Appendix 1 – Previously Completed Studies

7.1 Refined Alternatives Considered

ADOT representatives have stated that they were interested in consideration of an alternative with a terminus on SR 89 in the vicinity of Road 5 North to Road 6 North. It was agreed that connections or partial corridors between SR 89 and CV8 would be shown in the vicinity of Road 6 North and a point south of the BNSF for two reasons. First, these could be used as a guide for Chino Valley and Yavapai County for the planning of local roads between the Extension and SR 89. These two local roads could also serve as alternative termini of the Extension if further engineering and environmental studies show it would be the preferred solution. **Figure 7.1** shows the three alternatives that will be refined for further evaluation.

7.1.1 Corridor CV1

The southern terminus for CV1 occurs at the Great Western / Road 5 South Corridor and the northern terminus is in the Prescott National Forest, north of Paulden. Alternative CV1 is the eastern most corridor that loops though the Prescott National Forest.

7.1.2 Corridor CV2

The southern terminus for CV2 occurs at the Great Western / Road 5 South Corridor. The northern terminus is in the Prescott National Forest, north of Paulden. Alternative CV2 is the corridor that is more centrally located. Corridor CV2 passes through the Little Thumb Butte Conservation Easement area, and State Game and Fish Department Lands.

7.1.3 Corridor CV8

The southern terminus for CV8 occurs at the Great Western / Road 5 South Corridor. The northern terminus is in the Prescott National Forest, north of Paulden. Alternative CV8 is the most western corridor. It avoids the Game and Fish and Conservation Easement Lands. As discussed with ADOT representatives, the two local connections between CV8 and SR 89 can either be locations for interchanges along CV8 with arterial connections to SR 89, or serve as the termini for the Extension.

If the Road 5 North to Road 6 North area were considered a terminus, it would most likely trigger the need for widening existing SR 89 and providing combinations of interchanges and frontage roads to result in access control along the upgraded highway. This would include the need for purchasing access rights from adjoiners, as well as some structure demolition and reconstruction of the existing BNSF railroad bridge. Final disposition of corridor extents and associated phasing can be made in the future when the DCR and National Environmental Policy Act (NEPA) studies are completed.

An approximate alignment of CV8 is shown in the recently published Draft Regional Framework Study for the Northern Arizona Prescott Region Personal Vehicle Mobility study being performed by the Arizona Department of Transportation. This Study shows a proposed state highway running from SR 93 west of Wickenburg, north through Kirkland, Skull Valley, west of Granite Mountain in the Williamson Valley area, and generally following the Burlington Northern Santa Fe Railroad alignment, easterly to a point along SR 89 north of Paulden. East of SR 89, the proposed state highway follows CV8 on the east side of Chino Valley. The proposed state highway continues east of Prescott Valley and ends along I-17, north of the SR 69 junction. This Study also shows a westerly extension of a principal arterial roadway in the vicinity of Road 6 north, to the proposed highway.

7.2 Traffic Forecast and Operational Analysis

The socio-economic data set and arterial street network from the Small Area Transportation Study model for Chino Valley was used as the basis for the modeling of CV1, CV2, and CV8. Turn movement traffic volume data was obtained from the model at the termini with SR 89 and Road 5 South, to provide a preliminary opinion on the type of connection needed. A planning level analysis was provided to ensure the planned project roadways will provide acceptable capacity and operations.

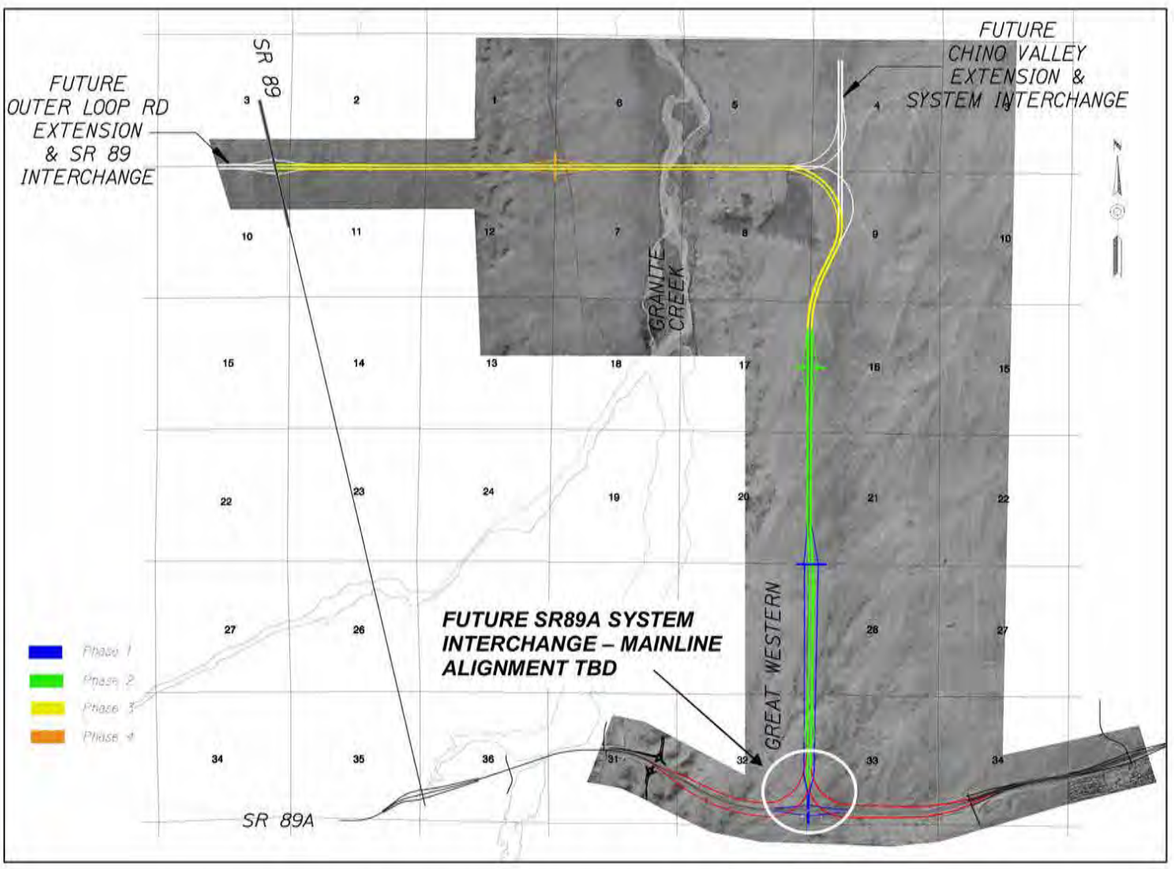


Figure 39. Recommended Implementation Phasing

The first public meeting held in July for the project resulted in comments from the public. There were no alignment alternatives that were singled out by having a significant number of positive or negative comments associated with them. Most of the public comments were related to how a particular corridor would affect the individual commenter's property.

Based on the evaluation and public feedback, it is recommended that PV5 and PV6 be forwarded for further development and evaluation. The CYMPO Technical Advisory Committee has considered and approved this recommendation.

7. Most Viable Alternatives Development

The alternatives development process was initiated with the creation of corridors with termini along SR 169 in the vicinity of Quail Track Road or in the vicinity of Grant Woods Parkway. Four termini locations were deemed possible along Fain Road at Santa Fe Loop South, Superstition Road, Lakeshore Drive, and a location ½ to 1-mile north of Lakeshore Drive. Based on preliminary engineering evaluation, environmental evaluation, the CYMPO Technical Advisory Committee input, property owner's comments and public input, the two most viable alternatives were identified and forwarded to the CYMPO Technical Advisory Committee as the alternatives to refine and further evaluate.

As part of the acceptance process, ADOT was consulted to ensure they were in agreement with the two alternatives, PV5 and PV6, considered as the most viable. Their comments and direction were incorporated and included in the selection of the most viable alternatives to be refined and further evaluated.

7.1 Refined Alternatives Considered

ADOT responded with the request to add a third alternative, to extend PV6 to the northwest to create a terminus along Fain Road at a location ½ mile to 1-mile north of Lakeshore Drive. These were the same terminus points along SR 169 and Fain Road as Alternative PV2. The overlap section along SR 169 between Grant Woods Parkway and Quail Track Road provided by Alternative PV2 was not included in ADOT's request or by the CYMPO Technical Advisory Committee. This new, modified alternative will be called PV2 Modified (PV2Mod). **Figure 7.1** shows the 3-alternatives that will be refined for further evaluation.

7.1.1 Corridor PV2Mod

The PV2Mod corridor begins at SR 169 in the vicinity of Grant Woods Parkway and ends at Fain Road roughly ½ to 1-mile north of Lakeshore Drive. The PV2Mod corridor coincides with the PV6 corridor, which is a shift to the west from the PV2 corridor. The PV2Mod corridor location eliminates crossing through the Prescott National Forest. The PV2Mod corridor now lies on a combination of private residential, ranching, Bureau of Land Management, and Arizona State Land properties.

7.1.2 Corridor PV5

The PV5 corridor begins at SR 169 near Grant Woods Parkway and ends at Fain Road in the vicinity of the Santa Fe Loop South. There were no changes proposed to the alignment.

7.1.3 Corridor PV6

The PV6 corridor begins at SR 169 in the vicinity of Grant Woods Parkway and ends at Fain Road at the Lakeshore Drive interchange. There were no changes proposed to the alignment.

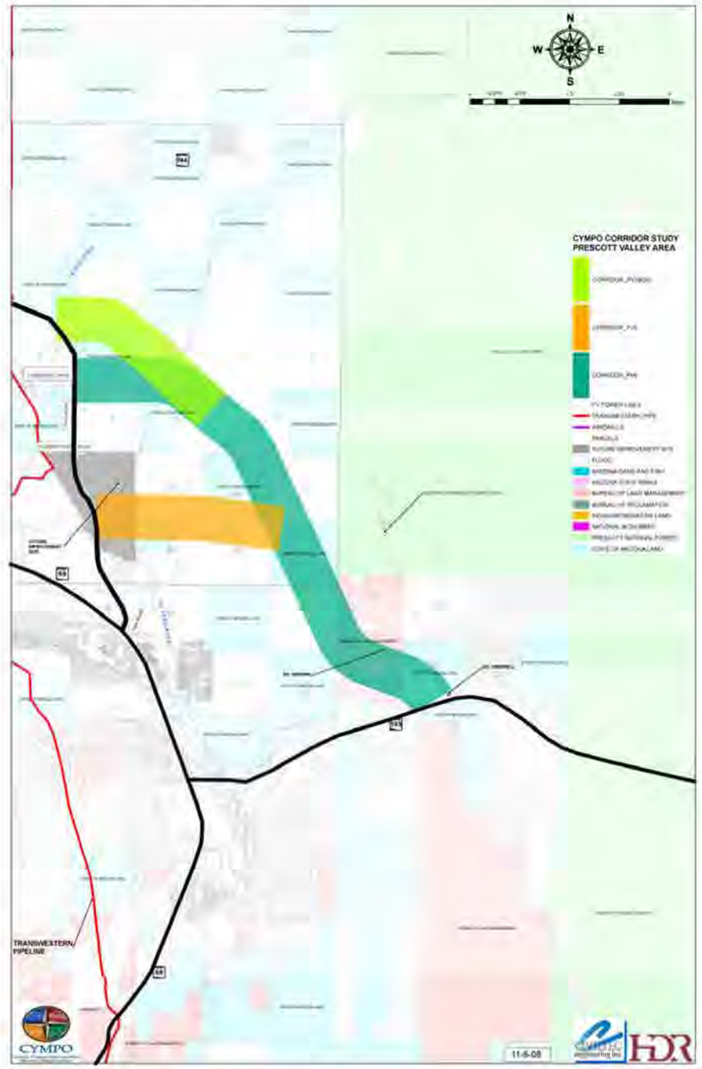
7.2 Traffic Forecast and Analysis

The socio-economic data set and arterial street network from the revised CYMPO model for the sensitivity analysis was used as the basis for the modeling of PV5 and PV6. Turn movement traffic volume data was obtained from the travel demand model at the termini with SR 169 and Fain Road to provide a preliminary opinion on the type of connection needed. A planning level analysis was provided to ensure the planned project roadway will provide acceptable capacity and operations.

Alternative PV2Mod was not modeled. Due to its close proximity to PV6, it is expected that the data for PV2Mod would be similar to the mainline and turn movement forecast that was provided for PV6. Therefore, it is assumed that the operational evaluation for PV6 is approximately equivalent to that of PV2Mod.

7.2.1 Viable Alternatives (Year 2030) Traffic Forecast

The data shown on **Figure 7.2** and **Figure 7.3** was obtained from the revised CYMPO travel demand forecast model for PV5 and PV6, respectively. Using the socio-economic data and local arterial street network from the sensitivity model, these figures depict the projected ADT volumes along the SR 169 Connector to Fain Road for PV5 and PV6.



Most Viable Alternatives
Figure 7.1

Appendix 2 – Robert Road RSA Recommendations

Robert Road RSA Recommendations

Location	Potential Safety Issue Description	Countermeasures for Consideration	Agency to Respond
Robert Road	1. Right shoulder being used as turn lane. 2. High approach speeds, and permissive right turn on red could make it difficult for drivers to judge gaps. 3. Drivers not stopping for red light while machining right turn. 4. Traffic signals centered over lanes have been shown to provide safer operation. 5. Object marker blocking curve sign and speed plaque. 6. Single chevron at northwest quadrant.	1. Implement a countermeasure such as pavement markings to deter right turns from shoulder. 2. Evaluate the desirability of a “no right turn on red” sign. 3. Targeted enforcement for red light runners. 4. Adjust traffic signal heads so they are centered over their respective lanes. 5. Move the curve warning sign so it is more conspicuous. 6. Remove the single chevron and replace it with delineators or a W1-6 sign.	1. ADOT 2. ADOT 3. Prescott Valley 4. ADOT 5. Prescott Valley 6. ADOT
SR 89A north and east of the intersection	1. Westbound traffic signals are visible to southbound traffic. 2. RSA team observed the average speed of drivers approaching the curve at 44 mph. 3. Single chevron may not convey clear message. 4. Numerous guide signs and route markers close to the intersection can make it difficult for unfamiliar drivers. 5. The signal head on “A” pole for SB traffic has diminished visibility. 6. Curve warning sign and speed plaque has limited visibility behind luminaire pole. 7. NB SR 89A traffic stopping on the shoulder which is causing pavement edge erosion.	1. Shield the westbound SR 89A traffic signals so they cannot be seen by southbound 89A traffic. 2. Re-evaluate the speed limit on SB SR 89A north of the intersection. 3. Remove the single chevron and replace it with either delineators or a W1-6 sign. 4. Re-evaluate signing plan for the intersection. Consider the use of diagrammatic signs and in lane pavement markings. 5. The signal head should be re-aimed to maximize the visibility for approaching traffic. 6. Relocate curve warning sign and speed plaque to become more visible. 7. Seal the entrance to the area to discourage drivers from stopping there and repair the edge drop off.	1. ADOT 2. ADOT 3. ADOT 4. ADOT 5. ADOT 6. ADOT 7. ADOT
SR 89A west of the intersection	1. Traffic signals centered over lanes have been shown to provide safer operation.	1. Center traffic signal heads over their respective lanes.	1. ADOT
Fain Rd	1. Yield sign not easily visible to right-turning drivers. 2. Traffic signals centered over lanes have been shown to provide safer operation.	1. Turn the yield sign so it is more clearly visible to right turning drivers. 2. Center traffic signal heads over their respective lanes.	1. ADOT 2. ADOT
Eastbound and Westbound Approach Rd	1. The RSA team measured speeds that averaged over the posted speed limit near the intersection. 2. No signing for Jerome at the Robert Rd intersection.	1. Oversized speed limit signs, adding beacons, adding reduced speed signs ahead, fixed ITS radar feedback sign, additional speed limit signs, enhanced enforcement. 2. Consider adding Jerome signing at the Robert Rd intersection and to NB Fain Rd.	1. ADOT, Prescott Valley Local Law Enforcement 2. ADOT
General Recommendation all signal heads	1. Traffic Signal Visibility.	1. Add a reflective back plate to traffic signal heads.	1. ADOT

Appendix 3 – Interchange and Intersection Truck Template Diagrams

SR 89 TI

N

280 ft

1992

Google earth

Imagery Date: 11/6/2015 34°37'56.09" N 112°25'43.76" W elev 5039 ft eye alt 6255 ft

N

Larry Caldwell Drive

259 ft

1992

Google earth

Imagery Date: 11/6/2015 34°38'05.78" N 112°25'01.94" W elev 4981 ft eye alt 6133 ft

Granite Dells Pkwy

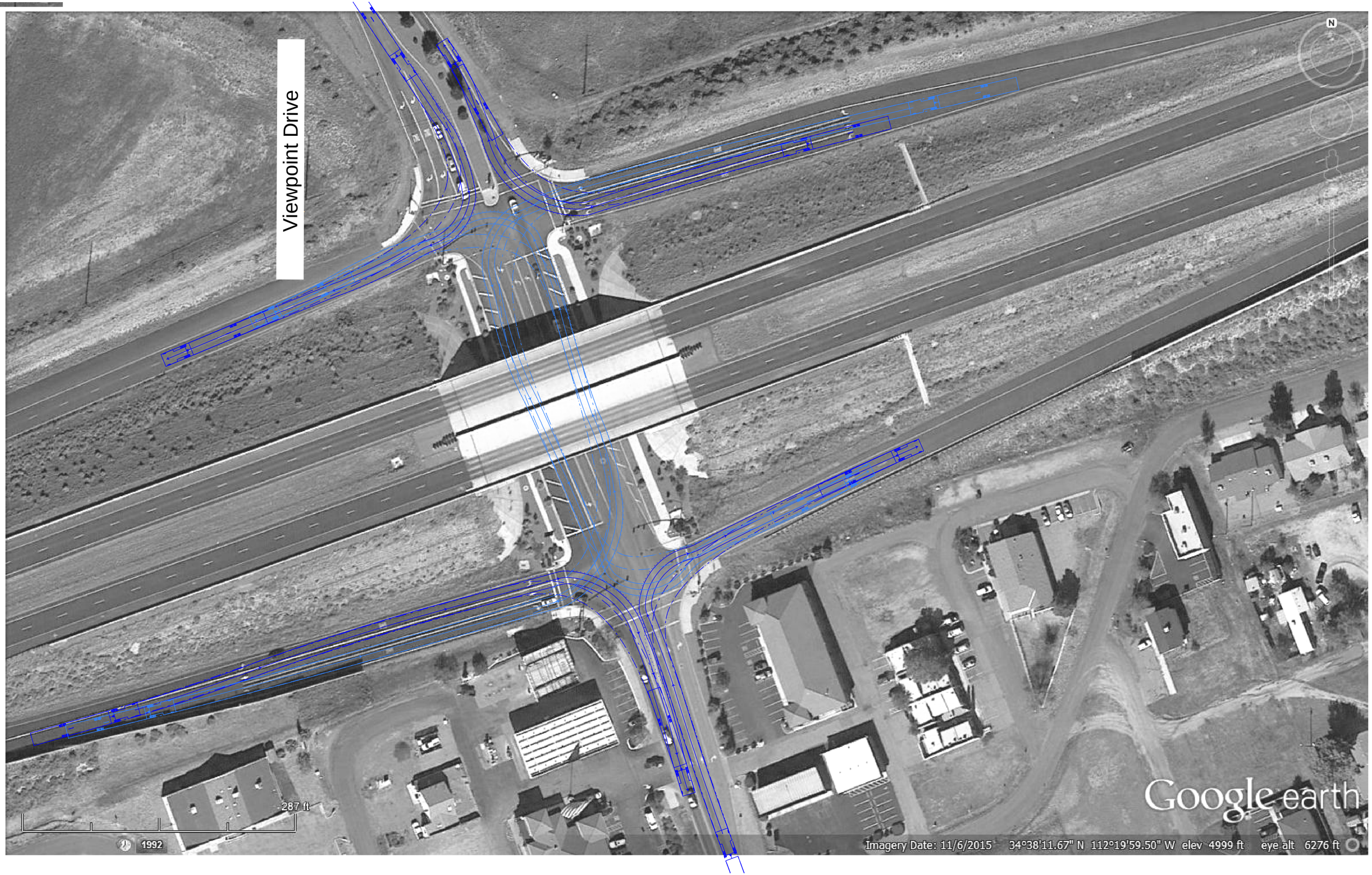
N

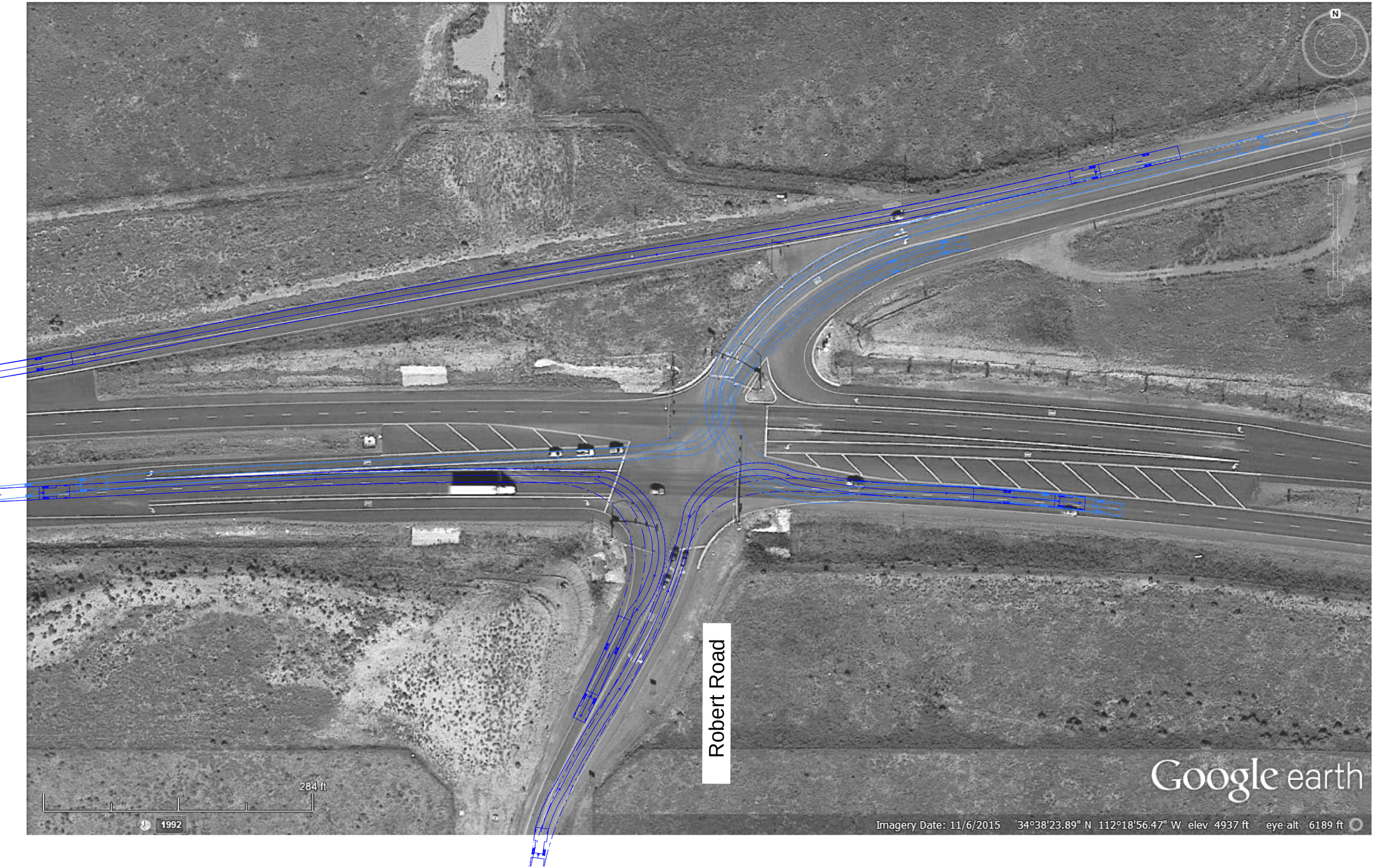
1992

Imagery Date: 11/6/2015 34°38'08.06" N 112°23'49.90" W elev 5050 ft eye alt 6483 ft

Google earth

N
Glassford Hill Road
337 ft
1992
Google earth
Imagery Date: 11/6/2015 34°37'53.20" N 112°21'16.40" W elev 5028 ft eye alt 6553 ft


Viewpoint Drive
N
287 ft
1992
Google earth
Imagery Date: 11/6/2015 34°38'11.67" N 112°19'59.50" W elev 4999 ft eye alt 6276 ft


N
Robert Road
284 ft
1992
Google earth
Imagery Date: 11/6/2015 34°38'23.89" N 112°18'56.47" W elev 4937 ft eye alt 6189 ft

Appendix 4 – Predictive Safety Analysis

Predictive Safety Analysis of Selected Improvements on the SR-89A Corridor

October 11, 2017

As a subconsultant to AECOM, Lee Engineering has conducted a predictive safety analysis for the SR-89A corridor, with the objective to rank selected improvements according to their safety benefit.

Safety improvements are often evaluated according to their Crash Modification Factor (CMF). A CMF represents the rate of expected change in crashes after implementing a roadway change. For instance, a CMF of 0.9 indicates that after the roadway change, crashes should be 90% as high as before the change. (A CMF of 0.9 translates to a 10 percent crash reduction.) CMFs can be established to apply to only certain crash types or severities. The *Highway Safety Manual*[1] and the Crash Modification Factors Clearinghouse[2] are the primary resources used to determine CMFs for this analysis.

While CMFs are a powerful analysis tool, they are typically taken from studies conducted at a variety of sites that may or may not have similar characteristics as the sites in the study corridor. As such, actual results could differ, either positively or negatively, from the CMF predictions.

Robert Road

Predictive safety analysis has been requested for three improvements at the intersection of Robert Rd. and SR-89A:

- Conversion of the signalized intersection to a roundabout
- Conversion of the signalized intersection to a grade-separated interchange
- Addition of a northbound left-turn lane (and possible related change to lane configuration) and installation of reflective backplates at the signal with signal modifications

The improvements are discussed below, in order of their expected safety benefit, from highest to lowest.

Roundabout

Many studies have documented the ability of roundabouts to help mitigate crashes. Roundabouts, in fact, are one of the "proven safety countermeasures"[3] recommended for implementation by the Federal Highway Administration as a safety mitigation measure.

The roundabout at Robert Road is proposed to have two circulating lanes; two-lane roundabouts often have more sources of conflict than single-lane roundabouts. Several CMFs address the conversion of signalized intersections to roundabouts, but only two studies provide CMFs to address the conversion of a signal to a two-lane roundabout. Both such studies[4,5] show the same CMF values, suggesting that they may have been drawn from the same source data.

The CMF for all crashes (in both studies) is 0.81, and the CMF for injury crashes is 0.29. This suggests that while total crashes may be reduced by about 19 percent, severe crashes could drop by 71 percent.

Robert Road experienced a total of 22 crashes over the recent 5-year period, or an average of 4.4 crashes per year. Of these, 12 were either injury or fatality crashes, and 10 involved property damage only. The CMFs suggest that annual severe crashes might be reduced from 2.4 to about 0.7, while total annual crashes could drop from 4.4 to about 3.6.

Grade-separated interchange

One study[6] determined CMFs associated with converting at-grade intersections to grade-separated interchanges; a variety of CMFs were determined according to the before and after characteristics. For the conversion of signalized intersections to a grade-separated interchange, this study determined a CMF for all crashes of 0.73 and a CMF for injury crashes of 0.72.

It should be noted that this study did not consider the type of grade-separated interchange, and certainly the interchange design can have a large impact of its safety performance. However, limits on the available data make it difficult to identify CMFs for specific interchange types.

Applying these CMF values to the crash pattern on Robert Road would suggest a reduction in annual injury crashes from 2.4 to about 1.7 and total annual crashes from 4.4 to about 3.2.

While the roundabout is expected to reduce total crashes by a smaller rate than the interchange, it is considered to have better overall safety performance than the grade-separated interchange because it is expected to reduce severe crashes by a greater rate.

Northbound left-turn lane

A comprehensive review of the CMF Clearinghouse revealed no crash modification factors associated with adding a left-turn lane on the minor street of a signalized interchange. However, in general, an increase in capacity on an intersection approach might be expected to reduce queuing on that approach

---

[1] *Highway Safety Manual*, American Association of State Highway and Transportation Officials, 2010.
[2] Crash Modification Factors Clearinghouse, www.cmfclearinghouse.org.
[3] Proven Safety Countermeasures: Roundabouts. Federal Highway Administration, FHWA-SA-17-055
[4] Gross, F., Lyon, C., Persaud, B., Srinivasan, R., "Safety Effectiveness of Converting Signalized Intersections to Roundabouts." Presented at the 91st Annual Meeting of the Transportation Research Board, Paper No. 12-1658, Washington, DC (2012). Results also published in Accident Analysis and Prevention, Volume 50, January 2013, pages 234-241.
[5] Srinivasan, R., Baek, J., Smith, S., Sundstrom, C., Carter, D., Lyon, C., Persaud, B., Gross, F., Eccles, K., Hamidi, A., and Lefler, N., "NCHRP Report 705: Evaluation of Safety Strategies at Signalized Intersections.", Washington, D.C., Transportation Research Board, National Research Council, (2011). Presented at the Transportation Research Board 91st Annual Meeting, Paper No. 12-2521, January 22-26, 2012, Washington, DC.
[6] Elvik, R. and Erke, A., "Revision of the Hand Book of Road Safety Measures: Grade-separated junctions." (3-27-2007)

during congested periods. Rear-end collisions are often associated with extended queues, so reduction of queue length might normally help address a rear-end crash issue on an intersection approach.

The long cycle length at the intersection of Robert Rd. and SR-89A does lead to queues on the northbound approach at some times of day, but the queues have not resulted in crashes on this approach. The northbound approach (outside the intersection proper) experienced only one crash during the 5 years from 2011 through 2015, and this crash was not associated with queueing or congestion. It was a single-vehicle run-off-road crash that occurred at 8:12 p.m. on a Sunday, outside the traditional peak period.

The proposed left-turn lane would be created by restriping the existing pavement to accommodate a 3-lane approach instead of a 2-lane approach. This strategy will clearly provide a capacity benefit, but it could have a minor safety disbenefit, because it would eliminate the shoulder on the east side of Robert Road that currently serves as a refuge area for errant or disabled vehicles. However, conditions at the intersection are far different than a more isolated location, because drivers approaching the intersection are slowing for the traffic signal; familiar drivers are likely expecting to slow because the signal heavily favors mainline SR-89A traffic. The slow speeds and occasional queuing limit the shoulder's safety value. In addition, a well-graded unpaved shoulder is available just off the pavement that can provide almost the same benefit as the paved shoulder if the pavement is restriped as proposed.

Considering the lack of safety information in the literature about the northbound left-turn improvement, the very small number of existing crashes, and tendencies that might tend to both increase and decrease crashes, we believe it is appropriate to assume that this operational change will not have a significant effect on the intersection's safety performance. However, the installation of reflective backplates will have a CMF factor of 0.85 for all crashes. Applying this CMF value to the crash pattern on Robert Road would suggest a reduction in total annual crashes from 4.4 to about 3.8.

Summary of Robert Road countermeasures

Countermeasure	*CMF*		*Predicted annual crash reduction*	
	All crashes	*Severe crashes*	*All crashes*	*Injury crashes*
Roundabout	0.81	0.29	0.8	1.7
Interchange	0.73	0.72	1.2	0.7
NB left-turn lane & Reflective backplates	0.85	*	0.6	*

* No CMF is available for this countermeasure for sever crashes, but it is expected that it would result in an insignificant change in safety performance.

Glassford Hill Road

Predictive safety analysis has been conducted for the following improvements at the interchange of Glassford Hill Road and SR-89A:

- Converting the existing signalized interchange ramp termini to roundabout control
- Converting the existing conventional diamond interchange to a diverging diamond interchange (DDI)
- Converting the existing eastbound right-turn lane to a free right
- Constructing a new interchange between Glassford Hill Rd. and Granite Dells Pkwy.

These improvements are discussed in order of their expected safety benefit, from highest to lowest.

Roundabout ramp termini

From a safety perspective, conversion of the Glassford Hill interchange ramp termini signals to roundabouts is nearly identical to conversion of the Robert Road intersection to a roundabout. In both cases, the intersections start with signal control and are proposed to be converted to roundabouts with two circulating lanes. The Glassford Hill roundabouts are expected to operate with better safety performance than the Robert Road roundabout, because approach speeds and conflicts are reduced by virtue of the integration with the one-way interchange ramps. However, these details are not captured by the CMFs.

The CMFs noted above continue to apply to the Glassford Hill interchange: the CMF for all crashes is 0.81, and the CMF for injury crashes is 0.29.

Crash data show that the Glassford Hill interchange in its entirety experienced 52 crashes during the recent 5-year period, an average of 10.4 per year, but many of these crashes occurred on the entrance or exit ramps or other areas of the interchange not subject to correction by the roundabout ramp termini. At the interchange termini, the north intersection experienced 4 crashes in a 5-year period and the south intersection experienced 16 crashes during the same period. In addition, 9 crashes occurred on the northbound approach to the interchange, near enough to the signalized ramp terminus (within about 500 feet) that they can be considered related to the ramp terminus queuing. In all, 29 crashes occurred on Glassford Hill Rd. at or near one of the ramp termini, an average of 5.8 per year.

Of these 29 crashes, only 6 involved injuries, suggesting that motorists' low speeds are helping to keep injury severity relatively low.

According to the CMFs, the roundabout termini would be expected to reduce annual injury crashes from 1.2 to about 0.3 and total annual crashes from 5.8 to 4.7.

Diverging Diamond Interchange

A Diverging Diamond Interchange (DDI) is characterized by the two directions of mainline traffic crossing each other's paths on either side of the interchange. The configuration can reduce the number of signal phases at an interchange and can provide operational benefits when interchange turning volumes are high relative to mainline through volume.

While DDIs are uncommon in the U.S., one study[7] has attempted to develop a CMF for converting a conventional diamond interchange to a DDI. The safety benefits accrue from the reduction in conflict points, slower speeds through the interchange, and simplified turning movements. The DDI shows a CMF of 0.67 for all crashes and 0.59 for severe crashes.

Applying these CMFs to the Glassford Hill crash pattern at the ramp termini, it is expected that annual injury crashes could be reduced from 1.2 to about 0.7 and total annual crashes from 5.8 to 3.9.

The roundabout interchange and the DDI have similar crash reduction capabilities, though the roundabouts are somewhat more effective at reducing severe crashes and the DDI can better reduce overall crashes. It would be possible to rank these alternatives in the reverse order depending on the assumed ratio of cost of an injury crash to cost of a property damage crash.

Eastbound free right-turn lane

If the existing signalized ramp termini are maintained, it has been suggested that the eastbound right-turn lane on the SR-89A exit ramp could be converted to free operation, in which a stop or yield would not be required because the lane would feed a dedicated receiving lane on southbound Glassford Hill Rd.

Two CMFs were identified as potentially relevant to this improvement, but neither provided an exact match. One study evaluated the addition of a right-turn lane at a stop-controlled intersection, but it was discarded because the Glassford Hill ramp termini are signal-controlled. A second study[8] considered the addition of a right-turn lane on a major road approach to a traffic signal, but did not consider whether the lane would operate as a free right.

This study showed a CMF of 0.96 for all crashes and 0.91 for severe crashes. This improvement could only be expected to improve crashes at the south intersection within the interchange, and likely would not have any impact on crashes on the northbound approach. As noted earlier, a total of 16 crashes occurred at the south interchange over a 5-year period, and of these, only 3 involved injury. An additional 3 crashes occurred on the eastbound approach to the intersection, coded about 200 feet upstream of the stop bar, such that they may be related to queuing on the eastbound approach. Two of these three crashes involved an injury. In sum, a total of 19 crashes and 5 injury crashes occurred at or approaching the south intersection in the Glassford Hill interchange.

As such, these CMFs would suggest that severe annual crashes could be reduced from 1.0 to 0.9, and total annual crashes could be reduced from 3.8 to 3.6.

[7] Hummer, J.E., D., C.M. Cunningham, R. Srinivasan, S. Warchol, B. Claros, P. Edara, and C. Sun. "Safety Evaluation of Seven of the Earliest Diverging Diamond Interchanges Installed in the US". Presented at the 95th Annual Meeting of the Transportation Research Board, Paper No. 16-5481, Washington, D.C., (2016).

[8] Harwood, D. W., Bauer, K. M., Potts, I. B., Torbic, D. J., Richard, K. R., Rabbani, E. R., Hauer, E., Elefteriadou, L., and Griffith, M. S., "Safety Effectiveness of Intersection Left- and Right-Turn Lanes." Washington, D.C., 82nd Transportation Research Board Annual Meeting, (2003)

In general, it is expected that free-right operation would improve safety performance more than a conventional right-turn lane because it could help reduce queues during congested periods. However, only three crashes occurred on the eastbound approach in a 5-year period, which suggests that the potential for safety improvement by reducing this crash type is quite limited.

Adjacent Interchange

A new interchange (the Great Western TI) has been proposed as an alternative to be constructed between the existing Glassford Hill and Granite Dells interchanges. A new interchange would primarily help to relieve traffic from the existing interchanges, reducing the traffic volume without any other roadway safety improvements.

A review of the CMF Clearinghouse found no CMFs at an interchange associated with the construction of a nearby interchange.

Historically, crashes have been evaluated using a crash rate, often the number of crashes per million vehicle miles traveled. This formulation assumes that the crash rate is essentially constant for a given roadway condition, such that if traffic increases or decreases by a certain percentage, crashes will increase or decrease by the same percentage.

This strategy is not perfectly accurate, particularly because of the relationship between congestion and crashes. If traffic volume increases a small amount but crosses a threshold between uncongested and congested conditions, crashes may increase by a much larger amount. This effect can be captured by more modern measures of safety performance, such as Safety Performance Functions (SPFs).

However, for a broad improvement such as a new interchange, the crash rate formulation can be helpful to understand overall safety patterns. If crashes are linearly related to traffic volume, then it could be expected that if a new interchange could reduce traffic volume at the Glassford Hill interchange by a set percentage, then it could also be expected to reduce crashes by the same percentage. (At some times of day, the crash reduction might be expected to exceed the volume reduction, particularly during congested times.)

While this formulation suggests a reduction in crashes at the Glassford Hill interchange, crashes are likely to occur at the proposed interchange as well. The proposed interchange might have ramp termini with better safety performance than Glassford Hill (such as roundabouts), and if so the total number of crashes at the two interchanges may be reduced slightly. However, the new interchange will also introduce two new exit gores and two new entrance gores, merging, diverging, and (possibly) weaving areas on the mainline, all of which are potentially new sources of crashes beyond current conditions.

As such, while a new interchange is likely to provide much improved corridor mobility and traffic operations, it is not clear at this time that it would have a significant overall impact on safety performance.

Summary of Glassford Hill Road countermeasures

Countermeasure	*CMF*		*Predicted annual crash reduction*	
	All crashes	*Severe crashes*	*All crashes*	*Injury crashes*
Roundabouts	0.81	0.29	1.1	0.9
DDI	0.67	0.59	1.9	0.5
EB free right	0.96	0.91	0.2	0.1
Great Western TI	*	*	*	*

* No CMF is available for this countermeasure, but it is expected that it would result in an insignificant change in safety performance.

Granite Dells Parkway

Two safety countermeasures have been suggested for the interchange of Granite Dells Parkway with SR-89A:

- Modifying the lane configuration and alignment at the roundabout
- Constructing a new interchange between Glassford Hill Rd. and Granite Dells Pkwy.

Roundabout Lane Configuration

The Granite Dells interchange ramp termini are controlled by roundabouts, each of which has two circulating lanes, except that they have only a single circulating lane for crossroad U-turns, a very low-volume movement. A change to the lane configuration and alignment has been recommended to address traffic operational concerns in the future.

Such a change is difficult to address using a predictive safety analysis. A review of the CMF Clearinghouse did not identify any CMFs associated with a change in the lane configuration and alignment of a roundabout.

Furthermore, the interchange has little traffic today, though its volume is projected to increase considerably in future years. The low current volume translates to excellent existing safety performance. No crashes occurred at either of the Granite Dells interchange terminus roundabouts during the recent 5-year period. It is difficult to apply any factor or rate to crash conditions when the existing conditions start with perfect safety performance.

Qualitatively, the recommended change to slow traffic approaching the roundabout using a series of reverse curves should tend to improve safety, because it is imperative that drivers approach and traverse a roundabout at reasonable speeds to maximize safety. It is not possible to improve on the perfect safety record from 2011 to 2015, but as volume increases in the future, it is likely that crashes may begin to occur as well, and the reverse curves can better position the roundabouts to continue their excellent safety performance.

Unfortunately, the lack of available CMF data or any existing crashes make it difficult to quantify the effects on safety. In general, it is expected that a change to lane configuration and alignment would have a small impact on crashes.

Adjacent Interchange

The adjacent interchange was discussed earlier, and the same discussion applies to Granite Dells as to Glassford Hill. The lack of crashes at the existing Granite Dells roundabouts further complicates the ability to evaluate the safety impact of an adjacent interchange.

Summary of Granite Dells Parkway countermeasures

Countermeasure	*CMF*		*Predicted annual crash reduction*	
	All crashes	*Severe crashes*	*All crashes*	*Injury crashes*
Change in lane configuration	*	*	*	*
Great Western TI	*	*	*	*

* No CMF is available for this countermeasure, but it is expected that it would result in an insignificant change in safety performance.

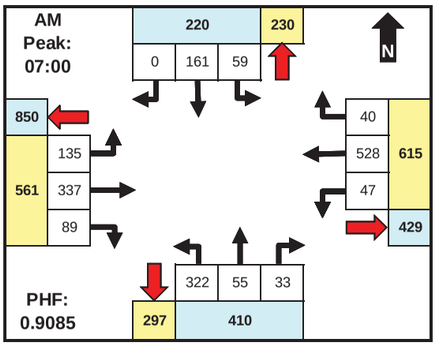
Appendix 5 – Raw Volume Counts and Calculated Volume Factors

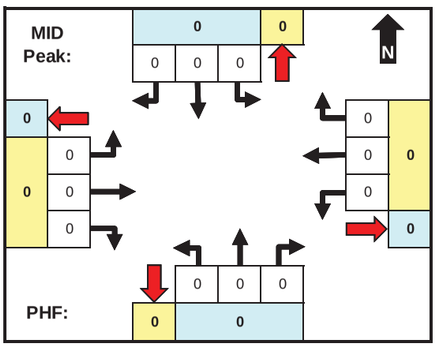
TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

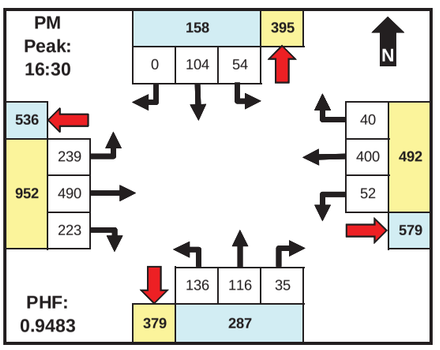
Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

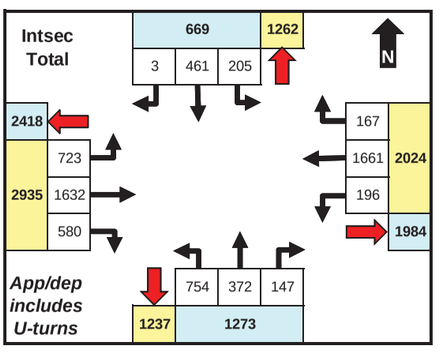
Intersection ID: 1701335
Count Date: 4/13/2017

N ROBERT RD & FAIN RD









	North		East		South		West		
	App	Dep	App	Dep	App	Dep	App	Dep	Total
AM	220	230	615	429	410	297	561	850	1806
MID	0	0	0	0	0	0	0	0	0
PM	158	395	492	579	287	379	952	536	1889
Total	669	1262	2024	1984	1273	1237	2935	2418	6901

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

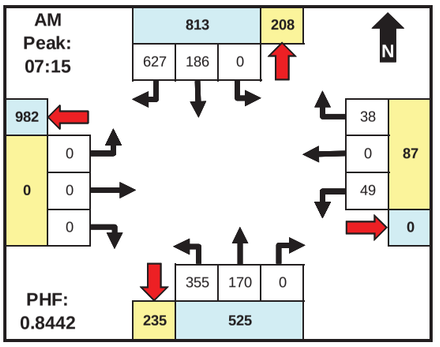
	From North					From East					From South					From West					INTSEC
	N ROBERT RD					FAIN RD					N ROBERT RD					FAIN RD					
Time	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	TOTAL
0:00																					0
0:15																					0
0:30																					0
0:45																					0
1:00																					0
1:15																					0
1:30																					0
1:45																					0
2:00																					0
2:15																					0
2:30																					0
2:45																					0
3:00																					0
3:15																					0
3:30																					0
3:45																					0
4:00																					0
4:15																					0
4:30																					0
4:45																					0
5:00																					0
5:15																					0
5:30																					0
5:45																					0
6:00																					0
6:15																					0
6:30																					0
6:45																					0
07:00	12	24	0	0	0	7	119	11	0	0	61	12	5	0	0	33	75	16	0	0	375
07:15	17	39	0	0	0	12	124	4	0	0	91	15	10	0	0	32	78	22	0	0	444
07:30	20	48	0	0	0	16	146	15	0	0	85	13	14	0	0	37	79	17	0	0	490
07:45	10	50	0	0	0	12	139	10	0	0	85	15	4	0	0	33	105	34	0	0	497
08:00	10	28	0	0	0	8	92	9	0	0	46	23	13	0	0	30	91	23	0	0	373
08:15	11	32	1	0	0	22	95	9	0	0	43	25	15	0	0	43	96	39	0	0	431
08:30	12	23	0	0	0	18	90	6	0	0	59	17	15	0	0	34	110	31	0	0	415
08:45	9	26	1	0	0	5	86	12	0	0	36	22	9	0	0	39	78	20	0	0	343
09:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
9:15																					0
9:30																					0
9:45																					0
10:00																					0
10:15																					0
10:30																					0
10:45																					0
11:00																					0
11:15																					0
11:30																					0
11:45																					0
12:00																					0
12:15																					0
12:30																					0
12:45																					0
13:00																					0
13:15																					0
13:30																					0
13:45																					0
14:00																					0
14:15																					0
14:30																					0
14:45																					0
15:00																					0
15:15																					0
15:30																					0
15:45																					0
16:00	12	23	0	0	0	16	103	16	0	0	38	39	13	0	0	49	136	46	0	0	491
16:15	12	24	1	0	0	13	106	12	0	0	28	29	4	0	0	50	111	36	0	0	426
16:30	17	20	0	0	0	22	91	12	0	0	42	22	14	0	0	47	109	54	0	0	450
16:45	15	33	0	0	0	5	109	5	0	0	33	35	7	0	0	58	129	55	0	0	484
17:00	8	17	0	0	0	12	91	16	0	0	32	31	9	0	0	73	118	50	0	0	457
17:15	14	34	0	0	0	13	109	7	0	0	29	28	5	0	0	61	134	64	0	0	498
17:30	16	25	0	0	0	8	93	12	0	0	19	28	7	0	0	55	98	43	0	0	404
17:45	10	15	0	0	0	7	68	10	0	0	27	18	3	0	0	49	85	30	0	0	322
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15																					0
18:30																					0
18:45																					0
19:00																					0
19:15																					0
19:30																					0
19:45																					0
20:00																					0
20:15																					0
20:30																					0
20:45																					0
21:00																					0
21:15																					0
21:30																					0
21:45																					0
22:00																					0
22:15																					0
22:30																					0
22:45																					0
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	205	461	3	0	0	196	1661	167	0	0	754	372	147	0	0	723	1632	580	0	0	6901
AM Peak Hr:																					7:00
Pk Vol	59	161	0	0	0	47	528	40	0	0	322	55	33	0	0	135	337	89	0	0	1806
PHF	0.738	0.805	n/a	n/a	n/a	0.734	0.904	0.667	n/a	n/a	0.885	0.917	0.589	n/a	n/a	0.912	0.802	0.654	n/a	n/a	0.908
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																					16:30
Pk Vol	54	104	0	0	0	52	400	40	0	0	136	116	35	0	0	239	490	223	0	0	1889
PHF	0.794	0.765	n/a	n/a	n/a	0.591	0.917	0.625	n/a	n/a	0.810	0.829	0.625	n/a	n/a	0.818	0.914	0.871	n/a	n/a	0.948

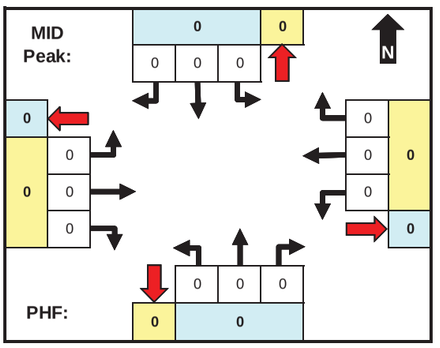
TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

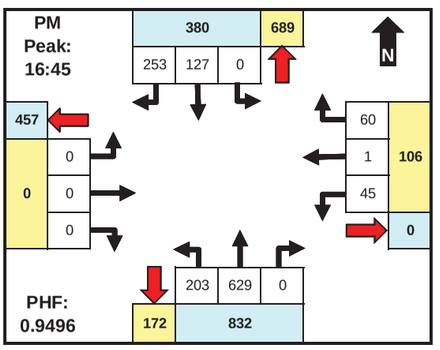
Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

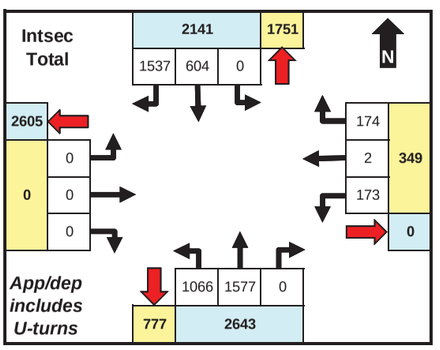
Intersection ID: 1701336
Count Date: 4/13/2017

AZ-89A WB RAMPS & N VIEWPOINT DR









	North		East		South		West		
	App	Dep	App	Dep	App	Dep	App	Dep	Total
AM	813	208	87	0	525	235	0	982	1425
MID	0	0	0	0	0	0	0	0	0
PM	380	689	106	0	832	172	0	457	1318
Total	2141	1751	349	0	2643	777	0	2605	5133

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

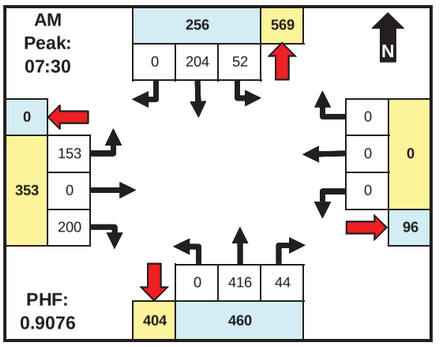
	From North					From East					From South					From West					INTSEC
	AZ-89A WB RAMPS					NONE					AZ-89A WB RAMPS					N VIEWPOINT DR					
Time	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	TOTAL
0:00																					0
0:15																					0
0:30																					0
0:45																					0
1:00																					0
1:15																					0
1:30																					0
1:45																					0
2:00																					0
2:15																					0
2:30																					0
2:45																					0
3:00																					0
3:15																					0
3:30																					0
3:45																					0
4:00																					0
4:15																					0
4:30																					0
4:45																					0
5:00																					0
5:15																					0
5:30																					0
5:45																					0
6:00																					0
6:15																					0
6:30																					0
6:45																					0
07:00	0	32	123	0	0	5	0	1	0	0	99	29	0	0	0	0	0	0	0	0	289
07:15	0	41	192	0	0	13	0	3	0	0	87	20	0	0	0	0	0	0	0	0	356
07:30	0	39	191	0	0	18	0	16	0	0	117	41	0	0	0	0	0	0	0	0	422
07:45	0	55	142	0	0	11	0	11	0	0	83	50	0	0	0	0	0	0	0	0	352
08:00	0	51	102	0	0	7	0	8	0	0	68	59	0	0	0	0	0	0	0	0	295
08:15	0	72	95	0	0	9	0	6	0	0	87	66	0	0	0	0	0	0	0	0	335
08:30	0	46	111	0	0	11	0	12	0	1	84	51	0	0	0	0	0	0	0	0	316
08:45	0	33	86	0	0	8	0	9	0	0	53	70	0	0	0	0	0	0	0	0	259
09:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9:15																					0
9:30																					0
9:45																					0
10:00																					0
10:15																					0
10:30																					0
10:45																					0
11:00																					0
11:15																					0
11:30																					0
11:45																					0
12:00																					0
12:15																					0
12:30																					0
12:45																					0
13:00																					0
13:15																					0
13:30																					0
13:45																					0
14:00																					0
14:15																					0
14:30																					0
14:45																					0
15:00																					0
15:15																					0
15:30																					0
15:45																					0
16:00	0	30	73	0	0	14	0	12	0	0	40	128	0	0	0	0	0	0	0	0	297
16:15	0	33	59	0	0	10	0	9	0	0	45	157	0	0	0	0	0	0	0	0	313
16:30	0	28	68	0	0	9	1	17	0	0	52	136	0	0	0	0	0	0	0	0	311
16:45	0	35	70	0	0	8	1	13	0	0	55	165	0	0	0	0	0	0	0	0	347
17:00	0	31	58	0	0	11	0	18	0	0	38	160	0	0	0	0	0	0	0	0	316
17:15	0	32	58	0	0	11	0	17	0	0	63	157	0	0	0	0	0	0	0	0	338
17:30	0	29	67	0	0	15	0	12	0	0	47	147	0	0	0	0	0	0	0	0	317
17:45	0	16	41	0	0	13	0	10	0	0	48	141	0	0	0	0	0	0	0	0	269
18:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18:15																					0
18:30																					0
18:45																					0
19:00																					0
19:15																					0
19:30																					0
19:45																					0
20:00																					0
20:15																					0
20:30																					0
20:45																					0
21:00																					0
21:15																					0
21:30																					0
21:45																					0
22:00																					0
22:15																					0
22:30																					0
22:45																					0
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	0	604	1537	0	0	173	2	174	0	1	1066	1577	0	0	0	0	0	0	0	0	5134
AM Peak Hr:																					7:15
Pk Vol	0	186	627	0	0	49	0	38	0	0	355	170	0	0	0	0	0	0	0	0	1425
PHF	n/a	0.845	0.816	n/a	n/a	0.681	n/a	0.594	n/a	n/a	0.759	0.720	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.844
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																					16:45
Pk Vol	0	127	253	0	0	45	1	60	0	0	203	629	0	0	0	0	0	0	0	0	1318
PHF	n/a	0.907	0.904	n/a	n/a	0.750	0.250	0.833	n/a	n/a	0.806	0.953	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.950

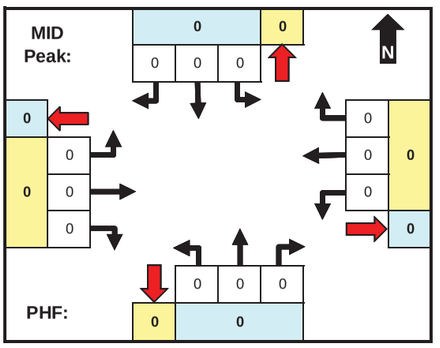
TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

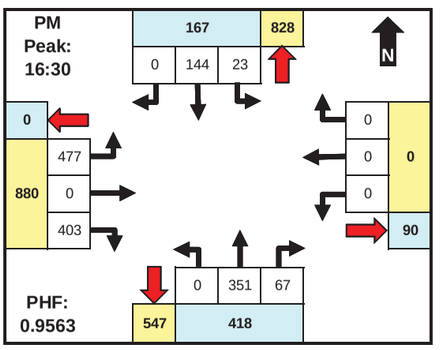
Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

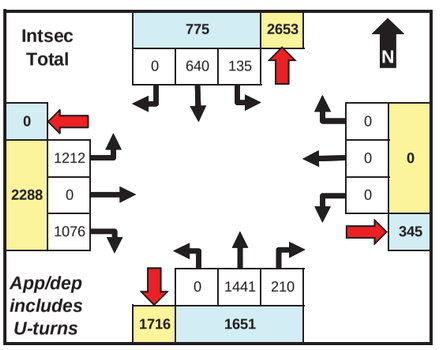
Intersection ID: 1701337
Count Date: 4/13/2017

AZ-89A EB RAMPS & N VIEWPOINT DR









	North		East		South		West		
	App	Dep	App	Dep	App	Dep	App	Dep	Total
AM	256	569	0	96	460	404	353	0	1069
MID	0	0	0	0	0	0	0	0	0
PM	167	828	0	90	418	547	880	0	1465
Total	775	2653	0	345	1651	1716	2288	0	4714

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

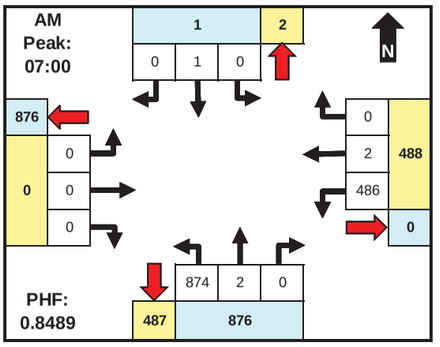
	From North					From East					From South					From West					INTSEC
	AZ-89A EB RAMPS					N VIEWPOINT DR					AZ-89A EB RAMPS					NONE					
Time	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	TOTAL
0:00																					0
0:15																					0
0:30																					0
0:45																					0
1:00																					0
1:15																					0
1:30																					0
1:45																					0
2:00																					0
2:15																					0
2:30																					0
2:45																					0
3:00																					0
3:15																					0
3:30																					0
3:45																					0
4:00																					0
4:15																					0
4:30																					0
4:45																					0
5:00																					0
5:15																					0
5:30																					0
5:45																					0
6:00																					0
6:15																					0
6:30																					0
6:45																					0
7:00	8	25	0	0	0	0	0	0	0	0	0	106	12	0	0	19	0	32	0	0	202
7:15	13	44	0	0	0	0	0	0	0	0	0	102	14	0	0	7	0	40	0	0	220
7:30	9	44	0	0	0	0	0	0	0	0	0	127	16	0	0	30	0	58	0	0	284
7:45	11	57	0	0	0	0	0	0	0	1	0	97	9	0	0	33	0	49	0	0	257
8:00	17	35	0	0	0	0	0	0	0	0	0	81	7	0	0	46	0	49	0	0	235
8:15	15	68	0	0	0	0	0	0	0	0	0	111	12	0	0	44	0	44	0	1	295
8:30	14	47	0	0	0	0	0	0	0	1	0	110	17	0	0	33	0	39	0	0	261
8:45	5	37	0	0	0	0	0	0	0	0	0	68	9	0	0	49	0	33	0	0	201
9:00																					0
9:15																					0
9:30																					0
9:45																					0
10:00																					0
10:15																					0
10:30																					0
10:45																					0
11:00																					0
11:15																					0
11:30																					0
11:45																					0
12:00																					0
12:15																					0
12:30																					0
12:45																					0
13:00																					0
13:15																					0
13:30																					0
13:45																					0
14:00																					0
14:15																					0
14:30																					0
14:45																					0
15:00																					0
15:15																					0
15:30																					0
15:45																					0
16:00	8	38	0	0	0	0	0	0	0	0	0	77	10	0	0	93	0	78	0	1	305
16:15	3	37	0	0	0	0	0	0	0	0	0	74	14	0	0	131	0	85	0	0	344
16:30	4	35	0	0	0	0	0	0	0	0	0	87	14	0	0	103	0	103	0	0	346
16:45	8	33	0	0	0	0	0	0	0	0	0	91	16	0	0	125	0	95	0	0	368
17:00	8	35	0	0	0	0	0	0	0	0	0	81	24	0	0	125	0	95	0	0	368
17:15	3	41	0	0	0	0	0	0	0	0	0	92	13	0	0	124	0	110	0	0	383
17:30	6	36	0	0	0	0	0	0	0	0	0	67	11	0	0	129	0	86	0	0	335
17:45	3	28	0	0	0	0	0	0	0	0	0	70	12	0	0	121	0	80	0	0	314
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15																					0
18:30																					0
18:45																					0
19:00																					0
19:15																					0
19:30																					0
19:45																					0
20:00																					0
20:15																					0
20:30																					0
20:45																					0
21:00																					0
21:15																					0
21:30																					0
21:45																					0
22:00																					0
22:15																					0
22:30																					0
22:45																					0
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	135	640	0	0	0	0	0	0	0	2	0	1441	210	0	0	1212	0	1076	0	2	4718
AM Peak Hr:																					7:30
Pk Vol	52	204	0	0	0	0	0	0	0	1	0	416	44	0	0	153	0	200	0	1	1071
PHF	0.765	0.750	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.250	n/a	0.819	0.688	n/a	n/a	0.832	n/a	0.862	n/a	0.250	0.908
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																					16:30
Pk Vol	23	144	0	0	0	0	0	0	0	0	0	351	67	0	0	477	0	403	0	0	1465
PHF	0.719	0.878	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.954	0.698	n/a	n/a	0.954	n/a	0.916	n/a	n/a	0.956

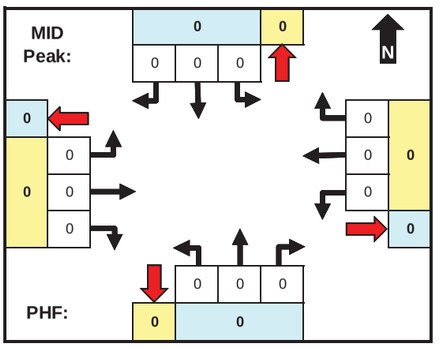
TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

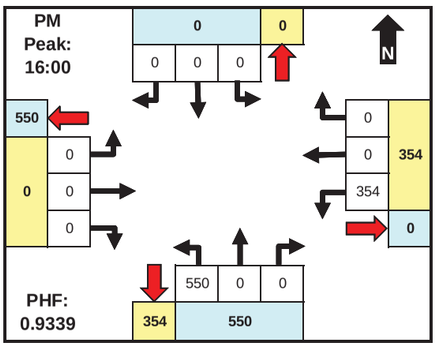
Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

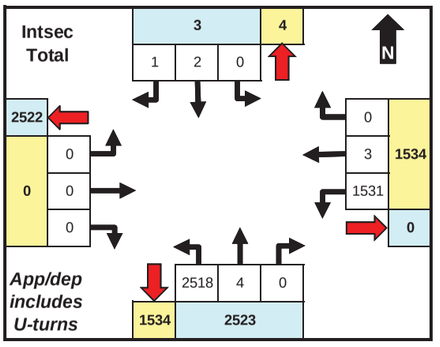
Intersection ID: 1701338
Count Date: 4/13/2017

GLASSFORD HILL RD & AZ-89A WB RAMPS









	North		East		South		West		
	App	Dep	App	Dep	App	Dep	App	Dep	Total
AM	1	2	488	0	876	487	0	876	1365
MID	0	0	0	0	0	0	0	0	0
PM	0	0	354	0	550	354	0	550	904
Total	3	4	1534	0	2523	1534	0	2522	4060

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

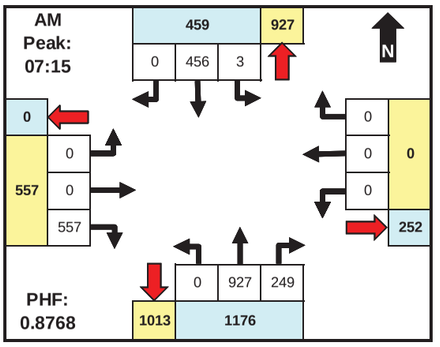
	From North					From East					From South					From West					INTSEC
	GLASSFORD HILL RD					NONE					GLASSFORD HILL RD					AZ-89A WB RAMPS					
Time	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	TOTAL
0:00																					0
0:15																					0
0:30																					0
0:45																					0
1:00																					0
1:15																					0
1:30																					0
1:45																					0
2:00																					0
2:15																					0
2:30																					0
2:45																					0
3:00																					0
3:15																					0
3:30																					0
3:45																					0
4:00																					0
4:15																					0
4:30																					0
4:45																					0
5:00																					0
5:15																					0
5:30																					0
5:45																					0
6:00																					0
6:15																					0
6:30																					0
6:45																					0
07:00	0	0	0	0	0	96	1	0	0	0	148	0	0	0	0	0	0	0	0	0	245
07:15	0	0	0	0	0	143	0	0	0	0	228	0	0	0	0	0	0	0	0	0	371
07:30	0	1	0	0	0	126	1	0	0	0	272	2	0	0	0	0	0	0	0	0	402
07:45	0	0	0	0	0	121	0	0	0	0	226	0	0	0	0	0	0	0	0	0	347
08:00	0	0	0	0	0	68	0	0	0	0	154	0	0	0	0	0	0	0	0	0	222
08:15	0	0	0	0	0	104	1	0	0	0	158	0	0	0	0	0	0	0	0	0	263
08:30	0	0	0	0	0	97	0	0	0	0	145	0	0	0	0	0	0	0	0	0	242
08:45	0	0	1	0	1	92	0	0	0	1	146	0	0	0	0	0	0	0	0	0	241
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15																					0
9:30																					0
9:45																					0
10:00																					0
10:15																					0
10:30																					0
10:45																					0
11:00																					0
11:15																					0
11:30																					0
11:45																					0
12:00																					0
12:15																					0
12:30																					0
12:45																					0
13:00																					0
13:15																					0
13:30																					0
13:45																					0
14:00																					0
14:15																					0
14:30																					0
14:45																					0
15:00																					0
15:15																					0
15:30																					0
15:45																					0
16:00	0	0	0	0	0	87	0	0	0	0	137	0	0	0	0	0	0	0	0	0	224
16:15	0	0	0	0	0	80	0	0	0	0	137	0	0	0	0	0	0	0	0	0	217
16:30	0	0	0	0	0	89	0	0	0	0	132	0	0	0	0	0	0	0	0	0	221
16:45	0	0	0	0	0	98	0	0	0	0	144	0	0	0	0	0	0	0	0	0	242
17:00	0	0	0	0	0	82	0	0	0	0	127	0	0	0	0	0	0	0	0	0	209
17:15	0	0	0	0	0	83	0	0	0	0	124	1	0	1	0	0	0	0	0	0	209
17:30	0	1	0	0	0	86	0	0	0	0	134	1	0	0	0	0	0	0	0	0	222
17:45	0	0	0	0	0	78	0	0	0	0	106	0	0	0	0	0	0	0	0	0	184
18:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18:15																					0
18:30																					0
18:45																					0
19:00																					0
19:15																					0
19:30																					0
19:45																					0
20:00																					0
20:15																					0
20:30																					0
20:45																					0
21:00																					0
21:15																					0
21:30																					0
21:45																					0
22:00																					0
22:15																					0
22:30																					0
22:45																					0
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	0	2	1	0	1	1531	3	0	0	1	2518	4	0	1	0	0	0	0	0	0	4062
AM Peak Hr:																					7:00
Pk Vol	0	1	0	0	0	486	2	0	0	0	874	2	0	0	0	0	0	0	0	0	1365
PHF	n/a	0.250	n/a	n/a	n/a	0.850	0.500	n/a	n/a	n/a	0.803	0.250	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.849
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																					16:00
Pk Vol	0	0	0	0	0	354	0	0	0	0	550	0	0	0	0	0	0	0	0	0	904
PHF	n/a	n/a	n/a	n/a	n/a	0.903	n/a	n/a	n/a	n/a	0.955	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.934

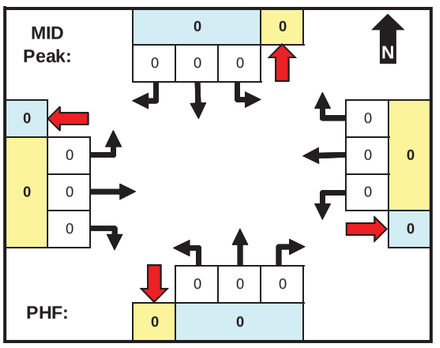
TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

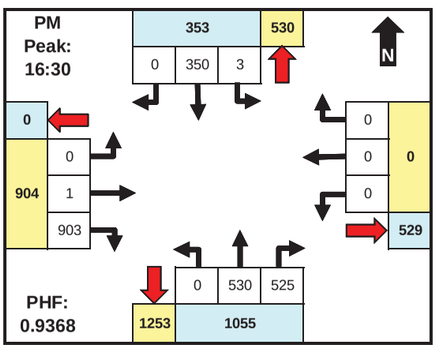
Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

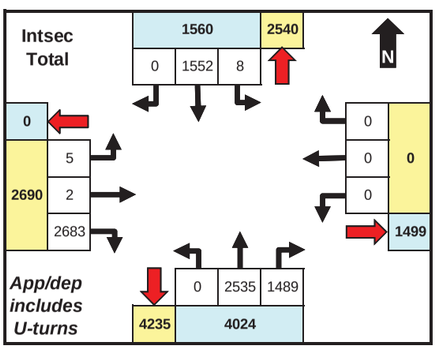
Intersection ID: 1701339
Count Date: 4/13/2017

GLASSFORD HILL RD & AZ-89A EB RAMPS









	North		East		South		West		
	App	Dep	App	Dep	App	Dep	App	Dep	Total
AM	459	927	0	252	1176	1013	557	0	2192
MID	0	0	0	0	0	0	0	0	0
PM	353	530	0	529	1055	1253	904	0	2312
Total	1560	2540	0	1499	4024	4235	2690	0	8274

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

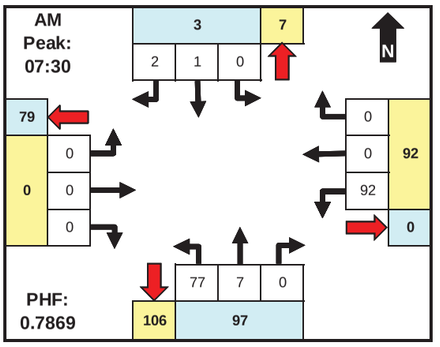
	From North					From East					From South					From West					INTSEC
	GLASSFORD HILL RD					AZ-89A EB RAMPS					GLASSFORD HILL RD					NONE					
Time	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	TOTAL
0:00																					0
0:15																					0
0:30																					0
0:45																					0
1:00																					0
1:15																					0
1:30																					0
1:45																					0
2:00																					0
2:15																					0
2:30																					0
2:45																					0
3:00																					0
3:15																					0
3:30																					0
3:45																					0
4:00																					0
4:15																					0
4:30																					0
4:45																					0
5:00																					0
5:15																					0
5:30																					0
5:45																					0
6:00																					0
6:15																					0
6:30																					0
6:45																					0
07:00	0	95	0	0	0	0	0	0	0	0	0	156	42	0	0	1	0	97	0	0	391
07:15	1	153	0	0	0	0	0	0	0	0	0	233	49	0	0	0	0	139	0	0	575
07:30	1	122	0	0	0	0	0	0	0	0	0	281	65	0	0	0	0	156	0	0	625
07:45	1	116	0	0	0	0	0	0	0	0	0	269	61	0	0	0	0	140	0	0	587
08:00	0	65	0	0	0	0	0	0	0	0	0	144	74	0	0	0	0	122	0	0	405
08:15	1	115	0	0	0	0	0	0	0	0	0	146	79	0	0	1	0	121	0	0	463
08:30	0	96	0	0	0	0	0	0	0	0	0	146	67	0	0	0	0	134	0	0	443
08:45	0	93	0	0	0	0	0	0	0	0	0	140	53	0	0	1	0	119	0	1	407
09:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:15																					0
9:30																					0
9:45																					0
10:00																					0
10:15																					0
10:30																					0
10:45																					0
11:00																					0
11:15																					0
11:30																					0
11:45																					0
12:00																					0
12:15																					0
12:30																					0
12:45																					0
13:00																					0
13:15																					0
13:30																					0
13:45																					0
14:00																					0
14:15																					0
14:30																					0
14:45																					0
15:00																					0
15:15																					0
15:30																					0
15:45																					0
16:00	0	90	0	0	0	0	0	0	0	0	0	126	100	0	0	0	0	224	0	0	540
16:15	1	78	0	0	0	0	0	0	0	0	0	128	121	0	0	1	0	186	0	0	515
16:30	1	83	0	0	0	0	0	0	0	0	0	141	134	0	0	0	0	217	0	0	576
16:45	1	94	0	0	0	0	0	0	0	0	0	152	131	0	0	0	0	223	0	0	601
17:00	0	84	0	0	0	0	0	0	0	0	0	116	117	0	0	0	0	201	0	0	518
17:15	1	89	0	0	0	0	0	0	0	0	0	121	143	0	0	0	1	262	0	0	617
17:30	0	93	0	0	0	0	0	0	0	0	0	129	120	0	0	1	1	167	0	0	511
17:45	0	83	0	0	0	0	0	0	0	0	0	107	132	0	0	0	0	174	0	0	496
18:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
18:15																					0
18:30																					0
18:45																					0
19:00																					0
19:15																					0
19:30																					0
19:45																					0
20:00																					0
20:15																					0
20:30																					0
20:45																					0
21:00																					0
21:15																					0
21:30																					0
21:45																					0
22:00																					0
22:15																					0
22:30																					0
22:45																					0
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	8	1552	0	0	0	0	0	0	0	0	0	2535	1489	0	0	5	2	2683	0	1	8275
AM Peak Hr:																					7:15
Pk Vol	3	456	0	0	0	0	0	0	0	0	0	927	249	0	0	0	0	557	0	0	2192
PHF	0.750	0.745	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.825	0.841	n/a	n/a	n/a	n/a	0.893	n/a	n/a	0.877
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																					16:30
Pk Vol	3	350	0	0	0	0	0	0	0	0	0	530	525	0	0	0	1	903	0	0	2312
PHF	0.750	0.931	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.872	0.918	n/a	n/a	n/a	0.250	0.862	n/a	n/a	0.937

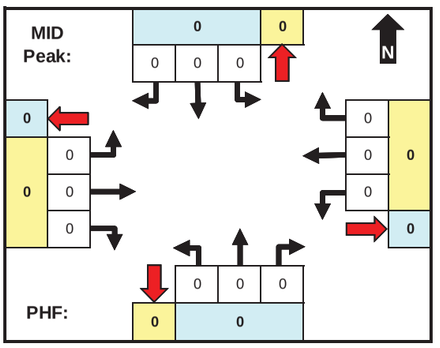
TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

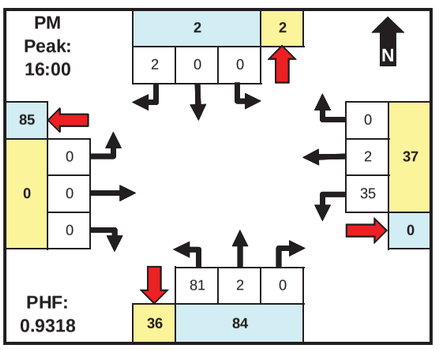
Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

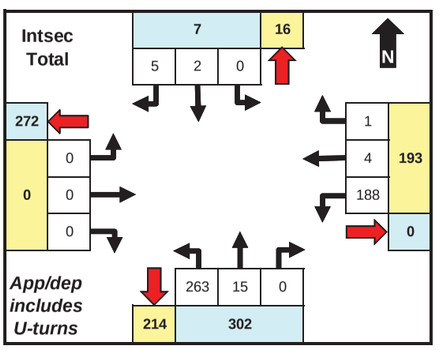
Intersection ID: 1701340
Count Date: 4/13/2017

GRANITE DELLS PARKWAY & AZ-89A WB RAMPS









	North		East		South		West		
	App	Dep	App	Dep	App	Dep	App	Dep	Total
AM	3	7	92	0	97	106	0	79	192
MID	0	0	0	0	0	0	0	0	0
PM	2	2	37	0	84	36	0	85	123
Total	7	16	193	0	302	214	0	272	502

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

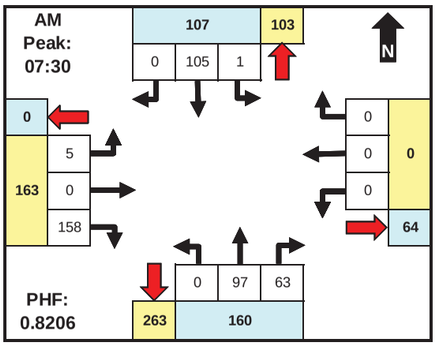
	From North					From East					From South					From West					INTSEC
	GRANITE DELLS PARKWAY					NONE					GRANITE DELLS PARKWAY					AZ-89A WB RAMPS					
Time	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	TOTAL
0:00																					0
0:15																					0
0:30																					0
0:45																					0
1:00																					0
1:15																					0
1:30																					0
1:45																					0
2:00																					0
2:15																					0
2:30																					0
2:45																					0
3:00																					0
3:15																					0
3:30																					0
3:45																					0
4:00																					0
4:15																					0
4:30																					0
4:45																					0
5:00																					0
5:15																					0
5:30																					0
5:45																					0
6:00																					0
6:15																					0
6:30																					0
6:45																					0
07:00	0	1	0	0	0	15	0	0	0	0	6	2	0	1	0	0	0	0	0	0	25
07:15	0	0	0	0	0	13	0	0	0	0	8	2	0	6	0	0	0	0	0	0	29
07:30	0	0	0	0	0	25	0	0	0	0	15	4	0	7	0	0	0	0	0	0	51
07:45	0	1	1	0	0	18	0	0	0	0	12	2	0	5	0	0	0	0	0	0	39
08:00	0	0	0	0	0	19	0	0	0	0	21	1	0	0	0	0	0	0	0	0	41
08:15	0	0	1	0	0	30	0	0	0	0	29	0	0	1	0	0	0	0	0	0	61
08:30	0	0	0	0	0	16	1	0	0	0	30	1	0	0	0	0	0	0	0	0	48
08:45	0	0	0	0	0	5	1	0	0	0	14	1	0	0	0	0	0	0	0	0	21
9:00																					0
9:15																					0
9:30																					0
9:45																					0
10:00																					0
10:15																					0
10:30																					0
10:45																					0
11:00																					0
11:15																					0
11:30																					0
11:45																					0
12:00																					0
12:15																					0
12:30																					0
12:45																					0
13:00																					0
13:15																					0
13:30																					0
13:45																					0
14:00																					0
14:15																					0
14:30																					0
14:45																					0
15:00																					0
15:15																					0
15:30																					0
15:45																					0
16:00	0	0	1	0	0	9	2	0	0	0	21	0	0	0	0	0	0	0	0	0	33
16:15	0	0	0	0	0	7	0	0	0	0	22	1	0	0	0	0	0	0	0	0	30
16:30	0	0	1	0	0	7	0	0	0	0	19	0	0	1	0	0	0	0	0	0	28
16:45	0	0	0	0	0	12	0	0	0	0	19	1	0	0	0	0	0	0	0	0	32
17:00	0	0	0	0	0	4	0	0	0	0	20	0	0	0	0	0	0	0	0	0	24
17:15	0	0	0	0	0	5	0	0	0	0	10	0	0	1	0	0	0	0	0	0	16
17:30	0	0	1	0	0	2	0	1	0	0	12	0	0	1	0	0	0	0	0	0	17
17:45	0	0	0	0	0	1	0	0	0	0	5	0	0	1	0	0	0	0	0	0	7
18:00																					0
18:15																					0
18:30																					0
18:45																					0
19:00																					0
19:15																					0
19:30																					0
19:45																					0
20:00																					0
20:15																					0
20:30																					0
20:45																					0
21:00																					0
21:15																					0
21:30																					0
21:45																					0
22:00																					0
22:15																					0
22:30																					0
22:45																					0
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	0	2	5	0	0	188	4	1	0	0	263	15	0	24	0	0	0	0	0	0	502
AM Peak Hr:																					7:30
Pk Vol	0	1	2	0	0	92	0	0	0	0	77	7	0	13	0	0	0	0	0	0	192
PHF	n/a	0.250	0.500	n/a	n/a	0.767	n/a	n/a	n/a	n/a	0.664	0.438	n/a	0.464	n/a	n/a	n/a	n/a	n/a	n/a	0.787
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																					16:00
Pk Vol	0	0	2	0	0	35	2	0	0	0	81	2	0	1	0	0	0	0	0	0	123
PHF	n/a	n/a	0.500	n/a	n/a	0.729	0.250	n/a	n/a	n/a	0.920	0.500	n/a	0.250	n/a	n/a	n/a	n/a	n/a	n/a	0.932

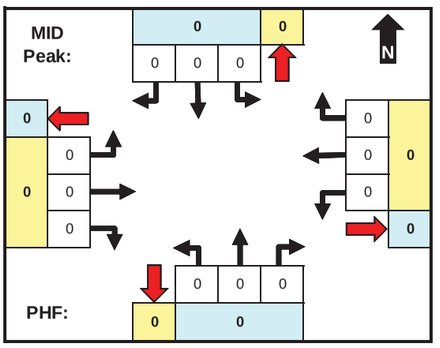
TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

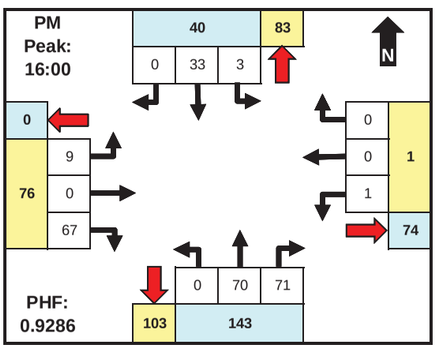
Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

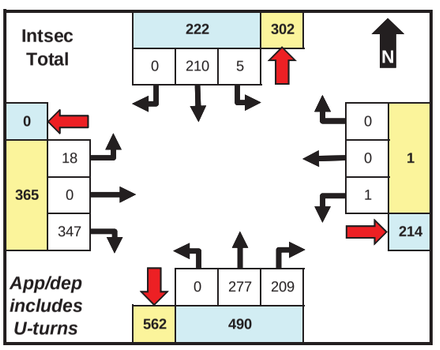
Intersection ID: 1701341
Count Date: 4/13/2017

GRANITE DELLS PARKWAY & AZ-89A EB RAMPS









	North		East		South		West		
	App	Dep	App	Dep	App	Dep	App	Dep	Total
AM	107	103	0	64	160	263	163	0	430
MID	0	0	0	0	0	0	0	0	0
PM	40	83	1	74	143	103	76	0	260
Total	222	302	1	214	490	562	365	0	1078

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

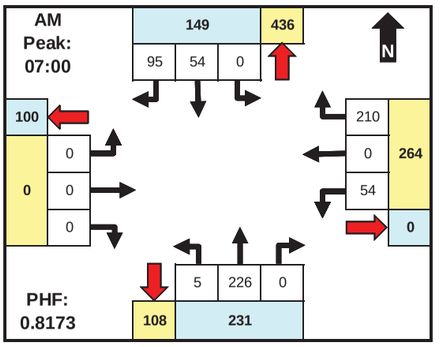
	From North					From East					From South					From West					INTSEC
	GRANITE DELLS PARKWAY					AZ-89A EB RAMPS					GRANITE DELLS PARKWAY					AZ-89A EB RAMPS					
Time	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	TOTAL
0:00																					0
0:15																					0
0:30																					0
0:45																					0
1:00																					0
1:15																					0
1:30																					0
1:45																					0
2:00																					0
2:15																					0
2:30																					0
2:45																					0
3:00																					0
3:15																					0
3:30																					0
3:45																					0
4:00																					0
4:15																					0
4:30																					0
4:45																					0
5:00																					0
5:15																					0
5:30																					0
5:45																					0
6:00																					0
6:15																					0
6:30																					0
6:45																					0
07:00	1	20	0	0	0	0	0	0	0	0	0	10	3	0	0	1	0	27	0	0	62
07:15	0	18	0	1	0	0	0	0	0	0	0	17	8	1	0	1	0	34	0	0	80
07:30	0	33	0	0	0	0	0	0	0	0	0	29	13	0	0	1	0	34	0	0	110
07:45	0	25	0	0	0	0	0	0	0	0	0	18	14	0	0	2	0	40	0	0	99
08:00	0	18	0	0	0	0	0	0	0	0	0	21	13	0	0	2	0	36	0	0	90
08:15	1	29	0	1	0	0	0	0	0	0	0	29	23	0	0	0	0	48	0	0	131
08:30	0	16	0	0	0	0	0	0	0	0	0	26	9	0	0	1	0	26	0	0	78
08:45	0	5	0	0	0	0	0	0	0	0	0	13	9	0	0	1	0	11	0	0	39
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15																					0
9:30																					0
9:45																					0
10:00																					0
10:15																					0
10:30																					0
10:45																					0
11:00																					0
11:15																					0
11:30																					0
11:45																					0
12:00																					0
12:15																					0
12:30																					0
12:45																					0
13:00																					0
13:15																					0
13:30																					0
13:45																					0
14:00																					0
14:15																					0
14:30																					0
14:45																					0
15:00																					0
15:15																					0
15:30																					0
15:45																					0
16:00	1	8	0	1	0	1	0	0	0	0	0	20	15	0	0	1	0	17	0	0	64
16:15	1	6	0	1	0	0	0	0	0	0	0	17	18	1	0	3	0	19	0	0	66
16:30	0	7	0	1	0	0	0	0	0	0	0	18	21	0	0	2	0	21	0	0	70
16:45	1	12	0	1	0	0	0	0	0	0	0	15	17	1	0	3	0	10	0	0	60
17:00	0	3	0	0	0	0	0	0	0	0	0	20	20	0	0	0	0	7	0	0	50
17:15	0	6	0	0	0	0	0	0	0	0	0	7	13	0	0	0	0	6	0	0	32
17:30	0	2	0	1	0	0	0	0	0	0	0	12	7	1	0	0	0	4	0	0	27
17:45	0	2	0	0	0	0	0	0	0	0	0	5	6	0	0	0	0	7	0	0	20
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15																					0
18:30																					0
18:45																					0
19:00																					0
19:15																					0
19:30																					0
19:45																					0
20:00																					0
20:15																					0
20:30																					0
20:45																					0
21:00																					0
21:15																					0
21:30																					0
21:45																					0
22:00																					0
22:15																					0
22:30																					0
22:45																					0
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	5	210	0	7	0	1	0	0	0	0	0	277	209	4	0	18	0	347	0	0	1078
AM Peak Hr:																					7:30
Pk Vol	1	105	0	1	0	0	0	0	0	0	0	97	63	0	0	5	0	158	0	0	430
PHF	0.250	0.795	n/a	0.250	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.836	0.685	n/a	n/a	0.625	n/a	0.823	n/a	n/a	0.821
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																					16:00
Pk Vol	3	33	0	4	0	1	0	0	0	0	0	70	71	2	0	9	0	67	0	0	260
PHF	0.750	0.688	n/a	1.000	n/a	0.250	n/a	n/a	n/a	n/a	n/a	0.875	0.845	0.500	n/a	0.750	n/a	0.798	n/a	n/a	0.929

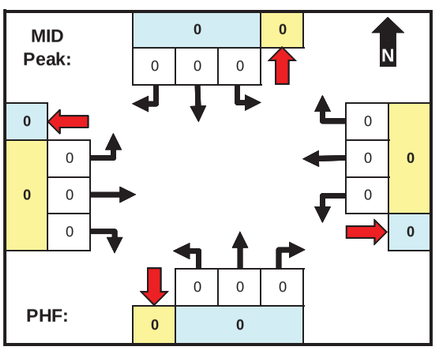
TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

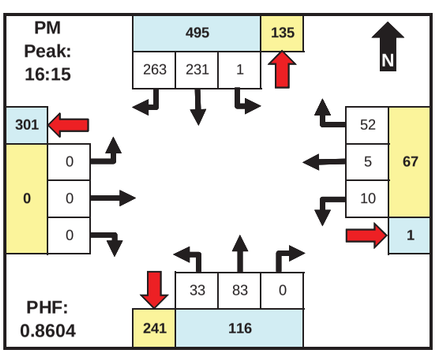
Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

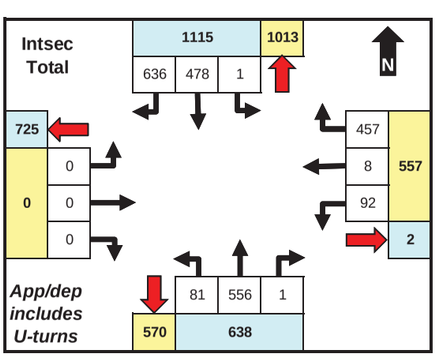
Intersection ID: 1701342
Count Date: 4/13/2017

LARRY CALDWELL DR & AZ-89A WB RAMPS









	North		East		South		West		
	App	Dep	App	Dep	App	Dep	App	Dep	Total
AM	149	436	264	0	231	108	0	100	644
MID	0	0	0	0	0	0	0	0	0
PM	495	135	67	1	116	241	0	301	678
Total	1115	1013	557	2	638	570	0	725	2310

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

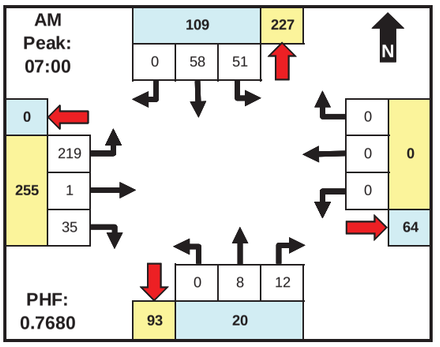
	From North					From East					From South					From West					INTSEC
	LARRY CALDWELL DR					NONE					LARRY CALDWELL DR					AZ-89A WB RAMPS					
Time	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	TOTAL
0:00																					0
0:15																					0
0:30																					0
0:45																					0
1:00																					0
1:15																					0
1:30																					0
1:45																					0
2:00																					0
2:15																					0
2:30																					0
2:45																					0
3:00																					0
3:15																					0
3:30																					0
3:45																					0
4:00																					0
4:15																					0
4:30																					0
4:45																					0
5:00																					0
5:15																					0
5:30																					0
5:45																					0
6:00																					0
6:15																					0
6:30																					0
6:45																					0
07:00	0	14	27	0	0	11	0	48	0	0	0	50	0	0	0	0	0	0	0	0	150
07:15	0	13	23	0	0	13	0	53	0	0	0	49	0	0	0	0	0	0	0	0	151
07:30	0	10	21	0	0	15	0	43	0	0	3	54	0	0	0	0	0	0	0	0	146
07:45	0	17	24	0	0	15	0	66	0	0	2	73	0	0	0	0	0	0	0	0	197
08:00	0	17	30	0	0	4	1	46	0	0	4	37	0	0	0	0	0	0	0	0	139
08:15	0	16	23	0	0	10	1	32	0	0	3	42	0	0	0	0	0	0	0	0	127
08:30	0	11	32	0	0	5	0	36	0	0	7	42	0	0	0	0	0	0	0	0	133
08:45	0	15	25	0	0	6	0	35	0	0	5	58	0	0	0	0	0	0	0	0	144
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15																					0
9:30																					0
9:45																					0
10:00																					0
10:15																					0
10:30																					0
10:45																					0
11:00																					0
11:15																					0
11:30																					0
11:45																					0
12:00																					0
12:15																					0
12:30																					0
12:45																					0
13:00																					0
13:15																					0
13:30																					0
13:45																					0
14:00																					0
14:15																					0
14:30																					0
14:45																					0
15:00																					0
15:15																					0
15:30																					0
15:45																					0
16:00	0	63	75	0	0	0	0	13	0	0	12	21	0	0	0	0	0	0	0	0	184
16:15	0	43	47	0	0	4	1	9	0	0	7	25	0	0	0	0	0	0	0	0	136
16:30	0	78	73	0	0	3	1	14	0	0	10	18	0	0	0	0	0	0	0	0	197
16:45	1	45	54	0	0	2	2	15	0	0	10	21	0	0	0	0	0	0	0	0	150
17:00	0	65	89	0	0	1	1	14	0	0	6	19	0	0	0	0	0	0	0	0	195
17:15	0	29	45	0	0	2	0	14	0	0	7	20	0	0	0	0	0	0	0	0	117
17:30	0	22	32	0	0	0	0	10	0	0	3	12	1	0	0	0	0	0	0	0	80
17:45	0	20	16	0	0	1	1	9	0	0	2	15	0	0	0	0	0	0	0	0	64
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15																					0
18:30																					0
18:45																					0
19:00																					0
19:15																					0
19:30																					0
19:45																					0
20:00																					0
20:15																					0
20:30																					0
20:45																					0
21:00																					0
21:15																					0
21:30																					0
21:45																					0
22:00																					0
22:15																					0
22:30																					0
22:45																					0
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	1	478	636	0	0	92	8	457	0	0	81	556	1	0	0	0	0	0	0	0	2310
AM Peak Hr:																					7:00
Pk Vol	0	54	95	0	0	54	0	210	0	0	5	226	0	0	0	0	0	0	0	0	644
PHF	n/a	0.794	0.880	n/a	n/a	0.900	n/a	0.795	n/a	n/a	0.417	0.774	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.817
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																					16:15
Pk Vol	1	231	263	0	0	10	5	52	0	0	33	83	0	0	0	0	0	0	0	0	678
PHF	0.250	0.740	0.739	n/a	n/a	0.625	0.625	0.867	n/a	n/a	0.825	0.830	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.860

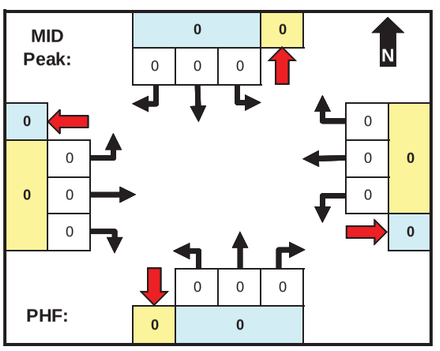
TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

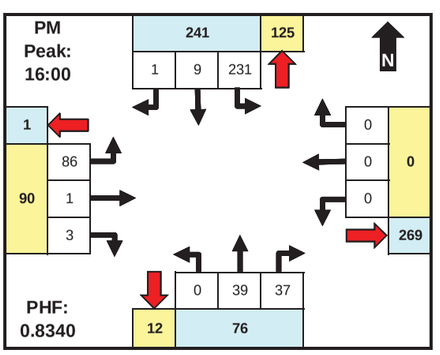
Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

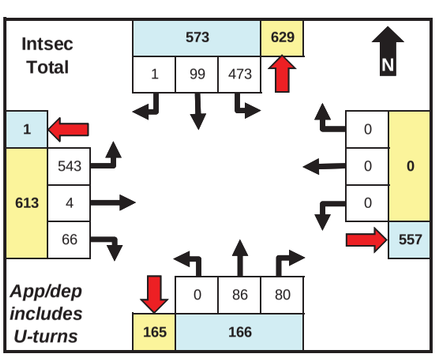
Intersection ID: 1701343
Count Date: 4/13/2017

LARRY CALDWELL DR & AZ-89A EB RAMPS









	North		East		South		West		
	App	Dep	App	Dep	App	Dep	App	Dep	Total
AM	109	227	0	64	20	93	255	0	384
MID	0	0	0	0	0	0	0	0	0
PM	241	125	0	269	76	12	90	1	407
Total	573	629	0	557	166	165	613	1	1352

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

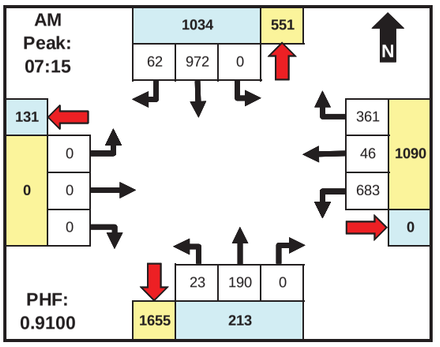
	From North					From East					From South					From West					INTSEC
	LARRY CALDWELL DR					AZ-89A EB RAMPS					LARRY CALDWELL DR					NONE					
Time	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	TOTAL
0:00																					0
0:15																					0
0:30																					0
0:45																					0
1:00																					0
1:15																					0
1:30																					0
1:45																					0
2:00																					0
2:15																					0
2:30																					0
2:45																					0
3:00																					0
3:15																					0
3:30																					0
3:45																					0
4:00																					0
4:15																					0
4:30																					0
4:45																					0
5:00																					0
5:15																					0
5:30																					0
5:45																					0
6:00																					0
6:15																					0
6:30																					0
6:45																					0
7:00	15	11	0	0	0	0	0	0	0	0	0	0	2	0	0	49	0	2	0	0	79
7:15	12	14	0	0	0	0	0	0	0	0	0	1	0	0	0	47	0	3	0	0	77
7:30	9	16	0	0	0	0	0	0	0	0	0	4	3	0	0	54	0	17	0	0	103
7:45	15	17	0	0	0	0	0	0	0	0	0	3	7	0	0	69	1	13	0	0	125
8:00	16	5	0	0	0	0	0	0	0	0	0	3	2	0	0	35	1	7	0	0	69
8:15	15	11	0	0	0	0	0	0	0	0	0	5	5	0	0	39	0	7	0	0	82
8:30	9	5	0	0	0	0	0	0	0	0	0	6	1	0	0	42	0	4	0	0	67
8:45	16	7	0	0	0	0	0	0	0	0	0	7	3	0	0	55	0	5	0	0	93
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15																					0
9:30																					0
9:45																					0
10:00																					0
10:15																					0
10:30																					0
10:45																					0
11:00																					0
11:15																					0
11:30																					0
11:45																					0
12:00																					0
12:15																					0
12:30																					0
12:45																					0
13:00																					0
13:15																					0
13:30																					0
13:45																					0
14:00																					0
14:15																					0
14:30																					0
14:45																					0
15:00																					0
15:15																					0
15:30																					0
15:45																					0
16:00	60	1	1	0	0	0	0	0	0	0	0	13	10	0	0	20	0	1	0	0	106
16:15	46	4	0	0	0	0	0	0	0	0	0	6	8	0	0	26	1	0	0	0	91
16:30	79	2	0	0	0	0	0	0	0	0	0	10	12	0	0	19	0	0	0	0	122
16:45	46	2	0	0	0	0	0	0	0	0	0	10	7	0	0	21	0	2	0	0	88
17:00	64	1	0	0	0	0	0	0	0	0	0	5	5	0	0	19	1	3	0	0	98
17:15	28	2	0	0	0	0	0	0	0	0	0	8	6	0	0	20	0	0	0	0	64
17:30	23	0	0	0	0	0	0	0	0	0	0	3	7	0	0	13	0	2	0	0	48
17:45	20	1	0	0	0	0	0	0	0	0	0	2	2	0	0	15	0	0	0	0	40
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15																					0
18:30																					0
18:45																					0
19:00																					0
19:15																					0
19:30																					0
19:45																					0
20:00																					0
20:15																					0
20:30																					0
20:45																					0
21:00																					0
21:15																					0
21:30																					0
21:45																					0
22:00																					0
22:15																					0
22:30																					0
22:45																					0
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	473	99	1	0	0	0	0	0	0	0	0	86	80	0	0	543	4	66	0	0	1352
AM Peak Hr:																					7:00
Pk Vol	51	58	0	0	0	0	0	0	0	0	0	8	12	0	0	219	1	35	0	0	384
PHF	0.850	0.853	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.500	0.429	n/a	n/a	0.793	0.250	0.515	n/a	n/a	0.768
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																					16:00
Pk Vol	231	9	1	0	0	0	0	0	0	0	0	39	37	0	0	86	1	3	0	0	407
PHF	0.731	0.563	0.250	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.750	0.771	n/a	n/a	0.827	0.250	0.375	n/a	n/a	0.834

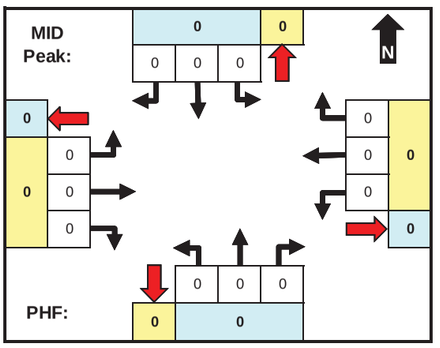
TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

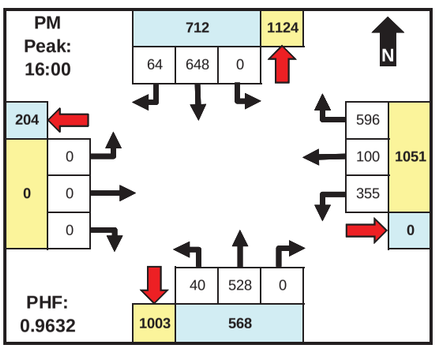
Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

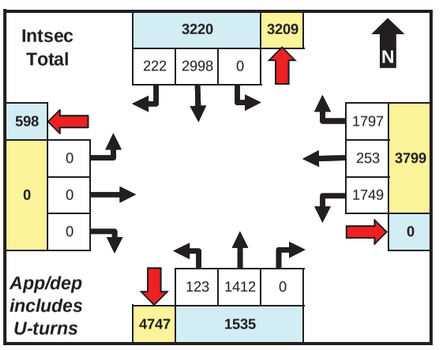
Intersection ID: 1701344
Count Date: 4/13/2017

AZ-89 & AZ-89A WB RAMPS









	North		East		South		West		
	App	Dep	App	Dep	App	Dep	App	Dep	Total
AM	1034	551	1090	0	213	1655	0	131	2337
MID	0	0	0	0	0	0	0	0	0
PM	712	1124	1051	0	568	1003	0	204	2331
Total	3220	3209	3799	0	1535	4747	0	598	8554

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

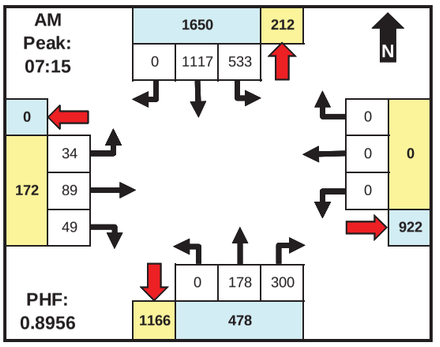
	From North					From East					From South					From West					INTSEC
	AZ-89					NONE					AZ-89					AZ-89A WB RAMPS					
Time	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	TOTAL
0:00																					0
0:15																					0
0:30																					0
0:45																					0
1:00																					0
1:15																					0
1:30																					0
1:45																					0
2:00																					0
2:15																					0
2:30																					0
2:45																					0
3:00																					0
3:15																					0
3:30																					0
3:45																					0
4:00																					0
4:15																					0
4:30																					0
4:45																					0
5:00																					0
5:15																					0
5:30																					0
5:45																					0
6:00																					0
6:15																					0
6:30																					0
6:45																					0
07:00	0	201	11	0	0	102	13	75	0	0	3	45	0	0	0	0	0	0	0	0	450
07:15	0	259	12	0	0	171	10	77	0	0	5	43	0	0	0	0	0	0	0	0	577
07:30	0	262	19	0	0	208	8	83	0	0	11	49	0	0	0	0	0	0	0	0	640
07:45	0	266	13	0	0	187	14	103	0	0	3	56	0	0	0	0	0	0	0	0	642
08:00	0	185	18	0	0	117	14	98	0	0	4	42	0	0	0	0	0	0	0	0	478
08:15	0	197	10	0	0	105	10	61	0	0	5	43	0	0	0	0	0	0	0	0	431
08:30	0	193	11	0	0	131	11	76	0	0	3	44	0	0	0	0	0	0	0	0	469
08:45	0	177	13	0	0	80	15	81	0	0	6	51	0	0	0	0	0	0	0	0	423
09:00	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3
9:15																					0
9:30																					0
9:45																					0
10:00																					0
10:15																					0
10:30																					0
10:45																					0
11:00																					0
11:15																					0
11:30																					0
11:45																					0
12:00																					0
12:15																					0
12:30																					0
12:45																					0
13:00																					0
13:15																					0
13:30																					0
13:45																					0
14:00																					0
14:15																					0
14:30																					0
14:45																					0
15:00																					0
15:15																					0
15:30																					0
15:45																					0
16:00	0	148	17	0	0	85	28	165	0	0	10	152	0	0	0	0	0	0	0	0	605
16:15	0	166	23	0	0	100	23	138	0	0	11	127	0	0	0	0	0	0	0	0	588
16:30	0	179	14	0	0	73	26	148	0	0	7	124	0	0	0	0	0	0	0	0	571
16:45	0	155	10	0	0	97	23	145	0	0	12	125	0	0	0	0	0	0	0	0	567
17:00	0	153	14	0	0	90	23	151	0	0	11	144	0	0	0	0	0	0	0	0	586
17:15	0	164	8	0	0	65	18	139	0	0	11	132	0	0	0	0	0	0	0	0	537
17:30	0	137	19	0	0	76	13	151	0	0	16	120	0	0	0	0	0	0	0	0	532
17:45	0	155	9	0	0	62	4	104	0	0	5	114	0	0	0	0	0	0	0	0	453
18:00	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
18:15																					0
18:30																					0
18:45																					0
19:00																					0
19:15																					0
19:30																					0
19:45																					0
20:00																					0
20:15																					0
20:30																					0
20:45																					0
21:00																					0
21:15																					0
21:30																					0
21:45																					0
22:00																					0
22:15																					0
22:30																					0
22:45																					0
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	0	2998	222	0	0	1749	253	1797	0	0	123	1412	0	0	0	0	0	0	0	0	8554
AM Peak Hr:																					7:15
Pk Vol	0	972	62	0	0	683	46	361	0	0	23	190	0	0	0	0	0	0	0	0	2337
PHF	n/a	0.914	0.816	n/a	n/a	0.821	0.821	0.876	n/a	n/a	0.523	0.848	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.910
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																					16:00
Pk Vol	0	648	64	0	0	355	100	596	0	0	40	528	0	0	0	0	0	0	0	0	2331
PHF	n/a	0.905	0.696	n/a	n/a	0.888	0.893	0.903	n/a	n/a	0.833	0.868	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.963

TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

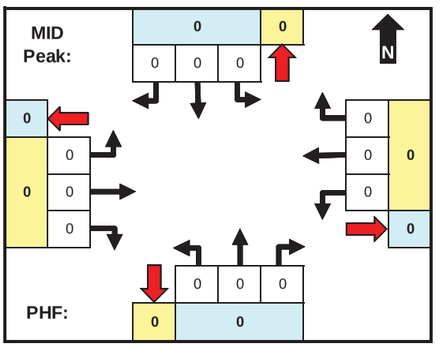
Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Intersection ID: 1701345
Count Date: 4/13/2017

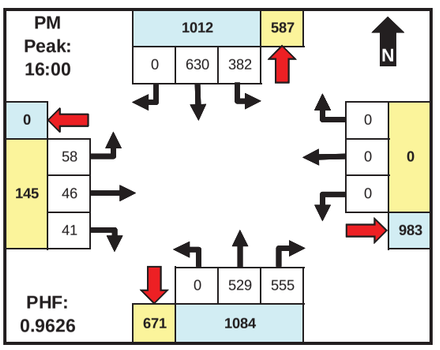
AM Peak: 07:15



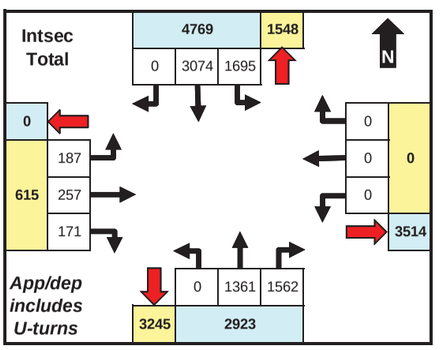
MID Peak:



PM Peak: 16:00



Intsec Total



	North		East		South		West		
	App	Dep	App	Dep	App	Dep	App	Dep	Total
AM	1650	212	0	922	478	1166	172	0	2300
MID	0	0	0	0	0	0	0	0	0
PM	1012	587	0	983	1084	671	145	0	2241
Total	4769	1548	0	3514	2923	3245	615	0	8307

Comments

Unless shown otherwise, MID period defined as 10:00 AM - 2:00 PM. Peaks defined based on total intersection volume for all vehicle types. Chart totals do not include crosswalk data.

AZ-89 & AZ-89A EB RAMPS

	From North					From East					From South					From West					INTSEC
	AZ-89					AZ-89A EB RAMPS					AZ-89					NONE					
Time	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	LT	Thru	RT	U	CW	TOTAL
0:00																					0
0:15																					0
0:30																					0
0:45																					0
1:00																					0
1:15																					0
1:30																					0
1:45																					0
2:00																					0
2:15																					0
2:30																					0
2:45																					0
3:00																					0
3:15																					0
3:30																					0
3:45																					0
4:00																					0
4:15																					0
4:30																					0
4:45																					0
5:00																					0
5:15																					0
5:30																					0
5:45																					0
6:00																					0
6:15																					0
6:30																					0
6:45																					0
7:00	122	179	0	0	0	0	0	0	0	0	0	40	31	0	0	10	18	8	0	0	408
7:15	140	287	0	0	0	0	0	0	0	0	0	47	64	0	0	3	18	12	0	0	571
7:30	146	321	0	0	0	0	0	0	0	0	0	46	70	0	0	10	29	20	0	0	642
7:45	148	298	0	0	0	0	0	0	0	0	0	45	79	0	0	13	23	10	0	0	616
8:00	99	211	0	0	0	0	0	0	0	0	0	40	87	0	0	8	19	7	0	0	471
8:15	106	199	0	0	0	0	0	0	0	0	0	38	98	0	0	11	19	14	0	0	485
8:30	102	216	0	0	0	0	0	0	0	0	0	37	63	0	0	9	28	5	0	0	460
8:45	96	174	0	0	0	0	0	0	0	0	0	49	63	0	0	10	24	17	0	0	433
9:00																					0
9:15																					0
9:30																					0
9:45																					0
10:00																					0
10:15																					0
10:30																					0
10:45																					0
11:00																					0
11:15																					0
11:30																					0
11:45																					0
12:00																					0
12:15																					0
12:30																					0
12:45																					0
13:00																					0
13:15																					0
13:30																					0
13:45																					0
14:00																					0
14:15																					0
14:30																					0
14:45																					0
15:00																					0
15:15																					0
15:30																					0
15:45																					0
16:00	91	150	0	0	0	0	0	0	0	0	0	147	141	0	0	17	9	14	0	0	569
16:15	96	177	0	0	0	0	0	0	0	0	0	133	136	0	0	12	16	12	0	0	582
16:30	108	142	0	0	0	0	0	0	0	0	0	118	130	0	0	17	8	5	0	0	528
16:45	87	161	0	0	0	0	0	0	0	0	0	131	148	0	0	12	13	10	0	0	562
17:00	101	148	0	0	0	0	0	0	0	0	0	142	118	0	0	11	8	14	0	0	542
17:15	86	150	0	0	0	0	0	0	0	0	0	138	146	0	0	10	7	8	0	0	545
17:30	76	134	0	0	0	0	0	0	0	0	0	112	100	0	0	18	9	9	0	0	458
17:45	91	127	0	0	0	0	0	0	0	0	0	98	88	0	0	16	9	6	0	0	435
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15																					0
18:30																					0
18:45																					0
19:00																					0
19:15																					0
19:30																					0
19:45																					0
20:00																					0
20:15																					0
20:30																					0
20:45																					0
21:00																					0
21:15																					0
21:30																					0
21:45																					0
22:00																					0
22:15																					0
22:30																					0
22:45																					0
23:00																					0
23:15																					0
23:30																					0
23:45																					0
Total	1695	3074	0	0	0	0	0	0	0	0	0	1361	1562	0	0	187	257	171	0	0	8307
AM Peak Hr:																					7:15
Pk Vol	533	1117	0	0	0	0	0	0	0	0	0	178	300	0	0	34	89	49	0	0	2300
PHF	0.900	0.870	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.947	0.862	n/a	n/a	0.654	0.767	0.613	n/a	n/a	0.896
MID Peak Hr:																					
Pk Vol																					0
PHF																					
PM Peak Hr:																					16:00
Pk Vol	382	630	0	0	0	0	0	0	0	0	0	529	555	0	0	58	46	41	0	0	2241
PHF	0.884	0.890	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.900	0.938	n/a	n/a	0.853	0.719	0.732	n/a	n/a	0.963

Roadway	ADT	% Trucks	AM Peak				PM Peak			
			Vol	K	NB/EB D	SB/WB D	Vol	K	NB/EB D	SB/WB D
AZ-89A	**4180**	**5%**	**280**	**7%**	**91%**	**8%**	**360**	**9%**	**93%**	**7%**
North Robert Rd	**7440**	**2%**	**730**	**10%**	**52%**	**48%**	**630**	**8%**	**43%**	**57%**
N Viewpoint Dr, North Side	12700	1%	1070	8%	20%	80%	1050	8%	66%	34%
N Viewpoint Dr, South Side	6910	2%	550	8%	61%	39%	620	9%	38%	62%
Viewpoint Average		**1%**		**8%**	**41%**	**59%**		**9%**	**52%**	**48%**
Glassford Hill Rd	**24980**	**5%**	**2090**	**8%**	**52%**	**48%**	**2160**	**9%**	**47%**	**53%**
Granite Dells Parkway	**2400**	**4%**	**330**	**14%**	**46%**	**54%**	**630**	**14%**	**77%**	**23%**
Larry Caldwell Dr, North Side	6790	5%	660	10%	79%	21%	620	9%	22%	78%
Larry Caldwell Dr, South Side	830	4%	90	11%	19%	80%	80	9%	71%	28%
Larry Caldwell Average		**5%**		**10%**	**49%**	**51%**		**9%**	**47%**	**53%**
AZ-89, South Side	22630	4%	1600	7%	34%	66%	1910	8%	60%	40%
AZ-89, North Side	19760	2%	1660	8%	29%	71%	1780	9%	59%	41%
AZ-89 Average		**3%**		**8%**	**32%**	**68%**		**9%**	**60%**	**40%**
AZ-89A On Ramp, W of N Robert Rd	**2600**	**3%**	**260**	**10%**			**210**	**8%**		
AZ-89A Off Ramp, E of N Viewpoint Dr	1150	3%	90	8%			110	10%		
AZ-89A On Ramp, W of N Viewpoint Dr	7600	1%	1060	14%			490	6%		
AZ-89A Off Ramp, W of N Viewpoint Dr	8000	1%	460	6%			915	11%		
AZ-89A On Ramp, E of N Viewpoint Dr	1120	3%	110	10%			90	8%		
Viewpoint Ramps Average		**2%**		**9%**				**9%**		
AZ-89A Off Ramp, E of Glassford Hill	4840	2%	500	10%			380	8%		
AZ-89A On Ramp, W of Glassford Hill	7680	3%	900	12%			580	8%		
AZ-89A Off Ramp, W of Glassford Hill	8330	2%	580	7%			900	11%		
AZ-89A On Ramp, E of Glassford Hill	5570	1%	330	6%			530	10%		
Glassford Ramps Average		**2%**		**9%**				**9%**		

Roadway	ADT	% Trucks	AM Peak				PM Peak			
			Vol	K	NB/EB D	SB/WB D	Vol	K	NB/EB D	SB/WB D
AZ-89A Off Ramp, E of Granite Dells	580	3%	110	19%			50	9%		
AZ-89A On Ramp, W of Granite Dells	920	4%	110	12%			180	19%		
AZ-89A Off Ramp, W of Granite Dells	920	3%	160	17%			100	11%		
AZ-89A On Ramp, E of Granite Dells	590	2%	60	10%			100	17%		
Granite Dells Ramps Average		**3%**		**15%**				**14%**		
AZ-89A Off Ramp Rt Lane	830	4%	150	18%			90	11%		
NB Granite Dell Pkwy Rt Lane	600	12%	60	10%			100	17%		
AZ-89A Off Ramp, E of Larry Caldwell Dr	1770	5%	310	17%			110	6%		
AZ-89A On Ramp, W of Larry Caldwell Dr	2390	5%	190	8%			300	12%		
AZ-89A Off Ramp, W of Larry Caldwell Dr	2290	5%	280	12%			156	7%		
AZ-89A On Ramp, E of Larry Caldwell Dr	1650	5%	100	6%			260	16%		
Larry Caldwell Ramps Average		**5%**		**11%**				**10%**		
AZ-89A Off Ramp, E of AZ-89	8950	4%	930	10%			770	9%		
AZ-89A On Ramp, W of AZ-89	2390	3%	180	8%			220	9%		
AZ-89A Off Ramp, W of AZ-89	2370	2%	200	9%			190	8%		
AZ-89A On Ramp, E of AZ-89	11590	5%	910	8%			980	8%		
AZ-89 Ramps Average		**4%**		**9%**				**9%**		
SR-89A (Mainline Volumes)										
Btwn AZ-89 & LARRY CALDWELL DR	19370		1670	9%	32%	68%	1640	8%	56%	44%
Btwn LARRY CALDWELL DR & GRANITE DELLS PARKWAY	38150		3570	9%	32%	68%	3410	9%	62%	38%
Btwn GRANITE DELLS PARKWAY & GLASSFORD HILL RD	35670		3400	10%	35%	65%	3100	9%	60%	40%
Btwn GLASSFORD HILL RD & N VIEWPOINT DR	32130		2850	9%	29%	71%	2720	8%	64%	36%
Between N Viewpoint Dr & N Robert Rd	38300		3670	10%	34%	66%	3370	9%	61%	39%
Average SR 89A Mainline				**9%**	**32%**	**68%**		**9%**	**61%**	**39%**

Appendix 6 – 2025-2035 No-Build Volume and Configurations

LEGEND

XXX - 2025 AM Peak Hour Volumes
(XXX) - 2025 PM Peak Hour Volumes
XXXX - 2025 Average Daily Traffic

N

1830
(770)
12200

1110
(980)
12000

230
(410)
4500

2960
(1750)
24200

290
(90)
2100

3250
(1840)
26300

400
(460)
4200

2850
(1380)
22100

510
(410)
4600

250
(250)
3100

280
(250)
3100

600
(1440)
12300

910
(1000)
12000

290
(210)
3200

1510
(2440)
24300

130
(290)
2200

1640
(2730)
26500

380
(420)
3800

1260
(2310)
22700

430
(460)
4600

3360
(1790)
26700

1690
(2770)
27300

89A

SR 89

Larry Caldwell Dr

Granite Dells Pkwy

MATCH LINE
See Sheet 2 of 2

SR 89A 2025 NO-BUILD VOLUMES AND LANE CONFIGURATION SHEET 1 OF 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

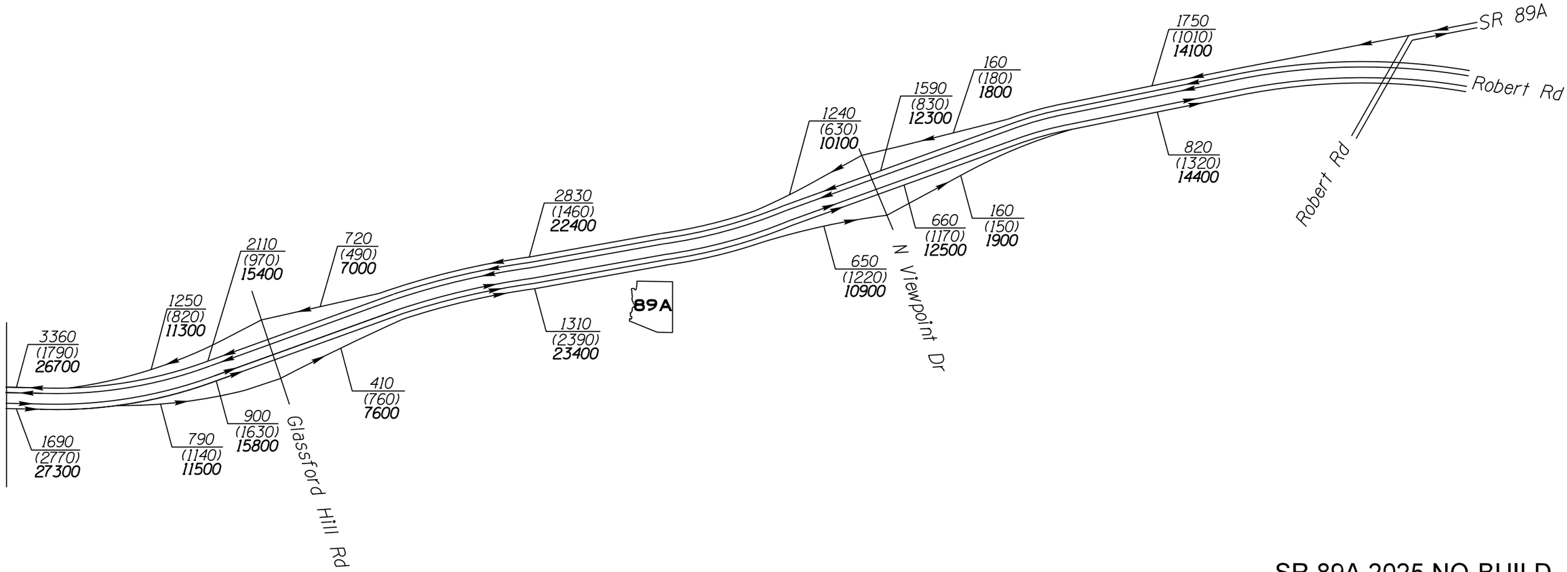
11/7/2017

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\No Build\SR89A Ramp Volumes 1_NB2025.dgn

LEGEND

XXX - 2025 AM Peak Hour Volumes
(XXX) - 2025 PM Peak Hour Volumes
XXXX - 2025 Average Daily Traffic

N



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2025 NO-BUILD VOLUMES AND LANE CONFIGURATION SHEET 2 OF 2

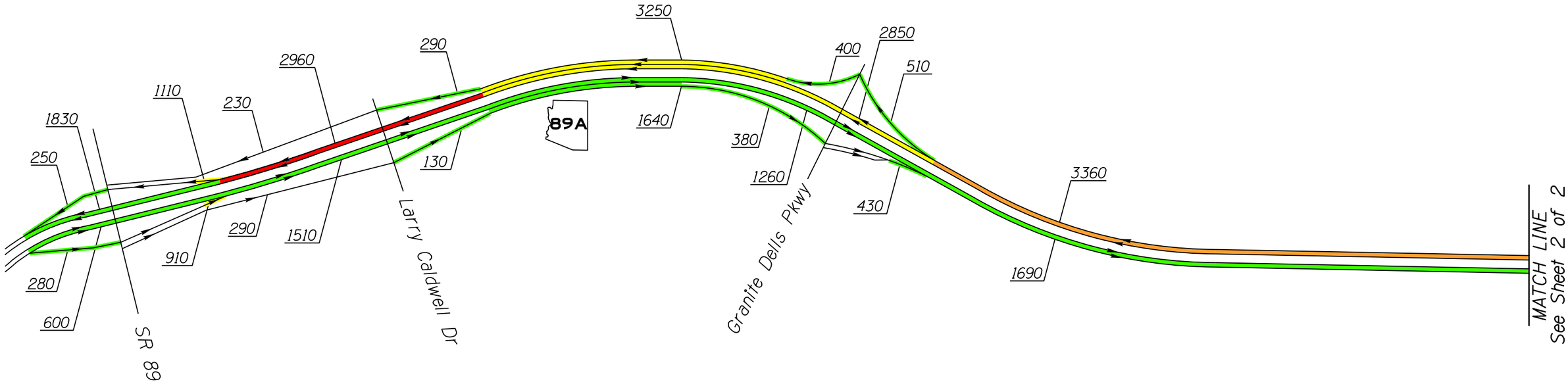
11/7/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\No Build\SR89A Ramp Volumes 2_NB2025.dgn

LEGEND

XXX - 2025 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2025 NO-BUILD
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\No Build\SR89A 2025 NB LOS AM.dgn

11/7/2017

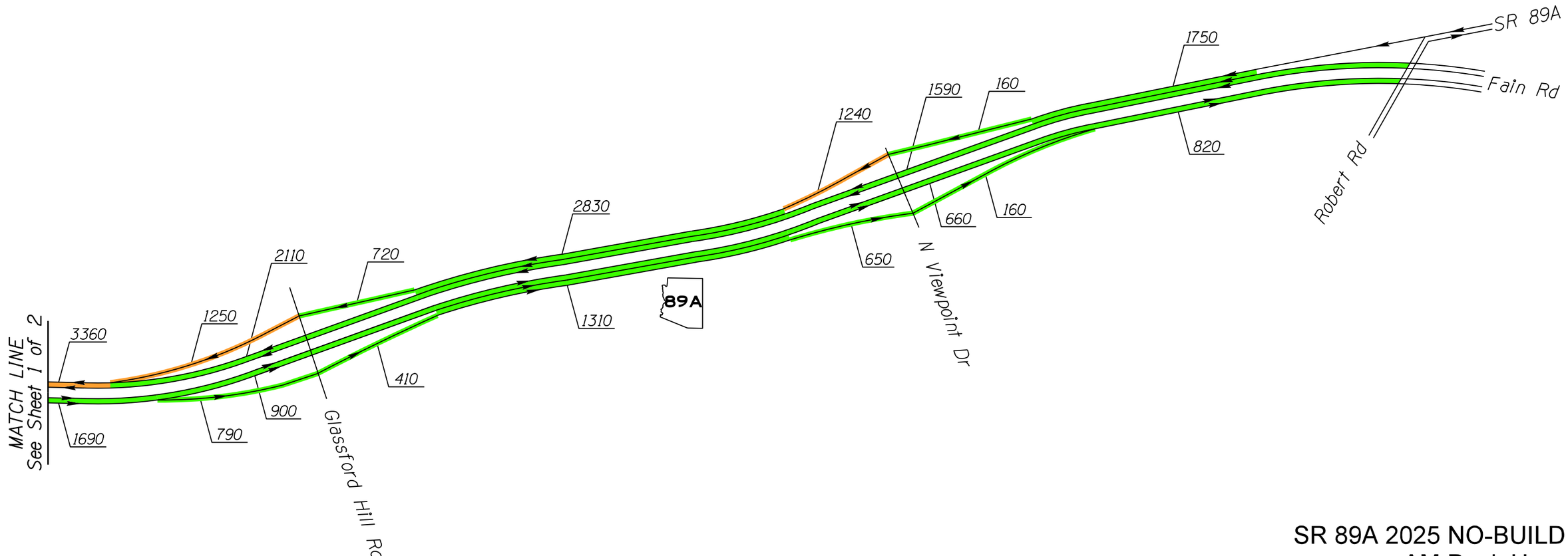
LEGEND

XXX - 2025 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

N



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2025 NO-BUILD
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

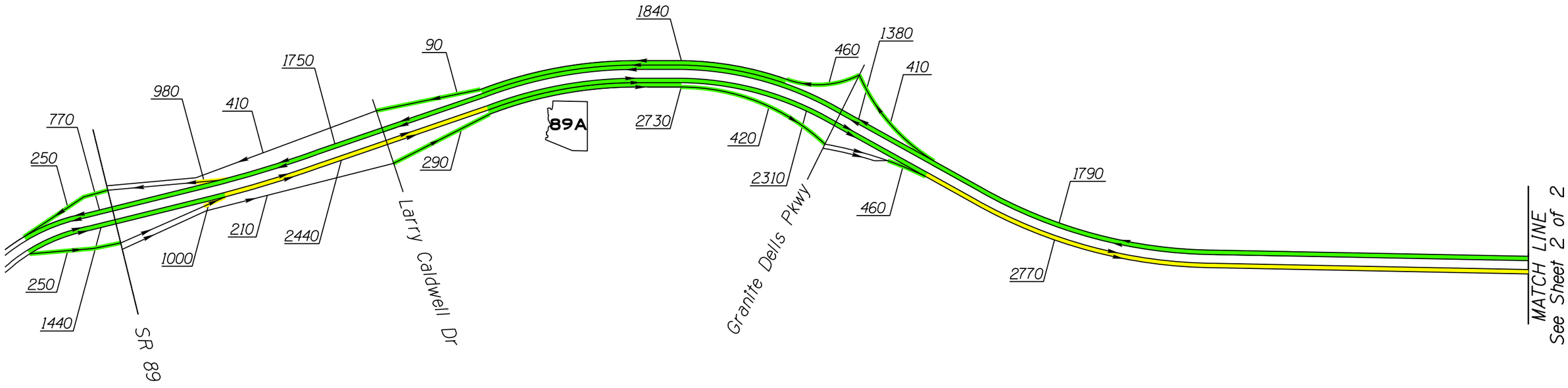
11/7/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\No Build\SR89A 2025 NB LOS AM 2.dgn

LEGEND

XXX - 2025 PM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A 2025 NO-BUILD
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\No Build\SR89A 2025 NB LOS PM.dgn

11/7/2017

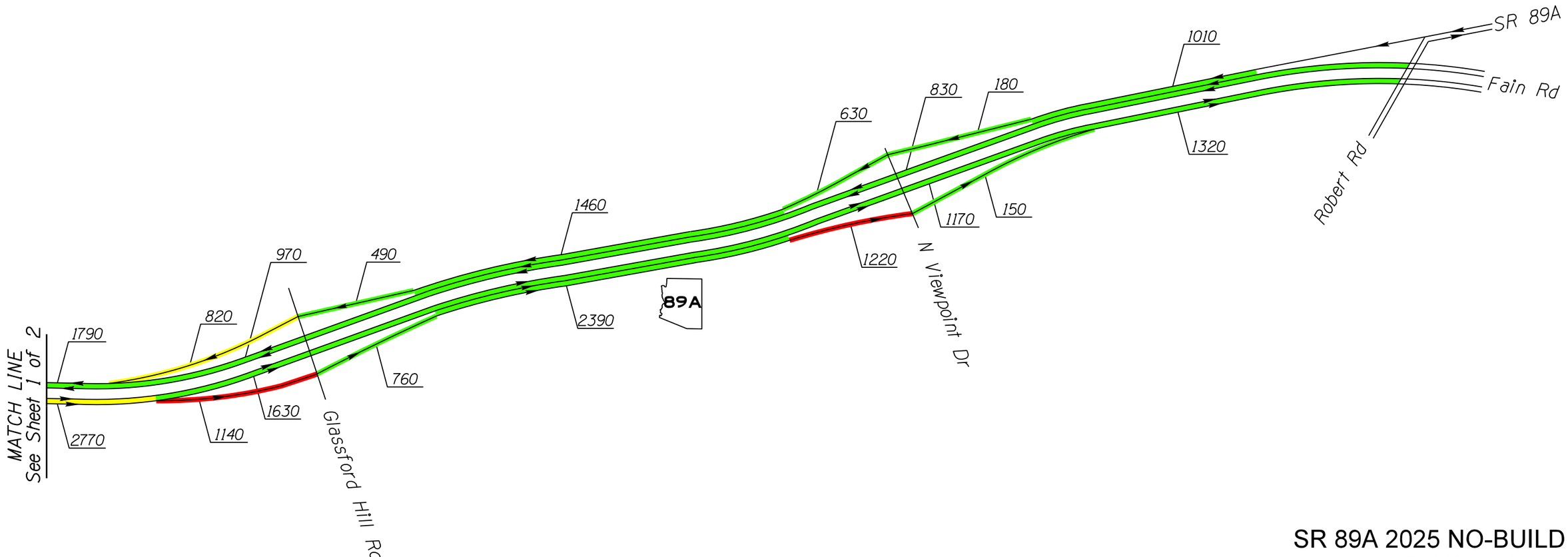
LEGEND

XXX - 2025 PM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

N



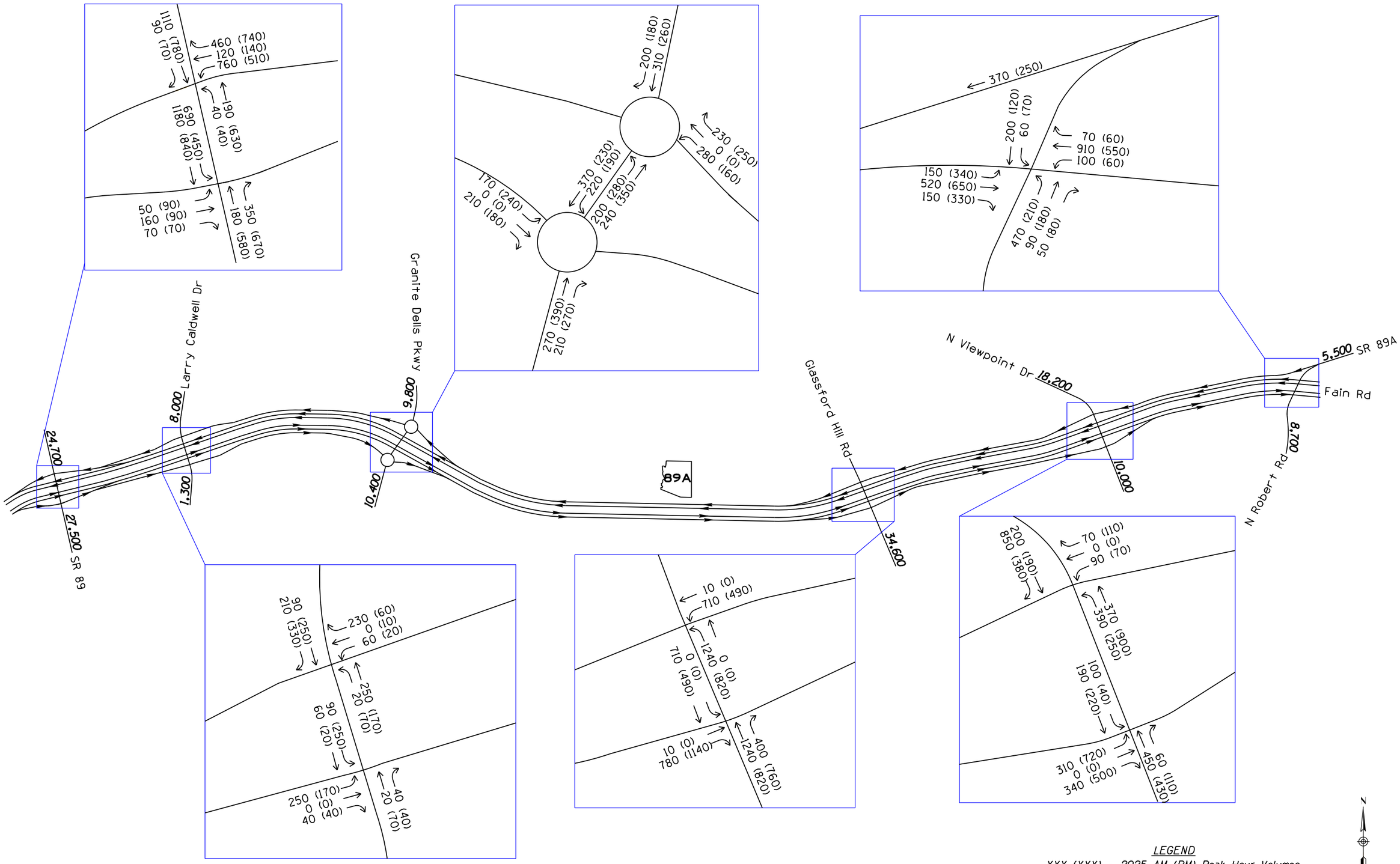
SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2025 NO-BUILD
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\No Build\SR89A 2025 NB LOS PM 2.dgn

11/7/2017



LEGEND

XXX (XXX) - 2025 AM (PM) Peak Hour Volumes

XXXX - 2025 Average Daily Traffic (Bidirectional)

SR 89A (SR 89 To Fain Rd)

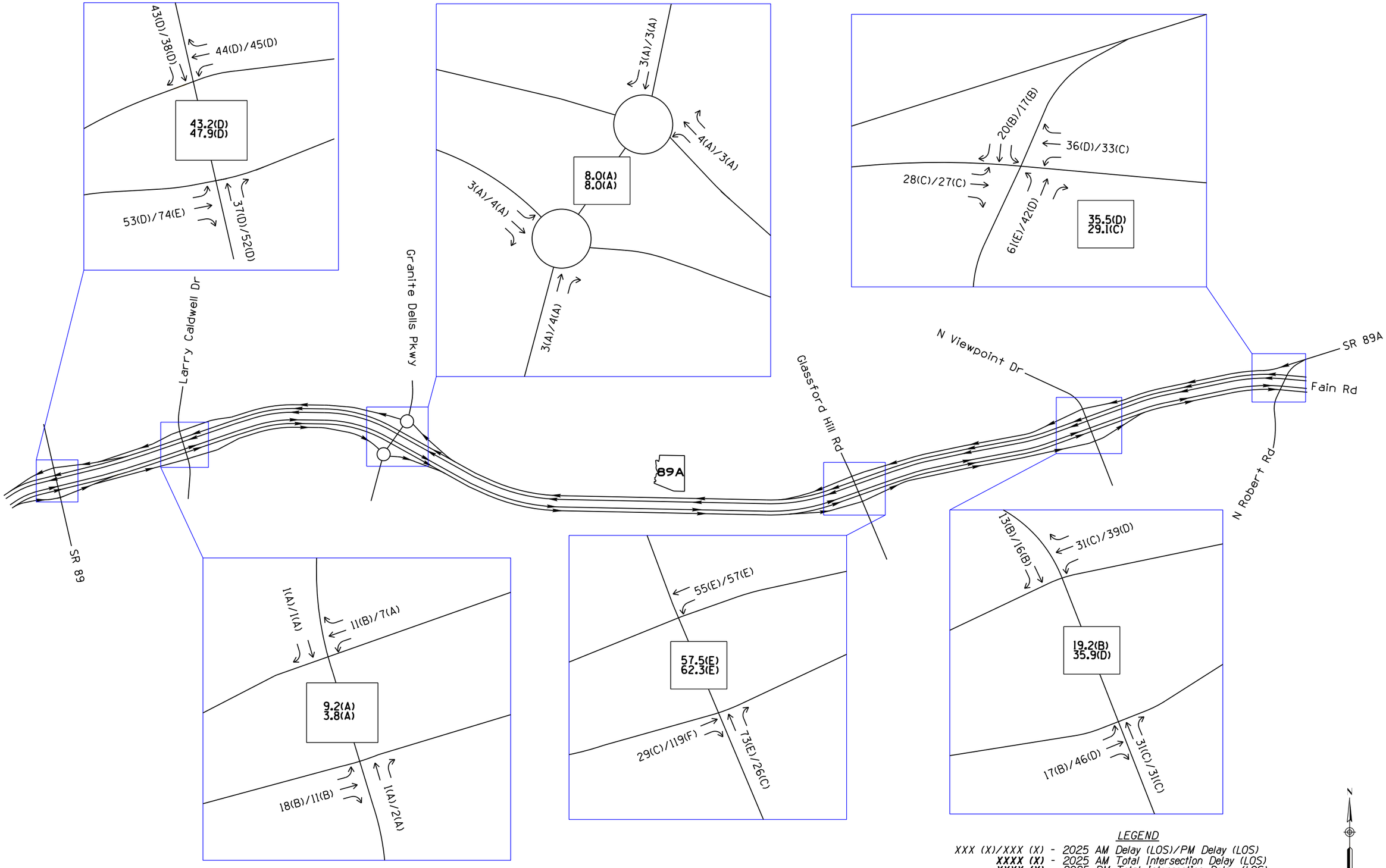
NOT TO SCALE - SCHEMATIC ONLY

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\No Build\SR89A 2025 NB Volume Diagram.dgn

2/15/2018

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\No Build\SR89A 2025 NB Int LOS Diagram.dgn

11/7/2017



LEGEND

XXX (X)/XXX (X) - 2025 AM Delay (LOS)/PM Delay (LOS)
XXXX (X) - 2025 AM Total Intersection Delay (LOS)
XXXX (X) - 2025 PM Total Intersection Delay (LOS)

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

LEGEND

XXX - 2030 AM Peak Hour Volumes
(XXX) - 2030 PM Peak Hour Volumes
XXXX - 2030 Average Daily Traffic

N

2340
(900)
14600

1200
(1070)
13800

300
(420)
4500

3540
(1970)
28400

320
(120)
2300

3860
(2090)
30700

760
(690)
6300

3100
(1400)
24400

900
(730)
7000

290
(290)
3600

300
(270)
3600

780
(1840)
14800

SR 89

980
(1090)
13700

340
(280)
3800

1760
(2930)
28500

150
(310)
2500

Larry Caldwell Dr

89A

1910
(3240)
31000

690
(730)
6400

1220
(2510)
24600

Granite Dells Pkwy

780
(780)
7800

4000
(2130)
31400

2000
(3290)
32400

MATCH LINE
See Sheet 2 of 2

SR 89A 2030 NO-BUILD
VOLUMES AND LANE CONFIGURATION
SHEET 1 OF 2

SR 89A (SR 89 To Fain Rd)

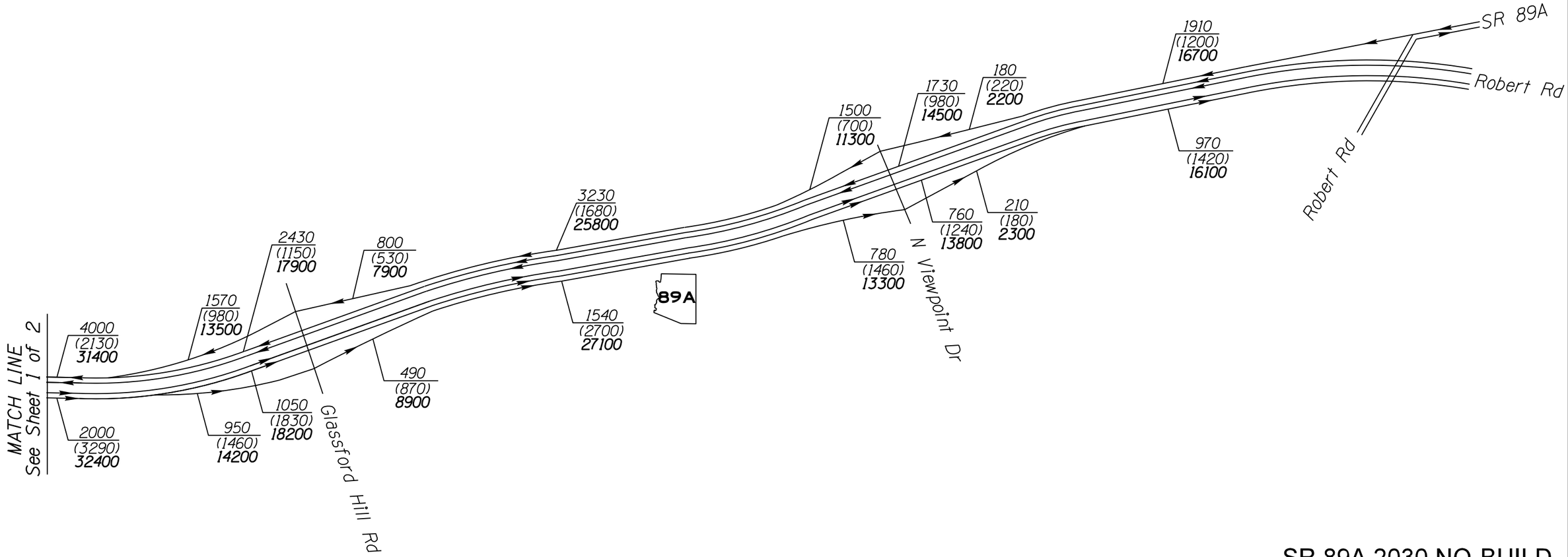
NOT TO SCALE - SCHEMATIC ONLY

11/7/2017

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\No Build\SR89A Ramp Volumes 1_NB2030.dgn

LEGEND

XXX - 2030 AM Peak Hour Volumes
(XXX) - 2030 PM Peak Hour Volumes
XXXX - 2030 Average Daily Traffic



SR 89A 2030 NO-BUILD
VOLUMES AND LANE CONFIGURATION
SHEET 2 OF 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

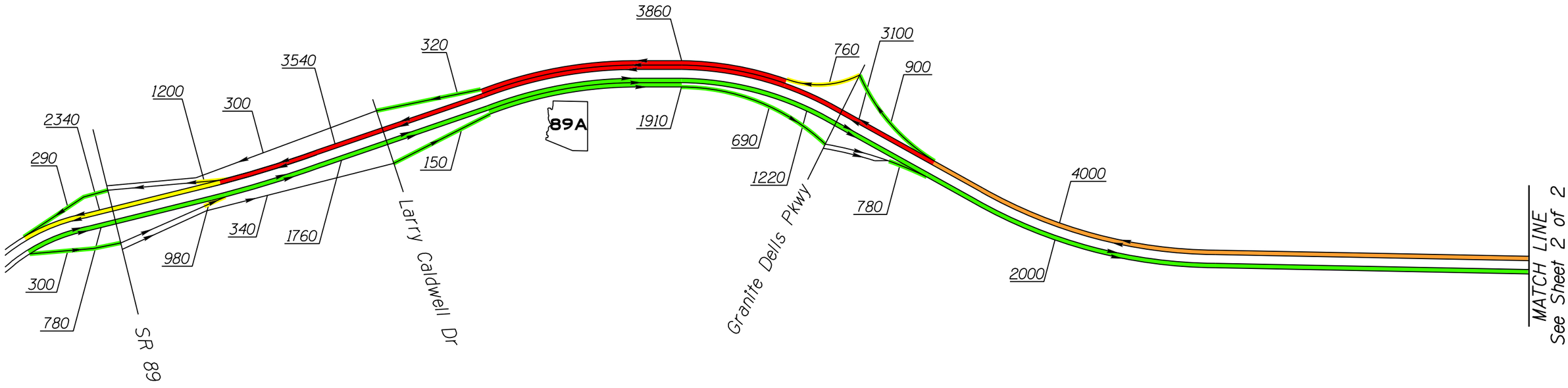
11/7/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\No Build\SR89A Ramp Volumes 2_NB2030.dgn

LEGEND

XXX - 2030 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2030 NO-BUILD
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

11/7/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\No Build\SR89A 2030 NB LOS AM.dgn

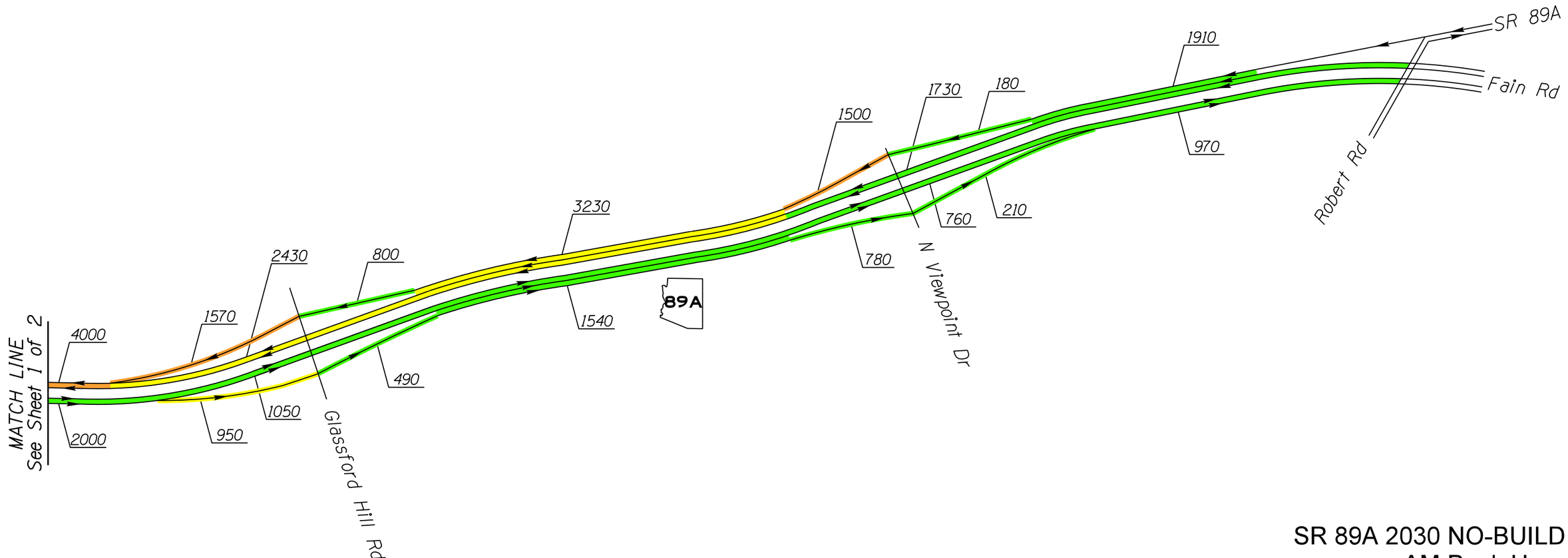
LEGEND

XXX - 2030 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

N



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2030 NO-BUILD
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

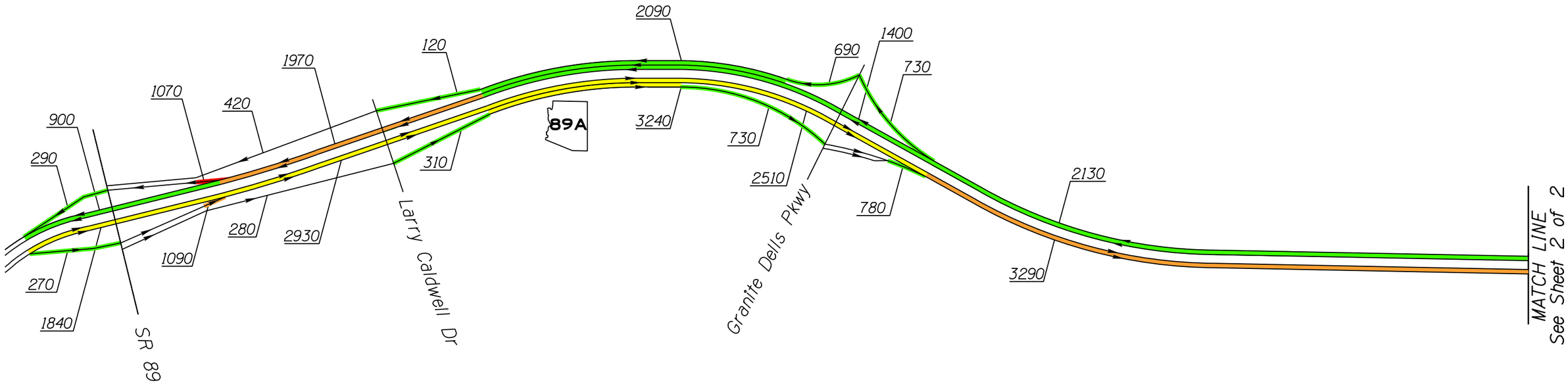
11/7/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\No Build\SR89A 2030 NB LOS AM 2.dgn

LEGEND

XXX - 2030 PM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2030 NO-BUILD
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\No Build\SR89A 2030 NB LOS PM.dgn

11/7/2017

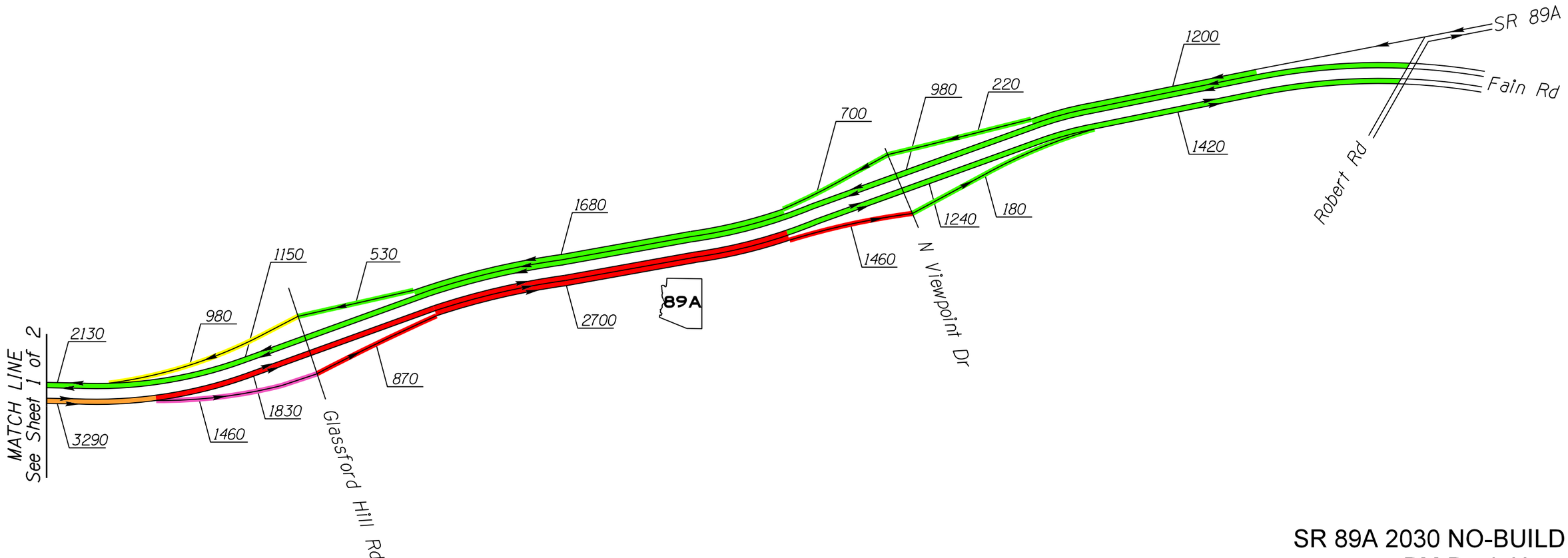
LEGEND

XXX - 2030 PM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

N



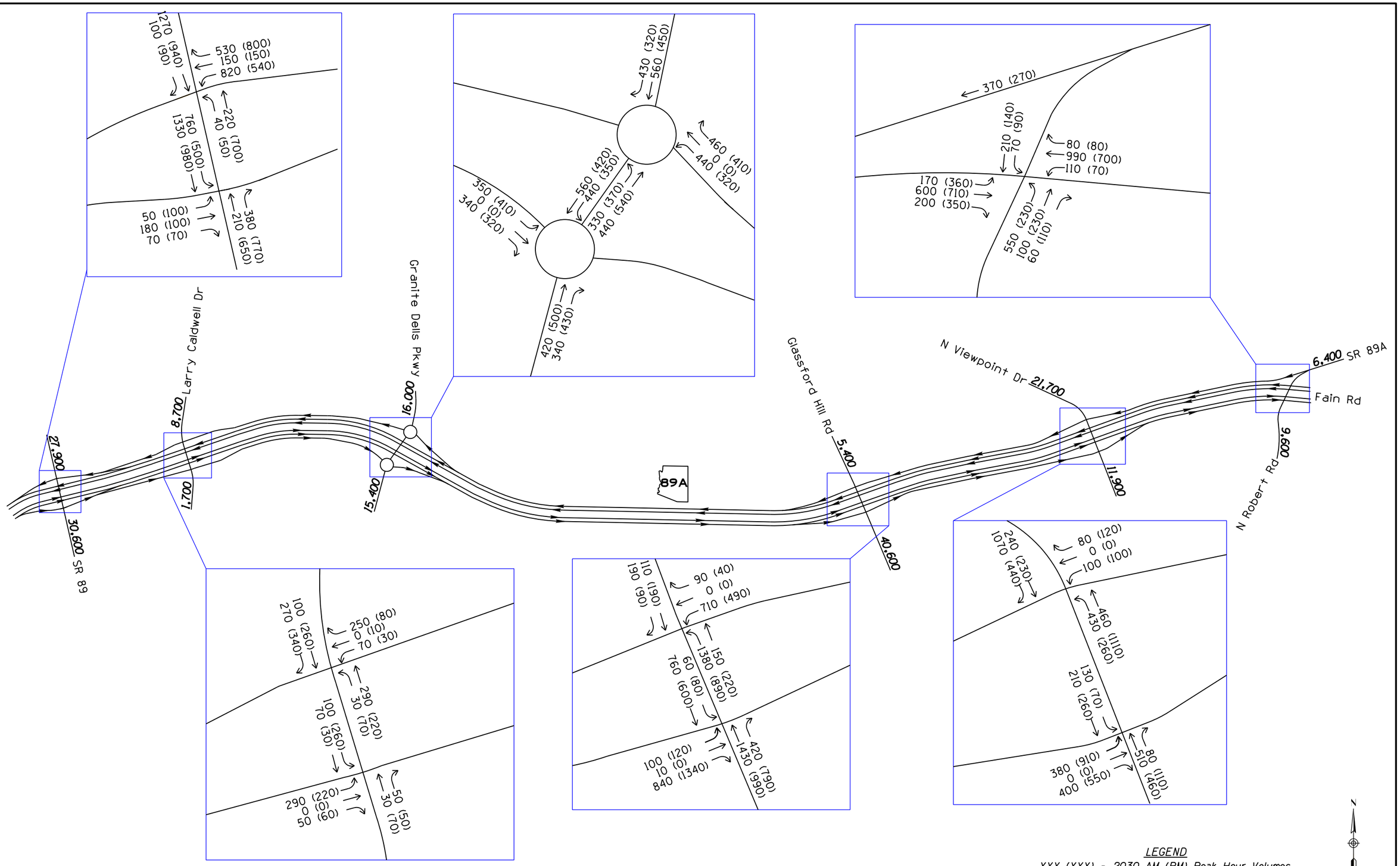
SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2030 NO-BUILD
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\No Build\SR89A 2030 NB LOS PM 2.dgn

11/7/2017



LEGEND

XXX (XXX) - 2030 AM (PM) Peak Hour Volumes

XXXX - 2030 Average Daily Traffic (Bidirectional)

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

2/15/2018

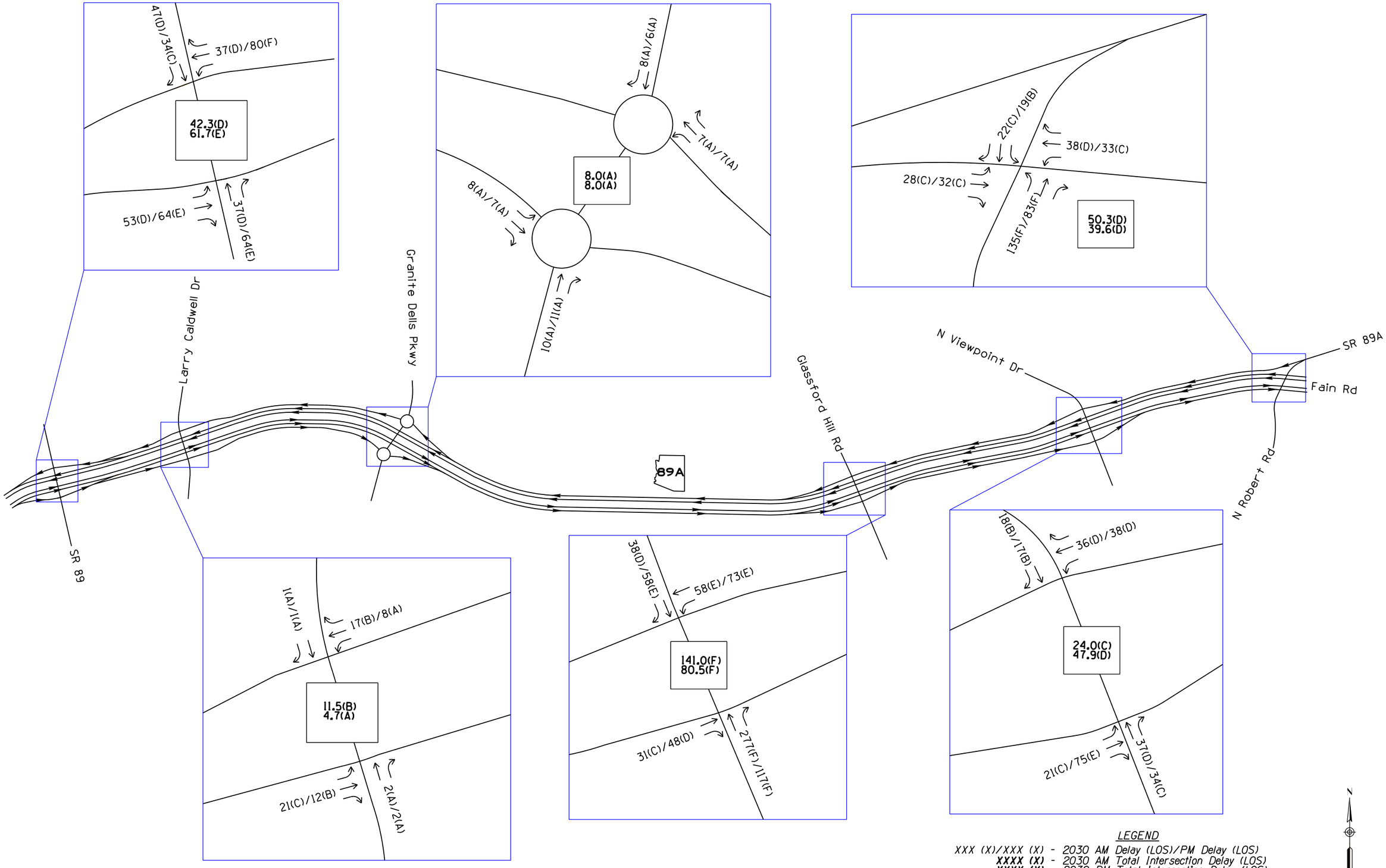
P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\No Build\SR89A 2030 NB Volume Diagram.dgn

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\No Build\SR89A 2030 NB LOS Diagram.dgn

11/7/2017

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY



LEGEND

XXX (X)/XXX (X) - 2030 AM Delay (LOS)/PM Delay (LOS)
***XXXX (X)** - 2030 AM Total Intersection Delay (LOS)*
***XXXX (X)** - 2030 PM Total Intersection Delay (LOS)*

LEGEND

XXX - 2035 AM Peak Hour Volumes
(XXX) - 2035 PM Peak Hour Volumes
XXXX - 2035 Average Daily Traffic

N

2670
(1080)
16900

320
(320)
4000

340
(310)
4000

840
(2030)
17300

SR 89

1300
(1170)
15400

360
(430)
4500

1070
(1180)
15300

3970
(2250)
32300

410
(320)
4300

1910
(3210)
32600

370
(160)
2400

200
(350)
2900

Larry Caldwell Dr

89A

4340
(2410)
34700

2110
(3560)
35500

1010
(950)
8400

820
(1000)
8600

1290
(2560)
26900

3330
(1460)
26300

1000
(1250)
11000

Granite Dells Pkwy

1280
(920)
9900

4610
(2380)
36200

2290
(3810)
37900

MATCH LINE
See Sheet 2 of 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2035 NO-BUILD VOLUMES AND LANE CONFIGURATION SHEET 1 OF 2

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\No Build\SR89A Ramp Volumes 1.NB2035.dgn

11/7/2017

LEGEND

XXX - 2035 AM Peak Hour Volumes
(XXX) - 2035 PM Peak Hour Volumes
XXXX - 2035 Average Daily Traffic

N

MATCH LINE
See Sheet 1 of 2

4610
(2380)
36200

2290
(3810)
37900

1760
(1150)
14700

1080
(1690)
15400

2850
(1230)
21500

1210
(2120)
22500

Glassford Hill Rd

890
(610)
8400

560
(930)
9300

3740
(1840)
29900

1770
(3050)
31800

89A

1660
(800)
12600

2080
(1040)
17300

220
(250)
2700

2300
(1290)
20000

1180
(1710)
20100

870
(1570)
14500

N Viewpoint Dr

900
(1480)
17300

280
(230)
2800

Robert Rd

SR 89A

Robert Rd

SR 89A 2035 NO-BUILD
VOLUMES AND LANE CONFIGURATION
SHEET 2 OF 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

11/7/2017

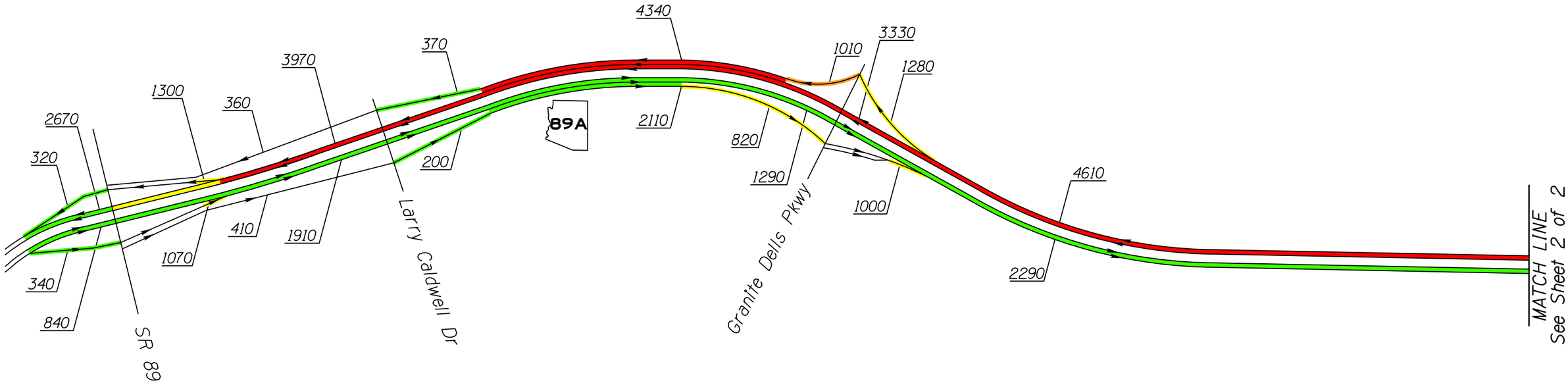
P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\No Build\SR89A Ramp Volumes 2_NB2035.dgn

LEGEND

XXX - 2035 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2035 NO-BUILD
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

11/7/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\No Build\SR89A 2035 NB LOS AM.dgn

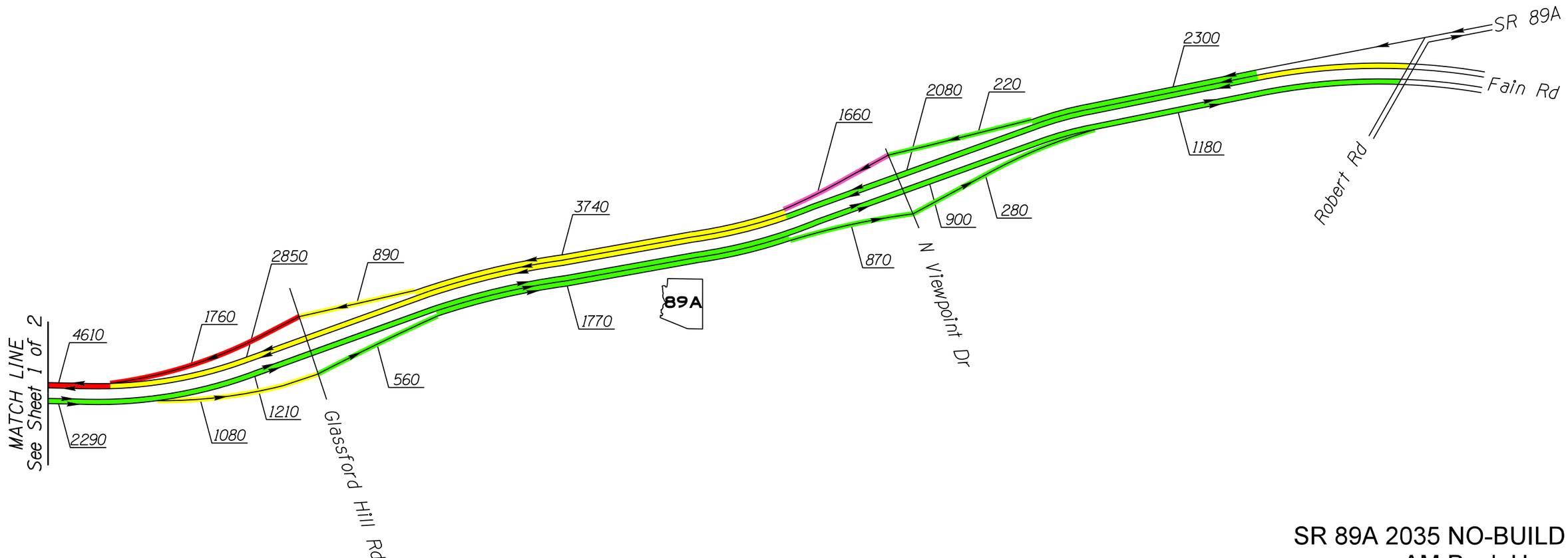
LEGEND

XXX - 2035 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

N



SR 89A 2035 NO-BUILD
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

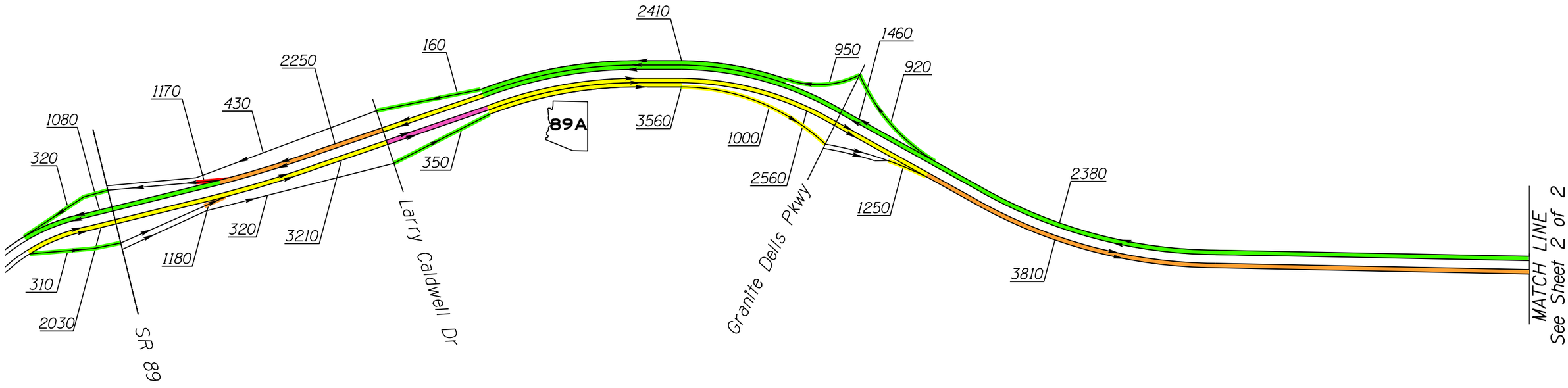
11/7/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\No Build\SR89A 2035 NB LOS AM 2.dgn

LEGEND

XXX - 2035 PM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2035 NO-BUILD
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

11/7/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\No Build\SR89A 2035 NB LOS PM.dgn

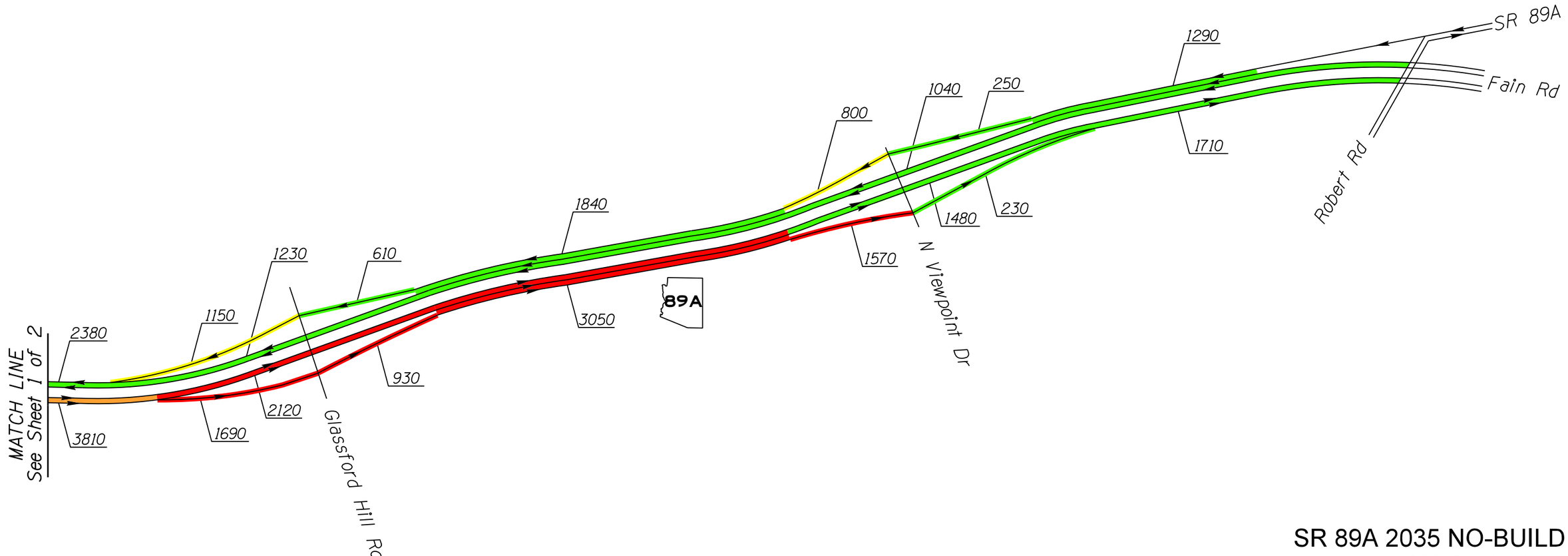
LEGEND

XXX - 2035 PM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

N



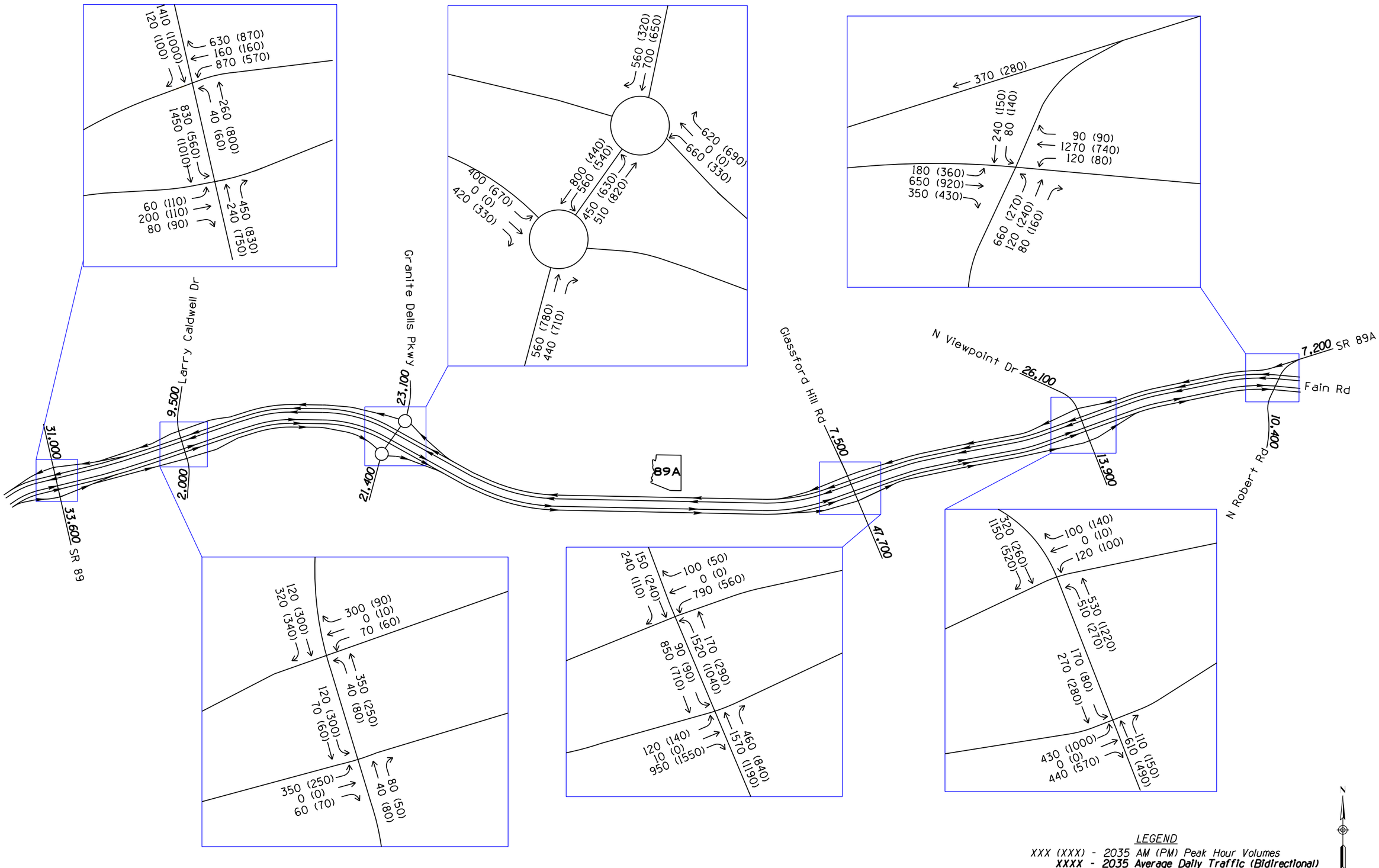
SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2035 NO-BUILD
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\No Build\SR89A 2035 NB LOS PM 2.dgn

11/7/2017



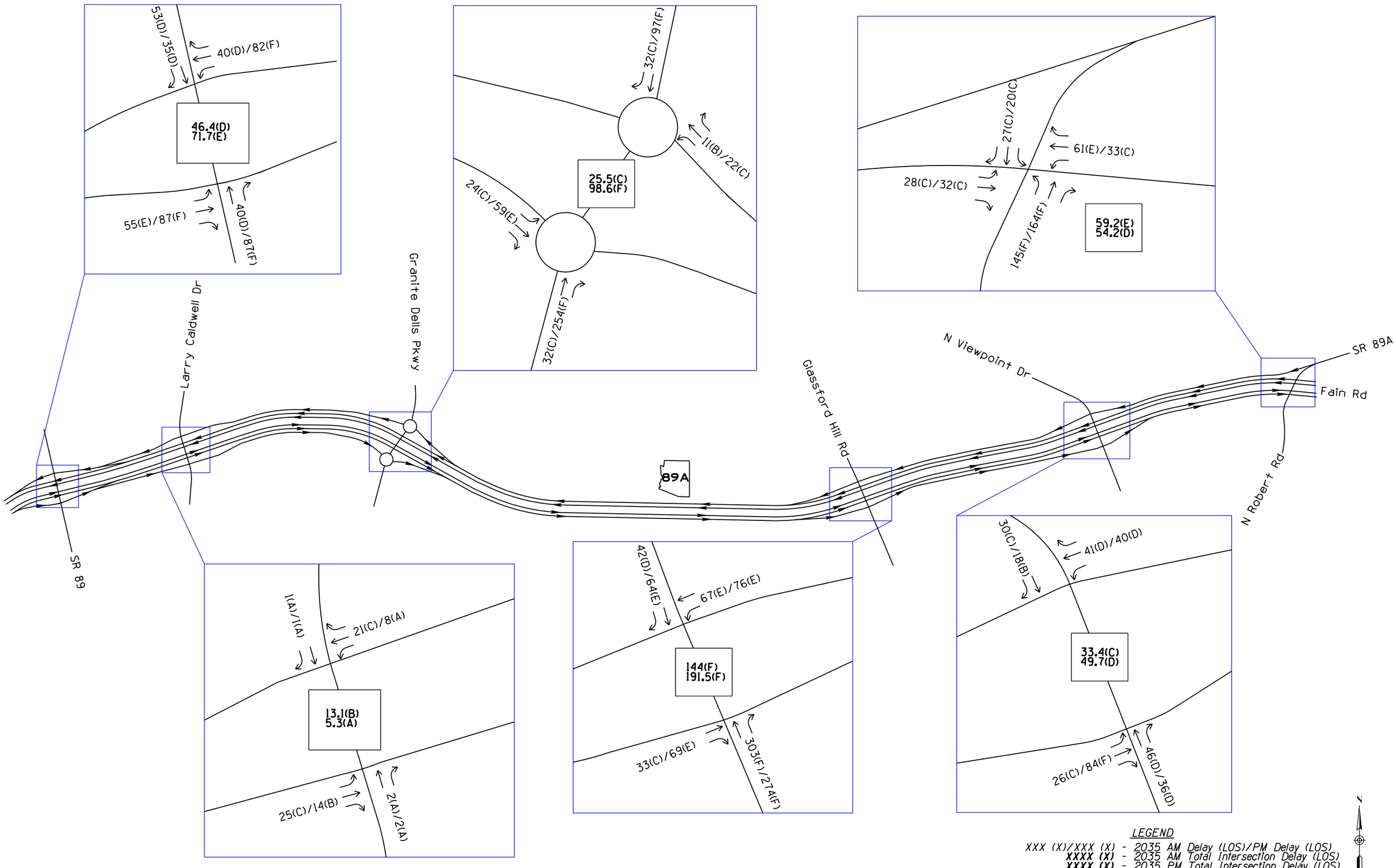
LEGEND

XXX (XXX) - 2035 AM (PM) Peak Hour Volumes

XXXX - 2035 Average Daily Traffic (Bidirectional)

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY



LEGEND

XXX (X)/XXX (X) - 2035 AM Delay (LOS)/PM Delay (LOS)
XXXX (X) *- 2035 AM Total Intersection Delay (LOS)*
XXXX (X) *- 2035 PM Total Intersection Delay (LOS)*

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\No Build\SR89A 2035 NB LOS Diagram.dgn

11/7/2017

Appendix 7 – 2025-2035 Build Volumes and Configurations

LEGEND

XXX - 2025 AM Peak Hour Volumes
(XXX) - 2025 PM Peak Hour Volumes
XXXX - 2025 Average Daily Traffic

N

1830
(770)
12200

250
(250)
3100

280
(250)
3100

600
(1440)
12300

SR 89

1110
(980)
12000

230
(410)
4500

910
(1000)
12000

2960
(1750)
24200

290
(210)
3200

1510
(2440)
24300

290
(90)
2100

130
(290)
2200

Larry Caldwell Dr

89A

3250
(1840)
26300

1640
(2730)
26500

400
(460)
4200

380
(420)
3800

1260
(2310)
22700

2850
(1380)
22100

430
(460)
4600

510
(410)
4600

Granite Dells Pkwy

3360
(1790)
26700

1690
(2770)
27300

MATCH LINE
See Sheet 2 of 2

SR 89A 2025 RECOMMENDED
VOLUMES AND LANE CONFIGURATION
SHEET 1 OF 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

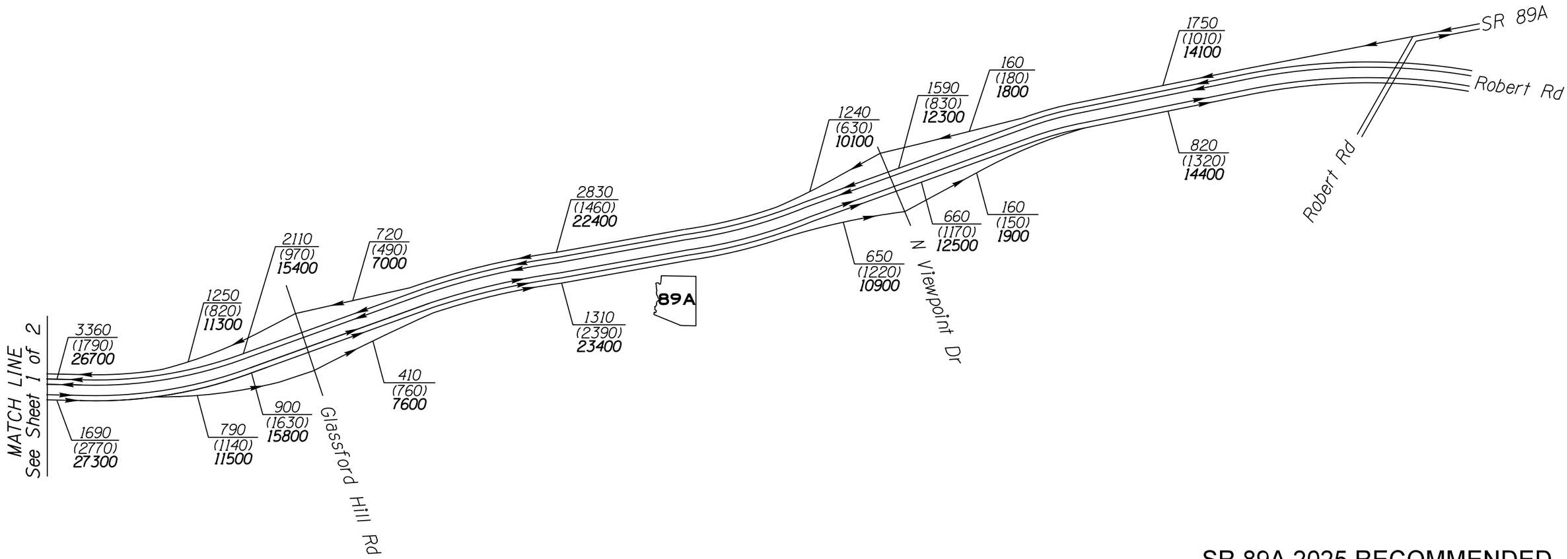
12/5/2017

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\Build\SR89A Ramp Volumes 1_Build_2025.dgn

LEGEND

XXX - 2025 AM Peak Hour Volumes
(XXX) - 2025 PM Peak Hour Volumes
XXXX - 2025 Average Daily Traffic

N



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2025 RECOMMENDED VOLUMES AND LANE CONFIGURATION SHEET 2 OF 2

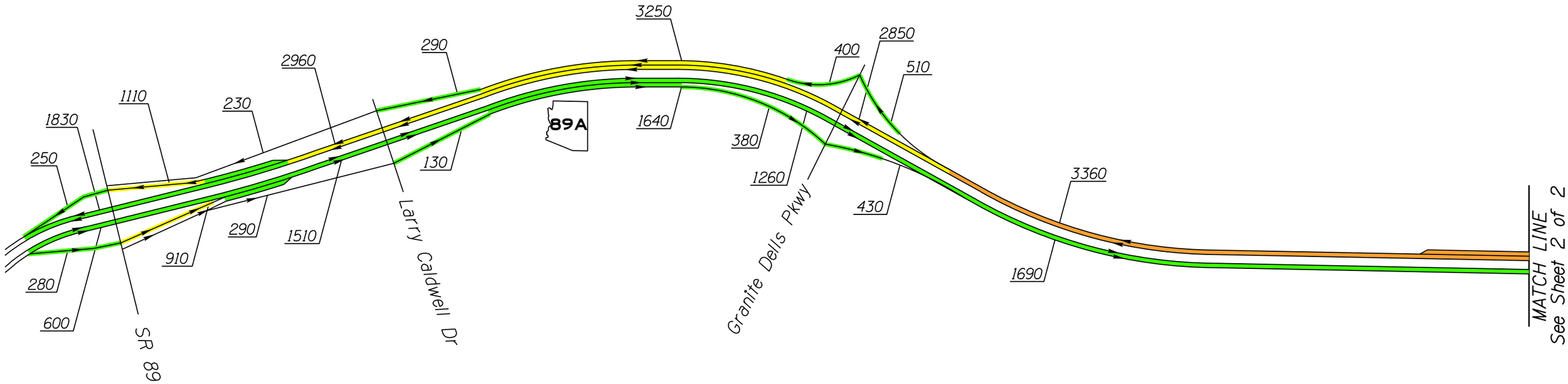
12/5/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\Build\SR89A Ramp Volumes 2_Build_2025.dgn

LEGEND

XXX - 2025 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2025 RECOMMENDED
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

12/5/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\Build\SR89A 2025 Build_LOS AM.dgn

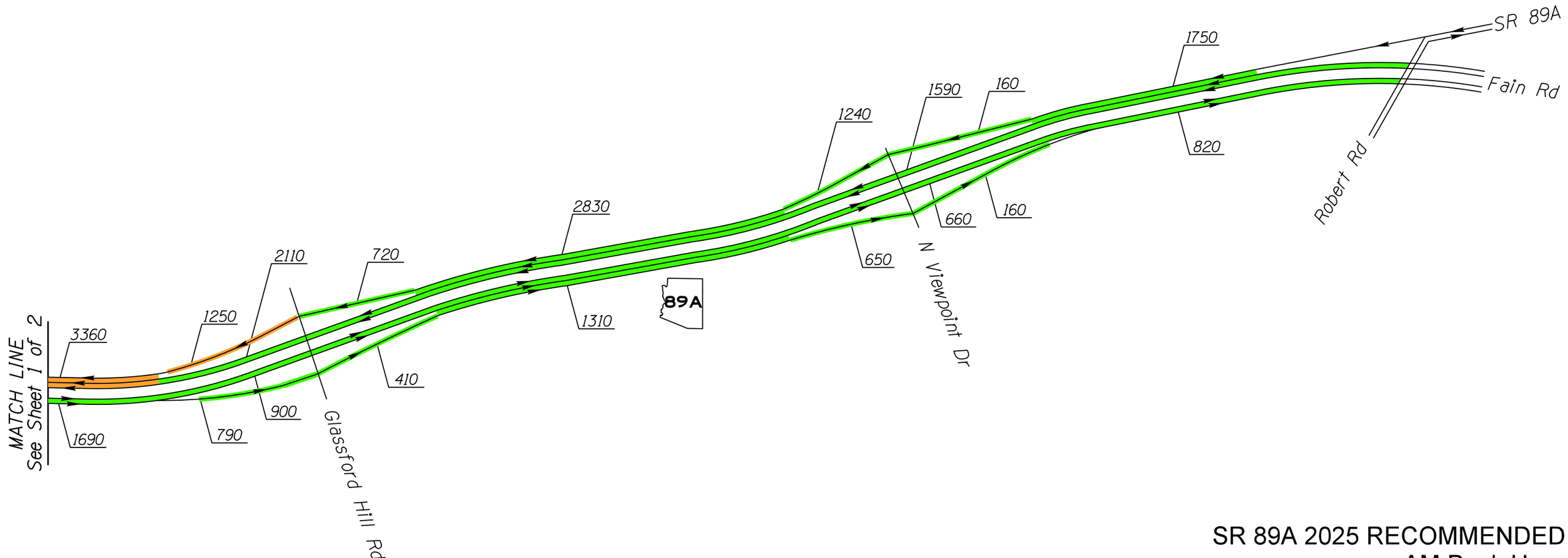
LEGEND

XXX - 2025 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

N



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2025 RECOMMENDED
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

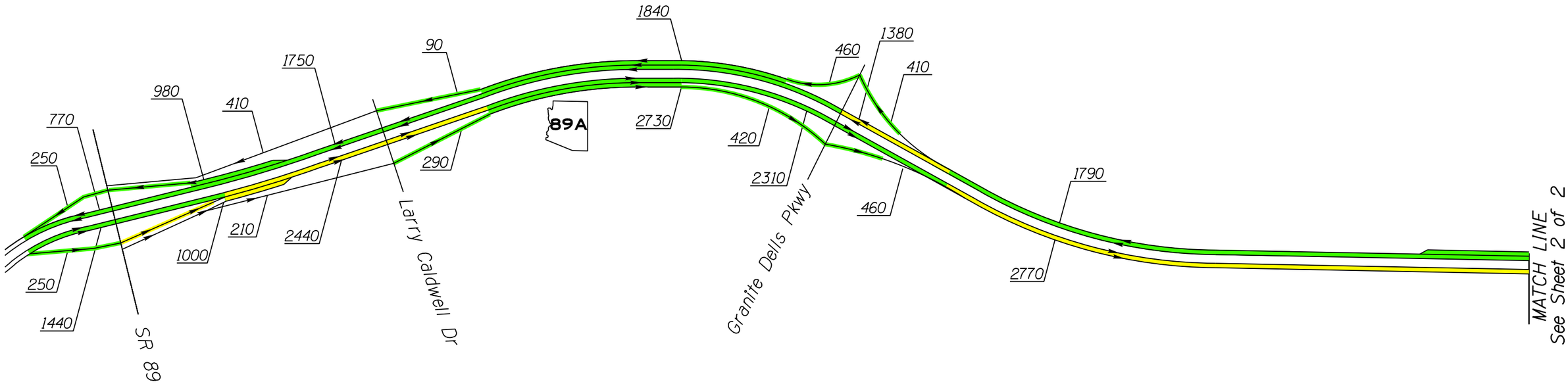
12/5/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\Build\SR89A 2025 Build_LOS AM 2.dgn

LEGEND

XXX - 2025 PM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2025 RECOMMENDED
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

12/5/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\Build\SR89A 2025 Build_LOS PM.dgn

LEGEND

XXX - 2025 PM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

N

SR 89A

Fain Rd

Robert Rd

N Viewpoint Dr

Glassford Hill Rd

89A

1010
830
180
630
1320
1460
1170
150
1220
970
490
2390
820
1790
760
1630
1140
2770

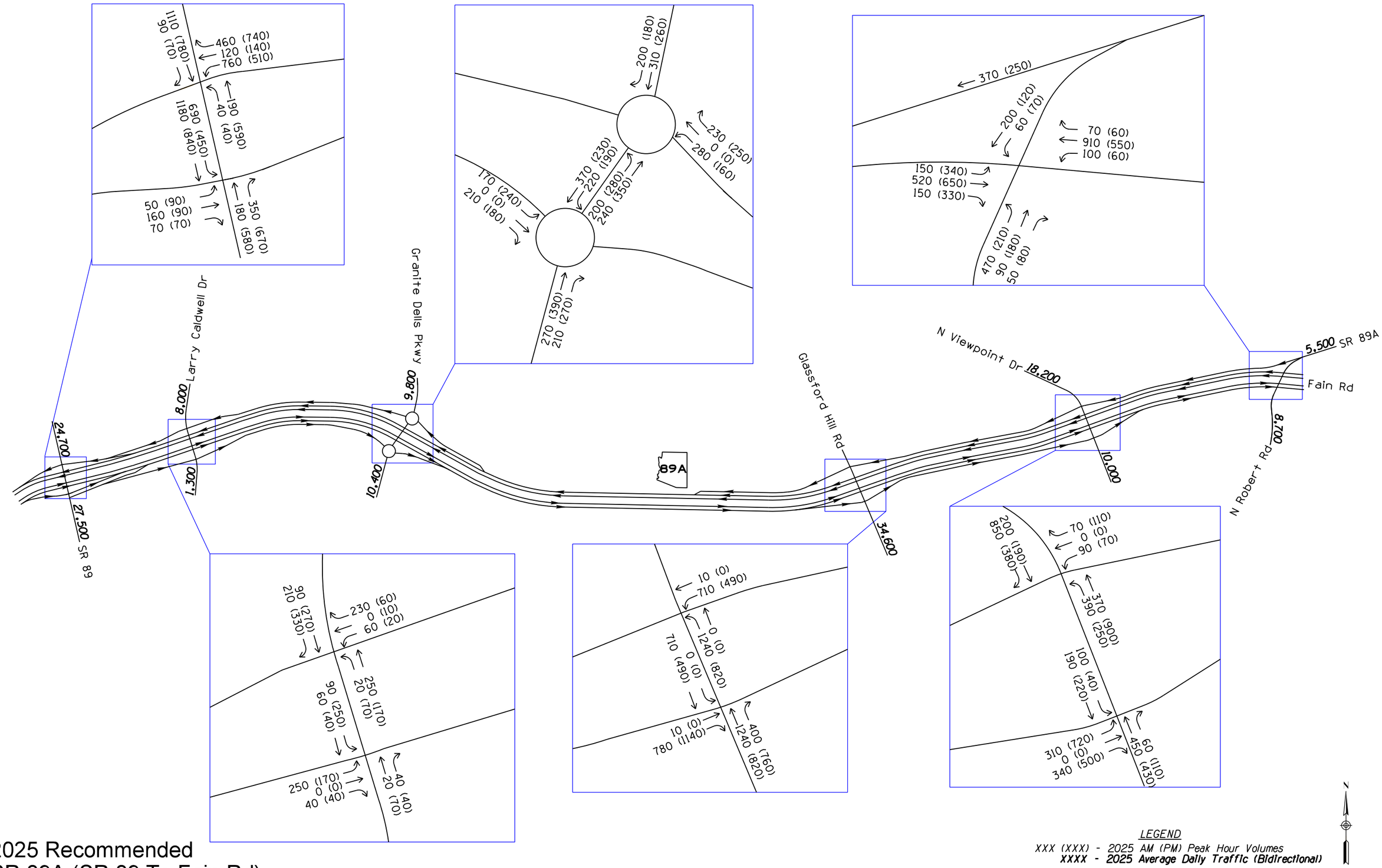
MATCH LINE
See Sheet 1 of 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2025 RECOMMENDED
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

12/5/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\Build\SR89A 2025 Build_LOS PM 2.dgn



2025 Recommended
SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

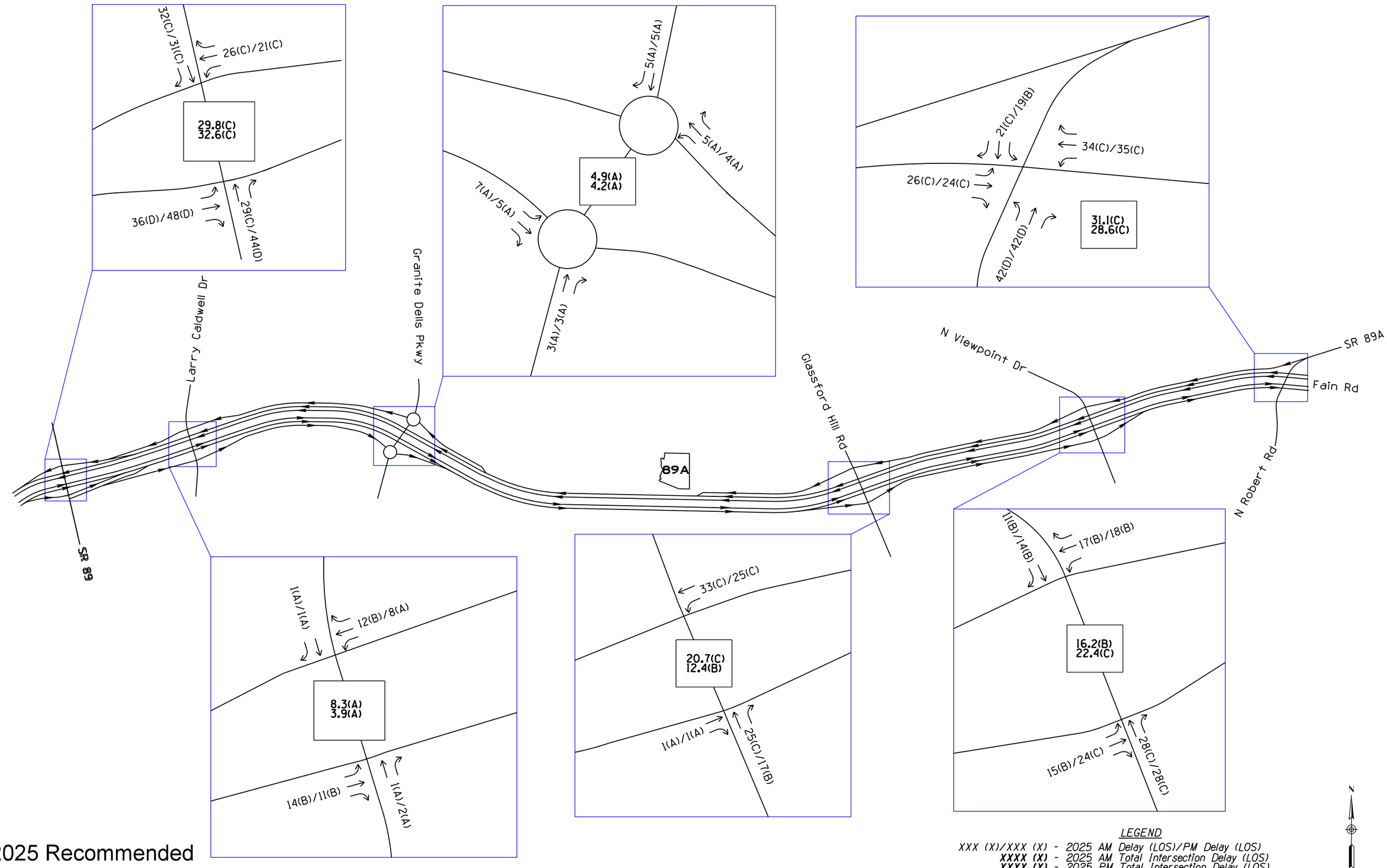
P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\Build\SR89A 2025 Build_ Volume Diagram.dgn

2/15/2018

P:\Projects\ADOT\ADOT_IPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2025\Build\SR89A 2025 Build Int LOS Diagram.dgn

12/5/2017

2025 Recommended
SR 89A (SR 89 To Fain Rd)



LEGEND

XXX (X)/XXX (X) - 2025 AM Delay (LOS)/PM Delay (LOS)
***XXXX (X)** - 2025 AM Total Intersection Delay (LOS)*
***XXXX (X)** - 2025 PM Total Intersection Delay (LOS)*

NOT TO SCALE - SCHEMATIC ONLY

LEGEND

XXX - 2030 AM Peak Hour Volumes
(XXX) - 2030 PM Peak Hour Volumes
XXXX - 2030 Average Daily Traffic

N

2340
(900)
14600

1200
(1070)
13800

290
(290)
3600

300
(270)
3600

780
(1840)
14800

SR 89

300
(420)
4500

3540
(1970)
28400

980
(1090)
13700

340
(280)
3800

1760
(2930)
28500

320
(120)
2300

150
(310)
2500

Larry Caldwell Dr

89A

3860
(2090)
30700

1910
(3240)
31000

760
(690)
6300

690
(730)
6400

1220
(2510)
24600

Granite Dells Pkwy

3100
(1400)
24400

900
(730)
7000

780
(780)
7800

4000
(2130)
31400

2000
(3290)
32400

MATCH LINE
See Sheet 2 of 2

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\Build\SR89A Ramp Volumes 1.Build.2030.dgn

12/5/2017

SR 89A (SR 89 To Fain Rd)

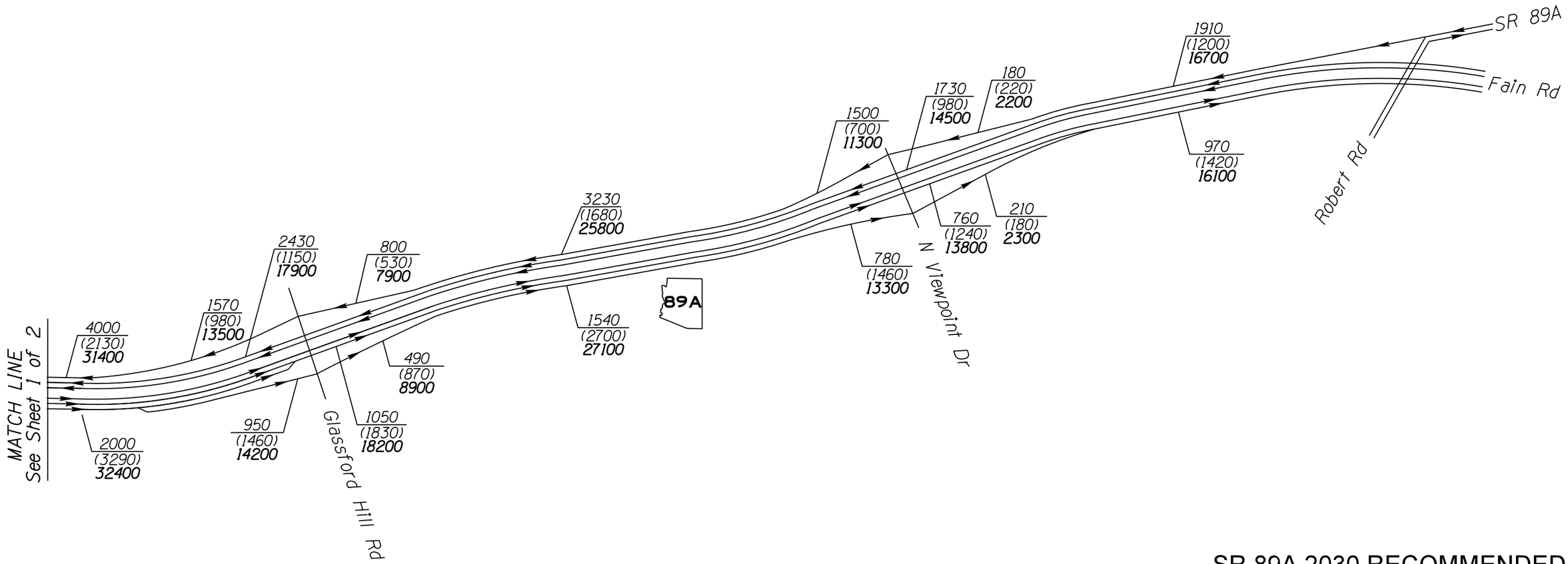
NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2030 RECOMMENDED VOLUMES AND LANE CONFIGURATION

SHEET 1 OF 2

LEGEND

XXX - 2030 AM Peak Hour Volumes
(XXX) - 2030 PM Peak Hour Volumes
XXXX - 2030 Average Daily Traffic



SR 89A 2030 RECOMMENDED
VOLUMES AND LANE CONFIGURATION
SHEET 2 OF 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

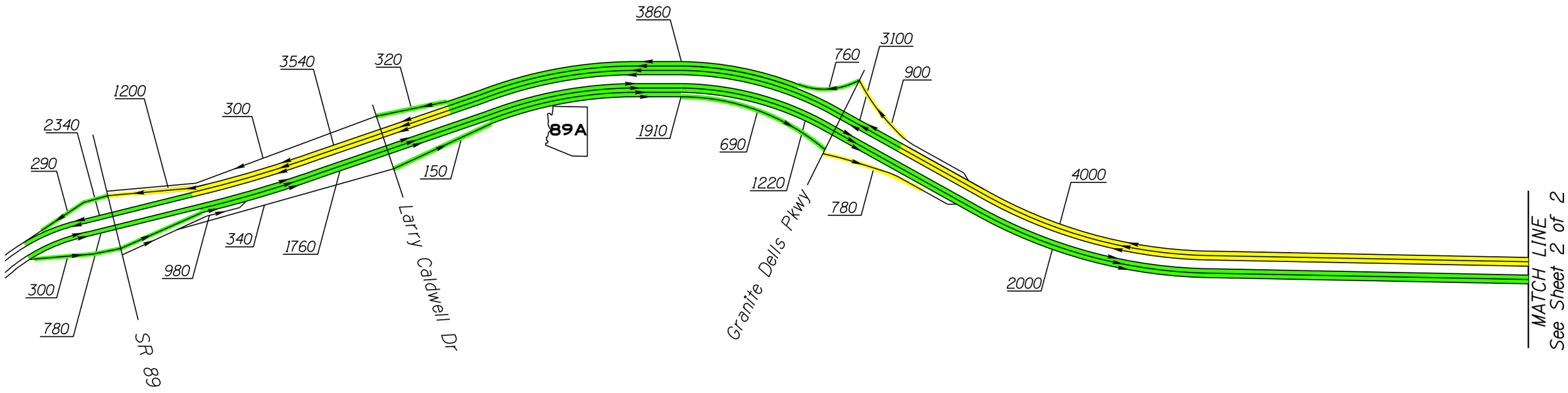
12/5/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\Build\SR89A Ramp Volumes 2_Build_2030.dgn

LEGEND

XXX - 2030 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2030 RECOMMENDED
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

12/5/2017

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\Build\SR89A 2030 Build_LOS AM.dgn

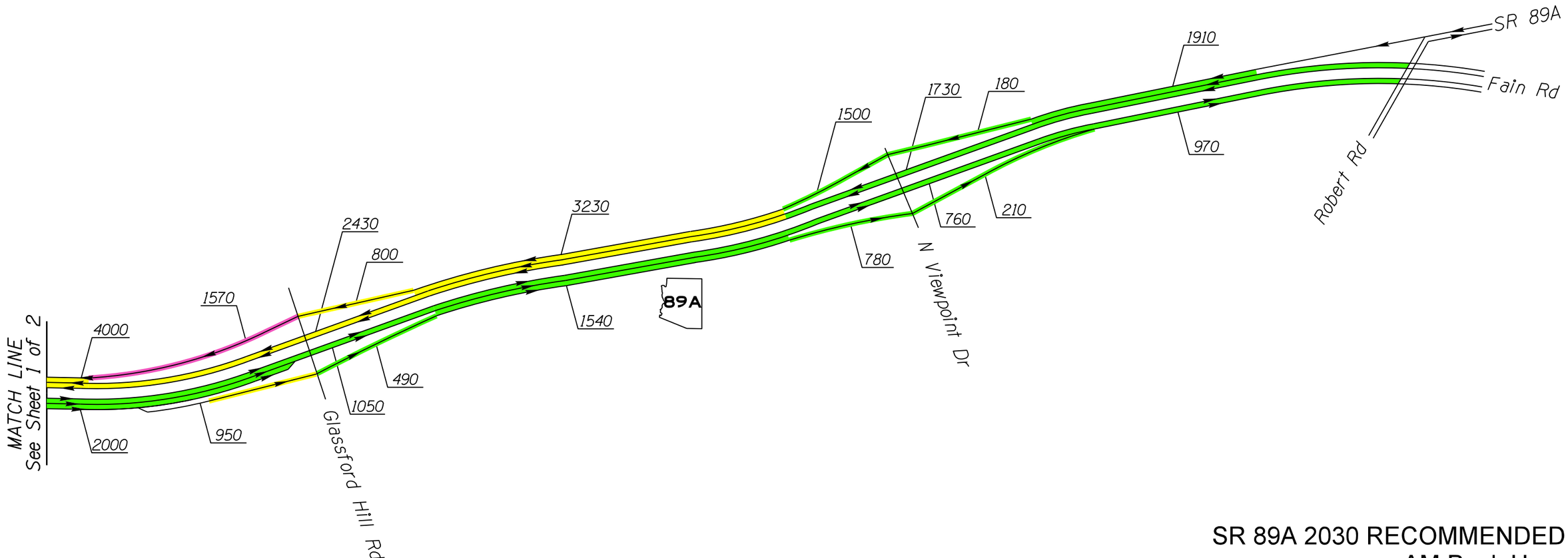
LEGEND

XXX - 2030 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

N



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2030 RECOMMENDED
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

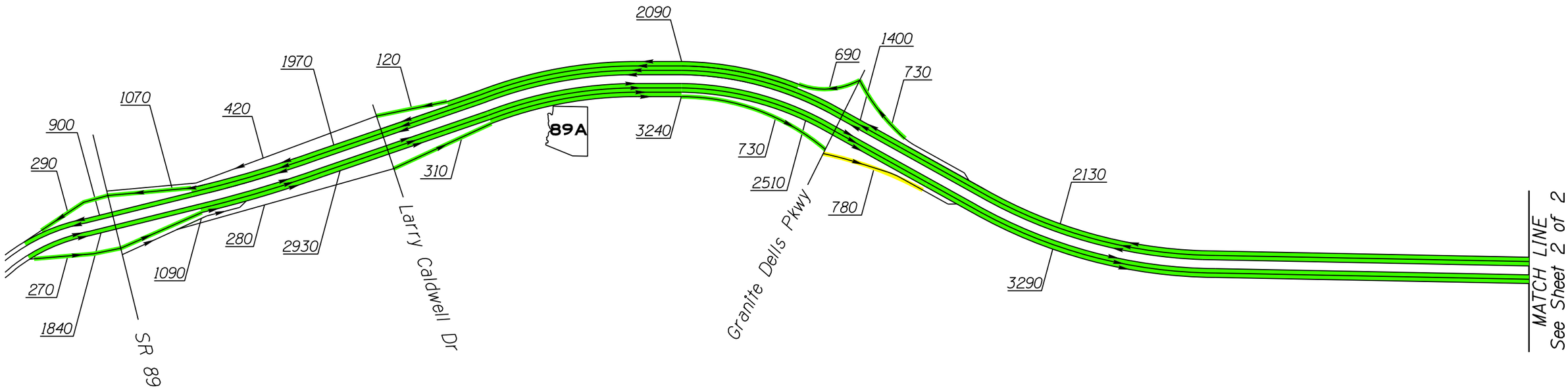
12/5/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\Build\SR89A 2030 Build LOS AM 2.dgn

LEGEND

XXX - 2030 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2030 RECOMMENDED
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

12/5/2017

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\Build\SR89A 2030 Build LOS PM.dgn

LEGEND

XXX - 2030 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2030 RECOMMENDED
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

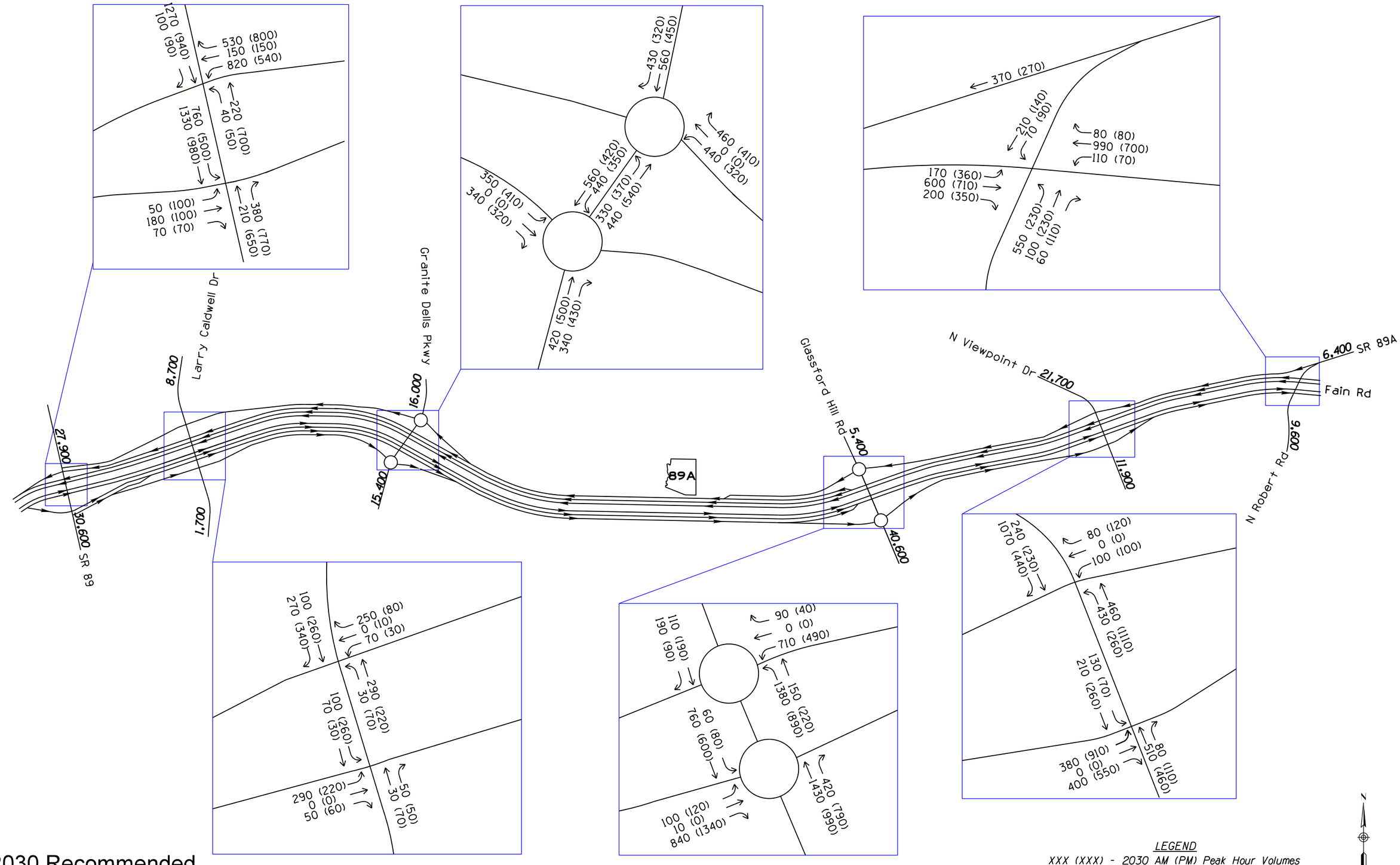
12/5/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\Build\SR89A 2030 Build LOS PM 2.dgn

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\Build\SR89A 2030 Build Volume Diagram.dgn

2/15/2018

2030 Recommended
SR 89A (SR 89 To Fain Rd)

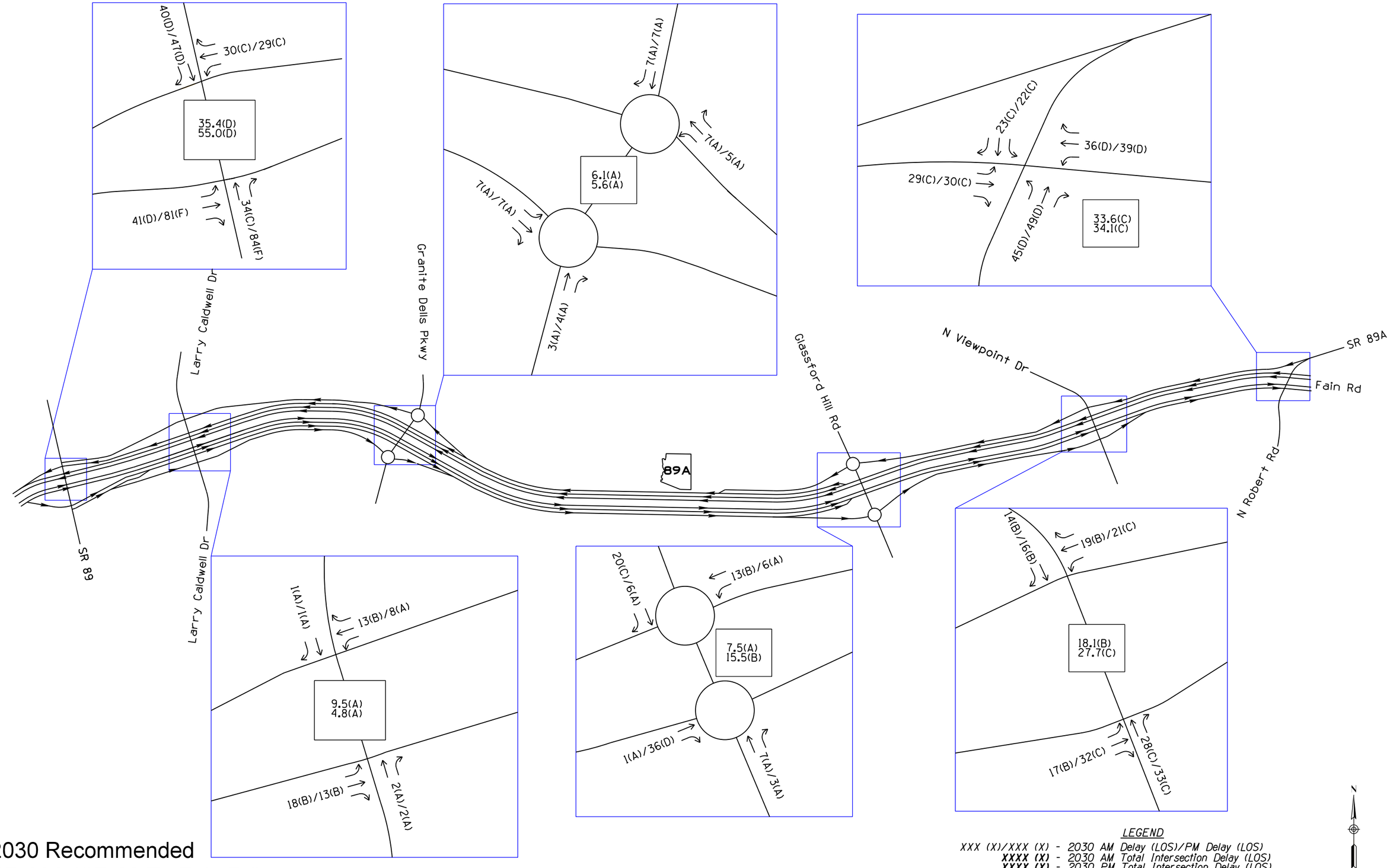
NOT TO SCALE - SCHEMATIC ONLY



LEGEND

XXX (XXX) - 2030 AM (PM) Peak Hour Volumes

XXXX - 2030 Average Daily Traffic (Bidirectional)



2030 Recommended
SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

LEGEND

XXX (X)/XXX (X) - 2030 AM Delay (LOS)/PM Delay (LOS)
***XXXX (X)** - 2030 AM Total Intersection Delay (LOS)*
***XXXX (X)** - 2030 PM Total Intersection Delay (LOS)*

12/5/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2030\Build\SR89A 2030 Build_Int_LOS Diagram.dgn

LEGEND

XXX - 2035 AM Peak Hour Volumes
(XXX) - 2035 PM Peak Hour Volumes
XXXX - 2035 Average Daily Traffic

N

2670 (1080) **16900**
1300 (1170) **15400**
320 (320) **4000**
340 (310) **4000**
840 (2030) **17300**
SR 89
360 (430) **4500**
3970 (2250) **32300**
1070 (1180) **15300**
410 (320) **4300**
1910 (3210) **32600**
370 (160) **2400**
200 (350) **2900**
Larry Caldwell Dr
4340 (2410) **34700**
89A
2110 (3560) **35500**
600 (600) **6000**
1510 (2960) **29500**
Granite Dells Pkwy
800 (800) **8000**
590 (570) **4900**
3750 (1840) **29800**
800 (590) **7000**
4550 (2430) **36800**
2310 (3760) **37500**
850 (580) **7500**
680 (900) **7500**
630 (2860) **30000**
Great Western Dr
3700 (1850) **29300**
560 (940) **5100**
480 (590) **5600**
MATCH LINE
See Sheet 2 of 2

SR 89A (SR 89 To Fain Rd)

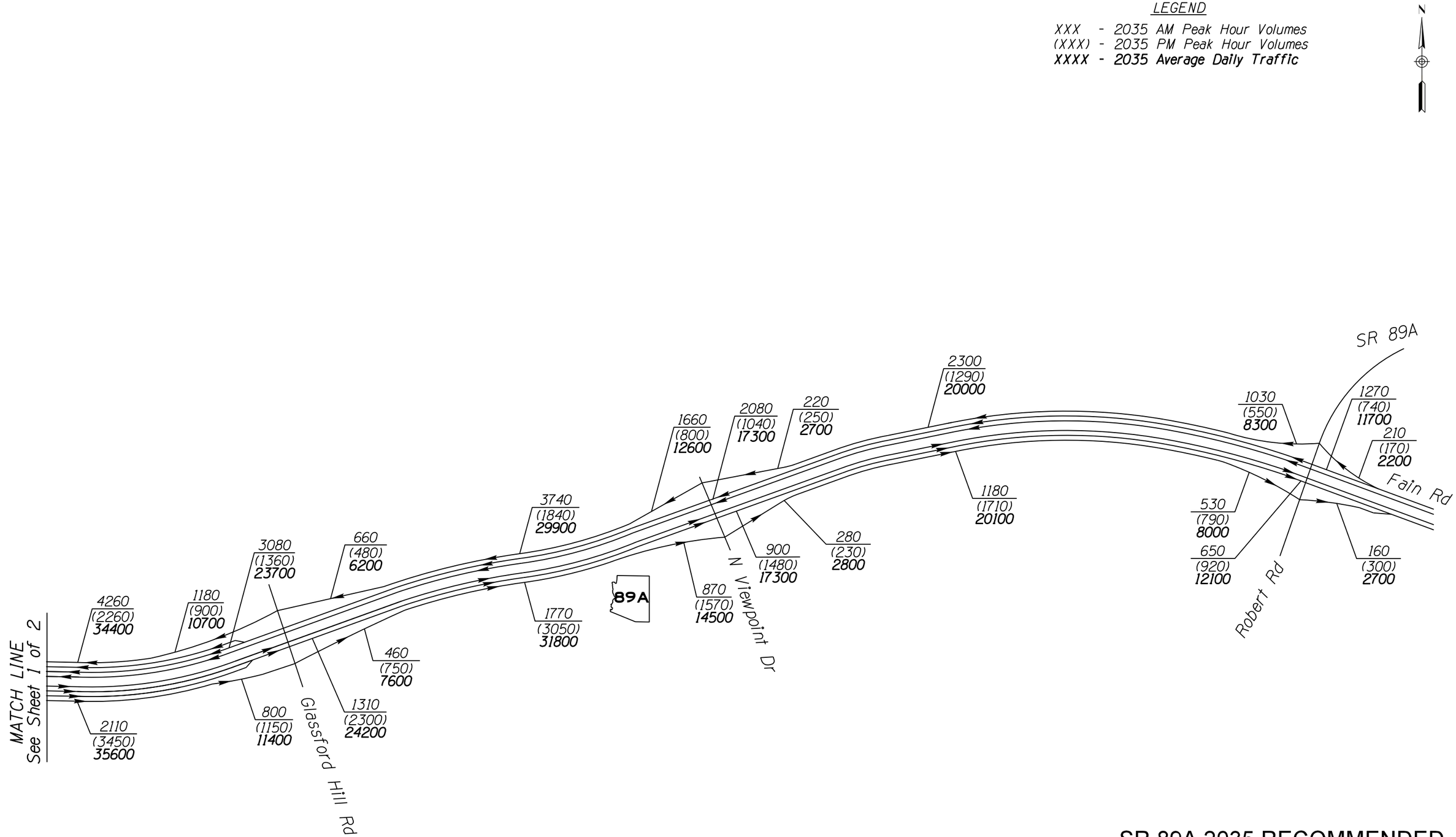
NOT TO SCALE - SCHEMATIC ONLY

SR 89A 2035 RECOMMENDED VOLUMES AND LANE CONFIGURATION SHEET 1 OF 2

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\Build\SR89A Ramp Volumes 1.Build.2035.dgn
12/5/2017

LEGEND

XXX - 2035 AM Peak Hour Volumes
(XXX) - 2035 PM Peak Hour Volumes
XXXX - 2035 Average Daily Traffic



SR 89A 2035 RECOMMENDED
VOLUMES AND LANE CONFIGURATION
SHEET 2 OF 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\Build\SR89A Ramp Volumes 2_Build_2035.dgn

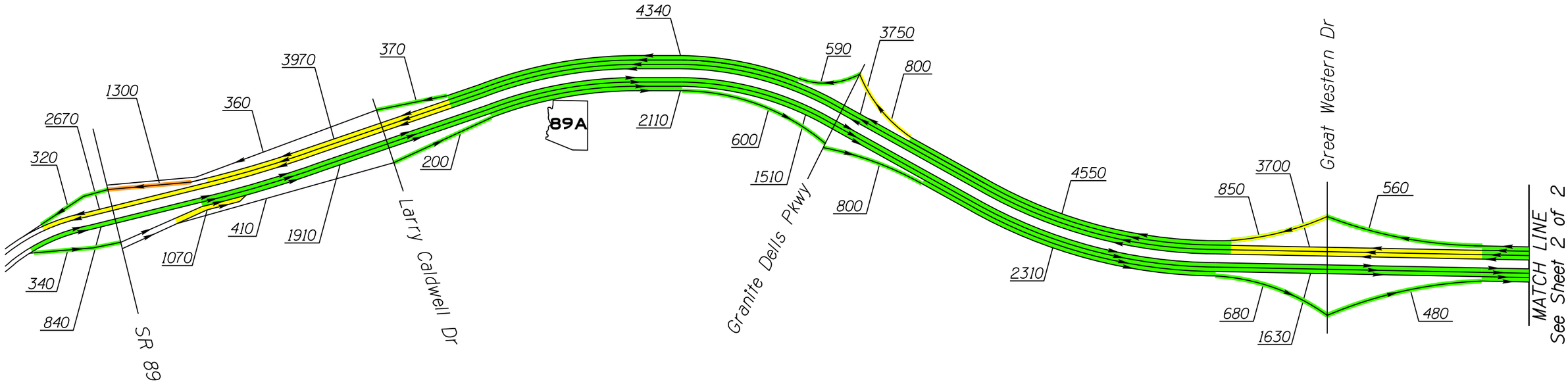
12/5/2017

LEGEND

XXX - 2035 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A 2035 RECOMMENDED
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

12/5/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\Build\SR89A 2035 Build LOS AM.dgn

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\Build\SR89A 2035 Build_LOS AM 2.dgn

12/5/2017

LEGEND

XXX - 2035 AM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

N

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

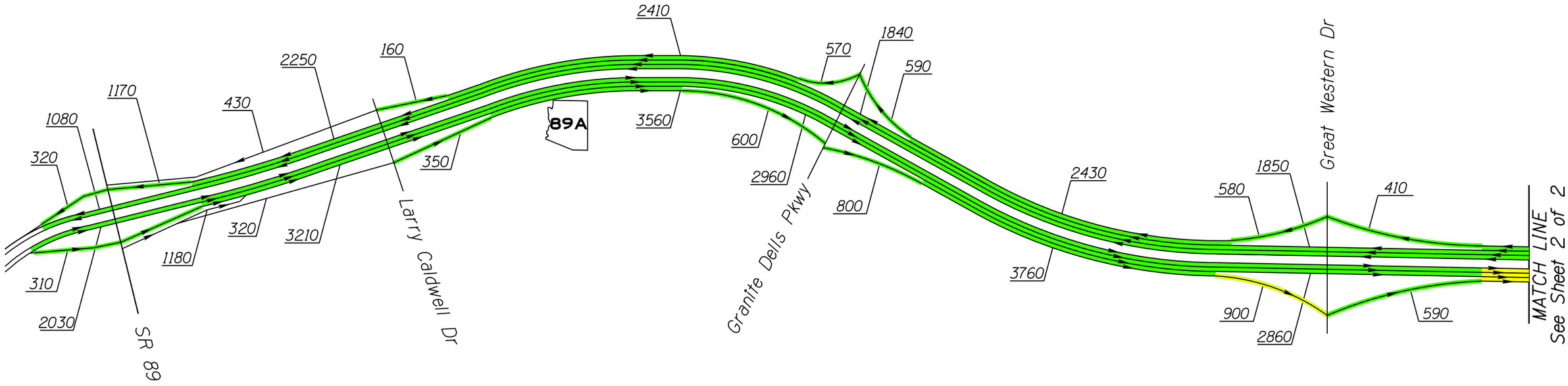
SR 89A 2035 RECOMMENDED
AM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

LEGEND

XXX - 2035 PM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F



SR 89A 2035 RECOMMENDED
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 1 OF 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

12/5/2017 P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\Build\SR89A 2035 Build_LOS PM.dgn

LEGEND

XXX - 2035 PM Peak Hour Volumes

LEVEL OF SERVICE

A	B	C	D	E	F

N

SR 89A

1290

250

1040

800

1840

1360

480

900

2260

MATCH LINE
See Sheet 1 of 2

3450

1150

Glassford Hill Rd

2300

750

3050

89A

1570

N Viewpoint Dr

1480

230

1710

Fain Rd

Robert Rd

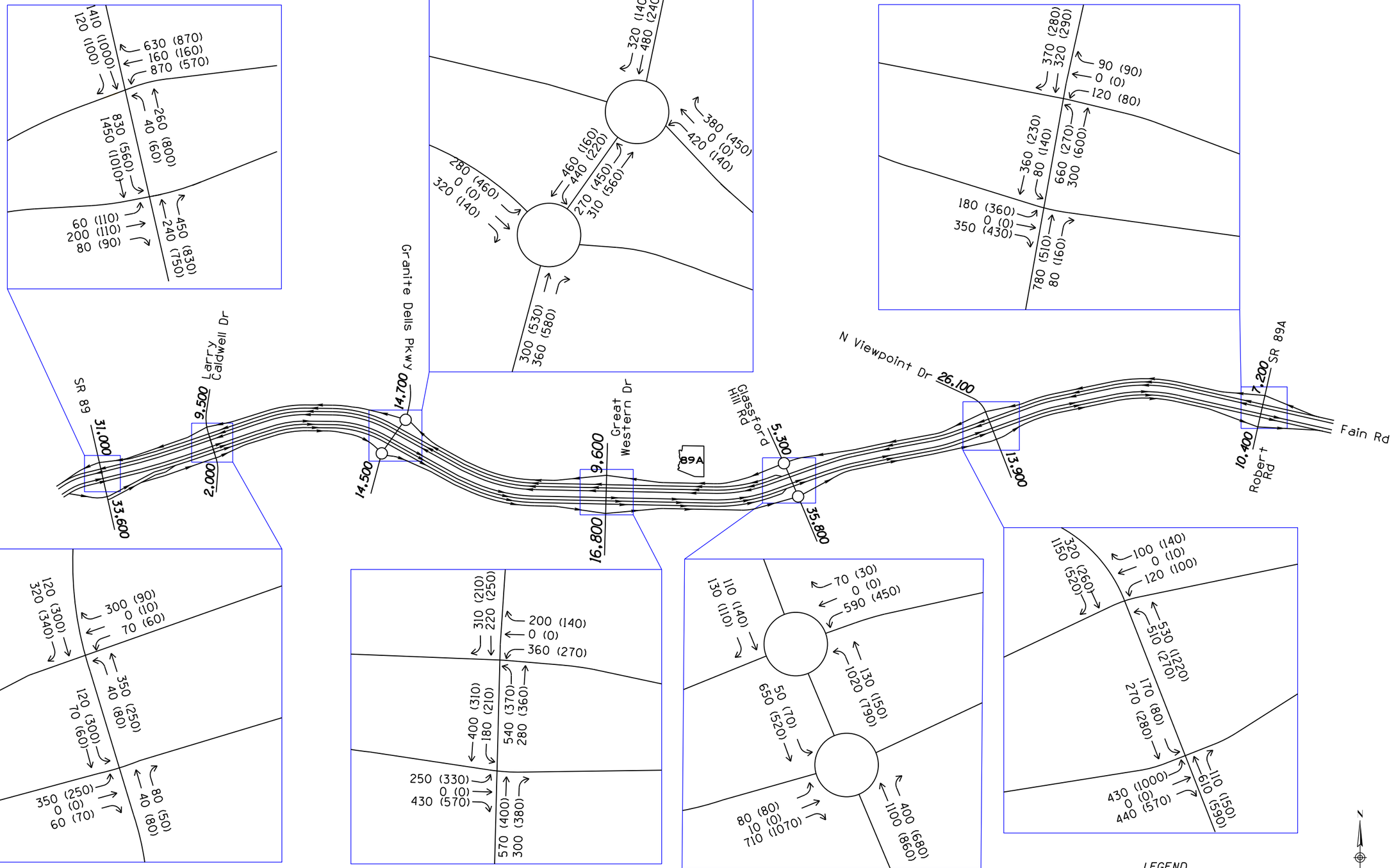
SR 89A 2035 RECOMMENDED
PM Peak Hour
LEVEL-OF-SERVICE
SHEET 2 OF 2

SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

12/5/2017

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\Build\SR89A 2035 Build_LOS PM 2.dgn



2035 Recommended
SR 89A (SR 89 To Fain Rd)

NOT TO SCALE - SCHEMATIC ONLY

LEGEND

XXX (XXX) - 2035 AM (PM) Peak Hour Volumes

XXXX - 2035 Average Daily Traffic (Bidirectional)

N

2/15/2018

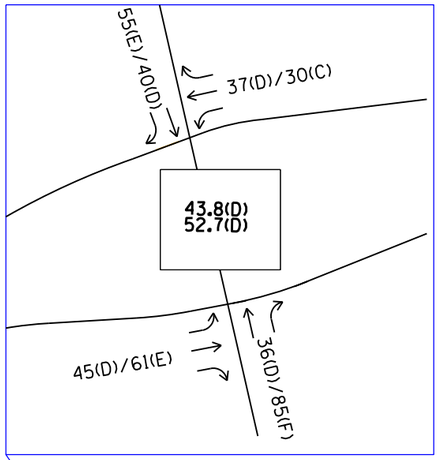
P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\Build\SR89A 2035 Build Volume Diagram.dgn

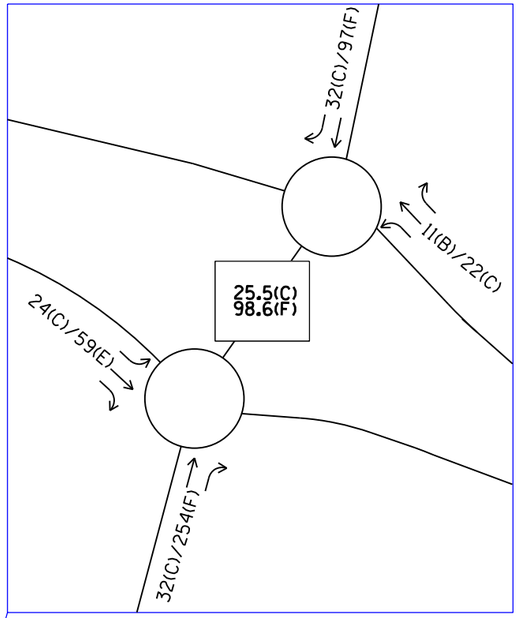
P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\25 SKETCHES\2035\Build\SR89A 2035 Build.LOS Diagram.dgn

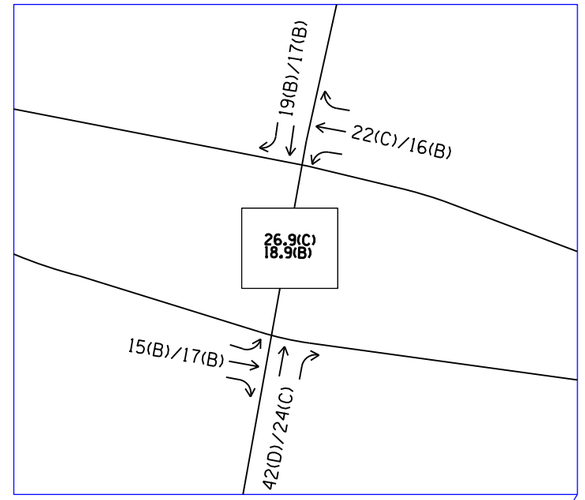
12/5/2017

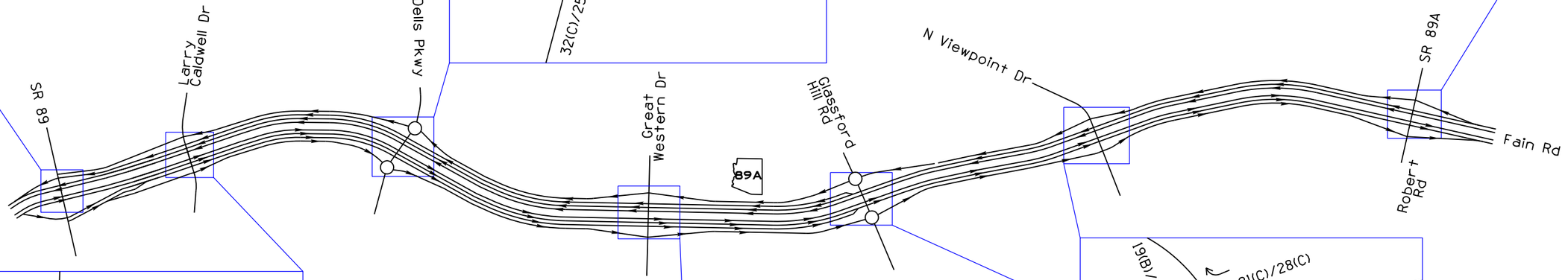
2035 Recommended
SR 89A (SR 89 To Fain Rd)

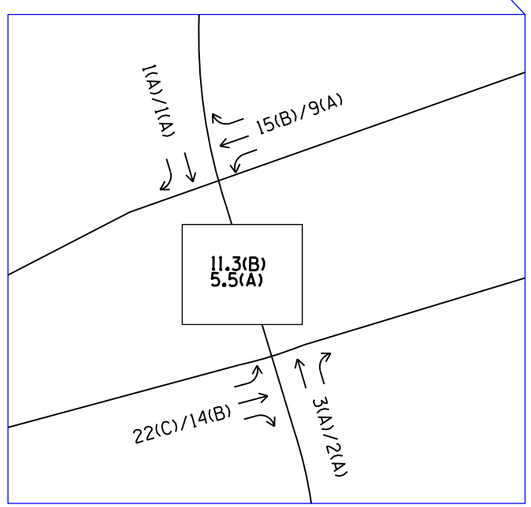
NOT TO SCALE - SCHEMATIC ONLY

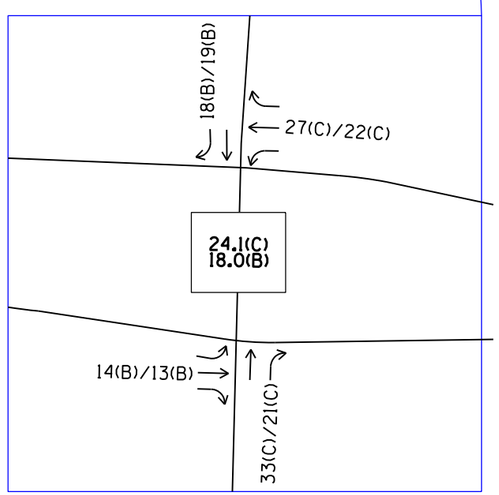


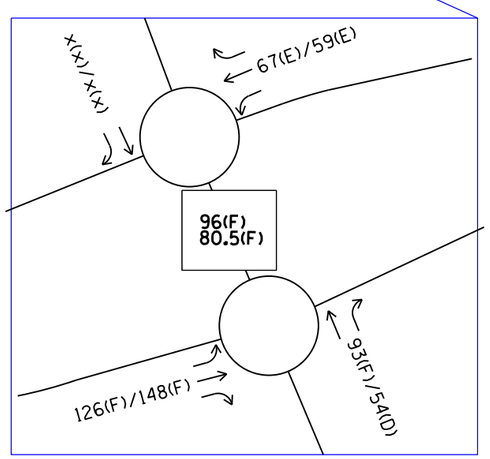


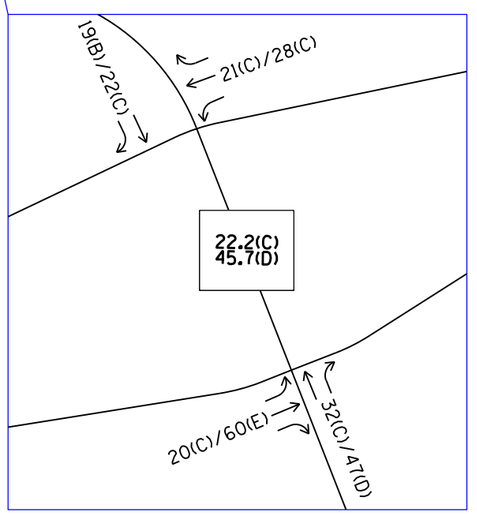












LEGEND

XXX (X)/XXX (X) - 2035 AM Delay (LOS)/PM Delay (LOS)
XXXX (X) *- 2035 AM Total Intersection Delay (LOS)*
XXXX (X) *- 2035 PM Total Intersection Delay (LOS)*

Appendix 8 – Public Outreach Report Appendices

Appendix A: News Release

ADOT Project #: P170106P. Fed Aid #: MPD-S(017)

ADOT

Public invited to help plan SR 89A corridor improvements in Prescott Valley

Arizona Department of Transportation sent this bulletin at 11/30/2017 02:17 PM MST. If you would like alerts on this and other ADOT news, sign up above to receive our GovDelivery notices.

Having trouble viewing this email? https://content.govdelivery.com/accounts/AZDOT/bulletins/1c8a9c1

ADOT

SHARE

Arizona Department of Transportation and local agencies plan to improve State Route 89A corridor

The Arizona Department of Transportation (ADOT) and partnering agencies including the Central Yavapai Metropolitan Planning Organization and Yavapai County are conducting a transportation planning study along State Route 89A from State Route 89 to east of Robert Road. The purpose of the study is to identify potential transportation improvements for the next 20 years as housing and commercial developments are anticipated to increase traffic volumes in the area.

ADOT will host a public meeting regarding the study on **Tuesday, Dec. 12, from 6 to 7:30 p.m. at the Town of Prescott Valley Public Library located at 7401 E. Civic Circle, Prescott Valley, Ariz., 86314.** A brief presentation will start at 6:15 p.m. followed by an open-house setting that will allow participants to speak directly with ADOT representatives. The public is encouraged to attend and provide comments.

Learn more about the study at:www.azdot.gov/SR89RobertRoadStudy . If you are unable to attend the meeting but would like to comment, you can do so before Dec. 31 in the following ways:

- By telephone: 855.712.8530
- By email:Projects@azdot.gov
- In writing: State Route 89A Study, 206 S. 17th Avenue, MD310B, Phoenix, AZ 85007

Pursuant to Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA), ADOT does not discriminate on the basis of race, color, national origin, age, sex or disability. Persons who require a reasonable accommodation based on language or disability should contact Michele Beggs at 928.681.6054 or MBeggs@azdot.gov. Requests should be made as early as possible to ensure the State has an opportunity to address the accommodation.

De acuerdo con el título VI de la Ley de Derechos Civiles de 1964 y la Ley de Estadounidenses con Discapacidades (ADA por sus siglas en inglés), el Departamento de Transporte de Arizona (ADOT por sus siglas en inglés) no discrimina por raza, color, nacionalidad, edad, género o discapacidad. Personas que requieren asistencia (dentro de lo razonable) ya sea por el idioma o por discapacidad deben ponerse en contacto con Michele Beggs al 928.681.6054 o en MBeggs@azdot.gov. Las solicitudes deben hacerse lo más pronto posible para asegurar que el equipo encargado del proyecto tenga la oportunidad de hacer los arreglos necesarios.

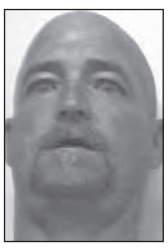
Schedules are subject to change based on weather and other unforeseen factors. For more information, please call the ADOT Project Information Line at 855.712.8530 or email Projects@azdot.gov. For real-time highway conditions statewide, visit ADOT's Traveler Information Site at www.az511.gov, follow ADOT on Twitter (@ArizonaDOT) or call 511, except while driving.

Appendix B: Newspaper Advertisement

ADOT Project #: P170106P. Fed Aid #: MPD-S(017)

CATCH 22: DAY 3

56-year-old wanted for possession of a firearm, drug violations


Lukasik

Today the Clarkdale police are asking for help in locating, John Gregory Lukasik. He is a 56-year-old Caucasian who is 6/4 and weighs about 210 pounds. His last known address was in Cottonwood on South 18th Street.

He is wanted on several charges including possession of a firearm during the commission of a felony, drug violations and for displaying photographs of another person without their permission (invasion of privacy).

If you have information that leads to the arrest of #3 of "CATCH 22" you could earn a $500.00 cash reward. To earn the reward, you must call Yavapai Silent Witness at 1-800-932-3232 with your information within 90 days of this broadcast. Remember, you never have to give your name.

Prescott in Brief

A #METOO rally set for Dec. 6 at courthouse plaza

The Prescott Indivisible Human Rights Team is putting on a #METOO rally from 4 to 5 p.m. Wednesday, Dec. 6, at the Yavapai Count Courthouse Plaza in Prescott. The team requests rally members bring signs supporting women, opposing sexual harassment and violence.

Blood Drive at St. Luke's on Dec. 6

Make your appointment now to donate blood on Wednesday, Dec. 6, between the hours of 10 a.m. and 2 p.m. at St. Luke's Episcopal Church. When you give blood, you will receive a voucher for a free 14" cheese pizza, donated by Streets of New York. To schedule an appointment, please visit www.blood-hero.com (Sponsor code: StLukesEC). For questions, please Contact Charlotte Willman at 928-778-4499 or Darrell Anderson at 928-710-8932. St. Luke's Episcopal Church is located at 2000 Shepherds Lane, Prescott (near the airport, at 89 and Ruger Road).

Free Christmas concert and nativity display Dec. 10

Capture more of the Christmas spirit this season by attending the sixth annual Community Christmas Concert and Nativity Display. The live concert will feature traditional music celebrating the birth of Jesus Christ. This free concert and singing celebration is hosted by the Prescott Valley Arizona Stake of The Church of Jesus Christ of Latter-day Saints. The concert begins at 7 p.m. on Sunday, Dec. 10, in the LDS Stake Center Chapel located at 7073 Pronghorn Ranch Parkway in Prescott Valley near the intersection of Highway 89A and Viewpoint Drive. The program will include a choir and orchestra under the direction of Glennis Miller. The public will be invited to join the choir in the singing of traditional Christmas carols. The doors open at 5:45 p.m. to view nativity sets from around the world. Refreshments will be served after the program.

Obituary Notices

Warren E. Zarder, Sr., 82, born May 26, 1935, in Milwaukee, Wisc., died November 25, 2017, in Prescott, Ariz. Affordable Burial & Cremation, LLC, of Chino Valley, Ariz., handled all arrangements.

CAFMA promotes, hires employees

Two were promoted and six were hired by the Central Arizona Fire and Medical Authority during the agency's new hire/promotional ceremony Nov. 29. In this photo, Jenna McGuire pins a brand new firefighter badge on her husband Thaddeus. Those promoted include: Tim Snyder to Captain and Gordon Dibble to Engineer. New hires include: Keith Ryan (Firefighter), Thaddeus McGuire (Firefighter), Brett Mills (Fire Inspector I), Chris Peckham (Mechanic), Katie Reeves (Administrative Assistant I) and Jim Gillihan (Training Technician). (CAFMA/Courtesy)

Prescott seeks new members for Pedestrian, Bicycle and Traffic Advisory Committee

Applications due by Dec. 30

The Prescott City Council Appointment Committee is now accepting applications for citizens who are interested in serving on the Pedestrian, Bicycle and Traffic Advisory Committee.

A city news release states that those who have an interest in "creating a sustainable capital improvement plan toward the impact of pedestrian, bicycle and traffic issues" are being encouraged to apply for the committee.

"The City of Prescott would like you to serve on this board to help provide recommendations on matters related to public and traffic safety," the release added.

Committee members' terms will run through March 2020. Applicants must be residents of the City of Prescott.

"Advisory groups, boards, commissions and committees provide opportunities for citizens to take an active role in their local government," the news release stated.

Members are appointed by the Mayor and/or City Council. If there are more applicants than seats, the City Council Appointment Committee will review applications and sometimes conduct interviews with candidates in order to make recommendations to the full council for appointment.

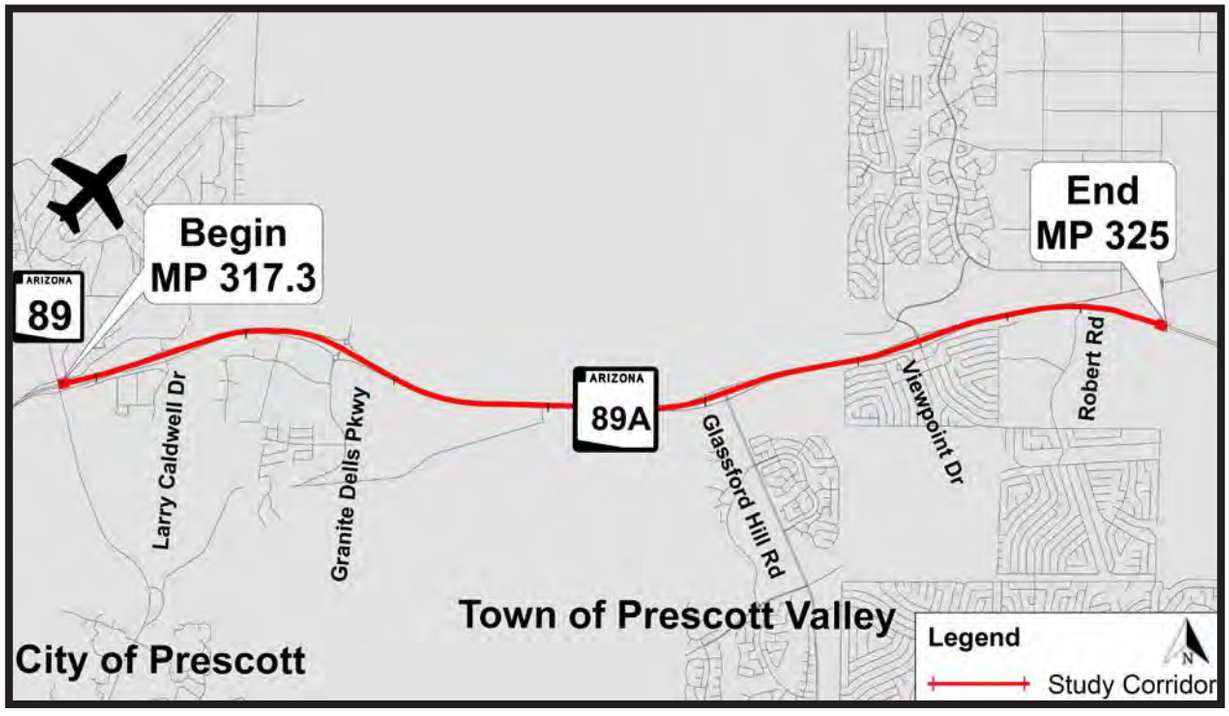
Applications are due to the city by Dec. 30.

More information (and the online application) is available by visiting the city's website at www.prescott-az.gov/leadership/boards, or by contacting the city clerk's office at 928-777-1272.

— The Daily Courier

State Route 89A Planning Study Public Meeting

Arizona Department of Transportation and local agencies plan to improve State Route 89A corridor



The Arizona Department of Transportation (ADOT) and partnering agencies including the Central Yavapai Metropolitan Planning Organization and Yavapai County are conducting a transportation planning study along State Route 89A from State Route 89 to east of Robert Road. The purpose of the study is to identify potential transportation improvements for the next 20 years as housing and commercial developments are anticipated to increase traffic volumes in the area.

ADOT will host a public meeting regarding the study on Tuesday, Dec. 12, from 6 to 7:30 p.m. at the Town of Prescott Valley Public Library located at 7401 E. Civic Circle, Prescott Valley, Ariz., 86314. A brief presentation will start at 6:15 p.m. followed by an open-house setting that will allow participants to speak directly with ADOT representatives. The public is encouraged to attend and provide comments.

Learn more about the study at: www.azdot.gov/SR89RobertRoadStudy. If you are unable to attend the meeting but would like to comment, you can do so before Dec. 31:

By telephone: 928.681.6054 **By email**: MBeggs@adot.gov **In writing**: State Route 89A Study, 3660 E. Andy Devine Ave., Kingman, AZ 86401

Pursuant to Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA), ADOT does not discriminate on the basis of race, color, national origin, age, sex or disability. Persons who require a reasonable accommodation based on language or disability should contact Michele Beggs at 928.681.6054 or MBeggs@azdot.gov. Requests should be made as early as possible to ensure the State has an opportunity to address the accommodation.

De acuerdo con el título VI de la Ley de Derechos Civiles de 1964 y la Ley de Estadounidenses con Discapacidades (ADA por sus siglas en inglés), el Departamento de Transporte de Arizona (ADOT por sus siglas en inglés) no discrimina por raza, color, nacionalidad, edad, género o discapacidad. Personas que requieren asistencia (dentro de lo razonable) ya sea por el idioma o por discapacidad deben ponerse en contacto con Michele Beggs al 928.681.6054 o en MBeggs@azdot.gov. Las solicitudes deben hacerse lo más pronto posible para asegurar que el equipo encargado del proyecto tenga la oportunidad de hacer los arreglos necesarios.

ADOT Project No. P170106P
Federal Aid No. MPD-S(017)

Appendix C: Flyer

ADOT Project #: P170106P. Fed Aid #: MPD-S(017)

ADOT

ADOT
Communications

Douglas A. Ducey, Governor
John S. Halikowski, Director
Timothy Tait, Communications Director

Arizona Department of Transportation and local agencies plan to improve State Route 89A corridor

The Arizona Department of Transportation (ADOT) and partnering agencies including the Central Yavapai Metropolitan Planning Organization and Yavapai County are conducting a transportation planning study along State Route 89A from State Route 89 to east of Robert Road. The purpose of the study is to identify potential transportation improvements for the next 20 years as housing and commercial developments are anticipated to increase traffic volumes in the area.

ADOT will host a public meeting regarding the study on Tuesday, Dec. 12, from 6 to 7:30 p.m. at the Town of Prescott Valley Public Library located at 7401 E. Civic Circle, Prescott Valley, Ariz., 86314. A brief presentation will start at 6:15 p.m. followed by an open-house setting that will allow participants to speak directly with ADOT representatives. The public is encouraged to attend and provide comments.

Learn more about the study at: *www.azdot.gov/SR89RobertRoadStudy*. If you are unable to attend the meeting but would like to comment, you can do so before Dec. 31:

By telephone: 928.681.6054
By email: MBeggs@adot.gov
In writing: State Route 89A Study, 3660 E. Andy Devine Ave., Kingman, AZ 86401

CYMPO
Central Yavapai Metropolitan Planning Organization

YAVAPAI COUNTY ARIZONA

ADOT Project #: P170106P. Fed Aid #: MPD-S(017)

VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA)
Pursuant to Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA), ADOT does not discriminate on the basis of race, color, national origin, age, sex or disability. Persons who require a reasonable accommodation based on language or disability should contact Michele Beggs at 928.681.6054 or MBeggs@azdot.gov. Requests should be made as early as possible to ensure the State has an opportunity to address the accommodation.

De acuerdo con el título VI de la Ley de Derechos Civiles de 1964 y la Ley de Estadounidenses con Discapacidades (ADA por sus siglas en inglés), el Departamento de Transporte de Arizona (ADOT por sus siglas en inglés) no discrimina por raza, color, nacionalidad, edad, género o discapacidad. Personas que requieren asistencia (dentro de lo razonable) ya sea por el idioma o por discapacidad deben ponerse en contacto con Michele Beggs al 928.681.6054 o en MBeggs@azdot.gov. Las solicitudes deben hacerse lo más pronto posible para asegurar que el equipo encargado del proyecto tenga la oportunidad de hacer los arreglos necesarios.

Appendix D: Postcard

ADOT Project #: P170106P. Fed Aid #: MPD-S(017)

ADOT

ADOT Multimodal Planning Division
206 S. 17th Avenue, MD310B
Phoenix, AZ 85007

The Arizona Department of Transportation and partnering agencies are conducting a transportation planning study along State Route 89A from State Route 89 to east of Robert Road (www.azdot.gov/SR89RobertRoadStudy). The study identifies potential transportation improvements for the next 20 years as housing and commercial developments are anticipated to increase traffic volumes. You are invited to a public meeting to provide comments on the study:

ADOT

Tuesday, Dec. 12
6 to 7:30 p.m.
Town of Prescott Valley Public Library
7401 E. Civic Circle
Prescott Valley, Ariz., 86314

Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA)
Pursuant to Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA), ADOT does not discriminate on the basis of race, color, national origin, age, sex or disability. Persons who require a reasonable accommodation based on language or disability should contact Michele Beggs at 928.681.6054 or MBeggs@azdot.gov. Requests should be made as early as possible to ensure the State has an opportunity to address the accommodation. De acuerdo con el título VI de la Ley de Derechos Civiles de 1964 y la Ley de Estadounidenses con Discapacidades (ADA por sus siglas en inglés), el Departamento de Transporte de Arizona (ADOT por sus siglas en inglés) no discrimina por raza, color, nacionalidad, edad, género o discapacidad. Personas que requieren asistencia (dentro de lo razonable) ya sea por el idioma o por discapacidad deben ponerse en contacto Michele Beggs 928.681.6054 o en MBeggs@azdot.gov. Las solicitudes deben hacerse lo más pronto posible para asegurar que el equipo encargado del proyecto tenga la oportunidad de hacer los arreglos necesarios.

Appendix E: Social Media

Appendix F: Other Publicity

ADOT Project #: P170106P. Fed Aid #: MPD-S(017)

ADOT

Weekly Team Update
Town of Prescott Valley

PRESCOTT VALLEY

Mayor:
Harvey Skoog

Vice Mayor:
Lora Lee Nye

Council Members:
Rick Anderson
Mary Mallory
Michael Whiting
Marty Grossman
Jodi Rooney

Town Manager:
Larry Tarkowski
759-3101

Community Development Director:
Richard Parker
759-3051

Human Resources Director:
Karen Smith
759-3004

Library Director:
Stuart Mattson
759-3041

Magistrate Court:
Judge Keith Carson
772-8277

Management Services Director:
Bill Kauppi
759-3127

Parks & Recreation Director:
Brian Witty
759-3091

Police Chief:
Bryan Jarrell
772-5115

Public Works Director:
Norm Davis
759-3071

Town Attorney:
Ivan Legler
759-3031

Town Clerk:
Diane Russell
759-3028

Utilities Director:
Neil Wadsworth
759-3078

Week Ending
December 8, 2017

- ***HOME/HTF Funds Awarded:*** The Community Development Department has been awarded $275,000 in HOME/HTF Funds from the Arizona Department of Housing. This marks the 15th year that Community Development has been awarded HOME funds by ADOH. These funds are available to rehabilitate owner-occupied homes within the Town of Prescott Valley, and to date, over 80 families in our community have been served directly by this program. The funds are available to low-moderate income homeowners, with an emphasis on elderly, single-parent, or households with disability. The income limit for a family of four is $43,850 per household or $35,100 for a family of two. Further information is available on the Community Development webpage or by contacting James Gardner at jgardner@pvaz.net or at 928-759-3058.

- ***PVPD Awarded Stipend:*** The 100 Club of Arizona awarded the Prescott Valley Police Department a stipend in the amount of $1,778. This stipend will fund officer safety equipment.

- ***December 18th Monday Night Movie - Wonder Woman (PG13)*** - An Amazon princess leaves her island home and journeys to the outside world, which is being consumed by a massive war. With the help of an American pilot, she works to put an end to the conflict. Runtime 141 minutes. Starts at 5:30 PM in the Prescott Valley Public Library Auditorium.

- ***Create A Tree displays are up!*** Did you miss the Create-A-Tree opening night display this past Friday? Never fear, you will have the opportunity to view all tree displays and vote for your favorite one all through December. The display with the most votes will receive the coveted "People's Choice" award. Be sure to head on over to the PV Library to check them out and show your support.

- ***GIVING TREE:*** Please join us in decorating the tree with new gloves, mittens, socks, scarves, and hats. You are also welcome to bring non-perishable food items to place under the tree. The *Wellness Team* will have this "Giving Tree" on display in **through Thursday, December 14th.** ***All "decorations" will be donated to our local Food Bank in hopes of brightening others' holiday season.***

Prescott Valley Fit for Life

Bringing Wellness for the Health of It!!

➢ ***ADOT – SR89A Corridor Study - Public Open House:*** ADOT is conducting a public open house meeting on Tuesday evening, **December 12th**, beginning at **6:00 pm** in the Prescott Valley Library Auditorium. Potential short and long term transportation improvements to the SR89A corridor between SR89 and Robert Road will be discussed at this meeting. The Public is encouraged to attend and give comments. See flyer below for more details.

Town Weekly Team Update Dec. 8, 2017

ADOT
Communications

Douglas A. Ducey, Governor
John S. Halikowski, Director
Timothy Tait, Communications Director

Arizona Department of Transportation and local agencies plan to improve State Route 89A corridor

The Arizona Department of Transportation (ADOT) and partnering agencies including the Central Yavapai Metropolitan Planning Organization and Yavapai County are conducting a transportation planning study along State Route 89A from State Route 69 to east of Robert Road. The purpose of the study is to identify potential transportation improvements for the next 20 years as housing and commercial developments are anticipated to increase traffic volumes in the area.

ADOT will host a public meeting regarding the study on Tuesday, Dec. 12, from 6 to 7:30 p.m. at the Town of Prescott Valley Public Library located at 7401 E. Civic Circle, Prescott Valley, Ariz., 86314. A brief presentation will start at 6:15 p.m. followed by an open-house setting that will allow participants to speak directly with ADOT representatives. The public is encouraged to attend and provide comments.

Learn more about the study at: www.azdot.gov/SR89RobertRoadStudy. If you are unable to attend the meeting but would like to comment, you can do so before Dec. 31:

By telephone: 928.681.6054
By email: MBeggs@azdot.gov
In writing: State Route 89A Study, 3860 E. Andy Devine Ave., Kingman, AZ 86401

CYMPO

ADOT Project #: P170106P, Fed Aid #: MPD-S(017)

VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA)
Pursuant to Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA), ADOT does not discriminate on the basis of race, color, national origin, age, sex or disability. Persons who require a reasonable accommodation based on language or disability should contact Michele Beggs at 928.681.6054 or MBeggs@azdot.gov. Requests should be made as early as possible to ensure the State has an opportunity to address the accommodation.

De acuerdo con el título VI de la Ley de Derechos Civiles de 1964 y la Ley de Estadounidenses con Discapacidades (ADA por sus siglas en inglés), el Departamento de Transporte de Arizona (ADOT por sus siglas en inglés) no discrimine por raza, color, nacionalidad, edad, género o discapacidad. Personas que requieran asistencia (dentro de lo razonable) ya sea por el idioma o por discapacidad deben ponerse en contacto con Michele Beggs al 928.681.6054 o en MBeggs@azdot.gov. Las solicitudes deben hacerse lo más pronto posible para asegurar que el equipo encargado del proyecto tenga la oportunidad de hacer los arreglos necesarios.

ARIZONA DEPARTMENT OF TRANSPORTATION
206 S. 17th Ave. | Phoenix, AZ 85007 | azdot.gov

➢ ***Computer Classes:*** Registration is now open for the January 2018 PVPL Computer Classes. Check out the class offerings and register at pvlib.net, Computer Classes. Space is limited and registration is required.

➢ ***Ice skating:*** There will be ice skating all December long! Who's excited to dress up in their "vintage" 90's inspired wear? I know we are, so be sure to check the skate schedule to see what themed days you might be interested in. Please visit our website for a full listing of all out skate times or for a listing of our weekly times, call the ice skating hotline at 928-775-3165.

PRESCOTT VALLEY
TRIBUNE
December 20, 2017
PVTRIB.COM
INSIDE: Business leaders push for tax hike for schools, Page 8
14 PAGES

Changes coming to Highway 89A, but far in the future

Study produces plans with no funding

By SUE TONE
Prescott Valley Tribune

The Arizona Department of Transportation likes to plan its projects years in advance. At the Dec. 12 public meeting on the ADOT Highway 89A Study in the Prescott Valley Public Library auditorium, an audience of about 70 heard about the future projects in the agency's 5-, 10- and 20-year plans.

Large maps perched on easels showed five interchanges between Highway 89 to the west and the Robert Road intersection to the east with short-term, mid-term and long-term "fixes."

"There's no funding in the program for any of this," said Alvin Stump, district engineer for ADOT's Northwest District. "We need to know what the costs are – they are quite significant – so we are looking at all phases."

Glassford Hill Road, for instance, currently has 37,000 vehicles traveling through the Highway 89A interchange each year. Stump figures in another year, that number will reach 40,000. There's a lot ADOT can do in the short term, he added.

Following are some of the solutions defined by the study.

See HIGHWAY, page 9

Proposed concept for the intersection of Glassford Hill Rd. and 89A. (ADOT/Courtesy)

Highway 89 interchange: At the intersection with Highway 89, ADOT would like to add an additional eastbound left-turn lane with two lanes on the entrance ramp.

Glassford Hill interchange: In the short-term, add a second lane to the eastbound ramp, with a free-flowing right-turn lane. In the mid-term, build double roundabouts to facilitate mobility. No northbound road is planned for Glassford Hill Road north of Highway 89A.

Granite Dells interchange: Create a free-flowing right turn land going westbound.

Great Western interchange: At the moment there is a dirt access road to get to the water tanks. This access will be eliminated with north-south roads at the interchange. The plan is eventually to connect Great Western north all the way to Chino Valley. Long-term plans include minimal roundabout modifications.

Glassford Hill interchange: ADOT would like to extend the on-ramp heading west for safer travel. Heading east and making a right turn onto Glassford Hill will be easier with a free-flowing right-turn lane.

"Depending on timing, it will need some significant changes," Stump said. ADOT's long-term plans include two roundabouts to handle traffic flow.

Viewpoint interchange: ADOT would like to extend two lanes westbound for safer merging, and add a second lane to the eastbound exit ramp left-turn lanes.

Robert Road interchange: At some point there needs to be an interchange and an underpass under Highway 89A. ADOT is looking to move the interchange further east.

"Why move it out so far? I did that drive 10 times a week, heading west (on Highway 89A). I won't drive farther east to catch the highway to drive west," said PV resident Jim Loper.

Stump said this intersection now is similar to the Larry Caldwell exit's close proximity to other interchanges, causing problems with merging traffic.

Following the short presentation by Stump, he answered questions and invited people to use written comment cards or use markers directly on the long aerial map stretching across one wall.

With roundabouts planned for Glassford Hill Road, a member of the audience asked if this road, too, would go all the way to Chino Valley. Stump said no, the Great Western interchange has more room to extend.

"Can you point out where the growth will be?" another person asked.

Stump said around the airport, between Granite Dells and Glassford Hill on the south side, then paused. "Basically, there's development all over the place," he said.

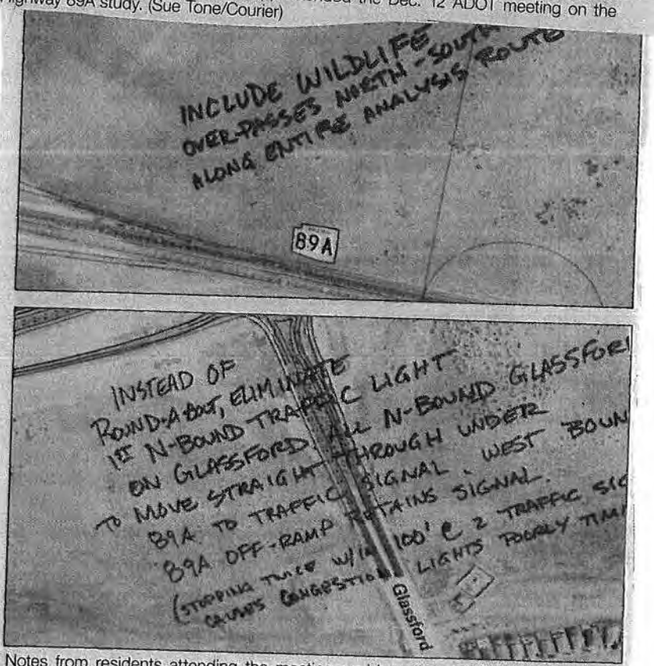
Connie Maudlin lives near Glassford Hill Road and Spouse. She said, so far, the plan looked pretty good. "I would like to see a road go out to Chino."

Loper said he thought more people will drive to Viewpoint as an alternative to Robert Road when they head west to Prescott. He thought moving the interchange to the east was a waste of money.

The traffic patterns along the corridor are growing at about 5 percent annually, the study indicated. ADOT anticipates an escalation in congestion along the 7.7-mile corridor. People may comment up to Dec. 31 by telephone to 928-681-6054 or email to MBeggs@adot.gov.

Follow Sue Tone on Twitter @ToneNotes. Reach her at stone@prescottaz.com or 928-445-3333, ext. 2043.

Sue Mapp lives south of Highway 89A and would like to see a second left turn lane at Robert Road put in "ASAP!" Mapp attended the Dec. 12 ADOT meeting on the Highway 89A study. (Sue Tone/Courier)



Notes from residents attending the meeting on ideas they would implement. (Sue Tone/Courier)

Appendix G: Meeting Materials

ADOT Project #: P170106P. Fed Aid #: MPD-S(017)

ADOT

STATE ROUTE 89A - State Route 89 to Robert Road Transportation Study

Overview The Arizona Department of Transportation and partnering agencies including the Central Yavapai Metropolitan Planning Organization and Yavapai County are conducting a transportation planning study along State Route 89A from State Route 89 to east of Robert Road.

Need for the Study The purpose of the study is to identify potential transportation improvements for the next 20 years as housing and commercial developments are anticipated to increase traffic volumes in the area.

The Average Annual Daily Traffic within the corridor is approximately 26,000 vehicles, which increases about 5% annually. New housing developments are underway at the Granite Dells Parkway traffic interchange and west of Glassford Hill Road (south of SR 89A); other areas to the west of the study area have been rezoned for commercial use. Additionally, the City of Prescott approved the final plat for the Walden Ranch development at Larry Caldwell Drive. These factors are anticipated to escalate congestion concerns and may contribute towards an increase in safety needs along the study corridor.

ADOT CYMPO

Study Goals & Objectives The primary objectives of the study are to:

1. Identify the expansion needs for the corridor.
2. Prioritize the needs for the short- (5 year), mid- (10 year), and long-term (20-year).
3. Scope out and prepare 15% design plans for the short-term recommended solutions.

The below conceptual improvements are for public review and comment. Funding for construction has not yet been identified.

The public is encouraged to provide comments on the study before Dec. 31, 2017:

- **At the public meeting**
- **By telephone:** *855.712.8530*
- **By email:** *Projects@azdot.gov*
- **In writing:** *State Route 89A Study*
  206 S. 17th Avenue, MD310B,
  Phoenix, AZ 85007

Conceptual Improvements for Short-term Implementation

SR 89 Traffic Interchange	Additional eastbound left-turn lane. Eastbound entrance ramp reconfiguration (two lane entrance ramp).
Great Western Road	Existing access closed.
Glassford Hill Road Traffic Interchange	Westbound extended parallel entrance ramp. Eastbound exit ramp free right-turn lane.
Viewpoint Drive Traffic Interchange	Westbound entrance ramp extension of second lane and eastbound exit ramp dual left-turn.

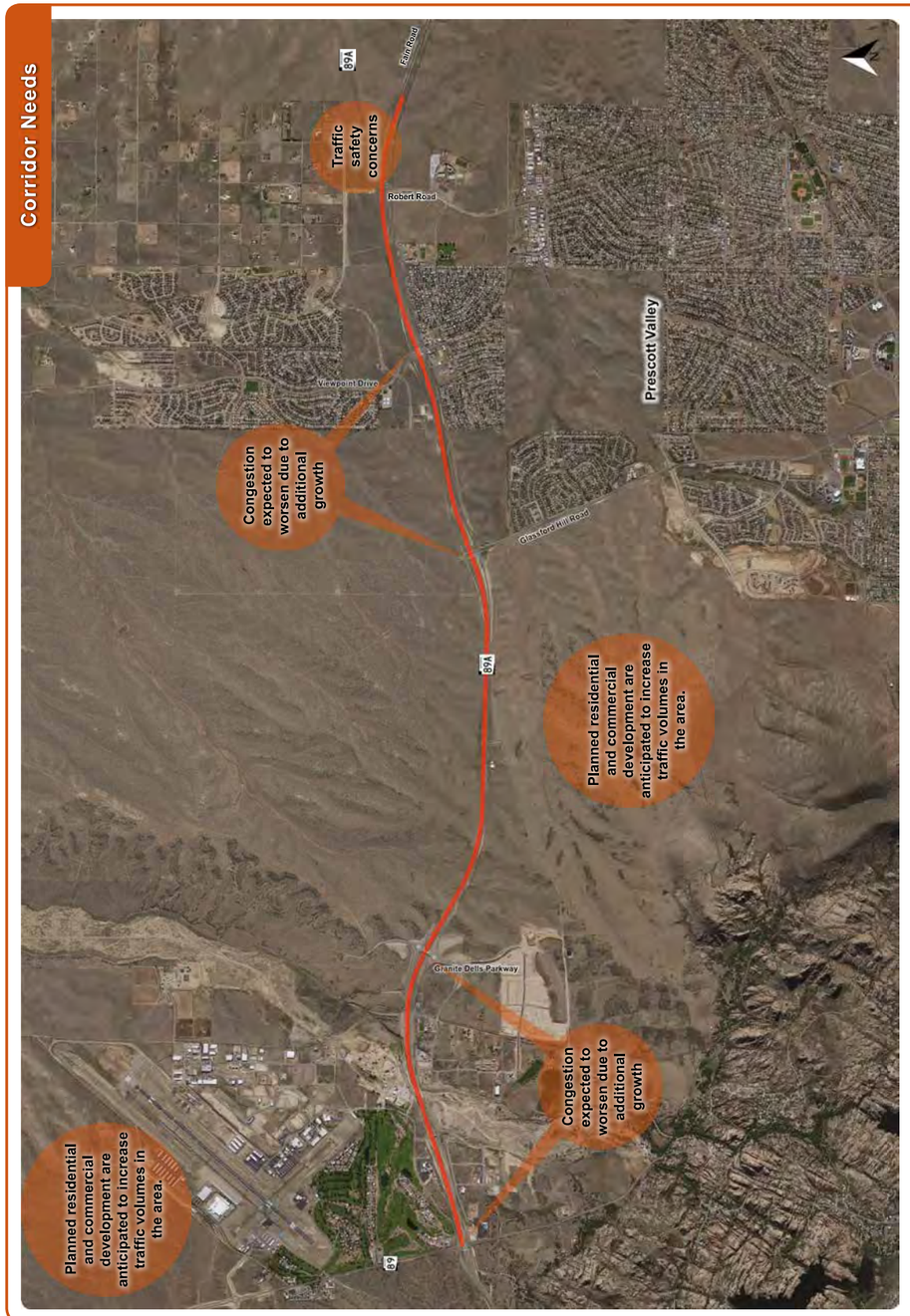
Conceptual Improvements for Mid-term Implementation

SR 89A Mainline	Additional general purpose lane in both eastbound and westbound directions between the SR 89 traffic interchange and Glassford Hill Road traffic interchange.
Great Western Road Traffic Interchange	New traffic interchange.
Robert Road Intersection	Convert to traffic interchange. Construct all critical connecting access roads to the new alignment of Robert Road.
Glassford Hill Road Traffic Interchange	Convert signalized intersections to roundabouts.

Conceptual Improvements for Long-term Implementation

SR 89A Mainline	Additional general purpose lane in both eastbound and westbound directions between the Glassford Hill Road traffic interchange and Robert Road traffic interchange.
Granite Dells Parkway Traffic Interchange	Minimal roundabout modifications.

Corridor Needs



AECOM ADOT

STATE ROUTE 89A - State Route 89 to Robert Road Transportation Study

ARIZONA 89A

State Route 89A Study– Public Meeting Comment Form

TUESDAY, DECEMBER 12, 2017 | 6–7:30 P.M.
PRESCOTT VALLEY PUBLIC LIBRARY | 7401 E. CIVIC CIRCLE | PRESCOTT VALLEY, AZ

Public comments are an important part of this project and will be reviewed by the project team. **Comments received by December 31, 2017 will be included in the summary of this public meeting.** Please comment in the space provided below. Please print clearly.

Contact Information (optional*)

Name: _____

Address: _____

Phone: _____

Email Address: _____

☐ **Please check this box if you would like to receive email updates on this project.**

Thank you for your participation. Send in completed form by mail by December 31, 2017 to:
c/o State Route 89A Study, 3660 E. Andy Devine Ave., Kingman, AZ 86401

Or comment by **telephone:** 928.681.6054 or **email:** MBeggs@adot.gov

Completion of this form is completely voluntary and helps the project team keep an accurate record of comments. Under state law, any identifying information provided will become part of the public record and, as such, must be released to any individual upon request.

ADOT

ADOT Project #P170106P
Federal Aid #MPD-S(017)



SR 89A, SR 89 to Robert Road Transportation Study

Public Meeting

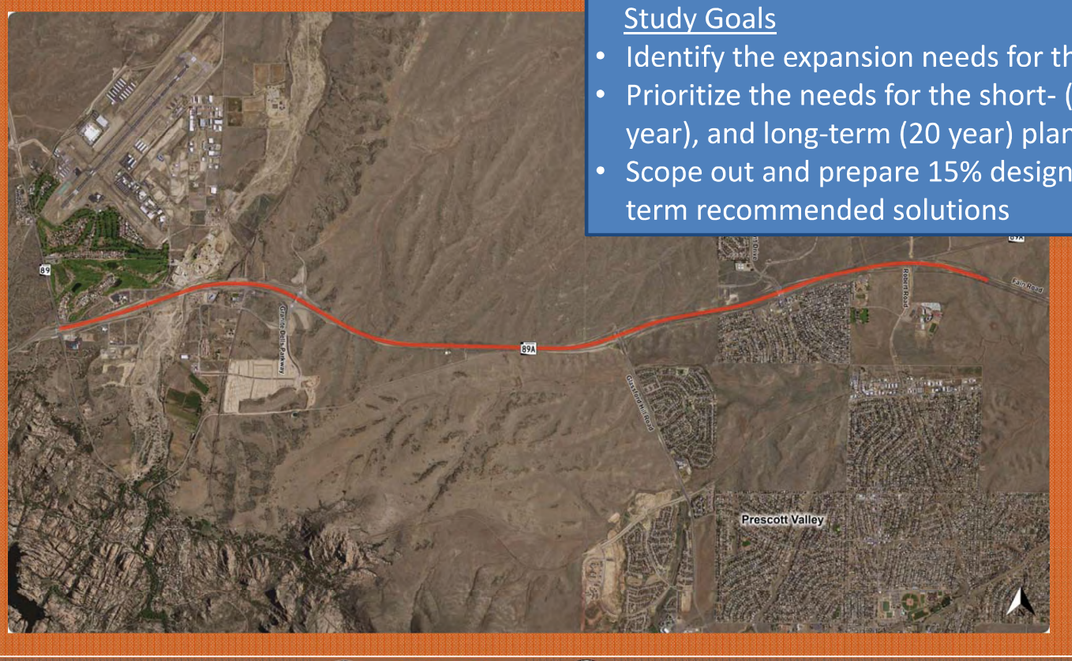
December 12, 2017
Town of Prescott Valley Library

CYMPO Central Yavapai Metropolitan Planning Organization ADOT AECOM

Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA)
Pursuant to Title VI of the Civil Rights Act of 1964 and the Americans with Disabilities Act (ADA), ADOT does not discriminate on the basis of race, color, national origin, age, sex or disability. Persons who require a reasonable accommodation based on language or disability should contact Michele Beggs at mbeggs@azdot.gov . Requests should be made as early as possible to ensure the State has an opportunity to address the accommodation.

De acuerdo con el título VI de la Ley de Derechos Civiles de 1964 y la Ley de Estadounidenses con Discapacidades (ADA por sus siglas en inglés), el Departamento de Transporte de Arizona (ADOT por sus siglas en inglés) no discrimina por raza, color, nacionalidad, edad, género o discapacidad. Personas que requieren asistencia (dentro de lo razonable) ya sea por el idioma o por discapacidad deben ponerse en contacto [insert name of appropriate person at ADOT and his/her telephone number] o en [insert email address of appropriate person at ADOT]. Las solicitudes deben hacerse lo más pronto posible para asegurar que el equipo encargado del proyecto tenga la oportunidad de hacer los arreglos necesarios.

Study Area and Goals



Study Goals

- Identify the expansion needs for the corridor
- Prioritize the needs for the short- (5 year), mid- (10 year), and long-term (20 year) planning horizons
- Scope out and prepare 15% design plans for the short-term recommended solutions

Corridor Needs

SR 89A Mainline Improvements

Improvement #1: SR89A Mainline Widening: MID-TERM to LONG-TERM IMPROVEMENT (varies)

- Today, there are two general purpose lanes in each direction in the corridor
- A third general purpose lane will be added in each direction
- Additionally, auxiliary lanes will be included between all interchanges

SR 89 Interchange Improvements

Improvement #1: Additional Eastbound Left-Turn Lane: SHORT-TERM IMPROVEMENT

- Today, the eastbound exit has 2 lanes at the intersection
  - One lane is a shared left/through
  - The other is a shared right/through
- This improvement creates an additional lane that would become a left-turn only lane

SR 89 Interchange Improvements

Improvement #2: Eastbound Entrance/Frontage Road Improvements: SHORT-TERM IMPROVEMENT

- Currently, it is difficult to merge onto the SR 89A using the outer-most left turn lane shown here
  - One lane connects to SR 89A
  - The other the other continues to the frontage road
- Additionally, the lack of barriers allows drivers cross the on-ramp illegally

- This improvement creates an additional lane on the entrance ramp and adds barriers to prevent drivers from crossing the ramp

Granite Dells Interchange Improvements

Improvement #1: Granite Dells Parkway Interchange: LONG-TERM IMPROVEMENT

- Granite Dells Parkway Interchange continues to work well into the future
- In the long term, minor adjustments may be needed

- For example, a southbound free right turn could be added

Great Western Drive Interchange

Improvement #1: Closure of Great Western Drive Access: SHORT-TERM IMPROVEMENT

- Today, there is a stop-sign controlled access to Great Western Drive in the area slated for development
- Once developers build an alternate access to the area, this access will be closed

Great Western Drive Interchange

Improvement #2: Construction of Great Western Traffic Interchange: MID-TERM IMPROVEMENT

- In the future, a new traffic interchange will be built at Great Western Drive to serve the new development and alleviate congestion at adjacent traffic interchanges

Glassford Hill Road Interchange

Improvement #1: Extending Westbound Parallel Entrance: SHORT-TERM IMPROVEMENT

- The westbound entrance from Glassford Hill Road has an acceleration lane when entering the freeway
- Today that acceleration lane is less than 500 feet long

- The acceleration lane will be extended to allow more time for vehicles to merge

Glassford Hill Road Interchange

Improvement #2: Eastbound Free Right Turn Lane: SHORT-TERM IMPROVEMENT

- In the evening, the eastbound right turn is the heaviest movement

- This improvement would add a receiving lane to southbound Glassford Hill, making the right turn “free”
- The free right turn would not conflict with other movements

ADOT AECOM CYMPO Central Yavapai Metropolitan Planning Organization
SR 89A, SR 89 to Robert Rd, Transportation Study

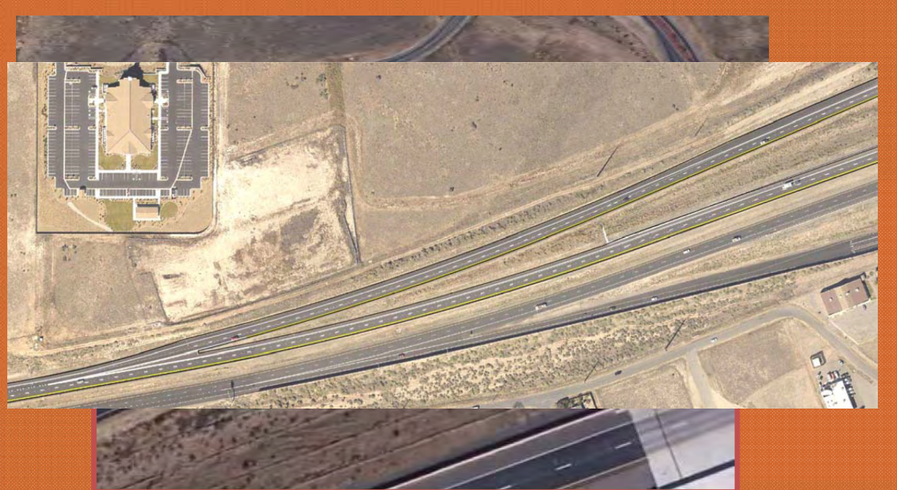
Glassford Hill Road Interchange

Improvement #3: Glassford Hill Road Roundabouts: MID-TERM IMPROVEMENT

- Future growth will continue to increase the congestion at Glassford Hill Road Interchange
- Converting the interchange to roundabouts will improve the mobility at this interchange

Viewpoint Drive Interchange

Improvement #1: Viewpoint Drive Westbound Entrance Ramp: SHORT-TERM IMPROVEMENT



- The westbound entrance ramp has 2 lanes, but only for a short distance
- This improvement will restripe the ramp to extend the second lane as far as possible

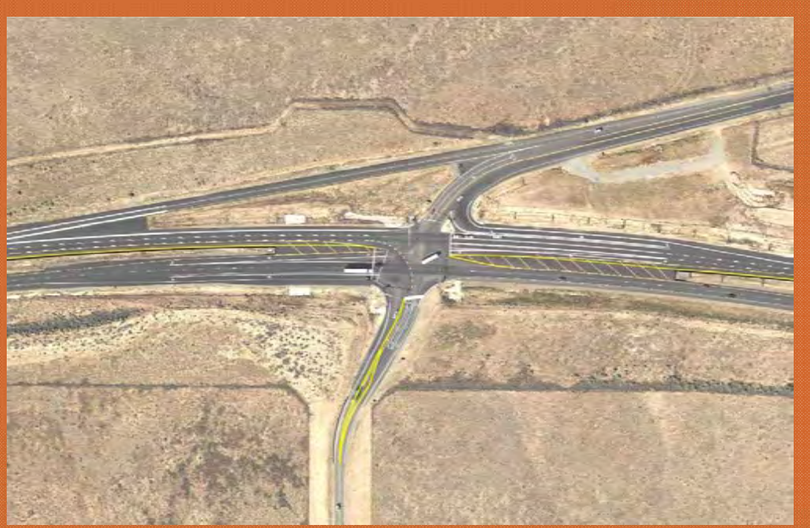
Viewpoint Drive Interchange

Improvement #2: Eastbound Dual Left Turns and Receiving Lanes: SHORT-TERM IMPROVEMENT

- At Viewpoint Drive, the eastbound approach currently has 1 left-turn lane
- With this improvement, the ramp will be re-striped to allow dual left turns here
- In addition, a northbound lane will be added to Viewpoint Drive to accommodate the dual lefts

Robert Road Intersection

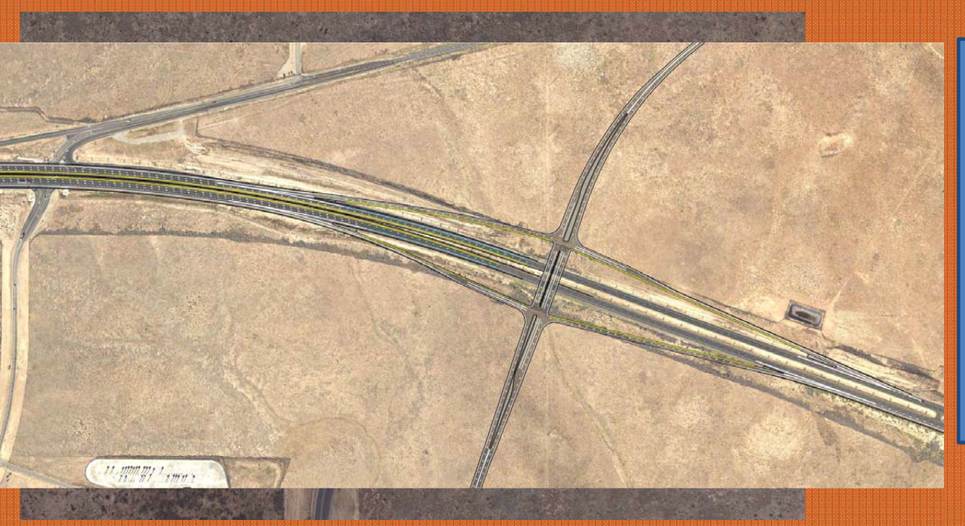
Improvement #1: Northbound Dual Left Turns and Safety Measures: SHORT-TERM IMPROVEMENT



- Robert Road, SR 89A, and Fain Road connect at an at-grade intersection
- In the short term, a second left-turn lane can be added to the northbound approach
- This improvement will include safety upgrades

Robert Road Intersection

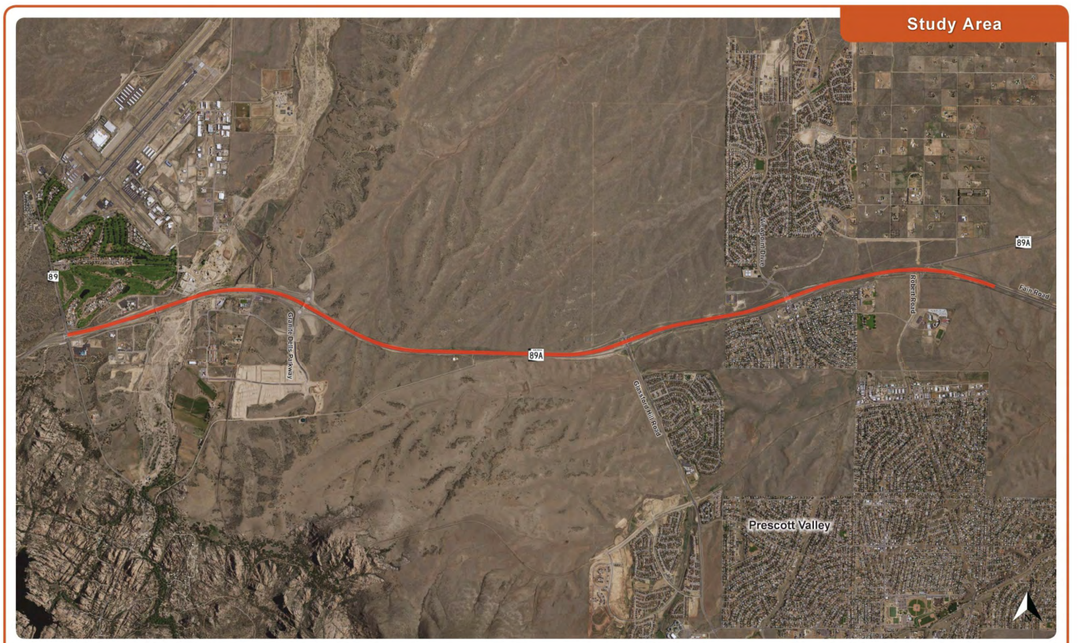
Improvement #2: Robert Road Traffic Interchange: MID-TERM IMPROVEMENT



- Robert Road, SR 89A, and Fain Road connect at an at-grade intersection
- This improvement creates a new traffic interchange east of the existing intersection
- Access to all existing properties will be maintained

ADOT AECOM CYMPO Central Yavapai Metropolitan Planning Organization

SR 89A, SR 89 to Robert Rd, Transportation Study



STUDY GOALS

The primary objectives of the study are to:

1. Identify the expansion needs for the corridor;
2. Prioritize the needs for the short- (5-year), mid- (10-year), and long-term (20-year) planning horizons; and
3. Scope out and prepare 15% design plans for the recommended solutions.

STATE ROUTE 89A - State Route 89 to Robert Road Transportation Study

AECOM CYMPO ADOT

Corridor Needs

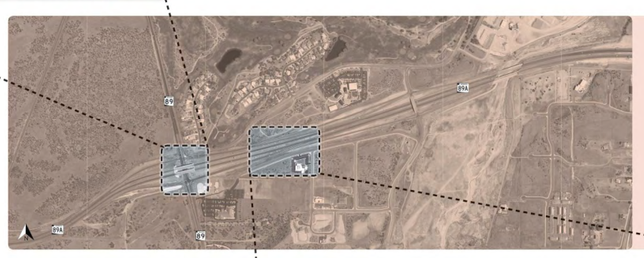
Existing Conditions

SR 89A/SR 89 Interchange

Conceptual Improvements

Short-term Improvement:

- Add a left-turn lane on the eastbound exit ramp



SR 89A/SR 89 Interchange Improvements

Short-term Improvement:

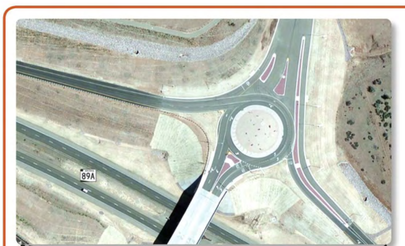
- Convert eastbound entrance to 2-lane entrance
- Include raised barriers between ramp and frontage road, preventing traffic from exiting illegally

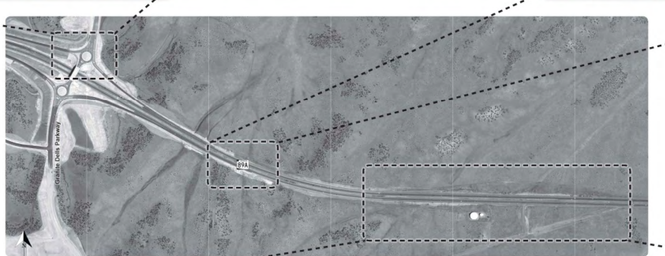
STATE ROUTE 89A - State Route 89 to Robert Road Transportation Study

AECOM CYMPO ADOT

Existing Conditions

SR 89A/Granite Dells Parkway Interchange





STATE ROUTE 89A - State Route 89 to Robert Road Transportation Study

AECOM CYMPO ADOT

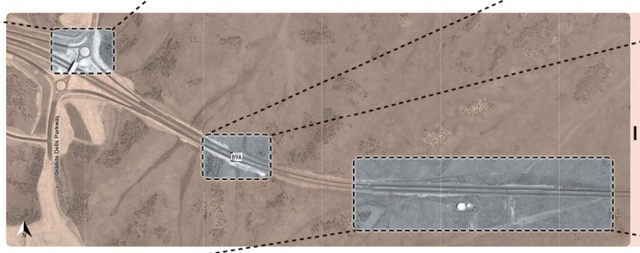
Conceptual Improvements

Mid-term to Long-term Improvement:

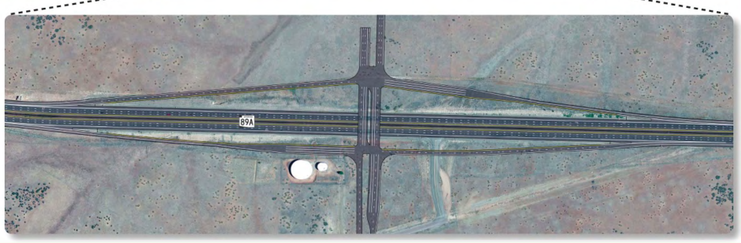
- Add a third through lane to SR 89A through the entire project corridor (SR 89 to Robert Road)
- This includes adding auxiliary lanes between all interchanges
- Recommended implementation varies by location, dependent upon need

Long-term Improvement:

- Minimal intersection lane adjustments



SR 89A/Granite Dells Parkway Interchange Improvements and Future Great Western Interchange

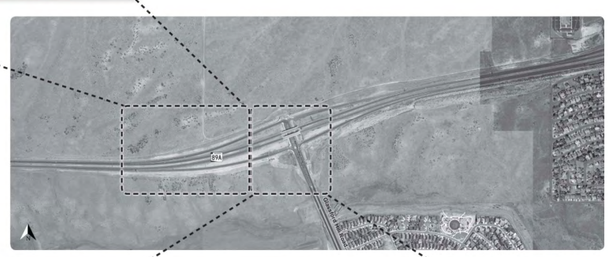


Mid-term Improvement:

- Build a new traffic interchange at Great Western Drive
- Prior to construction of the traffic interchange, remove current stop-controlled access to Great Western Drive

Existing Conditions

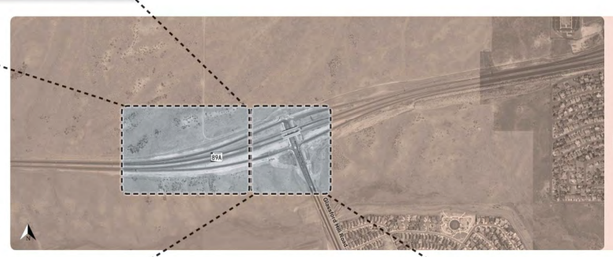
SR 89A/Glassford Hill Road Interchange



Conceptual Improvements

Short-term Improvement:

- Extend the entrance lane from Glassford Hill Road to westbound SR 89A to allow a longer distance for merging



SR 89A/ Glassford Hill Road Interchange Improvements

Short-term Improvement:

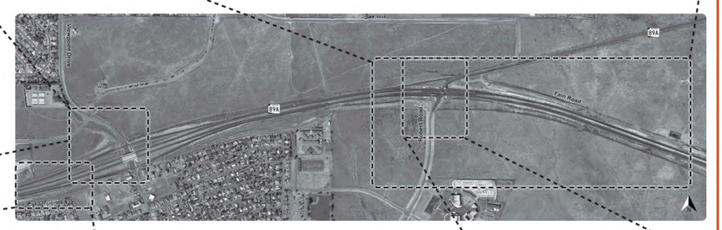
- Add a eastbound free moving right-turn onto Glassford Hill Road

Mid-term Improvement:

- Convert the SR 89A/Glassford Hill Road Interchange to double roundabouts to facilitate mobility

Existing Conditions

SR 89A/Viewpoint Drive Interchange and SR 89A/Robert Road/ Fain Road Intersection




Conceptual Improvements
Short-term Improvement:
• Re-stripe the Viewpoint Drive eastbound exit to include dual left-turns
• Re-stripe Viewpoint Drive under the SR 89A overpass to include two northbound lanes
• Add a second lane to northbound Viewpoint Drive between SR 89A and Pronghorn Ranch Parkway
Mid-term Improvement:
• Construct a new traffic interchange to replace the Robert Road/Fain Road/ SR 89A intersection
• The new interchange would be located east of the existing intersection
Improvements at SR 89A/Viewpoint Drive Interchange and SR 89A/Robert Road/ Fain Road Intersection
Short-term Improvement:
• Re-stripe the entrance ramp from Viewpoint Drive to westbound SR 89A to include 2 lanes for a longer distance
Short-term Improvement:
• Robert Road intersection improvements including one additional northbound approach left-turn lane
STATE ROUTE 89A - State Route 89 to Robert Road Transportation Study
AECOM
ADOT

ROLL PLOT


ADOT
CYMPO
AECOM

Appendix H: Formal Response to Comments

ADOT Project #: P170106P. Fed Aid #: MPD-S(017)

ADOT

ADOT

An Arizona Management System Agency

Infrastructure Delivery and Operations

Douglas A. Ducey, Governor
John S. Halikowski, Director
Dallas Hammit, State Engineer
Steve Boschen, Division Director

Jan. 12, 2018

Wayne Hassing
7468 N. Summit View Drive
Prescott Valley, AZ 86315

Subject: SR 89A Study Public Meeting

Dear Mr. Hassing:

On behalf of the Arizona Department of Transportation, we appreciate your participation, questions and comments regarding the State Route 89A Robert Road Study project.

In response to your question about a developer funded traffic interchange at Great Western on SR 89A, please note that the developer is not accessing the state highway system directly. The developer is accessing SR 89A by Glassford Hill, which is a town road. Therefore ADOT doesn't have the ability to require mitigation from the developer. If in the future the developer asks for state highway access, then ADOT will require developer contribution.

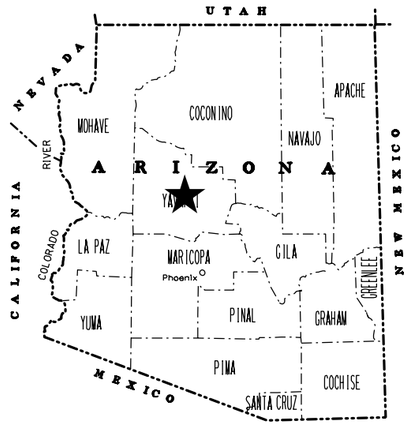
We agree with your statement regarding the need for new pavement rehabilitation on SR 89A, from Fain Road to SR 89 and have listed it as need on list of priorities. At this time, however, no money has been designated for a full pavement preservation project in this area. Our maintenance crews will continue ongoing road inspections and conduct any necessary repairs. Although there is no current funding for new pavement, ADOT routinely performs pavement flushes and crack seals to extend the life of the pavement.

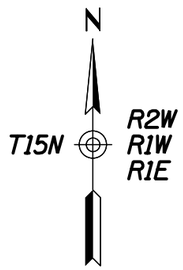
Please let me know if you have additional questions. Thank you again for participating in our public meeting and reaching out to ADOT with your concerns.

Sincerely,

Alvin Stump, P.E.
Northwest District Engineer
1109 Commerce Dr.
Prescott, AZ 86305

Appendix 9 – 15% Design Plans for Selected Recommendations



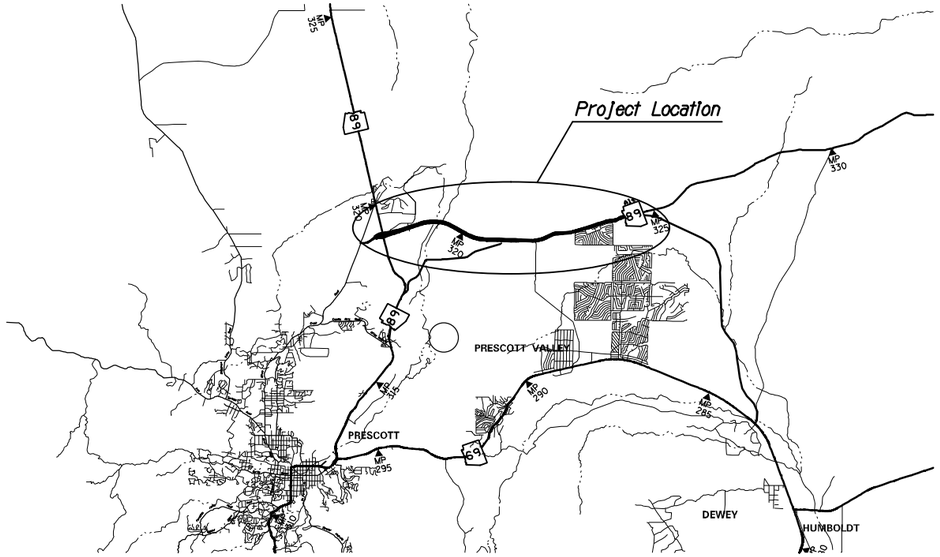


STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION

ADOT

PROJECT PLANS

STATE HIGHWAY
PRESCOTT–FLAGSTAFF HIGHWAY
STATE ROUTE 89A



STAGE I DESIGN SUBMITTAL
15% COMPLETE
FEBRUARY, 2018

SHORT–TERM PROJECTS

SR 89A TRANSPORTATION STUDY
SR 89 TO ROBERT ROAD

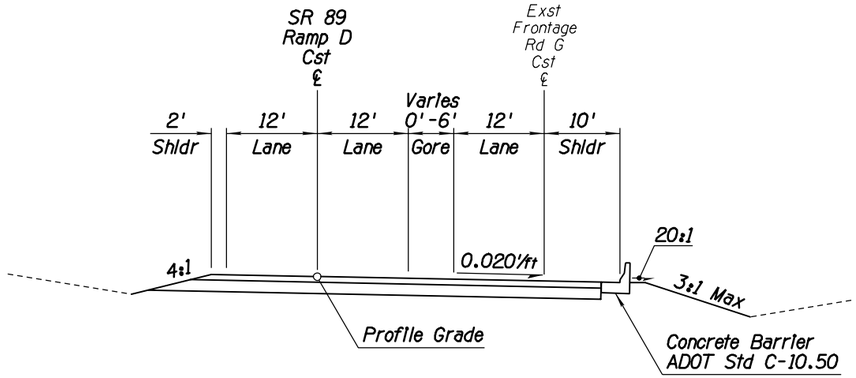
PROJECT NO.: P170106P
FEDERAL AID NO.: MPD–S(017)

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
DALLAS HAMMIT, P.E., STATE ENGINEER

REC. DWGS. DATA	REC. DWG. DATE	_____ OF _____

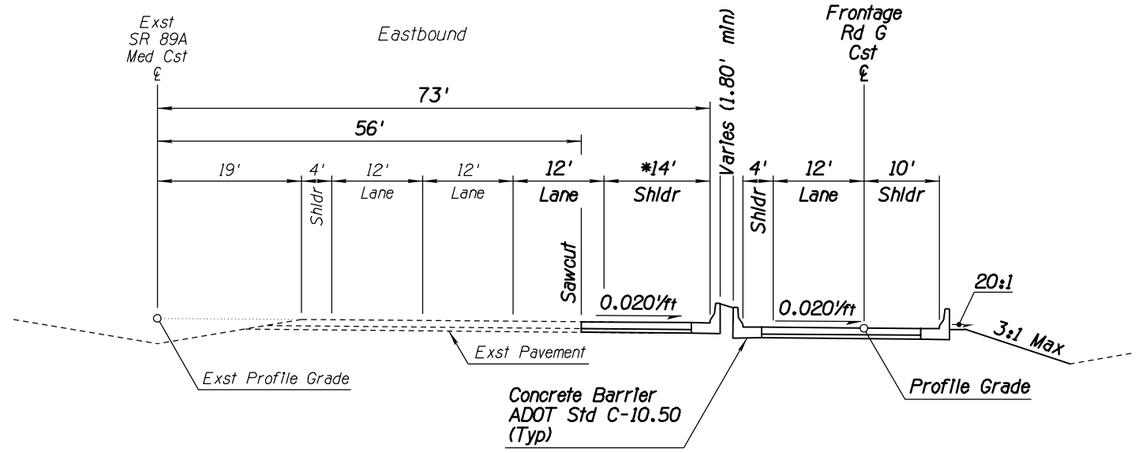
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



TYPICAL SECTION - SR 89 Ramp D

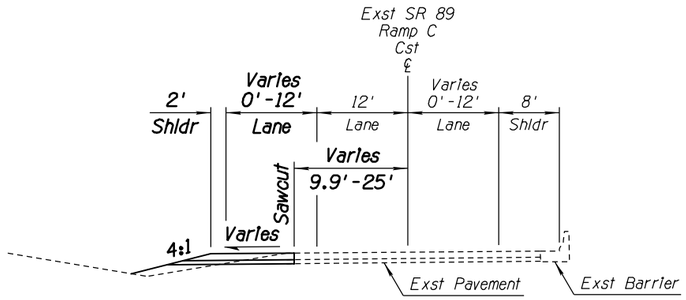
Sta 23+14.28 to Sta 28+29.98



TYPICAL SECTION - SR 89A & Frontage Rd G

Sta 353+30.88 to Sta 362+00.00

* *Using 14' Shoulder to Accommodate Future Widening*



TYPICAL SECTION - Exst SR 89 Ramp C

Sta 21+95.51 to Sta 26+01.27

PROJECT A

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

TYPICAL SECTIONS
PROJECT A

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD
DWG NO. C-01.01

TRACS NO. | P170106P | ___ OF ___

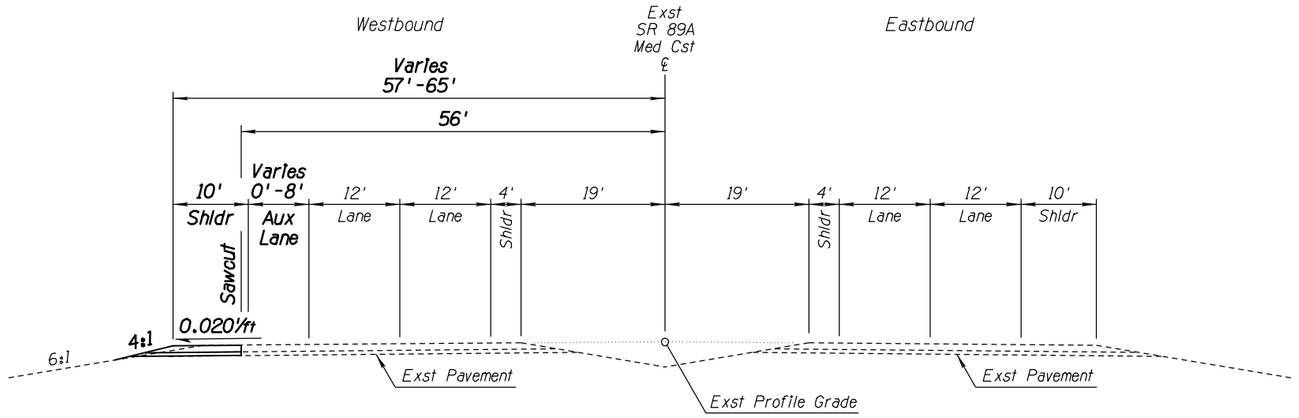
DATE- | LOCATION- | REVISIONS- | FINISHED PLANS- | SURVEY NO.

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxtyp01.dgn
3/14/2018 @ 11:37:13 AM kingn

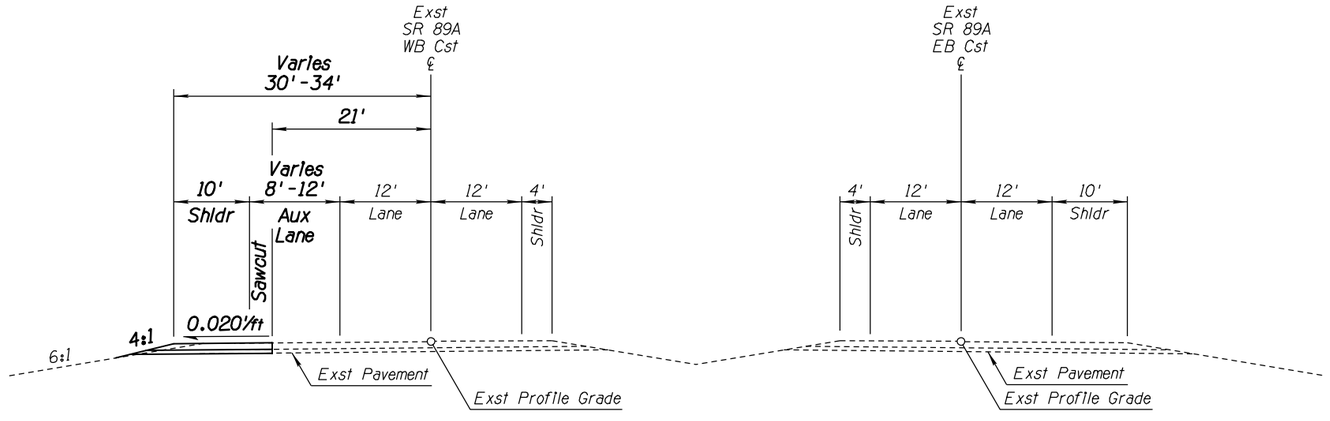
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



TYPICAL SECTION - SR 89A

Med Sta 521+69.94 to Med Sta 526+99.94



TYPICAL SECTION - SR 89A

WB Sta 527+00.00 to WB Sta 536+45.72

PROJECT B

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N. 16th St. Suite 150
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

TYPICAL SECTIONS
PROJECT B

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-01.02

TRACS NO. | P170106P | ___ OF ___

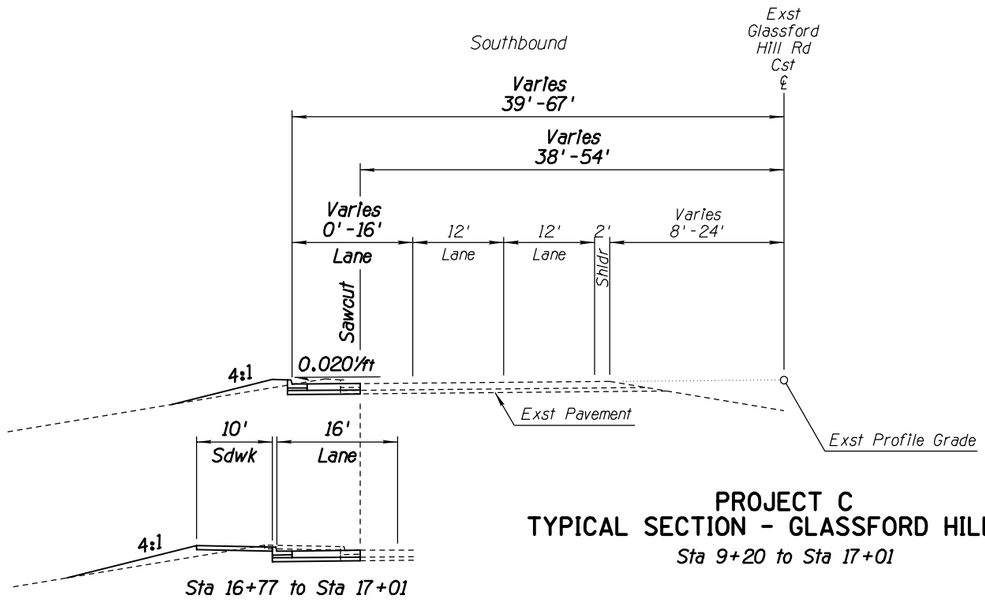
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG, PLTCFG
WYSIWYG_W_NAME, TBL

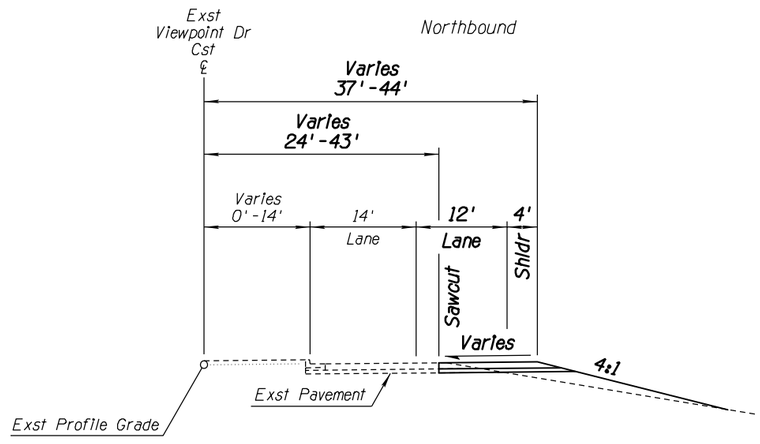
P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxtyp02.dgn
3/14/2018 @ 11:37:14 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



PROJECT C
TYPICAL SECTION - GLASSFORD HILL RD
Sta 9+20 to Sta 17+01



PROJECT D
TYPICAL SECTION - VIEWPOINT DR
Sta 22+99.11 to Sta 29+11.84

PROJECTS C & D

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N. 16th St. Suite 150
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

TYPICAL SECTIONS
PROJECTS C & D

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
SR 89A	SR 89 TO ROBERT ROAD

DWG NO. C-01.03

TRACS NO. P170106P

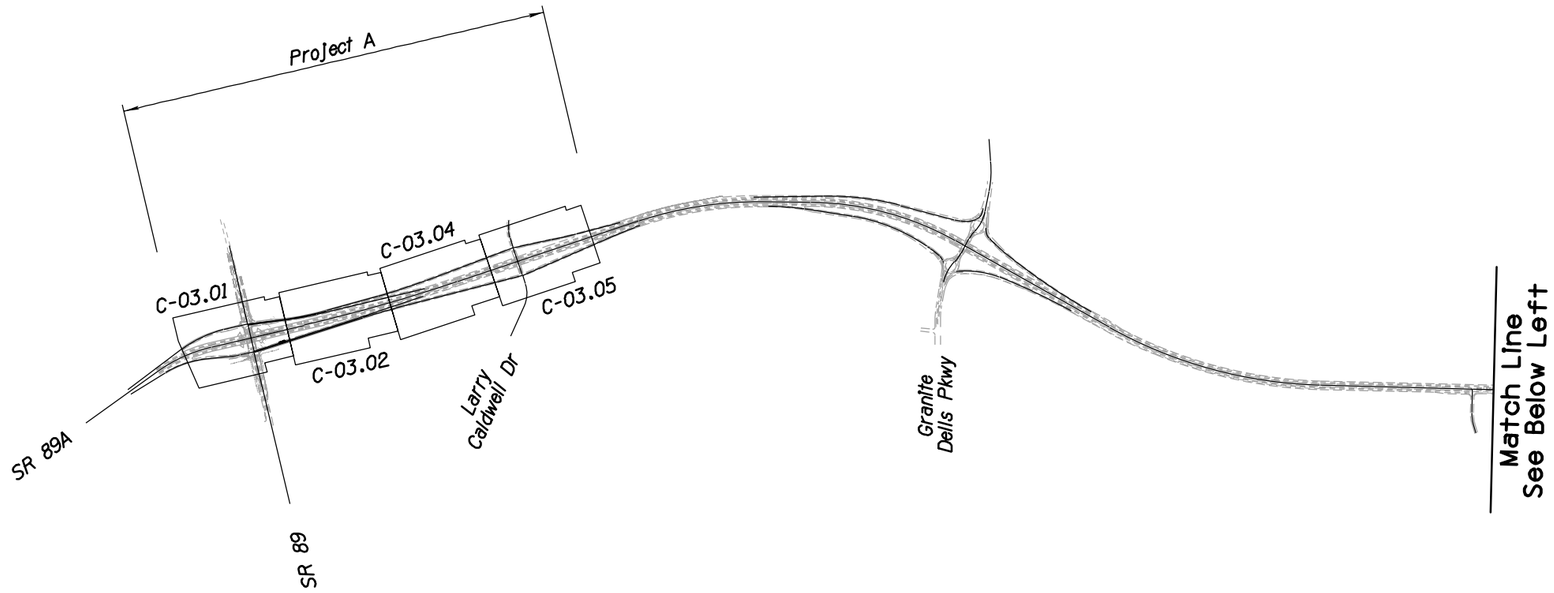
___ OF ___

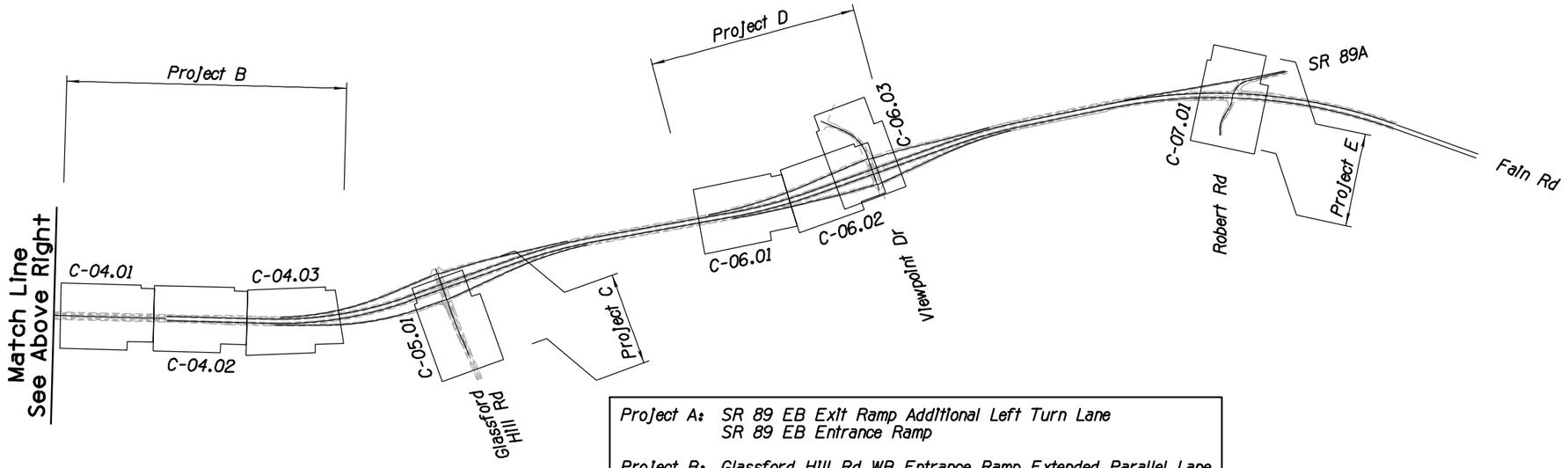
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxtyp03.dgn
3/14/2018 @ 11:37:15 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			
		89A YV 317			





Project A: *SR 89 EB Exit Ramp Additional Left Turn Lane*
SR 89 EB Entrance Ramp

Project B: *Glassford Hill Rd WB Entrance Ramp Extended Parallel Lane*

Project C: *Glassford Hill Rd EB Exit Ramp Free Right*

Project D: *Viewpoint Dr EB Exit Ramp Additional Left Turn*
Viewpoint Dr NB Additional Lane
Viewpoint Dr WB Entrance Ramp Restripe

Project E: *Robert Road Intersection Improvements*

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

KEY MAP

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-02.01

TRACS NO. P170106P

___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

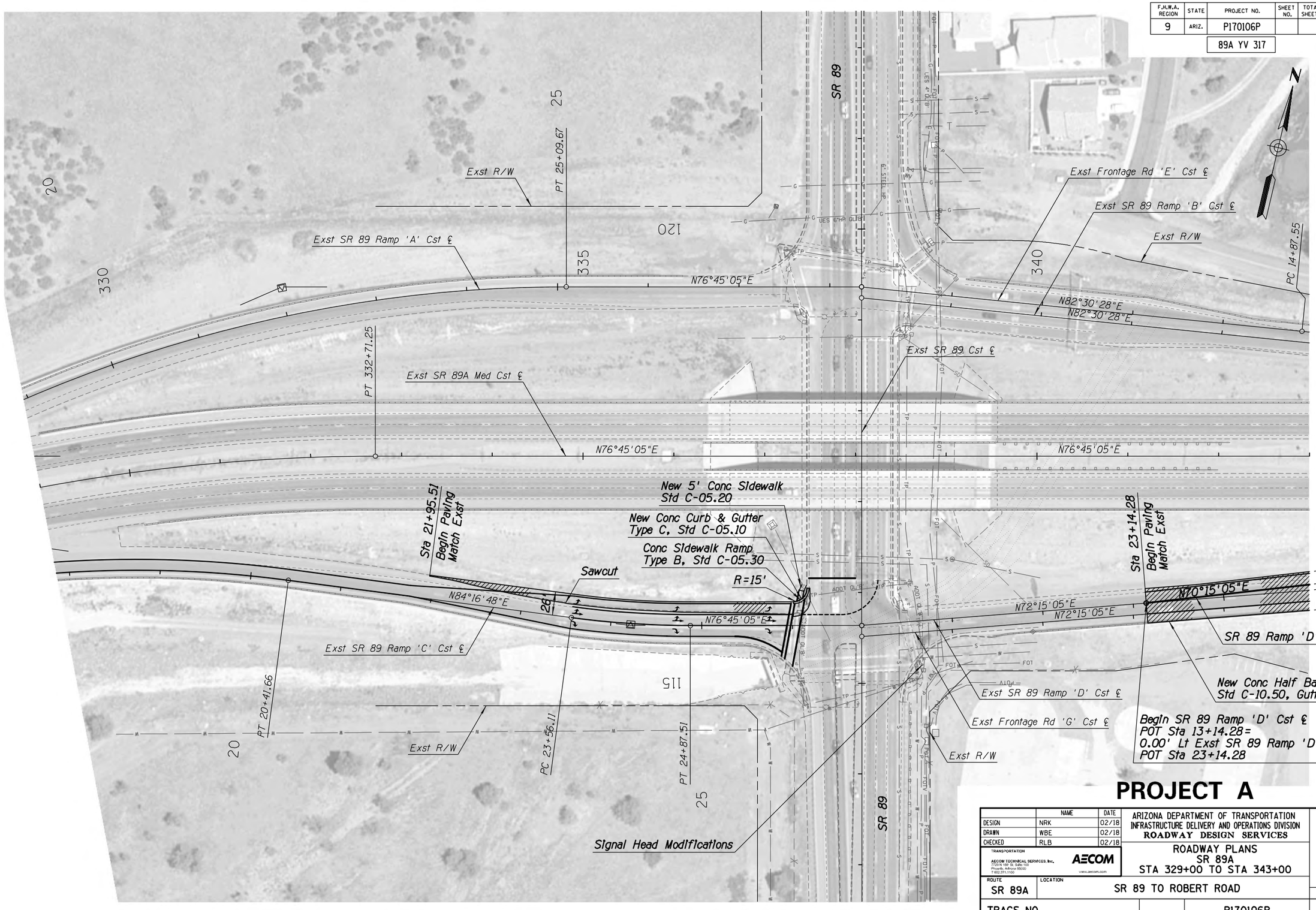
P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxkey-int.dgn
3/14/2018 @ 11:37:15 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317

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

PRINTER-B&W_HS_WYSIWYG. PLTCFG
WYSIWYG_W_NAME, TBL



PROJECT A

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 329+00 TO STA 343+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.01

___ OF ___

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp01.dgn
3/14/2018 @ 11:37:16 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317

(105) CURVE DATA

PI Sta 32+62.64

Main Curve
Δ=4°30'17" Rt
D=0°50'00"
R=6875.49'
L=540.57'
T=270.42'
Ext=5.32'
Super=NC

(110) CURVE DATA

PI Sta 37+34.02

Main Curve
Δ=3°15'33" Rt
D=0°15'00"
R=22918.31'
L=1303.67'
T=652.01'
Ext=9.27'
Super=NC

PC 15+08.40
PT 19+21.47
PT 20+59.95
PC 27+64.39
Exst Frontage Rd 'E' Cst ℄
Exst SR 89 Ramp 'B' Cst ℄
Exst R/W
N74°18'32"E
N76°35'28"E
PC 345+29.92
N76°45'05"E
Sta 347+57.62 Exst SR 89A Med Cst ℄
Sta 347+94.82 Begin Paving Match Exst
Exst SR 89A Med Cst ℄
New Conc Half Barrier
Std C-10.50, Gutter=2.5'
N71°34'11"E
N70°15'05"E
N72°15'05"E
N72°15'05"E
SR 89 Ramp 'D' Cst ℄
Exst Frontage Rd 'G' Cst ℄
PC 29+92.21
SR 89 Ramp 'D' Cst ℄ Sta 30+05.00, 15.99' Rt Begin Taper
PC 30+82.01
Exst R/W
SR 89 Ramp 'D' Cst ℄ Sta 33+51.85, 10.92' Rt= Exst SR 89A Med Cst ℄ Sta 351+50.82, 73.00' Rt End Taper Angle Point
PI 23+44.23
PC 25+06.42
Sawcut
Exst SR 89 Ramp 'D' Cst ℄
Frontage Rd 'G' Cst ℄
End SR 89 Ramp 'D' Cst ℄
PT Sta 35+32.78=
59.00' Rt Exst SR 89A Med Cst ℄
POC Sta 353+30.88
New Conc Half Barrier
Std C-10.50, Gutter=2.5'
Begin Frontage Rd 'G' Cst ℄
PC Sta 28+00.00=
0.00' Rt Exst Frontage Rd 'G' Cst ℄
POT Sta 18+00.00

PROJECT A

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N. 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 343+00 TO STA 357+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.02

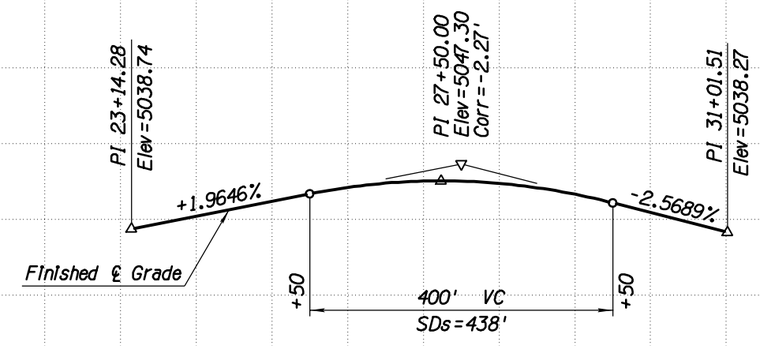
___ OF ___

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

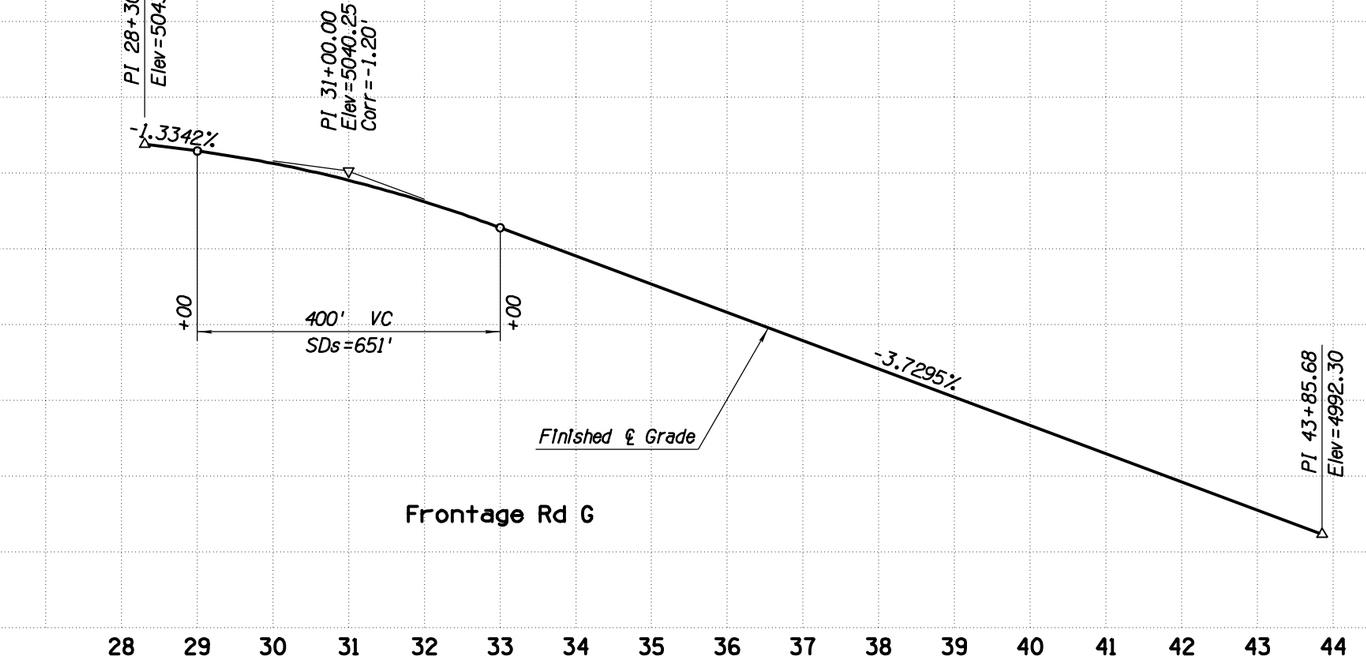
PRINTER-B&W_HS_WYSIWYG_PLTCFG
WYSIWYG_W_NAME_TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp02.dgn
3/14/2018 @ 11:37:21 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			
		89A YV 317			



SR 89 Ramp D



Frontage Rd G

PROJECT A

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION

AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
SR 89 RAMP D & FRONTAGE RD G

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	DWG NO.
SR 89A	SR 89 TO ROBERT ROAD	C-03.03
TRACS NO.	P170106P	___ OF ___

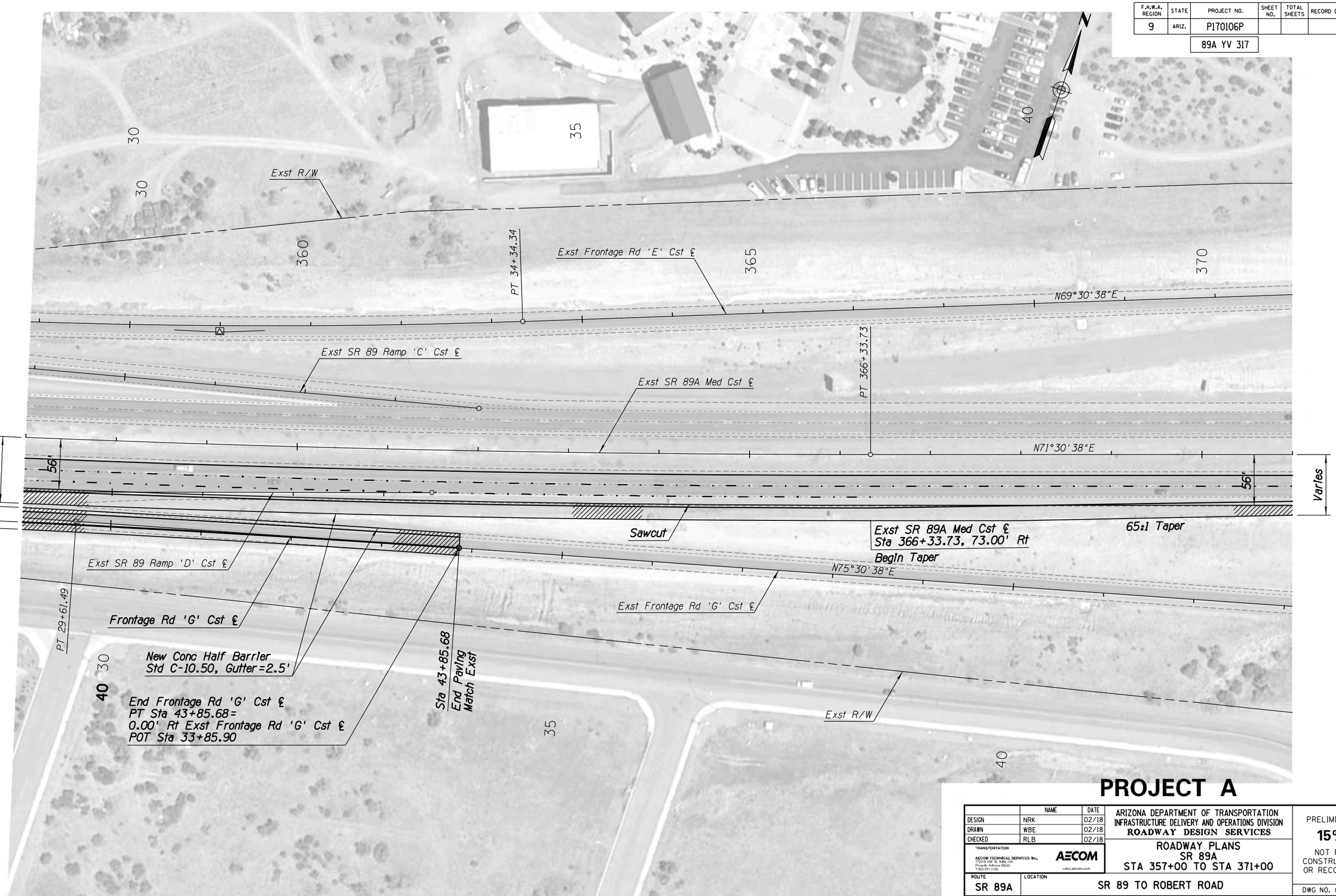
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG, PLTCFG
WYSIWYG_W_NAME, TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxv01.dgn
3/14/2018 @ 11:37:25 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



PROJECT A

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N. 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 357+00 TO STA 371+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.04

___ OF ___

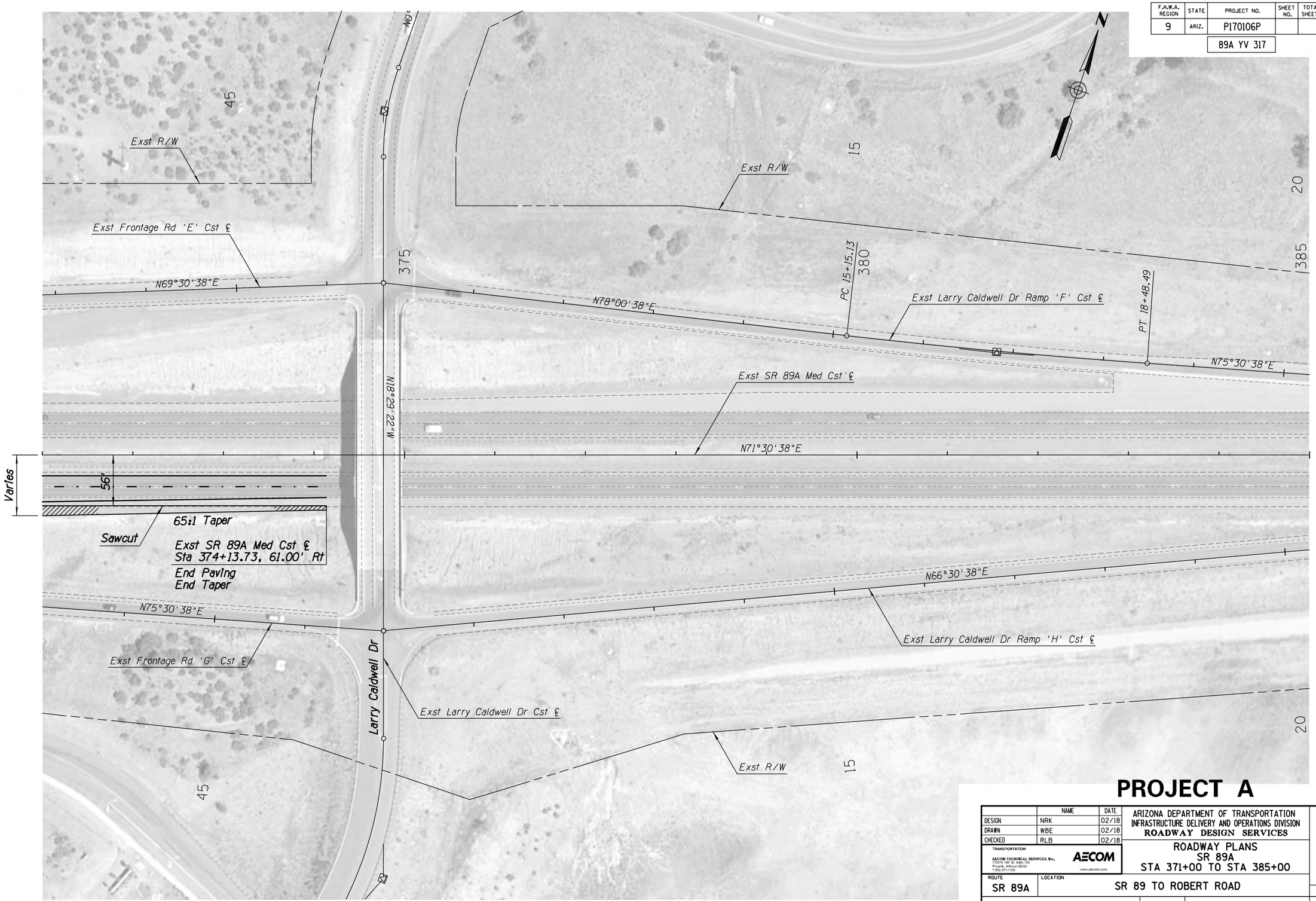
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG.W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp03.dgn
3/14/2018 @ 11:37:25 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



PROJECT A

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N. 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 371+00 TO STA 385+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	DWG NO.
SR 89A	SR 89 TO ROBERT ROAD	C-03.05
TRACS NO.	P170106P	___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp04.dgn
3/14/2018 @ 11:37:30 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317

PROJECT B

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 511+00 TO STA 525+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-04.01

___ OF ___

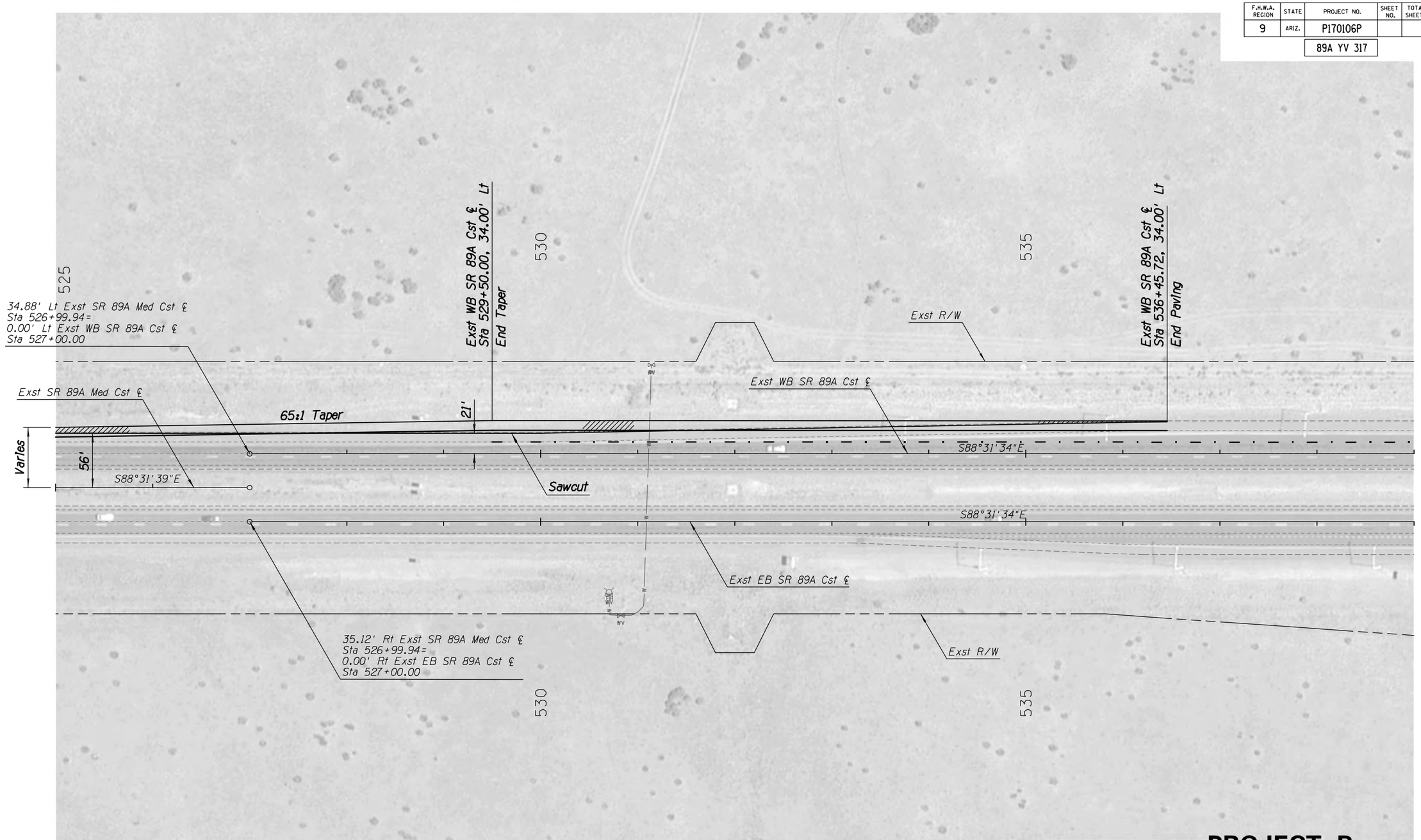
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp05.dgn
3/14/2018 @ 11:37:35 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



PROJECT B

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 525+00 TO STA 539+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-04.02

___ OF ___

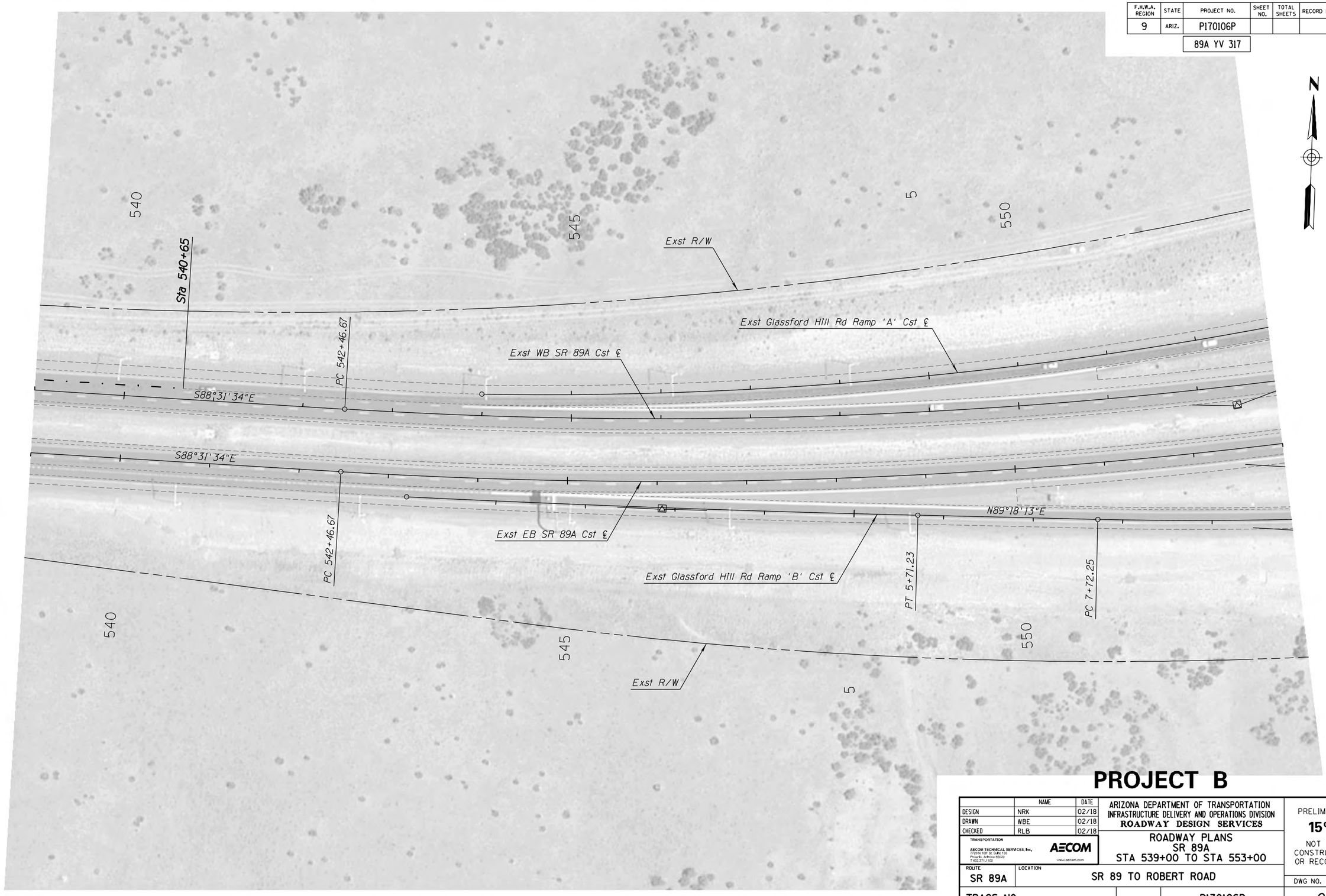
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp06.dgn
3/14/2018 @ 11:37:40 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



PROJECT B

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 539+00 TO STA 553+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-04.03

TRACS NO. P170106P

___ OF ___

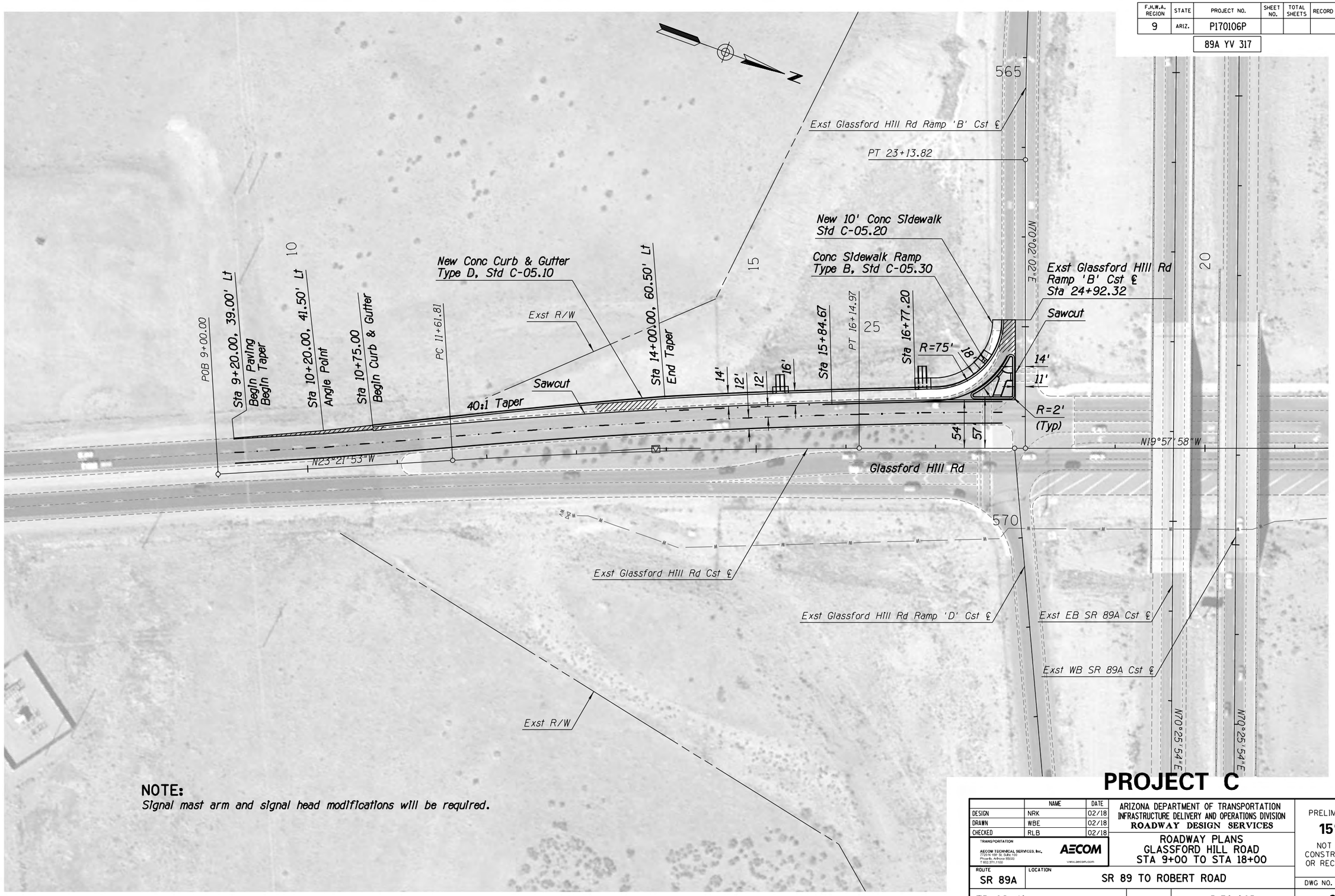
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp07.dgn
3/14/2018 @ 11:37:44 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



NOTE:
Signal mast arm and signal head modifications will be required.

PROJECT C

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
GLASSFORD HILL ROAD
STA 9+00 TO STA 18+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	DWG NO. C-05.01
SR 89A	SR 89 TO ROBERT ROAD	
TRACS NO.	P170106P	___ OF ___

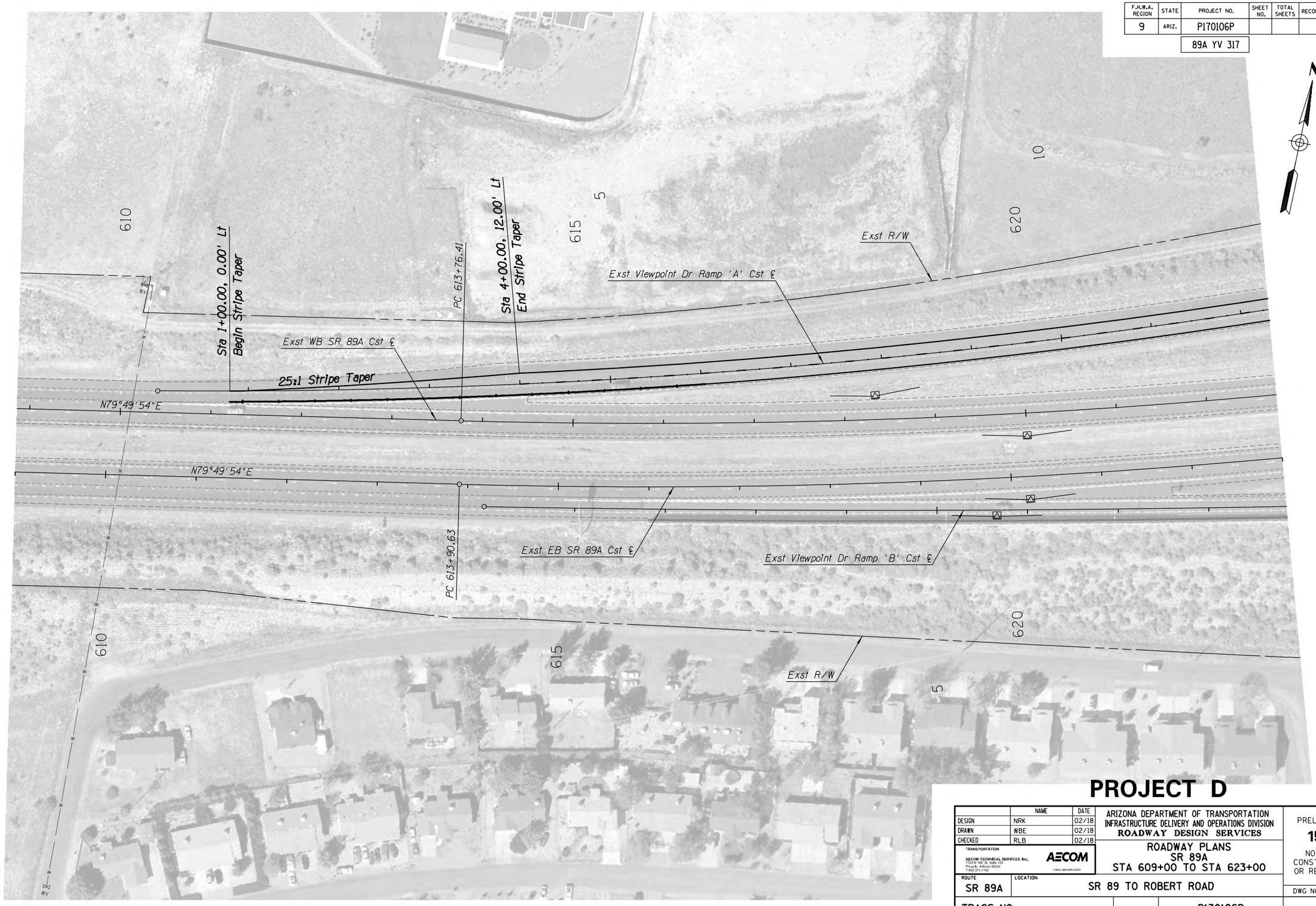
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp08.dgn
3/14/2018 @ 11:37:47 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



PROJECT D

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 609+00 TO STA 623+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	DWG NO. C-06.01
SR 89A	SR 89 TO ROBERT ROAD	
TRACS NO.		P170106P

___ OF ___

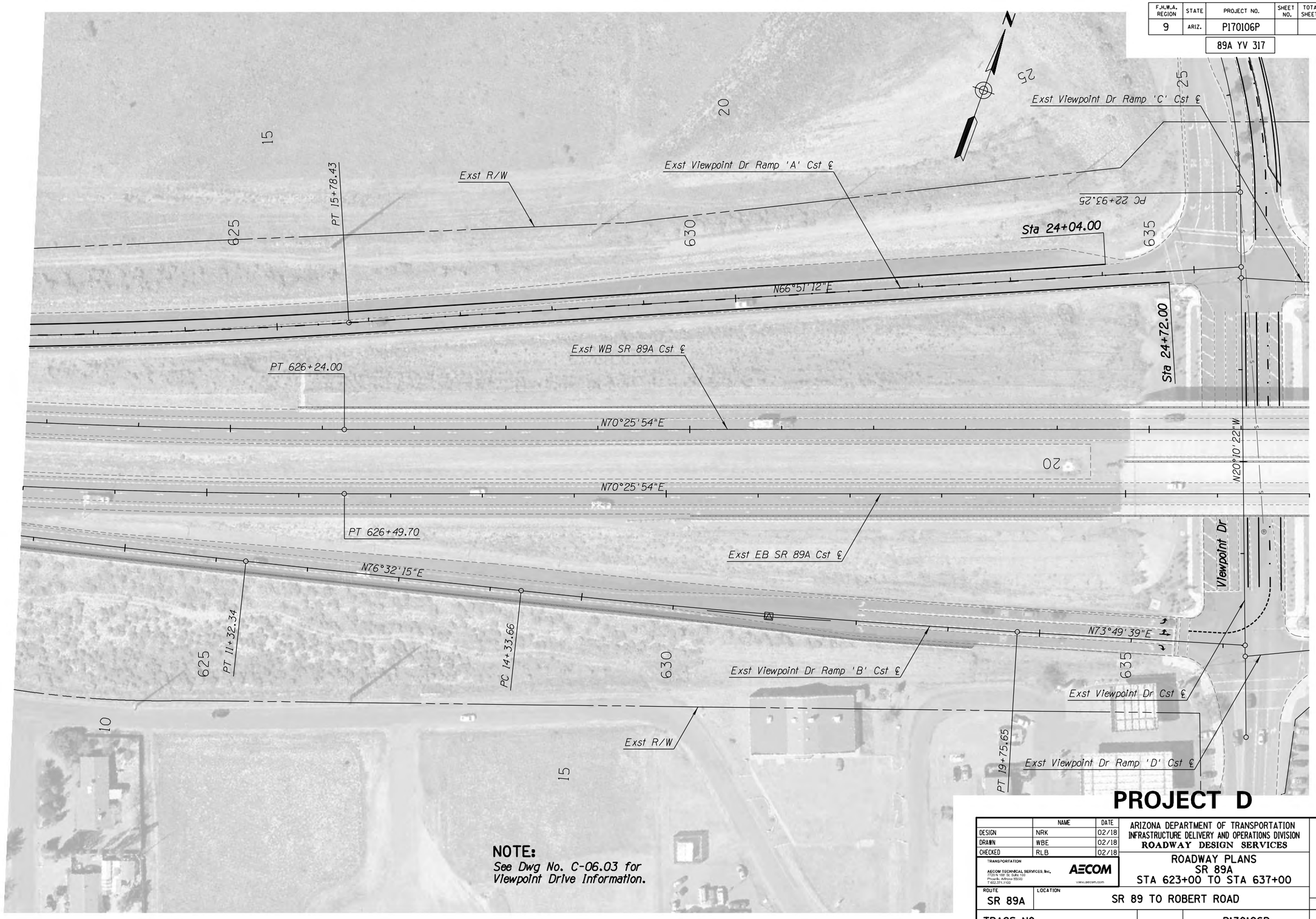
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG.W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp09.dgn
3/14/2018 @ 11:37:52 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



NOTE:
See Dwg No. C-06.03 for Viewpoint Drive Information.

PROJECT D

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 623+00 TO STA 637+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
SR 89A	SR 89 TO ROBERT ROAD

DWG NO. C-06.02

TRACS NO.		P170106P

___ OF ___

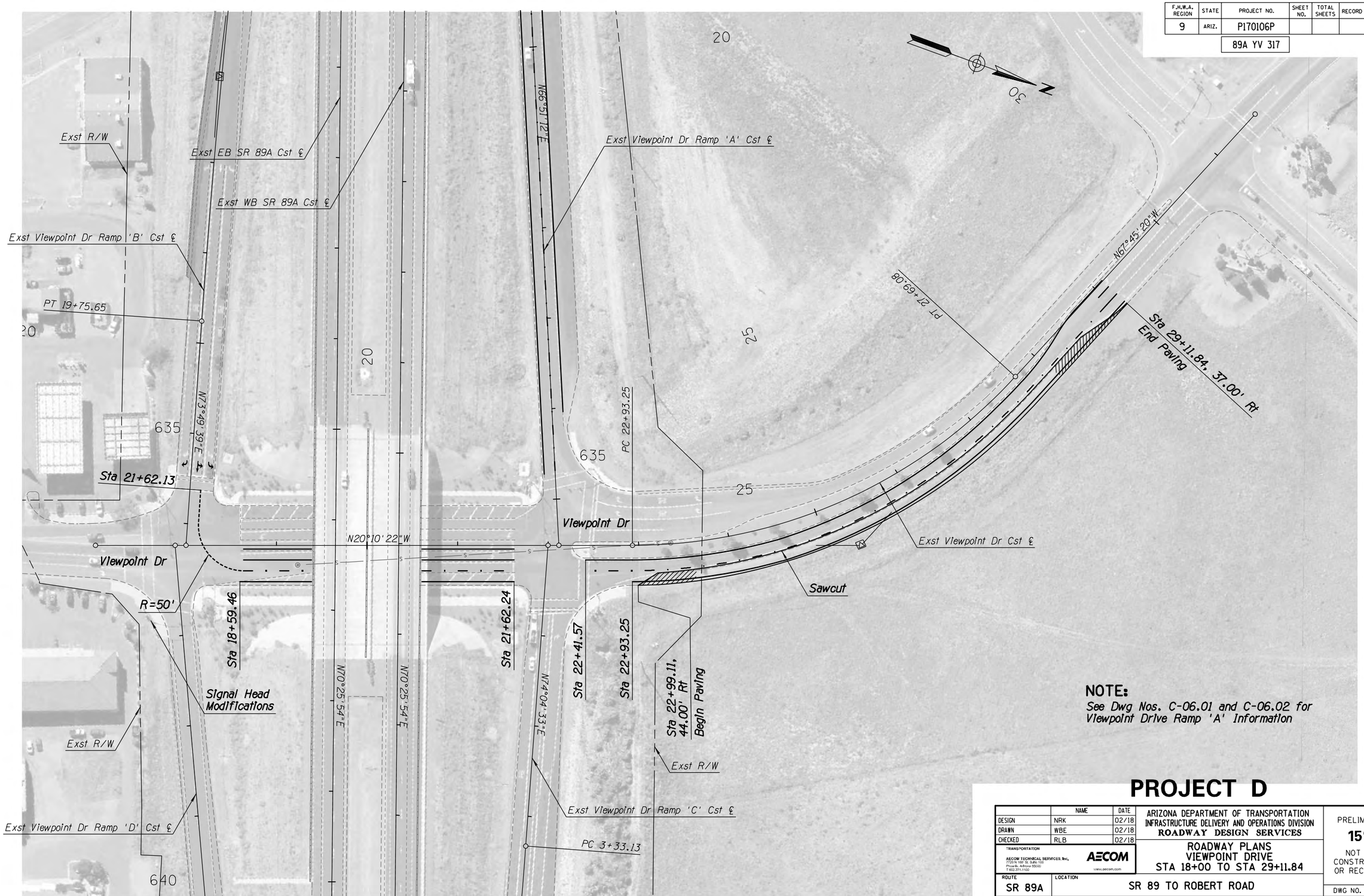
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG.W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp10.dgn
3/14/2018 @ 11:37:57 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



NOTE:
See Dwg Nos. C-06.01 and C-06.02 for Viewpoint Drive Ramp 'A' Information

PROJECT D

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
VIEWPOINT DRIVE
STA 18+00 TO STA 29+11.84

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
SR 89A	SR 89 TO ROBERT ROAD

DWG NO. C-06.03

TRACS NO.		P170106P	___ OF ___

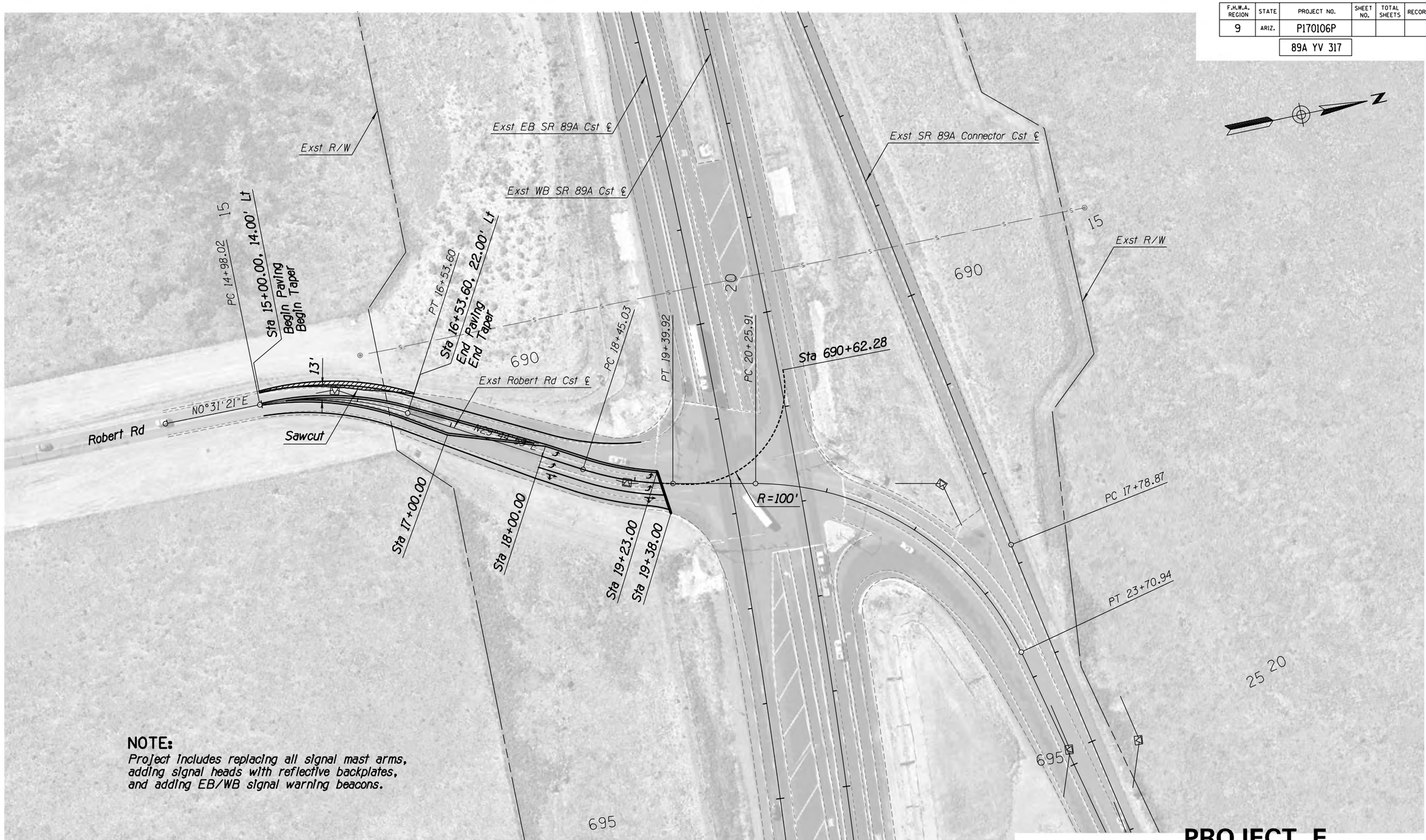
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG.W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp11.dgn
3/14/2018 @ 11:38:01 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



PROJECT E

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
ROBERT ROAD
STA 14+00 TO STA 23+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-07.01

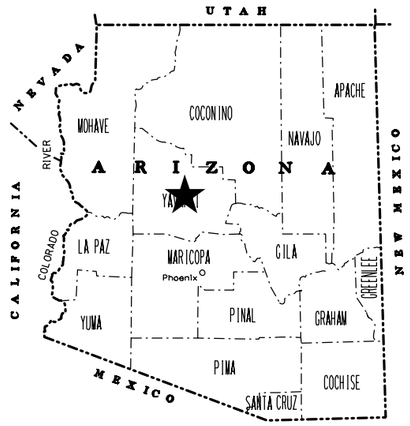
TRACS NO. P170106P

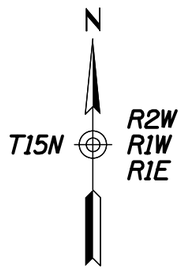
___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp12.dgn
3/14/2018 @ 11:38:05 AM kingn



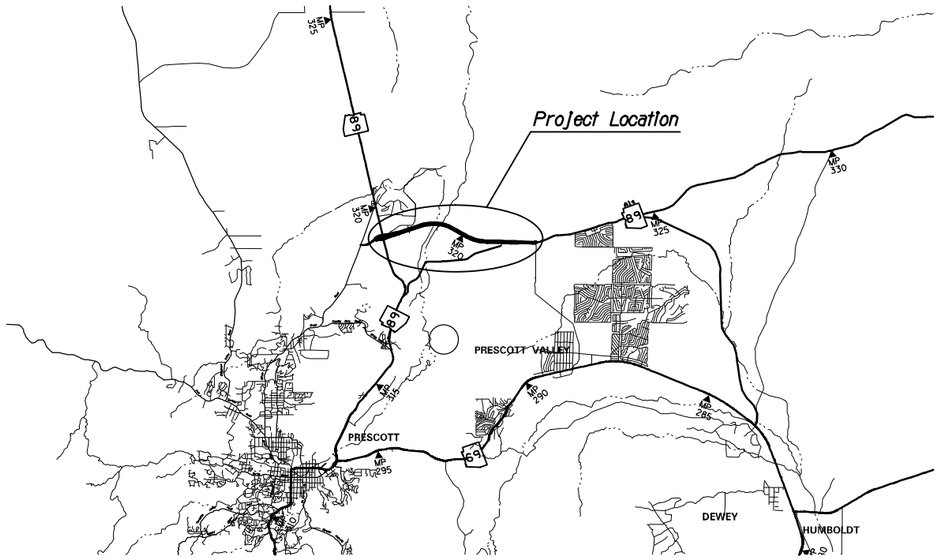


STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION

ADOT

PROJECT PLANS

STATE HIGHWAY
PRESCOTT–FLAGSTAFF HIGHWAY
STATE ROUTE 89A



STAGE I DESIGN SUBMITTAL
15% COMPLETE
FEBRUARY, 2018

MID–TERM PROJECT

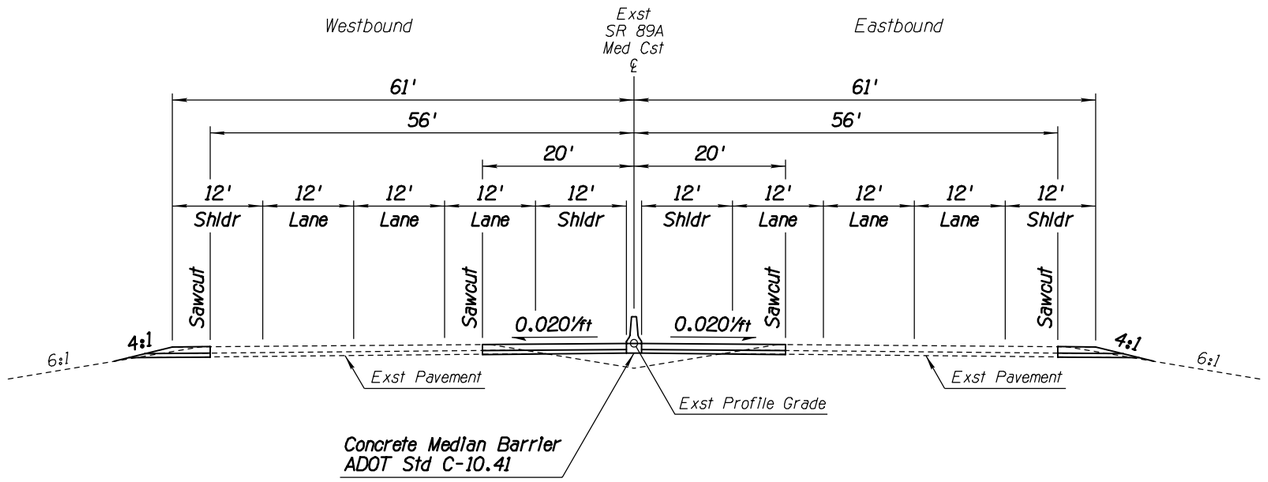
SR 89A TRANSPORTATION STUDY
SR 89 TO ROBERT ROAD

PROJECT NO.: P170106P
FEDERAL AID NO.: MPD–S(017)

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
DALLAS HAMMIT, P.E., STATE ENGINEER

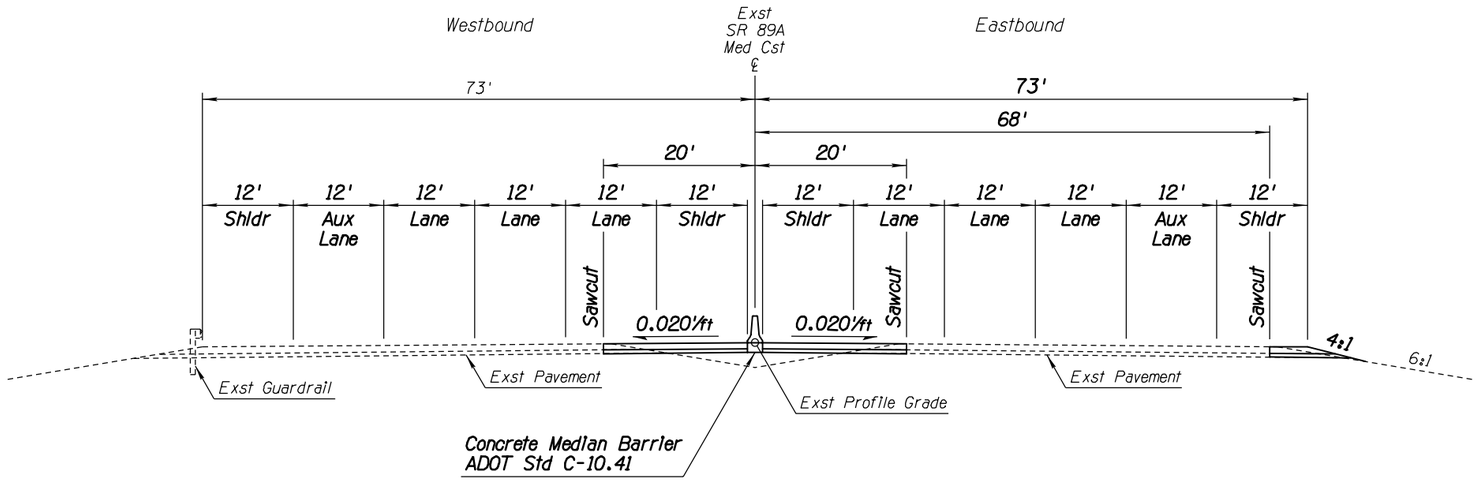
REC. DWGS. DATA	REC. DWG. DATE	OF

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			
		89A YV 317			



TYPICAL SECTION - SR 89A

Sta 416+68 to Sta 446+30
Sta 461+00 to Sta 521+00



TYPICAL SECTION - SR 89A

Sta 392+54 to Sta 399+06

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N. 16th St. Suite 150
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

TYPICAL SECTIONS

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-01.01

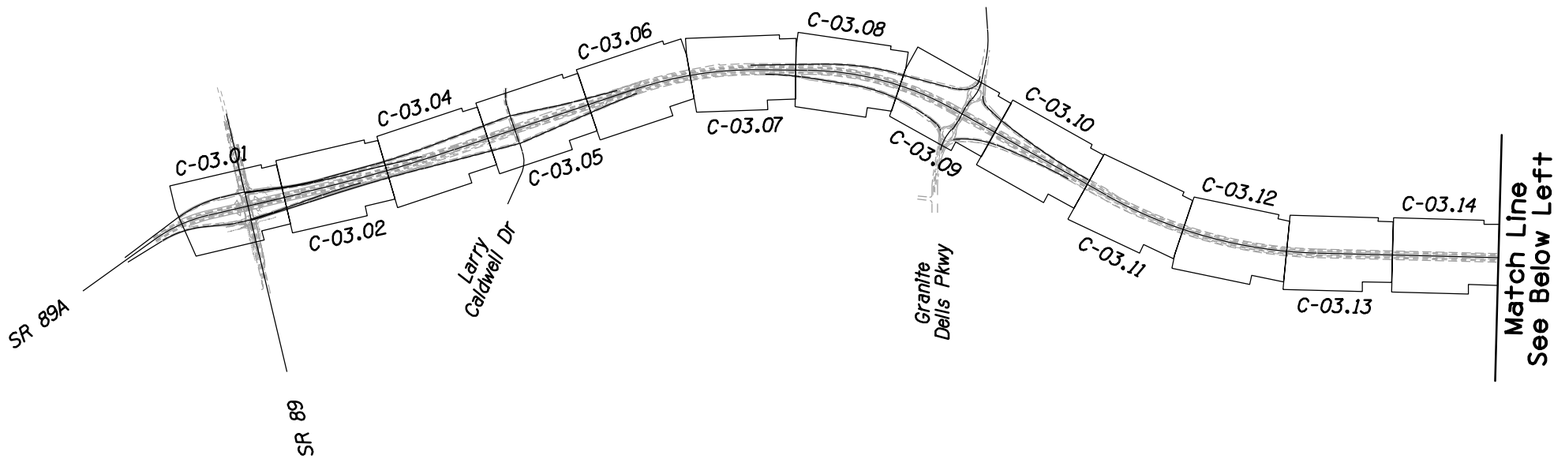
___ OF ___

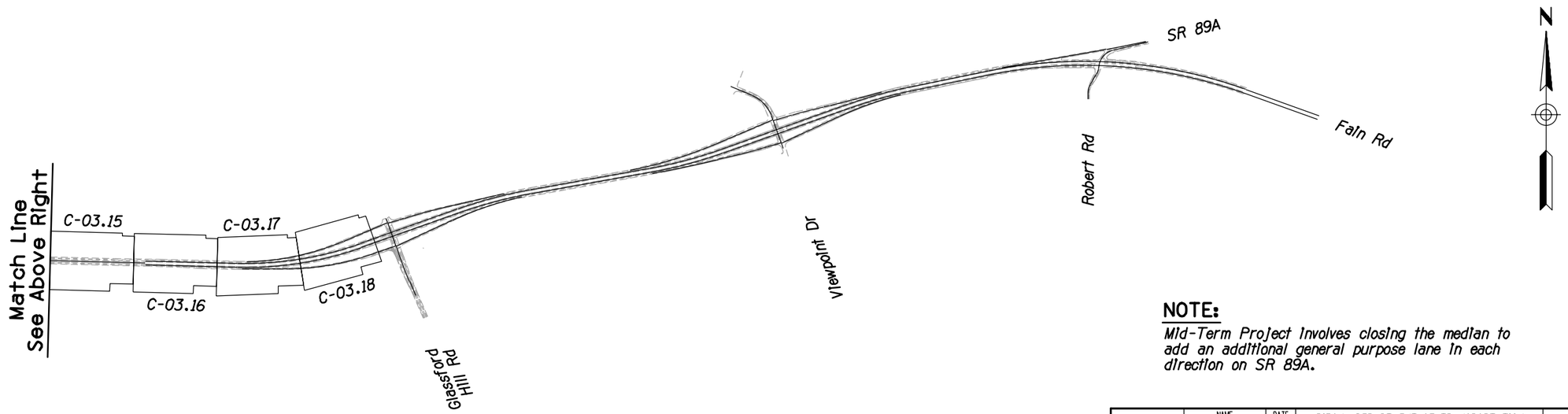
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG, PLTCFG
WYSIWYG_W_NAME, TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxtyp04.dgn
3/14/2018 @ 11:44:56 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			
		89A YV 317			





NOTE:

Mid-Term Project involves closing the median to add an additional general purpose lane in each direction on SR 89A.

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

KEY MAP

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-02.01

TRACS NO. P170106P

___ OF ___

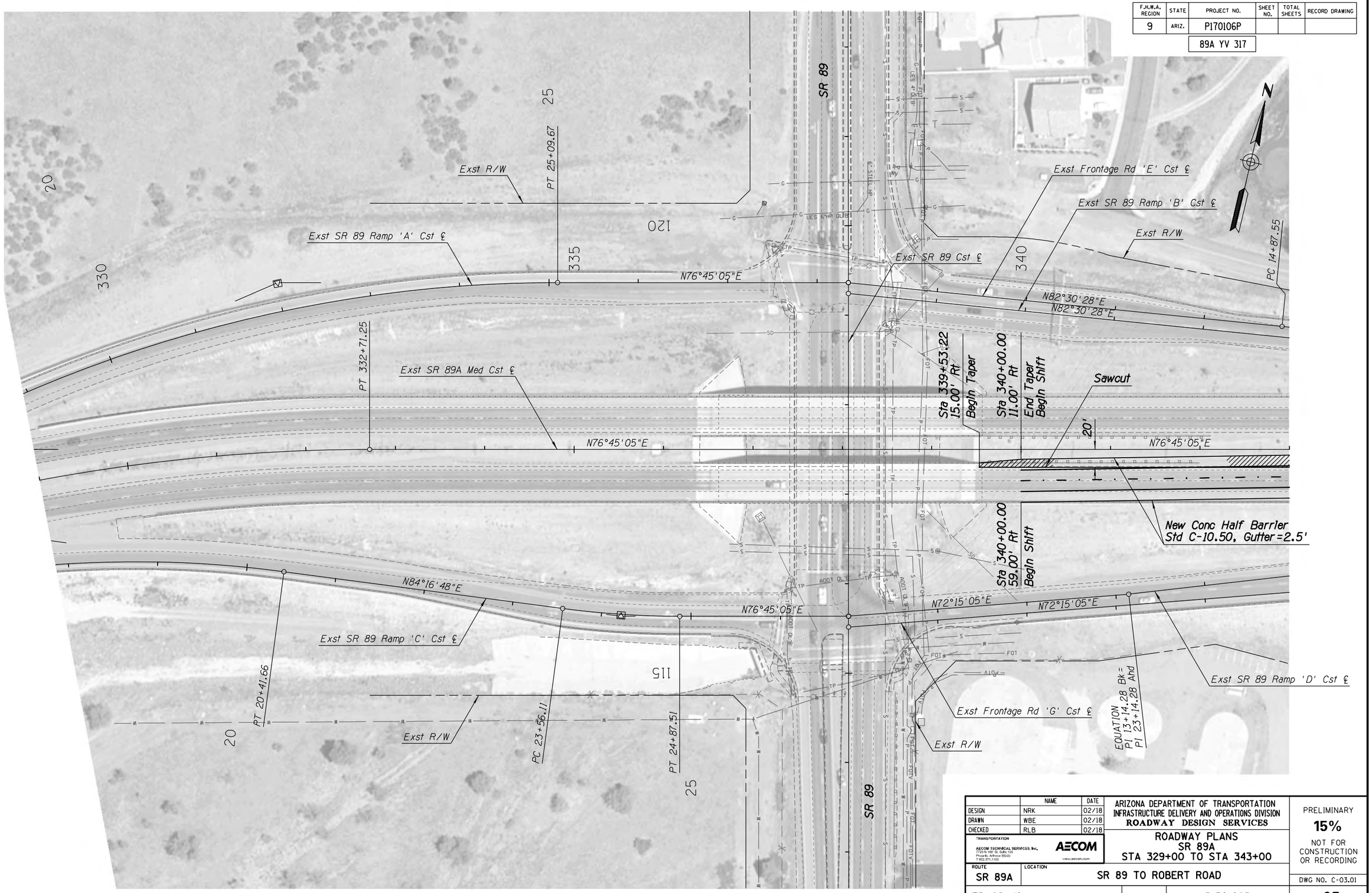
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxkey-ult.dgn
3/14/2018 @ 11:44:57 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION

AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 329+00 TO STA 343+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

DWG NO. C-03.01

___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp21.dgn
3/14/2018 @ 11:44:57 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317

(205) CURVE DATA

PI Sta 43+75.18

Main Curve
Δ=4°12'05" Rt
D=0°45'00"
R=7639.44'
L=560.20'
T=280.22'
Ext=5.14'
Super=NC

PC 15+08.40

Exst SR 89A Med Cst ℄
Sta 345+50.00, 19.00' Lt
Begin Paving
Begin Taper

PT 19+21.47

Exst SR 89A Med Cst ℄
Sta 347+50.00, 11.00' Lt
End Taper
Begin Shift

PT 20+59.95

Exst Frontage Rd 'E' Cst ℄

Exst SR 89 Ramp 'B' Cst ℄

Exst R/W

Exst SR 89A Med Cst ℄
Sta 355+30.00, 1.00' Lt
End Shift Lt

PC 27+64.39

N74°18'32"E

N76°35'28"E

Exst SR 89A Med Cst ℄
Sta 347+80.00,
1.00' Rt
End Shift

PC 345+29.92

N76°45'05"E

25:1 Taper

New Conc Half Barrier
Std C-10.50, Gutter=2.5'

Exst SR 89A Med Cst ℄

Sawcut

14'

49'

20'

Exst SR 89A Med Cst ℄
Sta 347+80.00, 49.00' Rt
End Shift

New Conc Half Barrier
Std C-10.50, Gutter=2.5'

N70°15'05"E

N72°15'05"E

PC 29+92.21

14'

16'

205

Sawcut

SR 89 Ramp 'D' Cst ℄

New Conc Median Barrier
Std C-10.41

End SR 89 Ramp 'D' Cst ℄
PT Sta 46+55.15=
49.00' Rt Exst SR 89A Med Cst ℄
POC Sta 354+52.61

PT 35+32.78

Exst SR 89 Ramp 'D' Cst ℄

Exst R/W

Exst Frontage Rd 'G' Cst ℄

EQUATION
POT 18+00.00 Bk=
POT 28+00.00 Ahd

PC 30+82.01

PC 40+94.96

Begin SR 89 Ramp 'D' Cst ℄
POT Sta 39+92.21=
0.00' Lt Exst SR 89 Ramp 'D' Cst ℄
PC Sta 29+92.21

N

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 343+00 TO STA 357+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.02

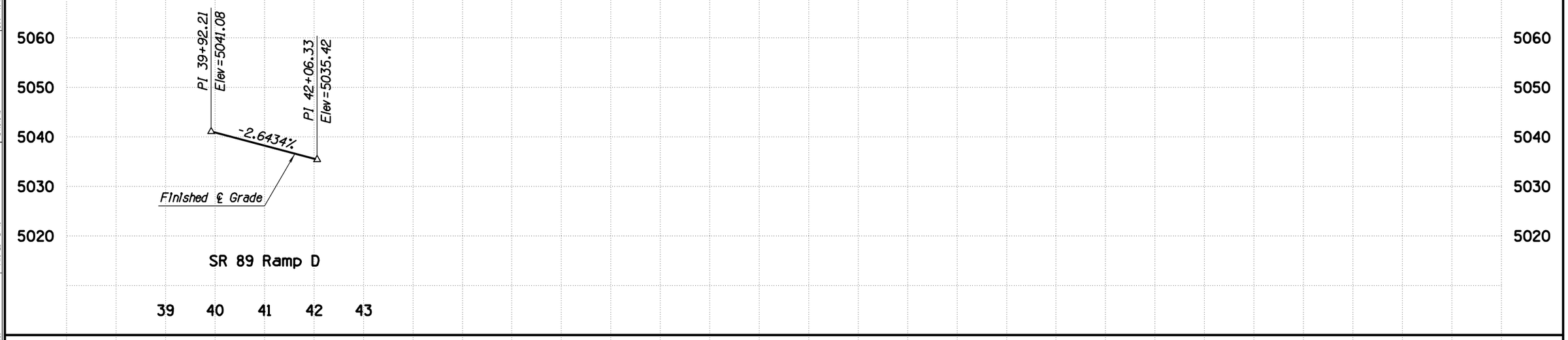
___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp22.dgn
3/14/2018 @ 11:45:01 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			
		89A YV 317			



	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
SR 89 RAMP D

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-03.03

TRACS NO. P170106P

___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxv11.dgn
3/14/2018 @ 11:45:04 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317

(210) CURVE DATA

PI Sta 44+00.21

Main Curve
Δ=4°51'59" Lt
D=0°43'00"
R=7994.76'
L=679.02'
T=339.72'
Ext=7.21'
Super=NC

Begin SR 89 Ramp 'C' Cst ℄
PC Sta 40+60.49=
0.00' Lt Exst SR 89 Ramp 'B' Cst ℄
POT Sta 30+60.49

End SR 89 Ramp 'C' Cst ℄
PT Sta 47+39.51=
49.00 Lt Exst SR 89A Med Cst ℄
POC Sta 365+47.77

Exst SR 89A Med Cst ℄
Sta 361+00.84, 67.11' Lt
Begin Paving

POE 33+92.85
PT 34+34.34
PT 366+33.73

Exst R/W
Exst Frontage Rd 'E' Cst ℄
Exst SR 89 Ramp 'B' Cst ℄
SR 89 Ramp 'C' Cst ℄
Sawcut
Exst SR 89A Med Cst ℄
N69°30'38"E
N71°30'38"E
N75°30'38"E
New Conc Median Barrier
Std C-10.41
Sta 368+00.00
Exst SR 89 Ramp 'D' Cst ℄
Exst Frontage Rd 'G' Cst ℄
EQUATION
PT 43+85.68 Bk =
POT 33+85.90 Ahd

14' 49' 10' 56' 20' 20' 61'

30 30 35 40 45 360 365 370 40 35 40

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 357+00 TO STA 371+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.04

___ OF ___

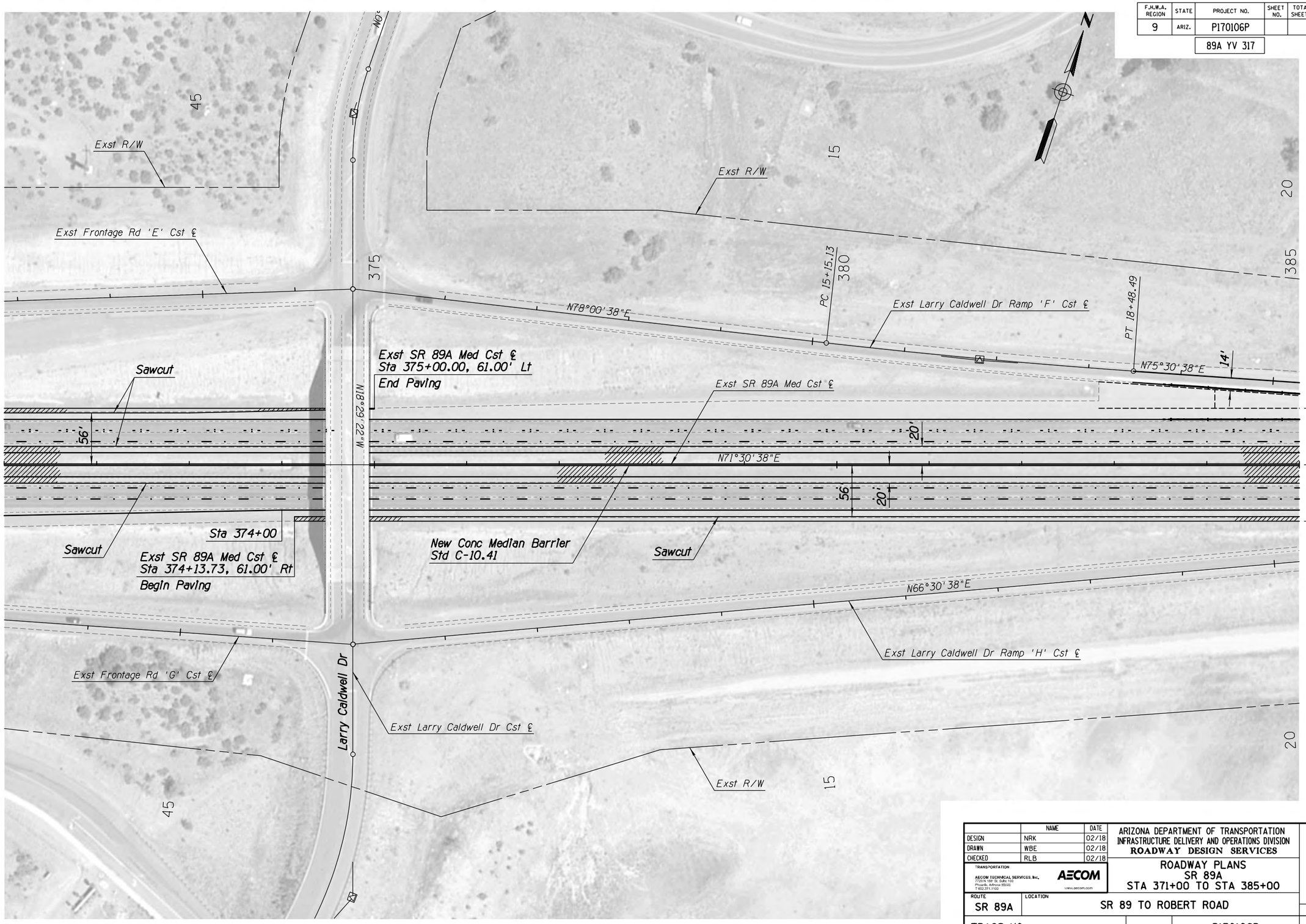
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG_PLTCFG
WYSIWYG_W_NAME_TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp23.dgn
3/14/2018 @ 11:45:05 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION

AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 371+00 TO STA 385+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	DWG NO.
SR 89A	SR 89 TO ROBERT ROAD	C-03.05
TRACS NO.	P170106P	___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp24.dgn
3/14/2018 @ 11:45:08 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			
		89A YV 317			

(215) CURVE DATA

PI Sta 34+24.37

Main Curve
Δ=4°00'00" Lt
D=1°00'00"
R=5729.58'
L=400.00'
T=200.08'
Ext=3.49'
Super=0.027'/ft

Exst Larry Caldwell Dr Ramp 'F' Cst ℄

Begin Larry Caldwell Dr Ramp 'C' Cst ℄
PC Sta 32+24.49=
0.00' Lt Exst Larry Caldwell Dr Ramp 'F' Cst ℄
POT Sta 22+24.49

End Larry Caldwell Dr Ramp 'C' Cst ℄
PT Sta 36+24.29=
61.00' Lt Exst SR 89A Med Cst ℄
POT Sta 390+95.45

Exst R/W

Larry Caldwell Dr Ramp 'C' Cst ℄

Sawcut

Widen WB Bridge

Exst SR 89A Med Cst ℄

New Conc Median Barrier
Std C-10.41

N75°30'38"E

N71°30'38"E

N66°30'38"E

PC 391+58.00

14'

61'

20'

56'

68'

73'

Exst Larry Caldwell Dr Ramp 'H' Cst ℄

PC 22+54.34

PC 33+60.46

PT 26+15.59

Sta 391+15.00
73.00' Rt
Begin Paving

Widen EB Bridge

Larry Caldwell Dr Ramp 'D' Cst ℄

End Larry Caldwell Dr Ramp 'D' Cst ℄
PT Sta 37+18.15=
61.00' Rt Exst SR 89A Med Cst ℄
POC Sta 391+89.88

Begin Larry Caldwell Dr Ramp 'D' Cst ℄
POT Sta 32+54.34=
0.00' Lt Exst Larry Caldwell Dr Ramp 'H' Cst ℄
PC Sta 22+54.34

(220) CURVE DATA

PI Sta 35+39.43

Main Curve
Δ=5°21'55" Rt
D=1°30'00"
R=3819.72'
L=357.69'
T=178.98'
Ext=4.19'
Super=0.040'/ft

385 390 395

35 25

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 385+00 TO STA 399+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. | P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.06

___ OF ___

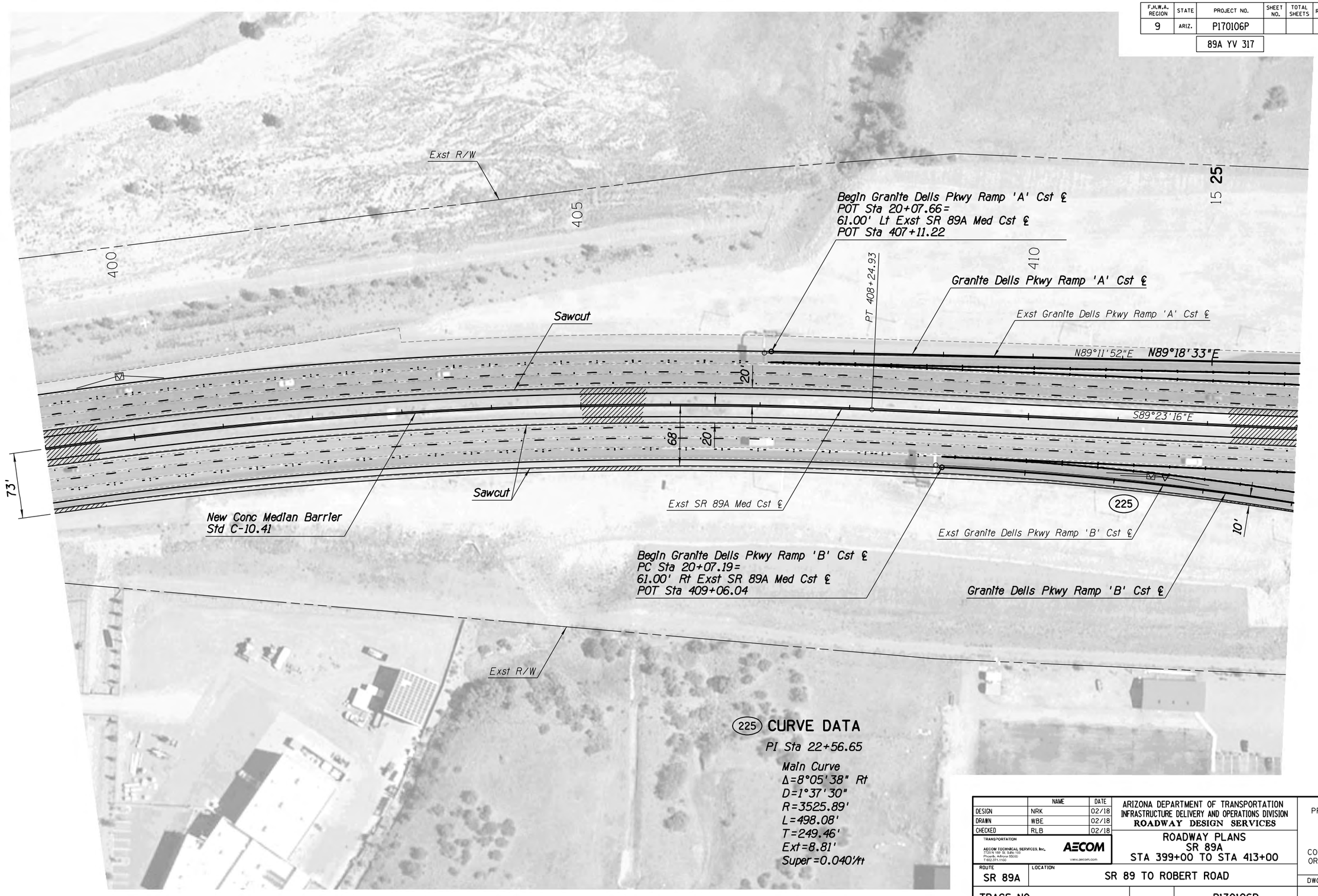
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp25.dgn
3/14/2018 @ 11:45:11 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 399+00 TO STA 413+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.07

___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp26.dgn
3/14/2018 @ 11:45:14 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317

End Granite Dells Pkwy Ramp 'A' Cst ℄
POT Sta 29+29.46=
0.00' Lt Exst Granite Dells Pkwy Ramp 'A' Cst ℄
POC Sta 19+29.46

Exst R/W

Granite Dells Pkwy Ramp 'A' Cst ℄

PC 414+56.86
Sta 27+82.06
Begin Paving
Sta 415+21.53
Begin Paving
Sawcut
PC 19+22.07
14'
10'
Sta 20+71.58
End Paving

New Conc Median Barrier
Std C-10.41

Exst Granite Dells Pkwy Ramp 'A' Cst ℄

PT 29+52.85

Sawcut

N89°18'33"E

56'
20'
20'
56'

61'
61'
61'

Exst SR 89A Med Cst ℄

Sawcut

S89°23'16"E

S81°17'38"E

10'
14'

(225)
Sta 413+03.52
Begin Paving
Sawcut
PT 14+80.54
Sta 25+05.27
End Paving

End Granite Dells Pkwy Ramp 'B' Cst ℄
PT Sta 25+05.27=
0.00' Rt Exst Granite Dells Pkwy Ramp 'B' Cst ℄
POT Sta 15+05.27

PC 21+26.14

Exst Granite Dells Pkwy Ramp 'B' Cst ℄

Exst R/W

Granite Dells Pkwy Ramp 'B' Cst ℄

(225) CURVE DATA

PI Sta 22+56.65

Main Curve
Δ=8°05'38" Rt
D=1°37'30"
R=3525.89'
L=498.08'
T=249.46'
Ext=8.81'
Super=0.040'/ft

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 413+00 TO STA 427+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-03.08

TRACS NO. P170106P

___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME_TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp27.dgn
3/14/2018 @ 11:45:17 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317

Exst R/W

Exst Granite Dells Pkwy Ramp 'A' Cst ℄

PC 36+89.16

PCC 37+69.39

PCC 39+85.55

PC 41+24.19

S75°15'37"E

430

435

440

PT 11+51.36

PC 12+92.23

S45°26'53"E

Exst Granite Dells Pkwy Ramp 'C' Cst ℄

Exst SR 89A Med Cst ℄

PT 434+58.66

Granite Dells Pkwy

N29°16'59"E

S60°42'51"E

Sawcut

56'

20'

61'

61'

61'

61'

New Conc Median Barrier
Std C-10.41

Exst Granite Dells Pkwy Cst ℄

Exst Granite Dells Pkwy Ramp 'B' Cst ℄

PT 31+93.32

PC 32+41.23

PCC 34+03.40

PT 34+76.38

PC 35+01.94

Exst R/W

Exst Granite Dells Pkwy Ramp 'D' Cst ℄

30

35

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION

AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100

AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 427+00 TO STA 441+00

ROUTE: SR 89A

LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.09

___ OF ___

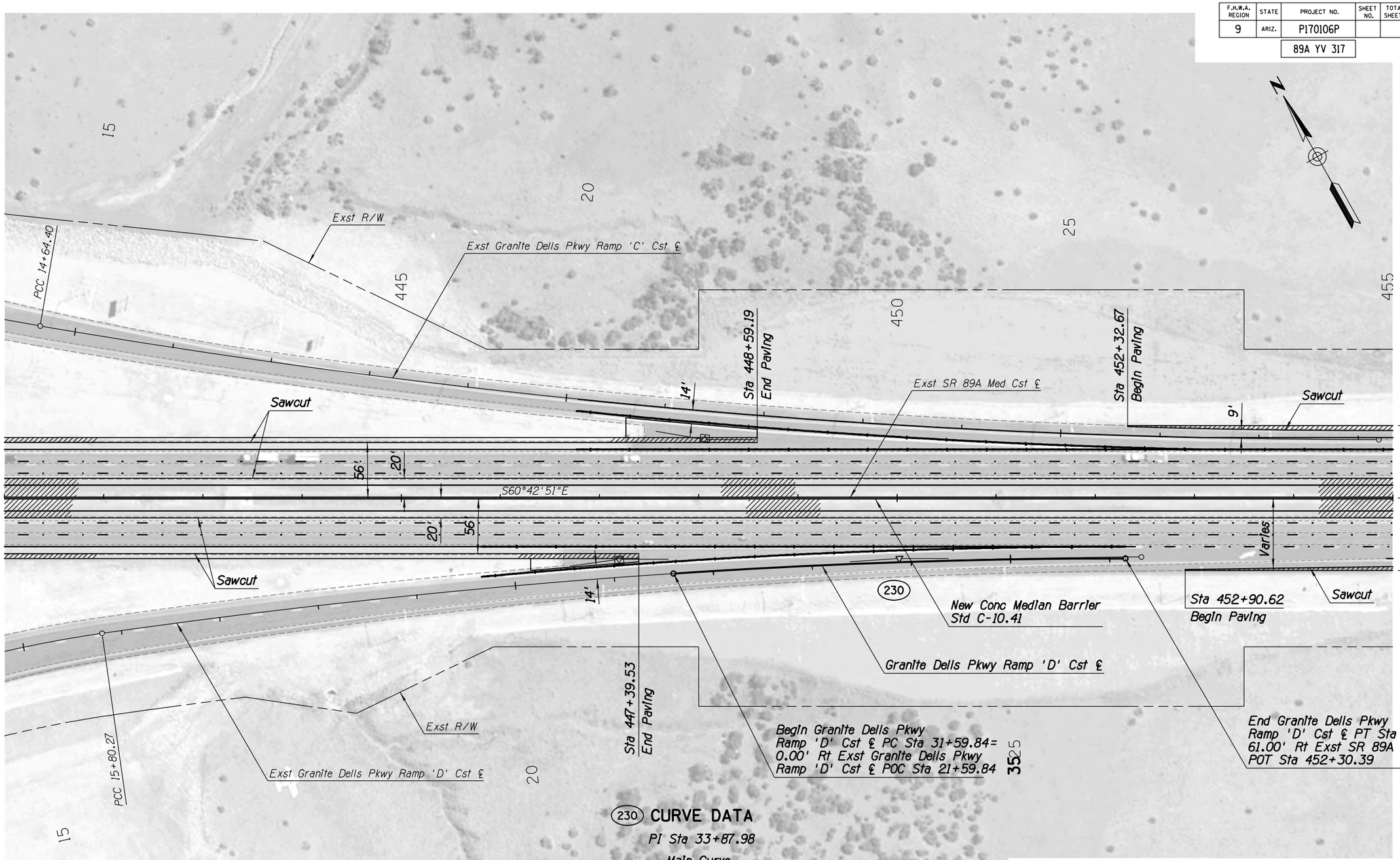
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp28.dgn
3/14/2018 @ 11:45:21 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



(230) CURVE DATA

PI Sta 33+87.98

Main Curve
Δ=3°48'03" Rt
D=0°50'00"
R=6875.49'
L=456.11'
T=228.14'
Ext=3.78'
Super=NC

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 441+00 TO STA 455+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.10

___ OF ___

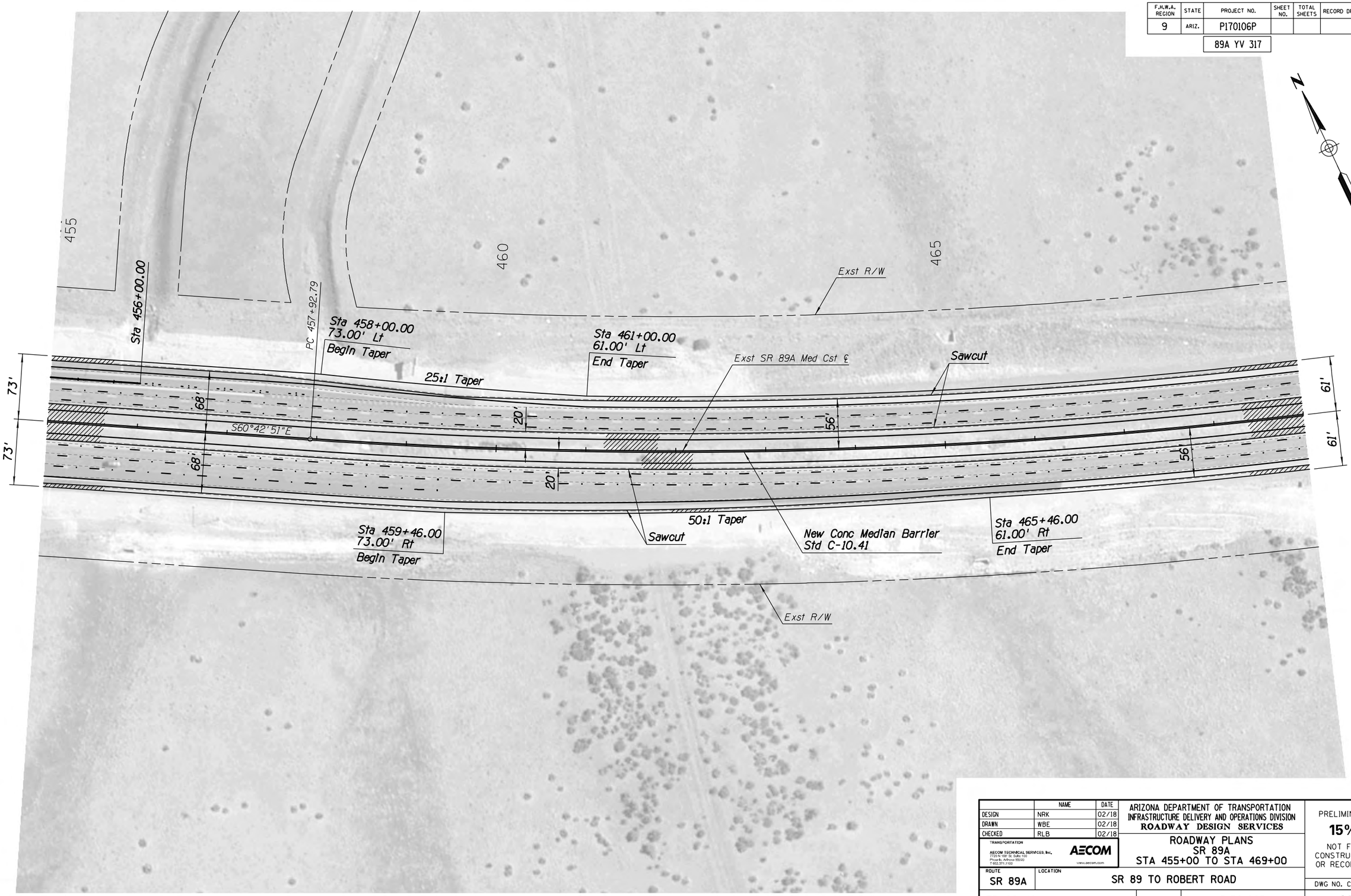
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp29.dgn
3/14/2018 @ 11:45:24 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 455+00 TO STA 469+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-03.11

TRACS NO. | P170106P | ___ OF ___

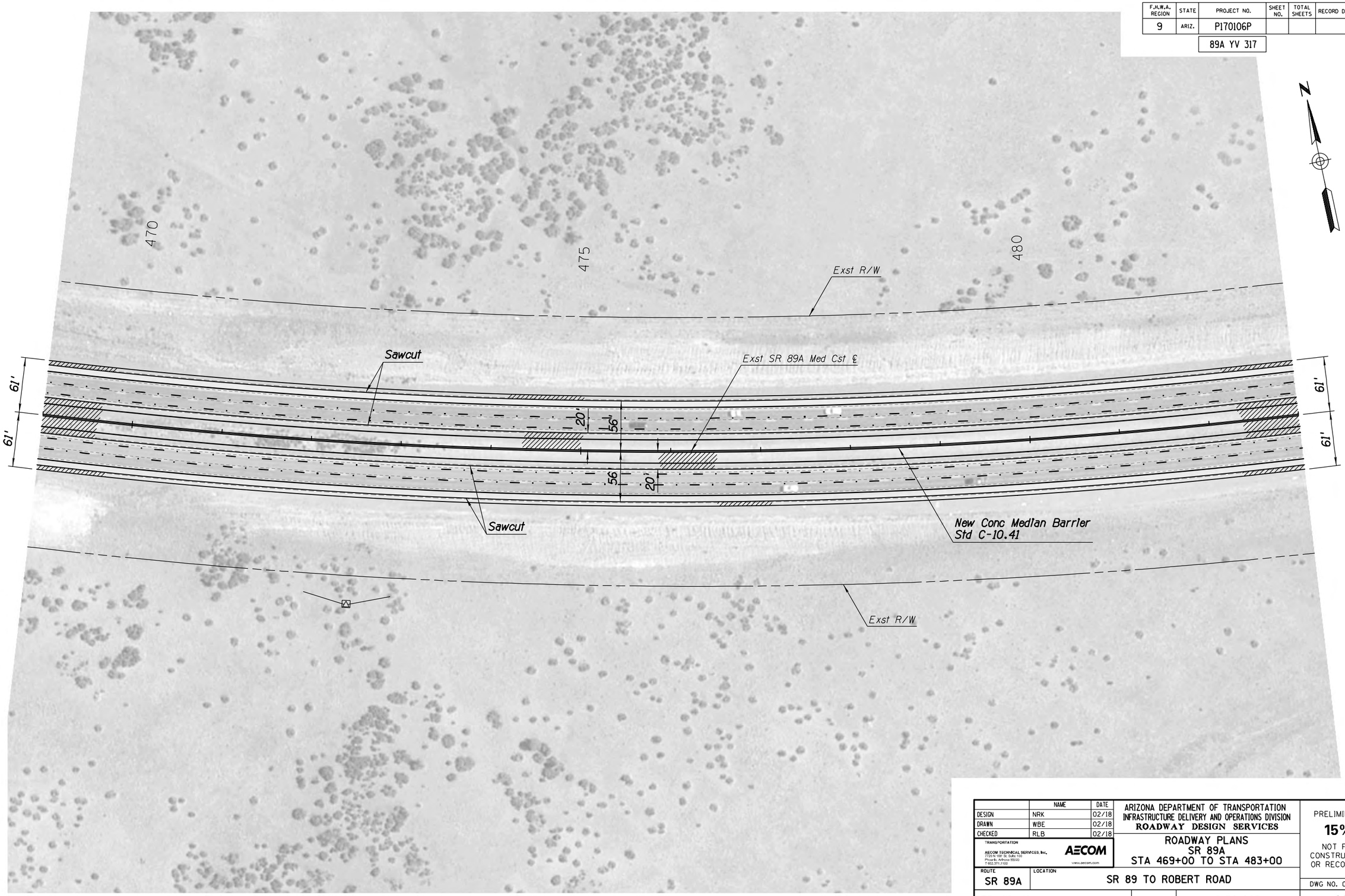
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp30.dgn
3/14/2018 @ 11:45:27 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 469+00 TO STA 483+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.12

___ OF ___

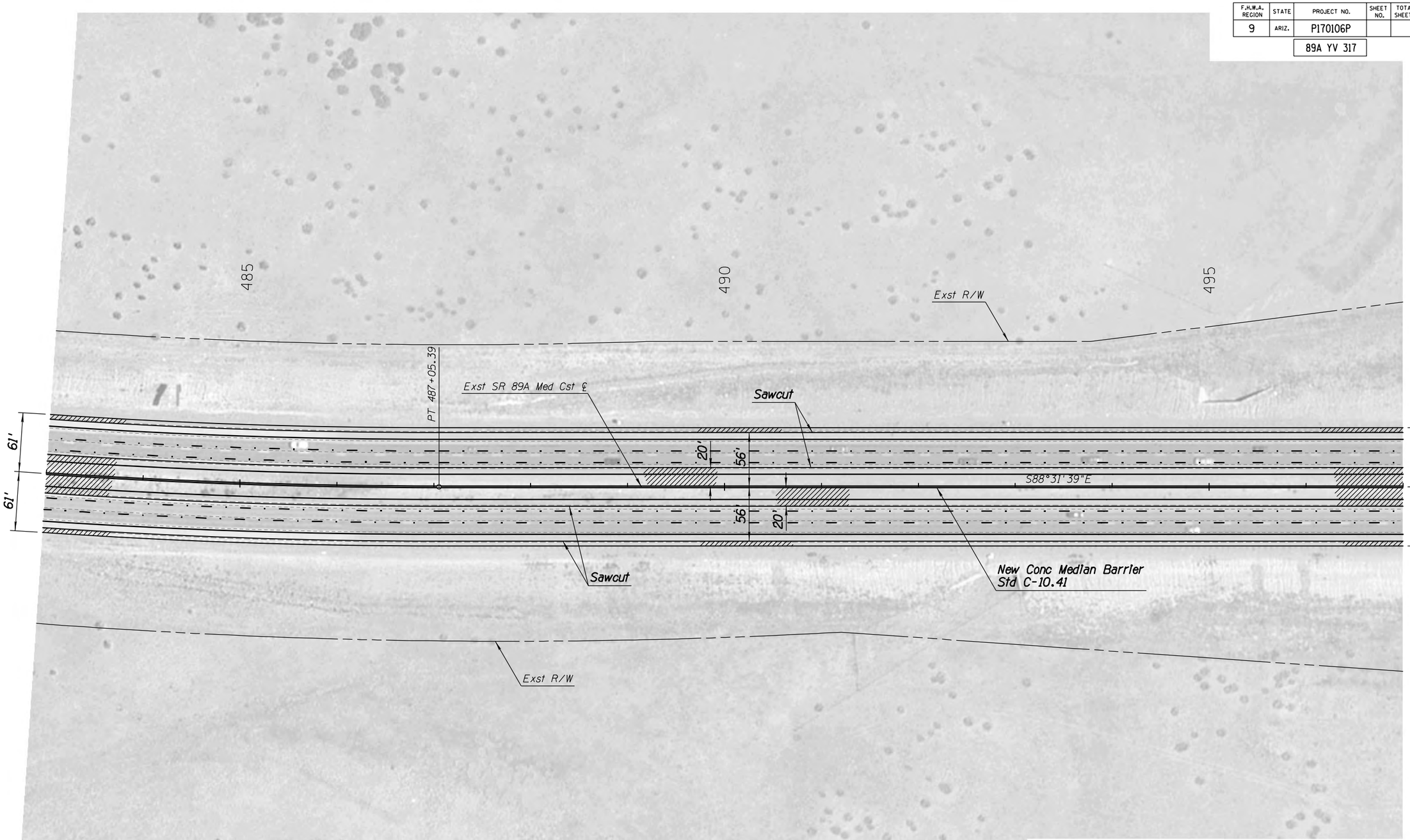
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME, TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp31.dgn
3/14/2018 @ 11:45:31 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 483+00 TO STA 497+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-03.13

TRACS NO. P170106P

___ OF ___

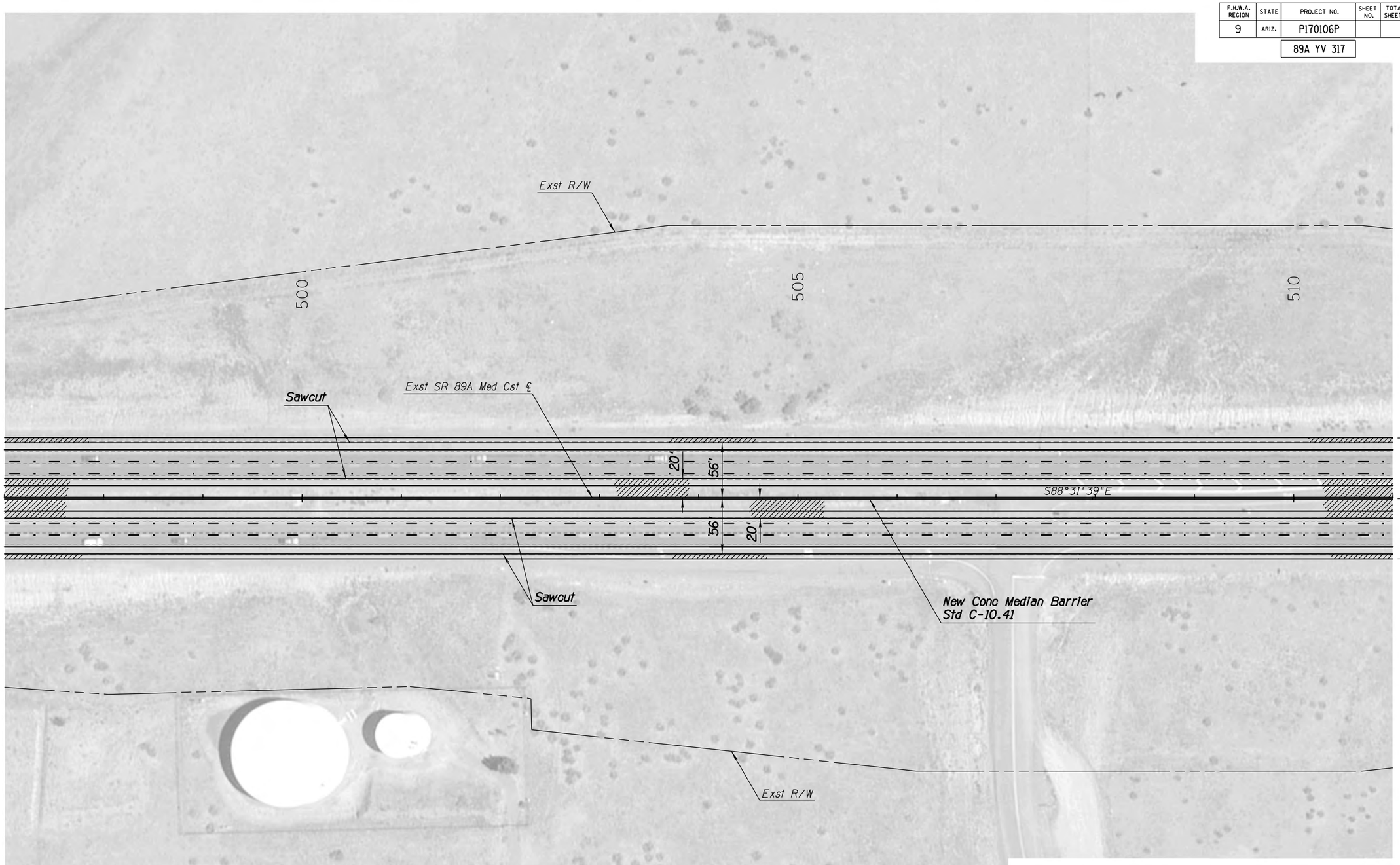
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG_PLTCFG
WYSIWYG_W_NAME_TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp32.dgn
3/14/2018 @ 11:45:34 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION

AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 497+00 TO STA 511+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A

LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-03.14

TRACS NO. P170106P

___ OF ___

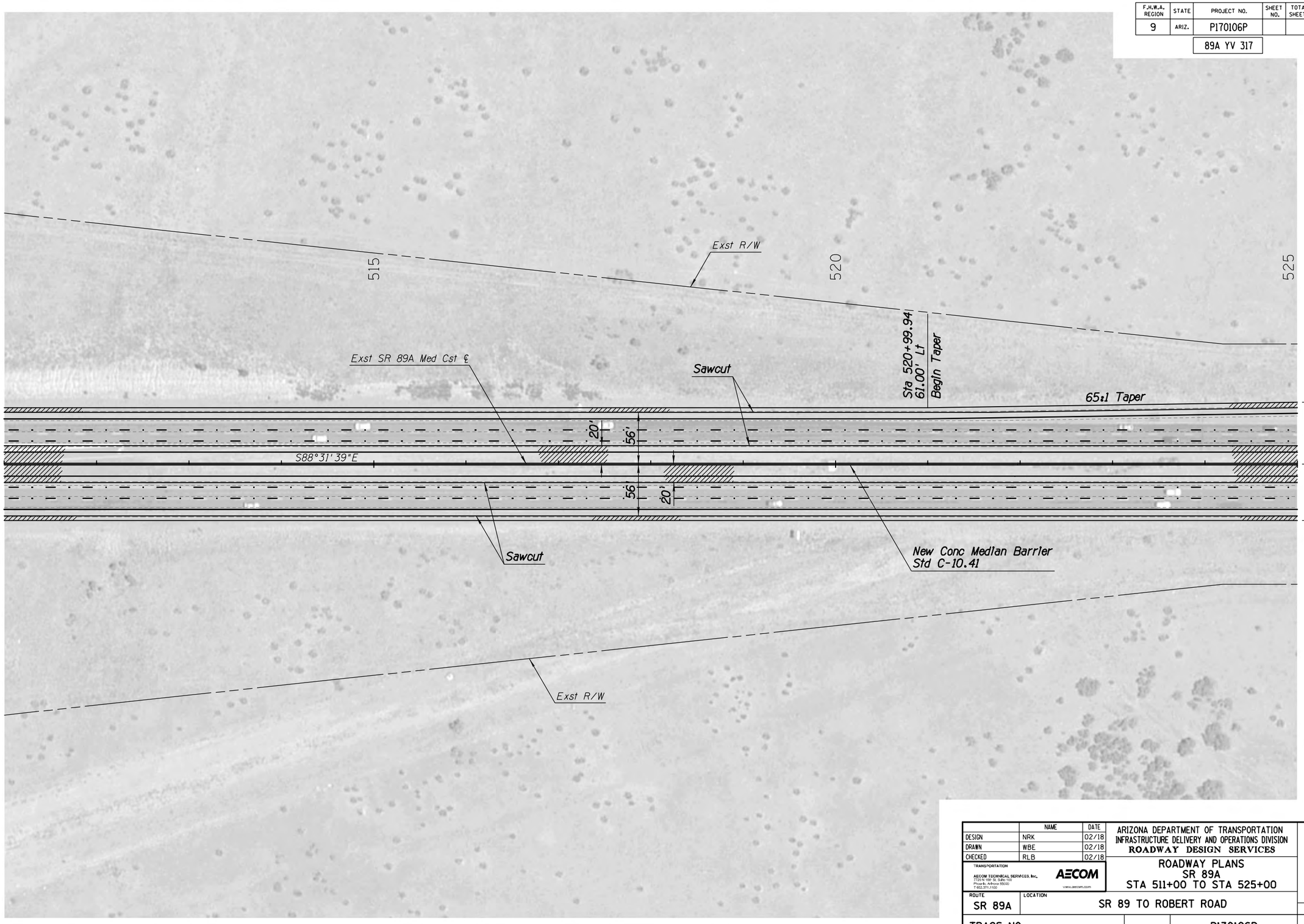
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp33.dgn
3/14/2018 @ 11:45:37 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 511+00 TO STA 525+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-03.15

TRACS NO. P170106P

___ OF ___

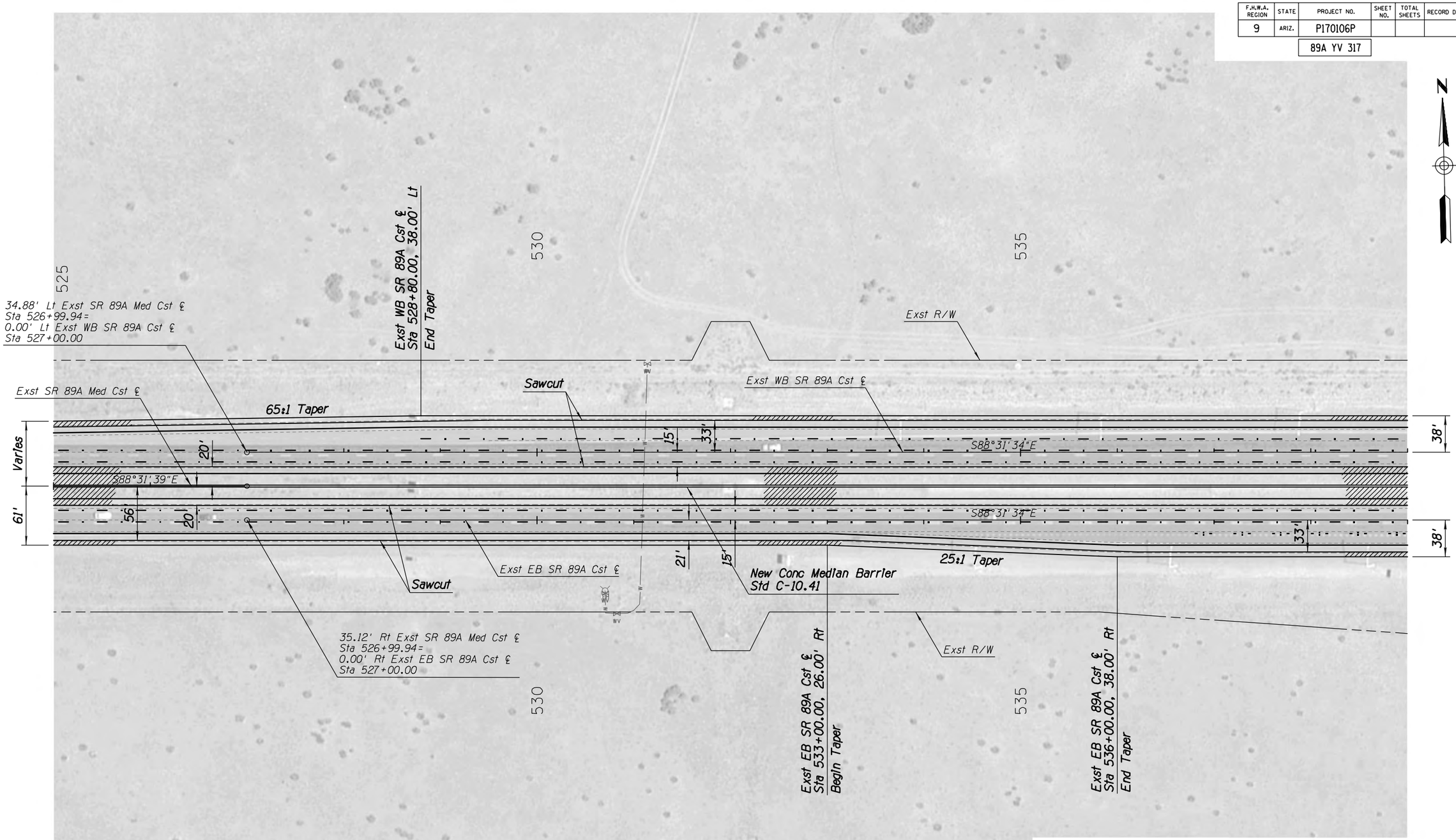
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp34.dgn
3/14/2018 @ 11:45:40 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317



	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St. Suite 100
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 525+00 TO STA 539+00

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

DWG NO. C-03.16

TRACS NO. P170106P

___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp35.dgn
3/14/2018 @ 11:45:43 AM kingn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			
		89A YV 317			

(235) CURVE DATA

PI Sta 17+57.76

Main Curve
Δ=24°18'19" Lt
D=1°18'00"
R=4407.37'
L=1869.64'
T=949.09'
Ext=101.03'
Super=0.030'/ft

Begin Glassford Hill Rd Ramp 'A' Cst ℄ PC Sta 8+08.66= 26.00' Lt Exst SR WB 89A Cst ℄ POT Sta 542+06.26

PC 542+46.67

Glassford Hill Rd Ramp 'A' Cst ℄

Exst R/W

Sawcut

Exst WB SR 89A Cst ℄

Exst Glassford Hill Rd Ramp 'A' Cst ℄

(235)

Sta 549+17.38 26.00' Lt Begin Paving

Glassford Hill Rd Ramp 'A' Cst ℄ Sta 16+95.52, 8.00' Lt Begin Taper

Exst WB SR 89A Cst ℄, 26.00' Lt Sta 551+50.00, Begin Shift

Exst WB SR 89A Cst ℄, 34.00' Rt Sta 551+50.00, Begin Taper

New Conc Half Barrier Std C-10.50, Gutter=2.5'

50:1 Taper

Varies

38'

S88°31'34"E

15'

33'

8'

14'

26'

21'

15'

26'

Exst EB SR 89A Cst ℄

Sawcut

PC 542+46.67

N89°36'18"E

N89°18'13"E

Sta 545+69.00 38.00' Rt End Paving

New Conc Median Barrier Std C-10.41

Glassford Hill Rd Ramp 'B' Cst ℄

PT 5+71.23

Sta 549+42.65 26.00' Rt Begin Paving

(240)

PC 17+48.13

PC 7+72.25

Exst EB SR 89A Cst ℄, 26.00' Rt Sta 552+25.00, Begin Taper

Exst EB SR 89A Cst ℄, 34.00' Lt Sta 552+25.00, Begin Shift

Exst Glassford Hill Rd Ramp 'B' Cst ℄

Exst R/W

540 545 550

10 15 5

Begin Glassford Hill Rd Ramp 'B' Cst ℄ POT Sta 11+13.85= 26.00' Rt Exst SR EB 89A Cst ℄ POC Sta 544+34.68

End Glassford Hill Rd Ramp 'B' Cst ℄ PT Sta 17+72.25= 0.00' Lt Exst Glassford Hill Rd Ramp 'B' Cst ℄ PC Sta 7+72.25

(240) CURVE DATA

PI Sta 17+60.19

Main Curve
Δ=0°18'05" Lt
D=1°15'00"
R=4583.66'
L=24.12'
T=12.06'
Ext=0.02'
Super=0.030'/ft

	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 150
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 539+00 TO STA 553+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.17

___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp36.dgn
3/14/2018 @ 11:45:47 AM kingn

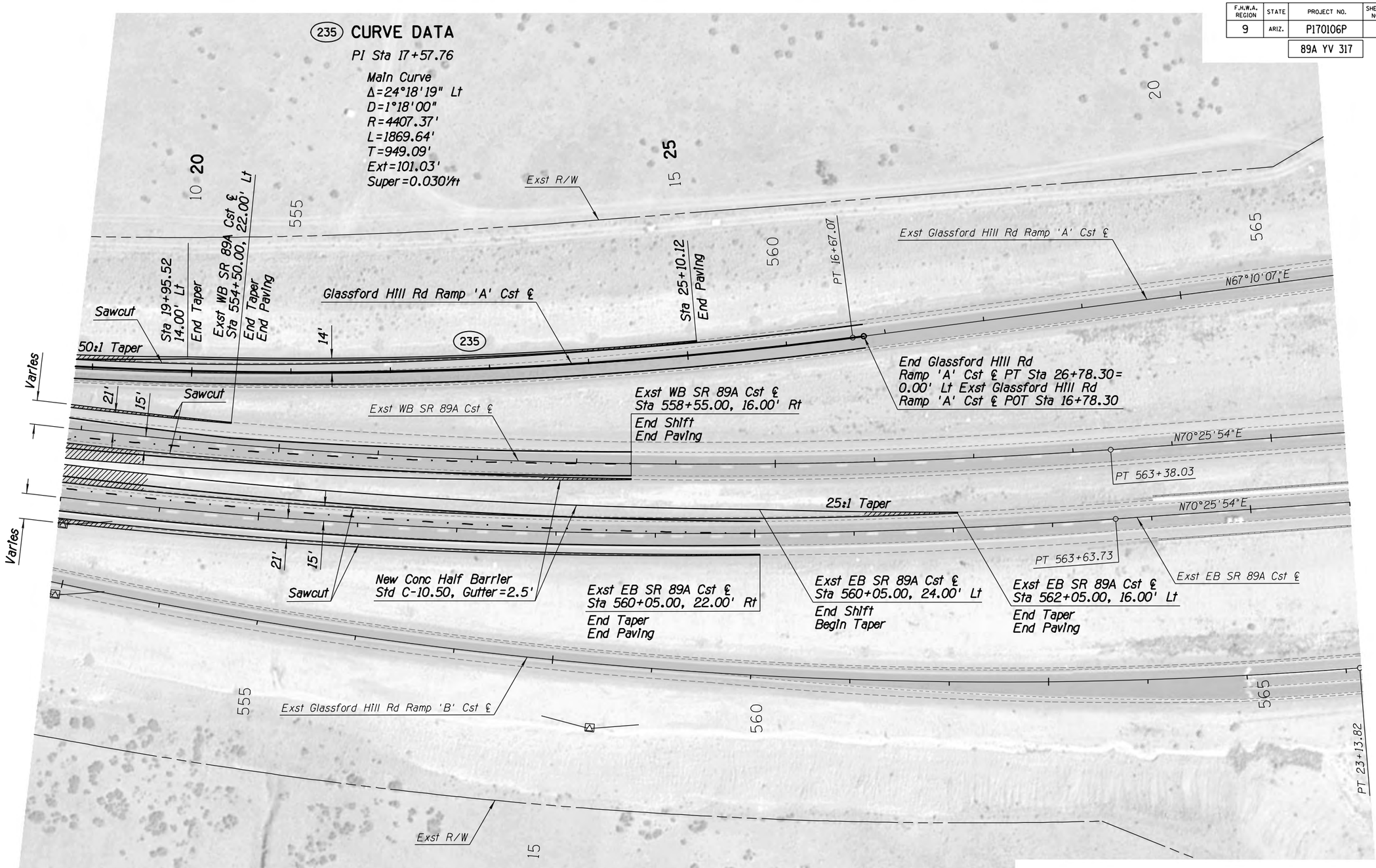
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	P170106P			

89A YV 317

(235) CURVE DATA

PI Sta 17+57.76

Main Curve
Δ=24°18'19" Lt
D=1°18'00"
R=4407.37'
L=1869.64'
T=949.09'
Ext=101.03'
Super=0.030'/ft



	NAME	DATE
DESIGN	NRK	02/18
DRAWN	WBE	02/18
CHECKED	RLB	02/18

TRANSPORTATION
AECOM TECHNICAL SERVICES, Inc.
7720 N 16th St, Suite 150
Phoenix, Arizona 85020
T 602.371.1100
AECOM
www.aecom.com

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ROADWAY PLANS
SR 89A
STA 553+00 TO STA 566+00

ROUTE: SR 89A
LOCATION: SR 89 TO ROBERT ROAD

TRACS NO. P170106P

PRELIMINARY
15%
NOT FOR CONSTRUCTION OR RECORDING

DWG NO. C-03.18

___ OF ___

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

PRINTER-B&W_HS_WYSIWYG.PLTCFG
WYSIWYG_W_NAME.TBL

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\900-CAD GIS\910 CAD\20 SHEETS\hxxxxp37.dgn
3/14/2018 @ 11:45:50 AM kingn

Appendix 10 – Cost Estimates

SR 89A, SR 89 to Robert Rd Order of Magnitude Estimate
Stage I (15%)
Robert Rd South Leg

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020036	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	18	10.00	200
2020201	SAWCUTTING	L.FT.	164	1.50	300
20300XX	EARTHWORK (2%)	L.SUM	1	1,600.00	1,600
40900XX	ASPHALTIC CONCRETE (MISCELLANEOUS STRUCTURAL) (1" AR-ACFC, 5" AC, AB or Lime Treated or Geotext)	SQ.YD.	84	60.00	5,100
60600XX	SIGNING (2%)	L.SUM	1	1,600.00	1,600
70100XX	OBLITERATE PAVEMENT MARKING	L.FT.	1,640	0.20	400
70400XX	PAVEMENT MARKINGS (STRIPE)	L.FT.	2,726	0.50	1,400
70800XX	PAVEMENT MARKINGS (SYMBOL)	EACH	6	100.00	600
73100XX	NEW TRAFFIC SIGNAL MAST ARMS	L.SUM	1	20,000.00	20,000
73600XX	NEW TRAFFIC SIGN HEAD	L.SUM	1	20,000.00	20,000
73600XX	NEW SIGNAL WARNING BEACONS	L.SUM	1	30,000.00	30,000
			ITEM TOTAL		**81,200**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		7,000.00	7,000
	Dust and Water Palliative (0.75%)	COST		1,000.00	1,000
	Quality Control (0.75%)	COST		1,000.00	1,000
	Construction Surveying (1.5%)	COST		2,000.00	2,000
	Erosion Control (0.3%)	COST		1,000.00	1,000
	Mobilization (8% of all construction items)	COST		9,900.00	9,900
			PROJECT WIDE SUBTOTAL		**21,900**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		21,000.00	21,000
			PROJECT WIDE TOTAL		**42,900**
OTHER COST					
	Construction Engineering (9%)	COST		12,000.00	12,000
	Construction Contingencies (5%)	COST		7,000.00	7,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.	0	1.50	-
	AR-ACFC Smoothness Incentive	L.MILE	0	11,000.00	-
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		10,000.00	10,000
	Right-of-Way	COST	*MAY REQUIRE NEW R/W (COST NOT INCLUDED)*		
	Utilities (Miscellaneous Relocation) (2%)	COST		3,000.00	3,000
			OTHER COST TOTAL		**32,000**

SUMMARY	
ITEM TOTAL	**81,200**
PROJECT WIDE	**42,900**
OTHER COST TOTAL	**32,000**
SUBTOTAL PROJECT COST	**156,100**
INDIRECT COST ALLOCATION (ICAP) (10.14%	**16,000**
TOTAL PROJECT COST	**172,100**
TOTAL PROJECT COST (ROUNDUP $10K)	**180,000**

SR 89A, SR 89 to Robert Rd Order of Magnitude Estimate
Stage I (15%)
SR 89A/SR89 EB On Ramp

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020036	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	8,692	7.00	60,900
2020201	SAWCUTTING	L.FT.	2,686	1.50	4,100
20200XX	REMOVE BARRIER	L.FT.	1,332	20.00	26,700
20300XX	EARTHWORK (4%)	L.SUM	1	44,000.00	44,000
40900XX	ASPHALTIC CONCRETE (RAMPS) (MISCELLANEOUS STRUCTURAL) (1" AR-ACFC, 5" AC, AB or Lime Treated or Geotext)	SQ.YD.	8,351	50.00	417,600
40900XX	ASPHALTIC CONCRETE (MAINLINE) (MISCELLANEOUS STRUCTURAL) (1" AR-ACFC, 7" AC, AB or Lime Treated or Geotext)	SQ.YD.	4,171	60.00	250,300
50000XX	DRAINAGE (3%)	L.SUM	1	33,000.00	33,000
60600XX	SIGNING (1%)	L.SUM	1	11,000.00	11,000
70400XX	PAVEMENT MARKINGS (STRIPE)	L.FT.	15,854	0.35	5,600
70600XX	PAVEMENT MARKERS	EACH	159	3.00	500
91000XX	CONCRETE HALF BARRIER	L.FT.	4,124	60.00	247,500
			ITEM TOTAL		**1,101,200**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		89,000.00	89,000
	Dust and Water Palliative (0.75%)	COST		9,000.00	9,000
	Quality Control (0.75%)	COST		9,000.00	9,000
	Construction Surveying (1.5%)	COST		17,000.00	17,000
	Erosion Control (0.3%)	COST		4,000.00	4,000
	Mobilization (8% of all construction items)	COST		130,000.00	130,000
			PROJECT WIDE SUBTOTAL		**258,000**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		272,000.00	272,000
			PROJECT WIDE TOTAL		**530,000**
OTHER COST					
	Construction Engineering (9%)	COST		147,000.00	147,000
	Construction Contingencies (5%)	COST		82,000.00	82,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.	0	1.50	-
	AR-ACFC Smoothness Incentive	L.MILE	0	11,000.00	-
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		131,000.00	131,000
	Right-of-Way	COST		-	-
	Utilities (Miscellaneous Relocation) (2%)	COST		33,000.00	33,000
			OTHER COST TOTAL		**393,000**

SUMMARY	
ITEM TOTAL	**1,101,200**
PROJECT WIDE	**530,000**
OTHER COST TOTAL	**393,000**
SUBTOTAL PROJECT COST	**2,024,200**
INDIRECT COST ALLOCATION (ICAP) (10.14%	**206,000**
TOTAL PROJECT COST	**2,230,200**
TOTAL PROJECT COST (ROUNDUP $100K)	**2,300,000**

P:\Projects\ADOT\ADOT_TPD\60542112 SR 89A SR 89 to Robert Rd Trans Study\400-Technical\431 Documents\Costest\Stage I (15%)\Final 15% Cost Estimate SR89A Short Term.xlsx

SR 89A, SR 89 to Robert Rd Order of Magnitude Estimate
Stage I (15%)
Viewpoint EB Off Ramp - ADOT

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
60600XX	SIGNING	L.SUM	1	1,000.00	1,000
70100XX	OBLITERATE PAVEMENT MARKING	L.FT.	1,068	0.20	300
70400XX	PAVEMENT MARKINGS (STRIPE)	L.FT.	828	0.50	500
70600XX	PAVEMENT MARKERS	EACH	7	5.00	100
70800XX	PAVEMENT MARKINGS (SYMBOL)	EACH	5	100.00	500
73600XX	NEW TRAFFIC SIGN HEAD	L.SUM	1	10,000.00	10,000
			ITEM TOTAL		**12,400**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		1,000.00	1,000
	Dust and Water Palliative (0.75%)	COST		-	-
	Quality Control (0.75%)	COST		1,000.00	1,000
	Construction Surveying (1.5%)	COST		1,000.00	1,000
	Erosion Control (0.3%)	COST		-	-
	Mobilization (8% of all construction items)	COST		1,680.00	1,680
			PROJECT WIDE SUBTOTAL		**4,680**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		4,000.00	4,000
			PROJECT WIDE TOTAL		**8,680**
OTHER COST					
	Construction Engineering (9%)	COST		2,000.00	2,000
	Construction Contingencies (5%)	COST		2,000.00	2,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.	0	1.50	-
	AR-ACFC Smoothness Incentive	L.MILE	0	11,000.00	-
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		2,000.00	2,000
	Right-of-Way	COST		-	-
	Utilities (Miscellaneous Relocation)	COST		-	-
			OTHER COST TOTAL		**6,000**

SUMMARY

ITEM TOTAL	**12,400**
PROJECT WIDE	**8,680**
OTHER COST TOTAL	**6,000**
SUBTOTAL PROJECT COST	**27,080**
INDIRECT COST ALLOCATION (ICAP) (10.14%	**3,000**
TOTAL PROJECT COST	**30,080**
TOTAL PROJECT COST (ROUNDUP $10K)	**40,000**

SR 89A, SR 89 to Robert Rd Order of Magnitude Estimate
Stage I (15%)
NB Viewpoint Dr - Private

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020036	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	71	10.00	800
2020201	SAWCUTTING	L.FT.	642	1.50	1,000
20300XX	EARTHWORK (4%)	L.SUM	1	2,350.00	2,400
40900XX	ASPHALTIC CONCRETE (MISCELLANEOUS STRUCTURAL) (1" AR-ACFC, 5" AC, AB or Lime Treated or Geotext)	SQ.YD.	861	60.00	51,700
60600XX	SIGNING (2%)	L.SUM	1	1,150.00	1,200
70100XX	OBLITERATE PAVEMENT MARKING	L.FT.	661	0.20	200
70400XX	PAVEMENT MARKINGS (STRIPE)	L.FT.	2,042	0.50	1,100
70600XX	PAVEMENT MARKERS	EACH	17	5.00	100
			ITEM TOTAL		**58,500**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		5,000.00	5,000
	Dust and Water Palliative (0.75%)	COST		1,000.00	1,000
	Quality Control (0.75%)	COST		1,000.00	1,000
	Construction Surveying (1.5%)	COST		1,000.00	1,000
	Erosion Control (0.3%)	COST		1,000.00	1,000
	Mobilization (8% of all construction items)	COST		7,200.00	7,200
			PROJECT WIDE SUBTOTAL		**16,200**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		15,000.00	15,000
			PROJECT WIDE TOTAL		**31,200**
OTHER COST					
	Construction Engineering (9%)	COST		9,000.00	9,000
	Construction Contingencies (5%)	COST		5,000.00	5,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.	0	1.50	-
	AR-ACFC Smoothness Incentive	L.MILE	0	11,000.00	-
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		8,000.00	8,000
	Right-of-Way	COST	*MAY REQUIRE NEW R/W (COST NOT INCLUDED)*		
	Utilities (Miscellaneous Relocation) (2%)	COST		2,000.00	2,000
			OTHER COST TOTAL		**24,000**

SUMMARY

ITEM TOTAL	**58,500**
PROJECT WIDE	**31,200**
OTHER COST TOTAL	**24,000**
SUBTOTAL PROJECT COST	**113,700**
INDIRECT COST ALLOCATION (ICAP) (10.14%	**12,000**
TOTAL PROJECT COST	**125,700**
TOTAL PROJECT COST (ROUNDUP $10K)	**130,000**

SR 89A, SR 89 to Robert Rd Order of Magnitude Estimate
Stage I (15%)
Glassford Hill WB On Ramp

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020036	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	164	10.00	1,700
2020201	SAWCUTTING	L.FT.	1,478	1.50	2,300
20300XX	EARTHWORK (4%)	L.SUM	1	4,800.00	4,800
40900XX	ASPHALTIC CONCRETE (MAINLINE) (MISCELLANEOUS STRUCTURAL) (1" AR-ACFC, 7" AC, AB or Lime Treated or Geotext)	SQ.YD.	1,179	70.00	82,600
50000XX	DRAINAGE (3%)	L.SUM	1	3,600.00	3,600
60600XX	SIGNING (2%)	L.SUM	1	2,400.00	2,400
70400XX	PAVEMENT MARKINGS (STRIPE)	L.FT.	2,592	0.50	1,300
70600XX	PAVEMENT MARKERS	EACH	28	5.00	200
73100XX	NEW RELOCATE EXISTING LIGHT POLE	L.SUM	1	20,000.00	20,000
			ITEM TOTAL		**118,900**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		10,000.00	10,000
	Dust and Water Palliative (0.75%)	COST		1,000.00	1,000
	Quality Control (0.75%)	COST		1,000.00	1,000
	Construction Surveying (1.5%)	COST		2,000.00	2,000
	Erosion Control (0.3%)	COST		1,000.00	1,000
	Mobilization (8% of all construction items)	COST		14,250.00	14,250
			PROJECT WIDE SUBTOTAL		**29,250**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		30,000.00	30,000
			PROJECT WIDE TOTAL		**59,250**
OTHER COST					
	Construction Engineering (9%)	COST		17,000.00	17,000
	Construction Contingencies (5%)	COST		9,000.00	9,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.	0	1.50	-
	AR-ACFC Smoothness Incentive	L.MILE	0	11,000.00	-
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		15,000.00	15,000
	Right-of-Way	COST		-	-
	Utilities (Miscellaneous Relocation) (2%)	COST		4,000.00	4,000
			OTHER COST TOTAL		**45,000**

SUMMARY	
ITEM TOTAL	**118,900**
PROJECT WIDE	**59,250**
OTHER COST TOTAL	**45,000**
SUBTOTAL PROJECT COST	**223,150**
INDIRECT COST ALLOCATION (ICAP) (10.14%	**23,000**
TOTAL PROJECT COST	**246,150**
TOTAL PROJECT COST (ROUNDUP $10K)	**250,000**

SR 89A, SR 89 to Robert Rd Order of Magnitude Estimate
Stage I (15%)
Glassford Hill EB Off Ramp

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020021	REMOVAL OF CONCRETE CURB AND GUTTER	L.FT.	745	5.00	3,800
2020025	REMOVAL OF CONCRETE SIDEWALKS, DRIVEWAYS, AND SLABS	SQ.FT.	1,302	5.00	6,600
2020036	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	287	10.00	2,900
2020201	SAWCUTTING	L.FT.	976	1.50	1,500
20300XX	EARTHWORK (4%)	L.SUM	1	6,500.00	6,500
40900XX	ASPHALTIC CONCRETE (MISCELLANEOUS STRUCTURAL) (1" AR-ACFC, 5" AC, AB or Lime Treated or Geotext)	SQ.YD.	1,112	60.00	66,800
50000XX	DRAINAGE (10%)	L.SUM	1	16,400.00	16,400
60600XX	SIGNING (2%)	L.SUM	1	3,200.00	3,200
70400XX	PAVEMENT MARKINGS (STRIPE)	L.FT.	2,202	0.50	1,200
70600XX	PAVEMENT MARKERS	EACH	26	5.00	200
73100XX	NEW RELOCATE EXISTING TRAFFIC SIGNAL	L.SUM	1	20,000.00	20,000
9080084	CONCRETE CURB AND GUTTER (C-05.10) (TYPE C)	L.FT.	870	20.00	17,400
9080201	CONCRETE SIDEWALK (C-05.20)	SQ.FT.	945	10.00	9,500
9080296	CONCRETE SIDEWALK RAMP (NEW)	EACH	4	2,000.00	8,000
			ITEM TOTAL		**164,000**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		14,000.00	14,000
	Dust and Water Palliative (0.75%)	COST		2,000.00	2,000
	Quality Control (0.75%)	COST		2,000.00	2,000
	Construction Surveying (1.5%)	COST		3,000.00	3,000
	Erosion Control (0.3%)	COST		1,000.00	1,000
	Mobilization (8% of all construction items)	COST		19,750.00	19,750
			PROJECT WIDE SUBTOTAL		**41,750**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		42,000.00	42,000
			PROJECT WIDE TOTAL		**83,750**
OTHER COST					
	Construction Engineering (9%)	COST		23,000.00	23,000
	Construction Contingencies (5%)	COST		13,000.00	13,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.	0	1.50	-
	AR-ACFC Smoothness Incentive	L.MILE	0	11,000.00	-
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		20,000.00	20,000
	Right-of-Way	COST		-	-
	Utilities (Miscellaneous Relocation) (2%)	COST		5,000.00	5,000
			OTHER COST TOTAL		**61,000**

SUMMARY	
ITEM TOTAL	**164,000**
PROJECT WIDE	**83,750**
OTHER COST TOTAL	**61,000**
SUBTOTAL PROJECT COST	**308,750**
INDIRECT COST ALLOCATION (ICAP) (10.14%	**32,000**
TOTAL PROJECT COST	**340,750**
TOTAL PROJECT COST (ROUNDUP $10K)	**350,000**

SR 89A, SR 89 to Robert Rd Order of Magnitude Estimate
Stage I (15%)
Viewpoint Dr WB On Ramp

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
60600XX	SIGNING	L.SUM	1	1,000.00	1,000
70100XX	OBLITERATE PAVEMENT MARKING	L.FT.	5,016	0.20	1,100
70400XX	PAVEMENT MARKINGS (STRIPE)	L.FT.	6,790	0.50	3,400
70600XX	PAVEMENT MARKERS	EACH	65	5.00	400
			ITEM TOTAL		**5,900**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		1,000.00	1,000
	Dust and Water Palliative (0.75%)	COST		-	-
	Quality Control (0.75%)	COST		1,000.00	1,000
	Construction Surveying (1.5%)	COST		1,000.00	1,000
	Erosion Control (0.3%)	COST		-	-
	Mobilization (8% of all construction items)	COST		1,000.00	1,000
			PROJECT WIDE SUBTOTAL		**4,000**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		2,000.00	2,000
			PROJECT WIDE TOTAL		**6,000**
OTHER COST					
	Construction Engineering (9%)	COST		2,000.00	2,000
	Construction Contingencies (5%)	COST		1,000.00	1,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.	0	1.50	-
	AR-ACFC Smoothness Incentive	L.MILE	0	11,000.00	-
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		1,000.00	1,000
	Right-of-Way	COST		-	-
	Utilities (Miscellaneous Relocation)	COST		-	-
			OTHER COST TOTAL		**4,000**

SUMMARY	
ITEM TOTAL	**5,900**
PROJECT WIDE	**6,000**
OTHER COST TOTAL	**4,000**
SUBTOTAL PROJECT COST	**15,900**
INDIRECT COST ALLOCATION (ICAP) (10.14%	**2,000**
TOTAL PROJECT COST	**17,900**
TOTAL PROJECT COST (ROUNDUP $10K)	**20,000**

SR 89A, SR 89 to Robert Rd Order of Magnitude Estimate
Stage I (15%)
SR 89A/SR89 EB Off Ramp

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020021	REMOVAL OF CONCRETE CURB AND GUTTER	L.FT.	37	5.00	200
2020025	REMOVAL OF CONCRETE SIDEWALKS, DRIVEWAYS, AND SLABS	SQ.FT.	161	5.00	900
2020036	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	49	10.00	500
2020201	SAWCUTTING	L.FT.	451	1.50	700
20300XX	EARTHWORK (4%)	L.SUM	1	2,200.00	2,200
40900XX	ASPHALTIC CONCRETE (RAMPS) (MISCELLANEOUS STRUCTURAL) (1" AR-ACFC, 5" AC, AB or Lime Treated or Geotext)	SQ.YD.	468	60.00	28,100
60600XX	SIGNING (2%)	L.SUM	1	1,100.00	1,100
70400XX	PAVEMENT MARKINGS (STRIPE)	L.FT.	2,730	0.50	1,400
70800XX	PAVEMENT MARKINGS (SYMBOL)	EACH	9	100.00	900
73100XX	NEW RELOCATE EXISTING LIGHT POLE	L.SUM	1	10,000.00	10,000
73600XX	NEW TRAFFIC SIGN HEAD	L.SUM	1	5,000.00	5,000
9080084	CONCRETE CURB AND GUTTER (C-05.10) (TYPE C)	L.FT.	24	20.00	500
9080201	CONCRETE SIDEWALK (C-05.20)	SQ.FT.	36	27.00	1,000
9080296	CONCRETE SIDEWALK RAMP (NEW)	EACH	1	2,000.00	2,000
			ITEM TOTAL		**54,500**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		5,000.00	5,000
	Dust and Water Palliative (0.75%)	COST		1,000.00	1,000
	Quality Control (0.75%)	COST		1,000.00	1,000
	Construction Surveying (1.5%)	COST		1,000.00	1,000
	Erosion Control (0.3%)	COST		1,000.00	1,000
	Mobilization (8% of all construction items)	COST		6,800.00	6,800
			PROJECT WIDE SUBTOTAL		**15,800**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	COST		15,000.00	15,000
			PROJECT WIDE TOTAL		**30,800**
OTHER COST					
	Construction Engineering (9%)	COST		8,000.00	8,000
	Construction Contingencies (5%)	COST		5,000.00	5,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.	0	1.50	-
	AR-ACFC Smoothness Incentive	L.MILE	0	11,000.00	-
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		7,000.00	7,000
	Right-of-Way	COST		-	-
	Utilities (Miscellaneous Relocation) (2%)	COST		2,000.00	2,000
			OTHER COST TOTAL		**22,000**

SUMMARY	
ITEM TOTAL	**54,500**
PROJECT WIDE	**30,800**
OTHER COST TOTAL	**22,000**
SUBTOTAL PROJECT COST	**107,300**
INDIRECT COST ALLOCATION (ICAP) (10.14%	**11,000**
TOTAL PROJECT COST	**118,300**
TOTAL PROJECT COST (ROUNDUP $10K)	**120,000**

SR 89A, SR 89 to Robert Rd Order of Magnitude Estimate
Stage I (15%)
GP Widening - SR89 to Glassford Hill

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020036	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	9,664	7.00	67,700
2020201	SAWCUTTING	L.FT.	78,321	1.50	117,500
20200XX	REMOVE BARRIER	L.FT.	3,453	20.00	69,100
20300XX	EARTHWORK (4%)	L.SUM	1	380,000.00	380,000
40900XX	ASPHALTIC CONCRETE (MAINLINE) (MISCELLANEOUS STRUCTURAL) (1" AR-ACFC, 7" AC, AB or Lime Treated or Geotext)	SQ.YD.	106,764	45.00	4,804,400
50000XX	DRAINAGE (3%)	L.SUM	1	290,000.00	290,000
60000XX	BRIDGE WIDENING	SQ.FT.	11,073	175.00	1,937,800
60600XX	SIGNING (1%)	L.SUM	1	100,000.00	100,000
70400XX	PAVEMENT MARKINGS (STRIPE)	L.FT.	192,830	0.35	67,500
70600XX	PAVEMENT MARKERS	EACH	2,636	3.00	8,000
800X002	LANDSCAPING (4 MILES @ $50,000/MI)	EACH	4	50,000.00	200,000
91000XX	CONCRETE HALF BARRIER	L.FT.	4,862	60.00	291,800
91000XX	CONCRETE MEDIAN BARRIER	L.FT.	19,702	65.00	1,280,700
			ITEM TOTAL		**9,614,500**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		770,000.00	770,000
	Dust and Water Palliative (0.75%)	COST		73,000.00	73,000
	Quality Control (0.75%)	COST		73,000.00	73,000
	Construction Surveying (1.5%)	COST		145,000.00	145,000
	Erosion Control (0.3%)	COST		29,000.00	29,000
	Mobilization (8% of all construction items)	COST		1,190,000.00	1,190,000
			PROJECT WIDE SUBTOTAL		**2,280,000**
	Unidentified Items (25% of Item Total and Project Wide Subtotal)	COST		2,974,000.00	2,974,000
			PROJECT WIDE TOTAL		**5,254,000**
OTHER COST					
	Construction Engineering (9%)	COST		1,339,000.00	1,339,000
	Construction Contingencies (5%)	COST		744,000.00	744,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.	0	1.50	-
	AR-ACFC Smoothness Incentive	L.MILE	8	11,000.00	88,000
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		1,190,000.00	1,190,000
	Right-of-Way	COST		-	-
	Utilities (Miscellaneous Relocation) (2%)	COST		298,000.00	298,000
			OTHER COST TOTAL		**3,659,000**

SUMMARY	
ITEM TOTAL	**9,614,500**
PROJECT WIDE	**5,254,000**
OTHER COST TOTAL	**3,659,000**
SUBTOTAL PROJECT COST	**18,527,500**
INDIRECT COST ALLOCATION (ICAP) (10.14%	**1,879,000**
TOTAL PROJECT COST	**20,406,500**
TOTAL PROJECT COST (ROUNDUP $100K)	**20,500,000**

SR 89A, SR 89 to Robert Rd Order of Magnitude Estimate
Stage I (15%)
Great Western TI

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
2020036	REMOVAL OF ASPHALTIC CONCRETE PAVEMENT	SQ.YD.	5,901	7.00	41,400
2020201	SAWCUTTING	L.FT.	17,218	1.50	25,900
20300XX	EARTHWORK (4%)	L.SUM	1	460,000.00	460,000
40900XX	ASPHALTIC CONCRETE (MAINLINE) (MISCELLANEOUS STRUCTURAL) (1" AR-ACFC, 7" AC, AB or Lime Treated or Geotext)	SQ.YD.	23,034	60.00	1,382,100
40900XX	ASPHALTIC CONCRETE (RAMPS/CROSS ROADS) (MISCELLANEOUS STRUCTURAL) (1" AR-ACFC, 5" AC, AB or Lime Treated or Geotext)	SQ.YD.	40,780	50.00	2,039,000
50000XX	DRAINAGE (3%)	L.SUM	1	350,000.00	350,000
60000XX	NEW BRIDGE	SQ.FT.	61,000	110.00	6,710,000
60600XX	SIGNING (1%)	L.SUM	1	120,000.00	120,000
70400XX	PAVEMENT MARKINGS (STRIPE)	L.FT.	66,963	0.35	23,500
70600XX	PAVEMENT MARKERS	EACH	643	3.00	2,000
800X002	LANDSCAPING (1 MILES @ $50,000/MI)	EACH	1	50,000.00	50,000
91000XX	CONCRETE MEDIAN BARRIER	L.FT.	4,305	65.00	279,900
			ITEM TOTAL		**11,483,800**
PROJECT WIDE					
	Maintenance and Protection of Traffic (8%)	COST		919,000.00	919,000
	Dust and Water Palliative (0.75%)	COST		87,000.00	87,000
	Quality Control (0.75%)	COST		87,000.00	87,000
	Construction Surveying (1.5%)	COST		173,000.00	173,000
	Erosion Control (0.3%)	COST		35,000.00	35,000
	Mobilization (8% of all construction items)	COST		1,420,000.00	1,420,000
			PROJECT WIDE SUBTOTAL		**2,721,000**
	Unidentified Items (25% of Item Total and Project Wide Subtotal)	COST		3,552,000.00	3,552,000
			PROJECT WIDE TOTAL		**6,273,000**
OTHER COST					
	Construction Engineering (9%)	COST		1,599,000.00	1,599,000
	Construction Contingencies (5%)	COST		888,000.00	888,000
	Environmental Mitigation (Unknown at this time)	COST		-	-
	PCCP Quality Incentive	SQ.YD.	0	1.50	-
	AR-ACFC Smoothness Incentive	L.MILE	0	11,000.00	-
	Engineering Design (Includes Surveying and Geotechnical) (8% of all items)	COST		1,421,000.00	1,421,000
	Right-of-Way	COST	*WILL REQUIRE NEW R/W (COST NOT INCLUDED)*		
	Utilities (Miscellaneous Relocation) (1%)	COST		178,000.00	178,000
			OTHER COST TOTAL		**4,086,000**

SUMMARY	
ITEM TOTAL	**11,483,800**
PROJECT WIDE	**6,273,000**
OTHER COST TOTAL	**4,086,000**
SUBTOTAL PROJECT COST	**21,842,800**
INDIRECT COST ALLOCATION (ICAP) (10.14%	**2,215,000**
TOTAL PROJECT COST	**24,057,800**
TOTAL PROJECT COST (ROUNDUP $100K)	**24,100,000**

SR 89A, SR 89 to Robert Rd Order of Magnitude Estimate
Stage I (15%)
Mid Term and Long Term Planning Level

Alternative	Construction	R/W *(ac)*	Utility Impacts	Notes
Glassford Hill Rd (roundabouts)	$ 7,000,000.00	--	Waterline along east side of GH	"Construct Double Lane Roundabout" from CPS CMF = $3,960,000 each; includes 800' of realignment on each leg overlap so one RA only include 75% total cost
Robert Rd (interchange)	$ 30,400,000.00	32	Overhead power line at interchange	Average TI cost $20M (Rodney estimate and CYMPO estimate); R/W assumes full take to north and south; additional 7650' of four lane arterial @ $7M/mi; signal at south end of Robert
SR 89A Mainline Widen (3rd lane - Glassford to Fain))	$ 12,100,000.00	--		Per Detailed Estimate $20.4 M to widen SR89 to Glassford (4.16 miles so $20.4 M/4.16 mi = $4.9M/mi....Glass to Fain = 2.46 miles)
Granite Dells (SB free right)	$ 300,000.00	--		"Construct New General Purpose Lane (AC) from CPS CMF = $2,640,000 per mile; new lane roughly 600'

Appendix 11 – Comment Response Matrices

REVIEW COMMENT FORM
State Route 89A, SR89 to Robert Rd Transportation Study

RE: Working Paper 1	DATE:
SEGMENT: N/A	RETURN DATE:
REVIEWER: Combination	
SUBMITTAL : Working Paper 1	
ADOT PROJECT MANAGER: Dan Gabiou	CONSULTANT: AECOM PROJECT MANAGER: Kate Bondy

CODES: A = Complied; B = Complied, but Modified; C = Could Not Comply (Response Required); D = Not Applicable

NO.	REVIEWER	PAGE	COMMENT	CODE	RESPONSE
1	Norm Davis, Town of Prescott Valley		Rename the "proposed trail" to the "Propose Multi-use Path Connection" in Figure 12	A	*Revision Completed*
2			Add the "PV Pipeline Multi-use Path" and "Central Core Multi-use Path to Figure 12	A	*Revision Completed*
3			Remove "no facilities" identification on the southern portions of the map that are not connected with the study corridor in Figure 12	A	*Revision Completed*
4			Include the "Corridor Location Study and Environmental Overview: I-17 to Fain Road Connector" in the previous studies section. Specifically identifying the proposed Robert Rd TI.	A	*Revision Completed*
5	Yavapai County	4	Figure 2: Image is too small	A	*Revision Completed*
6		5	Figure 3: Image is too small	A	*Revision Completed*
7		9	Section 3.1.4, Paragraph 1, Change sentence: Table 2 shows the full population counts, estimates, and ~~projects~~ projections between 2010 and ~~2040~~ 2015.	A	*Revision completed*
8		9	Section 3.1.4, Paragraph 2, Clarification: Please state why 3-miles was used and how yellow analysis boundary was derived.	A	*Further explanation provided*

NO.	REVIEWER	PAGE	COMMENT	CODE	RESPONSE
9	Yavapai County (continued)	19	Section 3.2.7.2, Add table: A summary table of intersections and deficiencies would be nice at the end of this section.	A	*Table added at the end of section 3.2.6.4*
10		21	Section 3.3.2, Bulleted Section, Question: Did the accident on January 22, 2013 and September 18, 2014 have any more details about influence of drugs or alcohol. Our recollection is that these crashes were related to either drugs or alcohol. How about a summary of the other crashes that were non-fatal were any of those attributed to drugs or alcohol?	A	*Revision Completed*
11		22	Table 15, Check figure: Under the Fatal column, should the figures be flipped under these two Junctions?: Intersection, Non-Interchange = ~~1~~ 2 Intersection Related, Non-Interchange = ~~2~~ 1	C	*We confirmed that the values in Table 15 are consistent with the data in ADOT's statewide crash database.*
12		27	Section 3.3.4.2, Paragraph 1, Clarification: How was this handled? Glassford Hill and Larry Caldwell data have been left out of this analysis because of the failing devices. Was there an analysis of data that was collected to fill in gaps? Since ARID should rely on matches for O-D determination, were timed-out origin points used to assume Glassford/L.C.? Why wasn't an attempt made to set up devices again? We assume Larry Caldwell has a lot of destination traffic due to jobs that are part of the industrial area and Glassford Hill is probably the highest destination of all the intersections. It's unfortunate that this information was lost. Explanation should be verbalized in the report on how this was handled. Does a 2nd attempt make sense? This significance of this data should be explained in the report. Does this data help in justification for certain improvements, etc. The VISSIM model utilized the O-D data with that data missing how does it affect the model?	A	*Unfortunately, two ARID devices (on Glassford Hill Road and Larry Caldwell Drive) did not successfully record real-time Wi-Fi data during the study. A second round of ARID data collection was attempted, with the goal of bridging this data gap, but we found that limited cellular signal availability near the ARID device locations was an impediment to data collection in the study area. Fortunately, other sources of data, such as the CYMPO model and counts of existing interchange turning movements, can be used to estimate the origin-destination trends in the study area, particularly when combined with the existing ARID data. This complimentary data was used to verify the O-D tables used in the VISSIM modeling effort. Because VISSIM results are provided as an average over space, the effects of not having more detailed information for these particular areas does not have a major impact on the model results. This information will be included in the final report text.*
13		30	Figure 15, Question: The count between Granite Dells Parkway and Larry Caldwell Rd shows 38,150. Is this just on the WB side?	A	*Revision completed. Updated graphic added (bi-directional) to legend of all intersection volume graphics.*
14		32	Figure 17, Add Note: Add a note to the two locations to specify that these did not collect on the Final Locations map.	B	*All most recent ARID data has been updated in table, and a note has been added to the figure.*
15		33	Paragraph 6, Clarification: Were the models run with a random seeding? How was median travel time calculated for missing ARID devices? Since ARID data was missing was 89A loaded conservatively to determine level of service how were	B	*Text added to the document to address random numbers and to clarify calibration procedure. The loading was done using volume data, which was collected in a different process separate from ARID and had no issues.*

NO.	REVIEWER	PAGE	COMMENT	CODE	RESPONSE
			missing intersections (Glassford and Larry Caldwell) modeled?		
16	Yavapai County (continued)	35-38	Existing Level of Service Maps – These Maps appear to differ significantly for peak hour counts in comparison to the existing volume counts on maps on Pages 28-29. Can you explain why?	A	*Revision completed. Existing Volume Figures on page 28-29 had wrong volumes displayed (2040 No-build volumes).*
17		44	Section 5.1.2, Paragraph 2, Correction: Change Jaspers to Jasper.	A	*Revision completed*
18		46	Section 5.3.1, Paragraph 3, Correction: Change bullet point 5 Grandville to Granville.	A	*Revision completed*
19		47	Figure 22, Question: Is the 2040 No-Build Condition the same as the existing 2017? No background growth?	A	*Revision completed. Existing Volume Figures on page 28-29 had wrong volumes displayed (2040 No-build volumes).*
20		49	Figure 23, Question: The count between Granite Dells Parkway and Larry Caldwell Rd shows 79,300. Is this just on the WB side?	A	*Revision completed. Updated graphic added (bi-directional) to legend of all intersection volume graphics.*
21		50	Correction: Section 3.3.6.3 and 3.3.6.4 should read 5.3.6.3 and 5.3.6.4	A	*Revision completed*
22		50	Section 3.3.6.4 (5.3.6.4), Paragraph 1, Clarification: Regarding the 2017 Existing Conditions, is the No-Build 2040 identical to the 2017 Existing or does Table 31 not include 2017 Existing?	A	*Table is meant to only include 2040 No-build results. There was a typo in the text. Revision completed.*
23		55	Section 5.4, Clarification: Conclusion does not relate to project objective as stated on Page 1, Section 2.3. Are improvements (in final bullet) addressed in working paper?	D	*Working Paper #1 identified existing and future deficiencies, Working Paper #2 and Final Report will include improvements to address these deficiencies.*
24	Dan Gabiou	6	Under SR89 Chino Valley..., 1st Paragraph, 2nd sentence: delete "and"	A	*Revision completed*
25		6	Under SR89A at Robert Rd RSA, 2nd Paragraph: missing period at end of paragraph.	A	*Revision completed*
26		7	Under 2.5.3, "STP" funds have been changed under the FAST Act to "Surface Transportation Block Grant Program (STBGP)".	A	*Revision completed*
27		16	Under 3.2.4, could you please add a sentence to explain the "Cracking" and "Average IRI" scales (similar to what was included in section 3.2.5 for Bridge rating)?	A	*Revision completed*
28		21	3.3.1.1, last bullet: the description states the motorcyclist was "legally" impaired, but had a BAC of 0.086 (0.08 being the legal limit). Is this terminology in error?	D	*Using the terminology from crash data/report*

NO.	REVIEWER	PAGE	COMMENT	CODE	RESPONSE
29	Dan Gabiou	27	Do you have an estimated timeframe of when Table 26 will be available?	A	*Table 26 went in the TAC with WP #1.*
30		34	Table 29: Could you add On Ramp LOS data as well? I believe one of the higher PV priorities is the AM Peak NB Glassford Hill to WB SR89A on-ramp traffic.	D	*On-ramp LOS is in the Figure diagram; there will also be detailed LOS data in Appendices in Final Report.*
31		41	4.1.3.3: Please provide low-income/minority/LEP data here so we have data to support sections 4.2.2.3 and 4.2.2.4 and determine whether we will need to translate materials for public meetings.	A	*Revision completed. No need for public meeting extra materials.*
32		50	Same as comment 7: Could you add On Ramp LOS data to the table or new table?	D	*On-ramp LOS is in the Figure diagram; there will also be detailed LOS data in Appendices in Final Report.*
33		ii, 56, 58	Instead of "Attachment", could you replace with "Appendix" and add a title to Appendix 1 and 2?	A	*Revision completed.*
34	TAC Meeting		Incorporate the environmental justice/title VI items into the report	A	*Revision completed*
35			Add details of the new Deep Well Ranch housing development located northwest of the study corridor. It is suggested that an increase as many as 20,000+ in population could occur within the next 5-10 years.	A	*Revision completed*
36			Add more detail explaining the 3-mile study area boundary	A	*Revision completed*
37			Use hierarchy for functional classification map	A	*Revision completed*
38			Reclassify the portion of the SR 89 directly south of SR 89A as the same as the remainder of the route	A	*Revision completed*
39			Take an inventory of the currently lighting along the corridor. Visually represent this in the corridor features diagram	A	*Revision completed*
40			Remove all notations of non-motorized facilities outside of the study corridor or intersection roadways Rename the future "trail" as "multi-use path"	A	*Revision completed*
41			Review and incorporate 2016 crash data	D	*2016 Data received seemed to be missing crashes and didn't include any information for our corridor therefore not updated.*
42			Increase the font size in the traffic diagrams	A	*Revision completed*

NO.	REVIEWER	PAGE	COMMENT	CODE	RESPONSE
43	TAC Meeting		Add color to the text for failing movements	A	*Revision completed*
44			Reprocess the O-D data and correlate to the VISSIM model	A	*Revision completed*
45			Adjust the color of the speed limits in the Roadway Features diagram to add visual clarity	A	*Revision completed*
46			Add reference to lighting conditions in the safety section	A	*Revision completed*
47			Make distinction of crashes influenced by any form of impairment	A	*Revision completed*
48			Add collision diagrams to the crash hot spots	A	*Revision completed*
49			Add table to safety analysis that is categorized by location instead of by year	A	*Revision completed*

REVIEW COMMENT FORM
State Route 89A, SR89 to Robert Rd Transportation Study

RE: Working Paper 2	DATE:
SEGMENT: N/A	RETURN DATE:
REVIEWER: Combined Comments	
SUBMITTAL : Working Paper 2	
ADOT PROJECT MANAGER: Dan Gabiou	CONSULTANT: AECOM PROJECT MANAGER: Kate Bondy

CODES: A = Complied; B = Complied, but Modified; C = Could Not Comply (Response Required); D = Not Applicable

NO.	REVIEWER	PAGE	COMMENT	CODE	RESPONSE
1	Norm Davis, Town of Prescott Valley		Include the letter from the City Council in Public Involvement information	A	*Revision Completed*
2			We should adjust implementation to refer to either the roundabouts at Glassford Hill or Great Western can be implemented first	A	*Updated prioritization to show Great Western prior to Glassford Hill per Core Team.*
3			Please confirm Town of Prescott Valley letter dated October 26, 2017 is included in Public comments.	A	*Revision Completed*
4	Yavapai County	General	Implementation of projects should occur before failure happens. As previously discussed a range of improvement should be specified to ensure improvements are in place before failure.	A	*Revision completed. Revised implementation to terms instead of years (short-term, mid-term, long-term).*
5		General	Do the traffic projections include the latest iteration of the Jasper TIA from PV?	D	*No the projections did not include the latest iteration. The model was updated based on the best information that the Town had supplied in Summer 2017.*
6		18	Is it possible to show schematic of Great Western northern intersection within existing ROW?	A/D	*It is possible that the ramps could be moved in to avoid ROW during further design. The current layout matches the 15% plans included in the DCR which also include a system interchange which will require more ROW. Text will be added to the report to reference the 15% and an option to reduce ROW during this first phase of Great Western implementation if needed.*
7		31	The alternative matrices are difficult to follow, is there another way to organize this information for clarity? Also, the "Net Effect" in each category appears to be only the Criteria	A	*Matrix updated to clarify scoring.*

NO.	REVIEWER	PAGE	COMMENT	CODE	RESPONSE
			Rating instead of the Criteria Rating multiplied by the adjustment factor. The sums at the bottom appear to be the summation of the Criteria Rating with the adjustment factors.		
8	Yavapai County		LOS for 2040 Build PM condition on Granite Dells WB Entr Ramp section appears to jump significantly in this one location from 2035 to 2040.	A	*Revision completed. VISSIM model had an error that has been addressed and updated.*
9			Will the final report have rankings of the recommended projects	A	*Yes and revision completed.*
10	Progress Meeting		Update the recommended prioritization to include Great Western before Glassford Hill Roundabouts	A	*Revision completed*
11			Update the recommended prioritization list to include numbers	A	*Revision completed*

REVIEW COMMENT FORM

State Route 89A, SR89 to Robert Rd Transportation Study

RE: Draft Final Report	DATE:
SEGMENT: N/A	RETURN DATE:
REVIEWER:	
SUBMITTAL : Draft Final Report	
ADOT PROJECT MANAGER: Dan Gabiou	CONSULTANT: AECOM PROJECT MANAGER: Kate Bondy

CODES: A = Complied; B = Complied, but Modified; C = Could Not Comply (Response Required); D = Not Applicable

NO.	REVIEWER	PAGE	COMMENT	CODE	RESPONSE
1	Dan Gabiou	13	Add Table 43 to page 13 as part of the Executive Summary	D	Table is already in executive summary as Table ES-7 on Page 17
2	BR	12	Either move Tier 4 criteria to this page or move all of 1.9.2 to page 13.	A	Will update formatting
3	BR	27	Zoning info goes from County to PV without listing PV in the text. "Similarly to Yav. Co., the zoning….."	A	Will update text
4	BR	28	Table 3 the 63,487 number should have ac behind it. A little confusing when the column title says population.	B	We agree this was confusing; We changed the table to read the total population in the bottom row, rather than acreage.
5	BR	64	4.2.1.8 – "…three cultural resources site eligible under for listing…" - this doesn't make sense.	A	Will update text
6	BR	100	Roundabout Alternative – it was my understanding that this was not going to be included. Or at the very least it was to state that this was only an option for a safety consideration.	B	Will Comply. We will be keeping the roundabout alternative in the report; however, is it not recommended for implementation. We will add text stating that the roundabout alternative is only a safety consideration.
7	BR	103	Roundabout exhibit – same as above.	D	Because the roundabout option is still included in the report as an option that was considered, the exhibit should remain. However, it is not recommended for implementation
8	BR	105	2 & 3 lane roundabout – same as above.	D	Because both roundabout options are still included in the report as options that were considered, the text should remain. However, it neither is recommended for implementation
9	BR	119	6.5.2 – 2030 number but text states 2025.	A	Will update text

NO.	REVIEWER	PAGE	COMMENT	CODE	RESPONSE
10	BR	123	Viewpoint Dr. text states "…through Year 2040 in both the AM peak …" - ?????	A	Will update text
11	BR	App 1	The spreadsheet text reads mar4ers and pla9ue????	A	Will update text
12	ND-PV	27	Sec. 3.1.3-Remove "s" from Glassford Hills in two places	A	Will update text here and anywhere else that reads "Hills" rather than "Hill"
13	ND-PV	55	Table 31: For Viewpoint Dr. TI - Why is Intersection Approach LOS & Delay a "C" for WB SR89A Off Ramp in PM when it currently backs up into mainline SR 89A in PM Peak?	A	We assume this comment is related to the eastbound off ramp. The ramp does back up for short periods of time, but the LOS and Delay provided are averaged across the entire peak hour. Those short periods of back-up will only increase over time, degrading the ramp in future years, as shown.
14	ND-PV	66	Sec. 5.1.2-Remove "s" from Glassford Hills in four places	A	Will update text here and anywhere else that reads "Hills" rather than "Hill"
15	ND-PV	68	Sec. 5.2.2- Change "FY 16" to "Completed January 2017" for bullet point Lakeshore Dr.- SR89A, Prescott Valley- Multi-use Path	A	Will comply
16	ND-PV	100	Last Paragraph- "South of the interchange, the cross road would" *remove* "intersect with Robert Road south of the Prescott Valley Bible Church and Bright Futures Preschool located south of SR 89A along the existing Robert Road alignment." *and replace with* "connect to a proposed extension of Sante Fe Loop from the West."	A	Will comply
17	ND-PV	119	Sec. 6.5- Can a reference be added that Predictive Safety Analysis is included in Appendix 3?	A	Will comply
18	ND-PV	Apx-9	Can font for Cost Estimates be bigger?	A	Will comply
19	Yavapai County	9	Table ES-1 – Is the sudden loss of LOS on SR89A/Granite Dells Pkwy TI a function of the roundabout reaching a tipping point?	A	Yes, roundabouts have an exponentials curve for volume-to-delay, and this is combined with the degrading LOS at adjacent interchanges
20	Yavapai County	12	Can we include the entire Tier 4 with weighting factor on either Page 12 or Page 13?	A	Will Update text
21	Yavapai County	15	Why does EB SR89A Off-Ramp improve from 2030 to 2040?	A	In each year of build implementation, we have attempted to optimize signal timings. Overall, the intersection operations are getting worse from 2030 to 2040. However, this leg is improving because our signal timing optimization has attempted to minimize overall delay. Some legs are benefiting from the degradation of other legs.

NO.	REVIEWER	PAGE	COMMENT	CODE	RESPONSE
22	Yavapai County	16	Can we add a table that compares the build vs no-build directly? The AM/PM comparison is limited in providing a before/after comparison.	A	Will add 2 tables to the executive summary only to show mainline Build and No-Build comparison
23	Yavapai County	22	Image quality for Figure 2 needs to be improved. Text is not legible for many labels.	B	Will move these images to an appendix, where they can be made as large as possible. However, the text is not very legible even in the original report from which the images were taken.
24	Yavapai County	26	Image quality for Figure 4 needs to be improved. Text is not legible for many labels.	B	Will move these images to an appendix, where they can be made as large as possible. However, the text is not very legible even in the original report from which the images were taken.
25	Yavapai County	30	Figure 6 – For areas in County, which color codes are utilized? Also, difficult to tell the colors apart with varying colors, can we use hatching or different fills for contrast?	B	Will update the map to include as much county data as we have available and will label it appropriately. Hatching will be added so that similar colors are more distinguishable.
26	Yavapai County	31	Figure 7 – Colors are difficult to tell apart, another method to differentiate the different zoning is needed.	A	Hatching will be added so that similar colors are more distinguishable.
27	Yavapai County	73	Is the weaving before the WB SR 89 off-ramp causing the LOS to drop at the start of the off-ramp? It appears the LOS improves just after this point.	A	Yes. In the No-Build conditions, the existing traffic to SR 89 is spilling back onto the mainline
28	Yavapai County	92	Figure 36 – How does this design interface with the most current Jasper development TIA?	A	We do not have the most recent TIA. However, according to the Staff Report posted online dated Oct. 2017, the extents of this design ends northwest of the boundaries of the Jasper development. It seems to align closely with the western boundary line. The closest parcel of the Jasper development to the extents of this design is Phase 15 which, as seen in the Staff Report, does not show any development. We think that this Great Western Drive would be able to T into their Point of Rocks Parkway. However, their graphics do not show this Great Western Drive.
29	Yavapai County	109	Why is Great Western recommended in the long term 2040 build recommendation on this page but it shown as a mid-term 2035 recommendation on page 119?	B	These recommendations are to be implemented prior to 2040. We have updated the text to remove the phrase "long term" from this section of the report. The plan of implementation and the prioritization sections provide guidance on time frames for each project.
30	Yavapai County	119	Section 6.5.2 – "2025" should be "2030" to match implementation year	A	Will update text
31	Yavapai County	A2	Make roadway labels more visible, hard to see against terrain	A	Will comply

NO.	REVIEWER	PAGE	COMMENT	CODE	RESPONSE
32	Yavapai County	A3	Has this been updated since the original draft? Is this the draft final?	A	This is the final version. We did not receive any comments on the report in draft format
33	Yavapai County	A8	Where is the stationing along the centerline?	D	We do not have a survey for this project which would provide geometric control, and we therefore did not include geometric data sheets. The stationing that is shown on the plan sheets both for mainline and ramp centerlines is taken from the As-Builts
34	Yavapai County	A8	C-03.01 – Should provide intersection crossing labels on plan sheet either in design sheet or within title block.	A	Will Comply
35	Yavapai County	A8	C-02.01 - 2nd DWG, mid-term projects should have key similar to the short term projects to decipher what the projects are that will be shown on the subsequent pages. The following page appears to show the 89 interchange, but no description of what work this plan sheet is connected to is available.	A	Mid-term plans depict one single project. We will add a key to indicate that