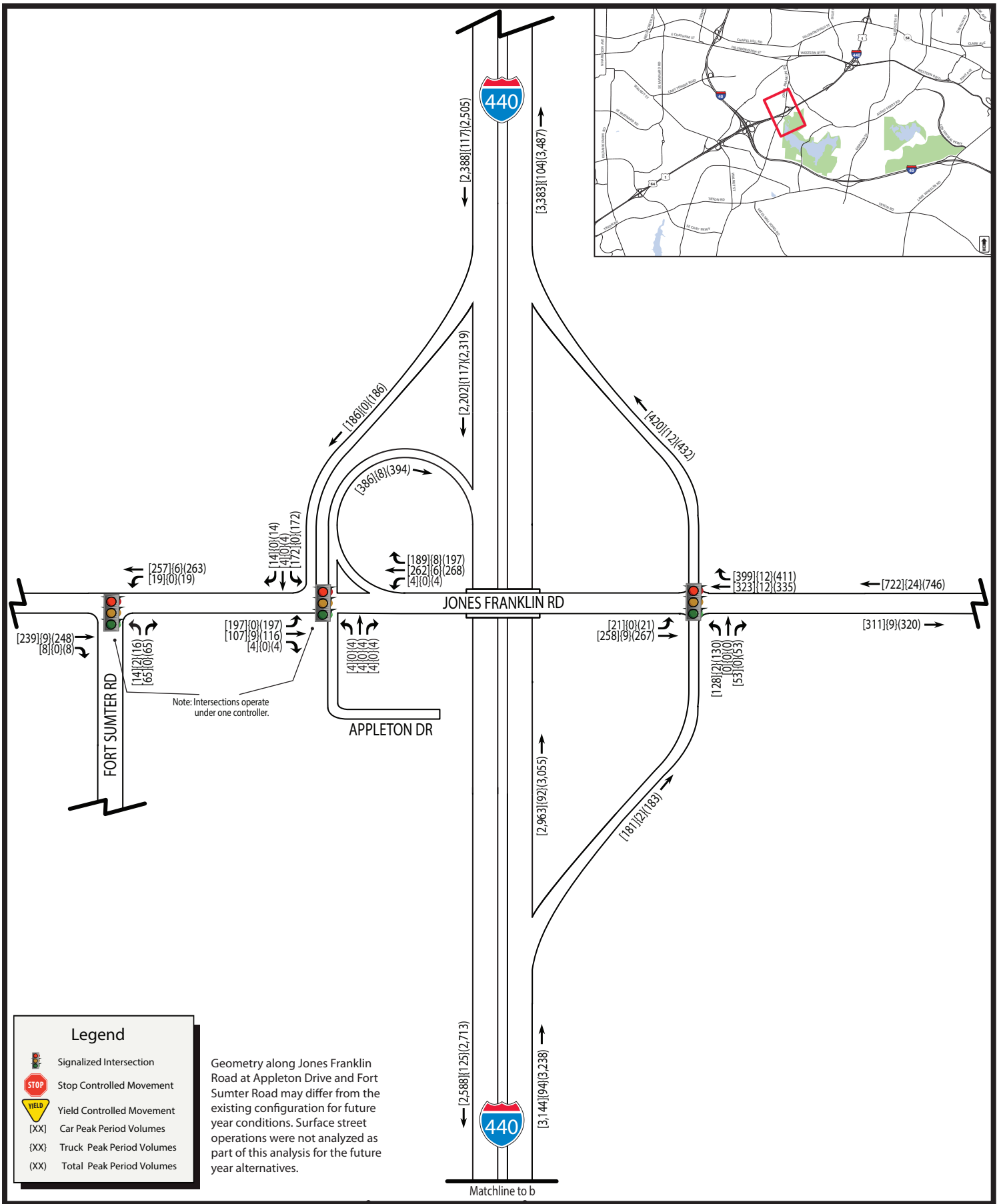
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 10f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035NB_ALL_am6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

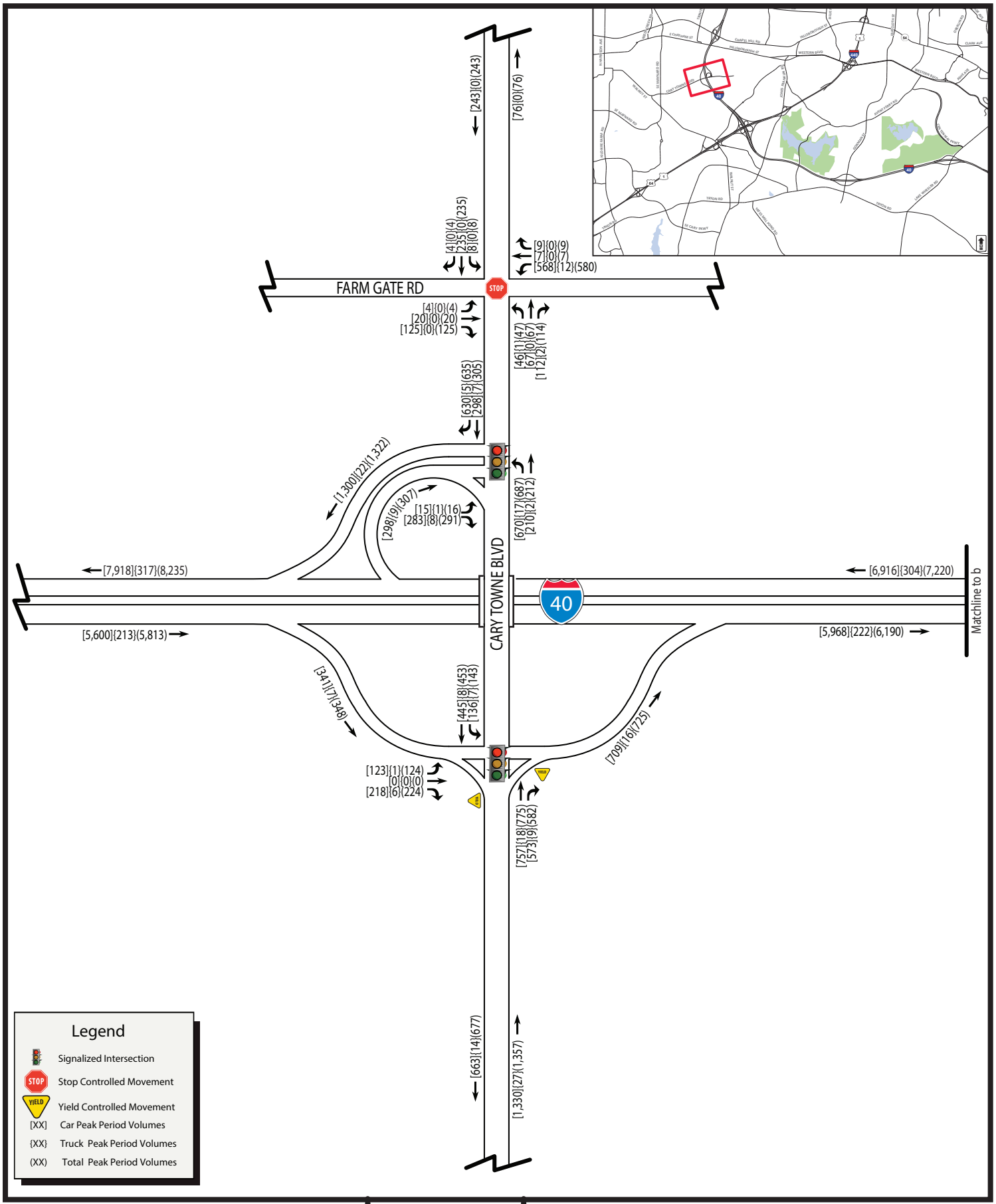
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6am-7am

FIGURE 10g



I-5703_TOTM_2035NB_ALL_am7-8.ai AKB 2021.05.25

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

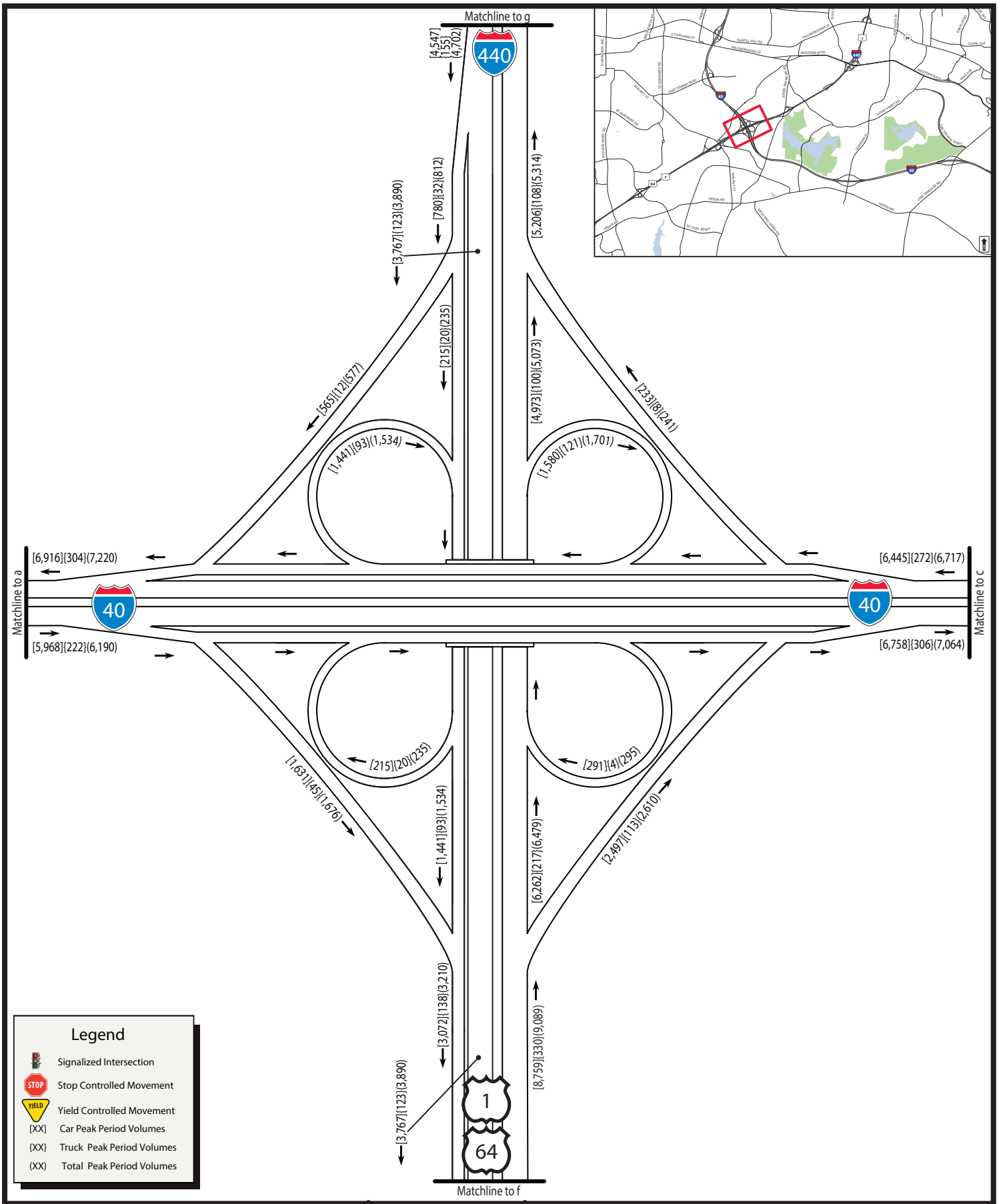
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 10a



I-5703_TOTM_2035NB_ALL_am7-8.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

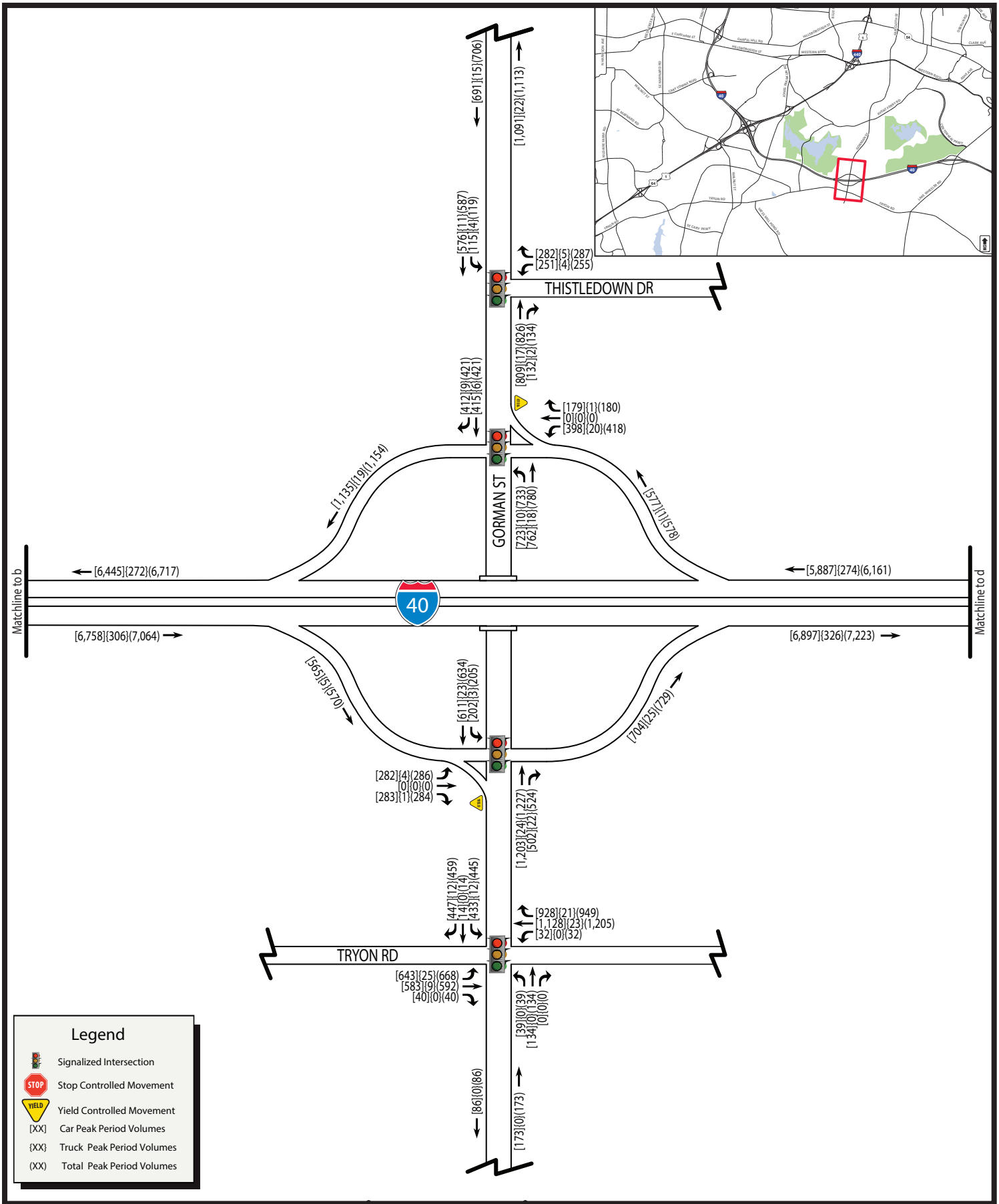
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 10b



I-5703_TOTM_2035NB_ALL_am7-8.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

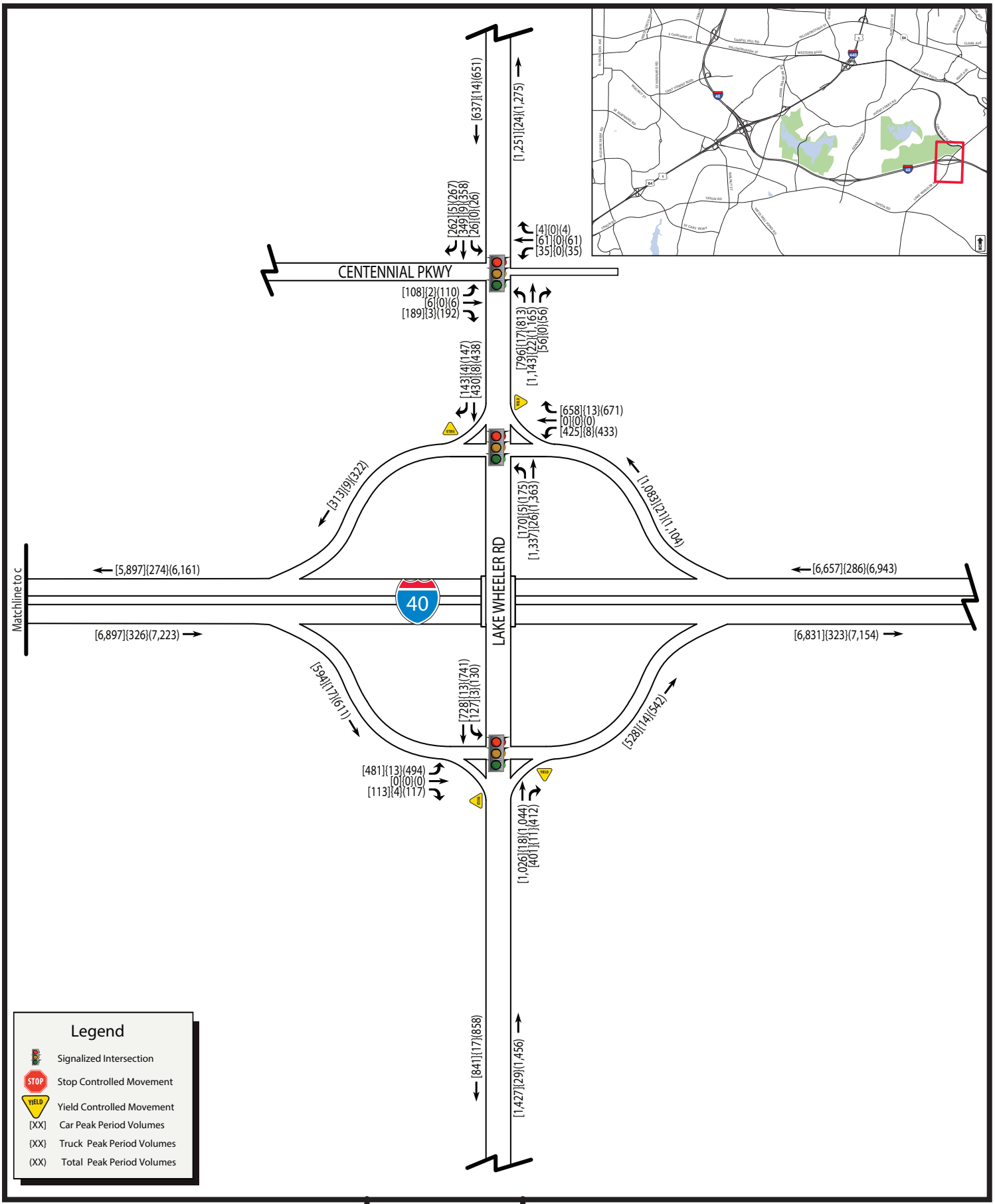
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 10c



I-5703_TOTM_2035NB_ALL_am7-8.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

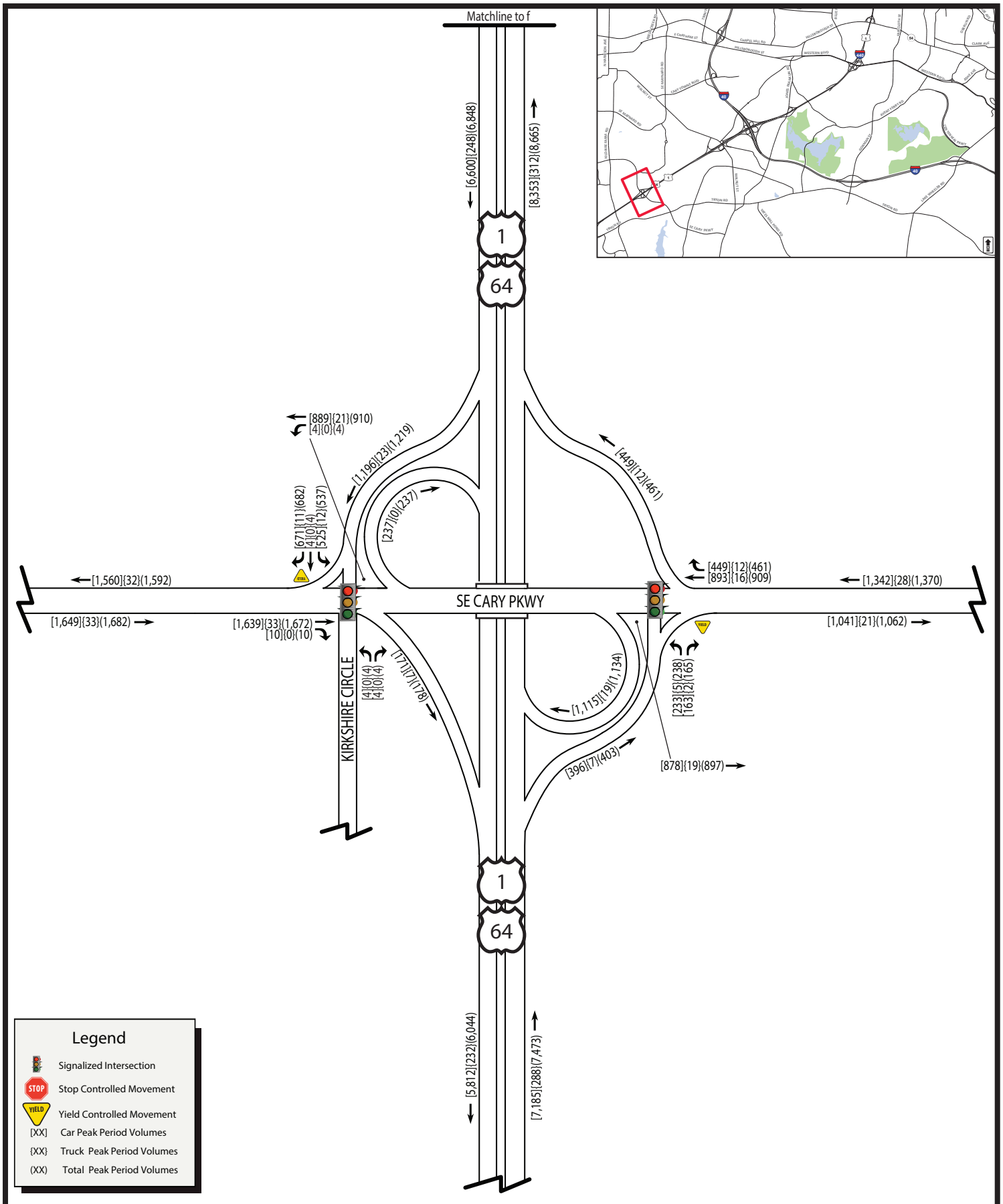
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 10d



I-5703_TOTM_2035NB_ALL_am7-8.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

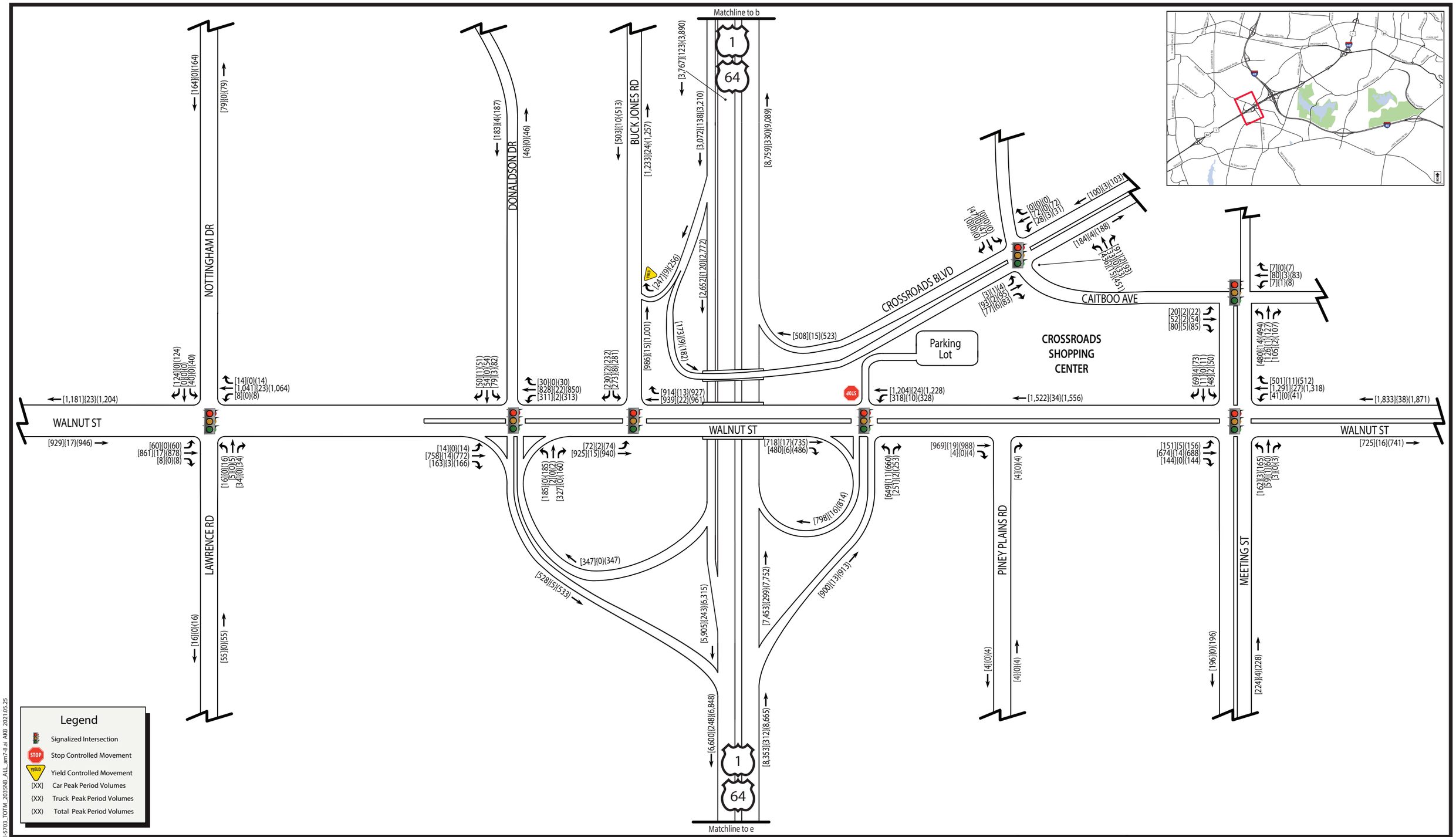
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 10e



Legend

- Signalized Intersection
- STOP — Stop Controlled Movement
- YIELD — Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2035NB_ALL_am7-8.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

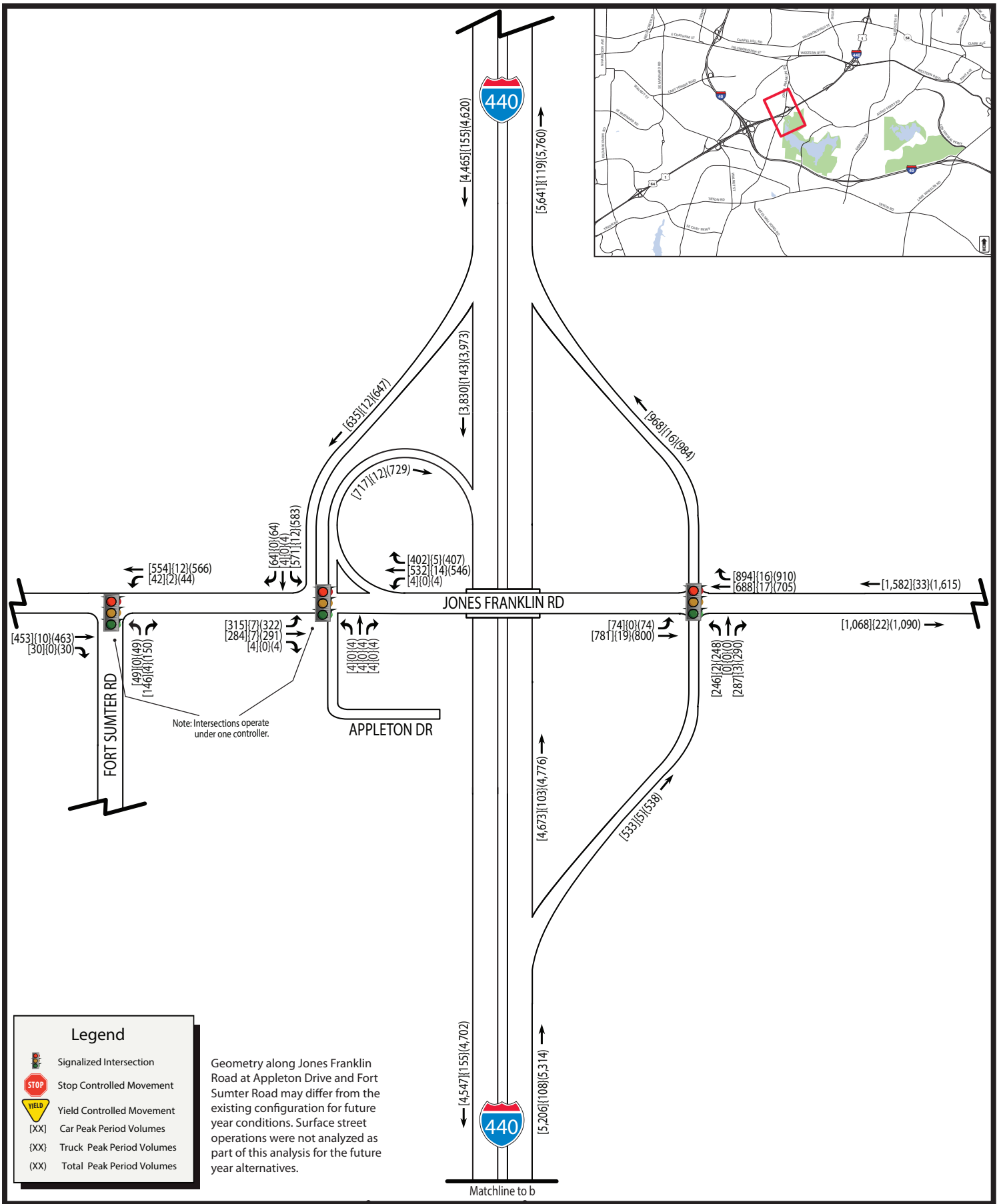
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 10f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035NB_ALL_am7-8.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

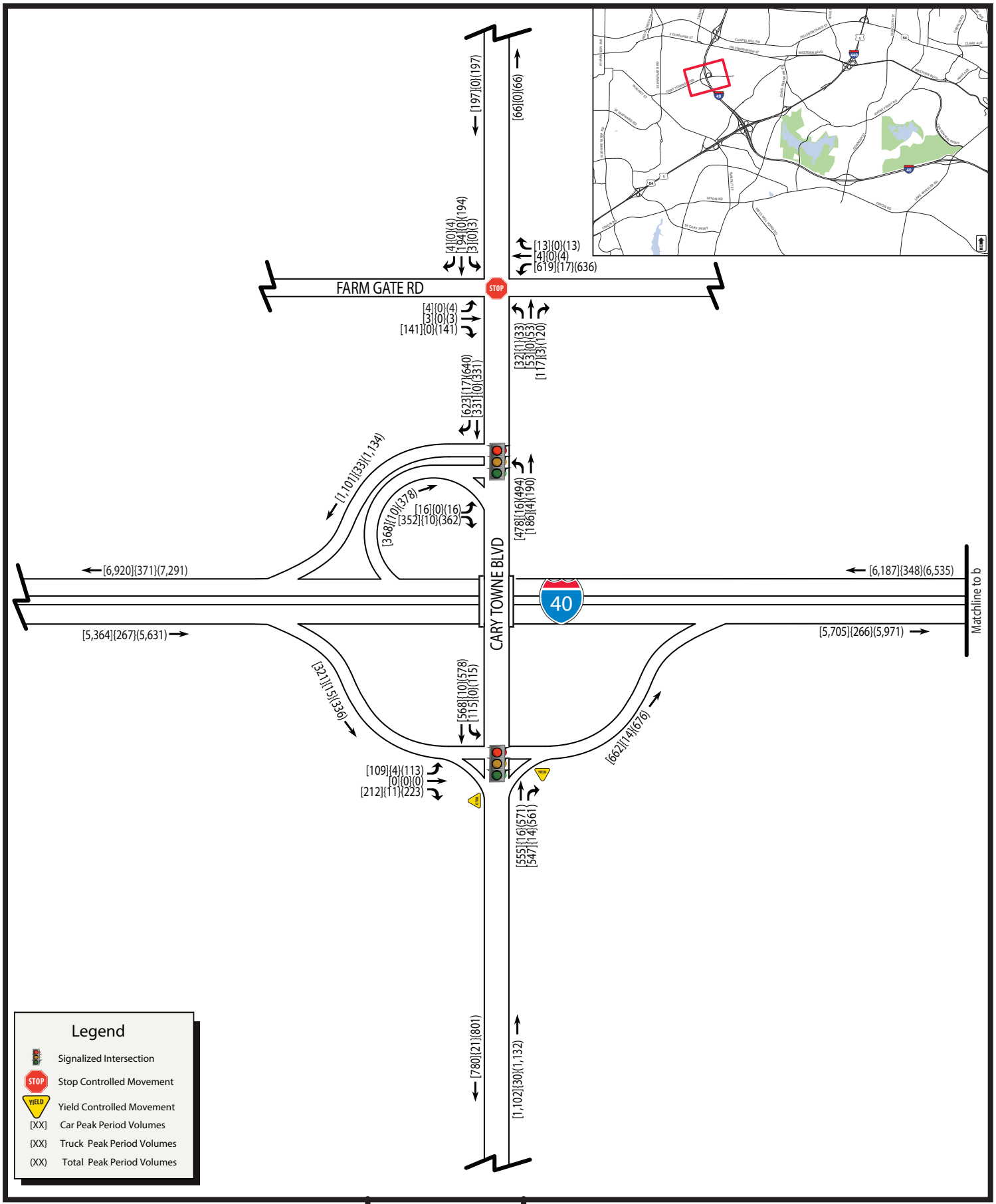
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 7am-8am

FIGURE 10g



I-5703_TOTM_2035NB_ALL_am8-9.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

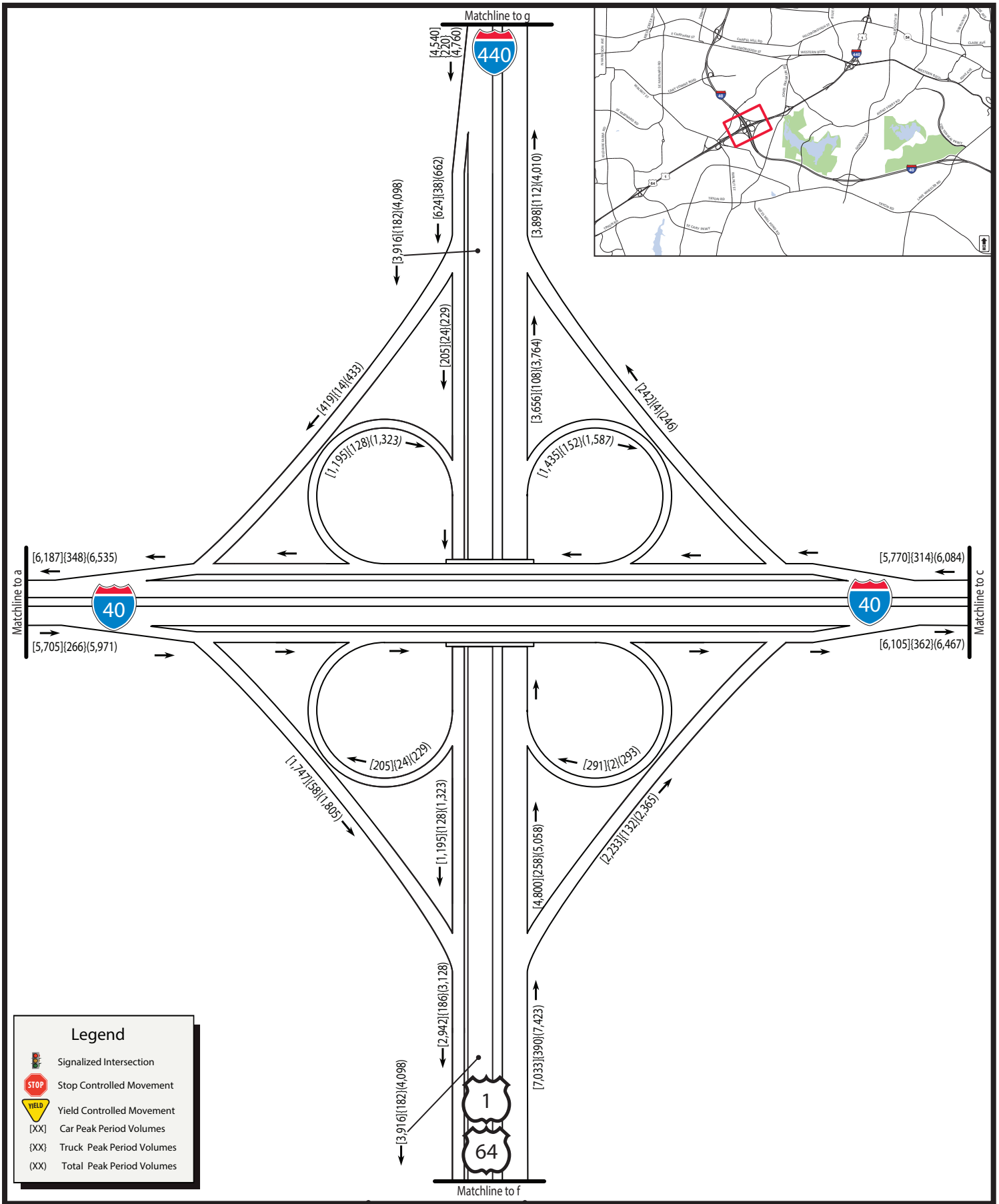
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 10a



I-5703_TOTM_2035NB_ALL_am8-9.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

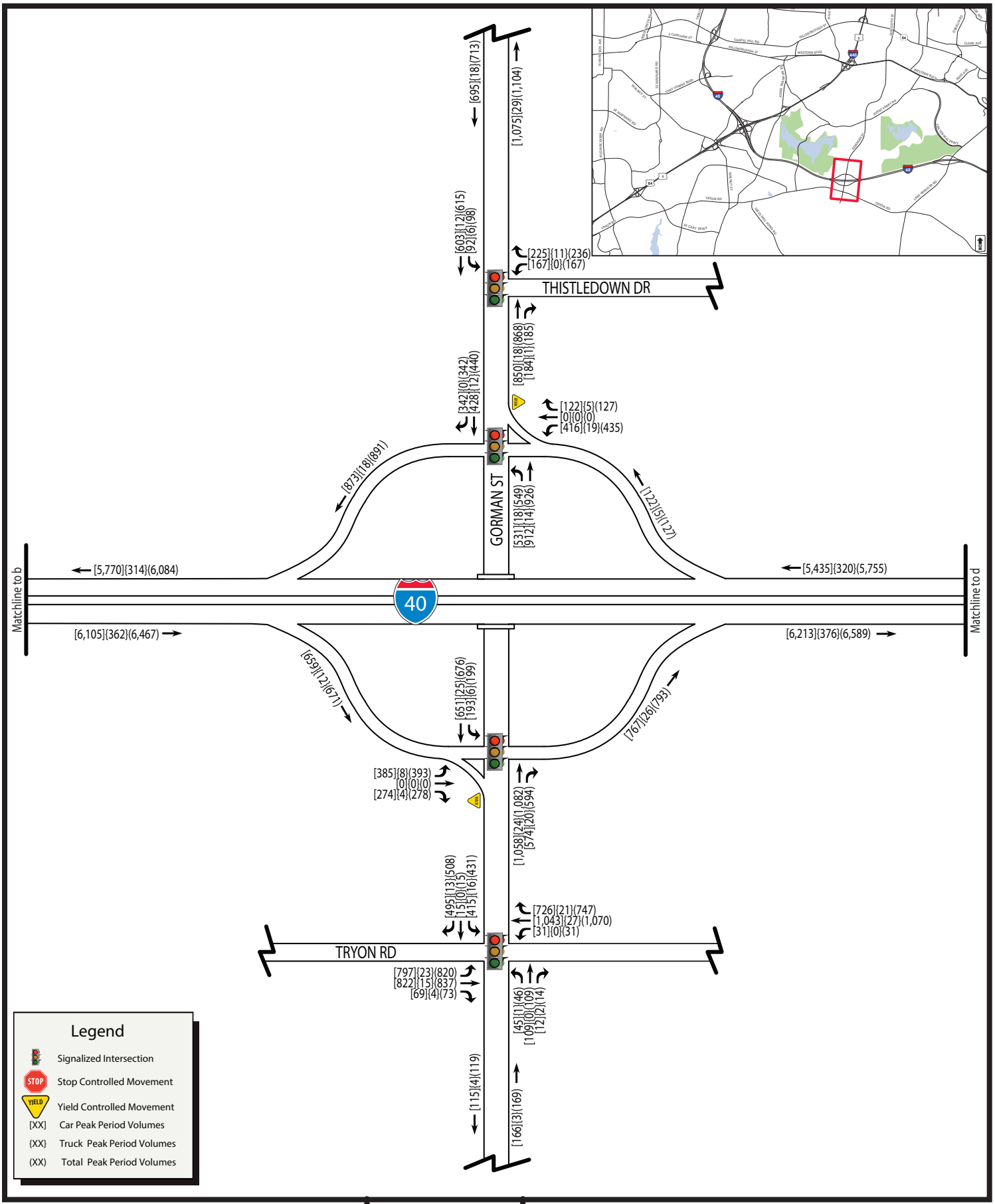
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 10b



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2035NB_ALL_am8-9.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

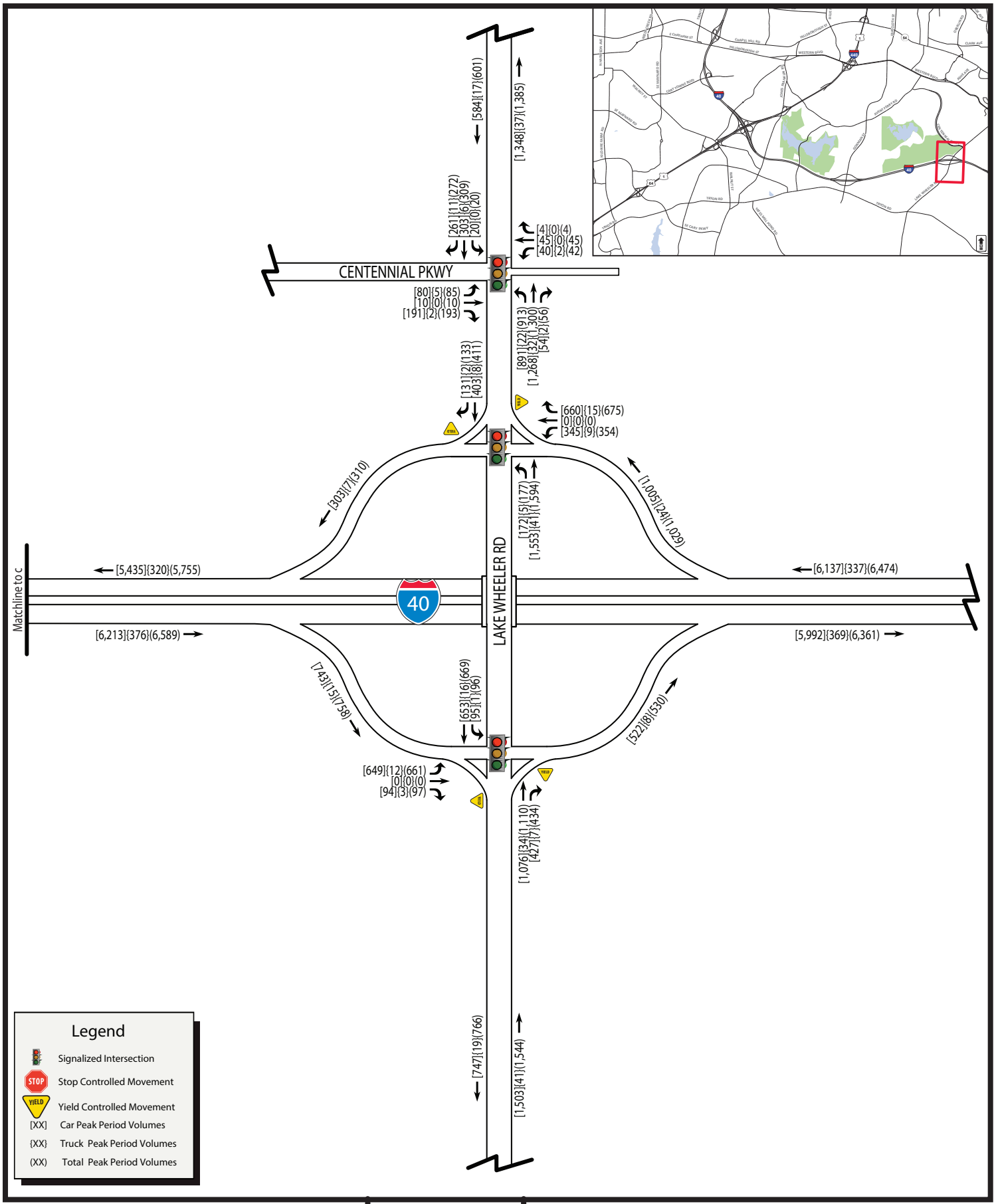
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 8am-9am

FIGURE 10c



I-5703_TOTM_2035NB_ALL_am8-9.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

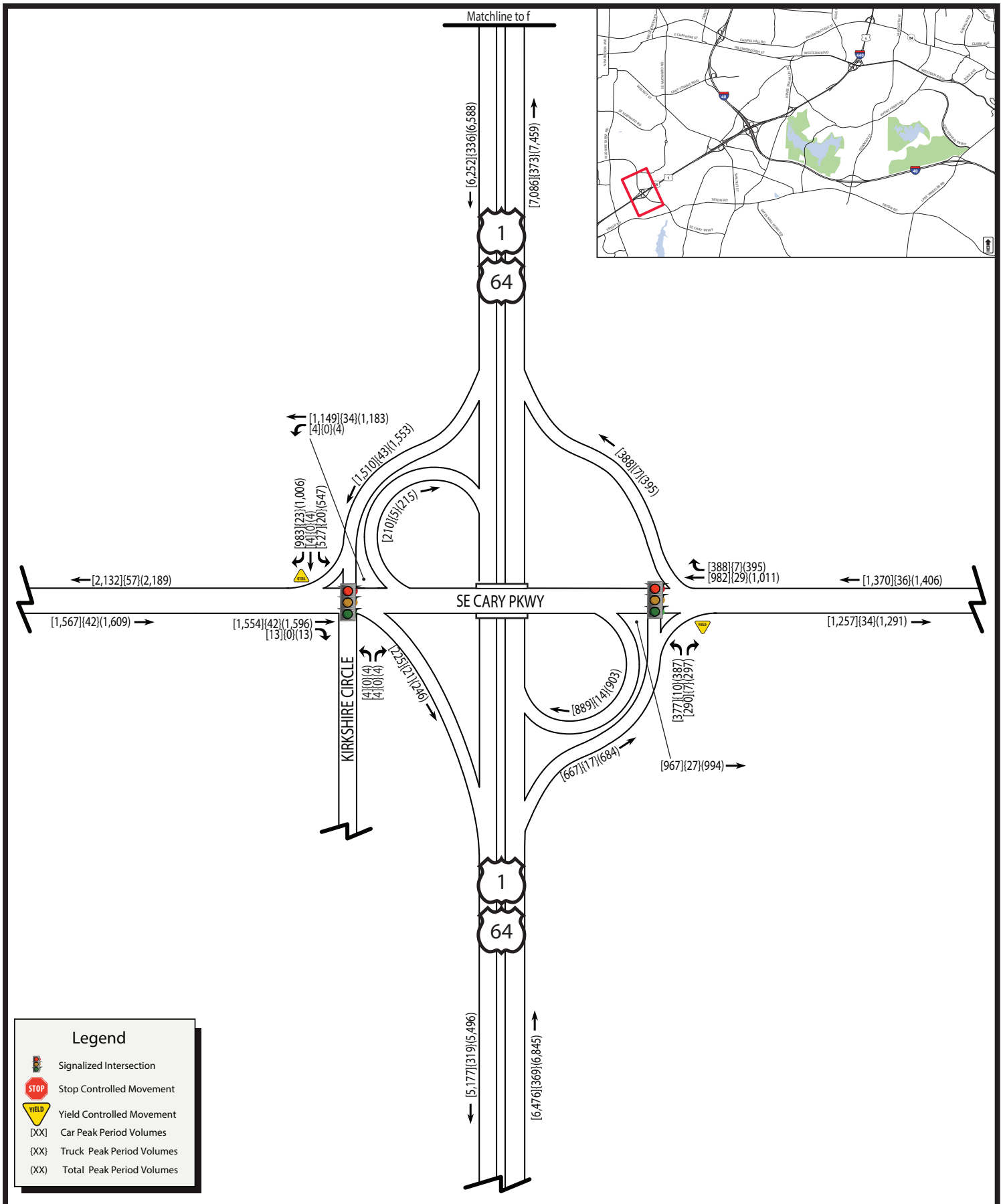
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 10d



I-5703_TOTM_2035NB_ALL_am8-9.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

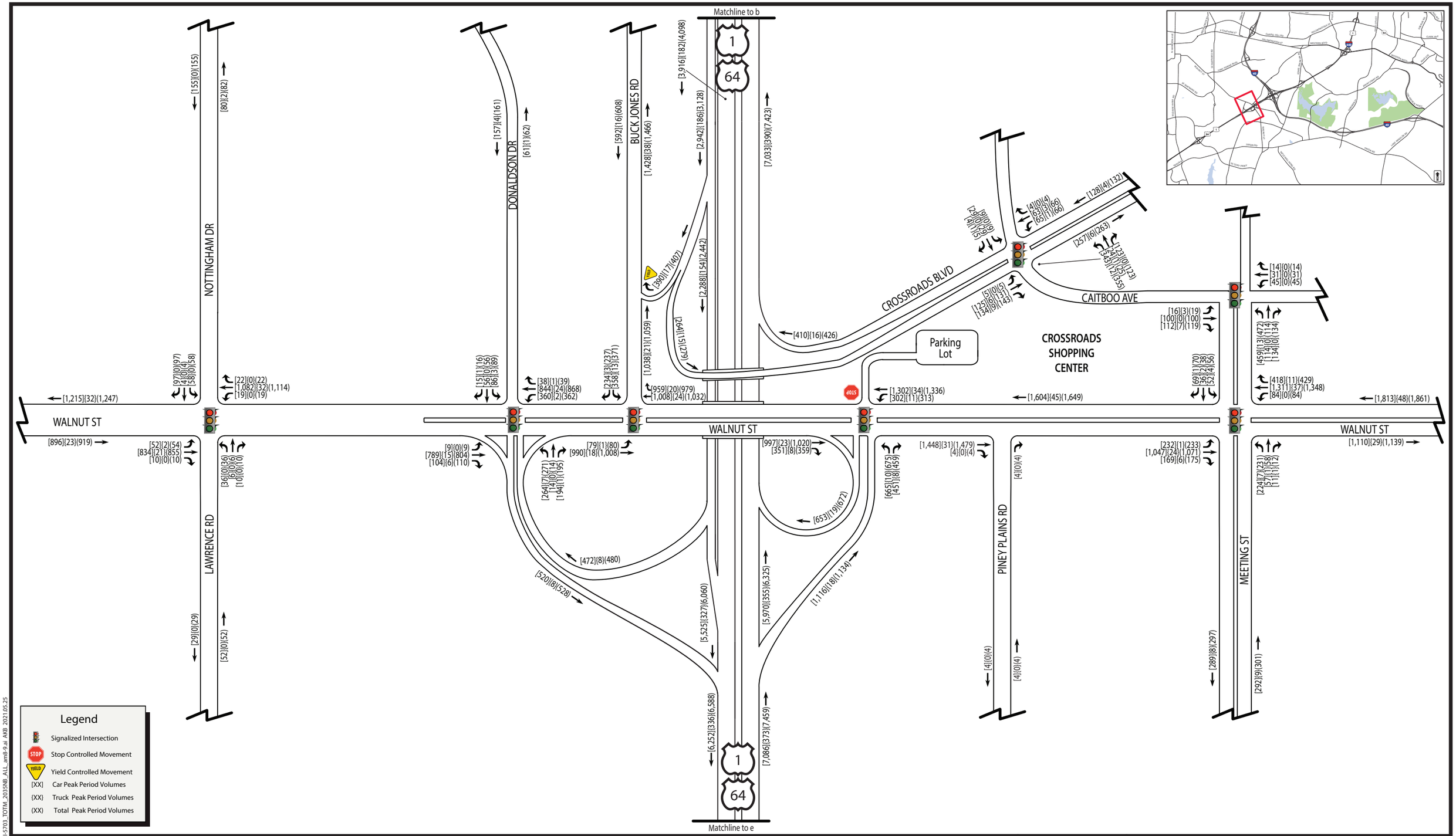
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 8am-9am

FIGURE 10e



I-5703_TOTM_2035NB_ALL_am8-9.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

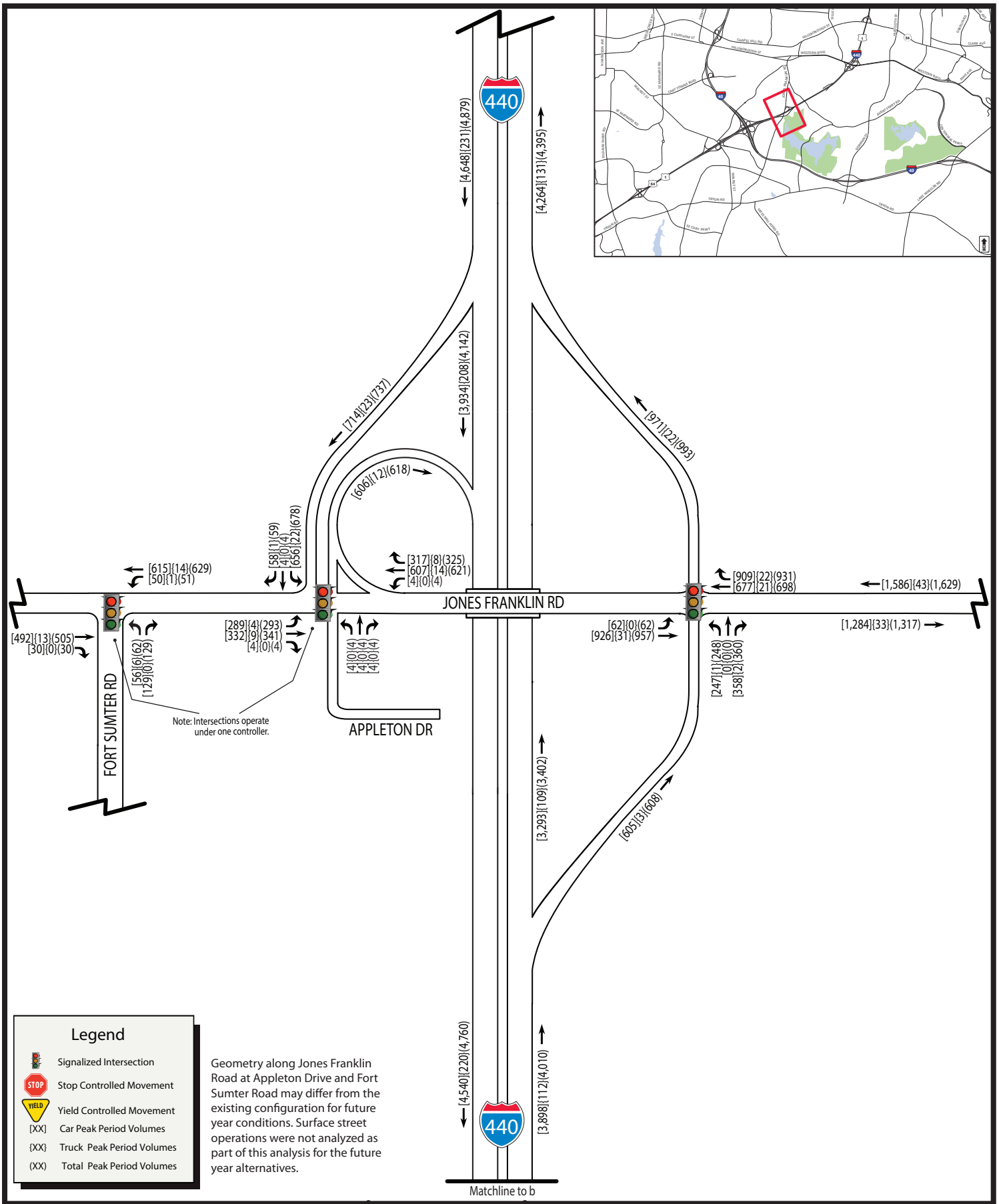
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 10f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035NB_ALL_am8-9.ai AKB 2021.05.25

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

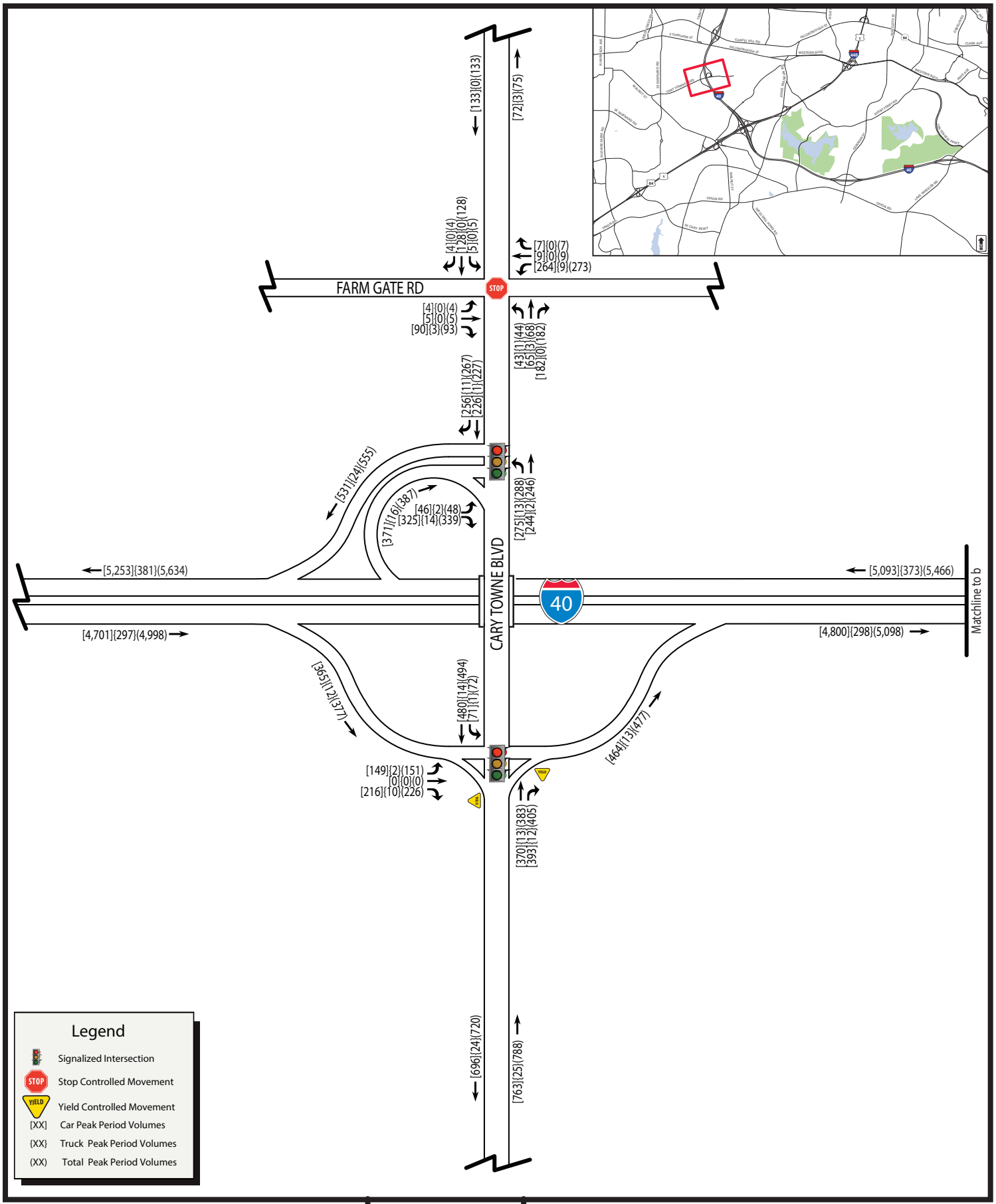
Wake County, North Carolina

N E W S

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 8am-9am

FIGURE 10g



I-5703_TOTM_2035NB_ALL_am9-10.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

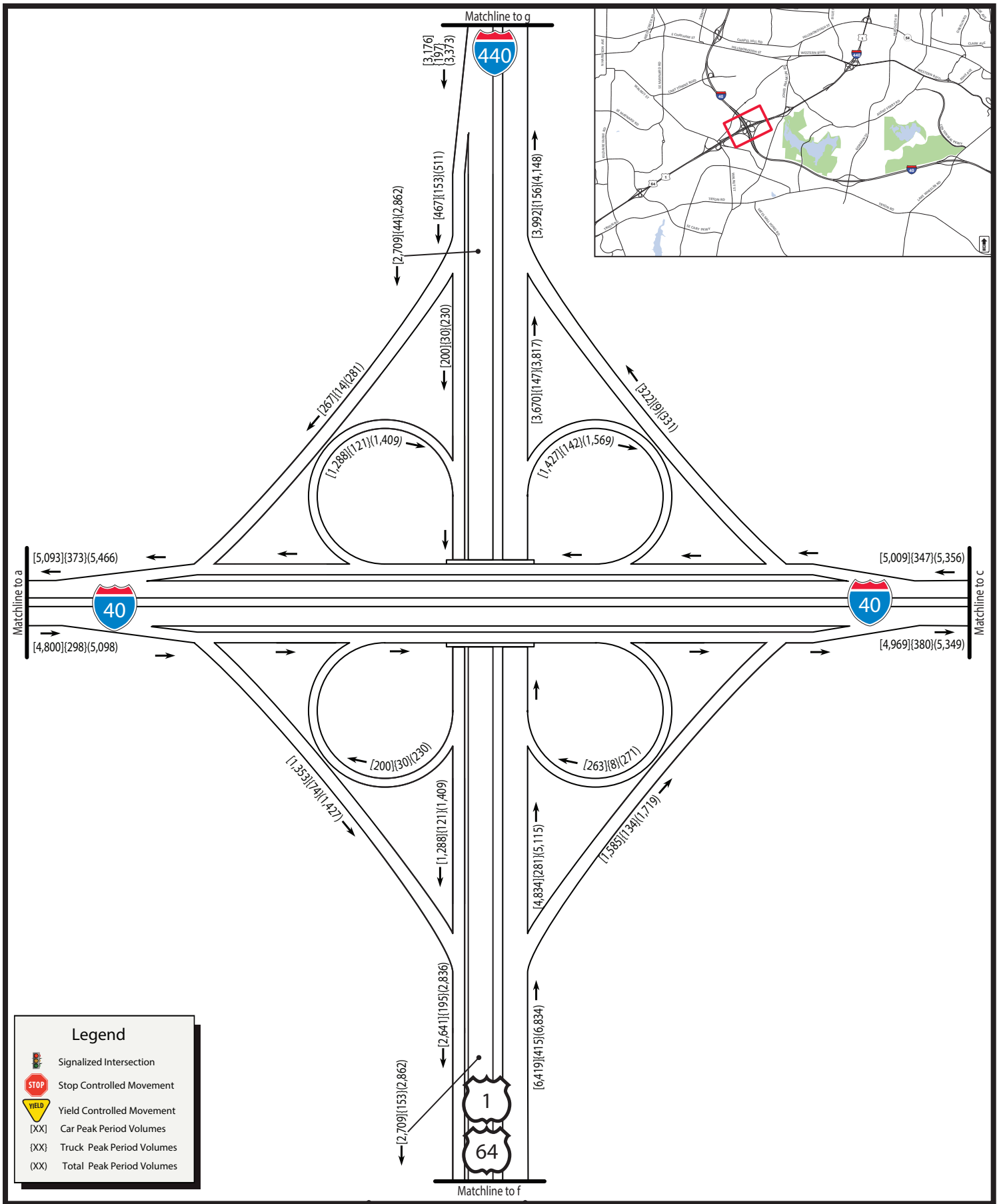
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 10a



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2035NB_ALL_am9-10.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

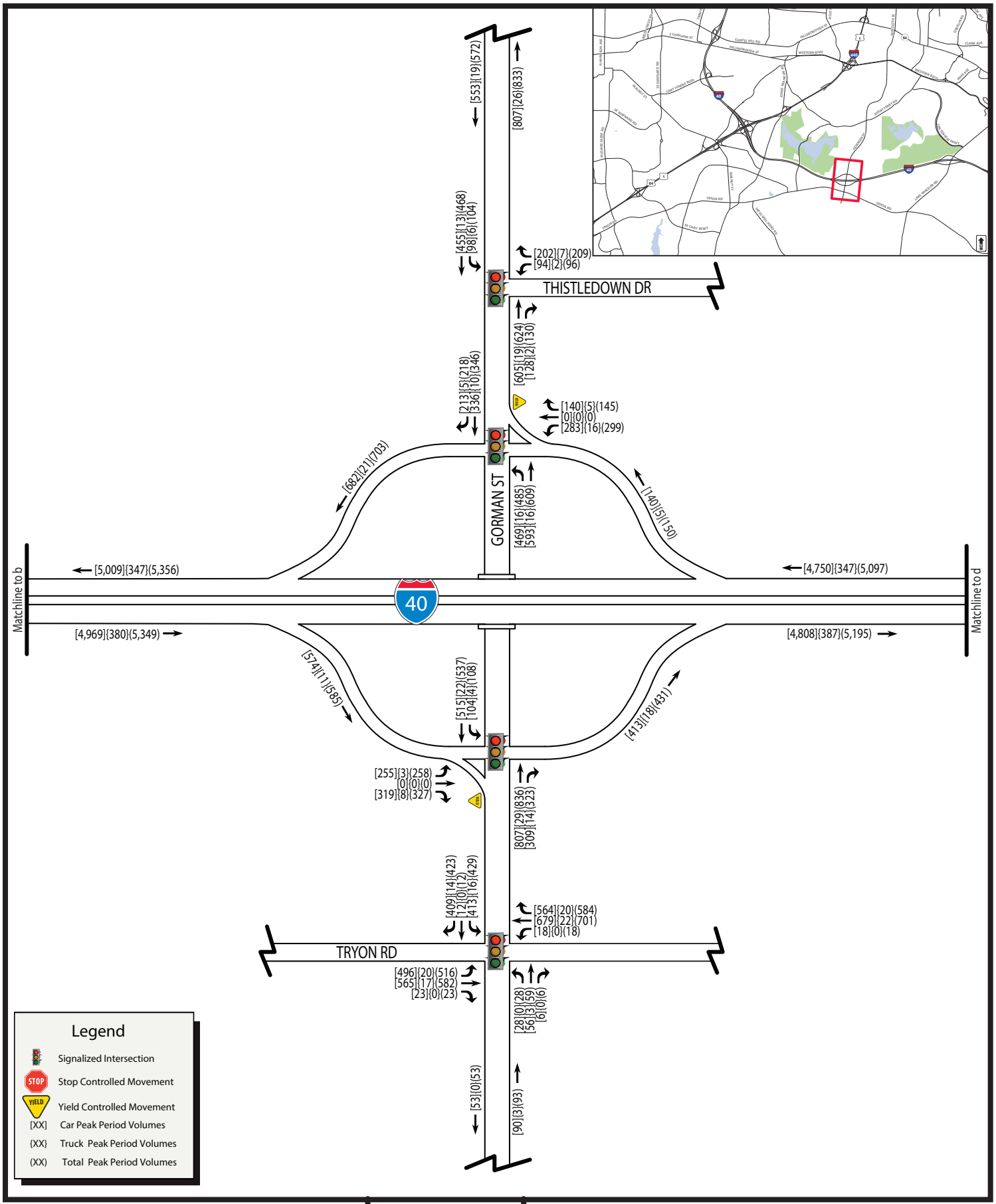
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 9am-10am

FIGURE 10b



I-5703_TOTM_2035NB_ALL_am9-10.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

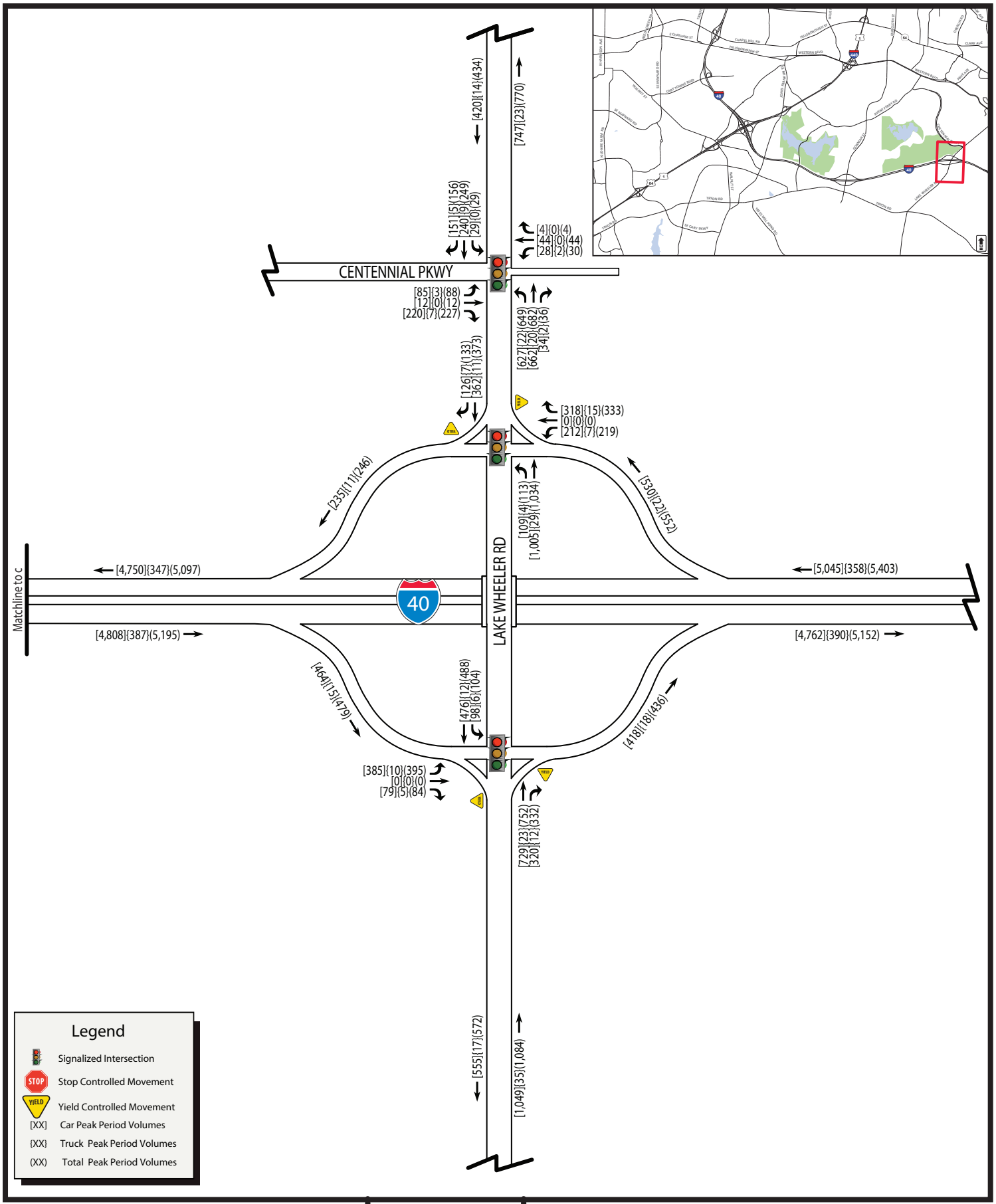
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 9am-10am

FIGURE 10c



I-5703_TOTM_2035NB_ALL_am9-10.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

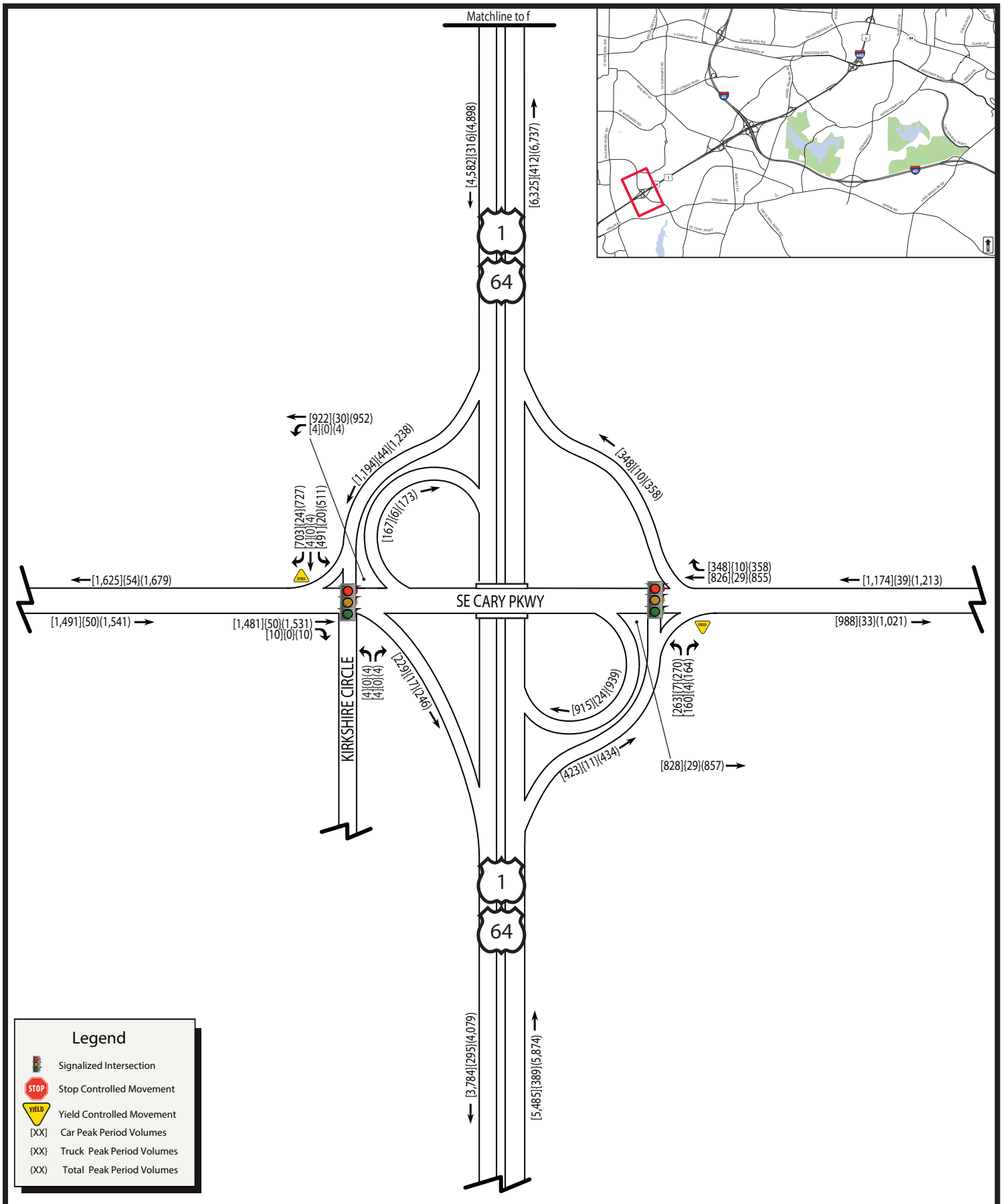
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 10d



I-5703_TOTM_2035NB_ALL_am9-10.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

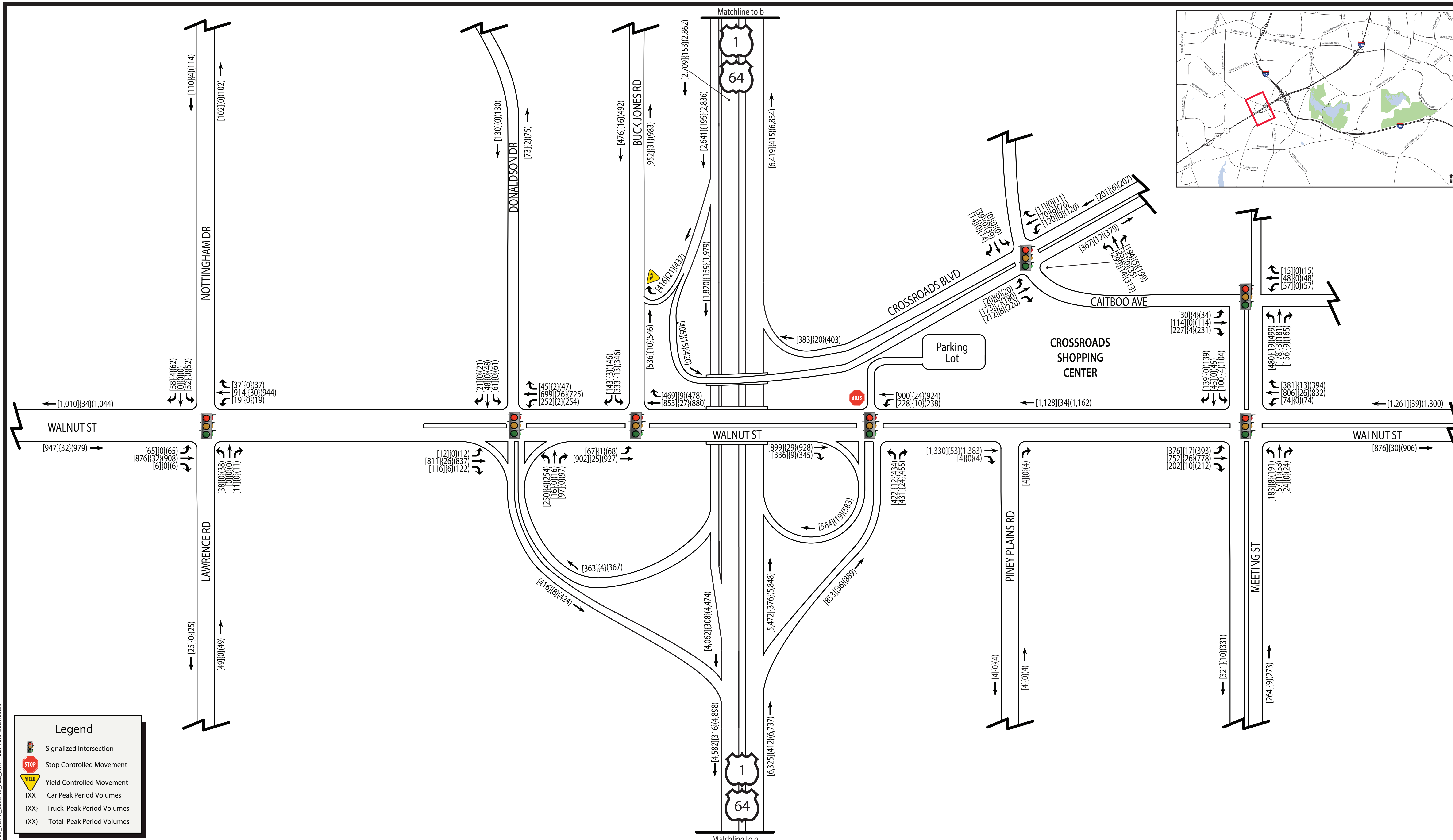
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 10e



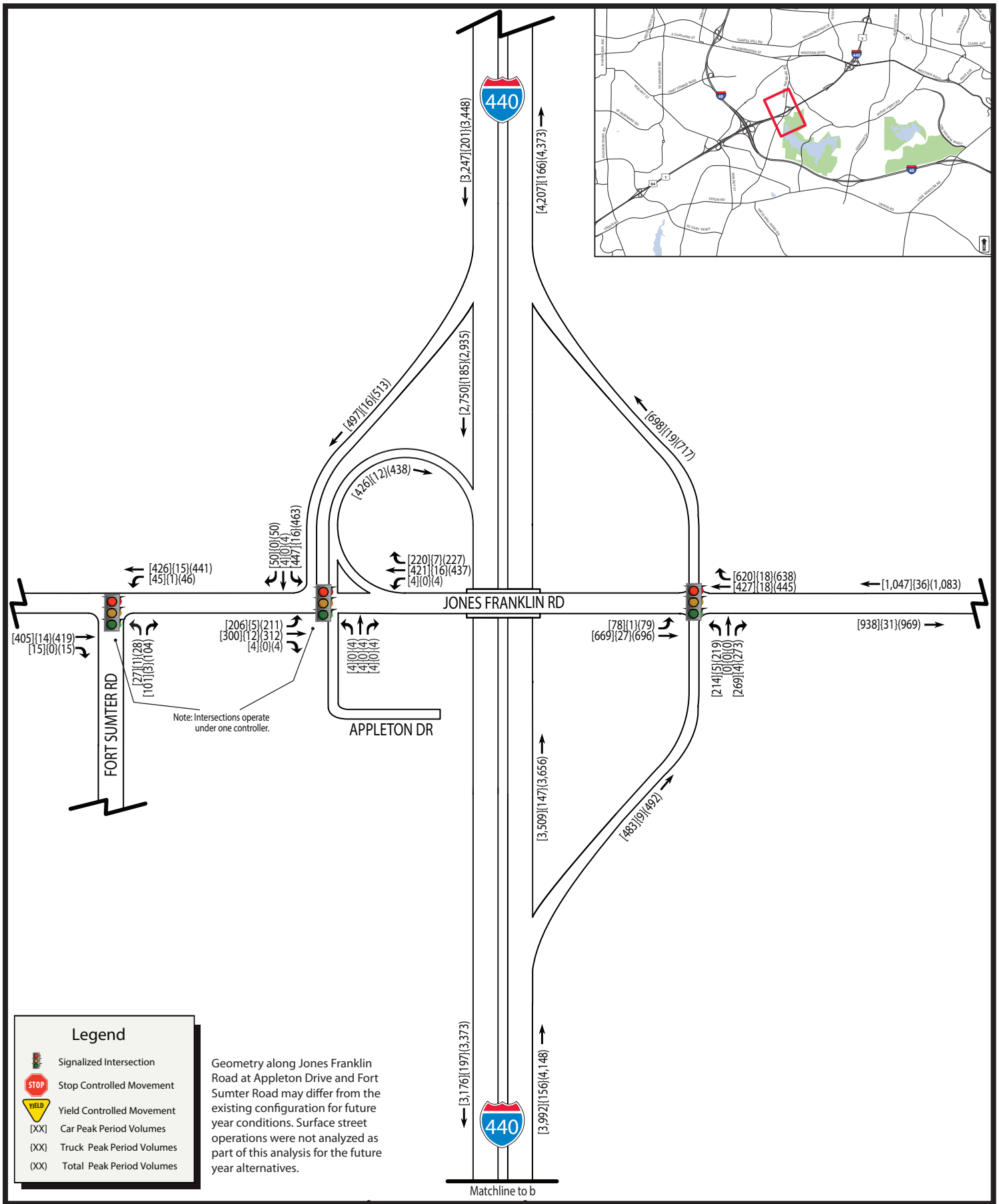
I-5703_TOTM_2035NB_ALL_am9-10.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64
Interchange Reconstruction
STIP PROJECT NO. I-5703
Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 10f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035NB_ALL_am9-10.ai AKB 2021.05.25

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

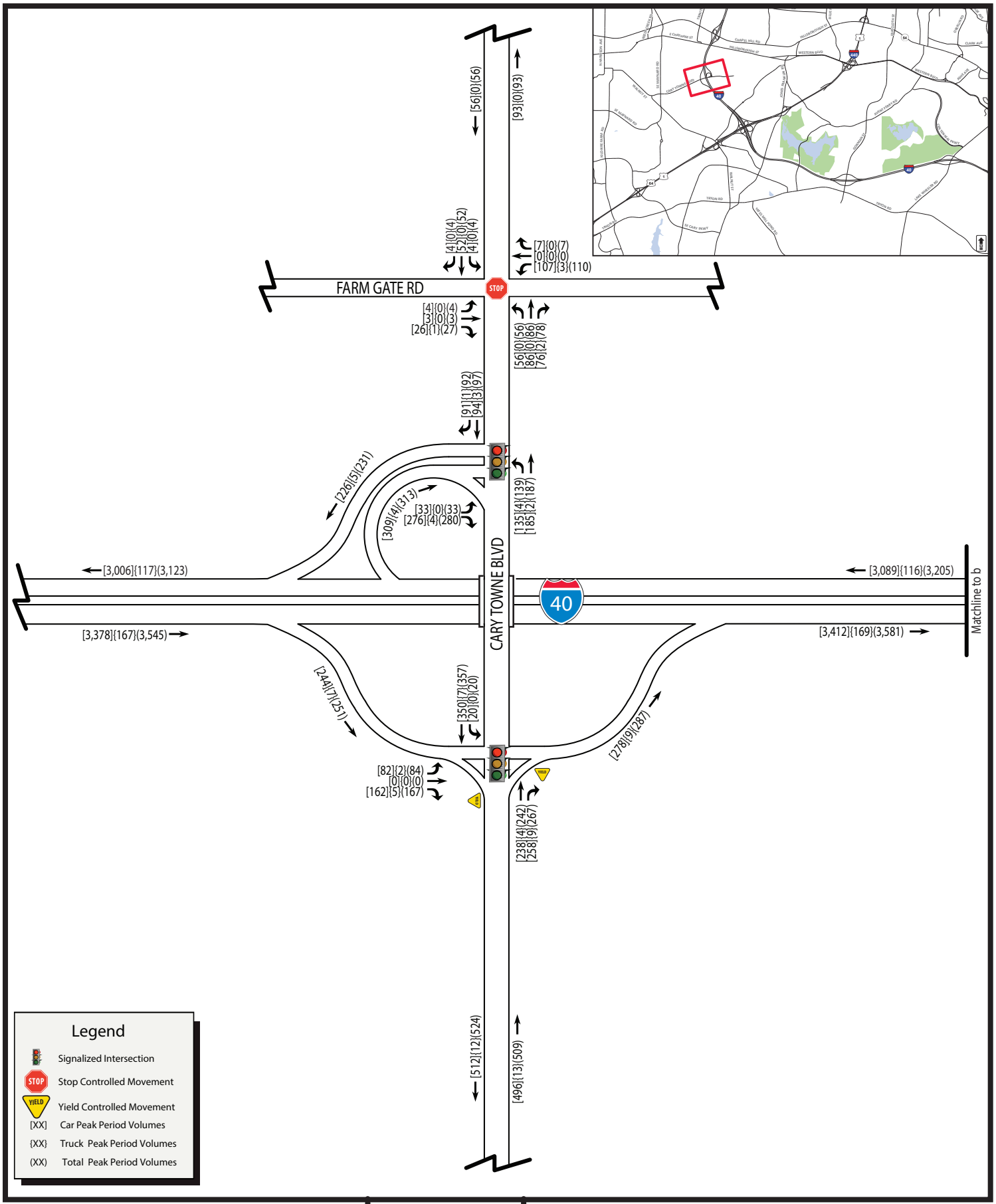
Wake County, North Carolina

N E S W

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 9am-10am

FIGURE 10g



I-5703_TOTM_2035NB_ALL_pm3-4.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

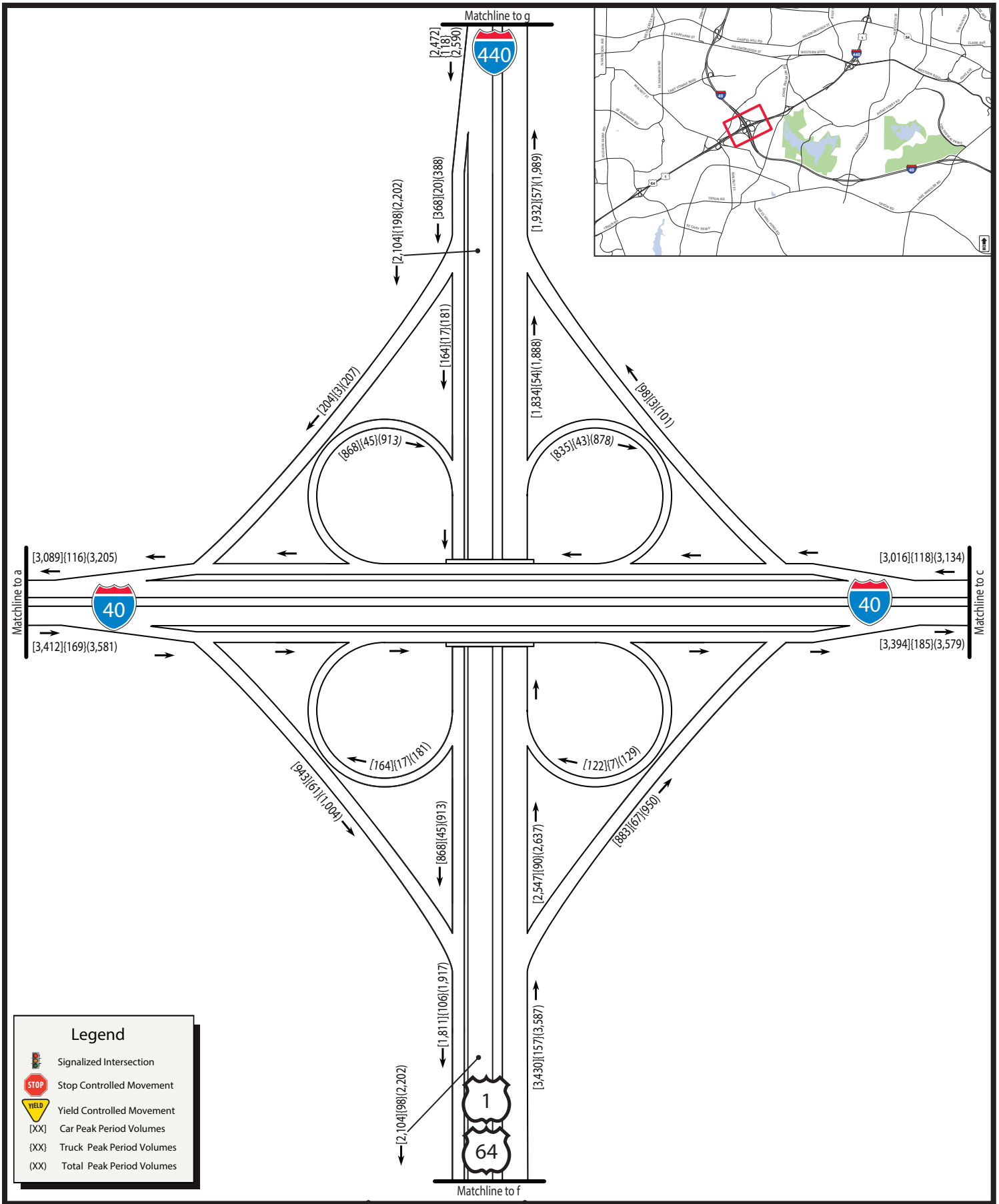
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 3:30pm-4pm

FIGURE 10a



I-5703_TOTM_2035NB_ALL_pm3-4.ai AKB 2021.05.25

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

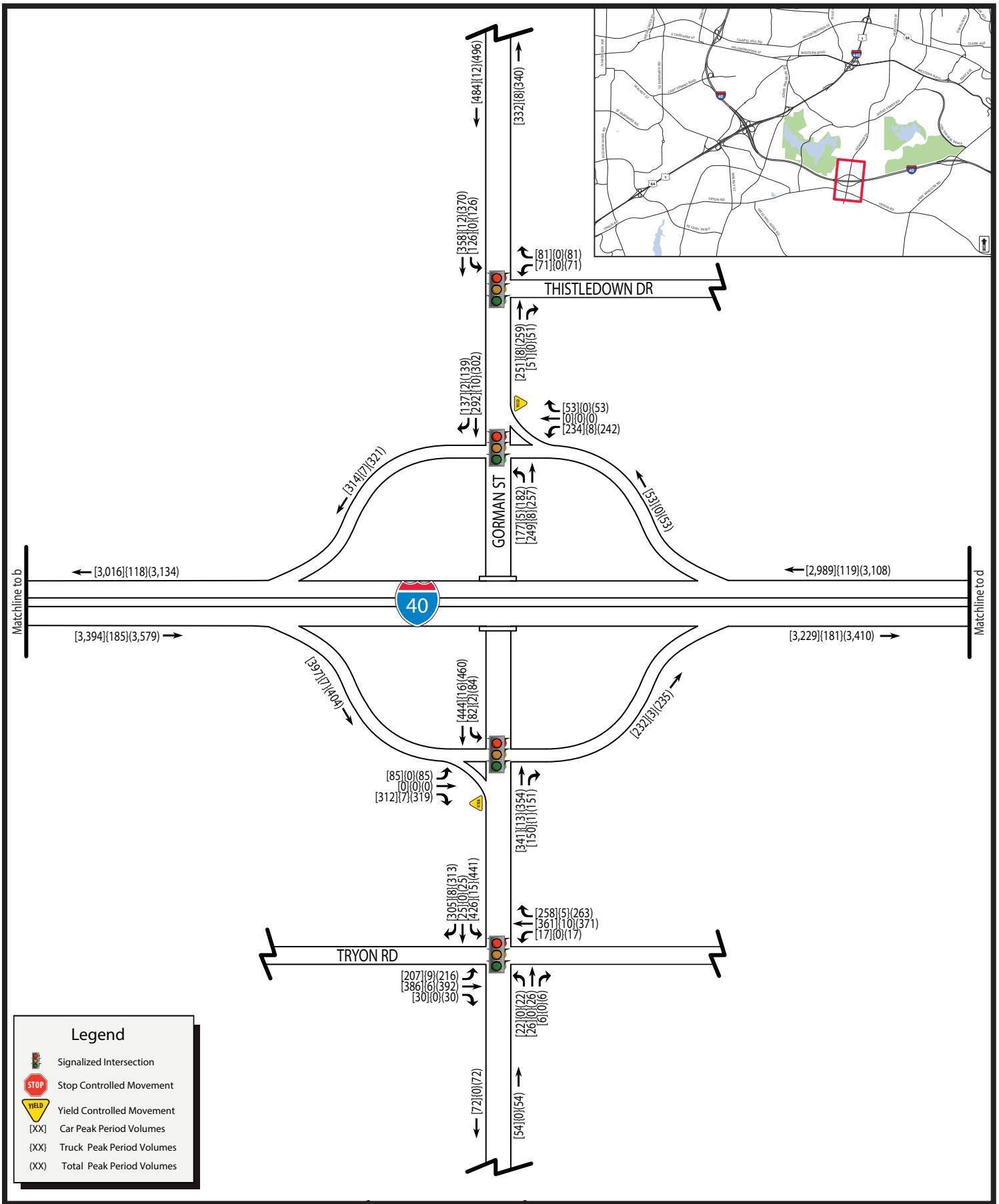
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 3:30pm-4pm

FIGURE 10b



I-5703_TOTM_2035NB_ALL_pm3-4.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

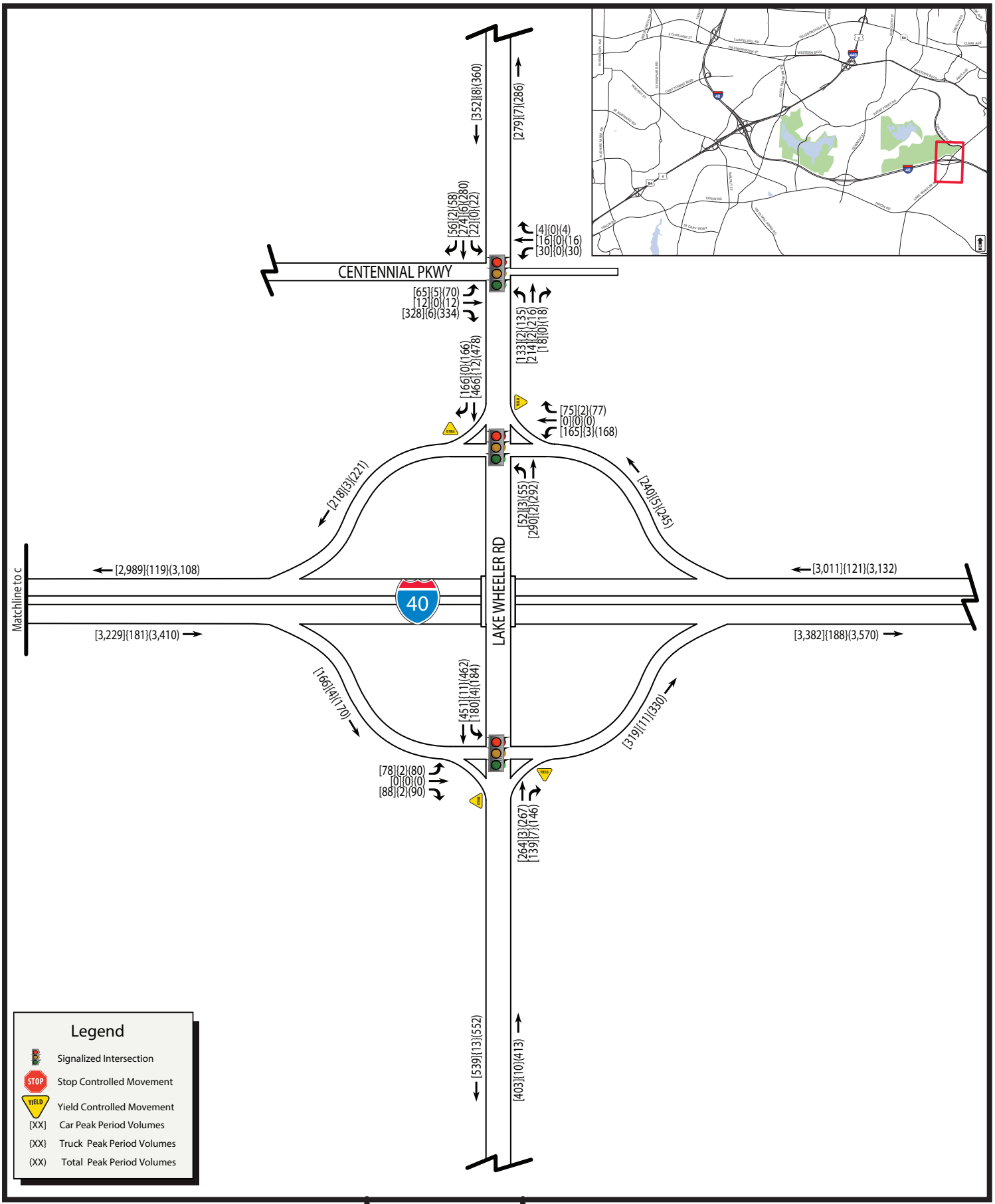
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 3:30pm-4pm

FIGURE 10c



I-5703_TOTM_2035NB_ALL_pm3-4.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

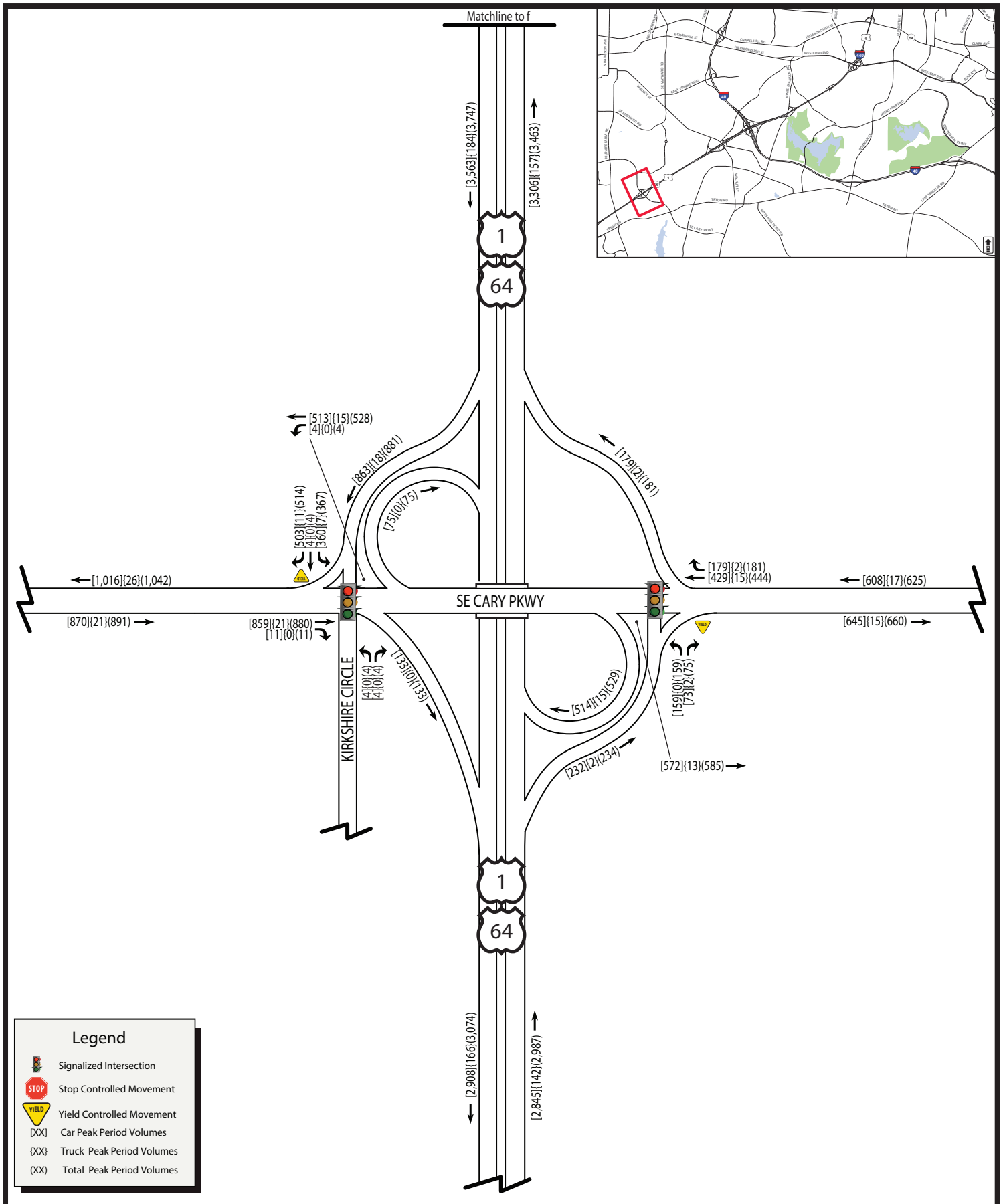
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 10d



I-5703_TOTM_2035NB_ALL_pm3-4.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

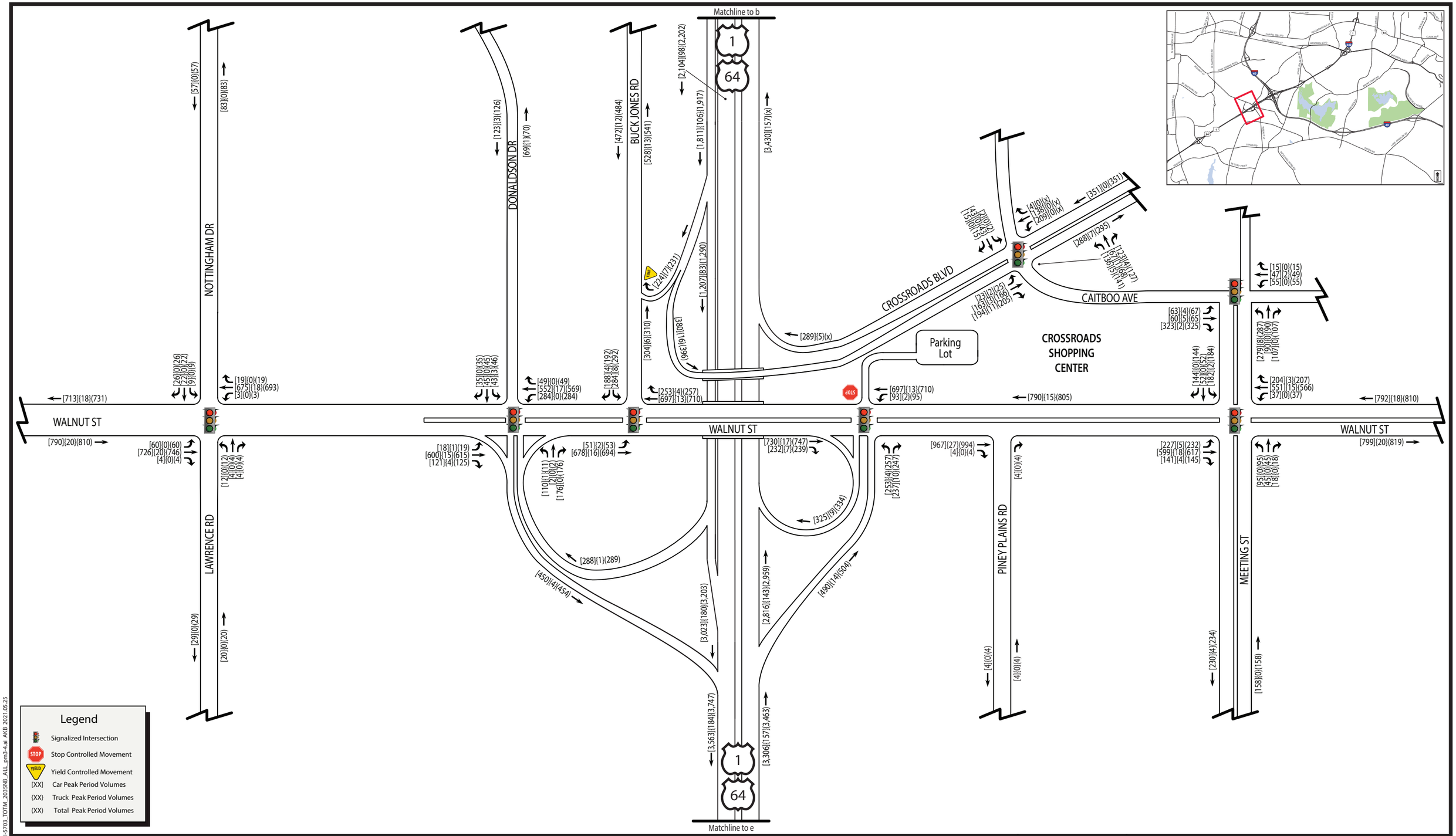
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 3:30pm-4pm

FIGURE 10e



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2035NB_ALL_pm3-4.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

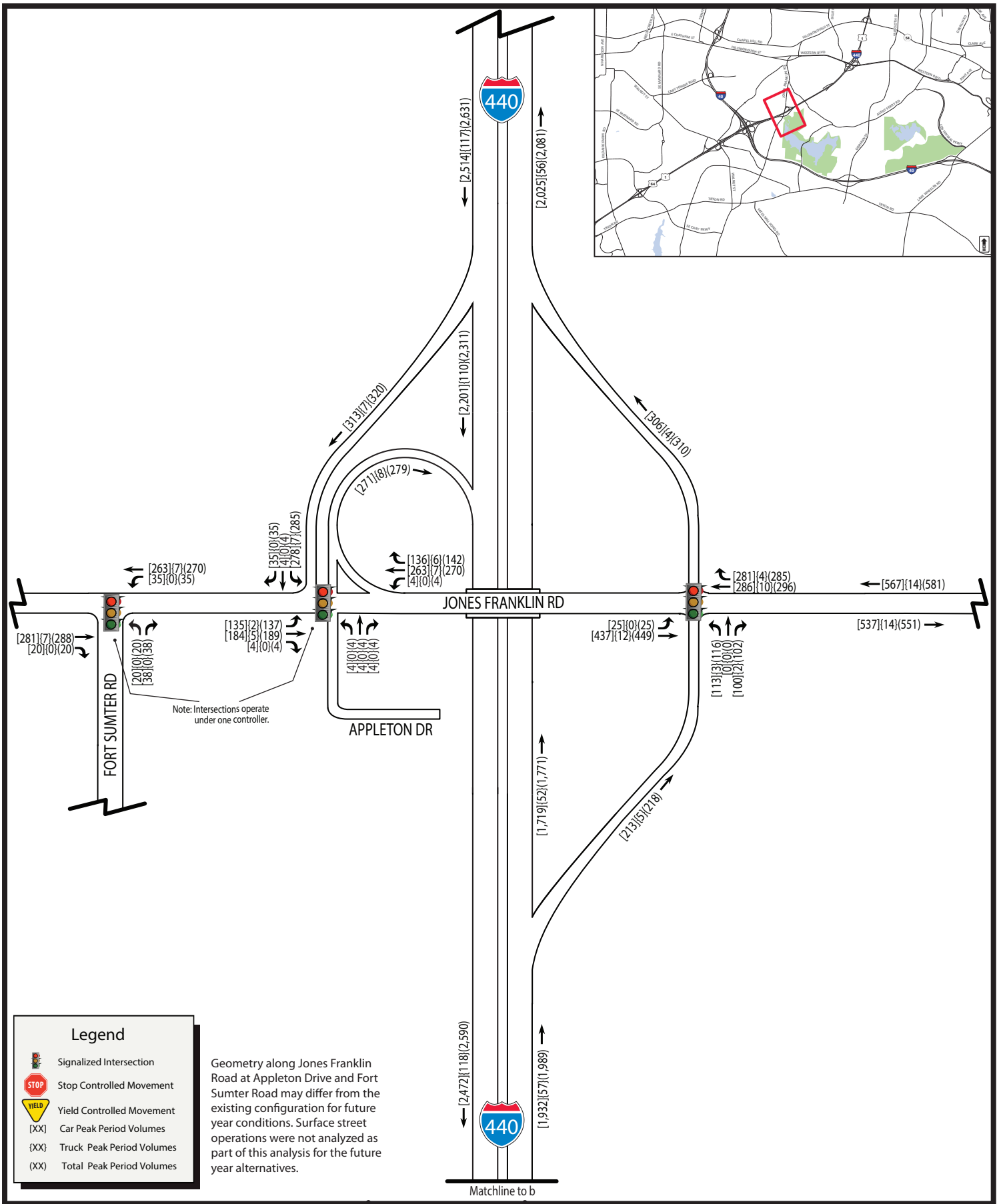
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 10f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

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I-5703_TOTM_2035NB_ALL_pm3-4.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

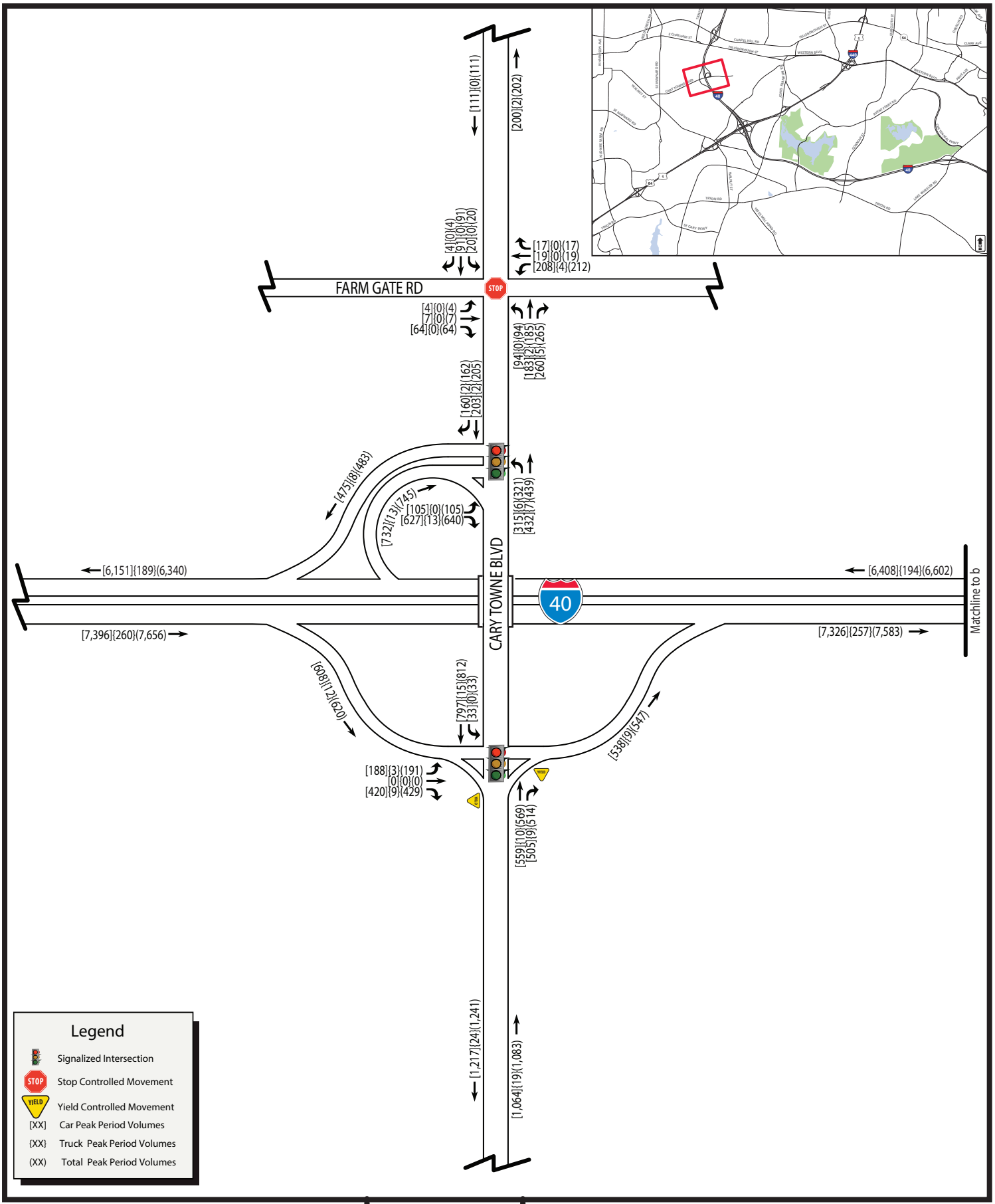
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 3:30pm-4pm

FIGURE 10g



I-5703_TOTM_2035NB_ALL_pm4-5.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

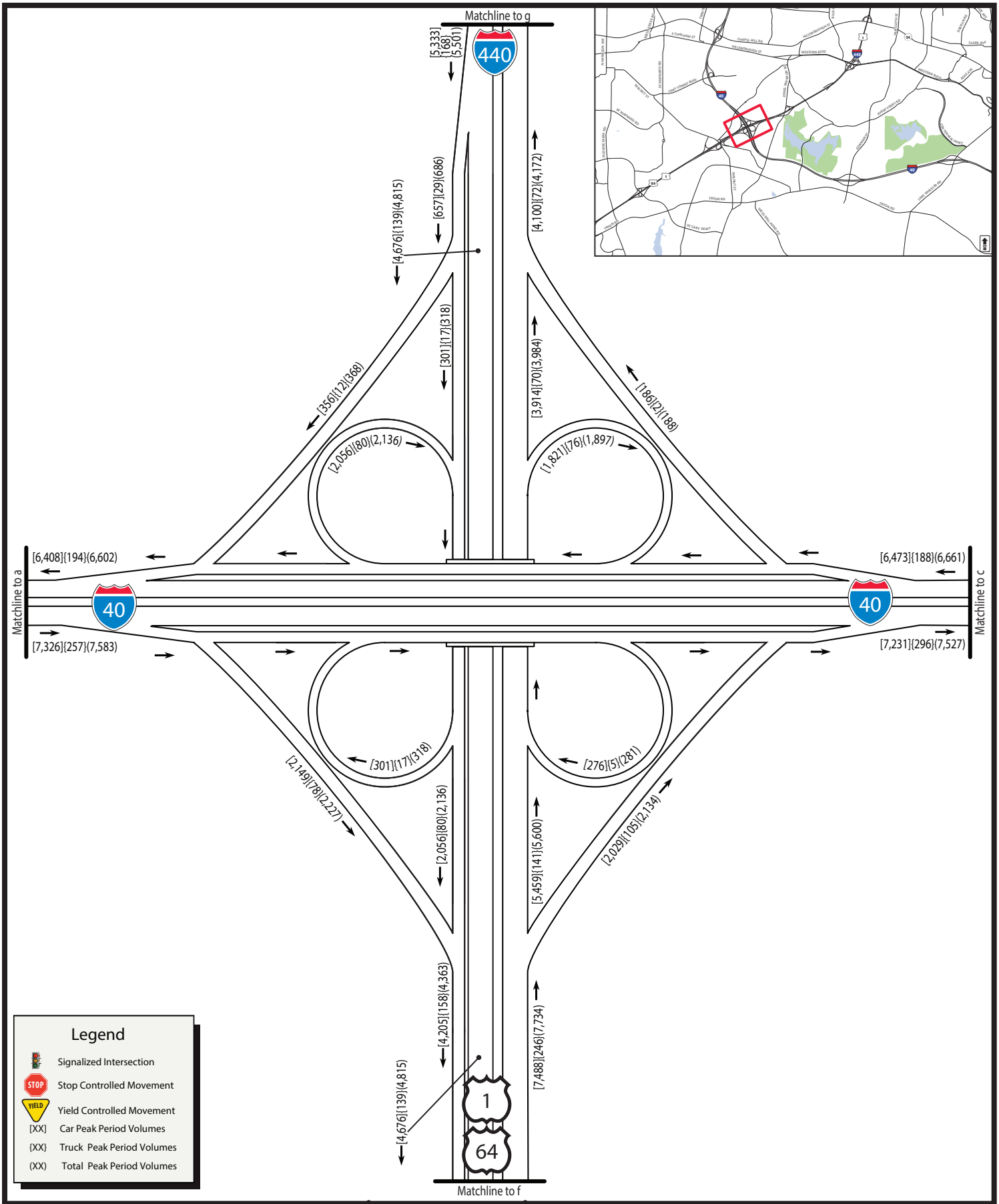
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 10a



I-5703_TOTM_2035NB_ALL_pm4-5.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

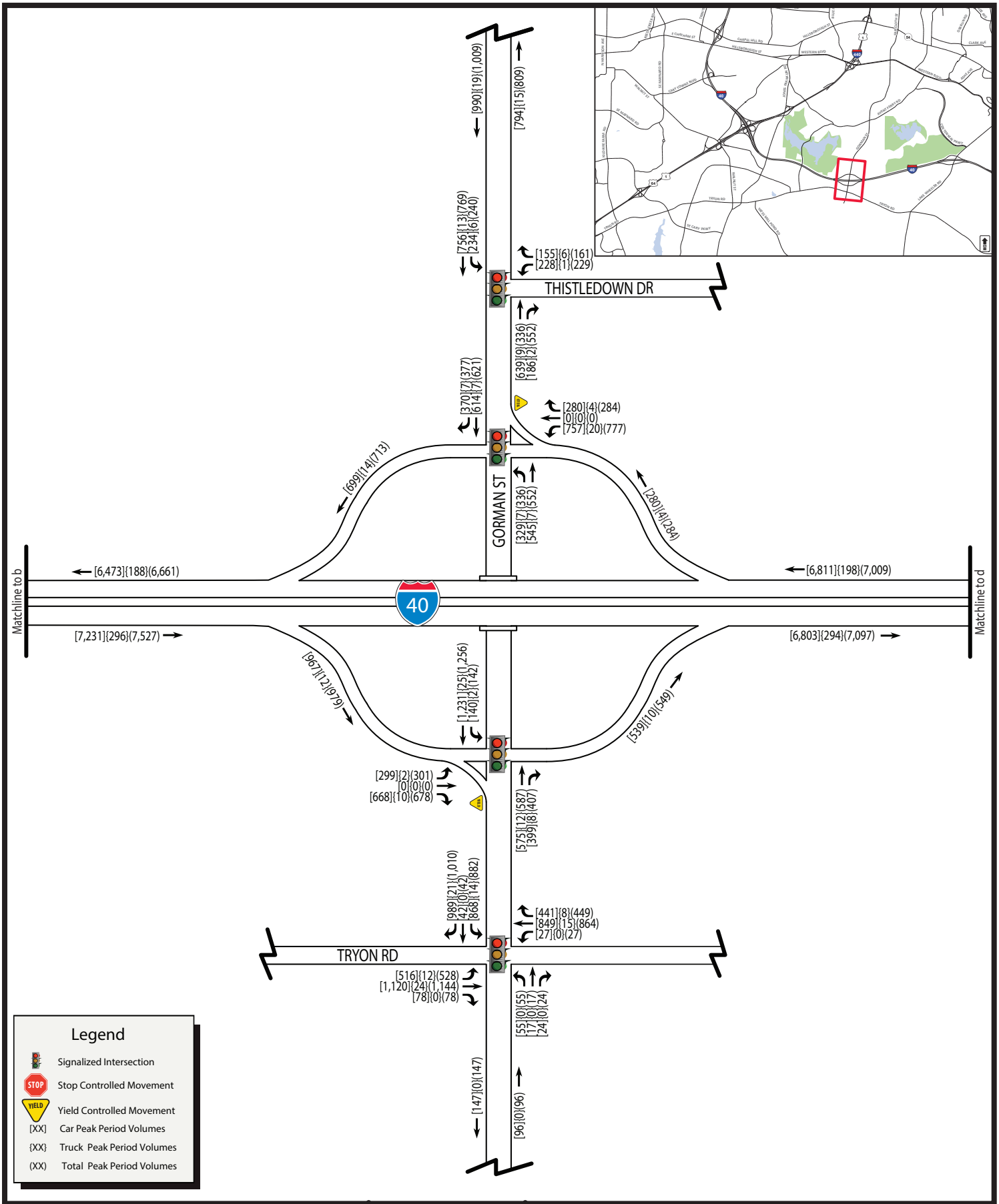
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 4pm-5pm

FIGURE 10b



I-5703_TOTM_2035NB_ALL_pm4-5.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

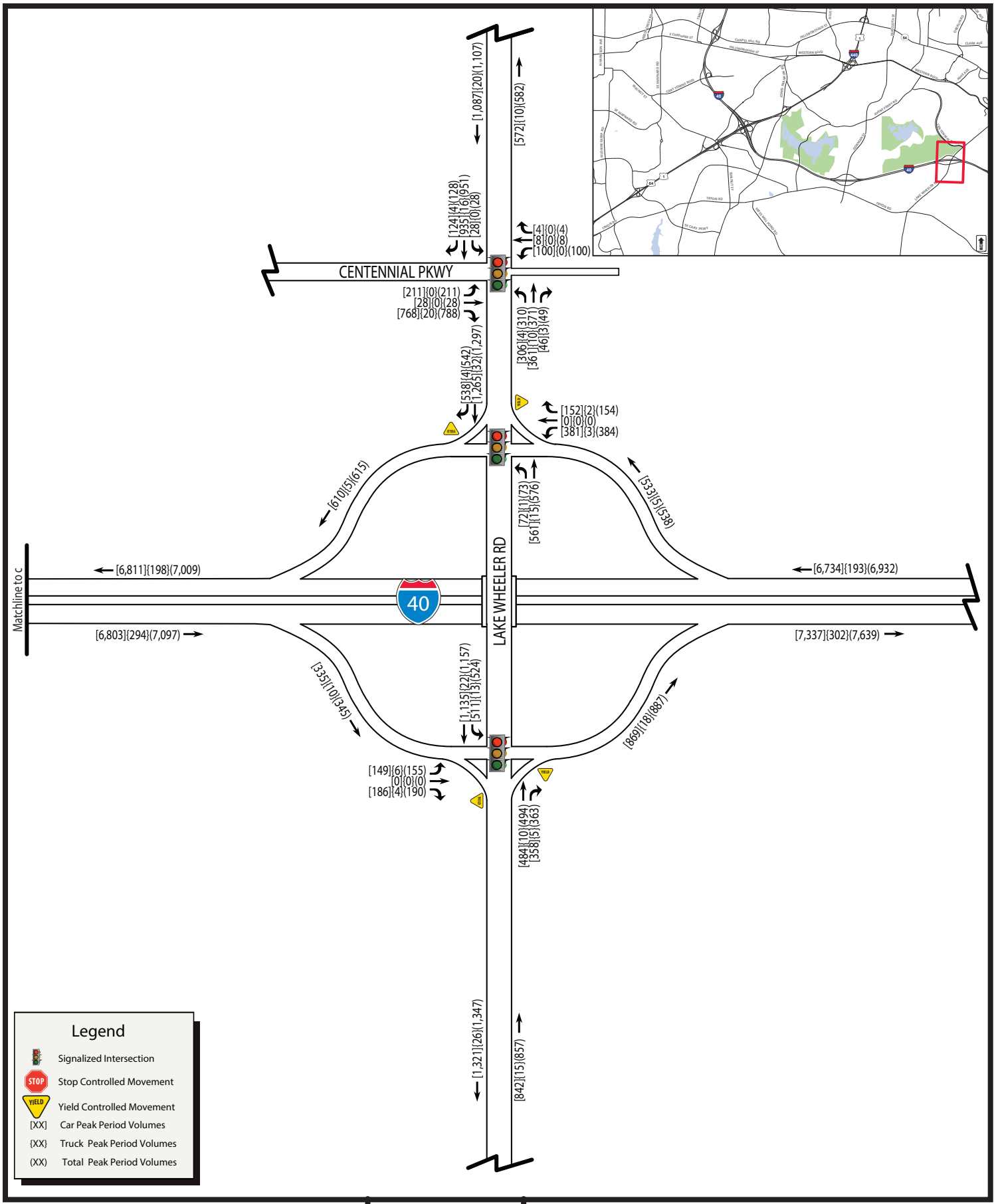
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 4pm-5pm

FIGURE 10c



I-5703_TOTM_2035NB_ALL_pm4-5.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

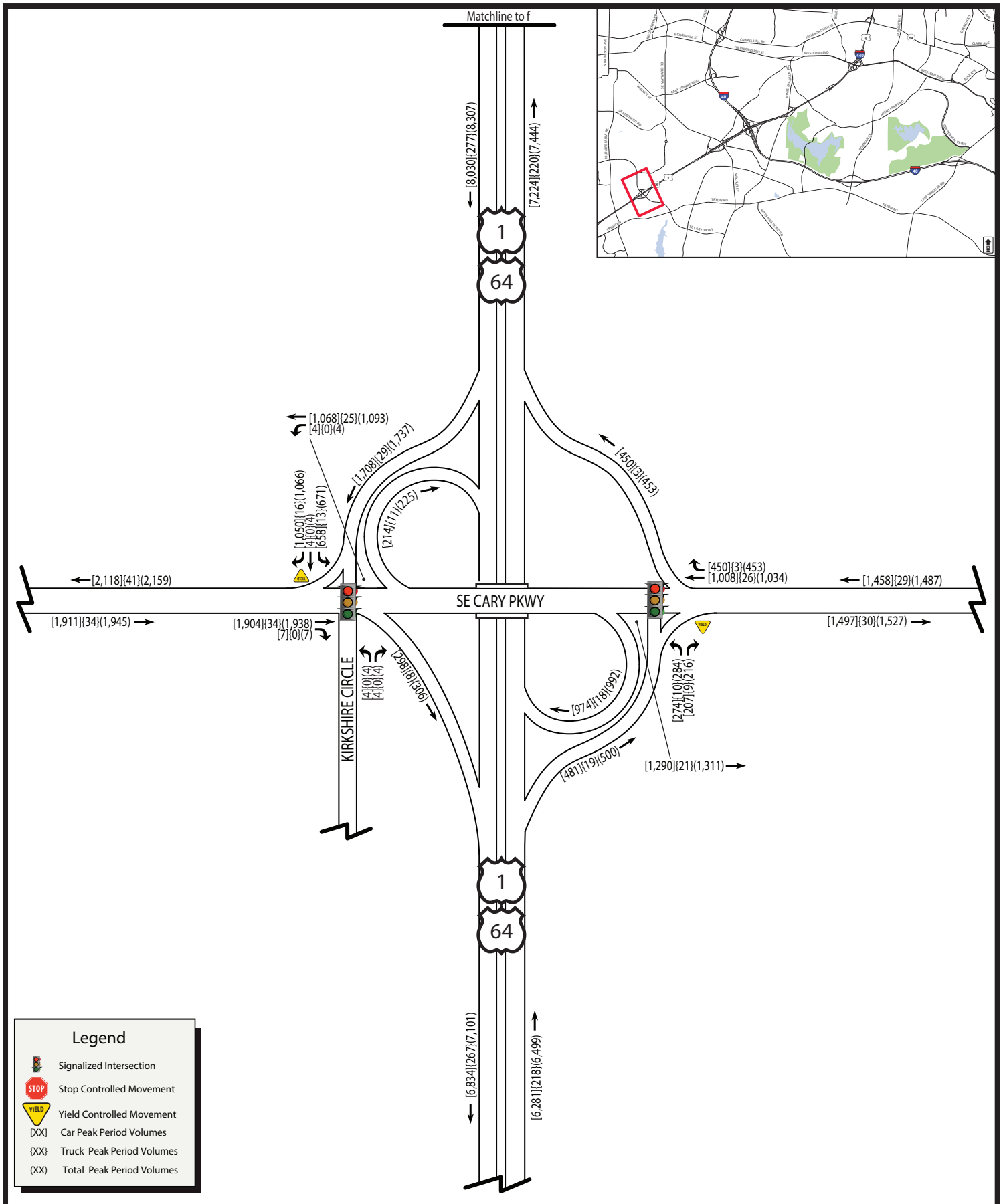
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 10d



I-5703_TOTM_2035NB_ALL_pm4-5.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

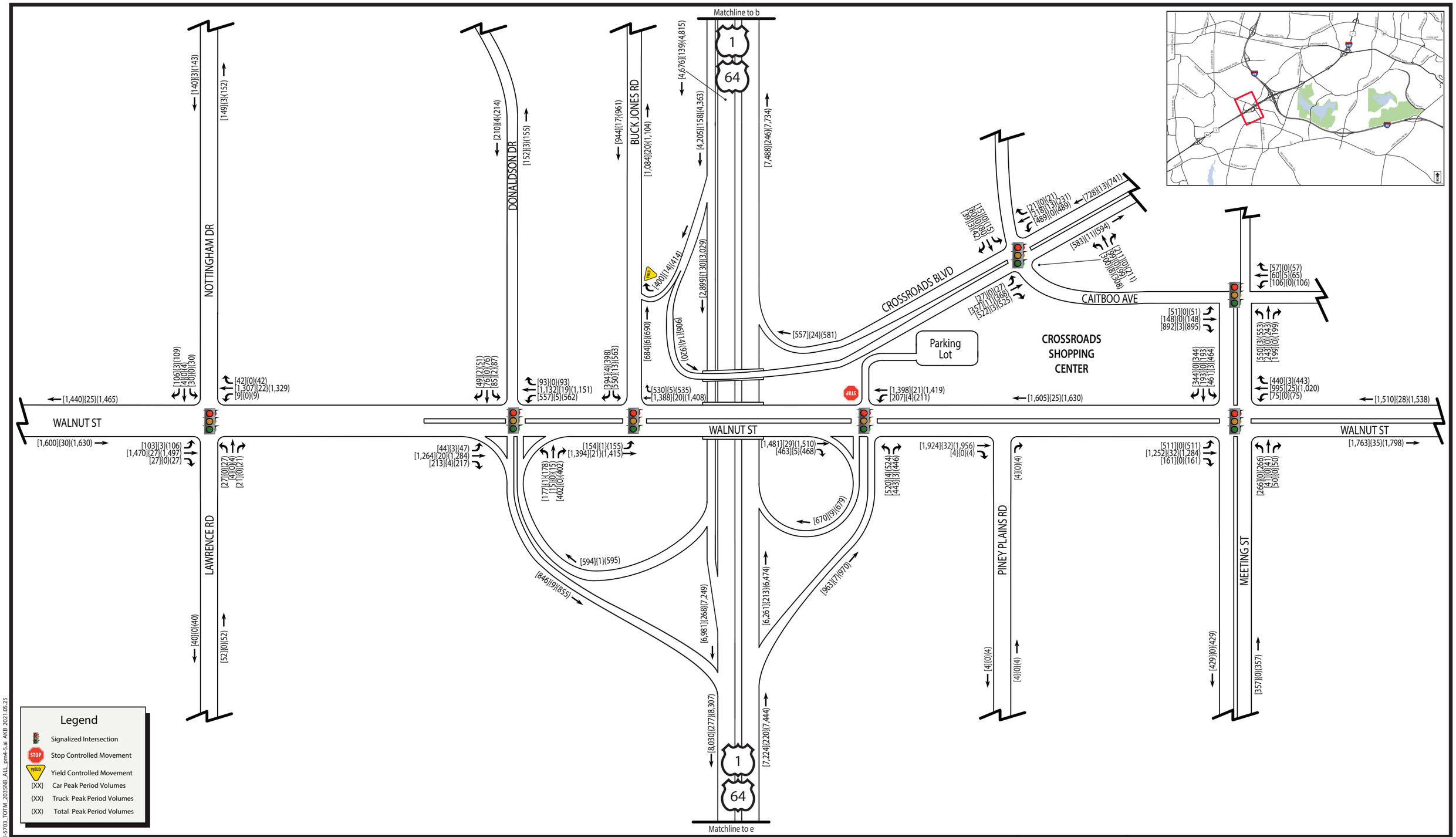
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 10e



I-5703_TOTM_2035NB_ALL_pm4-5.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

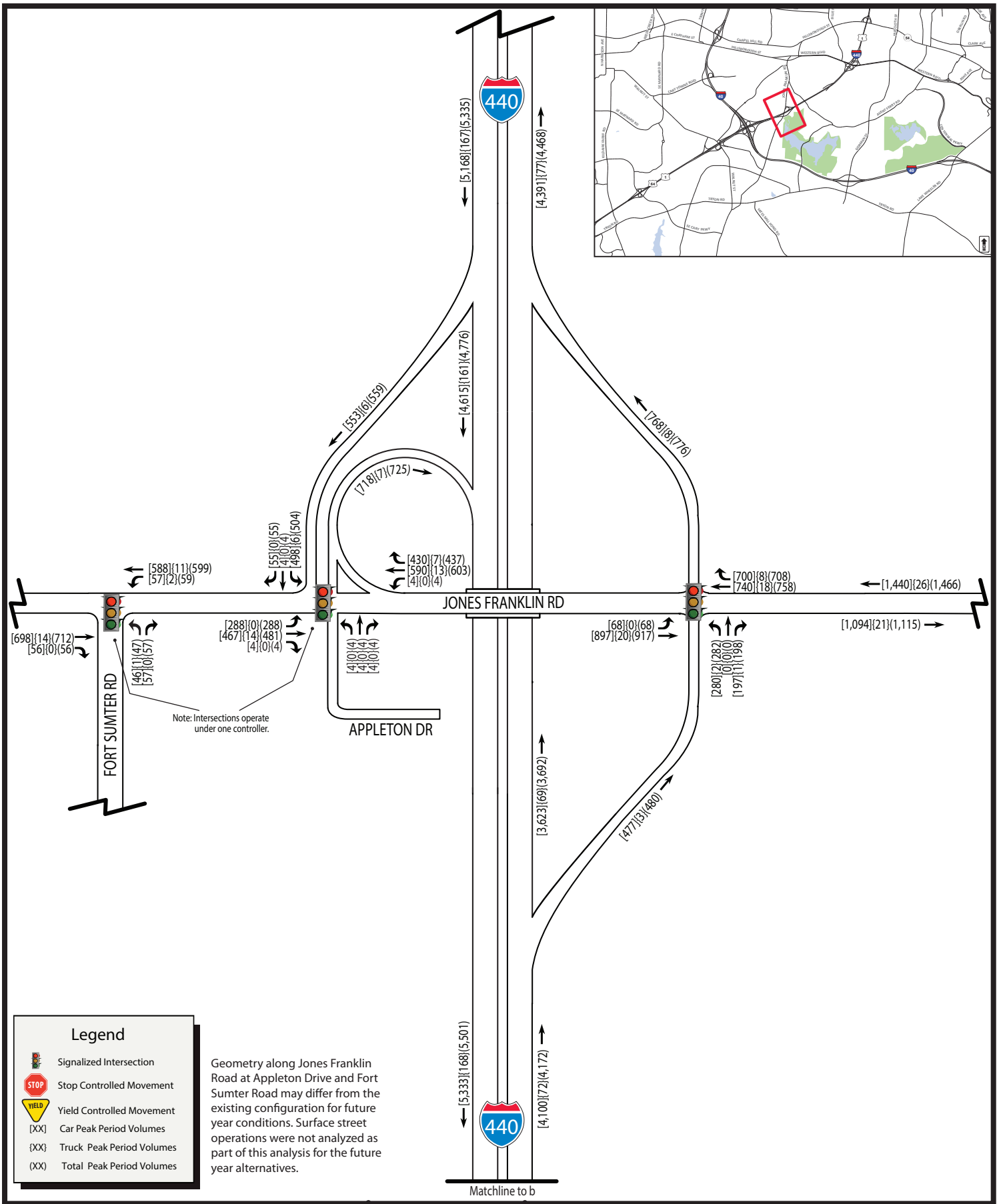
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 10f



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035NB_ALL_pm4-5.ai AKB 2021.05.25

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

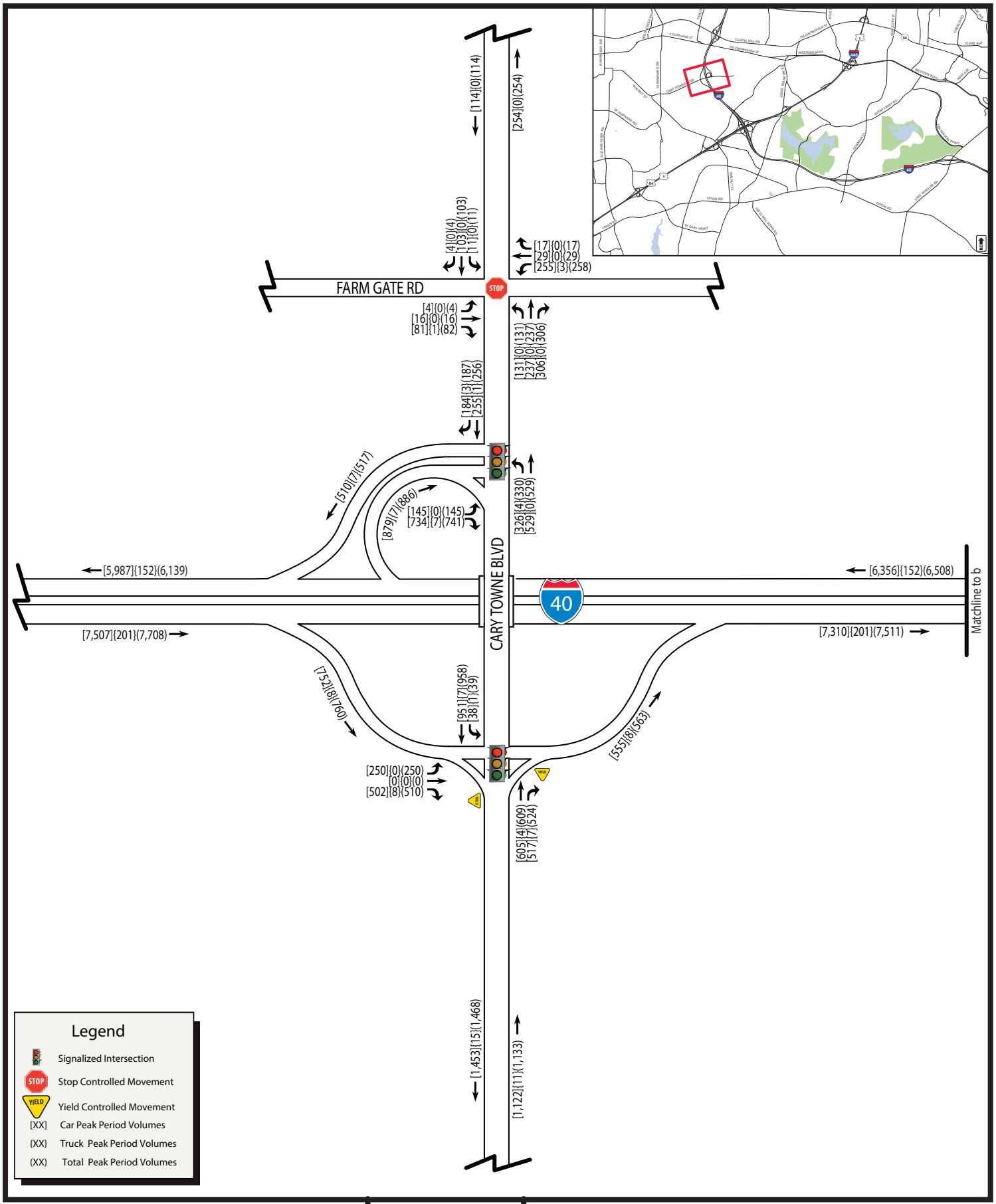
Wake County, North Carolina

N E W S

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 4pm-5pm

FIGURE 10g



I-5703_TOTM_2035NB_ALL_pm5-6.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

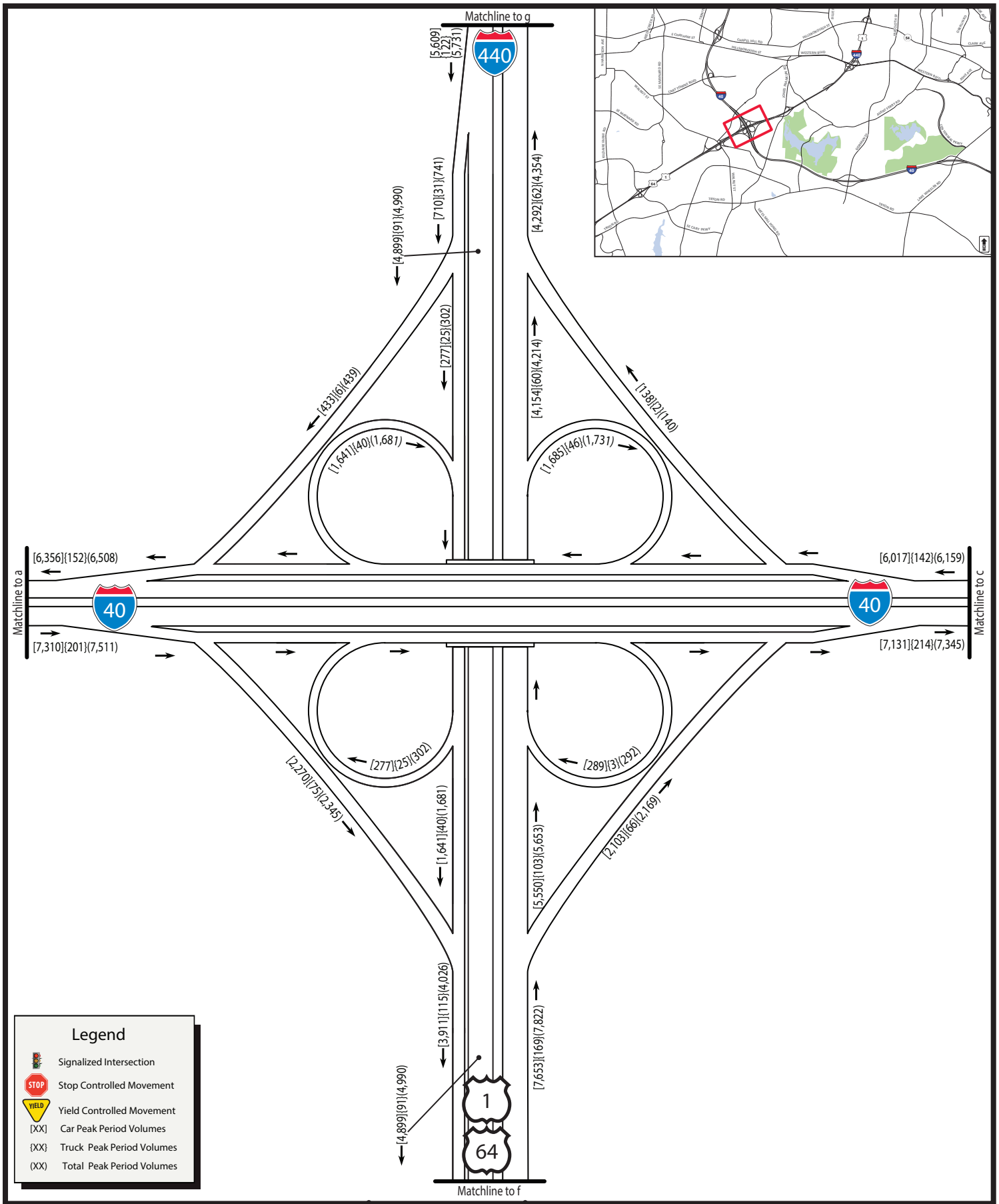
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 10a



I-5703_TOTM_2035NB_ALL_pm5-6.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

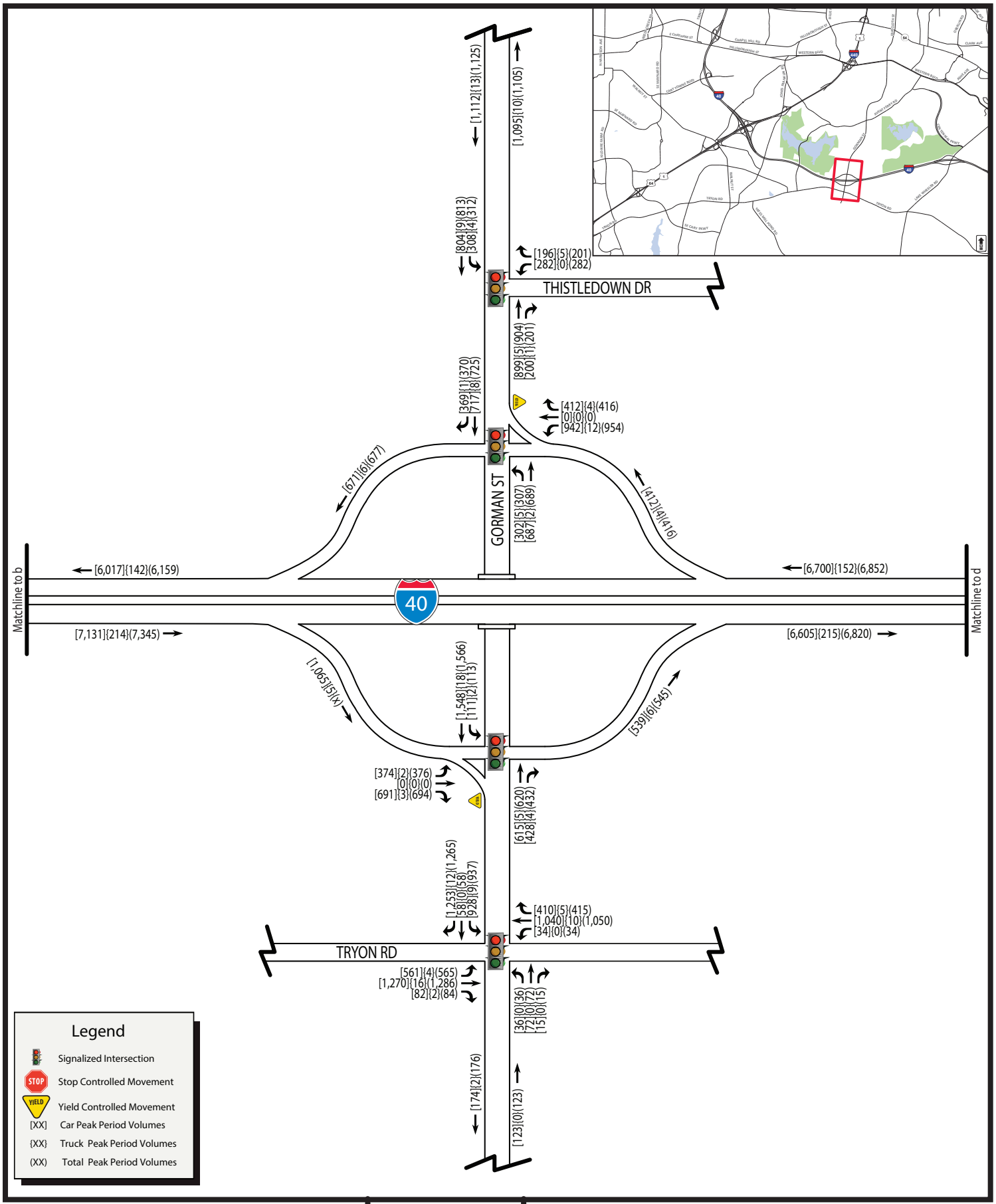
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 10b

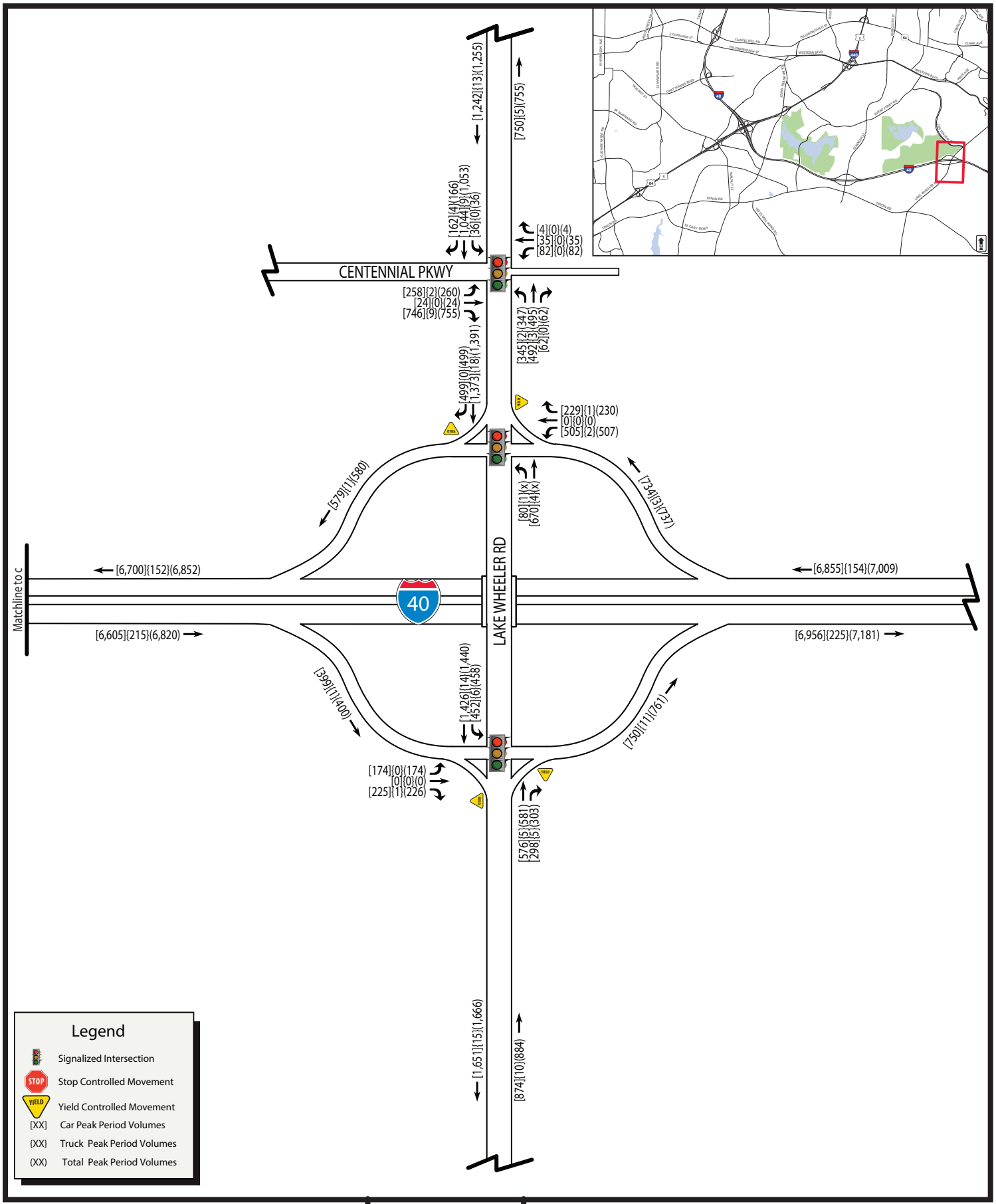


I-5703_TOTM_2035NB_ALL_pm5-6.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64
Interchange Reconstruction
STIP PROJECT NO. I-5703
Wake County, North Carolina

N E S W
Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm
FIGURE 10c



I-5703_TOTM_2035NB_ALL_pm5-6.ai AKB 2021.05.25

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

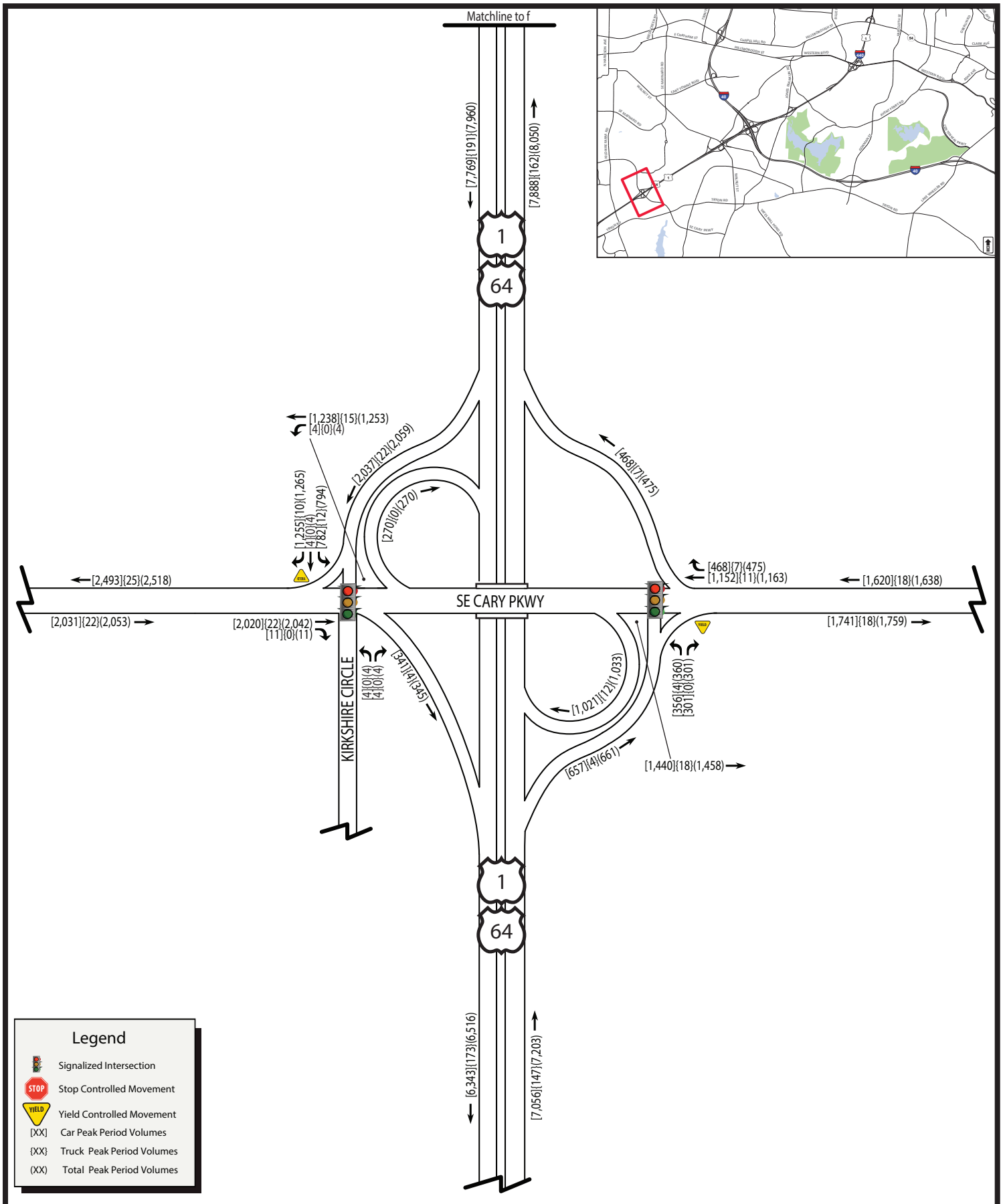
Wake County, North Carolina

N W E S

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 10d



I-5703_TOTM_2035NB_ALL_pm5-6.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

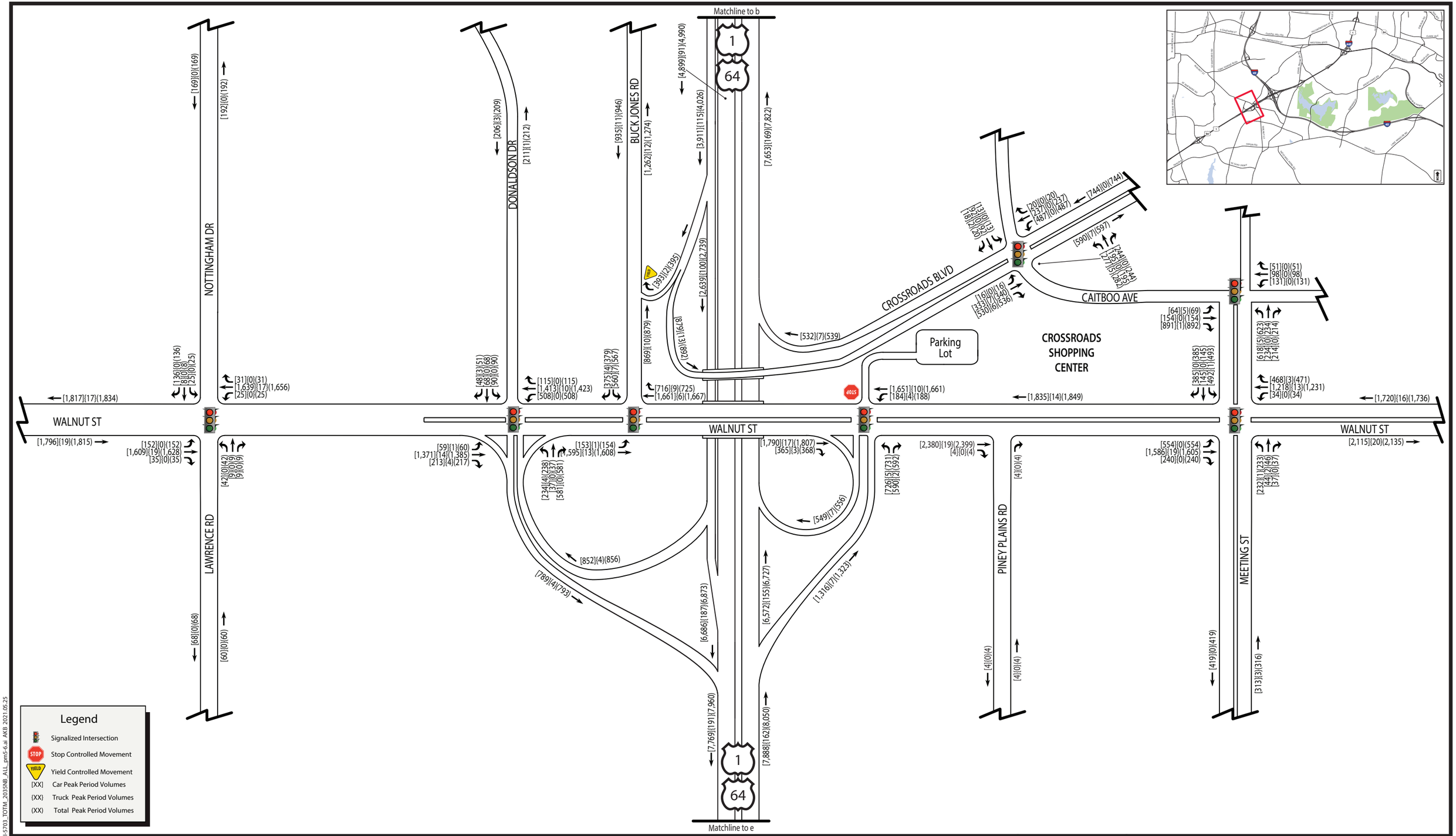
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 5pm-6pm

FIGURE 10e



I-5703_TOTM_2035NB_ALL_pms5-6.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

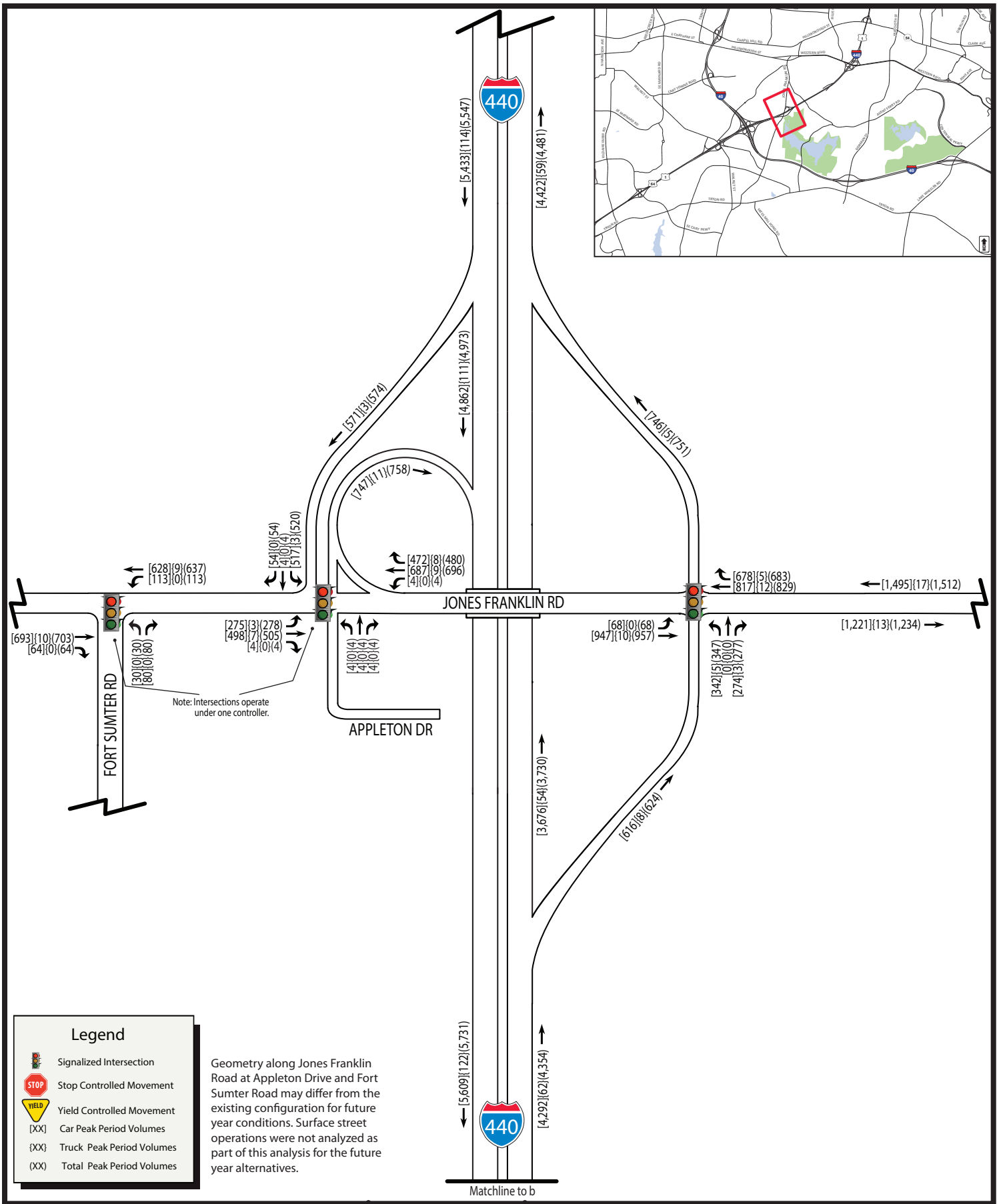
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 5pm-6pm

FIGURE 10f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

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I-5703_TOTM_2035NB_ALL_pm5-6.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

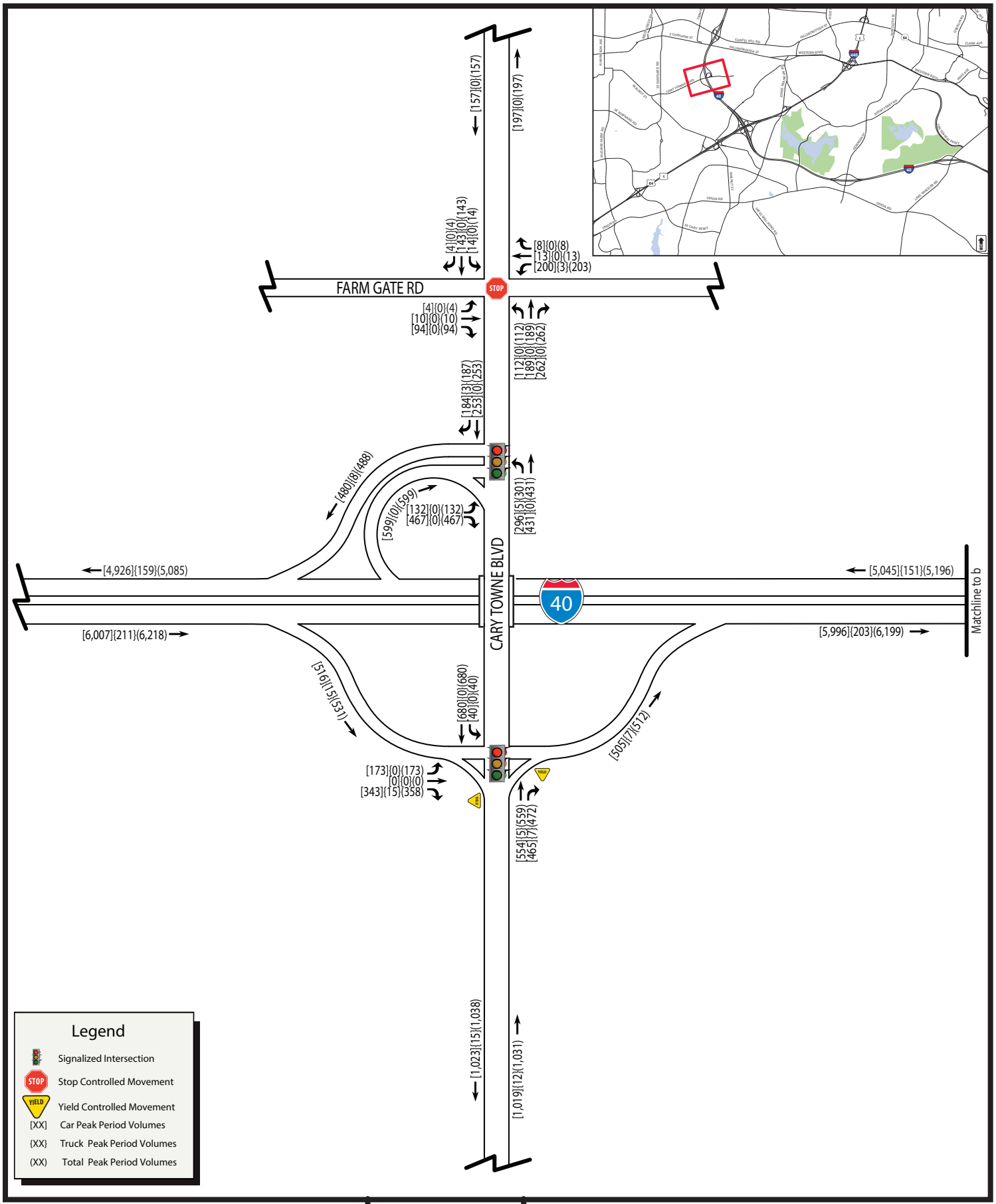
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE 2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 5pm-6pm

FIGURE 10g



I-5703_TOTM_2035NB_ALL_pm6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

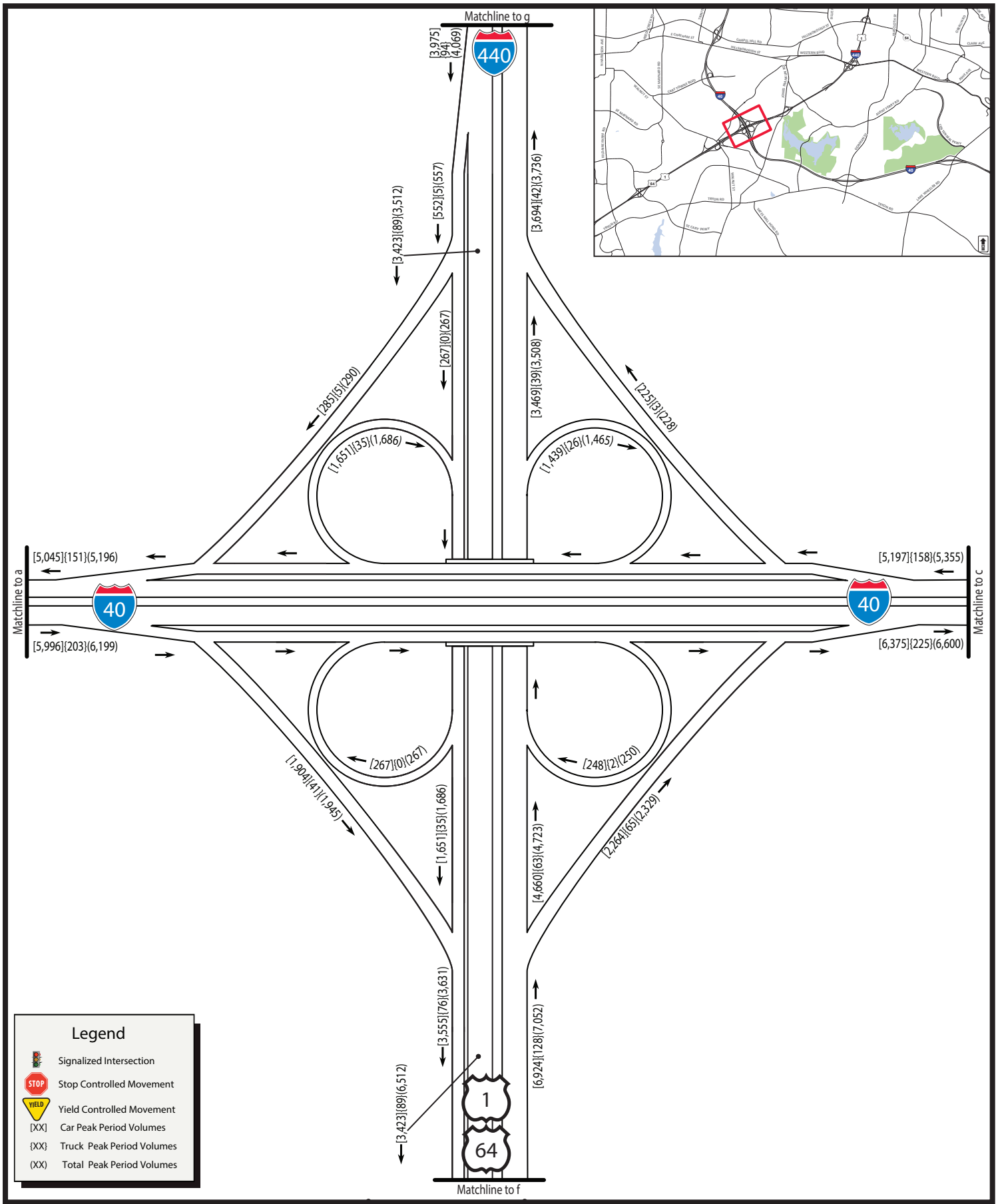
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 10a



I-5703_TOTM_2035NB_ALL_pm6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

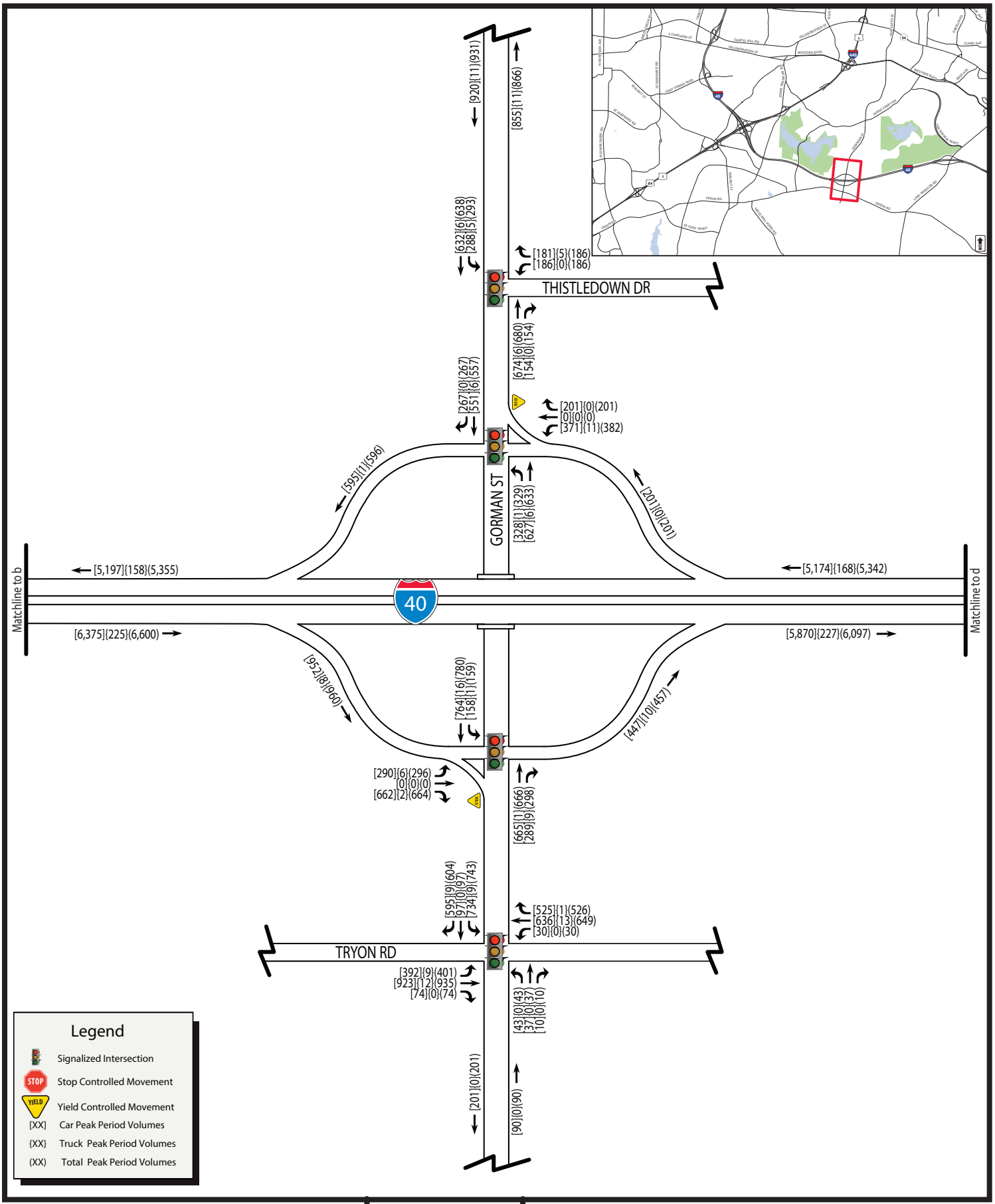
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 10b



I-5703_TOTM_2035NB_ALL_pm6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

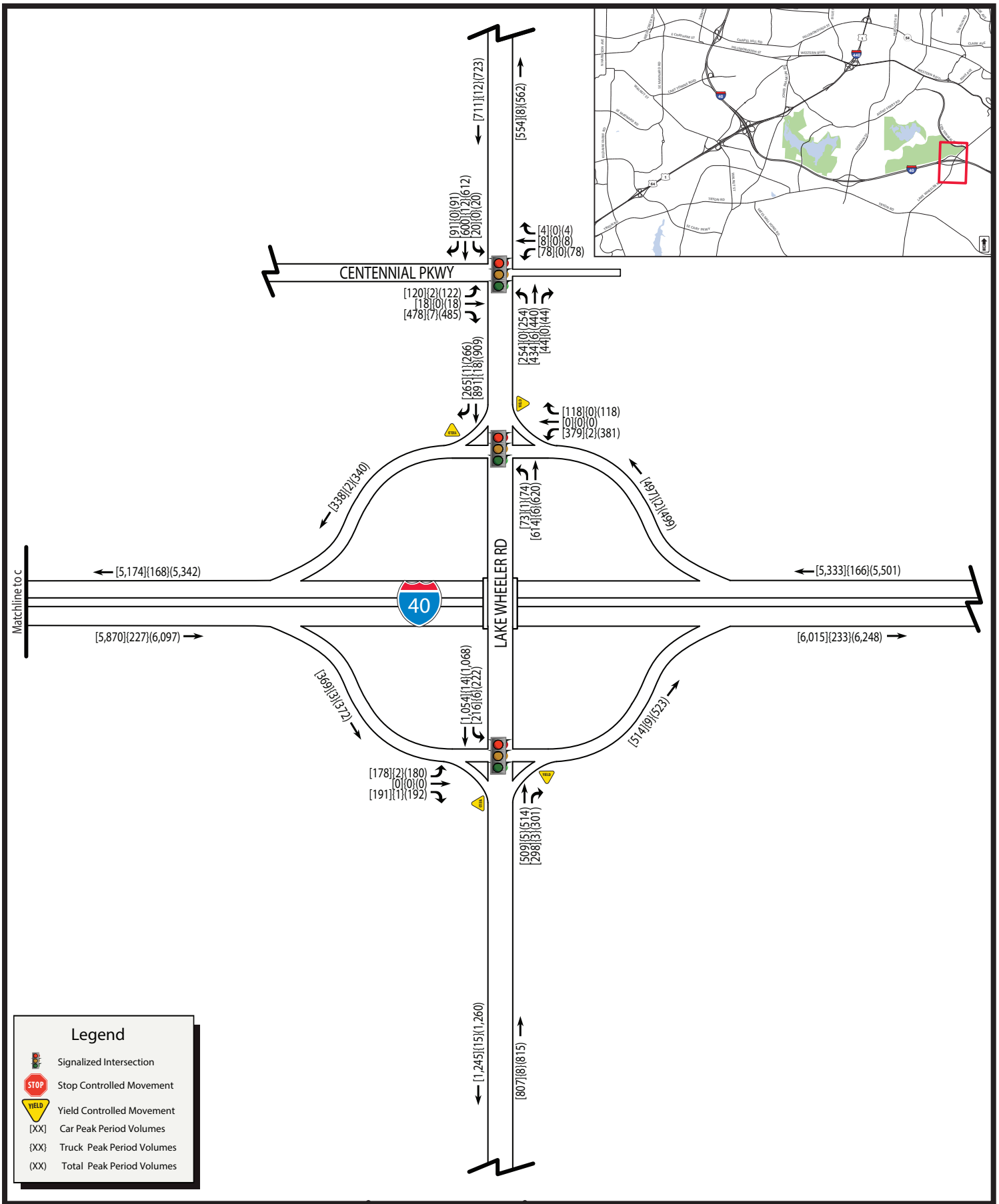
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6pm-7pm

FIGURE 10c



I-5703_TOTM_2035NB_ALL_pm6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

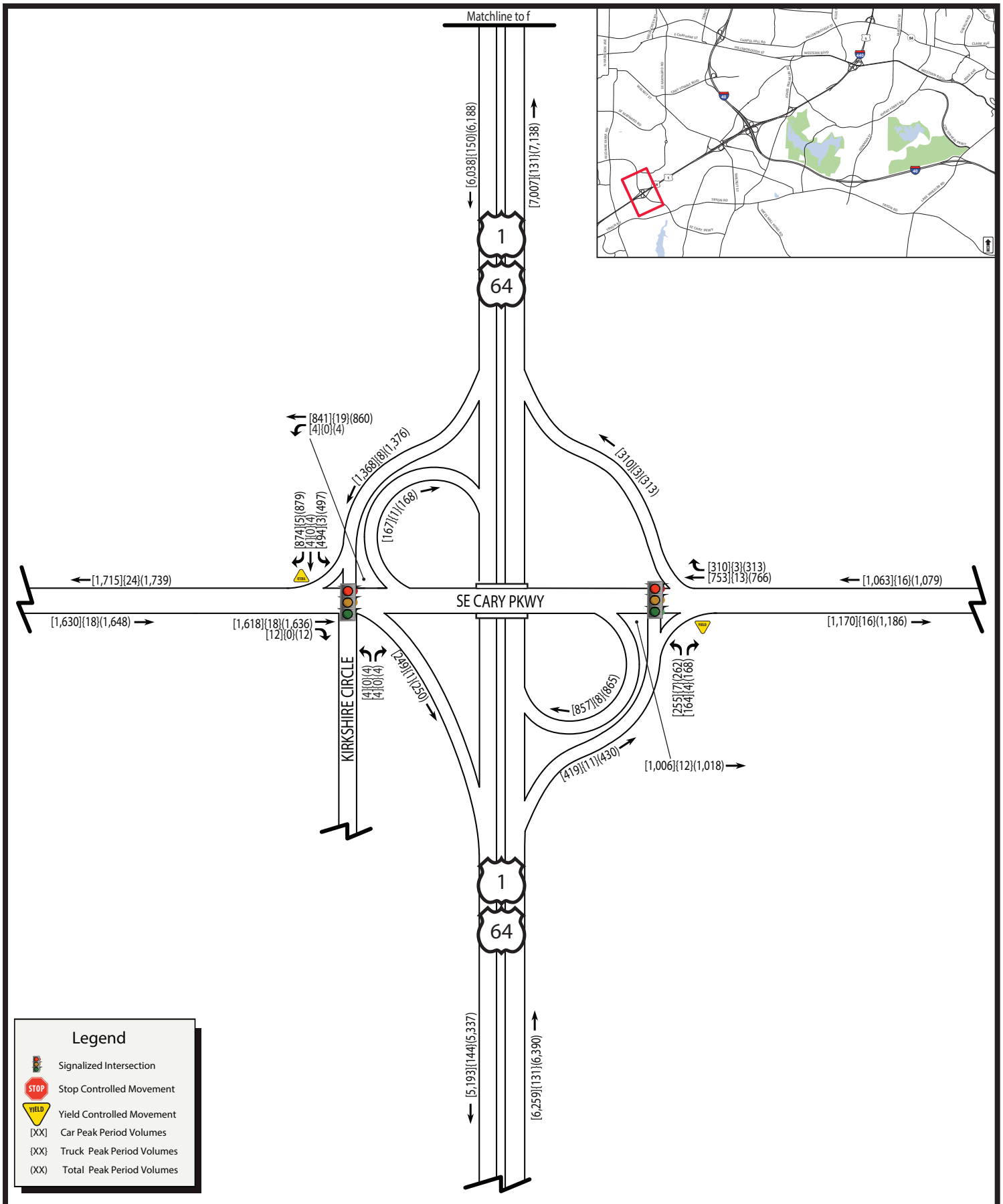
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 10d



I-5703_TOTM_2035NB_ALL_pm6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

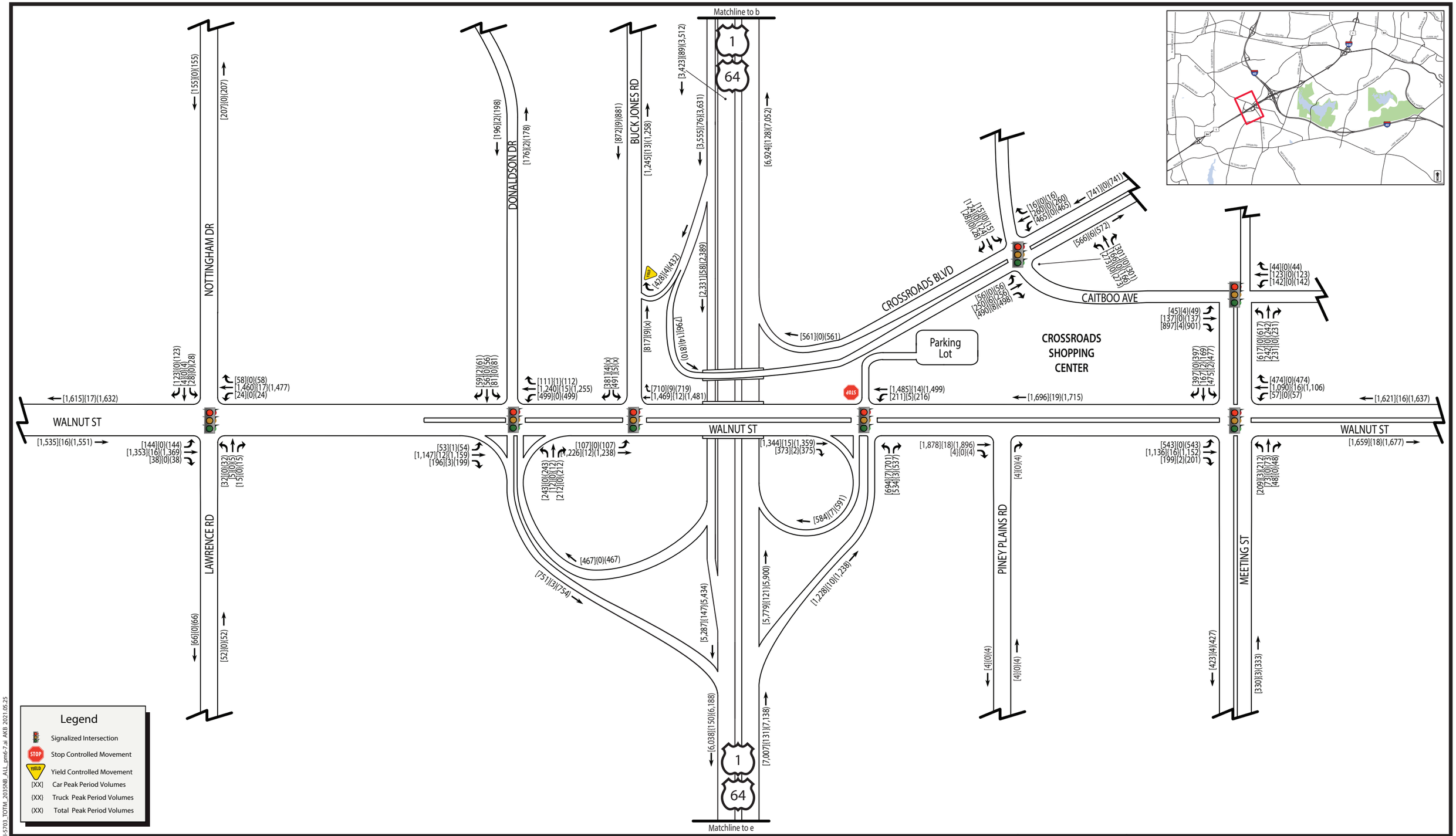
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 10e



I-5703_TOTM_2035NB_ALL_pm6-7.ai AKB 2021.05.25

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

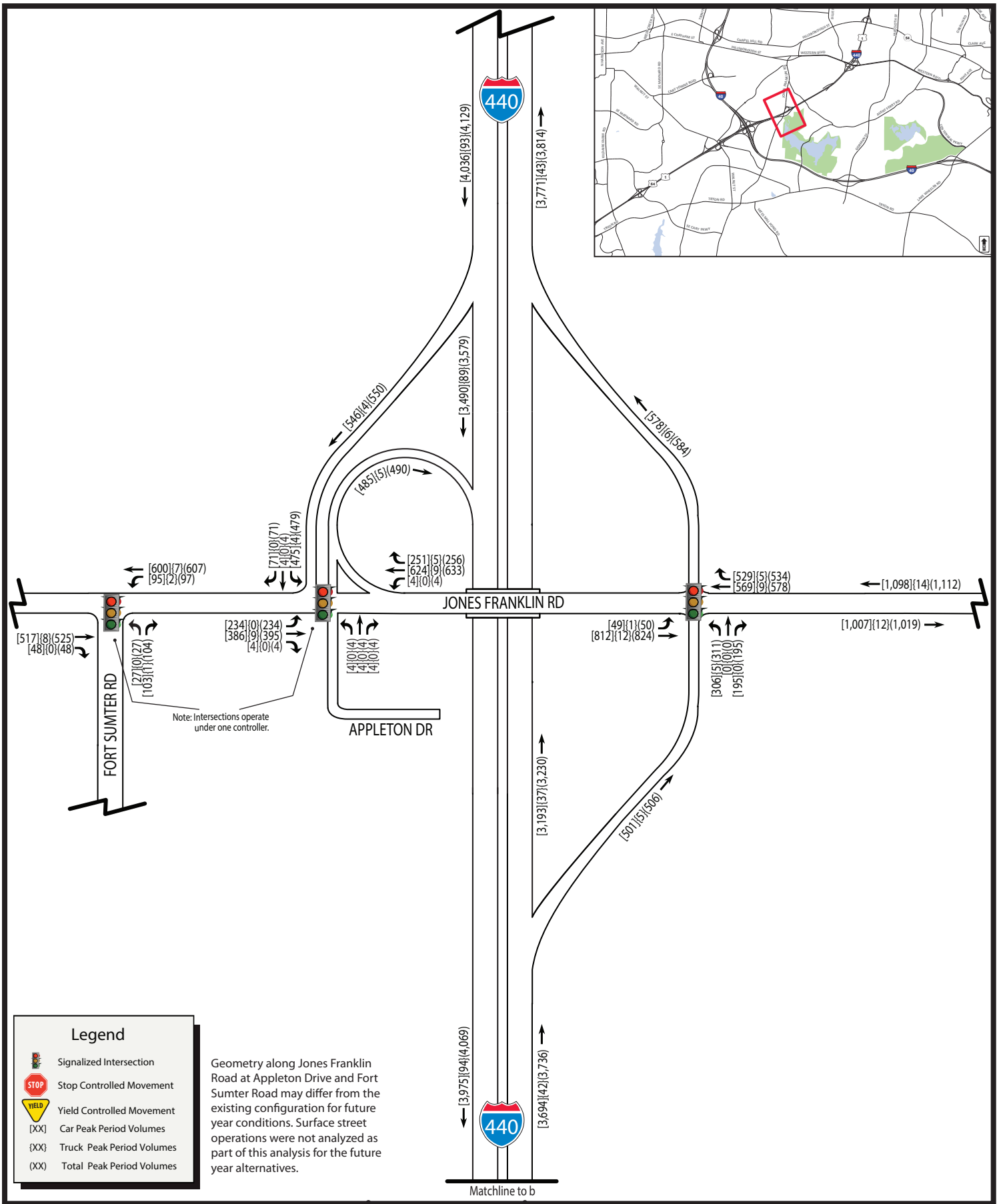
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 10f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035NB_ALL_pm6-7.ai AKB 2021.05.25

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

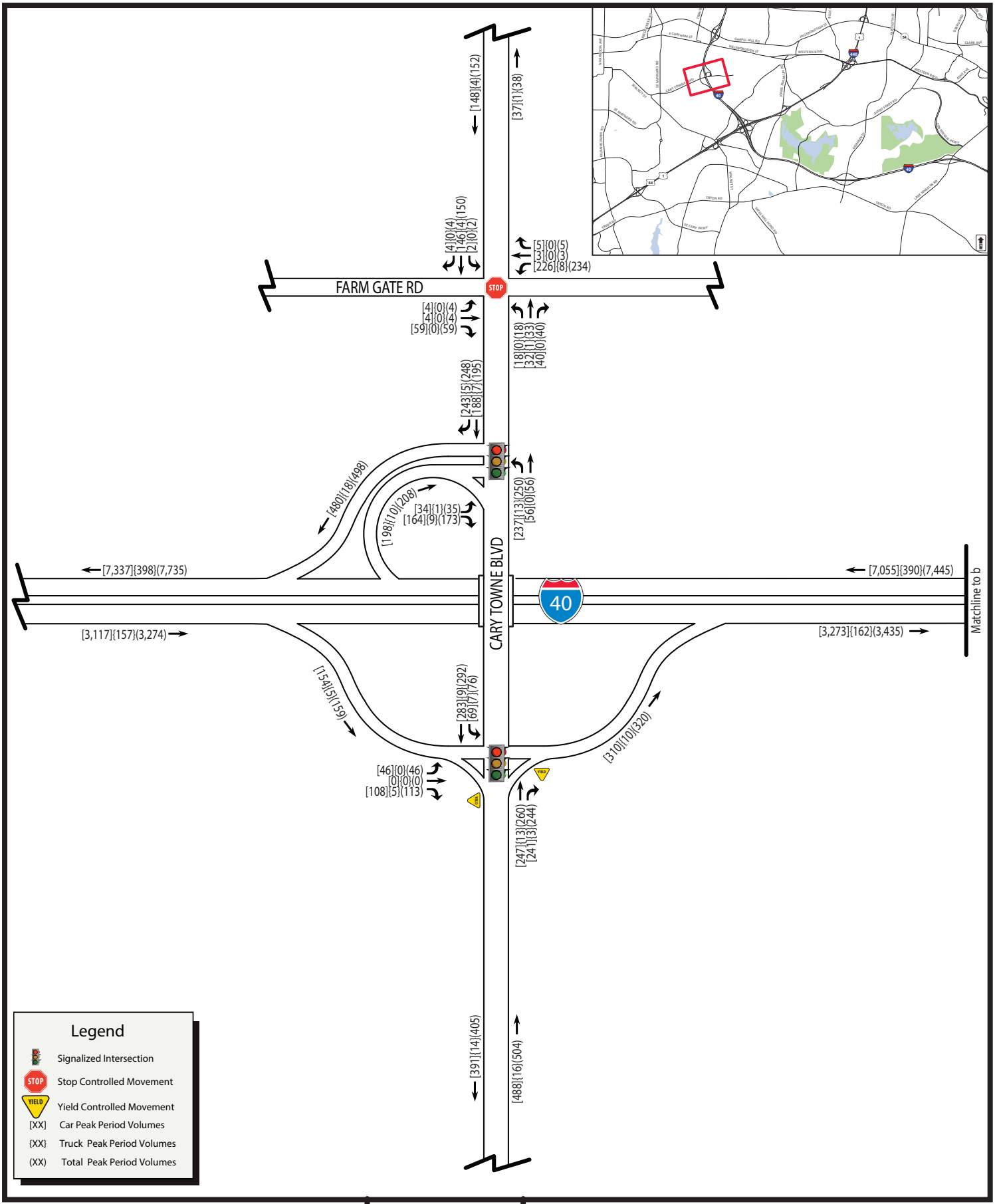
Wake County, North Carolina

N E S W

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2035 NO-BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6pm-7pm

FIGURE 10g



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

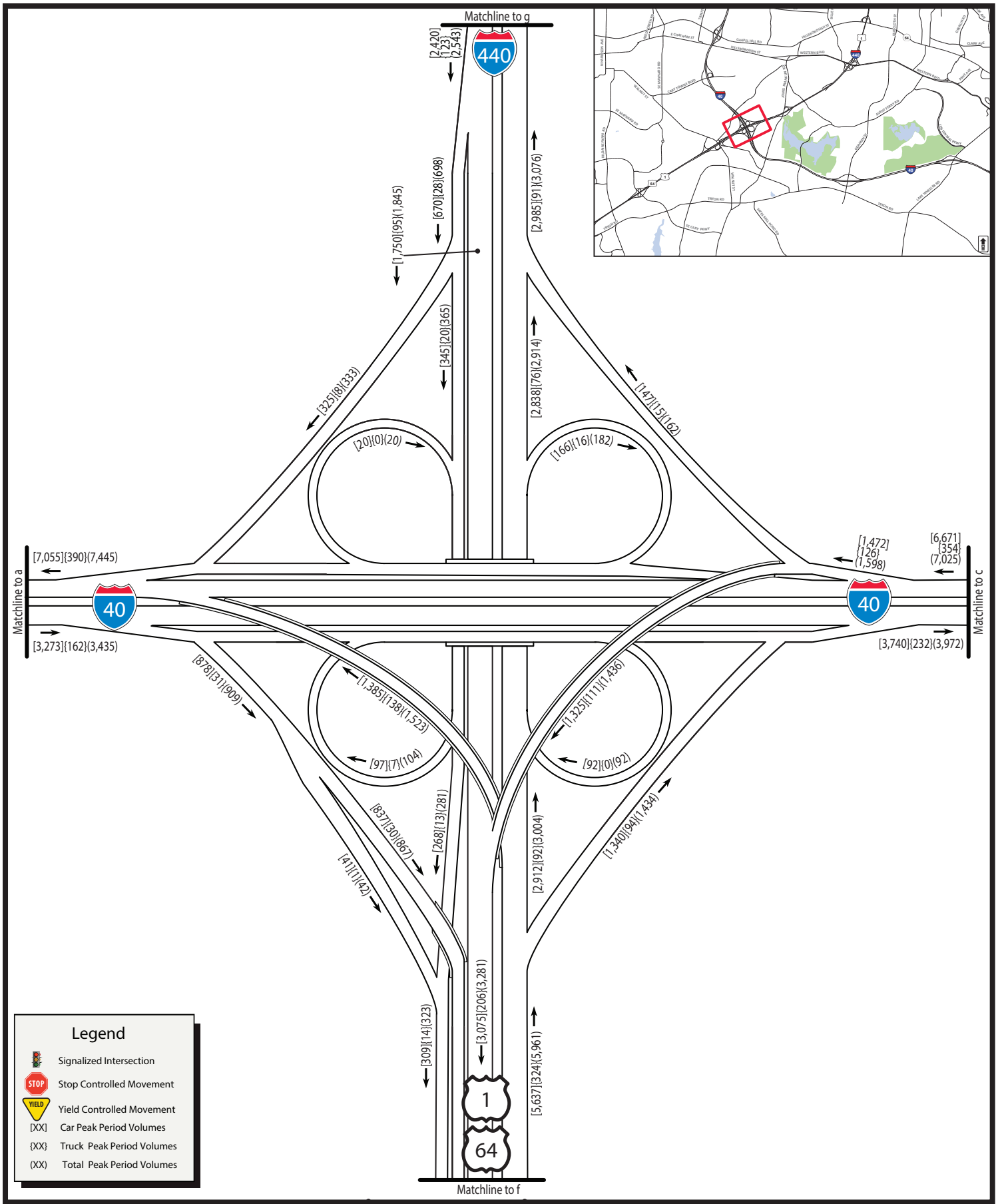
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 11a



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

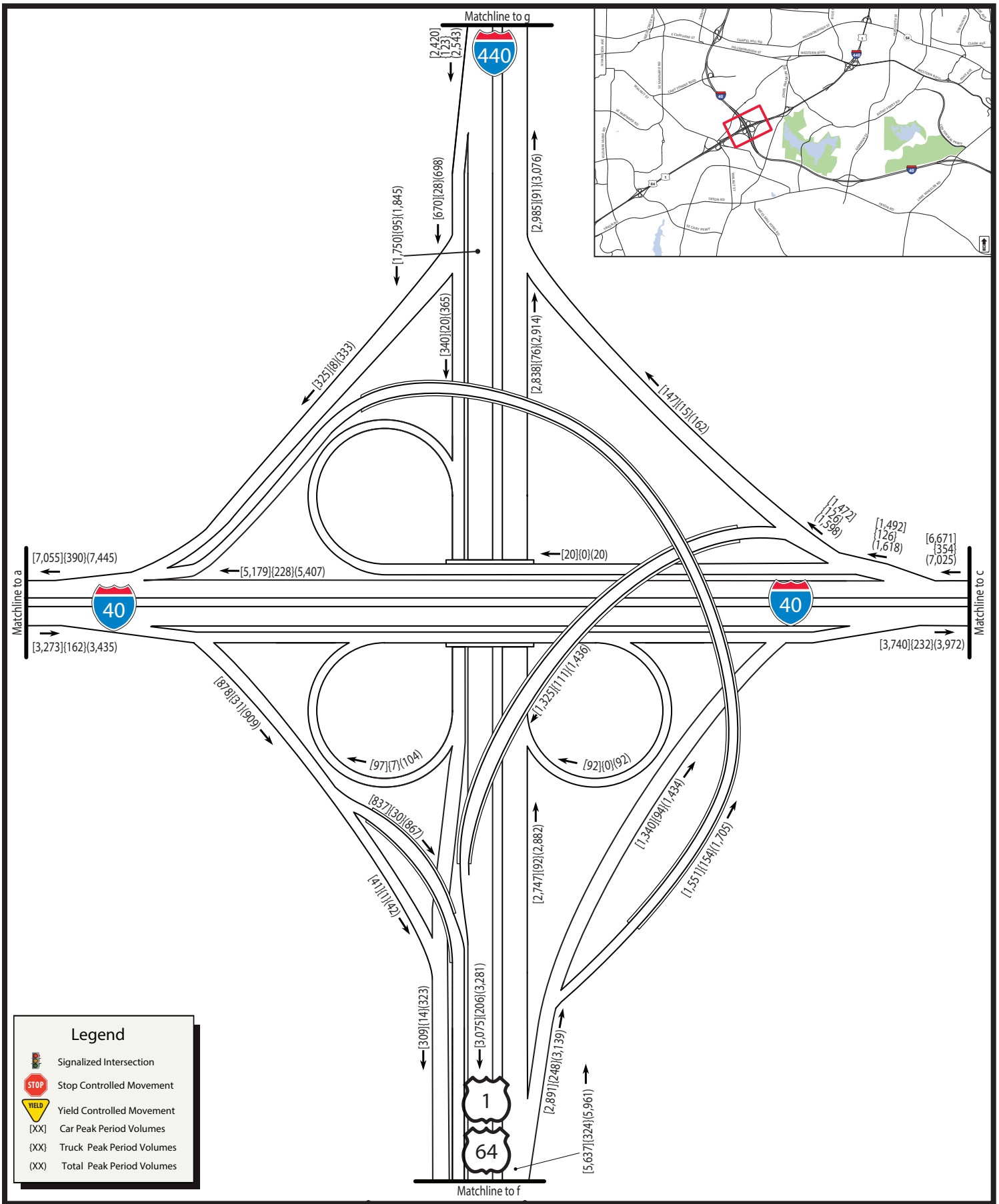
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6am-7am

FIGURE 11b-Alt 1



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

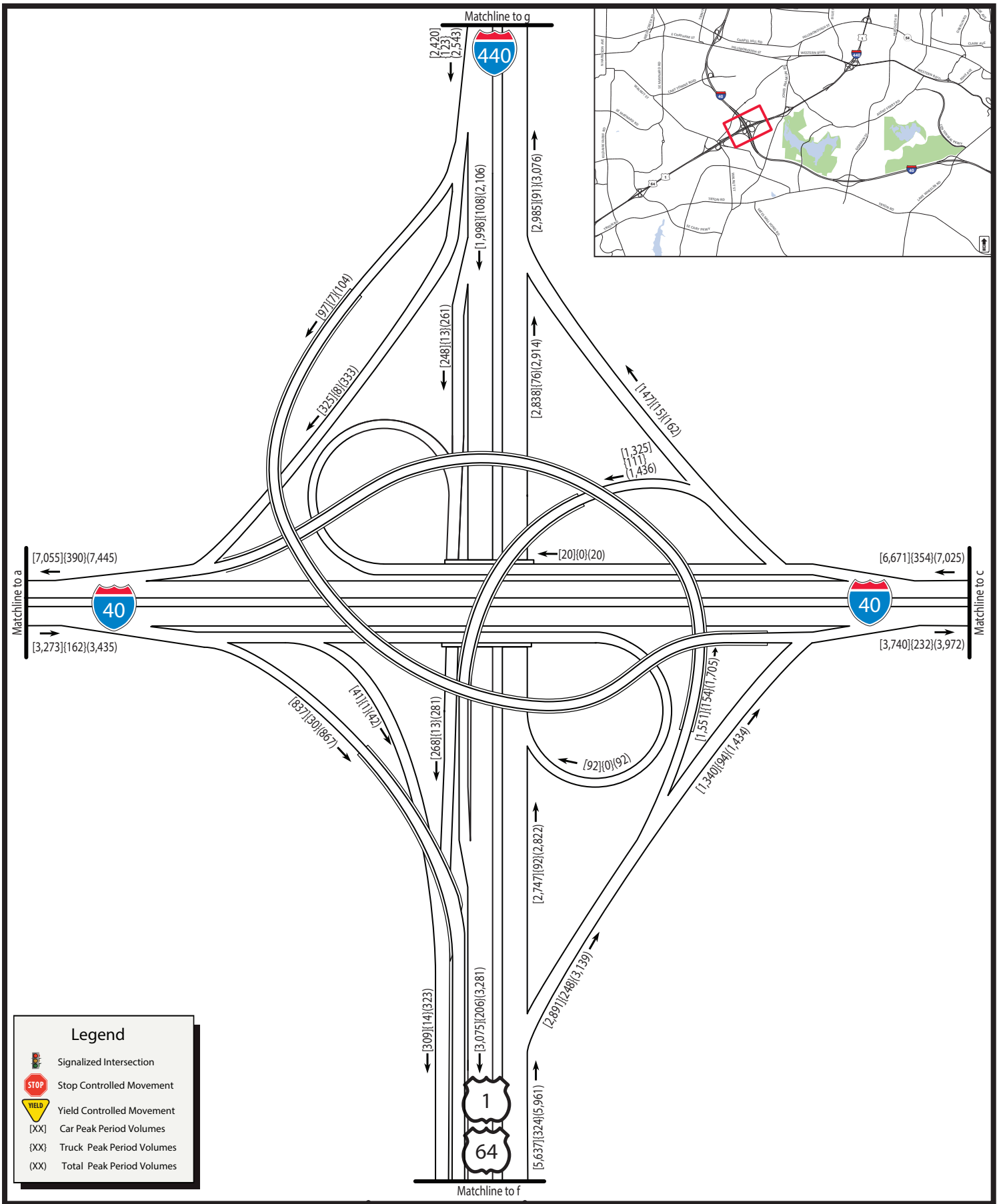
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6am-7am

FIGURE 11b-Alt 2



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

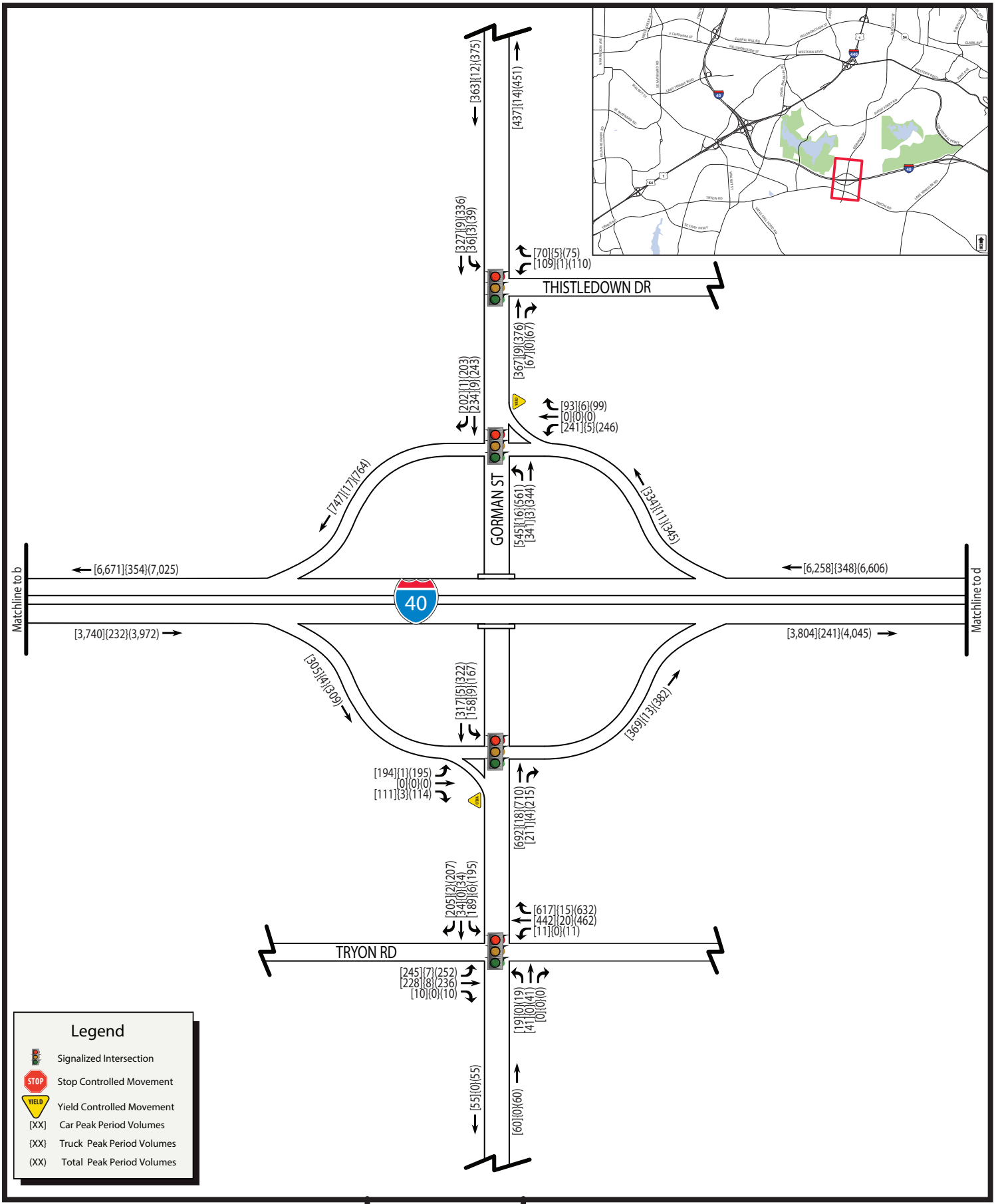
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6am-7am

FIGURE 11b-Alt 3



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

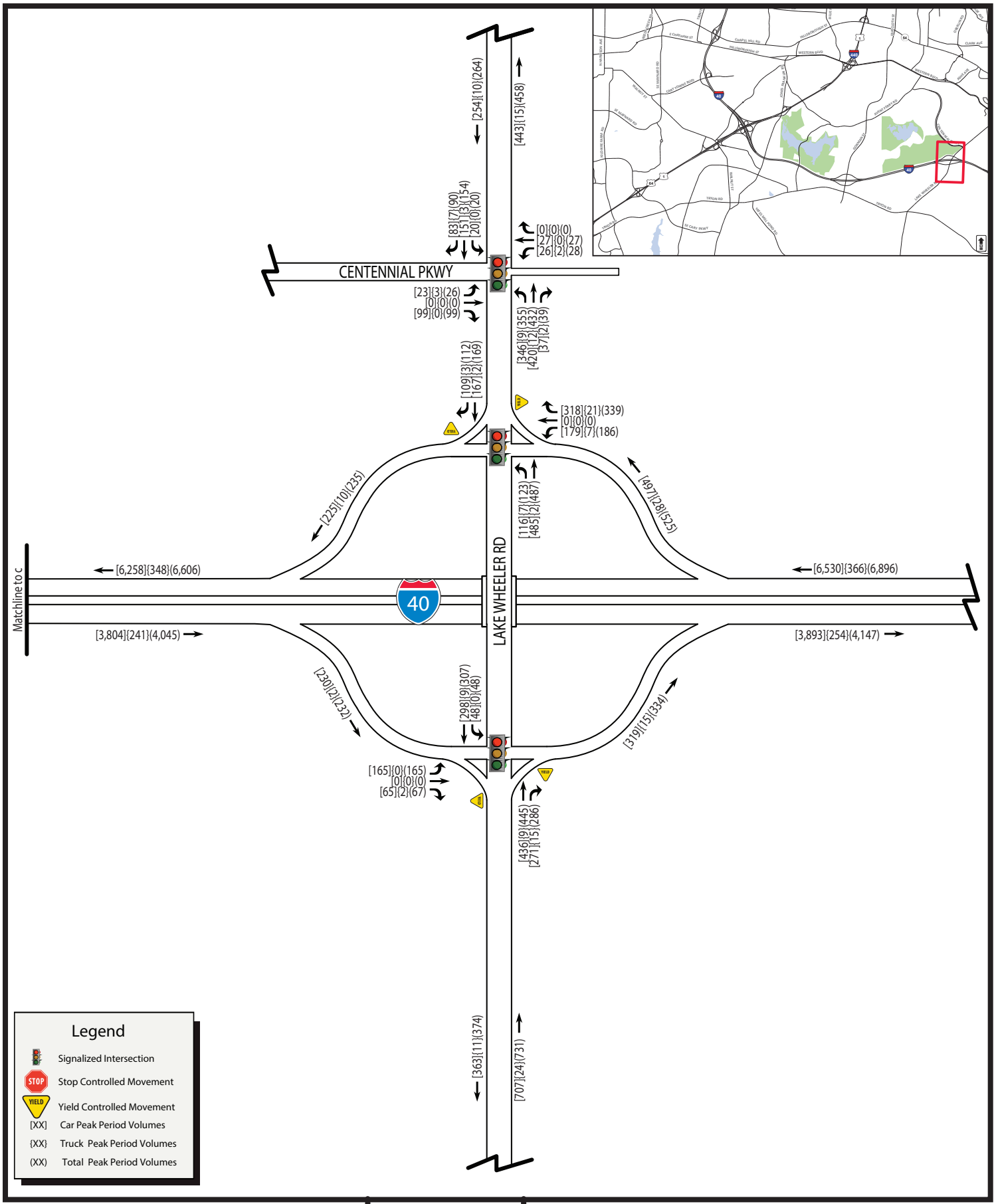
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6am-7am

FIGURE 11c



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

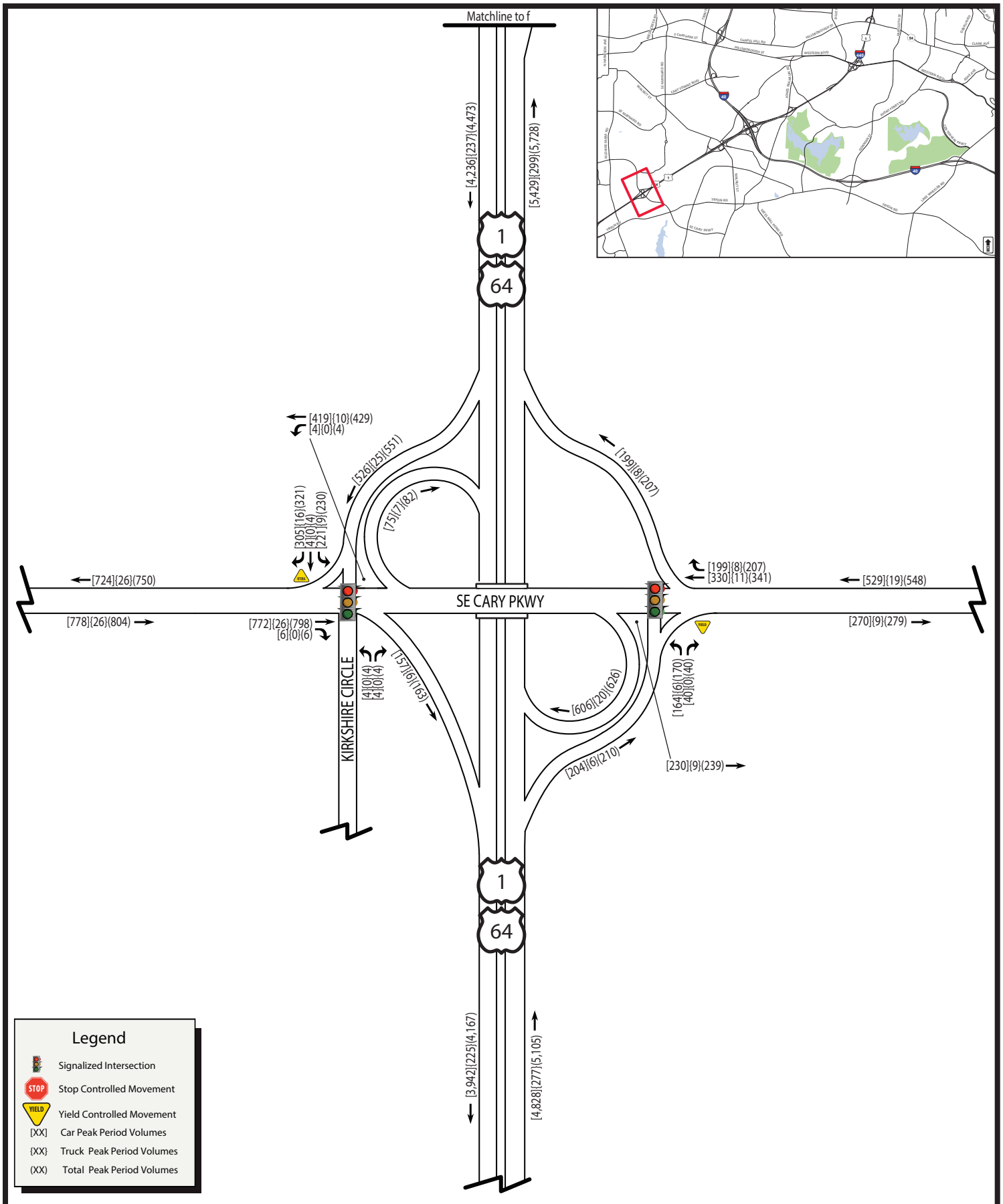
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6am-7am

FIGURE 11d



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

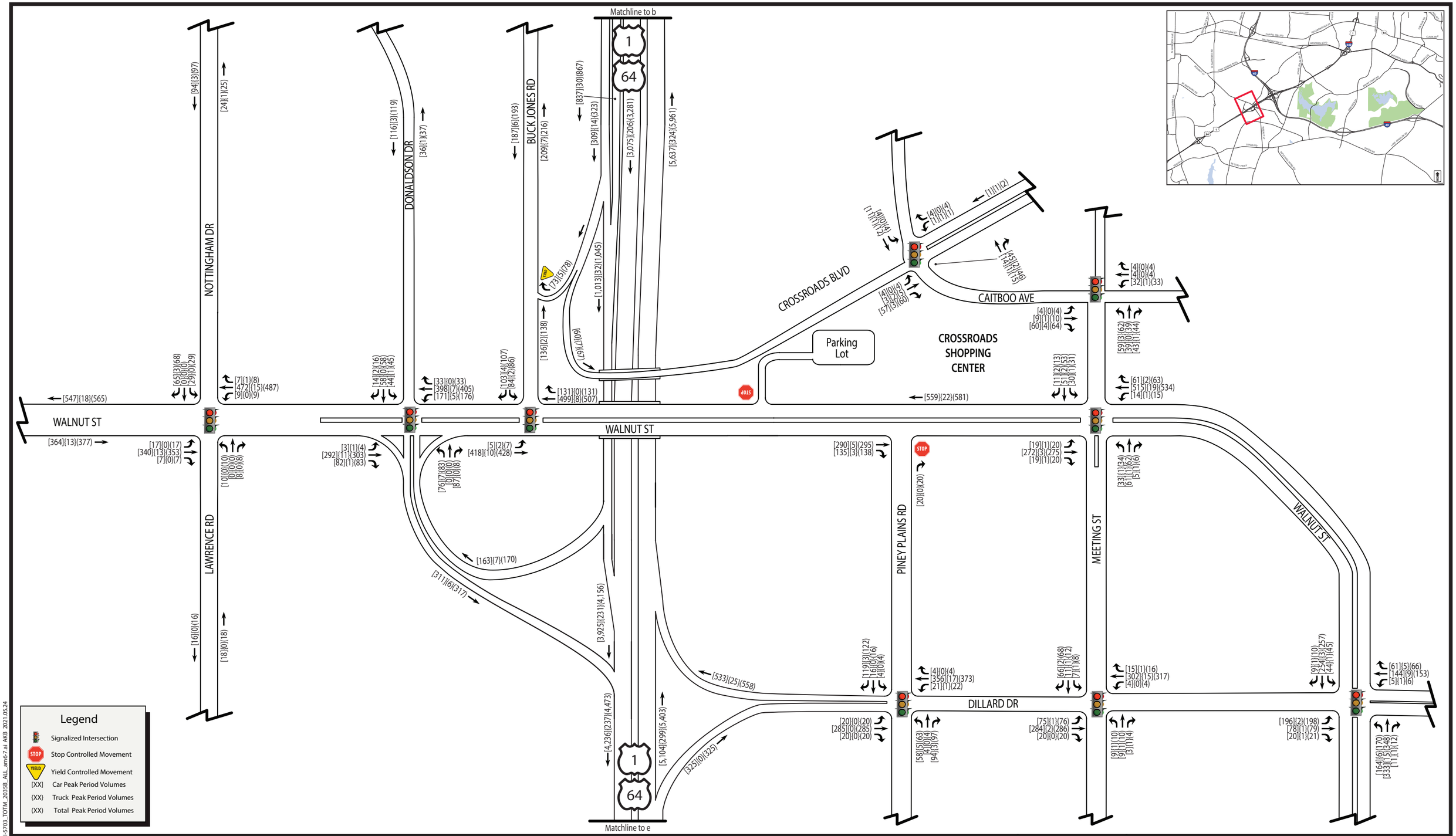
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6am-7am

FIGURE 11e



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2035B_ALL_am-6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

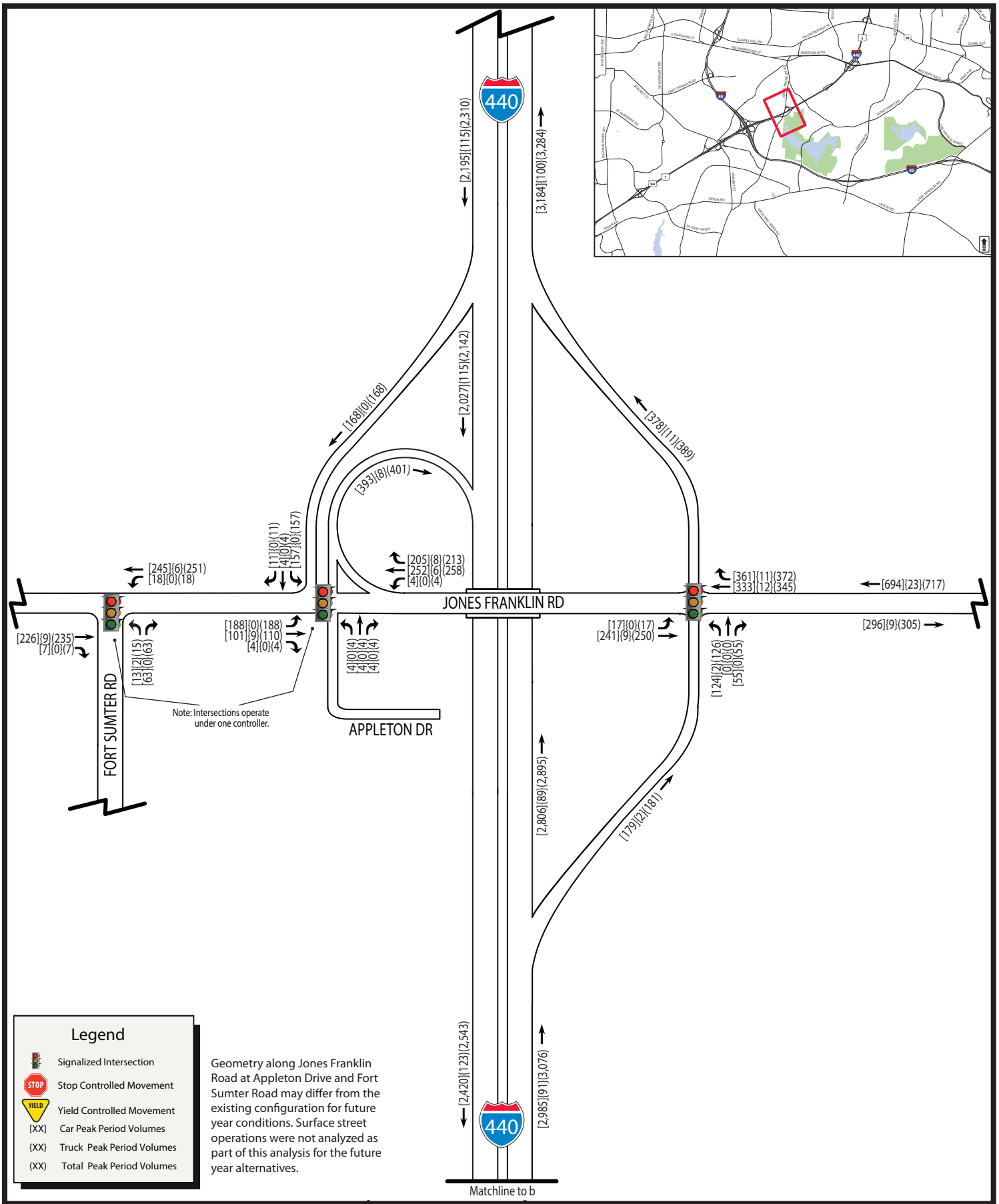
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 11f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

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I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

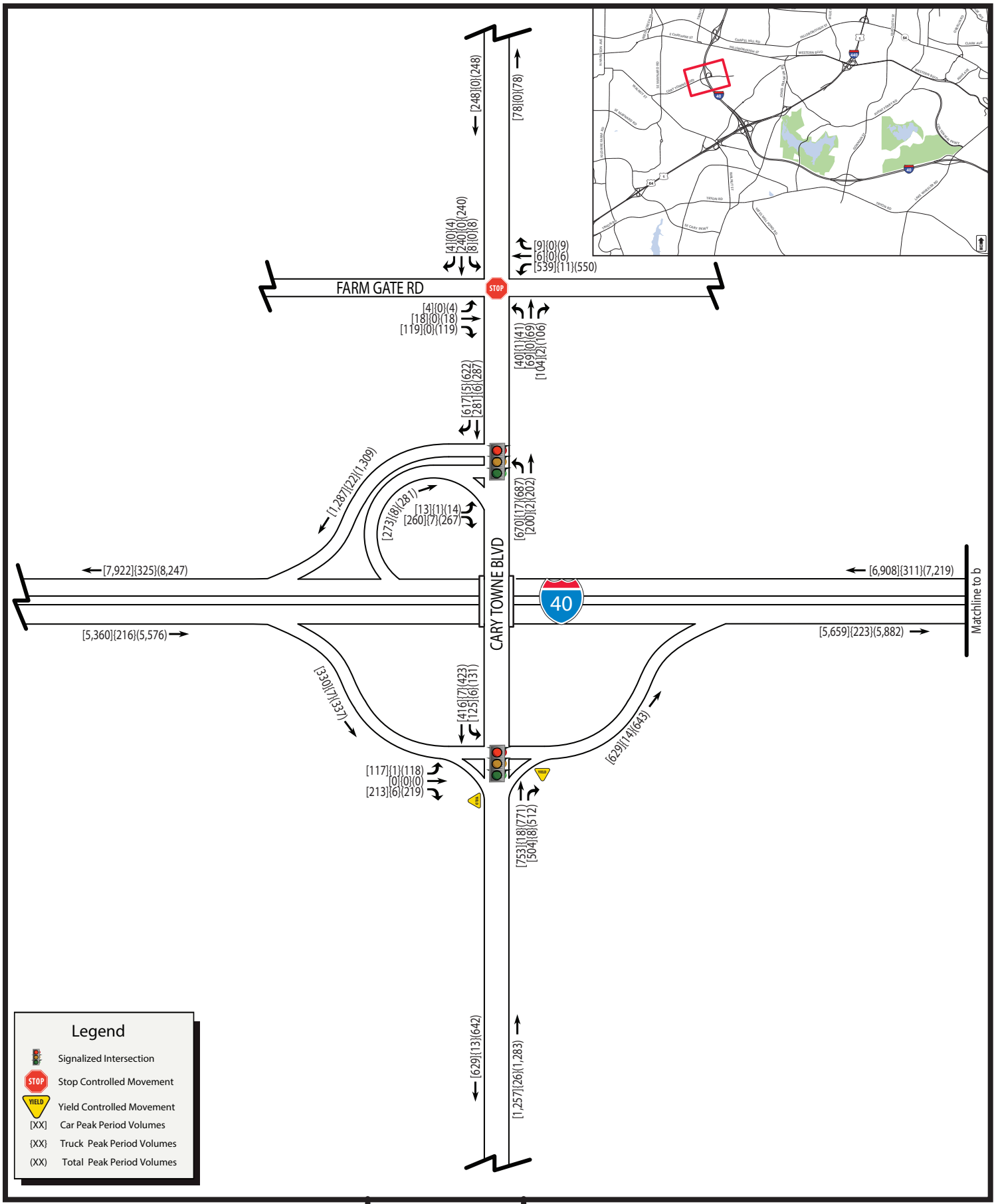
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6am-7am

FIGURE 11g



I-5703_TOTM_2035B_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

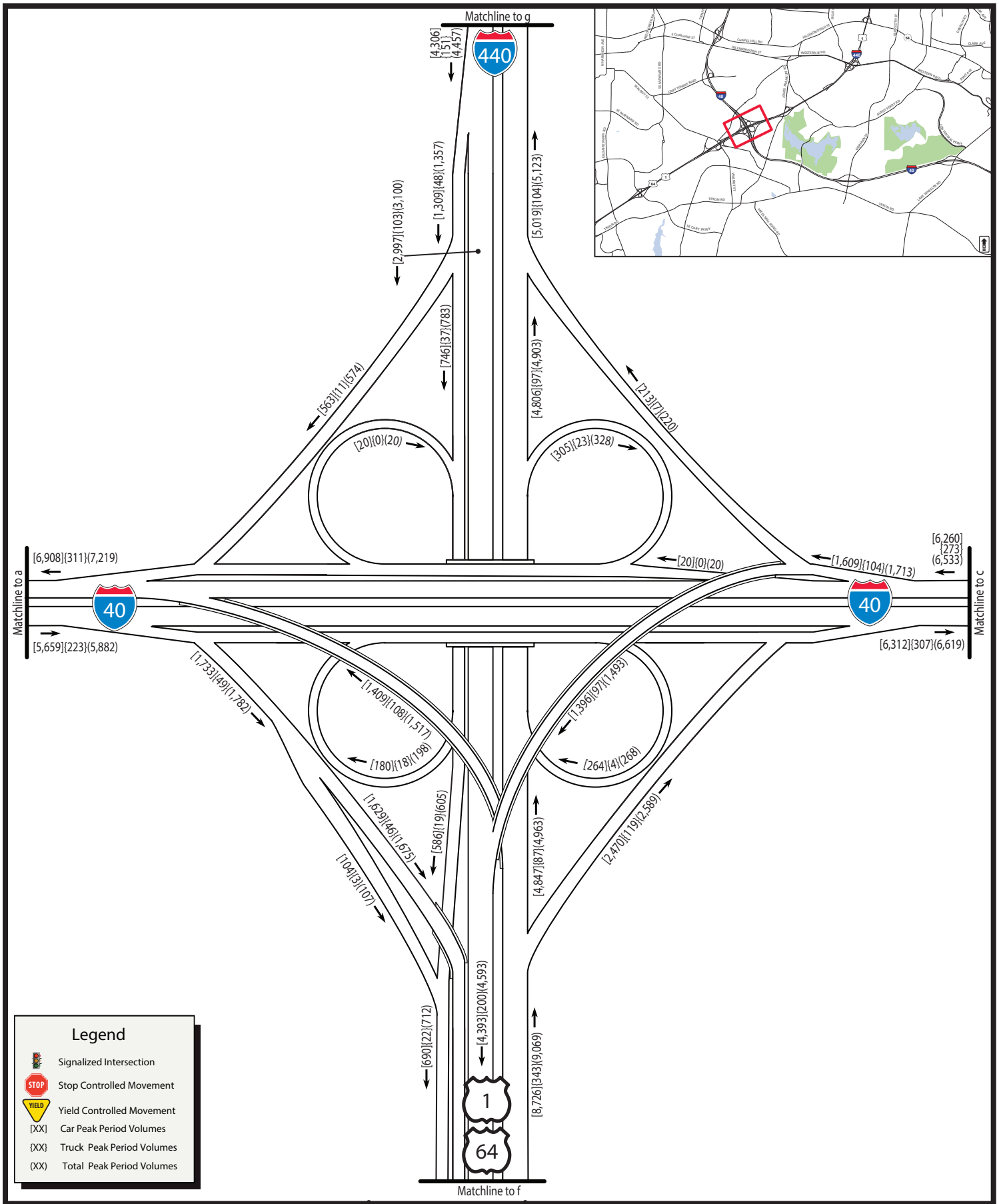
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 11a



I-5703_TOTM_2035B_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

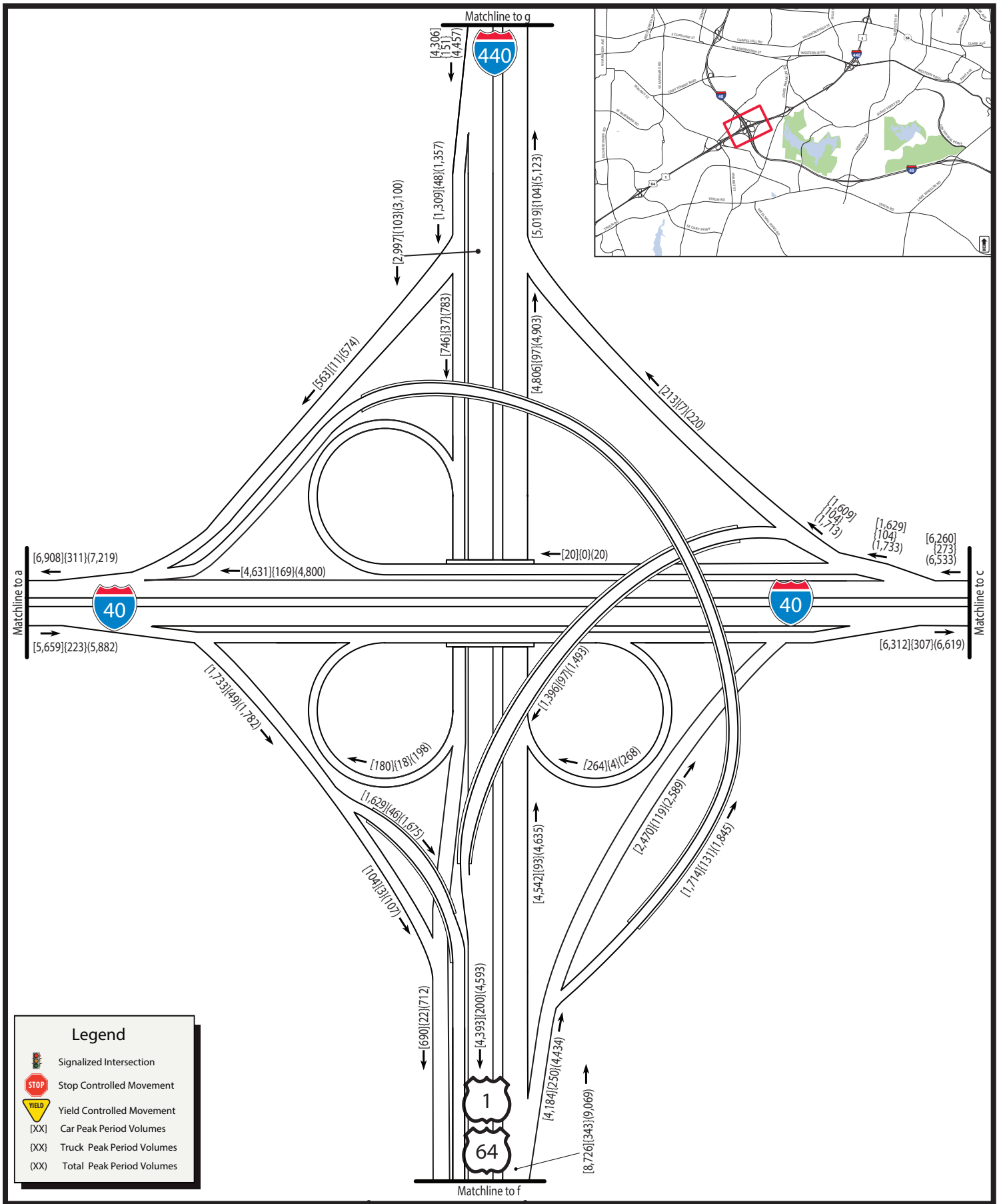
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 7am-8am

FIGURE 11b-Alt 1



I-5703_TOTM_2035B_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

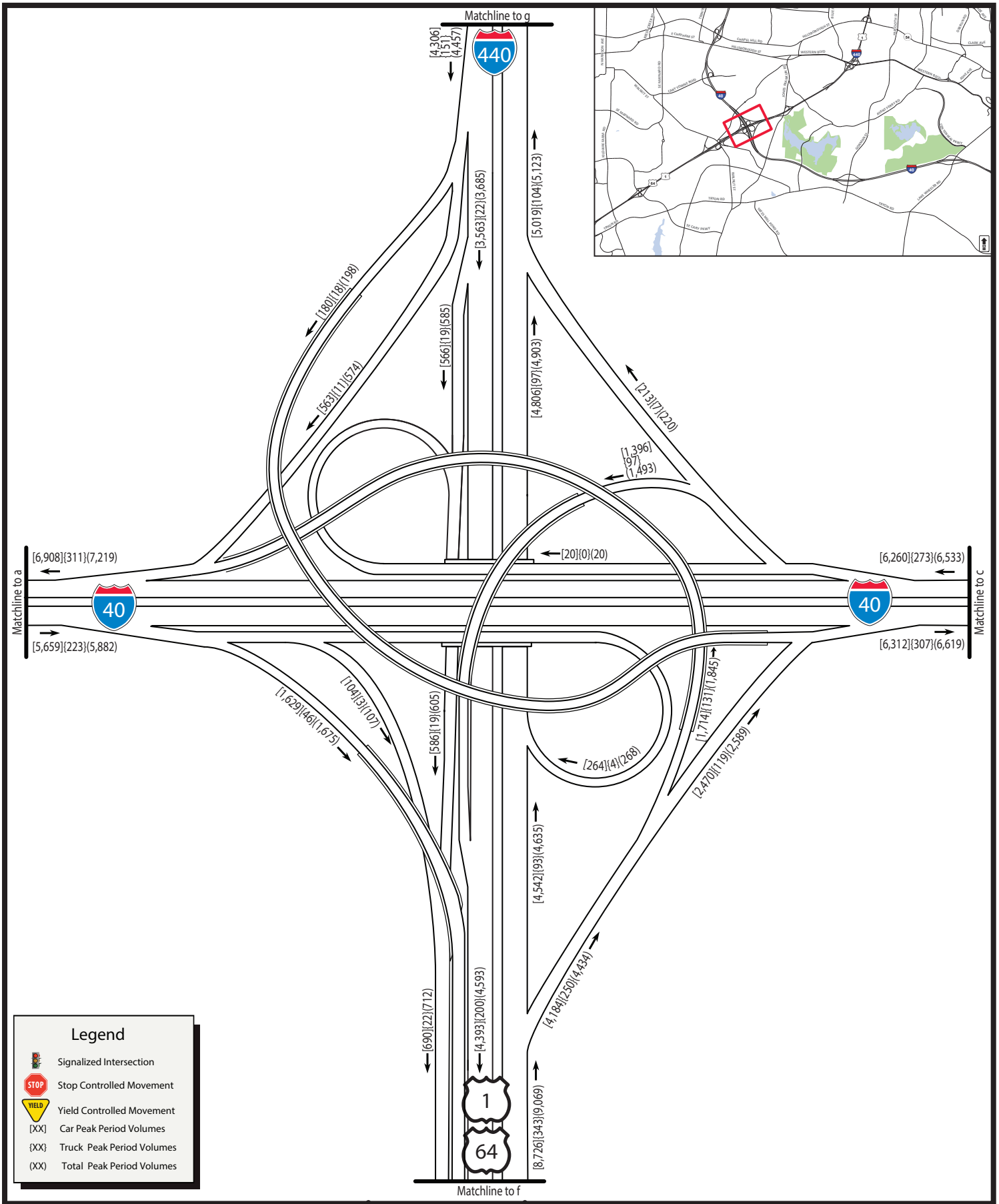
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 7am-8am

FIGURE 11b-Alt 2



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2035B_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

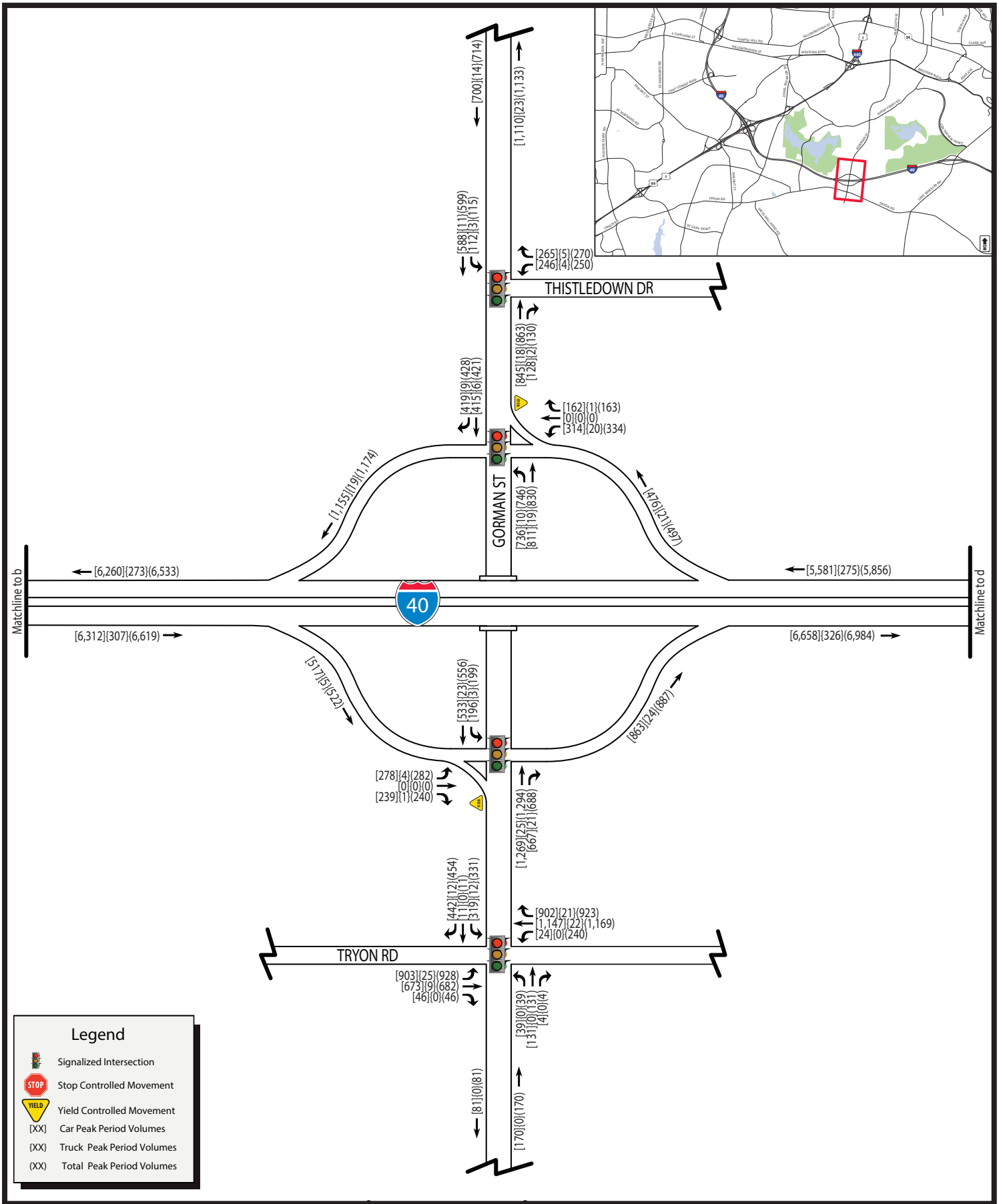
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 7am-8am

FIGURE 11b-Alt 3



I-5703_TOTM_2035B_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

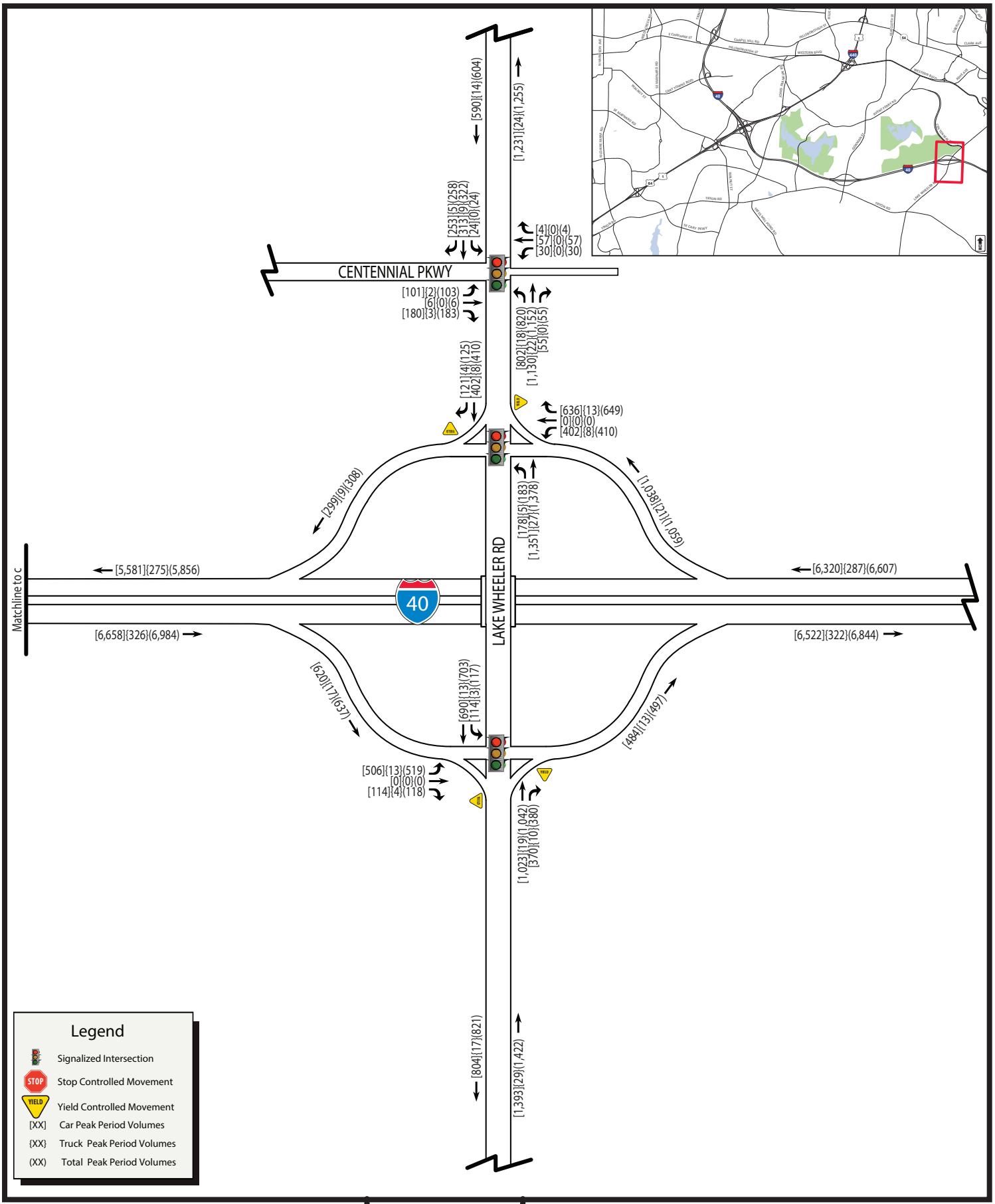
Wake County, North Carolina

N W E S

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 11c



I-5703_TOTM_2035B_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

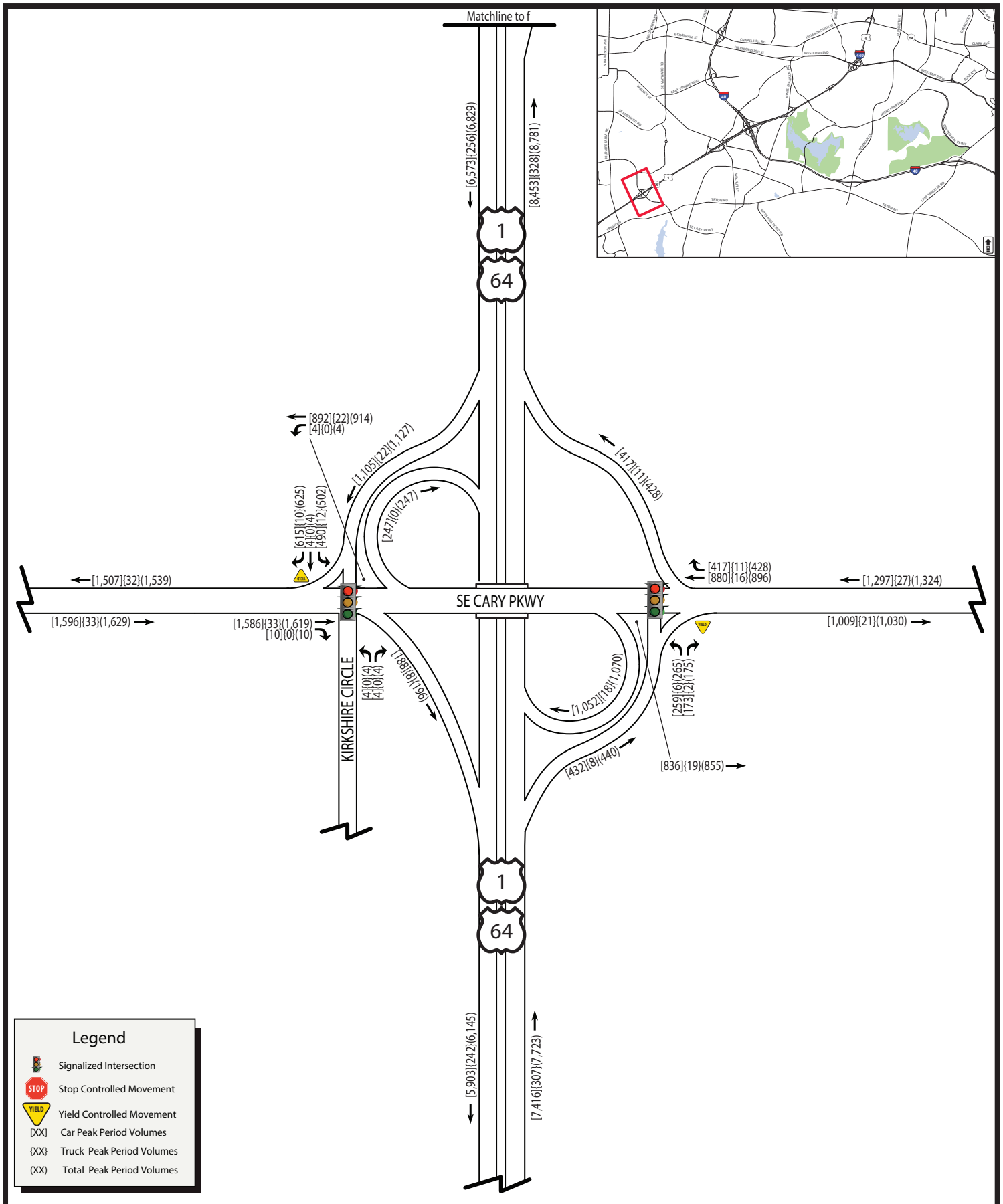
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 7am-8am

FIGURE 11d



I-5703_TOTM_2035B_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

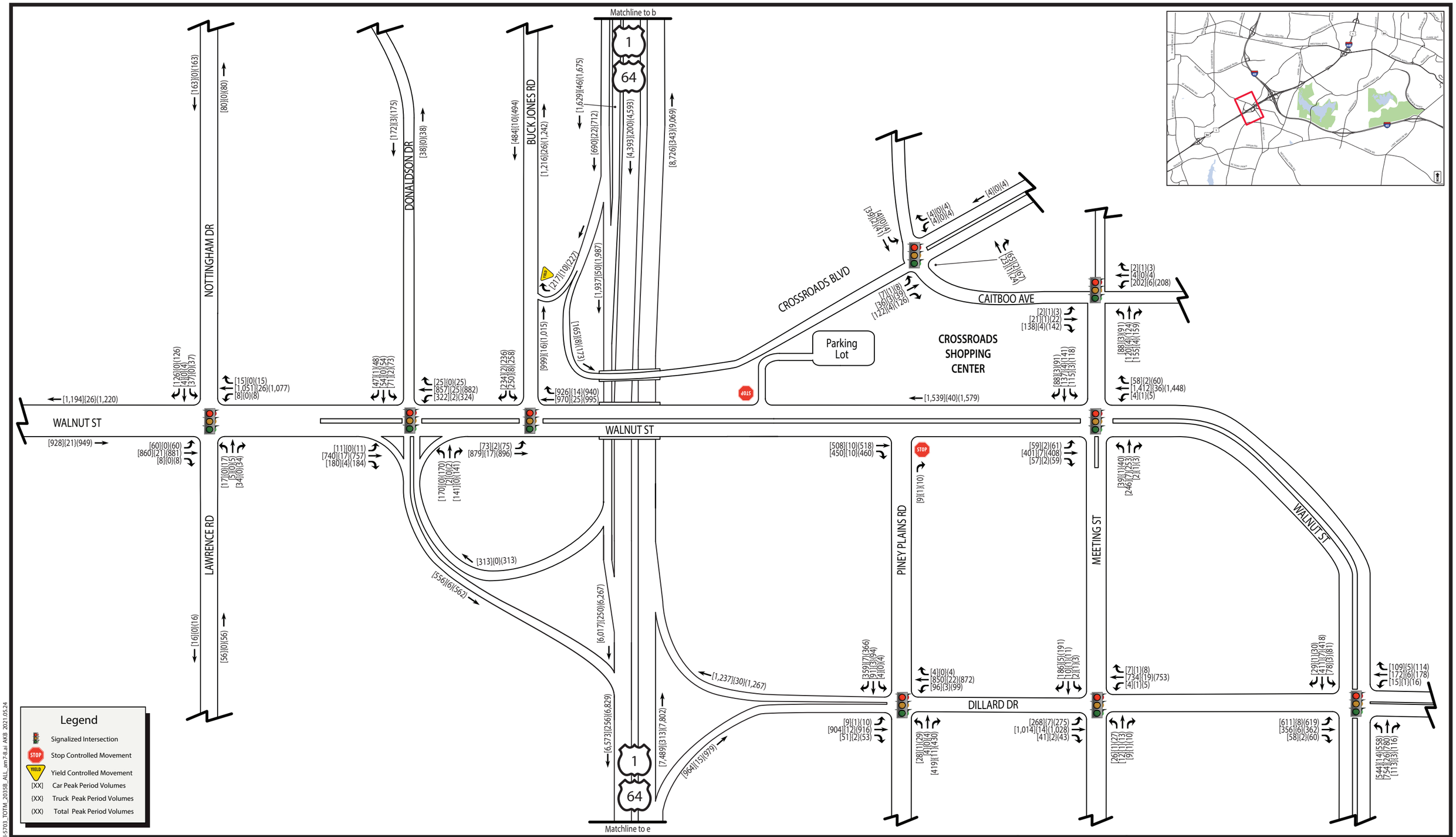
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 11e



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2035B_ALL_am7-8.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

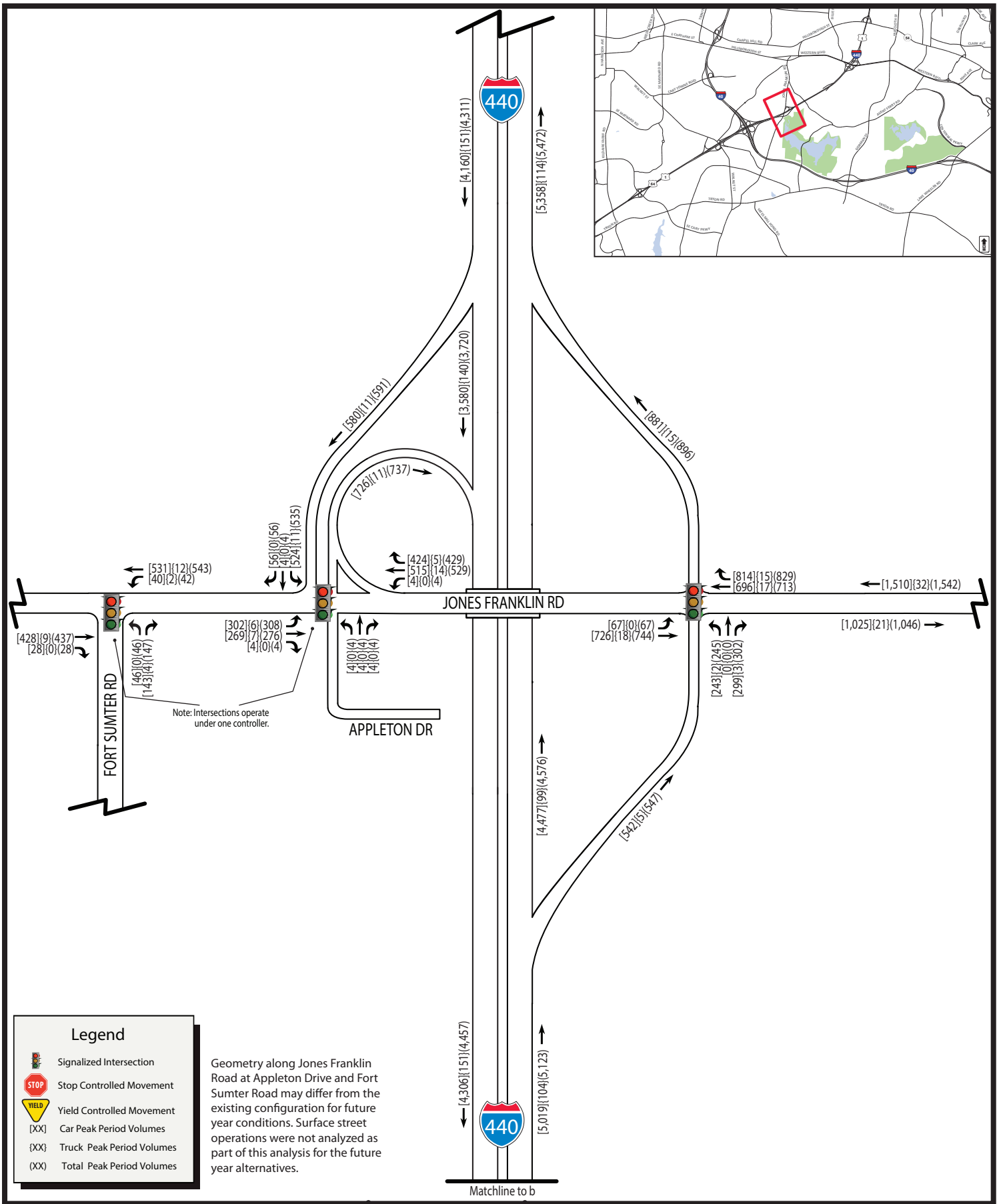
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 11f



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035B_ALL_am7-8.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

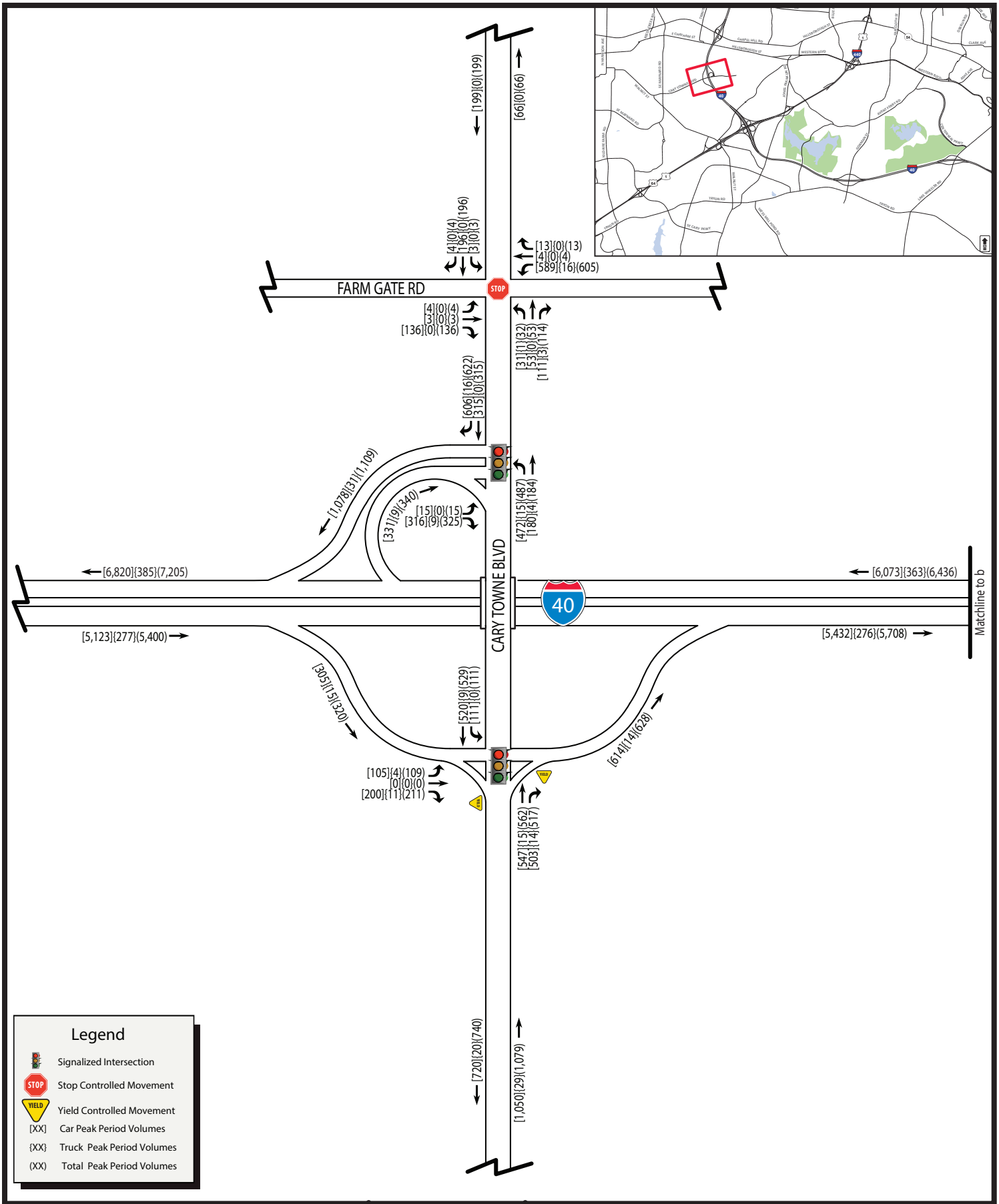
Wake County, North Carolina

N E S W

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 7am-8am

FIGURE 11g



I-5703_TOTM_2035B_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

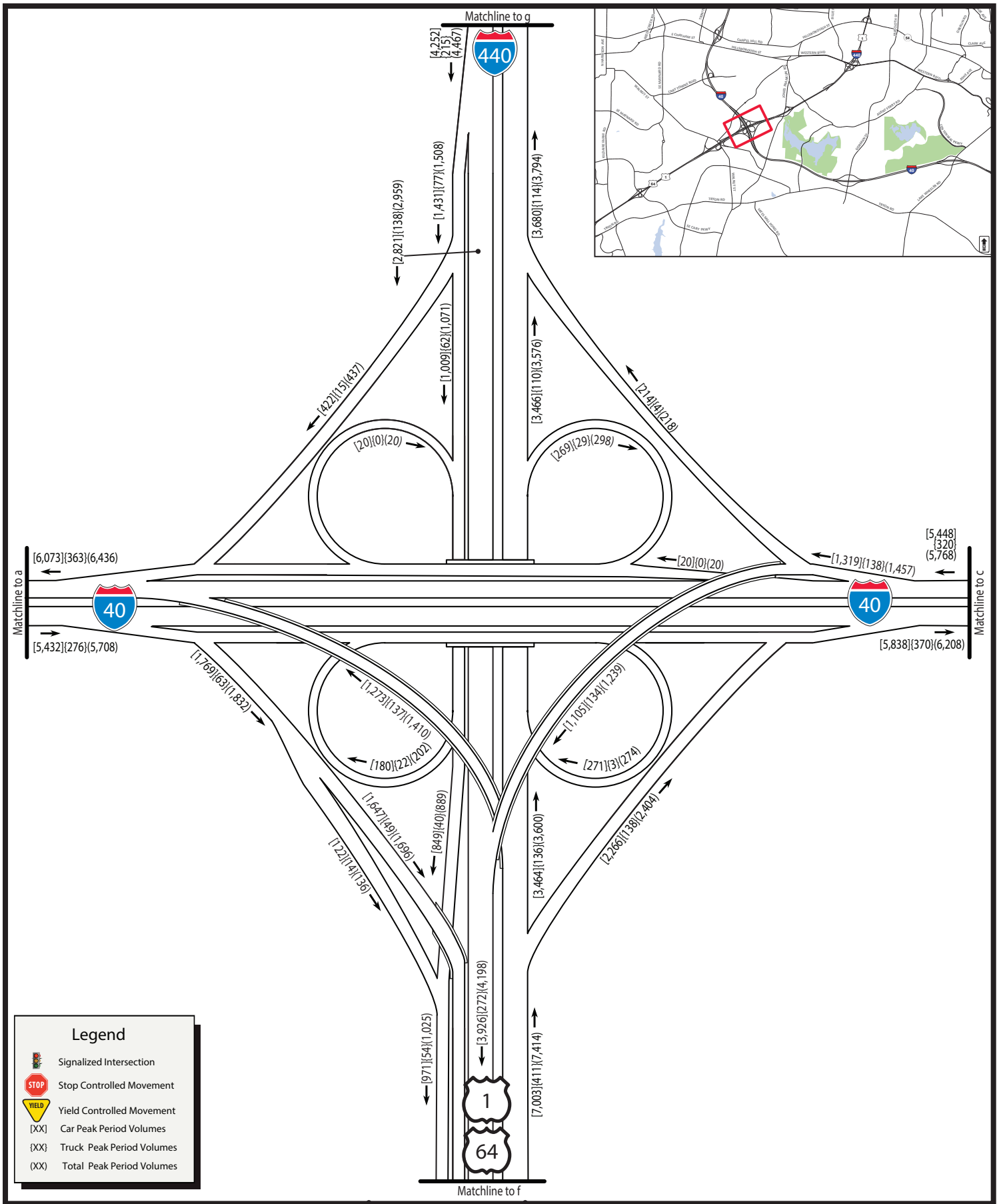
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 11a



I-5703_TOTM_2035B_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

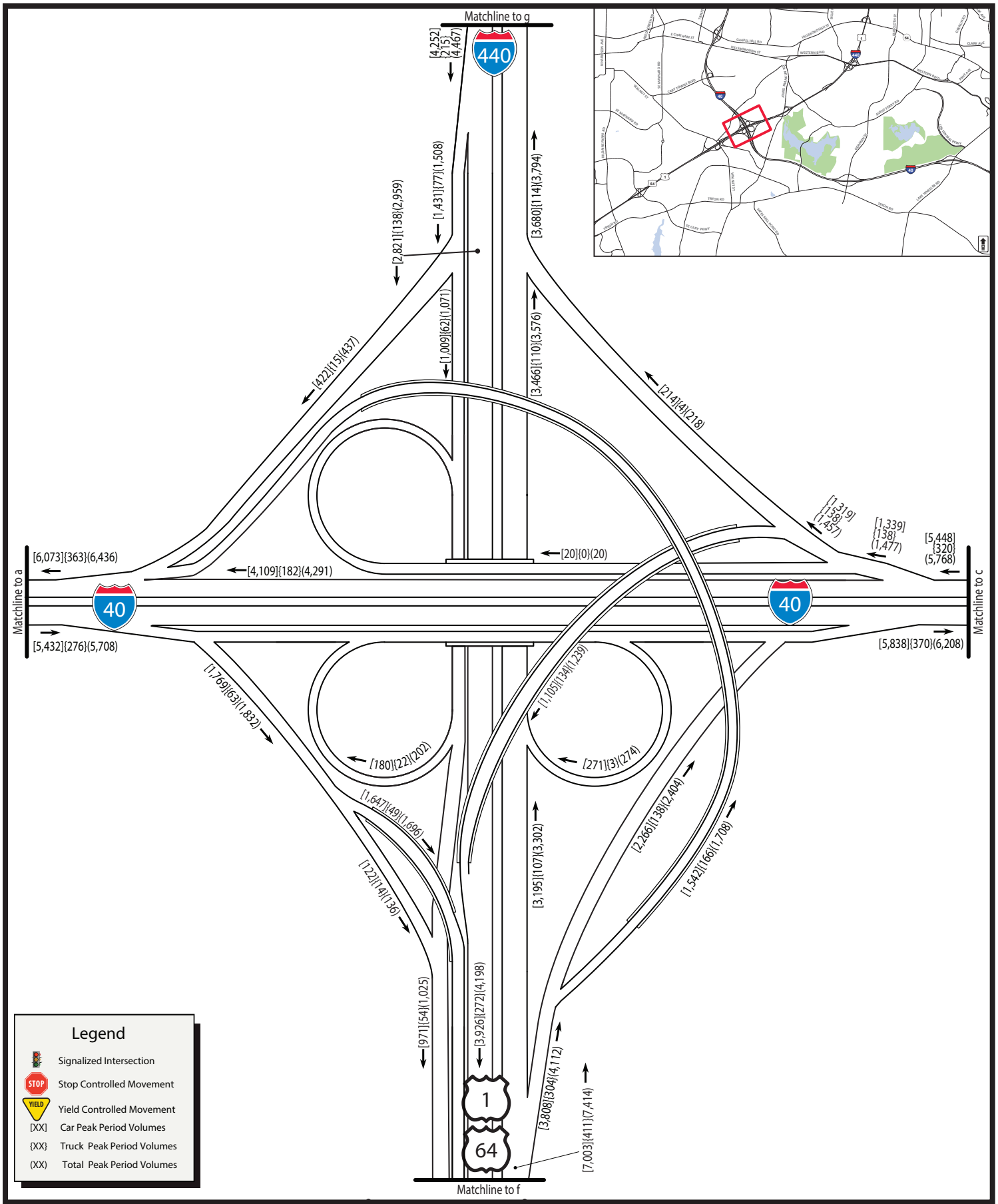
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 8am-9am

FIGURE 11b-Alt 1



I-5703_TOTM_2035B_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

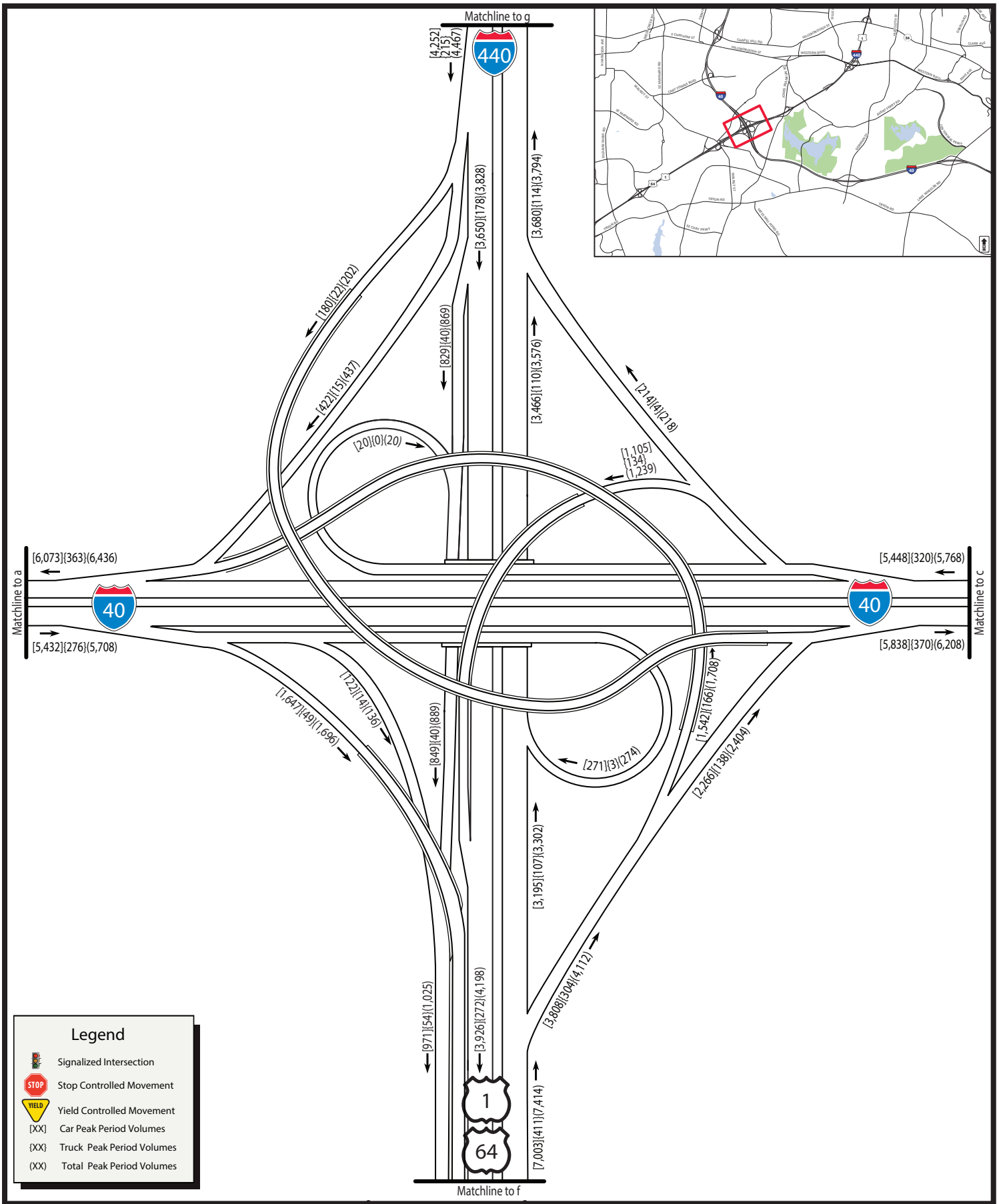
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 11b-Alt 2



I-5703_TOTM_2035B_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

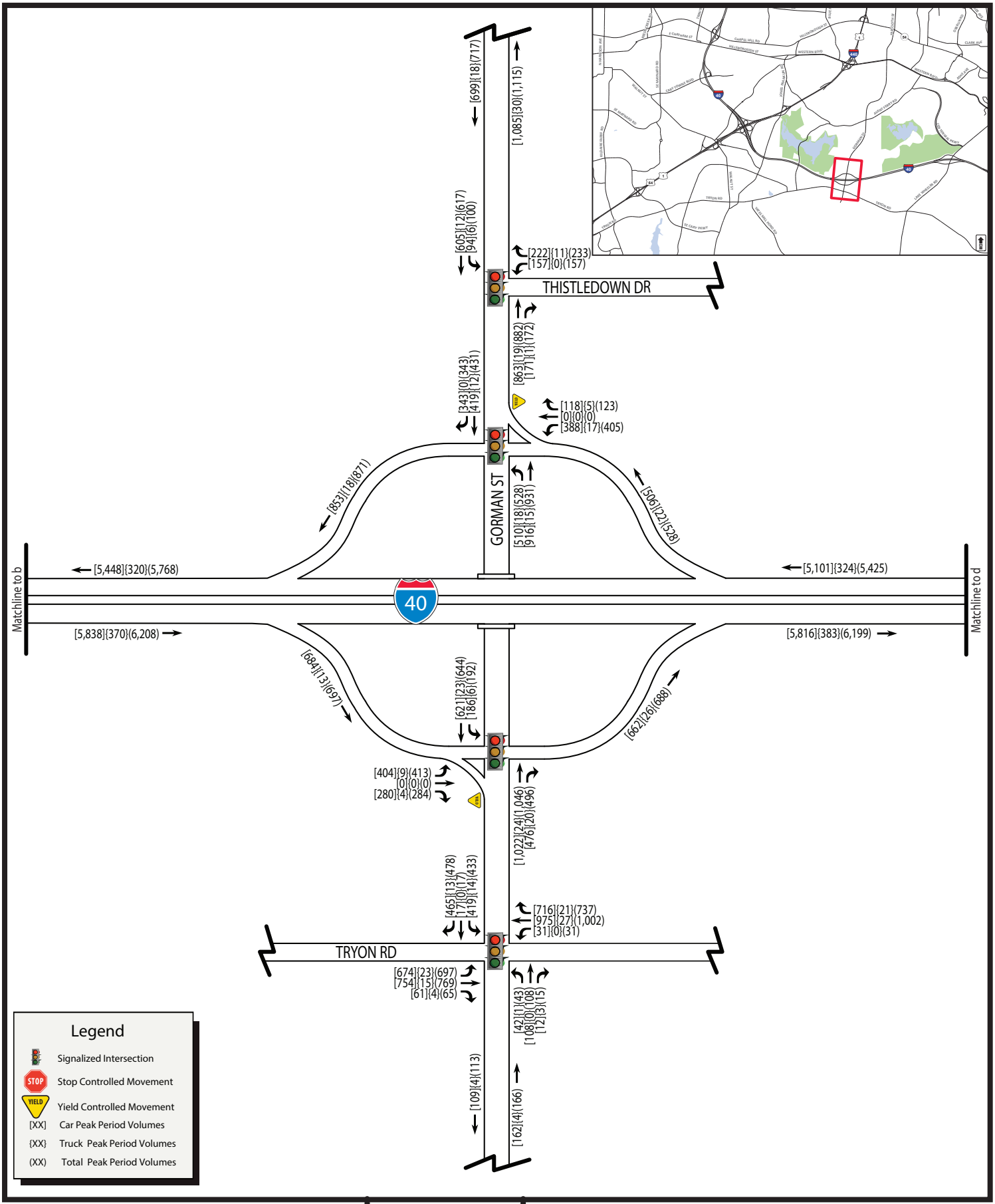
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 8am-9am

FIGURE 11b-Alt 3



I-5703_TOTM_2035B_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

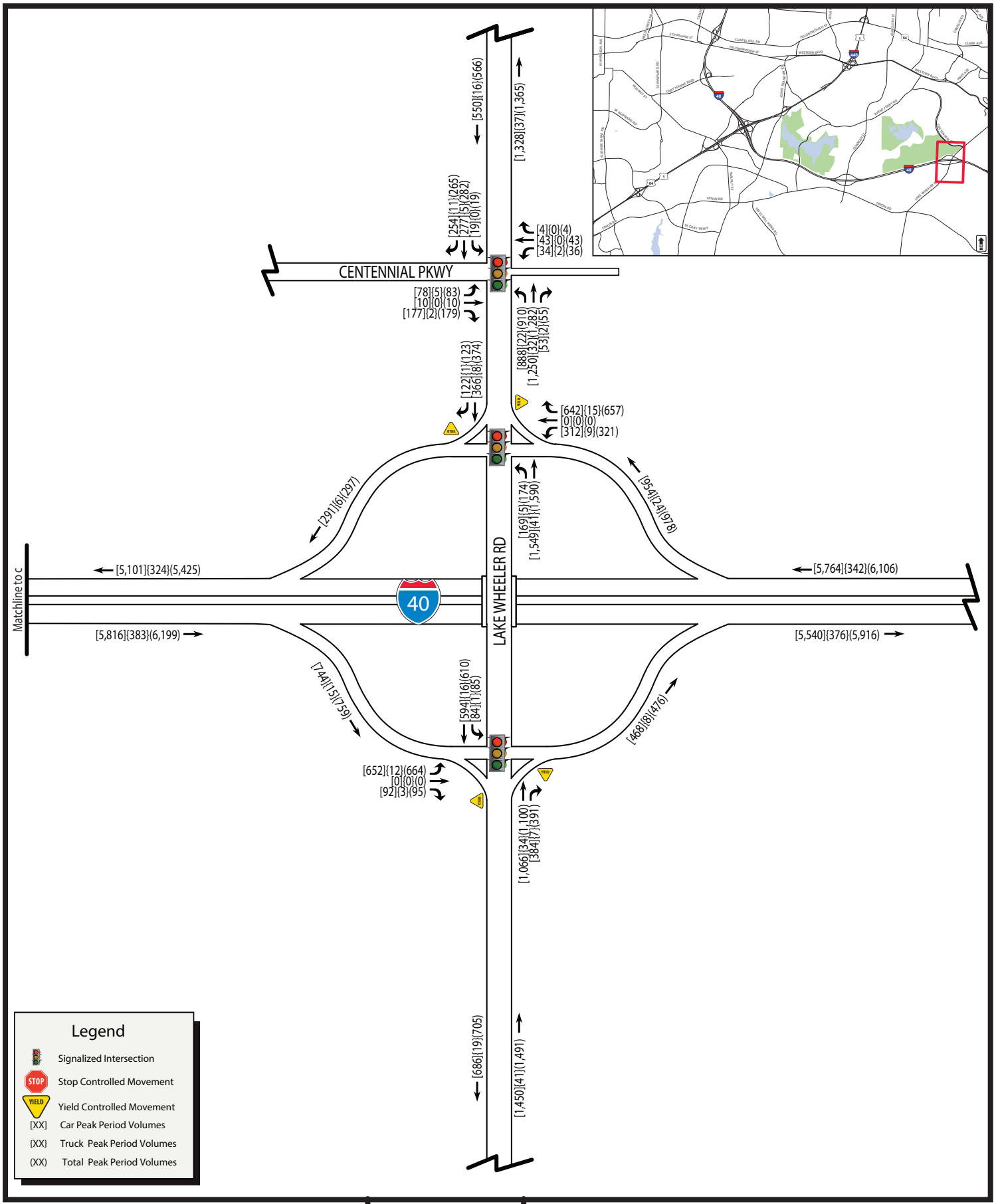
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 11c



I-5703_TOTM_2035B_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

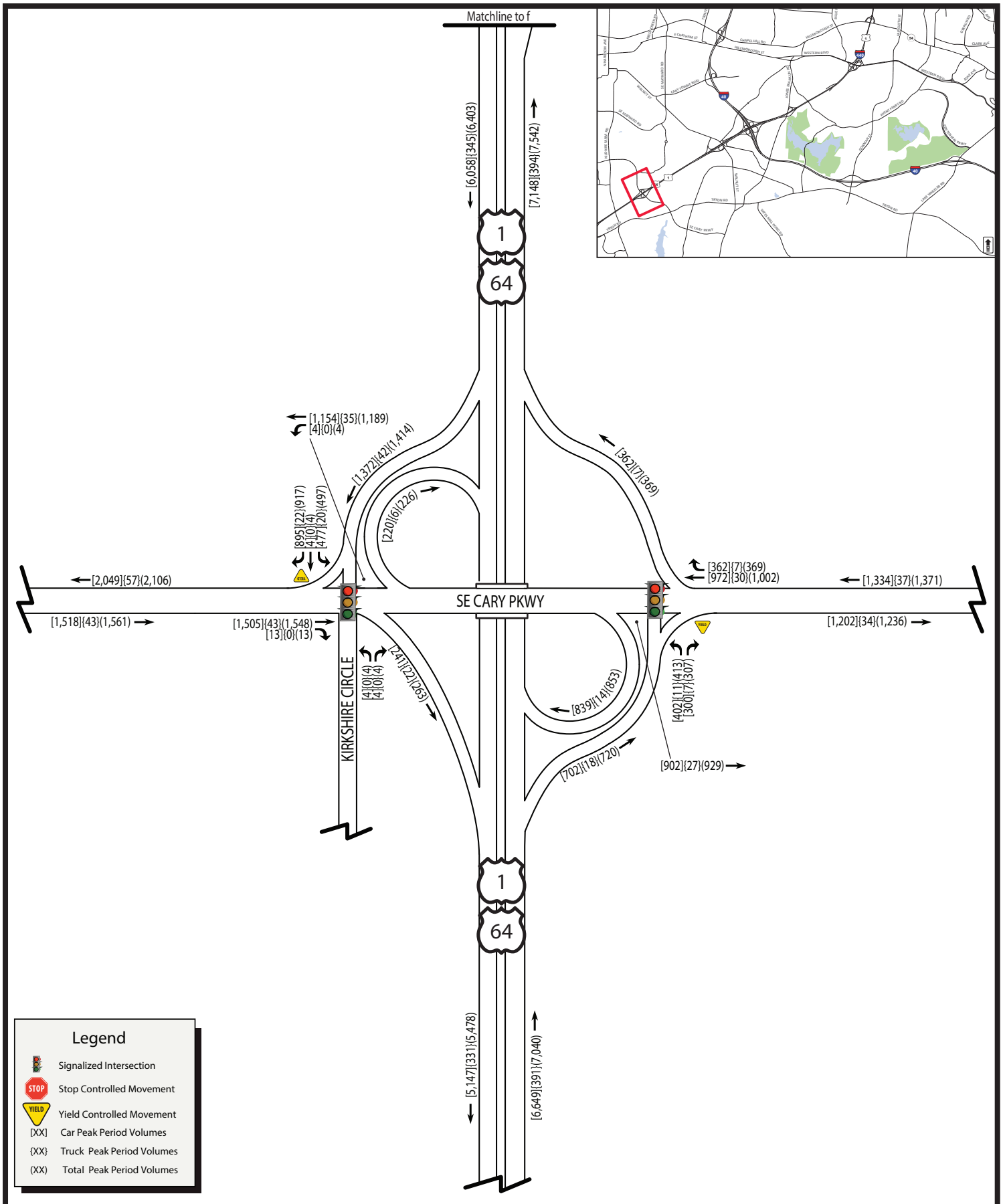
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 8am-9am

FIGURE 11d



I-5703_TOTM_2035B_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

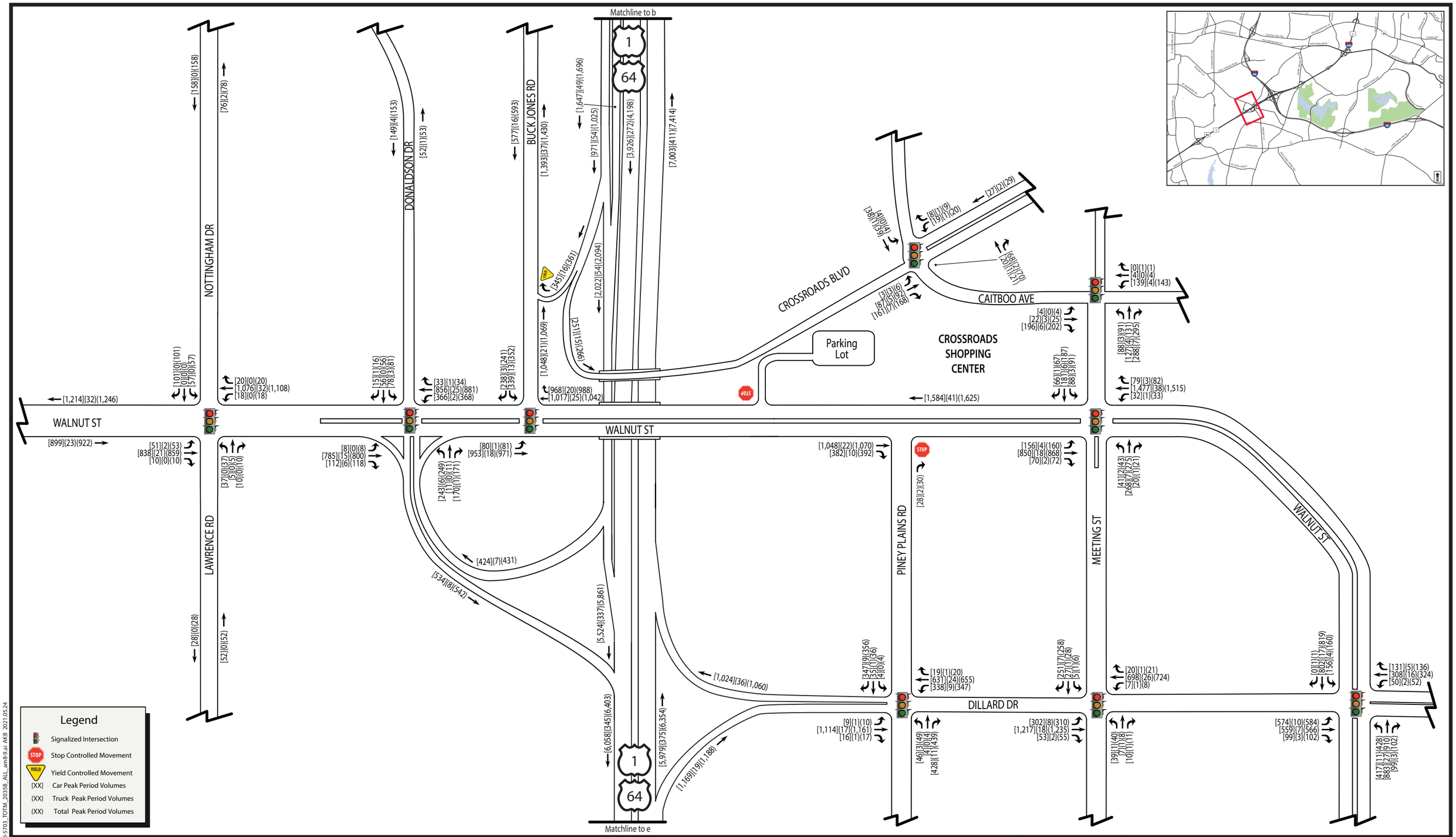
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 11e



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_20358_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

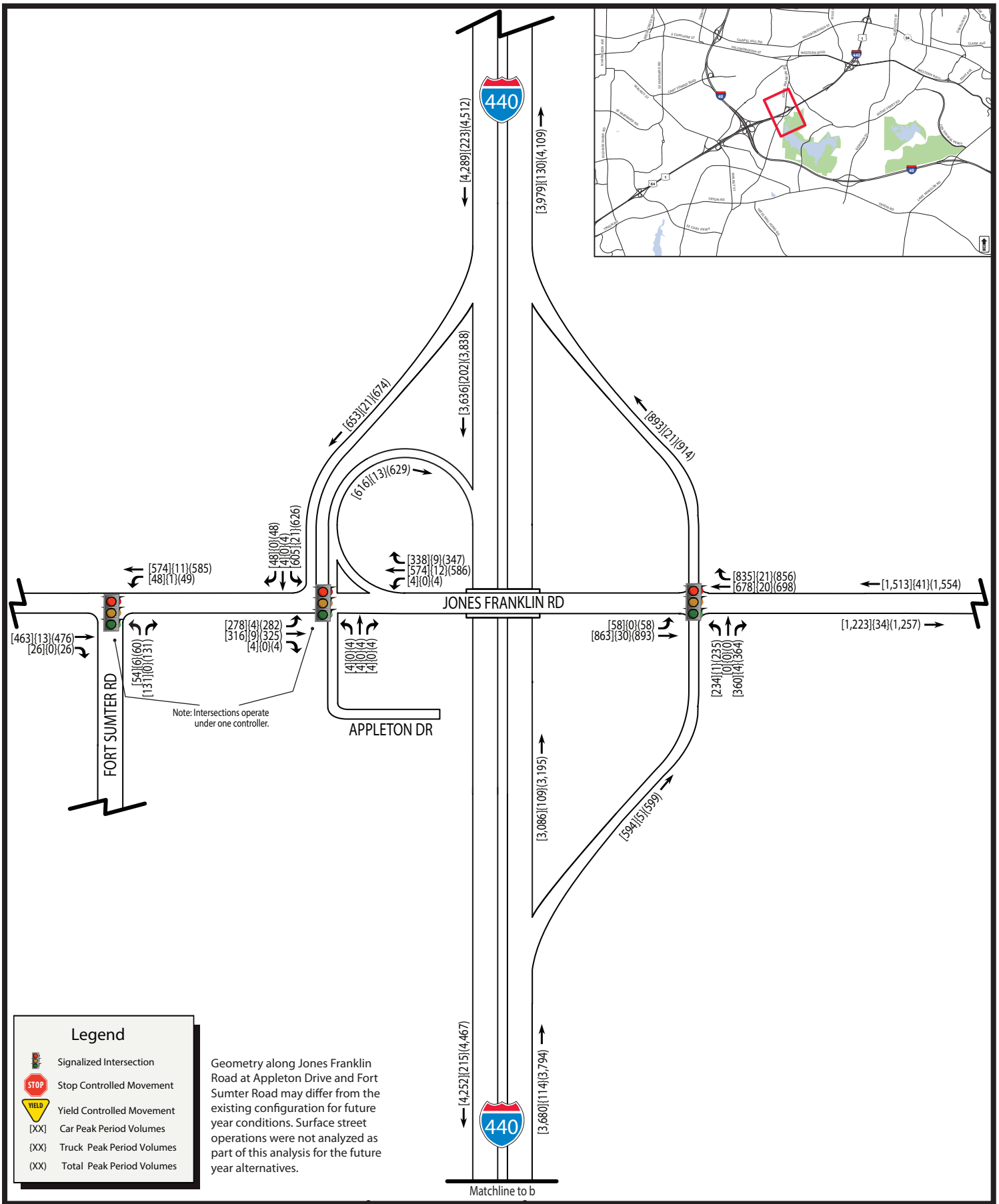
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 8am-9am

FIGURE 11f



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035B_ALL_am8-9.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

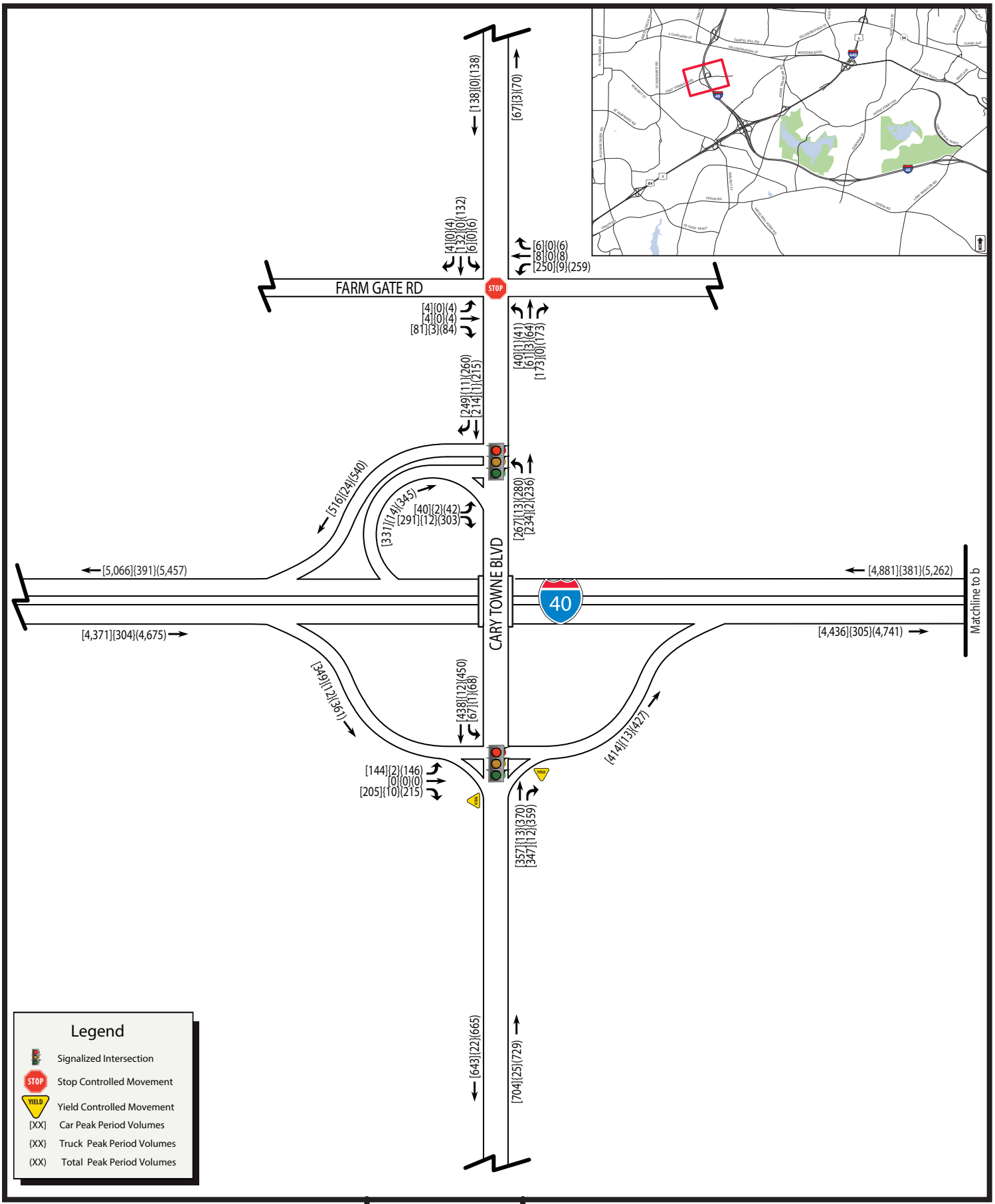
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 8am-9am

FIGURE 11g



I-5703_TOTM_2035B_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

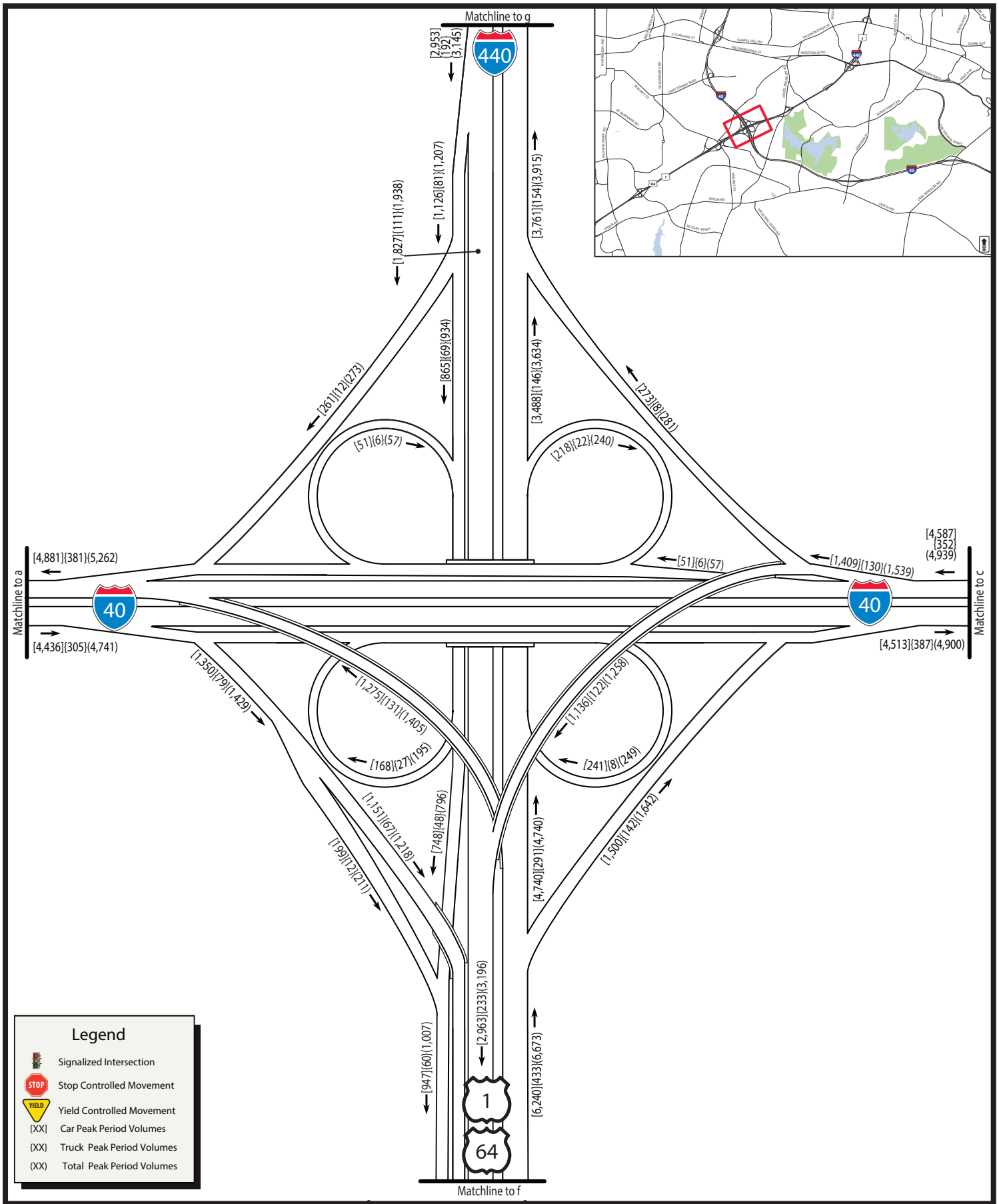
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 9am-10am

FIGURE 11a



I-5703_TOTM_2035B_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

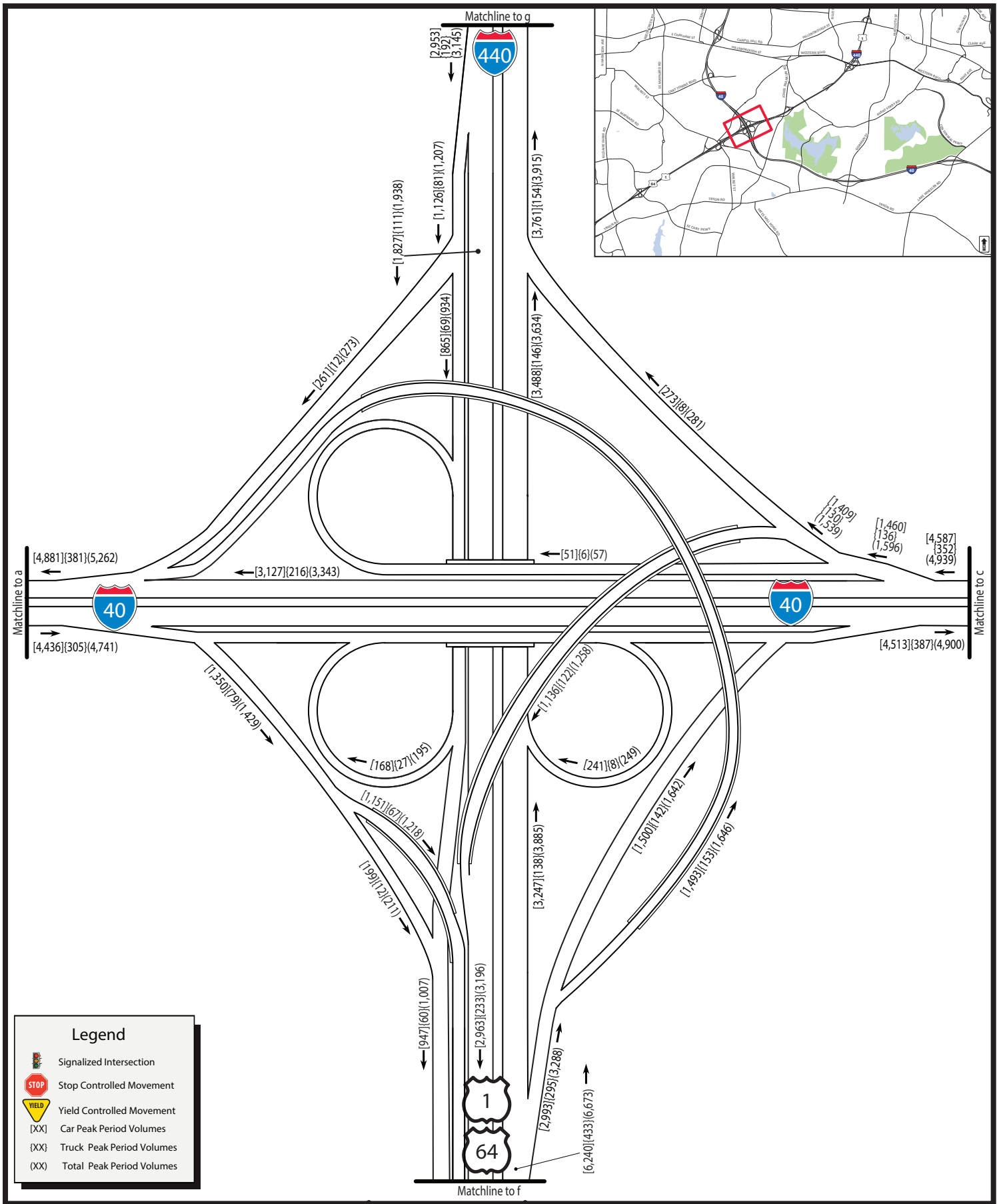
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 11b-Alt 1



I-5703_TOTM_2035B_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

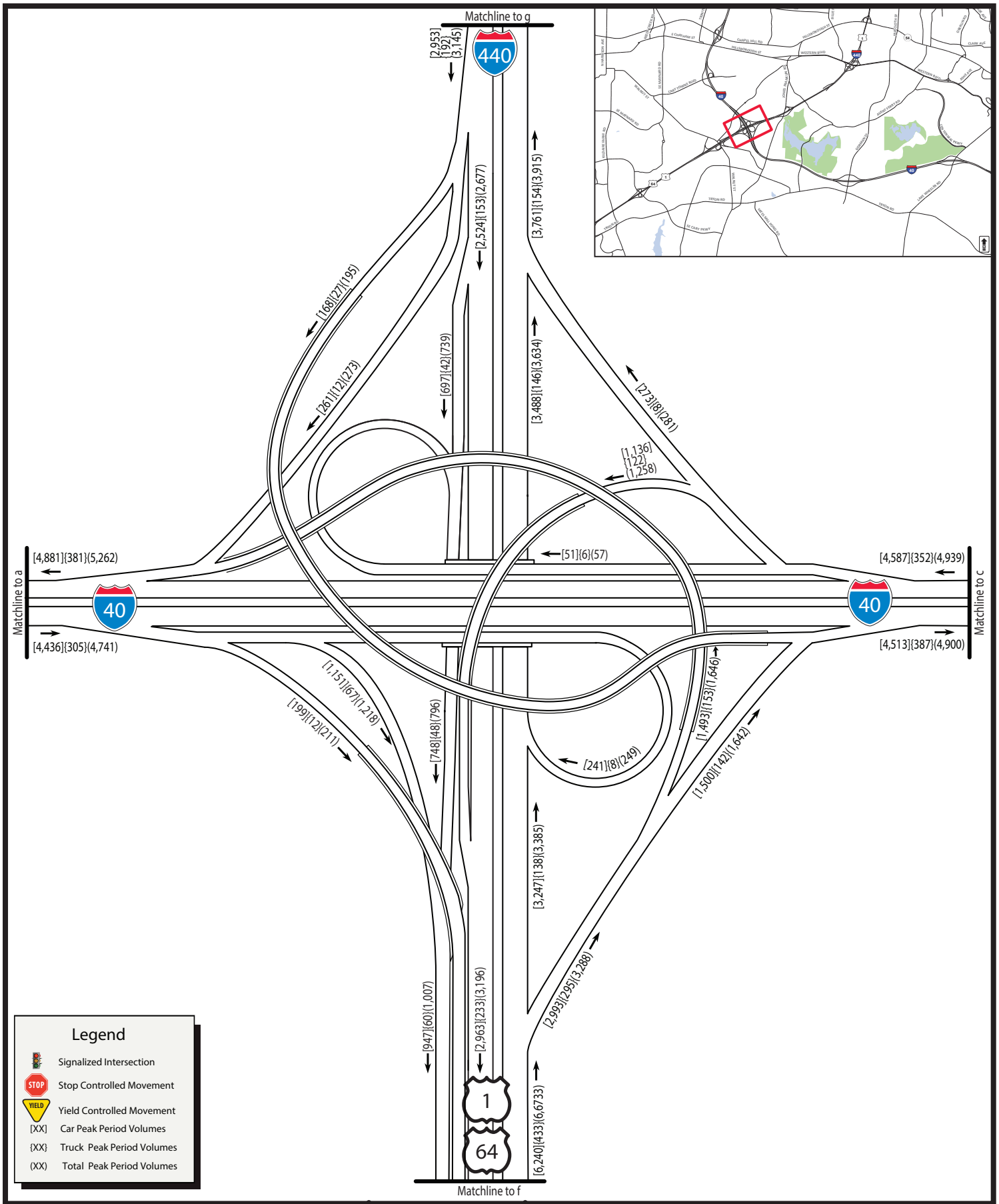
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 11b-Alt 2



I-5703_TOTM_2035B_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

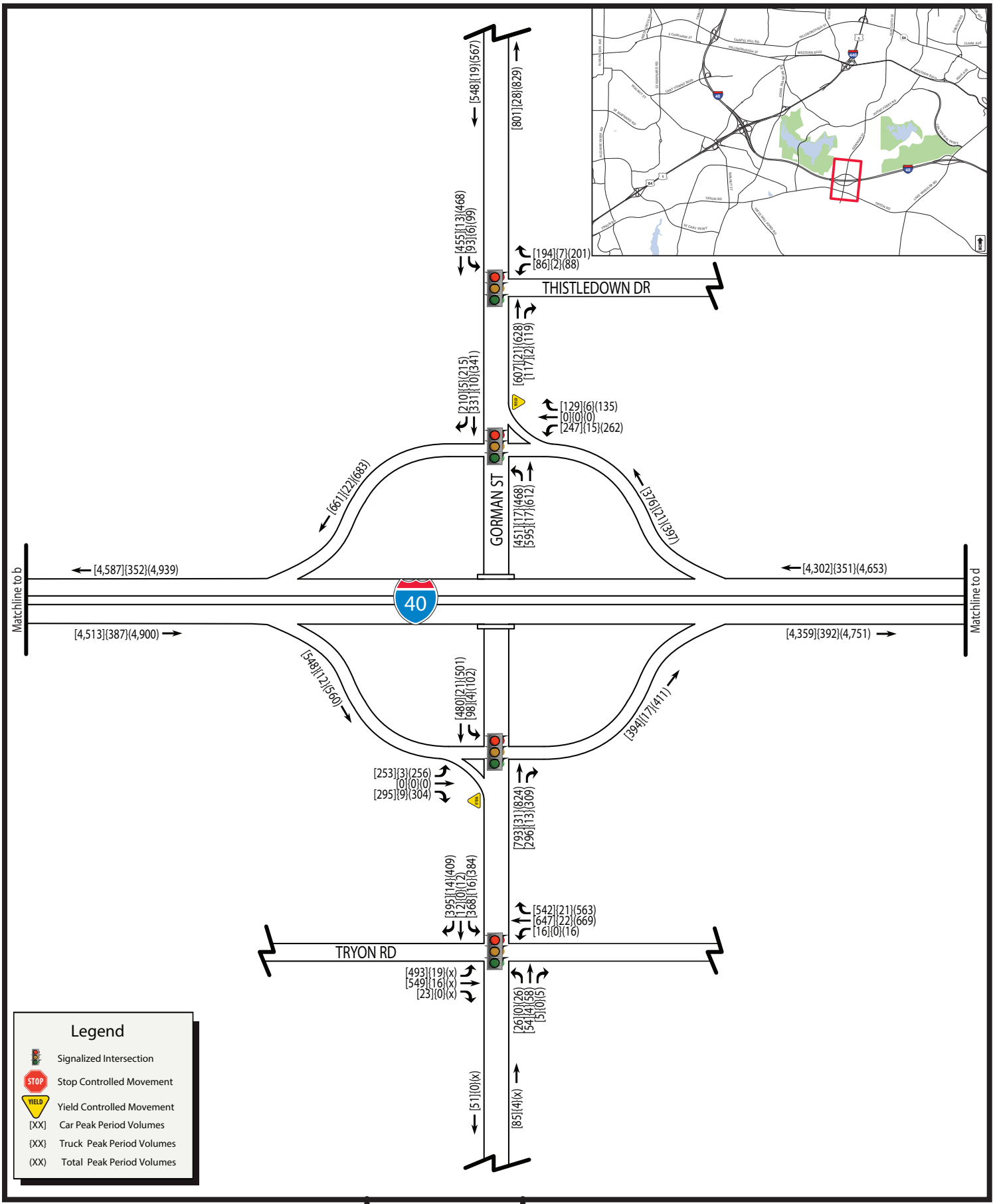
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 9am-10am

FIGURE 11b-Alt 3



I-5703_TOTM_2035B_ALL_am9-10.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

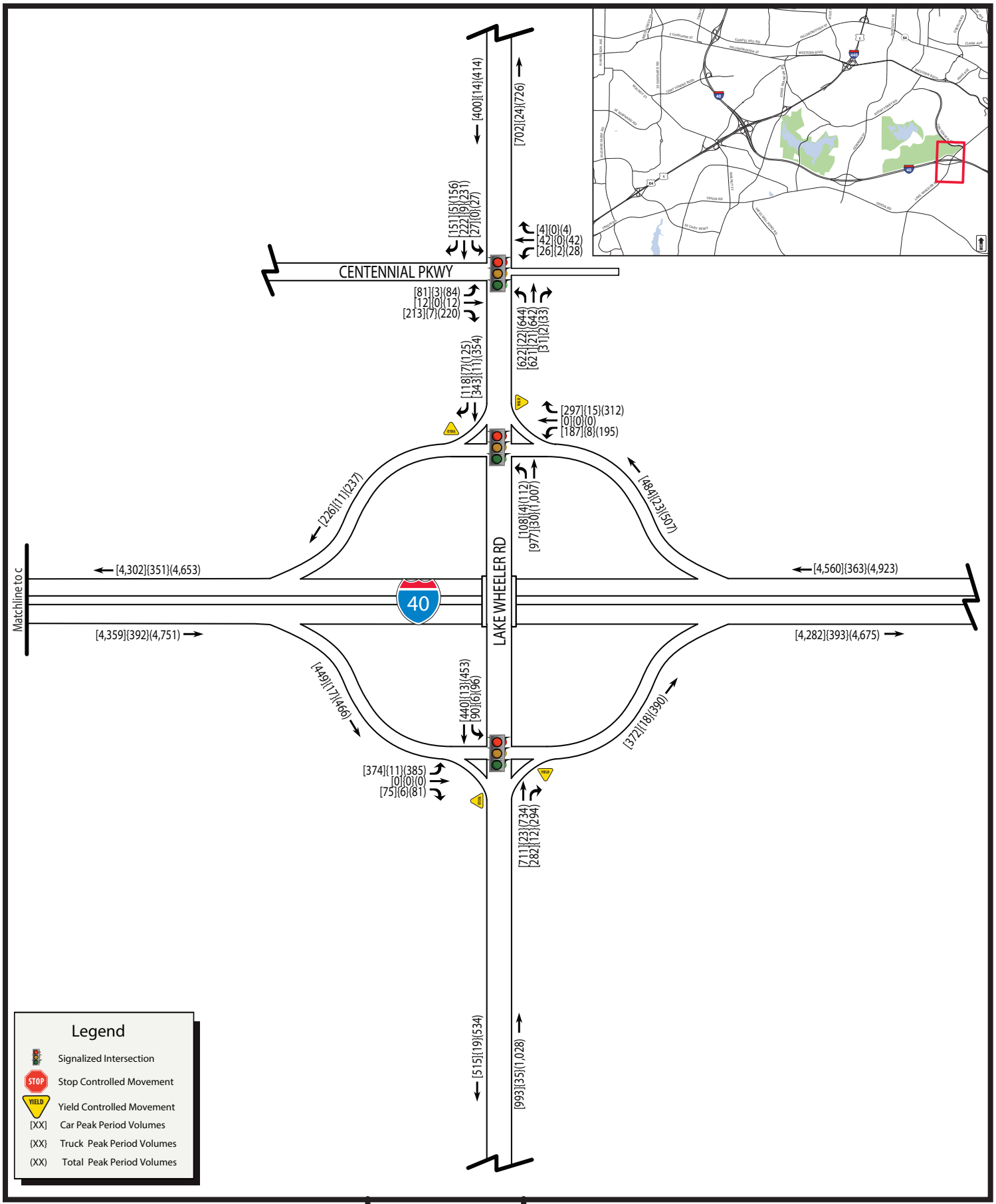
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 11c



I-5703_TOTM_2035B_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

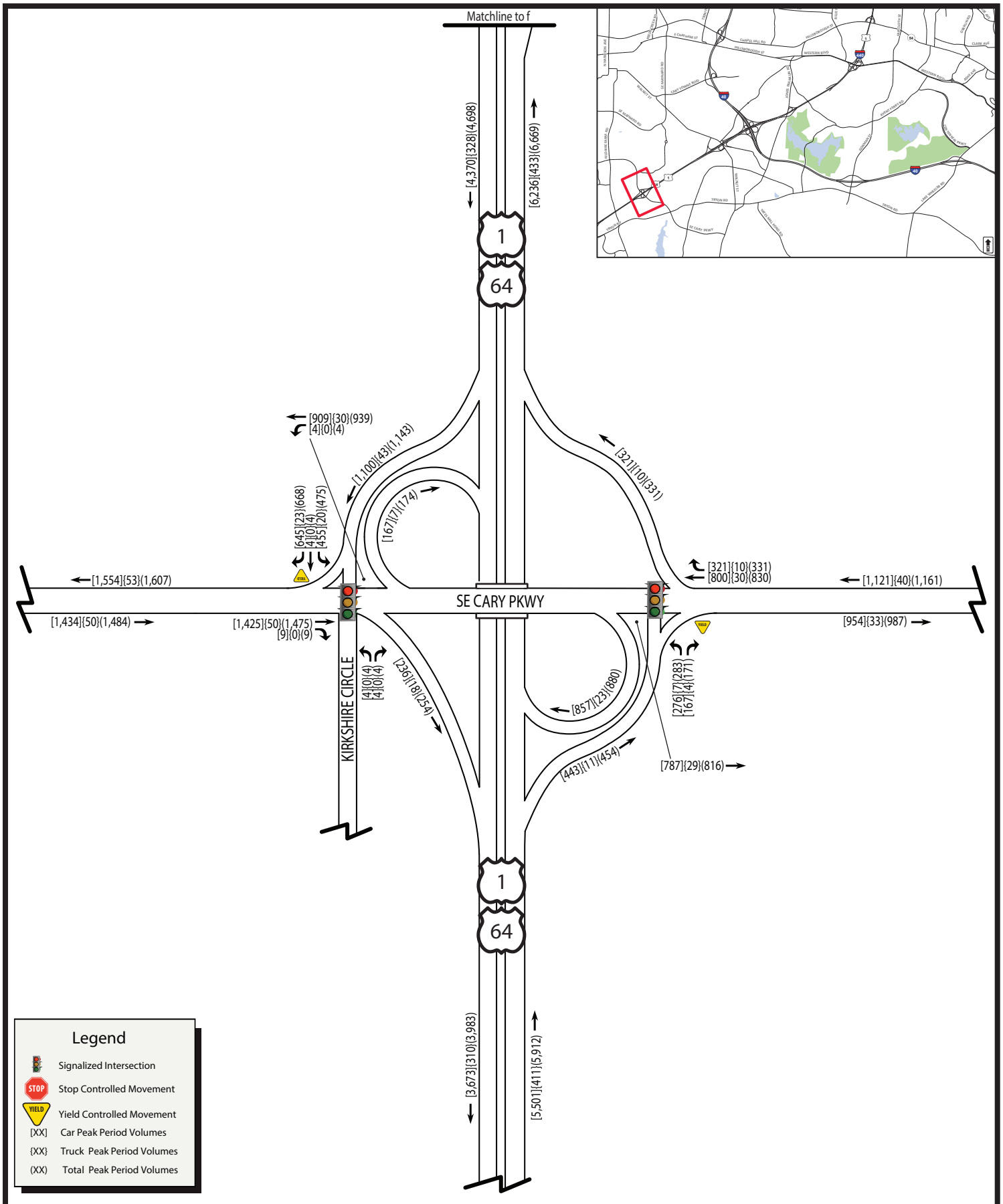
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 9am-10am

FIGURE 11d



I-5703_TOTM_2035B_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

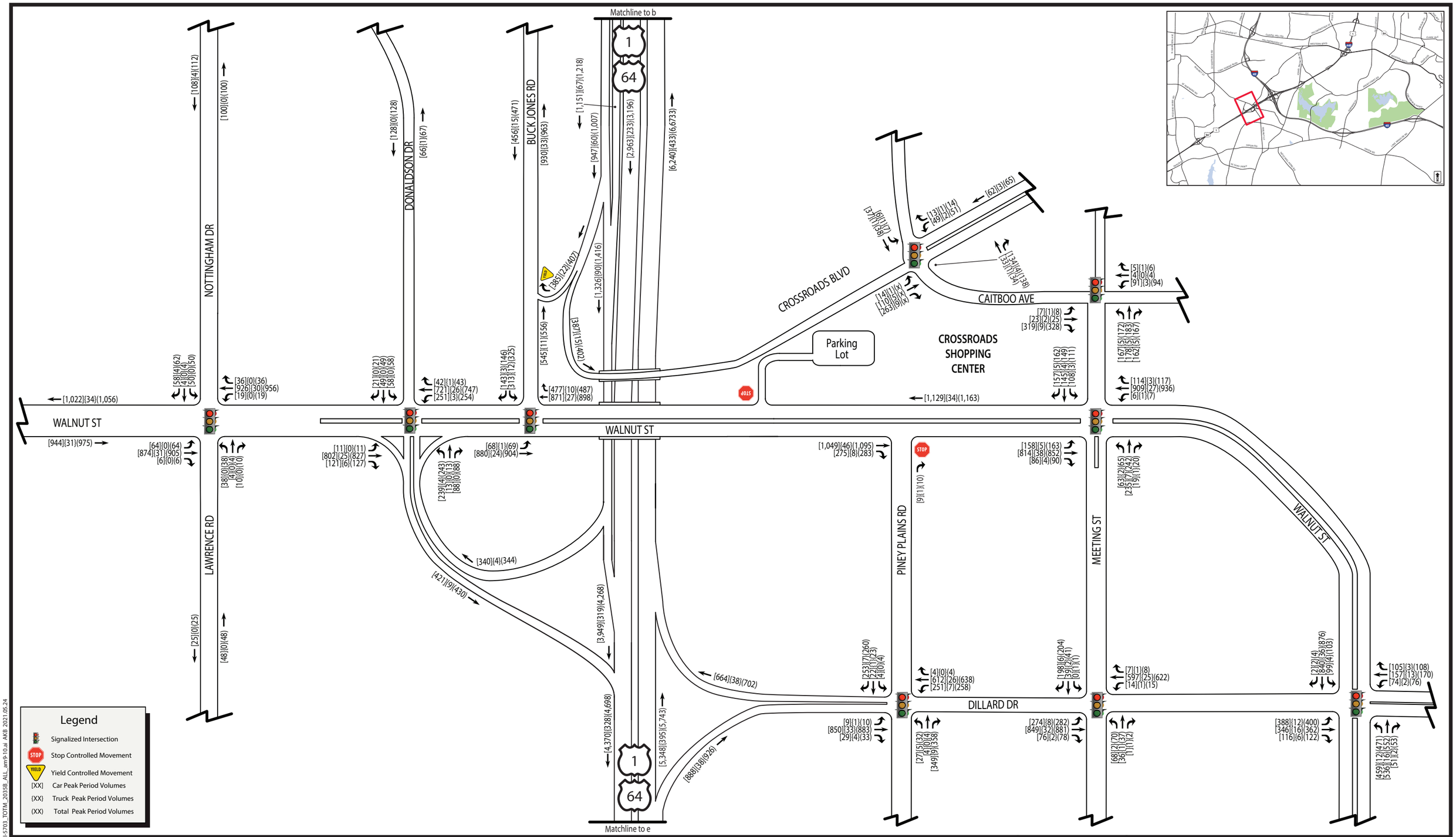
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 11e



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2035B_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

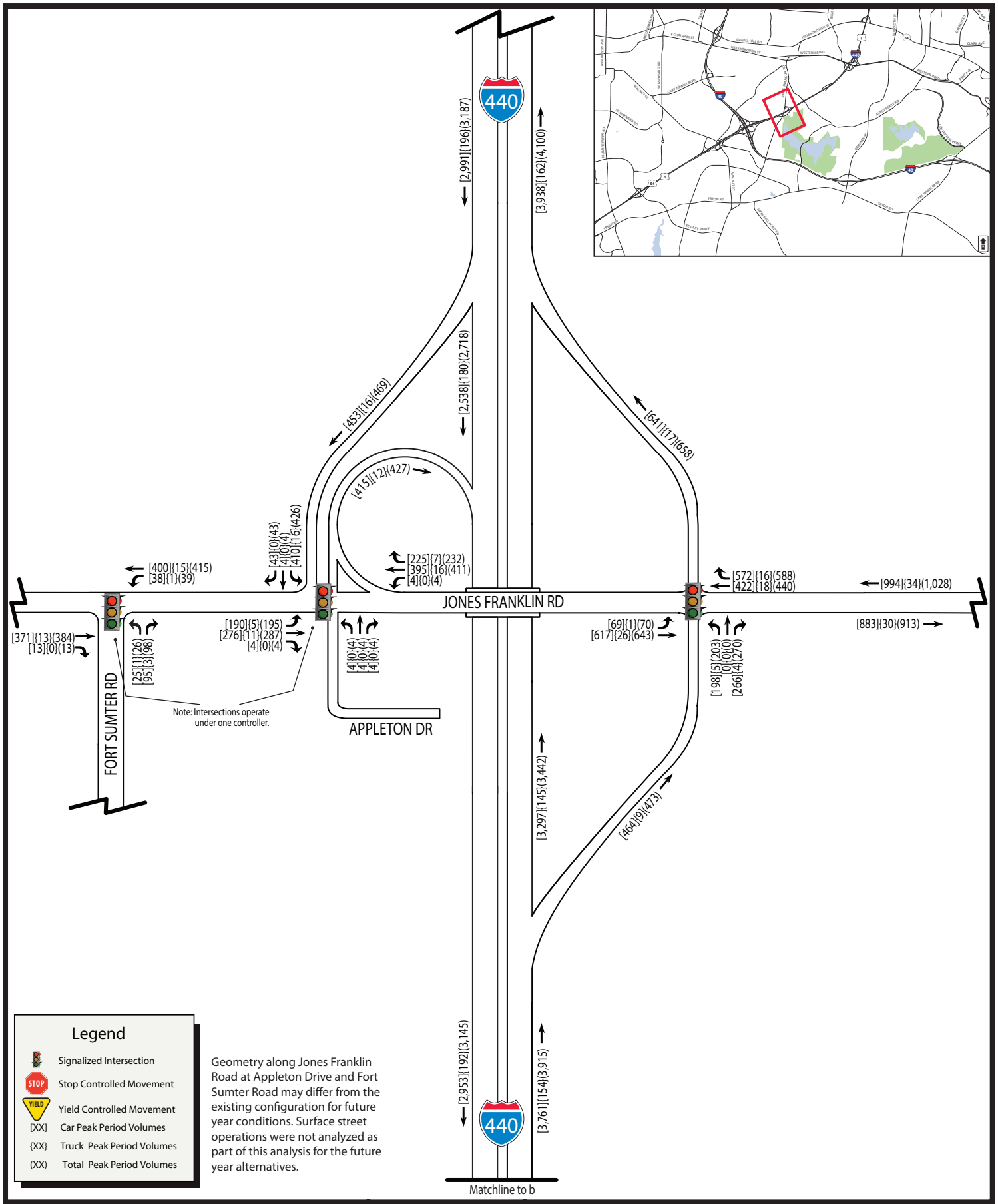
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 9am-10am

FIGURE 11f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035B_ALL_am9-10.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

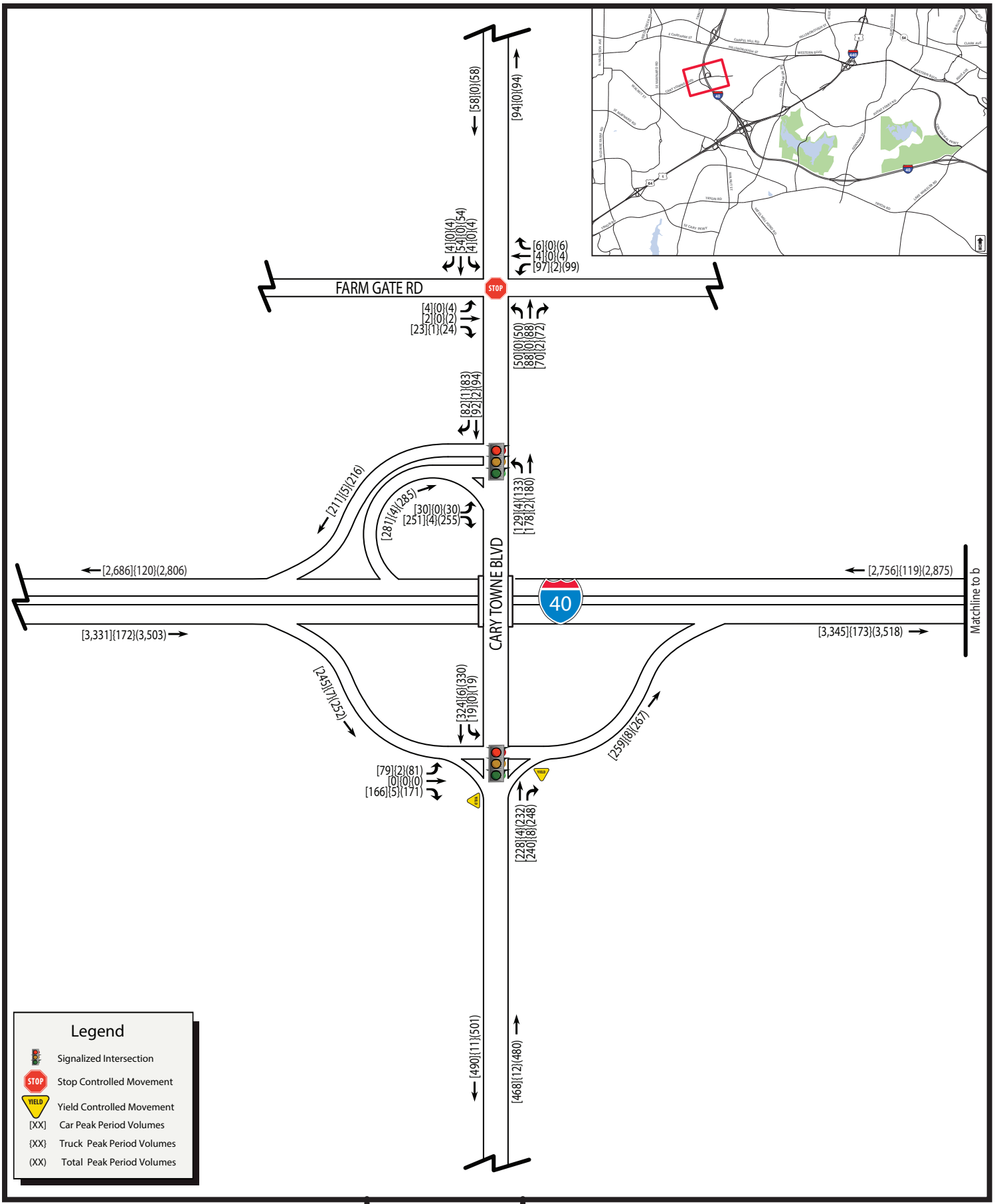
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 9am-10am

FIGURE 11g



I-5703_TOTM_2035B_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

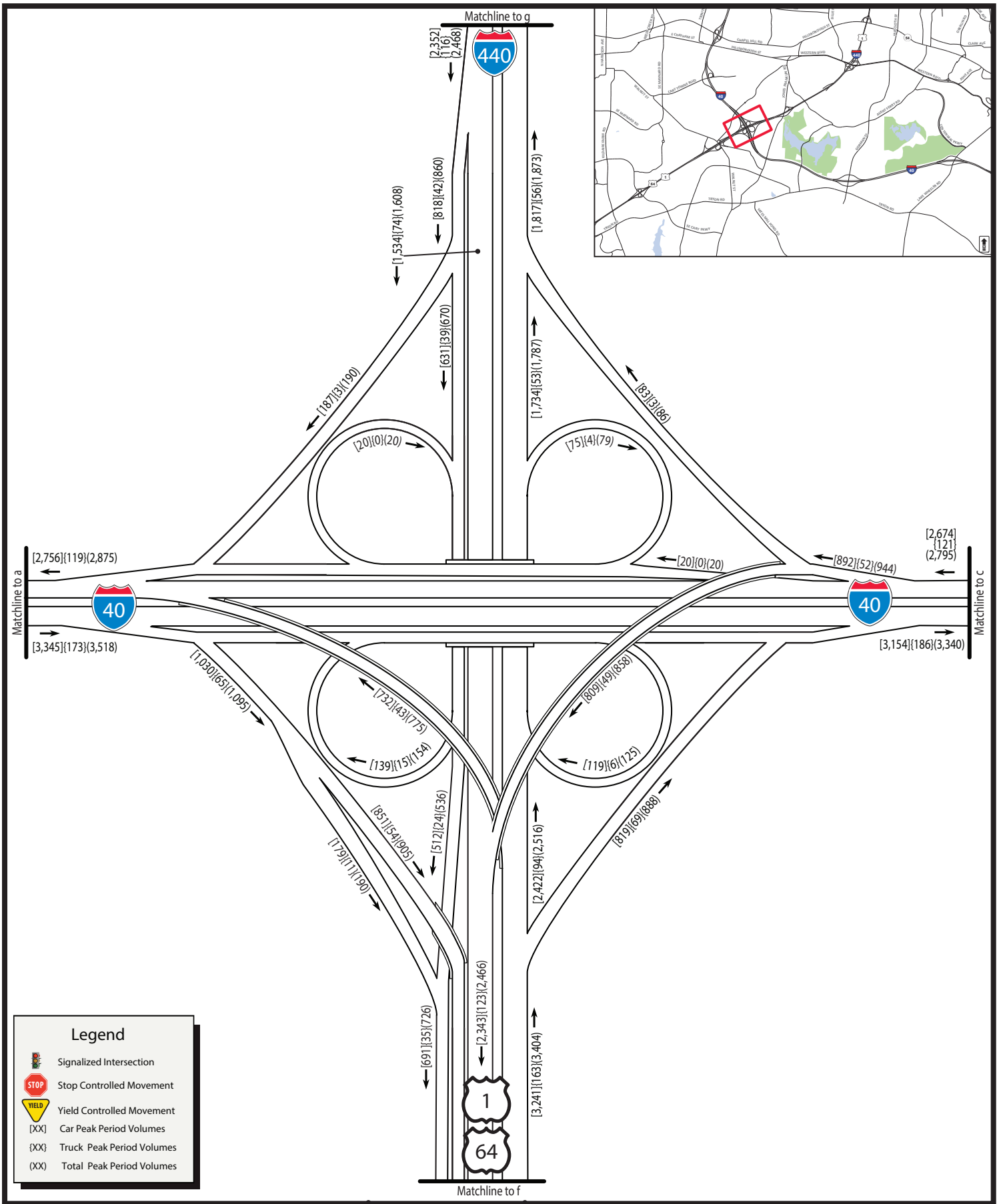
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 11a



I-5703_TOTM_2035B_ALL_pm3-4ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

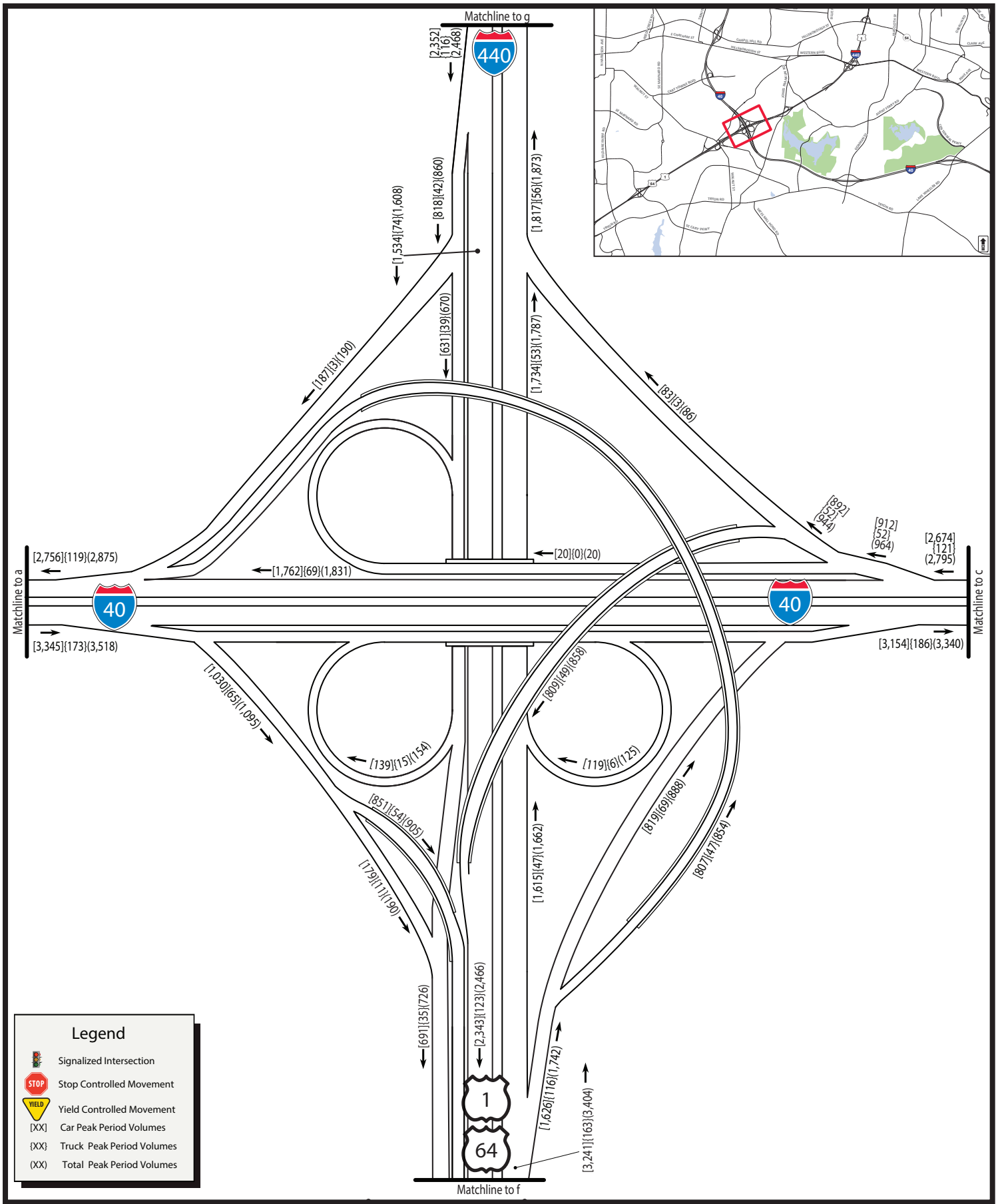
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 11b-Alt 1



I-5703_TOTM_2035B_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

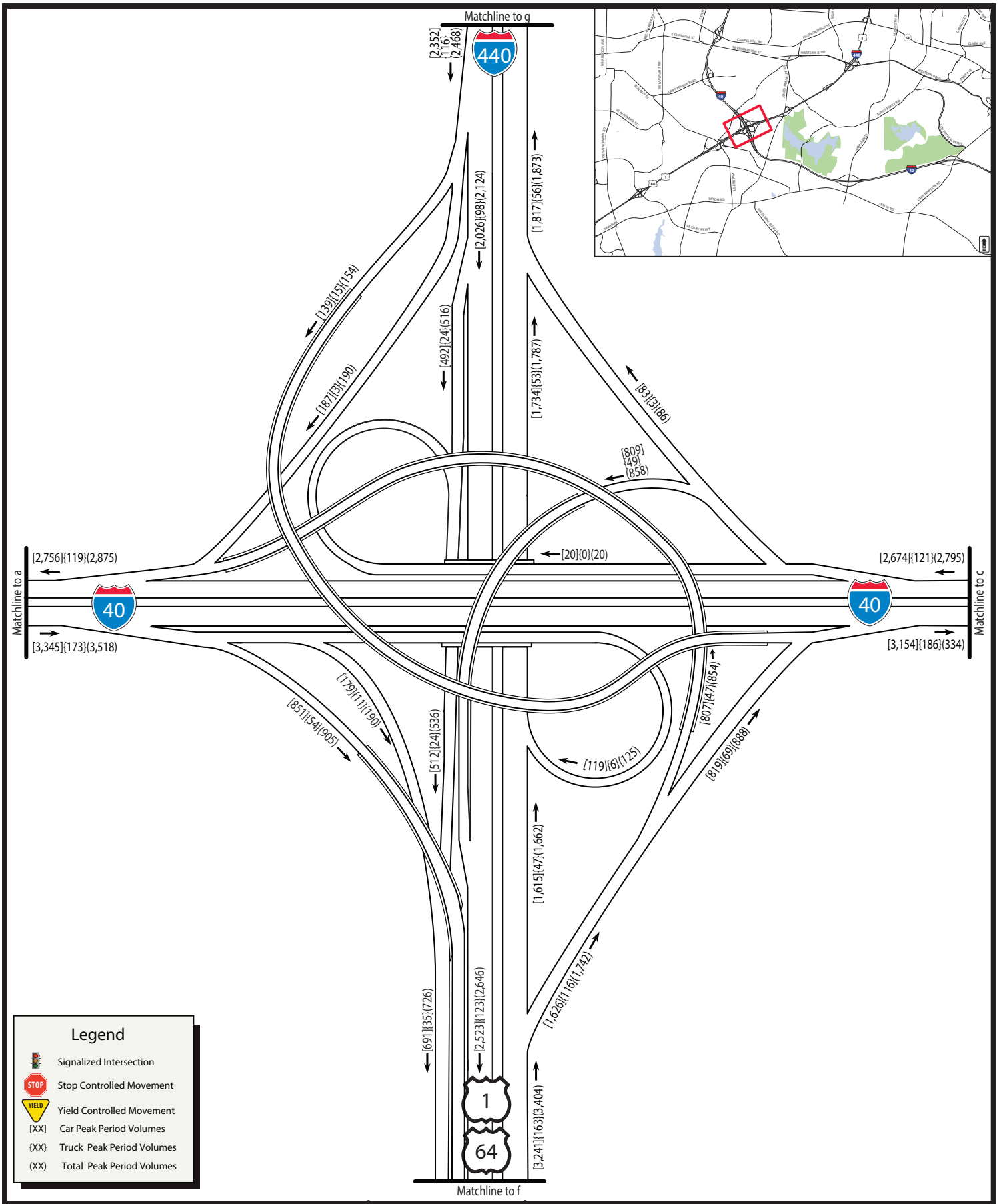
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 11b-Alt 2



I-5703_TOTM_2035B_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

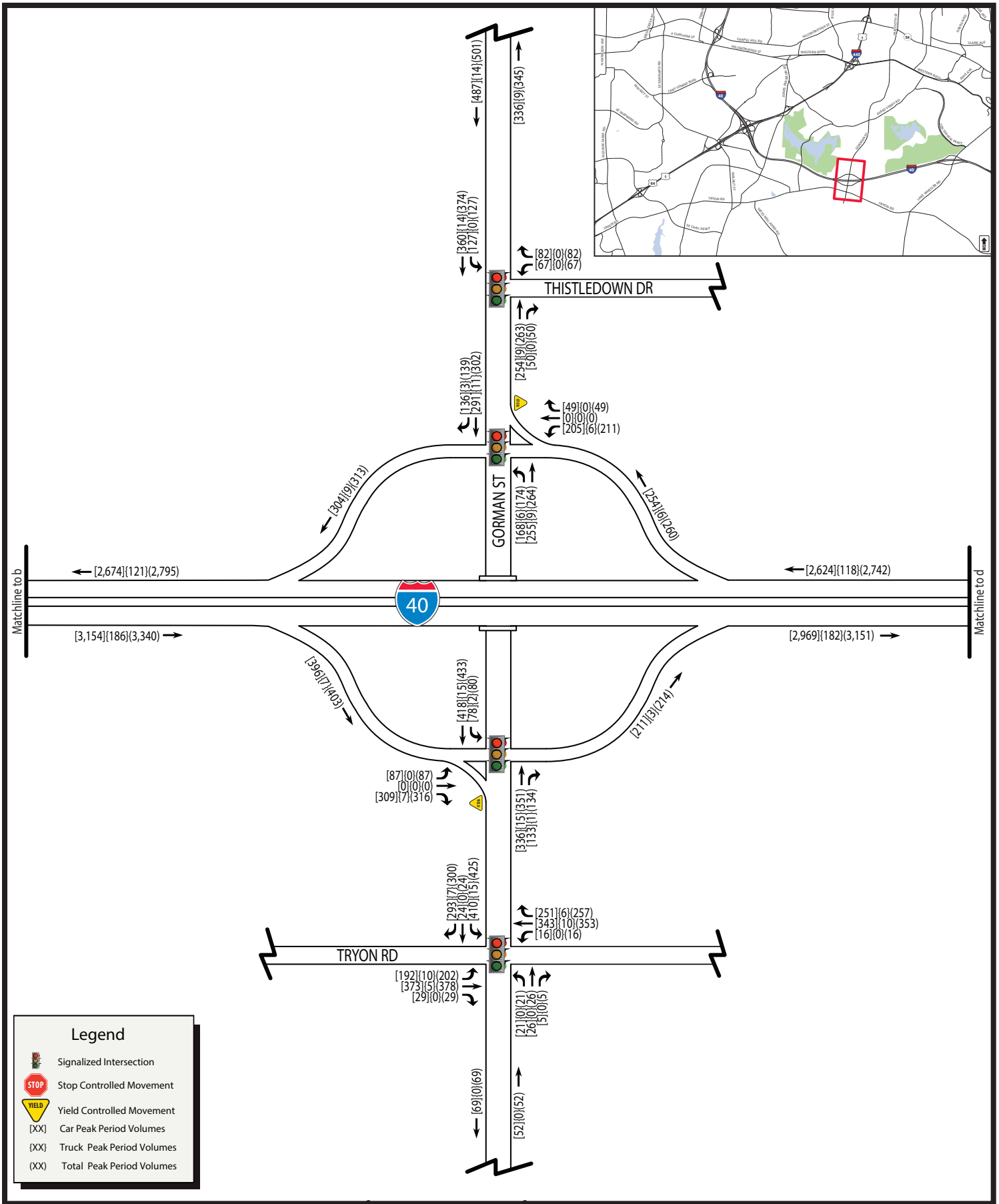
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 3:30pm-4pm

FIGURE 11b-Alt 3



I-5703_TOTM_2035B_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

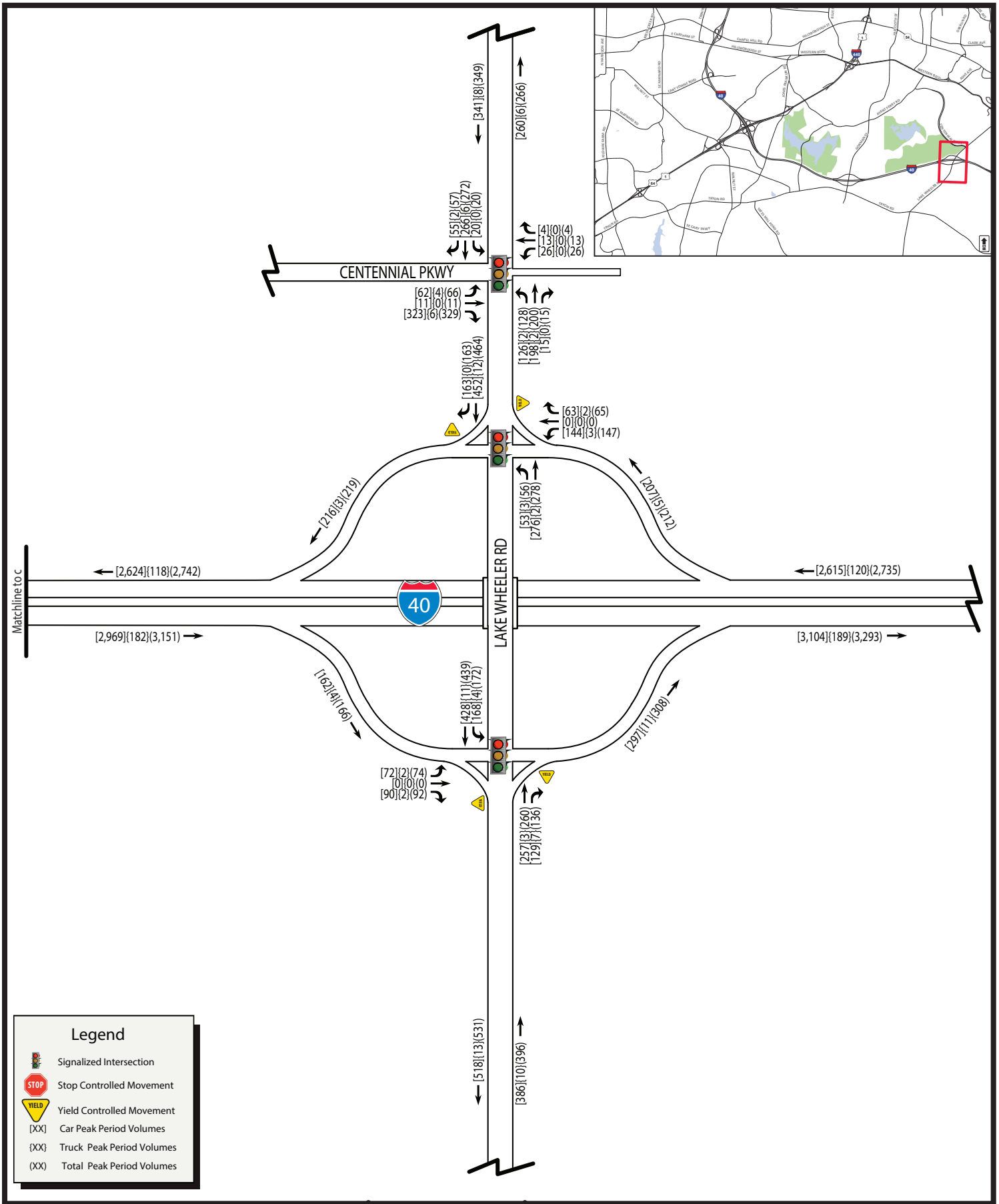
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 11c



I-5703_TOTM_2035B_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

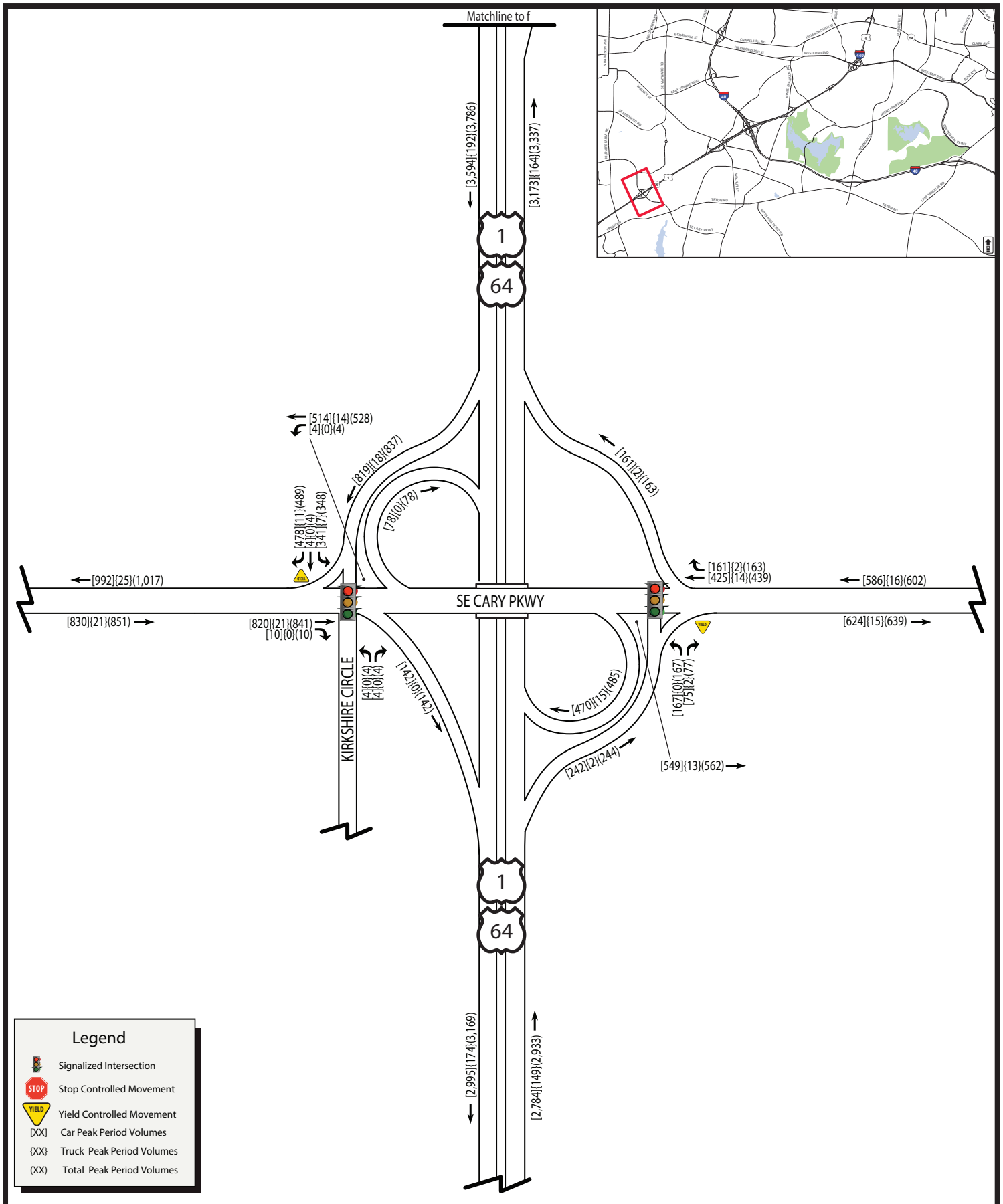
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 3:30pm-4pm

FIGURE 11d



I-5703_TOTM_2035B_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

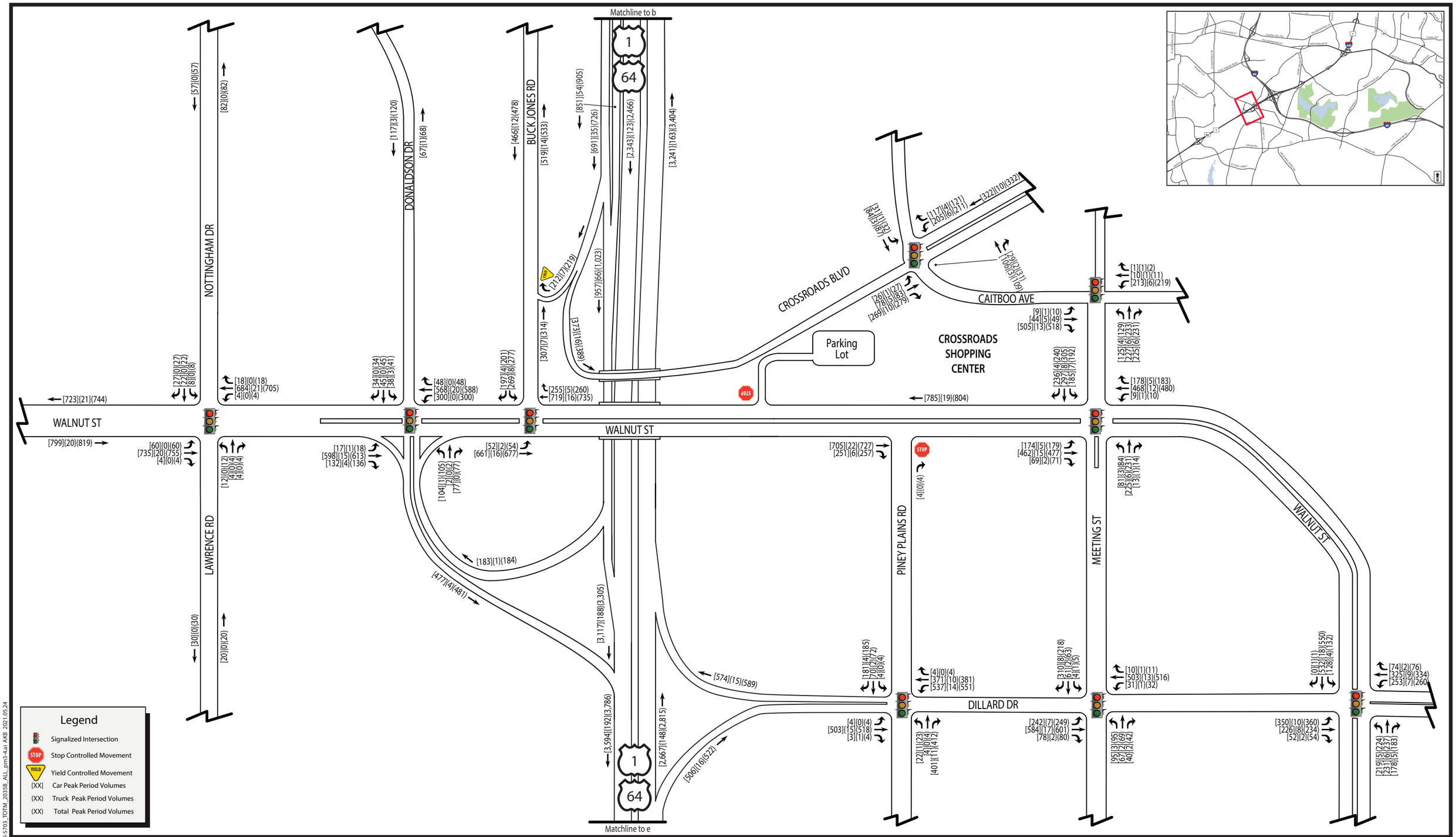
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 11e



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2035B_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

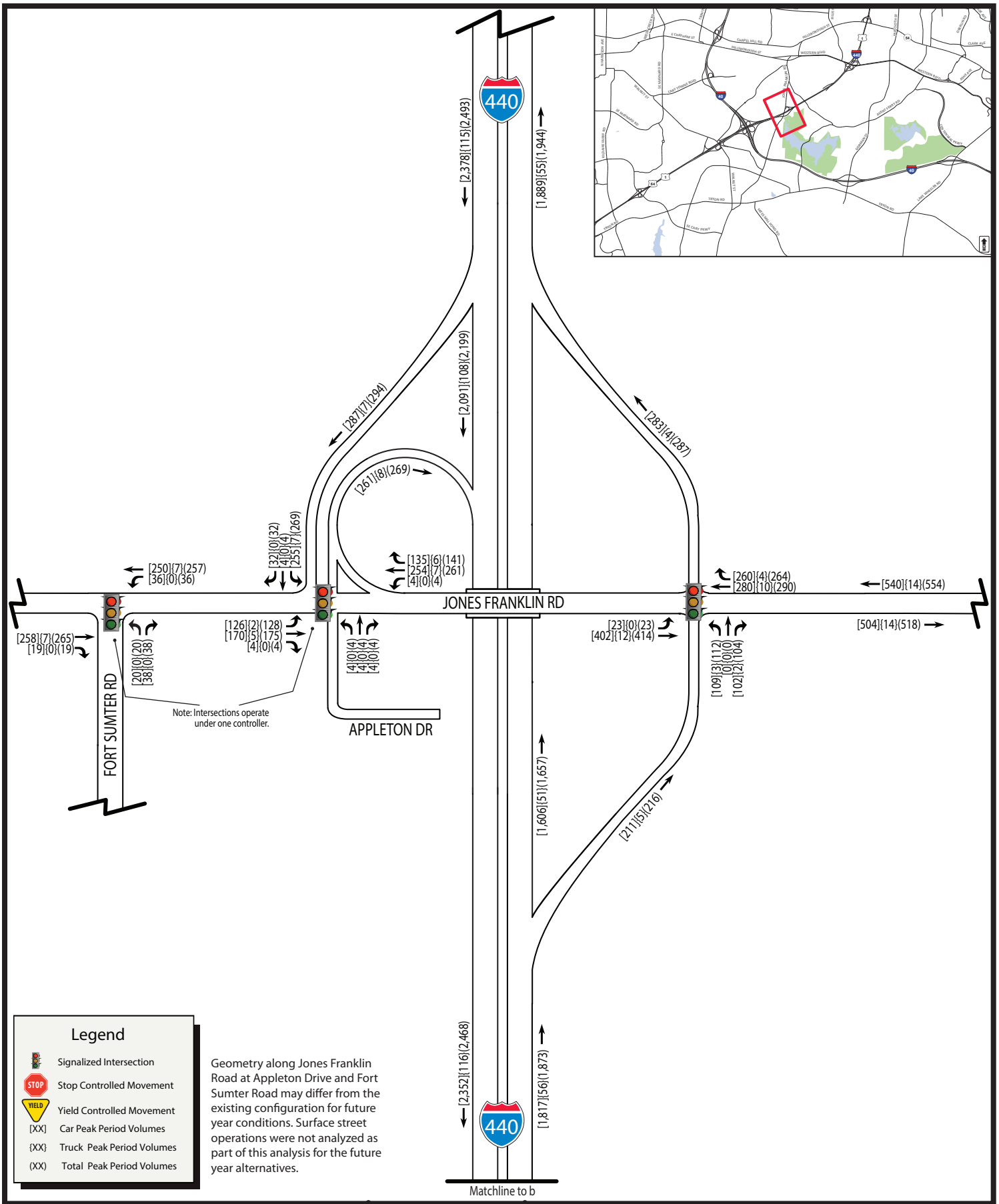
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 3:30pm-4pm

FIGURE 11f



I-5703_TOTM_2035B_ALL_pm3-4.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

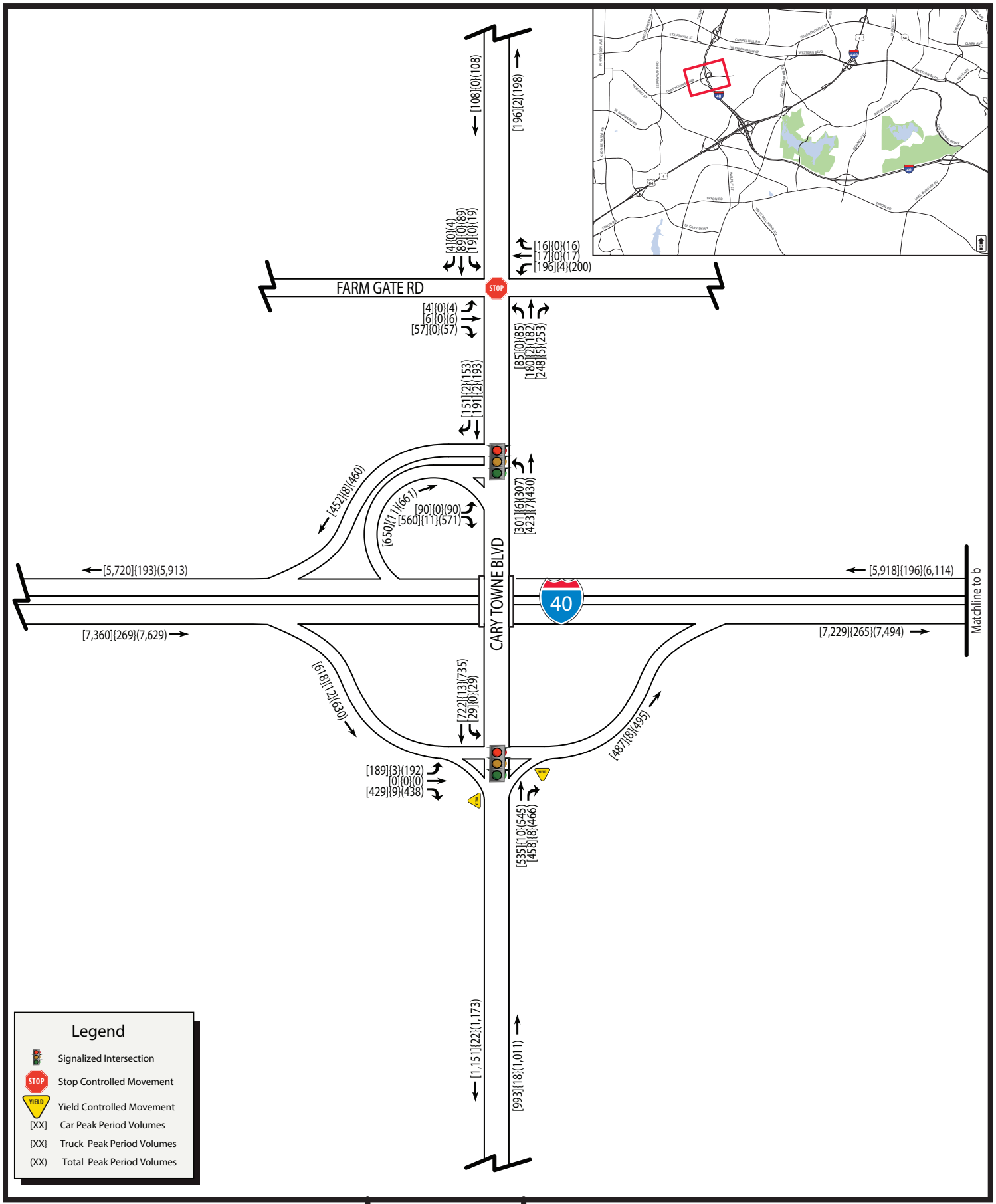
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 3:30pm-4pm

FIGURE 11g



I-5703_TOTM_2035B_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

Wake County, North Carolina

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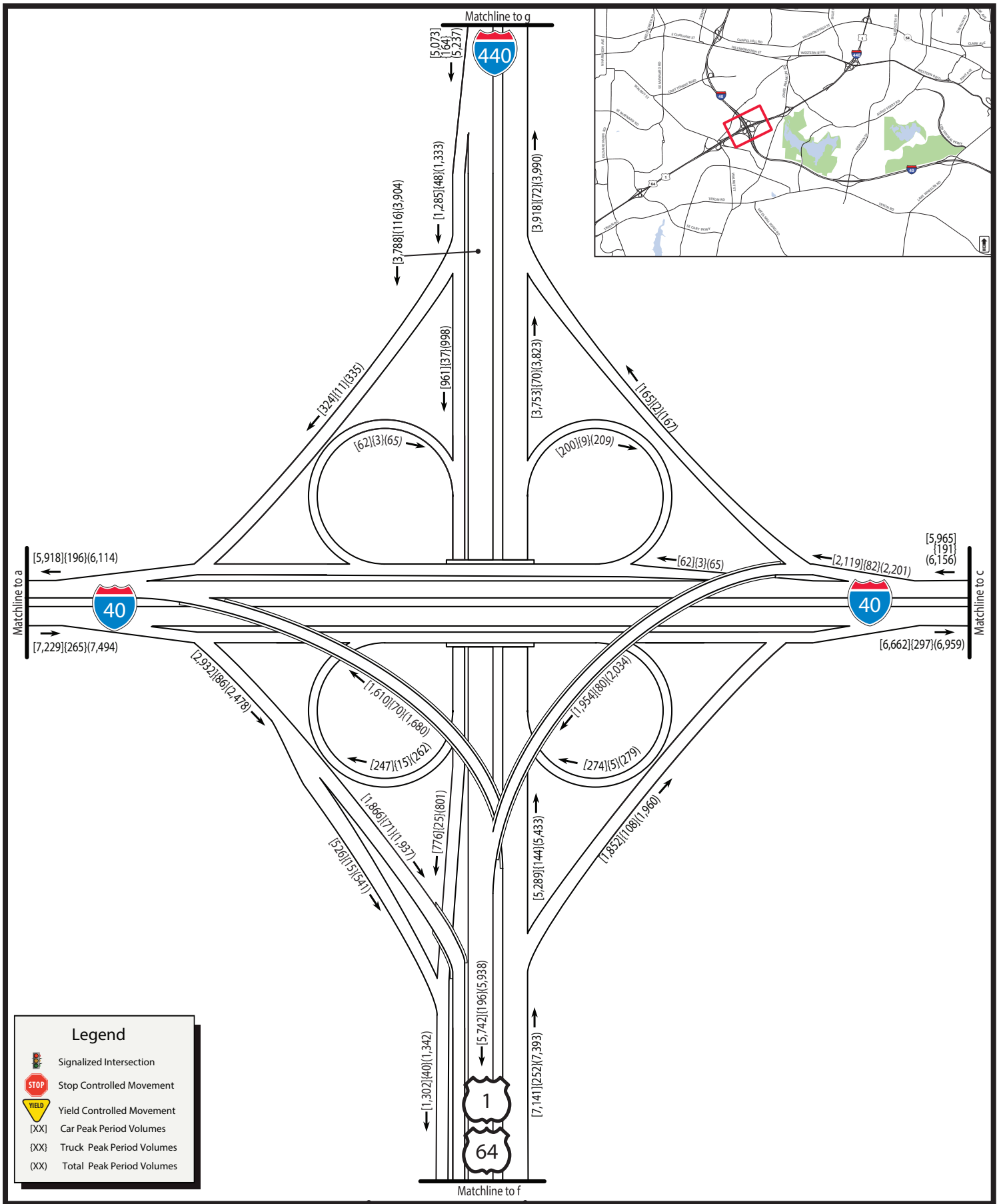
I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 11a



I-5703_TOTM_2035B_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

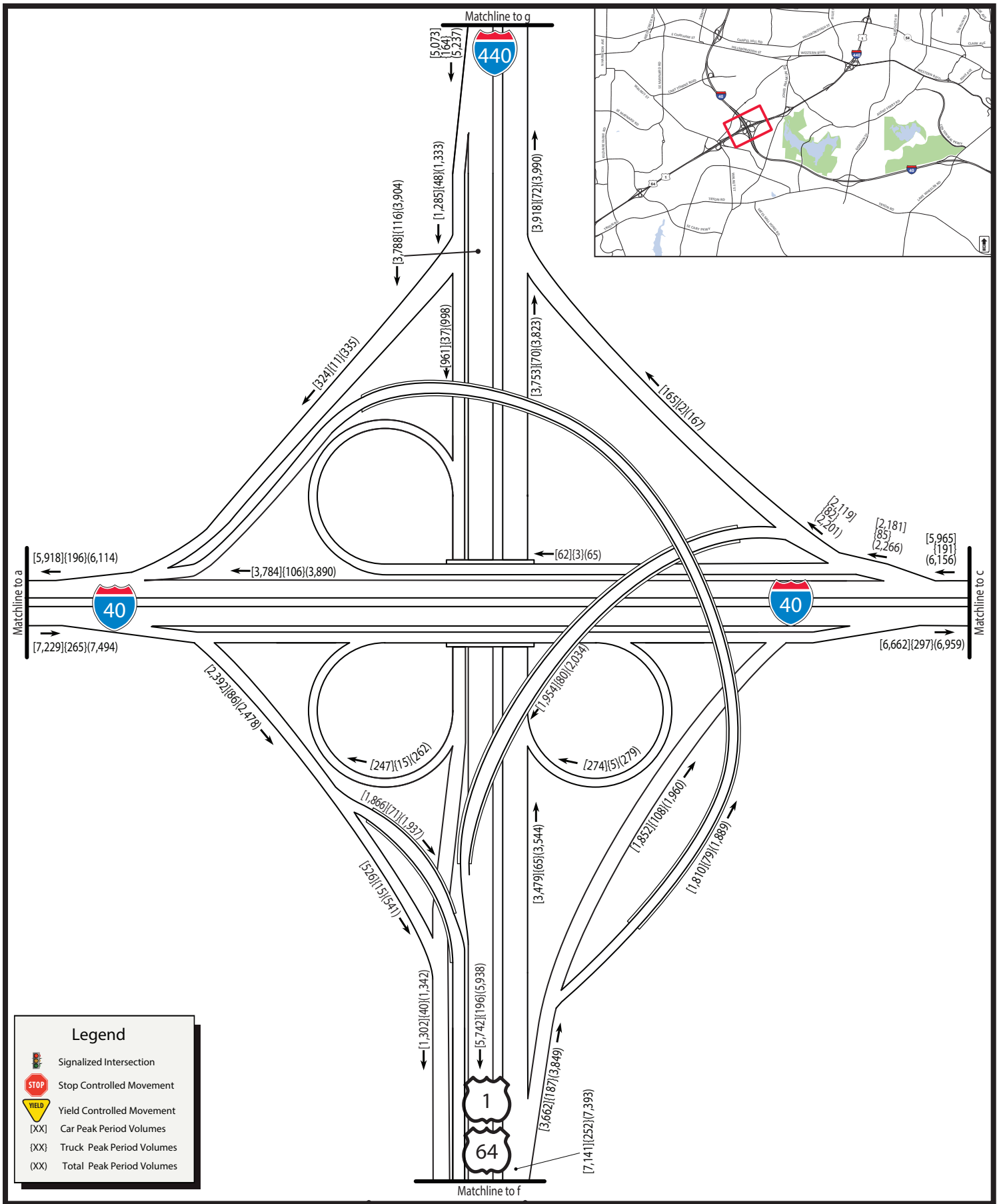
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 4pm-5pm

FIGURE 11b-Alt 1



I-5703_TOTM_2035B_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

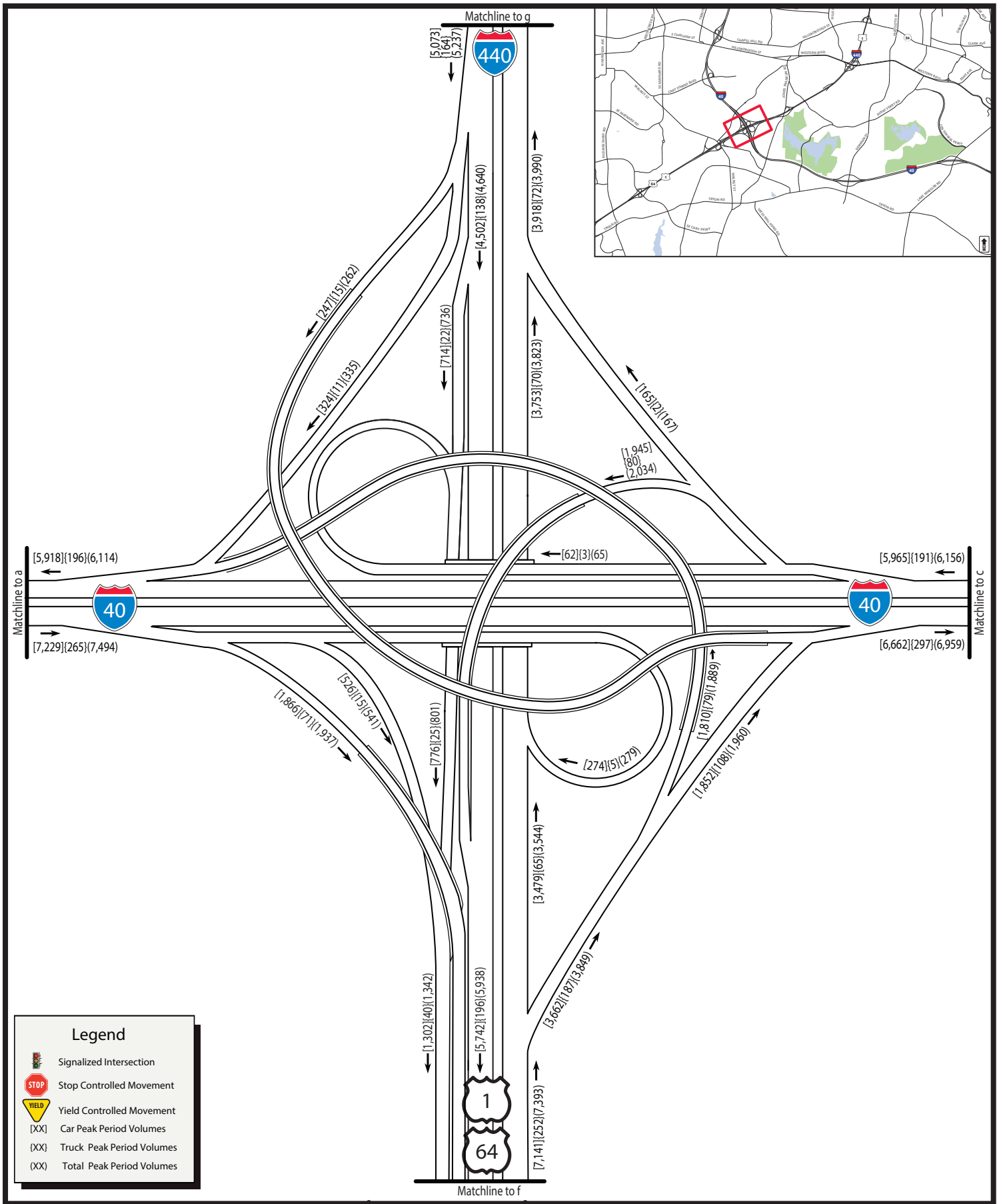
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 4pm-5pm

FIGURE 11b-Alt 2



I-5703_TOTM_2035B_ALL_pm4-5.ai AKB 2021.05.24

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

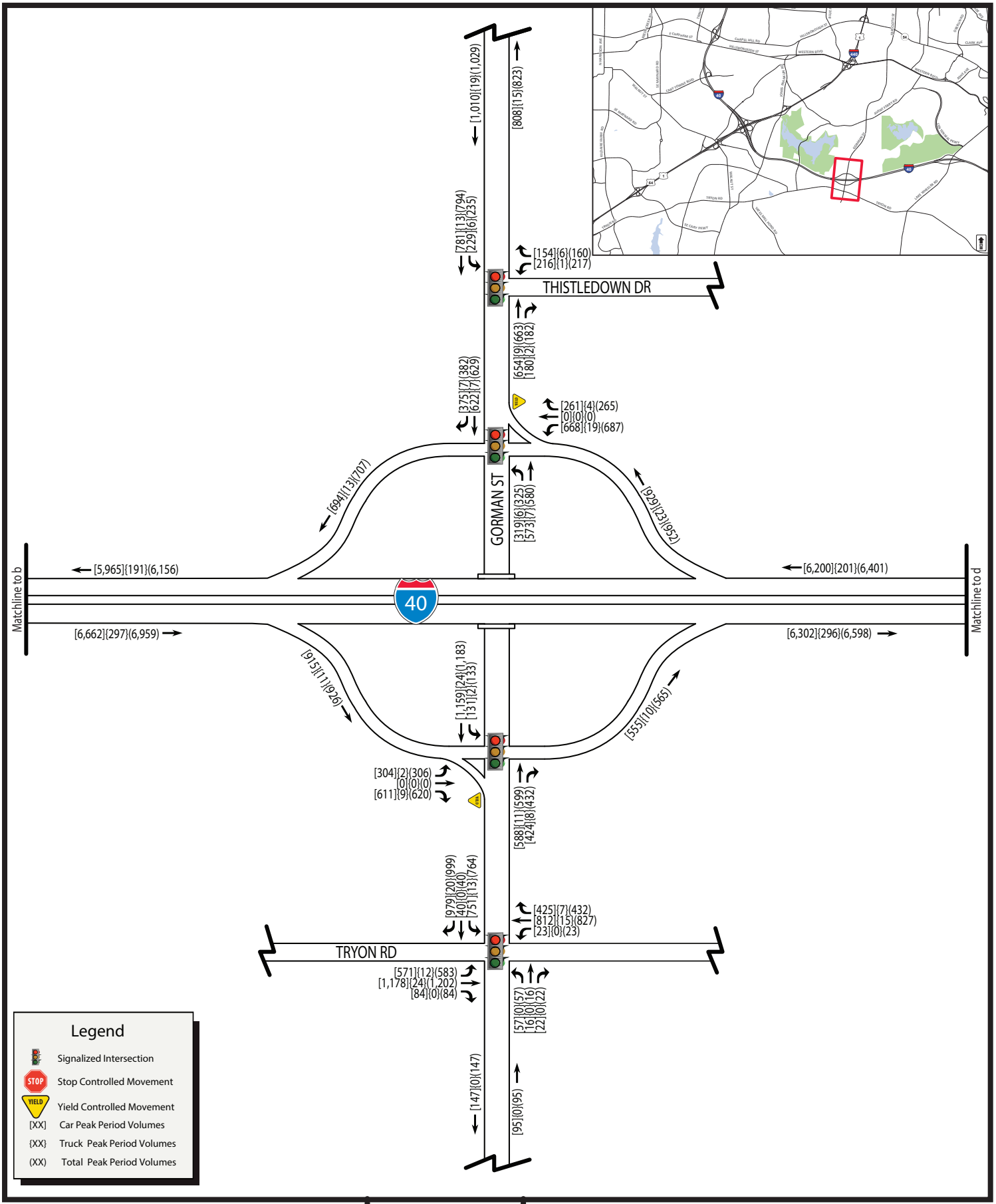
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 4pm-5pm

FIGURE 11b-Alt 3



I-5703_TOTM_2035B_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

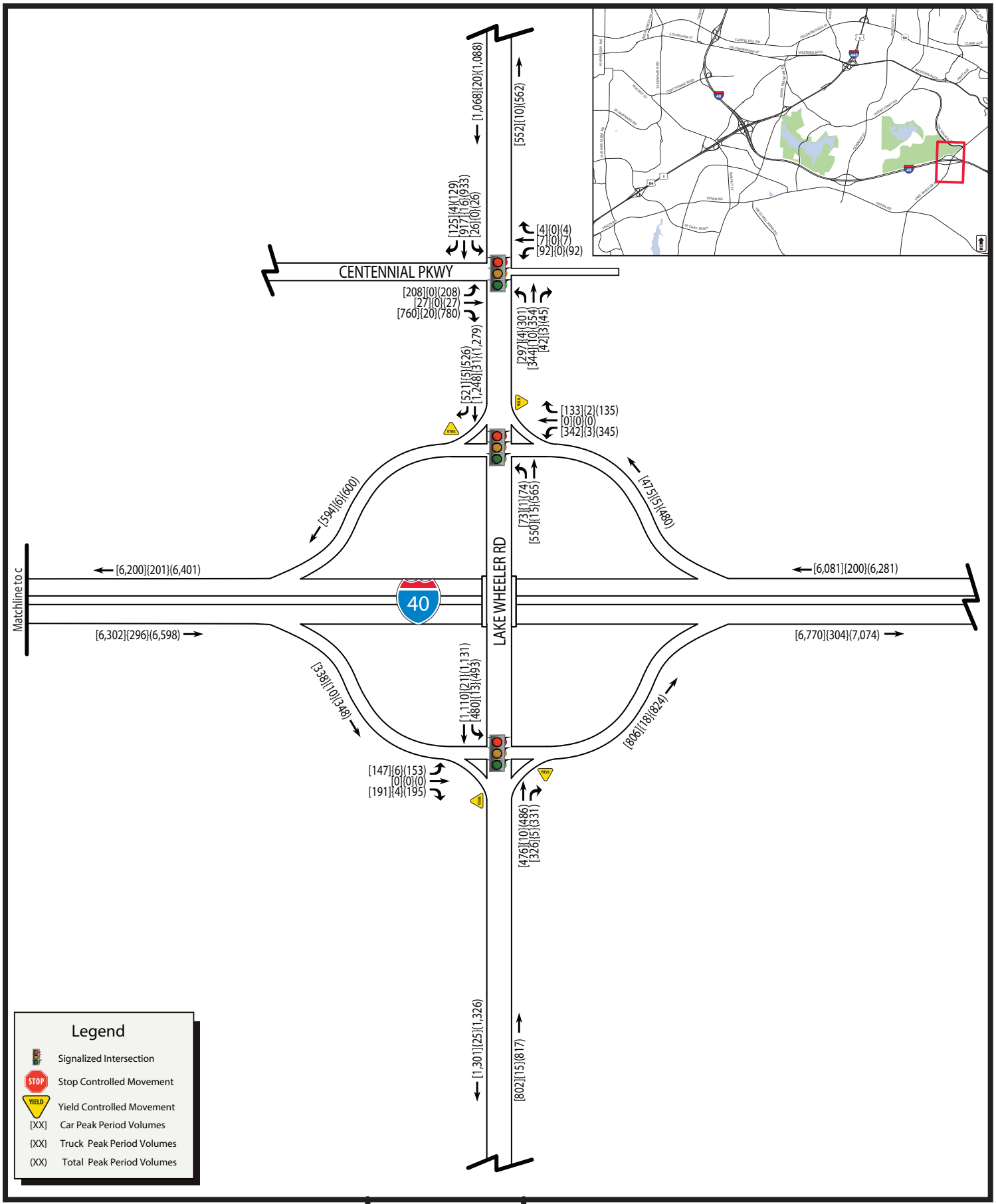
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 11c



I-5703_TOTM_2035B_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

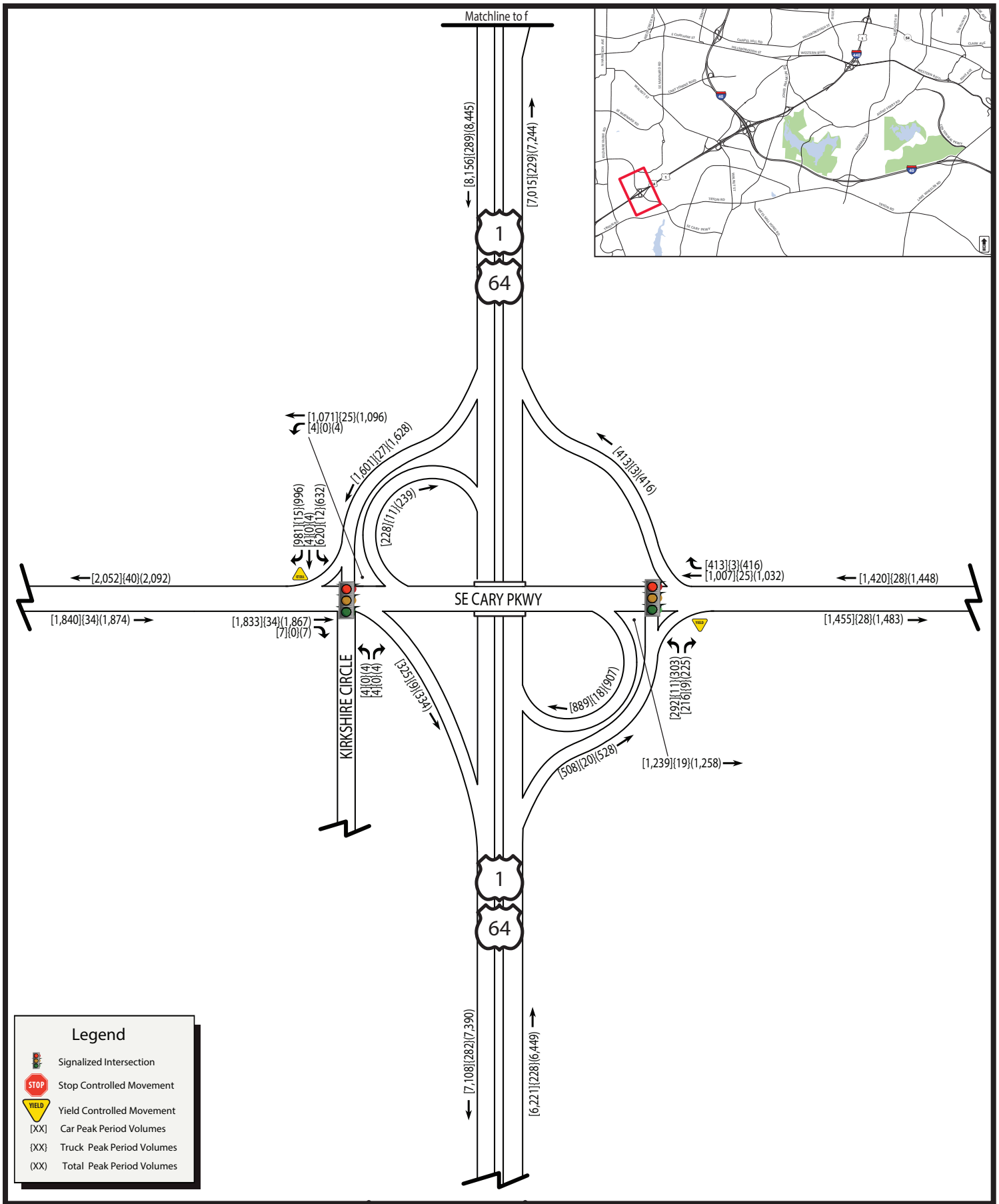
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 11d



I-5703_TOTM_2035B_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

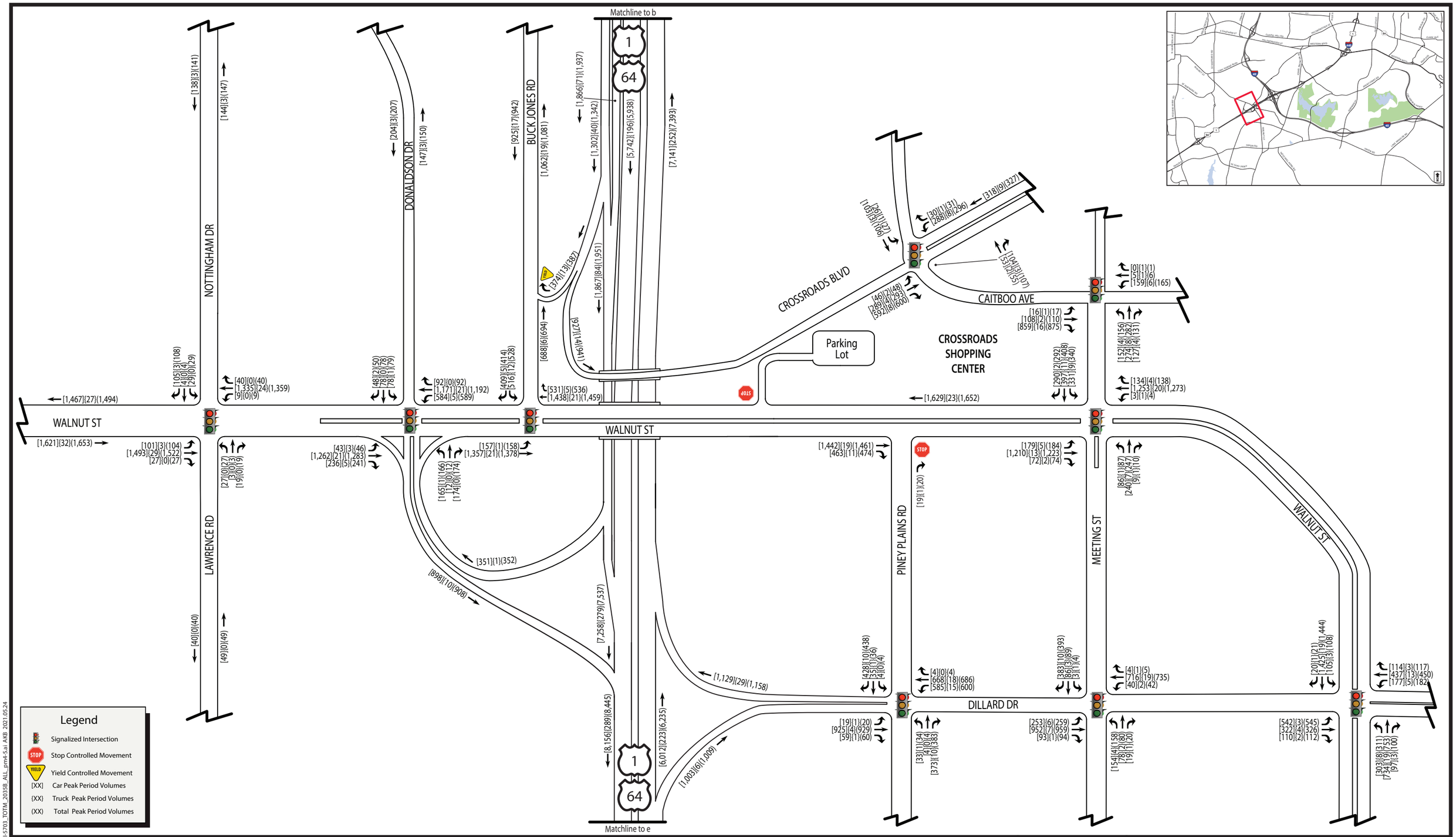
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 11e



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2035B_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

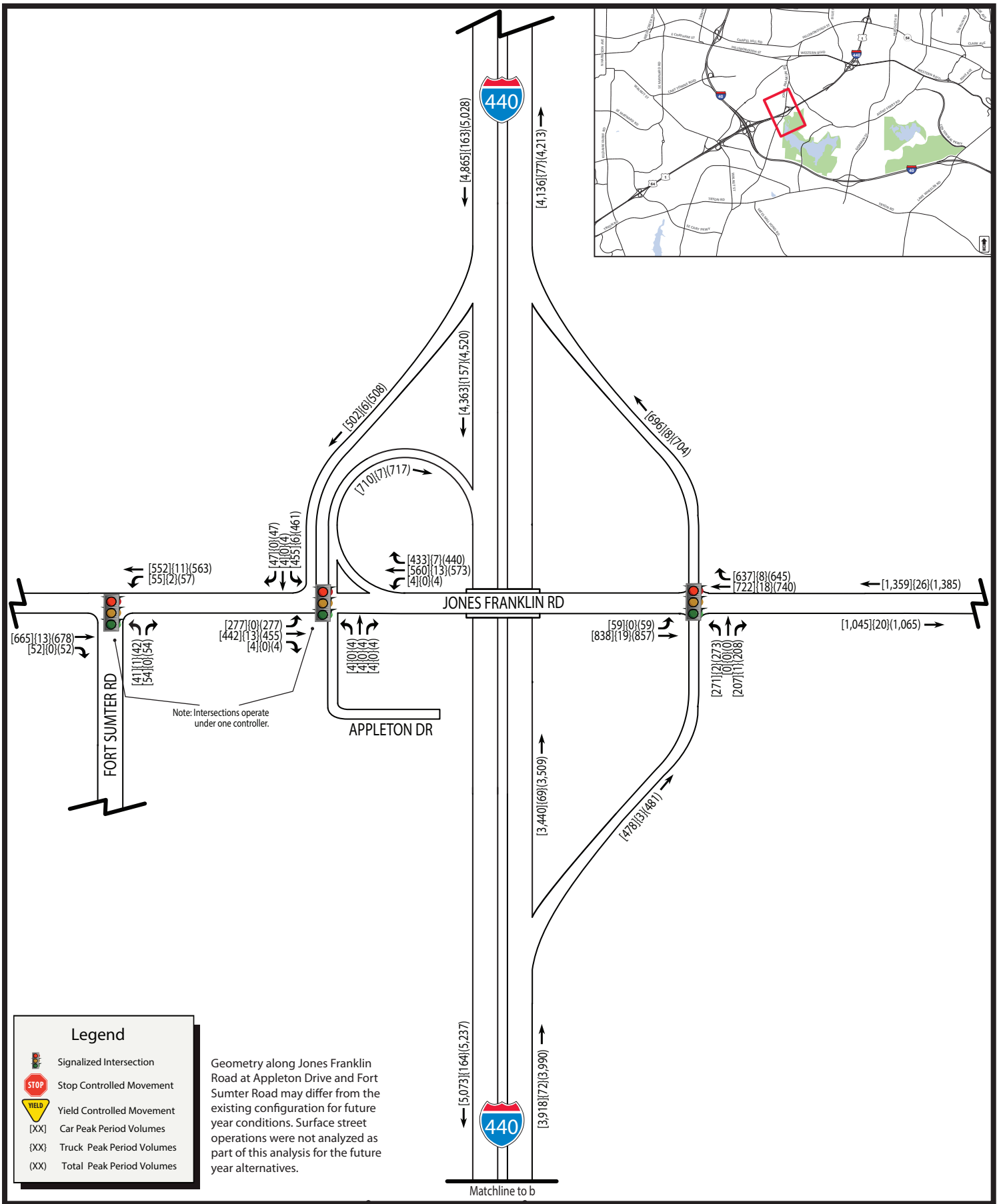
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 4pm-5pm

FIGURE 11f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035B_ALL_pm4-5.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

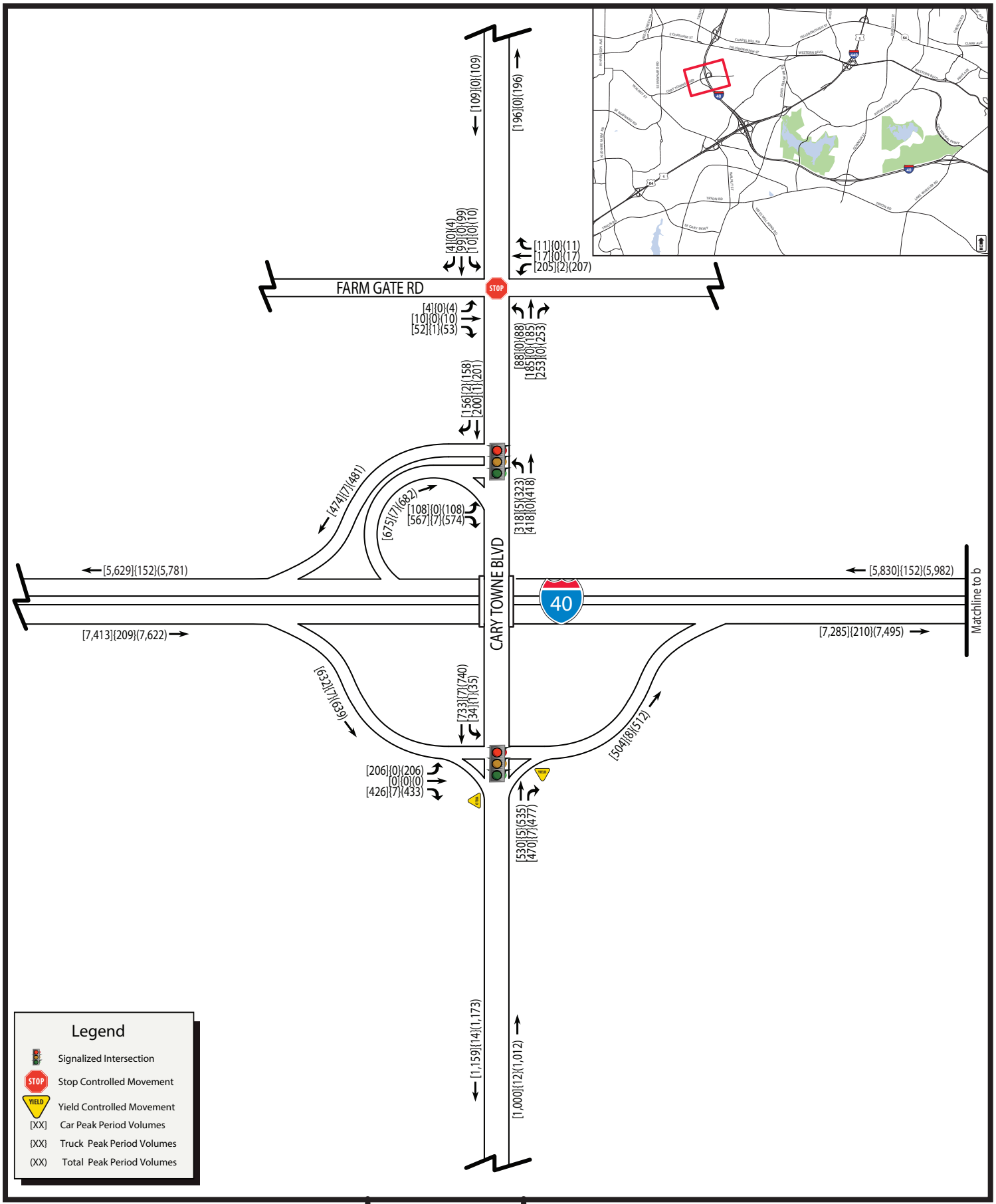
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 4pm-5pm

FIGURE 11g



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

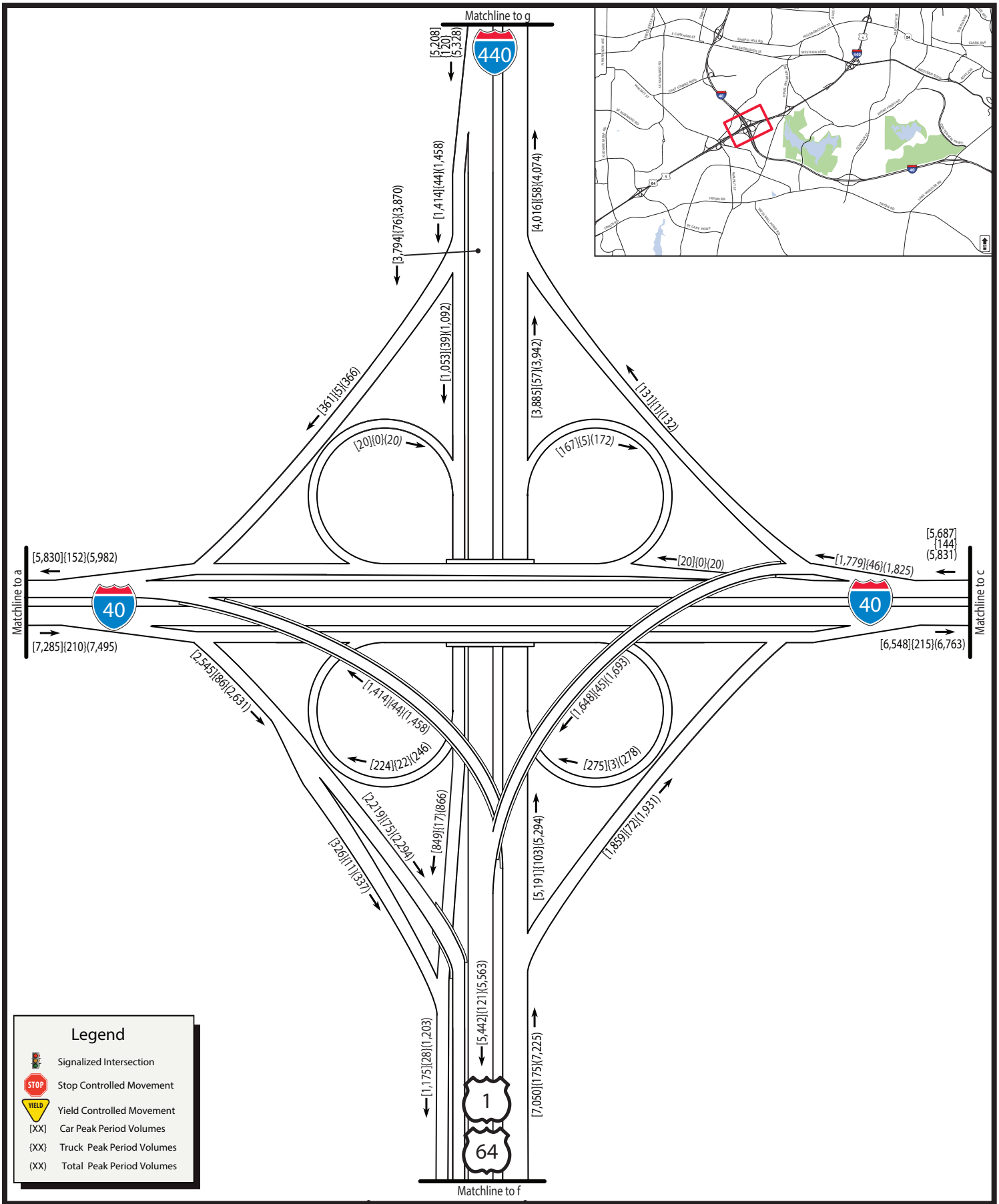
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 11a



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

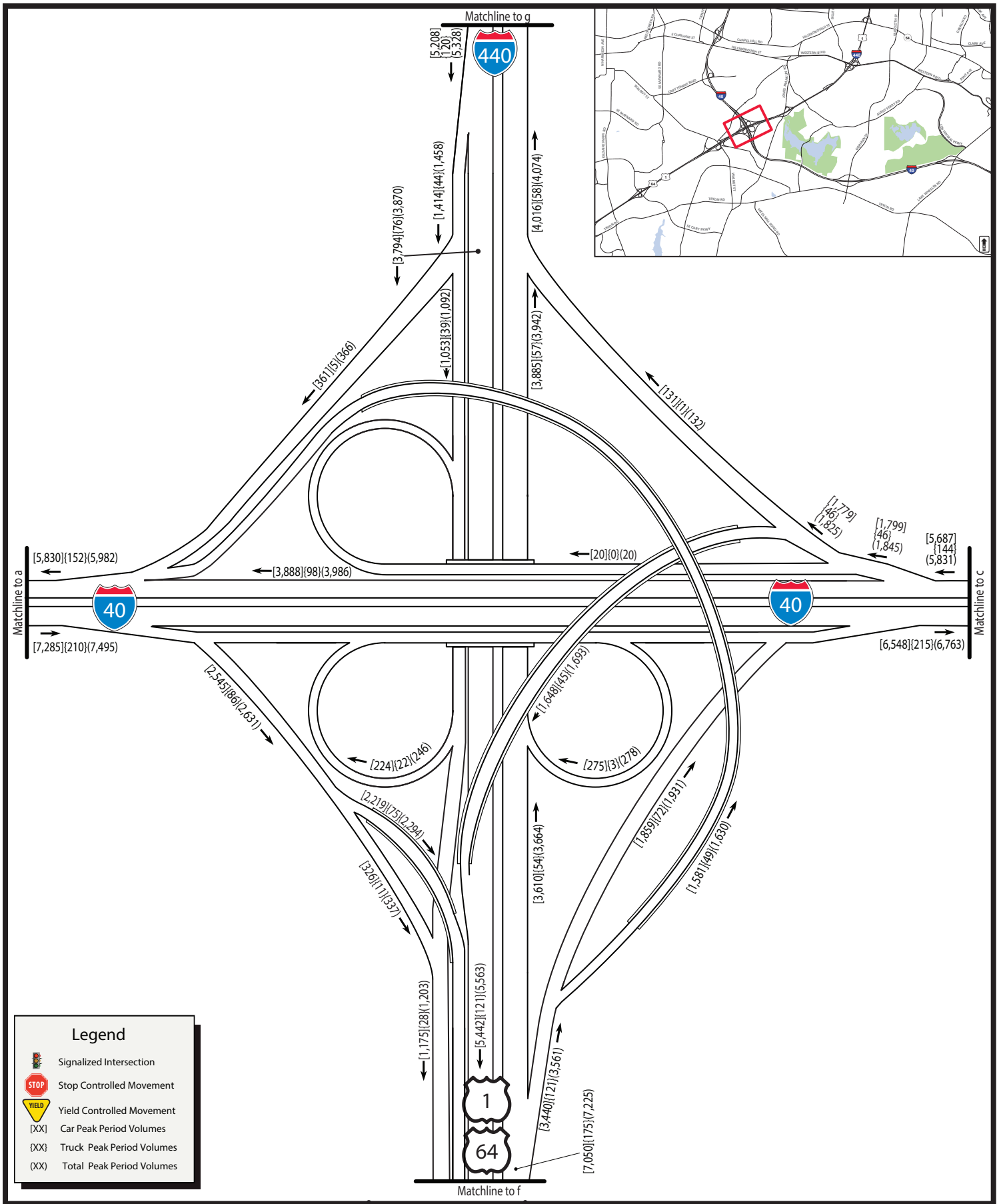
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 11b-Alt 1



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

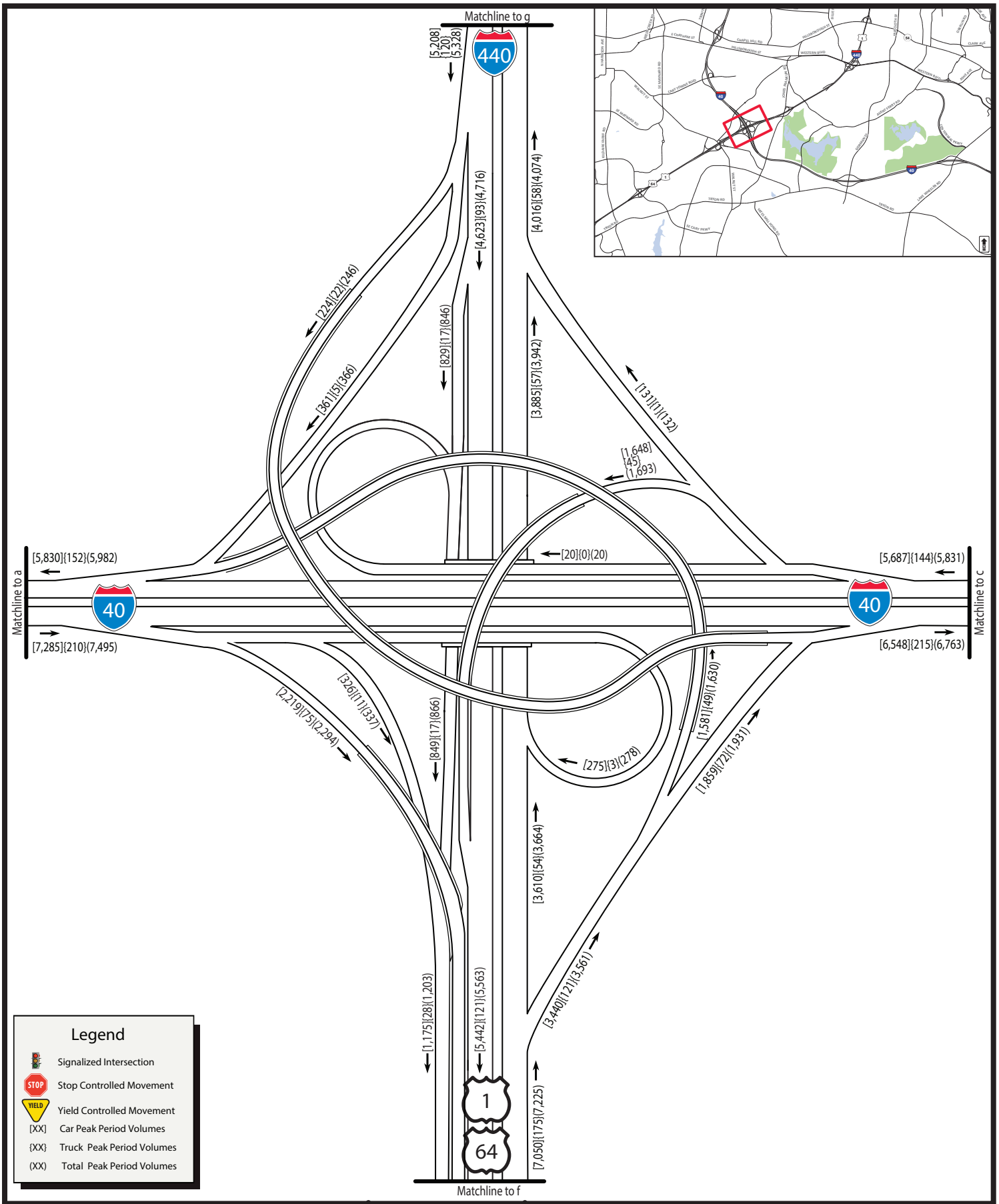
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 11b-Alt 2



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

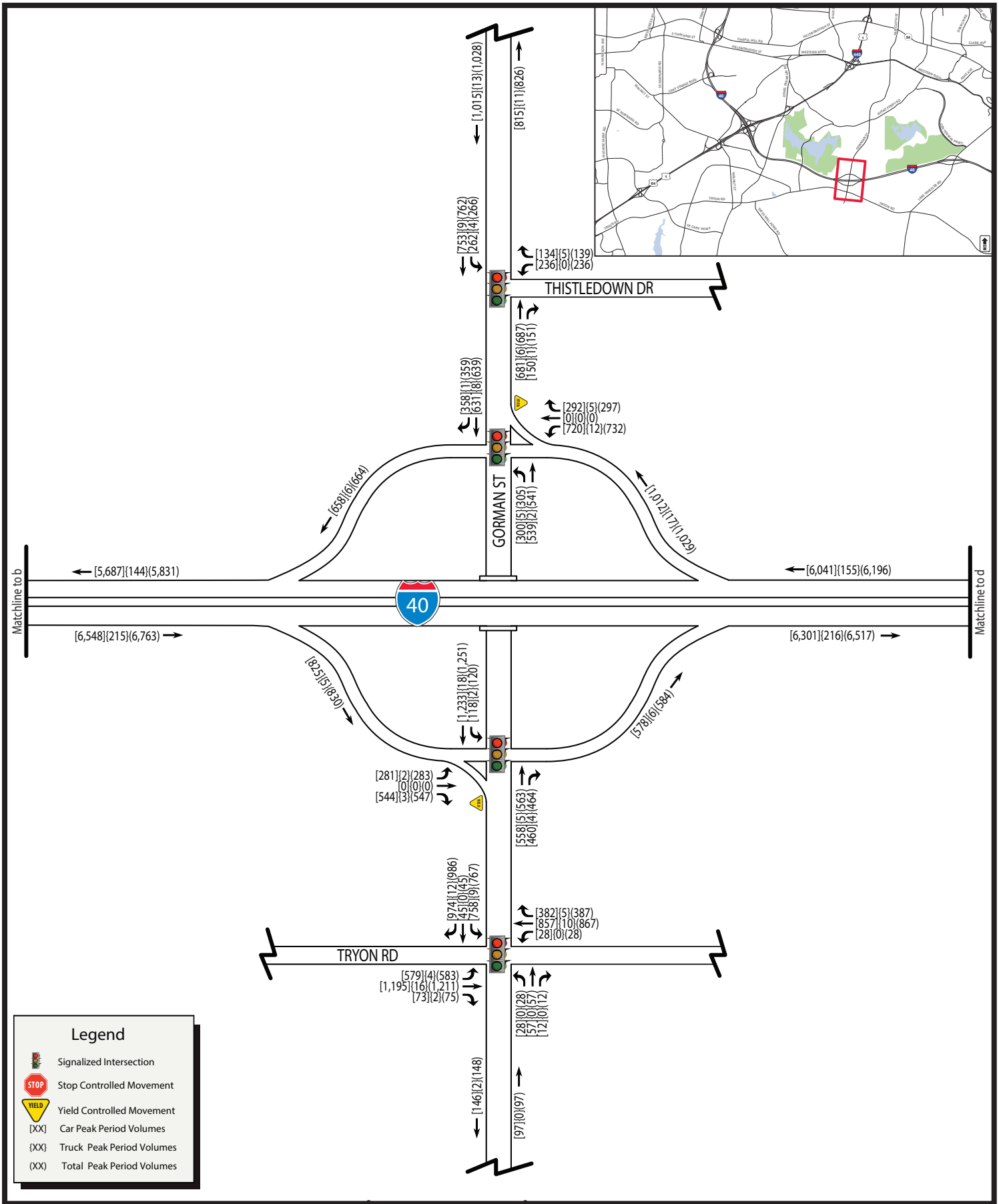
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 11b-Alt 3



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

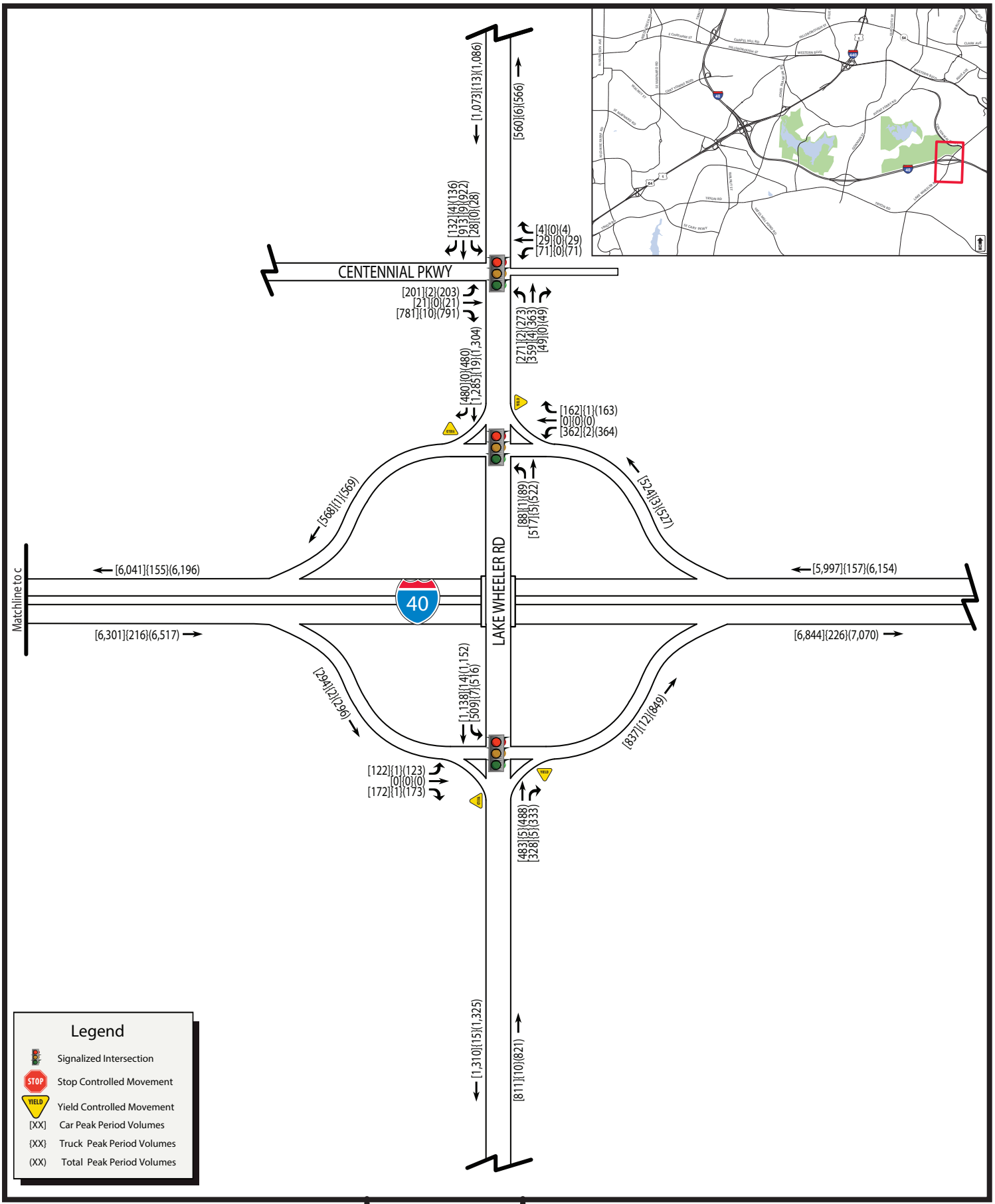
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 11c



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

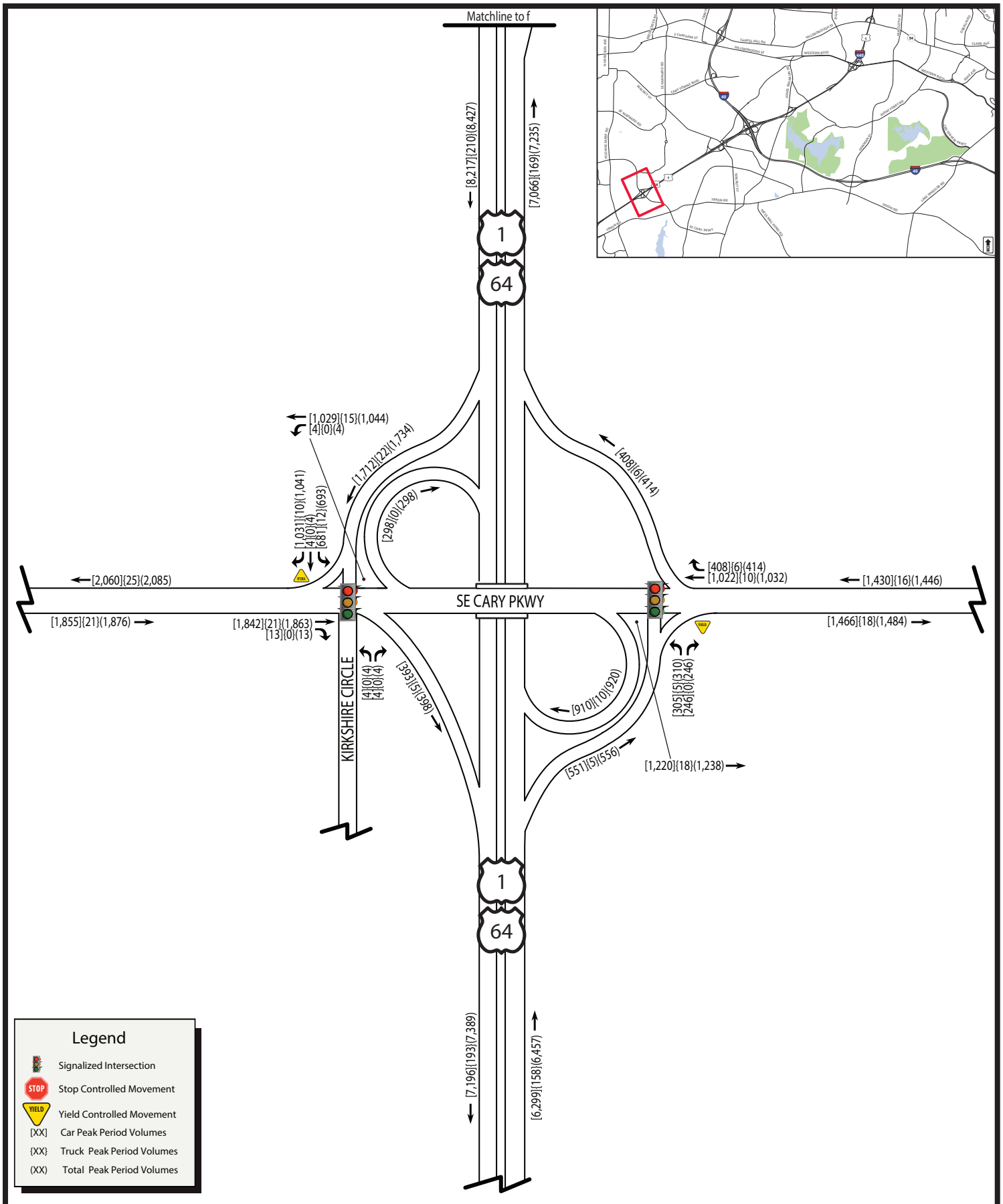
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 11d



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

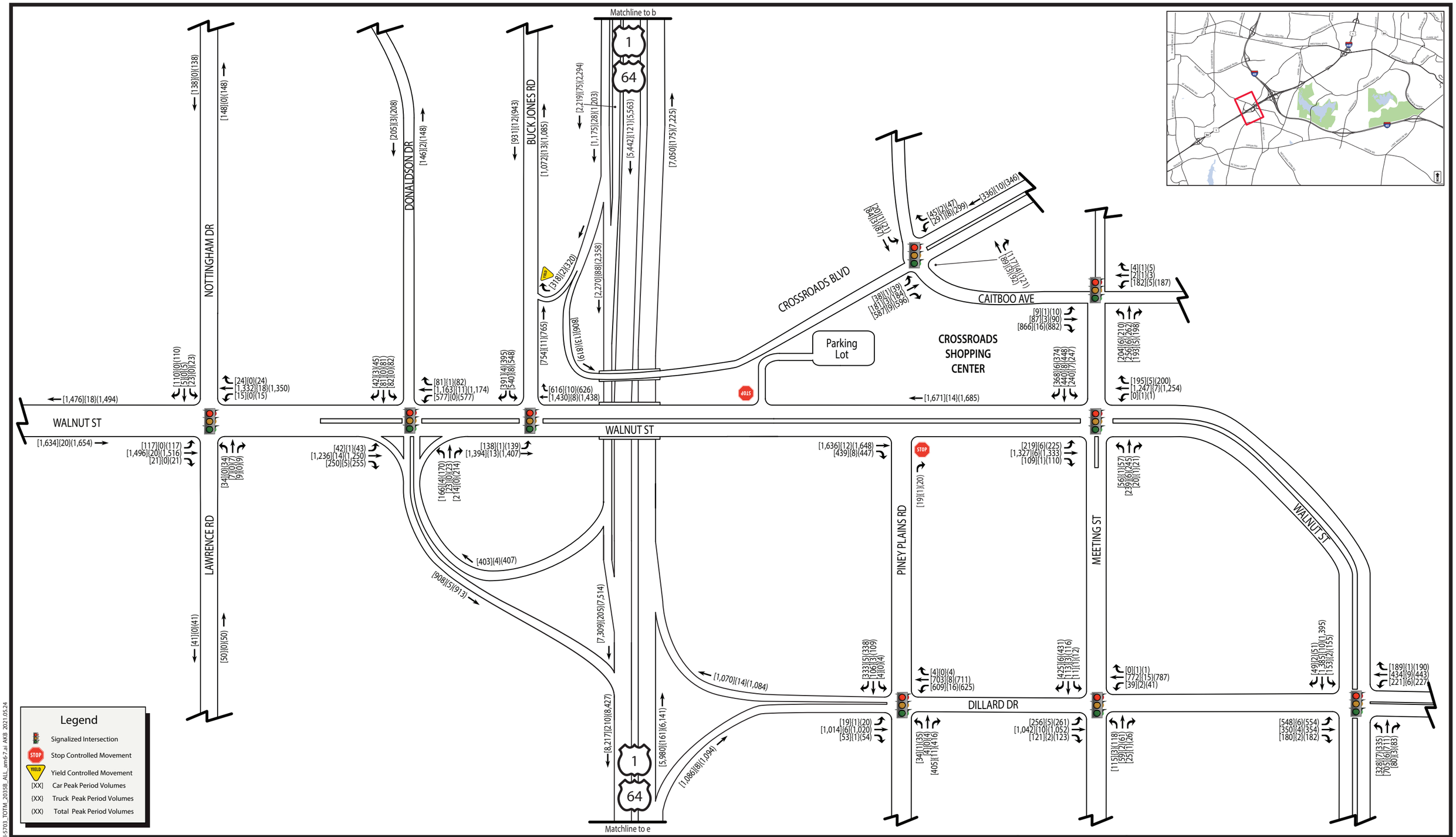
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 11e



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

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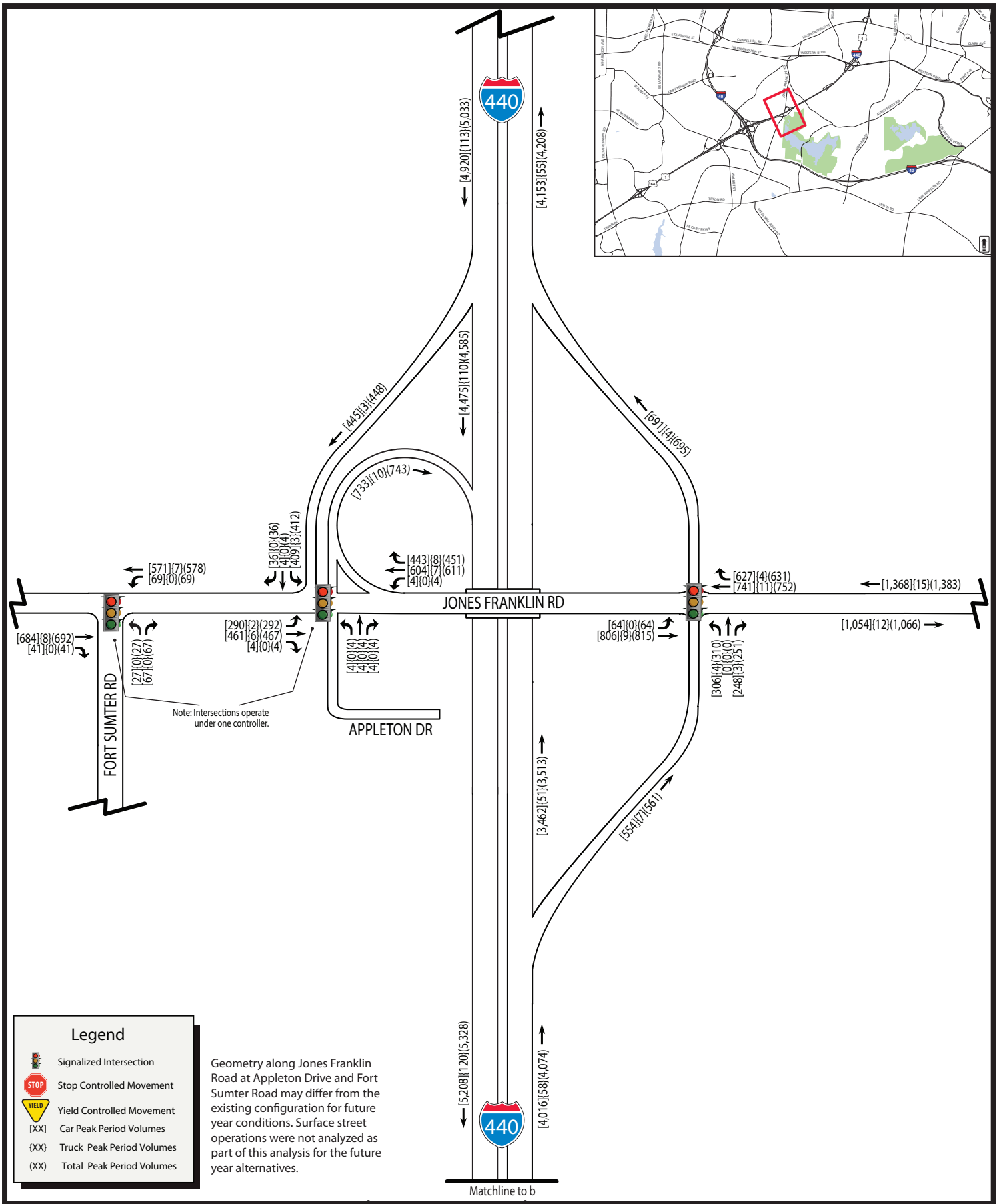
Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 5pm-6pm

FIGURE 11f



Legend

- Signalized Intersection
- STOP Stop Controlled Movement
- YIELD Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

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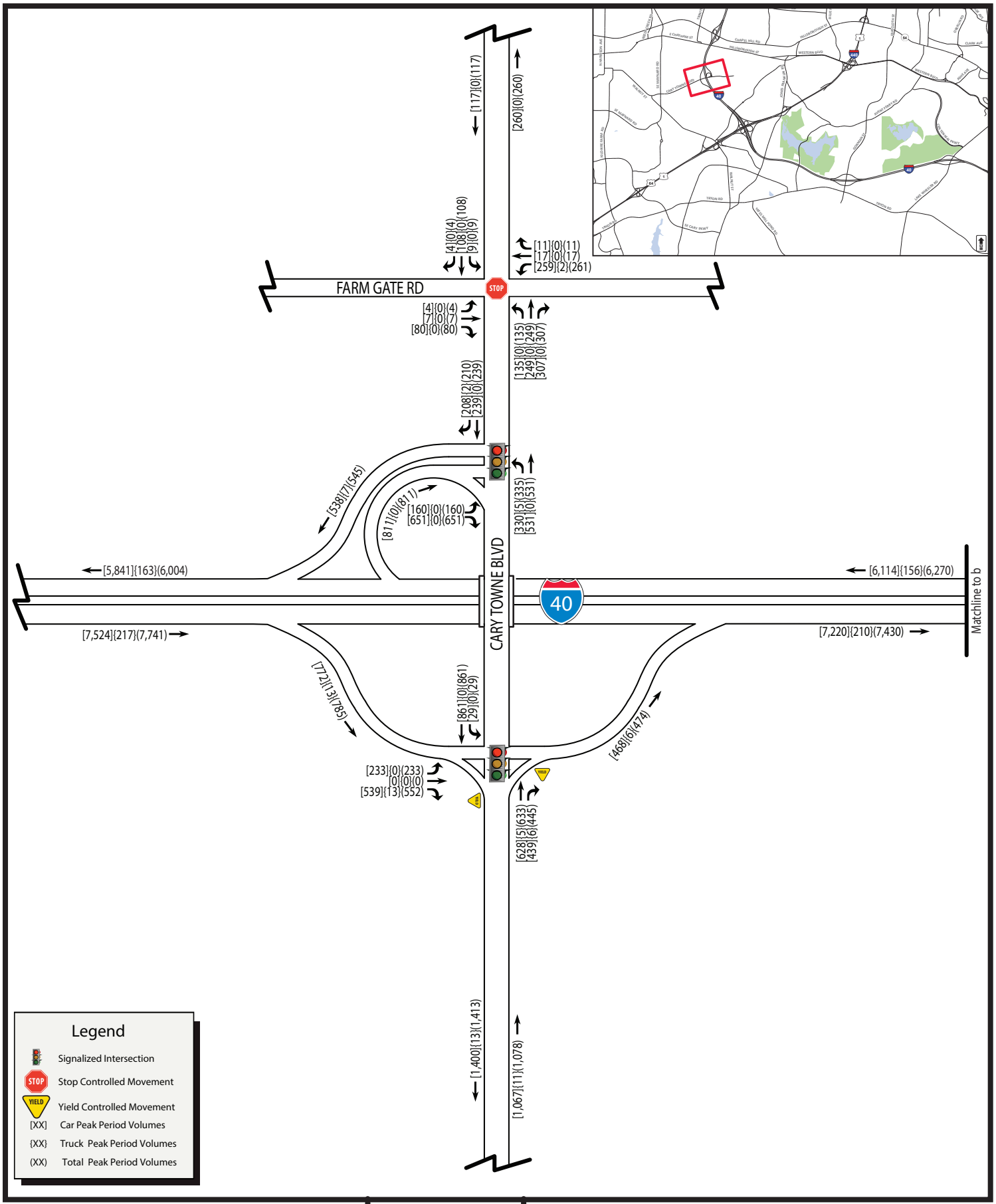
Wake County, North Carolina

Not to Scale

I-440 AND JONES FRANKLIN RD INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 5pm-6pm

FIGURE 11g



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I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

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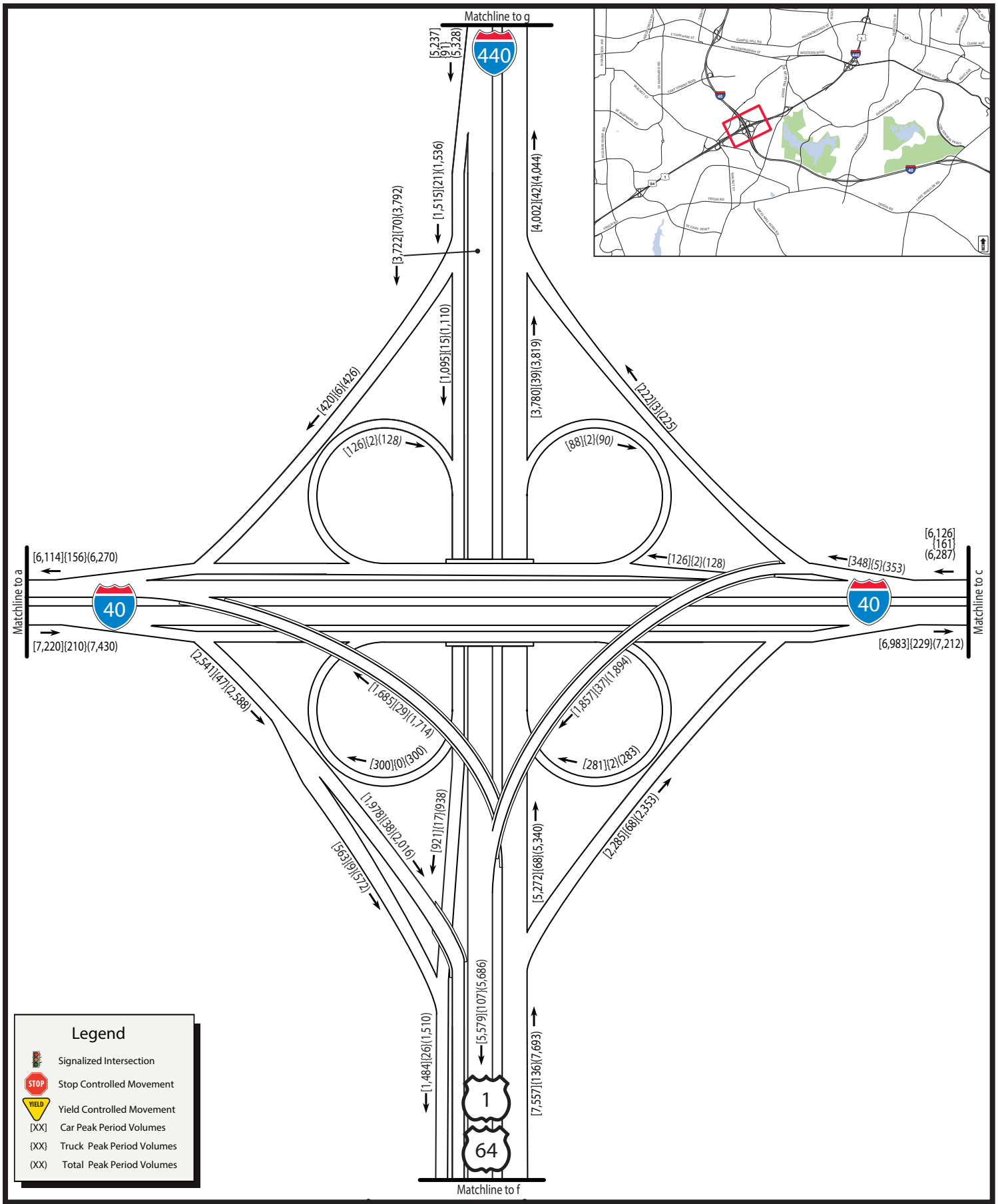
Not to Scale

I-40 AND CARY TOWNE BOULEVARD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 11a



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

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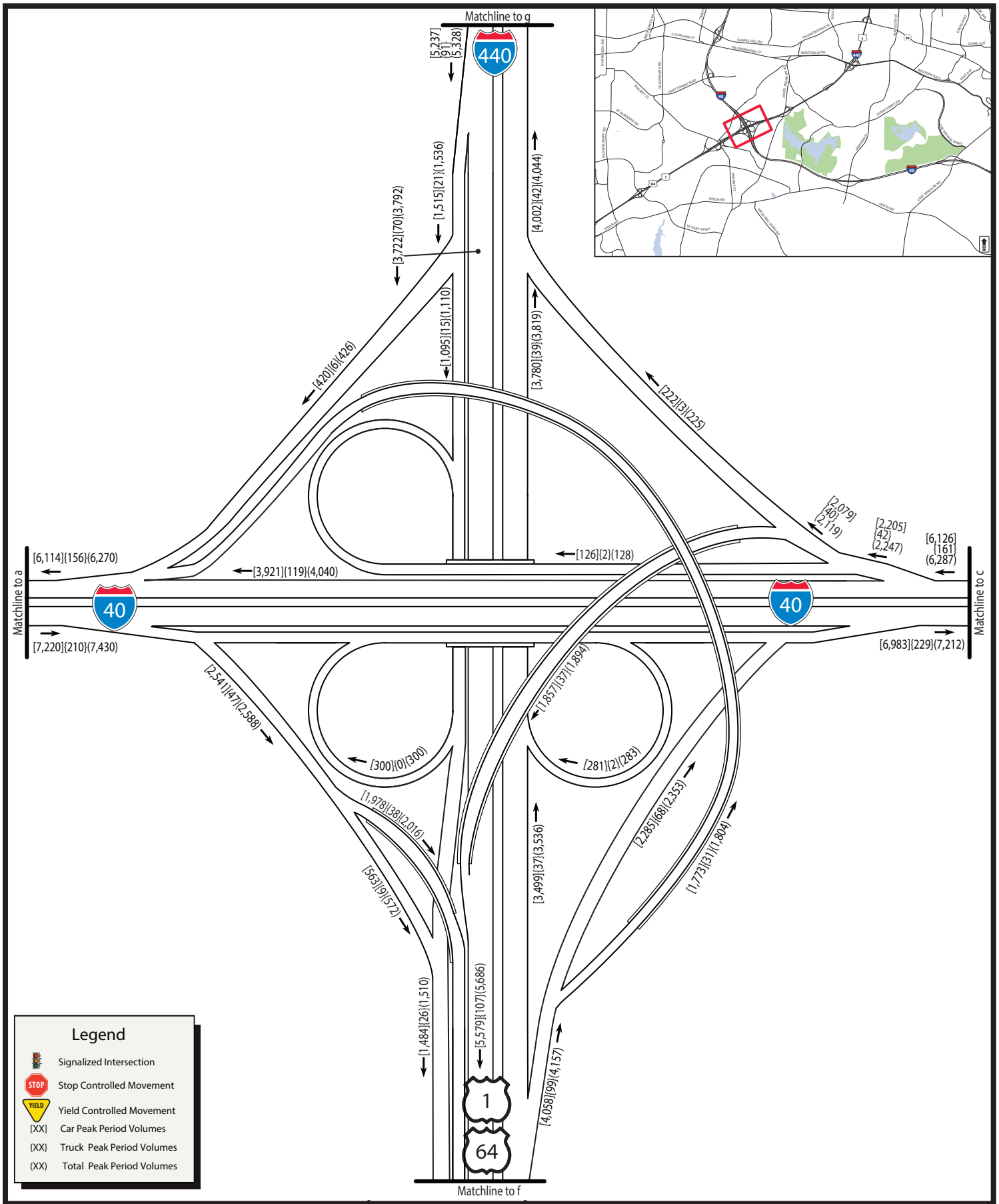
I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 11b-Alt 1



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I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

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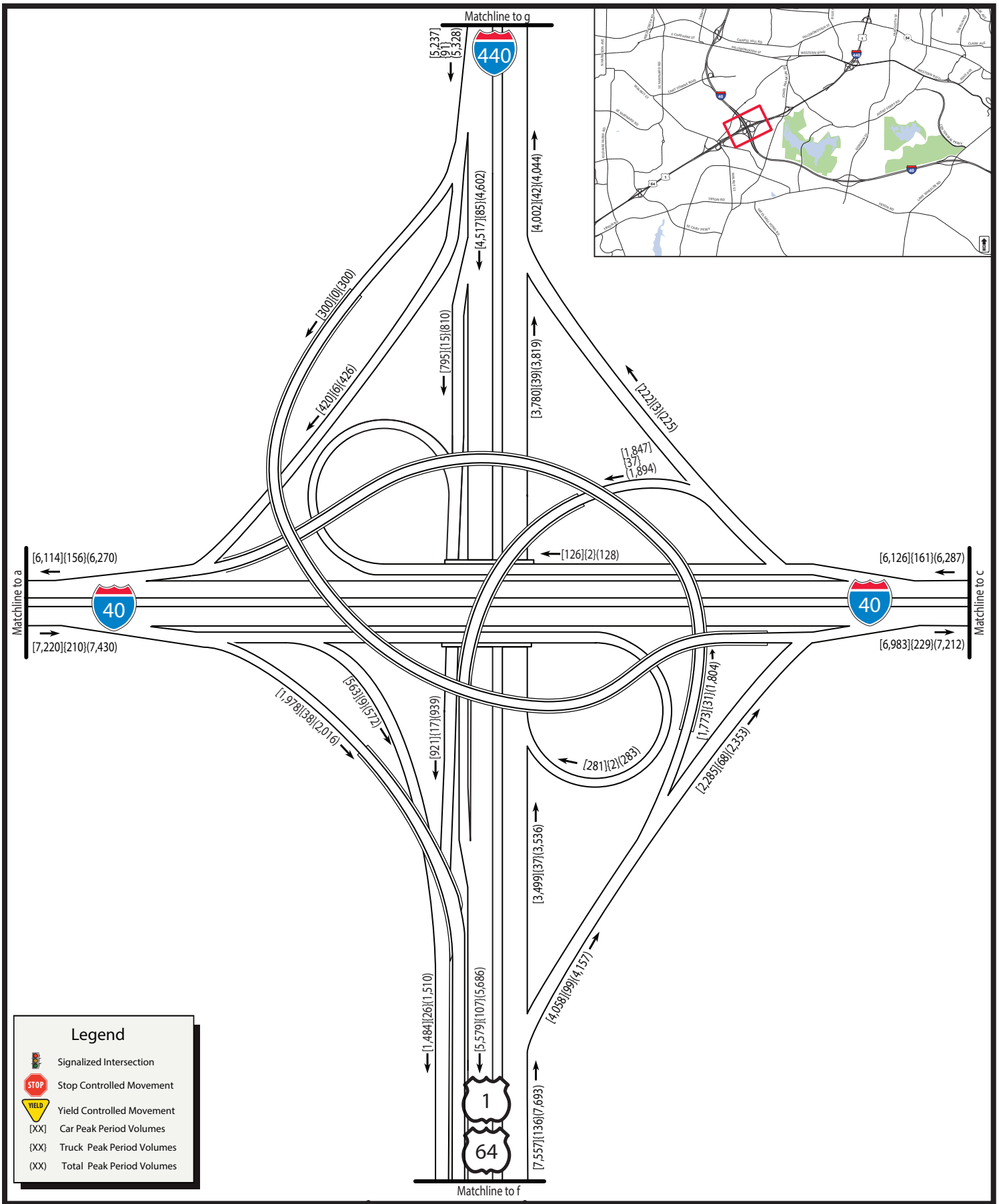
Wake County, North Carolina

Not to Scale

I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 11b-Alt 2



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I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

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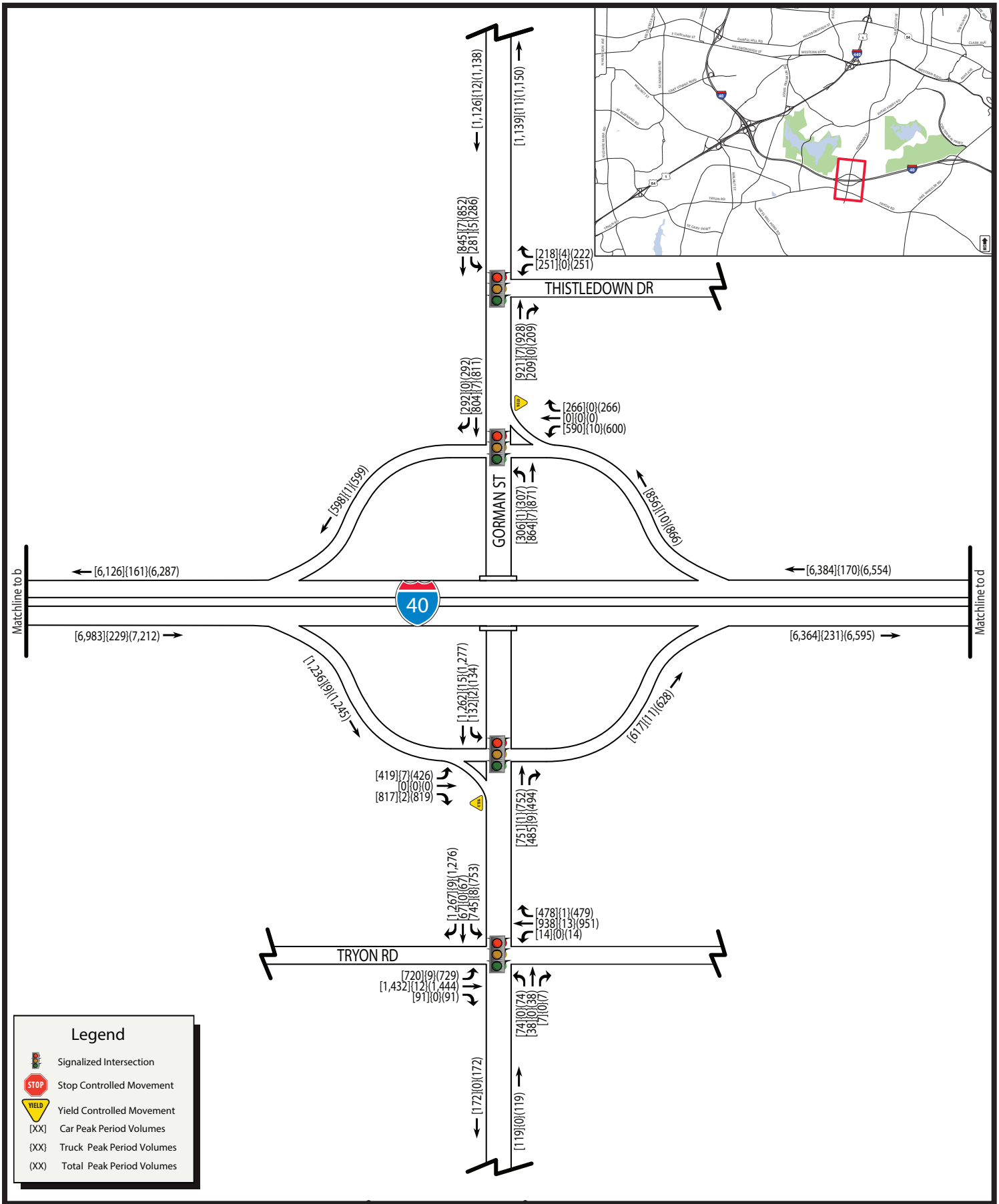
I-40 AND I-440/U.S. 1/U.S. 64 INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 11b-Alt 3



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

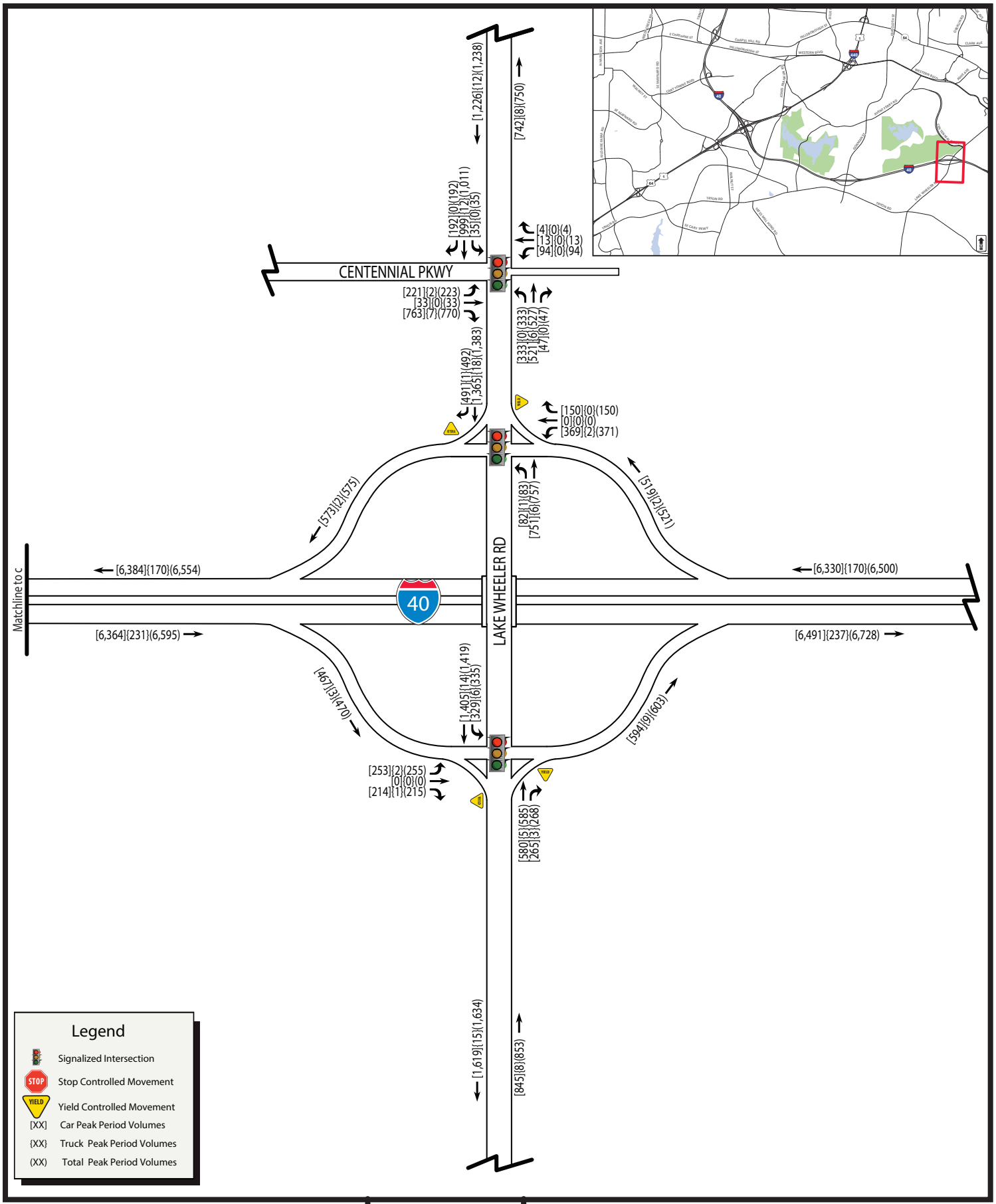
Wake County, North Carolina

N E S W

Not to Scale

I-40 AND GORMAN STREET INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 11c



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

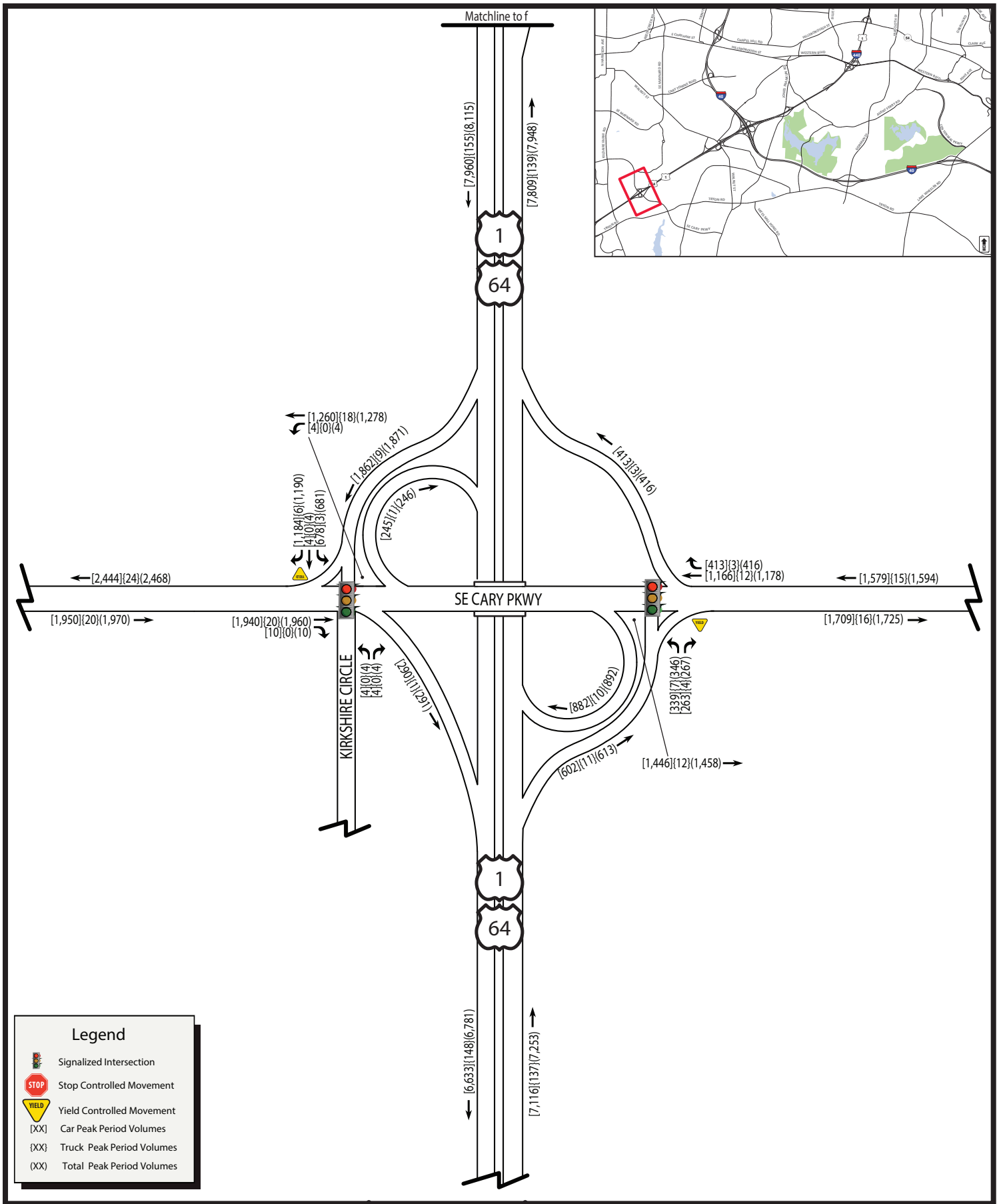
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

I-40 AND LAKE WHEELER RD INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 11d



I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

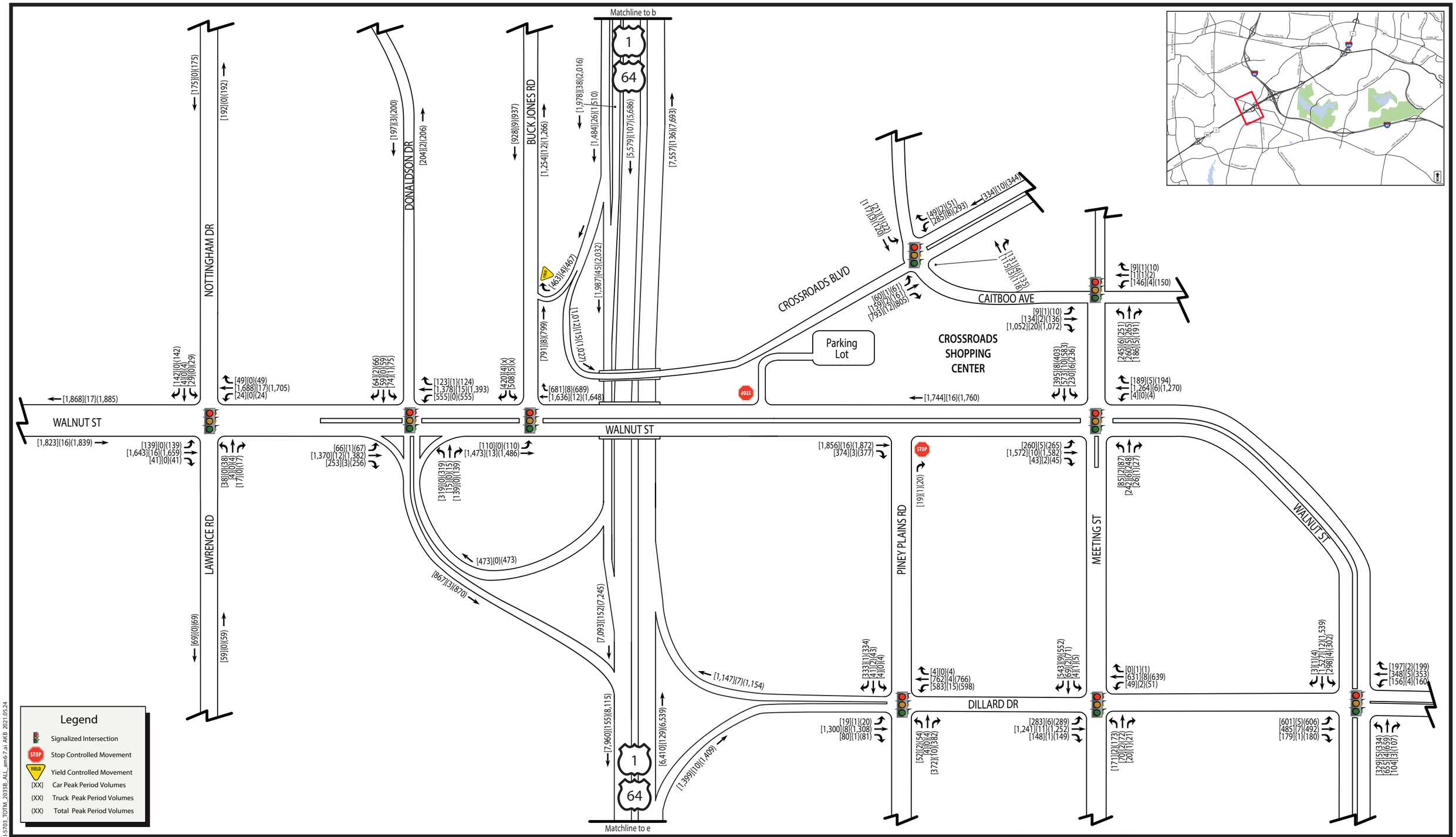
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND SE CARY PKWY INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 11e



I-5703_TOTM_2035B_ALL_am-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

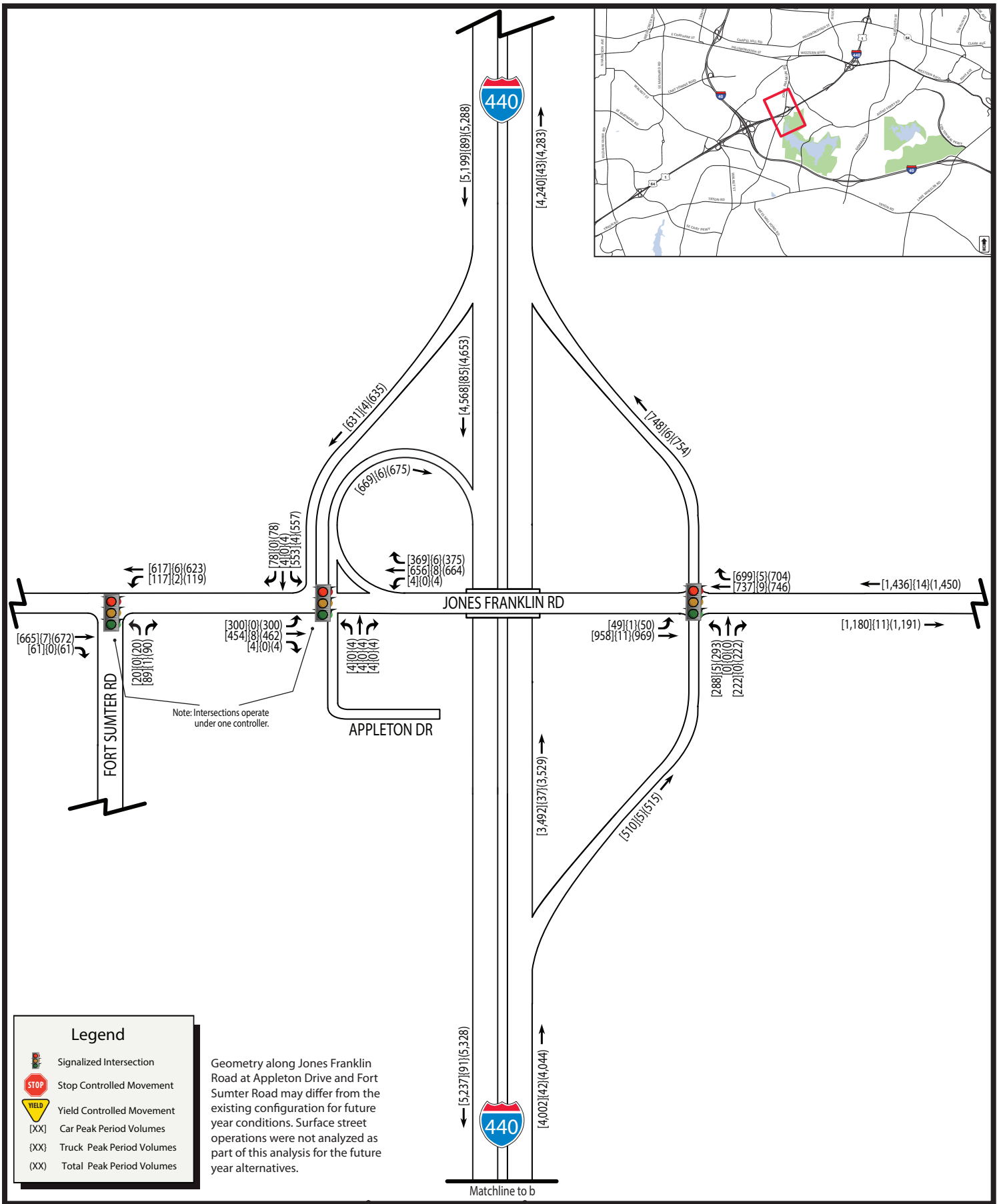
STIP PROJECT NO. I-5703

Wake County, North Carolina

Not to Scale

U.S. 1/U.S. 64 AND WALNUT ST INTERCHANGE
2035 BUILD VOLUMES FROM FIELD COUNT:
ALL VEHICLES 6pm-7pm

FIGURE 11f



Legend

- Signalized Intersection
- Stop Controlled Movement
- Yield Controlled Movement
- [XX] Car Peak Period Volumes
- {XX} Truck Peak Period Volumes
- (XX) Total Peak Period Volumes

Geometry along Jones Franklin Road at Appleton Drive and Fort Sumter Road may differ from the existing configuration for future year conditions. Surface street operations were not analyzed as part of this analysis for the future year alternatives.

I-5703_TOTM_2035B_ALL_am6-7.ai AKB 2021.05.24

I-40/I-440/U.S. 1/U.S. 64 Interchange Reconstruction

STIP PROJECT NO. I-5703

Wake County, North Carolina

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I-440 AND JONES FRANKLIN RD INTERCHANGE 2035 BUILD VOLUMES FROM FIELD COUNT: ALL VEHICLES 6pm-7pm

FIGURE 11g

DocuSign

Certificate Of Completion

Envelope Id: 512D3064DC6F4B379DA1C0BFEF81441E
Status: Completed
Subject: Please DocuSign: Traffic Ops Tech Memo Final 06172021.pdf, Traffic Ops Tech Memo Final Figures ...
Source Envelope:
Document Pages: 229
Signatures: 1
Certificate Pages: 4
Initials: 0
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-08:00) Pacific Time (US & Canada)

Envelope Originator:
Anthony Encarnacion
4519 Still Pines Dr
Raleigh, NC 27613
anthony.encarnacion@atkinsglobal.com
IP Address: 136.57.211.194

Record Tracking

Status: Original
6/17/2021 1:42:19 PM
Holder: Anthony Encarnacion
anthony.encarnacion@atkinsglobal.com
Location: DocuSign

Signer Events	Signature	Timestamp
James Parkhill james.parkhill@atkinsglobal.com Security Level: Email, Account Authentication (None)	DocuSigned by: James Parkhill 944894F9AC9E4EA... Signature Adoption: Pre-selected Style Using IP Address: 104.129.205.101	Sent: 6/17/2021 1:50:11 PM Viewed: 6/17/2021 1:50:46 PM Signed: 6/17/2021 1:50:56 PM

Electronic Record and Signature Disclosure:
Accepted: 5/19/2021 7:44:14 AM
ID: d874c114-7e88-40a7-86be-209daf0b8422

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	6/17/2021 1:50:11 PM
Certified Delivered	Security Checked	6/17/2021 1:50:46 PM
Signing Complete	Security Checked	6/17/2021 1:50:56 PM
Completed	Security Checked	6/17/2021 1:50:56 PM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

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PDF Reader:	Acrobat® or similar software may be required to view and print PDF files
Screen Resolution:	800 x 600 minimum
Enabled Security Settings:	Allow per session cookies

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