

Van Buren Corridor

(24th Street to 40th Street)

Bicycle and Pedestrian Improvements Design Assistance

December, 2014



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(24th Street to 40th Street)
Bicycle and Pedestrian Improvements Design Assistance**

December, 2014

Prepared For:

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1.0 INTRODUCTION

1.1 PROJECT PURPOSE

The Van Buren Street Corridor is currently comprised of two travel lanes in each direction with a center turn lane; primarily providing for motorized travel. There are no bicycle facilities, sidewalks are narrow and in poor condition, and there are very few trees providing shade. The purpose of this design assistance project is to look more technically at the measures identified by the Reinvent Phoenix Gateway TOD (Transit Oriented Development) Report which proposes to repurpose the corridor into more of a complete street, enhancing the walkability and bikeability, public transit use, and economic revitalization opportunities.

1.2 PURPOSE OF REPORT

The purpose of this report is to build upon the efforts made by the City's Reinvent Phoenix transit oriented development planning work for the Gateway District. The Gateway TOD study encompassed a larger area reaching well beyond the Van Buren Corridor, while this project focused on the next level of planning and design within the public right-of-way for Van Buren Street, in an effort to advance the goals for the Gateway District. (Refer to the REINVENTPHX GATEWAY TOD REPORT by Duany Plater-Zyberk & Company, LLC). The goal of this project is to identify a set of preferred urban design improvements and treatments that can be implemented either in conjunction with new development, or through direct public or private capital investment. This report and the technical plans and diagrams will be used by City staff, community members, developers and design consultants for implementation of future public and private improvements on Van Buren Street.

1.3 PROJECT LOCATION

The project area is located along Van Buren Street between 24th Street and 40th Street in the City of Phoenix.



Figure 1: Project Area Location

2.0 SITE INVENTORY

Data was collected from various sources for corridor evaluation including:

- *Aerial Mapping*; 2014 Maricopa County Assessor's Mapping
- *Utility Mapping*; City water, sewer and storm drain, and private utilities – gas, electric, communication, etc.
- *Property / Right-of-Way*; 2014 Maricopa County Assessor's Mapping, and City Right-of-Way Quarter Section Mapping
- *REINVENTPHX* – Gateway TOD Draft Report, July 16, 2013
- *Field Research*

3.0 SITE ANALYSIS

3.1 CORRIDOR HISTORY

The Van Buren Street Corridor was developed in response to the traveling motorist. With the advent of the automobile in the 1920s, Van Buren became a main thoroughfare jammed with swanky

cocktail lounges and "motor lodges," a convenience to those traveling U.S. Highways 70, 80, and 89, all of which intersected Van Buren.¹

In its heyday from the 1930s to the early 1960s, this eastern gateway to Phoenix was bustling with travelers working their way west. The corridor was lined with tourist amenities that included motels, diners, iconic neon signs and interesting roadside attractions.² By the 1970's, with the expansion of Interstate 10, the corridor began to decay as Van Buren Street was no longer the main thoroughfare.

A goal of the Gateway TOD Report was to provide the Gateway District and the Van Buren Corridor with the opportunity to reclaim its potential to be once again the portal to the City. The Gateway plan is to provide multi-modal transportation opportunities within the District. This is to be accomplished by improving the multi-modal link between Valley Metro light rail, Sky Harbor's Sky Train, bus transportation, bicycle lanes, and pedestrian use.

With the addition of light rail along Washington Street, and a decrease in traffic volumes along Van Buren, the addition of bicycle lanes can now be accomplished by removing traffic lanes and using the extra street width for bicycle lanes.

While the long term goal of the Gateway plan is to provide for overall transportation oriented development within the District, an immediate benefit of improving multi-modal transportation along the Van Buren Corridor will be seen by the local community. The corridor is currently located in a low-income area, and improvements to pedestrian and bicycle infrastructure will create more convenient and affordable transportation choices for the economically disadvantaged and transit-dependent populations.

1. Phoenix history: The heyday of Van Buren Street by Michelle Dodds, Special for The Republic June 27, 2014 www.azcentral.com/story/news/local/phoenix/2014/06/27/phoenix-history-van-buren-street-once-a-hub-for-tourists/11476555/ Access Date 9-17-14
2. Van Buren Street: Phoenix's Former Main Drag Is Now Just a Drag By Robrt L. Pela Thursday, Jan 28 2010 www.phoenixnewtimes.com/2010-01-28/culture/van-buren-street-phoenix-s-former-main-drag-is-now-just-a-drag/full. Access Date 9-17-14

3.2 EXISTING CONDITIONS

Over the course of the project, multiple site visits were conducted to inventory the street elements and to get a sense of how the street was being utilized; by motorists, pedestrians, bicyclists, and by the adjacent businesses that front onto the street. Existing conditions were identified to gain a sense of the local community character and context. The existing conditions and context for the street are described below. An Existing Conditions Map was produced that builds on the Gateway TOD Report while focusing on Van Buren Street (See Appendix A – Existing Conditions).

3.2.1 Right-of-Way

The existing right-of-way is generally 80-ft wide; the street pavement is generally 56-ft wide; which leaves approximately 12-ft for the pedestrian and landscape area on each side of the street.

3.2.2 Street

The use of the street corridor has changed over the decades. With the changes of land use, the addition of the freeway system and light rail transportation, the traffic volumes have decreased on Van Buren Street. With the lower traffic volume, the City has determined that the removal of one traffic lane in each direction is appropriate to accommodate new bike lanes. The existing lane configuration is two through lanes (12-ft outside/11-ft inside) in each direction and a 10-ft continuous left turn lane.

The existing street pavement west of 32nd Street is in poor condition and repairs would be required in certain areas to provide a safe bike lane. East of 32nd Street the pavement is in good condition. Therefore, it appears that a pavement overlay would be required west of 32nd Street, whereas, a less expensive slurry micro seal could be used east of 32nd Street. The slurry micro seal is necessary to cover the existing traffic lane striping to prepare the street for new bike lane striping and reconfiguration of traffic lanes.

Safety will be improved along the street with the addition of bicycle lanes, narrowed street configuration, slower traffic speeds, signage and improved pedestrian environment. These improvements will also improve safety along routes to several public schools in the project vicinity.

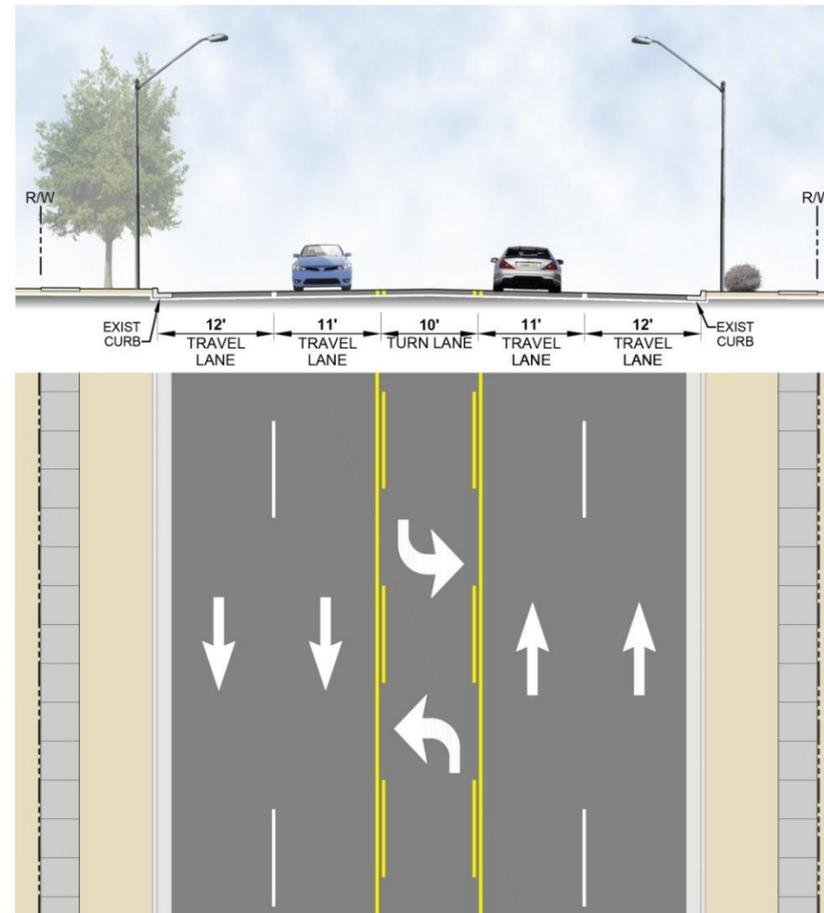


Figure 2: Existing Street Section & Plan View

The existing conditions analysis identified a location for a potential new crosswalk in the vicinity of Gateway Drive, east of 38th Street. The project has a consistent quarter-mile spacing of crosswalks except at this location. This location would also provide pedestrian access from the north side of Van Buren Street directly south to a light rail station on Washington Street. Any new crosswalks would need to be examined and authorized by City of Phoenix Street Transportation Operations Division.

Other characteristics of the street that will influence project improvements include:

- **Drainage:** The land in the project area generally slopes in a southwesterly direction. Loop 202 to the north collects upstream runoff, so stormwater runoff from the area downstream of Loop

202 enters Van Buren Street and is conveyed to the west in the street's gutters and in storm drain laterals. There are large diameter storm drains that run south in both 24th Street and 32nd Street. These storm drains both have laterals in Van Buren Street. The Van Buren lateral that connects to the 24th Street storm drain runs all the way upstream to 32nd Street, but the one that connects to the 32nd Street storm drain only runs a short distance to 32nd Place. Since Van Buren Street conveys significant stormwater runoff, the design of the street improvements must consider stormwater conveyance. Hence, the design of landscape "tree pockets" (bulb-out islands) for on-street parking should be designed with flush curb to minimize the impact to the street's ability to convey runoff. Otherwise the new improvements could create drainage issue by restricting the conveyance capacity of the street.

- **Adjacent properties with frequent visits:** The existing land uses along the street generally do not generate frequent come and go traffic, with the exception of three gas station/convenience stores, and one restaurant along the two mile stretch. This is beneficial for the bike lane because there are fewer conflicting travel movements between vehicles and bicyclists at most of existing driveways. A good portion of the street's driveways serve business or residential uses that see most of the traffic at the beginning and end of the work day.
- **Driveways and potential driveway removals:** Numerous driveways on the project were established during the motel era and many are no longer utilized. Of the 128 existing driveways, as many as one third or more could potentially be removed during redevelopment and the use of shared driveways. The reduction of driveways is very important to improving bicyclist and pedestrian safety, therefore an access management plan should be considered for future development within the corridor.

3.2.3 Sidewalk

The existing sidewalk is old and narrow, generally 4-ft wide, but overall it is in fairly good condition. There are sections of the sidewalk, however, that are not ADA compliant and need to be reconstructed or repaired; including non-compliant slopes within the

sidewalk and sidewalk ramps. There are also tripping hazards where the sidewalk has settled, and at utility boxes, manholes, etc. that would either need to be adjusted or ground smooth to acceptable standards. Currently, since the historic land uses made the street more of a motorist corridor, there is not significant pedestrian use other than the school routes and street crossings. As new development fills in, land use changes, and transportation modes shift, the pedestrian area will need to be enhanced with wider sidewalks.

3.2.4 Landscape

Typically, there is an existing 7-ft wide landscape planter between the curb and the sidewalk. Except for newer developments, the street landscaping maintained by the City has significantly declined since it was installed in the 1980's. Very few of the trees that were planted remain, and many of the landscape planters are barren, or what few plants remain are deteriorating. The irrigation system is not operating and is older than its expected life cycle and, if operated, is likely inefficient.



New landscaping has been installed along the street frontage of newer developments, which helps to enhance the street, but there are long stretches where landscaping does not exist, and therefore consistent streetscape aesthetics are lacking and very little shade is provided for pedestrians.

What is left of the older more lush plantings, palm trees for example, are declining and almost gone. The new landscapes are more xeric and consist of low water using plantings.

3.2.5 Overhead Utilities

There are four locations where overhead electrical lines cross the street: 30th Street, 30th Place, 36th Street, and on the west side of the Grand Canal. Otherwise the only overhead utility are the power lines for the street lights. The overhead street light circuit would be installed underground when new street lighting is installed with street improvements.

3.2.6 Land Use

The Van Buren Corridor historically developed by catering to the traveling motorist. But a new mix of land use is being established and planned for in the Gateway District. This new mix of land use creates the opportunity for regular pedestrian activity in the corridor. The corridor is currently transitioning away from intense motor vehicular driven uses to a mix commercial and residential land uses with the need to have more multi-modal choices.

3.2.7 Character

The corridor is in transition, with remnants of the past mixed with new development. Although there is mix of land uses including some residential, the corridor has the feel of a commercial or industrial strip. New landscaping associated with new development improves the corridor, but there are many barren gaps between these developments. The existing right-of-way landscaping is very sparse and declining. And there are many vacant lots and deteriorating properties. All of which contribute to the need for significant corridor improvement.

The existing architectural character of the project corridor is an eclectic mix of new and old architecture of varying styles. Older buildings include remnants of the motel era, 60's storefront architecture, and other nondescript buildings. Recent developments provide more contemporary architecture. Commercial signs are prevalent in the corridor. The most unique character element of the corridor is the iconic signage that remains from the motel era. The motel era signs targeted the traveling motorist and therefore are quite large in scale with some being disproportionately elevated. There are also a number of large billboards that add to the fairly intense commercial signage clutter typical of elongated commercial development.

3.3 EXISTING UNDERGROUND UTILITIES

The existing underground utilities create a significant challenge to the success of enhancing the Van Buren Corridor. There are numerous utilities of all types, both public and private that are spread throughout the right-of-way, and travel the length of the of the project. The utility owners require certain clear distances between their utility lines and tree plantings. In this corridor, the utility lines are so prevalent, that when all of the clear distances, or clear zones, are observed, there are

very few locations where trees can be planted. Figure 3 illustrates four typical cross sections along the corridor, the utility conflicts, and the limited space remaining to plant trees.

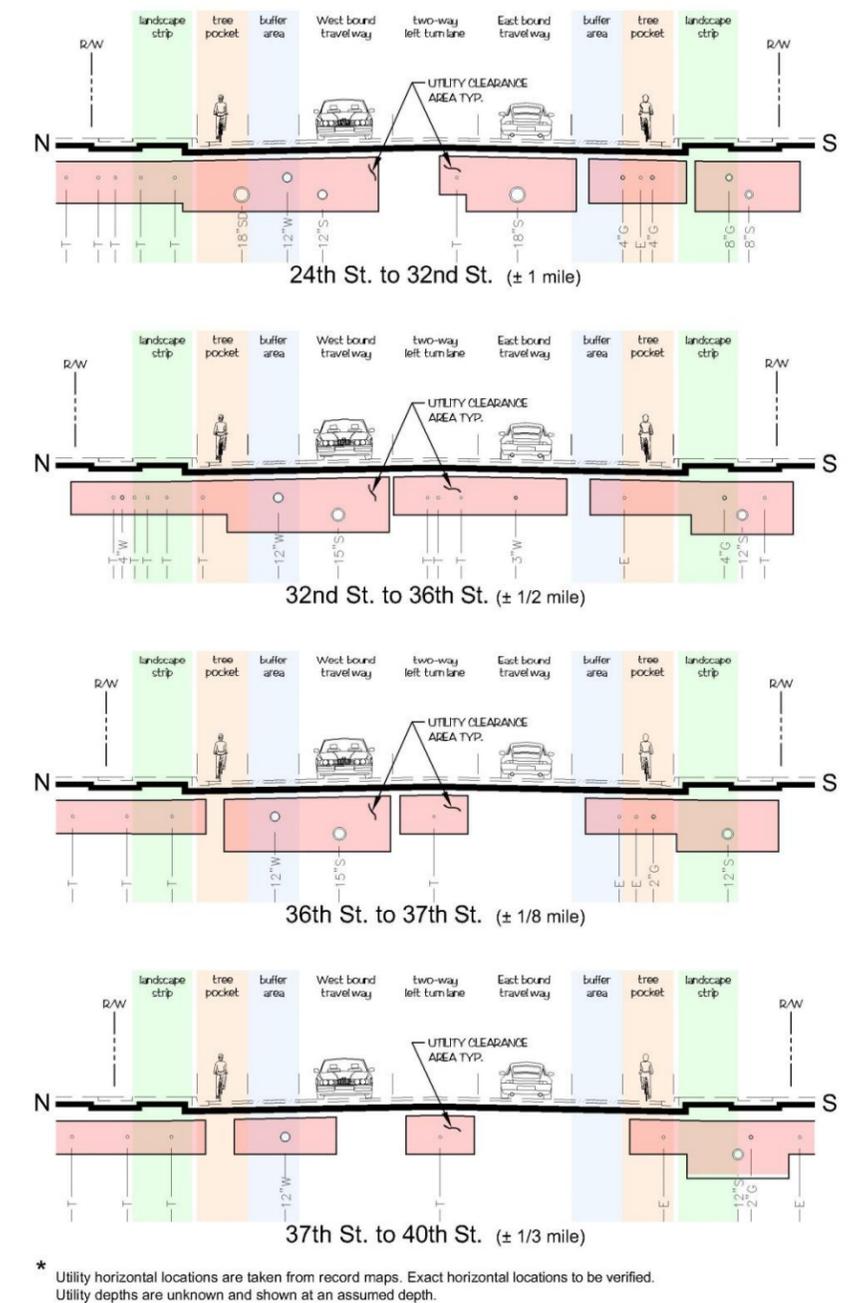


Figure 3: Tree Planting Utility Conflicts Evaluation
Van Buren Street – Looking East
(Representative Utility Cross Sections)

An exercise was conducted to evaluate the effect of reducing the clear distance required for new trees. Unfortunately, no significant impact to the tree planting envelopes was obtained until the clear distance from existing utilities was reduced to 2-ft. A 2-ft clearance was deemed impractical for utility maintenance (See Appendix B – Utility Clearance Effect on Tree Planting). In order to provide a desirable tree lined streetscape, significant utility relocation work would be required to provide the current utility owner clear distance requirements.

Alternative scenarios were studied in attempt to provide somewhat consistent tree coverage for the length of the project, and a reasonable amount of tree shade for the pedestrian and bicyclist, with minimal utility relocation. Two alternatives were identified based on certain qualifications. One alternative is to plant trees in the existing landscape areas, the other is to plant trees in the existing landscape areas and in the street area along the proposed bike lane based on the bike lanes options described in Section 4.0. The two alternatives are illustrated in Appendix B, Conditions 9 and 10. The qualifications for each alternative are listed below:

Alternative 1 - Use of existing landscape areas for trees is based on:

1. A 6-ft utility clearance is acceptable for water, storm drain and sewer;
2. Clearances for existing dry utilities was not observed due to; potholing would be required to determine exact locations of dry utilities; existing trees appear to be currently within the clearance area, and therefore their location may be acceptable by the utility agency; or the utility would be relocated by the private utility agency;
3. The existing 12-inch sewer line on the south side of Van Buren St. and from 32nd St. to just west of 40th St (4500 L.F.) would need to be relocated.

Alternative 2 – Planting trees along the new bike lane (in the existing street area) is based on:

1. A 6-ft utility clearance is acceptable for water, storm drain and sewer;
2. Clearances for existing dry utilities was not observed due to; potholing would be required to determine exact locations of dry utilities; existing trees appear to be currently within the clearance area, and therefore their location may be acceptable by the utility agency; or the utility would be relocated by the private utility agency;
3. The existing 12” water line on the north side of Van Buren St. from 32nd Pl. to approximately 600-ft. west of 40th St. (4400 L.F.) would be relocated.
4. The existing 18” storm drain on the north side of Van Buren St. from 24th St. to 32nd St. (5200 L.F.) would be relocated.

The suggestion of a reduced 6-ft clearance from the water, sewer and storm drain lines was discussed with the City Water Department, along with possible root-barrier and tree planting details. At the time of this report, the City Water Department is evaluating it’s criteria and policies for tree planting in the vicinity of their facilities. Even though the Water Department has not made a final determination, the tree planting recommendations for Phase One of the corridor improvements were made on the assumption that a 6-ft clearance will be acceptable. The alternative is to plant shrubs only, or make significant utility relocations. See Section 5.1 Phase One: Street Re-Striping.

4.0 BIKE LANE OPTIONS

The proposed approach for adding bike lanes on Van Buren Street is to eliminate one existing traffic lane in each direction. The existing 56-ft street width and curb and gutter would not change. The new lane configuration would include one 10-ft traffic lane in each direction, with a 10-ft continuous left turn lane. The remaining 13-ft on each side will be used for the bike lane, parking, and/or a bike lane buffer, and shade trees.

Two alternatives were identified for the bike lane location; one is based on the Gateway TOD Report concept that utilizes “Tree Pockets” between on-street parking spaces, with the bike lane located between the parking and the vehicle lane. The other alternative does not include on-street parking; instead it separates the bike lane from the vehicle lane with a 7-ft buffer. These two concepts are further explained in Sections 4.1 and 4.2 below. *Regardless of the bike lane location, the tree planting conflict with existing utilities described, affects both of these concepts equally. That is, trees cannot be planted in the tree pockets or in a buffer area without significant utility relocations.*

4.1 BIKE LANE WITH TREE POCKETS

The “Tree Pocket” concept provides on-street parking, with a 7-ft wide parking space, and a 6-ft wide bike lane between the parking space and the vehicle travel lane. This concept conforms to the Gateway District TOD plan that includes higher densities, no building setbacks, and a much more urban character that would benefit from having on-street parking. This concept would maintain the existing curb location and include the construction of curbed landscape island/tree pockets between parking spaces. (See Appendix C – Bike Lane Design Options; Concept Plan for Bike Lane with Tree Pockets)



Figure 4: Bike Lane with Tree Pockets Concept

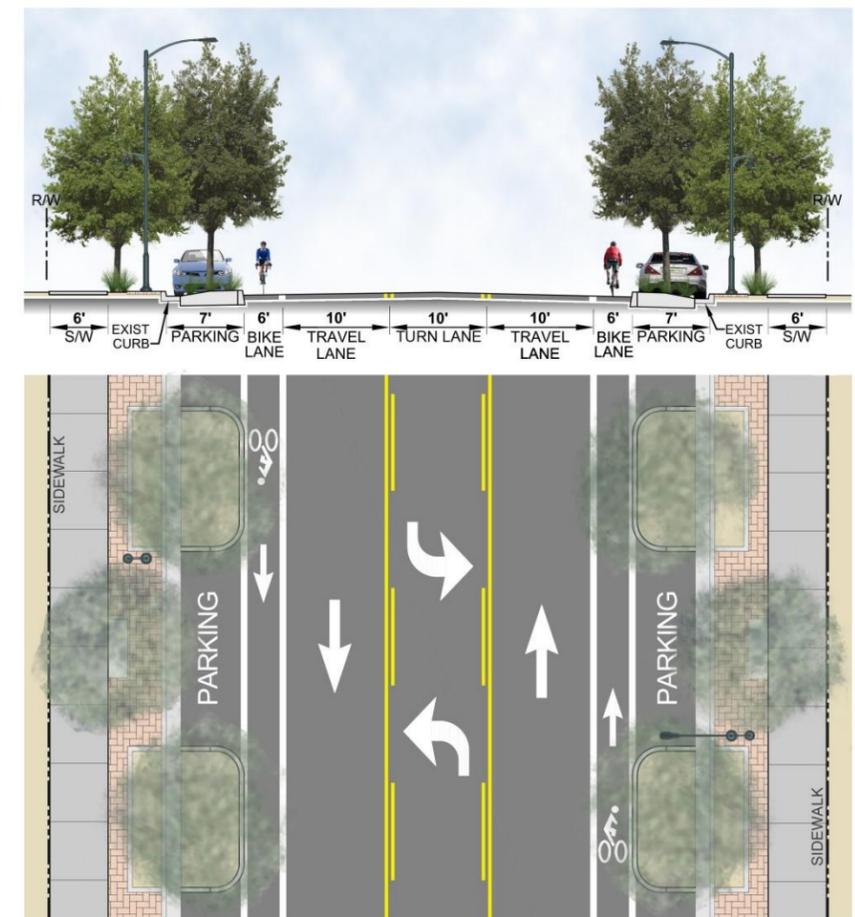


Figure 5: Bike Lane with Tree Pockets Concept Section & Plan View

4.2 BUFFERED BIKE LANE

The “Buffered Bike Lane” concept provides a 6-ft bike lane adjacent to the existing curb, separated from the vehicle travel lane with a 7-ft wide curbed landscape strip. This concept is more in response to current land uses and does not provide for on-street parking. It provides a wider bike lane with a buffer that gives bicyclists a sense of safety. Ultimately, if trees can be planted in the buffer, they would provide a shaded canopy for the bike lane on both sides of the street. While this concept may be somewhat unique to the Valley, it has been used in other parts of the country. There would be a learning curve for both motorists and bicyclists alike, and it is recommended that the use of colored bike lanes be considered at driveway locations where there are conflicting travel paths between motorists and bicyclists.

Design consideration should be given to the use of street sweeper maintenance in the bike lane area. This would require designing the space between the existing curb and the buffer curb to allow for street sweeper clearance, possibly with the use of a mountable curb on the buffer side.

(See Appendix C – Bike Lane Design Options; Concept Plan for Buffered Bike Lane)



Figure 6: Buffered Bike Lane Concept

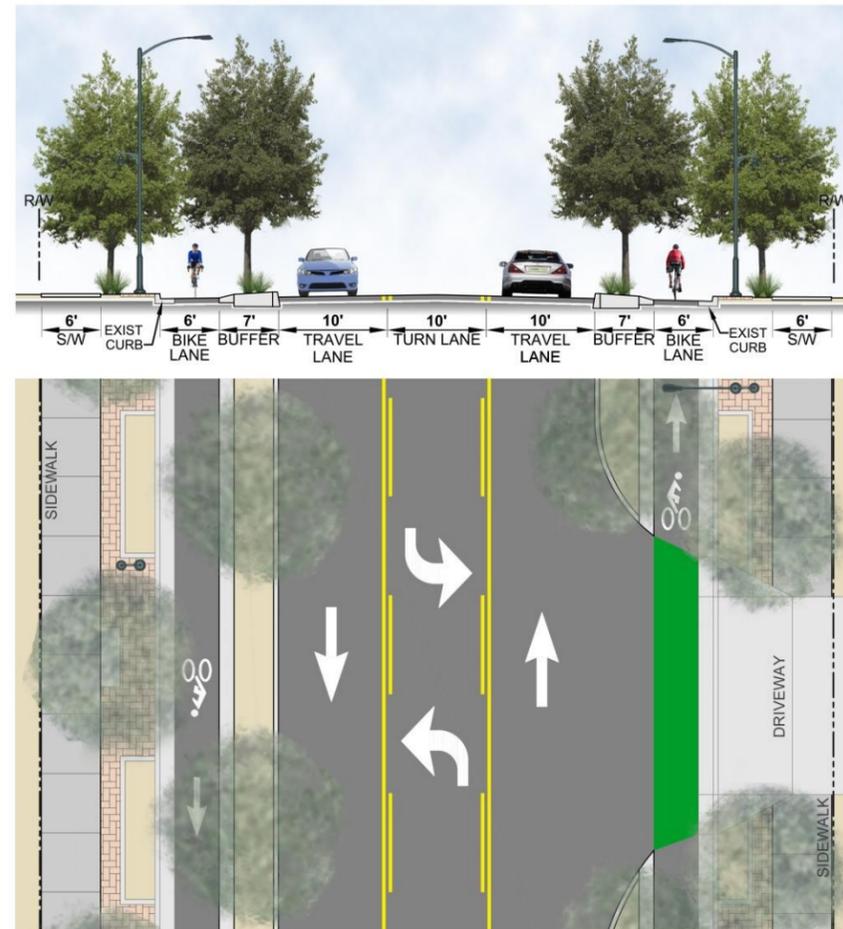


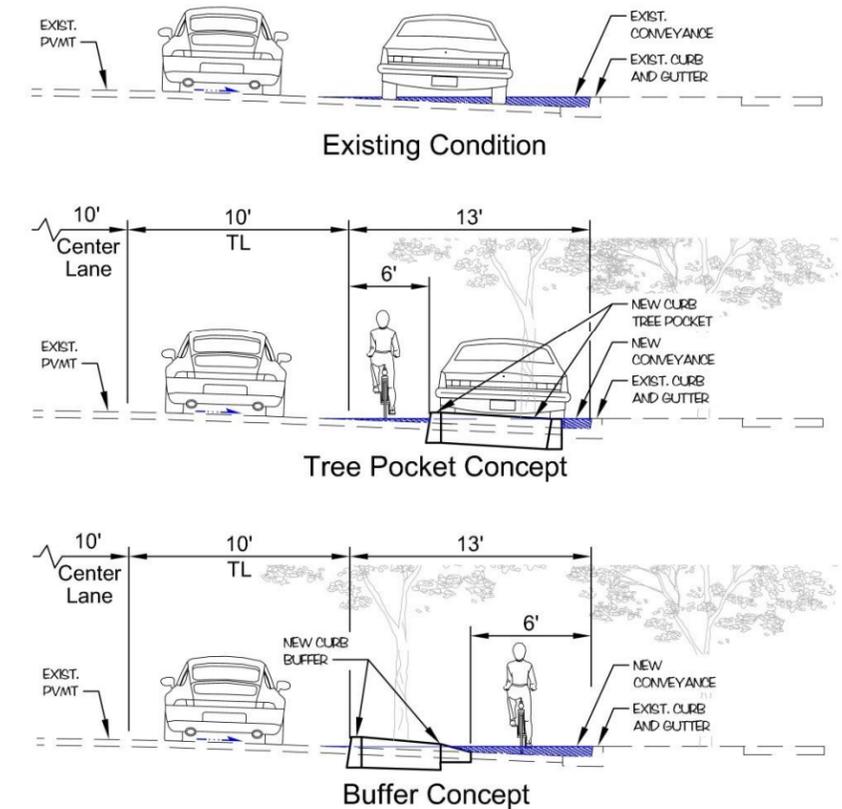
Figure 7: Buffered Bike Lane Concept Section & Plan View

4.3 TRANSITION BETWEEN TREE POCKET BIKE LANE AND BUFFERED BIKE LANE

The timing of the Van Buren Street bike lanes may dictate which concept is applied. Many of the existing properties would not benefit from on-street parking, making the buffered bike lane a more applicable concept. New Urban Code development, however, would benefit from on-street parking. Therefore, whichever concept is implemented, a transition from one to the other may be necessary in order to provide flexibility for the adjacent development.

(See Appendix C – Bike Lane Design Options; Concept Plan for Transitioning from Tree Pocket Concept to Buffered Bike Lane Concept)

BIKE LANE CONCEPTS DRAINAGE CONVEYANCE VAN BUREN STREET



Both bike lane concepts would introduce a raised landscape area into the existing street prism, with this in mind, design consideration for street drainage will need to be addressed so that street drainage conveyance is not negatively impacted.

Figure 8: Street Drainage Conveyance

4.4 PEDESTRIAN AREA

Both bike lane concepts will maintain the existing street curb in its current location, and the pedestrian area will be the same for both, utilizing the remaining 12-ft of right-of-way on each side of the street. This area will include widening of the sidewalk, new street and pedestrian lighting, shade trees and other landscaping, and street furniture. The Gateway TOD Report illustrates a phased approach to expand the existing 4-ft sidewalk. This approach maintains the existing curb and sidewalk and adds pavers at the back of the curb, connecting

to the existing sidewalk at key points; providing an expanded pedestrian area. This concept facilitates an economical and environmentally friendly solution to using the existing sidewalk that would be cost effective in the case of a City capital improvement project. The construction and aesthetics of this concept could also be easily replicated in the event that a new development finds it necessary to reconstruct the entire sidewalk frontage area.

5.0 PHASING

Implementing the Van Buren Street Corridor Bicycle and Pedestrian Improvements will require a long term phased approach. Phasing will not only be practical but also economically required based on the unforeseen utility conflicts and relocation costs that were unknown during preliminary Reinvent Phoenix planning of the Gateway District. The initial phase will be the re-striping of the street to add bike lanes. This first phase will provide the opportunity to observe how the traffic reacts to the lane reduction, and to monitor the use of the new bike lanes. Unfortunately, this first phase will only make a minimal impact in terms of providing shade for the bike lane, pedestrian area, or passenger waiting areas. Although passenger waiting areas could be improved with either shade structures that would not conflict with utilities, or with shade trees, if short sections of utility lines were relocated, or encased underground planters were to be used.

Shade will be provided in subsequent phases by implementing the “Tree Pockets” or “Buffered” landscape areas. To implement these phases, significant utility relocations will be required. Utility relocations could happen as scheduled upgrades or replacements of the utility line; or as a capital improvement project to add shade trees; or as a private development venture.

The following is a summary of improvements anticipated in each phase. Due to the utility conflict issue, phases Two and Three could be interchanged depending on how the corridor develops.

5.1 PHASE ONE: STREET RE-STRIPING

Phase One is street re-striping to add bike lanes on Van Buren Street. These bike lanes will be the first on Van Buren Street, and will facilitate future bike lanes into Downtown.

They will also provide connection to both the Grand Canal pathway and the future 32nd Street bike lanes. The bike lane striping will require the removal of one traffic lane in each direction and traffic lane transitions from two to one at both ends of the project, at 24th Street and 40th Street. At 24th Street, the outside eastbound lane would need to transition to a merge left and/or right turn only lane, and at 40th Street, the two west bound through lanes would need to merge into a single through lane. The lane transitions will require study to determine the most appropriate way to transition the traffic. The traffic signal heads and mast arms will also need to be reviewed to see if adjustments are required based on the reconfigured lanes. A determination will need to be made by the City if on-street parking is desired at the time that this phase is implemented.

The new bike lanes will require signage stating the bike lane ends at both 24th Street and 40th Street until such time that future bike connections are made east and west of the project.

Appendix D includes conceptual plans for the entire project length, showing re-striping with a buffer and no on-street parking. Appendix C provides an example of the “Tree Pocket” concept with on-street parking layout and how the Phase One striping would be accomplished if that concept is preferred.



Figure 9: Street Re-striping / Lane Reconfiguration

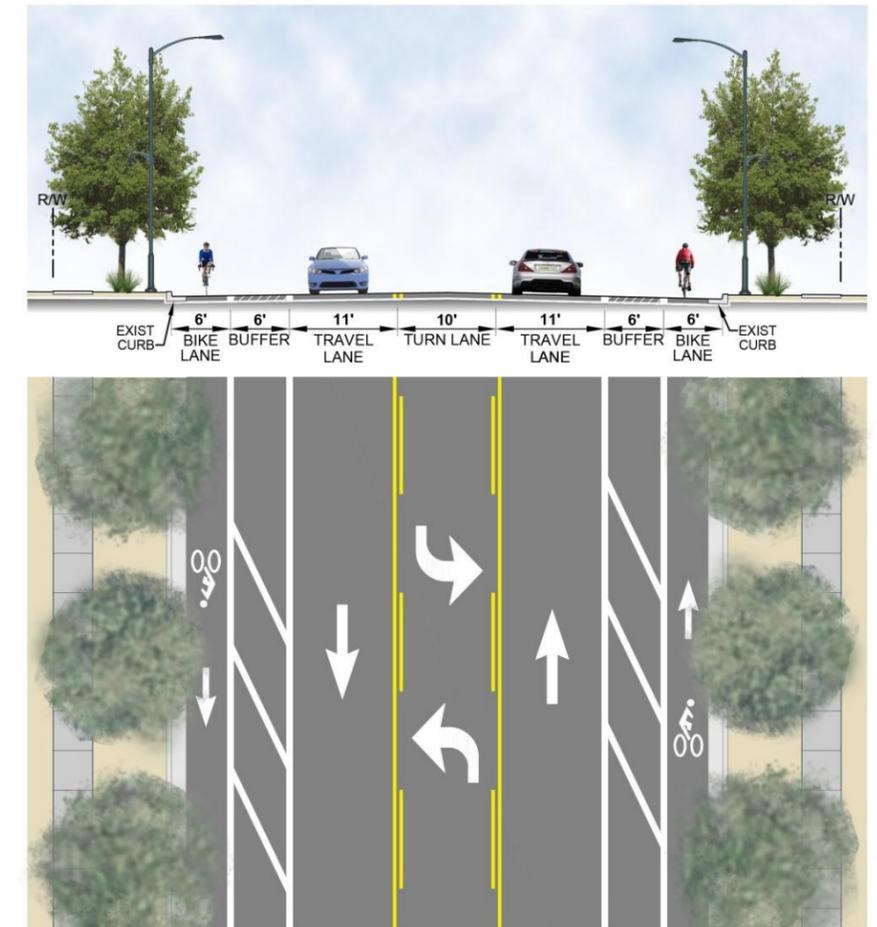


Figure 10: Street Re-striping Reconfiguration Section & Plan View

Phase One Improvements

- Street resurfacing west of 32nd Street;
- Street slurry micro seal to remove existing striping east of 32nd Street;
- Re-stripe lane configuration:
 - One 11-ft through lane in each direction
 - 10-ft center turn lane
 - 6-ft bike lane buffer
 - 6-ft bike lane
- Transition lanes to include right turn lanes at 32nd Street, and bike lane terminations at 24th Street and 40th Street;

- *Adjust traffic signal heads as required at 24th, 28th, 32nd and 40th Streets.*
- *Provide bike lane signage;*
- *Repair pedestrian accessibility problem areas;*
- *Landscaping:*
 - *New low shrubs and ground covers to be planted in existing landscape areas.*
 - *New irrigation system.*
 - *Assuming a 6-ft clearance from water, sewer, and storm drain lines is acceptable by the City, three quarters of the existing landscape area could be replanted with trees. This would include the landscape areas on both sides of the street west of 32nd Street, and the north side only, east of 32nd Street.*
 - *The existing landscape planter on the south side of the street from 32nd Street to 40th Street, has a 12-inch sewer line in close proximity. This sewer line would need to be relocated in order to plant trees. The estimated cost of relocating approximately 4500-ft of 12" sewer line is \$900,000.*

5.2 PHASE TWO: TREE POCKET and/or BUFFERED BIKE LANE

The implementation of Phase Two will be somewhat dependent on the status of the City utility clearance requirements for trees. Two scenarios are possible that could affect moving forward with Phase Two. One, the utilities in conflict are relocated; or two, the required clearances are significantly reduced with the use of extensive root barriers or encased planting pits. The “Tree Pocket” concept and the “Buffered” bike lane concept would both require similar utility relocation. If the tree/utility conflict cannot be eliminated and trees cannot be planted to provide the necessary shade, the installation of the curbed landscape planters would not be beneficial.

Assuming the utility conflict is resolved; Phase Two will include the installation of curbed landscape planters within the existing street

pavement area, and would include shrubs and shade trees. Appendix C provides an example of the “Tree Pocket” bike lane concept.

Phase Two Improvements

- *Install curbed landscape planters and plantings;*
- *Transition between “Tree Pocket” bike lane to “Buffered” bike lane if necessary;*
- *Adjust lane striping to use 10-ft vehicular traffic lanes. (Phase One calls for 11-ft through lanes and a 6-ft buffer) A 7-ft landscape buffer is preferred in the ultimate Phase, but a 7-ft stripped buffer in Phase One would not be desirable because it can be misconstrued as a travel lane.*
- *Provide colored bike lane at driveway / bike lane conflict areas (“Buffered” bike lane concept only) ;*
- *Adjust street signage as needed.*

5.3 PHASE THREE: PEDESTRIAN AREA IMPROVEMENTS

The last phase of the corridor improvements addresses the 12-ft of pedestrian area between the curb and right-of-way. The first two phases affect vehicular traffic throughout the corridor and would likely be implemented with City capital improvement projects. This last phase however, could be implemented incrementally as private development fills in and makes site improvements.

The existing sidewalk alignment should be maintained so that when projects are installed incrementally, the new sidewalks align with the old. But the new sidewalks associated with new development should be widened to a minimum 6-ft for accessibility, which is sufficient to allow two pedestrians to walk together as well as to accommodate two wheelchairs passing each other. To provide additional pedestrian space and to enhance the aesthetic character, concrete pavers will be added to replace portions of the landscape planter behind the curb. Phase One improvements will install landscaping in the existing 7-ft landscape planters between the curb and 4-ft sidewalk. But as new development

occurs, the landscape space will be filled in with sidewalk pavers, replacing shrubs but leaving the shade trees.

Along with the sidewalk improvements, the street lighting would be improved by undergrounding the street light electric lines, and adding new street and pedestrian lighting.

Street furniture including benches, litter receptacles, and bike racks would be added if the adjacent property owners are willing to accept the maintenance responsibilities of such elements.

Another improvement that could be made in this phase or in any phase as the need presents itself, is the installation of wayfinding signage. Way-finding signs would provide directions or cues to visitors and patrons as to where to find certain destinations such as public facilities, entrances and exits, public parking, and businesses.

The design, selection, and layout of the improvements in this phase are important in defining the street character and should be considered together as a whole in order to strengthen and enhance the corridor theme (See Section 6.5 Corridor Theme).

Phase Three Improvements

- *New street and pedestrian lighting;*
- *Sidewalk widening with the use of decorative pavers;*
- *Landscape planters would be reduced from 7-ft wide, to a 2-ft to 3-ft strip and/or just single tree planters;*
- *Street furniture;*
- *Wayfinding signage*

6.0 DESIGN GUIDELINES

6.1 VEHICLE ZONE

The existing street pavement width is 56-ft. The new vehicle travel area width shall be 32-ft, consisting of a 10-ft through lane (11-ft in Phase One – striping only) in each direction plus a 10-ft continuous left turn lane. These lane configurations change at the 24th, 32nd, and 40th Street interchanges to account for right turn lanes and accepting merge lanes.

6.2 BIKE ZONE

The bike zone shall be created with the use of selected items below and shall depend on the need for on-street parking at the time of bike lane implementation.

6.2.1 Bike Lane Striping

The bike lane shall be 6-ft wide in the case of the “Buffered” bike lane concept; utilizing the 1½-ft wide curb gutter pan, and 4½-ft of asphalt paving. In the case of the “Tree Pocket” concept, the bike lane shall be 6-ft wide. The bike lane striping shall be continuous except at street intersections, and where it will be dashed at merging right turn lanes. Bike lane signage will be required along with “Bike Lane Ends” signs at each end of the project.

6.2.2 Buffer Striping

The “Buffered” bike lane shall have a continuously striped 6-ft buffer area except at street intersections. The beginning and ends of the buffer shall include diagonal lines to distinguish the buffer area from the vehicle travel lanes.

6.2.3 Tree Pockets

Tree pockets shall be created with the installation of curbed landscape planters. Curbing shall meet City standards and shall be designed to account for street drainage.

6.2.4 On-Street Parking

The on-street parking space shall be 7-ft wide by 20-24-ft long. There shall be no more than three contiguous parking spaces between landscape planters. The design shall strive to provide for a repetitive tree pattern rather than maximizing parking spaces.

6.2.5 Buffer Landscape Planter

The buffer landscape planter shall consist of standard curb and gutter on the vehicle traffic side, and an 1½-ft wedge curb on the bike lane side. The standard traffic side curb shall have occasional openings to allow some street drainage to feed the landscape planter. The width of the planter and the wedge curb shall be designed to facilitate street sweeper maintenance.



Figure 11: Buffered Bike Lane Maintenance

6.2.6 Green Bike Lane

In the case that the “Buffered” bike lane with the landscape planter, it is recommended that the bike lane be painted green at driveway locations. Rather than painting the entire length of the bike lane, partial painting at driveways will reduce maintenance and highlight the potential conflict areas. This will bring to the attention of both the motorist and the bicyclist of their crossing paths.

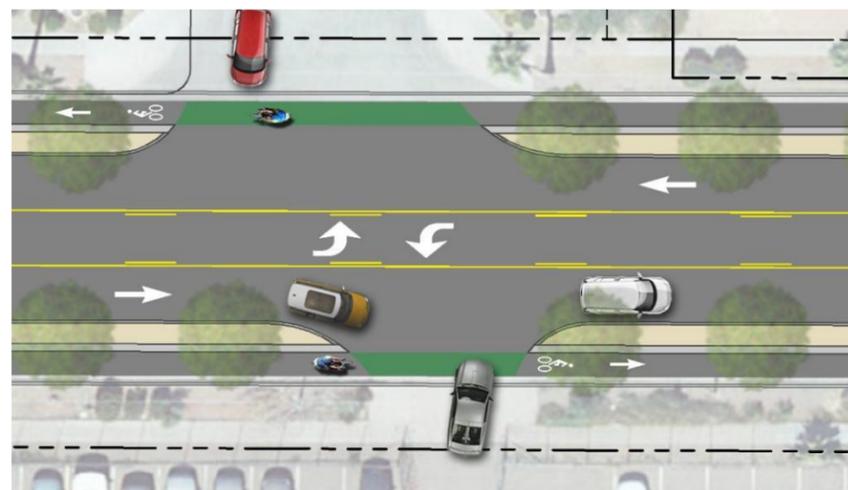


Figure 12: Green Bike Lane at Driveways

6.2.7 Planting in Street Planters

The selection of trees for the street planters may be different for the “Tree Pocket” landscape planters versus the “Buffer” landscape planters. The tree pocket landscape planters will allow the trees to be set back 8-ft from the vehicle travel lane, whereas the buffer landscape planters will only allow a 3-ft setback. When considering trees for these planters the 8-ft setback will allow a broader variety to choose from. The 3-ft setback will require a vertical more columnar tree variety due to the proximity to the vehicles.

6.3 PEDESTRIAN ZONE

6.3.1 Sidewalk Replacement

If the pedestrian zone is improved incrementally, it will be important to maintain the existing sidewalk alignment. This will help to create a uniform appearance as sidewalk improvements are made with new development. Sidewalk repair and replacements should match the existing sidewalk width and finish.

All sidewalk improvements within the public right-of-way shall meet the following basic requirements for universal accessibility:

- Maximum cross slope of two percent
- Maximum longitudinal grade of five percent
- No stairways, curbs or barriers

All new sidewalks associated with new development shall be a minimum of 6-ft wide with an additional 3½-ft pedestrian space added at the back of the existing curb with decorative concrete pavers.

6.3.2 Sidewalk Pavers

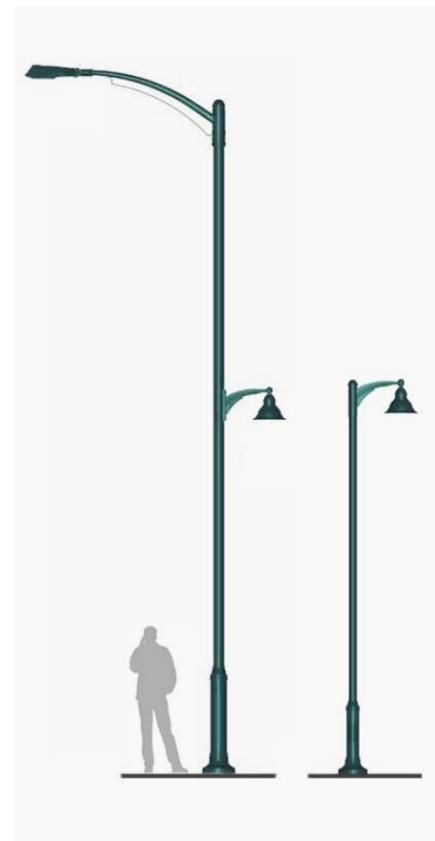
The decorative concrete pavers in the pedestrian zone will provide a cohesive thread that will tie the street character together as development occurs. The decorative pavers should be a ADA compliant permeable paver system installed over a crushed stone bedding and an open graded base aggregate. This type of system can help reduce storm water runoff and provide water and oxygen to plants in the landscape planters. The selection of the paver design should be consistent with the design theme. Pedestrian pavements from the mid-century accentuated geometric shapes and grid patterns. Therefore the paver layout pattern should utilize a grid, stacked bond pattern rather

than a running bond pattern. Alternatively, the paver shape may be more of a complex geometric shape rather than rectangular. Also, light colors were more prevalent in the era, therefore, the paver colors should be made up of light grays or other light colors, rather than brick red.



6.3.3 Lighting

Lighting should provide visual interest and increased nighttime safety and security for vehicles and pedestrians; as well as complement and enhance the existing streetscape in the City's right-of-way. Lighting will need to meet City standards and shall accommodate the use of LED. Pole and fixture selection for both the street and pedestrian lights should enhance the mid-century theme.



6.3.4 Street Furniture

Providing benches within the streetscape areas encourages social interaction, and such interaction is the very foundation for successful neighborhood and commercial areas. The installation of benches and other street furniture will depend on the willingness of adjacent private property owners to accept the maintenance of the street furniture. Benches are typically located at mid-block spaces, bus stops, and other desirable resting locations. Bench locations in proximity to shade provided by street trees and buildings is also preferred. Benches must not create unsafe obstructions for such things as building entrances and fire hydrants. In addition to benches, litter receptacles and bike racks should be placed at convenient locations. Street furniture shall be complimentary to bus stop structures, and be coordinated with the City Public Transit Department for long term maintenance.



6.3.5 Wayfinding

The design theme, based on the iconic motel strip, lends itself very well to the creation of a wayfinding sign package design. In addition to wayfinding signage within the right-of-way, private property owners could build upon and help create the corridor identity by translating the theme into their own on-site signage.



6.3.6 Planting in the pedestrian zone

Trees for the sidewalk area should be selected for their shade canopy, growth habits, and vertical form suitable for the narrow 12-ft wide pedestrian zone. Planters in the pedestrian area will be quite narrow therefore the use of shrubs and groundcovers will be minimal. Shrubs that are planted will need to be small and pedestrian friendly.

6.4 LANDSCAPING

The plant palette for the Van Buren Street Streetscape is relatively small by design. The plantings have been selected to reinforce a unified streetscape character that will help establish a sense of place along the corridor unique to this community. Deviations from the plant palette will come from planting on adjacent properties and streets. The deviations will add to the diversity, but this small list will prevent a chaotic planting appearance in the case where only small sections of the streetscape plan are implemented over time.

Deviation from this list for plantings behind the sidewalk is also acceptable and will allow flexibility for adjacent property owners. Plants that are added to this list must be drought tolerant, low water use plants that support water conservation. All plants shall be listed on the Arizona Department of Water Resources (ADWR) low water use plant list. The plant list has been developed using the following criteria:

- Plants have been selected to fit the context of the corridor.
- Plants have been selected from the ADWR low water use plant list.
- Trees have been selected for their shade canopy, seasonal color, growth habits and vertical form suitable for pedestrian walkways and their ability to provide for vehicular clearances.
- Shrubs have been selected for small size, hardiness, seasonal color, and low maintenance.

Plantings in the right-of-way could also benefit from the use of the rain garden concept. Curb openings in both the new planters within the street and within the existing curb will allow rain water to flow into depressed landscape areas, feeding the plants and reducing storm water runoff.

Plant List:

Trees:

- *Willow Acacia (Acacia salacina)*: Provides shade and has an upright form which is most conducive for the narrow pedestrian area and close proximity to the traffic lanes. Therefore this tree is recommended to be the dominate tree, tying the corridor landscape theme together.
- *Shoestring Acacia (Acacia stenophylla)*: While it is not the best shade tree, it is low maintenance and has a translucent quality. This tree may be useful in areas where commercial sign visibility is important.
- *Texas Ebony (Ebenopsis ebano)*: Can be maintained with an upright form; provides dense screening canopy for shade and contrast to the acacia. Desert quality ties into the more recent existing private desert landscapes along the corridor. This tree has thorns so it would be recommended for the street planters only, away from the pedestrian zone.
- *Desert Museum Palo Verde (Parkinsonia x. Desert Museum)*: Thornless palo verde that is recommended for the pedestrian zone. All of the trees used in the pedestrian zone will require the use of single trunk specimens, and trained into an upright form to accommodate pedestrian clearance. This tree will help tie the landscape into the existing palo verdes used on the more recent existing desert landscapes along the corridor.
- *Thornless Mesquite (Prosopis Hybrid)*: Thornless mesquite that produces good shade and is recommended for the pedestrian zone. It will help tie the landscape tie into the existing mesquites used on the more recent existing desert landscapes along the corridor.

Shrubs/Groundcovers:

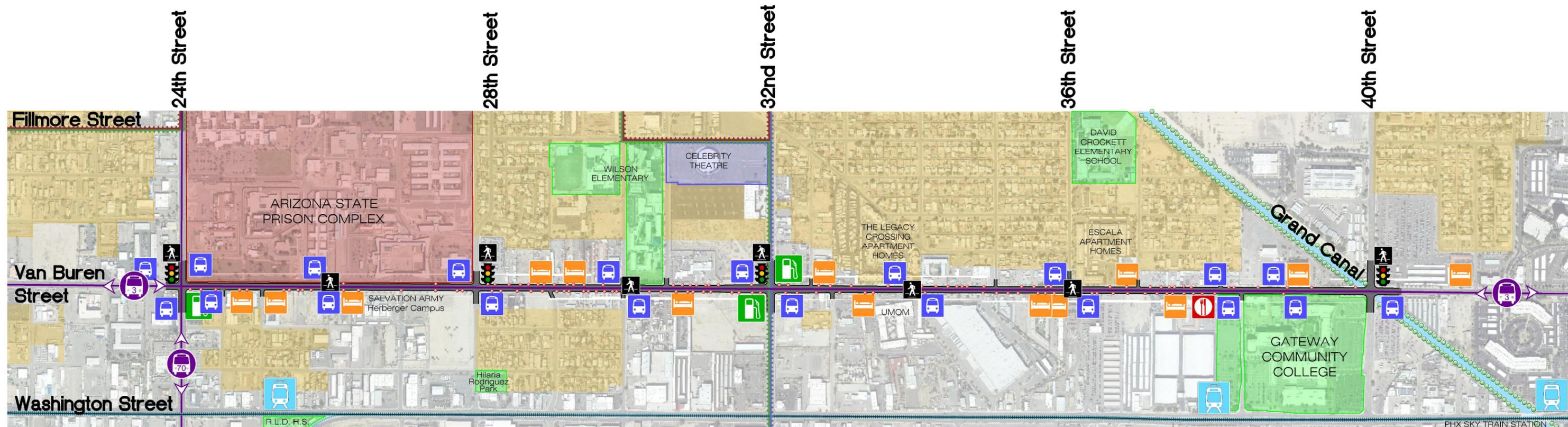
- *Brakelights Red Yucca (Hesperaloe parviflora "Brakelights")*: One of the most hardy and durable right-of-way plants, recommended to be the dominant shrub used throughout the corridor.
- *Eremphila species*: Several variety options provide small size and seasonal color.
- *Cimarron (Leucophyllum zygophyllum)*: Small size and seasonal color.

- *Blue Elf Aloe (Aloe x Blue Elf)*: Small hardy accent.
- *Small ornamental grasses*: Texture, contrast, and provide tie-ins to existing landscapes along the corridor.
- *Lantana varieties*: Color.

6.5 CORRIDOR THEME

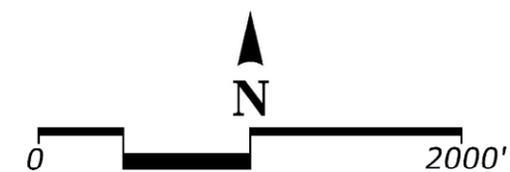
The mid-century history of the corridor provides a great opportunity to create a unique and distinctive character and theme for the Van Buren Street Corridor. In addition to the iconic signage that still remains along the street, connections back to the historic era can be made with the new streetscape elements. The streetscape elements proposed for the corridor were selected based on their mid-century inspired design.

Appendix A: Existing Conditions Map



EXISTING CONDITIONS
VAN BUREN STREET - 24th Street to 40th Street

- | | | | |
|-------------------|------------------------------|-------------------------|------------------------------|
| MAP LEGEND | | SERVICES | TRANSPORTATION LEGEND |
| | PARKS / EDUCATION | | |
| | RESIDENTIAL | | |
| | ENTERTAINMENT | | |
| | ARIZONA STATE PRISON COMPLEX | | |
| | PROJECT AREA | SCHOOL DISTRICTS | |
| | | | |
| | | | |
| | | | |
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EXISTING CONDITIONS

VAN BUREN CORRIDOR - 24TH ST. TO 40TH ST. - BICYCLE AND PEDESTRIAN IMPROVEMENTS

Appendix B: Utility Clearance Effect on Tree Planting

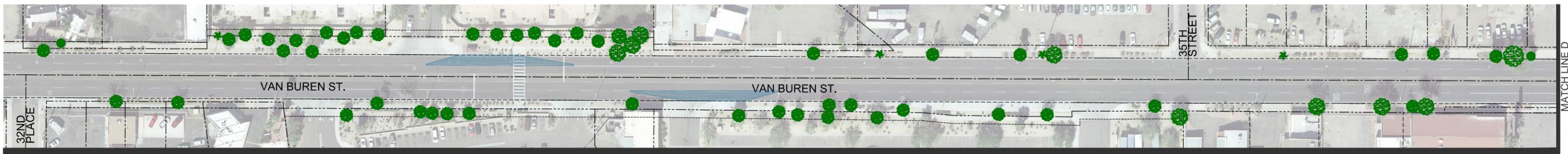
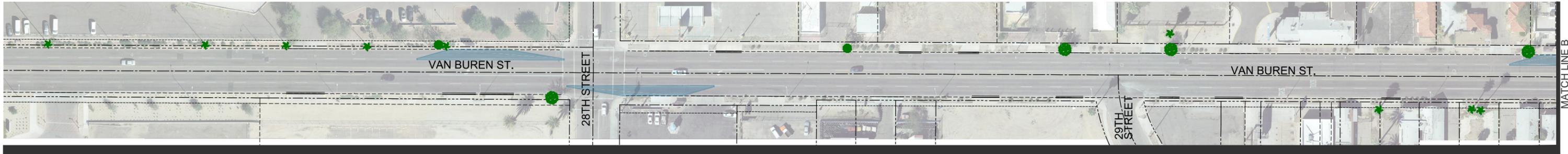
Summary of Appendix B:

Appendix B consists of an exercise that was conducted to evaluate the effect of reducing the utility clear distance required for planting new trees. The following is an explanation of each exhibit.

1. **Condition 1:** Illustrates the existing trees within the roadway right-of-way and frontage area.
2. **Condition 2:** Illustrates where trees would be planted in the right-of-way, in the ultimate phase, if no consideration was given to utilities or signage.
3. **Condition 3:** Illustrates where new trees could be planted in the existing landscape planters based on all current utility clearance tree setbacks; 10-ft for water, sewer and storm drain, and 4-ft for dry utilities. No consideration is given to the buffer or tree pocket concept trees that would be planted in the existing street pavement area.
4. **Condition 4:** Illustrates where trees could be planted in the existing landscape areas with a reduced 8-ft wet utility clearance, and a reduced 2-ft dry utility clearance. No consideration is given to the buffer or tree pocket concept trees.

Conditions 5-10 make no consideration for communication or electrical utility lines, assuming utility map locations for these facilities are approximate and could be different than what is shown, or could be relocated by the utility agency.

5. **Condition 5:** Illustrates where trees can be planted in the existing landscape areas with a reduced 8-ft wet utility clearance and 2-ft gas line clearance. No consideration is given to the buffer or tree pocket concept trees.
6. **Condition 6:** Illustrates where trees can be planted in the existing landscape areas with a reduced 8-ft wet utility clearance and 2-ft gas line clearance, and includes trees in the street area according to the Buffer and Tree Pocket concepts.
7. No significant difference was observed using a 6-ft, or 4-ft clearance for the Buffer concept, therefore **Condition 7** illustrates where trees can be planted in the existing landscape areas with a reduced 2-ft wet utility clearance and 2-ft gas line clearance, and includes trees in the street area according to the Buffer concept.
8. **Condition 7a:** Illustrates where trees can be planted in the existing landscape areas with a reduced 4-ft wet utility clearance and 2-ft gas line clearance, and includes trees in the street area according to the Tree Pocket concept.
9. **Condition 8:** Illustrates the anticipated affect that private commercial signage (red bars) may have on the tree layout, using the same utility clearance requirements as condition 7.
10. **Condition 9** – Alternative 1: Illustrates potential tree locations base on an alternative that includes a relocated sewer line and a 6-ft wet utility clearance. See Section 3.3 Existing Underground Utilities for further explanation.
11. **Condition 10** – Alternative 2: Illustrates potential tree locations base on an alternative that includes a relocated sewer, water, and storm drain lines and a 6-ft wet utility clearance. See Section 3.3 Existing Underground Utilities for further explanation.



#	CONDITIONS		
	WET UTILITY OFFSET	DRY UTILITY OFFSET	OTHER CONSIDERATIONS
1			Existing Conditions
2			No Consideration for Utilities
3	10' - W, S, SD	4' - G, Tel, E	No Buffer Trees
4	8' - W, S, SD	2' - G, Tel, E	No Buffer Trees
5	8' - W, S, SD	2' - G	No Buffer Trees but the Use of Existing Landscape Strips
6	8' - W, S, SD	2' - G	Buffer Concept and Existing Landscape Strips
7	2' - W, S, SD	2' - G	Buffer Concept and Existing Landscape Strips
7b	4' - W, S, SD	2' - G	Tree Pocket and Existing Landscape Strips
8	2' - W, S, SD	2' - G	Sign Visibility Triangle

CONDITION 1

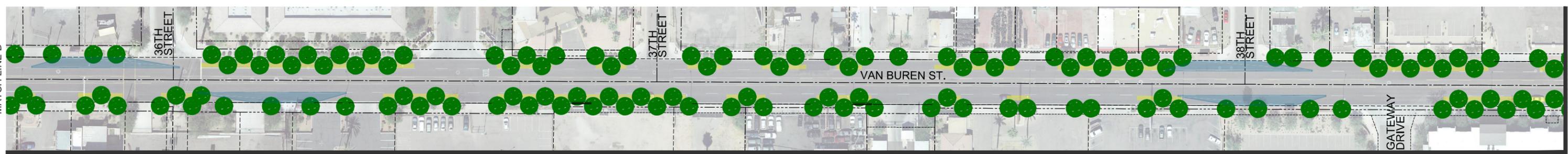
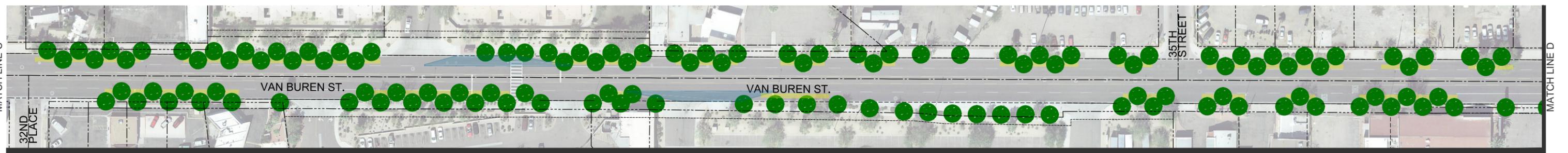
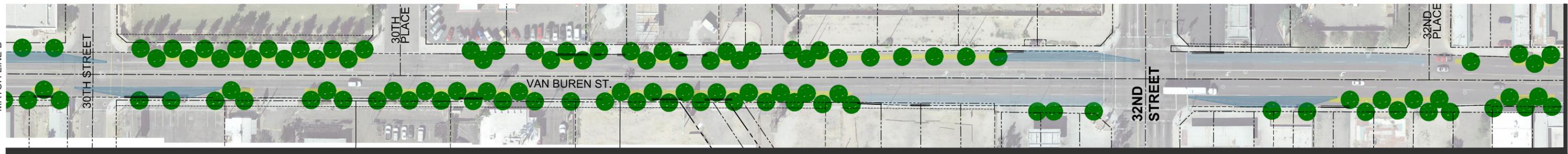
2/6/2014



VAN BUREN STREET CORRIDOR
24th Street to 40th Street
MAG BIKE & PED DESIGN ASSISTANCE

TREE LOCATION STUDY ACCORDING TO UTILITY CLEARANCES





#	CONDITIONS		
	WET UTILITY OFFSET	DRY UTILITY OFFSET	OTHER CONSIDERATIONS
1			Existing Conditions
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3	10' - W, S, SD	4' - G, Tel, E	No Buffer Trees
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7b	4' - W, S, SD	2' - G	Tree Pocket and Existing Landscape Strips
8	2' - W, S, SD	2' - G	Sign Visibility Triangle

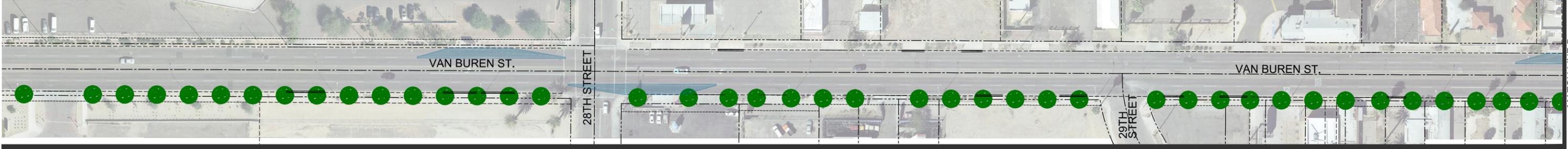
CONDITION 2

2/6/2014





MATCH LINE A



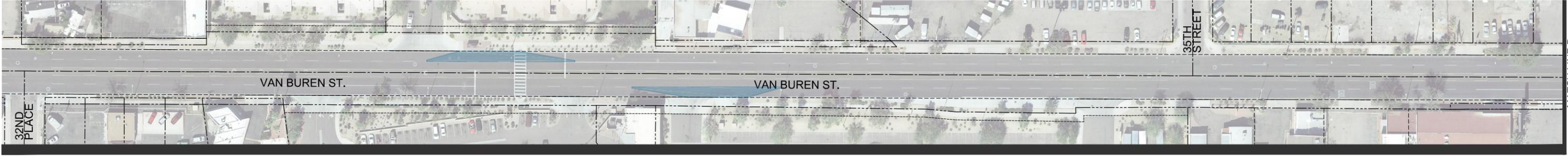
MATCH LINE A

MATCH LINE B



MATCH LINE B

MATCH LINE C



MATCH LINE C

MATCH LINE D



MATCH LINE D

MATCH LINE E



MATCH LINE E

#	CONDITIONS		
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8	2' - W, S, SD	2' - G	Sign Visibility Triangle

CONDITION 3

2/6/2014

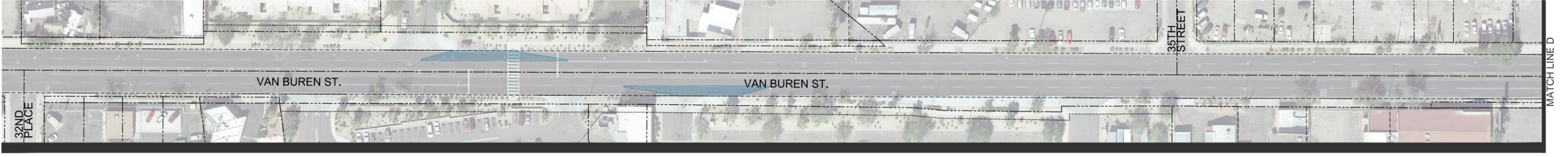
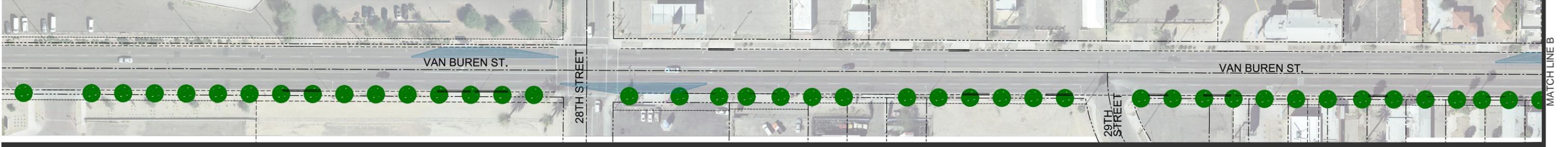
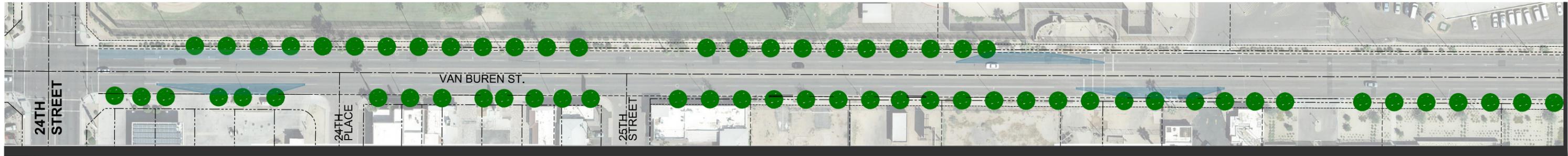


VAN BUREN STREET CORRIDOR
24th Street to 40th Street
MAG BIKE & PED DESIGN ASSISTANCE

TREE LOCATION STUDY ACCORDING TO UTILITY CLEARANCES



Gavan & Barker
INC.



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8	2' - W, S, SD	2' - G	Sign Visibility Triangle

CONDITION 4

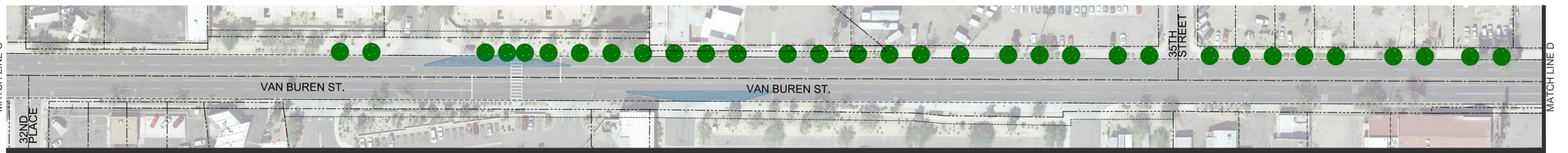
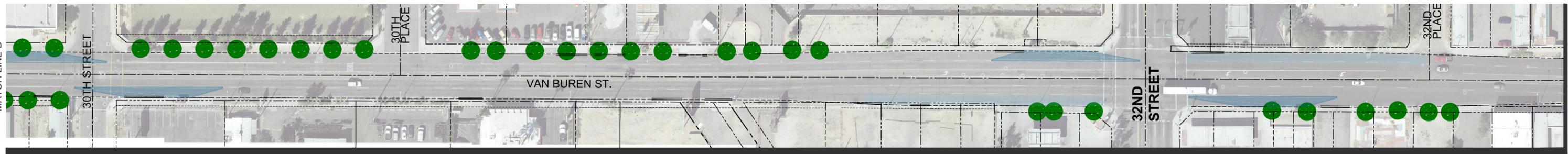
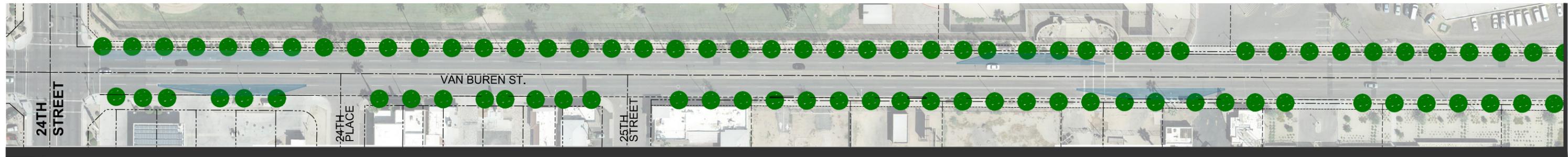
2/6/2014



VAN BUREN STREET CORRIDOR
24th Street to 40th Street
MAG BIKE & PED DESIGN ASSISTANCE

TREE LOCATION STUDY ACCORDING TO UTILITY CLEARANCES

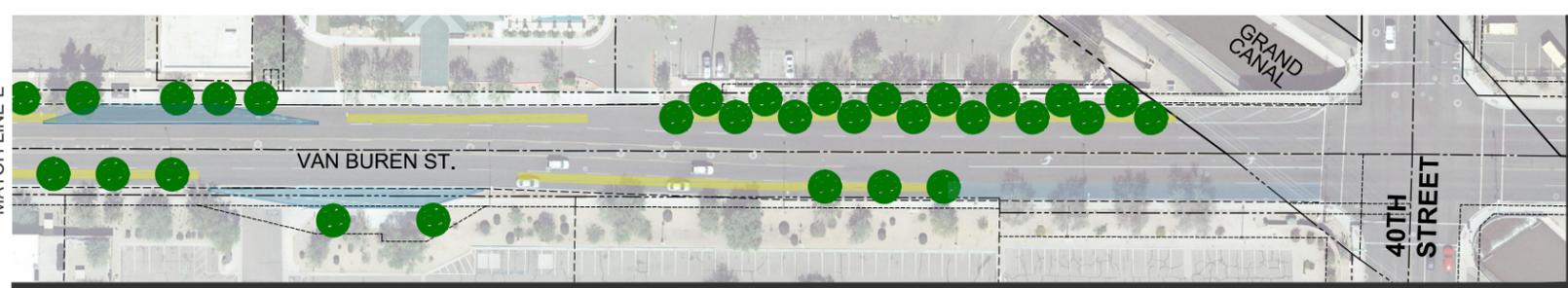
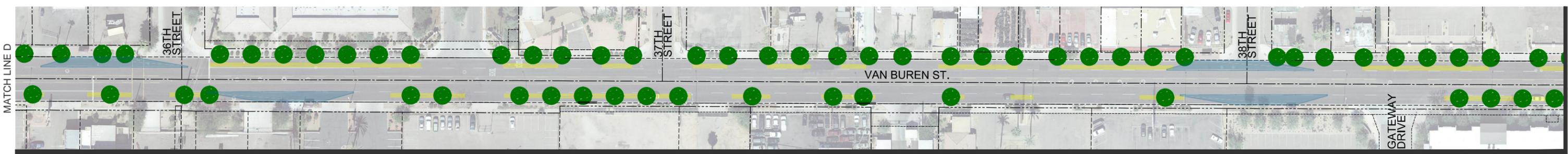
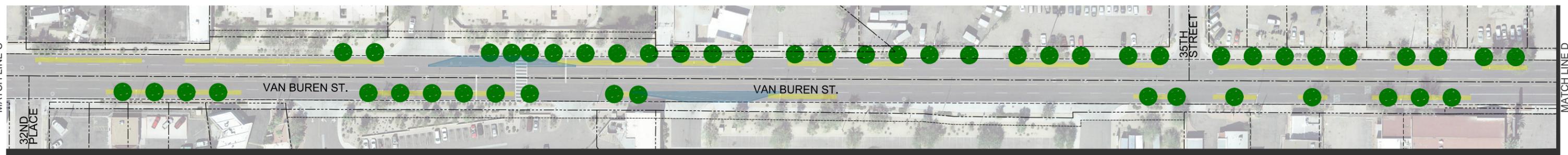
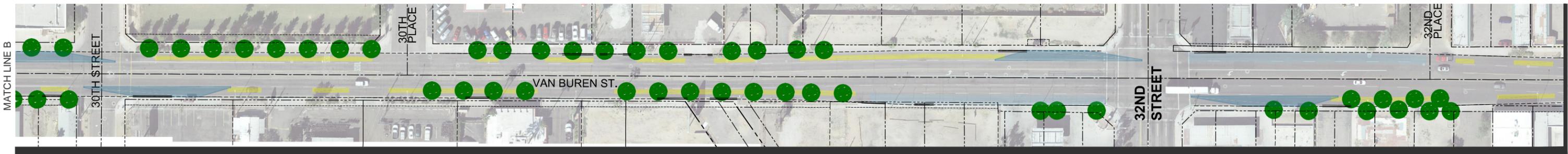
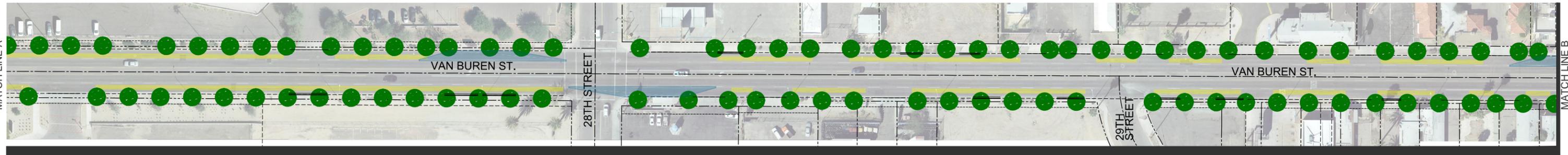
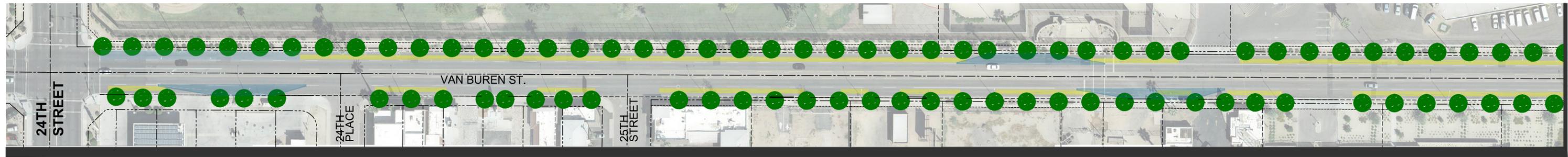




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7	2' - W, S, SD	2' - G	Buffer Concept and Existing Landscape Strips
7b	4' - W, S, SD	2' - G	Tree Pocket and Existing Landscape Strips
8	2' - W, S, SD	2' - G	Sign Visibility Triangle

CONDITION 5

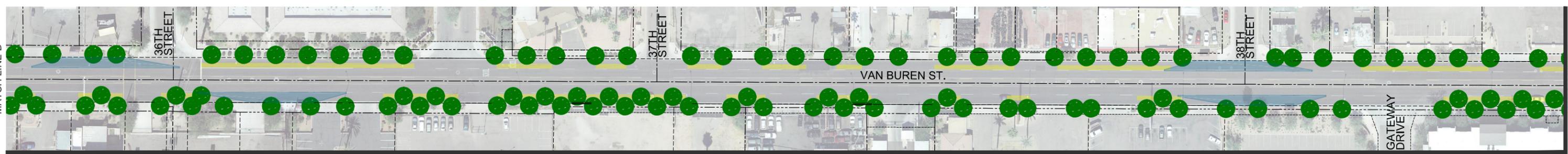
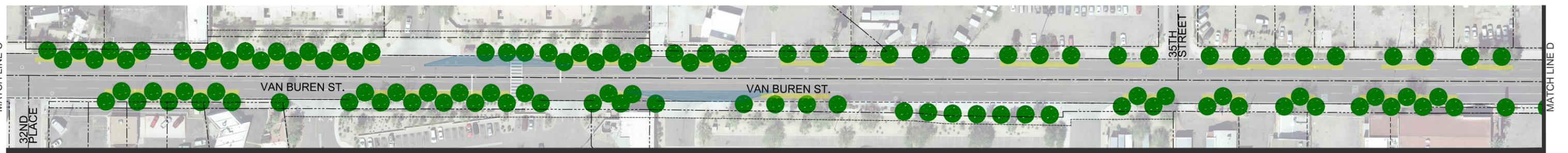
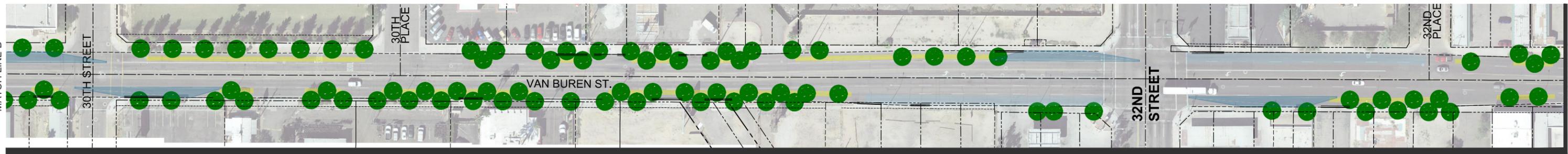
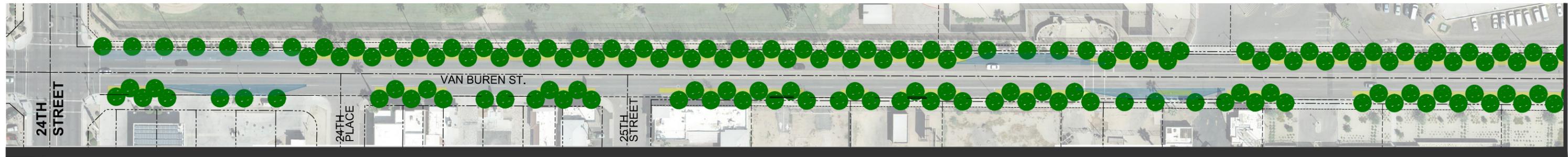
2/6/2014



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7b	4' - W, S, SD	2' - G	Tree Pocket and Existing Landscape Strips
8	2' - W, S, SD	2' - G	Sign Visibility Triangle

CONDITION 6

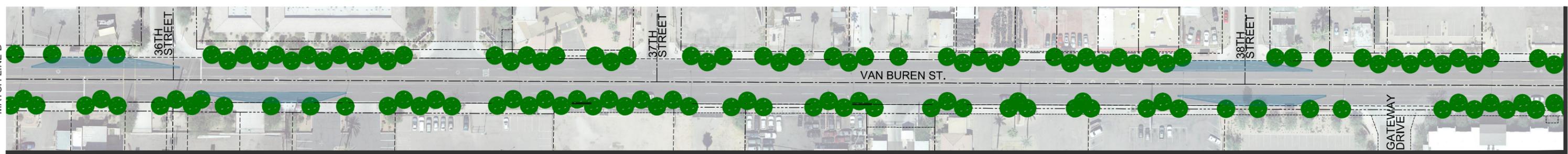
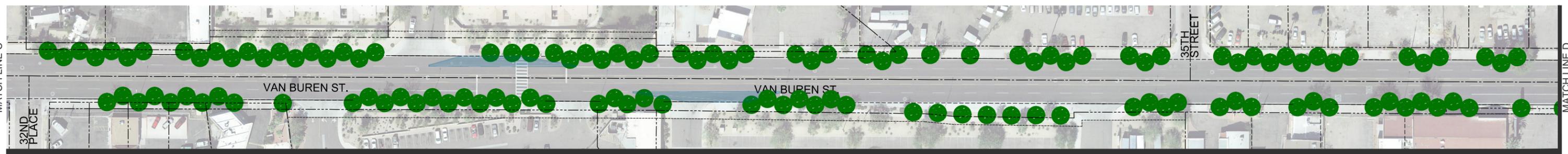
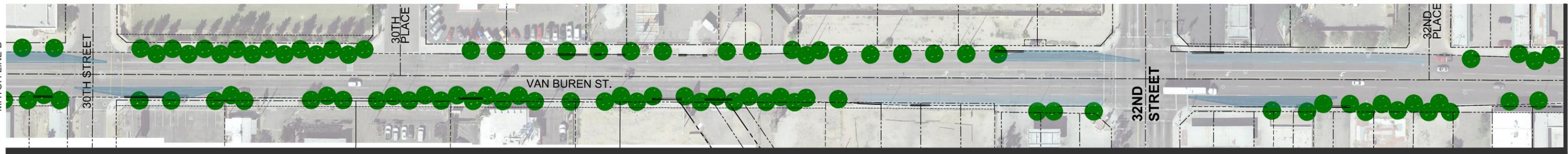
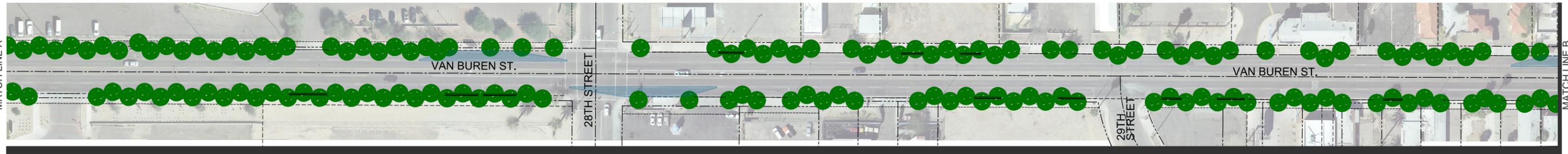
2/6/2014



#	CONDITIONS		
	WET UTILITY OFFSET	DRY UTILITY OFFSET	OTHER CONSIDERATIONS
1			Existing Conditions
2			No Consideration for Utilities
3	10' - W, S, SD	4' - G, Tel, E	No Buffer Trees
4	8' - W, S, SD	2' - G, Tel, E	No Buffer Trees
5	8' - W, S, SD	2' - G	No Buffer Trees but the Use of Existing Landscape Strips
6	8' - W, S, SD	2' - G	Buffer Concept and Existing Landscape Strips
7	2' - W, S, SD	2' - G	Buffer Concept and Existing Landscape Strips
7b	4' - W, S, SD	2' - G	Tree Pocket and Existing Landscape Strips
8	2' - W, S, SD	2' - G	Sign Visibility Triangle

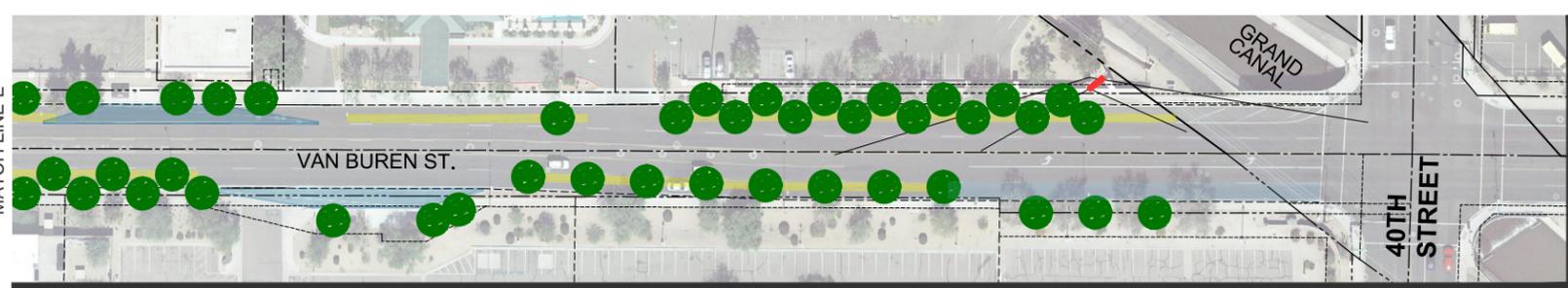
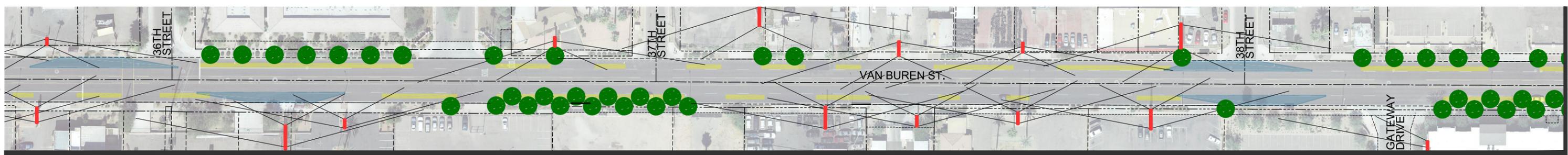
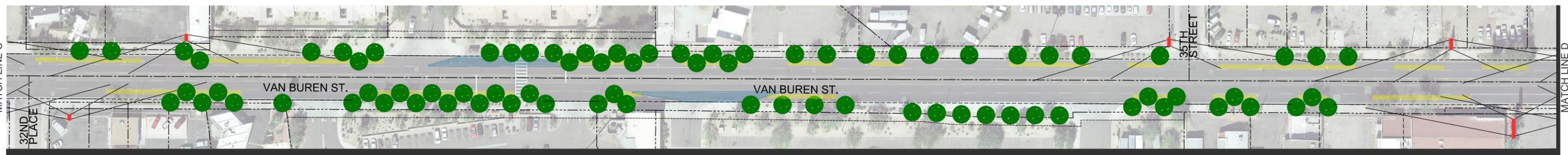
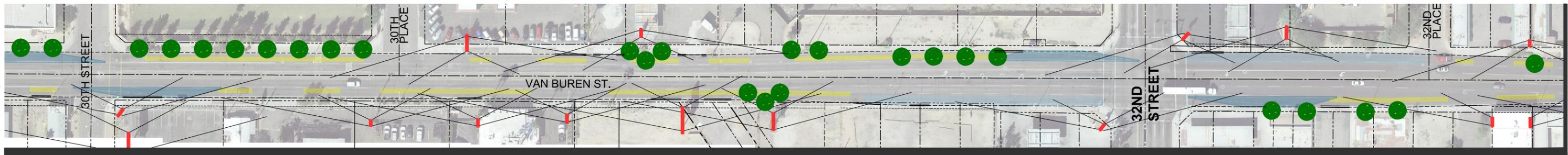
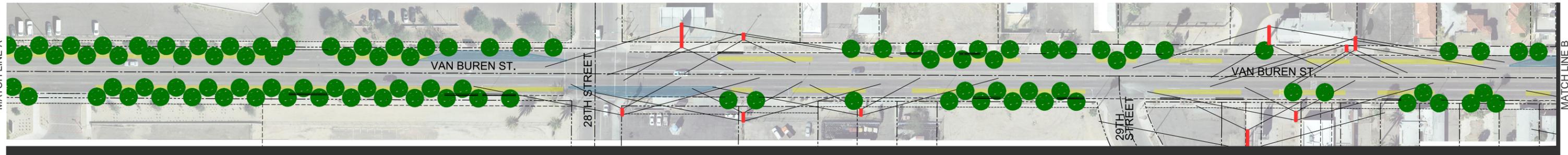
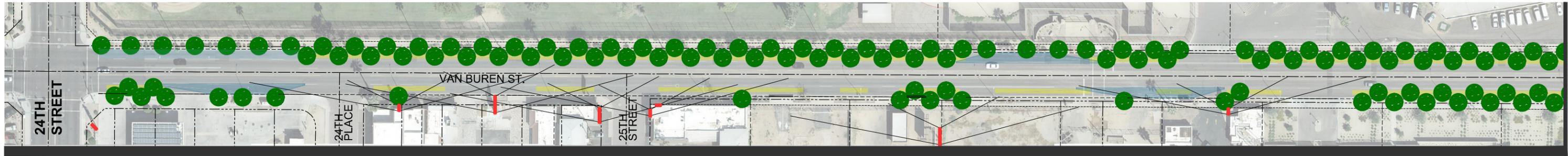
CONDITION 7

2/6/2014



#	CONDITIONS		
	WET UTILITY OFFSET	DRY UTILITY OFFSET	OTHER CONSIDERATIONS
1			Existing Conditions
2			No Consideration for Utilities
3	10' - W, S, SD	4' - G, Tel, E	No Buffer Trees
4	8' - W, S, SD	2' - G, Tel, E	No Buffer Trees
5	8' - W, S, SD	2' - G	No Buffer Trees but the Use of Existing Landscape Strips
6	8' - W, S, SD	2' - G	Buffer Concept and Existing Landscape Strips
7	2' - W, S, SD	2' - G	Buffer Concept and Existing Landscape Strips
7b	4' - W, S, SD	2' - G	Tree Pocket and Existing Landscape Strips
8	2' - W, S, SD	2' - G	Sign Visibility Triangle

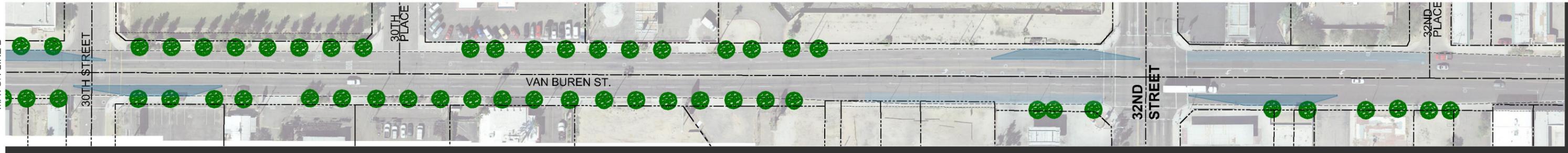
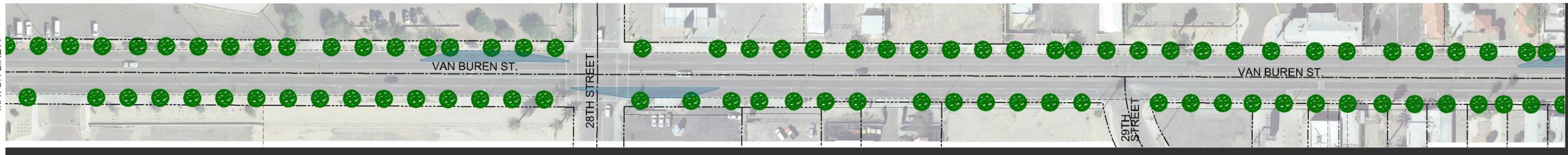
CONDITION 7b



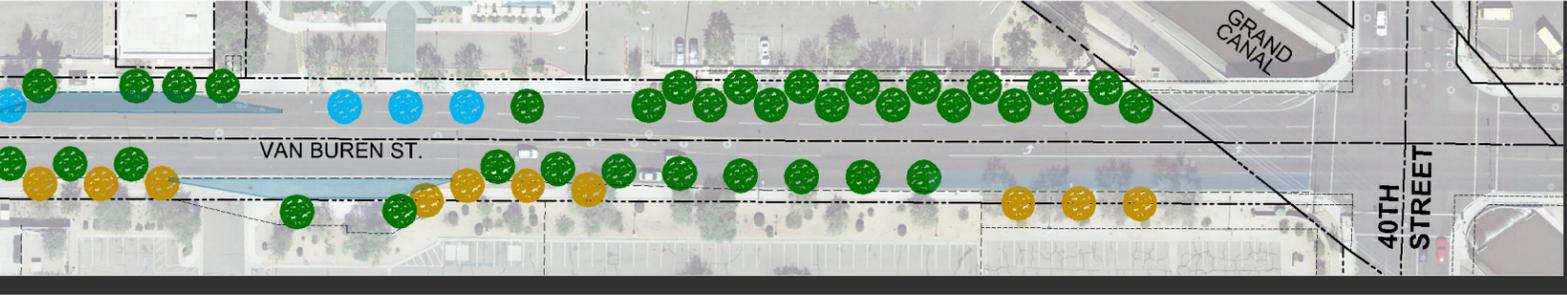
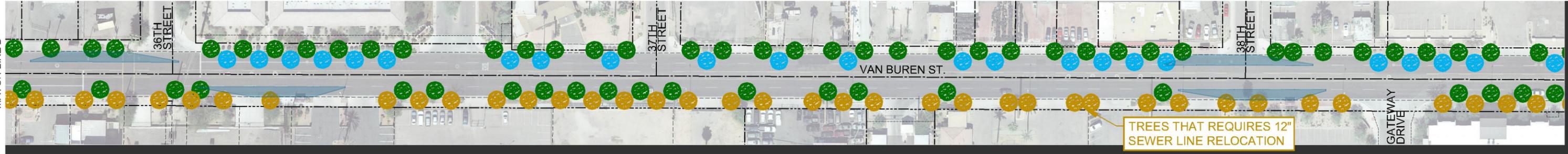
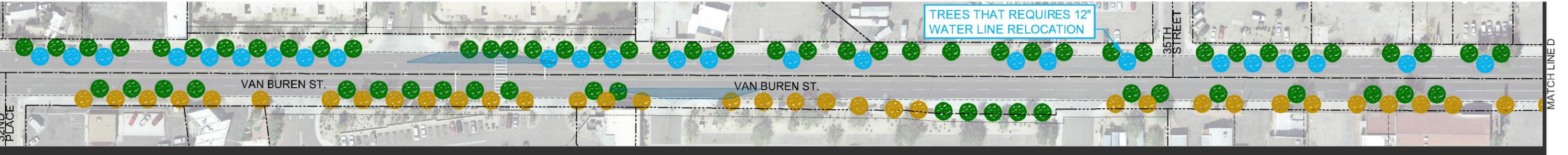
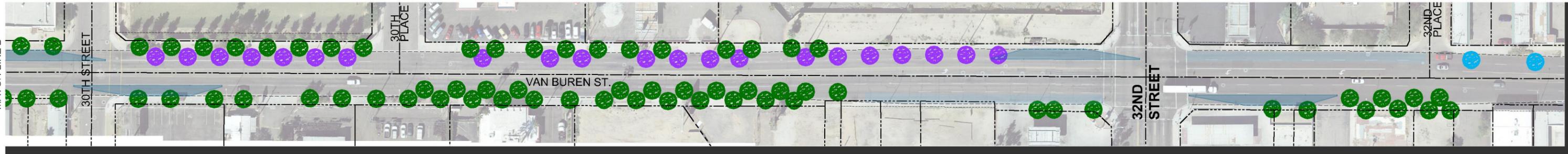
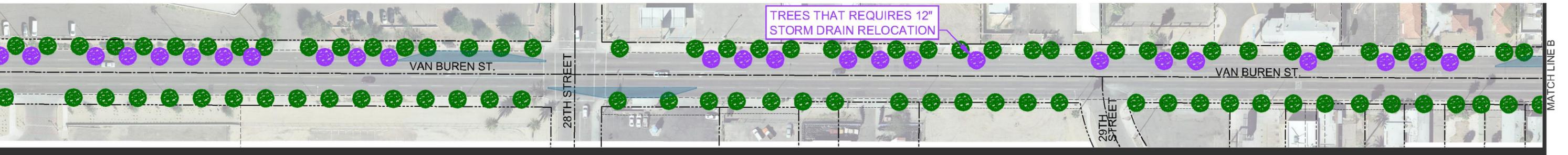
#	CONDITIONS		
	WET UTILITY OFFSET	DRY UTILITY OFFSET	OTHER CONSIDERATIONS
1			Existing Conditions
2			No Consideration for Utilities
3	10' - W, S, SD	4' - G, Tel, E	No Buffer Trees
4	8' - W, S, SD	2' - G, Tel, E	No Buffer Trees
5	8' - W, S, SD	2' - G	No Buffer Trees but the Use of Existing Landscape Strips
6	8' - W, S, SD	2' - G	Buffer Concept and Existing Landscape Strips
7	2' - W, S, SD	2' - G	Buffer Concept and Existing Landscape Strips
7b	4' - W, S, SD	2' - G	Tree Pocket and Existing Landscape Strips
8	2' - W, S, SD	2' - G	Sign Visibility Triangle

CONDITION 8

2/6/2014



- NOTE:
1. ALTERNATIVE IS BASED ON 6' WET UTILITY OFFSET AND 12" SEWER LINE RELOCATION
 2. NO CONSIDERATION FOR DRY UTILITIES



- NOTE:
1. ALTERNATIVE IS BASED ON 6' WET UTILITY OFFSET, 18" STORM DRAIN RELOCATION, 12" WATER RELOCATION AND 12" SEWER LINE RELOCATION
 2. NO CONSIDERATION FOR DRY UTILITIES

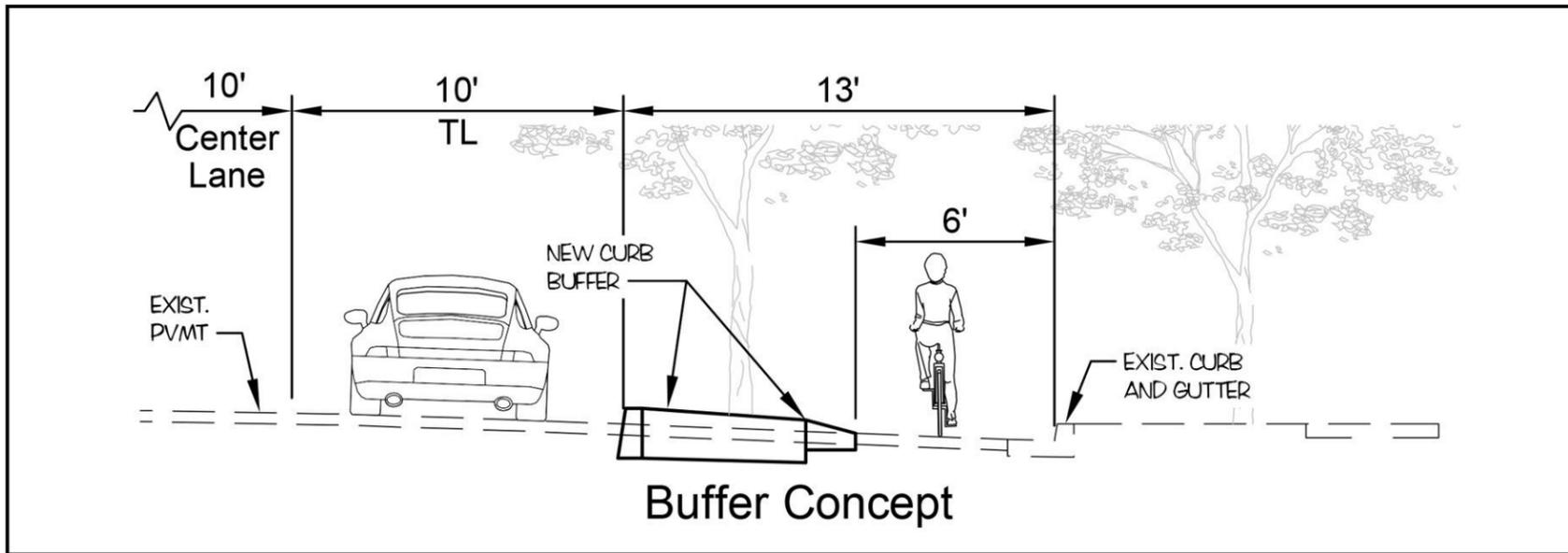
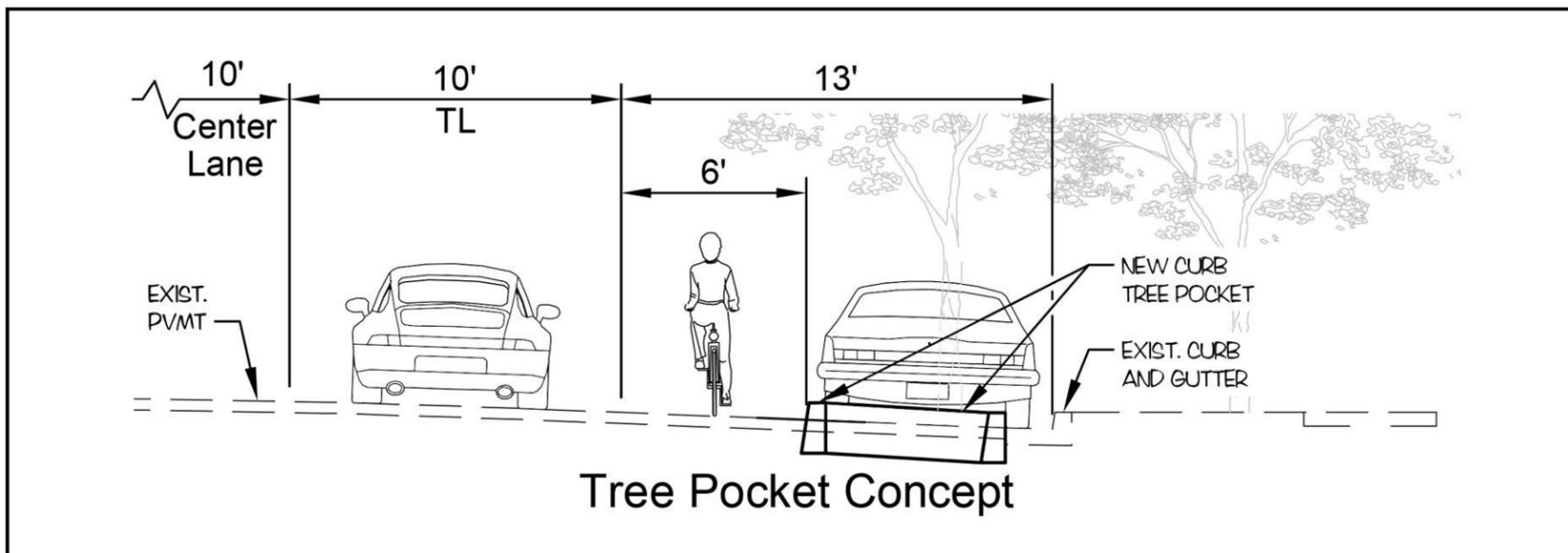
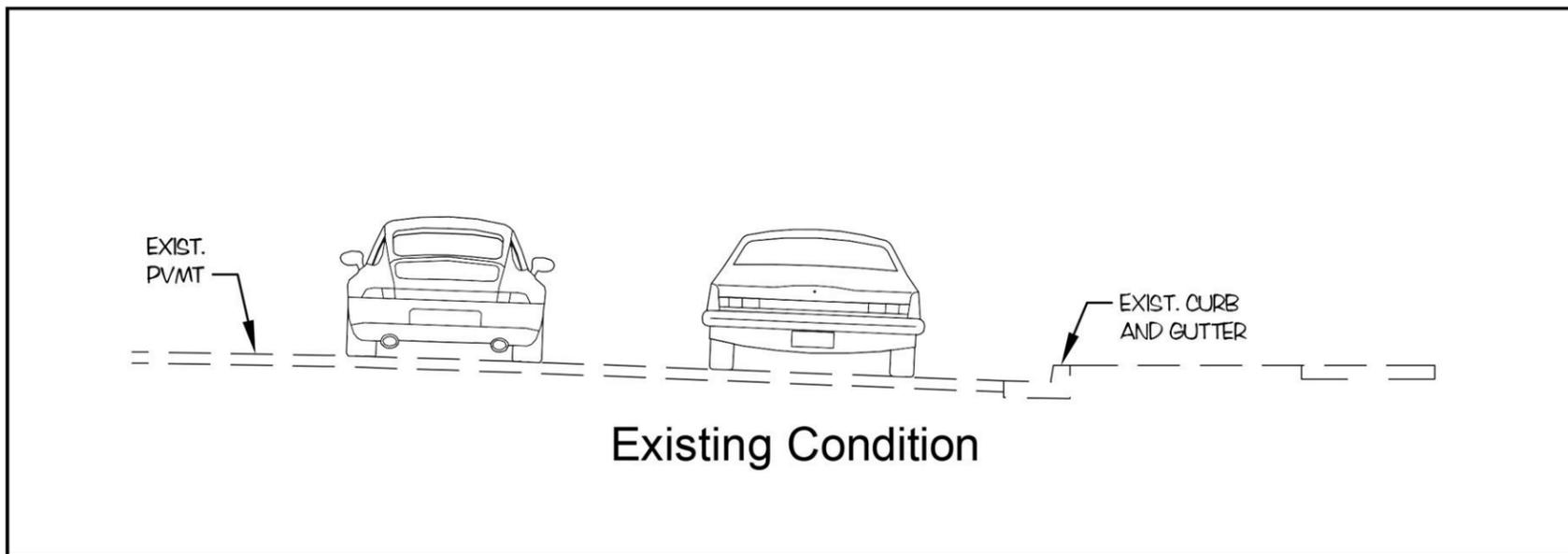
Appendix C: Bike Lane Design Options

Summary of Appendix C:

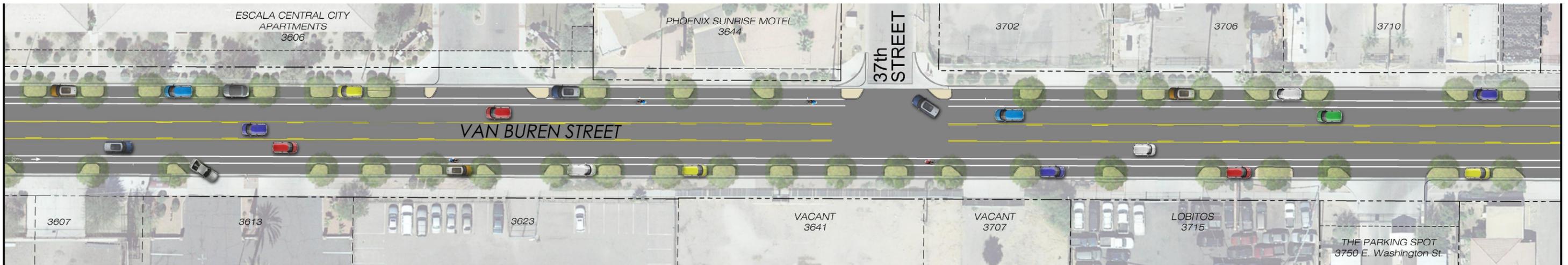
The two exhibits in this appendix illustrate the two bike lane concepts, including the “Tree Pocket Concept” and the “Buffered Bike Lane Concept”.

The first exhibit (Bike Lane Concepts) illustrates the existing street, curb, gutter, and sidewalk; and what the two concepts would look like in section view, and with a photo simulation view.

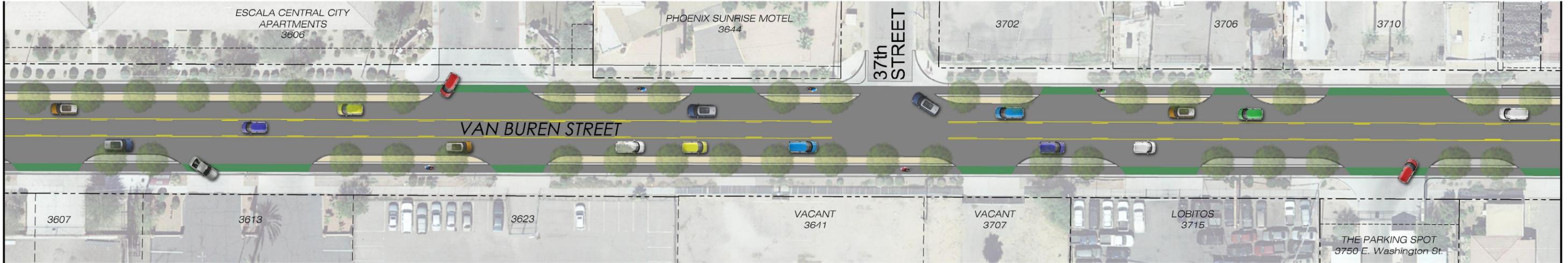
The second exhibit (Bike Lane Design Options) illustrates typical layouts of the two concepts in plan view, and a third plan view layout illustrates how both concepts could be used together, transitioning from one concept to the other, in the case that a portion of the Van Buren Street corridor requires on-street parking and other portions do not.



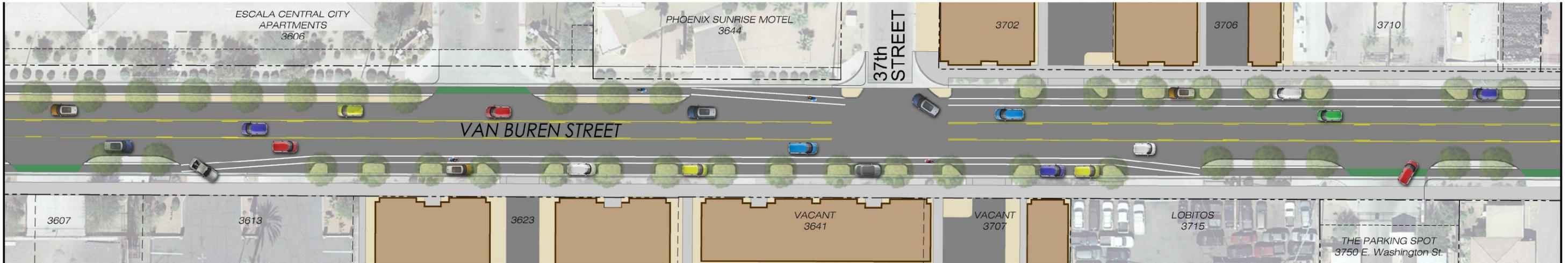
**BIKE LANE CONCEPTS
VAN BUREN STREET**



TREE POCKET CONCEPT



BUFFER CONCEPT



TREE POCKET & BUFFER CONCEPT TRANSITION

Bike Lane Design Options



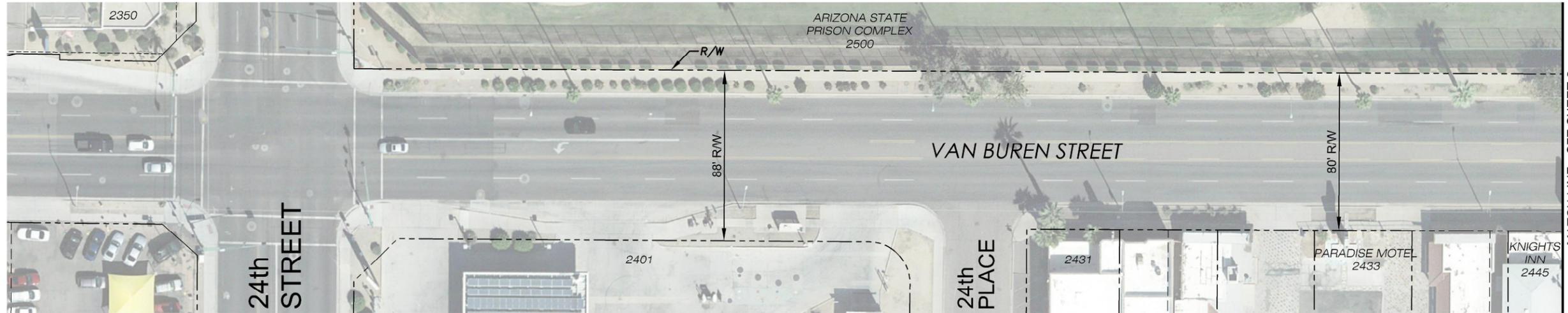
Appendix D: Concept Plans for Re-Striping to add Bike Lanes

Summary of Appendix D:

Appendix D includes conceptual plans for Phase One street re-striping to add bike lanes, and landscaping in the existing landscape areas.

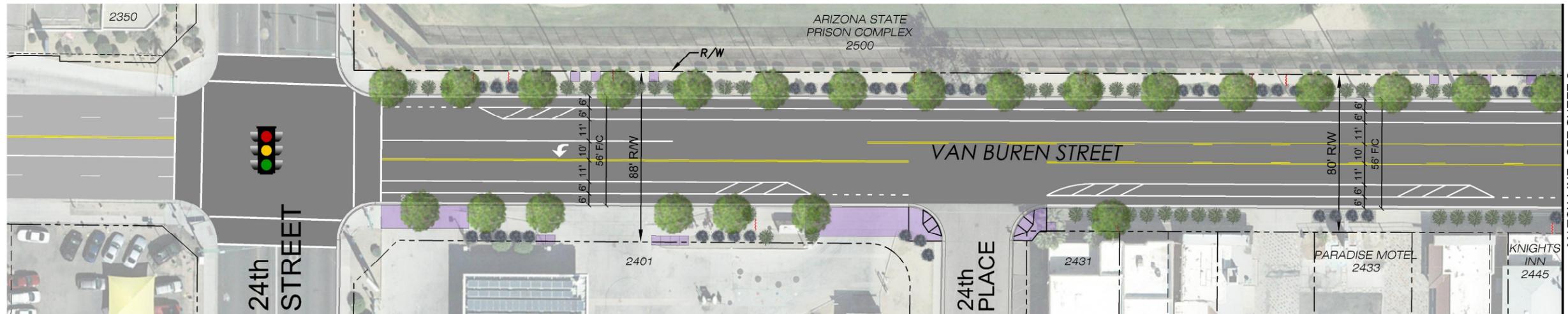
These concept plans show inventoried accessibility conflicts and anticipated sidewalk and ramp repairs and replacements required to make the sidewalks ADA compliant.

The locations of the trees shown on these concept plans assume that a 6-ft clearance from water, sewer, and storm drain lines would be coordinated with, and acceptable, by the City Water Department. It is also assumed that tree planting in the existing landscape areas would be acceptable to the dry utility agencies.



EXISTING CONDITIONS

MATCH LINE - SEE SHEET 2

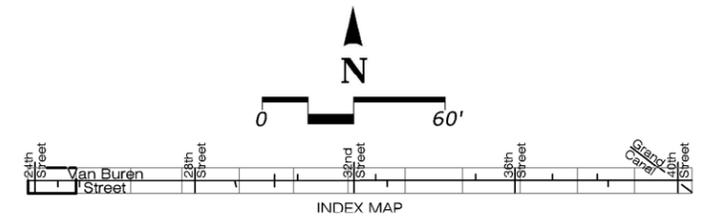


STRIPING PLAN

MATCH LINE - SEE SHEET 2

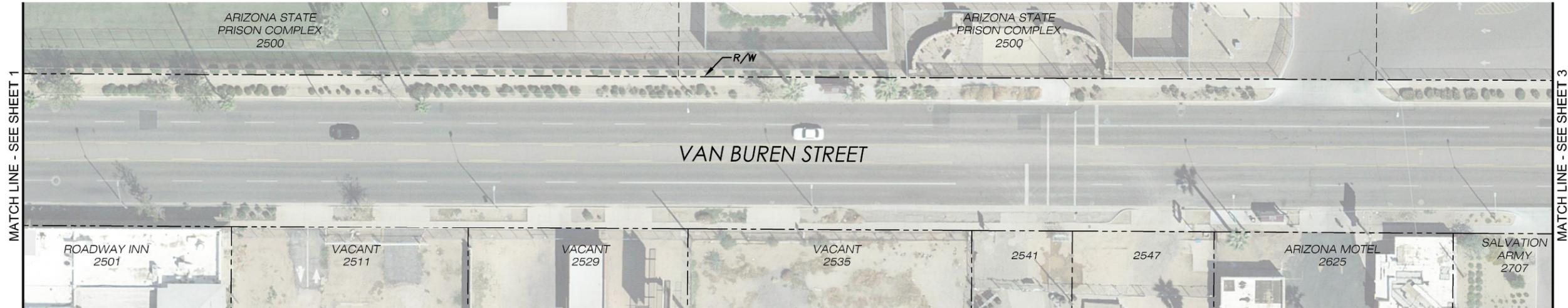
Legend

-  SIGNALIZED INTERSECTION
-  NEW TREES  NEW SHRUBS
-  ACCESSIBILITY IMPROVEMENTS
-  TRIPPING HAZARD (Grind or Replace Sidewalk)
-  NEW SIDEWALK / DRIVEWAY
(Replace Broken, Cracked, or Non-ADA Compliant Sidewalk or Driveways)
-  NEW ADA COMPLIANT SIDEWALK RAMP

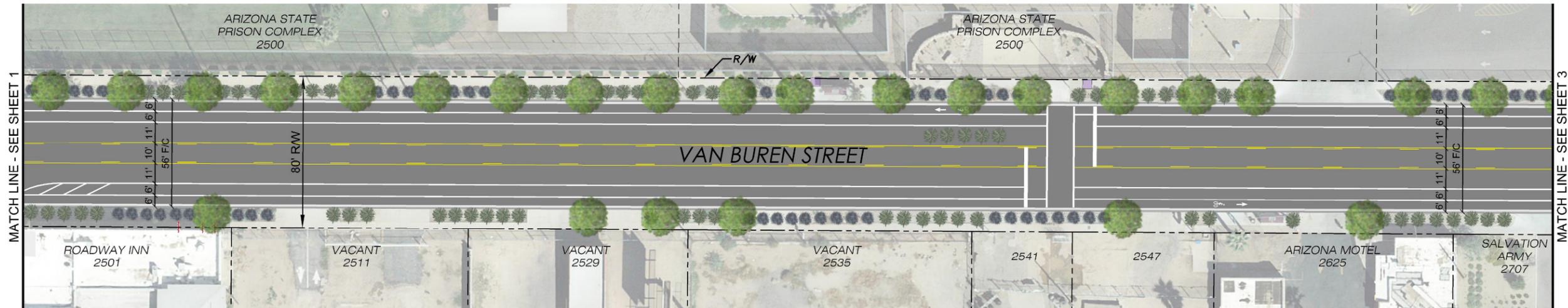


PHASE ONE: Street Re-Striping





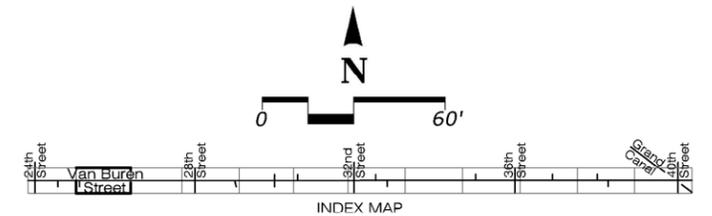
EXISTING CONDITIONS



STRIPING PLAN

Legend

-  SIGNALIZED INTERSECTION
-  NEW TREES  NEW SHRUBS
- ACCESSIBILITY IMPROVEMENTS**
-  TRIPPING HAZARD (Grind or Replace Sidewalk)
-  NEW SIDEWALK / DRIVEWAY
(Replace Broken, Cracked, or Non-ADA Compliant Sidewalk or Driveways)
-  NEW ADA COMPLIANT SIDEWALK RAMP



PHASE ONE: Street Re-Striping

VAN BUREN CORRIDOR - 24TH ST. TO 40TH ST. - BICYCLE AND PEDESTRIAN IMPROVEMENTS





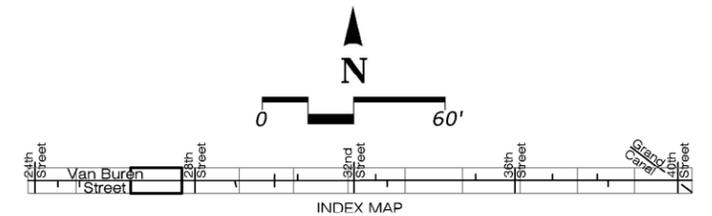
EXISTING CONDITIONS



STRIPING PLAN

Legend

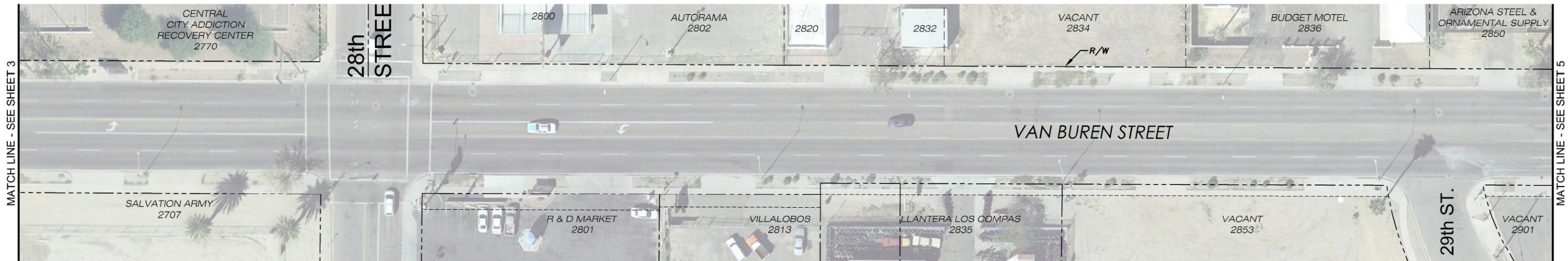
-  SIGNALIZED INTERSECTION
-  NEW TREES  NEW SHRUBS
- ACCESSIBILITY IMPROVEMENTS**
-  TRIPPING HAZARD (Grind or Replace Sidewalk)
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(Replace Broken, Cracked, or Non-ADA Compliant Sidewalk or Driveways)
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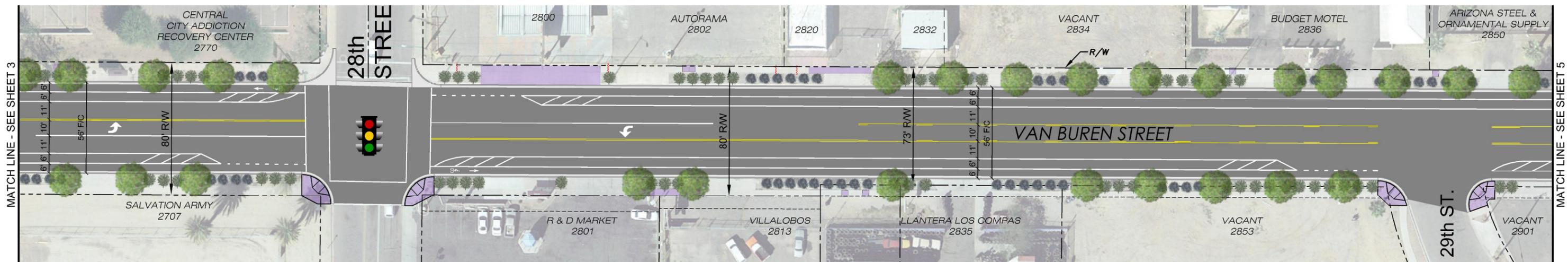
PHASE ONE: Street Re-Striping



VAN BUREN CORRIDOR - 24TH ST. TO 40TH ST. - BICYCLE AND PEDESTRIAN IMPROVEMENTS

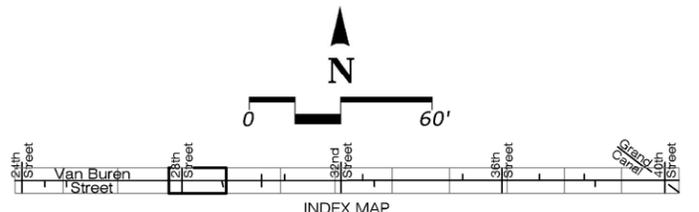


EXISTING CONDITIONS



STRIPING PLAN

- Legend**
- SIGNALIZED INTERSECTION
 - NEW TREES NEW SHRUBS
 - ACCESSIBILITY IMPROVEMENTS
 - TRIPPING HAZARD (Grind or Replace Sidewalk)
 - NEW SIDEWALK / DRIVEWAY (Replace Broken, Cracked, or Non-ADA Compliant Sidewalk or Driveways)
 - NEW ADA COMPLIANT SIDEWALK RAMP



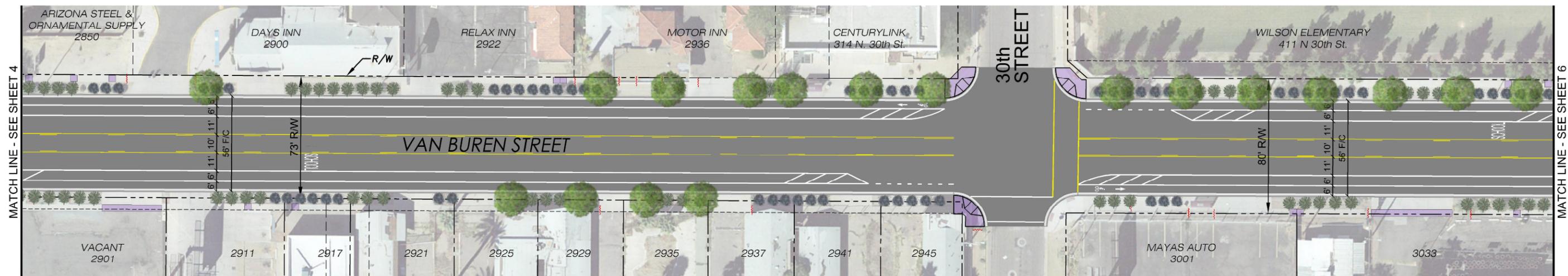
PHASE ONE: Street Re-Striping



VAN BUREN CORRIDOR - 24TH ST. TO 40TH ST. - BICYCLE AND PEDESTRIAN IMPROVEMENTS

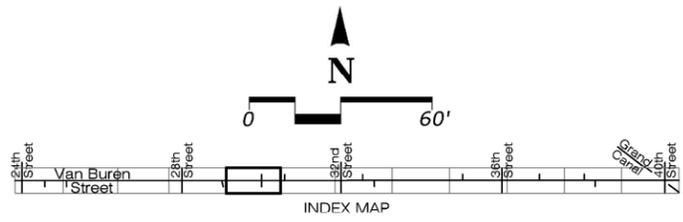


EXISTING CONDITIONS



STRIPING PLAN

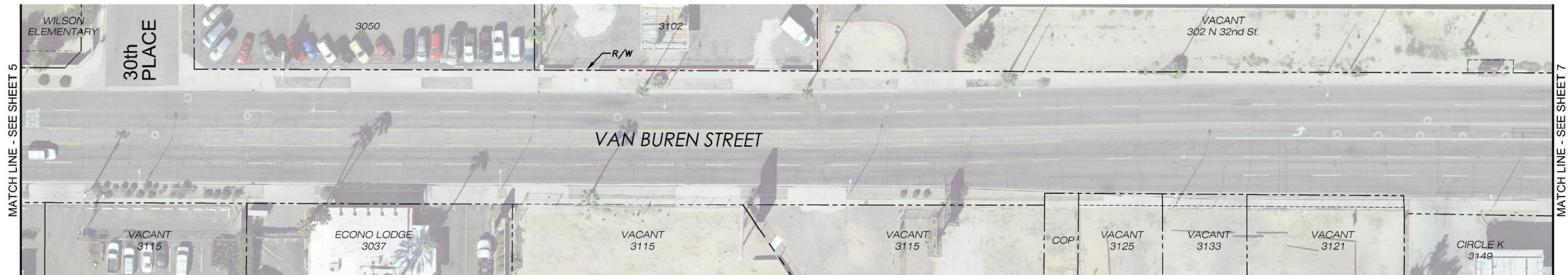
- Legend**
-  SIGNALIZED INTERSECTION
 -  NEW TREES
 -  NEW SHRUBS
 - ACCESSIBILITY IMPROVEMENTS**
 -  TRIPPING HAZARD (Grind or Replace Sidewalk)
 -  NEW SIDEWALK / DRIVEWAY (Replace Broken, Cracked, or Non-ADA Compliant Sidewalk or Driveways)
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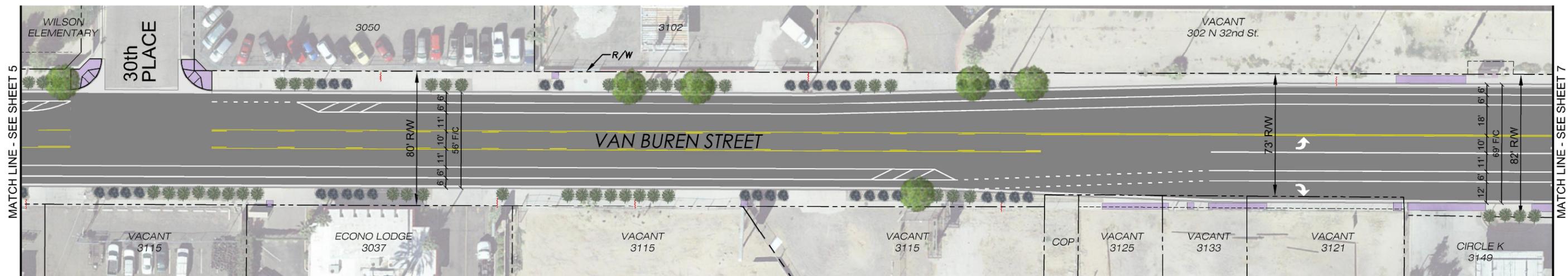
PHASE ONE: Street Re-Striping



VAN BUREN CORRIDOR - 24TH ST. TO 40TH ST. - BICYCLE AND PEDESTRIAN IMPROVEMENTS



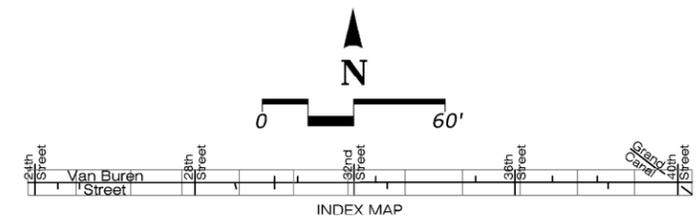
EXISTING CONDITIONS



STRIPING PLAN

Legend

-  SIGNALIZED INTERSECTION
-  NEW TREES
-  NEW SHRUBS
- ACCESSIBILITY IMPROVEMENTS**
-  TRIPPING HAZARD (Grind or Replace Sidewalk)
-  NEW SIDEWALK / DRIVEWAY (Replace Broken, Cracked, or Non-ADA Compliant Sidewalk or Driveways)
-  NEW ADA COMPLIANT SIDEWALK RAMP

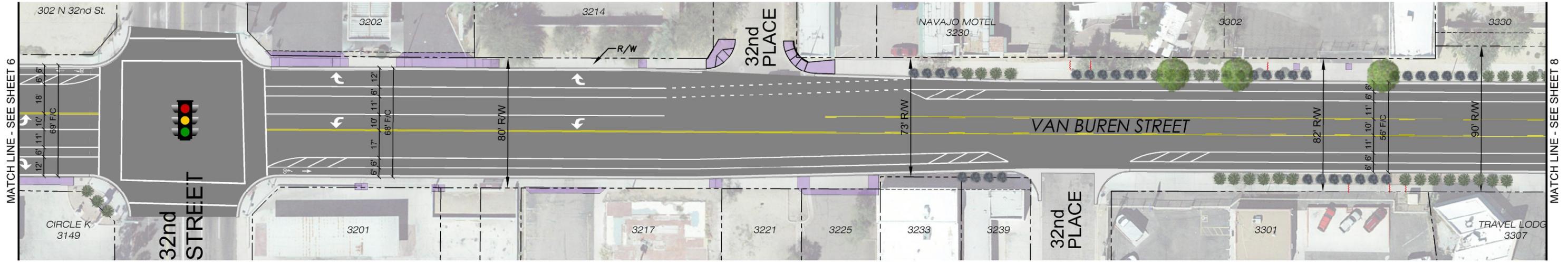


PHASE ONE: Street Re-Striping





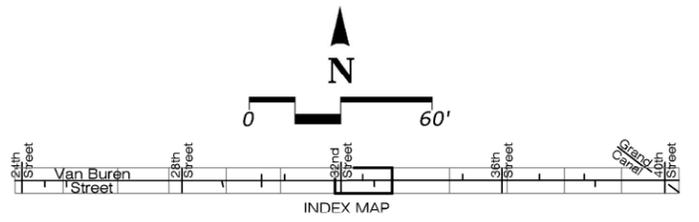
EXISTING CONDITIONS



STRIPING PLAN

Legend

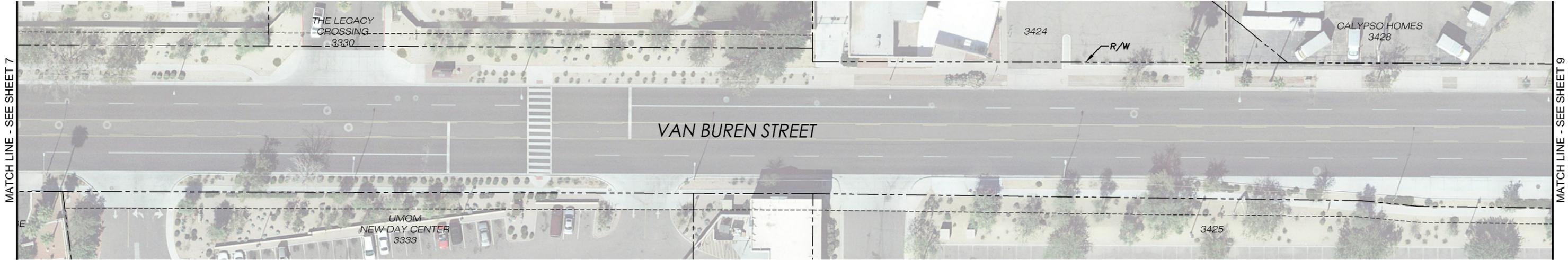
-  SIGNALIZED INTERSECTION
-  NEW TREES
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-  TRIPPING HAZARD (Grind or Replace Sidewalk)
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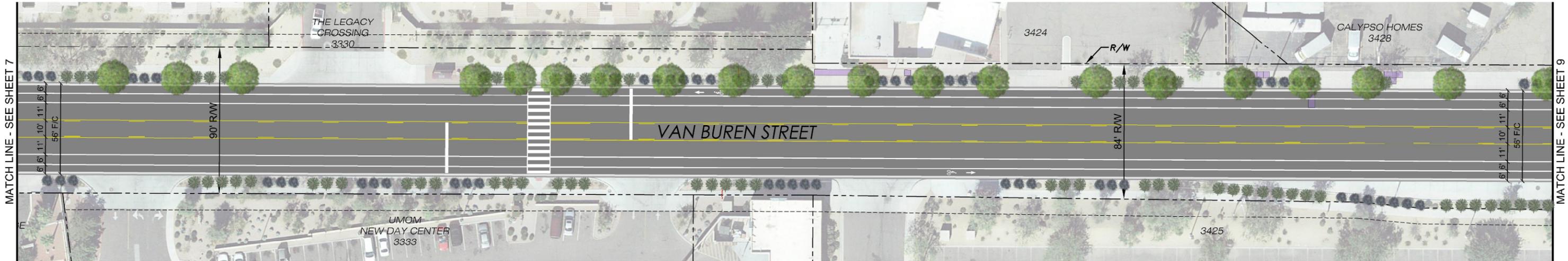
PHASE ONE: Street Re-Striping



VAN BUREN CORRIDOR - 24TH ST. TO 40TH ST. - BICYCLE AND PEDESTRIAN IMPROVEMENTS



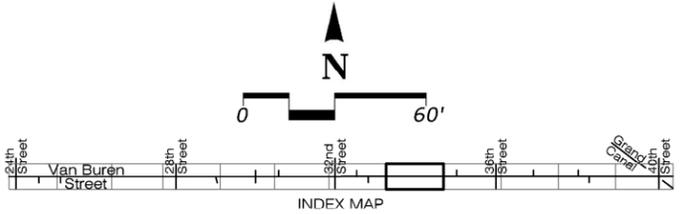
EXISTING CONDITIONS



STRIPING PLAN

Legend

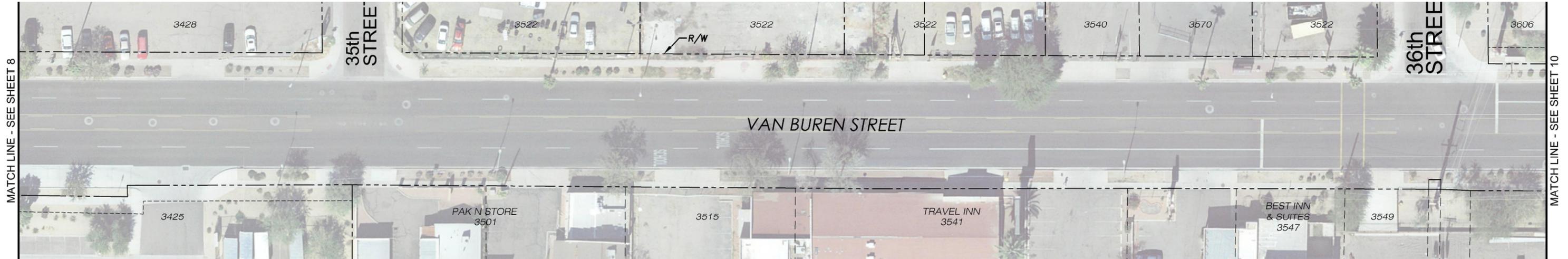
-  SIGNALIZED INTERSECTION
-  NEW TREES
-  NEW SHRUBS
-  ACCESSIBILITY IMPROVEMENTS
-  TRIPPING HAZARD (Grind or Replace Sidewalk)
-  NEW SIDEWALK / DRIVEWAY (Replace Broken, Cracked, or Non-ADA Compliant Sidewalk or Driveways)
-  NEW ADA COMPLIANT SIDEWALK RAMP



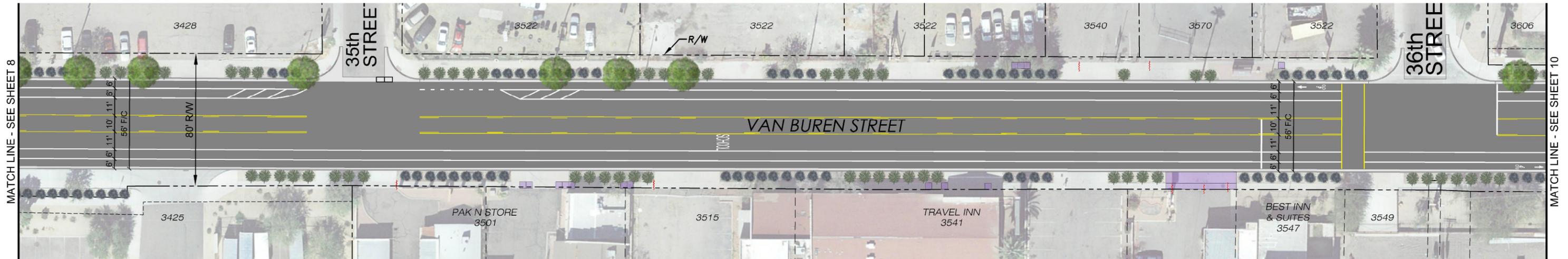
PHASE ONE: Street Re-Striping



VAN BUREN CORRIDOR - 24TH ST. TO 40TH ST. - BICYCLE AND PEDESTRIAN IMPROVEMENTS



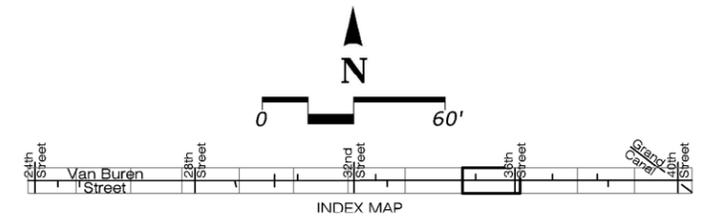
EXISTING CONDITIONS



STRIPING PLAN

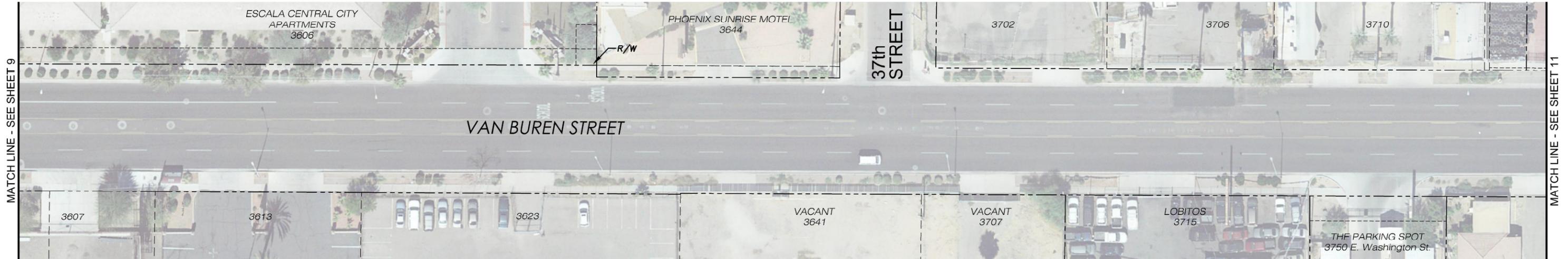
Legend

-  SIGNALIZED INTERSECTION
-  NEW TREES
-  NEW SHRUBS
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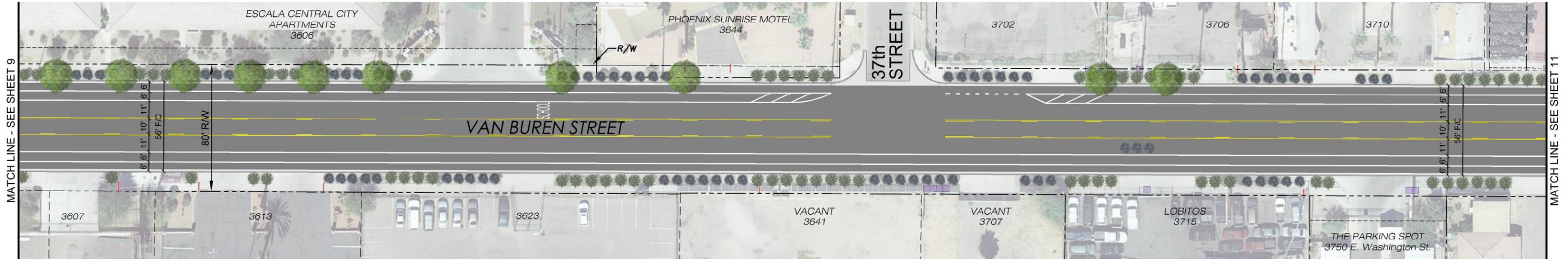


PHASE ONE: Street Re-Striping





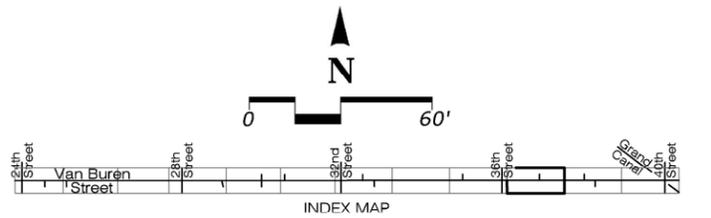
EXISTING CONDITIONS



STRIPING PLAN

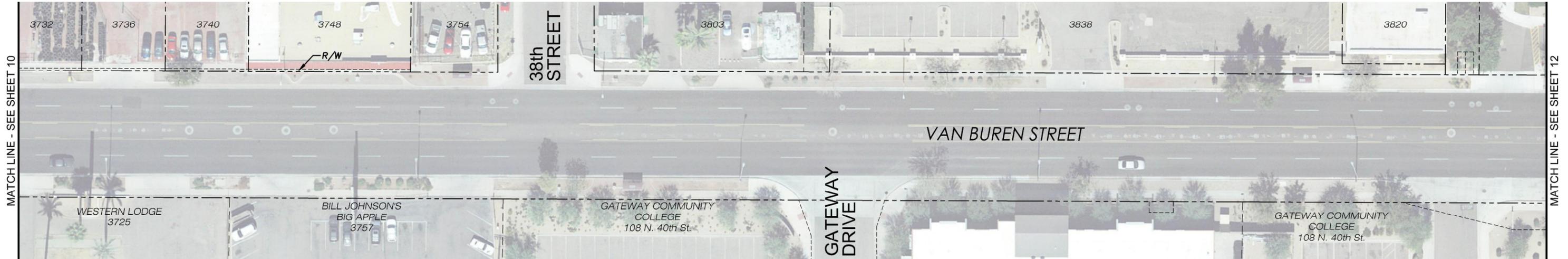
Legend

-  SIGNALIZED INTERSECTION
-  NEW TREES  NEW SHRUBS
- ACCESSIBILITY IMPROVEMENTS**
-  TRIPPING HAZARD (Grind or Replace Sidewalk)
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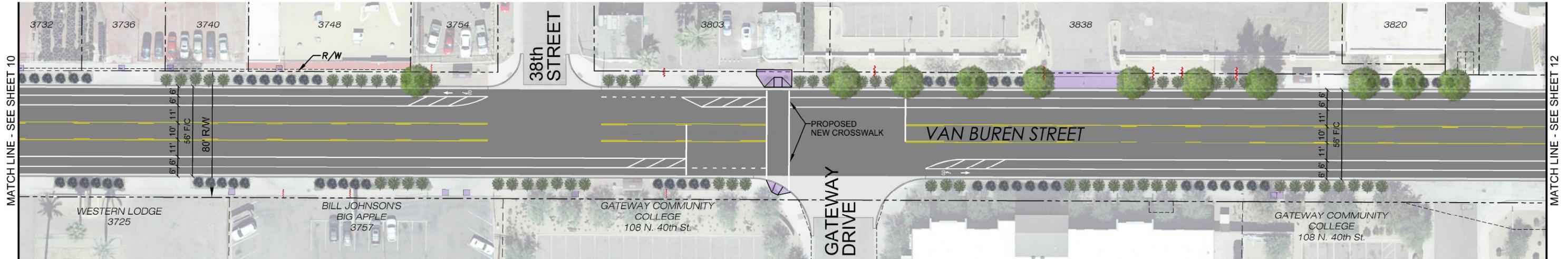


PHASE ONE: Street Re-Striping

VAN BUREN CORRIDOR - 24TH ST. TO 40TH ST. - BICYCLE AND PEDESTRIAN IMPROVEMENTS



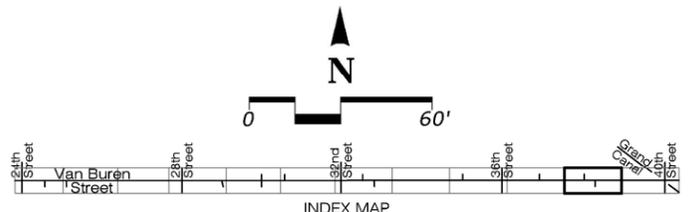
EXISTING CONDITIONS



STRIPING PLAN

Legend

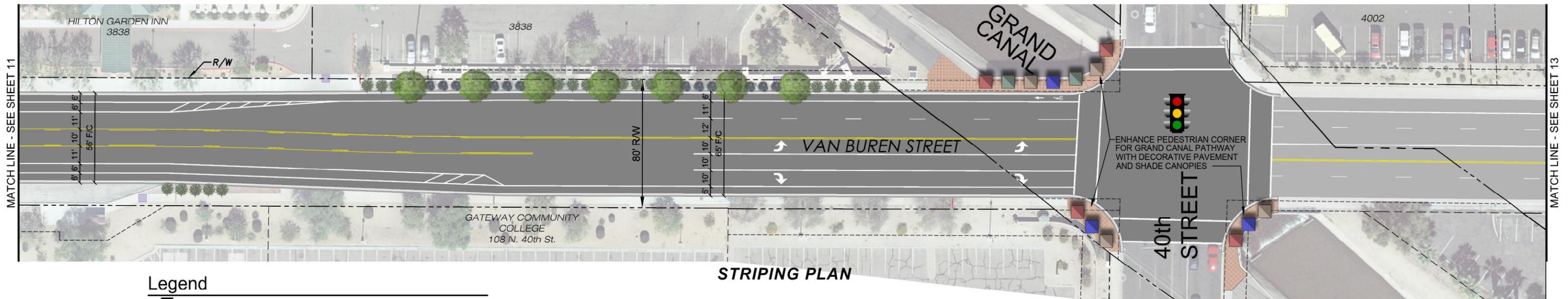
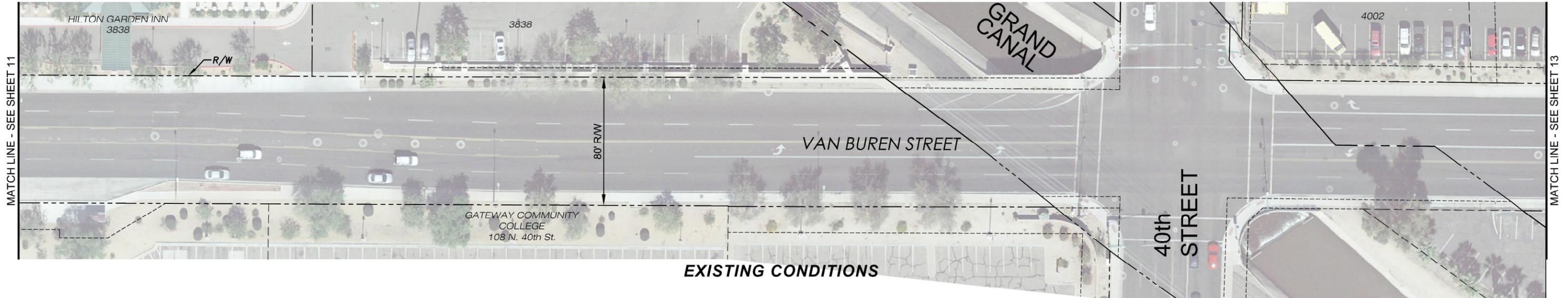
-  SIGNALIZED INTERSECTION
-  NEW TREES
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PHASE ONE: Street Re-Striping

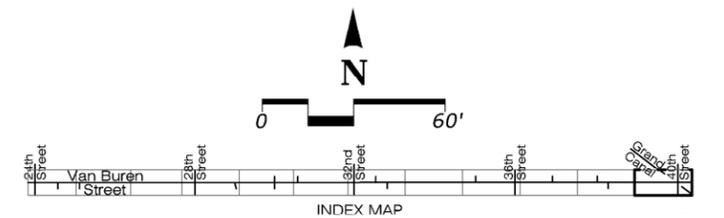


VAN BUREN CORRIDOR - 24TH ST. TO 40TH ST. - BICYCLE AND PEDESTRIAN IMPROVEMENTS



Legend

-  SIGNALIZED INTERSECTION
-  NEW TREES
-  NEW SHRUBS
-  ACCESSIBILITY IMPROVEMENTS
-  TRIPPING HAZARD (Grind or Replace Sidewalk)
-  NEW SIDEWALK / DRIVEWAY (Replace Broken, Cracked, or Non-ADA Compliant Sidewalk or Driveways)
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PHASE ONE: Street Re-Striping

VAN BUREN CORRIDOR - 24TH ST. TO 40TH ST. - BICYCLE AND PEDESTRIAN IMPROVEMENTS