Traffic Alternatives Study

State Route 101L
Princess Drive to Raintree Drive

Prepared For:

MARICOPA ASSOCIATION of GOVERNMENTS

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MAY 2017

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Appendix C – Alternative Conceptual Cost Estimates

Appendix D – Recommended Alternative Conceptual Plans

1.0 PROJECT OVERVIEW

1.1 Introduction and Background

The Maricopa Association of Governments (MAG), in coordination with the City of Scottsdale has requested a traffic study to analyze alternatives for improved traffic flow in the vicinity of State Route (SR) 101L between Princess Drive and Raintree Drive.

SR 101L is a major freeway serving Maricopa County and the Phoenix Metropolitan Region. The freeway extends from its southeast point at the SR 202L Santan junction north through Chandler, Tempe, and Scottsdale. In Scottsdale, just north of the Princess Drive/Pima Road exit, SR 101L turns west. It continues to the west through Phoenix and eventually turns south again, terminating at the I-10 junction. In north Scottsdale, SR 101L interchanges with Raintree Drive, Frank Lloyd Wright Boulevard, and Princess Drive/Pima Road before turning west. This portion of the freeway between Princess Drive/Pima Road and Raintree Drive also contains frontage roads. All three traffic interchanges (TI's) are heavily utilized throughout the day. Of special concern is the west-to-south connection at the Princess Drive/Pima Road TI (referred to as the Princess Drive TI throughout this report).

The aim of this study is to identify improvement options with the potential to alleviate congestion in this corridor. This study does not contain any implementation measures and does not define any funding sources for this project.

1.2 Project Location and Description

The traffic study area is located along SR 101L from the Princess Drive TI to the Raintree Drive TI. The project area was extended slightly to the north and south in order to assess any potential impacts that build alternative elements might have on the downstream or upstream freeway. The project limits are within the boundaries of Maricopa County and the City of Scottsdale. See **Figure 1** and **Figure 2** (pages 1-2) for a Project Location and Vicinity Map, respectively.

1.3 Existing Features/Surrounding Area

SR 101 in the project area is classified as a controlled access Urban Principal Arterial with a posted speed limit of 65 mph. Adjacent to either side of the freeway are northbound and southbound frontage roads that extend from the Princess Drive TI to the Raintree Drive TI. The study area includes 4 TI's: two diamond interchanges at Princess Drive/Pima Road and Bell Road, and two single point urban interchanges (SPUI's) at Frank Lloyd Wright Boulevard and Raintree Drive. The land adjacent to the study area is a mixture of developed commercial land, undeveloped State Trust or Bureau of Reclamation land, and undeveloped open spaces. The Central Arizona Project (CAP) canal cuts through the study area running east-west just north of Frank Lloyd Wright Boulevard.

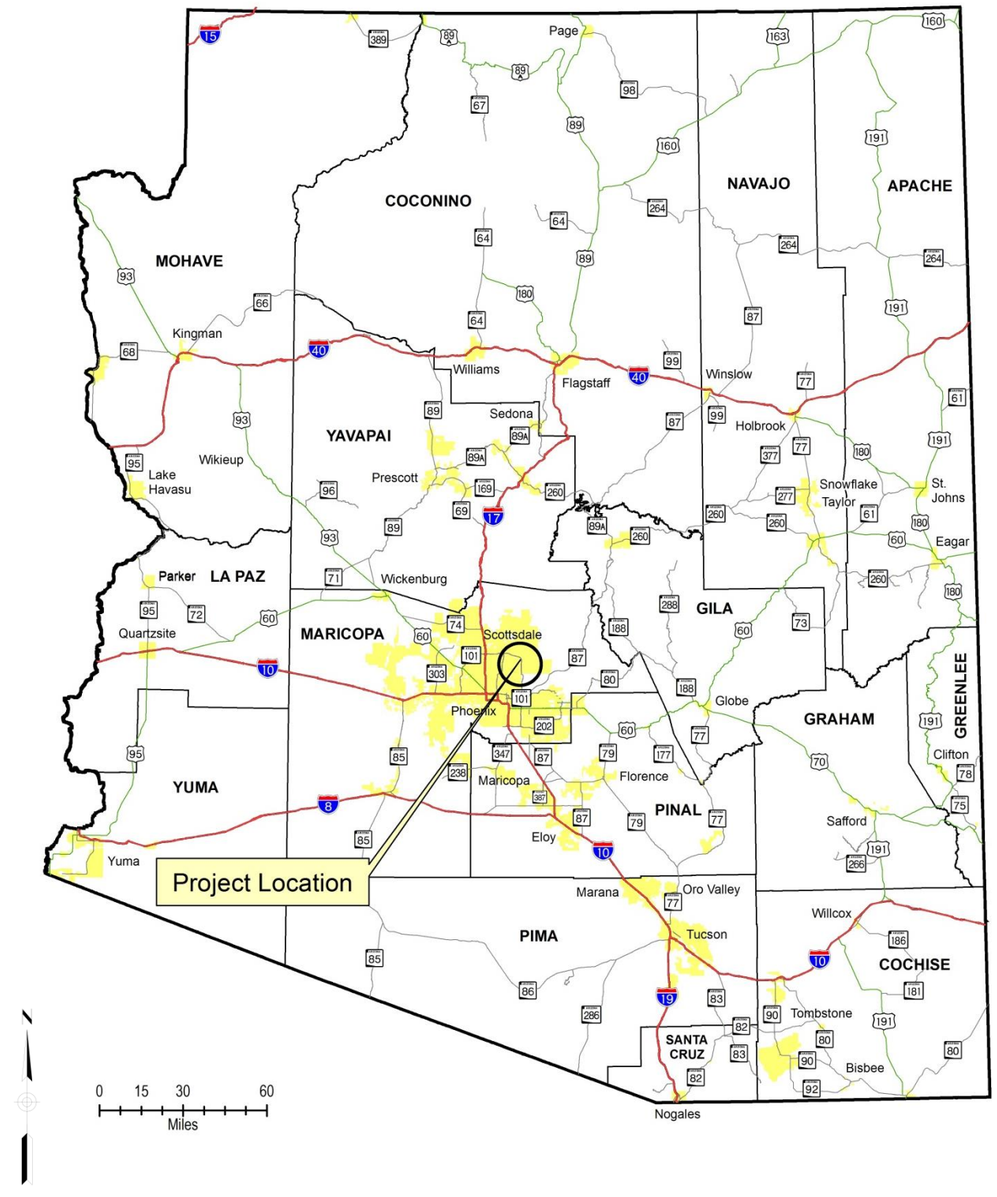


Figure 1 – Project Location Map

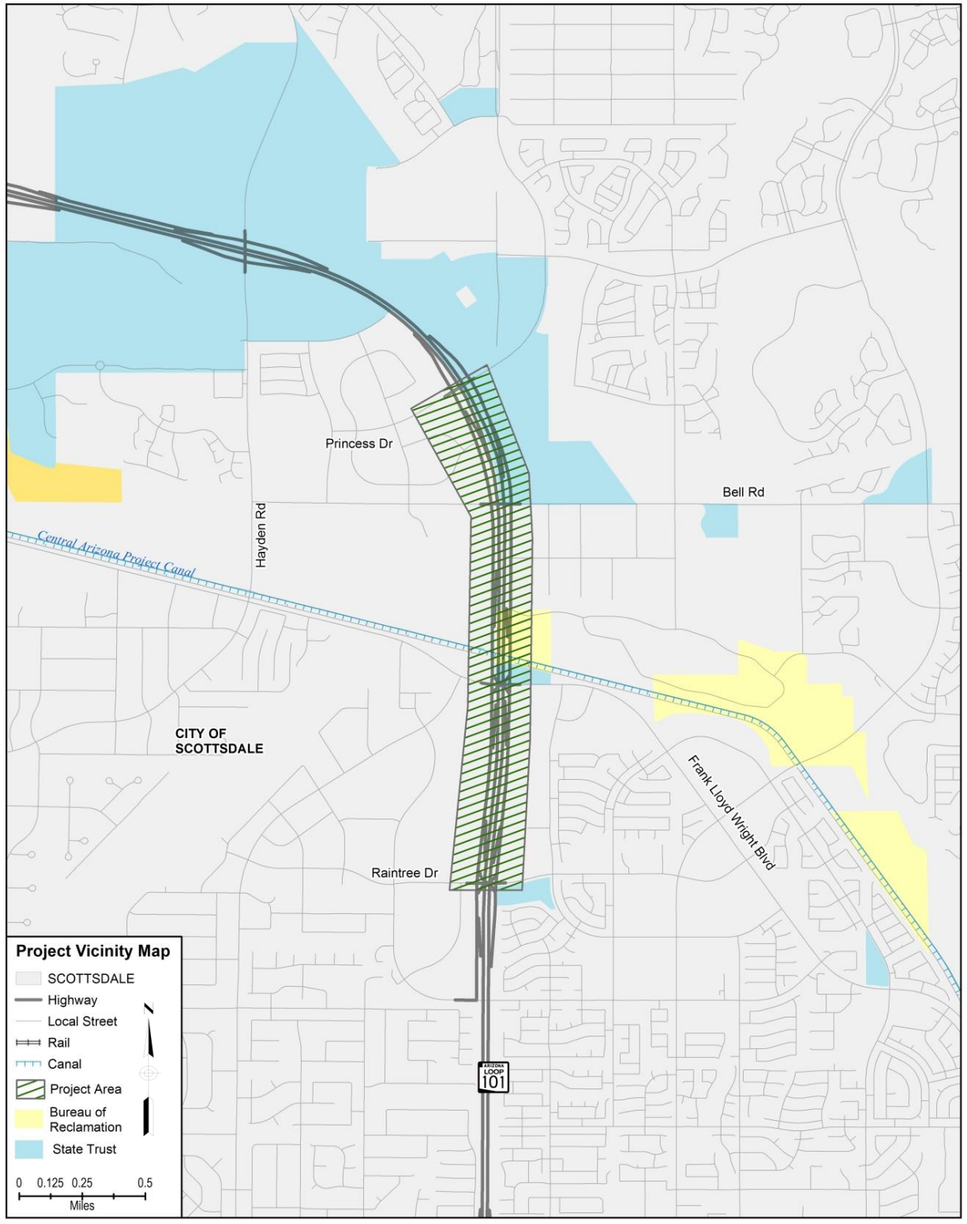


Figure 2 – Vicinity Map

2.0 EXISTING TRAFFIC CONDITIONS

2.1 Existing Roadways

The existing configuration typically includes 3 general purpose lanes and an HOV lane on the SR 101L freeway in both directions. **Figure 4** (pages 6-7) contains detailed lane configurations for the existing freeway and freeway ramps.

A southbound directional frontage road is present between Princess Drive and Thunderbird Road, and a northbound directional frontage road is present between Raintree Drive and Pima Road. Throughout the corridor, the frontage road in either direction is accessed by driveways and local streets. **Figure 5** (page 8) shows the configuration of frontage road access points between Frank Lloyd Wright Boulevard and Raintree Drive.

A full diamond TI exists at SR 101L and Princess Drive/Pima Road with access ramps on the south side connecting to the frontage roads. Bell Road has a diamond TI with the frontage road, and does not include access ramps to SR 101L. The Frank Lloyd Wright Boulevard and Raintree Drive TI's are configured as modified SPUI's. The intersection configurations of these TI's are shown in **Figure 6** (pages 9-10).

2.2 Crash Analysis

The ADOT Traffic Studies Section provided crash data for the segment of SR 101 between the Hayden Road TI and Cactus Road. There were a total of 559 reported crashes within the study area between January 1, 2010 and December 31, 2014. **Table 1** (page 3) illustrates the crash summary by freeway segment during this time period. Crash analysis details are supplied in **Appendix A.** The following is a summary of some key characteristics of the crash data:

- Of the 559 crashes reported, 365 resulted in property damage only (65.3%), 190 resulted in injuries or possible injuries (34.0%), and 4 resulted in a fatality (<1%).
- 68% of the crashes involved another motor vehicle in transport, 13% involved a concrete traffic barrier, and 8% involved another non-fixed object. These three types of crashes accounted for 89% of the crashes.
- Of the 381 crashes with another motor vehicle, 63.5% (242 crashes) were rear-end crashes, and 26.8% (102 crashes) were sideswipe crashes.
- 70% of the crashes occurred during the daylight hours, 5% occurred at dusk or dawn, and the remaining 25% occurred during hours of darkness.

According to the *Regional Freeway Bottleneck Study* (MAG, 2006), the average crash rate on the Regional Freeway System was 0.78 accidents per million vehicle miles in 2000. This study also documented the 75th percentile as 1.41 crashes per million vehicle miles. All segments of the northbound and southbound mainline traffic are below this average crash rate and 75th percentile.

Table 1 – Mainline Crash Summary

Freeway Segment	No. of Crashes (January 2009 – December 2013)	Crash Rate (2009 – 2013) (Crash/Million Vehicle Miles)
Southbound SR 101		
Hayden Rd to Princess Dr/Pima Rd	49	0.39
Princess Dr/Pima Rd to Frank Lloyd Wright Blvd	57	0.38
Frank Lloyd Wright Blvd to Raintree Dr	38	0.36
Raintree Dr to Cactus Rd	172	0.83
Northbound SR 101		
Hayden Rd to Princess Dr/Pima Rd	64	0.51
Princess Dr/Pima Rd to Frank Lloyd Wright Blvd	69	0.46
Frank Lloyd Wright Blvd to Raintree Dr	17	0.17
Raintree Dr to Cactus Rd	96	0.47

This evaluation indicates that 68% of the crashes with another motor vehicle on this segment of the SR 101 corridor are either rear-end or sideswipe crashes. These types of crash are commonly associated with congested traffic conditions. The currently programed general purpose lane widening of one lane in each direction will provide additional freeway capacity and may reduce the level of congestion and provide a more balanced level-of-service throughout the corridor, which may reduce these crash rates.

In addition to a mainline crash investigation, the Frontage Road crashes have been investigated and summarized with collision diagrams included in **Figure 3** on pages 4 to 5**.** These figures indicate that a majority of the frontage road crashes occur at or near the ramp junctions, though there are some crashes located near driveway access points on the frontage road. The majority of frontage road crashes (75%) are rear-end types. Another 12% of the crashes were sideswipes in the same direction, and 9% were single vehicle.

2.3 Existing Traffic Volumes

Volumes were collected along the SR 101L freeway, and turning movement counts were collected at the four major TI's in the study area – Princess Drive, Bell Road, Frank Lloyd Wright Boulevard, and Raintree Drive – during both AM and PM peak hours. Turning movement counts were also collected at the intersections of the frontage roads with Hartford Drive, Bahia Drive, and Westworld Road, at the intersections of Frank Lloyd Wright Boulevard with Hayden Road and 90th Street, and at the intersection of Raintree Drive and 87th Street. In addition, turning movement volumes were collected at all the driveways on the southbound and northbound frontage roads between Frank Lloyd Wright Boulevard and Raintree Drive.

Figure 4 (pages 6-7) shows lane configurations and volumes along the SR 101L mainline and access ramps. **Figure 5** (page 8) shows the turning movement volumes at access points along the northbound and southbound frontage roads between Frank Lloyd Wright Boulevard and Raintree Drive. **Figure 6** (pages 9-10) shows the turning movement counts at each intersection during the AM and PM peak hours.

A comparison of weekday versus weekend volumes on various freeway ramps was completed to ensure that weekend traffic was not drastically higher in the area. Volumes on the northbound and southbound Frank Lloyd Wright Boulevard exit ramps on Saturday were roughly equal to the average weekday traffic, but weekend daily volumes were otherwise lower than weekday volumes as expected. A comparison of weekday to weekend volumes is provided in **Figure 7** (page 11).

In addition to the volume data, an Origin-Destination study was completed in 2014 to investigate 1) the presence of a weave situation occurring on the frontage roads between the ramps and intersection north of Frank Lloyd Wright Boulevard and south of Princess Drive/Pima Road, and 2) the interaction between Princess Drive/Pima Road and Frank Lloyd Wright Boulevard. The O-D analysis revealed the following:

- In both the AM and PM peak hours, 89% of those vehicles making a westbound left-turn at the Princess Drive TI are destined for the freeway (as opposed to the frontage road).
- The majority (62% in the AM Peak and 88% in the PM Peak) of the traffic approaching the northbound leg of the Princess Drive TI from the Princess Drive exit ramp are destined for the right-turn. At the same time, the majority (76% in the AM peak and 71% in the PM peak) of the traffic approaching from the frontage road are destined for the through movement. This creates a weave between the ramp and the intersection.
- In the AM peak, a majority (74%) of the traffic making a right-turn from Frank Lloyd Wright Boulevard onto the northbound frontage road are destined for the entrance ramp. At the same time, a majority (72%) of the traffic making the left-turn onto the frontage road are destined to remain on the frontage road. This creates a weaving situation in the AM peak hour. In the PM peak hour the weave is less pronounced, as only a slight majority of both turning movements are destined for the entrance ramp.
- Of those vehicles that make a left-turn from the Princess Drive TI onto the southbound frontage road, 8% in the AM peak and 11% in the PM peak are destined for Frank Lloyd Wright Boulevard. In both peak hours, more than half of these vehicles use the frontage road (as opposed to the southbound freeway) to reach their destination.
- Of all those vehicles accessing the northbound frontage road from Frank Lloyd Wright Boulevard west of the freeway, 17% in the AM peak hour and 38% in the PM peak hour are destined for Pima Road east of the freeway (making the northbound right-turn at the Princess Drive TI). In the AM peak, the majority of these vehicles use the northbound freeway to reach their destination, while in the PM peak the majority of these vehicles use the frontage road.
- Of all those vehicles accessing the northbound frontage road from Frank Lloyd Wright Boulevard east of the freeway, 7% in the AM peak hour and 18% in the PM peak hour are destined for Pima Road east of the freeway. In the AM peak a slight majority of these vehicles use the freeway while in the PM peak a slight majority use the frontage road. The preference for the frontage road in the PM peak is likely due to the higher PM Peak Hour volumes on the freeway.

Figure 8 (pages 12-13) and **Figure 9** (pages 14-15) display the results of the Origin-Destination study for the AM and PM peak hours, respectively.

[Text resumes on page 16]

Figure 3 – Frontage Road Collision Diagram

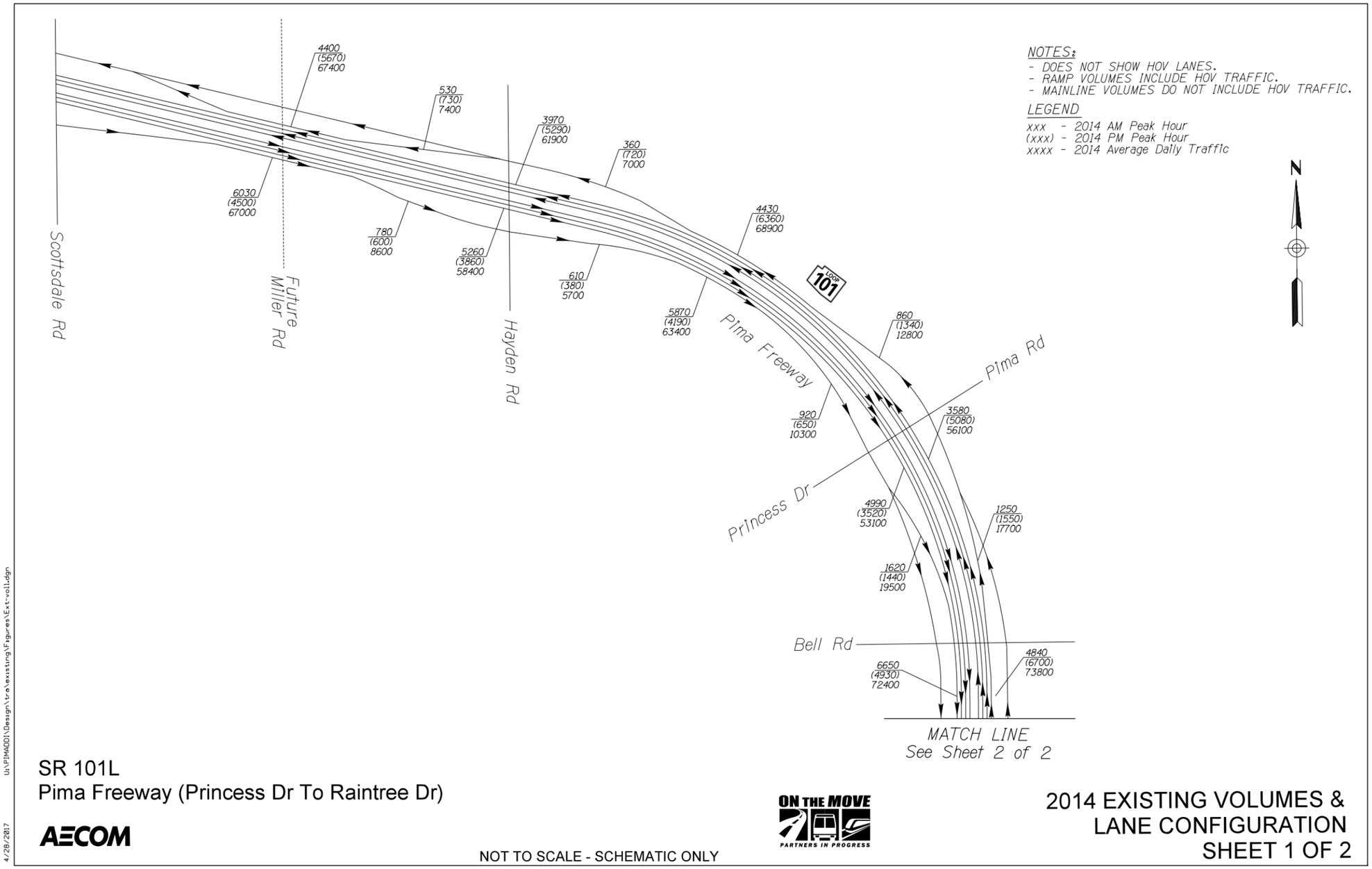
2010 to 2014 Crash Locations by Type - Sheet 1 of 4

2010 to 2014 Crash Locations by Type - Sheet 2 of 4

2010 to 2014 Crash Locations by Type - Sheet 3 of 4

2010 to 2014 Crash Locations by Type - Sheet 4 of 4

Figure 4 – 2014 Existing Volumes & Lane Configuration



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

AECOM

NOT TO SCALE - SCHEMATIC ONLY

ON THE MOVE
PARTNERS IN PROGRESS

2014 EXISTING VOLUMES & LANE CONFIGURATION
SHEET 1 OF 2

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FIGURE 4 - SHEET 2 OF 2

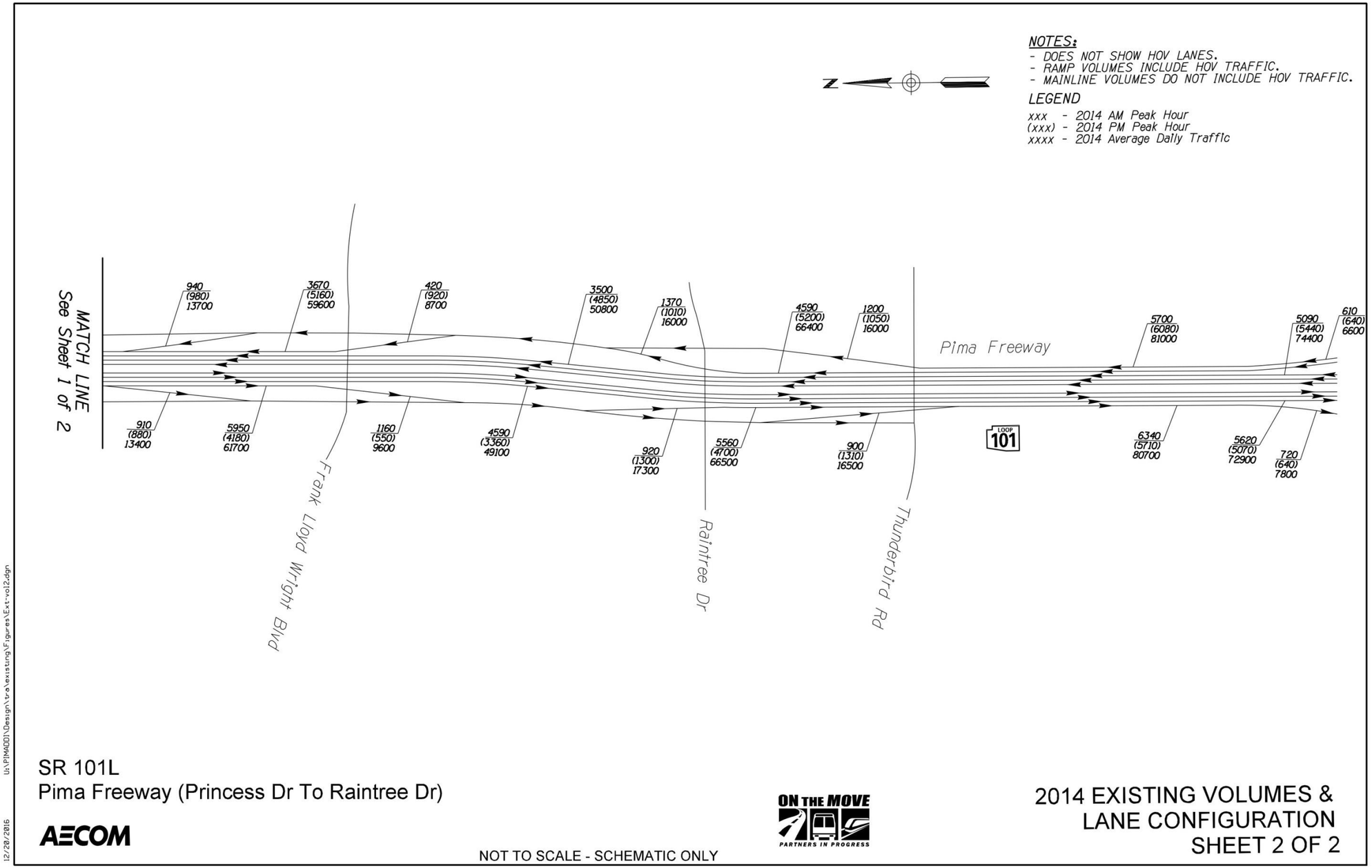


Figure 5 – 2014 Existing Driveway Volumes

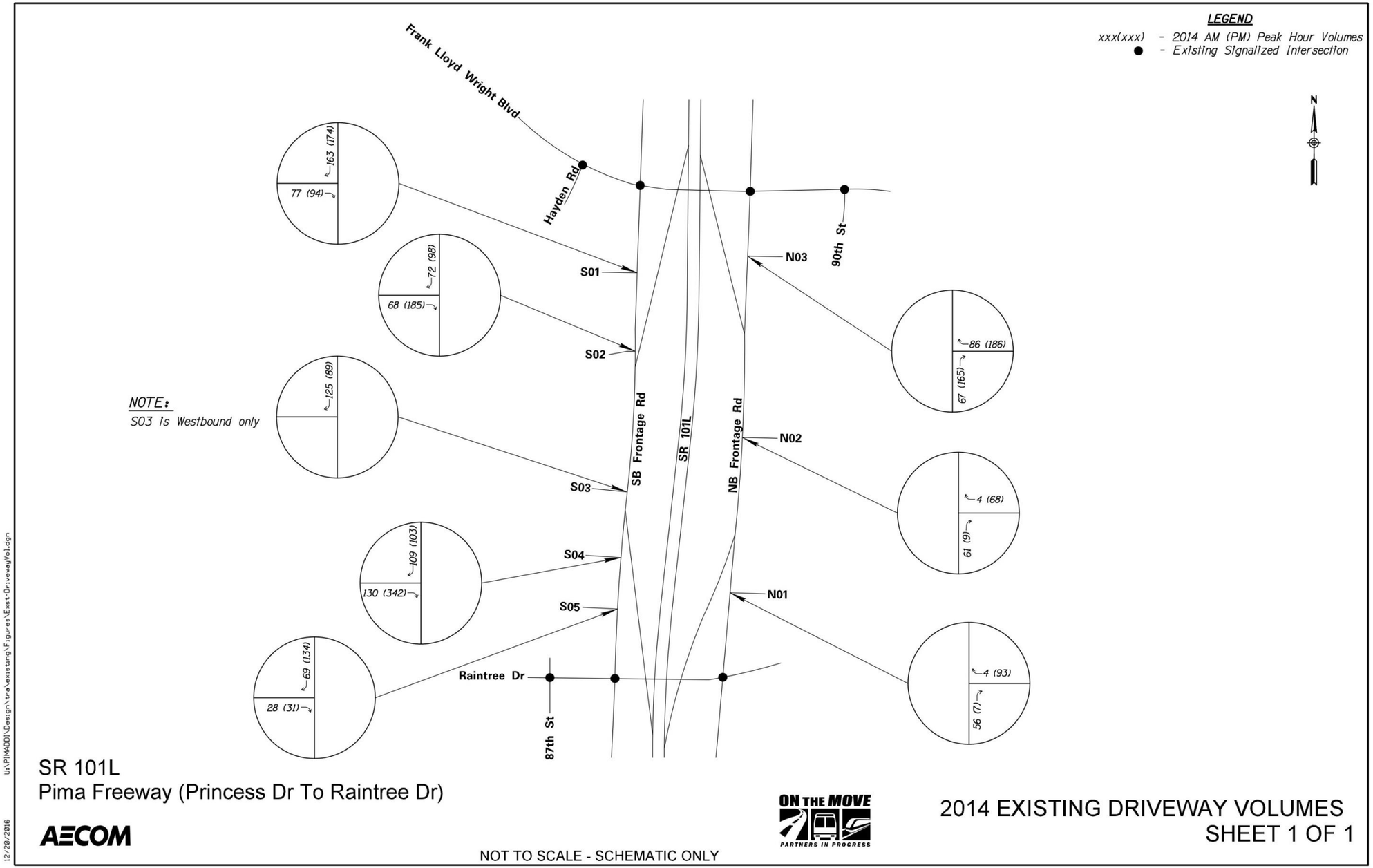
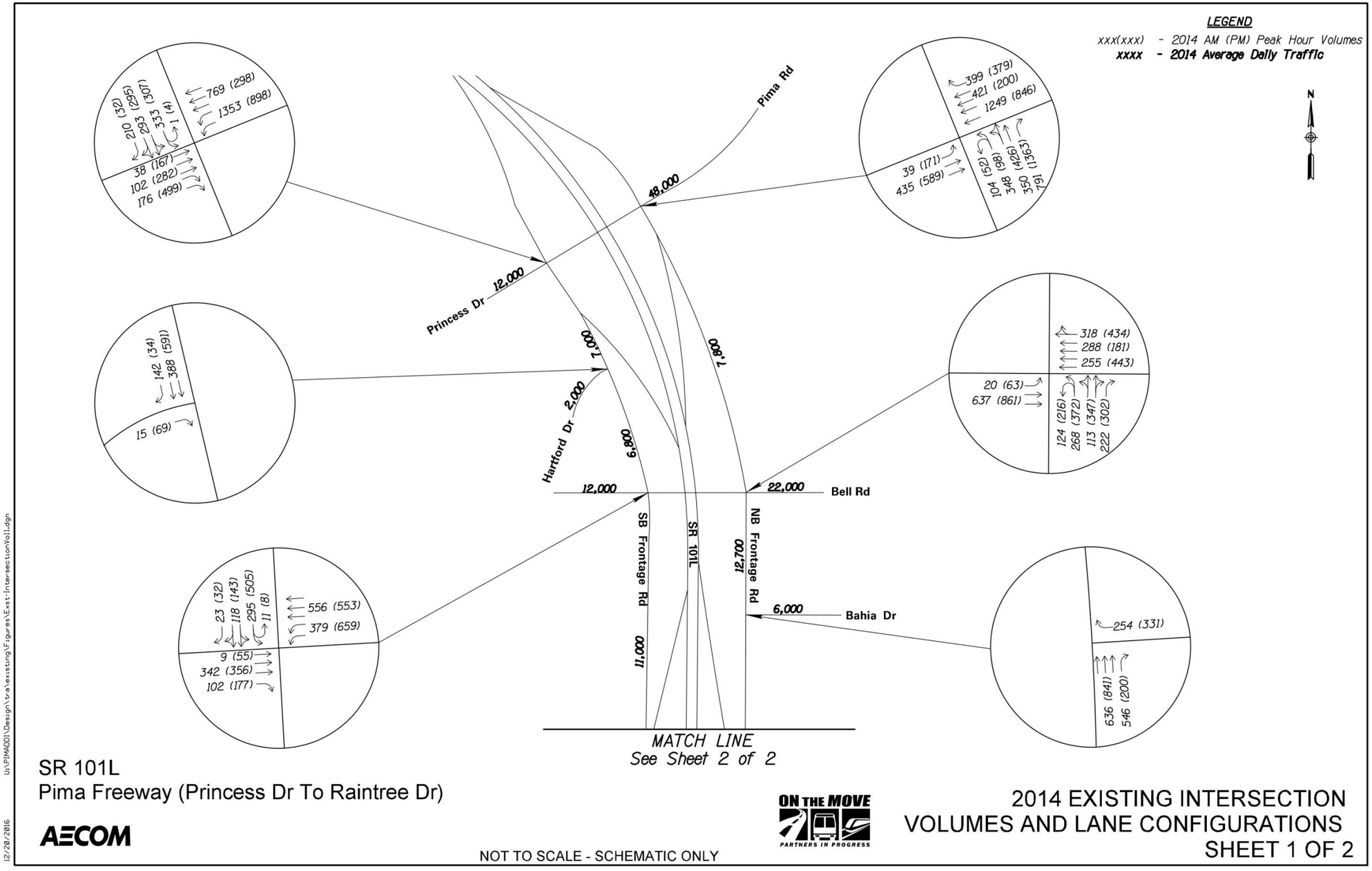


Figure 6 – 2014 Existing Intersection Volumes and Lane Configurations



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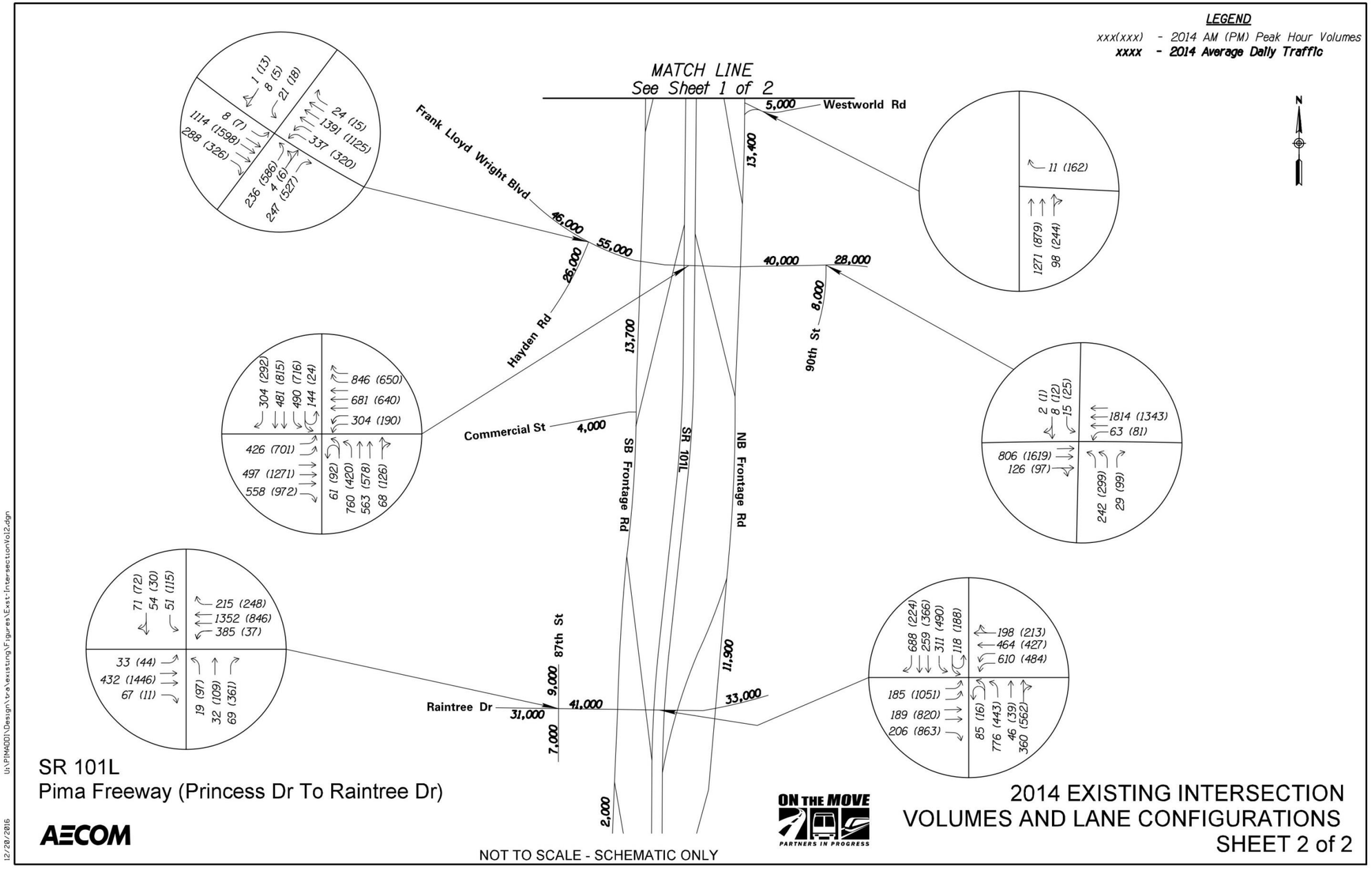
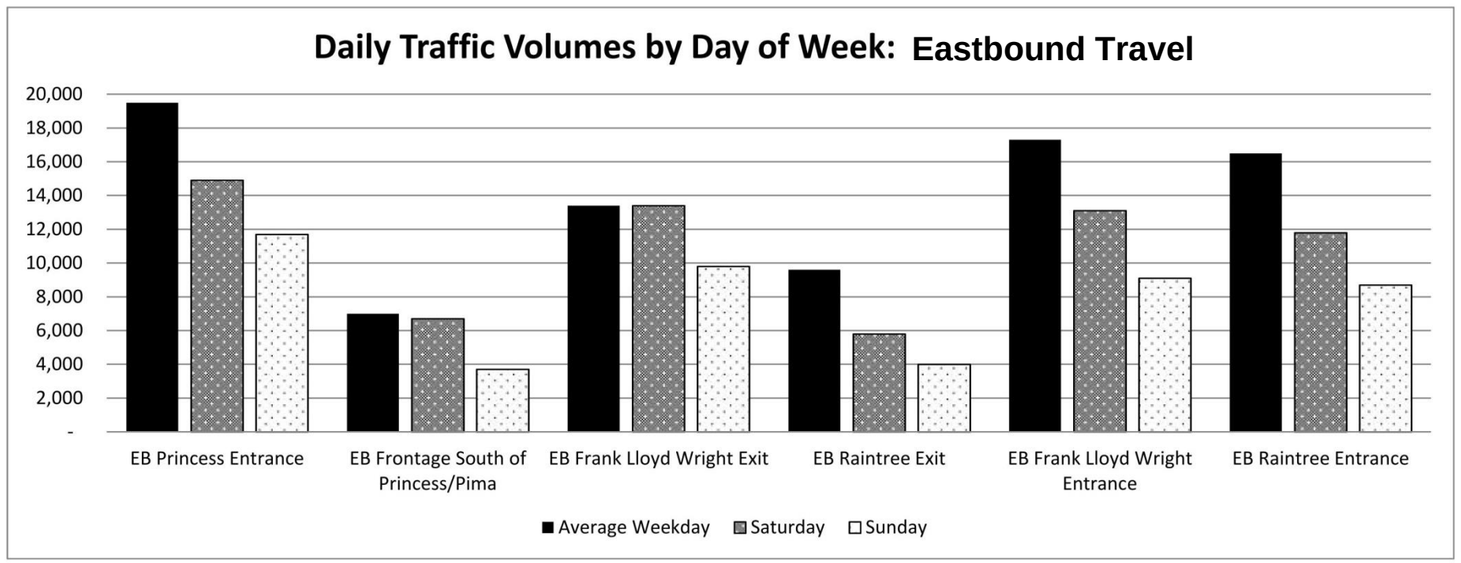


Figure 7 – 2014 Weekday and Weekend Volumes Comparison



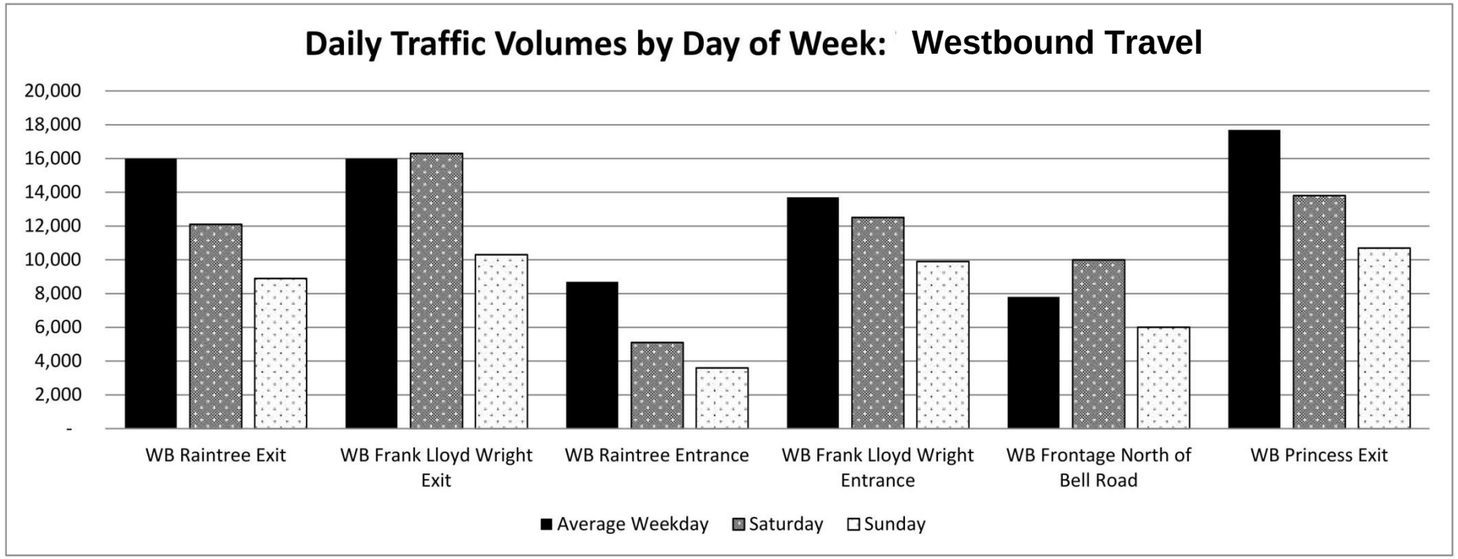
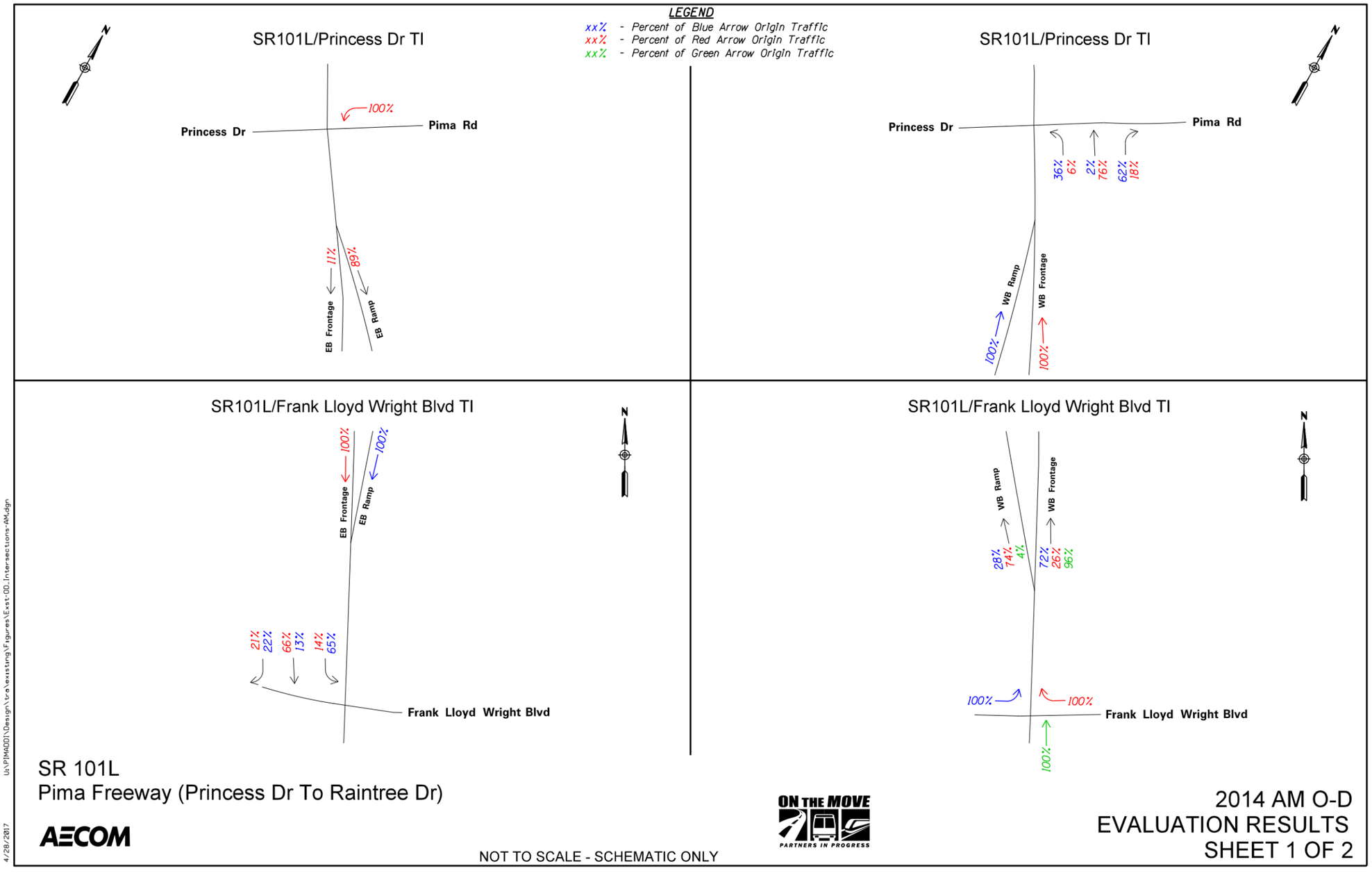


Figure 8 – 2014 AM Peak Hour O-D Study Results



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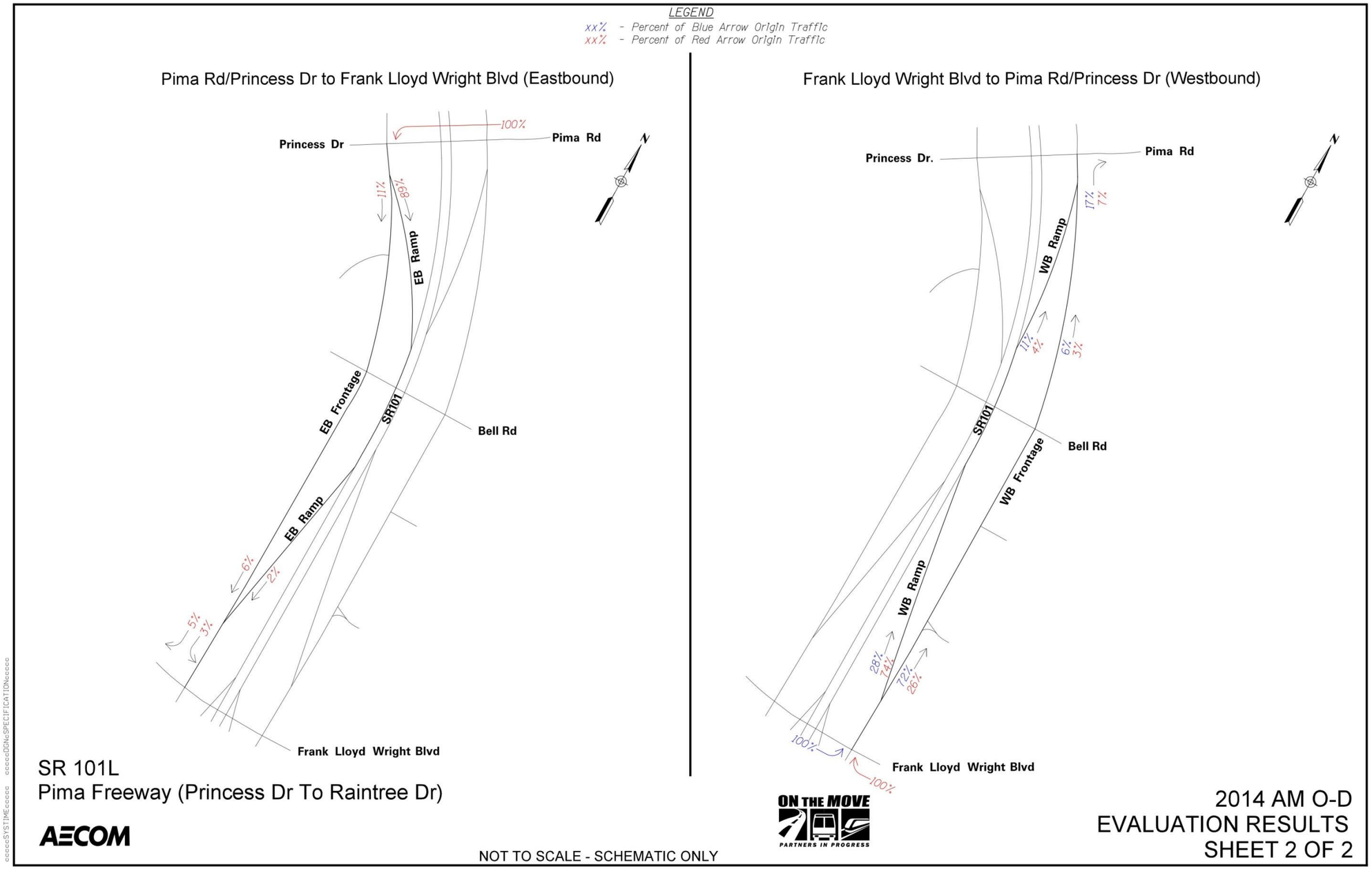


Figure 9 – 2014 PM Peak Hour O-D Study Results

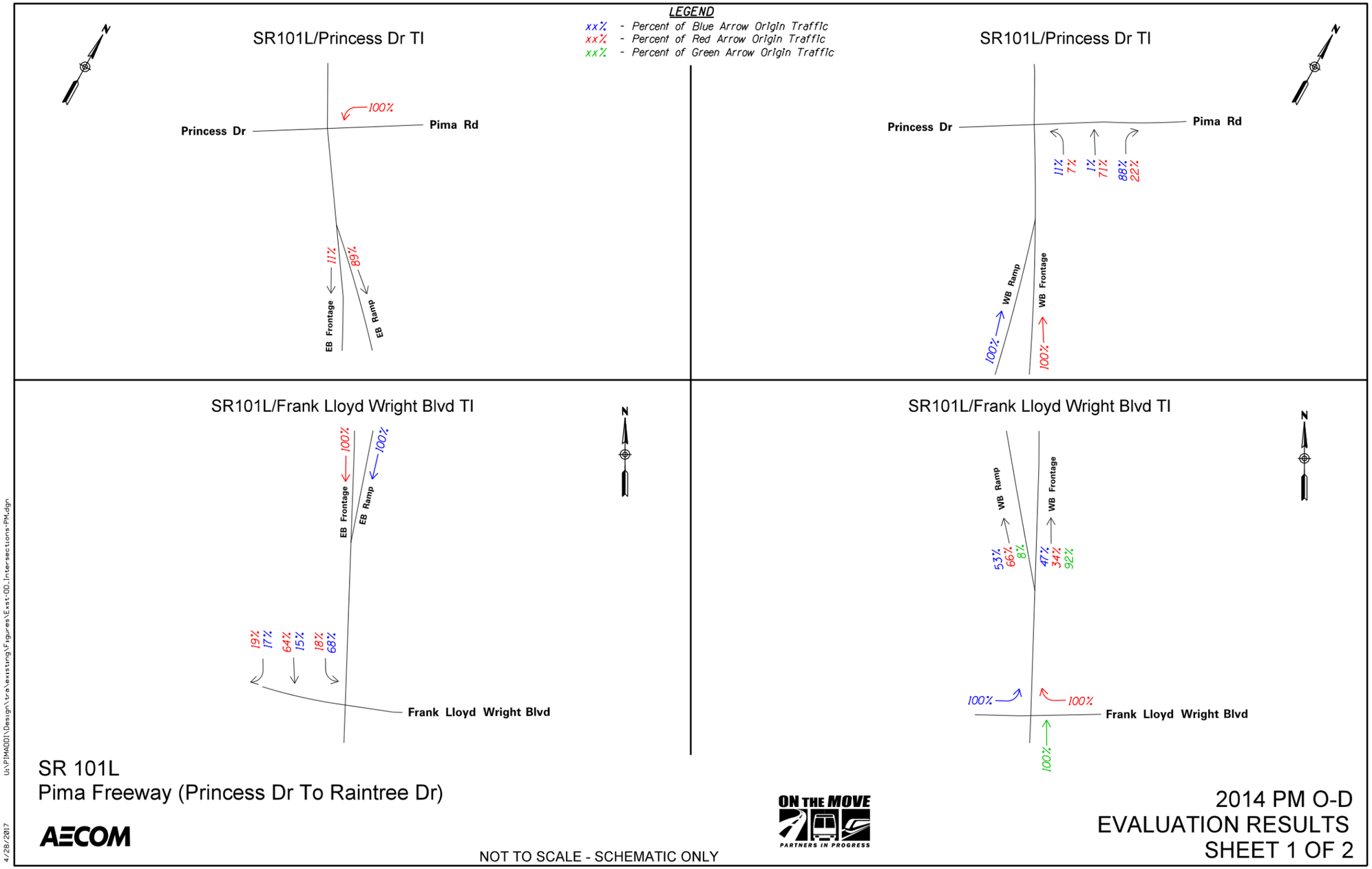
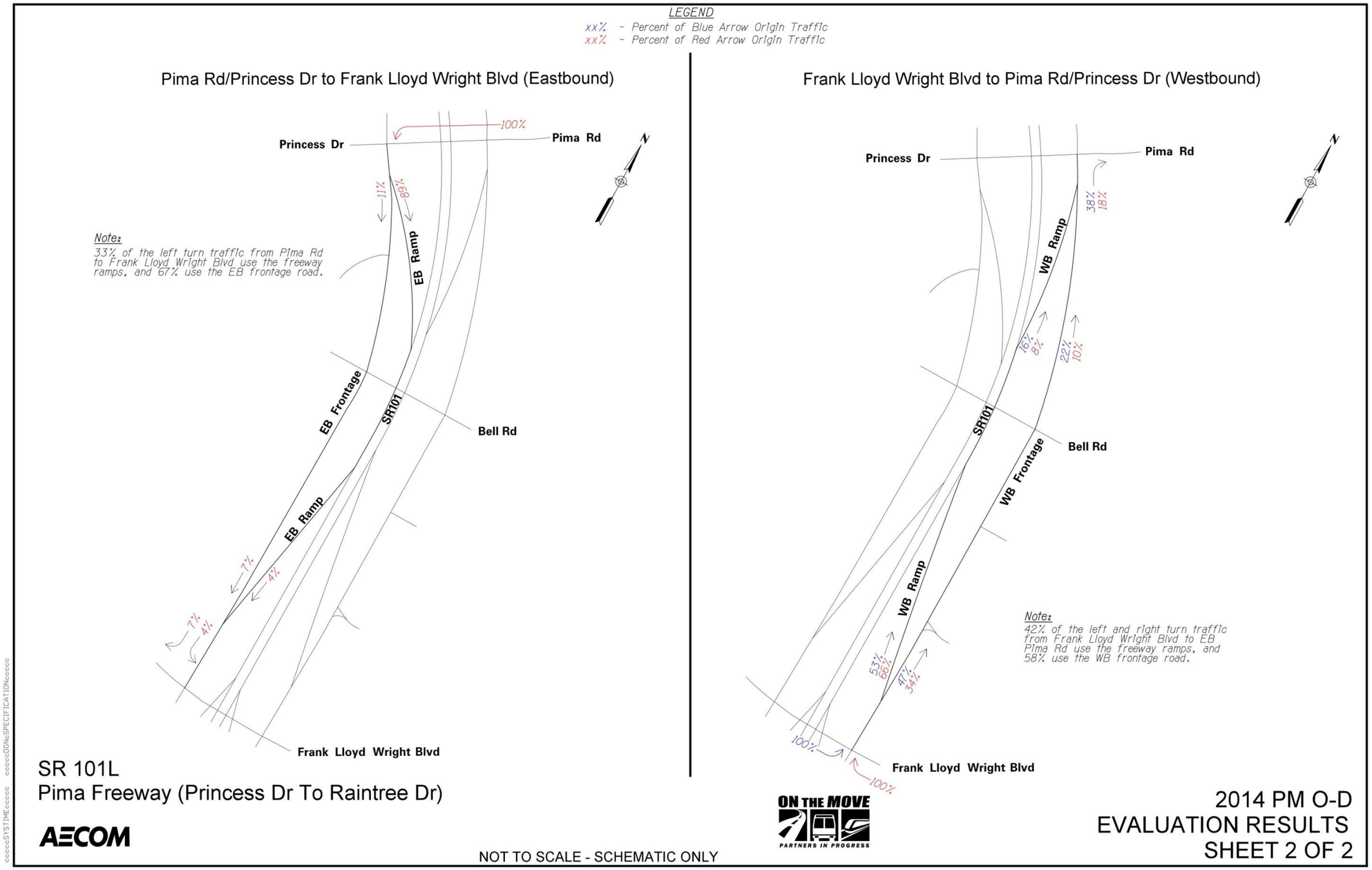


FIGURE 9 - SHEET 2 OF 2



3.0 OPERATIONAL ANALYSIS METHODOLOGY

An operational analysis was performed for the mainline including the general-purpose lanes, ramp junctions, and weave sections and for the existing conditions, No-Build, and each of the Build Alternatives. Intersection analysis was also performed for the study intersections including the four TI's and adjacent signalized intersections along Frank Lloyd Wright Boulevard and Raintree Drive. The VISSIM computer program was used to provide a simulation of the entire system within the study area. VISSIM is a microscopic traffic simulation program that uses roadway geometry and traffic volume inputs to simulate operations of an entire freeway network. VISSIM has the ability to provide various measures of effectiveness for each link within the system. The vehicle density and speed outputs from VISSIM were used as the measure of effectiveness to relate to a level-of-service as established by the Highway Capacity Manual (HCM) for the freeway and ramp facilities. The vehicle delay output was used to relate to a level-of-service at the signalized intersections.

The concept of level-of-service (LOS) uses qualitative measures that characterize operational conditions within a stream of traffic. The descriptions of individual levels-of-service characterize these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience. Six levels of service are defined for each type of facility for which the analytical procedures are available. They are given letter designations from 'A' to 'F', with LOS 'A' representing the best operational conditions and LOS 'F' representing an over-capacity condition with a high degree of congestion. Each level of service represents a range of operating conditions. **Table 2** below depicts levels-of-service and corresponding vehicle densities (vehicles per mile per lane) for freeway and ramp facilities or vehicle delays (seconds) for intersections established in the HCM.

Table 2 – Vehicle Densities and Corresponding Levels-of-Service

Level-of-Service	Density Range (pc/mi/ln)	Signal Control Delay (sec)
A	0-11	0-10
B	>11-18	>10-20
C	>18-26	>20-35
D	>26-35	>35-55
E	>35-45	>55-80
F	>45	>80

Source: *Highway Capacity Manual* (2010)

Existing signal timings were collected in 2014 for existing conditions, and any instance where a change in intersection configuration was being considered, the Synchro 8 simulation tool was used to develop adjusted signal timings.

The following VISSIM model input assumptions were used for the operational analysis for the alternatives evaluation:

- Free flow speed of 65 mph for the mainline general-purpose lanes
- Free flow speed equal to the posted speed limit for all arterials
- Commercial vehicle percentage on the SR 101 mainline was assumed to be 7% in both the AM and PM peak Hours

In order to replicate the existing peak hour travel conditions, the AM and PM peak hour VISSIM models were calibrated based on measured field data. Existing field measured traffic volumes, speeds, travel times, and queue lengths were utilized as calibration data. Following the calibration process, the VISSIM model output closely replicated the existing congestion conditions observed in the study area. The lane changing and driver behavior parameters from the calibration process were then used in the future condition VISSIM models. Each of the future conditions models were run at least ten times and the model output was averaged to determine the density.

In alternatives which required the addition of a roundabout, the RODEL software package was used to determine appropriate lane configurations and levels of service. RODEL is a macroscopic model that uses empirical equations to analyze roundabout operations and geometric data to predict roundabout capacity. RODEL is an interactive analysis tool that allows the user to input planning-level design elements to meet the needs of each site-specific intersection.

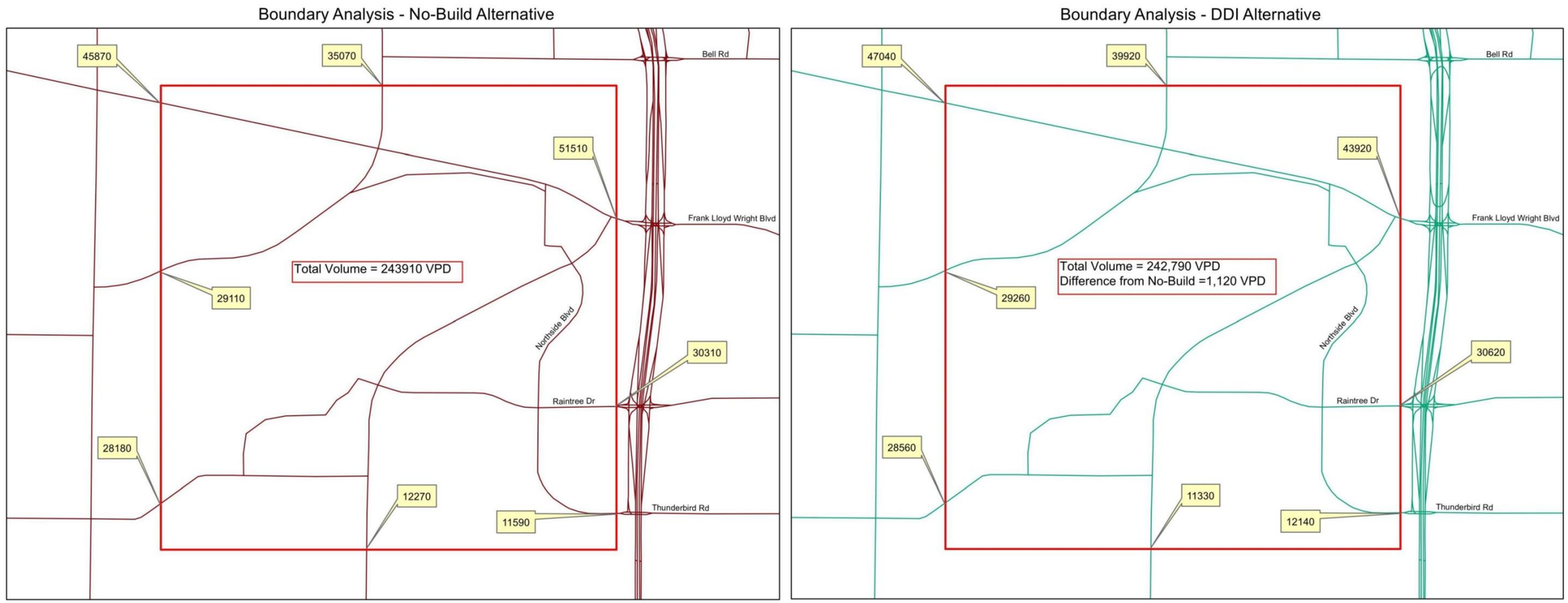
While traffic volumes for the existing VISSIM model were gathered in the field, the Maricopa Association of Governments (MAG) provided traffic volume projections for Design Year 2035. MAG maintains a regional traffic forecasting model to develop future traffic volume projections based on projected socio-economic, population, employment, origin-destination, and other regionally based data. The output from the model includes daily traffic volumes for the regional freeway system.

Network simulation output was provided by MAG for the No-Build (2035) and Build Alternative 1 (2035) conditions. The traffic volume projections that were received from MAG were post-processed in accordance with the procedures recommended by MAG. The lane diagrams and latest-year traffic volume projections for each build alternative are also provided in the alternative descriptions included in Section 4.0.

Because Build Alternative 1 contains a significant change in freeway access, the alternative was configured in a specific MAG model run and results were used to understand changing traffic flow patterns as a result of the change of access. In order to ensure that the changing access would not divert projected traffic away from the study area, a boundary analysis was completed. A boundary area was created west of SR 101L near Frank Lloyd Wright Boulevard, and all exiting and entering volumes in Alternative 1 were compared to those same volumes in the No-Build Alternative. The results showed that the total volumes in the area included in Build Alternative 1 are less than 1% different from the total volumes included in the No-Build alternative. The analysis results are provided in **Figure 10** (page 17).

[Text resumes on page 18]

Figure 10 – 2035 Demand Model Boundary Analysis



4.0 FUTURE ROADWAY ALTERNATIVES

4.1 Introduction

Several alternatives were evaluated in this study to determine the operational benefits of several potential treatments. The alternatives and their analysis years include the following:

- No-Build Alternative (Year 2035)
  - One additional general purpose lane in each direction on SR 101L
- Alternative 1, DDI (Year 2035)
  - Princess Drive DDI
  - Four additional SR 101 direct access ramps at Bell Road
  - Frontage road removal between Princess Drive TI and Bell Road TI
  - Removal of southbound off ramp at Frank Lloyd Wright Boulevard and northbound on ramp at Frank Lloyd Wright Boulevard
  - Texas U-turn in northbound and southbound direction on the Frontage Road between Bell Road and Frank Lloyd Wright Boulevard
- Alternative 2, Minor Intersection/Safety Improvements (Year 2035)
  - Three westbound-to-southbound left-turn lanes at Princess Drive TI
  - Provides exclusive left-turn lanes at the Frank Lloyd Wright Boulevard TI northbound and southbound approaches
  - Removal of one westbound right-turn lane at Frank Lloyd Wright Boulevard TI with additional storage length
  - Addition of a westbound right-turn lane at Raintree Drive TI
  - Continuous sidewalks on the frontage roads between Frank Lloyd Wright Boulevard and Bell Road
- Alternative 3, Diamond Interchanges & Fly-Over Ramp (Year 2035)
  - Three westbound-to-southbound left-turn lanes at Princess Drive TI
  - Dual lane entrance on the southbound Princess entrance ramp
  - Addition of a grade-separated ramp facility connecting the northbound Princess Drive/Pima Road exit to eastbound Pima Road
  - Reconfiguration of Frank Lloyd Wright Boulevard and Raintree Drive TI's as diamond interchanges
- Alternative 4, Bell Road Roundabouts (Year 2035)
  - Three westbound-to-southbound left-turn lanes at Princess Drive TI
  - Dual lane entrance on the southbound Princess entrance ramp
  - Two additional SR 101 direct access ramps at Bell Road (north side of Bell Road)
  - Frontage road removed between Princess Drive TI and Bell Road TI
  - Reconfiguration of Bell Road TI as two roundabouts
  - Texas U-turn in northbound direction on the frontage road between Bell Road and Frank Lloyd Wright Boulevard

Traffic operational analyses were conducted for each Alternative based on the methodology discussed in Section 3. VISSIM output details are included in **Appendix B.** The following sections describe the alternatives and the analysis results. The lane diagrams, traffic volume projections and level-of-service analysis results for each alternative are included in the following sections.

4.2 Existing Conditions

The existing roadway configurations existing average daily traffic (ADT) of peak hour volumes were shown previously on Figures 4, 5, and 6 (page 6-10). The traffic count data represents the existing roadway characteristics in 2014.

4.3 No-Build Alternative

The No-Build Alternative includes the existing roadways and planned improvements that are currently programmed for construction. The No-Build Alternative includes the addition of one general purpose lane in each direction on SR 101L. The No-Build conceptual layout is displayed in **Figure 11** (pages 19-20). The Year 2035 freeway and ramp traffic volume projections and lane diagrams are shown in **Figure 12** (pages 21-22). The turning movement volumes for the No-Build condition are provided in **Figure 13** (pages 23-24).

[Text resumes on page 25]

Figure 11 – 2035 No Build Conceptual Layout

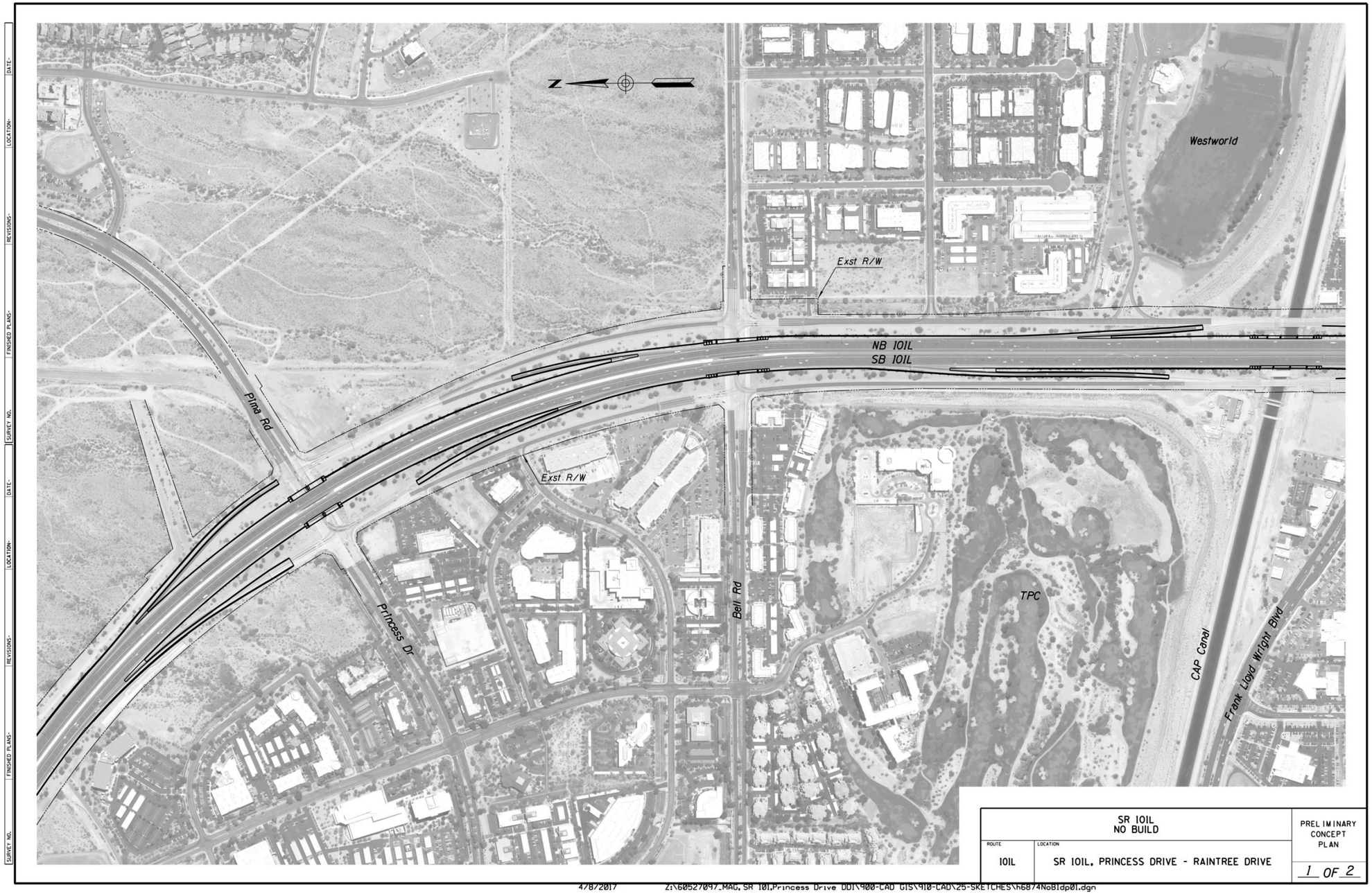


FIGURE 11- SHEET 2 OF 2

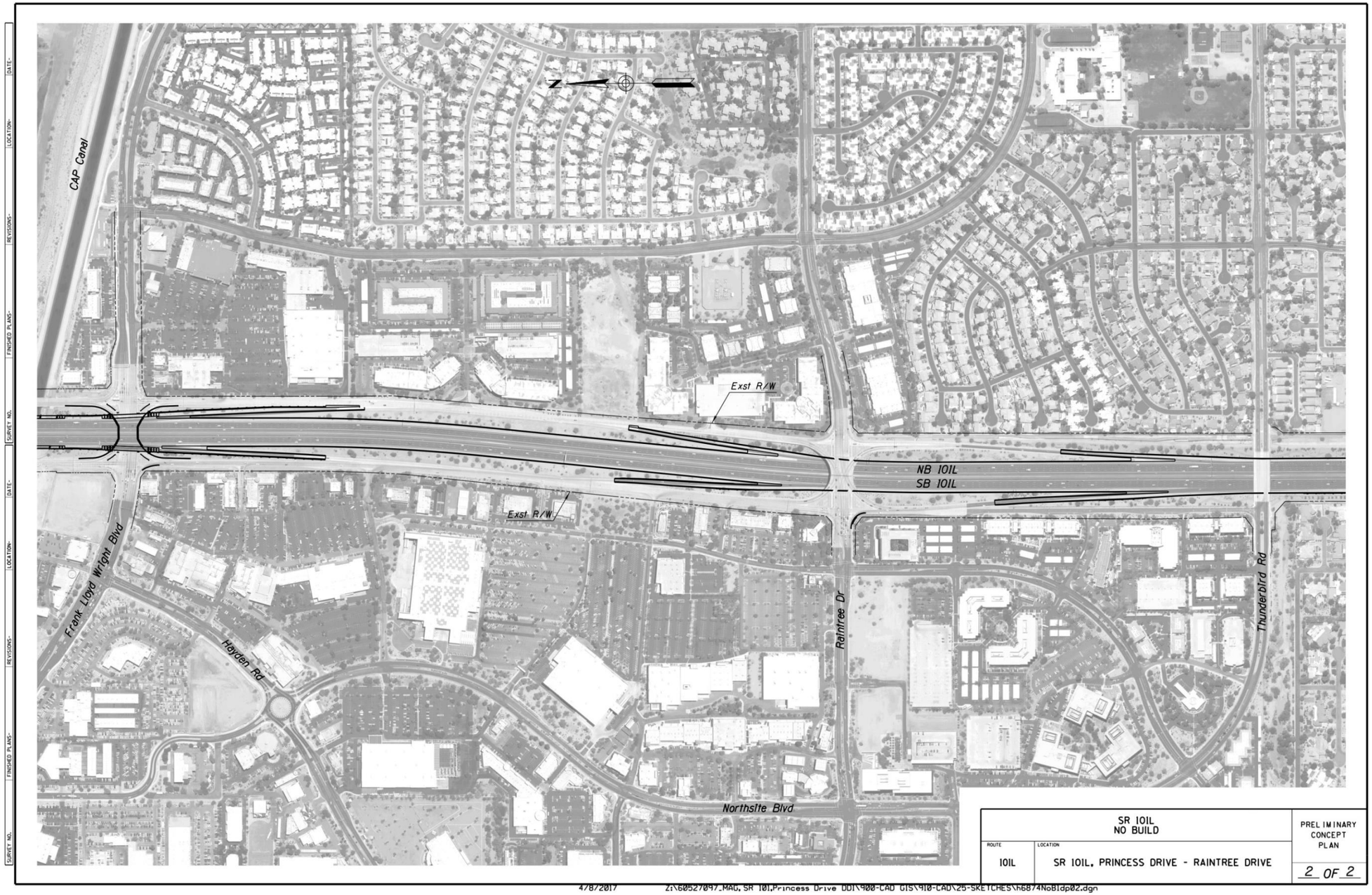


Figure 12 – 2035 No Build Volumes & Lane Configuration

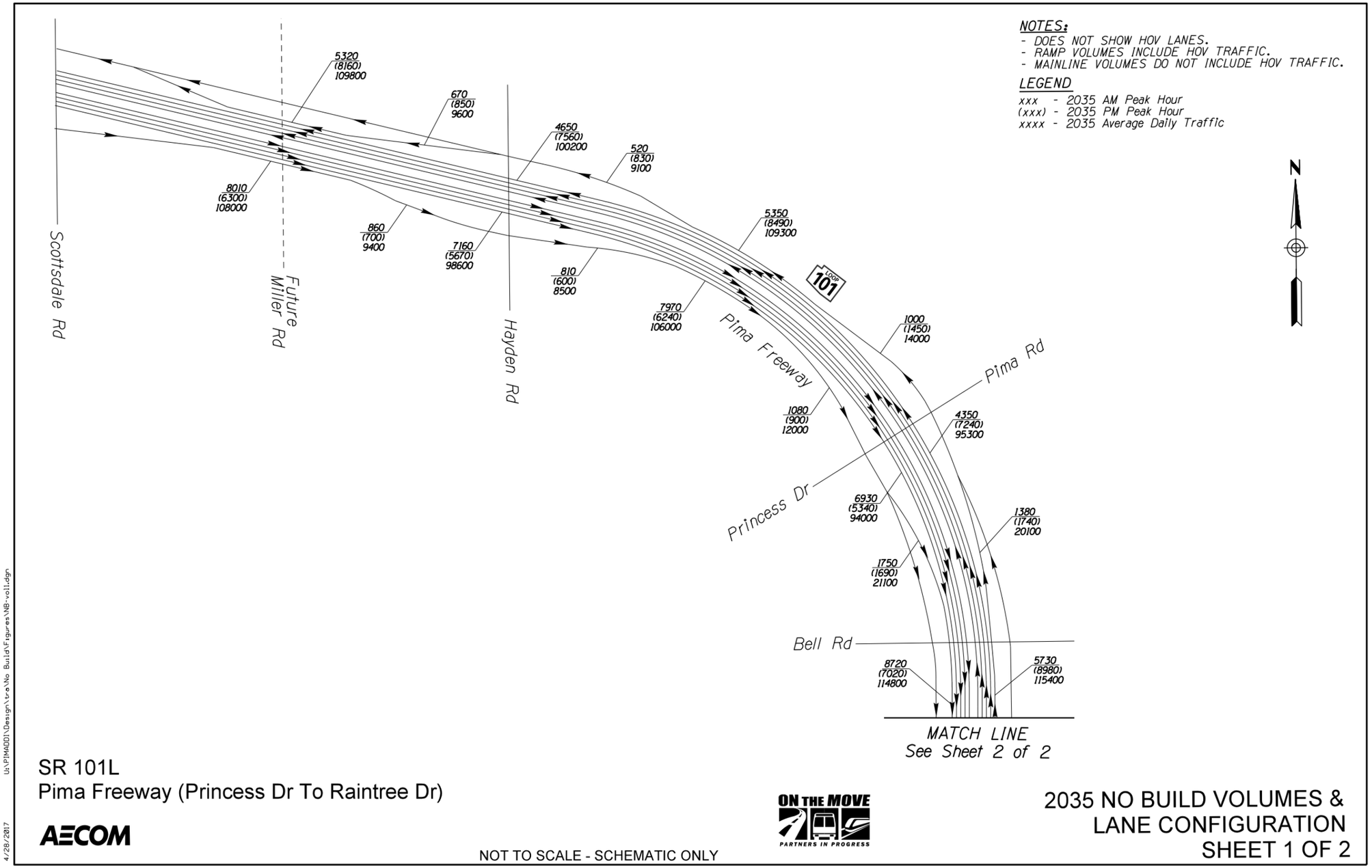


FIGURE 12 - SHEET 2 OF 2

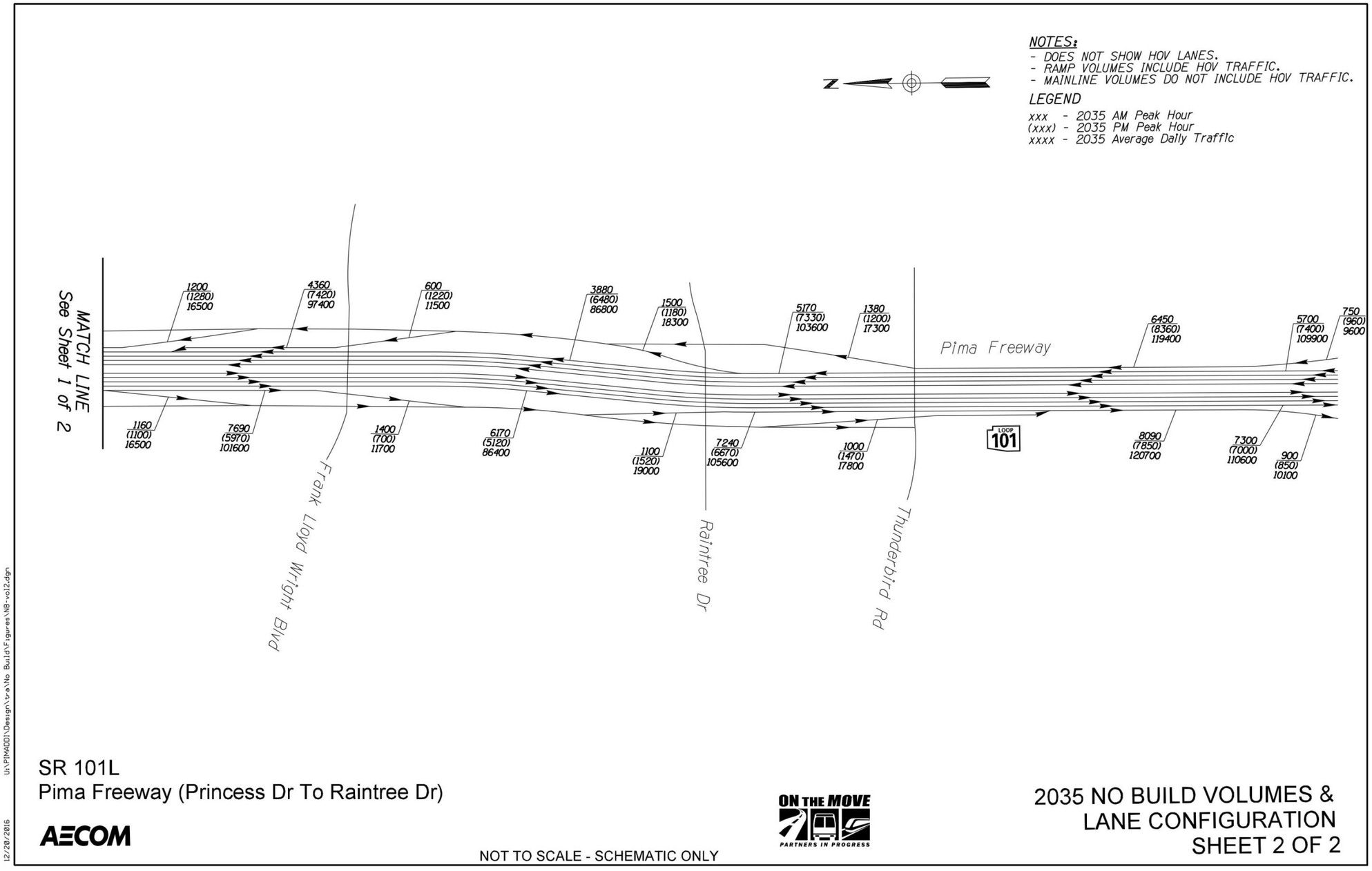


Figure 13 – 2035 No-Build Intersection Volumes and Lane Configurations

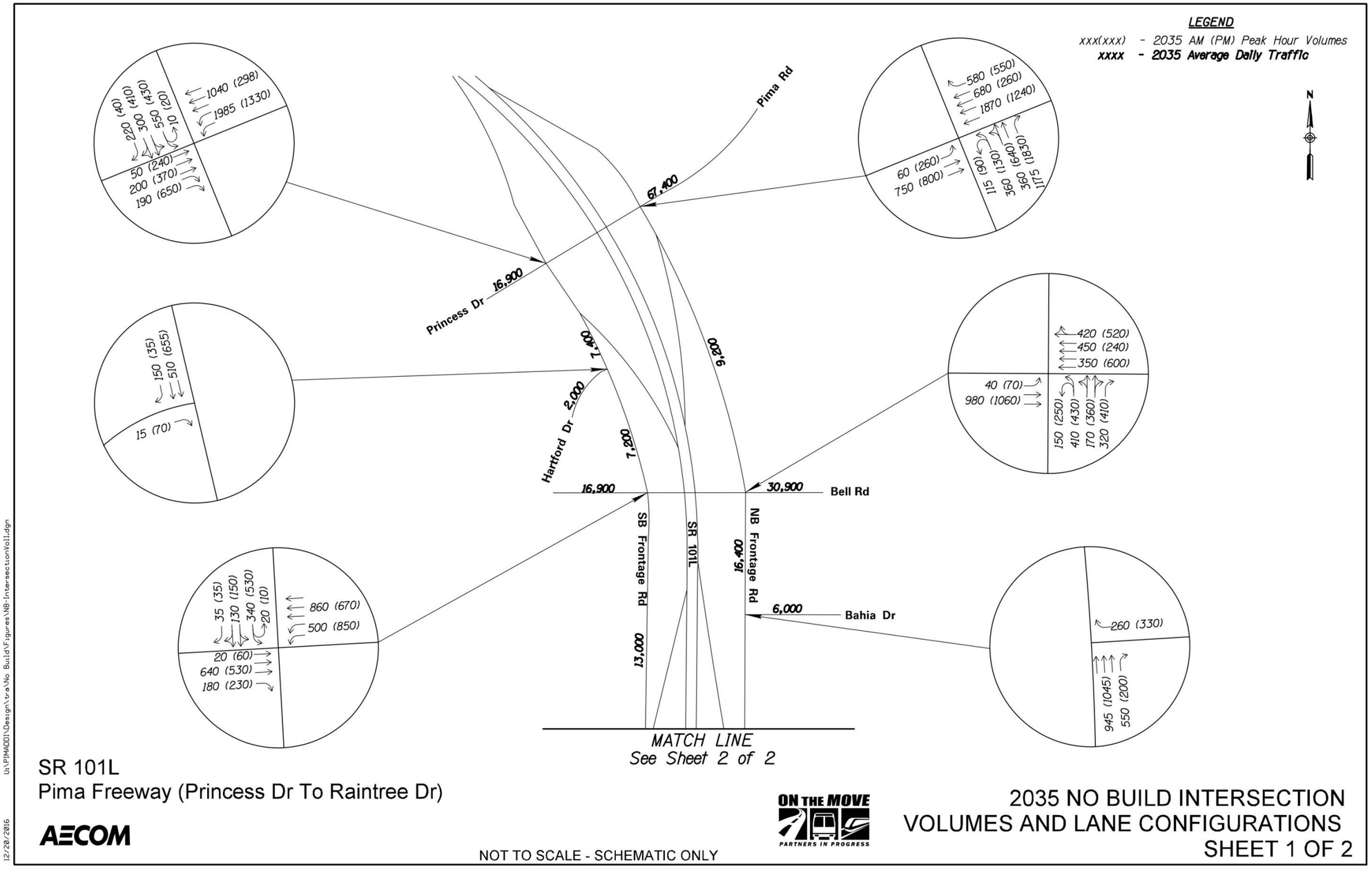
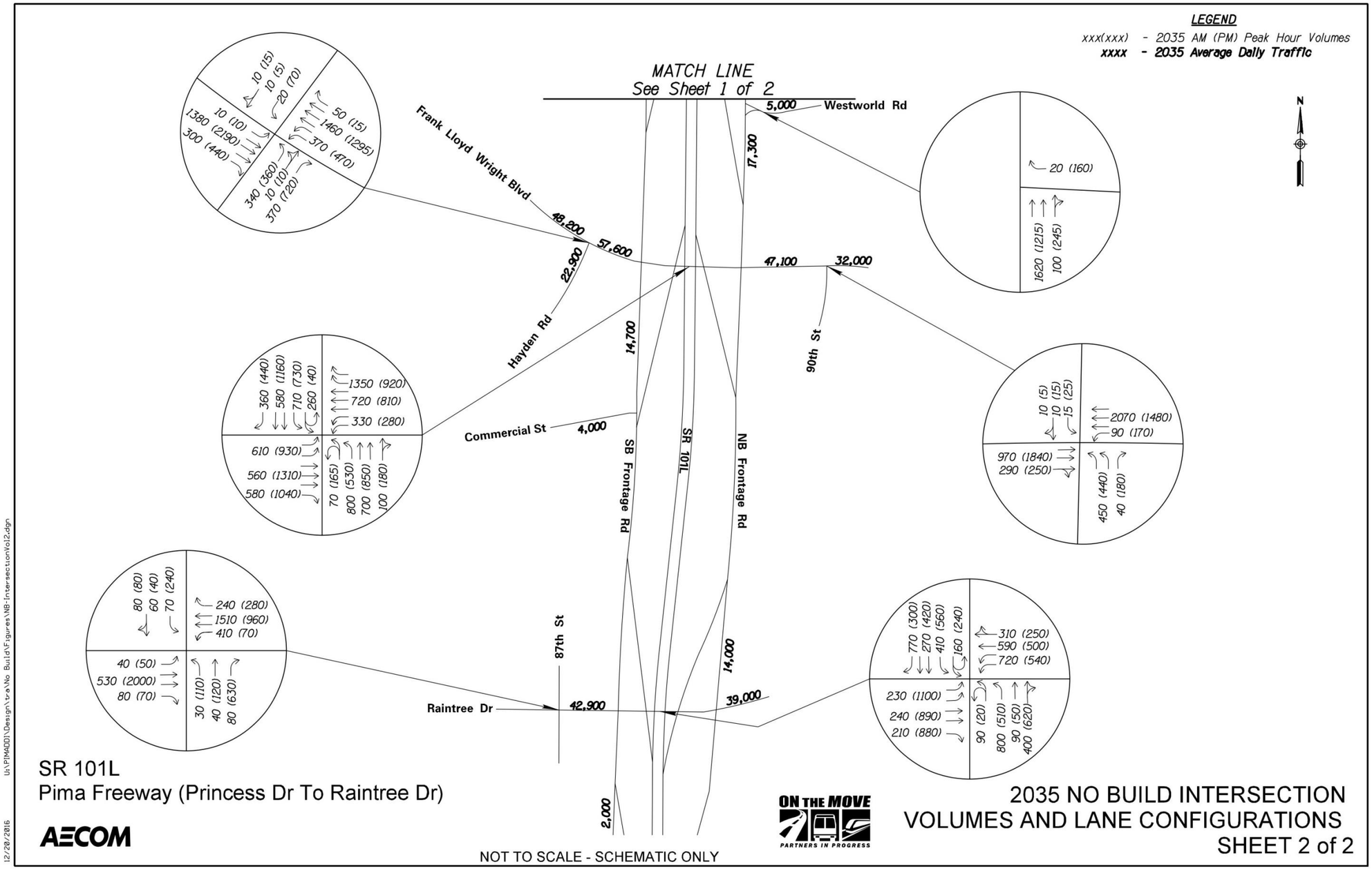


FIGURE 13 - SHEET 2 of 2



4.4 Build Alternatives

Build Alternative 1, DDI

A conceptual drawing of Build Alternative 1 is provided in **Figure 14** (pages 26-27). Build Alternative 1 includes the additional 4th general purpose lane on SR 101L, as in the No-Build Alternative. It also would reconfigure the Princess Drive TI to a Diverging Diamond Interchange (DDI). The frontage roads between the Princess Drive TI and Bell Road TI would be closed. A full traffic interchange with direct access SR 101L ramps would be added at Bell Road maintaining the current diamond configuration. The ramps south of Princess Drive/Pima Road would be braided and grade separated with the ramps north of Bell Road. The northbound Frank Lloyd Wright Boulevard entrance ramp and the southbound Frank Lloyd Wright Boulevard exit ramp would be removed. A Texas U-Turn from the northbound frontage road to the southbound frontage road would be added between the Bell Road interchange and the Bell Road southern ramps. Additionally, a southbound to northbound Texas U-Turn would be added on the frontage roads just north of Frank Lloyd Wright Boulevard. Therefore, a Texas U-turn is included in both the northbound and southbound directions on the frontage roads between Bell Road and Frank Lloyd Wright Boulevard. Volumes and lane configurations for the mainline in this alternative are shown in **Figure 15** (pages 28-29) and intersection configurations with turning movements are shown in **Figure 16** (pages 30-31).

Build Alternative 2, Minor Intersection/Safety Improvements

A conceptual drawing of Build Alternative 2 is provided in **Figure 17** (pages 32-33) which includes the additional 4th general purpose lane on SR 101L. This alternative represents minor or low-cost improvements to the corridor. Three westbound to southbound left- turn lanes are included at the Princess Traffic TI. The far left lane is forced onto the SR 101L ramp, the far right lane is forced onto the frontage road, and the middle lane is optional. Additional pavement is added at the southbound and northbound approaches to the Frank Lloyd Wright Boulevard TI such that the through/left-turn lanes are converted to a through only and a left-turn only lanes. One of the two westbound to northbound right-turn lanes at the Frank Lloyd Wright Boulevard TI would be removed and storage for remaining lane would be lengthened. The addition of a right-turn only lane for the westbound to northbound movement at the Raintree Drive TI is included. Continuous sidewalks are constructed along the northbound and southbound frontage road between Frank Lloyd Wright Boulevard and Bell Rd. Volumes and lane configurations for the mainline in this alternative are shown in **Figure 18** (pages 34-35) and intersection configurations with turning movements are shown in **Figure 19** (pages 36-37).

Build Alternative 3, Diamond Interchanges and Fly-Over Ramp

A conceptual drawing of Build Alternative 3 is provided in **Figure 20** (pages 38-39) which includes the additional 4th general purpose lane on SR 101L. This alternative, as compared to the no-build alternative, includes three westbound to southbound left-turn lanes at the Princess Drive TI, as described in Build Alternative 2 above. A two-lane entrance ramp to SR 101L southbound from the Princess Drive TI is included. The outside lane is dropped at the Frank Lloyd Wright Boulevard exit ramp while the inside is dropped at the Raintree Drive exit ramp. In the northbound direction, the exit to Princess Drive/Pima Road includes a “fly-over” ramp. This fly-over is a grade separated facility that is braided with the frontage road and provides a right-turn only access to eastbound Pima Road. All northbound movements continue to be provided at the signal, but right-turns from the frontage road are no longer free. Both Frank Lloyd Wright Boulevard and Raintree Drive TI’s are converted from the existing modified SPUI configuration to a diamond configuration. The number of lanes provided for each movement is the same as the No-build condition. A base signal phasing plan was adopted to match that of the existing Bell Road TI. Volumes and lane configurations for the mainline in this alternative are shown in **Figure 21** (pages 40-41) and intersection configurations with turning movements are shown in **Figure 22** (pages 42-43).

Build Alternative 4, Bell Road Roundabouts

A conceptual drawing of Build Alternative 4 is provided in **Figure 23** (pages 44-45) which includes the additional 4th general purpose lane on SR 101L. This alternative, as compared to the no-build alternative, includes three westbound to southbound left-turn lanes at the Princess Drive TI. All three lanes are forced onto the SR 101L entrance ramp and one lane is dropped prior to the freeway entrance. A two-lane entrance ramp to SR101L southbound from Princess Drive is included, as described in Alternative 3 above. The northbound and southbound frontage roads are eliminated between Princess Drive/Pima Road and Bell Road. Additional freeway ramps to and from the north at Bell Road are included. These ramps are braided with the ramps to and from the south of the Princess Drive TI. The Bell Road TI is converted to a roundabout configuration and a northbound-to-southbound Texas U-turn is included on the frontage roads between Bell Road and Frank Lloyd Wright Boulevard. Volumes and lane configurations for the mainline in this alternative are shown in **Figure 24** (pages 46-47) and intersection configurations with turning movements are shown in **Figure 25** (pages 48-49).

[Text resumes on page 50]

Figure 14 – 2035 Build Alternative 1 Conceptual Drawing

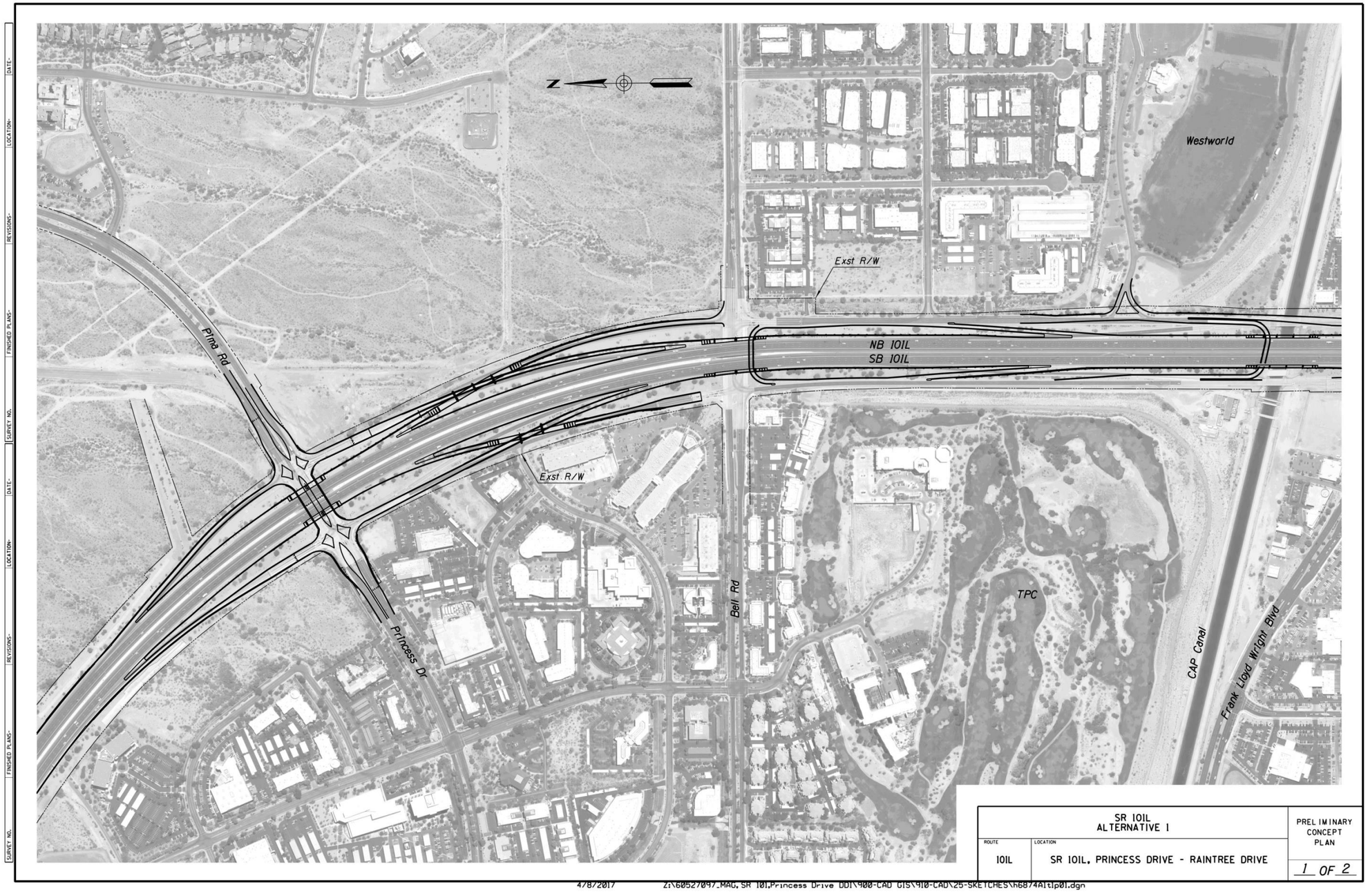


FIGURE 14 - SHEET 2 OF 2

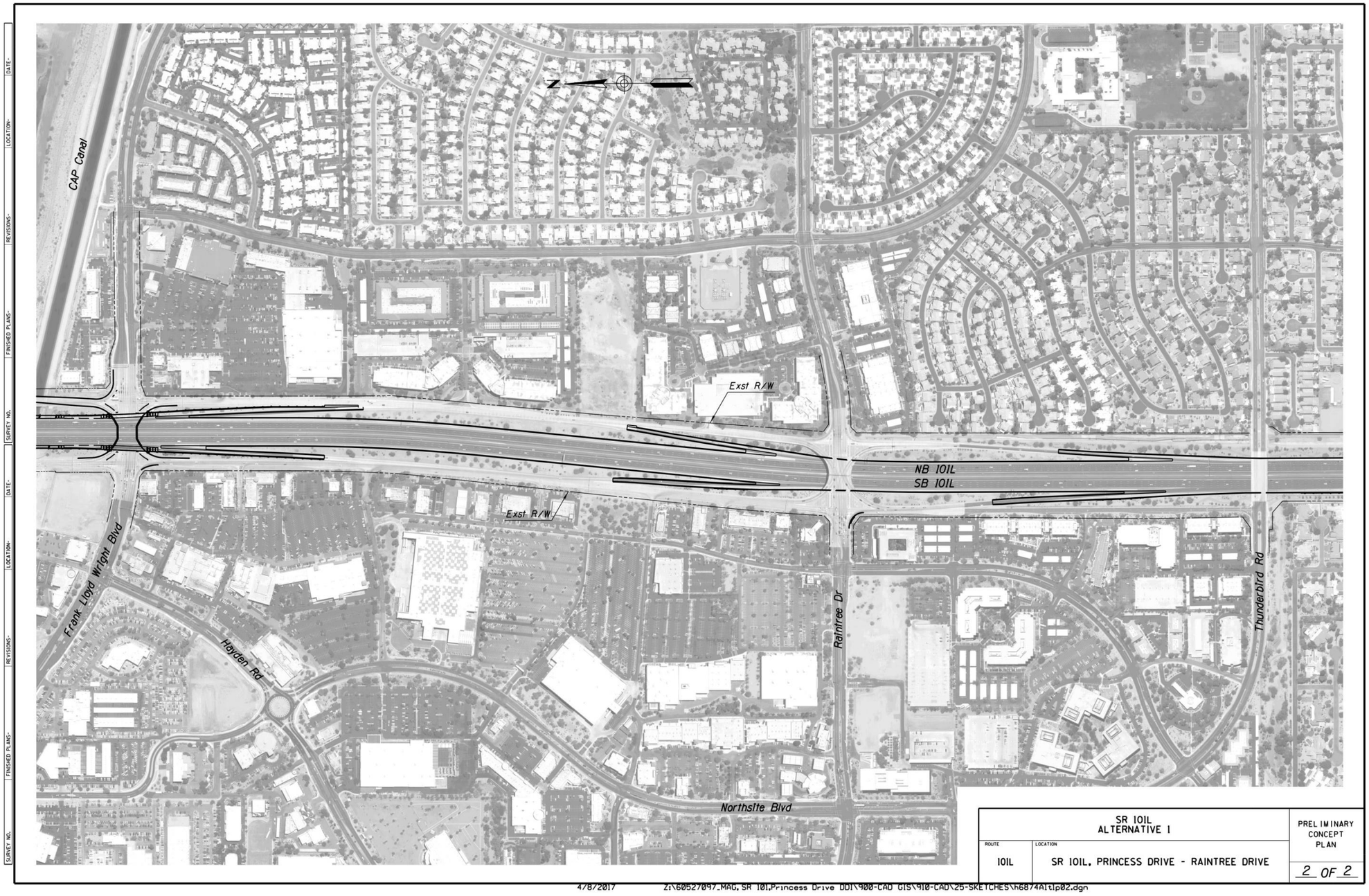


Figure 15 – 2035 Build Alternative 1 Volumes & Lane Configuration

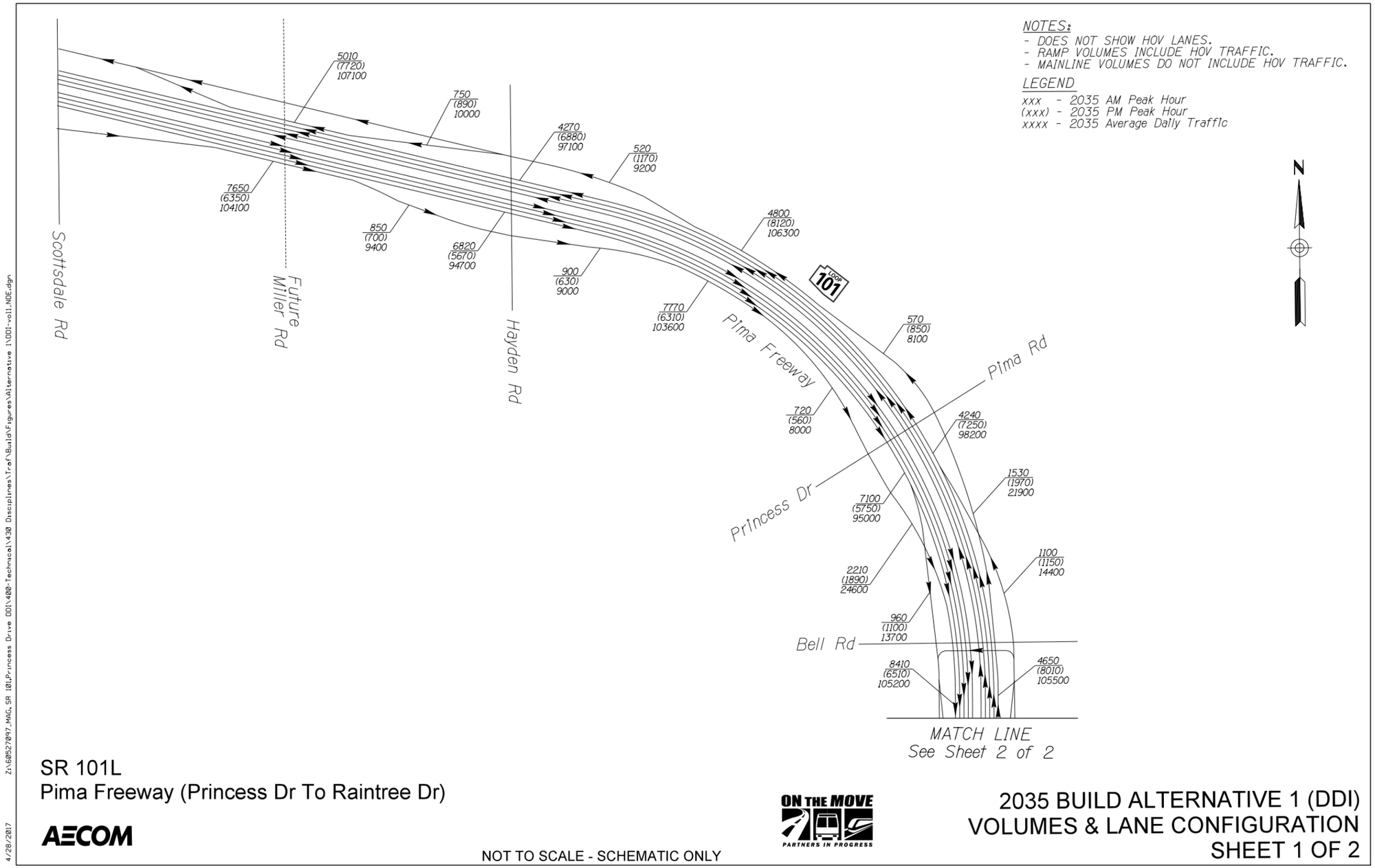
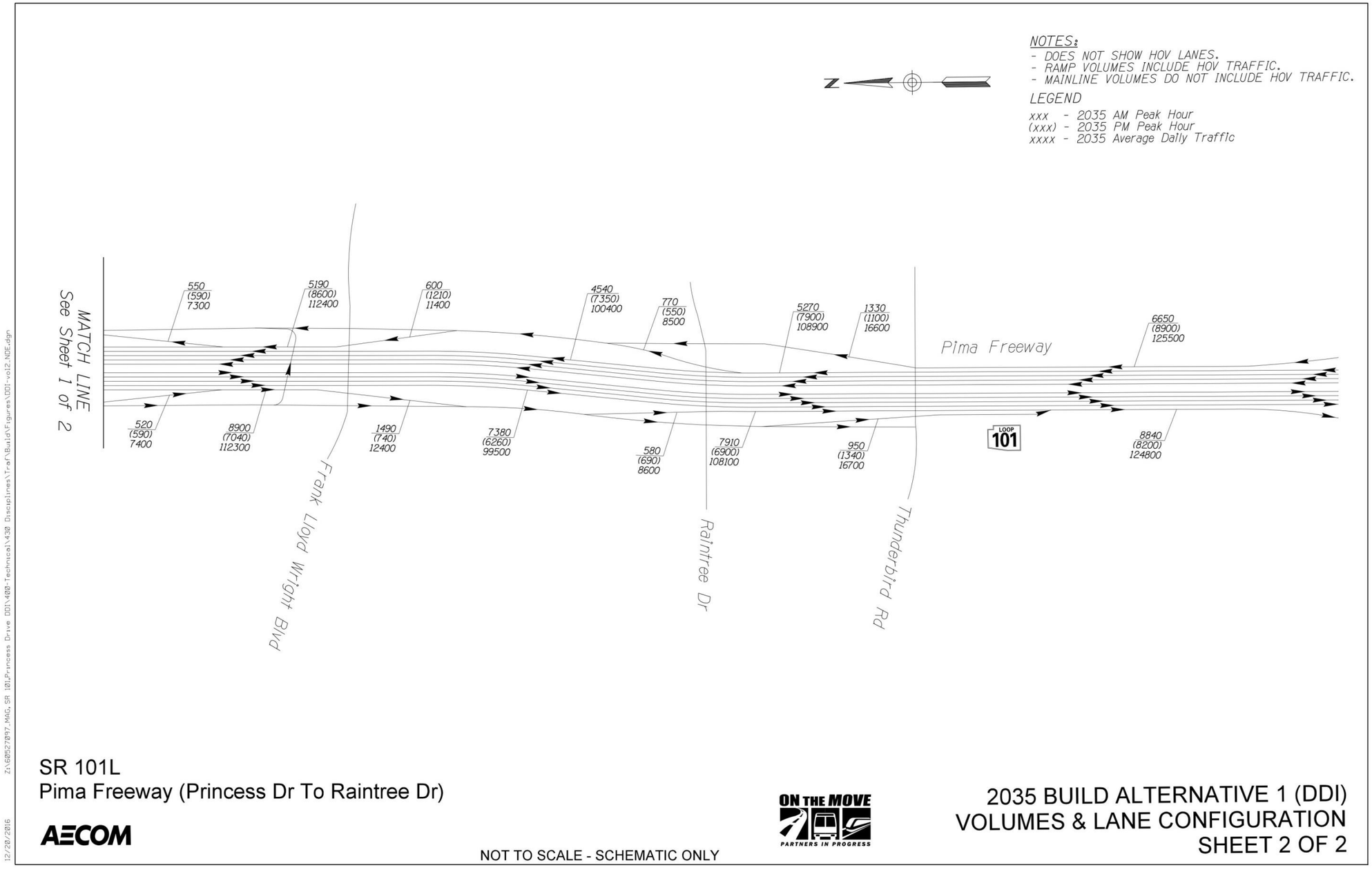


FIGURE 15 - SHEET 2 OF 2



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

AECOM

NOT TO SCALE - SCHEMATIC ONLY

ON THE MOVE
PARTNERS IN PROGRESS

2035 BUILD ALTERNATIVE 1 (DDI)
VOLUMES & LANE CONFIGURATION
SHEET 2 OF 2

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12/20/2016

Figure 16 – 2035 Build Alternative 1 Intersection Turning Movements

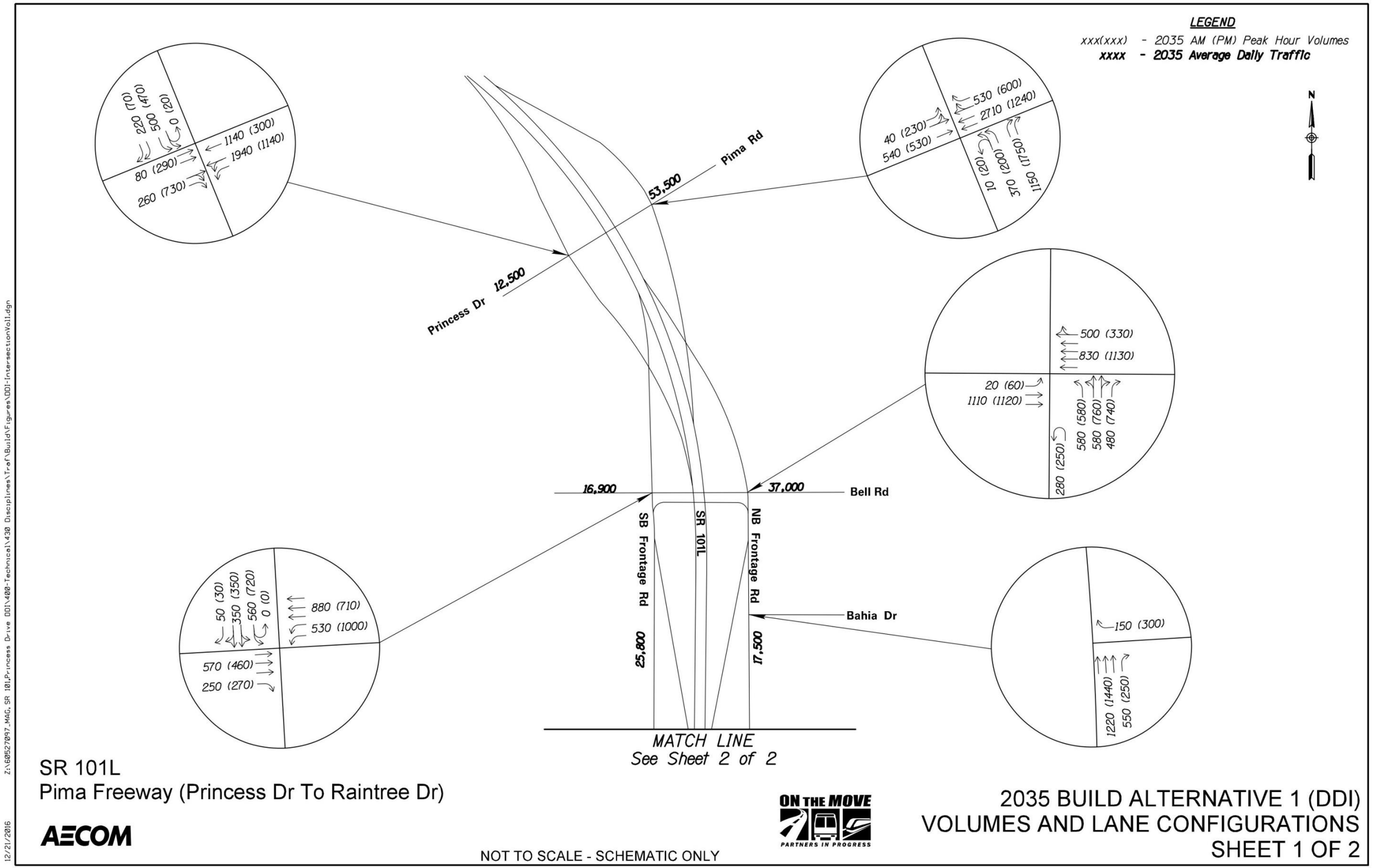


FIGURE 16 - SHEET 2 OF 2

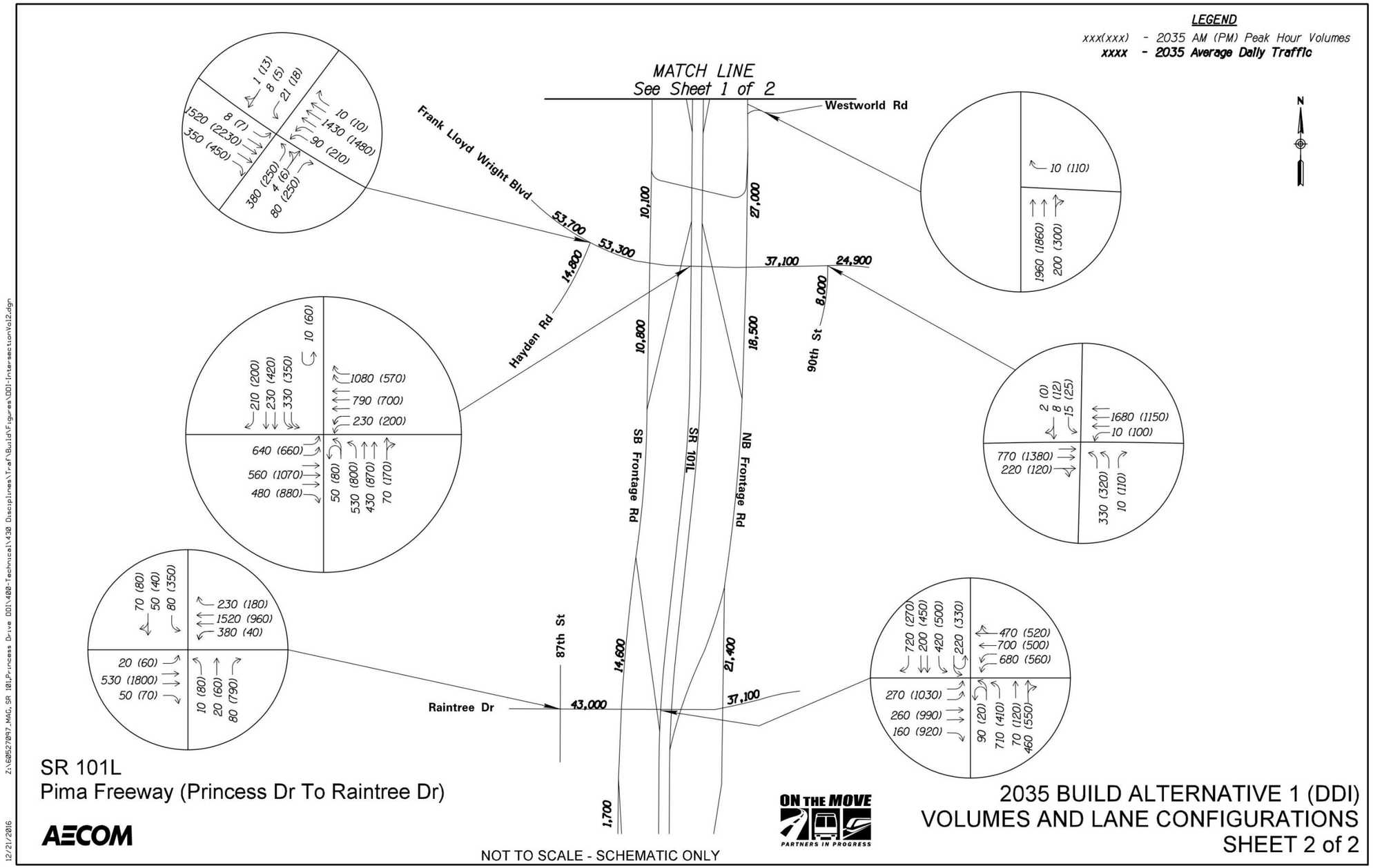


Figure 17 – 2035 Build Alternative 2 Conceptual Drawing

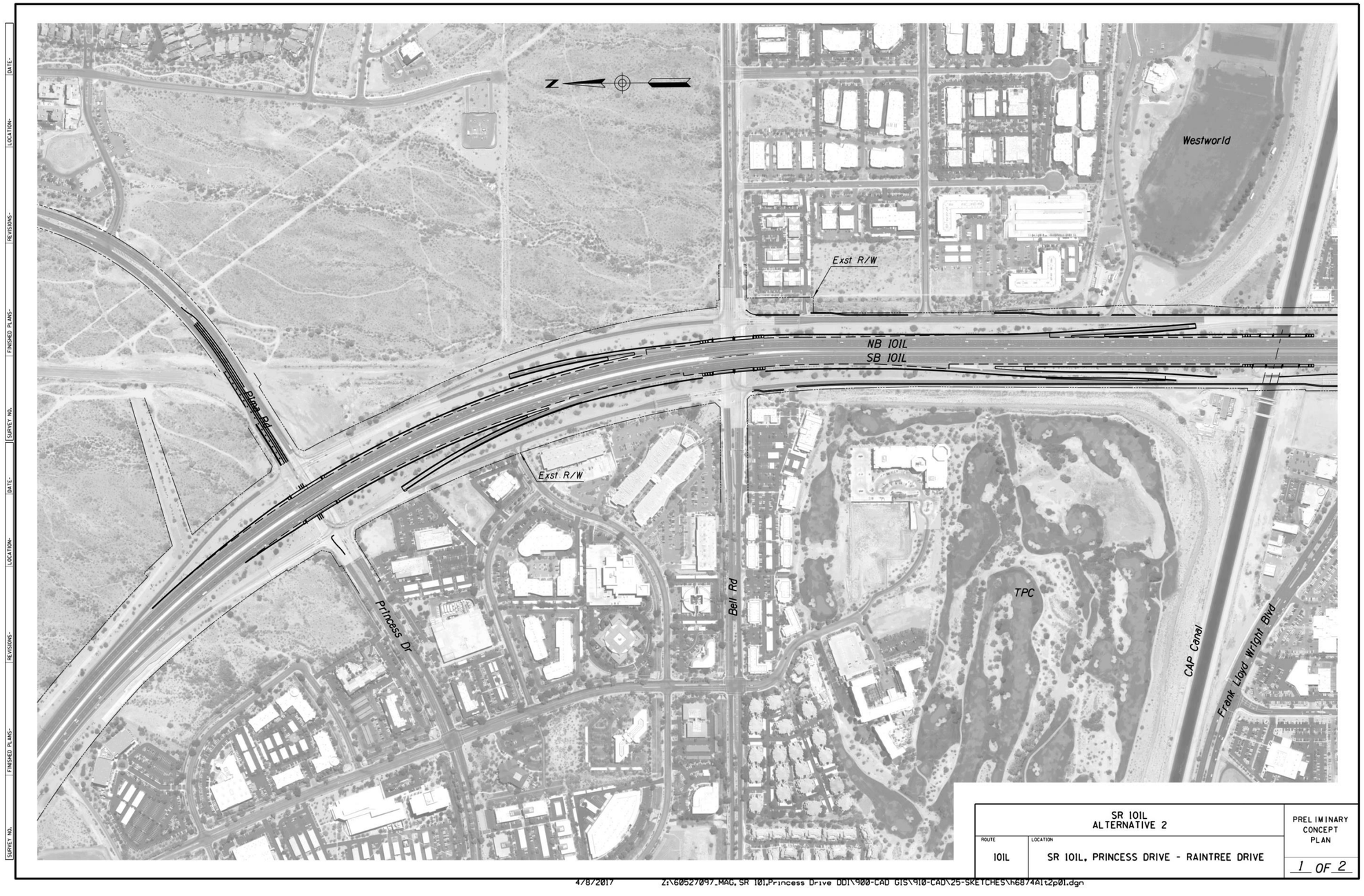


FIGURE 17 - SHEET 2 OF 2

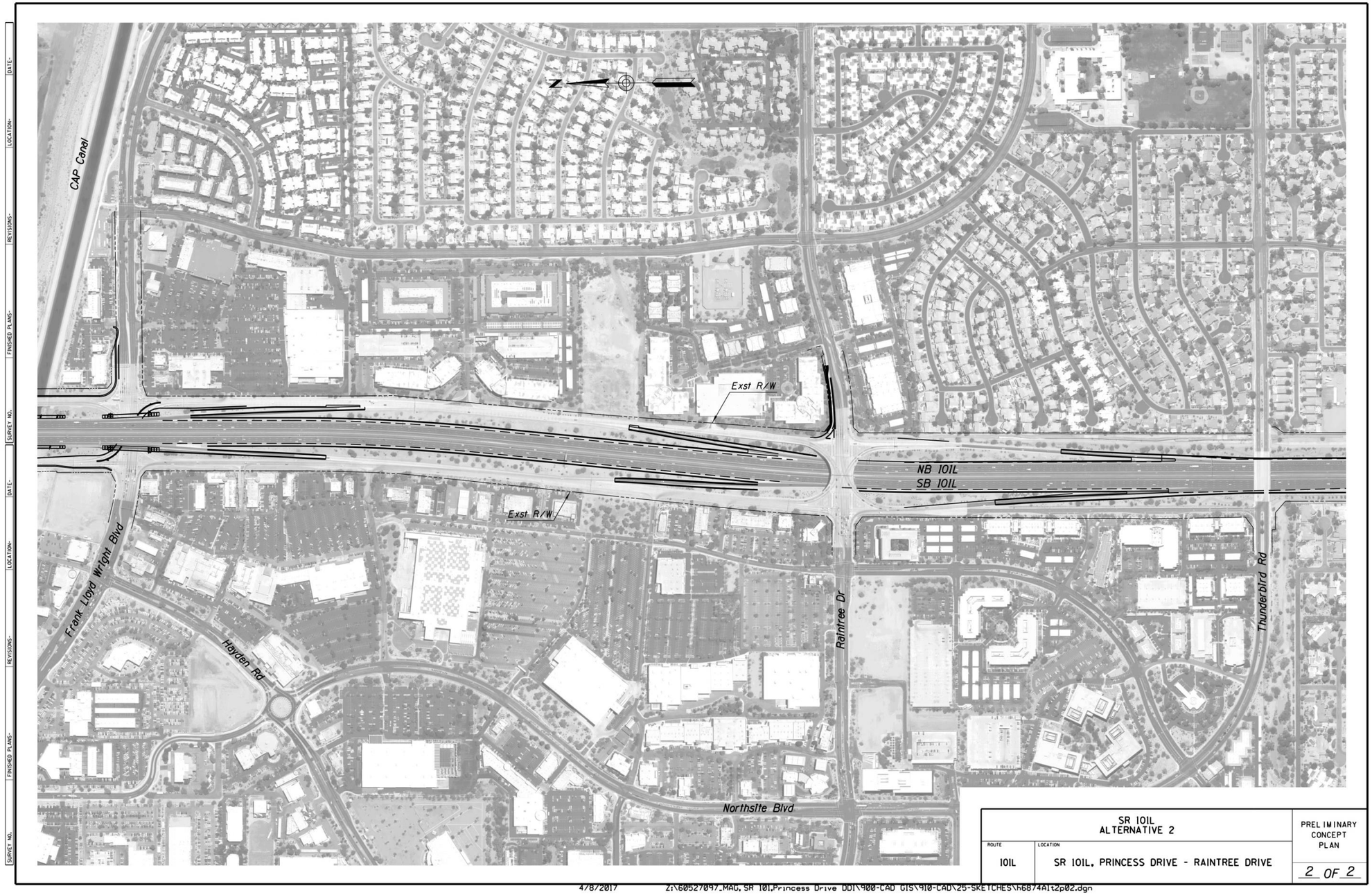
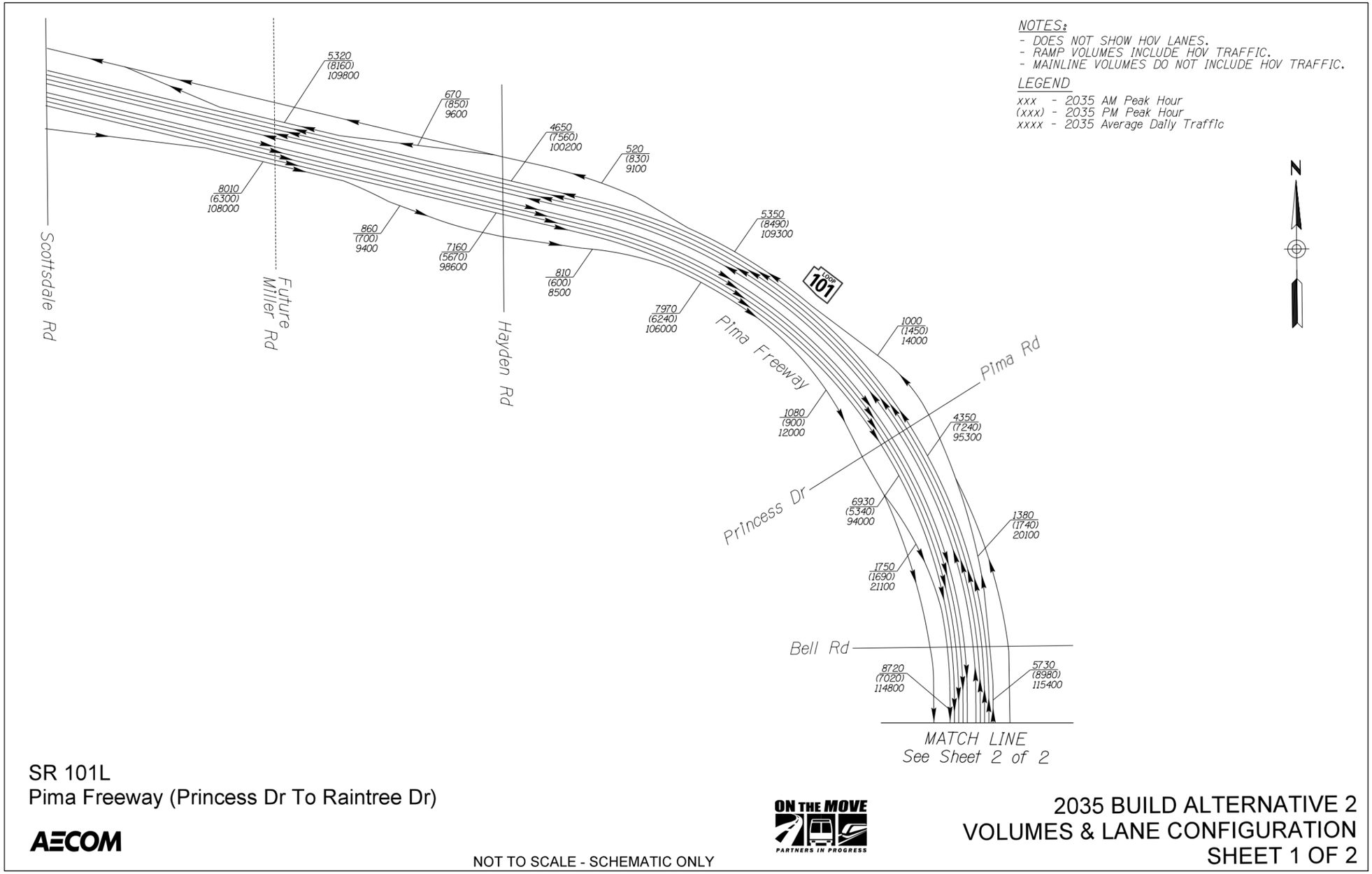


Figure 18 – 2035 Build Alternative 2 Volumes & Lane Configuration



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

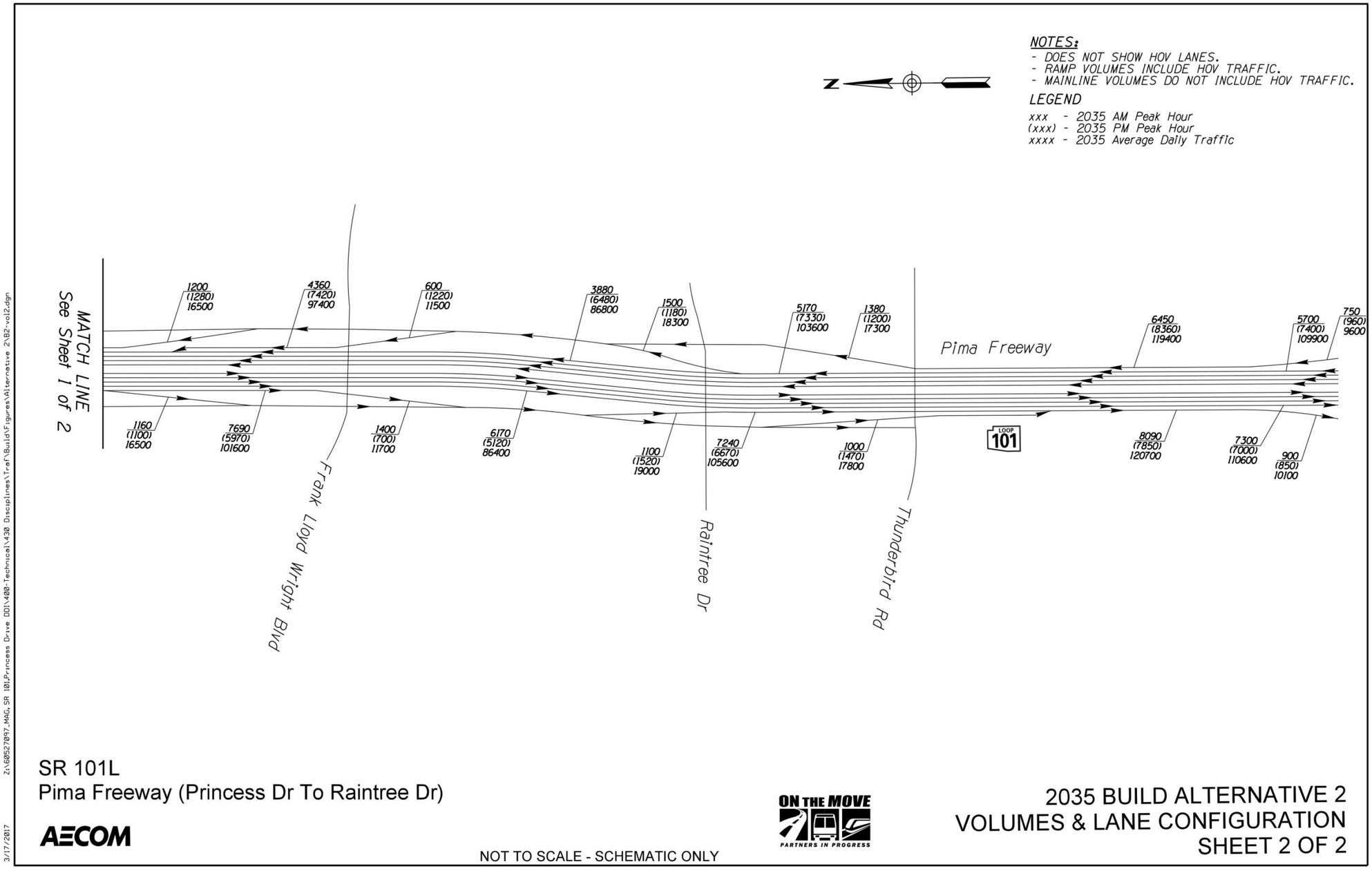
AECOM

NOT TO SCALE - SCHEMATIC ONLY

ON THE MOVE
PARTNERS IN PROGRESS

2035 BUILD ALTERNATIVE 2
VOLUMES & LANE CONFIGURATION
SHEET 1 OF 2

FIGURE 18 - SHEET 2 OF 2



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

AECOM

NOT TO SCALE - SCHEMATIC ONLY

ON THE MOVE
PARTNERS IN PROGRESS

2035 BUILD ALTERNATIVE 2
VOLUMES & LANE CONFIGURATION
SHEET 2 OF 2

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3/17/2017

Figure 19 – 2035 Build Alternative 2 Intersection Turning Movements

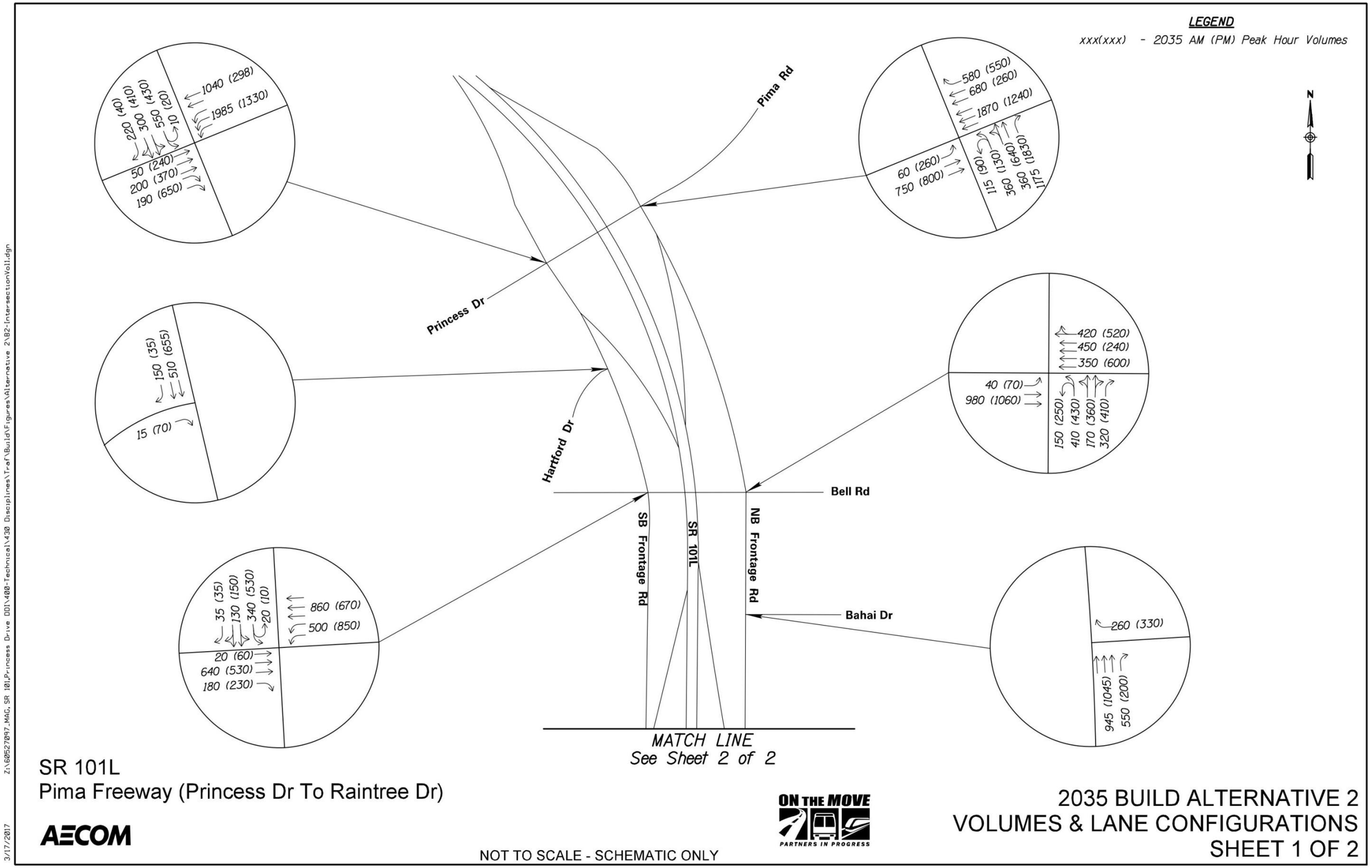


FIGURE 19 - SHEET 2 OF 2

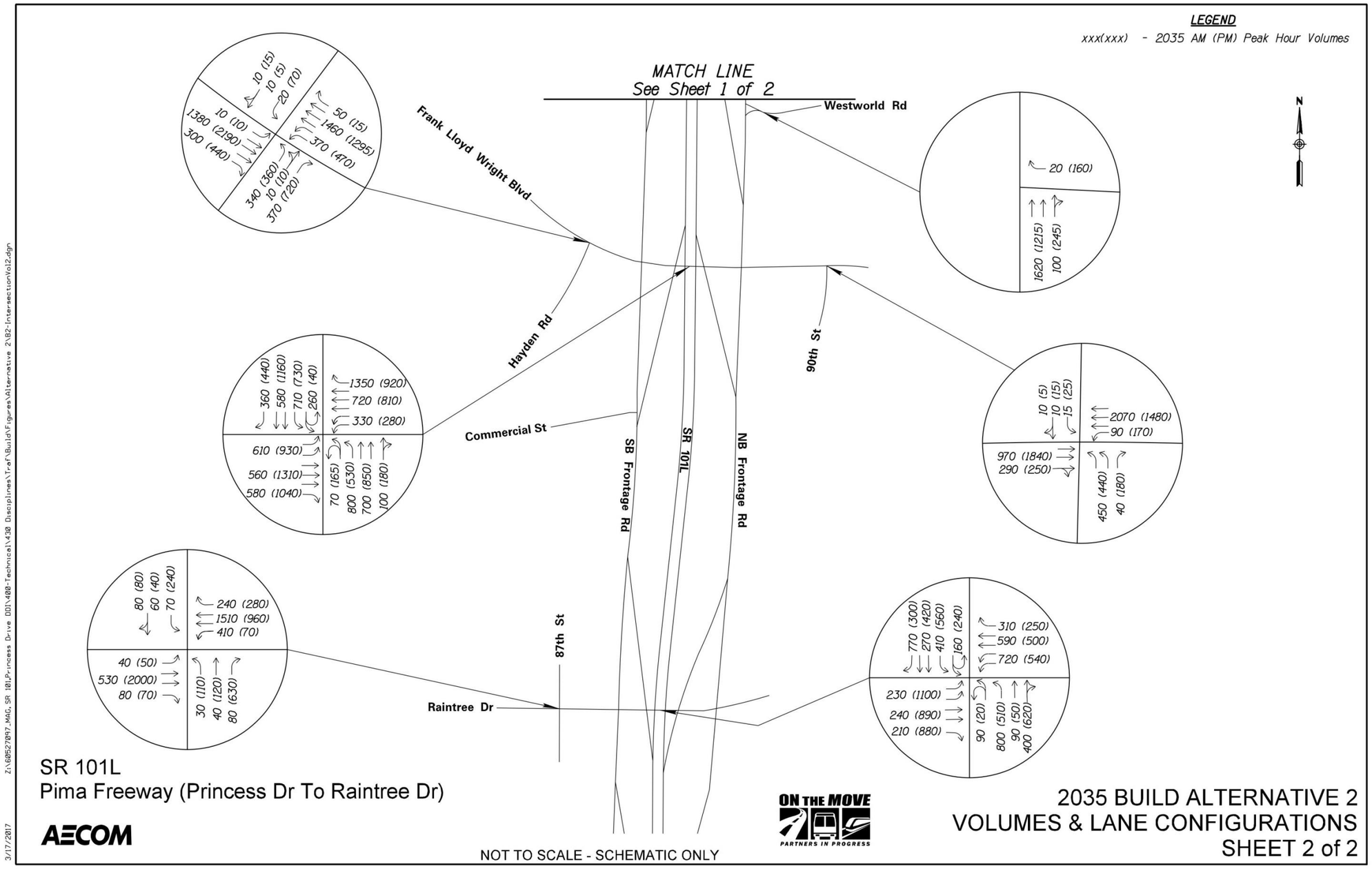


Figure 20 – 2035 Build Alternative 3 Conceptual Drawing

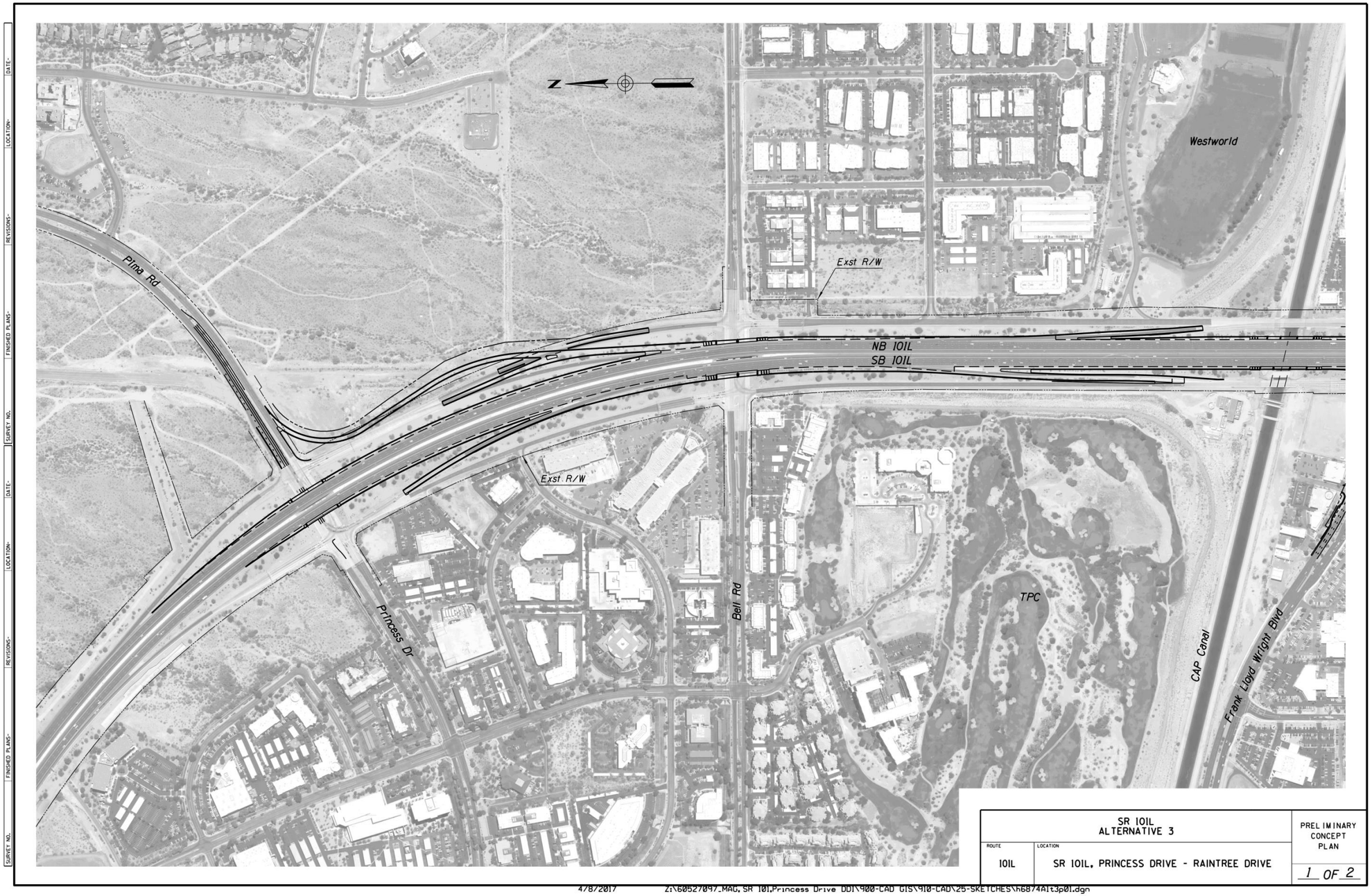


FIGURE 20 - SHEET 2 OF 2

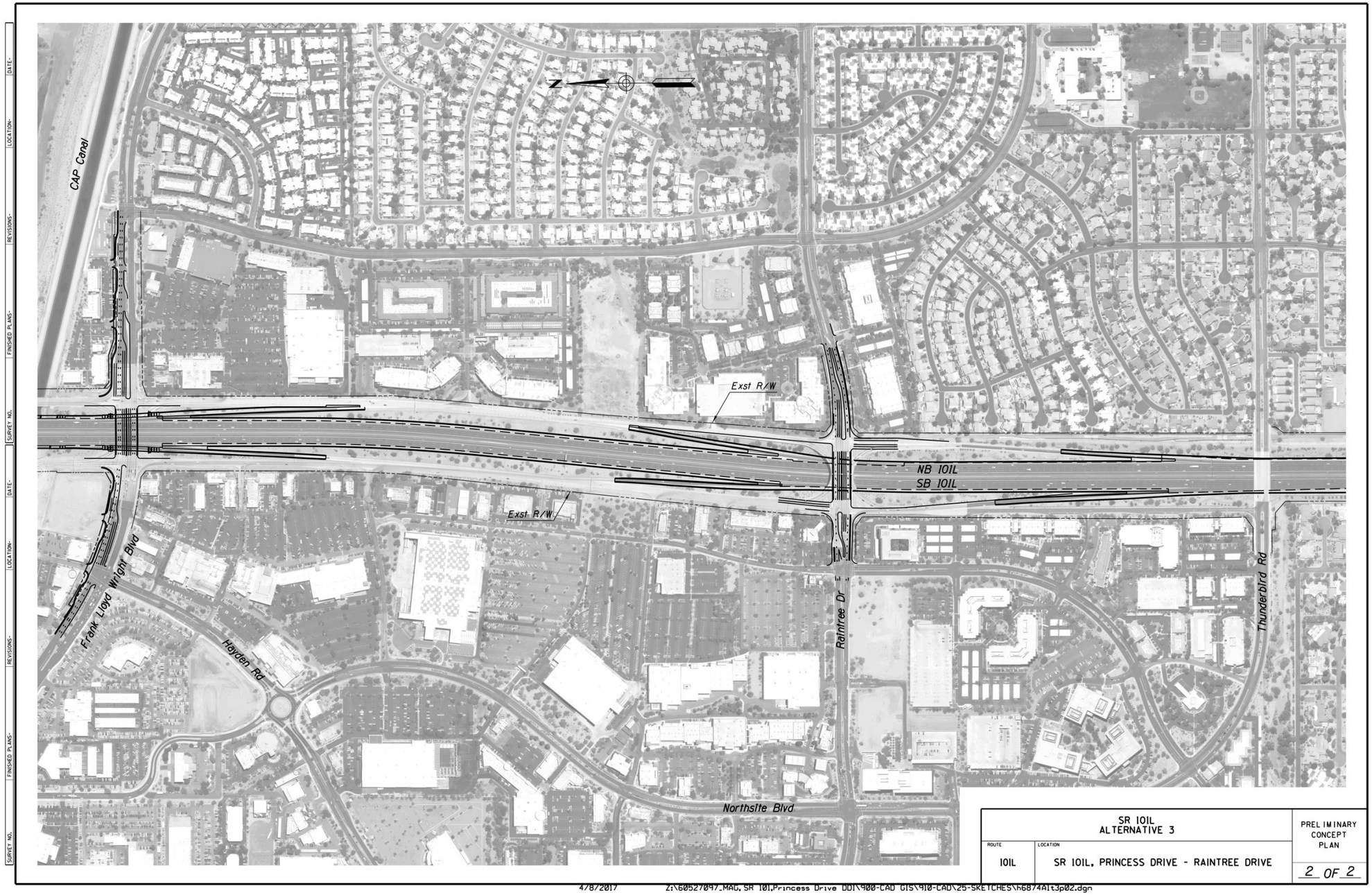
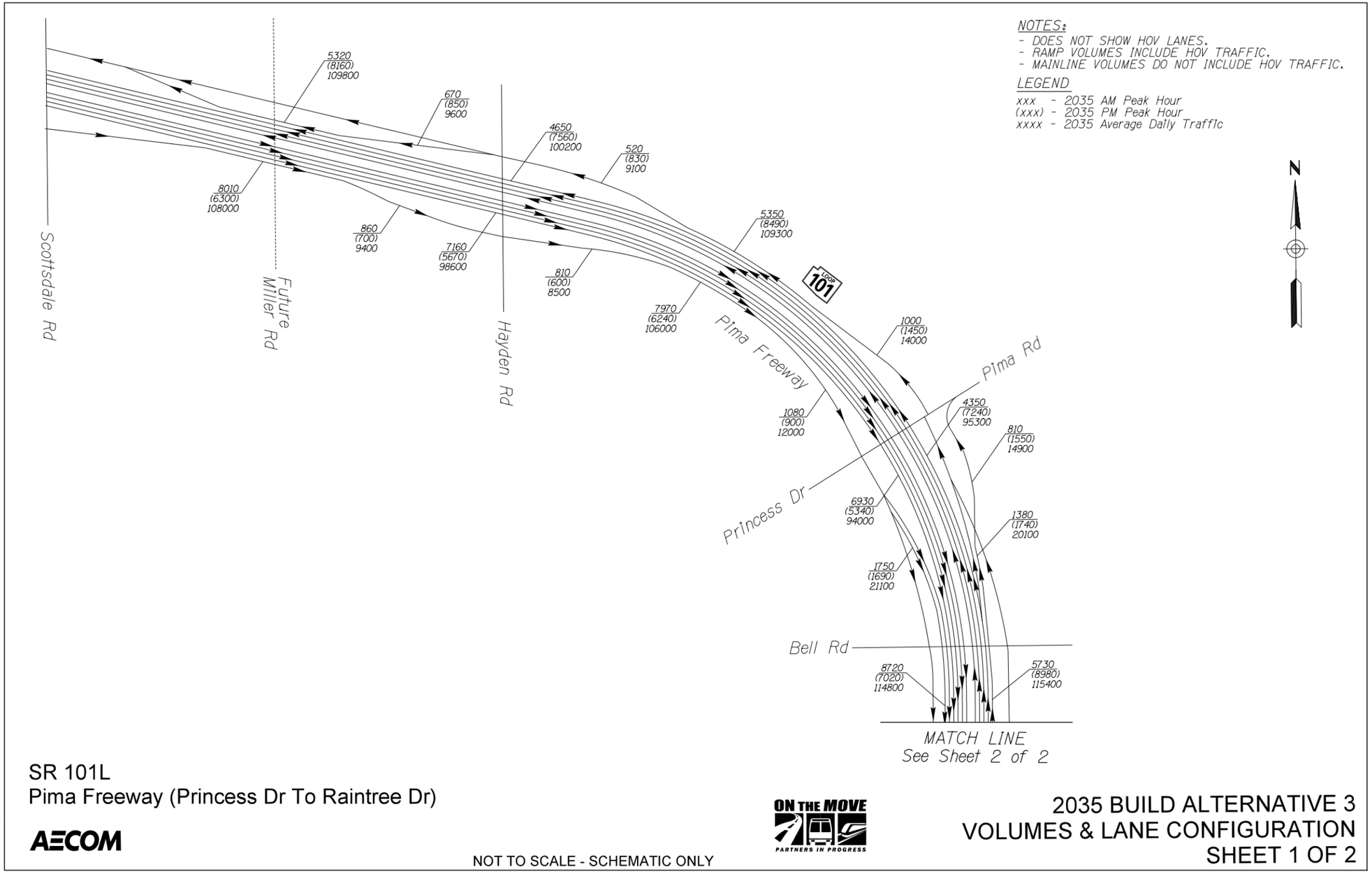


Figure 21 – 2035 Build Alternative 3 Volumes & Lane Configuration



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

AECOM

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ON THE MOVE
PARTNERS IN PROGRESS

2035 BUILD ALTERNATIVE 3
VOLUMES & LANE CONFIGURATION
SHEET 1 OF 2

FIGURE 21 - SHEET 2 OF 2

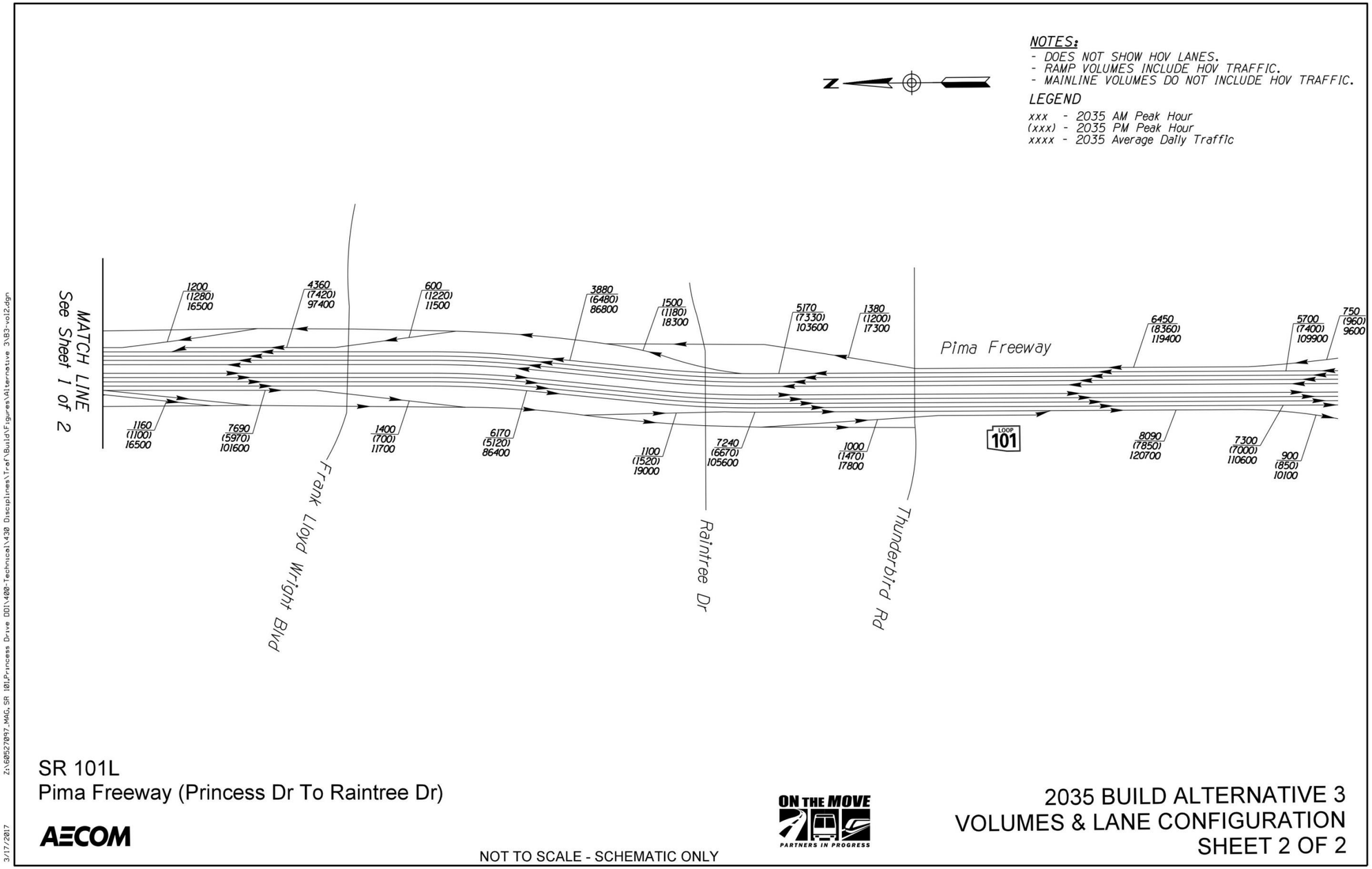


Figure 22 – 2035 Build Alternative 3 Intersection Turning Movements

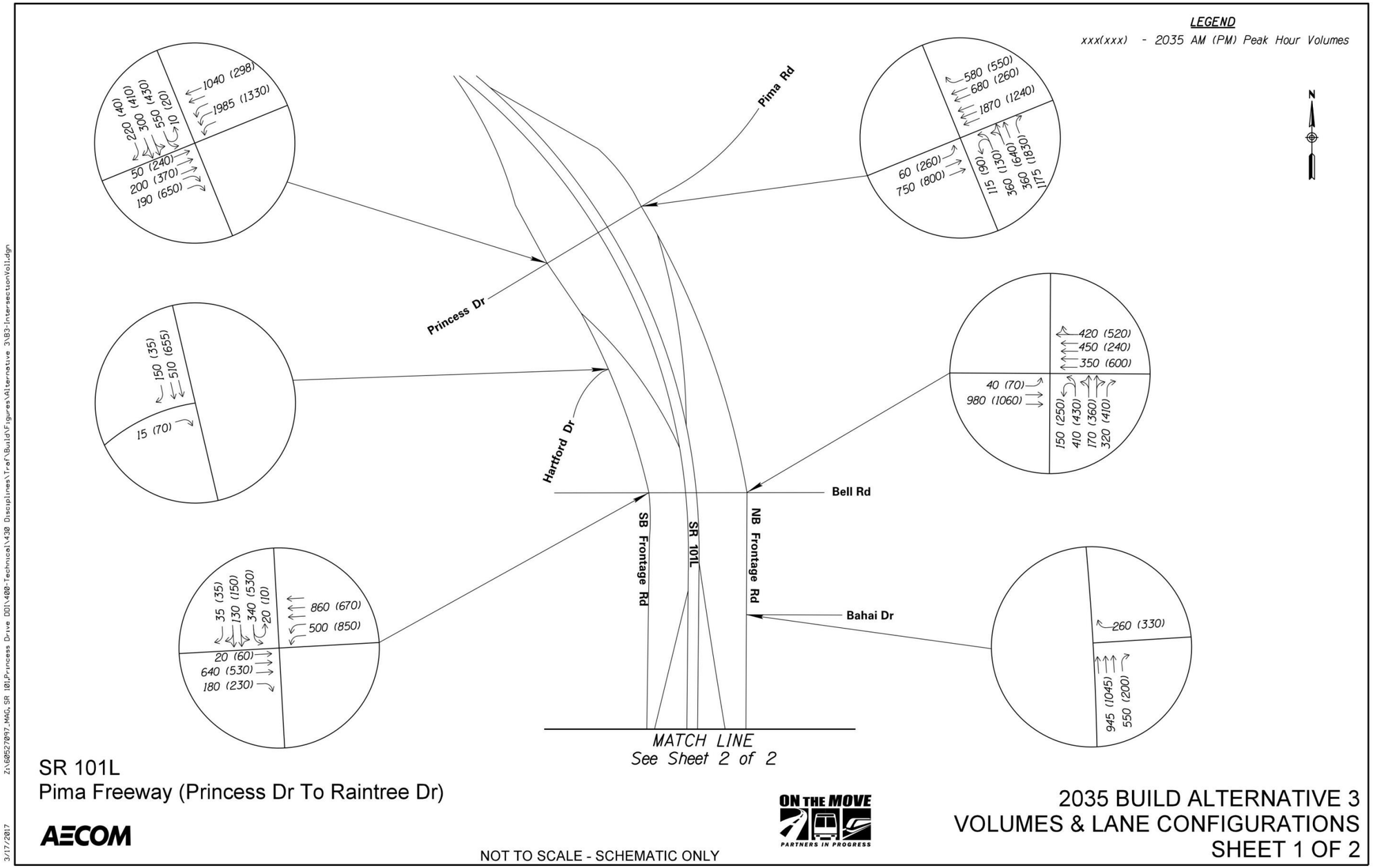


FIGURE 22 - SHEET 2 OF 2

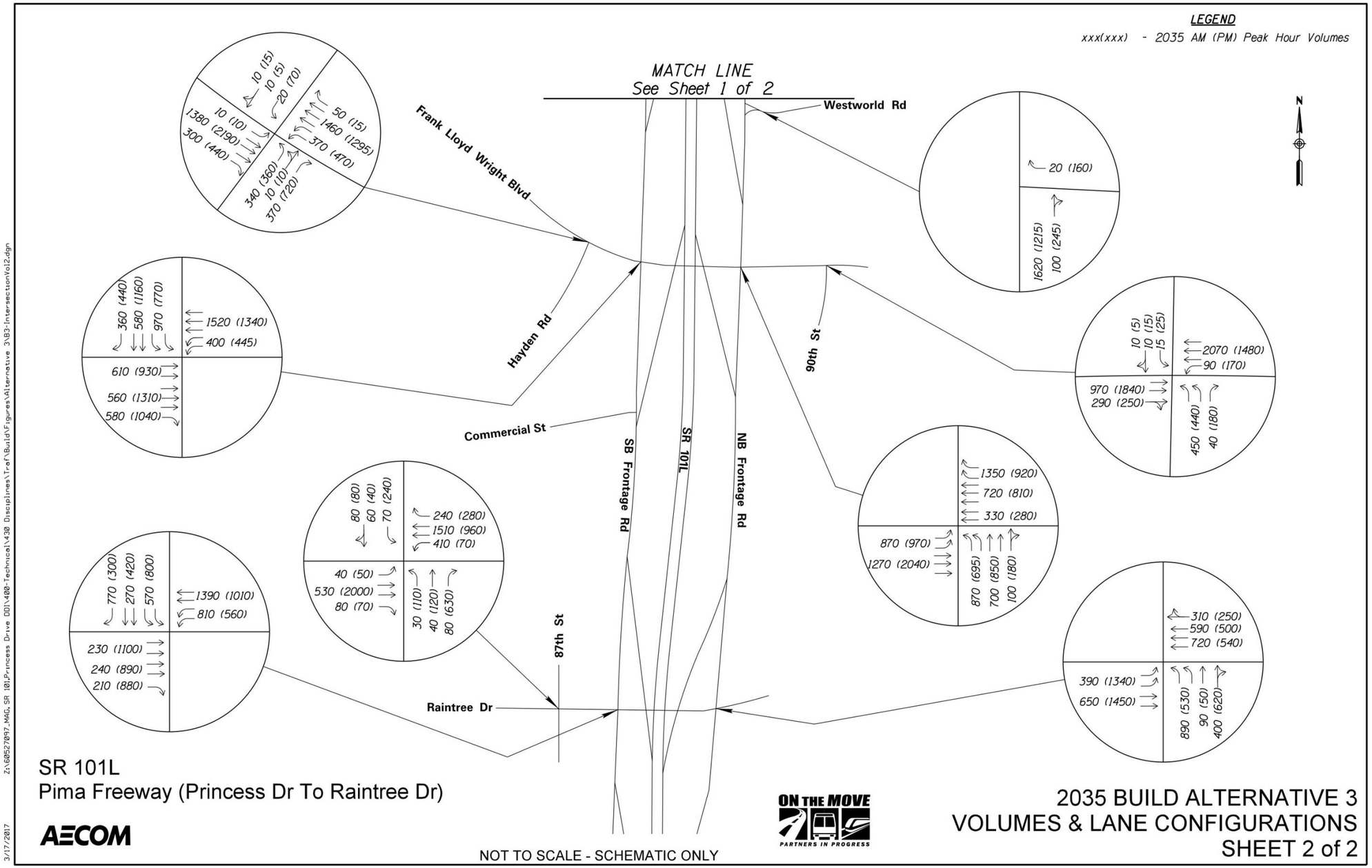


Figure 23 – 2035 Build Alternative 4 Conceptual Drawing

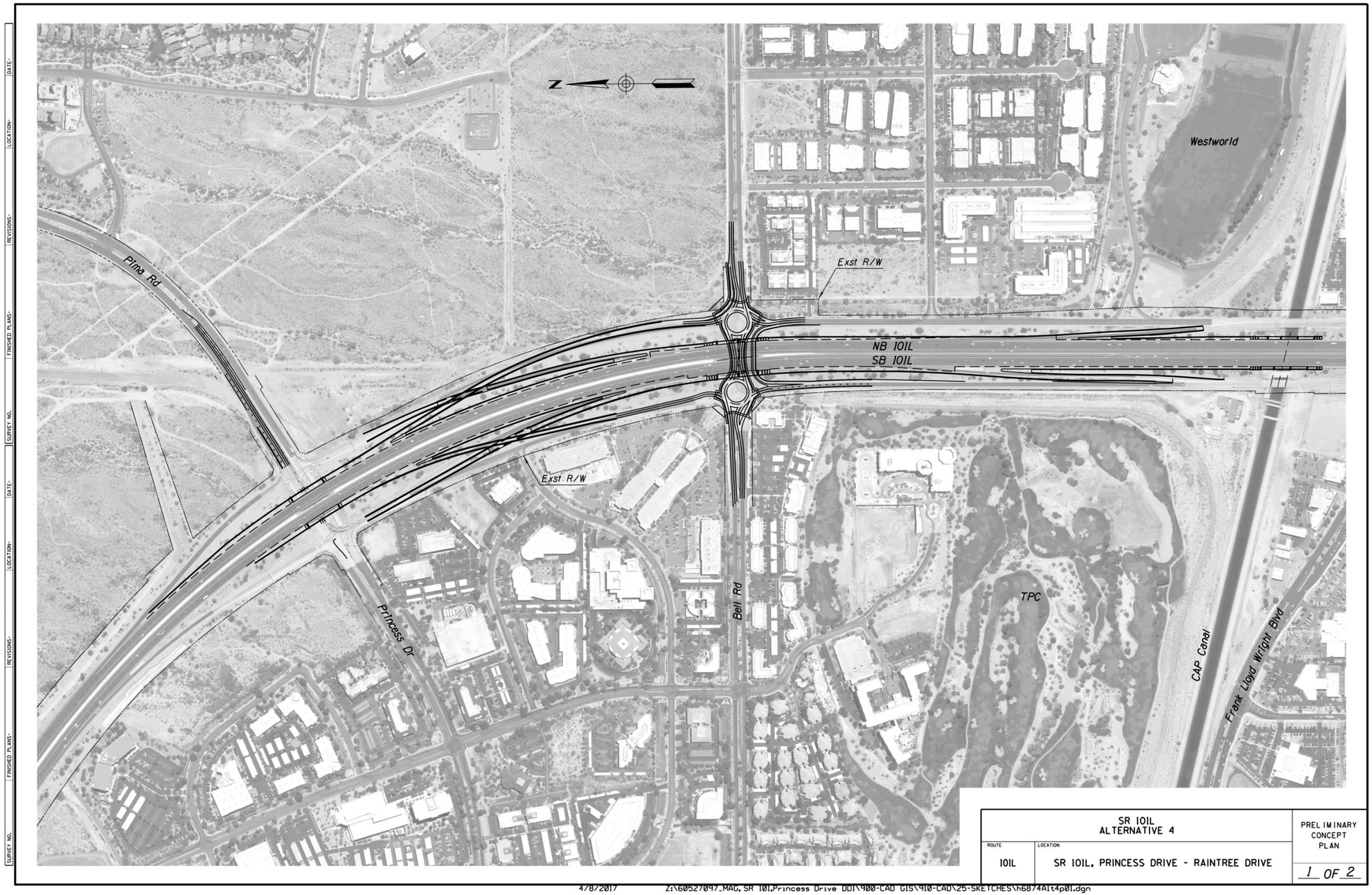


FIGURE 23 - SHEET 2 OF 2

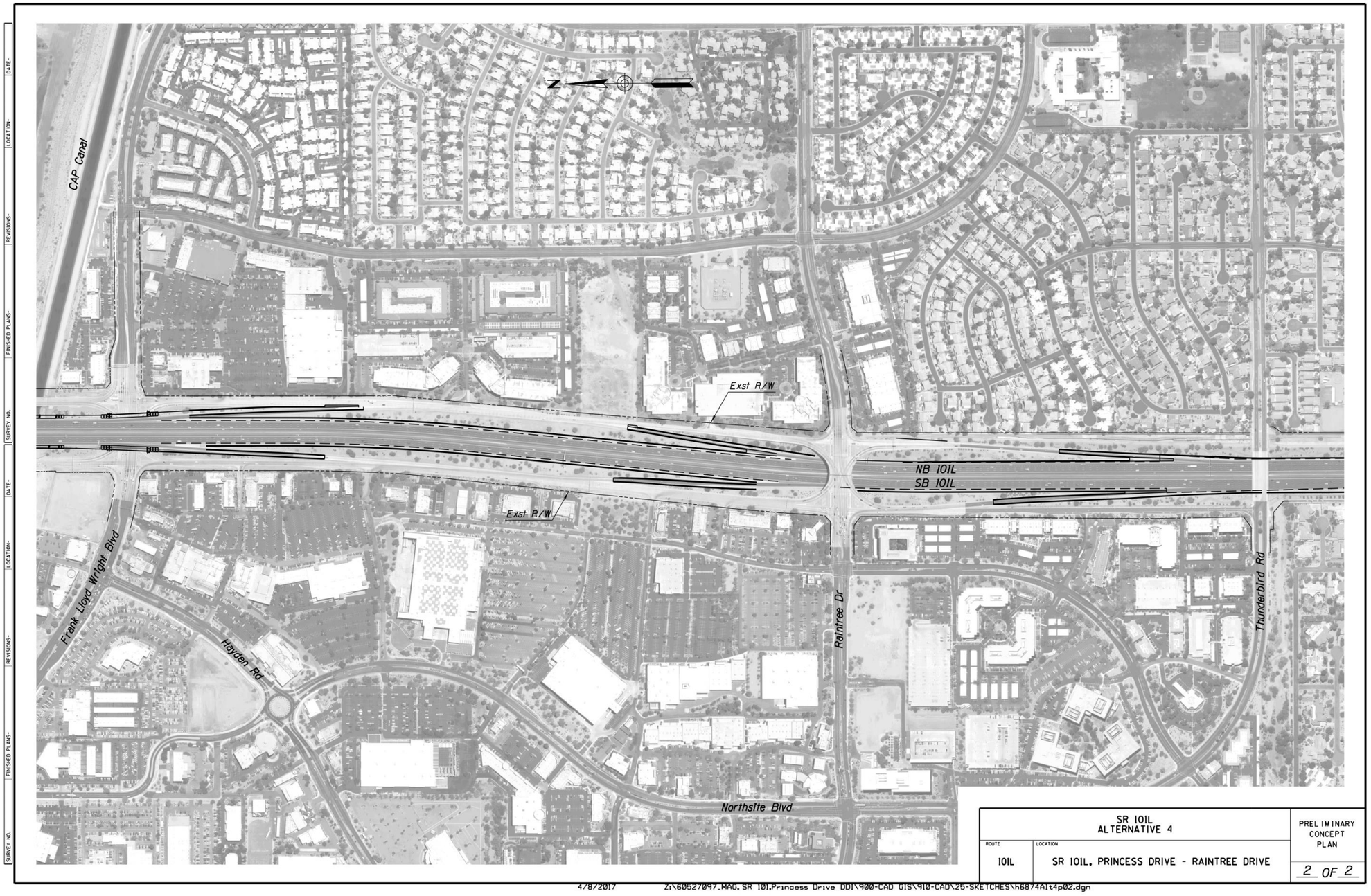
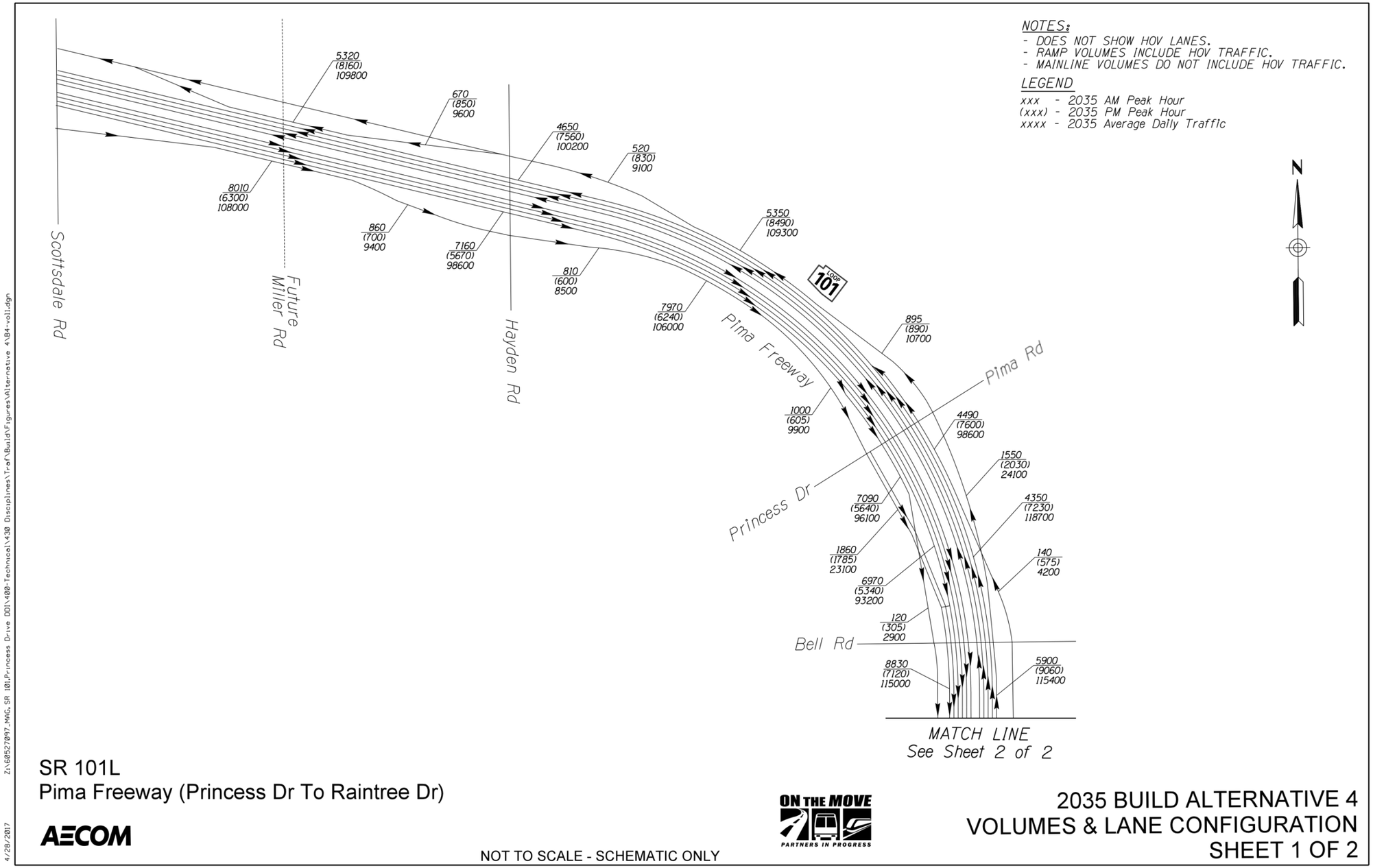


Figure 24 – 2035 Build Alternative 4 Volumes & Lane Configuration



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

AECOM

NOT TO SCALE - SCHEMATIC ONLY

ON THE MOVE PARTNERS IN PROGRESS

2035 BUILD ALTERNATIVE 4
VOLUMES & LANE CONFIGURATION
SHEET 1 OF 2

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4/28/2017

FIGURE 24 - SHEET 2 OF 2

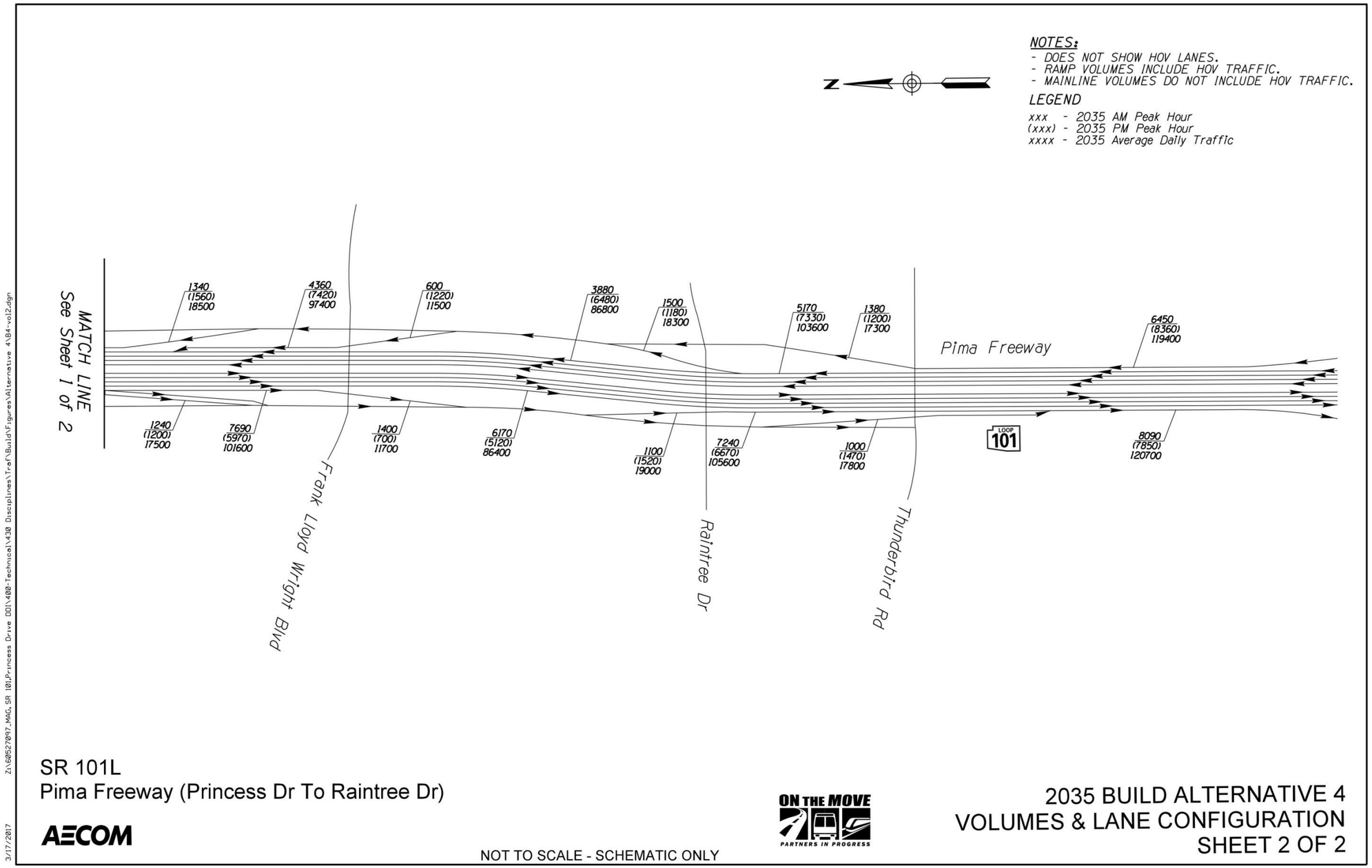


Figure 25 – 2035 Build Alternative 4 Intersection Turning Movements

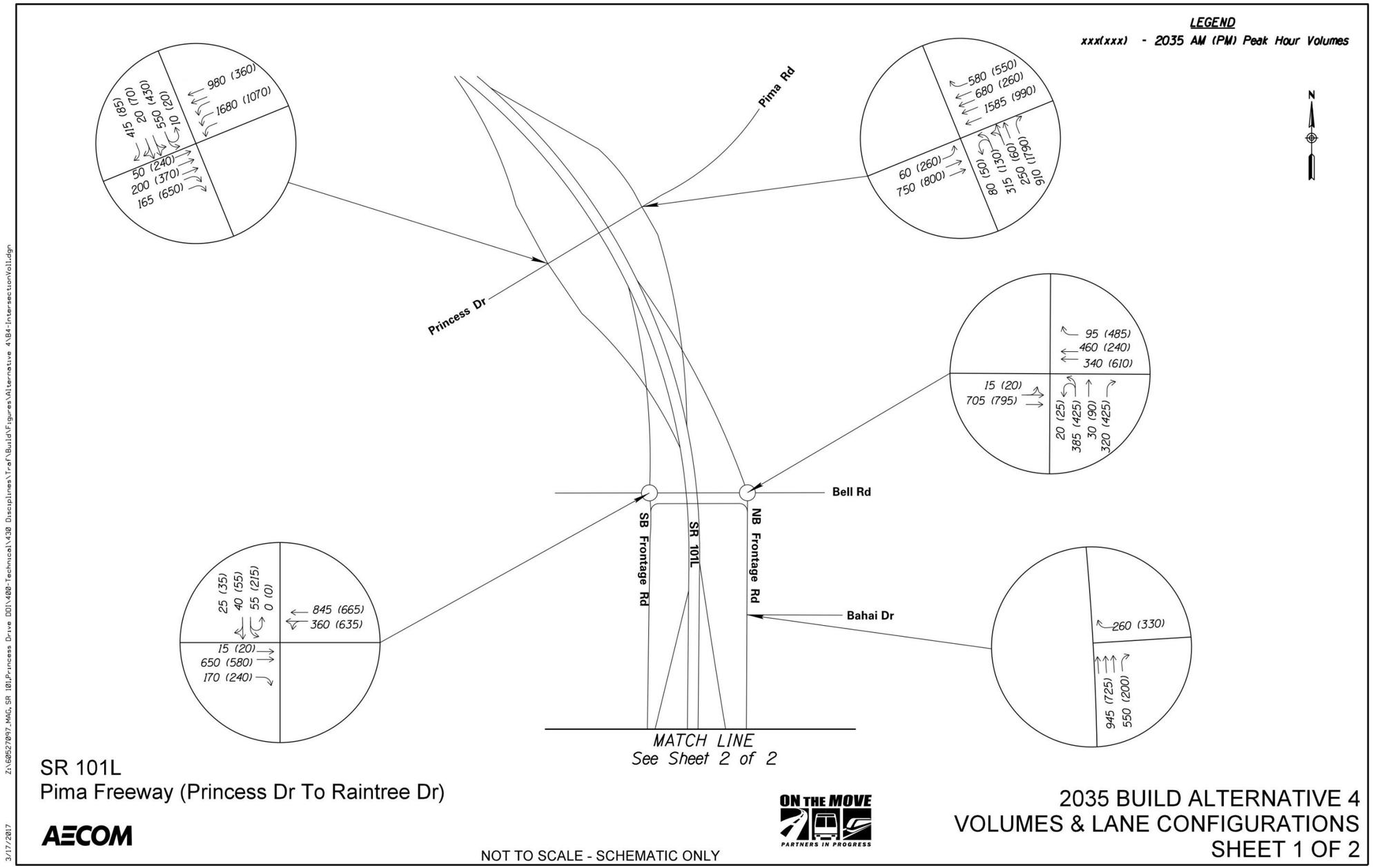
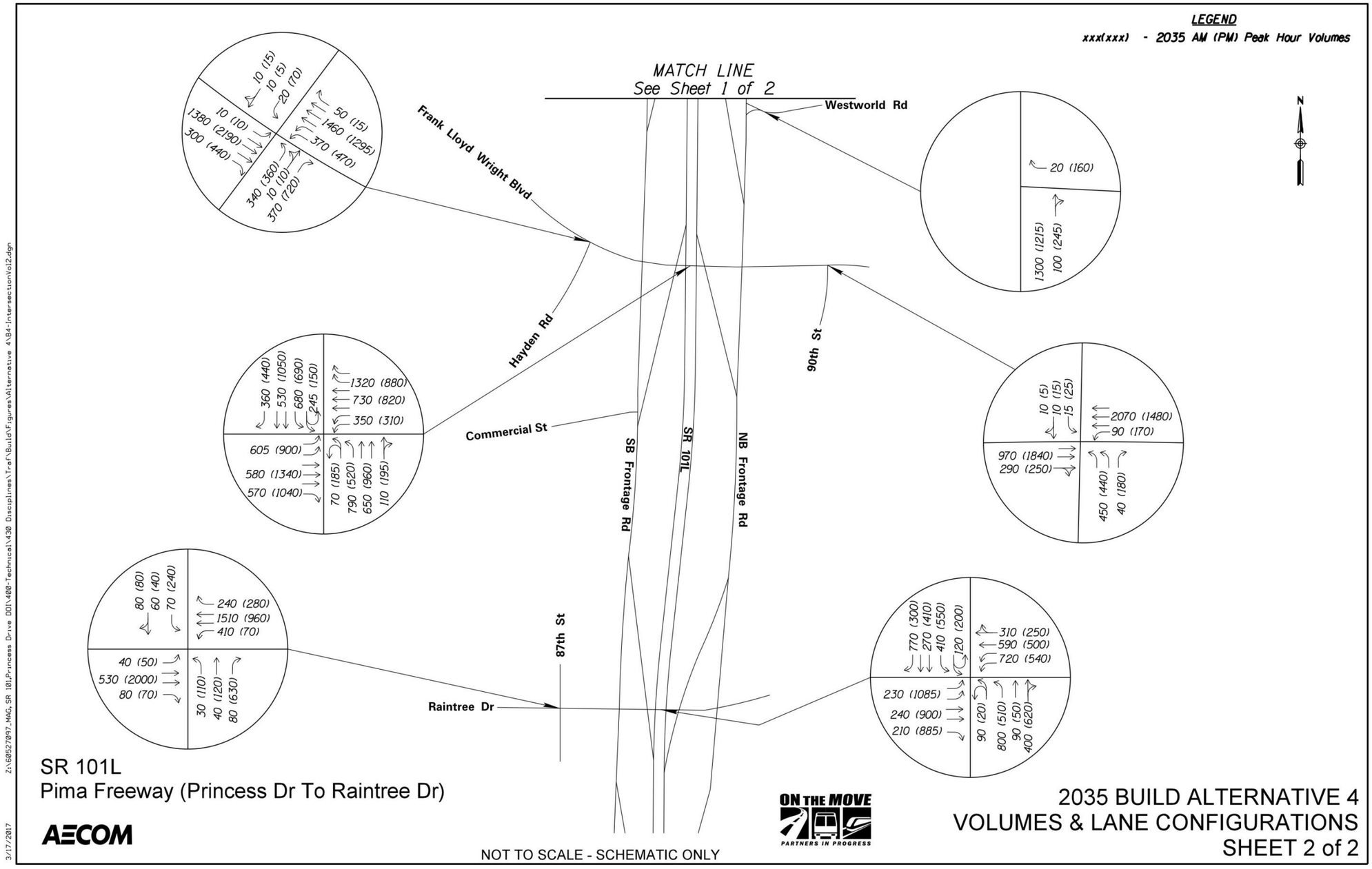


FIGURE 25 - SHEET 2 OF 2



4.5 Freeway Operational Analysis Results

4.5.1 Existing Conditions

Figure 26 (pages 51-52) and **Figure 27** (pages 53-54) summarize the level-of-service analysis results for the existing conditions AM and PM peak hours, respectively. In the AM peak Hour, SR 101L operates at level-of-service (LOS) 'C' in the eastbound/southbound direction, and at LOS 'A/B' in the westbound/northbound direction. All ramps in the study area operate at LOS 'C' or better.

In the PM peak hour, the southbound SR 101L operates at LOS 'C' from Hayden Road to the Frank Lloyd Wright Boulevard exit ramp, and at LOS 'A/B' from the Frank Lloyd Wright Boulevard exit ramp to Thunderbird Road. The northbound SR 101L operates at LOS 'C' from the Raintree Drive/Pima Road exit ramp to the Frank Lloyd Wright Boulevard entrance ramp. Northbound SR 101L operates at LOS 'D' between the Frank Lloyd Wright Boulevard entrance ramp and Hayden Road, with the exception of the segment between the Princess Dive/Pima Road exit ramp and the Princess Dive/Pima Road entrance ramp. The northbound Princess Drive/Pima Road exit ramp operates at LOS 'F' near the frontage road merge.

4.5.2 No-Build Alternative

Figure 28 (pages 55-56) and **Figure 29** (pages 57-58) summarize the level-of-service analysis results for the 2035 No-Build Alternative during the AM and PM peak hours, respectively. Volumes increase on the freeway in both directions, resulting in decrease in level-of-service.

In the AM peak hour, the southbound SR 101L operates at LOS 'F' between Hayden Road and the Frank Lloyd Wright Boulevard exit ramp. South of the Frank Lloyd Wright Boulevard exit ramp, the freeway operates at LOS 'C'. In the northbound direction, SR 101L operates at LOS 'E' south of the Raintree Drive exit ramp, and then transitions to a LOS 'C' or better throughout the study area. All southbound exit and entrance ramps north of Frank Lloyd Wright Boulevard operate at LOS 'F'. In the northbound direction, the Raintree Drive exit ramp operates at LOS 'F' and the Princess Drive/Pima Road exit ramp operates at LOS 'E' near the frontage road merge.

In the PM peak hour the southbound SR 101L operates at LOS 'D' north of the Frank Lloyd Wright Boulevard exit ramp and then transitions to LOS 'C' south of the exit ramp. In the northbound direction, the freeway operates at LOS 'D' from Thunderbird Road to the Frank Lloyd Wright Boulevard exit ramp. The freeway then transitions to an LOS 'E' from the Frank Lloyd Wright Boulevard exit ramp to the Raintree Drive entrance ramp, and to LOS 'F' from the Raintree Drive entrance ramp to the Princess Drive/Pima Road exit ramp. North of the Princess Drive/Pima Road exit ramp, the northbound freeway operates at LOS 'C'. Multiple ramps operate at LOS 'E' or 'F' in the PM peak hour. The southbound Frank Lloyd Wright Boulevard exit ramp operates at LOS 'F' near the frontage road merger, due to the amount of traffic on the southbound frontage road.

4.5.3 Alternative 1, DDI

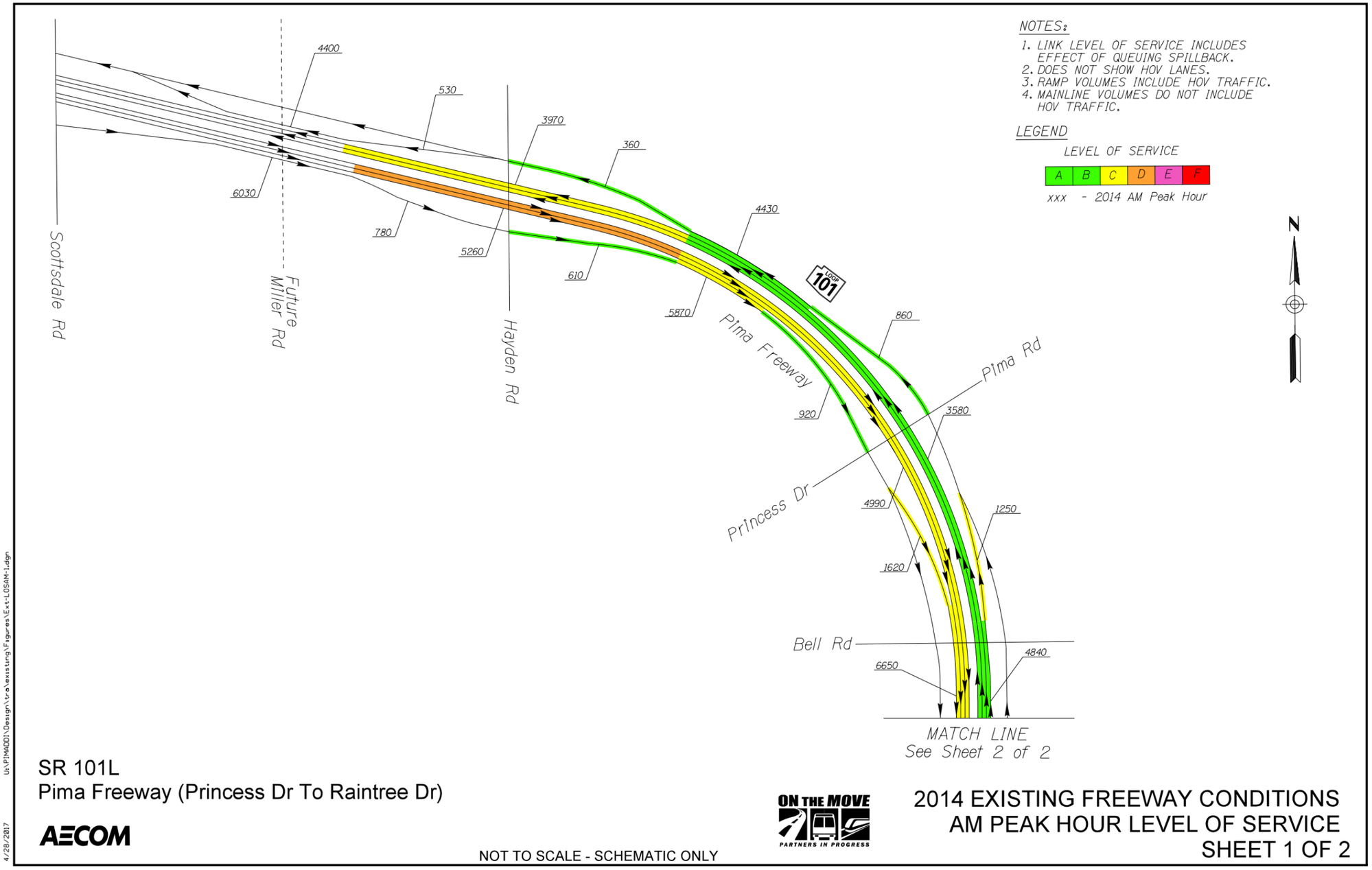
Figure 30 (page 59-60) and **Figure 31** (page 61-62) summarize the level-of-service analysis results for the 2035 Build Alternative 1 during the AM and PM peak hours, respectively.

In the AM peak hour, the southbound SR 101L operates at LOS 'E' from the project beginning to the Raintree Drive exit ramp, with the exception of the segment between the Hayden Road entrance ramp and Princess Drive/Pima Road exit ramp – which operates at LOS 'F' – and between the Bell Road exit ramp and Princess Drive entrance ramp – which operates at LOS 'D'. The freeway mainline then operates at LOS 'D' from the Raintree Drive exit ramp to the end of the project area. In the northbound direction, the freeway operates at LOS 'F' from the beginning of the project area to the Raintree Drive exit ramp, then transitions to LOS 'C' between the Raintree Drive exit ramp and the Frank Lloyd Wright Boulevard exit ramp. North of the Frank Lloyd Wright Boulevard exit ramp the freeway operates at LOS 'A/B'. The southbound Princess Drive/Pima Road entrance ramp and the northbound Raintree Drive exit ramp both operate at LOS 'F' while all other ramps operate at LOS 'D' or better.

In the PM peak hour, the southbound SR 101 operates at LOS 'D' throughout the study area, with the exception of the segment between the Bell Road exit ramp and the Princess Drive/Pima Road entrance ramp, which operates at LOS 'C'. In the northbound direction, the freeway mainline operates at LOS 'F' from the beginning of the project to the Bell Road exit ramp, with the exception of the segment between the Raintree Drive exit ramp and the Frank Lloyd Wright Boulevard exit ramp, which operates at LOS 'E'. North of the Bell Road exit ramp, the northbound SR 101 operates at LOS 'D' or LOS 'C'. The southbound Princess Drive/Pima Road entrance ramp operates at LOS 'F' while all other ramps operate at LOS 'D' or better.

[Text resumes on page 63]

Figure 26 – 2014 Existing AM Volumes & Level of Service



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

AECOM

NOT TO SCALE - SCHEMATIC ONLY

ON THE MOVE
PARTNERS IN PROGRESS

2014 EXISTING FREEWAY CONDITIONS
AM PEAK HOUR LEVEL OF SERVICE
SHEET 1 OF 2

FIGURE 26 - SHEET 2 OF 2

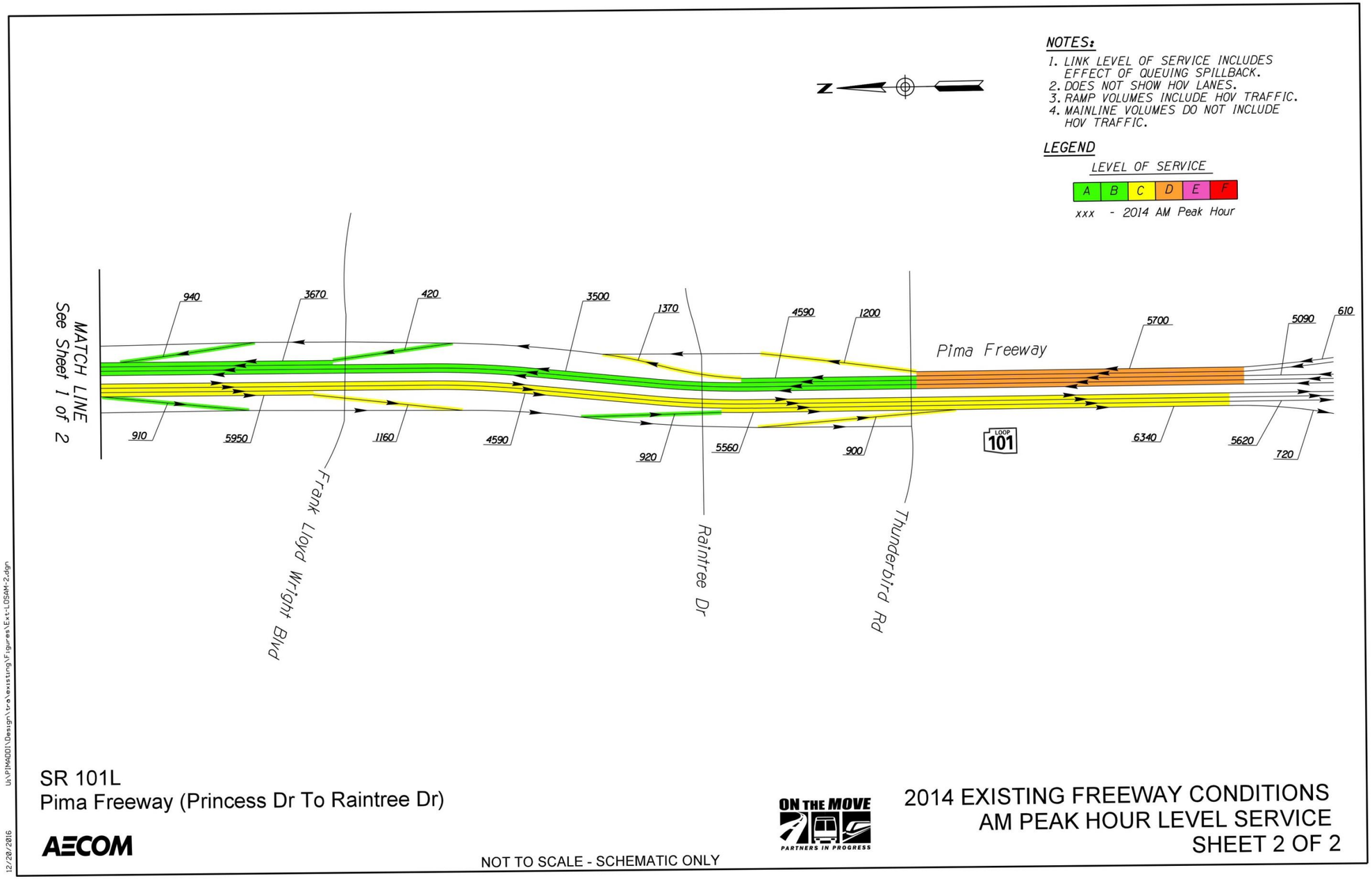


Figure 27 – 2014 Existing PM Volumes & Level of Service

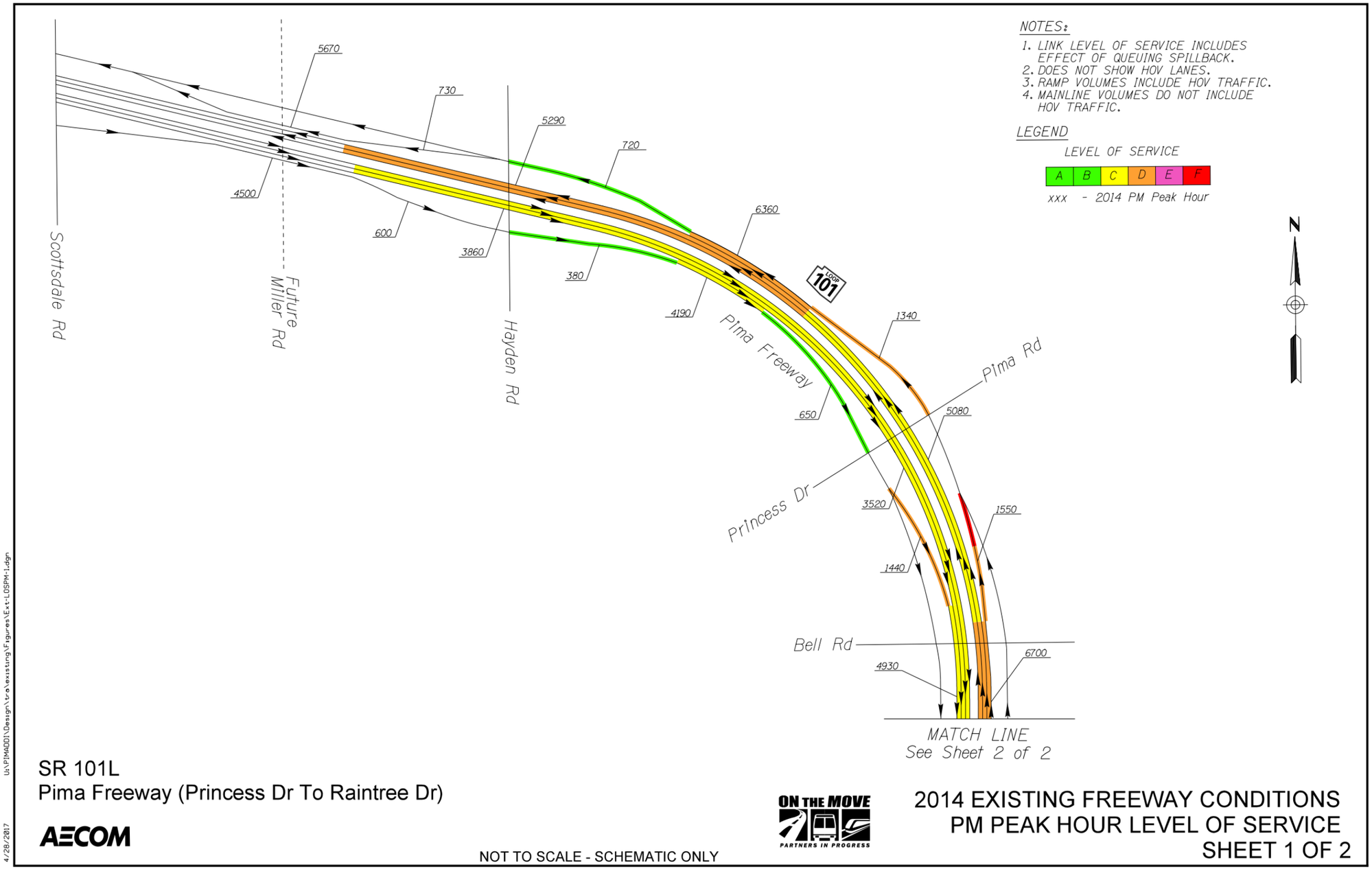


FIGURE 27 - SHEET 2 OF 2

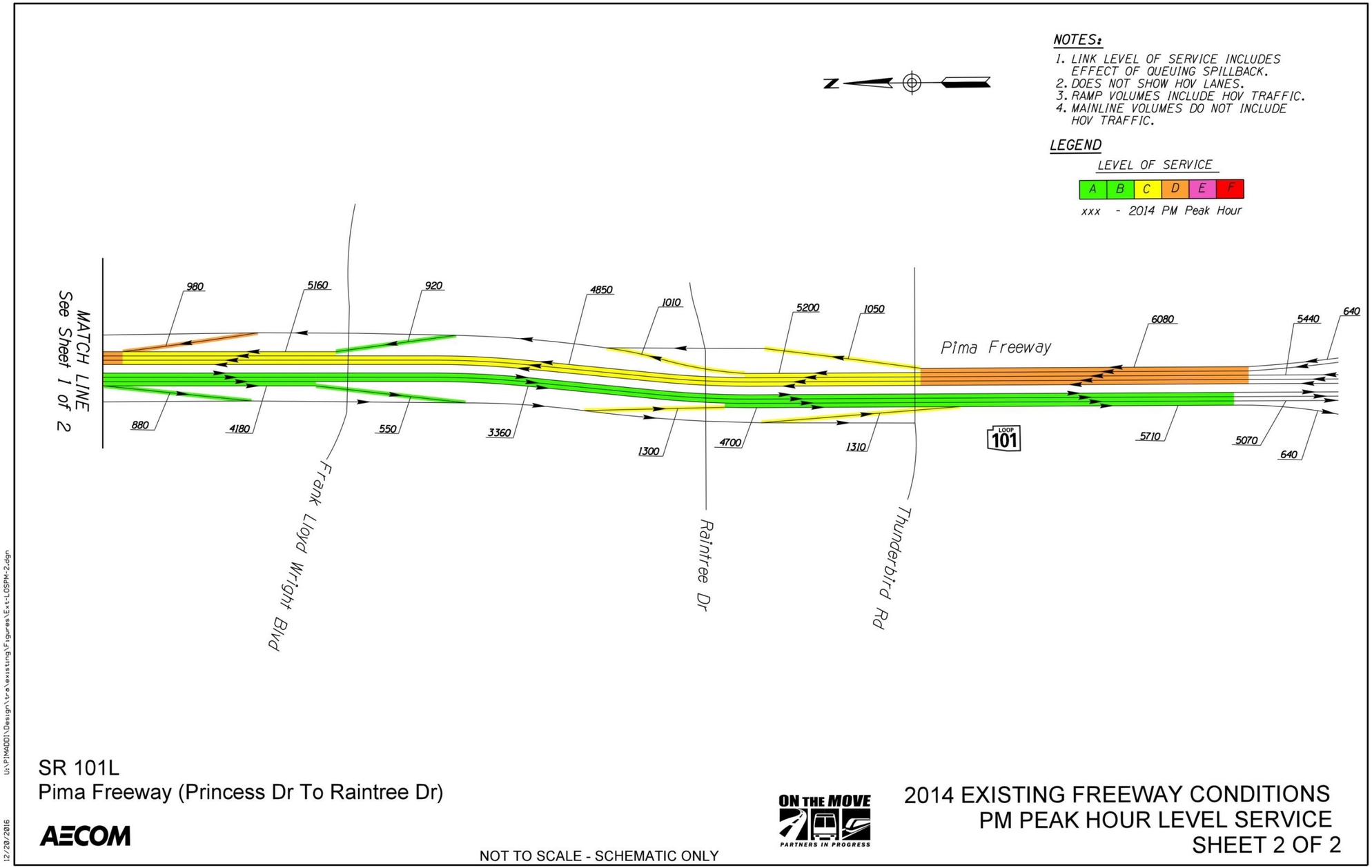


Figure 28 – 2035 No-Build AM Volumes & Level of Service

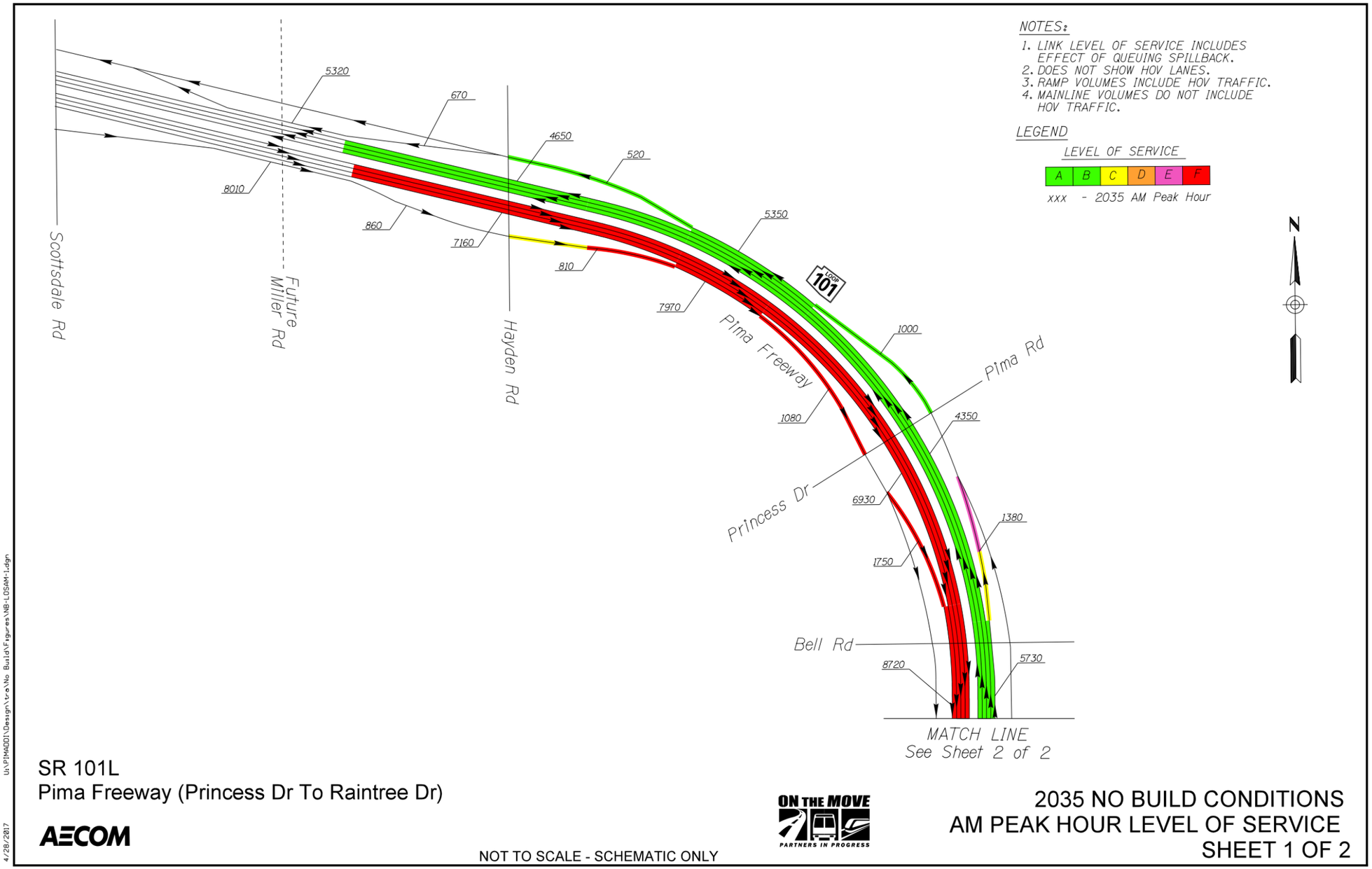


FIGURE 28 - SHEET 2 OF 2

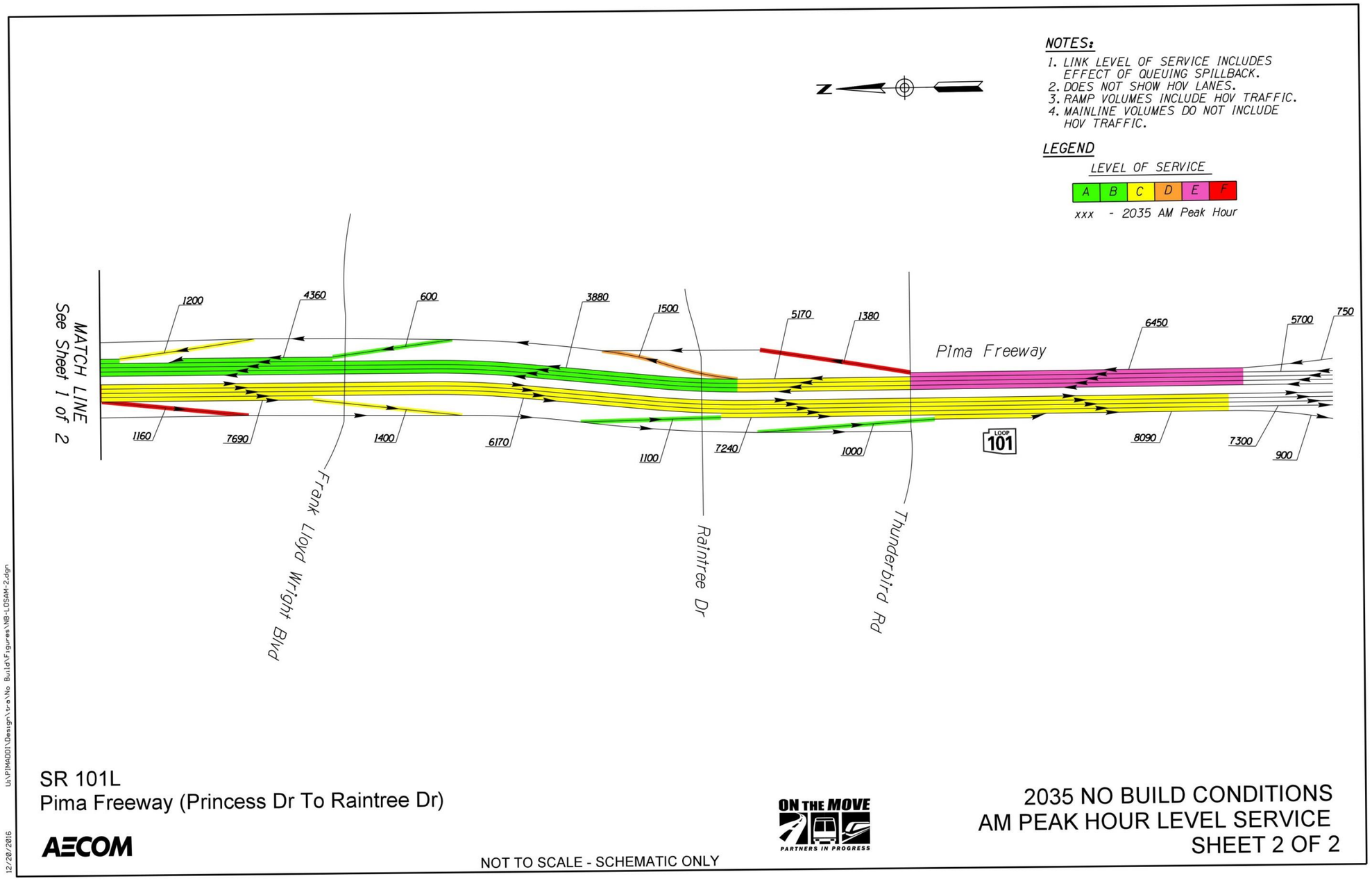


Figure 29 – 2035 No-Build PM Volumes & Level of Service

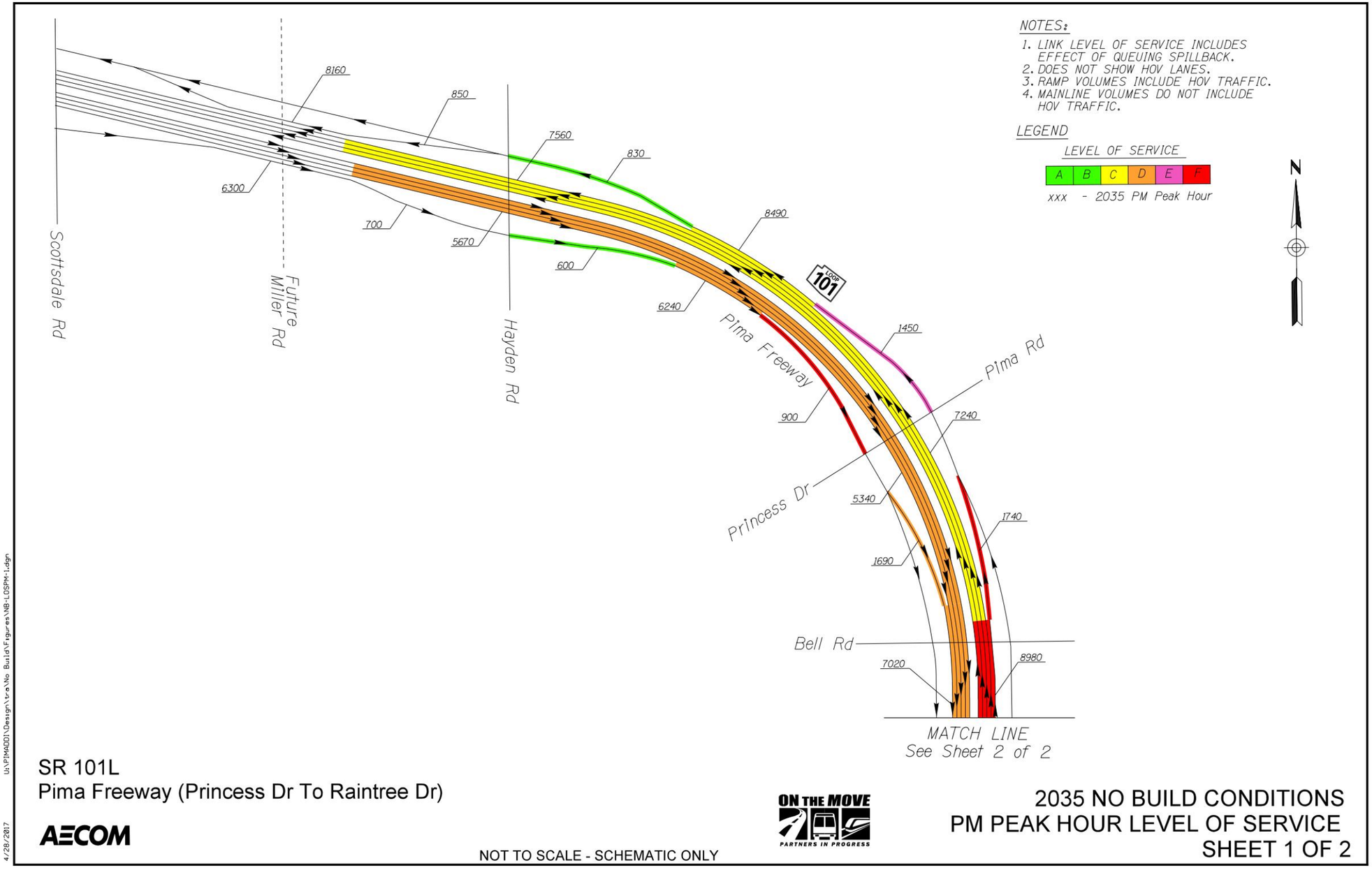


FIGURE 29 - SHEET 2 0F 2

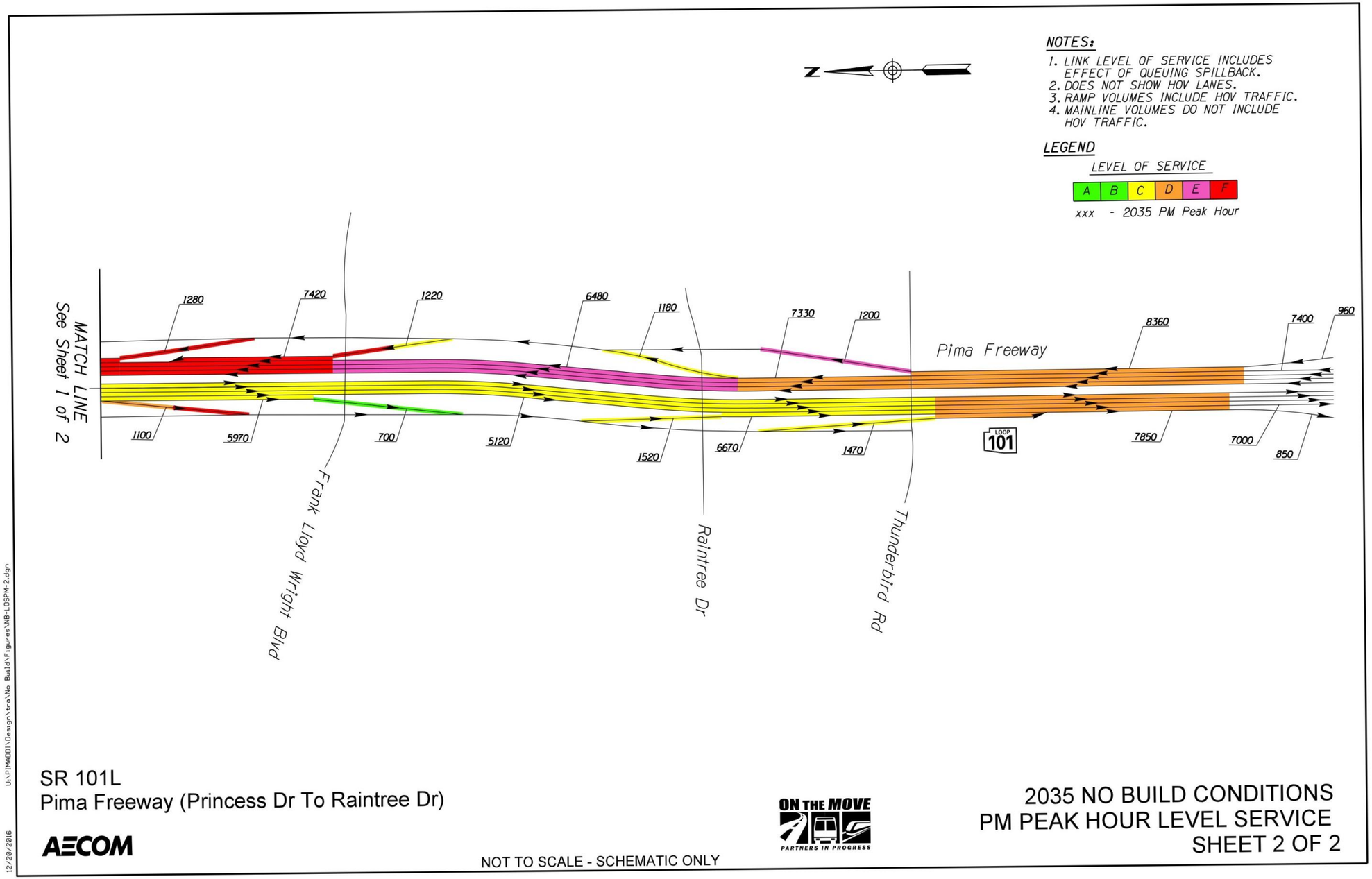


Figure 30 – 2035 Build Alternative 1 AM Volumes & Level of Service

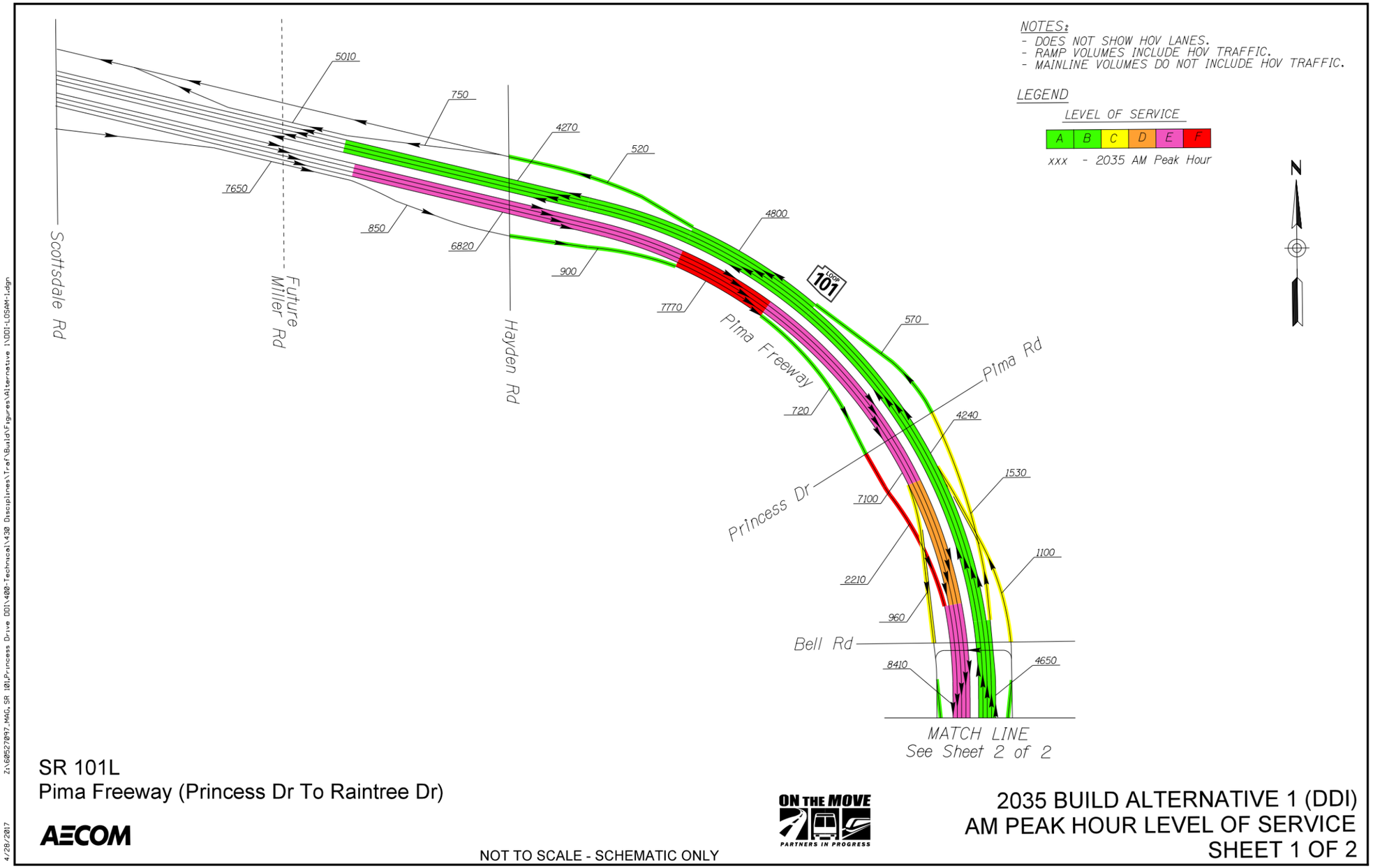


FIGURE 30 - SHEET 2 0F 2

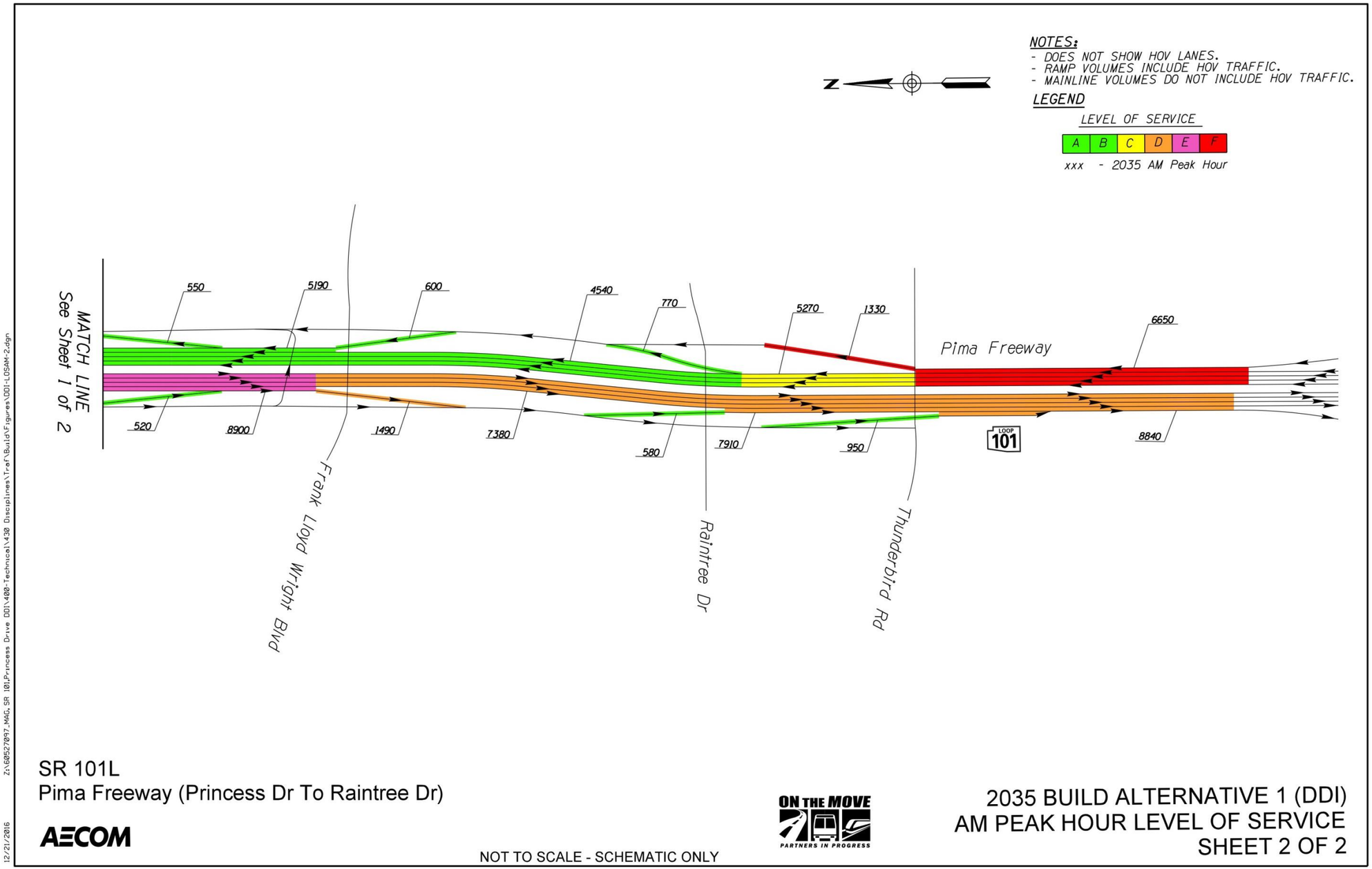


Figure 31 – 2035 Build Alternative 1 PM Volumes & Level of Service

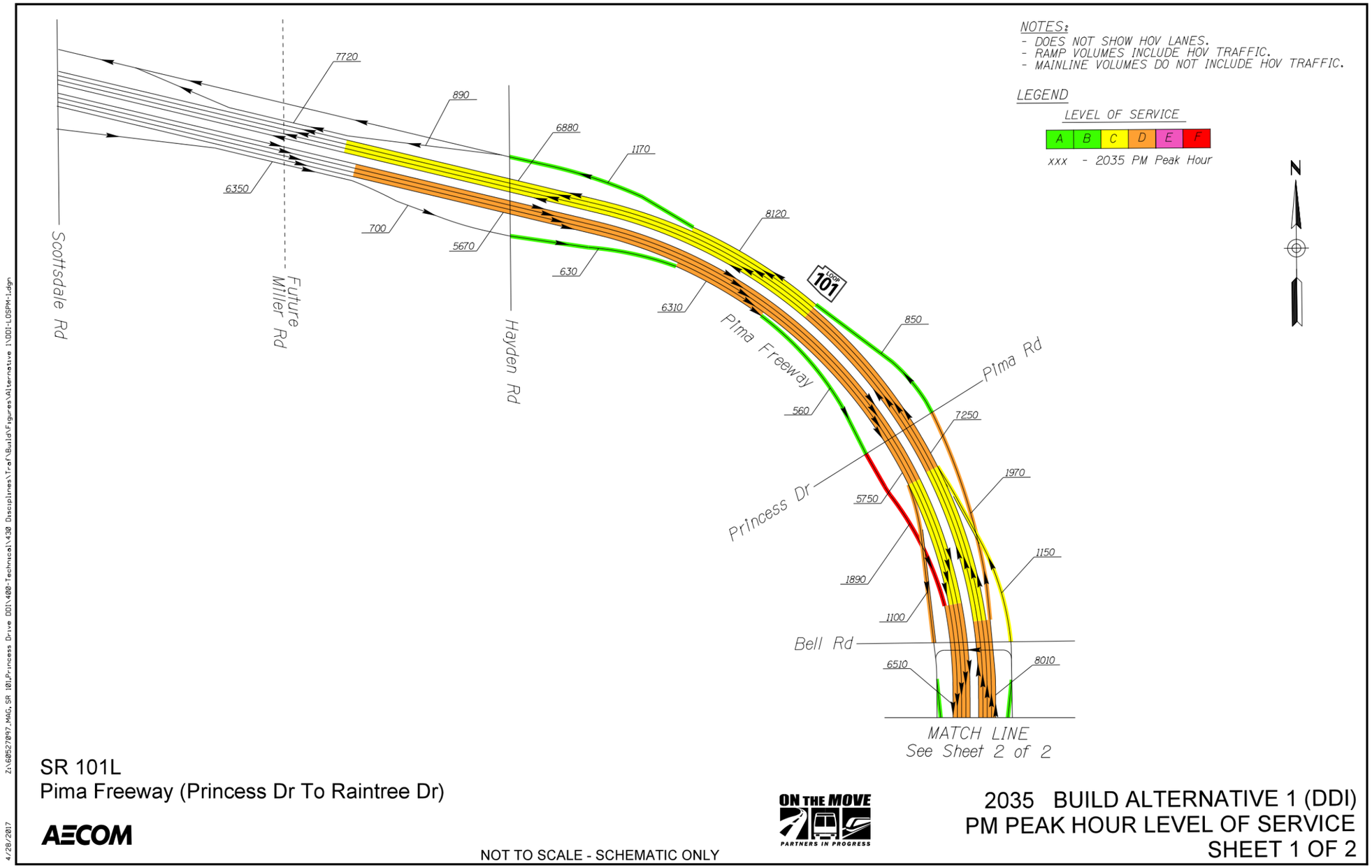
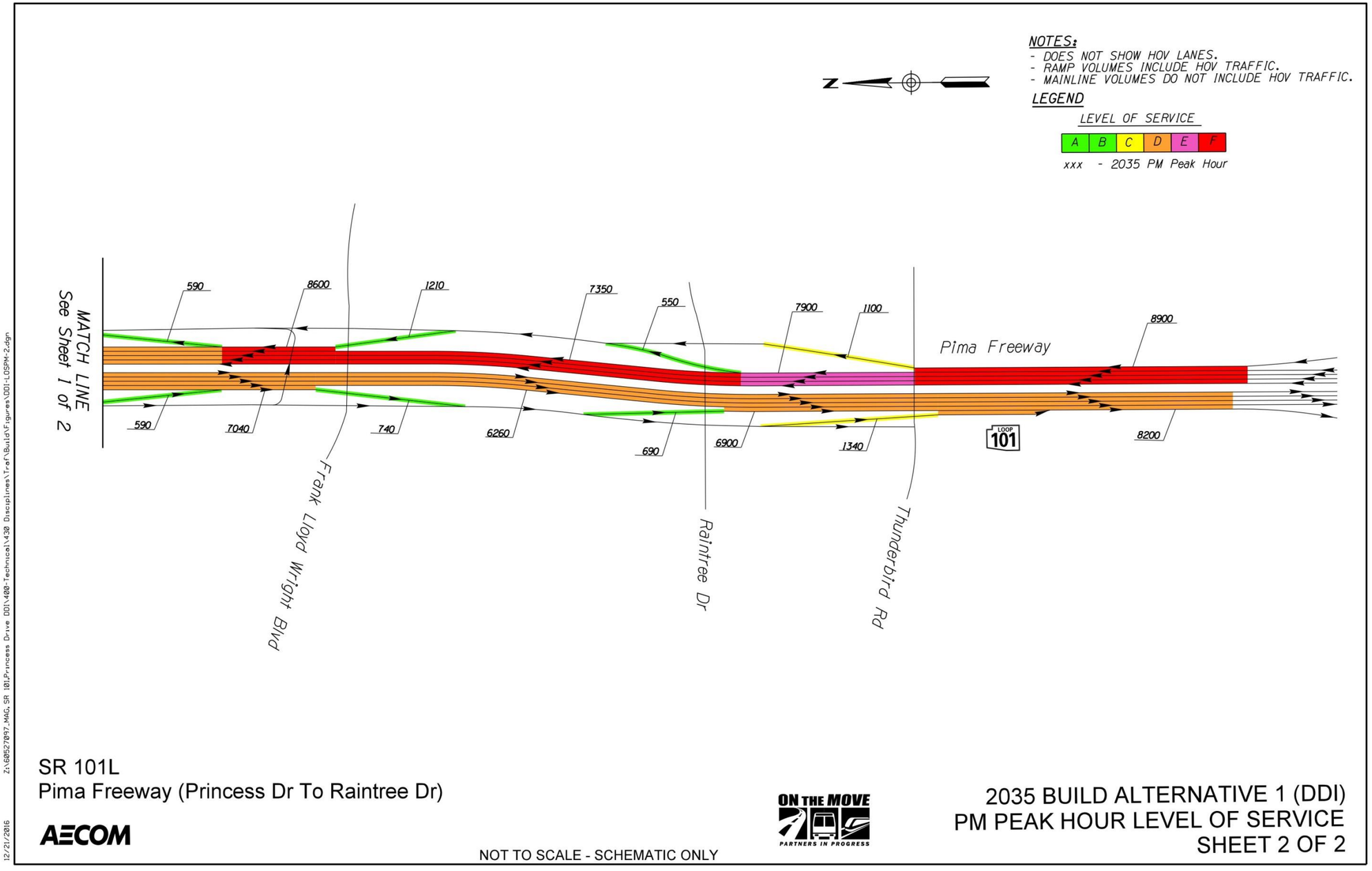


FIGURE 32- SHEET 2 0F 2



4.5.4 Alternative 2, Minor Intersection/Safety Improvements

Figure 32 (page 64-65) and **Figure 33** (page 66-67) summarize the level-of-service analysis results for the 2035 Build Alternative 2 during the AM and PM peak hours, respectively.

In the AM peak hour, the southbound SR 101 and all the southbound entrance and exit ramps operate at level of service 'F' from the northern edge of the project to the Frank Lloyd Wright Boulevard exit ramp. South of the Frank Lloyd Wright Boulevard exit ramp, the southbound SR 101 and all ramps operate at LOS 'D' or better. A good deal of congestion on the freeway facilities is caused by congestion at the southbound approach to the Frank Lloyd Wright Boulevard TI spilling back onto the freeway. The northbound SR 101 operates at LOS 'E' from the southern limit of the project to the Raintree Drive exit ramp. The Raintree Drive exit itself operates at LOS 'F'. North of this exit, the freeway and all entrance and exit ramps operate at LOS 'D' or better. The portion of the Princess Drive/Pima Road exit ramp closest to the frontage road merge point operates at LOS 'D'.

In the PM peak hour, the southbound SR 101 operates at LOS 'D' or better. The Princess Drive/Pima Road and Frank Lloyd Wright Boulevard exit ramps both operate a LOS 'E'. In the northbound direction, the freeway operates at LOS 'F' south of the Raintree Drive exit ramp, and at LOS 'D' or better from that point north. The portion of the Princess Drive/Pima Road exit ramp closest to the frontage road merge point operates at LOS 'F'.

4.5.5 Alternative 3, Diamond Interchanges and Fly-Over Ramp

Figure 34 (page 68-69) and **Figure 35** (page 70-71) summarize the level-of-service analysis results for the 2035 Build Alternative 3 during the AM and PM peak hours, respectively.

In the AM peak hour, the southbound SR 101 operates at level of service 'E' from the northern edge of the project to the Princess Drive/Pima Road entrance ramp. South of the Princess Drive/Pima Road entrance ramp, the southbound SR 101 and all ramps operate at LOS 'D' or better. The northbound SR 101 operates at LOS 'E' from the southern limit of the project to the Raintree Drive exit ramp. The Raintree Drive exit ramp itself operates at LOS 'F'. North of this exit ramp, the freeway and all entrance and exit ramps operate at LOS 'C' or better. The portion of the Princess Drive/Pima Road exit ramp closest to the frontage road merge point operates at LOS 'C'.

In the PM peak hour, the southbound SR 101 mainline and all ramps operate at LOS 'D' or better, except the Princess Drive/Pima Road exit ramp which operates at LOS 'E'. In the northbound direction, the freeway operates at LOS 'F' south of the Raintree Drive exit ramp, and at LOS 'D' or better from that point north, except for the Princess Drive/Pima Road entrance ramp which operates at LOS 'E'.

4.5.6 Alternative 4, Bell Road Roundabouts

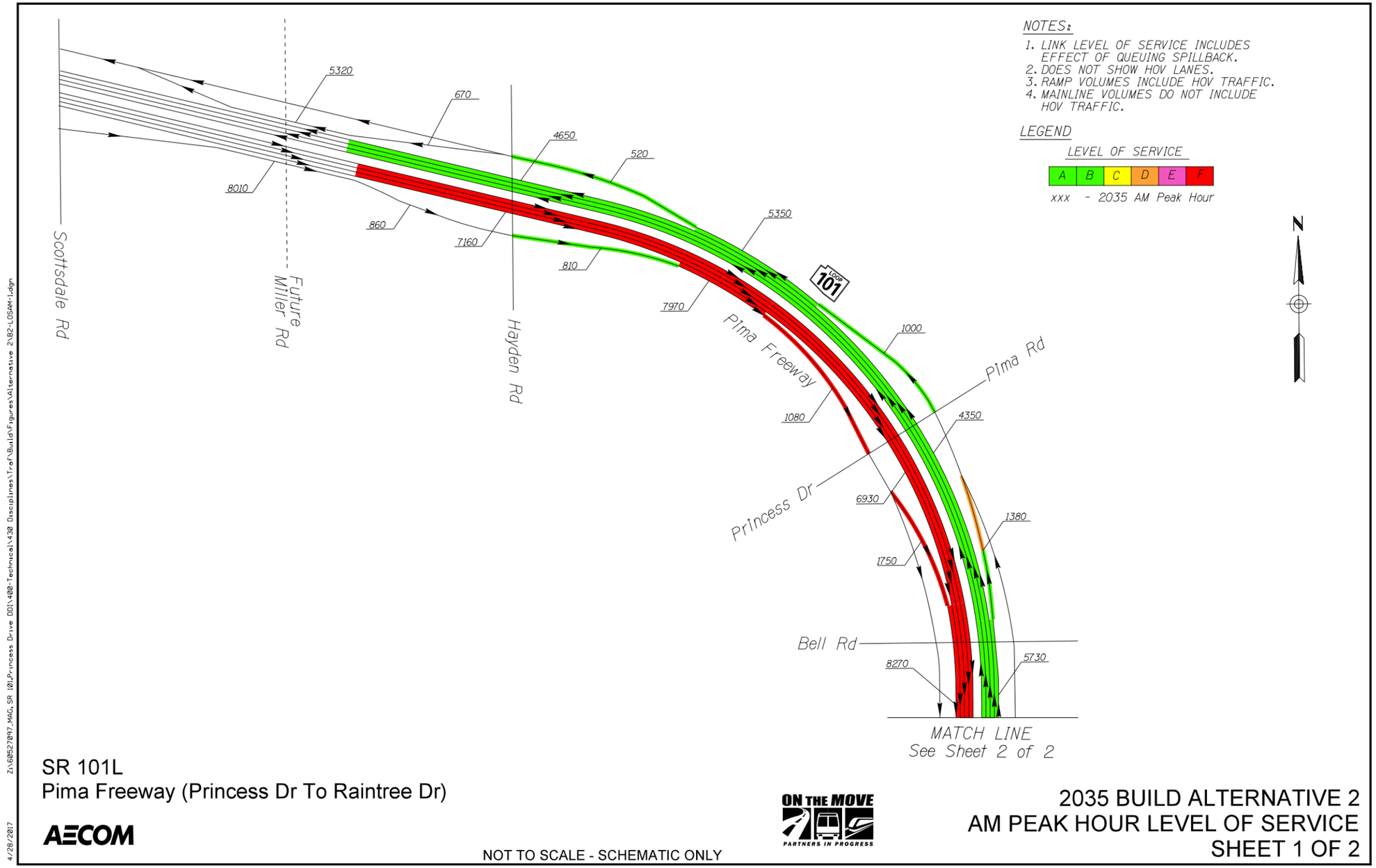
Figure 36 (page 72-73) and **Figure 37** (page 74-75) summarize the level-of-service analysis results for the 2035 Build Alternative 4 during AM and PM peak hours, respectively.

In the AM peak hour the southbound SR 101 operates at level of service 'E' from the northern edge of the project to the Princess Drive/Pima Road entrance ramp. South of the Princess Drive/Pima Road entrance ramp, the southbound SR 101 and all ramps operate at LOS 'D' or better. The northbound SR 101 operates at LOS 'F' from the southern limit of the project to the Raintree Drive exit ramp. The Raintree Drive exit ramp itself operates at LOS 'F'. North of this exit ramp, the freeway and all entrance and exit ramps operate at LOS 'C' or better.

In the PM peak hour, the southbound SR 101 operates at LOS 'D' or better. The Bell Road exit ramp operates at LOS 'E'. In the northbound direction, the freeway operates at LOS 'F' south of the Raintree Drive exit ramp and between the Raintree Drive entrance ramp and the Princess Drive/Pima Road exit ramp. The NB Princess Drive/Pima Road exit ramp, Frank Lloyd Wright Boulevard entrance ramp, Raintree Drive entrance ramp and Raintree Drive exit ramp all operate at LOS 'F'.

[Text resumes on page 76]

Figure 32 – 2035 Build Alternative 2 AM Volumes and Level of Service



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

AECOM

NOT TO SCALE - SCHEMATIC ONLY

ON THE MOVE
PARTNERS IN PROGRESS

2035 BUILD ALTERNATIVE 2
AM PEAK HOUR LEVEL OF SERVICE
SHEET 1 OF 2

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4/28/2017

FIGURE 32 - SHEET 2 OF 2

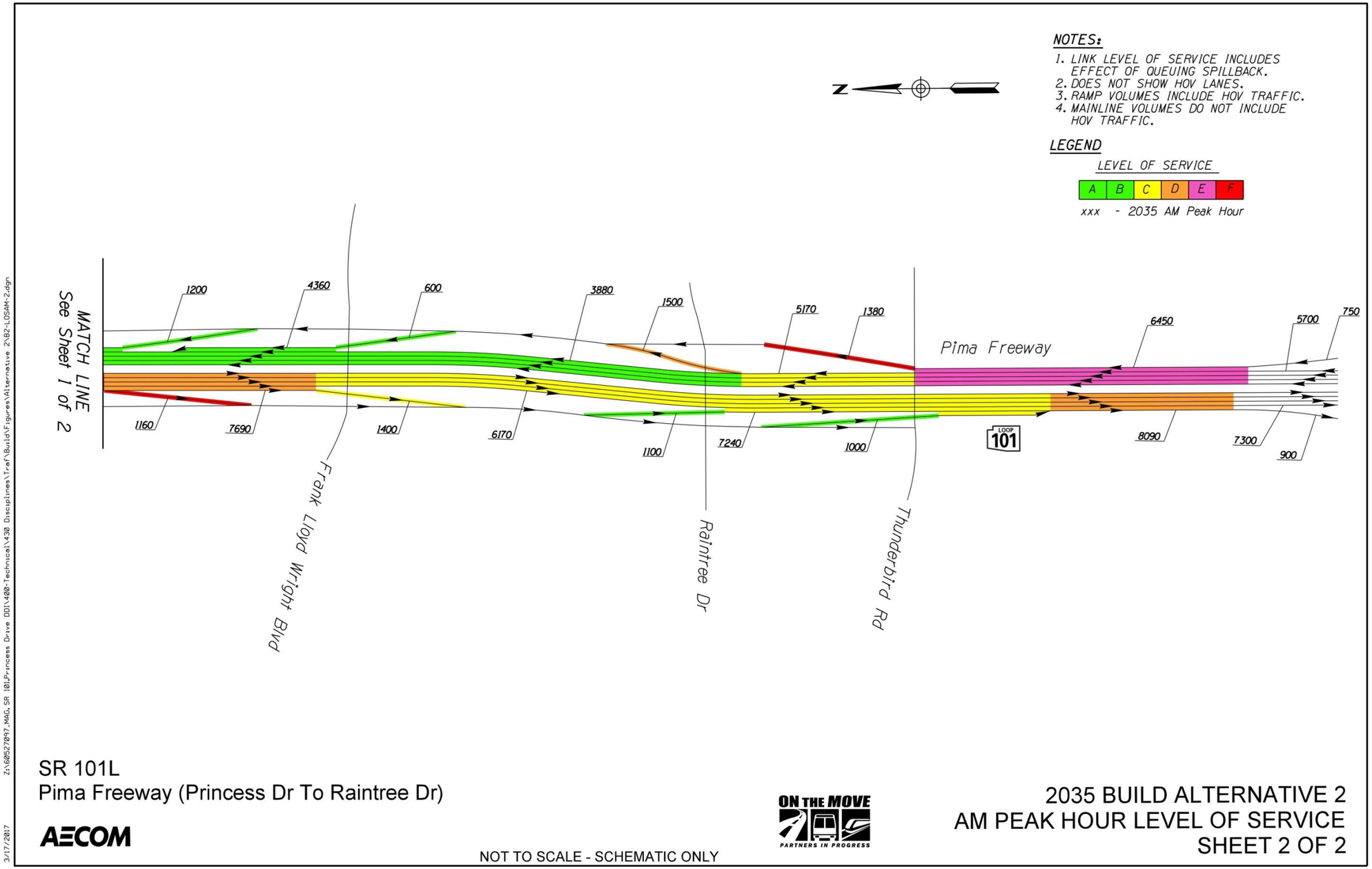


Figure 33 – 2035 Build Alternative 2 PM Volumes and Level of Service

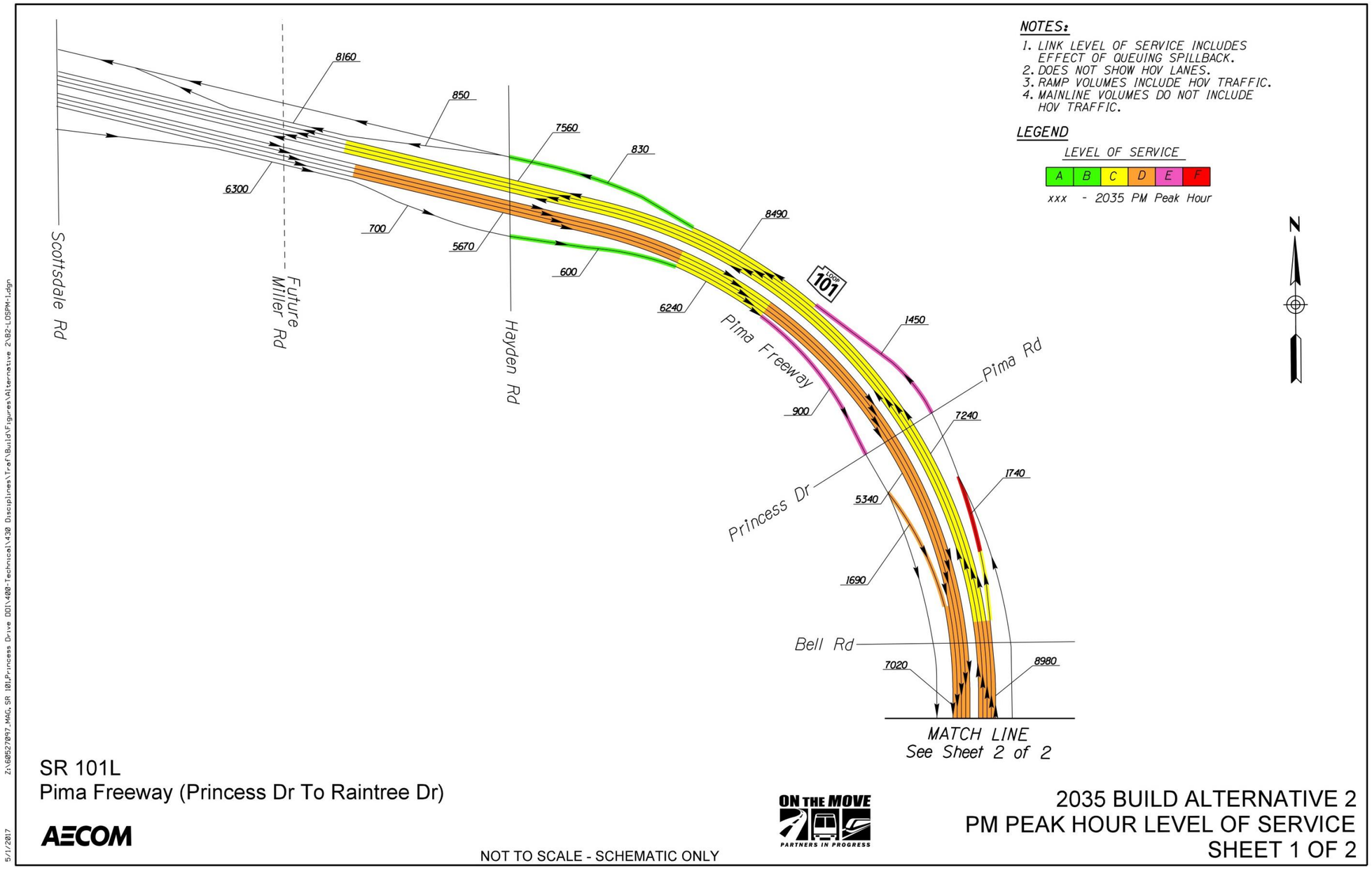


FIGURE 33- SHEET 2 OF 2

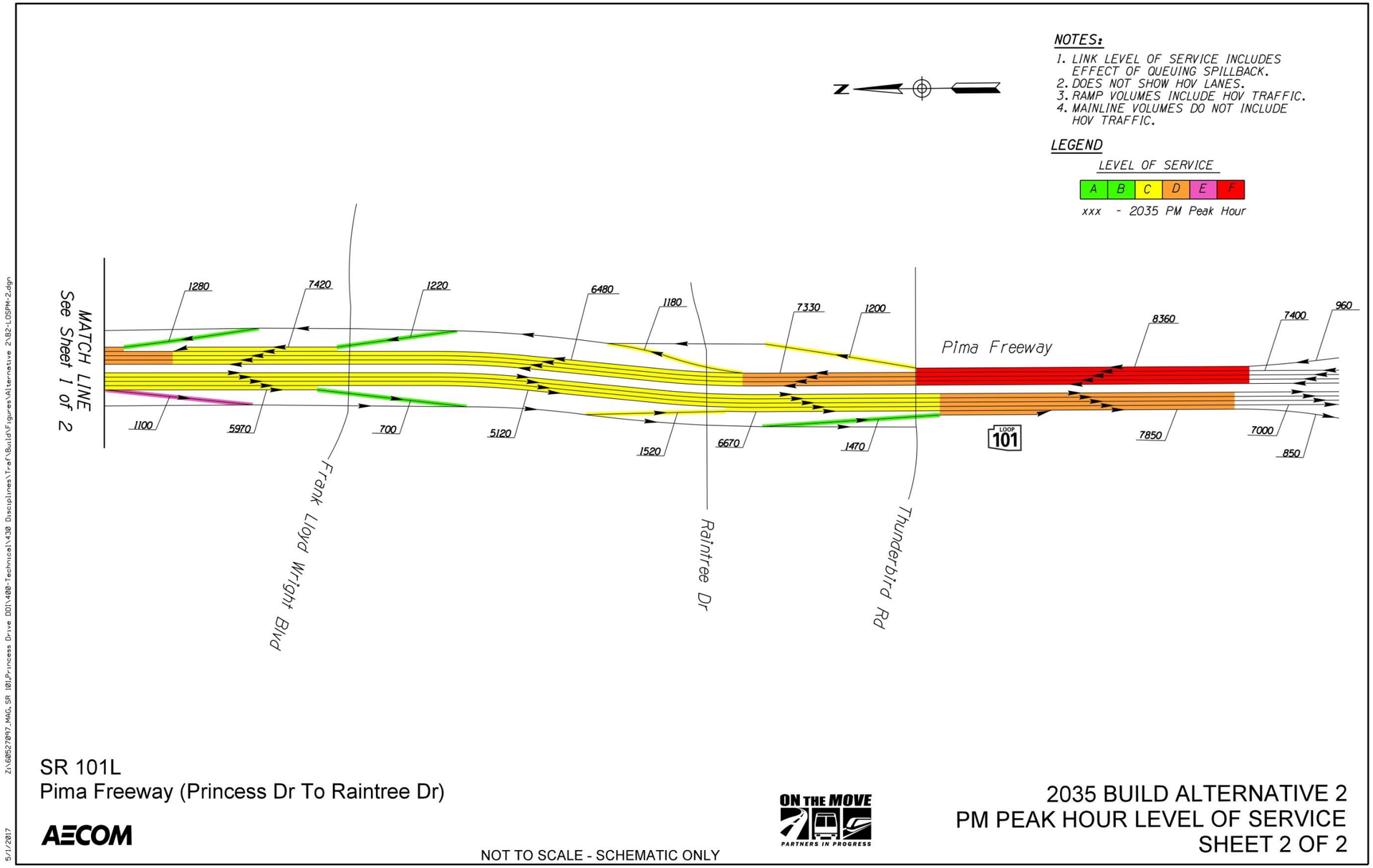
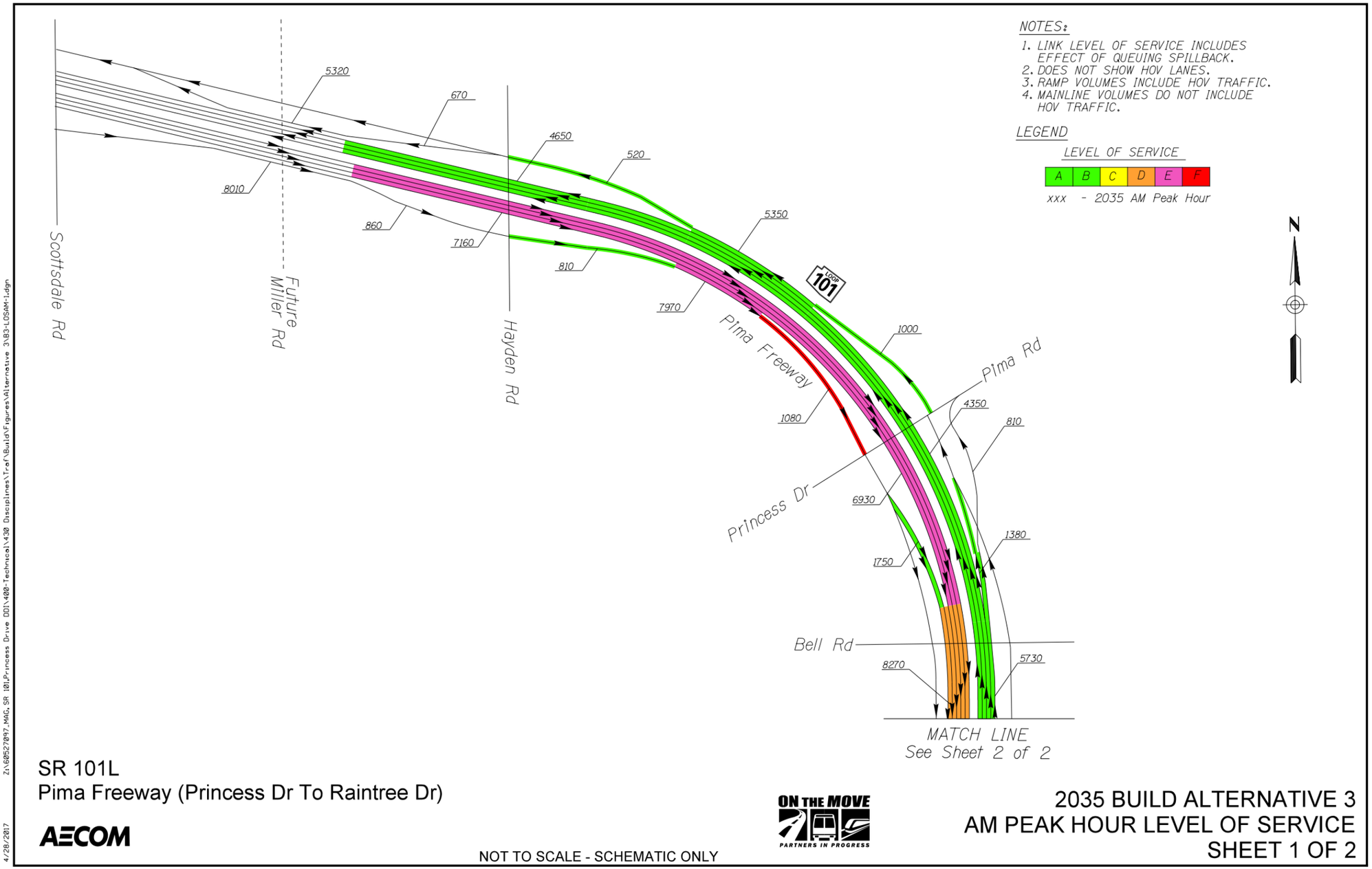


Figure 34 – 2035 Build Alternative 3 AM Volumes and Level of Service



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

AECOM

NOT TO SCALE - SCHEMATIC ONLY

ON THE MOVE
PARTNERS IN PROGRESS

2035 BUILD ALTERNATIVE 3
AM PEAK HOUR LEVEL OF SERVICE
SHEET 1 OF 2

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4/28/2017

FIGURE 34 - SHEET 2 OF 2

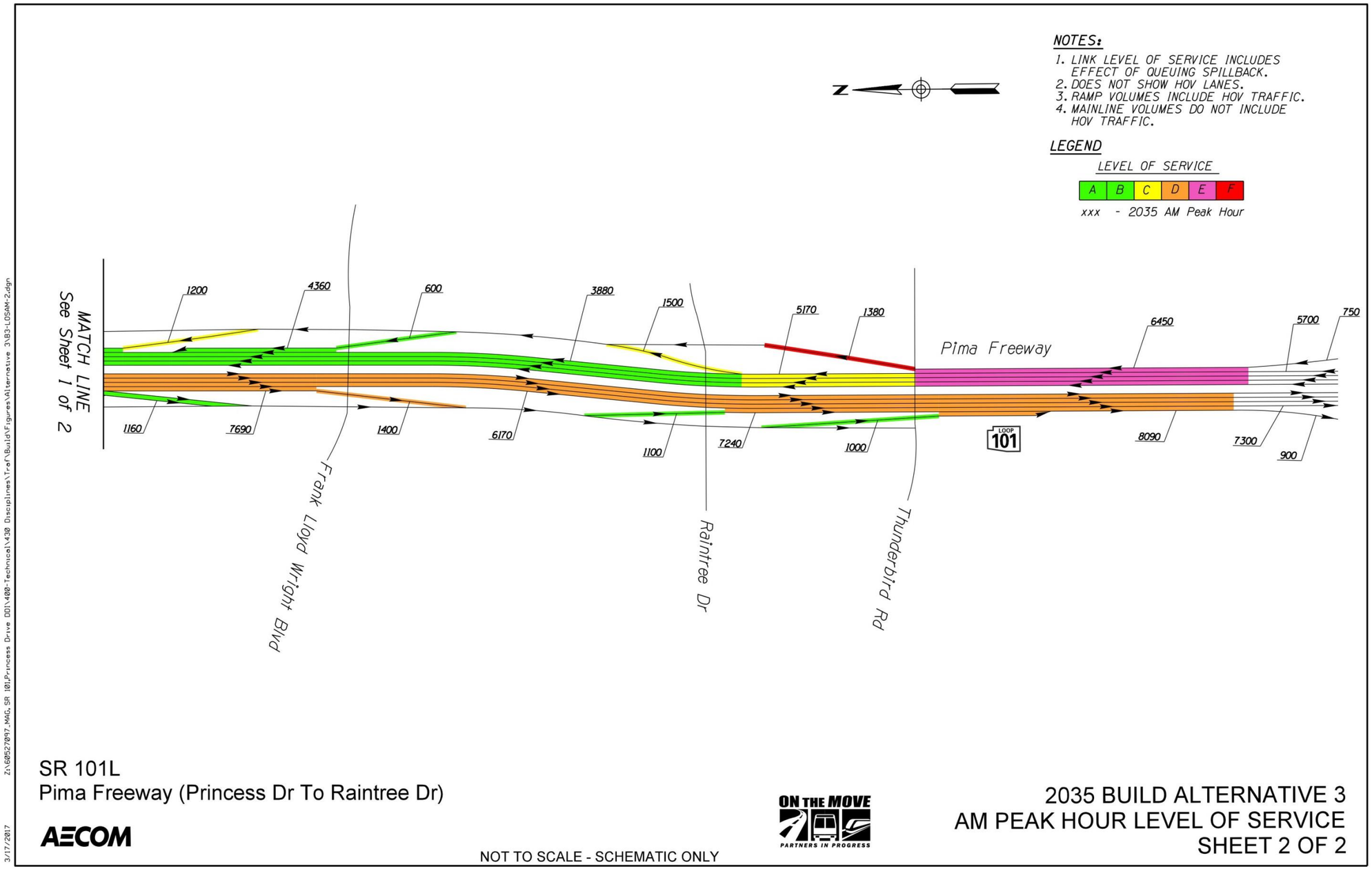


Figure 35 – 2035 Build Alternative 3 PM Volumes & Level of Service

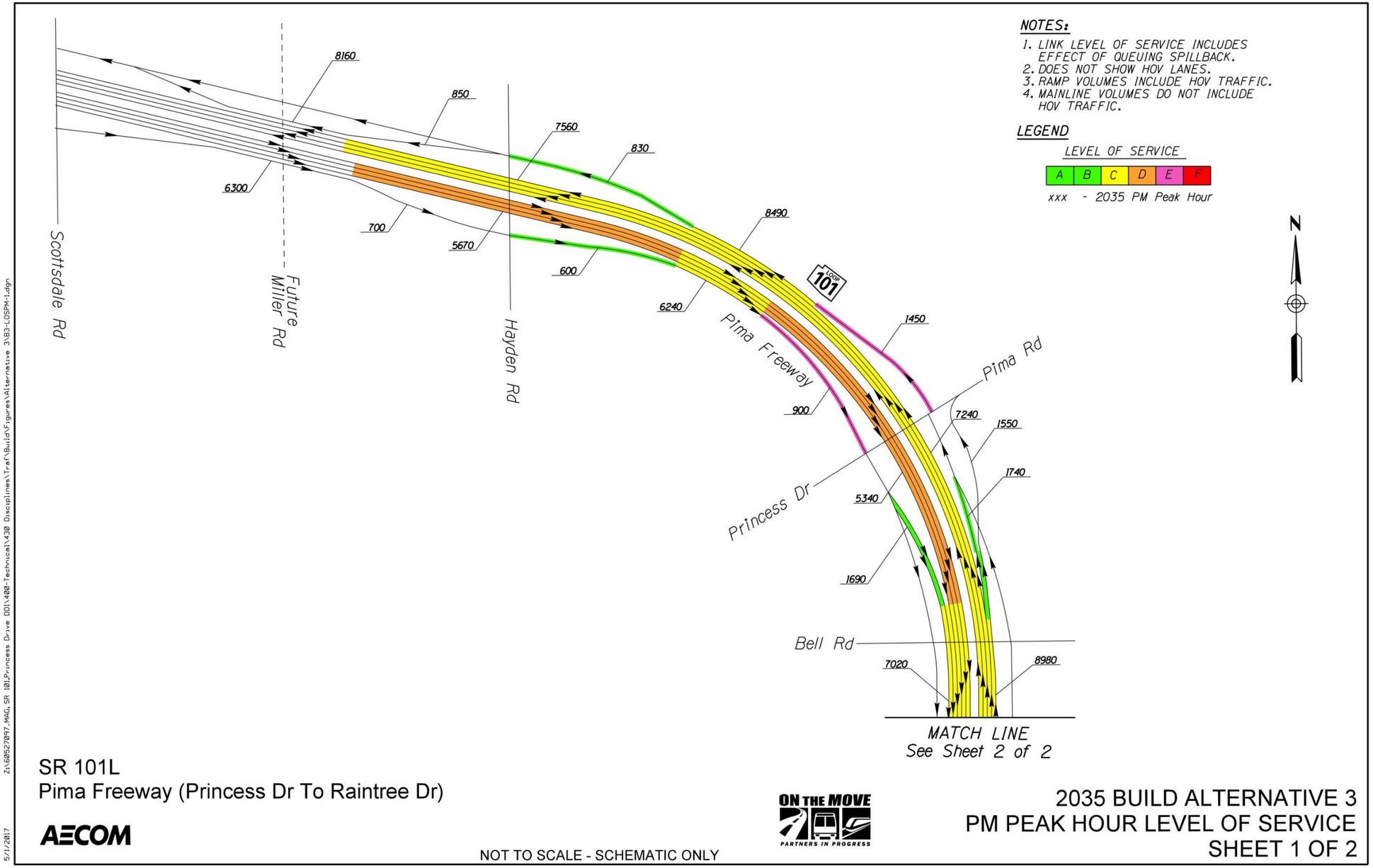


FIGURE 35 - SHEET 2 OF 2

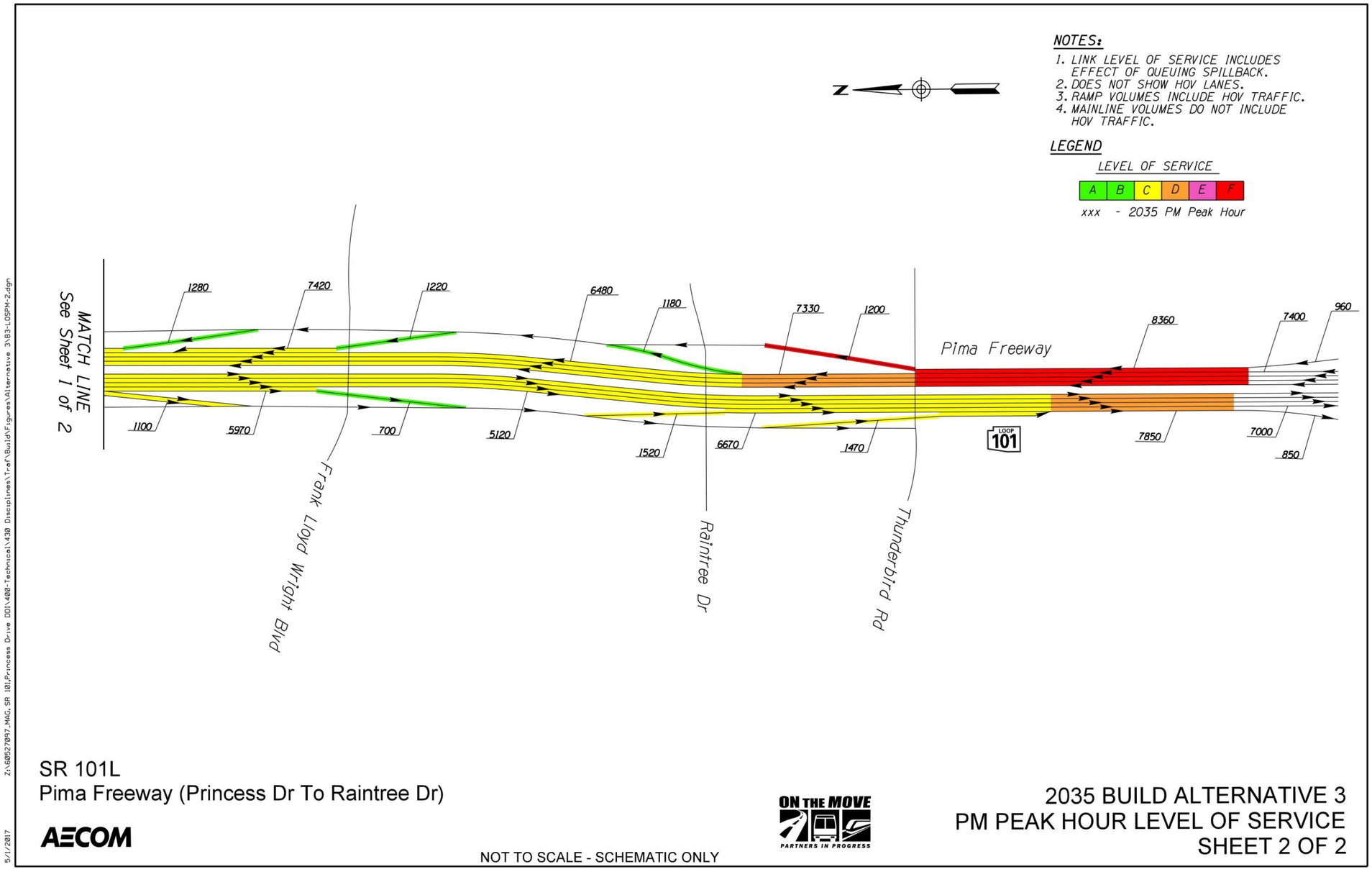
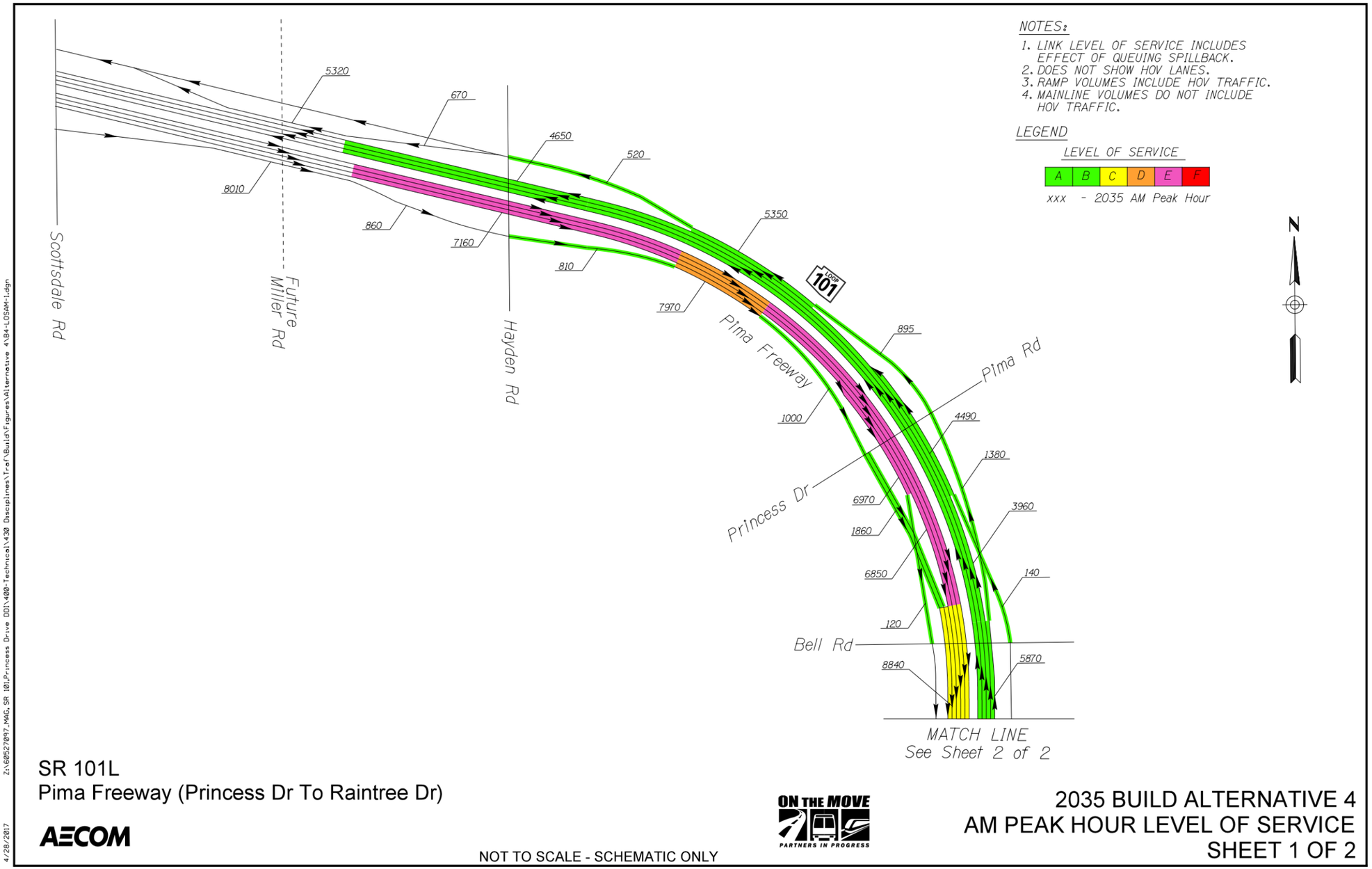


Figure 36 – 2035 Build Alternative 4 AM Volumes and Level of Service



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

AECOM

NOT TO SCALE - SCHEMATIC ONLY

ON THE MOVE
PARTNERS IN PROGRESS

2035 BUILD ALTERNATIVE 4
AM PEAK HOUR LEVEL OF SERVICE
SHEET 1 OF 2

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4/28/2017

FIGURE 36 - SHEET 2 OF 2

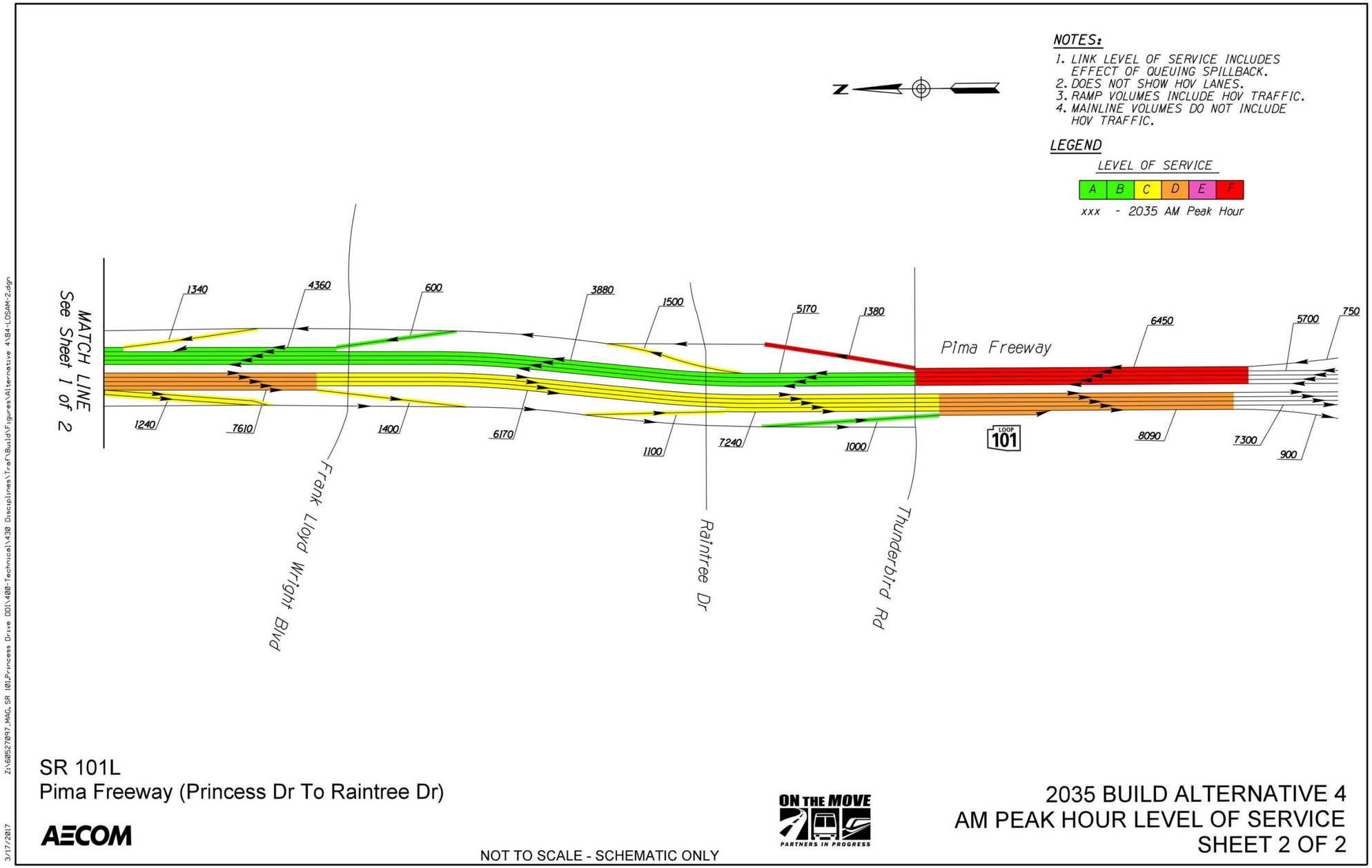
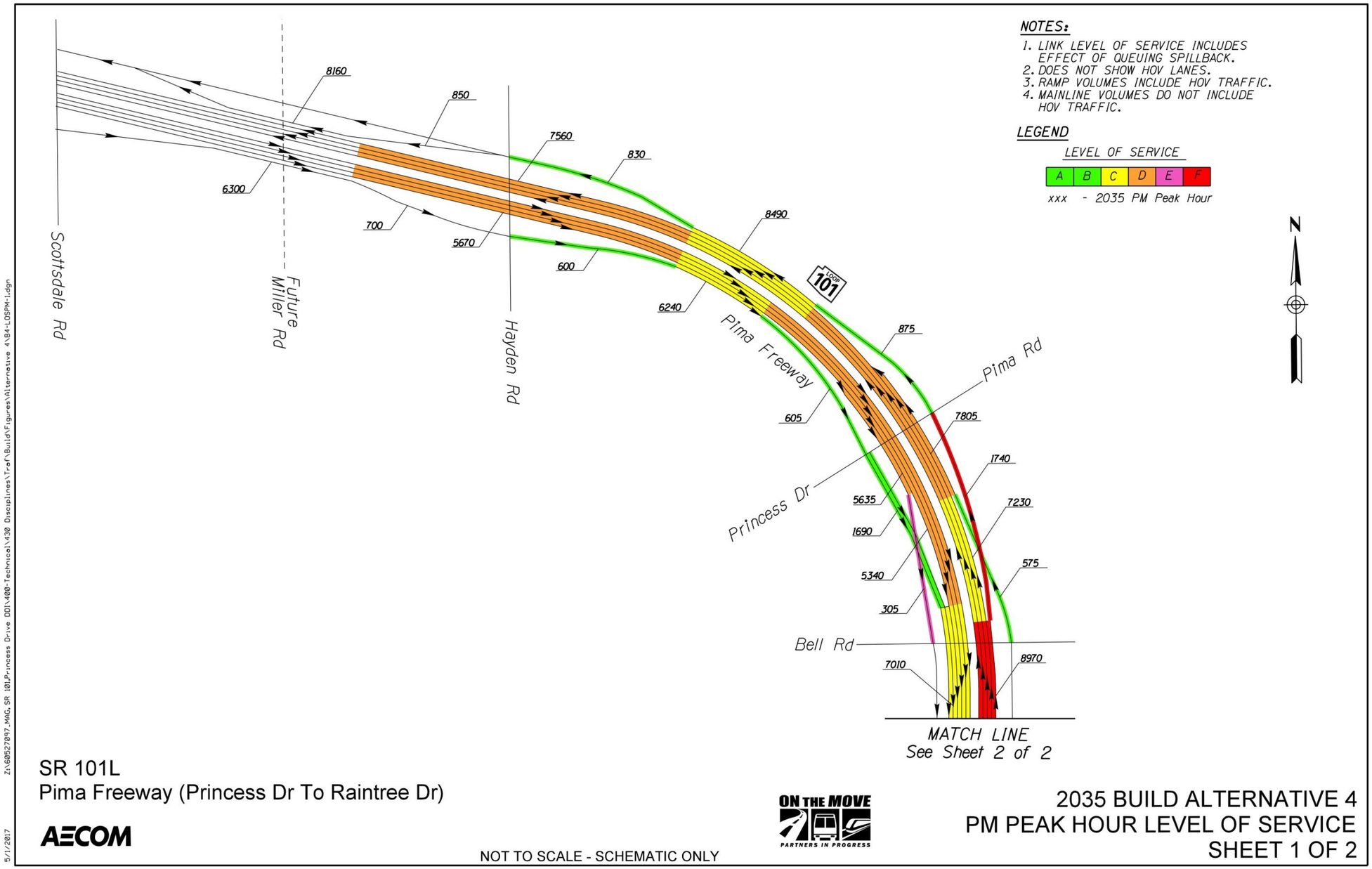


Figure 37 – 2035 Build Alternative 4 PM Volumes & Level of Service



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

AECOM

NOT TO SCALE - SCHEMATIC ONLY

ON THE MOVE
PARTNERS IN PROGRESS

2035 BUILD ALTERNATIVE 4
PM PEAK HOUR LEVEL OF SERVICE
SHEET 1 OF 2

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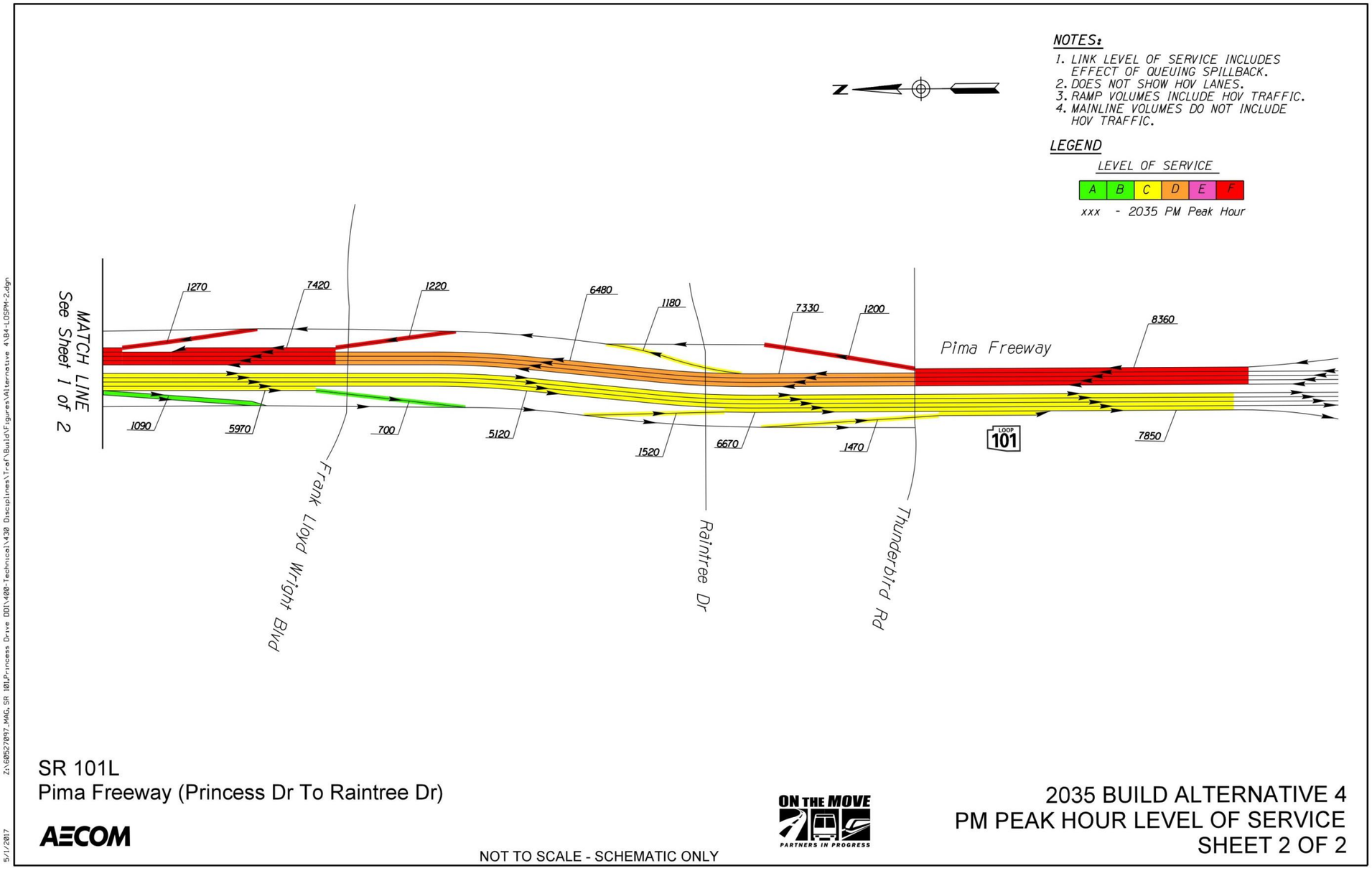
5/1/2017

FIGURE 37 - SHEET 2 OF 2



4.6 Intersection Operational Analysis Results

Table 3 (page 78) shows the operational results for the Existing Conditions, No-Build, and all Build alternatives for the AM peak, while **Table 4** (page 79) shows the same for the PM peak. The roundabout analysis included in Alternative 4 was completed in RODEL and the output is also included in **Appendix B**.

4.6.1 Existing Conditions

In the 2014 Existing conditions, the following intersections operate at LOS 'F' in the peak hour specified:

- Princess Drive TI in the AM peak hour
- Hayden Road and Frank Lloyd Wright Boulevard in the PM peak hour
- 87th Street and Raintree Drive in the PM peak hour

The following intersections operate at LOS 'E' in the peak hour specified:

- Princess Drive TI in the PM peak hour
- Frank Lloyd Wright Boulevard TI in the PM peak hour
- Raintree Drive TI in the PM peak hour

The following intersections operate at LOS 'D' but have at least one approach operating at LOS 'E' or worse in the peak hour specified:

- Bell Road TI in the PM peak hour
- Frank Lloyd Wright Boulevard TI in the AM peak hour
- Raintree Drive TI in the AM peak hour

4.6.2 No-Build Alternative

In the 2035 No-Build alternative, the volume increase on both the freeway and the arterial streets resulted in degrading levels of service at several of the intersections in the study area. The following intersections operate at LOS 'F' in the specified peak hour:

- Princess Drive TI in the AM peak hour
- Princess Drive TI in the PM peak hour
- Bell Road TI in the PM peak hour
- Hayden Road and Frank Lloyd Wright Boulevard in the PM peak hour
- Frank Lloyd Wright Boulevard TI in the AM peak hour
- Frank Lloyd Wright Boulevard TI in the PM peak hour
- 87th Street and Raintree Drive in the PM peak hour
- Raintree Drive TI in the AM peak hour
- Raintree Drive TI in the PM peak hour

In addition, the intersection of 90th Street and Frank Lloyd Wright Boulevard decreases to LOS 'E' in the AM peak hour. The intersection of SR 101 frontage roads with Bell Road in the AM peak hour operates at LOS 'D' but has one approach (the westbound) that operates at LOS 'E'.

4.6.3 Alternative 1, DDI

The re-routing of the volumes within the study area for Alternative 1 results in increased volume at the Bell Road TI and in decreased volumes along Frank Lloyd Wright Boulevard. The southbound Princess Drive/Pima Road entrance ramp is limited by ramp capacity, which affects the operations of the TI. The following intersections operate at LOS 'F' in the specified peak hour:

- Princess Drive TI in the AM peak hour
- Bell Road TI in the PM peak hour
- 87th Street and Raintree Drive in the PM peak hour
- Raintree Drive TI in the AM peak hour
- Raintree Drive TI in the PM peak hour

The following intersections operate at LOS 'E' in the specified peak hour:

- Princess Drive TI in the PM peak hour
- Hayden Road and Frank Lloyd Wright Boulevard in the PM peak hour

In addition, the following intersections operate at LOS 'D' or LOS 'C' in the specific peak hour but have at least one approach that operates at LOS 'E':

- Bell Road TI in the AM Peak Hour
- Hayden Road and Frank Lloyd Wright Boulevard in the AM peak hour
- Frank Lloyd Wright Boulevard TI in the PM peak hour

4.6.4 Alternative 2, Minor Intersection/Safety Improvements

In the Build Alternative 2 conditions, the following intersections operate at LOS 'F' in the peak hour specified:

- Princess Drive TI in the AM peak hour
- Frank Lloyd Wright Boulevard TI in the AM peak hour
- 90th Street and Frank Lloyd Wright Boulevard in the AM peak hour
- Princess Drive TI in the PM peak hour
- Bell Road TI in the PM peak hour
- Frank Lloyd Wright Boulevard TI in the PM peak hour
- Hayden Road and Frank Lloyd Wright Boulevard in the PM peak hour
- 90th St. and Frank Lloyd Wright Boulevard in the PM peak hour
- Raintree Drive TI in the PM peak hour
- 87th St. and Raintree Drive in the PM peak hour

The following intersections operate at LOS 'E' in the peak hour specified:

- Raintree Drive TI in the AM peak hour

4.6.5 Alternative 3, Diamond Interchanges and Fly-Over Ramp

In the Build Alternative 3 conditions, the following intersections operate at LOS 'F' in the peak hour specified:

- Princess Drive TI in the AM peak hour
- Princess Drive TI in the PM peak hour
- Raintree Drive TI in the AM peak hour
- Hayden Road and Frank Lloyd Wright Boulevard in the PM Peak Hour

The following intersections operate at LOS 'E' in the peak hour specified:

- Bell Road TI in the PM peak hour
- 87th St. and Raintree Drive in the PM peak hour
- Raintree Drive TI in the PM peak hour

The following intersections operate at LOS 'D' but have at least one approach operating at LOS 'E' or worse in the peak hour specified:

- Frank Lloyd Wright Boulevard TI in the PM peak hour

4.6.6 Alternative 4, Bell Road Roundabouts

In the Build Alternative 4 conditions, the following intersections operate at LOS 'F' in the peak hour specified:

- Princess Drive TI in the AM peak hour
- Frank Lloyd Wright Boulevard TI in the AM peak hour
- Raintree Drive TI in the AM peak hour
- Hayden Road and Frank Lloyd Wright Boulevard in the PM peak hour
- Frank Lloyd Wright Boulevard TI in the PM peak hour
- 87th St. and Raintree Drive in the PM peak hour
- Raintree Drive TI in the PM peak hour

The following intersections operate at LOS 'E' in the peak hour specified:

- Princess Drive TI in the PM peak hour
- 90th St. and Frank Lloyd Wright Boulevard in the AM peak hour

5.0 ALTERNATIVES ANALYSIS

The study team developed a list of considerations for determining a recommended alternative. The considerations include traffic operations, cost, right-of-way impacts, geometric design issues, and stakeholder input. Traffic operations are considered in both the AM and PM peak hours. Each element of the alternatives is evaluated separately so that the final recommendation may be a combination of several elements from each alternative. The evaluation matrix is provided in **Table 5** (page 80).

The criterion and a short description of the application of each criterion are described below.

Traffic Operations (Levels-of-Service) in the AM peak hour – Quantitatively measures the LOS during the AM peak hour.

Traffic Operations (Levels-of-Service) in the PM peak hour – Quantitatively measures the LOS during the PM peak hour.

Costs (Construction) – Quantitatively measures the concept construction costs not including right-of-way. Planning construction cost estimates were prepared for all concepts and are included in **Appendix C**.

Right-of-Way – Quantitatively measures the additional acres of right-of-way required when compared to the general purpose lane widening No-Build Alternative.

Geometric Issues – Qualitatively measures the ability for the concept to meet design criteria.

Stakeholder Input – Qualitatively measures the acceptance of the concept with input from the City of Scottsdale and MAG.

[Text resumes on page 81]

Table 3 – Intersection Operational Results for All Alternatives in the AM Peak Hour

Intersection Location	Intersection Approach	2014		2035 No-Build		2035 Build Alt 1 (DDI)		2035 Build Alt 2		2035 Build Alt 3		2035 Build Alt 4	
		Intersection Approach LOS & Delay	Overall Intersection LOS & Delay	Intersection Approach LOS & Delay	Overall Intersection LOS & Delay	Intersection Approach LOS & Delay	Overall Intersection LOS & Delay	Intersection Approach LOS & Delay	Overall Intersection LOS & Delay	Intersection Approach LOS & Delay	Overall Intersection LOS & Delay	Intersection Approach LOS & Delay	Overall Intersection LOS & Delay
SR101L/Princess Drive TI (signalized)	EB SR 101L Exit Ramp	F (106)	F (122)	F (196)	F (165)	F (157)	F (115)	F (160)	F (97)	F (192)	F (121)	F (134)	F (117)
	WB SR 101L Frontage Road	F (83)		F (92)		C (28)		C (20)		D (41)		C (24)	
	EB Princess Drive	E (58)		F (232)		C (30)		C (26)		E (77)		C (26)	
	WB Pima Road	F (175)		F (223)		F (166)		F (160)		F (156)		F (162)	
Eastbound Frontage Rd/Hartford Drive (un-signalized)	EB Hartford Drive	A (6)	N/A	A (6)	N/A	N/A	N/A	A (7)	N/A	A (7)	N/A	N/A	N/A
SR101L Frontage Road/ Bell Road TI (signalized)	EB SR 101L Frontage Road	D (47)	C (33)	D (49)	D (45)	E (63)	D (44)	D (47)	C (32)	D (48)	C (33)	A (7)*	B (11)*
	WB SR 101L Frontage Road	C (33)		C (33)		C (34)		C (30)		C (30)		B (11)*	
	EB Bell Road	C (25)		C (27)		D (38)		C (28)		C (30)		A (9)*	
	WB Bell Road	C (31)		E (67)		D (48)		C (32)		C (32)		B (13)*	
Westbound Frontage Rd/Bahia Drive (un-signalized)	WB Bahia Drive	B (11)	N/A	B (12)	N/A	A (8)	N/A	B (13)	N/A	B (14)	N/A	B (13)	N/A
Westbound Frontage Rd/Westworld Road (un-signalized)	WB Westword Road	A (7)	N/A	A (9)	N/A	A (5)	N/A	A (8)	N/A	A (8)	N/A	A (8)	N/A
Hayden Road/Frank Lloyd Wright Blvd (signalized)	EB Frank Lloyd Wright Blvd	B (14)	B (16)	C (35)	C (29)	C (21)	C (20)	C (21)	C (21)	C (23)	C (23)	C (26)	C (24)
	WB Frank Lloyd Wright Blvd	B (13)		B (15)		B (12)		B (14)		B (18)		B (14)	
	NB Hayden Road	C (28)		D (47)		D (42)		C (34)		D (36)		D (39)	
	SB Driveway	D (40)		D (40)		E (59)		D (37)		D (53)		D (39)	
SR101L/Frank Lloyd Wright Blvd TI (signalized)	EB Frank Lloyd Wright Blvd	D (40)	D (49)	D (55)	F (98)	D (38)	D (36)	D (44)	F (116)	D (35)	D (39)	D (47)	F (94)
	WB Frank Lloyd Wright Blvd	D (37)		F (101)		C (32)		F (218)		C (34)		F (108)	
	EB SR 101L Frontage Road	E (57)		F (182)		D (38)		F (162)		D (43)		F (99)	
	WB SR 101L Frontage Road	E (67)		E (78)		D (41)		E (79)		D (46)		F (124)	
90th Street/Frank Lloyd Wright Blvd (signalized)	EB Frank Lloyd Wright Blvd	A (6)	A (9)	A (9)	E (58)	A (7)	A (10)	B (14)	F (138)	A (7)	B (11)	B (12)	E (66)
	WB Frank Lloyd Wright Blvd	B (10)		E (76)		B (10)		F (168)		B (12)		F (80)	
	NB 90th Street	B (12)		F (92)		B (12)		F (864)		B (18)		F (152)	
	SB Driveway	B (13)		D (36)		B (13)		F (84)		B (15)		D (35)	
87th Street/Raintree Drive (signalized)	EB Raintree Drive	A (6)	A (7)	A (6)	A (8)	A (5)	A (7)	A (6)	A (7)	A (6)	A (6)	A (6)	A (7)
	WB Raintree Drive	A (7)		A (8)		A (6)		A (6)		A (6)		A (6)	
	NB 87th Street	A (9)		A (10)		A (10)		B (11)		A (9)		A (10)	
	SB 87th Street	B (13)		B (15)		B (14)		B (17)		A (8)		B (14)	
SR101L/Raintree Drive TI (signalized)	EB SR 101L Frontage Road	D (40)	D (53)	E (67)	F (85)	D (49)	F (87)	D (52)	E (70)	F (204)	F (112)	D (36)	F (97)
	WB SR 101L Frontage Road	E (67)		F (95)		F (120)		E (75)		E (73)		F (172)	
	EB Raintree Drive	C (35)		D (39)		C (32)		D (36)		C (33)		C (25)	
	WB Raintree Drive	E (63)		F (115)		F (132)		F (94)		F (107)		F (148)	

*Output for roundabout configuration from RODEL

Table 4 – Intersection Operational Results for All Alternatives in the PM Peak Hour

Intersection Location	Intersection Approach	2014		2035 No-Build		2035 Build Alt 1 (DDI)		2035 Build Alt 2		2035 Build Alt 3		2035 Build Alt 4	
		Intersection Approach LOS & Delay	Overall Intersection LOS & Delay	Intersection Approach LOS & Delay	Overall Intersection LOS & Delay	Intersection Approach LOS & Delay	Overall Intersection LOS & Delay	Intersection Approach LOS & Delay	Overall Intersection LOS & Delay	Intersection Approach LOS & Delay	Overall Intersection LOS & Delay	Intersection Approach LOS & Delay	Overall Intersection LOS & Delay
SR101L/Princess Drive TI (signalized)	EB SR 101L Exit Ramp	F (123)	E (74)	F (162)	F (111)	D (45)	E (65)	F (201)	F (117)	F (197)	F (117)	F (124)	E (71)
	WB SR 101L Frontage Road	D (52)		D (49)		B (16)		D (50)		E (57)		E (67)	
	EB Princess Drive	F (103)		F (215)		F (171)		F (339)		F (307)		E (80)	
	WB Pima Road	E (64)		F (102)		E (71)		E (61)		E (58)		E (55)	
Eastbound Frontage Rd/Hartford Drive (un-signalized)	EB Hartford Drive	A (7)	N/A	A (7)	N/A	N/A	N/A	A (8)	N/A	A (8)	N/A	N/A	N/A
SR101L Frontage Road/ Bell Road TI (signalized)	EB SR 101L Frontage Road	E (60)	D (50)	F (85)	F (113)	F (82)	F (84)	F (85)	F (113)	E (55)	E (58)	B (11)*	B (13)*
	WB SR 101L Frontage Road	D (47)		D (54)		D (52)		E (68)		D (36)		B (14)*	
	EB Bell Road	C (34)		F (120)		D (37)		F (109)		C (35)		B (11)*	
	WB Bell Road	E (56)		F (180)		F (175)		F (180)		F (95)		B (15)*	
Westbound Frontage Rd/Bahia Drive (un-signalized)	WB Bahia Drive	C (17)	N/A	C (18)	N/A	C (17)	N/A	C (21)	N/A	C (20)	N/A	C (19)	N/A
Westbound Frontage Rd/Westworld Road (un-signalized)	WB Westword Road	A (8)	N/A	A (9)	N/A	A (7)	N/A	A (9)	N/A	A (9)	N/A	A (9)	N/A
Hayden Road/Frank Lloyd Wright Blvd (signalized)	EB Frank Lloyd Wright Blvd	F (161)	F (100)	F (232)	F (136)	F (89)	E (57)	F (190)	F (97)	F (241)	F (104)	F (221)	F (110
	WB Frank Lloyd Wright Blvd	C (27)		D (36)		B (12)		C (22)		C (33)		C (33)	
	NB Hayden Road	F (100)		F (176)		D (35)		F (92)		F (91)		F (112)	
	SB Driveway	D (53)		F (83)		D (44)		C (35)		E (63)		E (67)	
SR101L/Frank Lloyd Wright Blvd TI (signalized)	EB Frank Lloyd Wright Blvd	E (70)	E (59)	F (85)	F (99)	D (38)	D (45)	E (73)	F (112)	C (35)	D (48)	E (64)	F (99)
	WB Frank Lloyd Wright Blvd	D (37)		D (44)		C (33)		F (190)		C (34)		D (51)	
	EB SR 101L Frontage Road	E (61)		F (119)		D (42)		F (144)		D (50)		F (164)	
	WB SR 101L Frontage Road	E (60)		F (176)		E (65)		E (60)		E (79)		F (138)	
90th Street/Frank Lloyd Wright Blvd (signalized)	EB Frank Lloyd Wright Blvd	A (8)	A (9)	A (9)	B (11)	A (8)	A (9)	B (14)	F (97)	A (8)	B (11)	A (8)	B (12)
	WB Frank Lloyd Wright Blvd	A (9)		B (12)		A (9)		F (127)		B (11)		B (13)	
	NB 90th Street	B (12)		B (14)		B (11)		F (406)		B (16)		B (15)	
	SB Driveway	B (13)		B (13)		B (18)		D (37)		B (16)		B (15)	
87th Street/Raintree Drive (signalized)	EB Raintree Drive	F (142)	F (89)	F (148)	F (103)	F (147)	F (125)	F (361)	F (146)	F (113)	E (79)	F (147)	F (87)
	WB Raintree Drive	A (3)		A (4)		A (5)		A (8)		A (5)		A (5)	
	NB 87th Street	F (158)		F (201)		F (329)		F (287)		F (167)		F (129)	
	SB 87th Street	F (91)		F (145)		F (145)		F (177)		D (36)		F (131)	
SR101L/Raintree Drive TI (signalized)	EB SR 101L Frontage Road	F (139)	E (73)	F (146)	F (84)	F (128)	F (86)	F (158)	F (83)	E (56)	E (71)	F (133)	F (94)
	WB SR 101L Frontage Road	E (57)		F (96)		D (52)		D (41)		F (138)		F (110)	
	EB Raintree Drive	D (41)		D (40)		D (43)		F(99)		D (42)		D (43)	
	WB Raintree Drive	E (65)		E (68)		F (121)		D (43)		E (70)		F (108)	

*Output for roundabout configuration from RODEL

Table 5 – Alternatives Evaluation Matrix

Evaluation Criteria	Alternative Number / Location	Build Alternative 1	Build Alternative 2	Build Alternative 3	Build Alternative 4
		DDI at Princess, changing access at Bell Rd and Frank Lloyd Wright, frontage road removal, and Texas U-turns	Triple left at Princess, additional storage at Frank Lloyd Wright and Raintree TI's, continuous sidewalks on Frontage Road	Triple left at Princess with dual lane freeway entrance, Fly-over ramp at Princess, diamond TI's at FLW and Raintree	Triple left at Princess with dual lane freeway, additional access at Bell Rd, frontage road removal, Bell roundabouts, & Texas U-turn
Traffic Operations in AM Peak Hour	Freeway Mainline & Ramps	SB Mainline from Hayden Rd to FLW (1.5 miles)	SB Mainline from Hayden Rd to FLW exit (1.5 miles)	SB Mainline from Hayden Rd to Pima entrance (1.0 miles)	SB Mainline from Hayden Rd to Pima entrance (1.0 miles)
	Pima/Princess TI	Overall LOS F (165 sec); 4 approaches LOS E or F	Overall LOS F (97 sec); 2 approaches LOS E or F	Overall LOS F (121 sec); 3 approaches LOS E or F	Overall LOS F (117 sec); 2 approaches LOS E or F
	Bell TI	Overall LOS D (44 sec); 1 approach LOS E or F	Overall LOS C (32 sec); 0 approaches LOS E or F	Overall LOS C (33 sec); 0 approaches LOS E or F	Overall LOS B (11 sec); 0 approaches LOS E or F
	Frank Lloyd Wright TI	Overall LOS D (36 sec); 0 approaches LOS E or F	Overall LOS F (116 sec); 3 approaches LOS E or F	Overall LOS D (39 sec); 0 approaches LOS E or F	Overall LOS F (94 sec); 3 approaches LOS E or F
	Raintree TI	Overall LOS F (87 sec); 2 approaches LOS E or F	Overall LOS E (70 sec); 2 approaches LOS E or F	Overall LOS F (112 sec); 3 approaches LOS E or F	Overall LOS F (97 sec); 2 approaches LOS E or F
Traffic Operations in PM Peak Hour	Freeway Mainline & Ramps	NB mainline from Bell exit to Thunderbird (1.5 miles)	NB Mainline from Raintree exit to Thunderbird (.25 miles)	NB Mainline from Raintree exit to Thunderbird (.25 miles)	NB mainline from Pima exit to FLW (0.75 miles)
	Pima/Princess TI	Overall LOS E (65 sec); 2 approaches LOS E or F	Overall LOS F (117 sec); 3 approaches LOS E or F	Overall LOS F (117 sec); 4 approaches LOS E or F	Overall LOS E (71 sec); 4 approaches LOS E or F
	Bell TI	Overall LOS F (84 sec); 2 approaches LOS E or F	Overall LOS F (113 sec); 4 approaches LOS E or F	Overall LOS E (58 sec); 2 approach LOS E or F	Overall LOS B (13 sec); 0 approaches LOS E or F
	Frank Lloyd Wright TI	Overall LOS D (45 sec); 1 approach LOS E or F	Overall LOS F (112 sec); 4 approaches LOS E or F	Overall LOS D (48 sec); 1 approach LOS E or F	Overall LOS F (99 sec); 3 approaches LOS E or F
	Raintree TI	Overall LOS F (86 sec); 2 approaches LOS E or F	Overall LOS F (83 sec); 2 approaches LOS E or F	Overall LOS E (71 sec); 3 approach LOS E or F	Overall LOS F (94 sec); 3 approaches LOS E or F
Cost	Freeway Mainline & Ramps	$36.5M	$1.4M (sidewalk along frontage roads)	$14M (NB Pima exit); $2.7M (SB Pima entrance & FLW exit)	$9M (new Bell ramps) ;$7M (SB Pima entrance & FLW exit)
	Pima/Princess TI	$9M	$550k	$550k	$550k
	Bell TI	None	None	None	$5.5M (roundabouts and Texas u-turn)
	Frank Lloyd Wright TI	None	$550k	$3.7M	None
	Raintree TI	None	$900k	$1.7M	None
R/W Impacts	Freeway Mainline & Ramps	None	None	3.5 acres due to new Pima Rd exit ramp	None
	Pima/Princess TI	0.25 acres due to conversion to DDI	None	None	None
	Bell TI	None	None	None	0.20 acres due to new roundabouts
	Frank Lloyd Wright TI	None	None	0.80 acres due to conversion to diamond TI	None
	Raintree TI	None	0.05 acres due to new RT lane	0.05 acres due to conversion to diamond TI	None
Geometric Issues	Freeway Mainline & Ramps	None	None	• NB exit at Pima TI includes 2 gores close together • SB 2-lane entrance ramp (at Pima TI) is uncommon	• Short weaving distance between SB Pima entrance and SB FLW exit • SB 2-lane entrance ramp (at Pima TI) is uncommon
	Pima/Princess TI	None	May require widening of SB frontage road to accommodate trucks	May require widening of SB frontage road to accommodate trucks	May require widening of SB frontage road to accommodate trucks
	Bell TI	None	None	None	None
	Frank Lloyd Wright TI	None	Results in tighter radius to shift traffic on inside of curve	None	None
	Raintree TI	None	None	None	None
Stakeholder Input	Freeway Mainline & Ramps Pima/Princess TI Bell TI Frank Lloyd Wright TI Raintree TI	The removal of Frank Lloyd Wright Ramps and frontage road is not preferred. Northbound Texas U-turn is preferred element.	Triple left turns at Princess TI, northbound and southbound approaches to Frank Lloyd Wright TI, and westbound approach to Raintree TI are favorable elements	Triple left turns at Princess TI, dual lane entrance ramp at southbound Princess, Fly-over ramp at Princess, and Diamond configuration at Frank Lloyd Wright are favorable elements	Triple left turns at Princess TI, dual lane entrance ramp at southbound Princess, additional ramps at Bell Road, and Bell Road roundabouts are favorable elements. Removal of frontage road is not preferred.

6.0 RECOMMENDATIONS

Based on the results of the Alternative Evaluation presented in Section 5.0, a list of short-term low-cost safety improvements will be recommended, and a longer term Recommended Alternative was developed. Conceptual 15% design plans were prepared for this Recommended Build Alternative and are included in **Appendix D**. A cost estimate for the Recommended Build Alternative is included in **Appendix C**.

6.1 Short-Term Low-Cost Safety Improvements

The short-term low-cost safety improvements that were included in portions of the Build Alternatives that are recommended to implement in the short-term include the following:

- Constructing a continuous sidewalk along the northbound and southbound frontage roads between Bell Road and Frank Lloyd Wright Boulevard.
- The addition of an westbound right-turn lane and improved northbound on-ramp striping at the Raintree Drive TI
- Widening the northbound and southbound approaches at the Frank Lloyd Wright Boulevard TI to accommodate separate left-turn and through lanes (2 left-turn lanes and 2 through lanes).
- The addition of a third westbound to southbound left-turn lane at the Princess Drive TI

The sidewalk, Raintree Drive TI right-turn lane, and additional left-turn at Princess Drive TI are all included in the Recommended Build Alternative Plans in **Appendix D**. The Frank Lloyd Wright Boulevard TI improvements are included in **Figure 38** (page 83).

6.2 Recommended Build Alternative Improvements

The long-term improvements that were included the Build Alternative Analysis that are recommended to implement in the long-term include the following:

- The addition of an westbound right-turn lane at the Raintree Drive TI (as recommended in the short-term safety improvements)
- Constructing a continuous sidewalk along the northbound and southbound frontage roads between Bell Road and Frank Lloyd Wright Boulevard (as recommended in the short-term safety improvements)
- The conversion of the Frank Lloyd Wright Boulevard TI to a Diamond interchange
- The conversion of the Bell Road TI to a dual lane roundabout configuration
- The addition of a Texas U-turn from the northbound to southbound frontage road between Bell Road and Frank Lloyd Wright Boulevard
- The addition of a third westbound to southbound left-turn lane at the Princess Drive TI (as recommended in the short-term safety improvements)
- The addition of a second southbound entrance ramp lane
- Addition of a grade-separated ramp facility connecting the northbound Princess Drive/Pima Road exit to eastbound Pima Road

Volumes and lane configurations for the mainline for this alternative are shown in **Figure 39** (pages 84-85) and intersection configurations with turning movements are shown in **Figure 40** (pages 86-87).

6.3 Recommended Build Alternative Freeway Operational Analysis Results

Figure 41 (pages 88-89) and **Figure 42** (pages 90-91) summarize the level-of-service analysis results for the 2035 Recommended Build Alternative during the AM and PM peak hours, respectively.

In the AM peak hour, the southbound SR 101 operates at level of service ‘E’ from the northern edge of the project to the Princess Drive/Pima Road entrance ramp. South of the Princess Drive/Pima Road entrance ramp, the southbound SR 101 and all ramps operate at LOS ‘D’ or better. The northbound SR 101 operates at LOS ‘D’ from the southern limit of the project to the Raintree Drive exit ramp. The Raintree Drive exit ramp itself operates at LOS ‘F’. North of this exit ramp, the freeway and all entrance and exit ramps operate at LOS ‘C’ or better.

In the PM peak hour, the southbound SR 101 mainline and all ramps operate at LOS ‘D’ or better. In the northbound direction, the freeway operates at LOS ‘E’ or ‘F’ south of the Frank Lloyd Wright Boulevard exit ramp, and at LOS ‘D’ or better from that point north, except for the Princess Drive/Pima Road entrance ramp which operates at LOS ‘E’.

6.4 Recommended Build Alternative Intersection Operational Analysis Results

Table 6 (page 92) shows the operational results for the Recommended Build alternative for the AM and PM peak hours.

In the Recommended Build Alternative conditions, the following intersections operate at LOS ‘F’ in the peak hour specified:

- Princess Drive TI in the AM peak hour
- Princess Drive TI in the PM peak hour
- Raintree Drive TI in the PM peak hour
- Hayden Road and Frank Lloyd Wright Boulevard in the PM peak hour
- 87th St. and Raintree Drive in the PM peak hour
- Raintree Drive TI in the PM peak hour

The following intersections operate at LOS ‘E’ in the peak hour specified:

- Raintree Drive TI in the AM peak hour

The Bell Road displays a LOS ‘C’ or better during each peak hour utilizing the RODEL roundabout software. This LOS was confirmed in an additional roundabout analysis software – Sidra; however, the VISSIM simulation does not match this anticipated LOS. Therefore, additional consideration to the recommended lane configuration of the Bell Road TI roundabout should be considered during the next stages of design.

6.5 Additional Considerations

It is important to note that both the short-term safety improvements and long-term recommended improvements are subject to additional analysis during scoping and final design. MAG and the City of Scottsdale would like the following alternative improvements to also be considered during the scoping and final design process:

- The conversion of the Raintree Drive TI to a dual-lane roundabout configuration.
- The addition of a northbound SR 101 entrance ramp from Bell Road with the closure of the northbound frontage road between Bell Road and Princess Drive/Pima Road.
- The addition of a southbound exit ramp at Bell Road with the closure of the southbound frontage road between Bell Road and Princess Drive/Pima Road
- The addition of a southbound exit ramp at Bell Road while keeping the southbound frontage road between Bell Road and Princess Drive in operation

Figure 38 – Frank Lloyd Wright Boulevard Short-Term Improvement Recommendation

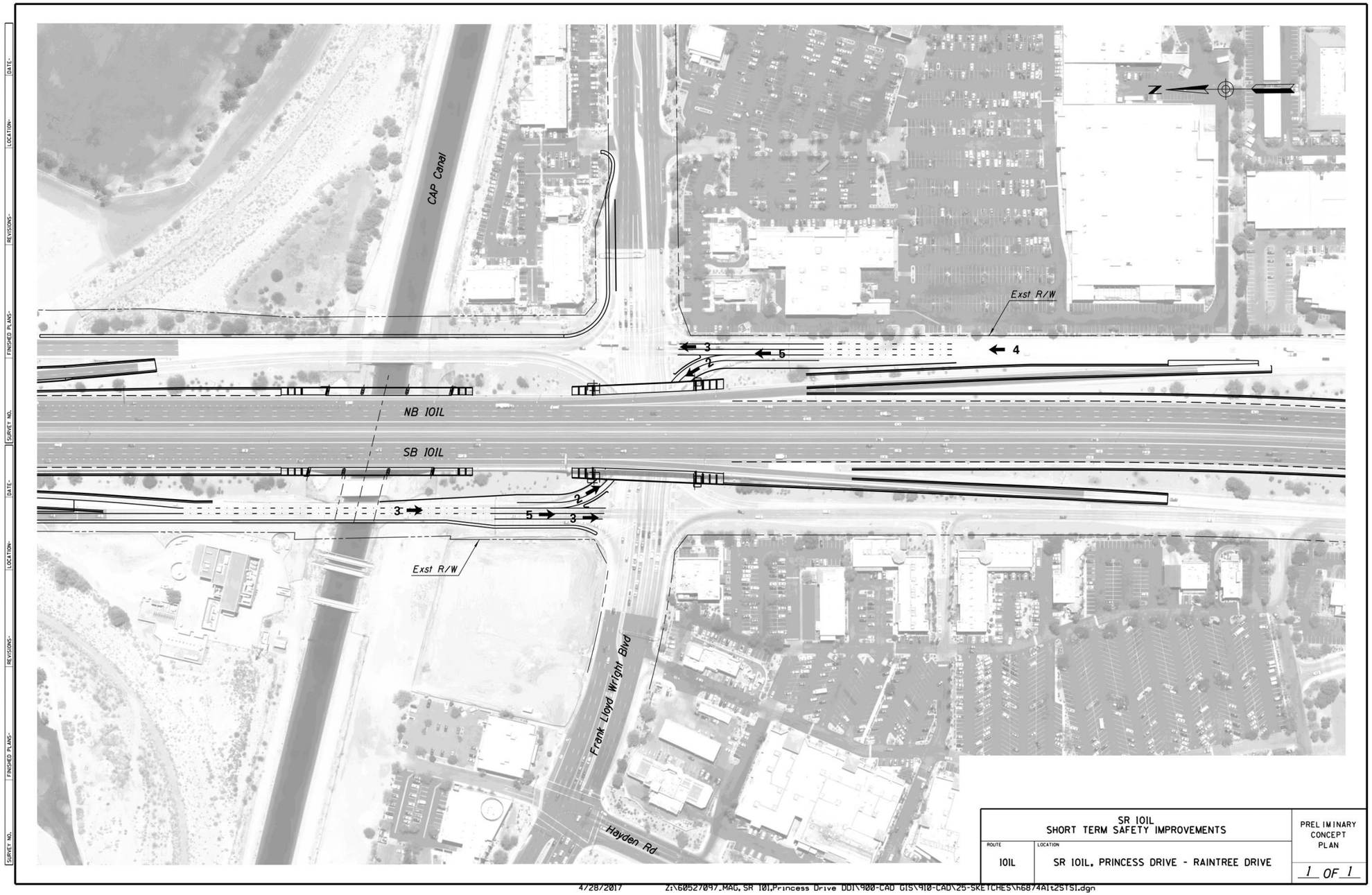
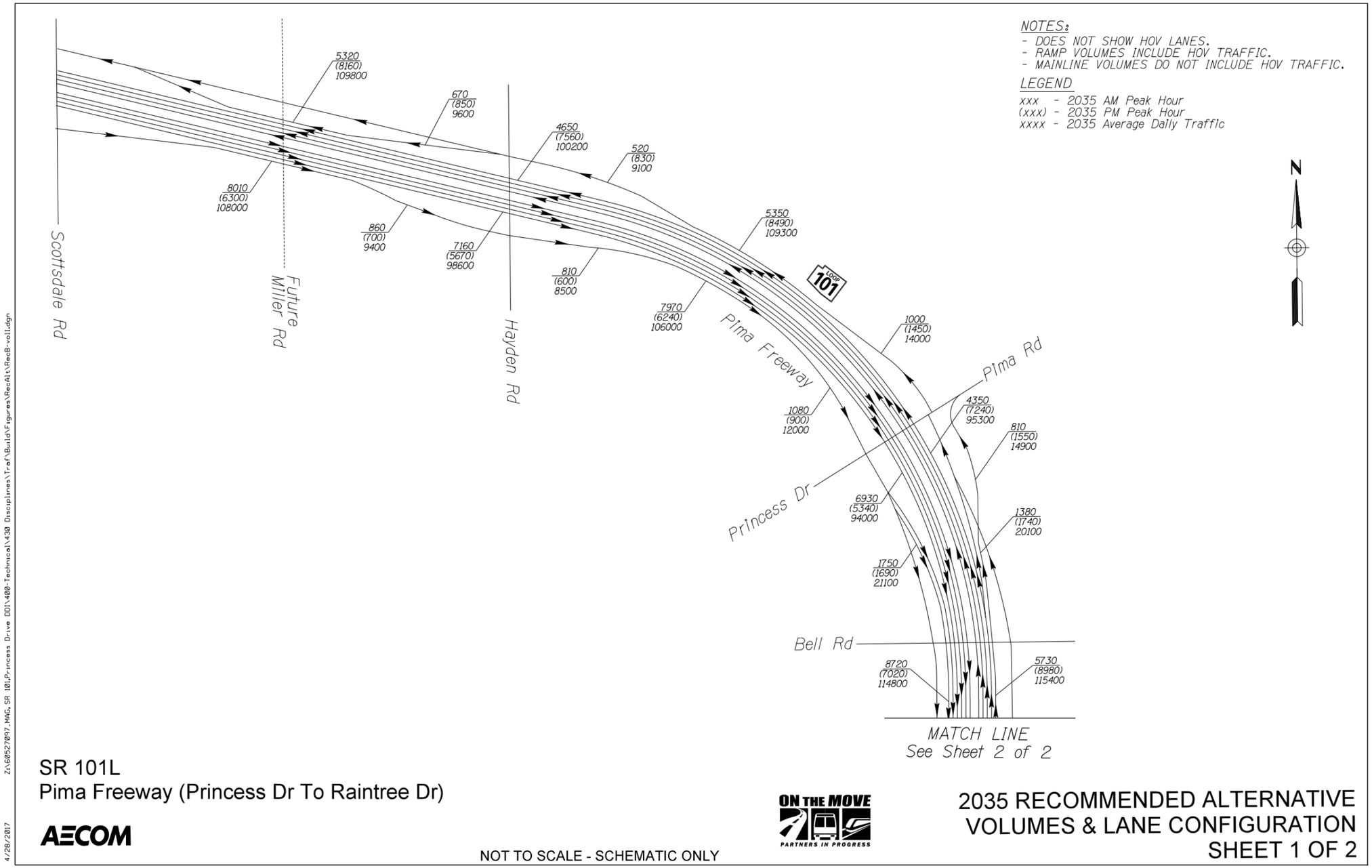


Figure 39 – 2035 Recommended Build Alternative Volumes & Lane Configuration



SR 101L
Pima Freeway (Princess Dr To Raintree Dr)

AECOM

NOT TO SCALE - SCHEMATIC ONLY

ON THE MOVE
PARTNERS IN PROGRESS

2035 RECOMMENDED ALTERNATIVE VOLUMES & LANE CONFIGURATION
SHEET 1 OF 2

4/28/2017 Z:\60527097_MAG_SR 101,Princess Drive DDI\400-Technical\430 Disciplines\Traf\Build\Figures\RecAlt\RecB-vol.dgn

Figure 39 - SHEET 2 of 2

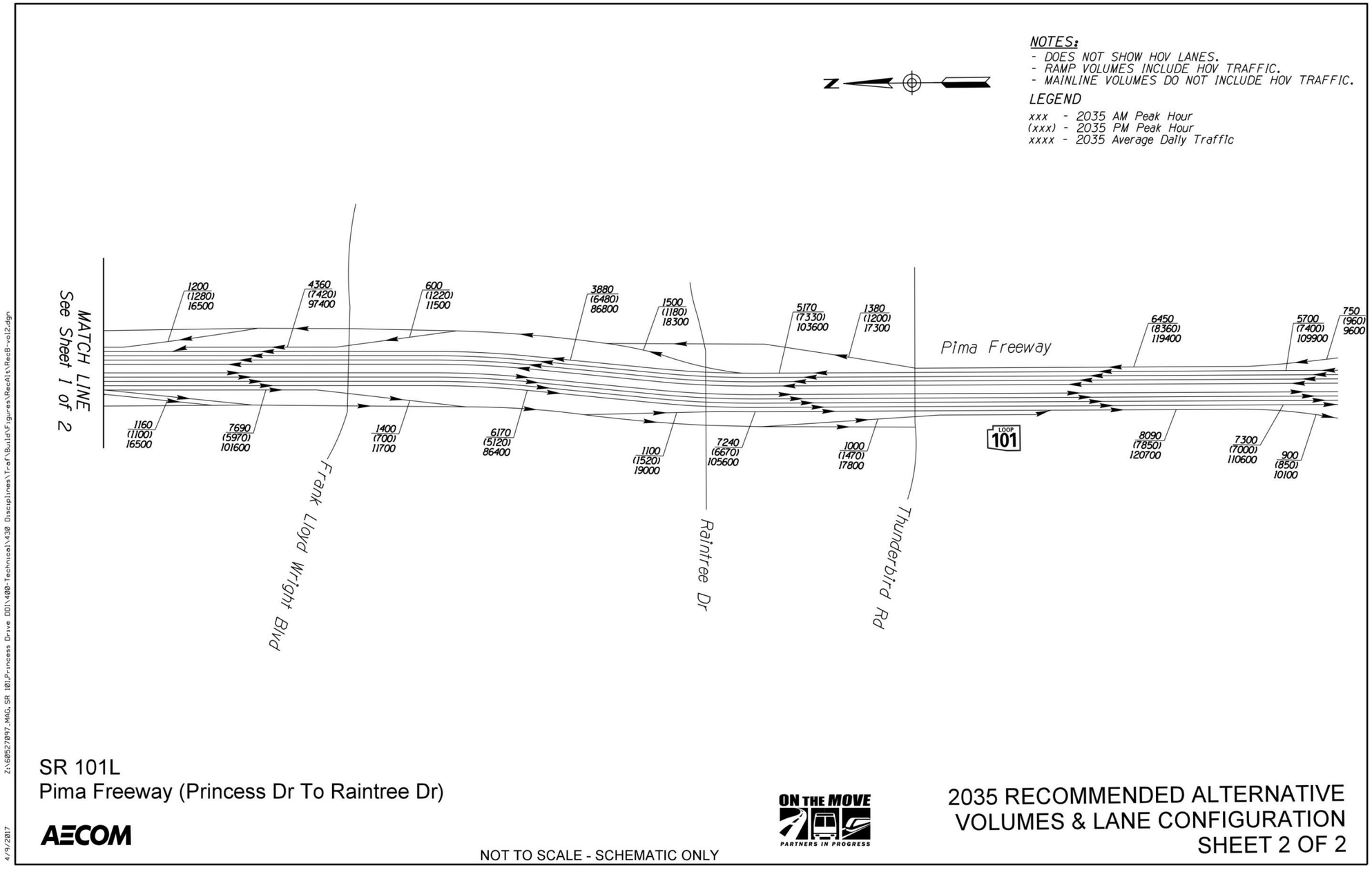


Figure 40 – 2035 Recommended Build Alternative Intersection Turning Movements

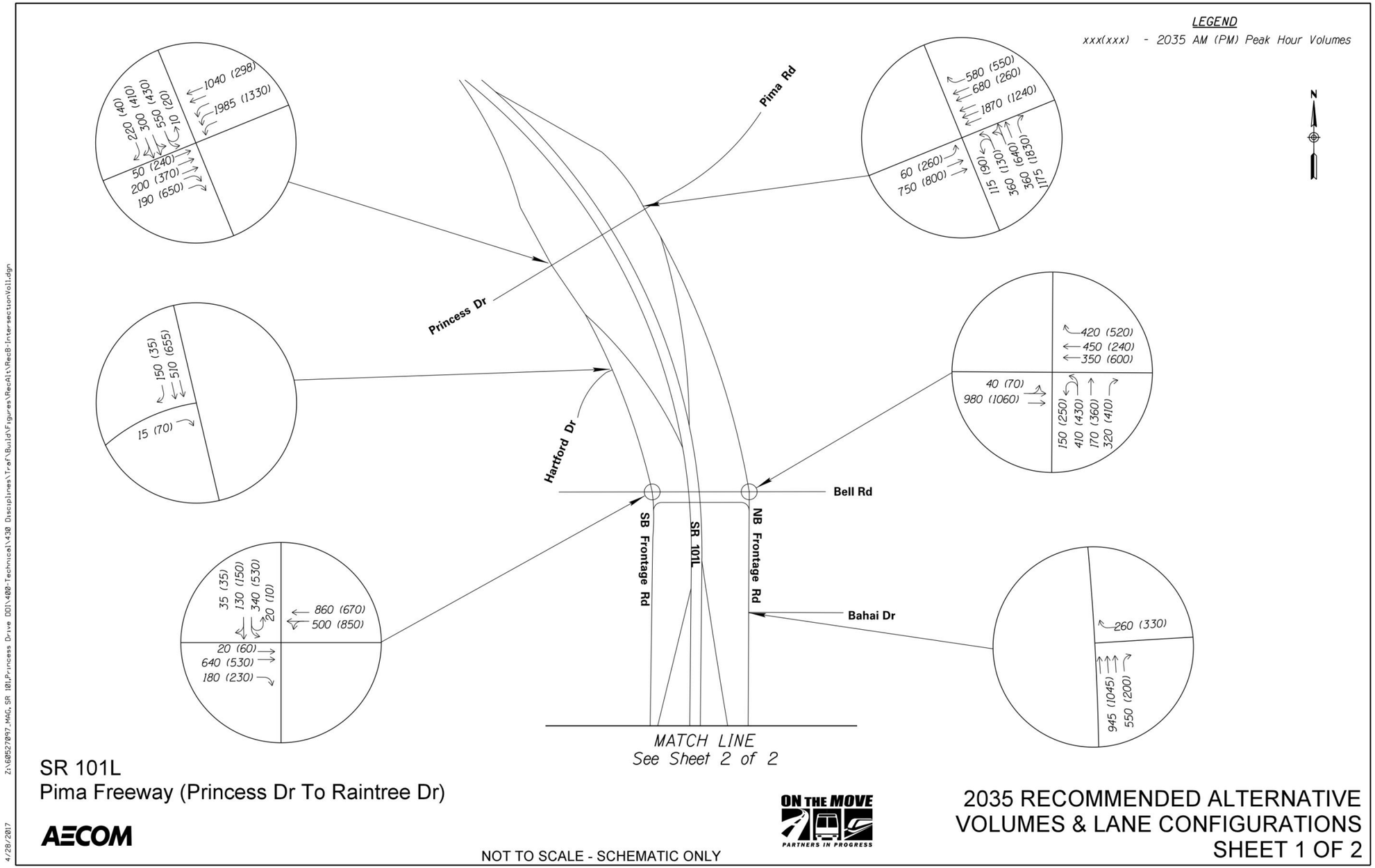


Figure 40 - SHEET 2 of 2

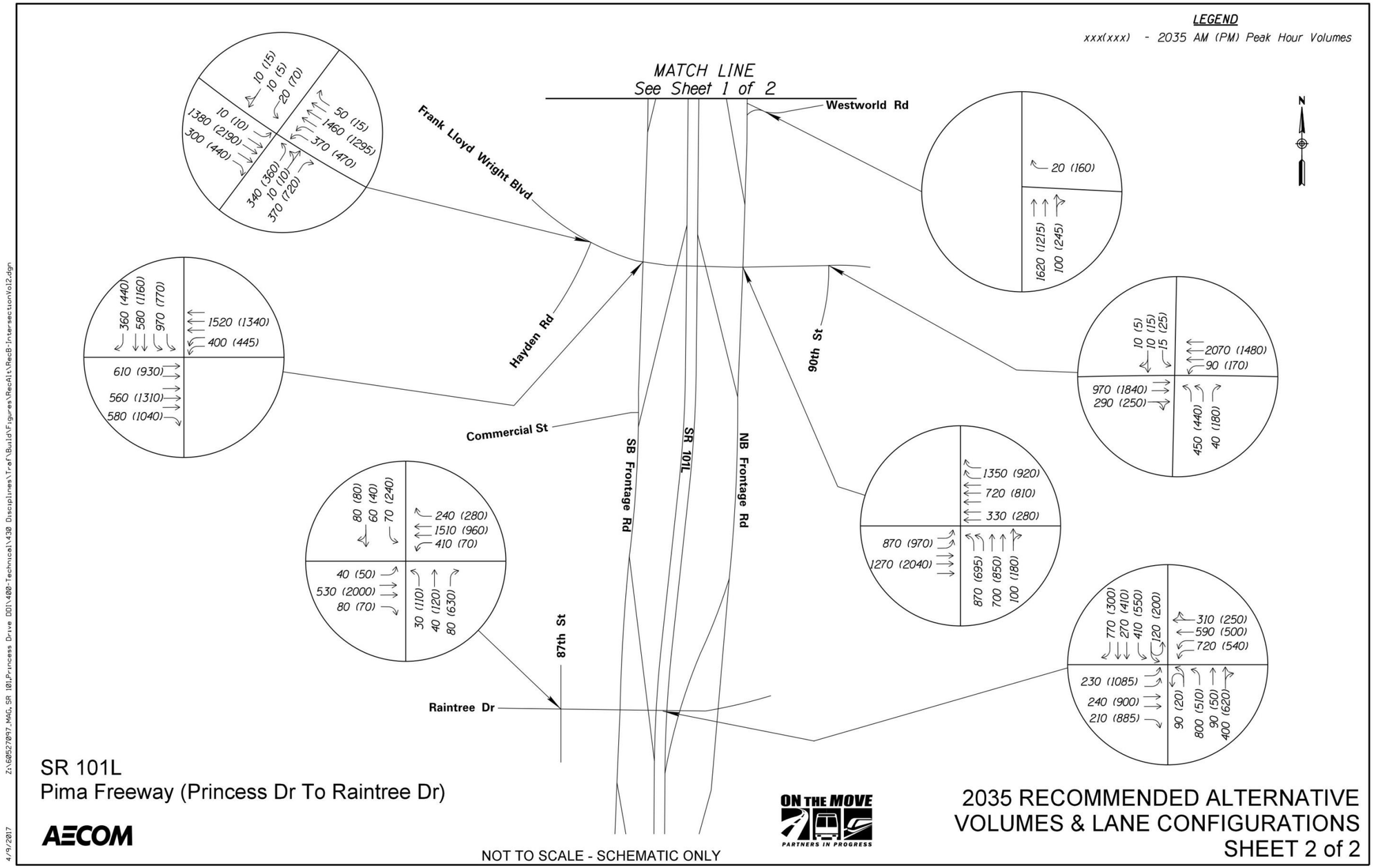


Figure 41 – 2035 Recommended Build Alternative AM Volumes & Level of Service

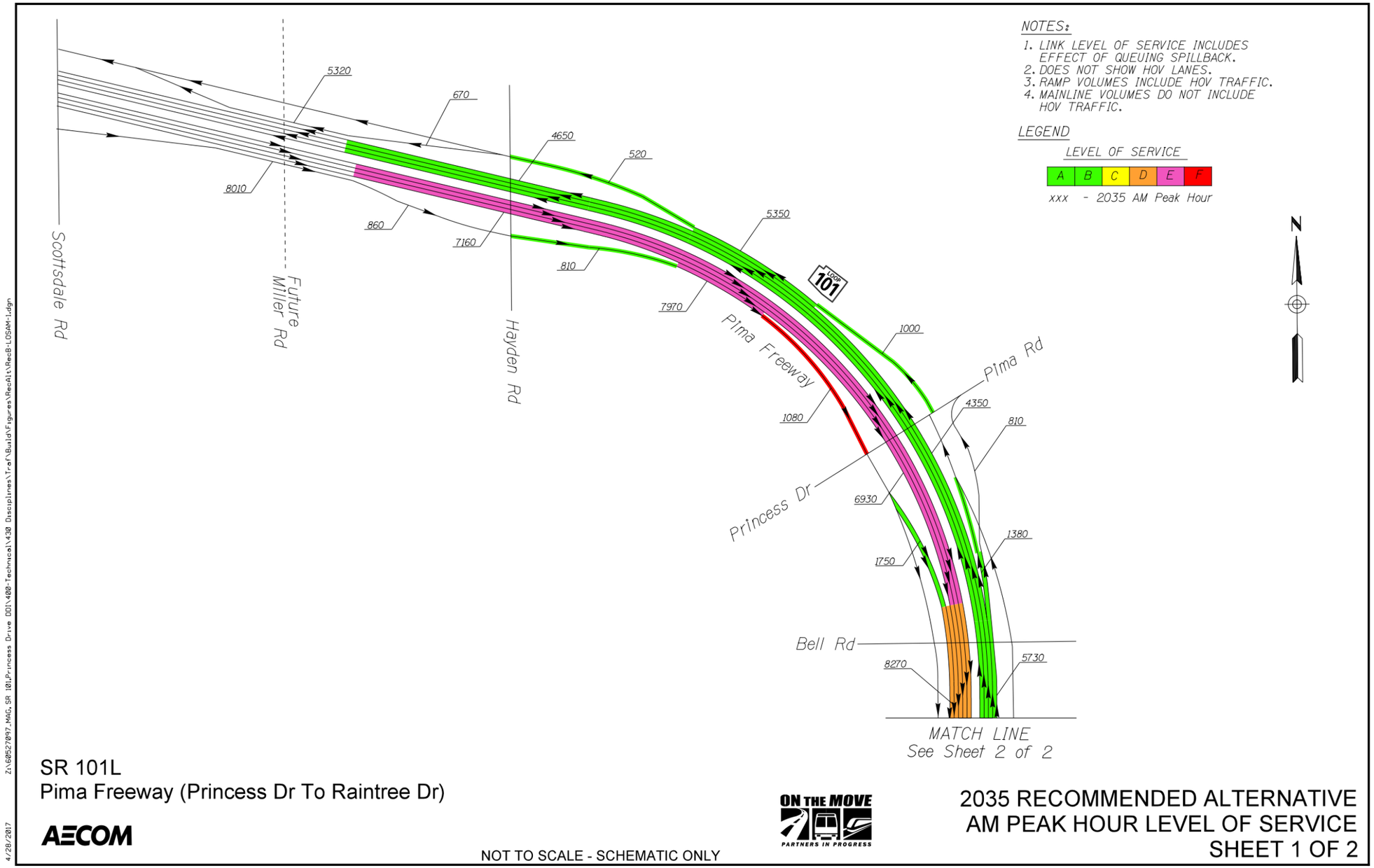


Figure 41 - SHEET 2 of 2

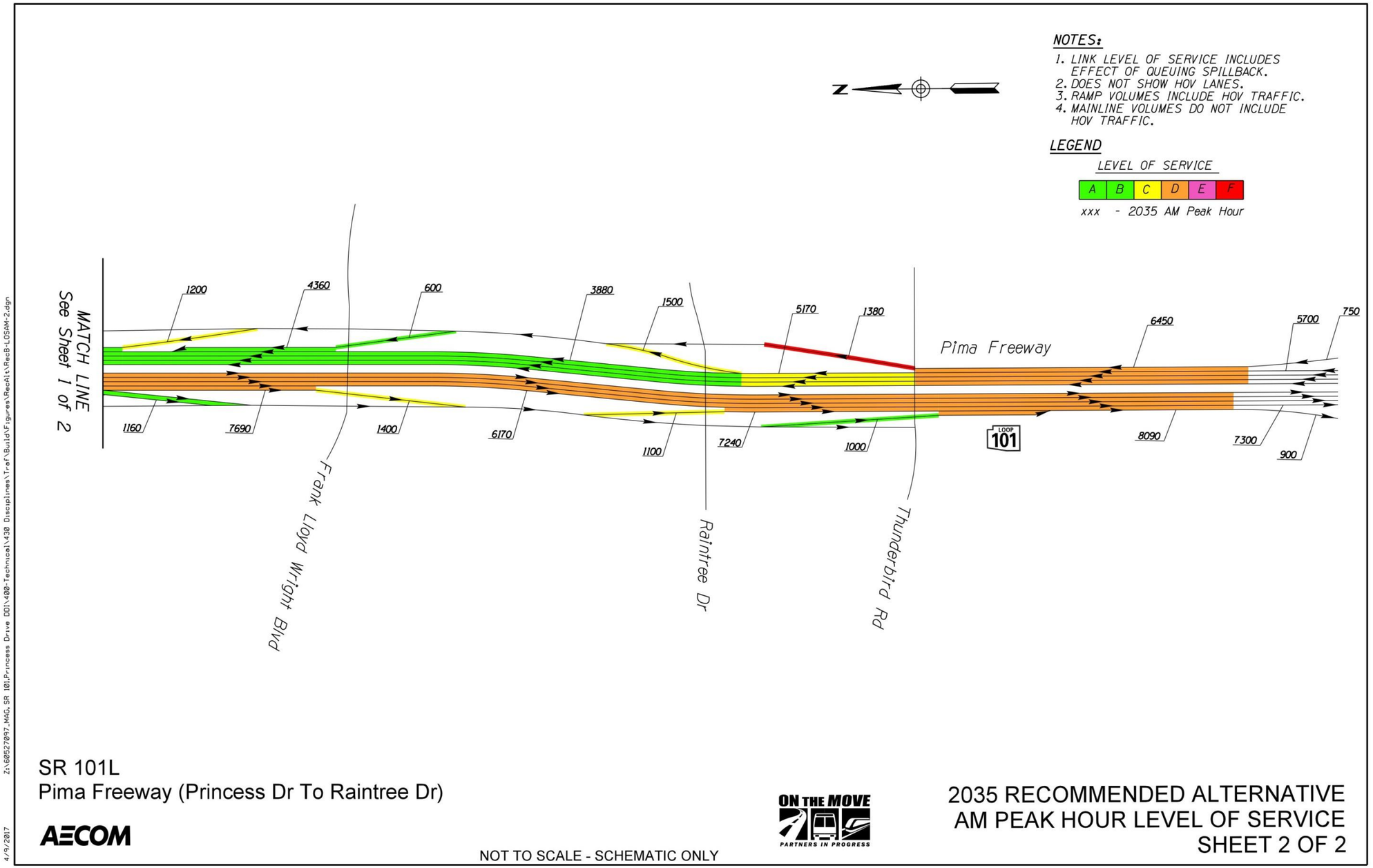


Figure 42 – 2035 Recommended Build Alternative PM Volumes & Level of Service

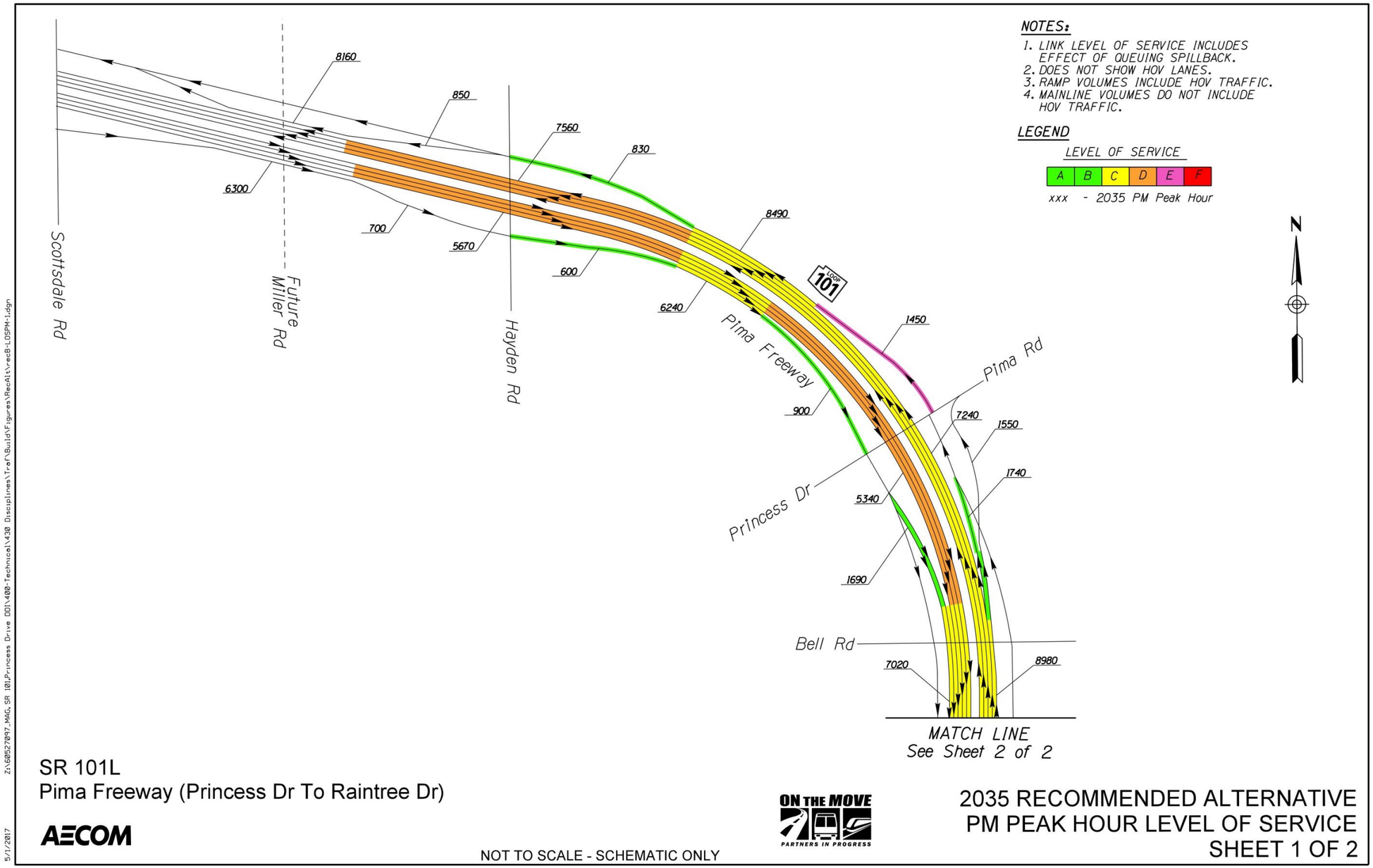


Figure 42 - SHEET 2 of 2

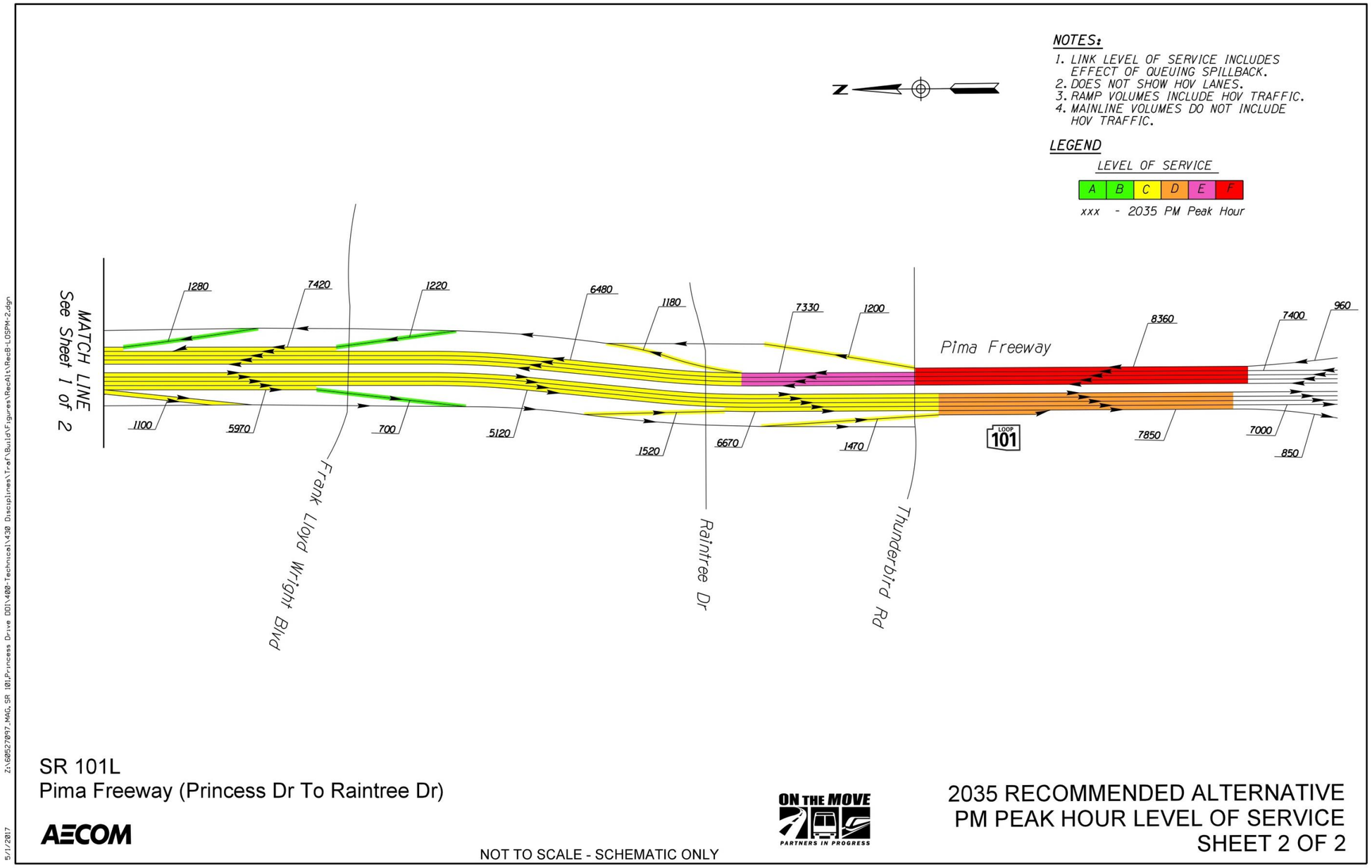


Table 6 – Intersection Operational Results for Recommended Build Alternative

Intersection Location	Intersection Approach	2035 Recommended Alternative AM Peak		2035 Recommended Alternative PM Peak	
		Intersection Approach LOS & Delay	Overall Intersection LOS & Delay	Intersection Approach LOS & Delay	Overall Intersection LOS & Delay
SR101L/Princess Drive TI (signalized)	EB SR 101L Exit Ramp	F (190)	F (117)	E (74)	F (82)
	WB SR 101L Frontage Road	D (41)		C (32)	
	EB Princess Drive	E (79)		F (149)	
	WB Pima Road	F (154)		F (132)	
Eastbound Frontage Rd/Hartford Drive (un-signalized)	EB Hartford Drive	A (8)	N/A	D (33)	N/A
SR101L Frontage Road/ Bell Road TI (signalized)	EB SR 101L Frontage Road	B (13)*	B (14)*	B (19)*	C (25)*
	WB SR 101L Frontage Road	B (14)*		C (21)*	
	EB Bell Road	B (12)*		B (16)*	
	WB Bell Road	B (15)*		D (36)*	
Westbound Frontage Rd/Bahia Drive (un-signalized)	WB Bahia Drive	B (14)	N/A	C (22)	N/A
Westbound Frontage Rd/Westworld Road (un-signalized)	WB Westword Road	A (8)	N/A	A (9)	N/A
Hayden Road/Frank Lloyd Wright Blvd (signalized)	EB Frank Lloyd Wright Blvd	C (23)	C (23)	F (253)	F (107)
	WB Frank Lloyd Wright Blvd	B (18)		C (33)	
	NB Hayden Road	D (36)		F (97)	
	SB Driveway	D (51)		E (65)	
SR101L/Frank Lloyd Wright Blvd TI (signalized)	EB Frank Lloyd Wright Blvd	C (35)	D (39)	D (50)	D (43)
	WB Frank Lloyd Wright Blvd	C (34)		D (38)	
	EB SR 101L Frontage Road	D (42)		D (41)	
	WB SR 101L Frontage Road	D (47)		D (45)	
90th Street/Frank Lloyd Wright Blvd (signalized)	EB Frank Lloyd Wright Blvd	A (7)	B (12)	A (8)	B (11)
	WB Frank Lloyd Wright Blvd	B (12)		B (11)	
	NB 90th Street	B (18)		B (17)	
	SB Driveway	B (16)		B (16)	
87th Street/Raintree Drive (signalized)	EB Raintree Drive	A (4)	A (5)	F (146)	F (83)
	WB Raintree Drive	A (2)		A (3)	
	NB 87th Street	C (28)		F (162)	
	SB 87th Street	C (28)		D (35)	
SR101L/Raintree Drive TI (signalized)	EB SR 101L Frontage Road	D (35)	E (61)	F (137)	F (86)
	WB SR 101L Frontage Road	E (60)		D (54)	
	EB Raintree Drive	D (36)		D (45)	
	WB Raintree Drive	F (99)		F (116)	

*Output for roundabout configuration from RODEL

Appendix A
Crash Data Summary

Appendix B
Analysis Output Reports

Appendix C
Alternative Conceptual Cost Estimates

Appendix D
Recommended Alternative Conceptual Plans

SR 101L,
Princess Drive to Raintree Drive

Appendix A
Crash Analysis

Crash Breakdown	Toals	
Total Crashes	559	
Total Injuries	190	
Total Fatalities	4	
Crashes by Type		
ANGLE (front to side)(other than left turn)	21	3.8%
HEAD_ON	5	0.9%
LEFT_TURN	0	0.0%
REAR_END	245	43.8%
OTHER	31	5.5%
REAR_TO_REAR	2	0.4%
REAR_TO_SIDE	0	0.0%
SIDESWIPE_OPPOSITE_DIRECTION	0	0.0%
SIDESWIPE_SAME_DIRECTION	105	18.8%
SINGLE VEHICLE	150	26.8%
UNKNOWN	0	0.0%
TOTAL	559	100.0%

SR 101L,
Princess Drive to Raintree Drive

Appendix A
Crash Analysis

Crashes by First Harmful Event

ANIMAL_LIVESTOCK	0	0.0%
ANIMAL_PET	0	0.0%
ANIMAL_WILD_GAME	1	0.2%
ANIMAL_WILD_NON_GAME	0	0.0%
BRIDGE_OVERHEAD_STRUCTURE	2	0.4%
BRIDGE_RAIL	0	0.0%
CABLE_TRAFFIC_BARRIER	0	0.0%
CARGO_EQUIPMENT_LOSS_SHIFT	8	1.4%
CONCRETE_TRAFFIC_BARRIER	74	13.2%
CURB	0	0.0%
CULVERT	1	0.2%
DITCH	0	0.0%
EMBANKMENT	2	0.4%
EQUIPMENT_FAILURE	0	0.0%
FELL_JUMPED_FROM_VEHICLE	0	0.0%
FENCE	2	0.4%
FIRE_EXPLOSION	6	1.1%
GUARDRAIL_END	1	0.2%
GUARDRAIL_FACE	1	0.2%
IMPACT_ATTENUATOR_CRASH_CUSHION	1	0.2%
JACKKNIFE	0	0.0%
MOTOR_VEHICLE_IN_TRANSPORT	381	68.2%
Not Reported	0	0.0%
OTHER_FIXED_OBJECT	1	0.2%
OTHER_NON_COLLISION	3	0.5%
OTHER_NON_FIXED_OBJECT	45	8.1%
OTHER_POST_POLE_OR_SUPPORT	0	0.0%
OTHER_TRAFFIC_BARRIER	1	0.2%
OVERTURN_ROLLOVER	8	1.4%
PARKED_MOTOR_VEHICLE	3	0.5%
PEDESTRIAN	2	0.4%
RAILWAY_VEHICLE_TRAIN_ENGINE	0	0.0%
RAN_OFF_ROAD_LEFT	0	0.0%
RAN_OFF_ROAD_RIGHT	0	0.0%
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	0	0.0%
THROWN_OR_FALLING_OBJECT	1	0.2%
TRAFFIC_SIGN_SUPPORT	5	0.9%
TRAFFIC_SIGNAL_SUPPORT	2	0.4%
TREE_BUSH_STUMP_STANDING	6	1.1%
UNKNOWN	0	0.0%
UTILITY_POLE_LIGHT_SUPPORT	1	0.2%
WORK_ZONE_MAINTENANCE_EQUIPMENT	1	0.2%
Totals	559	100.0%

SR 101L,
Princess Drive to Raintree Drive

Appendix A
Crash Analysis

Crashes by Severity

NO_INJURY	365	65.3%
POSSIBLE_INJURY	83	14.8%
NON_INCAPACITATING_INJURY	92	16.5%
INCAPACITATING_INJURY	15	2.7%
Unknown	0	0.0%
FATAL	4	0.7%
TOTAL	559	100.0%

Crashes by Lighting Condition

DARK_LIGHTED	139	24.9%
DARK_NOT_LIGHTED	4	0.7%
DARK_UNKNOWN_LIGHTING	0	0.0%
DAWN	5	0.9%
DAYLIGHT	391	69.9%
DUSK	20	3.6%
Not Reported	0	0.0%
TOTAL	559	100.0%

Crashes by Type for Motor Vehicle in Transport as 1st Harmful Event

MOTOR_VEHICLE_IN_TRANSPORT		
ANGLE (front to side)(other than left turn)	21	5.5%
HEAD_ON	5	1.3%
LEFT_TURN	0	0.0%
REAR_END	242	63.5%
OTHER	9	2.4%
REAR_TO_REAR	2	0.5%
REAR_TO_SIDE	0	0.0%
SIDESWIPE_OPPOSITE_DIRECTION	0	0.0%
SIDESWIPE_SAME_DIRECTION	102	26.8%
SINGLE VEHICLE	0	0.0%
UNKNOWN	0	0.0%
Total	381	100.0%

SR 101L,
Princess Drive to Raintree Drive

Appendix A
Crash Analysis

Crash Rate Calculations

N = 5 years

YEARS 2010-2014 (Eastbound)

	AADT	No. of Crashes	Segment Length (miles)	Accident Rate
MP35.55 (Hayden Rd) to MP36.59 (Princess Dr - Pima Rd)	66,100	49	1.0	0.39
MP36.59 (Princess Dr - Pima Rd) to MP37.80 (Frank Lloyd Wright Blvd)	67,400	57	1.2	0.38
MP37.80 (Frank Lloyd Wright Blvd) to MP38.59 (Raintree Dr)	68,100	35	0.8	0.36
MP38.59 (Raintree Dr) to MP40.08 (Cactus Rd)	75,800	172	1.5	0.83
TOTAL		313		

N = 5 years

YEARS 2010-2014 (Westbound)

	AADT	No. of Crashes	Segment Length (miles)	Accident Rate
MP35.55 (Hayden Rd) to MP36.59 (Princess Dr - Pima Rd)	66,100	64	1.0	0.51
MP36.59 (Princess Dr - Pima Rd) to MP37.80 (Frank Lloyd Wright Blvd)	67,400	69	1.2	0.46
MP37.80 (Frank Lloyd Wright Blvd) to MP38.59 (Raintree Dr)	68,100	17	0.8	0.17
MP38.59 (Raintree Dr) to MP40.08 (Cactus Rd)	75,800	96	1.5	0.47
TOTAL		246		

Description:	2014 Existing
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Eastbound/Southbound								
2	Hayden Road Off Ramp to Hayden Road On Ramp			5260	5274	0.3%	30	60.1	D
8	Hayden On Ramp 1		610		617	1.2%	11	55.4	B
9	Hayden On Ramp 2		610		615	0.8%	10	59.0	A
117	Hayden Road On Ramp to Princess Drive Off Ramp			5870	5885	0.3%	24	61.6	C
12	Princess Drive Off Ramp 1	920			920	0.0%	17	55.6	B
12	Princess Drive Off Ramp 2	920			920	0.0%	17	55.6	B
11	Princess Drive Off Ramp to Princess Drive On Ramp			4990	4964	-0.5%	25	65.5	C
16	Princess Drive On Ramp 1		1620		1361	-17.3%	26	52.5	D
17	Princess Drive On Ramp 2		1620		1361	-17.4%	25	54.2	C
119	Princess Drive On Ramp to Frank Lloyd Wright Blvd Off Ramp			6650	6320	-5.1%	25	63.8	C
19	Frank Lloyd Wright Blvd Off Ramp 1	910			879	-3.4%	15	58.8	B
122	Frank Lloyd Wright Blvd Off Ramp 2	910			846	-7.3%	15	56.9	B
121	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr Off Ramp			5950	5444	-8.9%	21	64.2	C
23	Raintree Dr Off Ramp 1	1160			1127	-2.9%	20	56.6	C
162	Raintree Dr Off Ramp 2	1160			1116	-3.9%	21	53.3	C
24	Raintree Dr Off Ramp to Frank Lloyd Wright Blvd On Ramp			4590	4313	-6.2%	22	64.3	C
27	Frank Lloyd Wright Blvd On Ramp 1		920		917	-0.4%	16	57.0	B
28	Frank Lloyd Wright Blvd On Ramp 2		920		883	-4.2%	15	57.6	B
170	Frank Lloyd Wright Blvd On Ramp to Raintree Dr On Ramp			5560	5238	-6.0%	20	66.4	C
31	Raintree Dr On Ramp 1		900		879	-2.3%	16	54.0	B
32	Raintree Dr On Ramp 2		900		881	-2.1%	20	45.0	C
189	Raintree Dr On Ramp to Cactus Road Off Ramp			6340	6132	-3.3%	19	65.5	C

Description:	2014 Existing
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Northbound/Westbound								
35	Cactus Road On Ramp to Raintree Dr Off Ramp			5700	5683	-0.3%	28	40.5	D
36	Raintree Dr Off Ramp 1	1200			1194	-0.5%	25	50.4	C
36	Raintree Dr Off Ramp 2	1200			1194	-0.5%	25	50.4	C
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			4590	4480	-2.4%	18	62.6	B
42	Frank Lloyd Wright Blvd Off Ramp 1	1370			1369	-0.1%	24	57.9	C
202	Frank Lloyd Wright Blvd Off Ramp 2	1370			1353	-1.3%	24	55.5	C
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			3500	3125	-11.3%	16	66.7	B
46	Raintree Dr On Ramp 1		420		407	-3.2%	7	59.0	A
47	Raintree Dr On Ramp 2		420		411	-2.1%	7	59.0	A
211	Raintree Dr On Ramp to Frank Lloyd Wright Blvd On Ramp			3670	3538	-3.7%	13	67.4	B
51	Frank Lloyd Wright Blvd On Ramp 1		940		904	-3.9%	17	54.3	B
52	Frank Lloyd Wright Blvd On Ramp 2		940		917	-2.5%	16	57.2	B
214	Frank Lloyd Wright Blvd On Ramp to Princess Drive Off Ramp			4840	4461	-8.1%	17	64.8	B
54	Princess Drive Off Ramp 1	1250			1249	-0.1%	20	62.3	C
216	Princess Drive Off Ramp 2	1250			1240	-0.8%	24	51.8	C
53	Princess Drive Off Ramp to Princess Drive On Ramp			3580	3217	-10.7%	16	67.0	B
58	Princess Drive On Ramp 1		860		762	-12.1%	17	46.1	B
59	Princess Drive On Ramp 2		860		748	-13.9%	16	47.9	B
220	Princess Drive On Ramp to Hayden Road Off Ramp			4430	3982	-10.6%	15	65.4	B
62	Hayden Road Off Ramp 1	360			357	-0.8%	6	60.6	A
67	Hayden Road Off Ramp 2	360			345	-4.3%	6	58.9	A
61	Hayden Road Off Ramp to Hayden On Ramp			3970	3630	-8.9%	18	66.7	C

Description:	2014 Existing
Route:	SR 101L, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Eastbound/Southbound								
2	Hayden Road Off Ramp to Hayden Road On Ramp			3860	3874	0.4%	21	62.1	C
8	Hayden On Ramp 1		380		384	1.1%	7	55.4	A
9	Hayden On Ramp 2		380		383	0.9%	6	59.4	A
117	Hayden Road On Ramp to Princess Drive Off Ramp			4190	4256	1.6%	17	61.8	B
12	Princess Drive Off Ramp 1	650			660	1.5%	12	57.1	B
12	Princess Drive Off Ramp 2	650			660	1.5%	12	57.1	B
11	Princess Drive Off Ramp to Princess Drive On Ramp			3520	3587	1.9%	18	66.4	C
16	Princess Drive On Ramp 1		1440		1428	-0.9%	27	52.6	D
17	Princess Drive On Ramp 2		1440		1431	-0.7%	26	54.4	D
119	Princess Drive On Ramp to Frank Lloyd Wright Blvd Off Ramp			4930	5014	1.7%	19	64.9	C
19	Frank Lloyd Wright Blvd Off Ramp 1	880			876	-0.4%	15	58.7	B
122	Frank Lloyd Wright Blvd Off Ramp 2	880			841	-4.5%	16	53.9	B
121	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr Off Ramp			4180	4144	-0.9%	16	66.4	B
23	Raintree Dr Off Ramp 1	550			553	0.5%	9	59.2	A
162	Raintree Dr Off Ramp 2	550			547	-0.5%	10	55.1	A
24	Raintree Dr Off Ramp to Frank Lloyd Wright Blvd On Ramp			3360	3592	6.7%	18	66.5	C
27	Frank Lloyd Wright Blvd On Ramp 1		1300		1213	-6.9%	21	56.6	C
28	Frank Lloyd Wright Blvd On Ramp 2		1300		1166	-10.9%	21	56.8	C
170	Frank Lloyd Wright Blvd On Ramp to Raintree Dr On Ramp			4700	4804	2.2%	18	66.5	C
31	Raintree Dr On Ramp 1		1310		1069	-20.3%	20	54.1	C
32	Raintree Dr On Ramp 2		1310		1071	-20.0%	22	48.9	C
189	Raintree Dr On Ramp to Cactus Road Off Ramp			5710	5888	3.1%	18	65.8	B

Description:	2014 Existing
Route:	SR 101L, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Northbound/Westbound								
35	Cactus Road On Ramp to Raintree Dr Off Ramp			6080	6668	9.2%	34	39.9	D
36	Raintree Dr Off Ramp 1	1050			1074	2.3%	19	55.3	C
36	Raintree Dr Off Ramp 2	1050			1074	2.3%	19	55.3	C
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			5200	5576	7.0%	24	59.4	C
42	Frank Lloyd Wright Blvd Off Ramp 1	1010			1035	2.4%	18	58.5	B
202	Frank Lloyd Wright Blvd Off Ramp 2	1010			1022	1.2%	18	56.4	C
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			4850	4561	-6.1%	23	64.9	C
46	Raintree Dr On Ramp 1		920		672	-31.2%	11	58.5	B
47	Raintree Dr On Ramp 2		920		680	-30.0%	12	57.9	B
211	Raintree Dr On Ramp to Frank Lloyd Wright Blvd On Ramp			5160	5247	1.7%	20	66.5	C
51	Frank Lloyd Wright Blvd On Ramp 1		980		916	-6.8%	17	53.7	B
52	Frank Lloyd Wright Blvd On Ramp 2		980		929	-5.4%	29	45.9	D
214	Frank Lloyd Wright Blvd On Ramp to Princess Drive Off Ramp			6700	6177	-8.1%	26	59.3	D
54	Princess Drive Off Ramp 1	1550			1518	-2.1%	33	48.1	D
216	Princess Drive Off Ramp 2	1550			813	-62.4%	91	18.2	F
53	Princess Drive Off Ramp to Princess Drive On Ramp			5080	4660	-8.6%	24	65.0	C
58	Princess Drive On Ramp 1		1340		1289	-3.9%	35	37.0	E
59	Princess Drive On Ramp 2		1340		1289	-3.9%	40	32.4	E
220	Princess Drive On Ramp to Hayden Road Off Ramp			6360	5966	-6.4%	25	60.1	C
62	Hayden Road Off Ramp 1	720			704	-2.3%	12	59.6	B
67	Hayden Road Off Ramp 2	720			678	-6.1%	12	58.2	B
61	Hayden Road Off Ramp to Hayden On Ramp			5290	5265	-0.5%	27	64.1	D

Description:	2035 No-Build								
Route:	SR 101, Princess to Raintree								
Direction:									
Link No.	**Link Description**	**Volume (vph)**		**Calculated**	**Average VISSIM Output**				
		Exit Ramp	**Entr. Ramp**	**Gen. Purpose**	**Volume**	**% Difference**	**Density**	**Speed**	**LOS**
	Eastbound/Southbound								
2	Hayden Road Off Ramp to Hayden Road On Ramp			7160	6468	-10.1%	72	23.1	F
8	Hayden On Ramp 1		810		814	0.4%	19	49.3	C
9	Hayden On Ramp 2		810		811	0.1%	51	26.7	F
117	Hayden Road On Ramp to Princess Drive Off Ramp			7970	6969	-13.4%	77	18.5	F
12	Princess Drive Off Ramp 1	1080			944	-13.5%	77	18.8	F
12	Princess Drive Off Ramp 2	1080			944	-13.5%	77	18.8	F
11	Princess Drive Off Ramp to Princess Drive On Ramp			6930	5855	-16.8%	93	16.2	F
16	Princess Drive On Ramp 1		1750		667	-89.7%	252	2.7	F
17	Princess Drive On Ramp 2		1750		604	-97.4%	312	2.0	F
119	Princess Drive On Ramp to Frank Lloyd Wright Blvd Off Ramp			8720	6217	-33.5%	92	13.7	F
19	Frank Lloyd Wright Blvd Off Ramp 1	1160			715	-47.5%	138	5.2	F
122	Frank Lloyd Wright Blvd Off Ramp 2	1160			669	-53.7%	161	4.2	F
121	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr Off Ramp			7690	5423	-34.6%	23	47.1	C
23	Raintree Dr Off Ramp 1	1400			1036	-29.9%	19	53.9	C
162	Raintree Dr Off Ramp 2	1400			1025	-30.9%	19	53.3	C
24	Raintree Dr Off Ramp to Frank Lloyd Wright Blvd On Ramp			6170	4434	-32.7%	22	50.5	C
27	Frank Lloyd Wright Blvd On Ramp 1		1100		946	-15.0%	17	56.6	B
28	Frank Lloyd Wright Blvd On Ramp 2		1100		927	-17.1%	17	55.5	B
170	Frank Lloyd Wright Blvd On Ramp to Raintree Dr On Ramp			7240	5421	-28.7%	20	53.8	C
31	Raintree Dr On Ramp 1		1000		876	-13.2%	16	54.2	B
32	Raintree Dr On Ramp 2		1000		892	-11.5%	19	47.3	C
189	Raintree Dr On Ramp to Cactus Road Off Ramp			8090	6326	-24.5%	26	49.2	C

Description:	2035 No-Build								
Route:	SR 101, Princess to Raintree								
Direction:									
Link No.	**Link Description**	**Volume (vph)**		**Calculated**	**Average VISSIM Output**				
		Exit Ramp	**Entr. Ramp**	**Gen. Purpose**	**Volume**	**% Difference**	**Density**	**Speed**	**LOS**
	Northbound/Westbound								
35	Cactus Road On Ramp to Raintree Dr Off Ramp			6450	6423	-0.4%	38	35.3	E
36	Raintree Dr Off Ramp 1	1380			1320	-4.4%	77	19.4	F
36	Raintree Dr Off Ramp 2	1380			1320	-4.4%	77	19.4	F
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			5170	5027	-2.8%	21	60.8	C
42	Frank Lloyd Wright Blvd Off Ramp 1	1500			1500	0.0%	27	55.0	D
202	Frank Lloyd Wright Blvd Off Ramp 2	1500			1482	-1.2%	27	55.7	D
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			3880	3541	-9.1%	13	66.4	B
46	Raintree Dr On Ramp 1		600		548	-9.1%	9	58.8	A
47	Raintree Dr On Ramp 2		600		540	-10.5%	9	58.1	A
211	Raintree Dr On Ramp to Frank Lloyd Wright Blvd On Ramp			4360	4094	-6.3%	16	65.5	B
51	Frank Lloyd Wright Blvd On Ramp 1		1200		1070	-11.4%	20	54.1	C
52	Frank Lloyd Wright Blvd On Ramp 2		1200		1079	-10.6%	19	57.1	C
214	Frank Lloyd Wright Blvd On Ramp to Princess Drive Off Ramp			5730	5193	-9.8%	16	64.7	B
54	Princess Drive Off Ramp 1	1380			1304	-5.7%	21	62.3	C
216	Princess Drive Off Ramp 2	1380			1325	-4.1%	36	42.7	E
53	Princess Drive Off Ramp to Princess Drive On Ramp			4350	3856	-12.0%	15	66.1	B
58	Princess Drive On Ramp 1		1000		601	-49.9%	13	46.0	B
59	Princess Drive On Ramp 2		1000		536	-60.3%	11	48.0	B
220	Princess Drive On Ramp to Hayden Road Off Ramp			5350	4469	-17.9%	14	65.6	B
62	Hayden Road Off Ramp 1	520			472	-9.7%	8	60.7	A
67	Hayden Road Off Ramp 2	520			455	-13.3%	8	58.7	A
61	Hayden Road Off Ramp to Hayden On Ramp			4650	4009	-14.8%	15	66.1	B

Description:	2035 No-Build
Route:	SR 101L, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Eastbound/Southbound								
2	Hayden Road Off Ramp to Hayden Road On Ramp			5670	5669	0.0%	28	50.5	D
8	Hayden On Ramp 1		600		605	0.8%	11	55.4	B
9	Hayden On Ramp 2		600		609	1.5%	10	58.9	A
117	Hayden Road On Ramp to Princess Drive Off Ramp			6240	6245	0.1%	31	41.2	D
12	Princess Drive Off Ramp 1	900			891	-1.0%	58	22.1	F
12	Princess Drive Off Ramp 2	900			891	-1.0%	58	22.1	F
11	Princess Drive Off Ramp to Princess Drive On Ramp			5340	5365	0.5%	27	49.9	D
16	Princess Drive On Ramp 1		1690		1532	-9.8%	30	51.4	D
17	Princess Drive On Ramp 2		1690		1543	-9.1%	46	33.8	F
119	Princess Drive On Ramp to Frank Lloyd Wright Blvd Off Ramp			7020	6892	-1.8%	28	48.4	D
19	Frank Lloyd Wright Blvd Off Ramp 1	1150			1079	-6.4%	31	39.6	D
122	Frank Lloyd Wright Blvd Off Ramp 2	1150			1030	-11.0%	67	15.4	F
121	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr Off Ramp			5920	5814	-1.8%	23	50.7	C
23	Raintree Dr Off Ramp 1	700			692	-1.2%	12	56.3	B
162	Raintree Dr Off Ramp 2	700			685	-2.2%	13	54.5	B
24	Raintree Dr Off Ramp to Frank Lloyd Wright Blvd On Ramp			5070	5130	1.2%	25	51.6	C
27	Frank Lloyd Wright Blvd On Ramp 1		1520		1175	-25.6%	21	56.4	C
28	Frank Lloyd Wright Blvd On Ramp 2		1520		1151	-27.6%	21	56.2	C
170	Frank Lloyd Wright Blvd On Ramp to Raintree Dr On Ramp			6620	6311	-4.8%	23	54.6	C
31	Raintree Dr On Ramp 1		1470		1062	-32.2%	20	53.7	C
32	Raintree Dr On Ramp 2		1470		1069	-31.6%	27	39.8	D
189	Raintree Dr On Ramp to Cactus Road Off Ramp			7800	7345	-6.0%	42	36.6	E

Description:	2035 No-Build
Route:	SR 101L, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Northbound/Westbound								
35	Cactus Road On Ramp to Raintree Dr Off Ramp			8160	8315	1.9%	51	33.5	F
36	Raintree Dr Off Ramp 1	1200			1175	-2.1%	38	41.9	E
36	Raintree Dr Off Ramp 2	1200			1175	-2.1%	38	41.9	E
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			7130	7096	-0.5%	36	50.6	E
42	Frank Lloyd Wright Blvd Off Ramp 1	1200			1156	-3.8%	21	55.4	C
202	Frank Lloyd Wright Blvd Off Ramp 2	1200			1144	-4.8%	20	56.5	C
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			6260	5771	-8.1%	47	38.1	F
46	Raintree Dr On Ramp 1		1220		776	-44.4%	21	45.5	C
47	Raintree Dr On Ramp 2		1220		769	-45.4%	86	15.2	F
211	Raintree Dr On Ramp to Frank Lloyd Wright Blvd On Ramp			7200	6285	-13.6%	80	18.2	F
51	Frank Lloyd Wright Blvd On Ramp 1		1280		1008	-23.8%	106	15.8	F
52	Frank Lloyd Wright Blvd On Ramp 2		1280		989	-25.7%	145	11.2	F
214	Frank Lloyd Wright Blvd On Ramp to Princess Drive Off Ramp			8760	7139	-20.4%	48	30.2	F
54	Princess Drive Off Ramp 1	1810			1362	-28.3%	90	15.2	F
216	Princess Drive Off Ramp 2	1810			747	-83.2%	119	15.6	F
53	Princess Drive Off Ramp to Princess Drive On Ramp			6950	5659	-20.5%	23	62.9	C
58	Princess Drive On Ramp 1		1450		1284	-12.2%	38	33.9	E
59	Princess Drive On Ramp 2		1450		1291	-11.6%	46	28.4	F
220	Princess Drive On Ramp to Hayden Road Off Ramp			8200	6963	-16.3%	22	62.2	C
62	Hayden Road Off Ramp 1	1150			682	-51.0%	11	60.2	B
67	Hayden Road Off Ramp 2	1150			659	-54.2%	11	58.2	B
61	Hayden Road Off Ramp to Hayden On Ramp			6950	6297	-9.9%	24	65.3	C

Description:	2035 Build Alternative 1
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Eastbound/Southbound								
2	Hayden Road Off Ramp to Hayden Road On Ramp			6820	6821	0.0%	36	48.0	E
8	Hayden On Ramp 1		900		901	0.2%	17	53.6	B
117	Hayden Road On Ramp to Princess Drive Off Ramp			7770	7683	-1.1%	48	32.0	F
12	Princess Drive Off Ramp 1	720			712	-1.1%	14	51.0	B
11	Princess Drive Off Ramp to Bell Road Off Ramp			7100	6925	-2.5%	41	42.1	E
10089	Bell Road Off Ramp 1	960			949	-1.1%	22	42.9	C
227	Bell Road Off Ramp to Princess Drive On Ramp			6170	6063	-1.7%	32	48.0	D
17	Princess Drive On Ramp 1		2210		1806	-20.1%	200	9.1	F
121	Princess Drive On Ramp to Bell Road On ramp			8410	7893	-6.3%	36	43.4	E
94	Bell Road On Ramp 1		520		489	-6.2%	11	44.2	B
228	Bell Road On Ramp to Raintree Drive Off Ramp			8900	8361	-6.2%	42	39.7	E
23	Raintree Drive Off Ramp 1	1490			1393	-6.7%	26	52.8	D
24	Raintree Drive Off Ramp to Frank Lloyd Wright On Ramp			7380	6970	-5.7%	37	46.9	D
28	Frank Lloyd Wright On Ramp 1		580		546	-6.1%	9	57.9	A
170	Frank Lloyd Wright On Ramp to Rantree Drive On Ramp			7910	7531	-4.9%	29	51.1	D
31	Raintree Drive On Ramp 1		950		754	-23.0%	15	50.9	B
224	Raintree Drive On Ramp to Cactus Road Off Ramp			8840	8288	-6.4%	35	47.4	D

SR 101L,
Princess to Raintree

VISSIM Output
Freeway and Ramps
AM Peak Hour

Description:	2035 Build Alternative 1
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Northbound/Westbound								
35	Cactus Road On Ramp to Raintree Dr Off Ramp			6550	6353	-3.1%	64	21.0	F
36	Raintree Dr Off Ramp 1	1330			1195	-10.7%	100	12.1	F
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			5270	5008	-5.1%	21	58.8	C
42	Frank Lloyd Wright Blvd Off Ramp 1	770			725	-6.1%	12	58.9	B
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			4540	4291	-5.6%	16	66.6	B
46	Raintree Dr On Ramp 1		600		527	-12.9%	9	58.5	A
211	Raintree Drive On ramp to Bell Road Off Ramp			5190	4775	-8.3%	16	60.1	B
89	Bell Road Off Ramp 1	550			519	-5.9%	9	55.8	A
214	Bell Road Off Ramp to Princess Drive Off Ramp			4650	4260	-8.8%	13	66.3	B
54	Princess Drive Off Ramp 1	1530			1446	-5.6%	24	59.8	C
53	Princess Drive Off Ramp to Bell Road On Ramp			3140	2819	-10.8%	10	67.6	A
10077	Bell Road On Ramp 1		1100		1021	-7.5%	21	48.8	C
226	Bell Road On Ramp to Princess Drive On Ramp			4240	3820	-10.4%	12	61.3	B
59	Princess Drive On Ramp 1		570		436	-26.6%	7	61.2	A
220	Princess Drive On Ramp to Hayden Road Off Ramp			4800	4281	-11.4%	13	66.9	B
62	Hayden Road Off Ramp 1	520			476	-8.9%	8	61.1	A
61	Hayden Road Off Ramp to Hayden On Ramp			4270	3805	-11.5%	14	67.1	B

Description:	2035 Build Alternative 1
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Eastbound/Southbound								
2	Hayden Road Off Ramp to Hayden Road On Ramp			5670	5664	-0.1%	28	50.2	D
8	Hayden On Ramp 1		630		630	0.0%	12	53.8	B
117	Hayden Road On Ramp to Princess Drive Off Ramp			6310	6262	-0.8%	31	41.0	D
12	Princess Drive Off Ramp 1	560			548	-2.2%	10	53.5	A
11	Princess Drive Off Ramp to Bell Road Off Ramp			5750	5646	-1.8%	32	44.5	D
10089	Bell Road Off Ramp 1	1100			1095	-0.4%	27	40.5	D
227	Bell Road Off Ramp to Princess Drive On Ramp			4640	4647	0.2%	23	50.8	C
17	Princess Drive On Ramp 1		1890		1799	-4.9%	206	8.7	F
121	Princess Drive On Ramp to Bell Road On ramp			6510	6465	-0.7%	24	53.5	D
94	Bell Road On Ramp 1		590		470	-22.6%	11	44.5	A
228	Bell Road On Ramp to Raintree Drive Off Ramp			7040	6916	-1.8%	28	49.6	D
23	Raintree Drive Off Ramp 1	740			706	-4.7%	13	56.2	B
24	Raintree Drive Off Ramp to Frank Lloyd Wright On Ramp			6260	6213	-0.8%	31	50.1	D
28	Frank Lloyd Wright On Ramp 1		690		604	-13.3%	10	58.1	A
170	Frank Lloyd Wright On Ramp to Rantree Drive On Ramp			6900	6836	-0.9%	26	53.3	D
31	Raintree Drive On Ramp 1		1340		1039	-25.3%	21	48.9	C
224	Raintree Drive On Ramp to Cactus Road Off Ramp			8200	7878	-4.0%	32	48.9	D

SR 101L,
Princess to Raintree

VISSIM Output
Freeway and Ramps
PM Peak Hour

Description:	2035 Build Alternative 1
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Northbound/Westbound								
35	Cactus Road On Ramp to Raintree Dr Off Ramp			8900	8892	-0.1%	63	28.8	F
36	Raintree Dr Off Ramp 1	1100			1116	1.4%	22	50.1	C
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			7900	7744	-2.0%	40	49.0	E
42	Frank Lloyd Wright Blvd Off Ramp 1	550			547	-0.6%	10	57.3	A
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			7350	7089	-3.6%	53	39.4	F
46	Raintree Dr On Ramp 1		1210		919	-27.4%	16	57.3	B
211	Raintree Drive On ramp to Bell Road Off Ramp			8600	7775	-10.1%	68	25.5	F
89	Bell Road Off Ramp 1	590			538	-9.1%	12	47.1	B
214	Bell Road Off Ramp to Princess Drive Off Ramp			8010	7185	-10.9%	24	60.1	D
54	Princess Drive Off Ramp 1	1970			1767	-10.9%	31	57.1	D
53	Princess Drive Off Ramp to Bell Road On Ramp			6080	5420	-11.5%	21	65.3	C
10077	Bell Road On Ramp 1		1150		922	-22.1%	22	42.6	C
226	Bell Road On Ramp to Princess Drive On Ramp			7250	6310	-13.9%	28	45.8	D
59	Princess Drive On Ramp 1		850		791	-7.2%	14	57.8	B
220	Princess Drive On Ramp to Hayden Road Off Ramp			8120	7143	-12.8%	22	63.7	C
62	Hayden Road Off Ramp 1	1170			1061	-9.7%	18	60.0	B
61	Hayden Road Off Ramp to Hayden On Ramp			6880	6087	-12.2%	23	65.6	C

Description:	2035 Build Alternative 2
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated Mainline		Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Total Traffic (Including HOV)	Volume	% Difference	Density	Speed	LOS
	Eastbound/Southbound									
2	Hayden Road Off Ramp to Hayden Road On Ramp			7160	4260	7043	-1.6%	47	39.0	F
8	Hayden On Ramp 1		810			814	0.5%	15	55.0	B
117	Hayden Road On Ramp to Princess Drive Off Ramp			7970	4640	7630	-4.4%	55	28.5	F
12	Princess Drive Off Ramp 1	1080				1023	-5.4%	85	13.5	F
11	Princess Drive Off Ramp to Princess Drive On Ramp			6930	3990	6473	-6.8%	72	23.6	F
16	Princess Drive On Ramp		1750			886	-65.6%	205	4.7	F
119	Princess Drive On Ramp to Frank Lloyd Wright Off Ramp			8270	5430	7079	-15.5%	71	20.1	F
19	Frank Lloyd Wright Off Ramp	1160				821	-34.3%	120	6.9	F
121	Frank Lloyd Wright Off Ramp to Raintree Off Ramp			7690	4550	6192	-21.6%	27	46.6	D
23	Raintree Off Ramp	1400				1144	-20.1%	22	53.2	C
24	Raintree Off Rampt to Frank Lloyd Write On Ramp			6170	4000	5086	-19.3%	26	49.3	C
27	Frank Lloyd Wright On Ramp		1100			899	-20.1%	16	56.6	B
170	Frank Lloyd Wright On Ramp to Rantree Drive On Ramp			7240	5300	6011	-18.5%	23	52.8	C
31	Raintree Drive On Ramp 1		1000			905	-9.9%	17	54.0	B
224	Raintree Drive On Ramp to Cactus Road Off Ramp			8090	6610	6942	-15.3%	27	51.3	D

Description:	2035 Build Alternative 2
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated Mainline		Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Total Traffic (Including HOV)	Volume	% Difference	Density	Speed	LOS
	Northbound/Westbound									
35	Cactus Road On Ramp to Raintree Dr Off Ramp			6450	7080	6428	-0.3%	38	36.1	E
36	Raintree Dr Off Ramp 1	1380				1353	-2.0%	54	32.5	F
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			5170	6030	5022	-2.9%	21	61.1	C
42	Frank Lloyd Wright Blvd Off Ramp 1	1500				1488	-0.8%	27	55.3	D
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			3880	5020	3553	-8.8%	13	66.5	B
47	Raintree Dr On Ramp 1		600			581	-3.3%	10	57.4	A
211	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			4360	5940	4151	-4.9%	13	65.3	B
225	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			4360	5940	4153	-4.9%	16	65.4	B
52	Frank Lloyd Wright On Ramp		1200			869	-32.0%	15	57.4	B
214	Frank Lloyd Wright On Ramp to Princess Off Ramp			5730	6920	5038	-12.8%	16	64.8	B
54	Princess Drive Off Ramp 1	1380				1268	-8.4%	10	61.1	A
55	Princess Drive Off Ramp to Frontage	1380				1288	-6.9%	27	53.4	D
53	Princess Drive Off Ramp to Princess Drive On Ramp			4350	6710	3738	-15.1%	14	66.0	B
59	Princess Drive On Ramp 1		1000			615	-47.7%	12	49.8	B
220	Princess Drive On Ramp to Hayden Road Off Ramp			5350	6710	4436	-18.7%	14	65.5	B
62	Hayden Road Off Ramp 1	520				457	-13.0%	8	60.6	A
61	Hayden Road Off Ramp to Hayden On Ramp			4650	5990	3989	-15.3%	15	66.0	B

Description:	2035 Build Alternative 2
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated Mainline		Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Total Traffic (Including HOV)	Volume	% Difference	Density	Speed	LOS
	Eastbound/Southbound									
2	Hayden Road Off Ramp to Hayden Road On Ramp			5670	4260	5679	0.2%	28	50.5	D
8	Hayden On Ramp 1		600			602	0.3%	11	55.3	A
117	Hayden Road On Ramp to Princess Drive Off Ramp			6240	4640	6243	0.1%	25	49.8	C
12	Princess Drive Off Ramp 1	900				889	-1.2%	44	27.6	E
11	Princess Drive Off Ramp to Princess Drive On Ramp			5340	3990	5386	0.9%	26	51.1	D
16	Princess Drive On Ramp		1690			1474	-13.6%	31	48.8	D
119	Princess Drive On Ramp to Frank Lloyd Wright Off Ramp			7020	5430	6870	-2.2%	28	48.6	D
19	Frank Lloyd Wright Off Ramp	1100				1052	-4.5%	40	31.9	E
121	Frank Lloyd Wright Off Ramp to Raintree Off Ramp			5970	4550	5814	-2.6%	23	50.9	C
23	Raintree Off Ramp	700				664	-5.3%	12	56.3	B
24	Raintree Off Rampt to Frank Lloyd Write On Ramp			5120	4000	5155	0.7%	25	51.5	C
27	Frank Lloyd Wright On Ramp		1520			1076	-34.2%	19	56.5	C
170	Frank Lloyd Wright On Ramp to Rantree Drive On Ramp			6670	5300	6239	-6.7%	23	54.4	C
31	Raintree Drive On Ramp 1		1470			901	-48.0%	17	54.3	B
224	Raintree Drive On Ramp to Cactus Road Off Ramp			7850	6610	7163	-9.2%	27	52.3	D

Description:	2035 Build Alternative 2
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated Mainline		Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Total Traffic (Including HOV)	Volume	% Difference	Density	Speed	LOS
	Northbound/Westbound									
35	Cactus Road On Ramp to Raintree Dr Off Ramp			8360	7080	8339	-0.3%	46	36.2	F
36	Raintree Dr Off Ramp 1	1200				1210	0.8%	22	54.0	C
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			7330	6030	7104	-3.1%	33	54.6	D
42	Frank Lloyd Wright Blvd Off Ramp 1	1180				1174	-0.5%	21	55.1	C
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			6480	5020	5948	-8.6%	23	63.8	C
46	Raintree Dr On Ramp 1		1220			594	-69.1%	10	58.7	A
211	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			7420	5940	6550	-12.5%	22	59.9	C
225	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			7420	5940	6557	-12.3%	26	62.3	D
52	Frank Lloyd Wright On Ramp		1280			966	-27.9%	18	54.9	B
214	Frank Lloyd Wright On Ramp to Princess Off Ramp			8980	6920	7528	-17.6%	27	57.5	D
54	Princess Drive Off Ramp 1	1740				1499	-14.9%	26	35.7	C
55	Princess Drive Off Ramp to Frontage	1740				1512	-14.0%	154	14.0	F
53	Princess Drive Off Ramp to Princess Drive On Ramp			7240	6710	5980	-19.1%	23	63.9	C
59	Princess Drive On Ramp 1		1450			1096	-27.8%	38	28.9	E
220	Princess Drive On Ramp to Hayden Road Off Ramp			8490	6710	7229	-16.0%	23	61.8	C
62	Hayden Road Off Ramp 1	830				716	-14.7%	12	60.2	B
61	Hayden Road Off Ramp to Hayden On Ramp			7560	5990	6525	-14.7%	25	64.7	C

Description:	2035 Build Alternative 3
Route:	SR 101L, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated Mainline		Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Total Traffic (Including HOV)	Volume	% Difference	Density	Speed	LOS
	Eastbound/Southbound									
2	Hayden Road Off Ramp to Hayden Road On Ramp			7160	4260	7174	0.2%	39	45.9	E
8	Hayden On Ramp 1		810			814	0.5%	15	55.0	B
117	Hayden Road On Ramp to Princess Drive Off Ramp			7970	4640	7907	-0.8%	41	39.4	E
12	Princess Drive Off Ramp 1	1080				1043	-3.5%	83	14.1	F
11	Princess Drive Off Ramp to Princess Drive On Ramp			6930	3990	6880	-0.7%	37	46.1	E
16	Princess Drive On Ramp		1750			1323	-27.8%	13	52.0	B
119	Princess Drive On Ramp to Frank Lloyd Wright Off Ramp			8270	5430	8190	-1.0%	29	47.5	D
19	Frank Lloyd Wright Off Ramp	1160				1076	-7.5%	13	46.8	B
121	Frank Lloyd Wright Off Ramp to Raintree Off Ramp			7690	4550	7125	-7.6%	32	44.9	D
23	Raintree Off Ramp	1400				1313	-6.4%	26	50.9	D
24	Raintree Off Rampt to Frank Lloyd Write On Ramp			6170	4000	5820	-5.8%	30	48.7	D
27	Frank Lloyd Wright On Ramp		1100			997	-9.9%	18	56.1	B
170	Frank Lloyd Wright On Ramp to Rantree Drive On Ramp			7240	5300	6815	-6.0%	26	51.8	D
31	Raintree Drive On Ramp 1		1000			899	-10.6%	17	54.4	B
224	Raintree Drive On Ramp to Cactus Road Off Ramp			8090	6610	7743	-4.4%	31	49.8	D

Description:	2035 Build Alternative 3
Route:	SR 101L, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated Mainline		Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Total Traffic (Including HOV)	Volume	% Difference	Density	Speed	LOS
	Northbound/Westbound									
35	Cactus Road On Ramp to Raintree Dr Off Ramp			6450	7080	6433	-0.3%	37	37.6	E
36	Raintree Dr Off Ramp 1	1380				1373	-0.5%	49	32.9	F
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			5170	6030	5029	-2.8%	22	56.9	C
42	Frank Lloyd Wright Blvd Off Ramp 1	1500				1163	-25.3%	20	57.5	C
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			3880	5020	3560	-8.6%	13	66.9	B
47	Raintree Dr On Ramp 1		600			470	-24.3%	8	57.7	A
211	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			4360	5940	4158	-4.8%	13	64.8	B
225	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			4360	5940	4159	-4.7%	16	65.1	B
52	Frank Lloyd Wright On Ramp		1200			1046	-13.7%	19	56.4	C
214	Frank Lloyd Wright On Ramp to Princess Off Ramp			5730	6920	5225	-9.2%	16	64.2	B
54	Princess Drive Off Ramp 1	1380				1326	-4.0%	11	63.1	A
55	Princess Drive Off Ramp to Frontage	550				448	-20.3%	8	58.6	A
230	Princess Drive Off Ramp to Princess	830				645	-25.1%	12	55.5	B
53	Princess Drive Off Ramp to Princess Drive On Ramp			4350	6710	3885	-11.3%	15	66.0	B
59	Princess Drive On Ramp 1		1000			643	-43.5%	12	53.6	B
220	Princess Drive On Ramp to Hayden Road Off Ramp			5350	6710	4617	-14.7%	14	65.6	B
62	Hayden Road Off Ramp 1	520				475	-9.0%	8	60.5	A
61	Hayden Road Off Ramp to Hayden On Ramp			4650	5990	4144	-11.5%	16	66.0	B

Description:	2035 Build Alternative 3									
Route:	SR 101, Princess to Raintree									
Direction:										
Link No.	**Link Description**	**Volume (vph)**		**Calculated Mainline**		**Average VISSIM Output**				
		Exit Ramp	**Entr. Ramp**	**Gen. Purpose**	**Total Traffic (Including HOV)**	**Volume**	**% Difference**	**Density**	**Speed**	**LOS**
	Eastbound/Southbound									
2	Hayden Road Off Ramp to Hayden Road On Ramp			5670	4260	5679	0.2%	28	50.5	D
8	Hayden On Ramp 1		600			602	0.3%	11	55.3	A
117	Hayden Road On Ramp to Princess Drive Off Ramp			6240	4640	6243	0.1%	25	49.5	C
12	Princess Drive Off Ramp 1	900				888	-1.3%	44	28.1	E
11	Princess Drive Off Ramp to Princess Drive On Ramp			5340	3990	5386	0.9%	26	51.1	D
16	Princess Drive On Ramp		1690			1498	-12.1%	14	53.4	B
119	Princess Drive On Ramp to Frank Lloyd Wright Off Ramp			7020	5430	6890	-1.9%	23	50.8	C
19	Frank Lloyd Wright Off Ramp	1100				1052	-4.5%	23	40.1	C
121	Frank Lloyd Wright Off Ramp to Raintree Off Ramp			5970	4550	5830	-2.4%	23	50.4	C
23	Raintree Off Ramp	700				664	-5.3%	12	55.6	B
24	Raintree Off Rampt to Frank Lloyd Write On Ramp			5120	4000	5169	0.9%	25	51.5	C
27	Frank Lloyd Wright On Ramp		1520			1178	-25.4%	21	56.3	C
170	Frank Lloyd Wright On Ramp to Rantree Drive On Ramp			6670	5300	6353	-4.9%	23	54.3	C
31	Raintree Drive On Ramp 1		1470			1097	-29.0%	20	54.3	C
224	Raintree Drive On Ramp to Cactus Road Off Ramp			7850	6610	7483	-4.8%	29	51.8	D

Description:	2035 Build Alternative 3									
Route:	SR 101, Princess to Raintree									
Direction:										
Link No.	**Link Description**	**Volume (vph)**		**Calculated Mainline**		**Average VISSIM Output**				
		Exit Ramp	**Entr. Ramp**	**Gen. Purpose**	**Total Traffic (Including HOV)**	**Volume**	**% Difference**	**Density**	**Speed**	**LOS**
	Northbound/Westbound									
35	Cactus Road On Ramp to Raintree Dr Off Ramp			8360	7080	7507	-10.8%	93	16.4	F
36	Raintree Dr Off Ramp 1	1200				1020	-16.2%	112	9.3	F
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			7330	6030	6351	-14.3%	32	50.3	D
42	Frank Lloyd Wright Blvd Off Ramp 1	1180				822	-35.7%	14	58.7	B
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			6480	5020	5345	-19.2%	20	65.5	C
47	Raintree Dr On Ramp 1		1220			683	-56.4%	12	57.0	B
211	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			7420	5940	6226	-17.5%	23	55.1	C
225	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			7420	5940	6240	-17.3%	26	60.0	D
52	Frank Lloyd Wright On Ramp		1280			966	-28.0%	17	56.3	B
214	Frank Lloyd Wright On Ramp to Princess Off Ramp			8980	6920	7241	-21.4%	24	61.3	C
54	Princess Drive Off Ramp 1	1740				1478	-16.3%	12	62.4	B
55	Princess Drive Off Ramp to Frontage	600				399	-40.4%	7	59.1	A
230	Princess Drive Off Ramp to Princess	1140				846	-29.6%	16	54.9	B
53	Princess Drive Off Ramp to Princess Drive On Ramp			7240	6710	5761	-22.7%	22	64.5	C
58	Princess Drive On Ramp 1		1450			1309	-10.2%	41	32.9	E
220	Princess Drive On Ramp to Hayden Road Off Ramp			8490	6710	7103	-17.8%	23	61.2	C
62	Hayden Road Off Ramp 1	830				702	-16.7%	12	60.3	B
61	Hayden Road Off Ramp to Hayden On Ramp			7560	5990	6407	-16.5%	25	64.2	C

Description:	2035 Build Alternative 4
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated Mainline		Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Total Traffic (Including HOV)	Volume	% Difference	Density	Speed	LOS
	Eastbound/Southbound									
2	Hayden Road Off Ramp to Hayden Road On Ramp			7160	4260	7182	0.3%	39	46.8	E
8	Hayden On Ramp 1		810			814	0.5%	15	55.2	B
117	Hayden Road On Ramp to Princess Drive Off Ramp			7970	4640	7949	-0.3%	34	46.9	D
12	Princess Drive Off Ramp 1	1080				992	-8.4%	19	51.8	C
11	Princess Drive Off Ramp to Bell Road Off Ramp			5635	3990	6993	21.5%	38	46.4	E
227	Bell Road Off Ramp	305				119	-87.9%	2	51.0	A
81	Bell Road Off Ramp to Princess Drive On Ramp			7325		6865	-6.5%	38	44.8	E
16	Princess Drive On Ramp		1750			351	-133.2%	3	52.8	A
119	Princess Drive On Ramp to Frank Lloyd Wright Off Ramp			8270	5430	7142	-14.6%	25	48.1	C
19	Frank Lloyd Wright Off Ramp	1160				1010	-13.8%	22	43.4	C
121	Frank Lloyd Wright Off Ramp to Raintree Off Ramp			7690	4550	6145	-22.3%	27	45.9	D
23	Raintree Off Ramp	1400				1130	-21.4%	22	51.0	C
24	Raintree Off Rampt to Frank Lloyd Write On Ramp			6170	4000	5010	-20.8%	25	49.5	C
27	Frank Lloyd Wright On Ramp		1100			1019	-7.7%	18	56.2	C
170	Frank Lloyd Wright On Ramp to Rantree Drive On Ramp			7240	5300	6025	-18.3%	23	52.7	C
31	Raintree Drive On Ramp 1		1000			781	-24.6%	15	54.1	B
224	Raintree Drive On Ramp to Cactus Road Off Ramp			8090	6610	6830	-16.9%	26	51.7	D

SR 101L,
Princess to Raintree

VISSIM Output
Freeway and Ramps
AM Peak Hour

Description:	2035 Build Alternative 4
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated Mainline		Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Total Traffic (Including HOV)	Volume	% Difference	Density	Speed	LOS
	Northbound/Westbound									
35	Cactus Road On Ramp to Raintree Dr Off Ramp			6450	7080	4725	-30.9%	132	7.2	F
36	Raintree Dr Off Ramp 1	1380				895	-42.7%	135	6.7	F
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			5170	6030	3663	-34.1%	15	59.7	B
42	Frank Lloyd Wright Blvd Off Ramp 1	1500				1085	-32.1%	19	57.1	C
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			3880	5020	2611	-39.1%	10	67.1	A
47	Raintree Dr On Ramp 1		600			485	-21.1%	8	57.9	A
211	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			4360	5940	3130	-32.9%	10	65.6	A
225	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			4360	5940	3132	-32.8%	12	65.8	B
52	Frank Lloyd Wright On Ramp		1200			1152	-4.1%	20	56.9	C
214	Frank Lloyd Wright On Ramp to Princess Off Ramp			5730	6920	4316	-28.2%	13	64.7	B
54	Princess Drive Off Ramp 1	1380				1226	-11.8%	10	60.1	A
53	Princess Drive Off Ramp to Bell Road On Ramp			9545		3081	-102.4%	12	66.2	B
74	Bell Road On Ramp		575			166	-110.3%	4	45.1	A
85	Bell Road On Ramp to Princess Drive On Ramp			7805	6710	3258	-82.2%	13	64.0	B
59	Princess Drive On Ramp 1		1000			736	-30.4%	14	53.4	B
220	Princess Drive On Ramp to Hayden Road Off Ramp			5350	6710	4096	-26.6%	13	63.5	B
62	Hayden Road Off Ramp 1	520				419	-21.6%	7	60.8	A
61	Hayden Road Off Ramp to Hayden On Ramp			4650	5990	3693	-22.9%	14	64.2	B

Description:	2035 Build Alternative 4
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated Mainline		Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Total Traffic (Including HOV)	Volume	% Difference	Density	Speed	LOS
	Eastbound/Southbound									
2	Hayden Road Off Ramp to Hayden Road On Ramp			5670	4260	5679	0.2%	28	50.5	D
8	Hayden On Ramp 1		600			602	0.3%	11	55.3	A
117	Hayden Road On Ramp to Princess Drive Off Ramp			6240	4640	6244	0.1%	24	51.1	C
12	Princess Drive Off Ramp 1	605				593	-2.0%	11	55.3	A
11	Princess Drive Off Ramp to Bell Road Off Ramp			5635	3990	5680	0.8%	29	49.5	D
227	Bell Road Off Ramp	305				262	-15.3%	42	14.5	E
81	Bell Road Off Ramp to Princess Drive On Ramp			7325		5367	-30.8%	27	49.5	D
16	Princess Drive On Ramp		1690			813	-70.1%	8	51.8	A
119	Princess Drive On Ramp to Frank Lloyd Wright Off Ramp			7010	5430	5966	-16.1%	19	51.1	C
19	Frank Lloyd Wright Off Ramp	1090				1005	-8.1%	11	48.0	B
121	Frank Lloyd Wright Off Ramp to Raintree Off Ramp			5970	4550	4973	-18.2%	20	50.7	C
23	Raintree Off Ramp	700				577	-19.3%	11	54.5	A
24	Raintree Off Rampt to Frank Lloyd Write On Ramp			5120	4000	4404	-15.0%	21	52.5	C
27	Frank Lloyd Wright On Ramp		1520			1121	-30.2%	20	56.1	C
170	Frank Lloyd Wright On Ramp to Rantree Drive On Ramp			6670	5300	5531	-18.7%	20	55.2	C
31	Raintree Drive On Ramp 1		1470			1061	-32.3%	20	54.3	C
224	Raintree Drive On Ramp to Cactus Road Off Ramp			7850	6610	6615	-17.1%	25	53.8	C

SR 101L,
Princess to Raintree

VISSIM Output
Freeway and Ramps
PM Peak Hour

Description:	2035 Build Alternative 4
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated Mainline		Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Total Traffic (Including HOV)	Volume	% Difference	Density	Speed	LOS
	Northbound/Westbound									
35	Cactus Road On Ramp to Raintree Dr Off Ramp			8360	7080	8280	-1.0%	51	33.7	F
36	Raintree Dr Off Ramp 1	1200				1184	-1.4%	46	35.4	F
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			7330	6030	7044	-4.0%	32	54.7	D
42	Frank Lloyd Wright Blvd Off Ramp 1	1180				1165	-1.3%	21	55.2	C
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			6480	5020	5863	-10.0%	32	53.3	D
47	Raintree Dr On Ramp 1		1220			761	-46.4%	51	31.5	F
211	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			7420	5940	6516	-13.0%	64	23.6	F
225	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			7420	5940	6480	-13.5%	74	23.3	F
52	Frank Lloyd Wright On Ramp		1270			1195	-6.1%	149	9.4	F
214	Frank Lloyd Wright On Ramp to Princess Off Ramp			8970	6920	7602	-16.5%	46	33.2	F
54	Princess Drive Off Ramp 1	1740				1673	-3.9%	80	21.2	F
53	Princess Drive Off Ramp to Bell Road On Ramp			7230		5885	-20.5%	24	62.6	C
74	Bell Road On Ramp		575			548	-4.7%	12	44.7	B
85	Bell Road On Ramp to Princess Drive On Ramp			7805	6710	6449	-19.0%	28	57.2	D
59	Princess Drive On Ramp 1		875			761	-13.9%	14	55.1	B
220	Princess Drive On Ramp to Hayden Road Off Ramp			8490	6710	7312	-14.9%	26	57.2	C
62	Hayden Road Off Ramp 1	830				723	-13.7%	12	60.1	B
61	Hayden Road Off Ramp to Hayden On Ramp			7560	5990	6617	-13.3%	29	57.5	D

MAG Route: Direction:	Recommended Build Alternative SR 101, Princess to Raintree								
Link No.	**Link Description**	**Volume (vph)**		**Calculated**	**Average VISSIM Output**				
		Exit Ramp	**Entr. Ramp**	**Gen. Purpose**	**Volume**	**% Difference**	**Density**	**Speed**	**LOS**
	Eastbound/Southbound								
2	Hayden Road Off Ramp to Hayden Road On Ramp			7160	7166	0.1%	40	45.3	E
8	Hayden On Ramp 1		810		814	0.5%	15	55.1	B
117	Hayden Road On Ramp to Princess Drive Off Ramp			7970	7899	-0.9%	42	38.3	E
12	Princess Drive Off Ramp 1	1080			1042	-3.6%	86	13.1	F
11	Princess Drive Off Ramp to Princess Drive On Ramp			6930	6876	-0.8%	37	46.0	E
16	Princess Drive On Ramp		1750		1332	-27.1%	13	51.9	B
119	Princess Drive On Ramp to Frank Lloyd Wright Off Ramp			8270	8194	-0.9%	29	47.5	D
19	Frank Lloyd Wright Off Ramp	1160			1076	-7.5%	13	46.2	B
121	Frank Lloyd Wright Off Ramp to Raintree Off Ramp			7690	7127	-7.6%	32	44.9	D
23	Raintree Off Ramp	1400			1313	-6.4%	26	51.6	C
24	Raintree Off Rampt to Frank Lloyd Write On Ramp			6170	5818	-5.9%	30	48.7	D
27	Frank Lloyd Wright On Ramp		1100		1037	-5.9%	18	56.3	C
170	Frank Lloyd Wright On Ramp to Rantree Drive On Ramp			7240	6859	-5.4%	26	51.9	D
31	Raintree Drive On Ramp 1		1000		899	-10.6%	17	54.0	B
224	Raintree Drive On Ramp to Cactus Road Off Ramp			8090	7773	-4.0%	31	49.7	D

MAG Route: Direction:	Recommended Build Alternative SR 101, Princess to Raintree								
Link No.	**Link Description**	**Volume (vph)**		**Calculated**	**Average VISSIM Output**				
		Exit Ramp	**Entr. Ramp**	**Gen. Purpose**	**Volume**	**% Difference**	**Density**	**Speed**	**LOS**
	Northbound/Westbound								
35	Cactus Road On Ramp to Raintree Dr Off Ramp			6450	6437	-0.2%	35	38.1	D
36	Raintree Dr Off Ramp 1	1380			1375	-0.4%	49	35.3	F
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			5170	5029	-2.8%	22	57.4	C
42	Frank Lloyd Wright Blvd Off Ramp 1	1500			1464	-2.5%	25	57.7	C
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			3880	3561	-8.6%	13	66.9	B
47	Raintree Dr On Ramp 1		600		460	-26.5%	8	57.8	A
211	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			4360	4147	-5.0%	13	65.0	B
225	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			4360	4149	-5.0%	16	65.2	B
52	Frank Lloyd Wright On Ramp		1200		1041	-14.2%	18	56.4	C
214	Frank Lloyd Wright On Ramp to Princess Off Ramp			5730	5210	-9.5%	16	64.5	B
54	Princess Drive Off Ramp 1	1380			1322	-4.3%	10	63.2	A
55	Princess Drive Off Ramp to Frontage	550			459	-18.1%	8	58.6	A
230	Princess Drive Off Ramp to Princess	830			635	-26.6%	12	55.5	B
53	Princess Drive Off Ramp to Princess Drive On Ramp			4350	3873	-11.6%	15	66.1	B
59	Princess Drive On Ramp 1		1000		651	-42.3%	12	53.8	B
220	Princess Drive On Ramp to Hayden Road Off Ramp			5350	4614	-14.8%	14	65.6	B
62	Hayden Road Off Ramp 1	520			476	-8.8%	8	60.7	A
61	Hayden Road Off Ramp to Hayden On Ramp			4650	4139	-11.6%	16	66.0	B

Description:	Recommended Build Alternative
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Eastbound/Southbound								
2	Hayden Road Off Ramp to Hayden Road On Ramp			5670	5679	0.2%	28	50.5	D
8	Hayden On Ramp 1		600		602	0.3%	11	55.3	A
117	Hayden Road On Ramp to Princess Drive Off Ramp			6240	6243	0.1%	25	50.4	C
12	Princess Drive Off Ramp 1	900			892	-0.9%	17	53.4	B
11	Princess Drive Off Ramp to Princess Drive On Ramp			5340	5386	0.9%	26	51.1	D
16	Princess Drive On Ramp		1690		1450	-15.3%	14	53.6	B
119	Princess Drive On Ramp to Frank Lloyd Wright Off Ramp			7020	6842	-2.6%	22	51.1	C
19	Frank Lloyd Wright Off Ramp	1100			1050	-4.7%	20	40.8	C
121	Frank Lloyd Wright Off Ramp to Raintree Off Ramp			5970	5791	-3.0%	23	50.7	C
23	Raintree Off Ramp	700			661	-5.8%	12	55.6	B
24	Raintree Off Rampt to Frank Lloyd Write On Ramp			5120	5129	0.2%	25	51.8	C
27	Frank Lloyd Wright On Ramp		1520		1174	-25.7%	21	56.0	C
170	Frank Lloyd Wright On Ramp to Rantree Drive On Ramp			6670	6301	-5.7%	23	54.4	C
31	Raintree Drive On Ramp 1		1470		1025	-35.7%	19	54.0	C
224	Raintree Drive On Ramp to Cactus Road Off Ramp			7850	7352	-6.6%	28	52.1	D

SR 101L,
Princess to Raintree

VISSIM Output
Freeway and Ramps
PM Peak Hour

Description:	Recommended Build Alternative
Route:	SR 101, Princess to Raintree
Direction:	

Link No.	Link Description	Volume (vph)		Calculated	Average VISSIM Output				
		Exit Ramp	Entr. Ramp	Gen. Purpose	Volume	% Difference	Density	Speed	LOS
	Northbound/Westbound								
35	Cactus Road On Ramp to Raintree Dr Off Ramp			8360	8336	-0.3%	51	33.0	F
36	Raintree Dr Off Ramp 1	1200			1208	0.7%	24	51.4	C
37	Raintree Off Ramp to Frank Lloyd Wright Blvd Off Ramp			7330	7094	-3.3%	37	48.6	E
42	Frank Lloyd Wright Blvd Off Ramp 1	1180			1154	-2.2%	20	58.0	C
41	Frank Lloyd Wright Blvd Off Ramp to Raintree Dr On Ramp			6480	5949	-8.5%	23	64.9	C
47	Raintree Dr On Ramp 1		1220		619	-65.4%	11	57.4	A
211	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			7420	6742	-9.6%	25	54.2	C
225	Raintree Drive On Ramp to Frank Lloyd Wright On Ramp			7420	6748	-9.5%	28	59.5	D
52	Frank Lloyd Wright On Ramp		1280		993	-25.3%	18	55.7	B
214	Frank Lloyd Wright On Ramp to Princess Off Ramp			8980	7753	-14.7%	26	60.3	C
54	Princess Drive Off Ramp 1	1740			1575	-9.9%	13	62.2	B
55	Princess Drive Off Ramp to Frontage	600			429	-33.2%	7	59.2	A
230	Princess Drive Off Ramp to Princess	1140			905	-23.0%	17	54.8	B
53	Princess Drive Off Ramp to Princess Drive On Ramp			7240	6171	-15.9%	24	64.3	C
58	Princess Drive On Ramp 1		1450		1368	-5.8%	35	39.2	E
220	Princess Drive On Ramp to Hayden Road Off Ramp			8490	7558	-11.6%	25	60.5	C
62	Hayden Road Off Ramp 1	830			746	-10.7%	12	60.0	B
61	Hayden Road Off Ramp to Hayden On Ramp			7560	6816	-10.4%	27	64.1	D

SR 101L, Princess to Raintree

Existing 2014 AM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	30	6	95	16	B	7.4	A
				TH	1	183	196	449	6	95	5	A		
				RT	1	183	207	66	6	95	3	A		
				Total	1			546			6	A		
			WB	LT	1	192	207	382	24	346	13	B		
				TH	1	192	194	1312	24	340	6	A		
				RT	1	192	208	215	24	340	4	A		
				Total	1			1908			7	A		
			NB	LT	1	203	194	20	3	56	13	B		
				TH	1	203	208	30	2	61	14	B		
				RT	1	203	196	73	0	0	6	A		
				Total	1			123			9	A		
			SB	LT	1	209	196	52	5	86	15	B		
				TH	1	209	207	57	5	87	16	B		
				RT	1	209	194	73	0	0	10	B		
				Total	1			182			13	B		
			Int	Total	1			2759			7	A		
2	Raintree and SR 101L	Signal	EB	LT	2	196	43	182	51	148	55	D	53.2	D
				TH	2	196	198	189	51	148	44	D		
				RT	2	196	30	202	0	0	8	A		
				Total	2			572			35	C		
			WB	LT	2	184	30	606	209	735	70	E		
				TH	2	184	192	481	209	735	66	E		
				RT	2	184	43	191	32	406	30	C		
				Total	2			1278			63	E		
			NB	LT	2	38	192	733	266	858	88	F		
				TH	2	38	43	41	62	673	43	D		
				RT	2	38	198	336	33	496	17	B		
				UT	2	38	30	81	266	858	92	F		
				Total	2			1191			67	E		
			SB	LT	2	5	198	301	77	247	58	E		
				TH	2	5	30	256	101	566	56	E		
				RT	2	5	192	696	106	607	24	C		
				UT	2	5	43	88	77	247	61	E		
				Total	2			1340			40	D		
			Int	Total	2			4381			53	D		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	794	8	179	7	A	9.2	A
				RT	3	265	155	118	0	13	5	A		
				Total	3			912			6	A		
			WB	LT	3	137	155	61	26	242	12	B		
				TH	3	137	159	1785	28	239	10	B		
				Total	3			1846			10	B		
			NB	LT	3	151	159	235	12	112	13	B		
				RT	3	151	265	28	12	112	5	A		
				Total	3			263			12	B		
			SB	LT	3	7	265	14	1	31	12	B		
				TH	3	7	155	10	1	31	15	B		
				RT	3	7	159	2	0	0	8	A		
				Total	3			25			13	B		
			Int	Total	3			3046			9	A		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	507	121	451	68	E	48.6	D
				TH	4	258	261	501	128	452	52	D		
				RT	4	258	128	566	51	429	5	A		
				Total	4			1574			40	D		
			WB	LT	4	252	128	329	104	296	51	D		
				TH	4	252	256	707	104	296	49	D		
				RT	4	252	49	832	0	16	20	B		
				Total	4			1868			37	D		
			NB	LT	4	130	256	716	231	627	82	F		
				TH	4	130	49	502	82	529	48	D		
				RT	4	130	261	75	41	335	29	C		
				UT	4	130	128	53	231	627	91	F		
				Total	4			1346			67	E		
			SB	LT	4	152	261	449	155	488	72	E		
				TH	4	152	128	430	128	461	66	E		
				RT	4	152	256	300	1	101	13	B		
				UT	4	152	49	141	155	488	76	E		
				Total	4			1319			57	E		
			Int	Total	4			6107			49	D		

SR 101L, Princess to Raintree

Existing 2014 AM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	9	39	274	54	D	15.8	B
				TH	5	134	257	1153	38	271	16	B		
				RT	5	134	143	290	0	0	6	A		
				Total	5			1451			14	B		
			WB	LT	5	256	143	333	55	288	41	D		
				TH	5	256	145	1369	55	288	6	A		
				RT	5	256	148	24	55	288	4	A		
				Total	5			1725			13	B		
			NB	LT	5	141	145	230	40	182	42	D		
				TH	5	141	148	4	40	182	35	D		
				RT	5	141	257	247	40	182	15	B		
				Total	5			481			28	C		
			SB	LT	5	149	257	20	4	47	41	D		
				TH	5	149	143	9	3	50	43	D		
				RT	5	149	145	2	0	0	9	A		
				Total	5			30			40	D		
			Int	Total	5			3688			16	B		
6	Bell Road and SR 101L	Signal	EB	LT	6	100	97	7	26	157	48	D	32.7	C
				TH	6	100	108	351	26	157	29	C		
				RT	6	100	111	95	0	0	7	A		
				Total	6			453			25	C		
			WB	LT	6	103	111	252	45	167	67	E		
				TH	6	103	98	303	45	167	22	C		
				RT	6	103	97	276	0	0	7	A		
				Total	6			830			31	C		
			NB	LT	6	105	98	261	51	193	39	D		
				TH	6	105	97	92	51	193	36	D		
				RT	6	105	108	222	7	112	10	B		
				UT	6	105	111	119	51	193	60	E		
				Total	6			693			33	C		
			SB	LT	6	96	108	232	35	222	52	D		
				TH	6	96	111	83	35	222	40	D		
				RT	6	96	98	17	1	67	20	B		
				UT	6	96	97	3	35	222	79	E		
				Total	6			335			47	D		
			Int	Total	6			2311			33	C		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	36	47	168	123	F	121.7	F
				TH	7	72	91	97	47	168	111	F		
				RT	7	72	15	181	0	0	17	B		
				Total	7			315			58	E		
			WB	LT	7	84	15	1065	1518	1674	252	F		
				TH	7	84	86	382	1518	1674	91	F		
				RT	7	84	58	379	1418	1674	44	D		
				Total	7			1827			175	F		
			NB	LT	7	218	86	349	339	941	153	F		
				TH	7	218	58	357	339	941	152	F		
				RT	7	218	91	809	339	941	13	B		
				UT	7	218	15	99	339	941	154	F		
				Total	7			1614			83	F		
			SB	LT	7	14	91	374	209	710	147	F		
				TH	7	14	15	309	209	710	132	F		
				RT	7	14	86	250	14	355	13	B		
				UT	7	14	58	1	209	710	107	F		
				Total	7			935			106	F		
			Int	Total	7			4691			122	F		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	11	0	0	7	A	7.1	A
				Total	8			11			7	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	247	0	0	11	B	11.0	B
				Total	9			247			11	B		
10	Hartford and Southbound Frontage	Stop	EB	RT	10	94	82	19	0	0	6	A	6.2	A
				Total	10			19			6	A		

SR 101L, Princess to Raintree

Existing 2014 PM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	25	947	1060	124	F	88.7	F
				TH	1	183	196	890	942	1053	143	F		
				RT	1	183	207	6	755	862	90	F		
				Total	1			921			142	F		
			WB	LT	1	192	207	33	1	42	13	B		
				TH	1	192	194	840	10	262	3	A		
				RT	1	192	208	250	10	262	2	A		
				Total	1			1122			3	A		
			NB	LT	1	203	194	93	423	616	95	F		
				TH	1	203	208	100	423	615	148	F		
				RT	1	203	196	476	445	637	172	F		
				Total	1			669			158	F		
			SB	LT	1	209	196	193	132	326	113	F		
				TH	1	209	207	31	132	327	70	E		
				RT	1	209	194	67	24	132	38	D		
				Total	1			291			91	F		
			Int	Total	1			3003			89	F		
2	Raintree and SR 101L	Signal	EB	LT	2	10305	43	622	212	433	59	E	73.3	E
				TH	2	196	198	342	197	431	38	D		
				RT	2	196	30	595	81	231	24	C		
				Total	2			1559			41	D		
			WB	LT	2	184	30	484	181	551	73	E		
				TH	2	184	192	444	181	551	66	E		
				RT	2	184	43	160	7	222	37	D		
				Total	2			1088			65	E		
			NB	LT	2	38	192	464	145	441	68	E		
				TH	2	38	43	40	145	455	69	E		
				RT	2	38	198	562	7	109	47	D		
				UT	2	38	30	14	145	441	72	E		
				Total	2			1080			57	E		
			SB	LT	2	5	198	472	754	1257	237	F		
				TH	2	5	30	375	520	1076	59	E		
				RT	2	5	192	215	94	390	6	A		
				UT	2	5	43	114	754	1257	248	F		
				Total	2			1176			139	F		
			Int	Total	2			4903			73	E		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	1521	20	305	8	A	9.2	A
				RT	3	265	155	87	1	138	6	A		
				Total	3			1607			8	A		
			WB	LT	3	137	155	81	17	194	17	B		
				TH	3	137	159	1340	19	191	9	A		
				Total	3			1421			9	A		
			NB	LT	3	151	159	300	17	135	14	B		
				RT	3	151	265	99	17	135	6	A		
				Total	3			400			12	B		
			SB	LT	3	7	265	26	2	46	14	B		
				TH	3	7	155	7	2	46	13	B		
				RT	3	7	159	1	0	0	3	A		
				Total	3			34			13	B		
			Int	Total	3			3462			9	A		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	554	499	799	95	F	58.7	E
				TH	4	258	261	1030	501	801	86	F		
				RT	4	258	128	733	513	835	29	C		
				Total	4			2317			70	E		
			WB	LT	4	252	128	198	94	254	55	E		
				TH	4	252	256	676	94	254	51	D		
				RT	4	252	49	618	0	0	16	B		
				Total	4			1492			37	D		
			NB	LT	4	130	256	441	132	423	64	E		
				TH	4	130	49	614	105	409	58	E		
				RT	4	130	261	138	5	138	42	D		
				UT	4	130	128	125	132	423	74	E		
				Total	4			1317			60	E		
			SB	LT	4	152	261	637	210	662	76	E		
				TH	4	152	128	673	189	631	65	E		
				RT	4	152	256	304	15	253	21	C		
				UT	4	152	49	22	210	662	79	E		
				Total	4			1636			61	E		
			Int	Total	4			6761			59	E		

SR 101L, Princess to Raintree

Existing 2014 PM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	6	1074	1331	123	F	100.2	F
				TH	5	134	257	1469	1069	1326	173	F		
				RT	5	134	143	269	547	777	92	F		
				Total	5			1744			161	F		
			WB	LT	5	256	143	310	86	366	58	E		
				TH	5	256	145	1083	86	366	18	B		
				RT	5	256	148	14	86	366	8	A		
				Total	5			1407			27	C		
			NB	LT	5	141	145	568	367	635	81	F		
				TH	5	141	148	6	367	635	99	F		
				RT	5	141	257	584	367	635	118	F		
				Total	5			1157			100	F		
			SB	LT	5	149	257	20	9	69	79	E		
				TH	5	149	143	5	6	71	69	E		
				RT	5	149	145	15	0	0	14	B		
				Total	5			40			53	D		
			Int	Total	5			4349			100	F		
6	Bell Road and SR 101L	Signal	EB	LT	6	100	97	44	49	211	53	D	49.5	D
				TH	6	100	108	365	49	211	43	D		
				RT	6	100	111	173	0	0	10	B		
				Total	6			581			34	C		
			WB	LT	6	103	111	452	102	338	93	F		
				TH	6	103	98	187	102	338	45	D		
				RT	6	103	97	363	1	67	14	B		
				Total	6			1002			56	E		
			NB	LT	6	105	98	332	110	386	48	D		
				TH	6	105	97	287	110	386	52	D		
				RT	6	105	108	274	16	151	19	B		
				UT	6	105	111	257	110	386	69	E		
				Total	6			1150			47	D		
			SB	LT	6	96	108	437	74	323	65	E		
				TH	6	96	111	123	74	323	50	D		
				RT	6	96	98	30	8	168	31	C		
				UT	6	96	97	2	74	323	66	E		
				Total	6			592			60	E		
			Int	Total	6			3326			50	D		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	218	331	747	129	F	73.6	E
				TH	7	72	91	271	331	747	123	F		
				RT	7	72	15	542	38	272	83	F		
				Total	7			1031			103	F		
			WB	LT	7	84	15	937	263	856	100	F		
				TH	7	84	86	201	263	856	53	D		
				RT	7	84	58	529	23	281	6	A		
				Total	7			1666			64	E		
			NB	LT	7	218	86	101	385	1221	117	F		
				TH	7	218	58	560	385	1221	133	F		
				RT	7	218	91	1485	182	976	14	B		
				UT	7	218	15	52	385	1221	126	F		
				Total	7			2199			52	D		
			SB	LT	7	14	91	317	180	516	135	F		
				TH	7	14	15	312	180	516	123	F		
				RT	7	14	86	30	4	161	10	A		
				UT	7	14	58	7	180	516	131	F		
				Total	7			666			123	F		
			Int	Total	7			5562			74	E		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	161	0	4	8	A	8.5	A
				Total	8			161			8	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	323	2	110	17	C	16.7	C
				Total	9			323			17	C		
10	Hartford and Southbound Frontage	Stop	EB	RT	10	94	82	72	0	0	7	A	7.3	A
				Total	10			72			7	A		

SR 101L, Princess to Raintree

No-Build 2035 AM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	37	7	109	17	B	8.3	A
				TH	1	183	196	533	7	109	6	A		
				RT	1	183	207	82	7	109	4	A		
				Total	1			652			6	A		
			WB	LT	1	192	207	368	30	358	16	B		
				TH	1	192	194	1323	30	386	7	A		
				RT	1	192	208	204	30	386	4	A		
				Total	1			1895			8	A		
			NB	LT	1	203	194	29	4	66	17	B		
				TH	1	203	208	40	4	66	16	B		
				RT	1	203	196	82	0	0	6	A		
				Total	1			152			10	B		
			SB	LT	1	209	196	70	8	101	17	B		
				TH	1	209	207	63	7	102	17	B		
				RT	1	209	194	80	0	0	12	B		
				Total	1			212			15	B		
			Int	Total	1			2911			8	A		
2	Raintree and SR 101L	Signal	EB	LT	2	196	43	231	67	190	60	E	85.4	F
				TH	2	196	198	249	67	190	45	D		
				RT	2	196	30	204	0	5	8	A		
				Total	2			684			39	D		
			WB	LT	2	184	30	635	900	1242	115	F		
				TH	2	184	192	524	900	1242	129	F		
				RT	2	184	43	269	585	913	89	F		
				Total	2			1428			115	F		
			NB	LT	2	38	192	755	670	1671	130	F		
				TH	2	38	43	82	424	1668	44	D		
				RT	2	38	198	375	437	1668	25	C		
				UT	2	38	30	91	670	1671	133	F		
				Total	2			1304			95	F		
			SB	LT	2	5	198	328	220	625	129	F		
				TH	2	5	30	216	173	707	58	E		
				RT	2	5	192	616	182	748	26	C		
				UT	2	5	43	107	220	625	135	F		
				Total	2			1267			67	E		
			Int	Total	2			4682			85	F		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	817	18	207	9	A	57.5	E
				RT	3	265	155	236	0	37	7	A		
				Total	3			1053			9	A		
			WB	LT	3	137	155	82	247	415	44	D		
				TH	3	137	159	1789	271	412	78	E		
				Total	3			1871			76	E		
			NB	LT	3	151	159	436	162	449	96	F		
				RT	3	151	265	42	162	449	59	E		
				Total	3			477			92	F		
			SB	LT	3	7	265	16	4	62	27	C		
				TH	3	7	155	13	4	62	34	C		
				RT	3	7	159	9	0	11	55	D		
				Total	3			37			36	D		
			Int	Total	3			3439			57	E		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	597	391	780	109	F	98.2	F
				TH	4	258	261	568	393	782	48	D		
				RT	4	258	128	573	316	813	5	A		
				Total	4			1738			55	D		
			WB	LT	4	252	128	303	944	1255	78	E		
				TH	4	252	256	645	944	1255	117	F		
				RT	4	252	49	1145	616	915	98	F		
				Total	4			2093			101	F		
			NB	LT	4	130	256	787	326	771	103	F		
				TH	4	130	49	650	183	730	52	D		
				RT	4	130	261	114	102	486	38	D		
				UT	4	130	128	63	326	771	107	F		
				Total	4			1614			78	E		
			SB	LT	4	152	261	462	1411	1674	232	F		
				TH	4	152	128	363	1407	1674	197	F		
				RT	4	152	256	245	1372	1674	32	C		
				UT	4	152	49	153	1411	1674	238	F		
				Total	4			1223			182	F		
			Int	Total	4			6668			98	F		

SR 101L, Princess to Raintree

No-Build 2035 AM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	10	73	415	54	D	29.1	C
				TH	5	134	257	1381	72	412	40	D		
				RT	5	134	143	304	0	26	9	A		
				Total	5			1695			35	C		
			WB	LT	5	256	143	332	61	315	43	D		
				TH	5	256	145	1290	61	315	9	A		
				RT	5	256	148	46	61	315	4	A		
				Total	5			1669			15	B		
			NB	LT	5	141	145	335	90	390	44	D		
				TH	5	141	148	11	90	390	44	D		
				RT	5	141	257	366	90	390	50	D		
				Total	5			712			47	D		
			SB	LT	5	149	257	18	5	59	62	E		
				TH	5	149	143	9	3	62	41	D		
				RT	5	149	145	13	0	0	9	A		
				Total	5			40			40	D		
			Int	Total	5			4115			29	C		
6	Bell Road and SR 101L	Signal	EB	LT	6	100	97	21	57	290	53	D	44.6	D
				TH	6	100	108	651	57	290	32	C		
				RT	6	100	111	180	0	0	8	A		
				Total	6			851			27	C		
			WB	LT	6	103	111	301	372	1180	71	E		
				TH	6	103	98	405	372	1180	44	D		
				RT	6	103	97	335	234	904	92	F		
				Total	6			1041			67	E		
			NB	LT	6	105	98	362	55	213	36	D		
				TH	6	105	97	148	55	213	66	E		
				RT	6	105	108	301	0	0	11	B		
				UT	6	105	111	39	55	213	49	D		
				Total	6			849			33	C		
			SB	LT	6	96	108	179	29	164	56	E		
				TH	6	96	111	80	29	164	41	D		
				RT	6	96	98	20	0	13	18	B		
				UT	6	96	97	1	29	164	27	C		
				Total	6			280			49	D		
			Int	Total	6			3021			45	D		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	38	296	854	301	F	164.6	F
				TH	7	72	91	150	296	854	302	F		
				RT	7	72	15	160	71	379	151	F		
				Total	7			347			232	F		
			WB	LT	7	84	15	671	1511	1674	337	F		
				TH	7	84	86	322	1511	1674	110	F		
				RT	7	84	58	249	1532	1674	62	E		
				Total	7			1242			223	F		
			NB	LT	7	218	86	305	651	1573	215	F		
				TH	7	218	58	312	651	1573	183	F		
				RT	7	218	91	1047	651	1573	12	B		
				UT	7	218	15	85	651	1573	308	F		
				Total	7			1748			92	F		
			SB	LT	7	14	91	497	774	1613	244	F		
				TH	7	14	15	254	774	1613	222	F		
				RT	7	14	86	195	598	1582	38	D		
				UT	7	14	58	11	774	1613	287	F		
				Total	7			957			196	F		
			Int	Total	7			4294			165	F		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	21	0	0	9	A	8.7	A
				Total	8			21			9	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	253	0	0	12	B	12.1	B
				Total	9			253			12	B		
10	Hartford and Southbound Frontage	Stop	EB	RT	10	94	82	15	0	0	6	A	6.2	A
				Total	10			15			6	A		

SR 101L, Princess to Raintree

No-Build 2035 PM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Demand	Volume Served	% Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link				Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	50	21	41%	959	1061	130	F	102.8	F
				TH	1	183	196	2000	818		952	1055	152	F		
				RT	1	183	207	70	37		769	862	76	E		
				Total	1			2120	876				148	F		
			WB	LT	1	192	207	70	64	97%	0	33	9	A		
				TH	1	192	194	960	917		22	422	4	A		
				RT	1	192	208	280	286		22	422	3	A		
				Total	1			1310	1267				4	A		
			NB	LT	1	203	194	110	111	84%	566	627	133	F		
				TH	1	203	208	120	102		564	625	201	F		
				RT	1	203	196	630	512		587	648	215	F		
				Total	1			860	725				201	F		
			SB	LT	1	209	196	240	220	93%	260	325	168	F		
				TH	1	209	207	40	39		261	326	125	F		
				RT	1	209	194	80	75		86	131	90	F		
				Total	1			360	334				145	F		
			Int	Total	1			4650	3202				103	F		
2	Raintree and SR 101L	Signal	EB	LT	2	10305	43	1100	605	54%	214	419	58	E	84.1	F
				TH	2	196	198	890	482		168	416	38	D		
				RT	2	196	30	880	462		80	223	19	B		
				Total	2			2870	1549				40	D		
			WB	LT	2	184	30	540	515	99%	214	590	74	E		
				TH	2	184	192	500	518		214	590	72	E		
				RT	2	184	43	250	238		8	262	48	D		
				Total	2			1290	1271				68	E		
			NB	LT	2	38	192	510	518	99%	322	556	101	F		
				TH	2	38	43	50	44		313	543	120	F		
				RT	2	38	198	620	614		18	189	91	F		
				UT	2	38	30	20	17		322	556	98	F		
				Total	2			1200	1193				96	F		
			SB	LT	2	5	198	560	431	78%	911	1376	252	F		
				TH	2	5	30	420	369		847	1358	58	E		
				RT	2	5	192	300	232		270	1335	8	A		
				UT	2	5	43	240	160		911	1376	263	F		
				Total	2			1520	1192				146	F		
			Int	Total	2			6880	5205				84	F		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	1840	1292	71%	21	355	9	A	11.0	B
				RT	3	265	155	250	184		2	188	7	A		
				Total	3			2090	1476				9	A		
			WB	LT	3	137	155	170	161	102%	33	237	23	C		
				TH	3	137	159	1480	1522		33	234	11	B		
				Total	3			1650	1683				12	B		
			NB	LT	3	151	159	440	449	101%	28	188	17	B		
				RT	3	151	265	180	179		28	188	7	A		
				Total	3			620	628				14	B		
			SB	LT	3	7	265	25	31	116%	3	64	13	B		
				TH	3	7	155	15	17		3	64	14	B		
				RT	3	7	159	5	4		0	0	8	A		
				Total	3			45	52				13	B		
			Int	Total	3			4405	3839				11	B		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	930	576	64%	560	809	128	F	99.2	F
				TH	4	258	261	1310	900		559	810	97	F		
				RT	4	258	128	1040	633		575	847	27	C		
				Total	4			3280	2109				85	F		
			WB	LT	4	252	128	280	303	104%	134	318	67	E		
				TH	4	252	256	810	871		134	318	59	E		
				RT	4	252	49	920	909		0	0	23	C		
				Total	4			2010	2083				44	D		
			NB	LT	4	130	256	530	485	84%	696	1140	238	F		
				TH	4	130	49	850	666		670	1123	134	F		
				RT	4	130	261	180	168		407	848	104	F		
				UT	4	130	128	165	132		696	1140	255	F		
				Total	4			1725	1451				176	F		
			SB	LT	4	152	261	730	526	73%	1451	1674	128	F		
				TH	4	152	128	1160	858		1447	1674	130	F		
				RT	4	152	256	440	322		1408	1674	72	E		
				UT	4	152	49	40	33		1451	1674	122	F		
				Total	4			2370	1739				119	F		
			Int	Total	4			9385	7382				99	F		

SR 101L, Princess to Raintree

No-Build 2035 PM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Demand	Volume Served	% Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link				Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	10	5	54%	1189	1332	235	F	135.5	F
				TH	5	134	257	2190	1201		1183	1326	252	F		
				RT	5	134	143	440	212		660	778	118	F		
				Total	5			2640	1418				232	F		
			WB	LT	5	256	143	470	434	94%	129	441	66	E		
				TH	5	256	145	1295	1232		129	441	25	C		
				RT	5	256	148	15	14		129	441	10	A		
				Total	5			1780	1680				36	D		
			NB	LT	5	141	145	360	276	82%	540	637	120	F		
				TH	5	141	148	10	6		540	637	205	F		
				RT	5	141	257	720	609		540	637	201	F		
				Total	5			1090	891				176	F		
			SB	LT	5	149	257	70	68	97%	31	200	96	F		
				TH	5	149	143	5	4		27	203	90	F		
				RT	5	149	145	15	15		2	89	22	C		
				Total	5			90	87				83	F		
			Int	Total	5			5600	4076				135	F		
6	Bell Road and SR 101L	Signal	EB	LT	6	100	97	60	49	76%	377	1249	57	E	112.5	F
				TH	6	100	108	530	448		377	1249	83	F		
				RT	6	100	111	230	129		204	629	270	F		
				Total	6			820	626				120	F		
			WB	LT	6	103	111	600	496	85%	674	1472	323	F		
				TH	6	103	98	240	216		674	1472	111	F		
				RT	6	103	97	520	450		438	1196	56	E		
				Total	6			1360	1162				180	F		
			NB	LT	6	105	98	430	352	76%	108	307	57	E		
				TH	6	105	97	360	289		108	307	49	D		
				RT	6	105	108	410	391		4	102	14	B		
				UT	6	105	111	250	69		108	307	290	F		
				Total	6			1450	1101				54	D		
			SB	LT	6	96	108	530	517	96%	101	333	68	E		
				TH	6	96	111	150	146		101	333	153	F		
				RT	6	96	98	35	33		18	178	54	D		
				UT	6	96	97	10	3		101	333	84	F		
				Total	6			725	699				85	F		
			Int	Total	6			4355	3588				112	F		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	240	189	82%	777	1039	209	F	110.5	F
				TH	7	72	91	370	320		777	1039	214	F		
				RT	7	72	15	650	525		339	564	219	F		
				Total	7			1260	1034				215	F		
			WB	LT	7	84	15	1240	1238	99%	600	1650	152	F		
				TH	7	84	86	260	261		600	1650	62	E		
				RT	7	84	58	550	527		30	364	6	A		
				Total	7			2050	2026				102	F		
			NB	LT	7	218	86	130	89	83%	239	697	124	F		
				TH	7	218	58	640	552		239	697	130	F		
				RT	7	218	91	1830	1521		49	410	13	B		
				UT	7	218	15	90	73		239	697	120	F		
				Total	7			2690	2235				49	D		
			SB	LT	7	14	91	430	397	97%	300	769	184	F		
				TH	7	14	15	410	412		300	769	155	F		
				RT	7	14	86	40	44		50	413	13	B		
				UT	7	14	58	20	17		300	769	207	F		
				Total	7			900	870				162	F		
			Int	Total	7			6900	6165				111	F		
8	Westworld and Northbound Frontage	Signal	WB	RT	8	239	50	160	172	108%	0	0	9	A	9.0	A
				Total	8			160	172				9	A		
9	Bahia and Northbound Frontage	Signal	WB	RT	9	245	78	330	338	102%	3	132	18	C	18.3	C
				Total	9			330	338				18	C		
10	Hartford and Southbound Frontage	Signal	EB	RT	10	94	82	70	67	96%	0	0	7	A	6.6	A
				Total	10			70	67				7	A		

SR 101L, Princess to Raintree

Build Alternative 1 2035 AM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	20	3	105	13	B	6.5	A
				TH	1	183	196	526	4	98	5	A		
				RT	1	183	207	47	0	0	3	A		
				Total	1			593			5	A		
			WB	LT	1	192	207	315	11	259	10	B		
				TH	1	192	194	1268	18	324	5	A		
				RT	1	192	208	187	18	324	3	A		
				Total	1			1769			6	A		
			NB	LT	1	203	194	9	2	49	15	B		
				TH	1	203	208	17	2	55	16	B		
				RT	1	203	196	79	5	78	7	A		
				Total	1			105			10	A		
			SB	LT	1	209	196	80	7	94	16	B		
				TH	1	209	207	52	6	95	16	B		
				RT	1	209	194	67	9	118	11	B		
				Total	1			200			14	B		
			Int	Total	1			2666			7	A		
2	Raintree and SR 101L	Signal	EB	LT	2	10305	43	273	41	199	43	D	87.3	F
				TH	2	196	198	261	31	163	35	D		
				RT	2	196	30	157	6	132	8	A		
				Total	2			690			32	C		
			WB	LT	2	184	30	467	995	1242	119	F		
				TH	2	184	192	486	995	1242	151	F		
				RT	2	184	43	329	1055	1300	121	F		
				Total	2			1282			132	F		
			NB	LT	2	38	192	600	895	1674	179	F		
				TH	2	38	43	73	841	1674	57	E		
				RT	2	38	198	412	848	1674	35	D		
				UT	2	38	30	73	895	1674	184	F		
				Total	2			1158			120	F		
			SB	LT	2	5	198	380	267	727	98	F		
				TH	2	5	30	208	118	647	55	D		
				RT	2	5	192	675	124	671	18	B		
				UT	2	5	43	211	267	727	52	D		
				Total	2			1474			49	D		
			Int	Total	2			4605			87	F		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	750	11	187	7	A	9.5	A
				RT	3	265	155	224	17	229	6	A		
				Total	3			974			7	A		
			WB	LT	3	137	155	10	23	222	13	B		
				TH	3	137	159	1682	26	219	10	B		
				Total	3			1691			10	B		
			NB	LT	3	151	159	327	16	137	12	B		
				RT	3	151	265	11	16	137	5	A		
				Total	3			338			12	B		
			SB	LT	3	7	265	16	1	38	12	B		
				TH	3	7	155	8	1	38	16	B		
				RT	3	7	159	1	0	50	6	A		
				Total	3			25			13	B		
			Int	Total	3			3028			9	A		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	646	139	492	66	E	36.3	D
				TH	4	258	261	549	138	493	34	C		
				RT	4	258	128	474	40	388	4	A		
				Total	4			1668			38	D		
			WB	LT	4	252	128	225	97	307	47	D		
				TH	4	252	256	813	97	307	43	D		
				RT	4	252	49	1062	87	344	21	C		
				Total	4			2099			32	C		
			NB	LT	4	130	256	477	70	283	42	D		
				TH	4	130	49	401	48	184	44	D		
				RT	4	130	261	63	6	194	20	B		
				UT	4	130	128	43	70	283	43	D		
				Total	4			984			41	D		
			SB	LT	4	152	261	334	24	223	45	D		
				TH	4	152	128	245	20	200	49	D		
				RT	4	152	256	209	17	242	12	B		
				UT	4	152	49	0	24	223	0	A		
				Total	4			788			38	D		
			Int	Total	4			5539			36	D		

SR 101L, Princess to Raintree

Build Alternative 1 2035 AM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	7	76	444	59	E	20.3	C
				TH	5	134	257	1511	75	438	24	C		
				RT	5	134	143	354	87	470	8	A		
				Total	5			1872			21	C		
			WB	LT	5	256	143	86	42	326	45	D		
				TH	5	256	145	1401	42	326	10	B		
				RT	5	256	148	19	42	326	8	A		
				Total	5			1505			12	B		
			NB	LT	5	141	145	385	57	188	45	D		
				TH	5	141	148	3	57	188	36	D		
				RT	5	141	257	79	57	188	27	C		
				Total	5			467			42	D		
			SB	LT	5	149	257	18	6	54	62	E		
				TH	5	149	143	10	5	57	58	E		
				RT	5	149	145	1	4	88	7	A		
				Total	5			30			59	E		
			Int	Total	5			3873			20	C		
6	Bell Road and SR 101L	Signal	EB	LT	6	100	97	19	80	309	56	E	44.4	D
				TH	6	100	108	554	80	309	49	D		
				RT	6	100	111	249	20	194	12	B		
				Total	6			822			38	D		
			WB	LT	6	103	111	532	121	411	84	F		
				TH	6	103	98	300	121	411	37	D		
				RT	6	103	97	501	158	478	16	B		
				Total	6			1334			48	D		
			NB	LT	6	105	98	487	119	398	50	D		
				TH	6	105	97	494	119	398	49	D		
				RT	6	105	108	410	165	459	17	B		
				UT	6	79	73	260	0	0	3	A		
				Total	6			1650			34	C		
			SB	LT	6	96	108	552	122	425	69	E		
				TH	6	96	111	346	122	425	56	E		
				RT	6	96	98	49	139	452	45	D		
				UT	6	96	97	1	122	425	56	E		
				Total	6			947			63	E		
			Int	Total	6			4753			44	D		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	10096	58	37	2	47	15	B	114.9	F
				TH	7	10096	91	42	2	47	22	C		
				RT	7	10096	15	263	18	118	34	C		
				Total	7			342			30	C		
			WB	LT	7	84	15	1474	1465	1674	193	F		
				TH	7	84	86	588	1465	1674	182	F		
				RT	7	84	58	400	1467	1674	41	D		
				Total	7			2462			166	F		
			NB	LT	7	218	86	314	52	216	87	F		
				TH	7	218	58					A		
				RT	7	218	91	1019	3	105	3	A		
				UT	7	218	15	113	52	216	86	F		
				Total	7			1446			28	C		
			SB	LT	7	14	91	502	54	256	211	F		
				TH	7	14	15					A		
				RT	7	14	86	214	1	47	30	C		
				UT	7	14	58	2	54	256	177	F		
				Total	7			718			157	F		
			Int	Total	7			4968			115	F		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	10	0	24	5	A	5.4	A
				Total	8			10			5	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	150	8	98	8	A	8.4	A
				Total	9			150			8	A		

SR 101L, Princess to Raintree

Build Alternative 1 2035 PM Peak results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	28	936	1061	120	F	125.4	F
				TH	1	183	196	878	929	1054	148	F		
				RT	1	183	207	0	738	862	0	A		
				Total	1			906			147	F		
			WB	LT	1	192	207	40	1	61	13	B		
				TH	1	192	194	835	18	355	6	A		
				RT	1	192	208	163	18	355	2	A		
				Total	1			1038			5	A		
			NB	LT	1	203	194	34	591	626	185	F		
				TH	1	203	208	24	590	625	323	F		
				RT	1	203	196	420	612	647	342	F		
				Total	1			478			329	F		
			SB	LT	1	209	196	264	259	334	163	F		
				TH	1	209	207	30	259	335	114	F		
				RT	1	209	194	61	281	358	83	F		
				Total	1			355			145	F		
			Int	Total	1			2777			125	F		
2	Raintree and SR 101L	Signal	EB	LT	2	10305	43	605	214	432	52	D	85.8	F
				TH	2	196	198	488	226	431	48	D		
				RT	2	196	30	455	231	465	25	C		
				Total	2			1548			43	D		
			WB	LT	2	184	30	468	938	1240	118	F		
				TH	2	184	192	390	938	1240	135	F		
				RT	2	184	43	469	997	1299	114	F		
				Total	2			1327			121	F		
			NB	LT	2	38	192	396	75	464	50	D		
				TH	2	38	43	133	147	457	76	E		
				RT	2	38	198	542	185	502	48	D		
				UT	2	38	30	15	75	464	42	D		
				Total	2			1086			52	D		
			SB	LT	2	5	198	377	1046	1416	242	F		
				TH	2	5	30	403	998	1399	64	E		
				RT	2	5	192	245	801	1440	6	A		
				UT	2	5	43	295	1046	1416	171	F		
				Total	2			1320			128	F		
			Int	Total	2			5281			86	F		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	1192	15	287	8	A	8.8	A
				RT	3	265	155	100	21	329	7	A		
				Total	3			1292			8	A		
			WB	LT	3	137	155	108	14	132	14	B		
				TH	3	137	159	1145	15	129	8	A		
				Total	3			1253			9	A		
			NB	LT	3	151	159	307	13	125	12	B		
				RT	3	151	265	119	13	125	6	A		
				Total	3			426			11	B		
			SB	LT	3	7	265	20	2	39	17	B		
				TH	3	7	155	15	2	39	19	B		
				RT	3	7	159	0	1	51	0	A		
				Total	3			35			18	B		
			Int	Total	3			3006			9	A		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	608	153	570	61	E	44.5	D
				TH	4	258	261	950	164	572	47	D		
				RT	4	258	128	817	131	609	10	B		
				Total	4			2375			38	D		
			WB	LT	4	252	128	208	83	280	49	D		
				TH	4	252	256	697	83	280	44	D		
				RT	4	252	49	540	26	288	14	B		
				Total	4			1445			33	C		
			NB	LT	4	130	256	683	201	576	79	E		
				TH	4	130	49	767	142	573	55	D		
				RT	4	130	261	125	31	509	43	D		
				UT	4	130	128	72	201	576	82	F		
				Total	4			1647			65	E		
			SB	LT	4	152	261	295	23	237	47	D		
				TH	4	152	128	374	29	211	52	D		
				RT	4	152	256	159	22	255	9	A		
				UT	4	152	49	0	23	237	0	A		
				Total	4			828			42	D		
			Int	Total	4			6295			44	D		

SR 101L, Princess to Raintree

Build Alternative 1 2035 PM Peak results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	7	890	1331	129	F	56.7	E
				TH	5	134	257	2002	887	1325	94	F		
				RT	5	134	143	412	918	1357	65	E		
				Total	5			2421			89	F		
			WB	LT	5	256	143	171	45	345	49	D		
				TH	5	256	145	1342	45	345	8	A		
				RT	5	256	148	16	45	345	4	A		
				Total	5			1529			12	B		
			NB	LT	5	141	145	259	49	208	43	D		
				TH	5	141	148	6	49	208	57	E		
				RT	5	141	257	247	49	208	27	C		
				Total	5			512			35	D		
			SB	LT	5	149	257	22	6	87	49	D		
				TH	5	149	143	6	4	90	74	E		
				RT	5	149	145	9	3	121	10	B		
				Total	5			37			44	D		
			Int	Total	5			4499			57	E		
6	Bell Road and SR 101L	Signal	EB	LT	6	100	97	57	59	208	53	D	83.9	F
				TH	6	100	108	400	59	208	49	D		
				RT	6	100	111	267	29	191	15	B		
				Total	6			724			37	D		
			WB	LT	6	103	111	680	1347	1477	217	F		
				TH	6	103	98	82	1347	1477	107	F		
				RT	6	103	97	227	1419	1548	73	E		
				Total	6			989			175	F		
			NB	LT	6	105	98	466	192	651	68	E		
				TH	6	105	97	641	192	651	64	E		
				RT	6	105	108	604	243	711	28	C		
				UT	6	79	73	219	0	0	3	A		
				Total	6			1711			52	D		
			SB	LT	6	96	108	722	231	979	92	F		
				TH	6	96	111	363	231	979	66	E		
				RT	6	96	98	37	254	1006	50	D		
				UT	6	96	97	2	231	979	170	F		
				Total	6			1124			82	F		
			Int	Total	6			4548			84	F		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	10096	58	177	504	1051	135	F	64.5	E
				TH	7	10096	91	48	504	1051	185	F		
				RT	7	10096	15	609	547	1103	181	F		
				Total	7			834			171	F		
			WB	LT	7	84	15	1094	218	798	108	F		
				TH	7	84	86	106	218	798	63	E		
				RT	7	84	58	578	0	115	3	A		
				Total	7			1778			71	E		
			NB	LT	7	218	86	199	55	238	73	E		
				TH	7	218	58					A		
				RT	7	218	91	1537	14	299	3	A		
				UT	7	218	15	142	55	238	77	E		
				Total	7			1878			16	B		
			SB	LT	7	14	91	492	59	260	51	D		
				TH	7	14	15					A		
				RT	7	14	86	61	0	40	2	A		
				UT	7	14	58	18	59	260	39	D		
				Total	7			571			45	D		
			Int	Total	7			5061			64	E		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	108	0	41	7	A	6.6	A
				Total	8			108			7	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	302	34	239	17	C	16.7	C
				Total	9			302			17	C		

SR 101L, Princess to Raintree

Build Alternative 2 2035 AM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	37	6	99	16	B	6.9	A
				TH	1	183	196	526	6	99	5	A		
				RT	1	183	207	80	6	99	3	A		
				Total	1			642			6	A		
			WB	LT	1	192	207	378	19	399	11	B		
				TH	1	192	194	1395	22	415	5	A		
				RT	1	192	208	220	22	415	3	A		
				Total	1			1994			6	A		
			NB	LT	1	203	194	30	5	69	18	B		
				TH	1	203	208	38	4	73	18	B		
				RT	1	203	196	78	0	0	6	A		
				Total	1			145			11	B		
			SB	LT	1	209	196	72	9	107	19	B		
				TH	1	209	207	56	8	108	19	B		
				RT	1	209	194	82	12	131	13	B		
				Total	1			209			17	B		
			Int	Total	1			2991			7	A		
2	Raintree and SR 101L	Signal	EB	LT	2	196	43	227	62	201	54	D	69.5	E
				TH	2	196	198	239	62	201	43	D		
				RT	2	196	30	209	11	179	8	A		
				Total	2			675			36	D		
			WB	LT	2	184	30	670	648	1135	109	F		
				TH	2	184	192	557	648	1135	107	F		
				RT	2	184	43	301	648	1188	38	D		
				Total	2			1528			94	F		
			NB	LT	2	38	192	771	434	1384	100	F		
				TH	2	38	43	94	254	1323	47	D		
				RT	2	38	198	390	169	1200	26	C		
				UT	2	38	30	82	434	1384	103	F		
				Total	2			1336			75	E		
			SB	LT	2	5	198	345	144	446	90	F		
				TH	2	5	30	233	128	639	53	D		
				RT	2	5	192	663	139	679	27	C		
				UT	2	5	43	100	144	446	93	F		
				Total	2			1341			52	D		
			Int	Total	2			4880			69	E		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	840	33	242	15	B	138.3	F
				RT	3	265	155	262	42	284	11	B		
				Total	3			1101			14	B		
			WB	LT	3	137	155	48	364	417	62	E		
				TH	3	137	159	1112	366	414	173	F		
				Total	3			1160			168	F		
			NB	LT	3	151	159	131	439	471	873	F		
				RT	3	151	265	12	439	471	759	F		
				Total	3			143			864	F		
			SB	LT	3	7	265	17	9	73	28	C		
				TH	3	7	155	10	9	73	69	E		
				RT	3	7	159	10	11	86	195	F		
				Total	3			37			84	F		
			Int	Total	3			2440			138	F		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	599	208	682	81	F	115.6	F
				TH	4	258	261	582	211	683	44	D		
				RT	4	258	128	570	72	612	4	A		
				Total	4			1750			44	D		
			WB	LT	4	252	128	174	1197	1255	125	F		
				TH	4	252	256	359	1197	1255	275	F		
				RT	4	252	49	651	1247	1305	211	F		
				Total	4			1183			218	F		
			NB	LT	4	226	256	773	646	1522	108	F		
				TH	4	226	49	638	468	1512	50	D		
				RT	4	226	261	109	154	1085	28	C		
				UT	4	226	128	64	646	1522	108	F		
				Total	4			1584			79	E		
			SB	LT	4	228	261	510	1304	1674	236	F		
				TH	4	228	128	423	1194	1674	122	F		
				RT	4	228	256	277	1196	1674	39	D		
				UT	4	228	49	162	1304	1674	238	F		
				Total	4			1372			162	F		
			Int	Total	4			5889			116	F		

SR 101L, Princess to Raintree

Build Alternative 2 2035 AM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	11	55	358	58	E	20.7	C
				TH	5	134	257	1378	54	355	23	C		
				RT	5	134	143	305	64	379	7	A		
				Total	5			1694			21	C		
			WB	LT	5	256	143	283	49	261	41	D		
				TH	5	256	145	1089	49	261	7	A		
				RT	5	256	148	38	49	261	4	A		
				Total	5			1410			14	B		
			NB	LT	5	141	145	344	64	284	42	D		
				TH	5	141	148	10	64	284	48	D		
				RT	5	141	257	368	64	284	25	C		
				Total	5			722			34	C		
			SB	LT	5	149	257	22	5	61	47	D		
				TH	5	149	143	10	4	64	37	D		
				RT	5	149	145	9	4	94	11	B		
				Total	5			40			37	D		
			Int	Total	5			3867			21	C		
6	Bell Road and SR 101L	Signal	EB	LT	6	100	97	23	58	324	49	D	31.9	C
				TH	6	100	108	649	58	324	32	C		
				RT	6	100	111	180	11	130	9	A		
				Total	6			851			28	C		
			WB	LT	6	103	111	339	113	707	58	E		
				TH	6	103	98	445	113	707	27	C		
				RT	6	103	97	379	159	778	15	B		
				Total	6			1162			32	C		
			NB	LT	6	105	98	320	50	210	37	D		
				TH	6	105	97	119	50	210	41	D		
				RT	6	105	108	254	87	270	11	B		
				UT	6	105	111	38	50	210	52	D		
				Total	6			731			30	C		
			SB	LT	6	96	108	217	34	182	53	D		
				TH	6	96	111	93	34	182	41	D		
				RT	6	96	98	26	41	209	17	B		
				UT	6	96	97	1	34	182	27	C		
				Total	6			336			47	D		
			Int	Total	6			3080			32	C		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	42	214	720	15	B	96.8	F
				TH	7	72	91	150	214	720	22	C		
				RT	7	72	15	154	246	759	34	C		
				Total	7			346			26	C		
			WB	LT	7	84	15	952	1010	1674	193	F		
				TH	7	84	86	420	1010	1674	182	F		
				RT	7	84	58	343	591	1674	41	D		
				Total	7			1715			160	F		
			NB	LT	7	218	86	283	513	1365	87	F		
				TH	7	218	58	305				A		
				RT	7	218	91	1041	513	1365	3	A		
				UT	7	218	15	74	513	1365	86	F		
				Total	7			1703			20	C		
			SB	LT	7	14	91	525	866	1670	211	F		
				TH	7	14	15					A		
				RT	7	14	86	204	902	1668	30	C		
				UT	7	14	58	8	866	1670	177	F		
				Total	7			736			160	F		
			Int	Total	7			4500			97	F		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	18	1	50	8	A	7.8	A
				Total	8			18			8	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	271	24	202	13	B	13.5	B
				Total	9			271			13	B		
10	Hartford and Southbound Frontage	Stop	EB	RT	10	94	82	13	0	37	7	A	7.3	A
				Total	10			13			7	A		

SR 101L, Princess to Raintree

Build Alternative 2 2035 PM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	9	1013	1056	302	F	146.3	F
				TH	1	183	196	397	1013	1056	368	F		
				RT	1	183	207	12	1013	1056	180	F		
				Total	1			418			361	F		
			WB	LT	1	192	207	67	3	112	13	B		
				TH	1	192	194	921	41	467	9	A		
				RT	1	192	208	273	41	467	4	A		
				Total	1			1261			8	A		
			NB	LT	1	203	194	72	579	626	165	F		
				TH	1	203	208	73	578	625	276	F		
				RT	1	203	196	389	606	653	312	F		
				Total	1			534			287	F		
			SB	LT	1	209	196	194	262	337	221	F		
				TH	1	209	207	30	263	338	108	F		
				RT	1	209	194	69	282	361	83	F		
				Total	1			293			177	F		
			Int	Total	1			2506			146	F		
2	Raintree and SR 101L	Signal	EB	LT	2	196	43	373	330	429	130	F	82.6	F
				TH	2	196	198	304	330	429	110	F		
				RT	2	196	30	302	361	463	49	D		
				Total	2			979			99	F		
			WB	LT	2	184	30	530	125	421	54	D		
				TH	2	184	192	508	125	421	50	D		
				RT	2	184	43	253	33	396	9	A		
				Total	2			1290			43	D		
			NB	LT	2	38	192	511	91	440	44	D		
				TH	2	38	43	50	126	459	59	E		
				RT	2	38	198	628	154	491	38	D		
				UT	2	38	30	20	91	440	42	D		
				Total	2			1208			41	D		
			SB	LT	2	5	198	423	925	1427	268	F		
				TH	2	5	30	318	766	1412	72	E		
				RT	2	5	192	242	53	293	9	A		
				UT	2	5	43	143	925	1427	273	F		
				Total	2			1127			158	F		
			Int	Total	2			4604			83	F		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	1285	40	309	14	B	97.3	F
				RT	3	265	155	173	48	351	12	B		
				Total	3			1458			14	B		
			WB	LT	3	137	155	145	326	416	63	E		
				TH	3	137	159	1229	333	413	134	F		
				Total	3			1374			127	F		
			NB	LT	3	151	159	193	409	470	445	F		
				RT	3	151	265	79	409	470	311	F		
				Total	3			273			406	F		
			SB	LT	3	7	265	27	6	73	28	C		
				TH	3	7	155	16	6	73	34	C		
				RT	3	7	159	4	4	86	108	F		
				Total	3			47			37	D		
			Int	Total	3			3151			97	F		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	568	430	789	82	F	112.4	F
				TH	4	258	261	855	434	791	100	F		
				RT	4	258	128	672	463	827	29	C		
				Total	4			2095			73	E		
			WB	LT	4	252	128	222	1170	1256	126	F		
				TH	4	252	256	583	1170	1256	242	F		
				RT	4	252	49	654	1220	1306	166	F		
				Total	4			1458			190	F		
			NB	LT	4	226	256	514	207	721	78	E		
				TH	4	226	49	687	143	691	50	D		
				RT	4	226	261	190	58	626	31	C		
				UT	4	226	128	155	207	721	83	F		
				Total	4			1547			60	E		
			SB	LT	4	228	261	506	1219	1674	99	F		
				TH	4	228	128	751	1466	1674	195	F		
				RT	4	228	256	313	1471	1674	99	F		
				UT	4	228	49	30	1219	1674	98	F		
				Total	4			1600			144	F		
			Int	Total	4			6700			112	F		

SR 101L, Princess to Raintree

Build Alternative 2 2035 PM Peak Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	5	594	692	179	F	97.2	F
				TH	5	134	257	1036	591	690	207	F		
				RT	5	134	143	211	620	719	109	F		
				Total	5			1252			190	F		
			WB	LT	5	256	143	363	74	322	52	D		
				TH	5	256	145	1025	74	322	12	B		
				RT	5	256	148	12	74	322	5	A		
				Total	5			1400			22	C		
			NB	LT	5	141	145	354	362	624	66	E		
				TH	5	141	148	10	362	624	97	F		
				RT	5	141	257	710	362	624	105	F		
				Total	5			1074			92	F		
			SB	LT	5	149	257	74	13	103	41	D		
				TH	5	149	143	5	10	106	26	C		
				RT	5	149	145	16	15	137	9	A		
				Total	5			94			35	C		
			Int	Total	5			3820			97	F		
6	Bell Road and SR 101L	Signal	EB	LT	6	100	97	43	243	879	79	E	113.0	F
				TH	6	100	108	414	243	879	76	E		
				RT	6	100	111	127	579	1327	229	F		
				Total	6			585			109	F		
			WB	LT	6	103	111	402	681	1388	329	F		
				TH	6	103	98	177	681	1388	117	F		
				RT	6	103	97	393	748	1459	56	E		
				Total	6			972			180	F		
			NB	LT	6	105	98	306	203	855	80	E		
				TH	6	105	97	274	203	855	57	E		
				RT	6	105	108	328	250	916	21	C		
				UT	6	105	111	63	203	855	307	F		
				Total	6			972			68	E		
			SB	LT	6	96	108	519	93	369	65	E		
				TH	6	96	111	129	93	369	179	F		
				RT	6	96	98	37	108	396	45	D		
				UT	6	96	97	1	93	369	39	D		
				Total	6			686			85	F		
			Int	Total	6			3214			113	F		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	161	955	1038	290	F	117.0	F
				TH	7	72	91	252	955	1038	329	F		
				RT	7	72	15	445	994	1077	363	F		
				Total	7			858			339	F		
			WB	LT	7	84	15	1245	150	906	80	E		
				TH	7	84	86	269	150	906	53	D		
				RT	7	84	58	559	100	383	23	C		
				Total	7			2073			61	E		
			NB	LT	7	218	86	105	357	996	122	F		
				TH	7	218	58	506	357	996	135	F		
				RT	7	218	91	1544	357	996	15	B		
				UT	7	218	15	65	357	996	115	F		
				Total	7			2221			50	D		
			SB	LT	7	14	91	412	628	1570	228	F		
				TH	7	14	15	404	628	1570	190	F		
				RT	7	14	86	40	664	1581	32	C		
				UT	7	14	58	19	628	1570	226	F		
				Total	7			876			201	F		
			Int	Total	7			6027			117	F		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	161	8	115	9	A	8.6	A
				Total	8			161			9	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	331	55	402	21	C	20.6	C
				Total	9			331			21	C		
10	Hartford and Southbound Frontage	Stop	EB	RT	10	94	82	67	2	62	8	A	8.1	A
				Total	10			67			8	A		

SR 101L, Princess to Raintree

Build Alternative 3 2035 AM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	37	7	100	16	B	6.2	A
				TH	1	183	196	526	7	100	5	A		
				RT	1	183	207	80	7	100	3	A		
				Total	1			642			6	A		
			WB	LT	1	4	207	369	12	313	4	A		
				TH	1	193	194	1370	60	724	7	A		
				RT	1	193	208	217	60	724	5	A		
				Total	1			1955			6	A		
			NB	LT	1	115	194	30	3	65	12	B		
				TH	1	115	208	38	3	65	13	B		
				RT	1	115	196	78	0	0	6	A		
				Total	1			145			9	A		
			SB	LT	1	209	196	71	0	0	1	A		
				TH	1	209	207	55	4	87	14	B		
				RT	1	209	194	82	6	106	9	A		
				Total	1			208			8	A		
			Int	Total	1			2951			6	A		
2	Raintree and SR 101L	Signal	EB	LT	2	197	43	226	42	261	61	E	111.8	F
				TH	2	197	254	239	42	261	34	C		
				RT	2	197	30	209	1	117	1	A		
				Total	2			674			33	C		
			WB	LT	2	188	30	685	571	1122	154	F		
				TH	2	188	192	571	571	1122	94	F		
				RT	2	188	43	307	557	1157	26	C		
				Total	2			1563			107	F		
			NB	LT	2	34	192	785	340	1519	91	F		
				TH	2	34	43	94	340	1519	48	D		
				RT	2	34	254	395	248	1458	31	C		
				UT	2	34	30	83	340	1519	132	F		
				Total	2			1357			73	E		
			SB	LT	2	10210	254	333	1044	1651	69	E		
				TH	2	10210	30	212	1044	1651	326	F		
				RT	2	10210	192	601	1044	1651	257	F		
				UT	2	10210	43	95	1044	1651	72	E		
				Total	2			1241			204	F		
			Int	Total	2			4835			112	F		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	896	13	208	7	A	11.4	B
				RT	3	265	155	280	19	251	6	A		
				Total	3			1176			7	A		
			WB	LT	3	137	155	96	45	349	15	B		
				TH	3	137	159	2070	47	346	12	B		
				Total	3			2167			12	B		
			NB	LT	3	151	159	452	36	234	19	B		
				RT	3	151	265	39	36	234	6	A		
				Total	3			490			18	B		
			SB	LT	3	7	265	17	2	44	15	B		
				TH	3	7	155	10	2	44	18	B		
				RT	3	7	159	10	2	80	15	B		
				Total	3			37			16	B		
			Int	Total	3			3870			11	B		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	385	96	547	72	E	38.9	D
				TH	4	258	261	578	96	547	39	D		
				RT	4	258	128	567	96	547	6	A		
				Total	4			1529			35	D		
			WB	LT	4	252	128	348	72	250	118	F		
				TH	4	252	260	721	72	250	46	D		
				RT	4	252	49	1317	7	237	6	A		
				Total	4			2386			34	C		
			NB	LT	4	226	260	783	147	744	52	D		
				TH	4	226	49	645	147	744	40	D		
				RT	4	226	261	108	19	487	26	C		
				UT	4	226	128	64	147	744	70	E		
				Total	4			1600			46	D		
			SB	LT	4	228	261	591	103	426	55	E		
				TH	4	228	128	466	95	439	42	D		
				RT	4	228	260	309	55	456	14	B		
				UT	4	228	49	80	103	426	63	E		
				Total	4			1446			43	D		
			Int	Total	4			6961			39	D		

SR 101L, Princess to Raintree

Build Alternative 3 2035 AM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	11	76	393	57	E	23.3	C
				TH	5	134	257	1386	74	390	26	C		
				RT	5	134	143	306	87	420	9	A		
				Total	5			1702			23	C		
			WB	LT	5	260	143	364	76	442	46	D		
				TH	5	260	145	1403	76	442	11	B		
				RT	5	260	148	50	76	442	6	A		
				Total	5			1817			18	B		
			NB	LT	5	141	145	346	70	291	48	D		
				TH	5	141	148	10	70	291	48	D		
				RT	5	141	257	368	70	291	24	C		
				Total	5			724			36	D		
			SB	LT	5	149	257	22	8	72	65	E		
				TH	5	149	143	10	7	75	60	E		
				RT	5	149	145	9	7	106	15	B		
				Total	5			41			53	D		
			Int	Total	5			4283			23	C		
6	Bell Road and SR 101L	Signal	EB	LT	6	100	97	22	65	304	46	D	33.0	C
				TH	6	100	108	650	65	304	35	D		
				RT	6	100	111	180	11	134	9	A		
				Total	6			852			30	C		
			WB	LT	6	103	111	345	73	324	62	E		
				TH	6	103	98	456	73	324	29	C		
				RT	6	103	97	411	117	395	11	B		
				Total	6			1212			32	C		
			NB	LT	6	105	98	367	56	228	38	D		
				TH	6	105	97	143	56	228	38	D		
				RT	6	105	108	289	94	289	12	B		
				UT	6	105	111	38	56	228	51	D		
				Total	6			838			29	C		
			SB	LT	6	96	108	273	44	202	56	E		
				TH	6	96	111	106	44	202	40	D		
				RT	6	96	98	44	55	229	19	B		
				UT	6	96	97	3	44	202	62	E		
				Total	6			425			48	D		
			Int	Total	6			3327			33	C		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	52	81	272	124	F	121.4	F
				TH	7	72	234	190	81	272	112	F		
				RT	7	72	15	180	107	308	27	C		
				Total	7			422			77	E		
			WB	LT	7	84	15	1423	869	1674	217	F		
				TH	7	84	86	547	869	1674	89	F		
				RT	7	84	58	452	439	1674	43	D		
				Total	7			2422			156	F		
			NB	LT	7	218	86	210	156	411	130	F		
				TH	7	218	58	219	156	411	121	F		
				RT	7	218	234	523	156	411	6	A		
				RT	7	10313	234	648	0	26	2	A		
				UT	7	218	15	80	156	411	128	F		
				Total	7			1680			41	D		
			SB	LT	7	14	234	526	839	1667	246	F		
				TH	7	14	15	275	839	1667	199	F		
				RT	7	14	86	205	875	1669	39	D		
				UT	7	14	58	8	839	1667	250	F		
				Total	7			1014			192	F		
			Int	Total	7			5538			121	F		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	18	1	50	8	A	8.1	A
				Total	8			18			8	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	271	24	200	14	B	13.7	B
				Total	9			271			14	B		
10	Hartford and Southbound Frontage	Stop	EB	RT	10	94	82	13	0	37	7	A	7.3	A
				Total	10			13			7	A		

SR 101L, Princess to Raintree

Build Alternative 3 2035 PM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	27	932	1065	104	F	78.9	E
				TH	1	183	196	1008	929	1062	115	F		
				RT	1	183	207	32	720	851	60	E		
				Total	1			1067			113	F		
			WB	LT	1	4	207	63	2	83	7	A		
				TH	1	193	194	878	40	543	6	A		
				RT	1	193	208	261	40	543	3	A		
				Total	1			1202			5	A		
			NB	LT	1	115	194	101	514	580	122	F		
				TH	1	115	208	106	513	579	176	F		
				RT	1	115	196	559	545	611	174	F		
				Total	1			766			167	F		
			SB	LT	1	209	196	121	58	316	23	C		
				TH	1	209	207	101	48	294	55	D		
				RT	1	209	194	138	58	314	34	C		
				Total	1			360			36	D		
			Int	Total	1			3395			79	E		
2	Raintree and SR 101L	Signal	EB	LT	2	197	43	631	122	407	81	F	70.6	E
				TH	2	197	254	535	122	407	34	C		
				RT	2	197	30	521	45	264	3	A		
				Total	2			1687			42	D		
			WB	LT	2	188	30	530	80	468	134	F		
				TH	2	188	192	506	80	468	35	D		
				RT	2	188	43	253	22	388	7	A		
				Total	2			1289			70	E		
			NB	LT	2	34	192	425	994	1674	75	E		
				TH	2	34	43	41	994	1674	190	F		
				RT	2	34	254	515	1010	1674	186	F		
				UT	2	34	30	17	994	1674	125	F		
				Total	2			998			138	F		
			SB	LT	2	10210	254	528	118	411	66	E		
				TH	2	10210	30	363	118	411	43	D		
				RT	2	10210	192	269	118	411	18	B		
				UT	2	10210	43	184	118	411	111	F		
				Total	2			1344			56	E		
			Int	Total	2			5318			71	E		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	1313	18	212	8	A	10.8	B
				RT	3	265	155	176	22	255	7	A		
				Total	3			1488			8	A		
			WB	LT	3	137	155	172	29	237	22	C		
				TH	3	137	159	1474	29	234	10	A		
				Total	3			1646			11	B		
			NB	LT	3	151	159	443	35	236	19	B		
				RT	3	151	265	179	35	236	8	A		
				Total	3			622			16	B		
			SB	LT	3	7	265	27	3	57	16	B		
				TH	3	7	155	15	3	57	19	B		
				RT	3	7	159	4	2	88	7	A		
				Total	3			46			16	B		
			Int	Total	3			3803			11	B		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	348	87	412	72	E	47.7	D
				TH	4	258	261	779	87	412	36	D		
				RT	4	258	128	615	87	412	12	B		
				Total	4			1743			35	C		
			WB	LT	4	252	128	313	53	246	113	F		
				TH	4	252	260	796	53	246	38	D		
				RT	4	252	49	894	3	209	3	A		
				Total	4			2003			34	C		
			NB	LT	4	226	260	464	218	738	91	F		
				TH	4	226	49	658	218	738	62	E		
				RT	4	226	261	173	57	487	47	D		
				UT	4	226	128	162	218	738	143	F		
				Total	4			1456			79	E		
			SB	LT	4	228	261	623	96	465	53	D		
				TH	4	228	128	943	114	715	56	E		
				RT	4	228	260	399	128	763	29	C		
				UT	4	228	49	14	96	465	59	E		
				Total	4			1980			50	D		
			Int	Total	4			7181			48	D		

SR 101L, Princess to Raintree

Build Alternative 3 2035 PM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	4	624	691	202	F	103.7	F
				TH	5	134	257	827	622	690	260	F		
				RT	5	134	143	168	650	718	148	F		
				Total	5			999			241	F		
			WB	LT	5	260	143	439	119	407	65	E		
				TH	5	260	145	1218	119	407	21	C		
				RT	5	260	148	15	119	407	10	B		
				Total	5			1672			33	C		
			NB	LT	5	141	145	355	370	621	75	E		
				TH	5	141	148	10	370	621	112	F		
				RT	5	141	257	715	370	621	98	F		
				Total	5			1080			91	F		
			SB	LT	5	149	257	73	28	175	72	E		
				TH	5	149	143	5	26	178	55	E		
				RT	5	149	145	15	37	210	20	C		
				Total	5			93			63	E		
			Int	Total	5			3844			104	F		
6	Bell Road and SR 101L	Signal	EB	LT	6	100	97	56	73	329	50	D	58.4	E
				TH	6	100	108	535	73	329	44	D		
				RT	6	100	111	231	17	158	11	B		
				Total	6			823			35	C		
			WB	LT	6	103	111	541	505	1268	143	F		
				TH	6	103	98	210	505	1268	89	F		
				RT	6	103	97	468	573	1339	44	D		
				Total	6			1220			95	F		
			NB	LT	6	105	98	347	80	267	43	D		
				TH	6	105	97	285	80	267	45	D		
				RT	6	105	108	337	120	328	16	B		
				UT	6	105	111	96	80	267	56	E		
				Total	6			1066			36	D		
			SB	LT	6	96	108	519	82	335	60	E		
				TH	6	96	111	136	82	335	47	D		
				RT	6	96	98	47	94	362	29	C		
				UT	6	96	97	2	82	335	70	E		
				Total	6			704			55	E		
			Int	Total	6			3812			58	E		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	175	933	1038	269	F	117.0	F
				TH	7	72	234	274	933	1038	304	F		
				RT	7	72	15	480	969	1074	322	F		
				Total	7			929			307	F		
			WB	LT	7	84	15	1245	146	902	74	E		
				TH	7	84	86	269	146	902	53	D		
				RT	7	84	58	559	106	414	24	C		
				Total	7			2074			58	E		
			NB	LT	7	218	86	172	304	909	144	F		
				TH	7	218	58	575	304	909	138	F		
				RT	7	218	234	392	304	909	3	A		
				RT	7	10313	234	853	0	116	3	A		
				UT	7	218	15	70	304	909	148	F		
				Total	7			2063			57	E		
			SB	LT	7	14	234	411	607	1495	222	F		
				TH	7	14	15	405	607	1495	186	F		
				RT	7	14	86	40	630	1509	30	C		
				UT	7	14	58	19	607	1495	224	F		
				Total	7			875			197	F		
			Int	Total	7			5940			117	F		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	161	8	114	9	A	8.6	A
				Total	8			161			9	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	338	48	321	20	C	20.1	C
				Total	9			338			20	C		
10	Hartford and Southbound Frontage	Stop	EB	RT	10	94	82	67	2	62	8	A	8.3	A
				Total	10			67			8	A		

SR 101L, Princess to Raintree

Build Alternative 4 2035 AM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	37	7	98	14	B	6.8	A
				TH	1	183	196	525	7	98	5	A		
				RT	1	183	207	80	7	98	4	A		
				Total	1			642			6	A		
			WB	LT	1	192	207	303	12	260	11	B		
				TH	1	192	194	1133	16	285	5	A		
				RT	1	192	208	176	16	285	3	A		
				Total	1			1612			6	A		
			NB	LT	1	203	194	30	4	70	15	B		
				TH	1	203	208	38	4	71	14	B		
				RT	1	203	196	78	0	0	6	A		
				Total	1			146			10	A		
			SB	LT	1	209	196	71	7	95	16	B		
				TH	1	209	207	56	6	96	16	B		
				RT	1	209	194	82	9	118	11	B		
				Total	1			209			14	B		
			Int	Total	1			2608			7	A		
2	Raintree and SR 101L	Signal	EB	LT	2	196	43	228	44	162	36	D	97.3	F
				TH	2	196	198	239	44	162	31	C		
				RT	2	196	30	209	9	154	7	A		
				Total	2			675			25	C		
			WB	LT	2	184	30	540	1056	1243	149	F		
				TH	2	184	192	449	1056	1243	160	F		
				RT	2	184	43	239	1114	1302	122	F		
				Total	2			1227			148	F		
			NB	LT	2	38	192	517	1256	1674	248	F		
				TH	2	38	43	65	1255	1674	52	D		
				RT	2	38	198	257	1133	1674	30	C		
				UT	2	38	30	57	1256	1674	259	F		
				Total	2			895			172	F		
			SB	LT	2	5	198	334	93	304	61	E		
				TH	2	5	30	230	62	416	49	D		
				RT	2	5	192	645	47	457	14	B		
				UT	2	5	43	103	93	304	65	E		
				Total	2			1311			36	D		
			Int	Total	2			4108			97	F		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	880	28	251	12	B	66.3	E
				RT	3	265	155	270	37	294	10	A		
				Total	3			1150			12	B		
			WB	LT	3	137	155	83	254	417	45	D		
				TH	3	137	159	1786	278	414	82	F		
				Total	3			1868			80	F		
			NB	LT	3	151	159	409	238	457	155	F		
				RT	3	151	265	35	238	457	119	F		
				Total	3			444			152	F		
			SB	LT	3	7	265	17	4	60	23	C		
				TH	3	7	155	10	4	60	32	C		
				RT	3	7	159	10	3	72	62	E		
				Total	3			36			35	D		
			Int	Total	3			3498			66	E		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	594	287	737	97	F	94.3	F
				TH	4	258	261	583	289	739	39	D		
				RT	4	258	128	573	136	679	5	A		
				Total	4			1750			47	D		
			WB	LT	4	252	128	301	1002	1253	96	F		
				TH	4	252	256	628	1002	1253	125	F		
				RT	4	252	49	1147	1038	1290	102	F		
				Total	4			2076			108	F		
			NB	LT	4	152	256	327	774	1362	39	D		
				TH	4	152	49	217	778	1350	179	F		
				RT	4	152	261	586	778	1350	183	F		
				UT	4	152	128	469	748	1332	85	F		
				Total	4			1598			124	F		
			SB	LT	4	130	261	84	72	360	40	D		
				TH	4	130	128	53	399	943	142	F		
				RT	4	130	256	616	399	943	135	F		
				UT	4	130	49	501	305	914	60	E		
				Total	4			1254			99	F		
			Int	Total	4			6679			94	F		

SR 101L, Princess to Raintree

Build Alternative 4 2035 AM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	10	63	371	60	E	23.8	C
				TH	5	134	257	1378	61	367	29	C		
				RT	5	134	143	305	73	397	8	A		
				Total	5			1693			26	C		
			WB	LT	5	147	143	315	55	281	43	D		
				TH	5	147	145	1215	55	281	7	A		
				RT	5	147	148	42	55	281	4	A		
				Total	5			1573			14	B		
			NB	LT	5	141	145	343	75	318	44	D		
				TH	5	141	148	10	75	318	45	D		
				RT	5	141	257	368	75	318	35	C		
				Total	5			721			39	D		
			SB	LT	5	149	257	22	5	64	51	D		
				TH	5	149	143	10	4	67	37	D		
				RT	5	149	145	9	4	97	10	B		
				Total	5			40			39	D		
			Int	Total	5			4026			24	C		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	55	88	281	15	B	116.6	F
				TH	7	72	91	206	88	281	22	C		
				RT	7	72	15	169	114	320	34	C		
				Total	7			431			26	C		
			WB	LT	7	84	15	1797	796	1674	193	F		
				TH	7	84	86	684	796	1674	182	F		
				RT	7	84	58	569	536	1672	41	D		
				Total	7			3050			162	F		
			NB	LT	7	218	86	233	148	499	87	F		
				TH	7	218	58	204				A		
				RT	7	218	91	736	148	499	3	A		
				UT	7	218	15	83	148	499	86	F		
				Total	7			1255			24	C		
			SB	LT	7	14	91	546	262	715	211	F		
				TH	7	14	15					A		
				RT	7	14	86	402	320	777	30	C		
				UT	7	14	58	9	262	715	177	F		
				Total	7			956			134	F		
			Int	Total	7			5692			117	F		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	18	1	49	8	A	8.1	A
				Total	8			18			8	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	270	23	199	13	B	13.3	B

SR 101L, Princess to Raintree

Build Alternative 4 2035 PM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	23	975	1067	126	F	87.2	F
				TH	1	183	196	832	970	1063	149	F		
				RT	1	183	207	26	769	861	83	F		
				Total	1			881			147	F		
			WB	LT	1	192	207	65	2	83	11	B		
				TH	1	192	194	903	22	322	6	A		
				RT	1	192	208	265	22	322	3	A		
				Total	1			1233			5	A		
			NB	LT	1	203	194	108	437	617	90	F		
				TH	1	203	208	114	437	616	135	F		
				RT	1	203	196	593	465	645	135	F		
				Total	1			814			129	F		
			SB	LT	1	209	196	219	235	336	155	F		
				TH	1	209	207	35	235	337	111	F		
				RT	1	209	194	77	255	360	73	E		
				Total	1			331			131	F		
			Int	Total	1			3260			87	F		
2	Raintree and SR 101L	Signal	EB	LT	2	196	43	625	190	416	52	D	93.5	F
				TH	2	196	198	510	190	416	52	D		
				RT	2	196	30	506	182	444	23	C		
				Total	2			1641			43	D		
			WB	LT	2	184	30	526	596	1114	108	F		
				TH	2	184	192	502	596	1114	117	F		
				RT	2	184	43	250	630	1173	91	F		
				Total	2			1277			108	F		
			NB	LT	2	38	192	495	471	1397	92	F		
				TH	2	38	43	48	476	1391	139	F		
				RT	2	38	198	602	515	1410	122	F		
				UT	2	38	30	20	471	1397	92	F		
				Total	2			1164			110	F		
			SB	LT	2	5	198	426	597	1056	211	F		
				TH	2	5	30	323	460	1028	77	E		
				RT	2	5	192	235	80	494	9	A		
				UT	2	5	43	158	597	1056	222	F		
				Total	2			1142			133	F		
			Int	Total	2			5224			93	F		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	1261	18	329	9	A	11.8	B
				RT	3	265	155	169	23	371	6	A		
				Total	3			1430			8	A		
			WB	LT	3	137	155	172	34	239	21	C		
				TH	3	137	159	1465	35	236	13	B		
				Total	3			1637			13	B		
			NB	LT	3	151	159	442	30	209	19	B		
				RT	3	151	265	180	30	209	8	A		
				Total	3			622			15	B		
			SB	LT	3	7	265	27	2	54	14	B		
				TH	3	7	155	15	2	54	17	B		
				RT	3	7	159	4	1	66	15	B		
				Total	3			46			15	B		
			Int	Total	3			3734			12	B		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	534	308	754	86	F	99.2	F
				TH	4	258	261	804	312	755	81	F		
				RT	4	258	128	635	322	792	23	C		
				Total	4			1973			64	E		
			WB	LT	4	252	128	308	208	747	66	E		
				TH	4	252	256	784	208	747	61	E		
				RT	4	252	49	864	210	784	37	D		
				Total	4			1956			51	D		
			NB	LT	4	152	256	331	1530	1674	83	F		
				TH	4	152	49	141	1530	1674	165	F		
				RT	4	152	261	537	1530	1674	159	F		
				UT	4	152	128	792	1528	1674	141	F		
				Total	4			1801			138	F		
			SB	LT	4	130	261	180	656	1320	107	F		
				TH	4	130	128	152	698	1289	232	F		
				RT	4	130	256	462	698	1289	210	F		
				UT	4	130	49	674	671	1275	132	F		
				Total	4			1468			164	F		
			Int	Total	4			7199			99	F		

SR 101L, Princess to Raintree

Build Alternative 4 2035 PM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	5	598	692	201	F	109.8	F
				TH	5	134	257	913	597	690	239	F		
				RT	5	134	143	186	625	719	130	F		
				Total	5			1103			221	F		
			WB	LT	5	147	143	417	114	399	67	E		
				TH	5	147	145	1145	114	399	21	C		
				RT	5	147	148	14	114	399	9	A		
				Total	5			1576			33	C		
			NB	LT	5	141	145	346	432	626	87	F		
				TH	5	141	148	10	432	626	132	F		
				RT	5	141	257	700	432	626	125	F		
				Total	5			1056			112	F		
			SB	LT	5	149	257	72	29	167	78	E		
				TH	5	149	143	5	26	170	59	E		
				RT	5	149	145	16	38	201	19	B		
				Total	5			93			67	E		
			Int	Total	5			3828			110	F		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	233	234	705	137	F	70.8	E
				TH	7	72	91	365	234	705	127	F		
				RT	7	72	15	640	269	744	32	C		
				Total	7			1237			80	E		
			WB	LT	7	84	15	1244	198	1160	72	E		
				TH	7	84	86	269	198	1160	53	D		
				RT	7	84	58	559	96	381	18	B		
				Total	7			2072			55	E		
			NB	LT	7	218	86	81	706	1671	125	F		
				TH	7	218	58	50	706	1671	188	F		
				RT	7	218	91	1487	706	1671	57	E		
				UT	7	218	15	62	706	1671	129	F		
				Total	7			1679			67	E		
			SB	LT	7	14	91	420	156	409	146	F		
				TH	7	14	15		156	409	136	F		
				RT	7	14	86	82	183	471	9	A		
				UT	7	14	58	19	156	409	133	F		
				Total	7			521			124	F		
			Int	Total	7			5509			71	E		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	161	9	120	9	A	8.8	A
				Total	8			161			9	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	339	45	309	19	C	18.9	C
				Total	9			339			19	C		

SR 101L, Princess to Raintree

Recommended Build Alternative 2035 AM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	37	4	110	12	B	5.3	A
				TH	1	183	196	525	4	110	3	A		
				RT	1	183	207	80	4	110	2	A		
				Total	1			641			4	A		
			WB	LT	1	4114	207	395	5	158	6	A		
				TH	1	193	194	1437	2	48	1	A		
				RT	1	193	208	226	2	48	2	A		
				Total	1			2058			2	A		
			NB	LT	1	115	194	30	16	88	56	E		
				TH	1	115	208	38	15	87	51	D		
				RT	1	115	196	78	0	0	6	A		
				Total	1			145			28	C		
			SB	LT	1	209	196	71	29	155	6	A		
				TH	1	209	207	56	25	134	56	E		
				RT	1	209	194	82	32	158	27	C		
				Total	1			209			28	C		
			Int	Total	1			3053			5	A		
2	Raintree and SR 101L	Signal	EB	LT	2	4197	14006	227	65	208	52	D	60.7	E
				TH	2	4197	4198	239	65	208	51	D		
				RT	2	4197	30	209	0	30	1	A		
				Total	2			675			36	D		
			WB	LT	2	4188	30	635	852	1214	102	F		
				TH	2	4188	4191	532	852	1214	124	F		
				RT	2	4188	4443	284	878	1286	44	D		
				Total	2			1451			99	F		
			NB	LT	2	4434	4191	792	359	1314	79	E		
				TH	2	4434	4443	95	150	1120	44	D		
				RT	2	4434	4198	395	166	1133	21	C		
				UT	2	4434	30	84	359	1314	83	F		
				Total	2			1366			60	E		
			SB	LT	2	14212	4198	383	84	301	50	D		
				TH	2	4182	30	258	79	553	49	D		
				RT	2	4182	4191	734	96	642	21	C		
				UT	2	14212	14006	112	84	301	50	D		
				Total	2			1488			35	D		
			Int	Total	2			4980			61	E		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	898	14	204	8	A	11.5	B
				RT	3	265	155	280	19	245	6	A		
				Total	3			1177			7	A		
			WB	LT	3	137	155	96	46	359	15	B		
				TH	3	137	159	2053	48	356	12	B		
				Total	3			2149			12	B		
			NB	LT	3	151	159	449	39	256	19	B		
				RT	3	151	265	38	39	256	7	A		
				Total	3			487			18	B		
			SB	LT	3	7	265	17	2	47	15	B		
				TH	3	7	155	10	2	47	20	C		
				RT	3	7	159	10	2	84	13	B		
				Total	3			37			16	B		
			Int	Total	3			3850			11	B		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	390	96	540	73	E	39.0	D
				TH	4	258	261	577	96	540	40	D		
				RT	4	258	128	572	96	540	5	A		
				Total	4			1540			35	D		
			WB	LT	4	252	128	351	82	354	114	F		
				TH	4	252	260	715	82	354	46	D		
				RT	4	252	49	1299	19	362	6	A		
				Total	4			2364			34	C		
			NB	LT	4	226	260	791	160	742	53	D		
				TH	4	226	49	643	160	742	41	D		
				RT	4	226	261	109	27	486	26	C		
				UT	4	226	128	65	160	742	68	E		
				Total	4			1608			47	D		
			SB	LT	4	228	261	595	103	423	56	E		
				TH	4	228	128	471	91	398	40	D		
				RT	4	228	260	314	51	424	13	B		
				UT	4	228	49	76	103	423	65	E		
				Total	4			1457			42	D		
			Int	Total	4			6969			39	D		

SR 101L, Princess to Raintree

Recommended Build Alternative 2035 AM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	11	75	402	59	E	23.4	C
				TH	5	134	257	1381	74	398	26	C		
				RT	5	134	143	305	86	428	9	A		
				Total	5			1696			23	C		
			WB	LT	5	260	143	370	78	437	47	D		
				TH	5	260	145	1403	78	437	11	B		
				RT	5	260	148	51	78	437	6	A		
				Total	5			1824			18	B		
			NB	LT	5	141	145	344	71	298	48	D		
				TH	5	141	148	10	71	298	47	D		
				RT	5	141	257	368	71	298	24	C		
				Total	5			722			36	D		
			SB	LT	5	149	257	22	8	66	61	E		
				TH	5	149	143	10	7	69	60	E		
				RT	5	149	145	9	7	101	14	B		
				Total	5			41			51	D		
			Int	Total	5			4282			23	C		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	51	81	272	135	F	117.3	F
				TH	7	72	234	188	81	272	113	F		
				RT	7	72	15	180	107	308	27	C		
				Total	7			419			79	E		
			WB	LT	7	84	15	1434	856	1674	215	F		
				TH	7	84	86	557	856	1674	88	F		
				RT	7	84	58	457	421	1673	44	D		
				Total	7			2448			154	F		
			NB	LT	7	218	86	210	157	403	129	F		
				TH	7	218	58	223	157	403	121	F		
				RT	7	218	234	521	157	403	5	A		
				RT	7	10313	234	640	0	24	2	A		
				UT	7	218	15	81	157	403	128	F		
				Total	7			1675			41	D		
			SB	LT	7	14	234	527	863	1671	248	F		
				TH	7	14	15		863	1671	203	F		
				RT	7	14	86	205	898	1668	38	D		
				UT	7	14	58	8	863	1671	261	F		
				Total	7			741			190	F		
			Int	Total	7			5283			117	F		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	18	3	59	8	A	7.8	A
				Total	8			18			8	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	259	47	253	14	B	14.2	B
				Total	9			259			14	B		
10	Hartford and Southbound Frontage	Stop	EB	RT	10	94	82	13	0	37	8	A	7.8	A
				Total	10			13			8	A		

SR 101L, Princess to Raintree

Recommended Build Alternative 2035 PM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
1	Raintree and 87th Street	Signal	EB	LT	1	183	208	24	969	1063	125	F	82.9	F
				TH	1	183	196	849	969	1062	148	F		
				RT	1	183	207	27	758	851	83	F		
				Total	1			900			146	F		
			WB	LT	1	4114	207	66	2	86	13	B		
				TH	1	193	194	914	6	190	2	A		
				RT	1	193	208	271	6	190	4	A		
				Total	1			1251			3	A		
			NB	LT	1	115	194	99	495	580	126	F		
				TH	1	115	208	106	494	579	172	F		
				RT	1	115	196	556	526	611	167	F		
				Total	1			761			162	F		
			SB	LT	1	209	196	120	56	279	24	C		
				TH	1	209	207	101	47	258	52	D		
				RT	1	209	194	139	58	282	33	C		
				Total	1			360			35	D		
			Int	Total	1			3272			83	F		
2	Raintree and SR 101L	Signal	EB	LT	2	4197	14006	568	188	397	57	E	85.6	F
				TH	2	4197	4198	486	188	397	65	E		
				RT	2	4197	30	470	20	340	11	B		
				Total	2			1524			45	D		
			WB	LT	2	4188	30	509	687	1147	118	F		
				TH	2	4188	4191	486	687	1147	147	F		
				RT	2	4188	4443	241	696	1186	47	D		
				Total	2			1235			116	F		
			NB	LT	2	4434	4191	509	145	515	62	E		
				TH	2	4434	4443	49	174	541	66	E		
				RT	2	4434	4198	625	197	568	47	D		
				UT	2	4434	30	20	145	515	59	E		
				Total	2			1203			54	D		
			SB	LT	2	14212	4198	450	933	1480	226	F		
				TH	2	4182	30	336	637	1465	75	E		
				RT	2	4182	4191	257	6	148	6	A		
				UT	2	14212	14006	152	933	1480	231	F		
				Total	2			1195			137	F		
			Int	Total	2			5157			86	F		
3	Frank Lloyd Wright and 90th Street	Signal	EB	TH	3	265	265	1318	19	234	9	A	10.9	B
				RT	3	265	155	174	25	277	7	A		
				Total	3			1491			8	A		
			WB	LT	3	137	155	172	28	241	21	C		
				TH	3	137	159	1477	29	238	10	A		
				Total	3			1650			11	B		
			NB	LT	3	151	159	442	36	225	20	C		
				RT	3	151	265	180	36	225	8	A		
				Total	3			622			17	B		
			SB	LT	3	7	265	27	3	56	17	B		
				TH	3	7	155	15	3	56	17	B		
				RT	3	7	159	4	2	90	7	A		
				Total	3			46			16	B		
			Int	Total	3			3809			11	B		
4	Frank Lloyd Wright and SR 101L	Signal	EB	LT	4	258	49	365	178	544	75	E	43.2	D
				TH	4	258	261	765	178	544	61	E		
				RT	4	258	128	603	178	544	22	C		
				Total	4			1733			50	D		
			WB	LT	4	252	128	311	75	263	116	F		
				TH	4	252	260	801	75	263	47	D		
				RT	4	252	49	893	5	246	4	A		
				Total	4			2005			38	D		
			NB	LT	4	226	260	502	104	348	46	D		
				TH	4	226	49	690	104	348	44	D		
				RT	4	226	261	182	1	92	31	C		
				UT	4	226	128	164	104	348	60	E		
				Total	4			1538			45	D		
			SB	LT	4	228	261	631	80	311	48	D		
				TH	4	228	128	956	77	655	45	D		
				RT	4	228	260	402	88	702	21	C		
				UT	4	228	49	15	80	311	52	D		
				Total	4			2005			41	D		
			Int	Total	4			7281			43	D		

SR 101L, Princess to Raintree

Recommended Build Alternative 2035 PM Results

Int #	Int Name	Traffic Control	Appr	Mvmt	hide			Volume Served	Queue (ft)		Delay (sec/veh)	LOS	Delay (sec/veh)	Intersection LOS
					Int #	From Link	To Link		Average	Max				
5	Frank Lloyd Wright and Hayden Road	Signal	EB	LT	5	134	148	4	624	692	201	F	106.5	F
				TH	5	134	257	795	623	690	273	F		
				RT	5	134	143	162	651	718	156	F		
				Total	5			961			253	F		
			WB	LT	5	260	143	451	121	423	65	E		
				TH	5	260	145	1239	121	423	21	C		
				RT	5	260	148	15	121	423	13	B		
				Total	5			1705			33	C		
			NB	LT	5	141	145	352	386	628	79	E		
				TH	5	141	148	10	386	628	117	F		
				RT	5	141	257	712	386	628	105	F		
				Total	5			1075			97	F		
			SB	LT	5	149	257	73	29	170	75	E		
				TH	5	149	143	5	27	173	58	E		
				RT	5	149	145	16	39	204	19	B		
				Total	5			93			65	E		
			Int	Total	5			3834			106	F		
7	Princess/Pima and SR 101L	Signal	EB	LT	7	72	58	189	766	1013	118	F	82.3	F
				TH	7	72	234	320	766	1013	138	F		
				RT	7	72	15	525	802	1050	167	F		
				Total	7			1034			149	F		
			WB	LT	7	84	15	238	942	1674	302	F		
				TH	7	84	86	234	942	1674	96	F		
				RT	7	84	58	481	497	1203	66	E		
				Total	7			953			132	F		
			NB	LT	7	218	86	234	158	483	76	E		
				TH	7	218	58	660	158	483	70	E		
				RT	7	218	234	330	158	483	2	A		
				RT	7	10313	234	909	1	107	3	A		
				UT	7	218	15	49	158	483	69	E		
				Total	7			2181			32	C		
			SB	LT	7	14	234	418	136	423	82	F		
				TH	7	14	15	369	136	423	71	E		
				RT	7	14	86	41	111	474	9	A		
				UT	7	14	58	19	136	423	78	E		
				Total	7			847			74	E		
			Int	Total	7			5015			82	F		
8	Westworld and Northbound Frontage	Stop	WB	RT	8	239	50	161	8	117	9	A	8.5	A
				Total	8			161			9	A		
9	Bahia and Northbound Frontage	Stop	WB	RT	9	245	78	338	53	330	22	C	21.7	C
				Total	9			338			22	C		
10	Hartford and Southbound Frontage	Stop	EB	RT	10	94	82	60	26	165	33	D	32.9	D
				Total	10			60			33	D		

Scheme Summary

Control Data

Control Data and Model Parameters

SR 101 Traffic Study	2035 PHF Flow Profile (veh)
2035 Alternative 4 - East Side	7.5 min Time Slice
Rodel-Win1	Control Delays (sec)
Right Hand Drive	Daylight conditions
AM Peak Hour	Peak 60/15 min Results
Full Geometry	Output flows: Vehicles
English Units (ft)	50% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	Yes
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (ft)

Approach and Entry Geometry

Leg	Leg Names	Approach Bearing (deg)	Grade Separation G	Half Width V	Approach Lanes n	Entry Width E	Entry Lanes n	Flare Length L'	Entry Radius R	Entry Angle ?
1	SR 101 NB Front	0	0	24.00	2	30.00	2	110.00	100.00	25.00
2	Bell Rd	90	0	24.00	2	30.00	2	110.00	100.00	25.00
3	SR 101 NB Front	180	0	10.00	1	10.00	1	0.00	100.00	25.00
4	Bell Rd	270	0	24.00	2	26.00	2	110.00	100.00	25.00

Circulating and Exit Geometry

Leg	Leg Names	Inscribed Diameter D	Circulating Width C	Circulating Lanes nc	Exit Width Ex	Exit Lanes nex	Exit Half Width Vx	Exit Half Width Lanes nvx
1	SR 101 NB Front	170.00	33.00	2	14.00	1	16.00	1
2	Bell Rd	170.00	33.00	2	28.00	2	24.00	2
3	SR 101 NB Front	170.00	33.00	2	28.00	2	24.00	2
4	Bell Rd	170.00	33.00	2	28.00	2	24.00	2

Bypass Geometry

Bypass Approach Geometry (ft)

Leg	Leg Names	Bypass Type	Bypass Flows	V	nv	Vb	nvb	Vt	nvt
1	SR 101 NB Front	Yield	320	24	2	12	1	24	2
2	Bell Rd	Yield	100	24	2	12	1	24	2

Bypass Entry and Exit Geometry (ft)

Leg	Leg Names	Entry Geometry						Leg	Leg Names	Exit Lanes	
		Eb	neb	Lb	Lt	Rb	Phib			nex	Nmx
1	SR 101 NB Front	12	1	50	200	100.0003008	25	2	Bell Rd	2	2
2	Bell Rd	12	1	50	130	80.00022272	25	3	SR 101 NB Front	2	2

Operational Results

2035 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SR 101 NB Front	Yield	440	320	710	710	0	1749	836	0.2541	0.3901
2	Bell Rd	Yield	800	100	450	450	1020	1937	923	0.4171	0.1098
3	SR 101 NB Front	None	0		0		140	0		0.0000	
4	Bell Rd	None	710		0		1210	2242		0.3190	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SR 101 NB Front	Yield	4.94	9.80	6.99	1.02	1.90	A	A	A
2	Bell Rd	Yield	5.86	5.42	5.81	1.97	0.36	A	A	A
3	SR 101 NB Front	None	0.00		0.00	0.00		A		A
4	Bell Rd	None	4.71		4.71	1.29		A		A

Global Results

Performance and Accidents

2035 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1950	420	2370
Capacity	veh/hr	5928	1759	7687
Average Delay	sec/veh	4.23	7.87	4.88
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	2.29	0.92	3.21

Scheme Summary

Control Data

Control Data and Model Parameters

SR 101 Traffic Study	2035 PHF Flow Profile (veh)
2035 Alternative 4 - West Side	7.5 min Time Slice
Rodel-Win1	Control Delays (sec)
Right Hand Drive	Daylight conditions
AM Peak Hour	Peak 60/15 min Results
Full Geometry	Output flows: Vehicles
English Units (ft)	50% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	Yes
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (ft)

Approach and Entry Geometry

Leg	Leg Names	Approach Bearing (deg)	Grade Separation G	Half Width V	Approach Lanes n	Entry Width E	Entry Lanes n	Flare Length L'	Entry Radius R	Entry Angle ?
1	SR 101 SB Front	0	0	10.00	1	10.00	1	0.00	100.00	25.00
2	Bell Rd	90	0	24.00	2	30.00	2	110.00	100.00	25.00
3	SR 101 SB Front	180	0	24.00	2	30.00	2	110.00	100.00	25.00
4	Bell Rd	270	0	24.00	2	30.00	2	110.00	100.00	25.00

Circulating and Exit Geometry

Leg	Leg Names	Inscribed Diameter D	Circulating Width C	Circulating Lanes nc	Exit Width Ex	Exit Lanes nex	Exit Half Width Vx	Exit Half Width Lanes nvx
1	SR 101 SB Front	170.00	33.00	2	28.00	2	24.00	2
2	Bell Rd	170.00	33.00	2	28.00	2	24.00	2
3	SR 101 SB Front	170.00	33.00	2	14.00	1	16.00	1
4	Bell Rd	170.00	33.00	2	28.00	2	24.00	2

Bypass Geometry

Bypass Approach Geometry (ft)

Leg	Leg Names	Bypass Type	Bypass Flows	V	nv	Vb	nvb	Vt	nvt
4	Bell Rd	Yield	170	24	2	12	1	24	2

Bypass Entry and Exit Geometry (ft)

Leg	Leg Names	Entry Geometry						Leg	Leg Names	Exit Lanes	
		Eb	neb	Lb	Lt	Rb	Phib			nex	Nmx
4	Bell Rd	12	1	50	130	80.00024 32	25	1	SR 101 SB Front	2	2

Operational Results

2035 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SR 101 SB Front	None	0		0		550	0		0.0000	
2	Bell Rd	None	1210		0		710	2262		0.5413	
3	SR 101 SB Front	None	120		1210		0	1531		0.0797	
4	Bell Rd	Yield	660	170	430	430	900	1955	932	0.3407	0.1850

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SR 101 SB Front	None	0.00		0.00	0.00		A		A
2	Bell Rd	None	7.80		7.80	4.29		A		A
3	SR 101 SB Front	None	5.12		5.12	0.45		A		A
4	Bell Rd	Yield	5.17	6.51	5.45	1.42	0.66	A	A	A

2035 AM Peak
50% Confidence Level
Daylight conditions

Project: SR 101 Traffic Study
Scheme: 2035 Alternative 4 - West Side
Rodel-Win1 - Full Geometry

Global Results

Performance and Accidents

2035 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1990	170	2160
Capacity	veh/hr	5747	932	6679
Average Delay	sec/veh	5.80	5.59	5.78
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	3.21	0.26	3.47

Scheme Summary

Control Data

Control Data and Model Parameters

SR 101 Traffic Study	2035 PHF Flow Profile (veh)
2035 Alternative 4 - East Side	7.5 min Time Slice
Rodel-Win1	Control Delays (sec)
Right Hand Drive	Daylight conditions
PM Peak Hour	Peak 60/15 min Results
Full Geometry	Output flows: Vehicles
English Units (ft)	50% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	Yes
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	Yes
Bypass Calibration	No
Global Results	Yes

2035 PM Peak
50% Confidence Level
Daylight conditions

Project: SR 101 Traffic Study
Scheme: 2035 Alternative 4 - East Side
Rodel-Win1 - Full Geometry

Operational Data

Main Geometry (ft)

Approach and Entry Geometry

Leg	Leg Names	Approach Bearing (deg)	Grade Separation G	Half Width V	Approach Lanes n	Entry Width E	Entry Lanes n	Flare Length L'	Entry Radius R	Entry Angle ?
1	SR 101 NB Front	0	0	24.00	2	30.00	2	110.00	100.00	25.00
2	Bell Rd	90	0	24.00	2	30.00	2	110.00	100.00	25.00
3	SR 101 NB Front	180	0	10.00	1	10.00	1	0.00	100.00	25.00
4	Bell Rd	270	0	24.00	2	26.00	2	110.00	100.00	25.00

Circulating and Exit Geometry

Leg	Leg Names	Inscribed Diameter D	Circulating Width C	Circulating Lanes nc	Exit Width Ex	Exit Lanes nex	Exit Half Width Vx	Exit Half Width Lanes nvx
1	SR 101 NB Front	170.00	33.00	2	14.00	1	16.00	1
2	Bell Rd	170.00	33.00	2	28.00	2	24.00	2
3	SR 101 NB Front	170.00	33.00	2	28.00	2	24.00	2
4	Bell Rd	170.00	33.00	2	28.00	2	24.00	2

Bypass Geometry

Bypass Approach Geometry (ft)

Leg	Leg Names	Bypass Type	Bypass Flows	V	nv	Vb	nvb	Vt	nvt
1	SR 101 NB Front	Yield	420	24	2	12	1	24	2
2	Bell Rd	Yield	490	24	2	12	1	24	2

Bypass Entry and Exit Geometry (ft)

Leg	Leg Names	Entry Geometry						Leg	Leg Names	Exit Lanes	
		Eb	neb	Lb	Lt	Rb	Phib			nex	Nmx
1	SR 101 NB Front	12	1	50	200	100.0003136	25	2	Bell Rd	2	2
2	Bell Rd	12	1	50	130	80.00023296	25	3	SR 101 NB Front	2	2

Operational Results

2035 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SR 101 NB Front	Yield	530	420	820	820	0	1653	789	0.3246	0.5463
2	Bell Rd	Yield	850	490	550	550	1220	1846	878	0.4654	0.5713
3	SR 101 NB Front	None	0		0		590	0		0.0000	
4	Bell Rd	None	820		0		1300	2219		0.3724	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SR 101 NB Front	Yield	6.01	13.31	9.24	1.58	3.66	A	B	A
2	Bell Rd	Yield	6.47	12.94	8.84	2.41	3.97	A	B	A
3	SR 101 NB Front	None	0.00		0.00	0.00		A		A
4	Bell Rd	None	5.18		5.18	1.64		A		A

Global Results

Performance and Accidents

2035 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	2200	910	3110
Capacity	veh/hr	5719	1667	7386
Average Delay	sec/veh	4.88	12.11	7.00
L.O.S. (Signal)	A – F	A	B	A
L.O.S. (Unsig)	A – F	A	B	A
Total Delay	veh.hrs	2.98	3.06	6.04

Scheme Summary

Control Data

Control Data and Model Parameters

SR 101 Traffic Study	2035 PHF Flow Profile (veh)
2035 Alternative 4 - West Side	7.5 min Time Slice
Rodel-Win1	Control Delays (sec)
Right Hand Drive	Daylight conditions
PM Peak Hour	Peak 60/15 min Results
Full Geometry	Output flows: Vehicles
English Units (ft)	50% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	Yes
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	Yes
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (ft)

Approach and Entry Geometry

Leg	Leg Names	Approach Bearing (deg)	Grade Separation G	Half Width V	Approach Lanes n	Entry Width E	Entry Lanes n	Flare Length L'	Entry Radius R	Entry Angle ?
1	SR 101 SB Front	0	0	10.00	1	10.00	1	0.00	100.00	25.00
2	Bell Rd	90	0	24.00	2	30.00	2	110.00	100.00	25.00
3	SR 101 SB Front	180	0	24.00	2	30.00	2	110.00	100.00	25.00
4	Bell Rd	270	0	24.00	2	30.00	2	110.00	100.00	25.00

Circulating and Exit Geometry

Leg	Leg Names	Inscribed Diameter D	Circulating Width C	Circulating Lanes nc	Exit Width Ex	Exit Lanes nex	Exit Half Width Vx	Exit Half Width Lanes nvx
1	SR 101 SB Front	170.00	33.00	2	28.00	2	24.00	2
2	Bell Rd	170.00	33.00	2	28.00	2	24.00	2
3	SR 101 SB Front	170.00	33.00	2	14.00	1	16.00	1
4	Bell Rd	170.00	33.00	2	28.00	2	24.00	2

Bypass Geometry

Bypass Approach Geometry (ft)

Leg	Leg Names	Bypass Type	Bypass Flows	V	nv	Vb	nvb	Vt	nvt
4	Bell Rd	Yield	240	24	2	12	1	24	2

Bypass Entry and Exit Geometry (ft)

Leg	Leg Names	Entry Geometry						Leg	Leg Names	Exit Lanes	
		Eb	neb	Lb	Lt	Rb	Phib			nex	Nmx
4	Bell Rd	12	1	50	130	80.00025088	25	1	SR 101 SB Front	2	2

Operational Results

2035 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SR 101 SB Front	None	0		0		900	0		0.0000	
2	Bell Rd	None	1300		0		820	2239		0.5901	
3	SR 101 SB Front	None	310		1300		0	1310		0.2409	
4	Bell Rd	Yield	600	240	880	880	730	1610	761	0.3771	0.3215

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SR 101 SB Front	None	0.00		0.00	0.00		A		A
2	Bell Rd	None	10.13		10.13	6.81		B		B
3	SR 101 SB Front	None	6.85		6.85	1.29		A		A
4	Bell Rd	Yield	6.05	9.40	7.01	1.71	1.42	A	A	A

Global Results

Performance and Accidents

2035 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	2210	240	2450
Capacity	veh/hr	5160	761	5921
Average Delay	sec/veh	7.56	8.40	7.64
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	4.64	0.56	5.20

Scheme Summary

Control Data

Control Data and Model Parameters

SR 101 Traffic Study	2035 PHF Flow Profile (veh)
2035 Recommended Alternative - East Side	7.5 min Time Slice
Rodel-Win1	Control Delays (sec)
Right Hand Drive	Daylight conditions
AM Peak Hour	Peak 60/15 min Results
Full Geometry	Output flows: Vehicles
English Units (ft)	50% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	Yes
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (ft)

Approach and Entry Geometry

Leg	Leg Names	Approach Bearing (deg)	Grade Separation G	Half Width V	Approach Lanes n	Entry Width E	Entry Lanes n	Flare Length L'	Entry Radius R	Entry Angle ?
1	SR 101 NB Front	0	0	24.00	2	30.00	2	110.00	100.00	25.00
2	Bell Rd	90	0	24.00	2	30.00	2	110.00	100.00	25.00
3	SR 101 NB Front	180	0	10.00	1	10.00	1	0.00	100.00	25.00
4	Bell Rd	270	0	24.00	2	26.00	2	110.00	100.00	25.00

Circulating and Exit Geometry

Leg	Leg Names	Inscribed Diameter D	Circulating Width C	Circulating Lanes nc	Exit Width Ex	Exit Lanes nex	Exit Half Width Vx	Exit Half Width Lanes nvx
1	SR 101 NB Front	170.00	33.00	2	14.00	1	16.00	1
2	Bell Rd	170.00	33.00	2	28.00	2	24.00	2
3	SR 101 NB Front	170.00	33.00	2	28.00	2	24.00	2
4	Bell Rd	170.00	33.00	2	28.00	2	24.00	2

Bypass Geometry

Bypass Approach Geometry (ft)

Leg	Leg Names	Bypass Type	Bypass Flows	V	nv	Vb	nvb	Vt	nvt
1	SR 101 NB Front	Yield	320	24	2	12	1	24	2
2	Bell Rd	Yield	420	24	2	12	1	24	2

Bypass Entry and Exit Geometry (ft)

Leg	Leg Names	Entry Geometry						Leg	Leg Names	Exit Lanes	
		Eb	neb	Lb	Lt	Rb	Phib			nex	Nmx
1	SR 101 NB Front	12	1	50	200	100.0002528	25	2	Bell Rd	2	2
2	Bell Rd	12	1	50	130	80.00018432	25	3	SR 101 NB Front	2	2

Operational Results

2035 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SR 101 NB Front	Yield	730	320	1020	1020	0	1526	725	0.4869	0.4527
2	Bell Rd	Yield	800	420	770	770	1300	1706	808	0.4747	0.5323
3	SR 101 NB Front	None	0		0		630	0		0.0000	
4	Bell Rd	None	1020		0		1360	2242		0.4589	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SR 101 NB Front	Yield	8.62	12.01	9.66	3.49	2.53	A	B	A
2	Bell Rd	Yield	6.84	12.75	8.87	2.54	3.44	A	B	A
3	SR 101 NB Front	None	0.00		0.00	0.00		A		A
4	Bell Rd	None	5.95		5.95	2.37		A		A

Global Results

Performance and Accidents

2035 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	2550	740	3290
Capacity	veh/hr	5473	1533	7006
Average Delay	sec/veh	5.99	11.43	7.22
L.O.S. (Signal)	A – F	A	B	A
L.O.S. (Unsig)	A – F	A	B	A
Total Delay	veh.hrs	4.25	2.35	6.60

Scheme Summary

Control Data

Control Data and Model Parameters

SR 101 Traffic Study	2035 PHF Flow Profile (veh)
2035 Recommended Alternative - West Side	7.5 min Time Slice
Rodel-Win1	Control Delays (sec)
Right Hand Drive	Daylight conditions
AM Peak Hour	Peak 60/15 min Results
Full Geometry	Output flows: Vehicles
English Units (ft)	50% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	No
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	Yes
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (ft)

Approach and Entry Geometry

Leg	Leg Names	Approach Bearing (deg)	Grade Separation G	Half Width V	Approach Lanes n	Entry Width E	Entry Lanes n	Flare Length L'	Entry Radius R	Entry Angle ?
1	SR 101 SB Front	0	0	10.00	1	10.00	1	0.00	100.00	25.00
2	Bell Rd	90	0	24.00	2	30.00	2	110.00	100.00	25.00
3	SR 101 SB Front	180	0	24.00	2	30.00	2	110.00	100.00	25.00
4	Bell Rd	270	0	24.00	2	30.00	2	110.00	100.00	25.00

Circulating and Exit Geometry

Leg	Leg Names	Inscribed Diameter D	Circulating Width C	Circulating Lanes nc	Exit Width Ex	Exit Lanes nex	Exit Half Width Vx	Exit Half Width Lanes nvx
1	SR 101 SB Front	170.00	33.00	2	28.00	2	24.00	2
2	Bell Rd	170.00	33.00	2	28.00	2	24.00	2
3	SR 101 SB Front	170.00	33.00	2	14.00	1	16.00	1
4	Bell Rd	170.00	33.00	2	28.00	2	24.00	2

2035 AM Peak
50% Confidence Level
Daylight conditions

Project: SR 101 Traffic Study
Scheme: 2035 Recommended Alternative - West Side
Rodel-Win1 - Full Geometry

Bypass Geometry

Bypass Approach Geometry (ft)

Leg	Leg Names	Bypass Type	Bypass Flows	V	nv	Vb	nvb	Vt	nvt
4	Bell Rd	Yield	180	24	2	12	1	24	2

Bypass Entry and Exit Geometry (ft)

Leg	Leg Names	Entry Geometry						Leg	Leg Names	Exit Lanes	
		Eb	neb	Lb	Lt	Rb	Phib			nex	Nmx
4	Bell Rd	12	1	50	130	80.00022784	25	1	SR 101 SB Front	2	2

Operational Results

2035 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SR 101 SB Front	None	0		0		810	0		0.0000	
2	Bell Rd	None	1360		0		1020	2262		0.6101	
3	SR 101 SB Front	None	525		1360		0	1411		0.3798	
4	Bell Rd	Yield	660	180	990	990	895	1564	738	0.4276	0.2486

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SR 101 SB Front	None	0.00		0.00	0.00		A		A
2	Bell Rd	None	9.40		9.40	6.30		A		A
3	SR 101 SB Front	None	8.74		8.74	2.81		A		A
4	Bell Rd	Yield	6.65	8.60	7.07	2.13	0.99	A	A	A

2035 AM Peak
50% Confidence Level
Daylight conditions

Project: SR 101 Traffic Study
Scheme: 2035 Recommended Alternative - West Side
Rodel-Win1 - Full Geometry

Global Results

Performance and Accidents

2035 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	2545	180	2725
Capacity	veh/hr	5238	738	5976
Average Delay	sec/veh	7.55	7.60	7.56
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	5.34	0.38	5.72

Scheme Summary

Control Data

Control Data and Model Parameters

SR 101 Traffic Study	2035 PHF Flow Profile (veh)
2035 Recommended Alternative - East Side	7.5 min Time Slice
Rodel-Win1	Control Delays (sec)
Right Hand Drive	Daylight conditions
PM Peak Hour	Peak 60/15 min Results
Full Geometry	Output flows: Vehicles
English Units (ft)	50% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	Yes
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	Yes
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (ft)

Approach and Entry Geometry

Leg	Leg Names	Approach Bearing (deg)	Grade Separation G	Half Width V	Approach Lanes n	Entry Width E	Entry Lanes n	Flare Length L'	Entry Radius R	Entry Angle ?
1	SR 101 NB Front	0	0	24.00	2	30.00	2	110.00	100.00	25.00
2	Bell Rd	90	0	24.00	2	30.00	2	110.00	100.00	25.00
3	SR 101 NB Front	180	0	10.00	1	10.00	1	0.00	100.00	25.00
4	Bell Rd	270	0	24.00	2	26.00	2	110.00	100.00	25.00

Circulating and Exit Geometry

Leg	Leg Names	Inscribed Diameter D	Circulating Width C	Circulating Lanes nc	Exit Width Ex	Exit Lanes nex	Exit Half Width Vx	Exit Half Width Lanes nvx
1	SR 101 NB Front	170.00	33.00	2	14.00	1	16.00	1
2	Bell Rd	170.00	33.00	2	28.00	2	24.00	2
3	SR 101 NB Front	170.00	33.00	2	28.00	2	24.00	2
4	Bell Rd	170.00	33.00	2	28.00	2	24.00	2

Bypass Geometry

Bypass Approach Geometry (ft)

Leg	Leg Names	Bypass Type	Bypass Flows	V	nv	Vb	nvb	Vt	nvt
1	SR 101 NB Front	Yield	410	24	2	12	1	24	2
2	Bell Rd	Yield	520	24	2	12	1	24	2

Bypass Entry and Exit Geometry (ft)

Leg	Leg Names	Entry Geometry						Leg	Leg Names	Exit Lanes	
		Eb	neb	Lb	Lt	Rb	Phib			nex	Nmx
1	SR 101 NB Front	12	1	50	200	100.0002656	25	2	Bell Rd	2	2
2	Bell Rd	12	1	50	130	80.00019456	25	3	SR 101 NB Front	2	2

Operational Results

2035 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SR 101 NB Front	Yield	1040	410	1130	1130	0	1432	678	0.7501	0.6262
2	Bell Rd	Yield	840	520	1109	1109	1469	1385	577	0.6180	1.0125
3	SR 101 NB Front	None	0		0		945	0		0.0000	
4	Bell Rd	None	1130		0		1519	2219		0.5140	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SR 101 NB Front	Yield	16.43	17.35	16.69	12.28	5.29	C	C	C
2	Bell Rd	Yield	9.75	60.14	29.02	4.72	31.43	A	F	D
3	SR 101 NB Front	None	0.00		0.00	0.00		A		A
4	Bell Rd	None	6.59		6.59	3.01		A		A

Global Results

Performance and Accidents

2035 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	3010	930	3940
Capacity	veh/hr	5036	1255	6291
Average Delay	sec/veh	9.87	40.28	17.05
L.O.S. (Signal)	A – F	A	D	B
L.O.S. (Unsig)	A – F	A	E	C
Total Delay	veh.hrs	8.25	10.40	18.66

Scheme Summary

Control Data

Control Data and Model Parameters

SR 101 Traffic Study	2035 PHF Flow Profile (veh)
2035 Recommended Alternative - West Side	7.5 min Time Slice
Rodel-Win1	Control Delays (sec)
Right Hand Drive	Daylight conditions
PM Peak Hour	Peak 60/15 min Results
Full Geometry	Output flows: Vehicles
English Units (ft)	50% Confidence Level

Available Data

Entry Capacity Calibrated	No
Entry Capacity Modified	No
Crosswalks	Yes
Flows Factored	No
Approach/Exit Road Capacity Calibrated	No
Accidents	No
Accident Costs	No
Bypass Model	Yes
Bypass Calibration	No
Global Results	Yes

Operational Data

Main Geometry (ft)

Approach and Entry Geometry

Leg	Leg Names	Approach Bearing (deg)	Grade Separation G	Half Width V	Approach Lanes n	Entry Width E	Entry Lanes n	Flare Length L'	Entry Radius R	Entry Angle ?
1	SR 101 SB Front	0	0	10.00	1	10.00	1	0.00	100.00	25.00
2	Bell Rd	90	0	24.00	2	30.00	2	110.00	100.00	25.00
3	SR 101 SB Front	180	0	24.00	2	30.00	2	110.00	100.00	25.00
4	Bell Rd	270	0	24.00	2	30.00	2	110.00	100.00	25.00

Circulating and Exit Geometry

Leg	Leg Names	Inscribed Diameter D	Circulating Width C	Circulating Lanes nc	Exit Width Ex	Exit Lanes nex	Exit Half Width Vx	Exit Half Width Lanes nvx
1	SR 101 SB Front	170.00	33.00	2	28.00	2	24.00	2
2	Bell Rd	170.00	33.00	2	28.00	2	24.00	2
3	SR 101 SB Front	170.00	33.00	2	14.00	1	16.00	1
4	Bell Rd	170.00	33.00	2	28.00	2	24.00	2

Bypass Geometry

Bypass Approach Geometry (ft)

Leg	Leg Names	Bypass Type	Bypass Flows	V	nv	Vb	nvb	Vt	nvt
4	Bell Rd	Yield	230	24	2	12	1	24	2

Bypass Entry and Exit Geometry (ft)

Leg	Leg Names	Entry Geometry						Leg	Leg Names	Exit Lanes	
		Eb	neb	Lb	Lt	Rb	Phib			nex	Nmx
4	Bell Rd	12	1	50	130	80.00023552	25	1	SR 101 SB Front	2	2

Operational Results

2035 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SR 101 SB Front	None	0		0		1229	0		0.0000	
2	Bell Rd	None	1520		0		1129	2239		0.6918	
3	SR 101 SB Front	None	725		1519		0	1153		0.6487	
4	Bell Rd	Yield	590	230	1539	1539	705	1139	528	0.5298	0.4517

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SR 101 SB Front	None	0.00		0.00	0.00		A		A
2	Bell Rd	None	11.86		11.86	9.71		B		B
3	SR 101 SB Front	None	14.07		14.07	7.50		B		B
4	Bell Rd	Yield	9.44	15.19	11.06	3.50	2.68	A	C	B

Global Results

Performance and Accidents

2035 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	2835	230	3065
Capacity	veh/hr	4532	528	5060
Average Delay	sec/veh	10.92	14.19	11.17
L.O.S. (Signal)	A – F	B	B	B
L.O.S. (Unsig)	A – F	B	B	B
Total Delay	veh.hrs	8.60	0.91	9.51

Build Alternative 1

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020021	REMOVAL OF CONCRETE CURB AND GUTTER	L.FT.	11,880	5.00	59,400
2020029	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	9,900	7.00	69,300
2020031	REMOVAL PORTLAND CEMENT CONCRETE PAVEMENT	SQ.YD.	16,606	7.00	116,300
2020052	REMOVE (WALL)	L.FT.	1,000	50.00	50,000
2020162	REMOVE (CONCRETE)	SQ.YD.	4,540	5.00	22,700
4010010	PORTLAND CEMENT CONCRETE PAVEMENT (10" PCCP OVER 4" AB)	SQ.YD.	38,600	35.00	1,351,000
407X001	ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	9,656	5.00	48,300
7040070	PAVEMENT MARKING	L.FT.	45,107	0.25	11,300
9080084	CONCRETE CURB AND GUTTER	L.FT.	14,590	20.00	291,800
9080201	CONCRETE SIDEWALK	SQ.FT.	58,325	5.00	291,700
9100008	CONCRETE HALF BARRIER	L.FT.	5,005	60.00	300,300
9140153	RETAINING WALL	SQ.FT.	46,700	45.00	2,101,500
9240174	MISCELLANEOUS WORK (MODIFY SIGN BRIDGE)	EACH	10	40,000.00	400,000
9999910	LUMP SUM (NB 101L STRUCTURE WIDENING OVER BELL ROAD)	L.SUM	1	375,000.00	375,000
9999910	LUMP SUM (SB 101L STRUCTURE WIDENING OVER PRINCESS DRIVE)	L.SUM	1	412,500.00	412,500
9999910	LUMP SUM (NB 101L STRUCTURE WIDENING OVER PRINCESS DRIVE)	L.SUM	1	412,500.00	412,500
9999910	LUMP SUM (SB BELL RD EXIT RAMP STRUCTURE OVER PRINCESS RAMP 'D')	L.SUM	1	1,551,150.00	1,551,200
9999910	LUMP SUM (NB BELL RD ENTRANCE RAMP STRUCTURE OVER PRINCESS RAMP 'C	L.SUM	1	3,216,000.00	3,216,000
			ITEM TOTAL		**11,080,800**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		887,000.00	887,000
	Dust and Water Palliative (0.75%)	COST		84,000.00	84,000
	Quality Control (0.75%)	COST		84,000.00	84,000
	Construction Surveying (1.5%)	COST		167,000.00	167,000
	Erosion Control (0.3%)	COST		34,000.00	34,000
	Mobilization (8% of all construction items)	COST		1,310,000.00	1,310,000
			PROJECT WIDE SUBTOTAL		**2,566,000**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		2,730,000.00	2,730,000
			PROJECT WIDE TOTAL		**5,296,000**
OTHER COST					
	Construction Engineering (9%)	COST		1,474,000.00	1,474,000
	Construction Contingencies (5%)	COST		819,000.00	819,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.		1.50	
	AR-ACFC Smoothness Incentive	L.MILE		11,000.00	
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		1,311,000.00	1,311,000
	Right-of-Way	COST		-	-
	Utilities (Miscellaneous Relocation)	COST		-	-
			OTHER COST TOTAL		**3,604,000**

SUMMARY	
ITEM TOTAL	**11,080,800**
PROJECT WIDE	**5,296,000**
OTHER COST TOTAL	**3,604,000**
SUBTOTAL PROJECT COST	**19,980,800**
INDIRECT COST ALLOCATION (ICAP) (8.36%)	**1,671,000**
TOTAL PROJECT COST	**21,651,800**

Build Alternative 2

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020021	REMOVAL OF CONCRETE CURB AND GUTTER	L.FT.	2,160	5.00	10,800
2020029	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	432	7.00	3,100
2020031	REMOVAL PORTLAND CEMENT CONCRETE PAVEMENT	SQ.YD.	161	7.00	1,200
2020162	REMOVE (CONCRETE)	SQ.YD.	615	5.00	3,100
4010010	PORTLAND CEMENT CONCRETE PAVEMENT (10" PCCP OVER 4" AB)	SQ.YD.	1,640	35.00	57,400
407X001	ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	1,985	5.00	10,000
7040070	PAVEMENT MARKING	L.FT.	5,135	0.25	1,300
9080084	CONCRETE CURB AND GUTTER	L.FT.	2,195	20.00	43,900
9080201	CONCRETE SIDEWALK	SQ.FT.	43,345	5.00	216,800
9080296	CONCRETE SIDEWALK RAMP	EACH	4	1,500.00	6,000
9140153	RETAINING WALL	SQ.FT.	2,617	45.00	117,800
9240174	MISCELLANEOUS WORK (MODIFY SIGN BRIDGE)	EACH	2	40,000.00	80,000
9240175	MISCELLANEOUS WORK (RELOCATE LIGHT POLES)	EACH	2	1,000.00	2,000
9240176	MISCELLANEOUS WORK (SIGNAL POLE, MAST ARM, LUMINAIRE)	EACH	1	20,000.00	20,000
9240177	MISCELLANEOUS WORK (SIGN STRUCTURES)	EACH	2	75,000.00	150,000
9240178	MISCELLANEOUS WORK (SIGNALS)	EACH	1	50,000.00	50,000
9999910	LUMP SUM (NB FRONTAGE ROAD STRUCTURE WIDENING OVER CAP CANAL)	L.SUM	1	220,950.00	221,000
9999910	LUMP SUM (SB FRONTAGE ROAD STRUCTURE WIDENING OVER CAP CANAL)	L.SUM	1	215,550.00	215,600
9999910	LUMP SUM (EXTEND RCBC)	L.SUM	1	249,000.00	249,000
			ITEM TOTAL		**1,459,000**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		117,000.00	117,000
	Dust and Water Palliative (0.75%)	COST		11,000.00	11,000
	Quality Control (0.75%)	COST		11,000.00	11,000
	Construction Surveying (1.5%)	COST		22,000.00	22,000
	Erosion Control (0.3%)	COST		5,000.00	5,000
	Mobilization (8% of all construction items)	COST		173,000.00	173,000
			PROJECT WIDE SUBTOTAL		**339,000**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		360,000.00	360,000
			PROJECT WIDE TOTAL		**699,000**
OTHER COST					
	Construction Engineering (9%)	COST		195,000.00	195,000
	Construction Contingencies (5%)	COST		108,000.00	108,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.		1.50	
	AR-ACFC Smoothness Incentive	L.MILE		11,000.00	
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		173,000.00	173,000
	Right-of-Way	COST		20,000.00	20,000
	Utilities (Miscellaneous Relocation)	COST		-	-
			OTHER COST TOTAL		**496,000**

SUMMARY	
ITEM TOTAL	**1,459,000**
PROJECT WIDE	**699,000**
OTHER COST TOTAL	**496,000**
SUBTOTAL PROJECT COST	**2,654,000**
INDIRECT COST ALLOCATION (ICAP) (8.36%)	**222,000**
TOTAL PROJECT COST	**2,876,000**

Build Alternative 3

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020021	REMOVAL OF CONCRETE CURB AND GUTTER	L.FT.	11,260	5.00	56,300
2020029	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	9,545	7.00	66,900
2020031	REMOVAL PORTLAND CEMENT CONCRETE PAVEMENT	SQ.YD.	9,210	7.00	64,500
2020162	REMOVE (CONCRETE)	SQ.YD.	8,220	5.00	41,100
2030901	ROADWAY EMBANKMENT (BORROW)	CU.YD.	65,046	10.00	650,500
4010010	PORTLAND CEMENT CONCRETE PAVEMENT (10" PCCP OVER 4" AB)	SQ.YD.	22,353	35.00	782,400
407X001	ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	11,400	5.00	57,000
5012524	STORM DRAIN PIPE	L.FT.	280	100.00	28,000
503000X	CONCRETE CATCH BASIN	EACH	28	3,500.00	98,000
7040070	PAVEMENT MARKING	L.FT.	18,700	0.25	4,700
9080084	CONCRETE CURB AND GUTTER	L.FT.	12,840	20.00	256,800
9080201	CONCRETE SIDEWALK	SQ.FT.	49,490	5.00	247,500
9080296	CONCRETE SIDEWALK RAMP	EACH	32	1,500.00	48,000
9100008	CONCRETE HALF BARRIER	L.FT.	8,355	60.00	501,300
9140153	RETAINING WALL	SQ.FT.	2,800	45.00	126,000
9240174	MISCELLANEOUS WORK (MODIFY SIGN BRIDGE)	EACH	2	40,000.00	80,000
9240175	MISCELLANEOUS WORK (RELOCATE LIGHT POLES)	EACH	27	1,000.00	27,000
9240176	MISCELLANEOUS WORK (SIGNING)	EACH	50	250.00	12,500
9240177	MISCELLANEOUS WORK (SIGNAL POLE AND HEAD)	EACH	12	25,000.00	300,000
9240178	MISCELLANEOUS WORK (SIGNAL POLE, MAST ARM, LUMINAIRE)	EACH	5	20,000.00	100,000
9999910	LUMP SUM (NB 101L STRUCTURE WIDENING OVER BELL ROAD)	L.SUM	1	375,000.00	375,000
9999910	LUMP SUM (SB 101L STRUCTURE WIDENING OVER BELL ROAD)	L.SUM	1	555,000.00	555,000
9999910	LUMP SUM (RCBC) (NB FRONTAGE ROAD UNDER PRINCESS RAMP 'C')	L.SUM	1	1,980,000.00	1,980,000
			ITEM TOTAL		**6,458,500**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		517,000.00	517,000
	Dust and Water Palliative (0.75%)	COST		49,000.00	49,000
	Quality Control (0.75%)	COST		49,000.00	49,000
	Construction Surveying (1.5%)	COST		97,000.00	97,000
	Erosion Control (0.3%)	COST		20,000.00	20,000
	Mobilization (8% of all construction items)	COST		765,000.00	765,000
			PROJECT WIDE SUBTOTAL		**1,497,000**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		1,592,000.00	1,592,000
			PROJECT WIDE TOTAL		**3,089,000**
OTHER COST					
	Construction Engineering (9%)	COST		860,000.00	860,000
	Construction Contingencies (5%)	COST		478,000.00	478,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.		1.50	
	AR-ACFC Smoothness Incentive	L.MILE		11,000.00	
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		764,000.00	764,000
	Right-of-Way	COST		3,217,000.00	3,217,000
	Utilities (Miscellaneous Relocation)	COST		1,900,000.00	1,900,000
			OTHER COST TOTAL		**7,219,000**

SUMMARY	
ITEM TOTAL	**6,458,500**
PROJECT WIDE	**3,089,000**
OTHER COST TOTAL	**7,219,000**
SUBTOTAL PROJECT COST	**16,766,500**
INDIRECT COST ALLOCATION (ICAP) (8.36%)	**1,402,000**
TOTAL PROJECT COST	**18,168,500**

Build Alternative 4

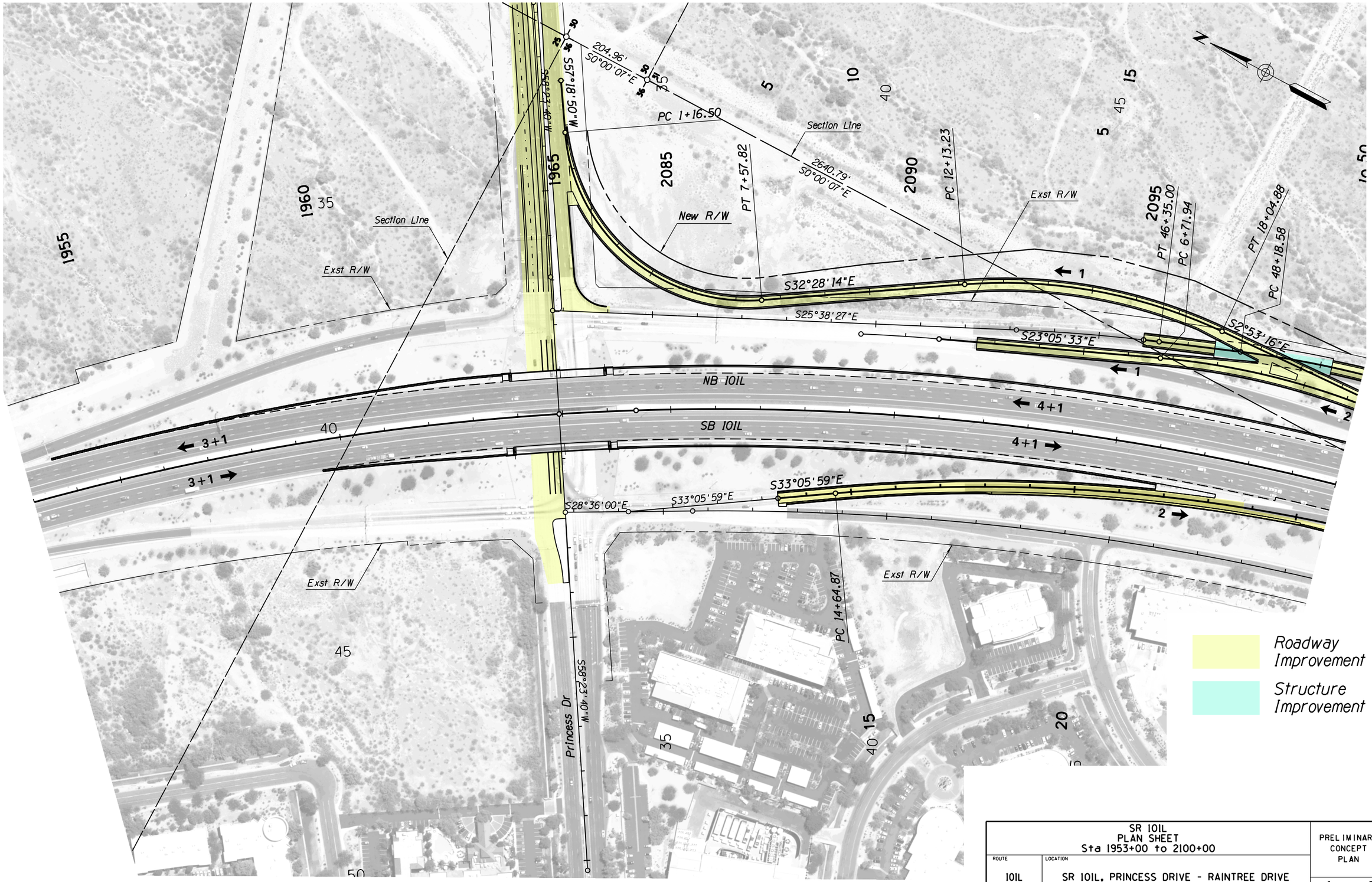
ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020021	REMOVAL OF CONCRETE CURB AND GUTTER	L.FT.	6,850	5.00	34,300
2020029	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	7,775	7.00	54,500
2020031	REMOVAL PORTLAND CEMENT CONCRETE PAVEMENT	SQ.YD.	12,360	7.00	86,600
2020162	REMOVE (CONCRETE)	SQ.YD.	3,125	5.00	15,700
2030201	EXCAVATION (	CU.YD.	6,000	10.00	60,000
2030901	ROADWAY EMBANKMENT (BORROW)	CU.YD.	139,542	10.00	1,395,500
4010010	PORTLAND CEMENT CONCRETE PAVEMENT (10" PCCP OVER 4" AB)	SQ.YD.	34,248	35.00	1,198,700
407X001	ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	5,770	5.00	28,900
7040070	PAVEMENT MARKING	L.FT.	64,388	0.25	16,100
9080084	CONCRETE CURB AND GUTTER	L.FT.	15,035	20.00	300,700
9080201	CONCRETE SIDEWALK	SQ.FT.	43,600	5.00	218,000
9100008	CONCRETE HALF BARRIER	L.FT.	11,180	60.00	670,800
9140153	RETAINING WALL	SQ.FT.	39,500	45.00	1,777,500
9240174	MISCELLANEOUS WORK (MODIFY SIGN BRIDGE)	EACH	10	40,000.00	400,000
9240175	MISCELLANEOUS WORK (NEW SIGN BRIDGE)	EACH	1	100,000.00	100,000
9240176	MISCELLANEOUS WORK (SIGNALS)	EACH	1	50,000.00	50,000
9999910	LUMP SUM (SB 101L STRUCTURE WIDENING OVER BELL ROAD)	L.SUM	1	555,000.00	555,000
9999910	LUMP SUM (NB 101L STRUCTURE WIDENING OVER BELL ROAD)	L.SUM	1	375,000.00	375,000
9999910	LUMP SUM (SB 101L STRUCTURE WIDENING OVER PRINCESS DRIVE)	L.SUM	1	412,500.00	412,500
9999910	LUMP SUM (NB 101L STRUCTURE WIDENING OVER PRINCESS DRIVE)	L.SUM	1	412,500.00	412,500
9999910	LUMP SUM (RCBC) (PIMA SB ENTRANCE RAMP UNDER SB BELL EXIT RAMP)	L.SUM	1	1,890,000.00	1,890,000
9999910	LUMP SUM (RCBC) (PIMA NB EXIT RAMP UNDER NB BELL ENTRANCE RAMP)	L.SUM	1	2,100,000.00	2,100,000
			ITEM TOTAL		**12,152,300**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		973,000.00	973,000
	Dust and Water Palliative (0.75%)	COST		92,000.00	92,000
	Quality Control (0.75%)	COST		92,000.00	92,000
	Construction Surveying (1.5%)	COST		183,000.00	183,000
	Erosion Control (0.3%)	COST		37,000.00	37,000
	Mobilization (8% of all construction items)	COST		1,435,000.00	1,435,000
			PROJECT WIDE SUBTOTAL		**2,812,000**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		2,993,000.00	2,993,000
			PROJECT WIDE TOTAL		**5,805,000**
OTHER COST					
	Construction Engineering (9%)	COST		1,617,000.00	1,617,000
	Construction Contingencies (5%)	COST		898,000.00	898,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.		1.50	
	AR-ACFC Smoothness Incentive	L.MILE		11,000.00	
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		1,437,000.00	1,437,000
	Right-of-Way	COST		62,400.00	62,400
	Utilities (Miscellaneous Relocation)	COST		-	-
			OTHER COST TOTAL		**4,014,400**

SUMMARY	
ITEM TOTAL	**12,152,300**
PROJECT WIDE	**5,805,000**
OTHER COST TOTAL	**4,014,400**
SUBTOTAL PROJECT COST	**21,971,700**
INDIRECT COST ALLOCATION (ICAP) (8.36%)	**1,837,000**
TOTAL PROJECT COST	**23,808,700**

Recommended Alternative

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020021	REMOVAL OF CONCRETE CURB AND GUTTER	L.FT.	13,355	5.00	66,800
2020029	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	17,207	7.00	120,500
2020031	REMOVAL PORTLAND CEMENT CONCRETE PAVEMENT	SQ.YD.	19,021	7.00	133,200
2020162	REMOVE (CONCRETE)	SQ.YD.	6,575	5.00	32,900
2030901	ROADWAY EMBANKMENT (BORROW)	CU.YD.	65,046	10.00	650,500
4010010	PORTLAND CEMENT CONCRETE PAVEMENT (10" PCCP OVER 4" AB)	SQ.YD.	47,003	35.00	1,645,200
407X001	ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	17,175	5.00	85,900
5012524	STORM DRAIN PIPE	L.FT.	280	100.00	28,000
503000X	CONCRETE CATCH BASIN	EACH	16	3,500.00	56,000
7040070	PAVEMENT MARKING	L.FT.	48,197	0.25	12,100
9080084	CONCRETE CURB AND GUTTER	L.FT.	20,860	20.00	417,200
9080201	CONCRETE SIDEWALK	SQ.FT.	120,715	5.00	603,600
9080296	CONCRETE SIDEWALK RAMP	EACH	18	1,500.00	27,000
9100008	CONCRETE HALF BARRIER	L.FT.	9,175	60.00	550,500
9140153	RETAINING WALL	SQ.FT.	6,800	45.00	306,000
9240173	MISCELLANEOUS WORK (NEW SIGN BRIDGE)	EACH	1	100,000.00	100,000
9240174	MISCELLANEOUS WORK (MODIFY SIGN BRIDGE)	EACH	6	40,000.00	240,000
9240175	MISCELLANEOUS WORK (RELOCATE LIGHT POLES)	EACH	18	1,000.00	18,000
9240176	MISCELLANEOUS WORK (SIGNING)	EACH	25	250.00	6,300
9240177	MISCELLANEOUS WORK (SIGNAL POLE AND HEAD)	EACH	6	25,000.00	150,000
9240178	MISCELLANEOUS WORK (SIGNAL POLE, MAST ARM, LUMINAIRE)	EACH	4	20,000.00	80,000
9240179	MISCELLANEOUS WORK (SIGNALS)	L.SUM	1	50,000.00	50,000
9999910	LUMP SUM (NB 101L STRUCTURE WIDENING OVER BELL ROAD)	L.SUM	1	375,000.00	375,000
9999910	LUMP SUM (SB 101L STRUCTURE WIDENING OVER BELL ROAD)	L.SUM	1	555,000.00	555,000
9999910	LUMP SUM (NB FRONTAGE ROAD STRUCTURE WIDENING OVER CAP CANAL)	L.SUM	1	220,950.00	221,000
9999910	LUMP SUM (SB FRONTAGE ROAD STRUCTURE WIDENING OVER CAP CANAL)	L.SUM	1	215,550.00	215,600
9999910	LUMP SUM (RCBC) (NB FRONTAGE ROAD UNDER PRINCESS RAMP 'C')	L.SUM	1	1,980,000.00	1,980,000
9999910	LUMP SUM (EXTEND RCBC, RAINTREE DRIVE RIGHT TURN LANE)	L.SUM	1	249,000.00	249,000
			ITEM TOTAL		**8,975,300**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		719,000.00	719,000
	Dust and Water Palliative (0.75%)	COST		68,000.00	68,000
	Quality Control (0.75%)	COST		68,000.00	68,000
	Construction Surveying (1.5%)	COST		135,000.00	135,000
	Erosion Control (0.3%)	COST		27,000.00	27,000
	Mobilization (8% of all construction items)	COST		1,060,000.00	1,060,000
			PROJECT WIDE SUBTOTAL		**2,077,000**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		2,211,000.00	2,211,000
			PROJECT WIDE TOTAL		**4,288,000**
OTHER COST					
	Construction Engineering (9%)	COST		1,194,000.00	1,194,000
	Construction Contingencies (5%)	COST		664,000.00	664,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.		1.50	
	AR-ACFC Smoothness Incentive	L.MILE		11,000.00	
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		1,062,000.00	1,062,000
	Right-of-Way	COST		3,279,400.00	3,279,400
	Utilities (Miscellaneous Relocation)	COST		1,900,000.00	1,900,000
			OTHER COST TOTAL		**8,099,400**

SUMMARY	
ITEM TOTAL	**8,975,300**
PROJECT WIDE	**4,288,000**
OTHER COST TOTAL	**8,099,400**
SUBTOTAL PROJECT COST	**21,362,700**
INDIRECT COST ALLOCATION (ICAP) (8.36%)	**1,786,000**
TOTAL PROJECT COST	**23,148,700**



SR 101L
PLAN SHEET
Sta 1953+00 to 2100+00

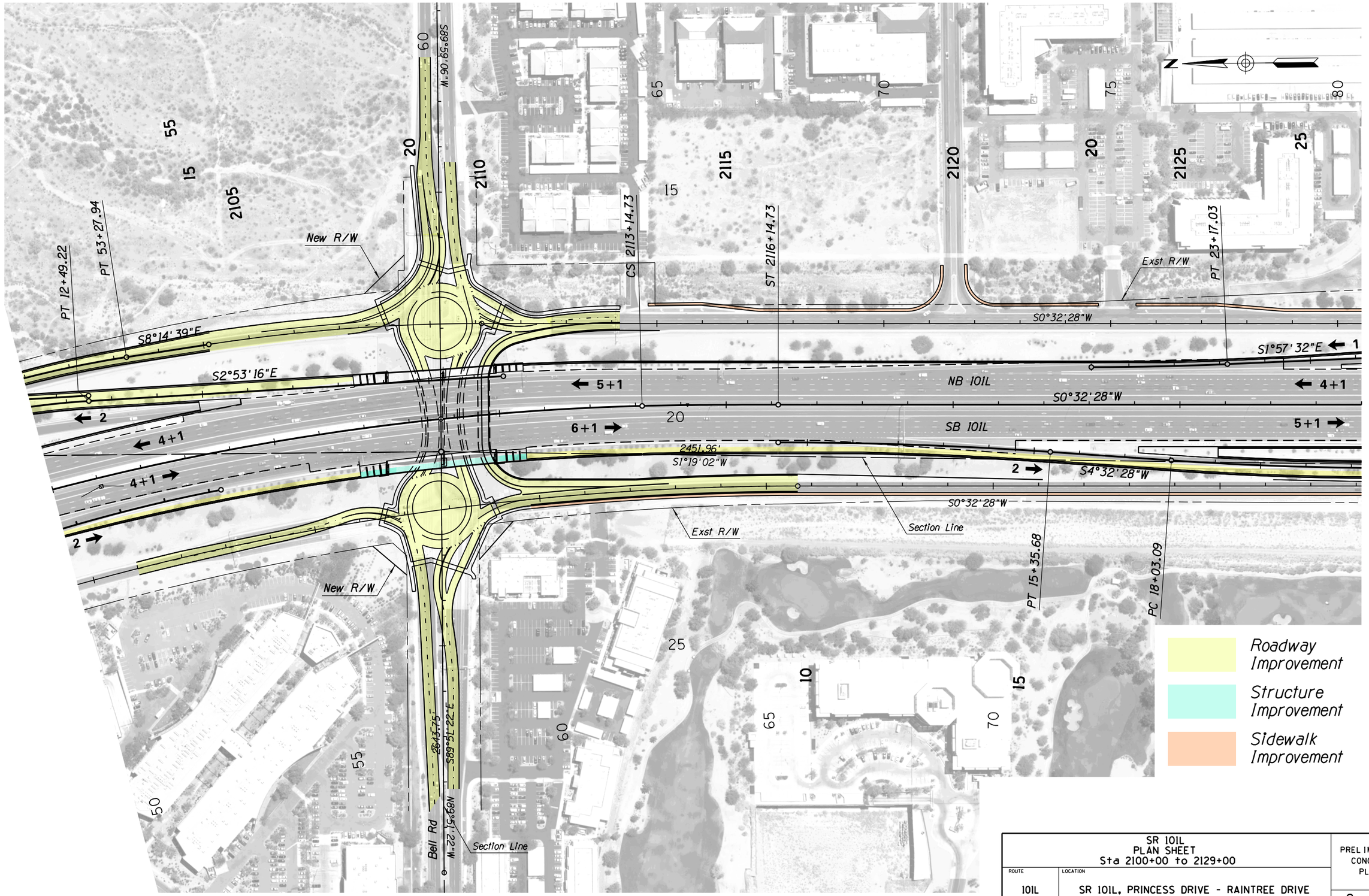
ROUTE	LOCATION
101L	SR 101L, PRINCESS DRIVE - RAINTREE DRIVE

PRELIMINARY CONCEPT PLAN

1 OF 9

SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

4/28/2017 Z:\60527097_MAG, SR 101,Princess Drive DDI\900-CAD GIS\910-CAD\20-SHEETS\h6874p01.dgn



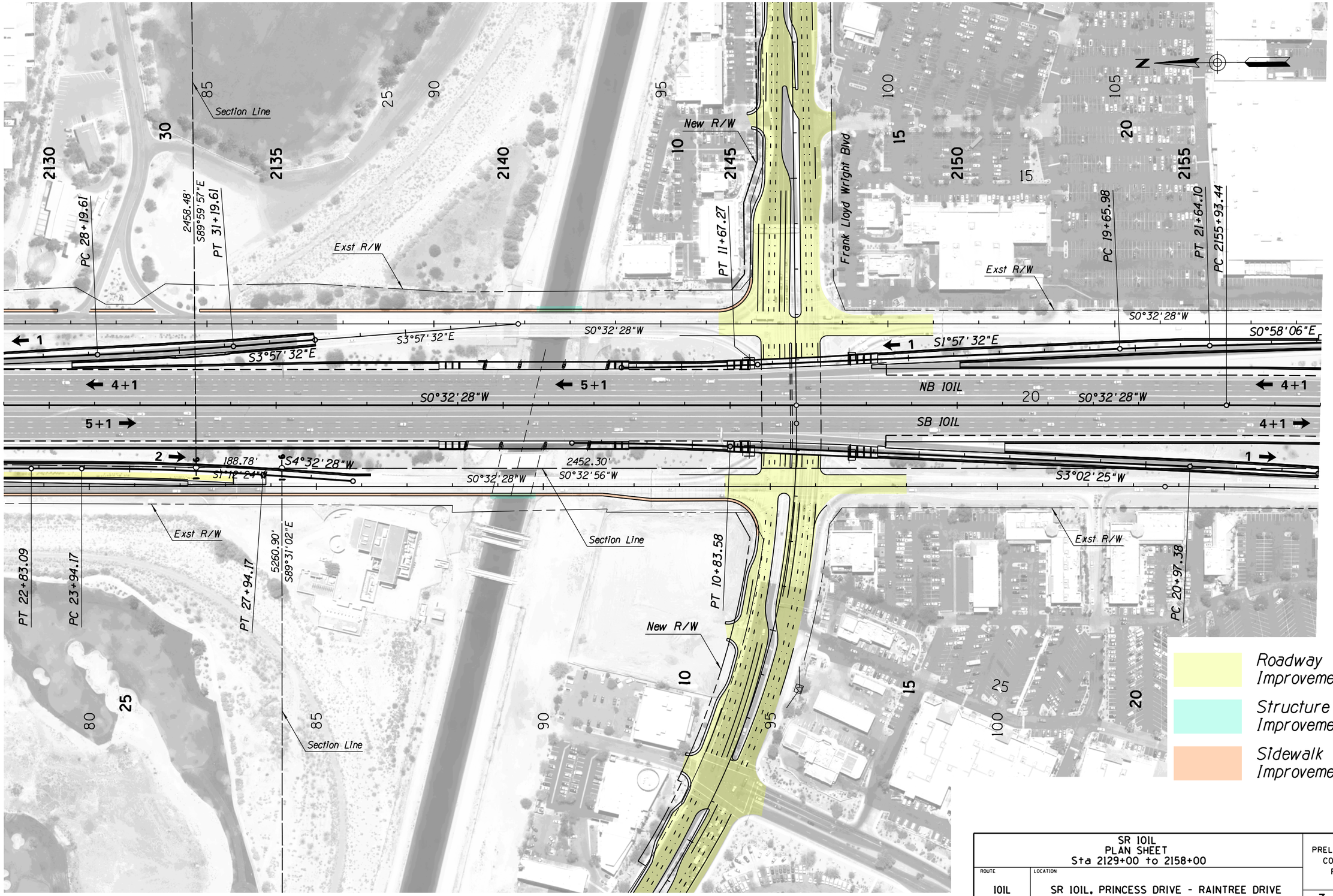
SR 101L
PLAN SHEET
Sta 2100+00 to 2129+00

ROUTE: 101L

LOCATION: SR 101L, PRINCESS DRIVE - RAINTREE DRIVE

PRELIMINARY CONCEPT PLAN

4/7/2017 Z:\60527097_MAG, SR 101,Princess Drive DDI\900-CAD GIS\910-CAD\20-SHEETS\h6874p02.dgn



SR 101L
PLAN SHEET
Sta 2129+00 to 2158+00

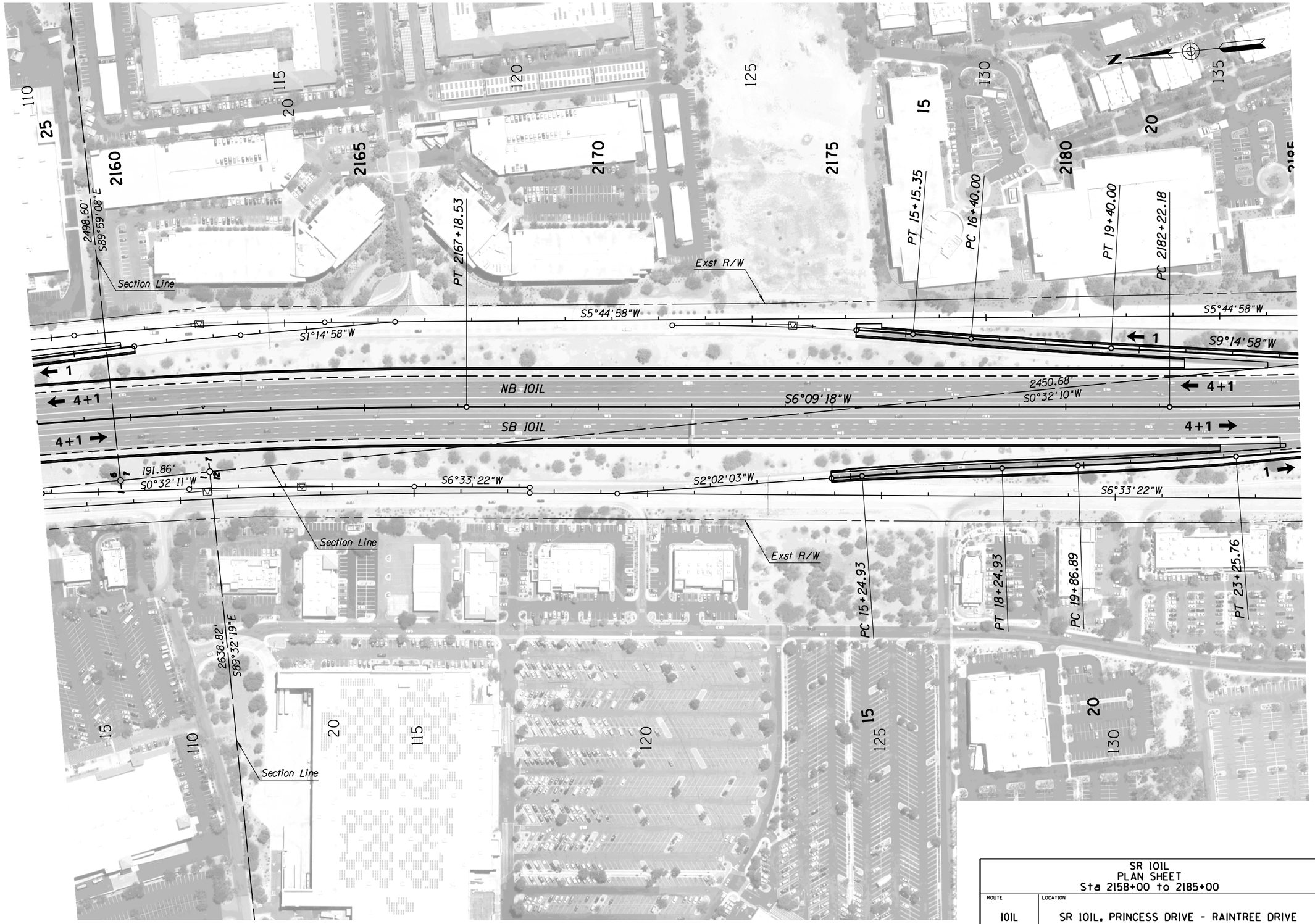
ROUTE	LOCATION
101L	SR 101L, PRINCESS DRIVE - RAINTREE DRIVE

PRELIMINARY CONCEPT PLAN

3 OF 9

SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

4/7/2017 Z:\60527097_MAG, SR 101,Princess Drive DDI\900-CAD GIS\910-CAD\20-SHEETS\h6874p03.dgn



SR 101L
PLAN SHEET
Sta 2158+00 to 2185+00

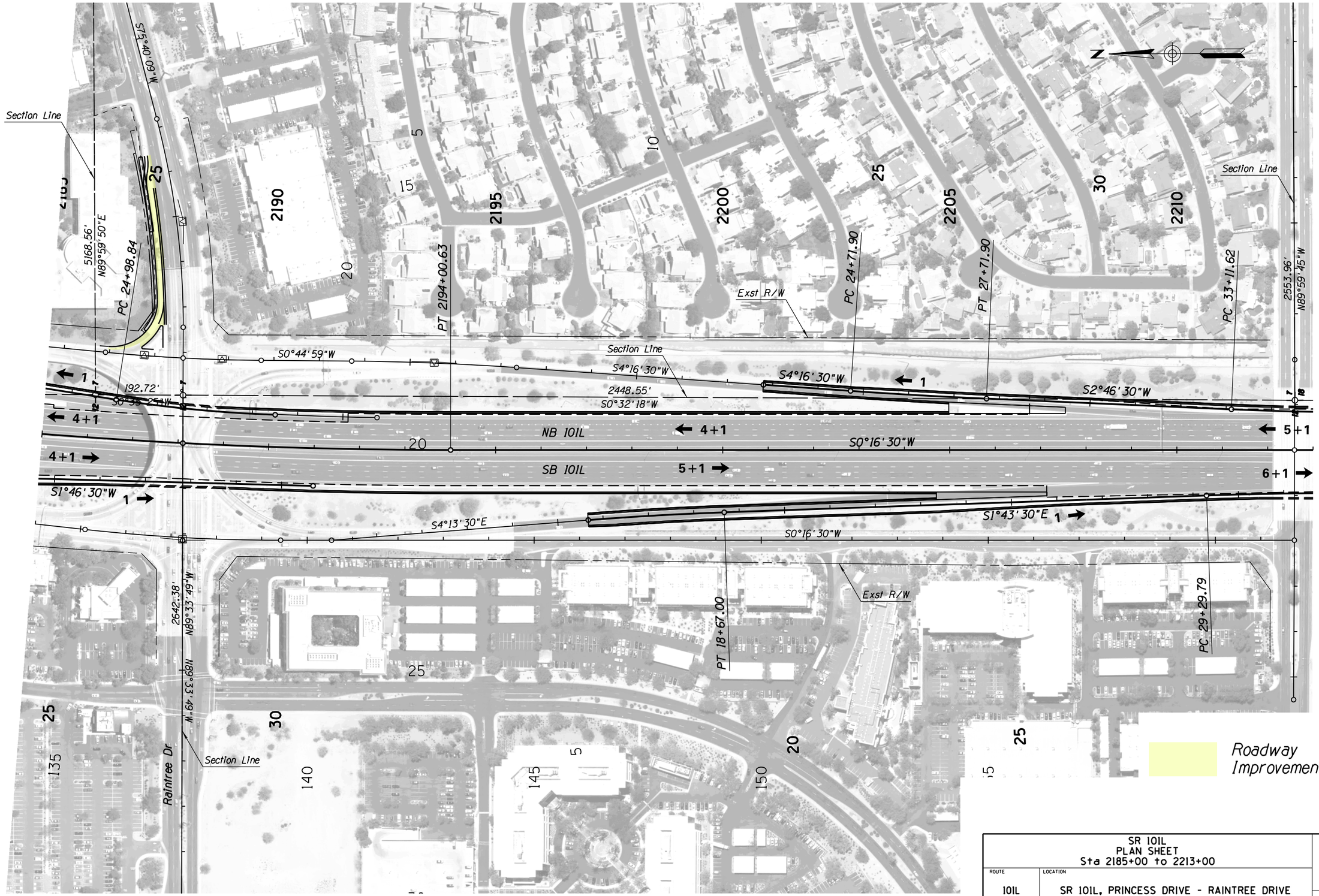
ROUTE	LOCATION
101L	SR 101L, PRINCESS DRIVE - RAINTREE DRIVE

PRELIMINARY CONCEPT PLAN

4 OF 9

SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

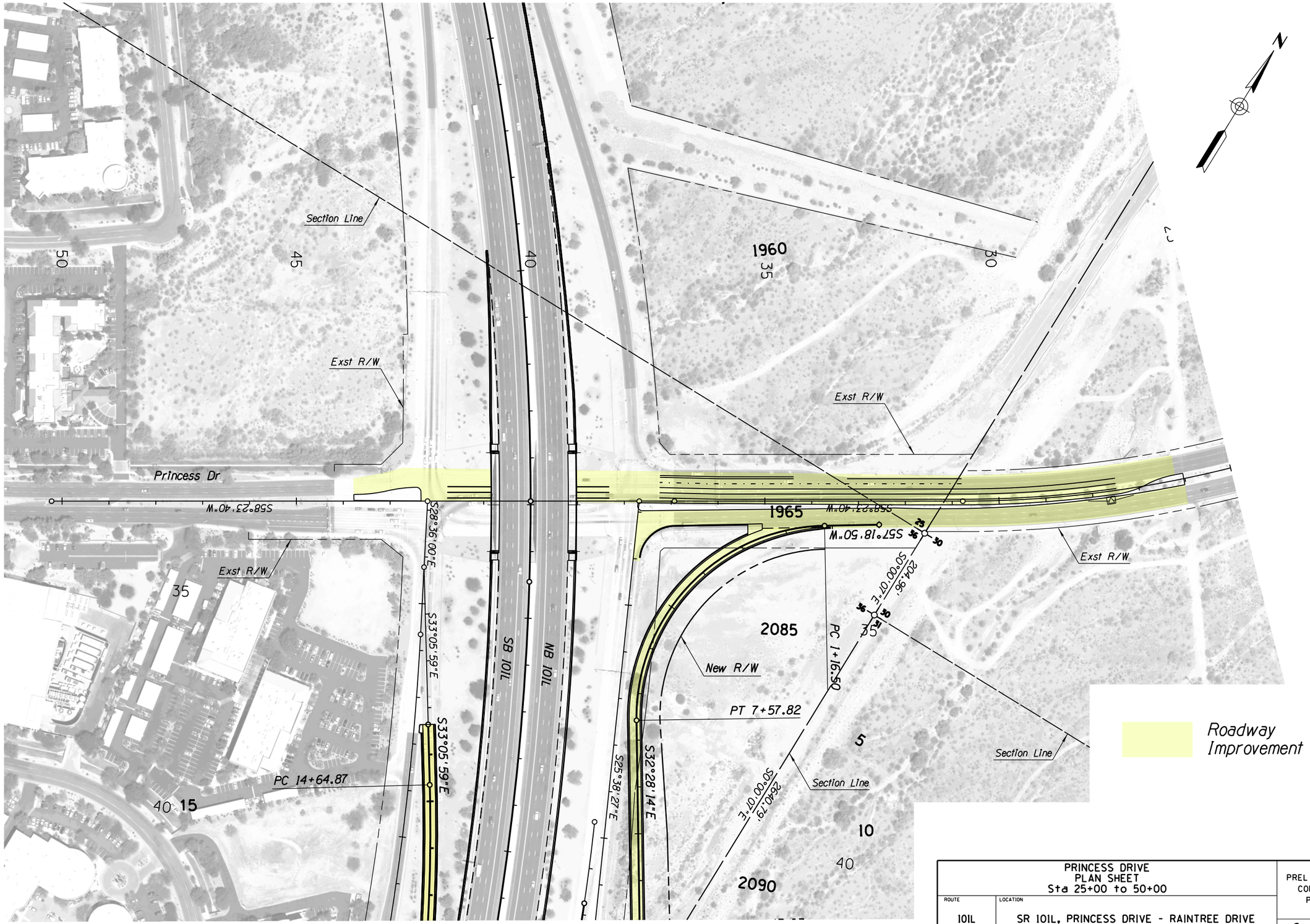
4/7/2017 Z:\60527097_MAG, SR 101,Princess Drive DDI\900-CAD GIS\910-CAD\20-SHEETS\h6874p04.dgn



SR 101L PLAN SHEET Sta 2185+00 to 2213+00	PRELIMINARY CONCEPT PLAN
ROUTE: 101L LOCATION: SR 101L, PRINCESS DRIVE - RAINTREE DRIVE	5 OF 9

4/7/2017 Z:\60527097_MAG, SR 101,Princess Drive DDI\900-CAD GIS\910-CAD\20-SHEETS\h6874p05.dgn

SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-



PRINCESS DRIVE PLAN SHEET Sta 25+00 to 50+00		PRELIMINARY CONCEPT PLAN
ROUTE 101L	LOCATION SR 101L, PRINCESS DRIVE - RAINTREE DRIVE	6 OF 9

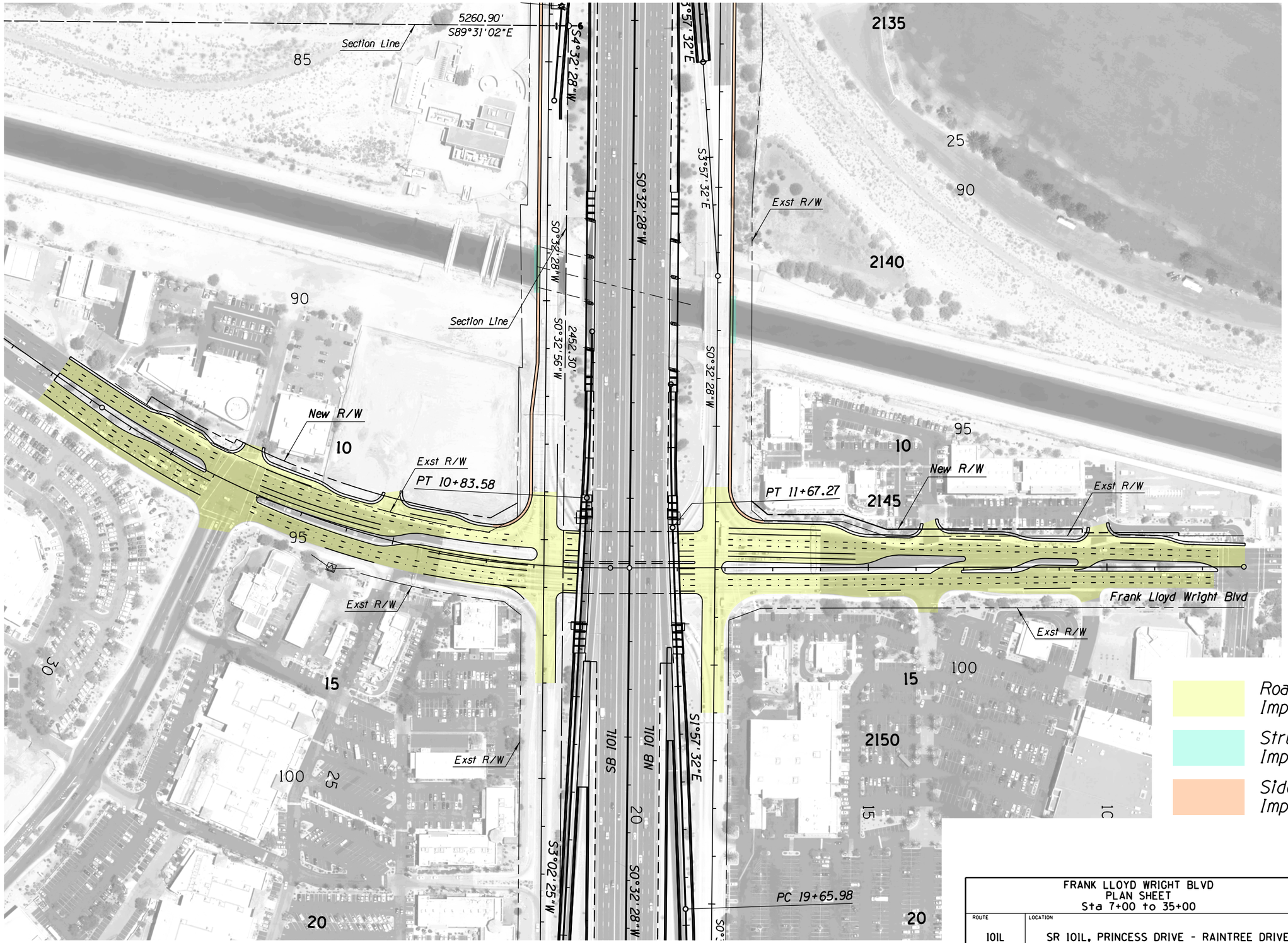
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

4/28/2017 Z:\60527097_MAG, SR 101,Princess Drive DDI\900-CAD GIS\910-CAD\20-SHEETS\h6874p06.dgn

BELL ROAD PLAN SHEET Sta 7+00 to 30+00	PRELIMINARY CONCEPT PLAN
ROUTE: 101L — LOCATION: SR 101L, PRINCESS DRIVE - RAINTREE DRIVE	7 OF 9

SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

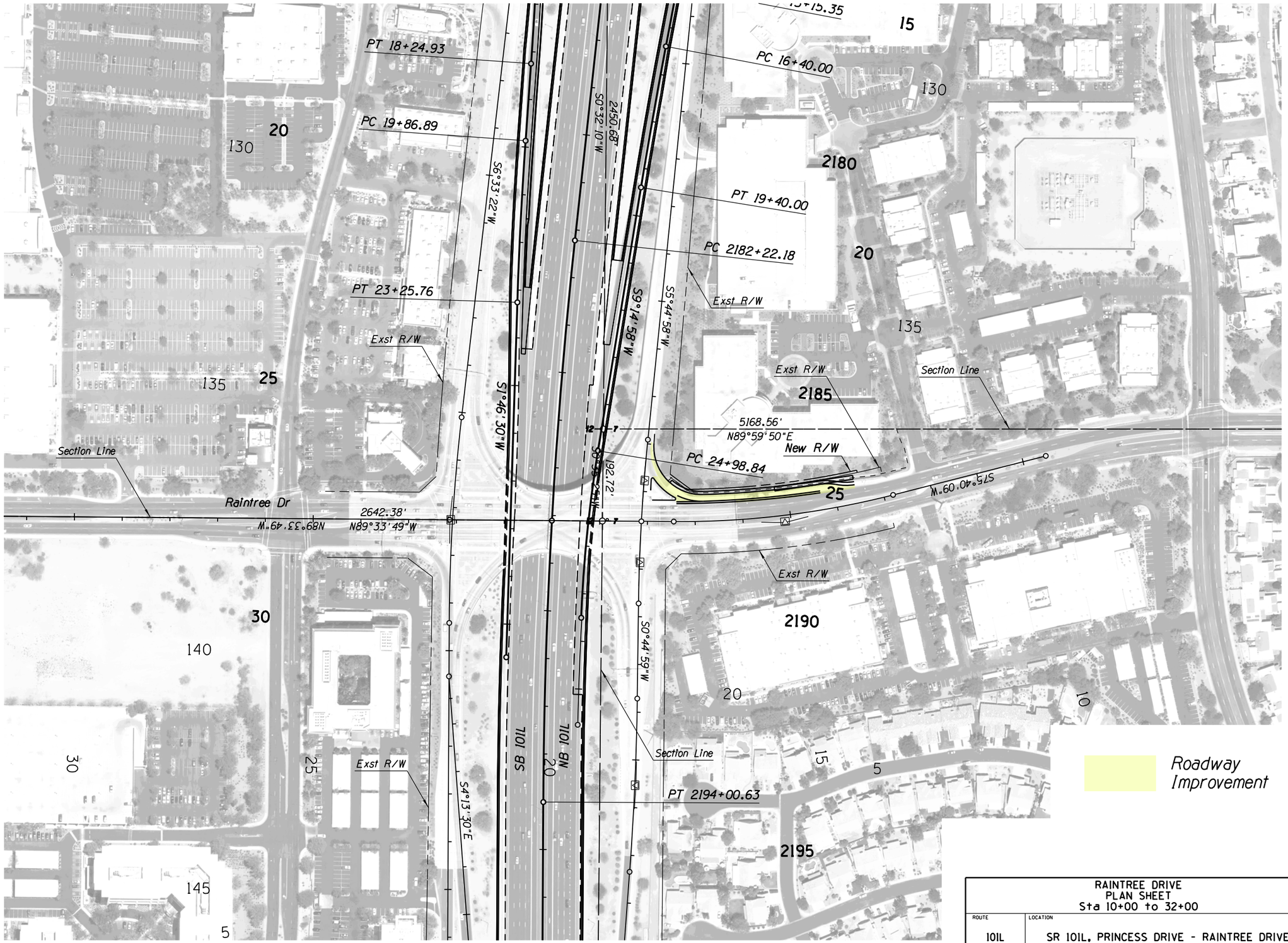
4/7/2017 Z:\60527097_MAG, SR 101,Princess Drive DDI\900-CAD GIS\910-CAD\20-SHEETS\h6874p07.dgn



FRANK LLOYD WRIGHT BLVD PLAN SHEET Sta 7+00 to 35+00	PRELIMINARY CONCEPT PLAN
ROUTE: 101L — LOCATION: SR 101L, PRINCESS DRIVE - RAINTREE DRIVE	8 OF 9

4/7/2017 Z:\60527097_MAG, SR 101,Princess Drive DDI\900-CAD GIS\910-CAD\20-SHEETS\h6874p08.dgn

SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-



RAINTREE DRIVE PLAN SHEET Sta 10+00 to 32+00	PRELIMINARY CONCEPT PLAN
ROUTE: 101L LOCATION: SR 101L, PRINCESS DRIVE - RAINTREE DRIVE	9 OF 9

SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

4/7/2017 Z:\60527097_MAG, SR 101,Princess Drive DDI\900-CAD GIS\910-CAD\20-SHEETS\h6874p09.dgn