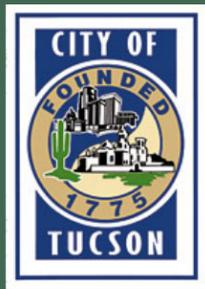




# EL PASO & SOUTHWESTERN GREENWAY

## SITE ANALYSIS REPORT







# EL PASO & SOUTHWESTERN GREENWAY

## SITE ANALYSIS REPORT

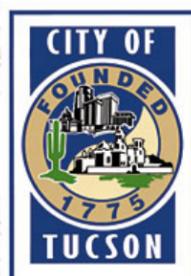
Prepared for:

City of Tucson Department of Transportation

Prepared by:

SAGE Landscape Architecture & Environmental, Inc.

**March 2010**





# EL PASO & SOUTHWESTERN GREENWAY

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# EL PASO & SOUTHWESTERN GREENWAY

## EXECUTIVE SUMMARY

### Overview

The El Paso and Southwestern Greenway (Greenway) is a multi-use path project located in the City of Tucson and the City of South Tucson in Pima County, Arizona. The majority of the multi-use path is located along the El Paso & Southwestern Railroad (EP&SW) historic railway alignment, running south from University Boulevard near Main, along the west side of downtown Tucson, southeast through the City of South Tucson, and east to the Ajo Detention Basin.

The approximate six-mile long El Paso & Southwestern Greenway project will provide a common thread connecting the greater Tucson community via its multi-use path. The history of the EP&SW railway line will be highlighted, as will the unique historic nuances of the neighborhoods encountered along the way. In addition, the Greenway will feature a divided urban pathway where the right-of-way width allows, and a single multi-use pathway in narrower areas. This path system will appeal to pedestrians, roller bladers, bicyclists and families out for a walk. The Greenway will accommodate the needs for accessibility, safety, and comfort for a variety of users. It will also protect and enhance the corridor's available natural resources. In order to support the long-term viability of the Greenway, sustainable design principals and long-term maintenance philosophies will be incorporated. Small parks, open spaces, and historic landmarks will be featured along the length of the Greenway.

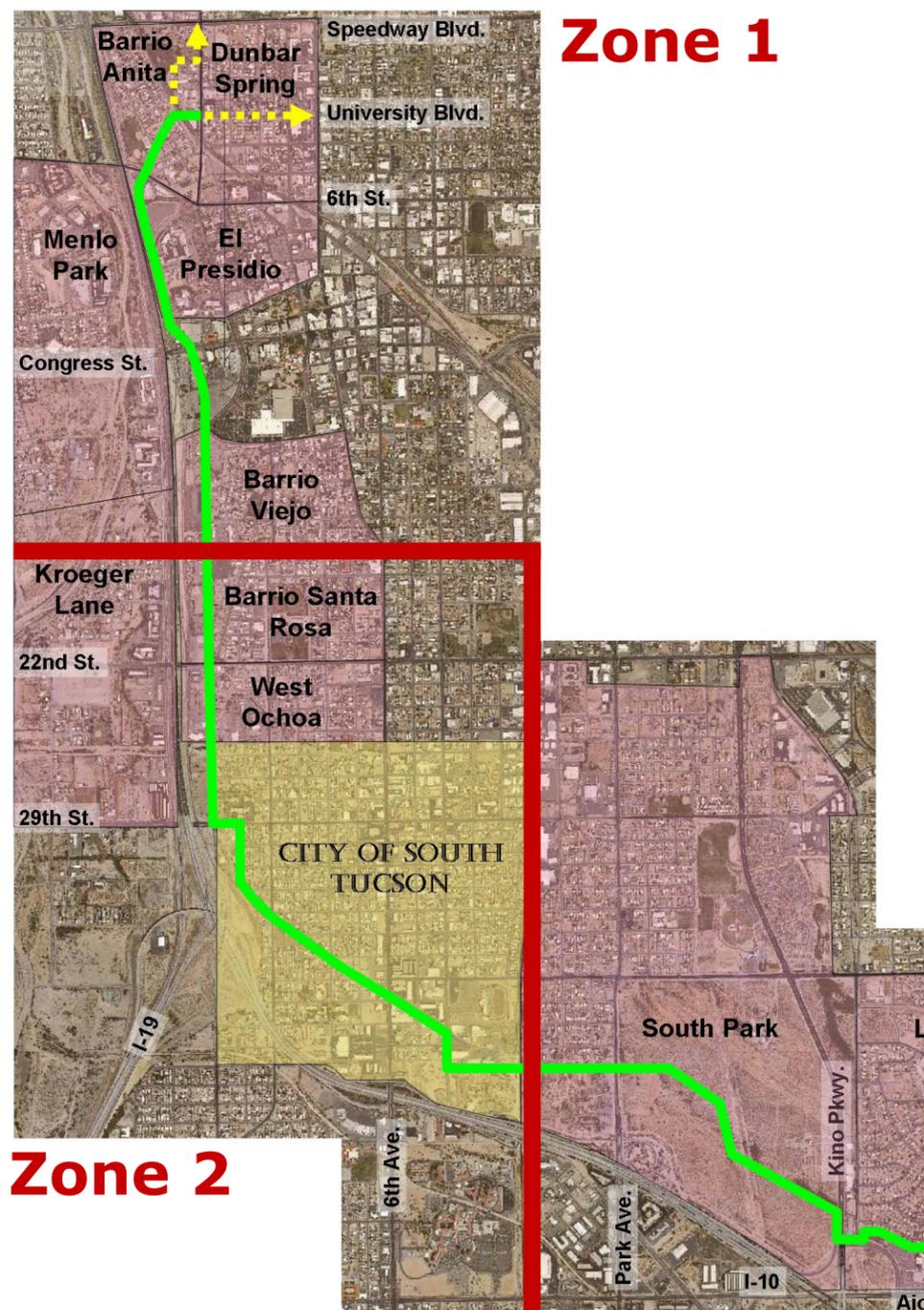
Existing major physical landmarks adjacent to the planned Greenway include Arroyo Chico, Manning House, the historic Railroad Depot, the Tucson Community Center, the historic Round House, and the historic Livestock Auction House. Some of these features will lend themselves to gathering nodes for events, historic interpretation or passive recreation in the form of seating or picnic areas. In areas where adjacent land is already city-owned, or a liaison with other public entities is possible, expansion may occur into more formally developed pocket parks with the ability to support larger activity venues.

The Greenway will feature connections with planned and existing nearby amenities such as intersecting bikeways and other alternative transportation routes, local parks, housing developments, and local landmarks including The Downtown Links, the Bridges Development, Santa Rosa Park, and the Tucson Greyhound Park (See Figure 1, Key Features, Challenges and Opportunities).

While the ideal alignment for the Greenway is along the historic right of way of its namesake, several significant ownership challenges exist along the preferred route that may require deviations from the historic alignment to provide the safest and most desirable user experience. The three main areas that pose the greatest challenge to the proposed alignment include La Entrada / Manning House, the area immediately south of the Greenway's intersection with 29th Street, and the Borderlands property east of 4th Avenue.

The timeline of Greenway development follows:

- In 2005 the Drachman Institute, (the community outreach arm of the University of Arizona) developed the "Drachman Report" which summarized the data they gathered in their study area that terminated at the east border of the City of South Tucson. Public and municipal input resulted in objectives that included connectivity of surrounding neighborhoods; recreation; reflection of local/regional identity and character; and celebration of local history.
- In 2006 Pima County voters approved \$3.26 million as part of the Regional Transportation Authority Plan (RTA) to fund the Master Plan design of the 5-mile Greenway project.
- In 2006 the City of Tucson was awarded a Federal Transportation Enhancement (TE) Grant for construction of a segment from Cushing Street to 22nd Street.
- In 2006 the City of Tucson, in conjunction with the Tucson Fire Department, initiated design of the downtown Fire Central project. Included in that scope was the first portion of the Greenway project to go into design from Cushing Street to Simpson Street. Construction of Fire Central and the prototype Greenway was completed in 2009.
- In 2007 the consulting team, headed by SAGE Landscape Architecture & Environmental (SAGE), was selected to design the Master Plan for the Greenway project as well as provide design services for the El



Paso & Southwestern Greenway - Simpson Street to 22nd Street project. This Site Analysis Report is the first phase of the Master Plan.

- In 2007, the privately funded 'The Bridges' master planned community committed to building one mile of the Greenway from Park Avenue to Kino Boulevard.

The limits for the Federal Transportation Enhancement (TE) Grant that the City received in 2006 was modified after the City of Tucson and the Tucson Fire Department collaborated to construct the Greenway from Cushing Street to Simpson. The TE Grant now includes only the segment between Simpson Street and 22nd Street. The federal environmental clearance is currently underway.

It is anticipated that implementation of the remaining Greenway will occur over a period of ten or more years. Several funding sources will be utilized and others will be researched for applicability. Regional Transportation Authority funds (RTA) will contribute to the completion of the EP&SW Master Plan scheduled to begin in early 2010. Other projects granted RTA funding directly intersect the Greenway and coordination is on-going to include critical interfacing elements within those projects to augment the Greenway funds. These projects include:

- Downtown Links - I-10 to Broadway Boulevard
- Broadway Boulevard - Euclid Avenue to Country Club Road
- Grant Road - Oracle Road to Swan Road
- 22nd Street - I-10 to Tucson Boulevard

Successful applications for additional Federal Transportation Enhancement (TE) grants will also result in additional funding. At this time only the Simpson to 22nd Street segment has TE funding. It is possible additional stimulus grants will be offered by the Federal Government and the Greenway may consider application for those funds. Build-out of the Greenway will proceed in phases based upon ease of construction: those areas with difficult obstructions such as crossing the active Union Pacific Railroad, or crossing parcels with landowners who are unsure of the benefits of the Greenway, may take longer to complete.

Private funds also will contribute to the EP&SW Greenway's progress. As previously mentioned, The Bridges development between Park Avenue and Kino Boulevard will build segments of the Greenway as the Master Plan is constructed. The first segment will be associated with the new Costco scheduled to be built by the end of 2010. The other segments are delayed from the original schedule due to current economic conditions, but eventually they will also be completed. The Inn Suites near St. Mary's and I-10 currently shows the Greenway in their latest improvement drawings. As portions of Tucson's downtown are developed, it is foreseeable that partnerships will be initiated that will include the Greenway in the designs.



## Zone 3

For the purpose of this Site Analysis report, the alignment of the greenway has been divided into three zones from north to southeast:

**Zone One:** from University Boulevard near Granada to 18th Street near I-10. It includes several neighborhoods: Barrio Anita, Dunbar Spring, El Presidio and Barrio Viejo. Menlo Park is nearby but not adjacent.

**Zone Two:** from 18th Street near I-10 through the City of South Tucson, ending at its boundary at 39th Street and the Nogales Spur of the Union Pacific Railroad. It includes Barrio Santa Rosa, West Ochoa, and the City of South Tucson. Kroeger Lane is nearby but not adjacent.

**Zone Three:** from the east border of the City of South Tucson near 39th Street to Country Club Road near 44th Street. It consists of the South Park, Las Vistas, and Western Hills II neighborhoods.

Stakeholder groups include the City of Tucson; the City of South Tucson; Pima County Natural Resources Parks and Recreation; the RTA; Pima Association of Governments (PAG); and most of the listed neighborhoods above as represented by City of Tucson Wards 1, 5, and 6; and Pima County Districts 5 and 2.



El Paso & Southwestern Railroad Route emblem on Historic Depot

## Site Analysis Report Goals

The goals of this Site Analysis Report are to provide:

- 1) A summary of the analysis tools used to obtain background information
- 2) Contextual information about existing amenities, infrastructure, and landmarks which may influence the project design
- 3) A summary of pertinent regulatory considerations
- 4) Information about existing land use and linkages with offsite trails and amenities
- 5) A summary of the natural resources along the alignment or in the surrounding area
- 6) Information about property ownership which may influence the project continuity
- 7) A composite look at critical issues and opportunities that will inform the development of the El Paso & Southwestern Greenway Master Plan



# EL PASO & SOUTHWESTERN GREENWAY

## INTRODUCTION

### Context

The El Paso & Southwestern Greenway project is mostly located along the historic and abandoned El Paso & Southwestern Railroad alignment. It lies on the western edge of downtown Tucson, and generally stays east and north of Interstate 10. It is a link in a planned system of green and open spaces that eventually will encircle the Tucson metropolitan area. The Greenway passes through downtown Tucson and a portion of the Downtown Redevelopment zone, the City of South Tucson, areas of low to moderate density housing, and some industrial areas. The east end crosses the Bridges mixed-use Development, which is currently undeveloped land, and extends to the Ajo Detention Basin within the Kino Sports Complex.

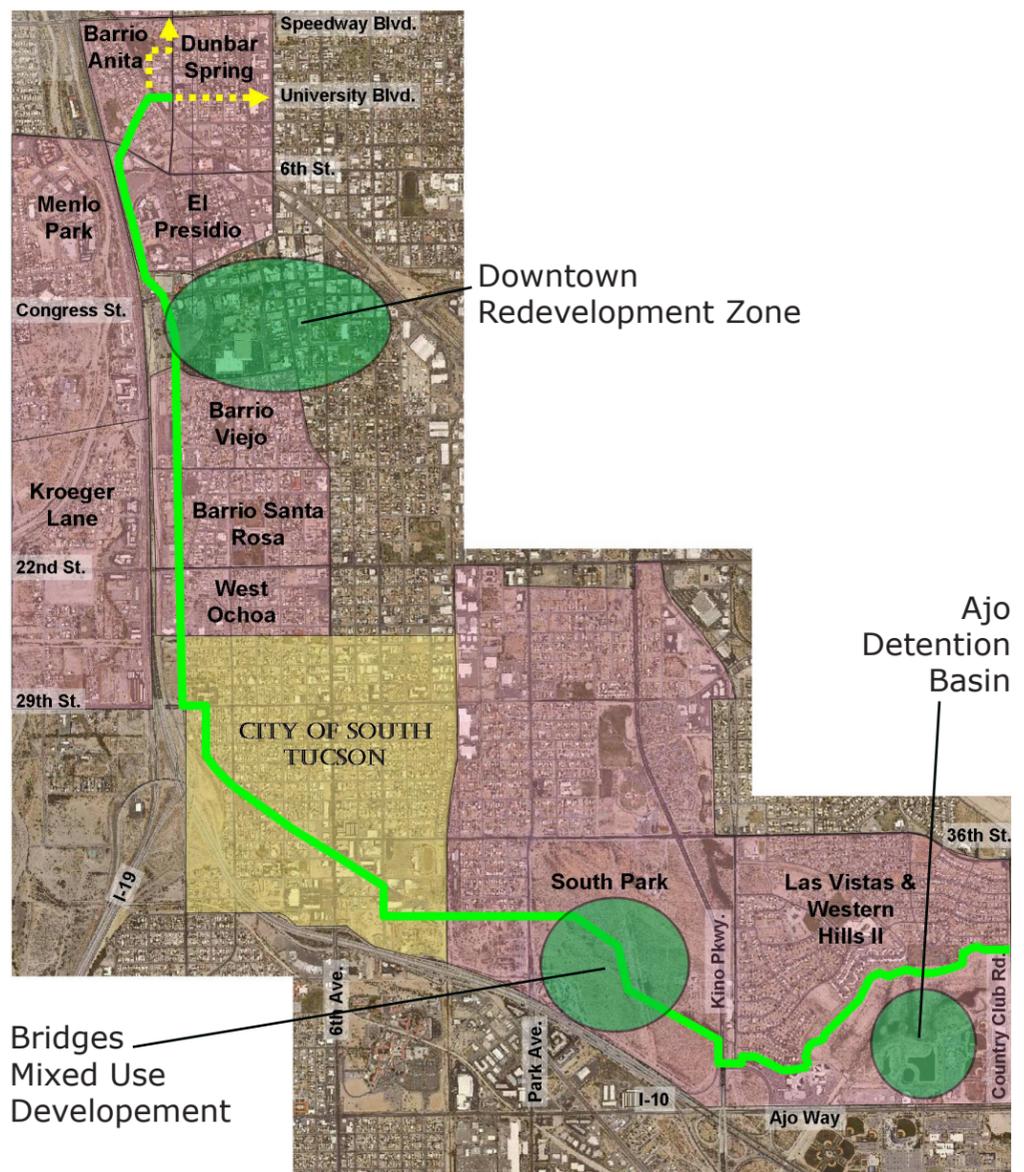
Currently there is limited existing park space along the historic alignment. Upon completion of the Greenway, Tucson will have a multi-modal, multi-use path with connecting links to multiple areas throughout the southwest area of Tucson.

### The Team

SAGE Landscape Architecture & Environmental, Inc. was retained to provide a Master Plan for the El Paso & Southwestern Greenway. This Site Analysis is the first step to assess the existing and planned amenities within the Greenway limits and the immediate surrounding areas. This report and associated documents presents a compilation of research and findings into the Cultural, Historic, Infrastructure, Drainage, Regulatory, Land Use and Linkages, Natural Resources, and Ownership information which will impact the design and development of this project. In order to accomplish this task, SAGE enlisted the assistance of the following experts who constitute the Greenway Design Team: Wood Patel & Associates, Inc. for civil and hydrologic evaluation; Drachman Institute for their previous research on the Greenway and cultural knowledge; Greenways Inc. for their national and international expertise on planning and implementing greenways; Gordley Design Group Inc. to provide public outreach; Structural Grace Inc. for structure at road and railroad crossings; Terracon Consultants, Inc. for geotechnical input; Monrad Engineering, Inc. for electrical and lighting; and Compusult for their understanding of costs.



A Fusion of Old & New Technologies will Symbolize the Spirit of the Greenway



Downtown Redevelopment Zone

Ajo Detention Basin

Bridges Mixed Use Development



[Gordley Design Group, Inc.]



## Methods of Analysis

The Greenway Design Team has performed analysis at three scales:

- 1) Focused review looking at the existing features in the limits of the Greenway boundaries
- 2) A mid-range view of influences within a very close proximity to the Greenway
- 3) An extended view of the region for connections and influences on a larger scale that will impact the El Paso & Southwestern Greenway.

Several methods were used as part of the site analysis process: interviews with neighbors; internet research; Tucson Historical Society research; photographic reviews; review of existing documents such as the Drachman Report and Masters theses from the University of Arizona; and review of regional projects including Rio Nuevo, Downtown Links, The Bridges and 22nd Street Corridor.

Several on-site visits were performed by SAGE and the Greenway Design Team. One site visit included several stakeholders and was focused on obtaining a broad base of information about the area. Two Open House meetings initiated contact with the community to introduce the project and facilitated communication regarding the Greenway's historic context.

The following is a compilation of the data gathered, and interpretations for the Site Analysis. It is intended to be read in conjunction with the accompanying exhibits which are grouped at the end of the report and provide graphic representation of the team's observations.



Field Observations of Drainage Concerns



View of a Portion of the Proposed El Paso & Southwestern Greenway Alignment



# EL PASO & SOUTHWESTERN GREENWAY

## Public Participation

### Stakeholder Input

The El Paso & Southwestern Greenway has incurred great interest from the Tucson community ever since its inception. Stakeholders who have contributed to the continued progress of the Greenway include:

- RTA-Regional Transportation Authority
- El Paso & Southwestern Greenway Coalition
- Pima County Natural Resources, Parks and Recreation
- City of Tucson Department of Transportation
- City of Tucson Parks and Recreation
- City of Tucson Real Estate Division
- City of Tucson Department of Urban Planning and Design
- City of Tucson Historic Preservation
- The City of South Tucson
- The University of Arizona Drachman Institute

These participants have been involved in the evolution of the alignment which often included discussions with landowners to determine feasibility. Other parties who have expressed great interest and wish to remain involved include City of Tucson Ward 1, Ward 5 and Ward 6, Pima County Supervisor Districts 2 and 5, the University of Arizona and all the neighborhoods that are in close proximity to the alignment (See Figure 2, Stakeholders).

As the Greenway design proceeds, these stakeholders will continue to contribute and advocate for its completion. New participants will be included when a relevant association or coordination effort with the Greenway becomes necessary. More recent coordination efforts are underway with the Inn Suites improvements; Downtown Links project which will interface with the Greenway at Saint Mary's; and the 22nd Street Corridor Master Plan teams. The Tucson-Pima County Bicycle Advisory Committee and Pima Trails Association are both valuable sources of pertinent site-and user-specific knowledge.

### Open Houses

The City of Tucson has held two public Open Houses to present preliminary information on the proposed Greenway project. The purpose of these meetings was to inform residents of the Greenway project status and to give them an understanding of how greenways positively contribute to community health, economic development, safety and neighborhood beauty.

A one half-hour power point presentation was provided by the City of Tucson, SAGE and Greenways, Inc. Afterwards, the public was invited to view multiple presentation boards and discuss any of their concerns with the entire Greenway Design Team. The Design Team was especially interested in how the neighbors' lives had been affected by the El Paso & Southwestern Railroad when it was in operation, and the unique stories of each neighborhood. Below is a summary of the two meetings along with the comments that were made by the general public.

The following materials were distributed at each meeting: Greenway Fact Sheet, Drainage Fact Sheet, Safety Fact Sheet, 22nd Street Corridor Fact Sheet, Downtown Links Fact Sheet, Agenda, Comment Form and Sign-in Sheets. They are included in Appendix A.

### *You're Invited to our Open House!*

**Wednesday, Dec. 17, 2008**  
Stop by anytime between  
**6 to 8 p.m.**

Welcome, introductions  
and presentation at 6:30 p.m.

University Services Annex  
220 W. Sixth St.  
Tucson, AZ 85701

The City of Tucson will hold an Open House to present the conceptual alignment for the El Paso and Southwestern Greenway Project, a six-mile long multi-use path for bicyclists and pedestrians, along a former railroad corridor. The project has just started and you are invited to participate in discussions and view displays of the entire alignment.

The El Paso and Southwestern Greenway alignment begins in the vicinity of Main Avenue and University Boulevard and passes along the west edge of downtown, east of Interstate 10, and continues south to cross 22nd Street. The Greenway enters the City of South Tucson at approximately 29th Street and proceeds to the vicinity of the Greyhound Park where it exits. It then travels generally east and ends at the Kino Sports Complex. The goal of the Greenway is to stay as close as possible to the original alignment of the railroad corridor, honor the railroad's history and honor the neighborhoods it travels through.

Community input and support is vital to making the Greenway project a success. The public is encouraged to attend to view the conceptual alignment and provide comments. Tell us what you think of the Greenway and whether the old railroad played a part in your life.

Individuals with disabilities who require special accommodations are requested to contact Paki Rico at (520) 327-6077.

**El Paso and Southwestern Greenway**



### *Los Invitamos!*

**Miércoles, 17 de diciembre de 2008**  
Visítenos a cualquier hora entre las  
**6 y las 8 p.m.**

La bienvenida, las introducciones y presentaciones se  
llevarán a cabo a las 6:30 p.m.

University Services Annex  
220 W. Sixth St.  
Tucson, AZ 85701

La Ciudad de Tucson tendrá una Reunión a Puertas Abiertas para presentar la alineación conceptual del Proyecto El Paso y Sendero de Áreas Verdes del Suroeste (Southwestern Greenway), un sendero de usos múltiples de seis millas de largo para ciclistas y peatones, a lo largo de un antiguo corredor ferroviario. El proyecto acaba de iniciar y se le invita a participar en las discusiones y para ver las maquetas de toda la alineación.

La alineación del Southwestern Greenway inicia en las cercanías de Main Avenue y University Boulevard y pasa a lo largo del borde occidental del centro de la ciudad, al este de la Carretera Interestatal 10, continuando al sur, cruzando 22nd Street. El proyecto Greenway incursionará en la Ciudad de South Tucson aproximadamente en 29th Street y seguirá hasta cerca de Greyhound Park donde saldrá. Luego, se desplazará en dirección general al este y termina en el Complejo Deportivo Kino. El objetivo del proyecto Greenway es mantenerse lo más cercano posible a la alineación original del corredor ferroviario, honrar la historia del ferrocarril y hacerle honor a los barrios por los que pasa.

Los insumos y el apoyo de la comunidad son de importancia vital para que el proyecto Greenway sea un éxito. Se alienta al público a ir a ver la alineación conceptual y proporcionar sus comentarios. Díganos lo que piensa del proyecto Greenway y si el ferrocarril antiguo desempeñó un papel en su vida.

Se solicita que las personas con discapacidades que requieren acomodos especiales se pongan en contacto con Paki Rico al (520) 327-6077.

Mailed Invitation to December Open House



## December 2008 Public Meeting

Approximately 44 people attended the first public meeting on December 17, 2008. Invitations were mailed on December 3, 2008, and advertisements were placed in the Downtown Tucson on December 1, 2008, in the Arizona Daily Star and Tucson Citizen newspapers on December 3, 2008, and in La Estrella on December 5, 2008. At least one representative was present at the public meeting from each of the following neighborhoods: Broadmoor, West University, El Presidio, Dunbar Spring, Oury Street, Barrio Anita, Barrio Kroeger Lane and Barrio Viejo. Ten public comments were received.

Areas of concern included the proposed disposition of the El Paso & Southwestern Railroad tracks, northern access, connections to the Santa Cruz River, proposed amenities, delays in connecting the Greenway with University Boulevard, restrooms and water fountains, the need for an unpaved pathway, accessibility and availability, keeping the route continuous even in tight spots and inclusion of the Barrio Blue Moon neighborhood.

One participant wanted to have a depot and to save track space for a future commuter train to provide an access route to the south. Other concerns included the homeless population, maintenance consistency, keeping neighbors informed, uncovering the route of the old acequia and connecting to Barrio Kroeger Lane. Another participant requested a dirt path for running, and there were concerns with La Entrada Apartments near the Greenway.

When attendees were asked how the railroad had been a part of their family's life, responses included the suggestion to research the Ringling Brothers Circus unloading on the spur to Congress Street and to link all neighborhoods together because each neighborhood has a story to tell.

General comments included using tracks for future trolley route, finding and designing the old irrigation ditch that ran from Barrio Anita to Marana, rain harvesting and linking Dunbar Spring to Barrio Blue Moon neighborhood.

## February 2009 Public Meeting

Approximately 11 people attended the second public meeting on Feb. 24, 2009. Invitations were mailed on Feb. 10, 2009, and advertisements were placed in the Arizona Daily Star and Tucson Citizen newspapers on Feb. 10, 2009 and La Estrella on Feb. 13, 2009. Two public comments were received at the public meeting, and two members of the public represented the City of South Tucson.

Areas of concern included the implementation of water harvesting, people crossing the dried-up wash and the close proximity of the Greenway to a member of the public's property. An additional concern was the hope for additional funds to construct the Greenway along with money for maintenance.

Responses to how the railroad has been a part of your family's life included the current unpaved portion gets in the way of biking through the area and the railroad brought the circus to Tucson.

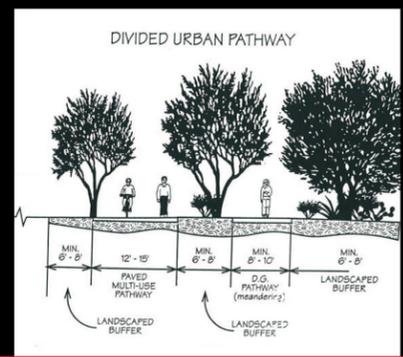
A special story about one neighborhood's history was that it is a tight-knit community and families have lived in the area a long time.

One member of the public is a former board member for the Blacks Run Greenway in Harrisburg, VA, and volunteered to help on this project.

### Known Areas of Concern




- Crossings 
- Limited Right-of-way 
- Drainage 
- Lighting & Security 
- Sustainability 



MIN. 8'-0"

12'-10"

MIN. 8'-0"

MIN. 8'-0"

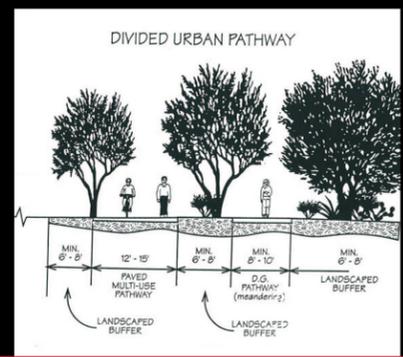
MIN. 8'-0"

PAVED MULTI-USE PATHWAY

D.G. PATHWAY (meandering)

LANDSCAPED BUFFER

LANDSCAPED BUFFER


### Crime Prevention Through Environmental Design

- Natural Surveillance
  - \* See and be seen
- Natural Access Control
  - \* Guide people to proper entrances
- Territorial Reinforcement
  - \* Create a sphere of influence
- Maintenance
  - \* One nuisance allowed to exist creates more



### El Paso and Southwestern Greenway



Board Presented at Both Open Houses



# EL PASO & SOUTHWESTERN GREENWAY

## Public Comments

City of Tucson El Paso and Southwestern Railroad Greenway Project Dec. 17, 2008 Open House Comment Summary									
Name	Address	City, State, Zip	Phone	E-mail	Neighborhood you belong to:	Area of concern:	Why you are concerned:	Project logo choice:	How the El Paso and Southwestern Railroad has been a part of your family's life:
Basye, R.	2049 Exeter St.	Tucson, AZ 85716			Broadmoor	El Paso and Southwestern Railroad tracks.	Save track space for future commuter train from Phoenix to prime location - El Paso and Southwestern Railroad depot.		
Boston, Dave	242 E. 4th St.	Tucson, AZ 85705	623-1664	zxboston@yahoo.com	West University Neighborhood	Northern access.	This should serve as an access route to points south. Currently not served by Aviation Parkway and the Santa Cruz River. Should also be more pleasant and have better services access than Aviation Parkway.		
Johnson, DH				dhjohnson@tucsonpimaar	El Presidio	Connections to the Santa Cruz River and amenities planned on the west side.			
McMahon, Terrance	836 N. Queen Ave.	Tucson, AZ 85705			Dunbar Springs	Delay in connecting the Greenway with University Boulevard. Will there be water fountains and restrooms?	Concerned about homeless population impacting the Greenway area. Maintenance of Greenway.		
Rico, Gabriela	400 W. Oury St.	Tucson, AZ 85705			Dury Street		Keeping neighbors informed.		
Rico, Jesus	1122 E. Lester St.	Tucson, AZ 85719			Barrio and Nita	The Arroyo being an environmental mess.	Show route of the old acequia. (Uncover it)	El Paso De La Acequia.	Research Ringling Brothers Circus unloading on the spur to Congress Street.
Ward, M	870 W. 19th St.	Tucson, AZ 85745	882-0371	mjward75@hotmail.com	Barrio Kroeger Lane	Connection to east side of Santa Cruz River; also a need for unpaved pathway.	Barrio Kroeger Lane is isolated and needs connections. Runners and walkers find dirt more comfortable than paving.		
					El Presidio.	Making the project work, access availability.		Match the Depot logo.	
Raab, Diane				diane_raab@hotmail.com					



February 2009 Open House

Name	Address	City, State, Zip	Phone
Frey, Jeremy	420 E. 31st St.	Tucson, AZ 85713	792-4039
Lopez, Arlene	2323 S. 9th Ave.	Tucson, AZ 85713	624-7019



A special story about your neighborhood's history:	General comments
	Tracks could also serve a future trolley route.
Old address 701 N Van Alstine.	Find and design the old irrigation ditch that ran from south to north under Barrio Anita homes, north to Marana.
I'd like to introduce you to Brad Lancaster, my neighbor and rainwater harvesting genius. He was talking with the RTA planners on Wednesday night about the El Paso and Southwestern Railroad Greenway Project and proposed his idea for a link between the Dunbar Springs neighborhood and the Barrio Blue Moon neighborhood just north of us on the other side of Speedway Boulevard. He said it uses already existing infrastructure and that he would like to see this included as a possibility in the documents/plans. I'll let him explain in his own words! His email is bradlank@gmail.com He will probably get in contact with you within the next few days.	

**Historic Neighborhoods along the El Paso & Southwestern Railroad**

**1 John Spring Historic District**  
The John Spring Historic District is significant for the period of 1896-1940. It has distinctive narrow streets, small lots, building placement on the front lot line, with noteworthy Queen Anne and Gothic Revival buildings. The neighborhood came into being as part of the economic expansion and accompanying period of social change in the 1870s and 1880s when Anglo settlers, institutions and national culture began to dominate the earlier Hispanic culture already established there. John Spring Neighborhood became the "axis of negotiation" for growth eastward toward the U of A.

**2 Barrio Anita**  
Barrio Anita is historically significant as a suburban development outside the urban core and settled as a close-knit Hispanic neighborhood in response to increasing marginalization. In 1920, the small neighborhood had 12 businesses within its boundaries including 7 grocery stores. Photo above is a store at 928 Anita Street.

**3 El Presidio Historic District**  
The now-vanished Hohokam Indians farmed here, possibly as early as 400 AD. In 1775, The Presidio de San Agustin del Tucson was established here as an outpost for Spain; Spanish soldiers spent several years building the 10- to 13-foot high adobe walls of the presidio. In the Presidio's early days, families settled inside the fortress walls for protection from Apaches. Later, El Presidio became Tucson's first elite residential neighborhood with many buildings designed by noted architects.

**4 Barrio El Membrillo**  
Barrio El Membrillo is a remnant Hispanic agricultural community, bounded by the Santa Cruz River on the west and the EP&SW rail line on the east. Membrillo is Spanish for quince, a fruit farmed in the neighborhood.

**5 Barrio El Hoyo Historic District**  
Periods of Significance are 1900-1924 and 1925-1949. The district includes a mixture of Mexican American architecture and engineering styles culturally tied to the barrio, including Sonoran, Sonoran-transitional, Bungalow and Craftsmen. Barrio El Hoyo was added to the National Historic Register in 1998.

**6 Barrio Santa Rosa**  
In the 1920s the railroad brought imported supplies and new types of building materials, resulting in a variety of architectural styles including Sonoran, Transitional, Mission Revival, Bungalow and Contemporary. The neighborhood was a tight knit Hispanic community in a suburban area, outside of the urban core.

**1912: First Train Arrives**  
On November 20, 1912, over 3,000 Tucsonans greeted the first train to arrive in Tucson on the El Paso & Southwestern line.

**1914: YMCA**  
The City of Tucson, eager for the commerce and development that a new rail line would bring, gave the El Paso and Southwestern Railroad right-of-way through City property. In exchange, the EP&SW constructed the City's first YMCA, located on the corner of Congress and Court.

**1905-1912: EP&SW Railroad Yard Office**  
The El Paso & Southwestern Railroad yard office and the Livestock Auction house are significant because they depict the railroad and mining history of Tucson, embodied in the brick railroad architecture of the early 20th century. Southern Pacific Railroad demolished most of the structures along the right of way in the 1960s and the railroad environment was lost. These buildings are characterized by masonry construction and segmented arch openings. The brick is plastered and/or painted.

**1905: Roundhouse**

**El Paso and Southwestern Greenway**

S A G E  
LANDSCAPE  
ARCHITECTURE  
& ENVIRONMENTAL

Board Presented at Both Open Houses

City of Tucson El Paso and Southwestern Railroad Greenway Project Feb. 24, 2009 Open House Comment Summary						
E-mail	Neighborhood you belong to:	Area of concern:	Please tell us why you are concerned:	How the El Paso and Southwestern Railroad has been a part of your family's life:	A special story about your neighborhood's history:	General comments:
jerseyfrey@hotmail.com	City of South Tucson	Implementation of rainwater harvesting (can actually create the "green" in the "greenway") along the rail-trail, especially.		The current leftover unpaved portion of the El Paso gets in my way as I bike from South Tucson to southern parts of Tucson.		I served as a board member for the Blacks Run Greenway project in Harrisburg, Virginia; would be willing to serve loudly for this one.
lopezhajs@msn.com	City of South Tucson	At the corner of 34th Street and 9th Avenue, people cross the dried up wash. (240 W. 34th St.)	This project runs in front of our yard. Where will people cross? Our house sits on lower ground than the railroad. People can see right into our house, so our drapes are always closed. All Terrain Vehicles (ATV) use the path.	The railroad brought the circus train in. My dad confiscated a dead alligator that was thrown off the train. He charged 5 cents per person to see it.	This is a tight-knit community; families have lived here forever!	I wish you luck in obtaining additional funding. I hope there is money to maintain the weeds and trash in the arroyo.



# EL PASO & SOUTHWESTERN GREENWAY

## Neighborhood Outreach

The proposed Greenway alignment offers a unique opportunity to connect a number of vibrant Tucson communities with one another. The Greenway will pass through a total of nine different neighborhoods, each with its own colorful history. The Greenway also passes through the City of South Tucson, an approximate one-mile square incorporated city surrounded by the City of Tucson. In an effort to fully embrace each of these unique communities, the Greenway will offer thematic elements along its length that celebrate and highlight the qualities that make each area distinctive.

Preliminary research was conducted on the history of each of the ten communities to start discussion with the neighbors about what they felt was the most important 'story' of their neighborhood. Comments were gathered at both open houses that were held in December 2008 and February 2009. Further research and input will be gathered during the Master Planning phase to fully understand the character, histories, and stories of each of these fascinating communities.

## Dunbar Spring Neighborhood

The proposed Greenway alignment begins within the Dunbar Spring neighborhood at the intersection of University Boulevard and Main Avenue, connecting with the popular University Bikeway. Dunbar Spring is named after Paul Lawrence Dunbar, a renowned African-American Poet and John Spring, who was the second public school teacher hired in Tucson.

In 1912, the Dunbar School located at 300 W. 2nd Street became the first and only segregated school established in Tucson. The school was completed in 1918 for the purpose of educating Tucson's African-American students and served as a cultural sanctuary for Tucson's African-American community. The school remained segregated until 1951 when it became the John Spring Junior High School. The school was permanently closed in 1978 and is currently being renovated by a group called the Dunbar Coalition, Inc. The historic school will ultimately become an African-American Museum and Cultural Center that will house artifacts and memorabilia that document the contributions African-Americans made to the development of the Southwest.

Tucson's third official cemetery, known as the Court Street Cemetery, occupied a portion of the land now called the Dunbar Spring Neighborhood. The cemetery was abandoned by 1916 after most of the occupants had been moved to a newer cemetery located further from town. In celebration of this unusual history, the residents of Dunbar Spring are the primary organizers of Tucson's All Souls' Procession.

Dunbar Spring residents have placed a strong emphasis on the natural environment. The neighbors have developed a community garden and mini-nature park that highlights native plant materials and sustainable practices.



Dunbar Spring Mini-Nature Park and Community Garden

### Dunbar Spring

- African-American Heritage
- Innovation & Sustainable Design
- Native Plants of the Sonoran Desert
- Community Art

Graphic Presented at the December 2008 Open House



## Barrio Anita

Crossing out of Dunbar Spring at the railroad tracks, the Greenway enters into the tight-knit community known as Barrio Anita. The area of land was purchased in 1902 by Thomas Hughes Sr. who originally called the area "McKinley Park" after President William McKinley was assassinated. Hughes named the streets after early Anglo-American settlers in Tucson. Barrio Anita got its name from Anita Avenue, which was named for Hughes' sister Annie.

By 1925, the Barrio Anita community was fully formed and featured a predominately Mexican culture with some Chinese influence. The neighborhood featured gardens of zinnias and margaritas in front of most homes. The residents raised chickens and tended to vegetable gardens filled with cabbage, tomatoes and green beans. Oral histories from this era tell of a shaded irrigation ditch that ran through Barrio Anita where everyone, regardless of race, would go swimming and spend time together. The water in this irrigation ditch was supposed to be holy on St. Juan's Day. All of the neighbors knew and liked each other and would gather frequently at the Davis School, Holy Family Church, or Oury Park. Stories from Barrio Anita's heyday describe the struggle that many young residents had to face when being forced to speak English at Davis School, the many baseball games that took place in Oury Park, and the strength and comfort that the Holy Family Church provided to the families.

Today, Barrio Anita is still a close community that shares a strong sense of their rich cultural heritage. A Master Plan for Oury Park was completed in 2004 following public meetings held in early 2003. The plan's Final Recommendations include a new Community Center on the site and development of housing on a City owned parcel east of the park. The plan recommends the creation of landscaped pedestrian and bike connections between the park and Davis Magnet School and with surrounding neighborhoods; and a demonstration of "green and historic design concepts".



In 1920, the small neighborhood of Barrio Anita had 12 businesses within its boundaries, including 7 grocery stores. The Sew Kee Market was a Chinese grocer located at 928 Anita Street.

## Barrio Anita

- Importance of Community
- Mexican Heritage & the Spanish Language
- El Arroyo
- Baseball & Recreation

Graphic Presented at the December 2008 Open House



Oury Park Neighborhood Center



Barrio Anita Homes



# EL PASO & SOUTHWESTERN GREENWAY

## El Presidio Neighborhood

South of St. Mary's, the proposed Greenway alignment crosses into the historic El Presidio Neighborhood. Located immediately north of Tucson's Central Business District and Governmental Complex, El Presidio is Tucson's oldest continuously occupied neighborhood. The area rests in part upon the site of a 1,200 year old Hohokam Pit House and is located near Tucson's birthplace which is known as El Presidio San Agustin del Tucson. The El Presidio Historic District reflects Tucson's development from an 18th-century walled compound to its emergence as a major 20th-century mercantile center.

The neighborhood contains many of Tucson's oldest and most significant historic homes and remains largely residential in character despite the proximity to the downtown district. Development that took place in the 1950's threatened the integrity of the neighborhood; however, since that time the residents of El Presidio have been committed to preserving and enhancing the traditional character and historic physical condition of the area.

### El Presidio








- Presidio San Agustin del Tucson
- Hohokam Culture
- The Railroad
- Spanish-Mexican Heritage



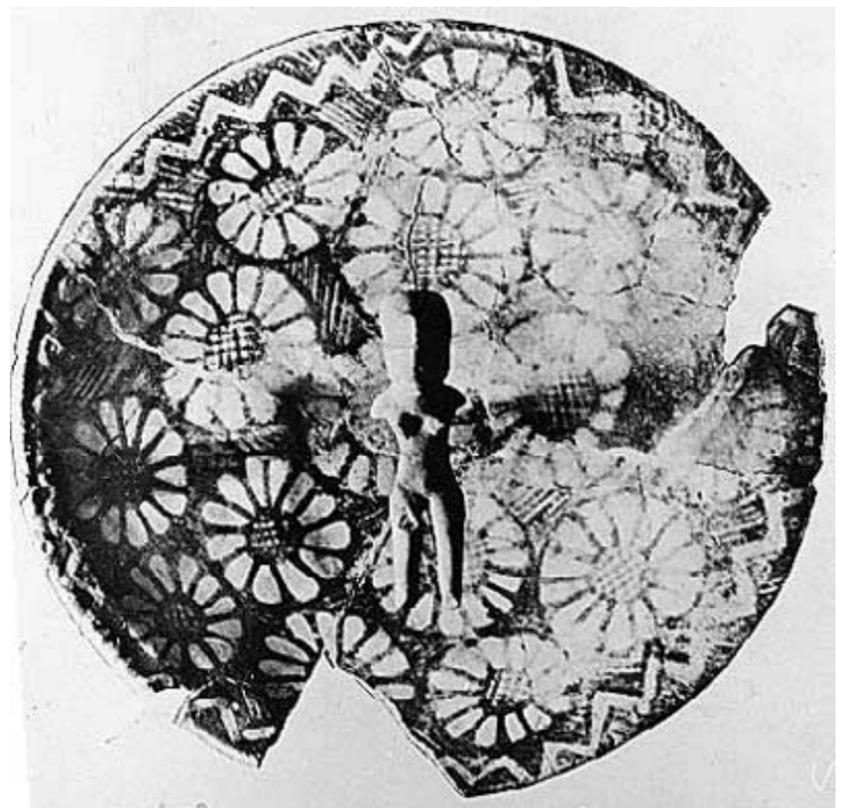
Graphic Presented at the December 2008 Open House



El Presidio's Historic Residences, Photo from National Register Collection

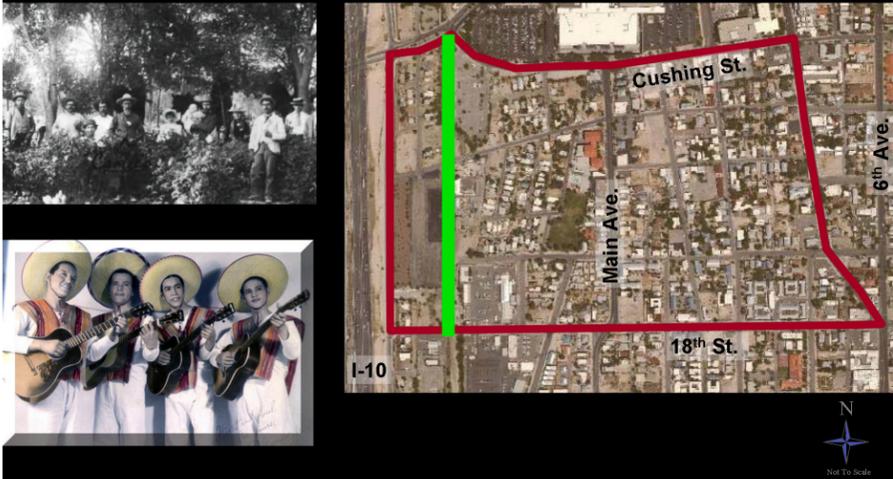


A Colorful Door in El Presidio, Photo from Sunset Magazine



Hohokam Pottery, Photo Courtesy of the University of Arizona

# Barrio Viejo



- Carrillo Gardens
- El Tiradito
- Bright Colors & Flowers
- Mexican Heritage & Music



Graphic Presented at the December 2008 Open House

## Barrio Viejo

South of Tucson's Central Business District is Barrio Viejo, also known as Barrio Historico or Barrio Libre. The proposed Greenway alignment passes through the western portion of this barrio near smaller communities within Barrio Viejo known as El Membrillo and El Hoyo. This area was once considered the Mexican-American side of Tucson and was a place of cultural celebration among its early residents. The early Mexican residents were more or less free to follow their own laws and continue with their traditional Mexican way of life.

Barrio Viejo was the site of Tucson's first public park known as the Carrillo Gardens from 1885 to 1903. The Gardens covered eight acres and were filled with peach trees, grape vines, quince trees, pomegranates, apricots, and roses. The Gardens also featured three spring-fed ponds with boats, twelve bath houses, a saloon, shooting gallery, restaurant, dance hall, zoo and circus. In 1903, the Gardens became known as the Elysian Grove and featured such 'firsts' as the first movie, the first dog race and the first airplane show in Tucson.

Although much of Barrio Viejo was destroyed during the urban renewal movement that took place in the 1960's, a number of historic structures still remain in the area including the Elysian Grove Market, the Carrillo School, the San Cosme Chapel and El Tiradito. El Tiradito is the final location of the only shrine in the United States that is dedicated to a sinner. The final shrine was designed in 1927 and is listed on the National Historic Register.



El Tiradito



El Parquetito, the Site of the Original Entrance to Elysian Grove



Carrillo Gardens, Photo Courtesy of the Arizona Historical Society



# EL PASO & SOUTHWESTERN GREENWAY

## Barrio Santa Rosa

The proposed Greenway alignment travels through Barrio Santa Rosa north of 22nd Street. One of Tucson's historic neighborhood districts, Barrio Santa Rosa is a fusion of different cultures and architectural styles. The Barrio is roughly 130 years old and remains a predominately residential area with a featured neighborhood park.

Barrio Santa Rosa suffered a period of neglect during the Urban Renewal efforts of the 1960's, but has recently undergone revitalization efforts that have sparked interest and pride in the community. HOPE VI is a five-year initiative developed to assist in the revitalization of the Santa Rosa Neighborhood. The project includes the creation of a 120-unit mixed income development and 130 public housing units scattered throughout the area. The comprehensive neighborhood rehabilitation project, now finishing its third year of implementation, also includes economic development, a new park, daycare center, and learning center, as well as homeownership opportunities.

The Barrio features a mix of traditional adobe homes, rammed-earth, straw-bale, concrete-block, and industrial-style metal-sided structures. Colorful tile and artwork created by the community is a central feature of the new community center and features gateways set to inspire hope for the future.

## Barrio Santa Rosa













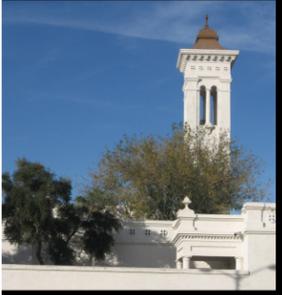
- Gateways & Hope
- Bright, Colorful Tilework
- Cultural Diversity
- Local Artists & Building Materials



Graphic Presented at the December 2008 Open House

## West Ochoa















- Iron-work
- Religion
- Tohono O'odham Culture
- Education



## West Ochoa Neighborhood

The proposed Greenway alignment travels through the western portion of the West Ochoa Neighborhood, which is located south of Barrio Santa Rosa. The neighborhood takes its name from Esteban Ochoa who was a native of Sonora, Mexico. Ochoa immigrated to the Arizona Territory in the 1850s and was a pioneer businessman in Tucson. Ochoa was elected Tucson's third mayor and served three distinguished terms in the Territorial government of Arizona. Known as an early advocate for public education in the territory, Ochoa introduced legislation that established Arizona's first public school system.

With approximately 145 households, the West Ochoa Neighborhood features the Santa Cruz Church which has been the cornerstone of the community since 1919. The neighborhood also is home to the Ochoa Elementary School which has been in operation for over 85 years and offers a Native American Youth Advocacy group to support the strong Tohono O'odham culture of the area.

The neighborhood recently hosted a Neighborhood Summer Fiesta, cleaned up some of the area streets and alleys, and had a "National Night Out" in 2009.

Graphic Presented at the December 2008 Open House

## City of South Tucson

The City of South Tucson is an approximate one square-mile city that supports about 6,000 residents of primarily Hispanic and Mexican heritage. The original area that comprised the City of South Tucson was an active community adjacent to the southern limits of the growing Tucson area. The City of Tucson wanted to annex this area in order to levy taxes and benefit from its prosperity. According to most accounts, the businessmen along South 4th and South 6th Avenues pushed incorporation of the City of South Tucson primarily to avoid the prospect of City of Tucson taxes (Logan, 1995). The threat of higher taxes as well as stringent building codes brought unity amongst residents and businessmen blocking the annexation and leading to incorporation in 1936. Sometime after incorporation, South Tucson discussed the possibility of annexing lands to expand to the east and south. Upon hearing of the expansion goal, the City of Tucson began annexing the lands surrounding South Tucson's borders and by 1956 rendered it "landlocked" with no ability to expand.

The City of South Tucson is integral to the Greenway improvements. The El Paso & Southwestern Railroad was a vital economic factor for South Tucson into the 1970's and possibly up until the early 1980's. The Greenway, which follows most of the existing track alignment, diagonally bisects the city from its northwest to the southeast corner. The entry point

at the northwest corner is just south of the Historic Roundhouse at 25 1/2 Street. A key factor to the railroad's importance was the stockyard located on 29th Street near 11th Avenue. The yard operated up through the early 1970's and funneled substantial business through the adjacent Historic Tucson Auction House. This Auction House is not directly along the historic alignment, but due to private ownership that prohibits access to an historic segment, the Greenway must be diverted down 29th Street right by the Auction House. This creates the opportunity to embrace the clear association this structure has to the railroad's history. The building received an emergency roof in August, 2009, in order to preserve the structure for possible historic restoration, through a grant to La Frontera from the National Trust for Historic Preservation. South Tucson is currently pursuing funding to continue improvements to the structure. South Tucson is also interested in creating an internal "Health and Wellness" loop that intersects with the Greenway. This loop can follow the existing bicycle routes along 29th Street to South 4th Avenue, and continue down 4th Avenue to intersect the EP&SW Greenway. The bicycle route along 36th Street can provide a secondary loop for the community.

**City of South Tucson**

MTA Regional Transportation Authority

1-10

10th Ave.

6th Ave.

29th St.

36th St.

Not To Scale

**-Importance of Community**

**-Mexican Heritage & the Spanish Language**

**-Independence**

Graphic Presented at the February 2009 Open House



Colorful Murals Within the City of South Tucson



# EL PASO & SOUTHWESTERN GREENWAY

## South Park Neighborhood

The proposed Greenway alignment enters into the South Park Neighborhood on its western boundary. The South Park Neighborhood was initially settled in the 1940's by African Americans who came from other states. Tucson had restrictions on land ownership for African Americans at that time. Because South Park was initially outside of the Tucson city limits, this area was one of only two locations in the region where African Americans were allowed to own property. Unable to obtain credit to build homes, many of South Park's early residents lived in tents while their homes were constructed, often with adobe materials. While times were tough, older area residents remember it as a time of community togetherness.

By the 1930's they had established a thriving community. They had endured much hardship together and formed a "well-knit" community, according to one source. In the 1940's the population was 90% African-American. However, over time the area declined and suffered from poverty, crime, gangs, and drugs. By 1980 almost 35% of households were below the poverty level. By the 1990 census the demographics reflected changes with less than 50% of the population being African-American, and almost 40% were Hispanic.

While the African-American community was most prominent in the early years, other ethnic groups who lived in South Park included the Asians who came to work on the railroads and the Tohono O'Odham. Visual symbols identified as important to the area include: Yin-Yang of Asia; Rising Sun of Japan; Man in the Maze for Tohono O'Odham; and the Eagle Feather for Native Americans. Also significant are: the Hand for peace and acceptance, pride and identity as well as Warning; Bird for imagination, dreams, and intuitive knowledge of the heart; Butterfly as an ancient symbol of transformation as well as children's souls lost to early death; and the Sacred Hoop of Native Americans. The colors purple and gray are used to unify the area.

**South Park**

Regional Transportation Authority

22nd St

Park Ave

Kino Blvd

36th St

I-10

Ajo Way

-African-American Heritage

-Community Spirit

-Community Art

Graphic Presented at the February 2009 Open House

### South Park Avenue

The South Park Avenue Improvement Project was funded by the Federal Transit Administration's Livable Communities Initiative. The Livable Communities Initiative was created to help neighborhoods who depend primarily on public transportation and whose communities are in need of economic redevelopment.

The S. Park Avenue Improvement Project began in fall of 1995, when the City of Tucson hired Entrance Engineering as the design team of civil engineers, with To-Ke-Nee Kester as project artist. The first part of the design phase of the project lasted almost a year. Between August and October 1996 the design team conducted a series of interviews, townhall meetings and "walkabouts" with neighborhood residents. The information gathered became the inspiration and driving force behind the images you see in the bus shelters and public art along S. Park Avenue between 20th Street and 36th Street.

### Early History

During the early 1940s the S. Park Avenue neighborhood began to grow and flourish. Opportunities for African-Americans to buy land and own a home made it a unique place in Tucson. The dream of having a home helped early residents endure harsh and challenging conditions. For \$200 (\$10 down and \$10 per month) a family could purchase land, and move onto the lot, often living in a tent at first. Often families would build their own homes out of adobe. African-Americans came together and created a strong foundation and formed their own community. Families owned businesses and worked together to run them. In the late 1940s to late 1950s, most of the businesses on S. Park were owned by African-Americans. Despite the obstacles and hard work of those early days, older residents often speak of that time with satisfaction, pride and longing. As one longtime resident said, "I found a togetherness in the community I wish I could see again..."

You shoot for the moon... you might miss but you will be among the stars.

### Public Art

The public art component of the South Park Avenue Improvement Project consists of 7 bus shelters, 20 mosaic panels, 9 totems, 4 bridge insets, 13 trash cans and 7 historic tiles. Because of the extensive nature of the public art and the intense community participation aspect, the design team decided to open an Art Center at 1940 S. Park Ave., the site of the old Mirasol Liquor Store. Residents and neighborhood groups came to the Art Center and helped create mosaic panels for the seat walls and the 52 panels needed for the trash cans. Among those involved were the Talbot Home School, the Arts and Humanities class of the Urban League Charter School, and Project Intervention.



**Shelters:** The design was inspired by stories and experiences of African-American elders as they struggled and worked together to create a community. The figures are guardians who support and protect each other and the neighborhood. They are symbolic of the elders and early residents who created foundations for the S. Park neighborhood.

**Totems:** Totems serve as the emblem of a family or clan, and are a reminder of its ancestry. There are 9 totems along S. Park Ave.—three 4 foot, three 8 foot, and three 10 foot ones, which have "caps." The totems represent the uniqueness of the S. Park neighborhood, and honor elders and all the people who make up this community. The purple bases reflect the transformative power of the neighborhood and its continuing effort to support, sustain and enhance itself.

### When you see color... it does something. It uplifts the spirit.

**Bridge Insets:** The bridge insets represent the diversity of the S. Park community while honoring its historical significance as an African-American neighborhood. The purple and gray squares visually and philosophically connect with the purple bases of the totems. Purple was a color used to denote royalty and is often identified with the positive transformative qualities of a life well lived.

**Trash Cans:** There are 13 trash cans. They start at 20th Street and end at 36th Street. Each trash can is composed of 4 mosaic panels, for a total of 52 individual panels that had to be designed and assembled by hand. The visual inspiration for the trash cans was the cut-out shapes of the guardian figures "holding up" the bus shelters.

**Historic Tiles:** There are 7 historic tiles placed on different totems along the street. They tell the history of the neighborhood starting from the early 1930s until the late 1950s and early 1960s. Bob and Vicki Wolf and wear-well.com generously donated their services in the sandblasting of the design and text for the tiles.

**Mosaic Panels:** 20 mosaic panels were created with the help of the community. Elders and youth worked side by side to design and fabricate them at the Art Center. The images were inspired by the information and stories gathered during the design phase of the project. The panels reflect the rich diversity, challenges, and enduring spirit of the S. Park Avenue neighborhood.

**South Park Avenue Walking Tour**

**LEGEND**

- Tile Panels
- Totem
- Trash Can
- Bus Shelter
- Historic Tile

**Design Elements**

The Wave motif represents movement of people: the removal of Native Americans from their land; the dispersal of African-Americans and the Middle Passage; the influx of Asian immigrants working on the railroads; the arrival of European immigrants seeking a new way of life; and the movement of Mexican people as new borders were created.

The Fractured Heart is indicative of the wounds we carry; how we have often treated each other in the past and how we continue to do so at times. But this heart, like a broken bone, has the ability to heal. How the healing takes place and how effective it can be is up to each of us and the choices that we make in our lives.

The Tapestry panels celebrate the colors, designs, and multi-cultural influences of both indigenous people and African-Americans. They were inspired by African Kente cloth and Native weavings.

**22nd Street Gateway**

The mosaic panels here proclaim the beginning of the South Park neighborhood. The hands symbolize peace and acceptance, pride and identity. They can also be seen as a warning: the viewer may have his or her own interpretation. The panels also reflect the cultural diversity and rich heritage of this area. We have the Yin-Yang symbol of Asian cultures; the rising sun represents Japanese-Americans; a stylized Man in the Maze—important to Tohono O'Odham people—and an eagle feather, a potent and sacred image among most Native Americans. The spiral represents the different ways of being—other ways of thinking about and viewing the universe and our placement in it. The bird symbolizes imagination, the ability to dream, and the intuitive knowledge of the heart. These mosaic panels are a celebration of all that we are and what we can bring to improve our world.

**Silverlake Intersection**

The panels here address the harsher realities of life in the S. Park area. One triptych deals with violence and death among our youth; the heart bleeds for those who have been killed and all we have lost. The hope is we can learn a new way, and come together in understanding. Another triptych looks at the pain of broken homes and domestic violence. In the two end panels you see how these issues affect our youth—what they express on the outside versus what is really going on inside. The middle panel shows the need for a home united and the heart healed. The totems at this intersection have mosaic panels that reflect the need we all have for peace and acceptance. Here is the peace symbol of the 60s and 70s; hands reaching to help each other; the butterfly, an ancient symbol of transformation, here also representing children's souls, lost to untimely death. The sacred hoop of Native Americans reflects the equality and need for the "4 root races" to come together and the "4 sacred directions."

**36th Street Gateway**

The S. Park Improvement Project ends here at 36th Street. The people on the mosaic panels represent the residents of this community. They are also tribal elders, holders of history and wisdom... guardians of the foundation.

## South Park Avenue Walking Tour Pamphlet

## Las Vistas & Western Hills II

The last two neighborhoods through which the proposed Greenway alignment passes are Las Vistas and Western Hills II. Las Vistas Neighborhood was first formed in 1989 after being formerly known as Western Hills I. The neighborhoods support a large percentage of senior citizens who have lived in the area most of their lives.

This area of Tucson has struggled with high crime rates and illegal dumping in alleyways. Both Las Vistas and Western Hills II are generally not considered walkable due to a lack of sidewalks and a heavy reliance on vehicles. The Las Vistas Neighborhood has worked on many projects over the years, including helping the police to cut crime, beautification of James Thomas Park, encouraging local soccer leagues, working on street safety issues, and bringing City services to those in need in the area.

According to the Las Vistas Association neighborhood website, the neighborhood is currently in the process of acquiring speed humps, neighborhood entry signs, park lighting and bus shelters through a \$400,000 Back to Basics grant. In addition, there are continuing efforts underway to resolve localized problems with the County renovation of the flood control retention ponds (known as the Ajo Detention Basin) located in the southern area of the neighborhood.



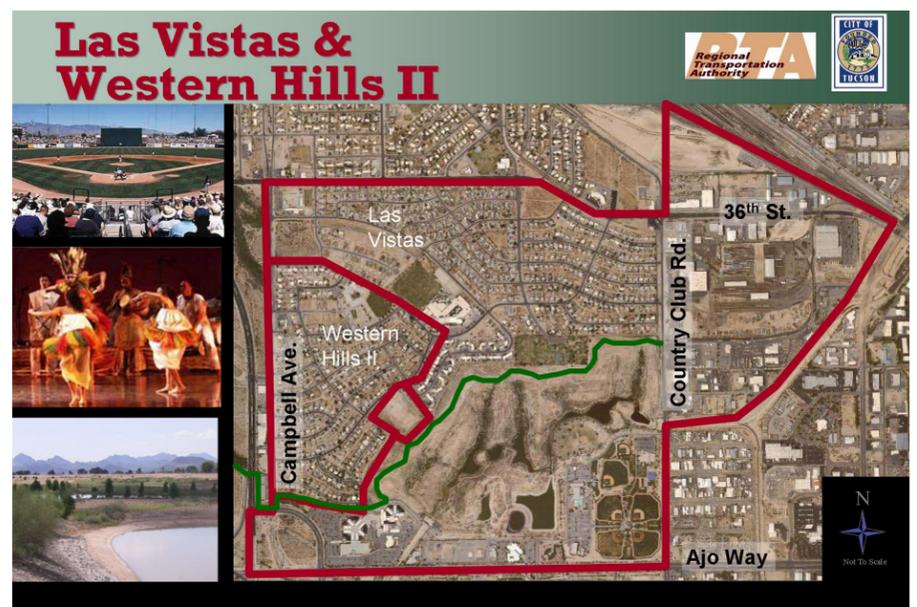
James Thomas Park



Ajo Detention Basin Path



Ajo Detention Basin



- Music & Culture
- Riparian Sanctuary
- Baseball & Recreation



Graphic Presented at the February 2009 Open House



# EL PASO & SOUTHWESTERN GREENWAY

## CULTURAL ANALYSIS



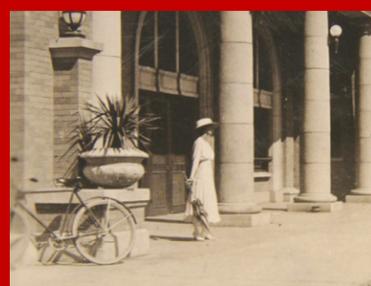
Historic assets of the El Paso & Southwestern Railroad, Tucson, Arizona  
Courtesy of Josh Pope, City of Tucson (Note: more recent information indicates the Railroad Yard was constructed in 1912-1913 and the Roundhouse was constructed in 1912)

### The Impact of the Railroad

The railroad was a major transportation system innovation enabling the mass transit of goods, people and ideas. It created a national cohesion with widely accessible linkages to national destinations.

Railroads enabled the rapid settlement of the American Southwest hastening new urban and economic centers along the entire route. The railroad revolutionized both the scale and the profitability of cattle ranching opening up huge tracts of the American southwest to grazing and creating huge economies in the shipping, finishing and slaughtering of beef.

Railroads brought new availability of imported goods, social luxuries, and a new level of cultural exchange. Suburbia became distinct from areas of work. Local land use and labor force began to transition from agriculture to industry.



## Historic Assets of the El Paso & Southwestern Railroad

The El Paso & Southwestern Project Engineer, R. H. Jones, routed the Fairbank to Tucson extension along the eastern edge of the Whetstone Mountains pediment and along the west side of the verdant San Pedro River. This route provided a gradual 0.3 percent grade all the way to Tucson with two crossings over the Southern Pacific route, see right (Eric J. Kaldahl, Old Pueblo Archeology Center Technical Report No. 2000.008, Allen Dart, PI, 2002).

The country's best engineers and architects were employed by mining and railroad companies. Route design and construction had to withstand severe desert flash floods, a variety of soil types, and numerous topographic challenges. Executing and coordinating the vast construction project required many men, mules, machinery and supplies. Phelps Dodge was flush with cash and expansion plans, decisions were accountable to east coast shareholders and expansion was emphasized. For a complete history of the El Paso & Southwestern Railroad see Appendix B.

### **1911 Railroad Bridge, South Tucson**

The El Paso & Southwestern Railroad winged abutment bridge was built in 1911 and is located in South Tucson near 32nd Street and S. 10th Avenue.

### **1911 Railroad Bed, South Tucson**

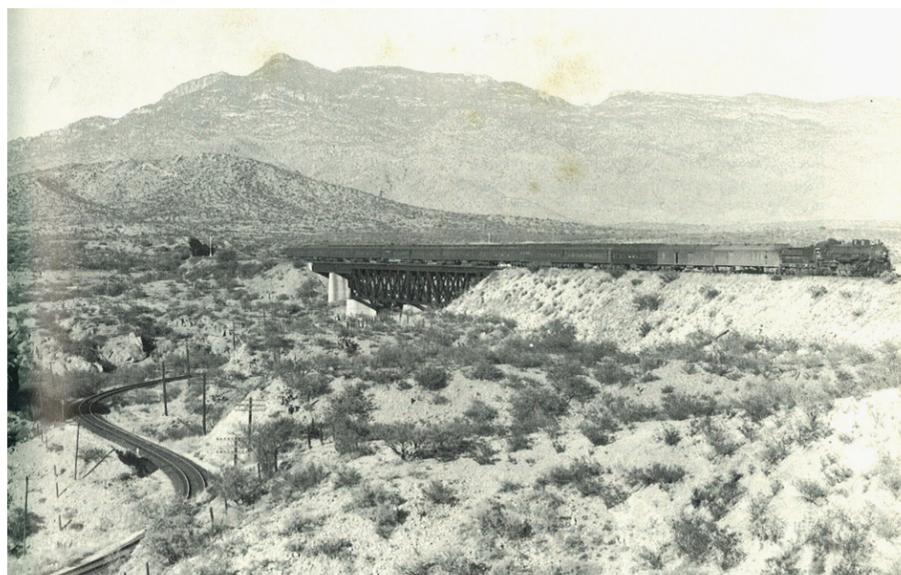
The 1911 original raised bed alignment runs through the neighborhoods of South Tucson. The raised berm alignment depicts the high quality railroad construction and engineering practices of the time. The raised bed is used locally as a pedestrian travel corridor.

### **1911 Railroad Track**

Original track from 1911 is still intact at several locations, including Barrio Anita, El Presidio and Barrio El Hoyo Neighborhood between Congress and 22nd, and, notably, directly adjacent to the El Paso & Southwestern Depot.



Portions of the original 1911 track are intact in several areas along the route



One of two EP&SW trestle crossings over the Southern Pacific route between Tucson and Fairbank (Myrick)



1912 railroad track near Barrio El Membrillo



1911 railroad bridge in South Tucson



The raised alignment of the El Paso & Southwestern rail bed between S. 10th Avenue and S. 6th Avenue, in the City of South Tucson



# EL PASO & SOUTHWESTERN GREENWAY

## National Historic Districts

The El Paso & Southwestern alignment ran between the east bank of the Santa Cruz River floodplain and the western edge of the City. It influenced the conversion of crop land to business and industry use and the displacement of local Hispanic farmers. Several of the neighborhoods it impacted are listed as National Historic Districts on the National Historic Register. Two other neighborhoods are eligible for listing (See Figure 3, Historic Districts).

### 1 John Spring Historic District

The John Spring Historic District's period of significance is from 1896 to 1940. The neighborhood came into being as part of the economic expansion and accompanying period of social change in the 1870s and 1880s, when Anglo settlers, institutions and national culture began to dominate the earlier Hispanic culture already established there. John Spring Neighborhood became the "axis of negotiation" for growth eastward toward the U of A. The District has distinctive narrow and intimate streets, small lots and homes, stores and churches, mostly placed toward the front of the lot line. There are noteworthy Queen Anne and Gothic Revival buildings as well as Sonoran and Sonoran-transitional architectural styles.

### 2 Barrio Anita - Eligible NHR

The Barrio Anita area was first owned by a group of Apache Mansos (peaceful Apaches) through a land grant dated 1796. In 1828, Teodoro Ramirez, a prominent member of the presidial community, purchased the land from the Mansos who continued to live and farm in the area. The City Farm was located just west of the neighborhood along the banks of the Santa Cruz River. In 1880 the Southern Pacific cut along the eastern edge of the neighborhood and in 1912, the El Paso & Southwestern Railroad laid the transfer track through the neighborhood, thereby joining the El Paso & Southwestern to the Southern Pacific.

Barrio Anita was fully formed between 1903 and 1920 and is historically significant as a suburban barrio. It developed outside the urban core and was a close-knit Hispanic barrio providing a social support system, a self-contained neighborhood with supportive social institutions in response to increasing social and political marginalization. There were numerous churches, schools and family-owned businesses. Residents had home gardens and raised chicken and livestock on their property. The neighborhood was also home to several Chinese storekeepers and their families. In 1920, the small neighborhood had 12 businesses within its boundaries including 7 grocery stores. Barrio Anita was also home to Yaqui and African-American families. Sites of interest include Davis School, Oury Park and Anita Street Market.

### 3 El Presidio Historic District

El Presidio is one of the nation's oldest continuously inhabited sites: the prehistoric Hohokam Indians farmed here, possibly as early as 400 AD. In 1775, The Presidio de San Agustin del Tucson was established here as an outpost for Spain; Spanish soldiers spent several years building the ten to thirteen foot high adobe walls of the presidio. In the Presidio's early days, families settled inside the fortress walls for protection from Apache raids.

Later, El Presidio became Tucson's first elite residential neighborhood and emerged as a 20th century economic center. The district contains a variety of architectural styles, including Sonoran, Mission/Spanish Revival, Victorian, Prairie School, and Bungalow/Craftsman. Many buildings are designed by noted architects including Holmes and Holmes and Henry Trost.

El Presidio received its City Historic District designation in 1975 as part of Tucson's bicentennial celebration. National Register status was acquired in 1976. Prior to district designation, many significant historic homes were lost to private demolition and urban renewal.



Thomas Brothers Map, City of Tucson, 1934  
(See also Figure 3, Historic Districts)



#### **4 Barrio El Membrillo - Eligible for NHR**

Barrio El Membrillo is a remnant Hispanic agricultural community, bounded by the Santa Cruz River on the west and the EP&SW rail line on the east. Membrillo is Spanish for quince, a fruit once farmed in the neighborhood. Today the small neighborhood is tucked between I-10 and the Tucson Community Center (TCC). Twenty years ago, about 25 homes were nestled along Sentinel Street south of Congress Street. The widening of the I-10 frontage road, combined with the expansion of parking for the TCC resulted in the demolition of numerous residences. Today only 14 homes remain.

#### **5 Barrio El Hoyo Historic District**

Barrio El Hoyo was added to the National Register in 1998. It is roughly bounded by Cushing Street, Sixth Avenue, 22nd Street and I-10. It includes 380 acres and 53 buildings. Periods of significance are 1900-1924 and 1925-1949. The district includes a mixture of Mexican American architecture and engineering styles culturally tied to the barrio, including Sonoran, Sonoran-transitional, Bungalow and Craftsman.

#### **6 Barrio Santa Rosa - Eligible for NHR**

The advent of the railroad brought imported supplies and new types of building materials in the 1920s, resulting in a variety of architectural styles including Sonoran, Transitional, Mission Revival, Bungalow and Contemporary. Barrio Santa Rosa was a tight knit Hispanic community in a suburban setting outside of the urban core and has a mix of post-railroad architectural styles.

#### **7 West Ochoa**

#### **8 City of South Tucson**

The City of South Tucson is a mile square city enveloped by the City of Tucson. South Tucson first incorporated in 1936 when south side businessmen and residents banded together to block annexation by Tucson. At the time residents and businessmen objected to the threat of higher taxes and stringent building codes that incorporation into Tucson would bring (Logan, 1995).

For four years South Tucson's incorporation was hotly contested by Tucson, and, after two separate Arizona Supreme Court decisions, in July, 1940, South Tucson's incorporation was upheld. (South Tucson Comprehensive Plan, 1999.) All of South Tucson's later annexation expansion efforts failed and South Tucson became completely surrounded by Tucson in the 1950's.

The population of South Tucson, based on 2005 Census Bureau estimates is 5,562, of which 81 percent are Hispanic or Latino and 9 percent are Native American. This cultural influence is evident in the City's colorful murals, brightly painted buildings, architectural styles, and popular Mexican restaurants. The City enjoys a compact street grid with a high degree of walkability and many locally-owned commercial destinations including markets, restaurants and services.



Facing south, this 1940's aerial photograph shows Barrio Membrillo at lower center-left, sandwiched between the El Paso and Southwestern rail line to the east, and the highway to the west. Barrio Kroeger Lane is right-center.



This portion of the same 1940's aerial shows Barrio Santa Rosa in the upper center-left portion of the photo, adjacent to Barrio El Hoyo at the lower-left and Barrio Membrillo at lower-right. The Roundhouse can be seen in the upper right of photo.



1950 aerial photograph looking northwest over the dog track on S. 4th Avenue in the foreground, South Tucson beyond, and the skyline of Tucson on the horizon



# EL PASO & SOUTHWESTERN GREENWAY

## Historical Buildings

### 1913: The El Paso & Southwestern Depot

The El Paso & Southwestern Railroad Depot was completed in December of 1913, at a cost of \$45,000. Its opulent classical design included a 30' high rotunda and stained-glass dome, considered unusual for railroad station design in the southwest at the time. Together, with Douglas Park, the Depot can be viewed as a symbol of the wealth of the copper industry as well as its power and extravagance.

The El Paso & Southwestern Depot closed November 12, 1924, only eleven years after it opened, when it was sold to the Southern Pacific. The building still stands, is privately owned, and though vacant, remains in good shape (See Figure 4, Landmarks).

*"The depot (106' x 57') is of classical design with porticos (45' x 57') on either end. All rooms in the depot open into a central rotunda covered by a stained glass dome with a protective skylight. The two main entries are flanked by four large columns of Indiana limestone. Similar smaller columns continue around the portico. Openings behind the entry columns are articulated with terra-cotta tile. The flat portico roofs and deck roof areas surrounding the skylight are composition roll-roofing on wood deck. The pitched roof center section is covered with red Mexican channel tile. The porticos which flank the main center of the depot are open on three sides and were used as baggage processing areas. Floors are of poured concrete and the roof structural members and soffit were stuccoed to resemble concrete. Interior walls are generally brick and have been plastered in the public areas of the building."* From the National Register of Historic Places Inventory/Nomination form.



A well dressed woman waits outside the east entrance of the Depot circa 1918. AHS #72556



Looking west over Douglas Park's central axis into the passenger depot. The freight house and offices are at left. Photo was taken from the upper floor of the Arizona Hotel on Congress Street. AHS #B89213



The original fountain still marks the location of Douglas Park; the stained glass dome from the interior of the El Paso & Southwestern Passenger Depot; and the National Historic Site sign at the depot.



Looking east down Congress Street, the Depot is to the right, Hotel Arizona, the white multi-storied building on the left. AHS #89001

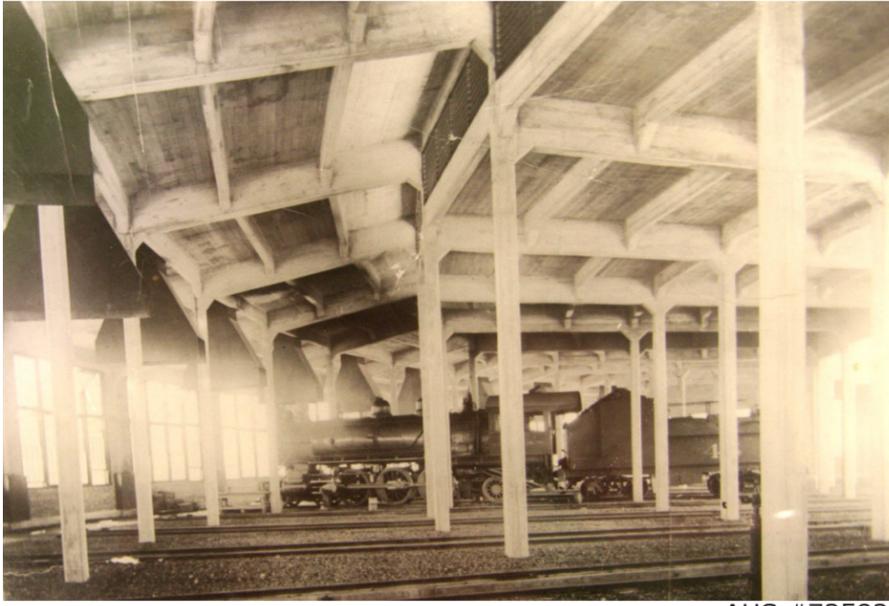


Douglas Park was a grand public space designed by Santa Barbara Landscape Architect, Cammillo Fenzi, with four fountains, six converging footpaths and many rare and exotic plants. AHS #14456



AHS #PAN26756





AHS #73582



AHS #73581

### 1912: Roundhouse

Constructed in 1912, the expansive curved brick structure with 11 engine tracks, is a treasure of a building. It is one of the largest concrete structures of its time, an unusual material for construction of this era. It has many high vertical windows along the entire southern facade providing ample natural light to the space within. It is occupied today by a private owner at 600 West 25th Street (off I-19). This building is an excellent prospect for public acquisition with potential for re-use as a museum.



AHS #73582



AHS #73579



AHS #73577



The roundhouse today is privately owned and used by a building supply company.



# EL PASO & SOUTHWESTERN GREENWAY

## **Circa 1912-1913: EP&SW Railroad Yard Office**

The El Paso & Southwestern Railroad yard office was probably built in 1912 and 1913 by the Phelps Dodge Mining Company as offices for the management of the railroad fueling yard. Since 1975 the structure has served as offices for the Flint Oil Co., a private fueling operation. It is currently vacant (Vint and Associates, 12/14/07).

Now 100 years old, the small brick building with segmented arch windows and doors, was built in the Craftsman style of the early 20th century. It is significant for its expression of the EP&SW rail corridor that was demolished by the Southern Pacific Railroad in the 1960s. Overall the building is in fair condition and could easily be refurbished, though the roof should be sealed as soon as possible.



EP&SW Railroad Yard Office

## **The Livestock Auction House**

The Auction House is all that remains of the Tucson Livestock Exchange, once occupying seven acres along the railroad tracks at the gateway to South Tucson. Dirt arenas and corrals, a gas station, and a grocery store were all dedicated to the auction of cows and horses. Today the auction house is owned by La Frontera, a community mental health center. The building is one of the few within the City of South Tucson that is eligible for listing to the National Historic Register. South Tucson and La Frontera are interested in preserving the building and have begun assessing it. One neighbor suggested using the restored auction house as a community meeting hall, another, as a gateway to the Greenway. The building is in fair condition and received a new roof through a grant from the National Trust for Historic Preservation in August 2009. The City of South Tucson hopes to encourage the preservation of this building.



Livestock Auction House



The interior of the livestock auction house, March 2009.

## **Tucson's first YMCA building**

The City of Tucson, eager for the commerce and development that a new rail line would bring, raised the money and acquired the right-of-way on behalf of the El Paso & Southwestern Railroad. Walter Douglas, vice president of the railroad, suggested that since Tucson had no public YMCA building, the railroad would provide a \$60,000 donation so that one could be built. The EP&SW constructed the City's first YMCA on the corner of Congress and Court. The building was demolished, along with many others, during urban renewal in the 1970's.



The City of Tucson's first YMCA was built by the El Paso & Southwestern with surplus railroad construction funds. The building, on the corner of Congress and Court, was demolished with the urban renewal in the early 1970's ([http://tucsonarizonahistory.tripod.com/El\\_Paso\\_and\\_Southwestern\\_.htm](http://tucsonarizonahistory.tripod.com/El_Paso_and_Southwestern_.htm)).



## The Spanish Trail Hotel & Motel

The Spanish Trail Hotel and Motel was once a stopping point for the rich and famous while they worked at the Old Tucson movie studio during the 1960's and 1970's. While little evidence of its glamorous past remains today, some former residents still remember it well. Below is an excerpt from a discussion forum devoted to the memory of the Spanish Trail Hotel and Motel.

*"This is about the famous Spanish Trail Hotel and Motel in Tucson Arizona. I actually lived on the property back in the late 60's early 70's. I decided to start a little history of this facility so that others could enjoy a taste of Tucson and Hollywood from the 70's. My late father, Jerry Durbin Sr., was the head chef at the Spanish Trails restaurant and my late mother Carolyn was a waitress there as well. For some reason, the professional staff was able to live in duplex housing north of the main hotel. This property today is a steel production yard. In fact most of the northern side of the resort is completely gone."*

*"There used to be a golf course, lagoon, running track and a cactus garden. This place was super in its day. It was where the movie stars and rich and famous lived or visited while working at Old Tucson movie studio. I would see John Wayne to Michael Landon on a daily basis. The best part of this resort was the dinner show lounge. It was in the large round building in the front by the highway. I saw many dinner shows from Rusty Warren to Ernie Menehune. My mother provided me and my little brother, Jerry Jr., unlimited Shirley Temples drinks and we partied like rock stars. My little brother Jerry was able to party with many stars and he was very popular with the Hawaiian dancing girls."*



*"This facility was owned by a rich man named Mr. Adler. He lived behind us in a nice home on the property by the train tracks. Nothing remains of his home, it doesn't even look like anyone ever lived there in fact. This facility had an Olympic swimming pool with a high dive board. You will not see that again."*

From: <http://www.city-data.com/forum/tucson/216093-remembering-spanish-trail-motel.html>

## Travelling Carnival Trains

The tracks were used by travelling circuses and carnivals. This is a 1940's view looking west, over S. 6th Avenue at the bottom. The EP&SW tracks are just north of the carnival. One South Tucson neighbor remembers her father found a small dead alligator along the tracks behind their home, apparently discarded by a passing circus train. Her father brought it home and charged children in the neighborhood a nickle to see the curiosity.



1940's



The Spanish Trail Motel & Hotel in February 2009.



# EL PASO & SOUTHWESTERN GREENWAY

## Infrastructure & Drainage

### Utilities

Utility maps/records were collected from the following utility providers:

- AT&T
- Verizon Business
- QWEST Communication
- Cox Communications (Cox)
- Southwest Gas (SW Gas)
- El Paso Natural Gas (EPNG)
- Kinder Morgan Energy Partners
- MCI
- Pima County Regional Wastewater Reclamation Department (PCRWRD)
- Tucson Electric Power (TEP)
- Tucson Water (TW)
- TW Telecom/Xspedius Com. Co. LLC
- Valley Telephone Cooperative, Inc. (VTC)
- Tucson Department of Transportation (TDOT)
- U of A Facilities Design and Construction

Utility information was collected from local utility providers, analyzed and compiled in order to identify locations within the Greenway project corridor which will present either drainage or utility coordination challenges. Refer to the Wood/Patel Wet Utility and Dry Utility base sheets for detailed information regarding utilities in and adjacent to the Greenway project corridor.

All utility locations as delineated on the figures are approximate. It is recommended that all utilities in the project corridor be identified and marked by BlueStake and located and surveyed during the design phase of this project.

### Sanitary Sewer

Sanitary sewer information was provided by PCRWRD and taken from Pima County MapGuide. For the majority of the northern portion of the project alignment, a sanitary sewer conveyance system exists within or parallel with the project corridor, and varies in size. Between St. Mary's Road and Franklin Street, a 24" sewer main runs along the project corridor. This sewer main connects to a 60" sewer interceptor that runs along the project corridor between Franklin Street and 17th Street. Between 17th Street and 18th Street, a 36" sewer main runs along the project corridor. From 18th Street to the southern end of the corridor, the project alignment crosses through multiple infrastructure systems containing 8" and 6" sewer pipes (See Figure 5, Wet Utilities).

Due to the close proximity of the 60" sewer interceptor with the Greenway corridor, it may be necessary to relocate the project alignment away from the vicinity of this main. Precautions will be necessary to ensure that the proper clearances to this interceptor are met in order to avoid any potential conflicts that can occur during construction.

### Water

Water information and infrastructure was provided by Tucson Water. The existing water system within and near the project corridor consists of varying sizes of conveyance and distribution infrastructure systems. From the north end of the corridor to Franklin Street, the project alignment crosses through an 8" and 6" water infrastructure system in the surrounding neighborhood. From Franklin Street to Alameda Street, a 20" mainline runs parallel to and crosses the project alignment. From Alameda Street to Simpson Street, a 24" mainline runs parallel to and crosses the site. From Simpson Street to 22nd Street, a 12" mainline runs parallel with the project. From 22nd Street to 31st Street, the project alignment crosses through an 8" and 6" infrastructure system in the nearby neighborhood. At 25th Street an 84" transition main crosses through the project corridor. At 10th Avenue, a 30" mainline crosses the site. At 18th Street a 24" main crosses the site. At Simpson Street and 6th Avenue, a 36" main crosses the site, and at Granada Avenue a 16" main crosses the site. East of Campbell Avenue the project runs through an 8" and 6" water system infrastructure.

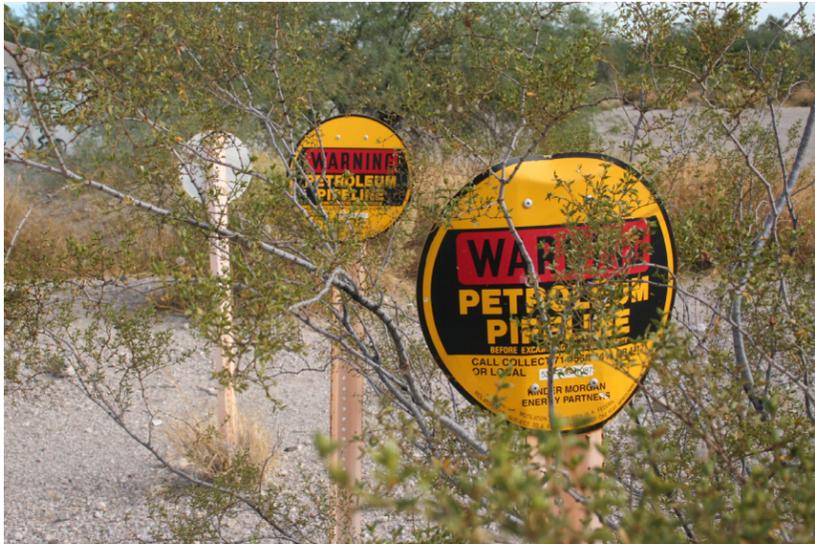
During future phases of the project, especially the construction period, extreme caution shall be used near the project intersection with 25th Street due to the existence of the 84" transmission main. It is recommended that this water line be potholed using non-destructive methods during the design phase of this project in order to determine its exact depth as it crosses through the project alignment (See Figure 5, Wet Utilities).

### Gas

Existing gas information was provided by Southwest Gas, El Paso Natural Gas and Kinder Morgan Energy Partners. According to the information received, gas system infrastructure exists in the project corridor at University Boulevard, Simpson Street, 22nd Street and in the residential subdivision west of Campbell Avenue. A 6" high pressure main and a 4" distribution line from Southwest Gas exists in the intersection of Cushing Street and Granada Avenue, which the project alignment crosses through. Three mainlines from Kinder Morgan Energy Partners, varying in size, run parallel to and within the project corridor. A 12¾" main exists between 26th Avenue and 4th Avenue, an 8" main exists between 26th Avenue and the Southern Pacific Rail Road alignment, and a 6" main exists between 26th Street and 33rd Street (See Figure 6, Dry Utilities).

During future phases of the project, especially the construction period, extreme caution shall be used near the Kinder Morgan gas mains. It may be necessary to relocate the project corridor away from these pipes in order to avoid any mishaps during construction. On the other hand, if necessary, it may be possible to relocate the 6" and 4" Southwest Gas facilities away from the project corridor. Coordination with Southwest Gas representatives would be recommended and required for relocation.





Gas Line Near Southern Pacific Railroad Alignment



Fiber Optics and Overhead Electric Lines Near Main St.



Existing Manhole Near Congress

## Electric and Communication

Electric information was provided by Tucson Electric Power, Qwest Communications, Cox Communications and Verizon. This information revealed that both aboveground and underground infrastructure exists within the project corridor. TEP infrastructure exists parallel to the corridor between St. Mary's Road and Alameda Street, crosses the corridor at Simpson Street, 25th Street, 27th Street, 31st Street and 33rd Street, and runs parallel with the corridor between 4th Avenue and Tyndall Avenue. Qwest Communications infrastructure crosses the corridor at St. Mary's Road, Simpson Street, the alley between 30th Street and 31st Street, 7th Avenue, 4th Avenue and Park Avenue. Cox Communications infrastructure crosses the corridor at University Boulevard, Simpson Street, 22nd Street, 31st Street, 8th Street, 7th Street and 5th Street. Verizon infrastructure crosses the corridor at University Boulevard, north of Franklin Street and Simpson Street (See Figure 6, Dry Utilities).

It is recommended that all electric systems within the project corridor be identified and marked by BlueStake and located/potholed in order to determine their exact location and depth, during the design phase of this project. Once that has been completed it will be possible to determine the effect that each utility has on the project corridor. Certain relocation may be necessary, such as relocation of project alignment, relocation of utility, or grounding of overhead utility.

## Fiber Optics

Fiber optics information was provided by Telecom and Expedius Communications, Cox Communications, Verizon and AT&T. Verizon has an underground fiber optic line that crosses the project alignment at the Union Pacific Railroad crossing near Main Street. Telecom and Expedius lines exist just east of the project corridor near David Street and Brady Avenue, and cross the project alignment at Simpson Street. Cox Communications has overhead fiber optic lines that run parallel with the project corridor between 22nd Street and 29th Street, and cross the project alignment at 7th Avenue, 36th Street and Park Avenue. Cox also has underground fiber optic lines that cross the project corridor at 10th Avenue and 4th Avenue. AT&T has underground fiber optic lines that run parallel to the project corridor between Euclid Avenue and Park Avenue, and between Kino Parkway and Campbell Avenue and a line that crosses the project alignment at Park Avenue (See Figure 6, Dry Utilities).

During future phases of the project, especially the construction period, extreme caution shall be used near these fiber optics lines. It is recommended that lines within the project corridor be identified and marked by BlueStake and located/potholed by non-destructive methods to determine their exact location and depth. It may be necessary to relocate the project alignment away from the parallel fiber optic lines.



# EL PASO & SOUTHWESTERN GREENWAY

## Soils

Terracon completed a preliminary geotechnical study of the proposed Greenway alignment in March of 2009. The following is a summary of the findings:

Based on information compiled from published sources and our own experiences in areas adjacent to the alignment we anticipate a wide range of soil types to be encountered. Soils will primarily consist of clayey and silty sand with gravel; lean clays, and moderately to highly cemented soils will also be encountered. The percentage of fines (material passing the #200 sieve) will range from 15 to 90 percent. The plasticity index of the soils may range from non-plastic to 20. We also expect that isolated areas of fill soils, and buried debris may be exposed during construction. The project development may be affected by collapsible soils, expansive soils, cemented soils, and fill material. Structures in areas where collapsible soils are present will likely need to be supported on engineered fill. Collapsible, or hydrocompactive, soils are typically loose, but stable with somewhat cemented, however, water soluble bonding material. Under the condition of load + wetting the soil structure collapses resulting in large building settlements. Areas with existing fills and buried debris may also need to be supported on engineered fill. It is likely that most on-site soils will be suitable for use as engineered fill; however, areas with moderate expansive potential will not be suitable for use as fill beneath lightly loaded structures unless the structures are designed to resist potential heave, or the soils are chemically stabilized. Spread footing foundations and drilled shaft foundations will be appropriate to support proposed structures along the alignment. It is anticipated that excavations for the proposed construction can be accomplished with conventional earthmoving equipment. We expect that only occasional vehicle traffic will use the paved path of the greenway; based on this assumption we expect that a pavement section consisting of either 2-inches of asphalt concrete supported by 4-inches of base, or 3-inches of asphalt concrete supported directly on compacted native soils will be suitable for the anticipated pathway traffic.



Existing Soil Structure

## Drainage

During the data collection phase of this project, several sources of information pertaining to localized and regional drainage were reviewed and referenced. Some of these sources include:

- **Tucson Stormwater Management Study-Balanced and Critical Basin Map**, Simons, Li and Associates, Inc. 1997-1998.

The watershed map depicts existing drainage basins within the City of Tucson (COT). Watersheds that affect the project include Mission View Wash Watershed, 18th Street Wash Watershed, Cushing Street Wash Watershed, Downtown Watershed, and the West University Watershed. Several of the other sources cited here-in examine these watersheds in some detail.

- **West University Neighborhood Drainage Study (WUNDS)**, Hydro-Science Engineering Southwest, Inc. 1989.

This technical document examines a 380 acre sub-area to the aforementioned West University Watershed. The purpose of the study was to provide the City of Tucson Department of Transportation (TDOT) information in support of the Master Drainage Plan which was in the development process at that time. The report focused on increased run-off due to urbanization and the concerns associated with said run-off. The 100 year peak flow rates from this document were utilized at the northern end of the Greenway Project corridor.

- **Fire Central Drainage Report**, Submittal Number 2. Dowl Engineers. 2007.

This technical document was prepared in order to determine surface run-off and 100 year water surface elevations for stormwater flows crossing the Fire Central Site. That new fire station and its appurtenances are currently nearing completion. The 3.45 acre site is located south of the intersection of Clark Street, Granada Avenue, and Cushing Street. The Greenway project corridor runs parallel along the western boundary of the Fire Central Site. Information from this report was used to estimate localized 100 year peak flow rates in that immediate area.

- **Master Drainage Report for the Mission View Wash Project** W.O.5 MISWA. Wood, Patel and Associates, Inc. 2007.

This technical document was prepared in support of the Mission View Wash Regional Flood Control Facility and to determine surface run-off and 100 year water surface elevations for storm-water flows crossing the 320 acre parcel formerly used as the Downtown Airport site. Planned improvements on this site include a regional flood control detention basin, residential use, commercial use, retail use, hospitality use and office use. The Greenway project traverses the 320 acre parcel between Park Avenue and Kino Boulevard. Information from this report was used to estimate 100 year peak flow rates and water surface elevations in or near the Greenway corridor in the area between Park Avenue and Kino Boulevard.



- **The Pima County Mapguide and TDOT Map Center interactive websites** were accessed to collect Wash flow data, drainage structure location, and retention/detention basin information pertaining to the Greenway project.

### Drainage Discussion and Results

This narrative has been developed through the review of existing drainage related documents which were not specifically prepared for the Greenway project and therefore additional information may be needed. There is not a complete regional or local survey in existence for the drainage areas which contribute to the area discussed in the Greenway corridor. During the design phase, an in depth analysis of survey and resulting drainage calculations of the 18 large and small drainages affecting the Greenway must take place in order to adequately address all drainage related issues. According to the currently effective FEMA FIRMS, the only Federally mapped floodplain affecting the Greenway is associated with the Tucson Arroyo where an old RR bridge/culvert will allow the paths to cross over the main channel. Drainages affecting the Greenway corridor are briefly described as follows beginning at the northern end of the corridor.

In general, the basins as indicated on the Tucson Stormwater Management Study-Balanced and Critical Basin Map produce run-off that flows in a northwesterly direction across the City of Tucson and City of South Tucson. Flows are conducted in storm drain systems, open channel flow in streets, or improved and non-improved channels which are dispersed throughout this portion of the City of Tucson. Ultimately, stormwater flows discharge into the Santa Cruz River located west of Interstate 10 (See Figures 7 & 8, Topography & Area Drainage; Figure 8 also shows photo locations).

At the northern end of the project (University Boulevard and Van Alstine Street), localized flood hazard conditions include concentrated flows as well as surface run-off. The abandoned railroad track is elevated with reference to the surrounding landscape, thus influencing the drainage patterns of some runoff. For example, drainage patterns are redirected from the northwesterly direction which causes localized ponding on the east side of the intersection of Oury Street and the project corridor. The majority of the West University Neighborhood runoff that concentrates at this location is turned northwesterly following the old rail bed in a non-improved channel where flow combines with other drainage from the West University Neighborhood. Ultimately, that runoff estimated to have a peak of 1,200 cfs during a 100 year event collects in Estevan Park south of Speedway Boulevard and discharges into the Santa Cruz River via a culvert beneath the railroad and I-10.



Elevated Abandoned Railroad Track

The Tucson Arroyo, another flood hazard area located southeast of the intersection of Saint Mary’s Road and Granada Avenue, has its main channel cross under the proposed alignment through an old railroad bridge/culvert structure. This wash conducts runoff generated from the Tucson Arroyo Watershed and conveys it westerly to the Santa Cruz River. The peak Flow in this wash during a 100 year rainfall event is estimated to be in the magnitude of 5,300 cfs.



The Tucson Arroyo, looking East (Top Image) and West toward the I-10 off-ramp (Bottom Image)



# EL PASO & SOUTHWESTERN GREENWAY

Near the intersection of Cushing Street and Granada Avenue, the Cushing Street Wash crosses under the project corridor with 100 year flows in the magnitude of 630 CFS. This wash collects stormwater from multiple locations. From the north and east, runoff sheet flows across paved parking lots into the Cushing Street Wash. Also from the east, 2 - 8'x4' concrete box culverts intercept storm water from the Cushing Street surface through a series of storm drain inlets and pipes and re-direct these flows into the Cushing Street Wash. The outlet for these box culverts is located at the intersection of Cushing Street and Granada Avenue. Lastly, the Tucson Convention Center site generates run-off that is collected in a drop inlet located at the eastern corner of the intersection of Granada Avenue and Cushing Street. The collected stormwater is conveyed through storm drain pipes under Granada Avenue to its outfall in the Cushing Street Wash. Flows from the south and southeast are also intercepted by the Cushing Street Wash.



Cushing Street Wash

The next major wash flood hazard area affecting the Greenway alignment is the 18th Street Wash. This wash conveys regional and localized stormwater generated from the 18th Street Wash watershed to the Santa Cruz River and has a 100 year peak flow rate on the magnitude of 2,600 cfs. The Greenway alignment will cross the 18th Street Wash between 17th and 18th Streets, where it then parallels the wash channel for approximately 2,500 feet. At 23rd Street, the wash alignment departs from the corridor in a southeasterly direction while the path alignment continues southward in the railroad Right-of-Way.

Between 26th Street and 29th Street, the project corridor will parallel the east bank of a storm-water detention basin built by the State of Arizona appurtenant to I-10. Said basin collects some run-off generated by the 18th Street Wash Watershed. Overland flows that are introduced into the basin from the east must cross the planned alignment and enter the basin through a weir/channel.



18th Street Wash



18th Street Wash



18th Street Wash at 22nd



Storm Water Detention Basin Near I-10



At approximately 29th Street and 11th Avenue, the project alignment enters the Mission View Wash watershed and angles southeasterly. In this flood hazard region of the alignment there are very few drainage improvements as most stormwater is conveyed within streets or overland as dispersed flow. The run-off in this area generally flows in a northwesterly direction as the Greenway path angles southeasterly. The former railroad track bed is elevated relative to the surrounding landscape which may reduce inundation of the planned path alignment.



Historic Railroad Bridge Across Drainage Near 11th Ave.

East of the Nogales railroad track embankment, the Greenway corridor crosses the northern boundary of the vacant parcel south of the Grandview Subdivision and then crosses Park Avenue. The corridor will continue southeasterly along the boundary between the Tucson Marketplace and the Mission View Wash Detention Basin to Kino Parkway. Runoff west of Park Avenue drains westerly via an old railroad trestle discharging into the City of South Tucson. Runoff from catchments east of Park Avenue drain into the Mission View Wash Detention Basin and are not expected to affect the Greenway project.



Drainage Structure Under Southern Pacific Railroad



Drainage Structure at Kino Parkway



Surface Flows Near Juvenile Detention Center



Ajo Detention Basin



# EL PASO & SOUTHWESTERN GREENWAY

## Traffic Studies & Critical Crossings

### Designing a Safe Greenway

The planning and design of the Greenway will be based primarily on ensuring, to the greatest extent possible, the safety of the Greenway users. A transportation planning study report, "El Paso and Southwestern Greenway Transportation, Access and Circulation", prepared by Curtis Lueck & Associates, is included as Appendix C. Although this is a long range plan that will be implemented as opportunities arise, the Curtis Lueck report provides a planning level analysis for the ultimate Greenway traffic crossing design.

The locations of the crossings and the ease with which the Greenway users are able to cross the major streets will be critical to having a safe and well used Greenway multi-use path. Tucson Department of Transportation Traffic Engineering staff should be a major contributor to this project at the earliest stages. At some locations, the Greenway may need to deviate from the railroad right-of-way, or conceptual alignment, in order to direct the users to the best crossing location.

### Greenway Crossing Types

The Greenway/street intersections should all be designed in a consistent manner based on functional classification and cross traffic volumes. Low volume local streets should have a simple crossing, perhaps a yield sign on the Greenway; collectors may have stop control on the Greenway; arterials may have advanced signs and markings and active control, such as traffic signals or grade separations. The use of nearby crossings may be a safer alternative than crossing a major roadway along the Greenway alignment. However, pedestrians and bicyclists are treated differently than motor vehicle drivers by statutes. For instance, it is usually illegal to route bikes down a sidewalk or through a crosswalk unless the rider dismounts. Therefore, solutions that support crossing at the Greenway location, whenever practicable, may be the most effective solution to promote flow and continuity of the Greenway.

For each crossing type, it will be necessary to design the approaches and intersections on the Greenway and on the cross streets or paths to optimize safe crossing. The following is a list of crossing locations that will be encountered on the Greenway:

- **Midblock crossings:** This type of crossing is the simplest and most common, and it involves a trail crossing a roadway or railroad when there are no other adjacent intersections or crossings. There are two types of midblock crossings: perpendicular crossings, which occur when the trail and the roadway intersect at right angles, and skewed crossings, which occur most often when the trail and the roadway intersect at an angle. Skewed crossings usually require a swerve in the trail path so that the trail crossing itself is perpendicular to the roadway.
- **Adjacent path crossings:** These crossings occur most often when a trail, running parallel to a roadway, crosses an existing roadway intersection.

Due to the presence of turning vehicles, this type of crossing presents more challenges than a midblock crossing. Appropriate signage, traffic signals and distance between the roadway intersection and the trail crossing often play important roles in the design of adjacent path crossings.

- **Complex crossings:** This category acts as a catchall for most crossings that cannot be categorized as midblock or adjacent path crossings. Due to the nonstandard challenges these crossings often present, these crossings should be treated on a case-by-case basis.

Crossings can also be categorized by what type of roadway or other intersecting entity they cross.

- **Physical barriers:** There are two locations where the Greenway alignment will cross active Union Pacific Railroad (UPRR) tracks; one at the north terminus at University Boulevard, and the other between 4th Avenue and Park Avenue which will require a grade separation for the Greenway. See Appendix D: Union Pacific Railroad Crossing Schematics for a study of the various options for the crossing of the UPRR tracks at University Boulevard. Kino Parkway also acts as a physical barrier along the Greenway alignment. It is infeasible to provide an at-grade crossing at this location due to presence of freeway ramps and the high volumes on the roadway. At this location, a Greenway underpass may be necessary. The interim solution may be an at-grade crossing at Duvall Vista.

- **Major Streets:** There are several major streets that the Greenway must cross. Many of these are four or five lane arterials. These include St. Mary's Road, Congress Street, 22nd Street, 29th Street, 10th Avenue, 6th Avenue, 4th Avenue and Park Avenue. Several of the crossing locations are near existing or planned traffic signals, either at street intersections, or mid-block pedestrian signals. Options for crossing along the Greenway at these major streets can include providing a non-signalized crossing area (typical or specialized crosswalk; i.e. Zebra), a signalized pedestrian crossing (HAWK, Pelican, or Toucan), or routing Greenway users to existing traffic signal locations. The option for each location should be made based on the safest way for Greenway users to cross the major street. South Tucson public works department representatives have indicated a preference for a grade separation at 22nd Street.

- **Local Streets:** The Greenway will cross through several neighborhoods, and thus will cross local, or neighborhood streets. The Greenway will also skirt several streets, especially between 22nd Street and 29th Street where an access point, or trailhead, rather than a crossing at the Greenway will be located. Solutions in these areas may include yield signs, or stop signs with appropriate pavement markings and signage, or other crossing solutions.

### Greenway Crossing Categories

Within the Curtis Lueck study, three crossing categories were applied (See Figure 9: Crossings). It is important to note that two categories may be identified for one crossing so that both interim and long-term goals can be addressed. Within the Appendix is a list of all local



and major roadway crossings along the Greenway identified by the following categories:

- Type I – uncontrolled crossing (unsignalized, but possibly with other traffic control devices) are recommended where vehicles travel at speeds of less than 35 mph and are used by fewer than 10,000 vehicles per day. Other devices may include high visibility crosswalks, signing, curb extensions and pedestrian refuges. Most of the crossings along the Greenway will be Type I crossings.

- Type II – signalized crossings are recommended for crossings more than 600 feet from an existing signalized intersection (per City of Tucson spacing criteria), where 85th percentile travel speeds are 35 mph and above and/or ADT exceeds 15,000 vehicles, and where it is recommended that trails receive a high level of crossing protection. Many of the trail crossings that would fit the Type II crossing criteria are close to existing signalized intersections. Some of these crossings may be better provided at these existing signalized intersections. Up to eight of these crossings will be Type II crossing.

- Type III – grade-separated crossings may be needed when a physical barrier cannot be relocated (railroad track), and/or based on high traffic volumes, and with the posted speeds over 45 mph. Personal safety may be a concern with overcrossings and undercrossings when trail users may be temporarily out of sight from public view and may have poor visibility themselves. Three of the crossings will initially be Type III crossings: Railroad crossings west of Main/University and west of Park Avenue and also at Kino Parkway. The ultimate goal of the Greenway design is to provide additional grade-separated crossings at Congress Street, 22nd Street, and 6th Avenue.

Each crossing, regardless of traffic speed or volume, requires additional review by a registered engineer to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity, and safety.

### Design Considerations for Crossings

Several items must be considered in the design of the Greenway trail crossings. Some of these include:

- At unsignalized intersection crossings, motorists many times do not expect to see bicyclists and pedestrians. Along the Greenway, most of the roadways to be crossed have low to moderate traffic volumes, and there is good visibility on the trail as users and roadway users approach. However, some of the crossings will be at roadways that carry (or will carry) over 15,000 vehicles per day.

- The alignment of the Greenway right-of-way as shown in the conceptual plan shows many of the trail crossings aligned at a skew to the roadways they cross. Skewed alignments extend crossing distances and make the design treatments more difficult to implement. Efforts should be made to align crossings so that the crossings are made at 90 degree angles to the roadways.

- The crossing treatments should consider traffic speed, street width, traffic volumes, line of sight, and trail user profile (age distribution, destinations).

- A traffic study should be completed for roadway crossings as a part of the preliminary design phase for each segment as it moves toward implementation to determine the most appropriate and safe design features.

Initial crossing design concepts can be refined during the design and construction document stages. For each of the crossing treatments, established regulatory and warning and signing and accompanying pavement markings will be necessary at the approaches to the crossings and to establish the right-of-way hierarchy for users at the Greenway intersections.

Additional design and operational measures can address these trail user safety concerns. For example, an undercrossing can be designed to be spacious and well-lit, equipped with emergency phones at each end, and completely visible for its entire length prior to entering. Trail signals are normally activated by push buttons, but also may be triggered by motion or loop detectors. Minimum crossing times should be determined by the width of the street, trail user profile, or other factors determined by the jurisdiction. Trail signals should be supplemented by standard advanced warning and regulatory signs pursuant to the Manual of Uniform Traffic Control Devices (MUTCD).



Signalized HAWK Crossing



The 'Snake Bridge' Pedestrian Overpass, Tucson, AZ



Underpass on the University of Arizona Campus



# EL PASO & SOUTHWESTERN GREENWAY

## Regulatory

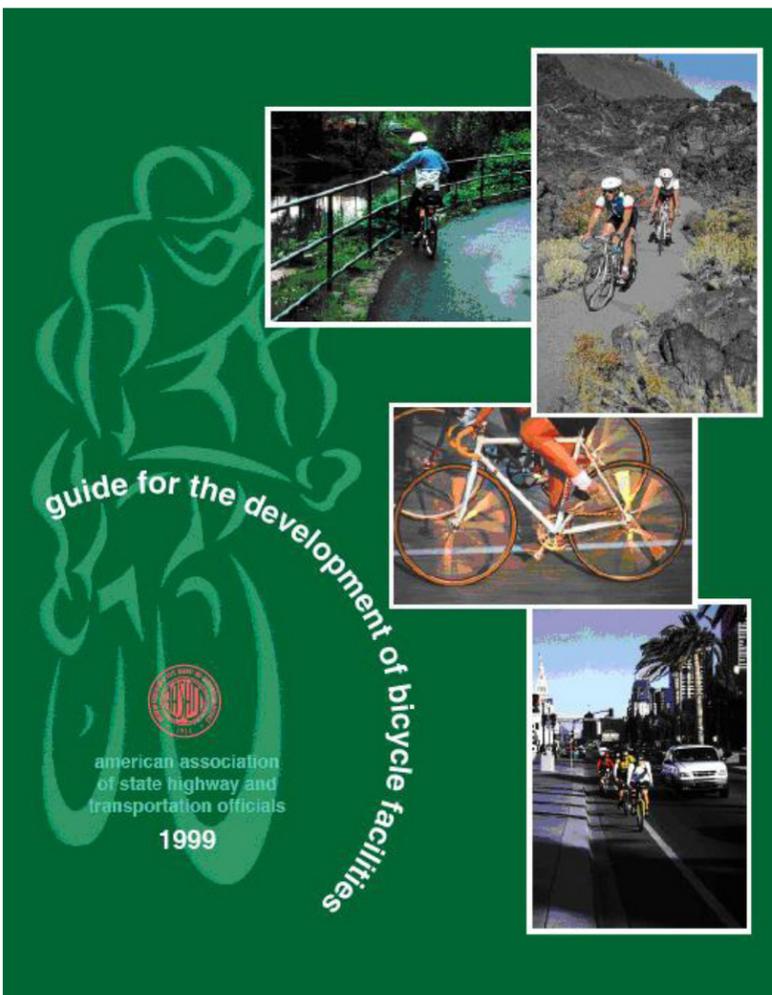
### National Development Codes

#### National Trail Design Development Standards

During the past three decades work has been completed to create a set of national design standards for trails and greenways. There are various federally-sponsored documents that have helped to offer guidance for the design of various urban, suburban and rural trail and greenway projects. The following outlines the most important guidelines that should be used for the design and development of the El Paso & Southwestern Greenway project.

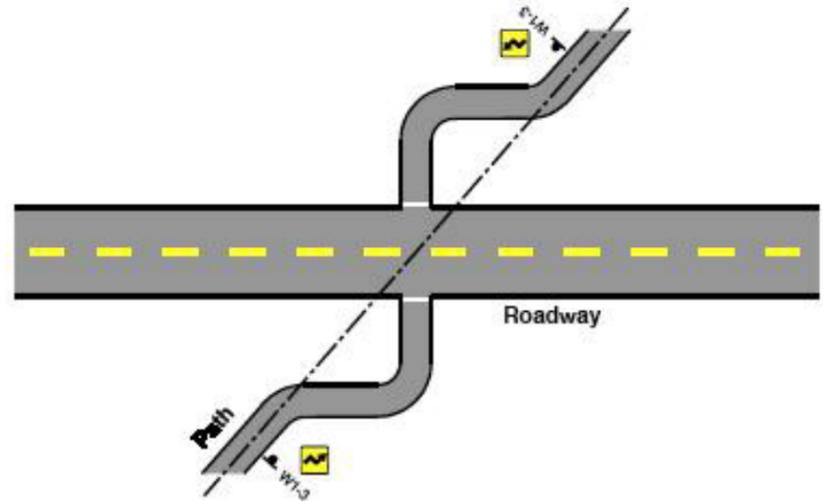
#### AASHTO Guide for the Development of Bicycle Facilities

AASHTO's Guide for the Development of Bicycle Facilities has been the principal national design manual for on-road and off-road bicycle facilities for three decades. The Guide was last updated in 1999 and is currently undergoing a comprehensive update process. The new update is expected to be released in late 2010/early 2011.

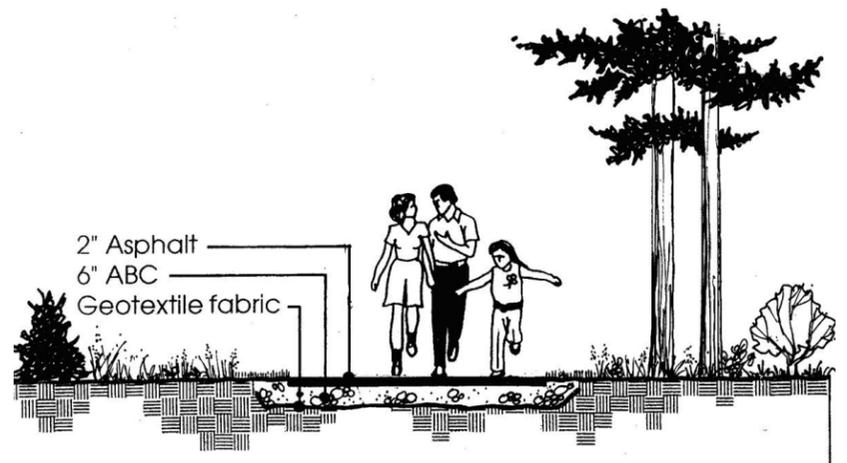


The Guide provides important design standards for "shared-use paths" or off-road trails, similar to the proposed El Paso Greenway project. The Guide also addresses a wide range of on-road design standards that will also be important to the development of the Greenway. AASHTO establishes standards for trail width, clearance, design speed, horizontal alignment, grade, sight distance, path-roadway intersections, signing and pavement markings, pavement structure, structures, drainage, lighting, restriction of motor vehicle traffic, and sharing paths with other user groups. Intersection design will be

one of the most important elements of the Greenway project. The AASHTO Guide offers standards for how to resolve these intersections, as shown in the following detail for diagonal street crossings.



AASHTO recommends a minimum urban trail width of 10 feet, with a preferred width of 12 feet, and in some cases a recommendation of 14 feet. For the Greenway, it will be appropriate to consider both a 12 and 14 foot width for the majority of the project, as future use and demand will necessitate a wider trail width. Urban trails that use federal funding should be paved with asphalt or concrete. The following cross section is typical for urban greenways.

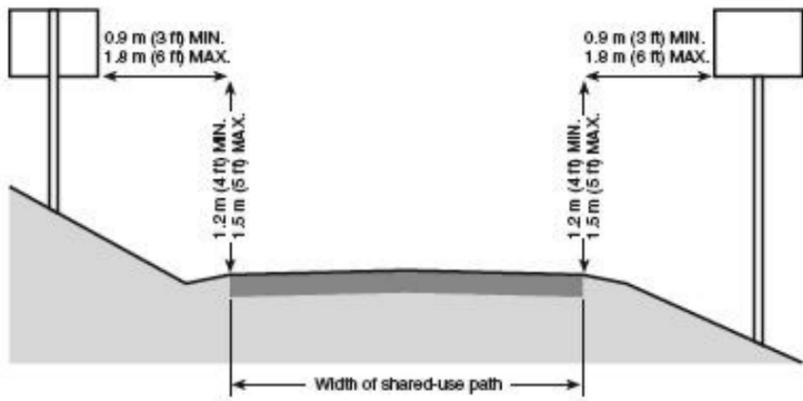


#### Manual on Uniform Traffic Control Devices

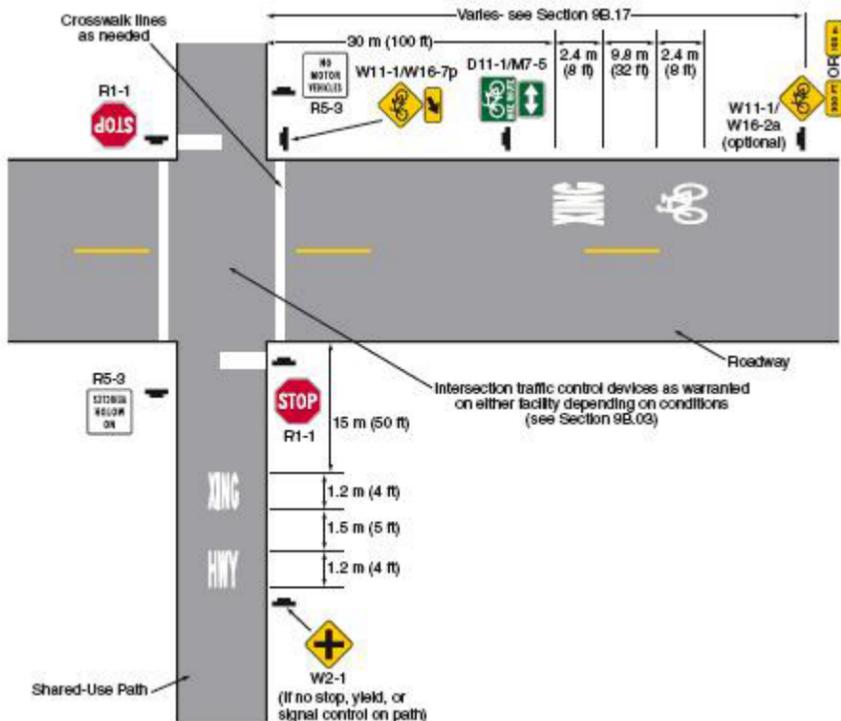
The Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways serves to guide the design and placement of all outdoor regulatory, safety and directional signage as it relates to transportation systems. Bicycle and pedestrian facilities are referenced in Chapter 9, Traffic Control for Bicycle Facilities.

The El Paso & Southwestern Greenway will be subject to MUTCD which should be consulted closely by the design team to protect public health, safety and welfare. Specifically, a signage, traffic control and transportation safety plan should be prepared for the project. For the most part, the Greenway will be an off-road path and therefore the most important design standard, from MUTCD point of view, will be the placement of signs along the trail, as illustrated in the standard above right.



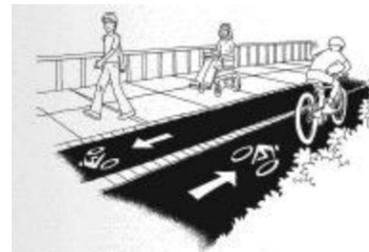


Another important consideration, with respect to the MUTCD, is the design of trail intersections with roadways. The Greenway, as an urban pathway, will intersect with many urban roadways. The design solution of these crossings will vary by intersection. MUTCD offers guidelines on how to coordinate bicycle and pedestrian travel and automobile travel. The following illustration from MUTCD is general in nature and would need to be tailored to fit the needs of the Greenway and roadway intersections.

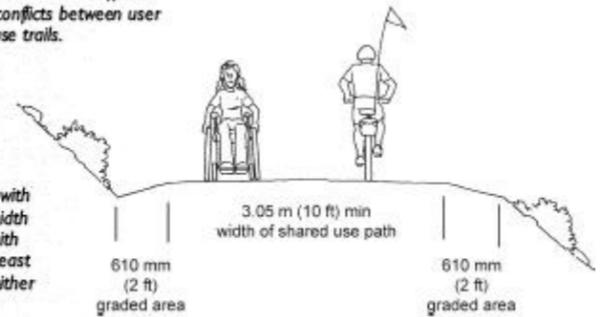


### Americans with Disability Act

The Americans with Disabilities Act of 1990 prohibits discrimination on the basis of physical impairment. The ADA is civil rights legislation and not a building code. The most important subsequent publication to be produced after the passage of ADA has been *Designing Sidewalks and Trails for Access, Part 2 of 2, Best Practices for Design* published by the USDOT FHWA in September 2001. This guidebook is the second of a two-phased project focused on designing sidewalks and trails for access. It was created to provide planners, designers, and transportation engineers with a better understanding of how sidewalks and trails should be developed to promote pedestrian access for all users, including people with disabilities. The book is packed with helpful guidelines and standards that enable designers to address off-road trail development issues that will comply with the spirit and intent of ADA. The guidebook is available from FHWA. Some of these standards are illustrated above right.



**Figure 14-6. GOOD DESIGN:** Shared-use paths that provide different lanes for users who travel at different speeds prevent conflicts between user groups on high use trails.



**Figure 14-11.** Shared-use paths should be designed with a minimum tread width of 3.05 m (10 ft) with graded areas of at least 610 mm (2 ft) on either side of the path.

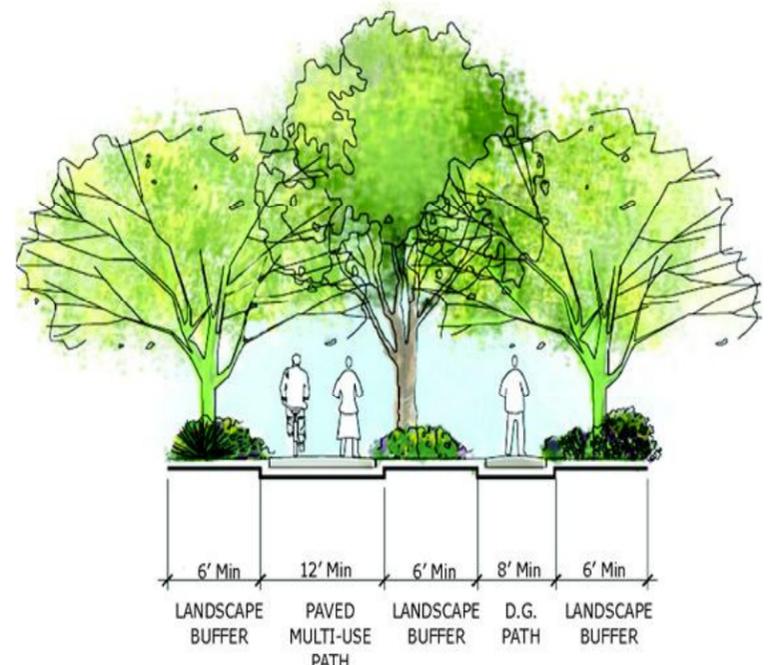
One of the most important work elements that the Cities of Tucson and South Tucson can undertake is to assemble and work with a group of disabled trail users to review the design development program for the trail and resolve challenging development problems.

## Local Development Codes

### City of Tucson & Pima County Development Standards

The El Paso & Southwestern Greenway will travel through two different jurisdictions within Pima County: the City of Tucson and the City of South Tucson. For ease of long-term management, the Greenway will be maintained by the City of Tucson's Parks and Recreation Department. Therefore, it is important that the Greenway's construction details conform to the City of Tucson Parks and Recreation standard details and specifications.

All additional local regulations applicable to development within Pima County, the City of Tucson, and the City of South Tucson will also apply to this project. Of special interest are the City of Tucson's recently approved Water Harvesting Ordinance and Pima County's 'Divided Urban Pathway' standard as shown in the graphic below. Both of these standards will be adhered to as closely as possible throughout the proposed Greenway alignment.



# EL PASO & SOUTHWESTERN GREENWAY

## Land Use & Linkages

### Zoning

The El Paso & Southwestern Greenway spans approximately 6.5 miles around the southwest section of the Tucson Metropolitan Area. Within this corridor a variety of zoning and land uses occur (See Figure 10, Zoning).

In the northern portion of the project there is a mix of older and historic residential properties with commercial and industrial uses. The downtown Tucson government and commercial section is just to the east of the Greenway corridor. Redevelopment efforts are occurring and present opportunities for future connections. Interstate 10 runs parallel to the Greenway alignment in this northern section. Past and present industrial uses are found along the length of the corridor. The city owns several pieces of property between Interstate 10 and the Greenway corridor.

The Greenway enters the City of South Tucson at 25th and 1/2 Street. The northwest portion of South Tucson is primarily residential zoning. As the Greenway progresses southeast through South Tucson it moves away from Interstate 10 and zoning changes to more industrial usage.

East of South Tucson, the Greenway crosses the Bridges planned community. This is expected to be a mixed-use area including retail, residential, research and development with planned open space and recreation areas. The eastern-most portion of the Greenway borders residential, industrial and commercial property. One segment will either run through the north parking lot of the Pima County Juvenile Detention Center or use the residential streets adjacent and north of the center. The Greenway terminates when it intersects the existing path that circumvents the Ajo Detention Basin.

### Hazardous Materials

No open or closed landfills are found along the immediate El Paso Greenway corridor. Along the northern portion of the Greenway there are several sites with storage tanks. Some of these tanks are known to be leaking hazardous materials. The leaking tanks are primarily clustered near I-10 at the intersections of St. Mary's Road, Congress Street, Simpson Street, from 22nd to 29th Streets, and along 6th Avenue and 4th Avenue. Several non-leaking storage tanks are also located within a 500' buffer to the east of I-10. Leaking tank status was last updated in 2006 (Information is from the Arizona Department of Environmental Quality website: [www.azdeq.gov](http://www.azdeq.gov)).

Several parcels in the vicinity of the proposed Greenway alignment are listed on the City of South Tucson Brownfields Grant Active Properties (See Figure 11, Hazardous Materials). Grant funds may be available to address and assess these various properties throughout the City of South Tucson as the design of the Greenway progresses.



Construction Materials Near Greenway Alignment

The Greenway site is aligned along existing Union Pacific Railroad tracks and the Interstate 10 freeway. Both of these transit lines have the potential to be sources of chemical and air pollution.



Storage Tanks and Abandoned Vehicles Adjacent to Greenway Alignment



Scenes from Residential Areas Along Proposed Greenway Alignment



## Area Parks

Estevan Park is located adjacent to the UPRR tracks a few blocks north of the Greenway's starting point at University Boulevard. Oury Park is located just north of St. Mary's Road to the west of the Greenway and features a swimming pool. A 2004 Master Plan for the park recommended increased pedestrian and bike linkages between the park and Davis Middle School, as well as with surrounding neighborhoods. It recommended creating parking on the Hughes right-of-way and the historic railroad spur (now part of the Greenway). The report anticipated the city-owned property to the east to become housing (See Figure 12, Parks).

There is a small unofficial park south of Simpson Street with no improvements except for a simple homemade sign labeled 'Galvan Park.' No other parks are immediately adjacent to the Greenway until the southeast end of the project. Street Scene Park, owned by the City of Tucson, is located in the South Park neighborhood, adjacent to the north side of the Greenway between Benson Highway and South Park Avenue. It is a small local neighborhood park. The Bridges planned community, which lies north of Interstate 10 and west of Kino Parkway, includes the Greenway alignment, as well as plans for open space and recreation areas in its Master Plan. On the west side of Country Club Road, north of Ajo Road is the Ajo Detention Basin. The Greenway will intersect the established path system and use the path to provide continuity as the Greenway continues east. As this pathway continues northeast, it passes by the James C. Thomas Park. A path will be extended from the Kino path to allow access to the park. Pima County owns the Kino Sports Complex, featuring ball fields and professional sports games, which is located south of Ajo Road and extends toward Interstate 10.

Two significant linear parks are in close proximity to the El Paso & Southwestern Greenway. The Santa Cruz River Park is on the west side of Interstate 10 and parallels much of the north half of the Greenway. The 18<sup>th</sup> Street Bikeway connects them via the new bike/pedestrian underpass at I-10. This semi-natural river park includes multi-use paths, riparian habitat, and wildlife corridors. The park incorporates the river bottom and will likely function as a connection with the El Paso & Southwestern Greenway for many users. The Julian Wash, located approximately one mile to the south and parallel to the southern leg of the Greenway, currently has an intermittent path system which is most completely developed south of the City of South Tucson. The 10th Avenue bike lanes provide access to the portion of the Julian Wash that is designated as the Paseo de Lupe Eckstrom Park.



Oury Park



Galvan Park



Street Scene Park



Ajo Detention Basin



James C. Thomas Park



# EL PASO & SOUTHWESTERN GREENWAY

## Police, Fire, Schools & Libraries

The Greenway's location through the urban areas of Tucson and South Tucson means it is well served by numerous governmental amenities. The services include schools, fire stations, police stations, and libraries located within a short distance from the site. Additionally, a large number of schools ranging from elementary through college level are located within a short distance from the site. Pima Community College has a community campus in the downtown Tucson area approximately 2/3 mile away, The University of Arizona is about 1 1/4 miles away, and there are a variety of public, private and charter schools within 1 mile of the project. At the east end and adjacent to the Greenway a Juvenile Detention Center contains its own school (See Figure 12, Schools, Fire, Police and Libraries).

The City of Tucson Central Fire Station and Police Headquarters are located in downtown Tucson. The Greenway connects with a park area which is adjacent to the new Fire Central. The City of South Tucson Police Headquarters is also located within 1 mile of the Greenway, and the Juvenile Detention Center borders the Greenway's east terminus.

The City of Tucson Main Library is located in the downtown area, and Quincy Douglas Library is within 0.5 miles of the project's east end. Sam Lena Library is located in South Tucson and is less than 0.5 miles from the Greenway.



City of Tucson Main Library

## Linkages

The proposed Greenway alignment will connect to local and statewide communities through a series of transportation venues. Located adjacent to Interstate 10, the major north-south highway of the state will provide easy access to the project. Suntran bus provides service along I-10 and has numerous other routes which will connect with the Greenway system. Currently Suntran bus provides service along most of the major streets which will intersect with the Greenway including St. Mary's Road, Congress Street, 22nd Street, 29th Street, 6th Avenue, Park Avenue, and Kino Boulevard. (See Figure 14, Linkages).

Tucson is known as a bike friendly city with an extensive network of bike paths which will provide access to the Greenway from the downtown area. Additional bike paths connect to the south through the City of South Tucson on 10th Avenue, 8th Avenue, 4th Avenue, Cushing Street, 18th Street, University Boulevard, and Euclid Avenue. A multi-use path around the Ajo Detention Basin includes bike access and connections to the Julian Wash Trail system. Other major bike trails are located on the west and south side of I-10 including the Santa Cruz Wash and the Julian Wash trail systems.

A shared-use path is located around the Ajo Detention Basin. As noted above, shared-use paths are located on the west and south sides of I-10 along the Santa Cruz and Julian Washes. There is a connection between the Ajo Detention path and the Julian Wash trail. Numerous additional shared-use paths and bike routes



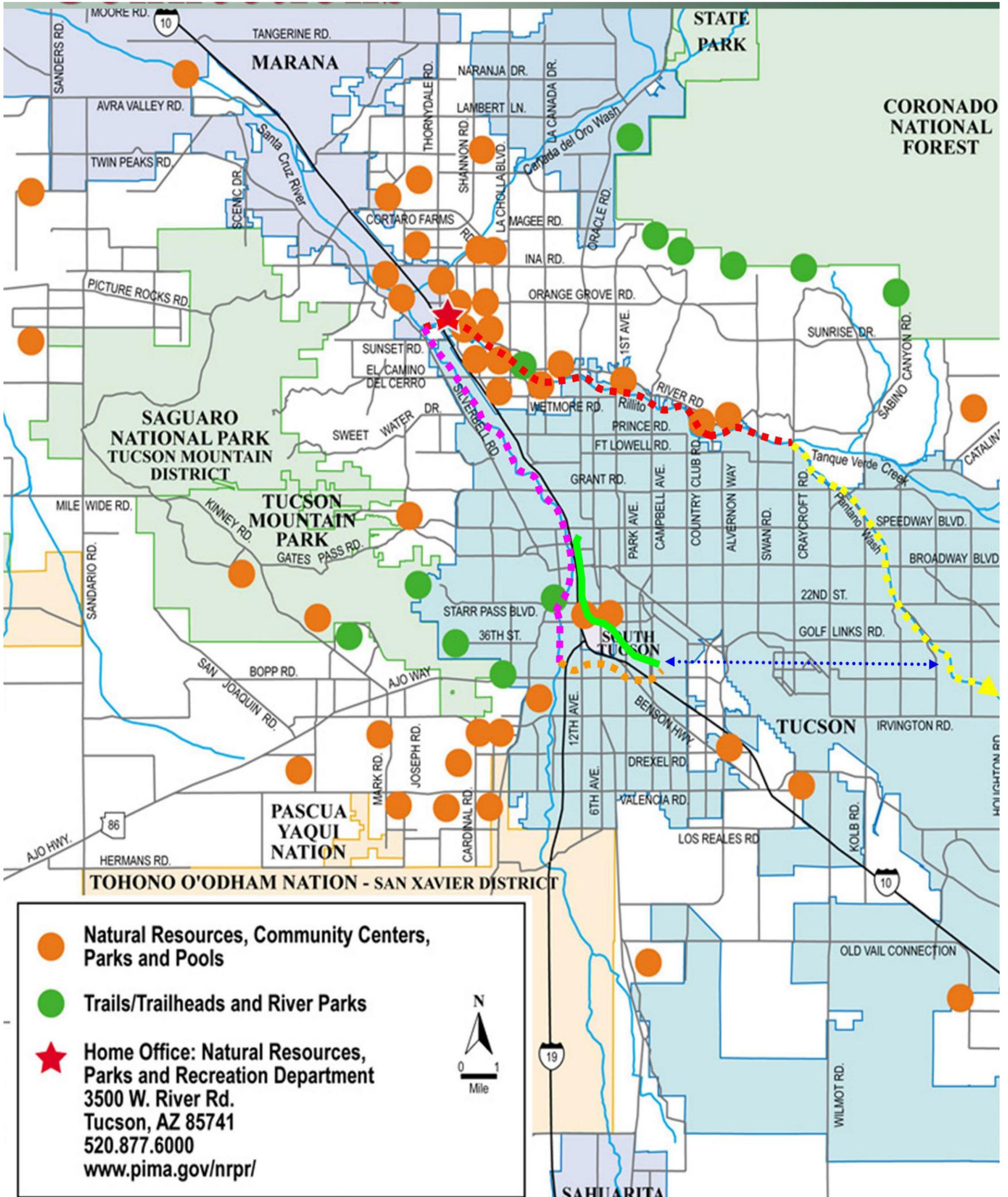
Bike Riders Near Northern Greenway Alignment



City of Tucson Fire Central



## Pima County Parks and Recreation Facilities Map



Pima County Parks and Recreation Facilities in Eastern Pima County; Map Courtesy of Pima County Parks and Recreation Department.

Dashed lines refer to existing trails within Pima County. Green solid line represents proposed Greenway alignment. Blue dotted line represents future Greenway connection.



# EL PASO & SOUTHWESTERN GREENWAY

## Natural Resources

### Viewsheds

The El Paso & Southwestern Greenway will provide numerous opportunities for both distant and intimate views. Many of the views include historic properties which line the Greenway property and create a focus for the project. The Greenway traverses several historic and culturally significant Barrios, each of which displays a different ambiance. There are also some areas of undesirable views which are encountered along the alignment (See Figure 15, Viewsheds).

#### FAVORABLE VIEWS

At the north entry to the Greenway, visitors will encounter views of all three of the major mountain ranges in the region: the Catalina Mountains to the north, the Tucson Mountains to the west, and the Rincon Mountains in the distant east. A-Mountain is a prominent feature on the west side of Tucson, and is a landmark in the area. Views of downtown Tucson are immediately adjacent to the proposed path.



View of I-10 with A-Mountain in the Distance



Views to North of Catalina Mountains

Other favorable views include colorful local residences and the nearby community gardens of Dunbar Spring neighborhood. Each barrio presents a slightly different history and perspective which can be enjoyed when passing through various neighborhoods, and provides a focus on the significant aspects of the area. Local community buildings have been enhanced and are a source of history and information about the neighborhoods of the region.



Dunbar Spring Community Garden



View to Northwest Across Railroad Tracks to Tucson Mountains



Ramada Within Dunbar Spring Community Garden



View of Downtown Tucson from Proposed Greenway Alignment





Streetscape in Dunbar Spring Neighborhood



Barrio Anita Neighborhood

In addition, many historic buildings are encountered along the length of the proposed Greenway. Some of the most significant of these features relate to the historic El Paso railroad. Of note are the El Paso and Southwestern Depot building, the historic Livestock Auction House, the Roundhouse which was a switching yard for the railroad, and the historic railroad tracks. South Tucson provides many favorable views with landscaped streets, views of the historic VA Hospital, and 6th Avenue restaurants.



Cross with Cultural Embellishment at Small Chapel



Historic Livestock Auction House, South Tucson



El Paso & Southwestern Depot Building



Historic Railroad Tracks



# EL PASO & SOUTHWESTERN GREENWAY



South Tucson Streetscape



Residential Areas Near Raised Railroad Bed



View from South Tucson to Historic VA Hospital



Concrete Structure with Graffiti

Further south the elevated historic railroad track provides sweeping views of the surrounding mountains. This portion of the Greenway crosses between two residential neighborhoods. Just east of Park Avenue, in a previously disturbed area of desert lies a large concrete structure. Covered with graffiti, it provides an unusual contemporary counterpoint to the surrounding area. Nearby a small park provides shade for visitors.



Street Scene Park



Raised Railroad Bed with Views of Tucson Mountains to West

Upon arrival at the Ajo Detention Basin there is dense vegetation with an elevated shared-use path surrounding the lush area. Views from this vantage point include the surrounding mountains, local neighborhoods, downtown Tucson in the distance, and the lush revegetation area.





View Across Ajo Detention Basin to East Towards Rincon Mountains



Industrial Usage Looking East from Alignment



Elevated Shared-use Path with Catalina Mountains in Distance



Along the Proposed Alignment in South Tucson

## UNFAVORABLE VIEWS

The new Greenway alignment will cross several areas of the city which do not provide favorable views. Primarily these are areas with little vegetation, unmaintained structures, industrial usage, and debris left by transient residents. Other structures and buildings currently use razor wire and chain link fences to define property limits. The proposed alignment passes near trash and dump sites. Use of vegetation and redirection will mitigate these negative views.



Transient Home



Trash Piles Near Concrete Structure and Railroad Tracks



Along 11th Avenue in South Tucson



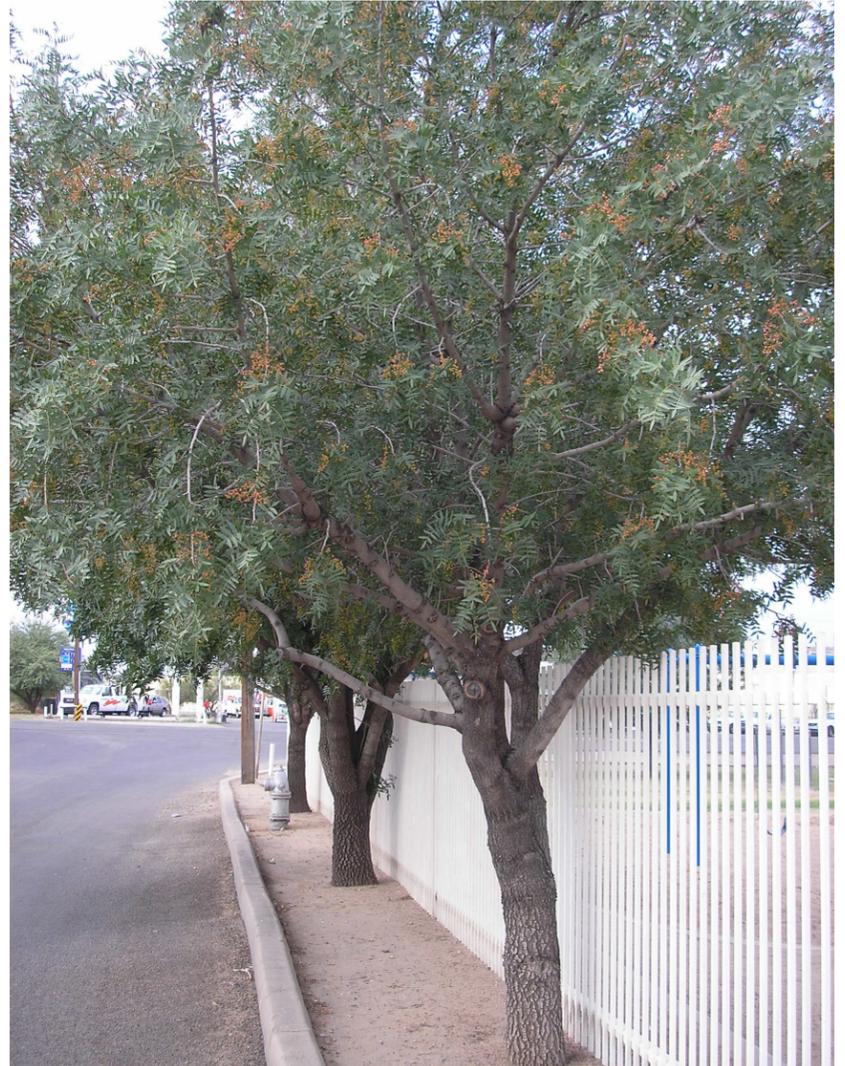
# EL PASO & SOUTHWESTERN GREENWAY

## Riparian Areas, Wildlife & Existing Vegetation

Primary riparian areas that intersect the proposed Greenway alignment are defined in the Pima County RFCD "Regulated Riparian Habitat Mitigation Standards and Implementation Guidelines." Xeroriparian D areas are located between 26th Street and 29th Street in the South Tucson area, and between S. 4th Avenue and Kino Parkway near I-10. In addition, there are two areas of Xeroriparian C habitat, one just west of Kino Parkway, and the other is the Ajo Detention Basin. With the exception of the Ajo Detention Basin, the riparian areas primarily consist of dry wash beds which experience seasonal flow and have increased vegetation density compared with the surrounding area (See Figure 16, Riparian & Wildlife).

Vegetation along the Greenway primarily consists of non-native species including Mexican Palo Verde, hybrid Mesquites, African Sumac, Desert Broom and exotic plants used as part of localized landscaping. Some areas also contain native Velvet Mesquites, Blue Palo Verdes, Acacias and Desert Willows. Vegetation is most dense along the wash beds, and transitions to sparse grass and stunted trees in urban areas where plants depend on rainfall for water. The desert between S. 4th Avenue and Kino Parkway appears to have been disturbed in the past, but has revegetated with Mexican Palo Verdes, some native Mesquites, Desert Broom and grasses. A large area of land between S. Park Avenue and Kino Parkway, known as The Bridges, was recently bladed for residential development. The Ajo Detention Basin is a revegetated riparian area surrounding a detention basin for water harvesting. That project provides an artificial desert oasis.

It is expected that wildlife concentrate along the riparian areas and in any small wash beds. Limited wildlife was noted during site visits as much of the area is very urban in nature. Many bird species are abundant near the Ajo Detention Basin, and it is expected that other species typical to the desert can be found there including rabbits, reptiles, coyotes, and desert rodents. Because of the roaming nature of coyotes it is likely that they cover much of the desert areas that connect with the proposed alignment. It would be expected that other small desert animals inhabit these desert areas.



Planted Pistache Trees Near Oury Park



Revegetated Desert North of I-10 Near Park Avenue



Typical Vegetation Along Proposed Greenway Alignment



Ajo Detention Basin and Lush Vegetation





Typical Vegetation Along Washes Include Higher Densities of Plants, Many of Which are Non-native



Typical Vegetation in Drainage Area



Typical Wildlife Along Greenway



Vegetation Growing Within the Original Railroad Track Alignment



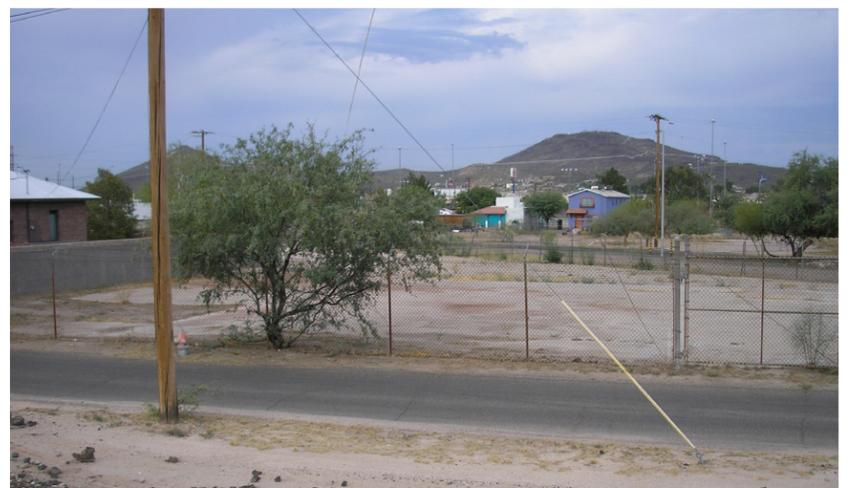
# EL PASO & SOUTHWESTERN GREENWAY

## Ownership Data

### Challenges With Proposed Alignment

The initial alignment proposed in the "Drachman Report" for the El Paso & Southwestern Greenway was based on maintaining the original El Paso & Southwestern Railroad alignment. The proposed Greenway began at the active Union Pacific Railroad line near University Boulevard and terminated at the Nogales Railroad line just east of the City of South Tucson. Through the research conducted during the preparation of the report, a number of areas were identified that presented a challenge to the proposed alignment. While a large percentage of the land is publicly owned, several physical obstructions exist that block the historic alignment or portions of the alignment; these are either in private ownership or are still owned by the railroad. With the recent expansion of the proposed Greenway to its current terminus at Country Club Road, the ownership challenges presented in the Drachman Report have been coupled with new challenges in the areas east of South Tucson. A detailed analysis of the ownership information for all parcels within the proposed Greenway alignment was conducted and can be viewed in greater detail in Figure 17, Ownership Data.

The current proposed Greenway alignment begins at the intersection of University Boulevard and Main Avenue. Once the alignment crosses the Union Pacific Railroad line, the Greenway has the potential to encroach upon a property known as the Calvert Property. This property is currently under private ownership, although the owners have expressed interest in selling their property for use as a park node for the Greenway. The proposed alignment is not dependent on this property; however, further discussion with the owners is encouraged to create an opportunity for an enhanced greenspace along the Greenway.



Calvert Property Near North End of Greenway Alignment

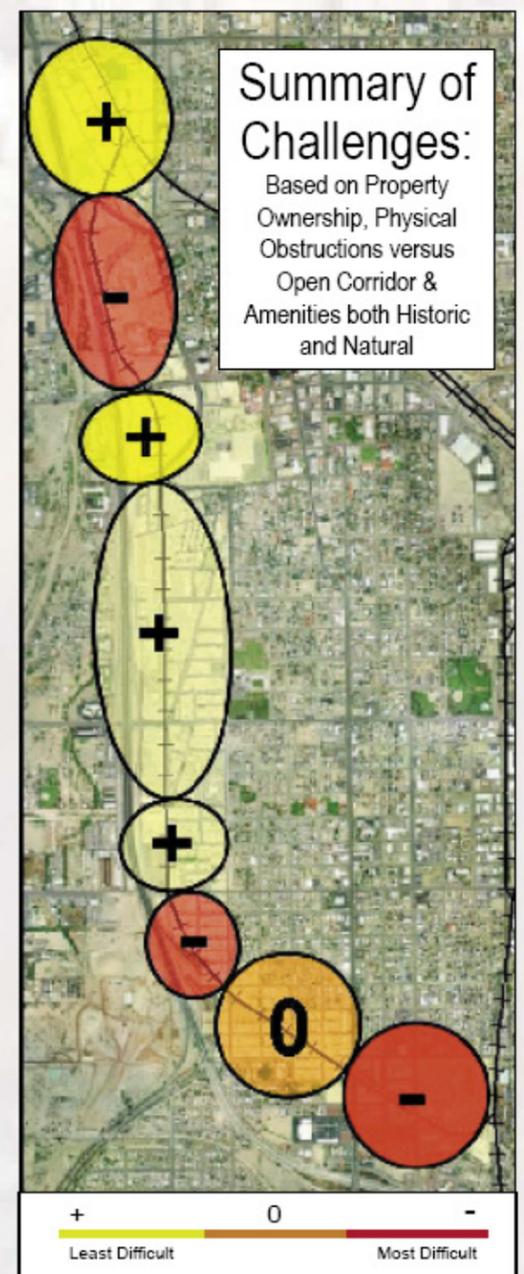
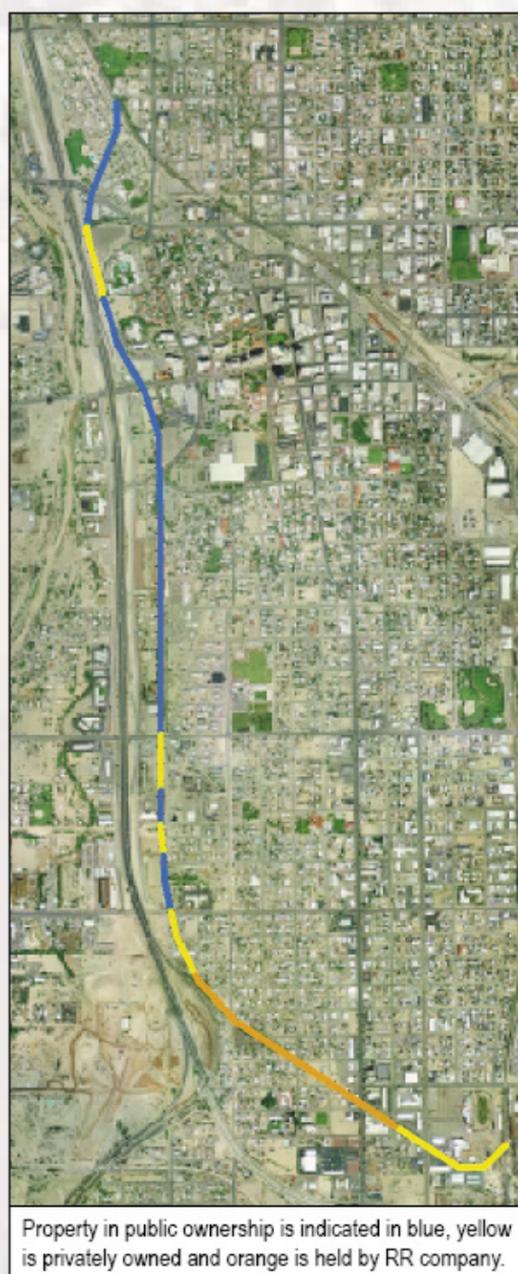
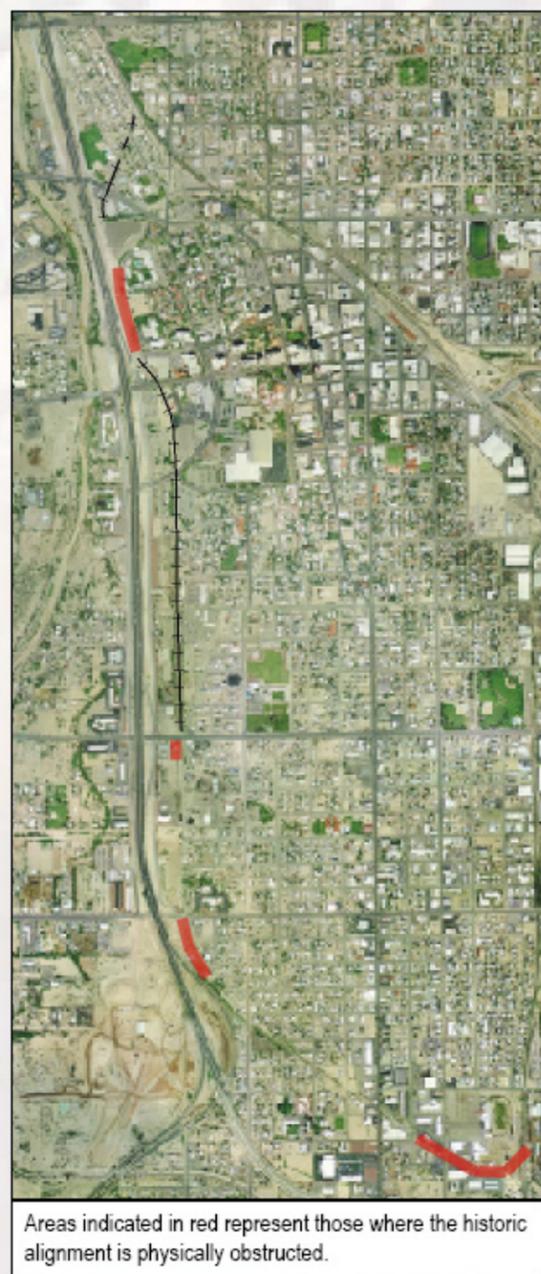


Figure from "Drachman Report" Illustrating Ownership Challenges Based on the Proposed Historic Greenway Alignment





Limited Right-of-Way Near Manning House



Historic Rail Depot is Currently Under Private Ownership and is Inaccessible from Proposed Greenway Alignment



Privately Owned Property near 29th Street



Privately Owned Property in South Tucson

Negotiations have been underway and will continue with some of the current owners of properties obstructing the proposed alignment. Negotiations will need to continue in order for the Greenway to honor the historic alignment; however, some deviations are necessary to provide for the safest and most desirable user experience.

The proposed Greenway alignment encounters its first significant ownership challenge in the vicinity of the Manning House near Alameda Street. There is no publicly owned right-of-way in this area and the land that once supported the historic railroad alignment is now under private ownership. Past Congress Street, the proposed Greenway alignment runs adjacent to the historic El Paso & Southwestern Railroad Depot. The Depot is currently under private ownership and is separated from the alignment by a block wall. Removal of the wall would allow for a visual connection between the Greenway and the Depot. The Depot has the potential to provide a dynamic space for a museum dedicated to the history of the railroad in Arizona if the parcel were under public ownership. It could also be reinstated as a restaurant, the most recent use, and provide a convenient resting point for visitors.

The next significant ownership challenge occurs as the proposed Greenway alignment crosses 29th Street in the City of South Tucson. The historic railroad alignment continues south through what is now a privately owned construction company. Due to the anticipated difficulties in acquiring access to this property, the proposed alignment separates from the historic alignment by traveling east along 29th Street and south on 11th Avenue. This slight detour from the historic alignment allows inclusion of the historic Livestock Auction House into the Greenway alignment. Although this route takes the Greenway along public roadsides, it rejoins the historic alignment at the historic railroad bridge.

Within South Tucson, the proposed Greenway travels along a segment of raised railroad alignment which is currently owned by the railroad. Discussions with the railroad will need to take place to transfer ownership rights, potentially through the implementation of the National Rails to Trails program. The historic alignment is difficult to follow through the eastern edge of South Tucson as much of the area is now under private ownership. Another deviation from the historic alignment is suggested near what is known as the "Borderlands Property" east of 4th Avenue. The alternate Greenway alignment travels south along 4th Avenue and crosses 4th Avenue just south of the "Borderlands Property." Significant negotiations would be required with a number of property owners if the alignment were to remain true to the historic alignment in this area of the project.

East of the Nogales Railroad, the proposed Greenway alignment encounters little resistance until it reaches the area east of Kino Parkway. The available public right-of-way is limited and additional land may need to be required to achieve the preferred Greenway cross-section.





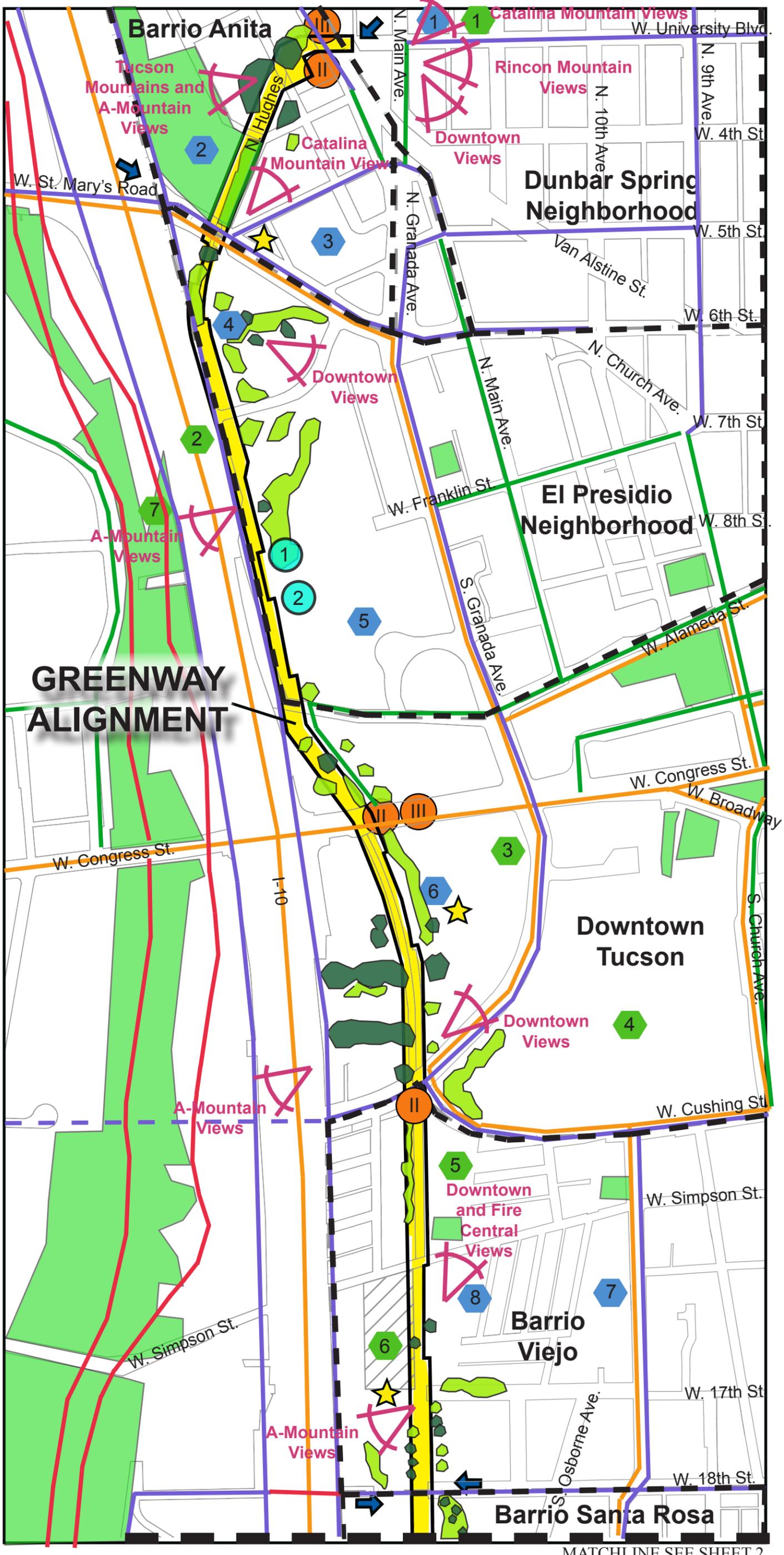
# EL PASO & SOUTHWESTERN GREENWAY

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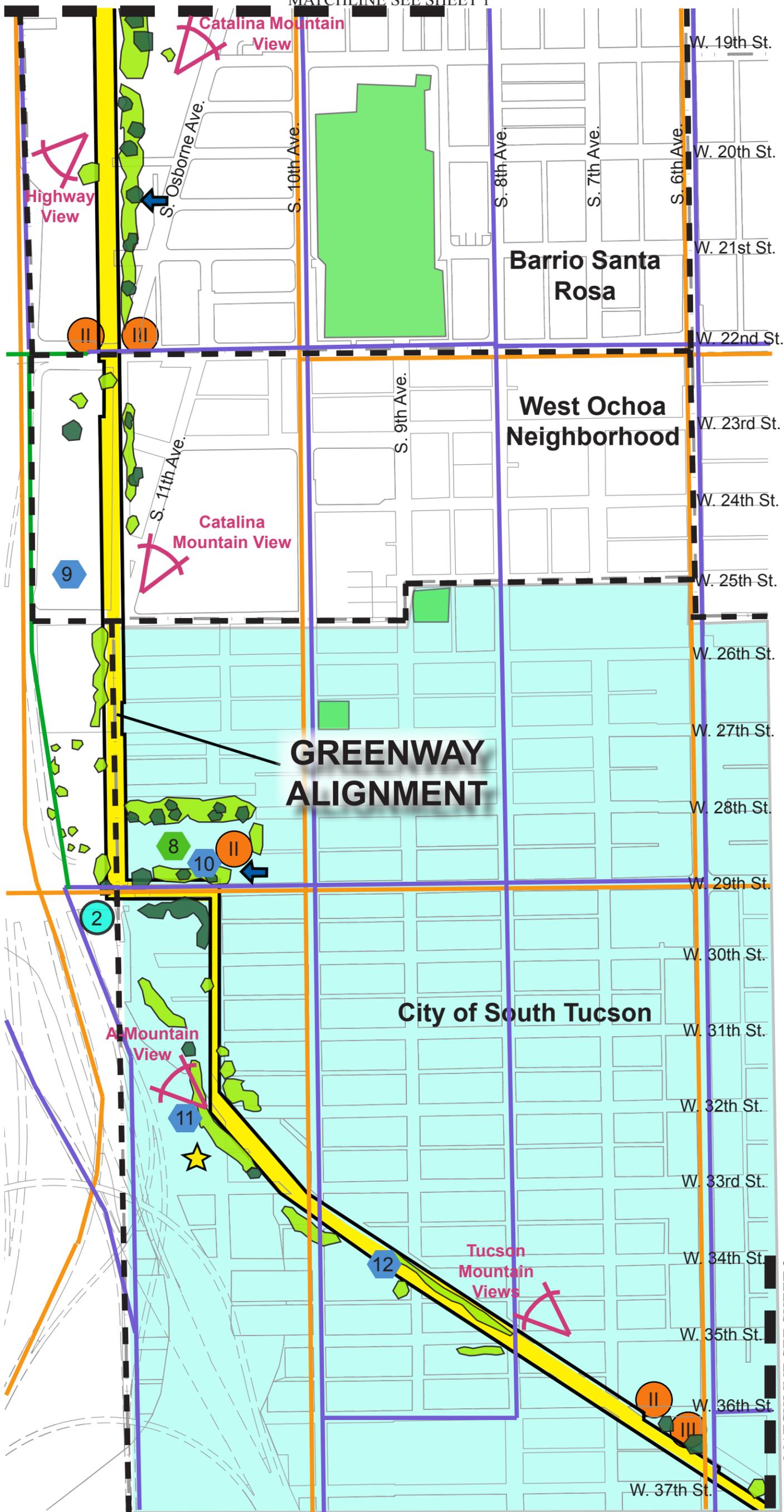




- ### LEGEND
- Parks
  - Linkages
    - Key Bike Route
    - Connecting Streets
    - Shared-use Path
    - Bike Route
    - Proposed Bike Route
    - Bus Routes-Suntran
  - Historic Landmarks
    - 1 Holy Family Catholic Church
    - 2 Oury Park
    - 3 Davis School
    - 4 Historic Rail Tracks
    - 5 Manning House
    - 6 Historic Railroad Depot
    - 7 Carillo School
    - 8 Historic Rail Road Office Bldg.
  - Non-Historic Landmarks
    - 1 Dunbar Spring Community Garden
    - 2 Interstate 10
    - 3 United States Federal Courthouse
    - 4 Tucson Community Center
    - 5 Fire Central, Station #1 City of Tucson
    - 6 Gem and Mineral Show Grounds
    - 7 Santa Cruz River Park
  - Viewsheds
    - View Direction
  - Critical Links
    - > Critical Links
  - Significant Native Vegetation
    - Significant Native Vegetation
  - Non-Native and Other Vegetation
    - Non-Native and Other Vegetation
  - Neighborhood Boundaries
    - Neighborhood Boundaries
  - ROW Restrictions
    - 1  La Entrada
    - 2  Manning House
  - Crossings
    - Signalized Crossing
    - Grade Separated Crossing
  - Opportunities for further development
    - Opportunities for further development

MATCHLINE SEE SHEET 2

**Figure 1**



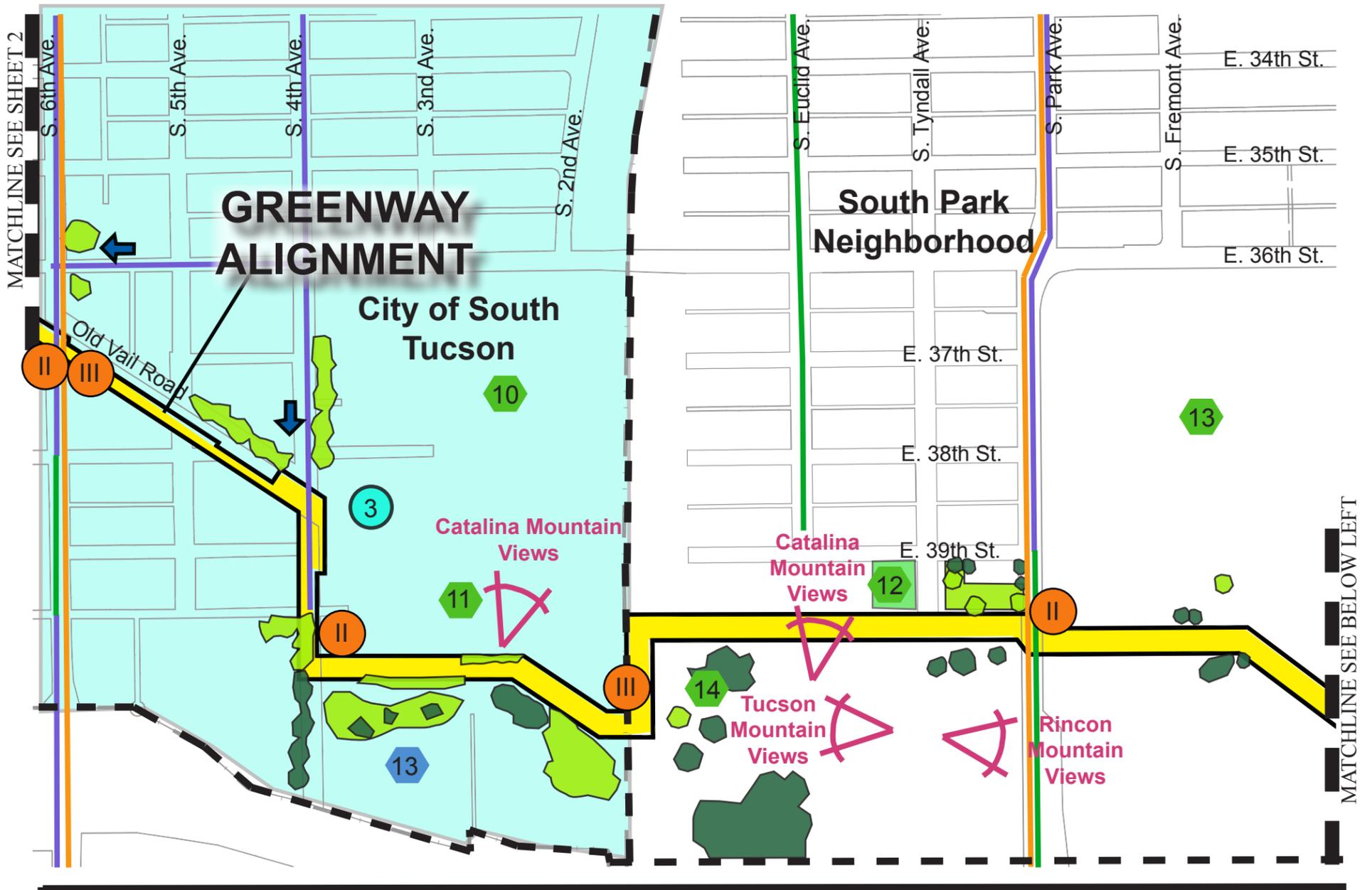
**LEGEND**

- Parks
- Linkages**
- Key Bike Route
- Connecting Streets
- Shared-use Path
- Bike Route
- Proposed Bike Route
- Bus Routes-Suntran
- Neighborhood Boundaries
- Historic Landmarks
- 9 Round House
- 10 Historic Auction House
- 11 Historic Railway Bridge
- 12 Raised Railway Alignment
- Non-Historic Landmarks
- 8 La Frontera Center
- Viewsheds**
- View Direction
- Critical Links
- Significant Native Vegetation
- Non-Native and Other Vegetation
- ROW Restrictions
- 2 29th St. in City of South Tucson
- Signalized Crossing
- Grade Separated Crossing
- Opportunities for further development

MATCHLINE SEE SHEET 3



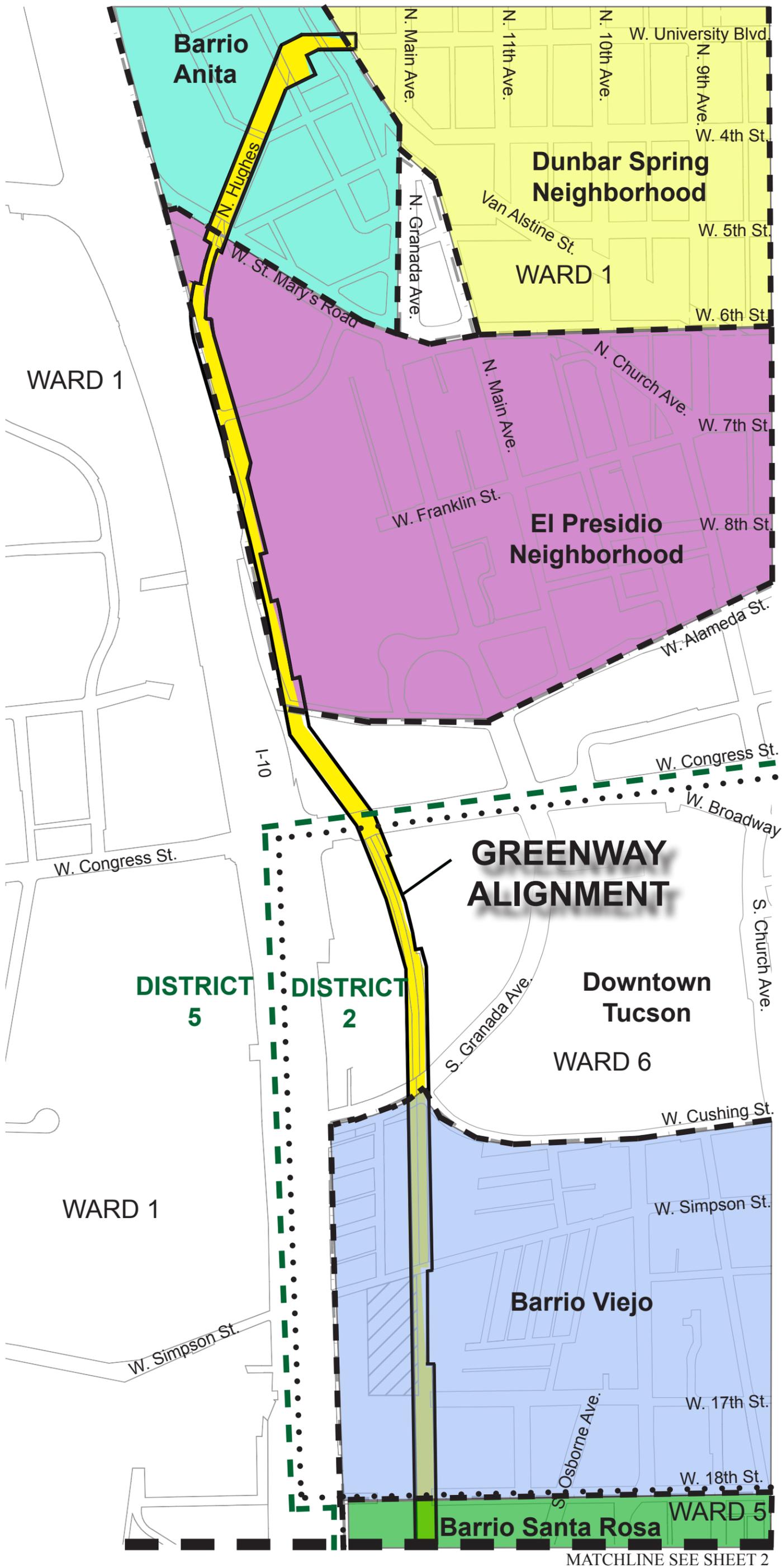
**Figure 1**



**LEGEND**

- Critical Links
- Parks
- Significant Native Vegetation
- Non-Native and Other Vegetation
- Neighborhood Boundaries
- Key Bike Route
- Shared-use Path
- Bike Route
- Proposed Bike Route
- Bus Routes-Suntran
- Historic Landmarks
- Non-Historic Landmarks
- View Direction
- ROW Restrictions
- 3 Borderlands Construction
- 4 Juvenile Detention Center
- 10 Tucson Greyhound Park
- 11 Borderland Const Yard
- 12 Street Scene Park
- 13 Spanish Trail Motel
- 14 Concrete Structure
- 15 Ajo Detention Basin
- 16 Pima County Juvenile Detention Center
- Signalized Crossing
- Grade Separated Crossing

**Figure 1**



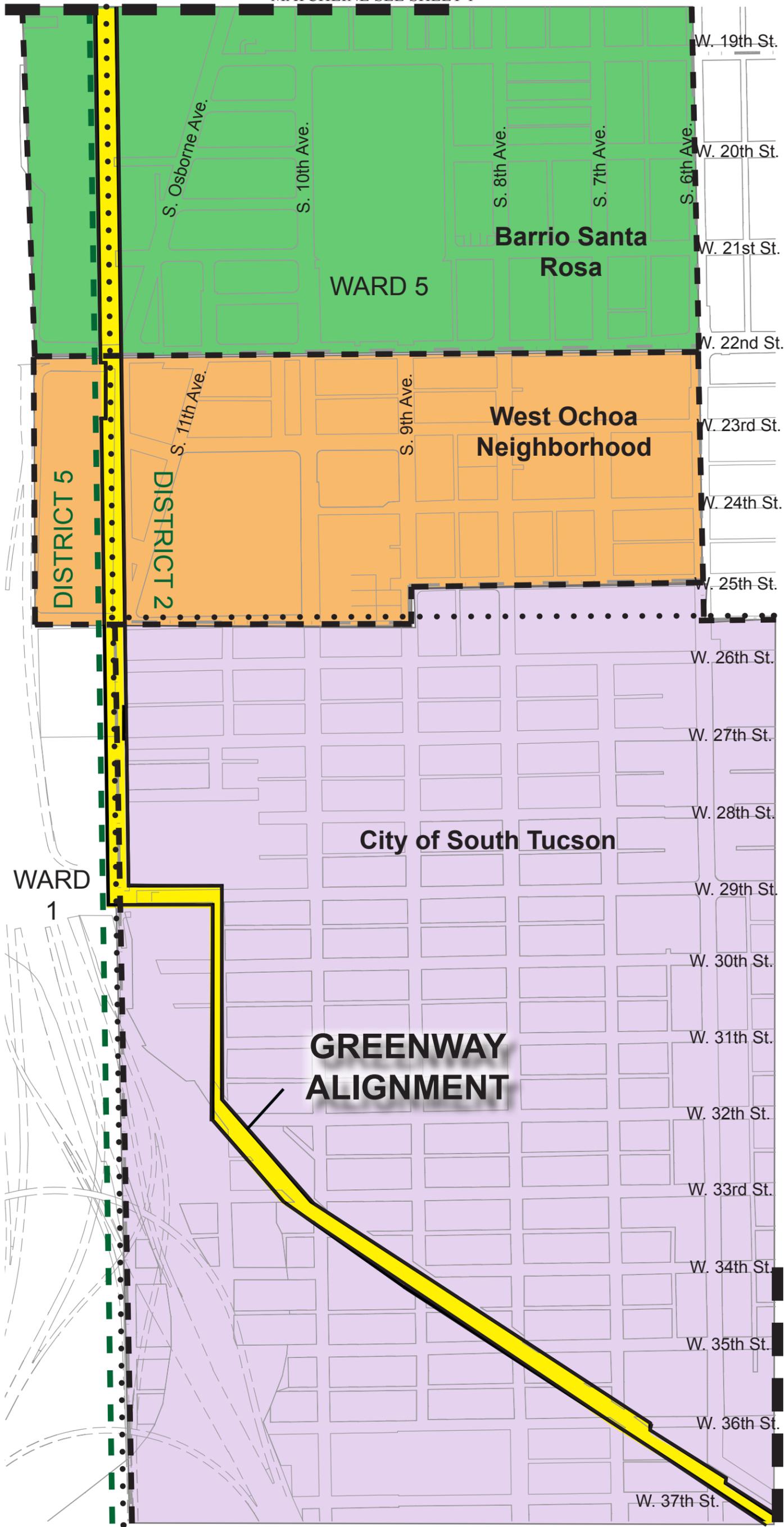
**LEGEND**

- Neighborhoods
- Barrio Anita
- Dunbar Spring
- Barrio Santa Rosa
- Barrio Viejo
- El Presidio
- West Ochoa
- City of South Tucson
- South Park
- Western Hills
- Las Vistas
- Wards
- - - Districts
- - - Neighborhood Boundaries



**Figure 2**

MATCHLINE SEE SHEET 2



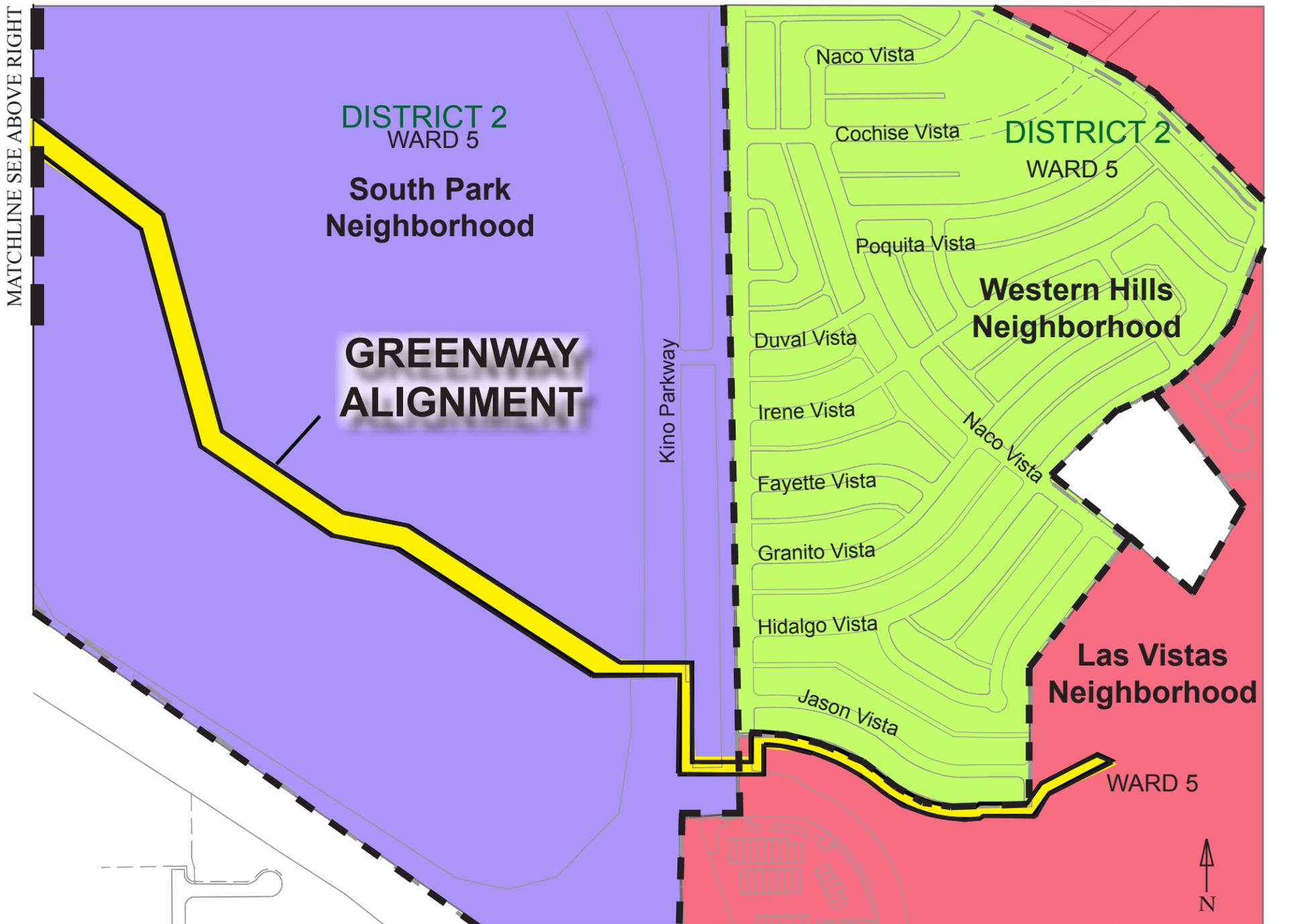
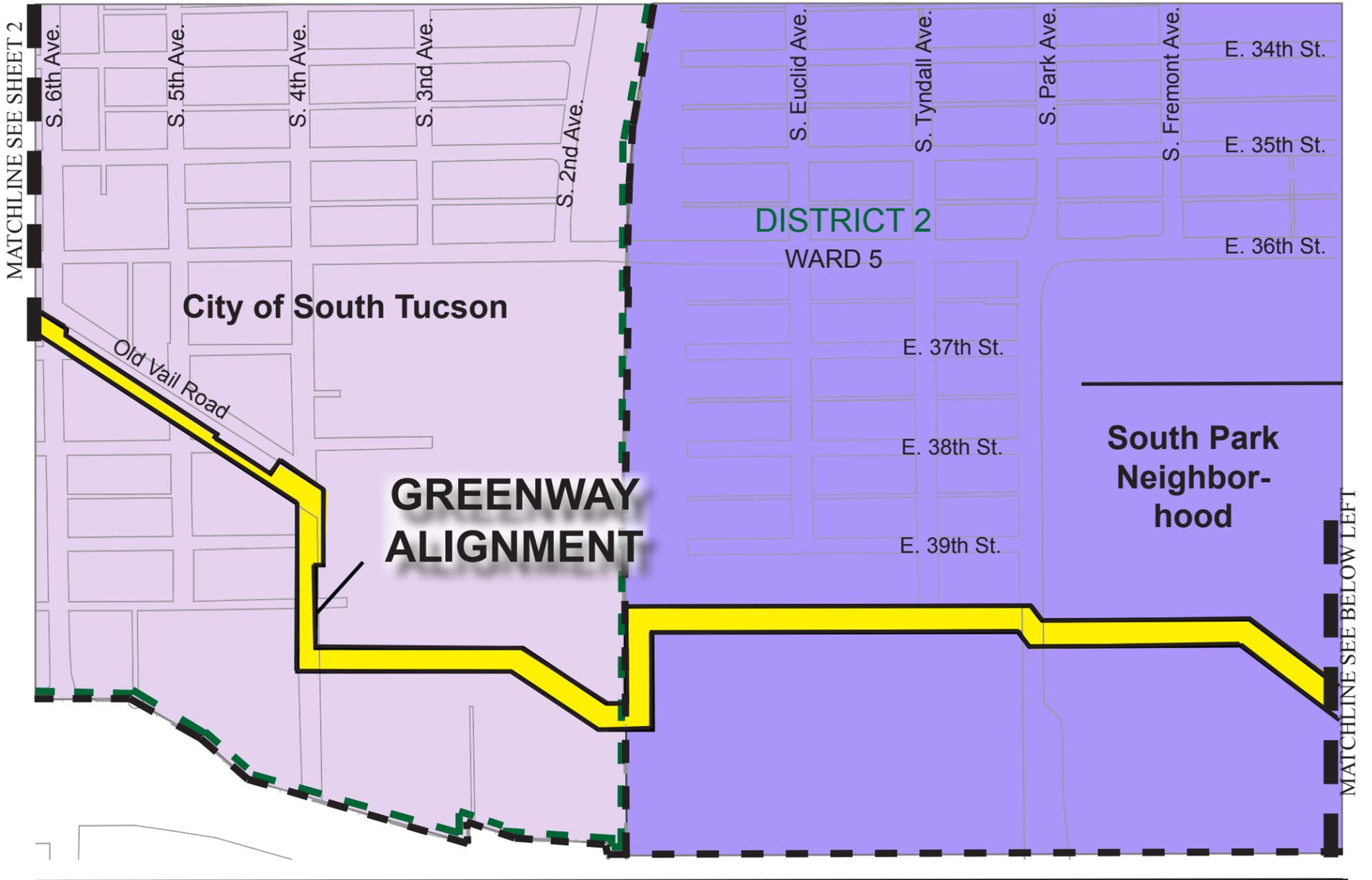
### LEGEND

- Neighborhoods
  - Barrio Anita
  - Dunbar Spring
  - Barrio Santa Rosa
  - Barrio Viejo
  - El Presidio
  - West Ochoa
  - City of South Tucson
  - Western Hills
  - Las Vistas
  - South Park
- Wards
- Neighborhood Boundaries
- - - Districts

MATCHLINE SEE SHEET 3

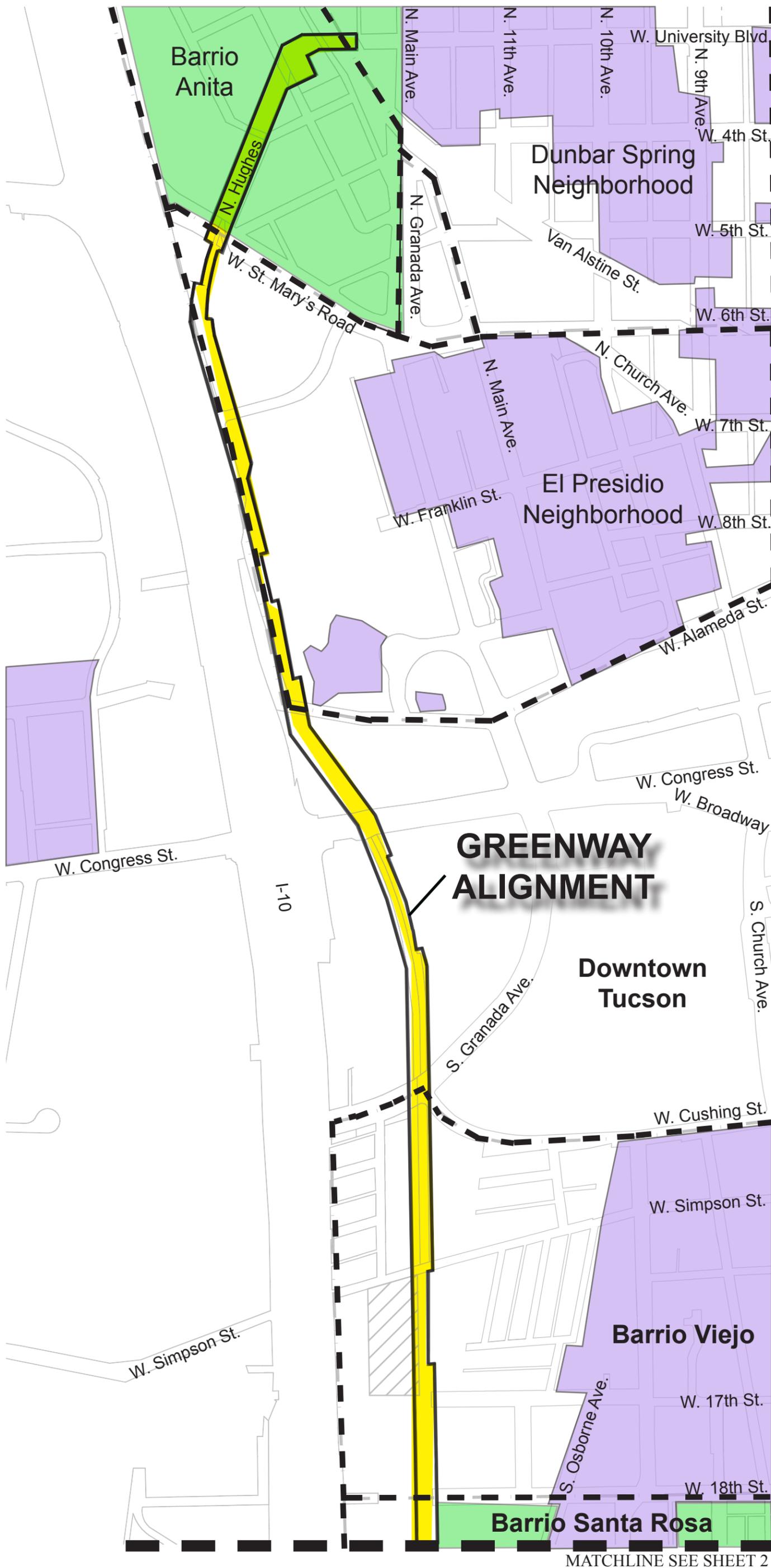


**Figure 2**



- LEGEND**
- |                         |                   |                      |               |
|-------------------------|-------------------|----------------------|---------------|
| Neighborhoods           | Barrio Santa Rosa | West Ochoa           | Western Hills |
| Neighborhood Boundaries | Barrio Santa Rosa | City of South Tucson | Las Vistas    |
|                         | El Presidio       | South Park           | Wards         |
| Barrio Anita            | Dunbar Spring     |                      | Districts     |

**Figure 2**



**LEGEND**

Current Historic Districts, National Register

Eligible for Historic Districts, National Register

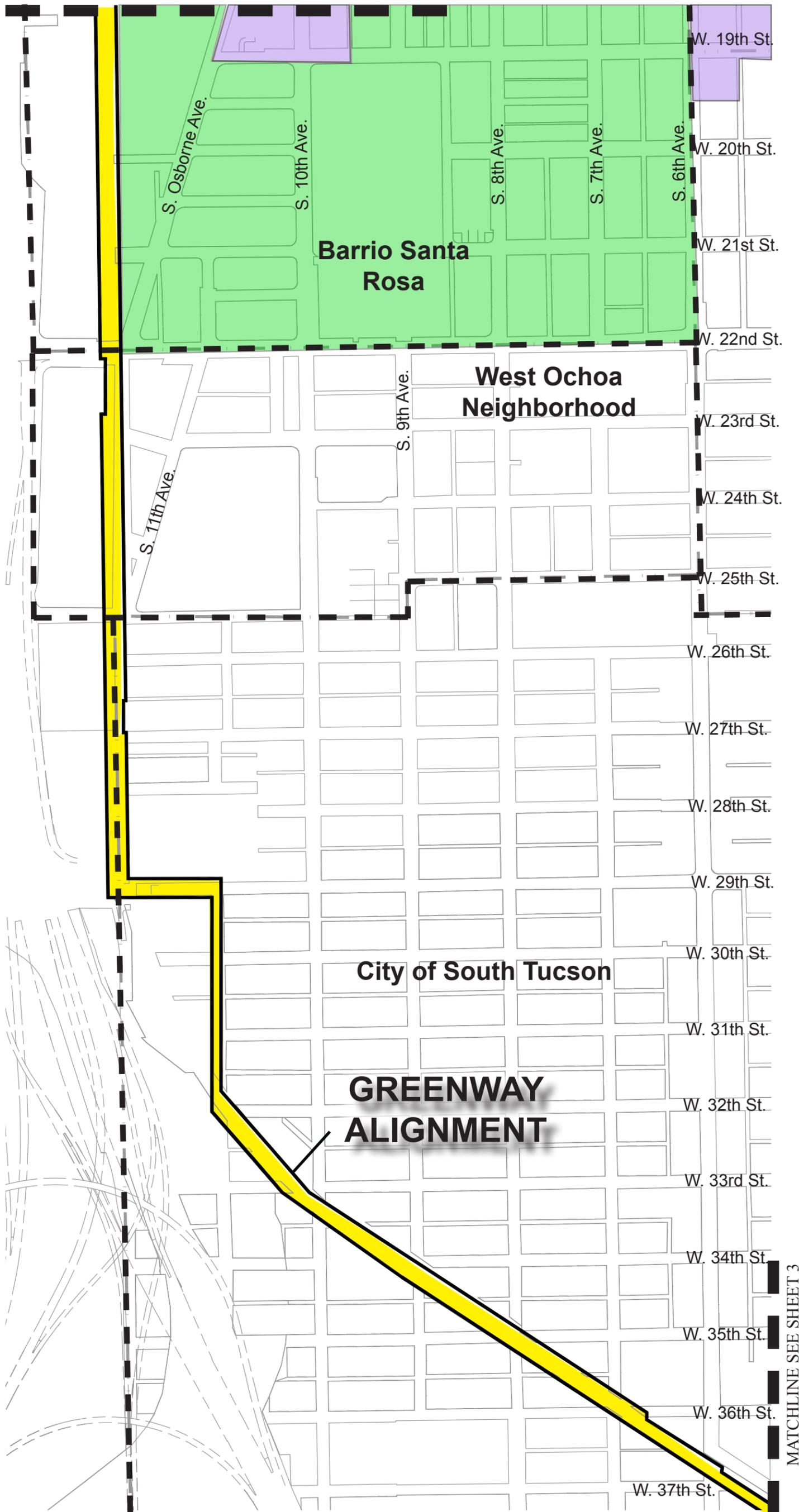
NOTE: There are no designated or eligible Historic Districts south of 22nd Street within the project area.

Neighborhood Boundaries



**Figure 3**

MATCHLINE SEE SHEET 2



**LEGEND**

 Current Historic Districts, National Register

 Eligible for Historic Districts, National Register

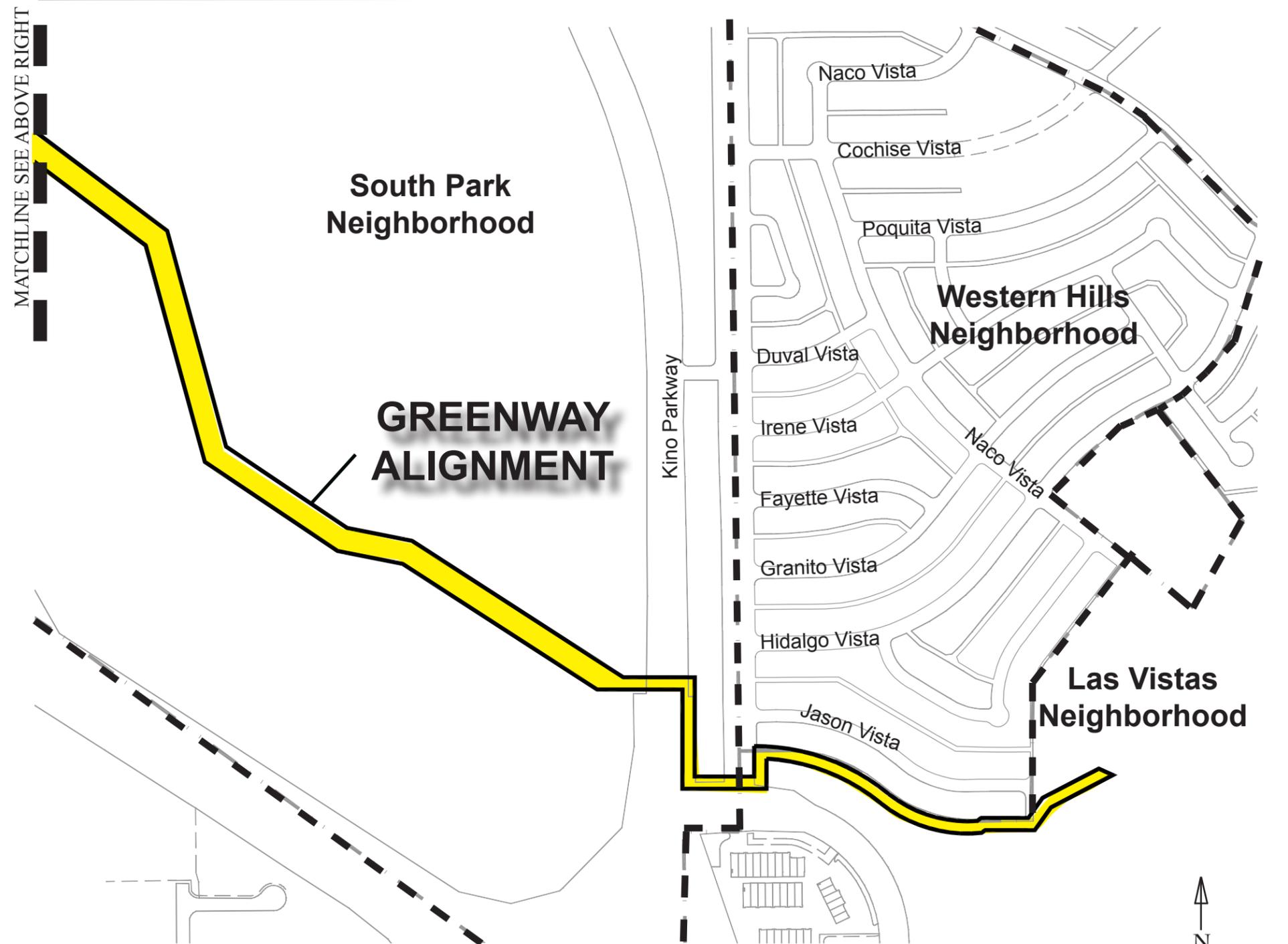
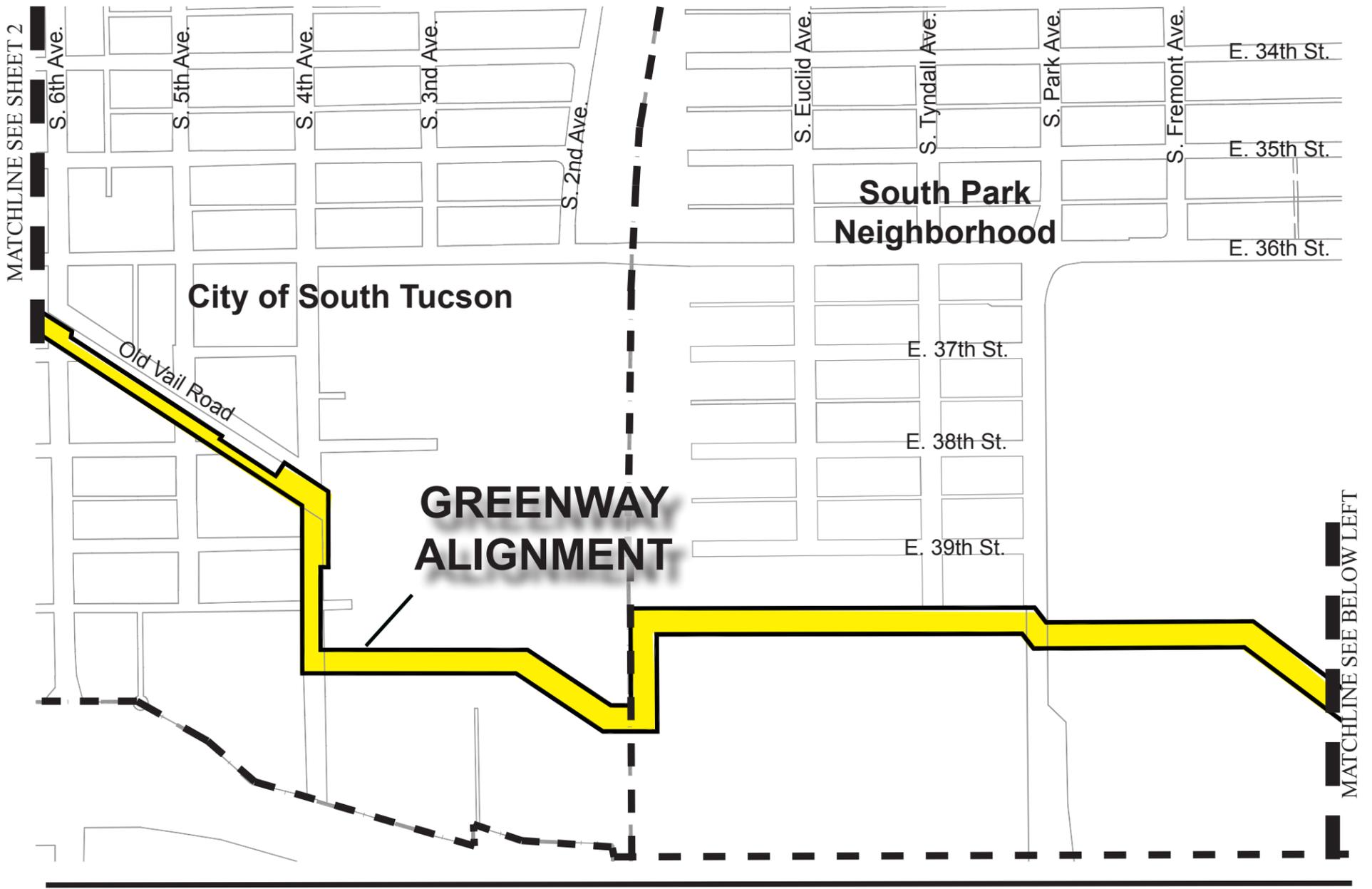
NOTE: There are no designated or eligible Historic Districts south of 22nd Street within the project area.

 Neighborhood Boundaries

MATCHLINE SEE SHEET 3



**Figure 3**



**LEGEND**

NOTE: There are no designated or eligible Historic Districts south of 22nd Street within the project area.

--- Neighborhood Boundaries



**Figure 3**



## LEGEND

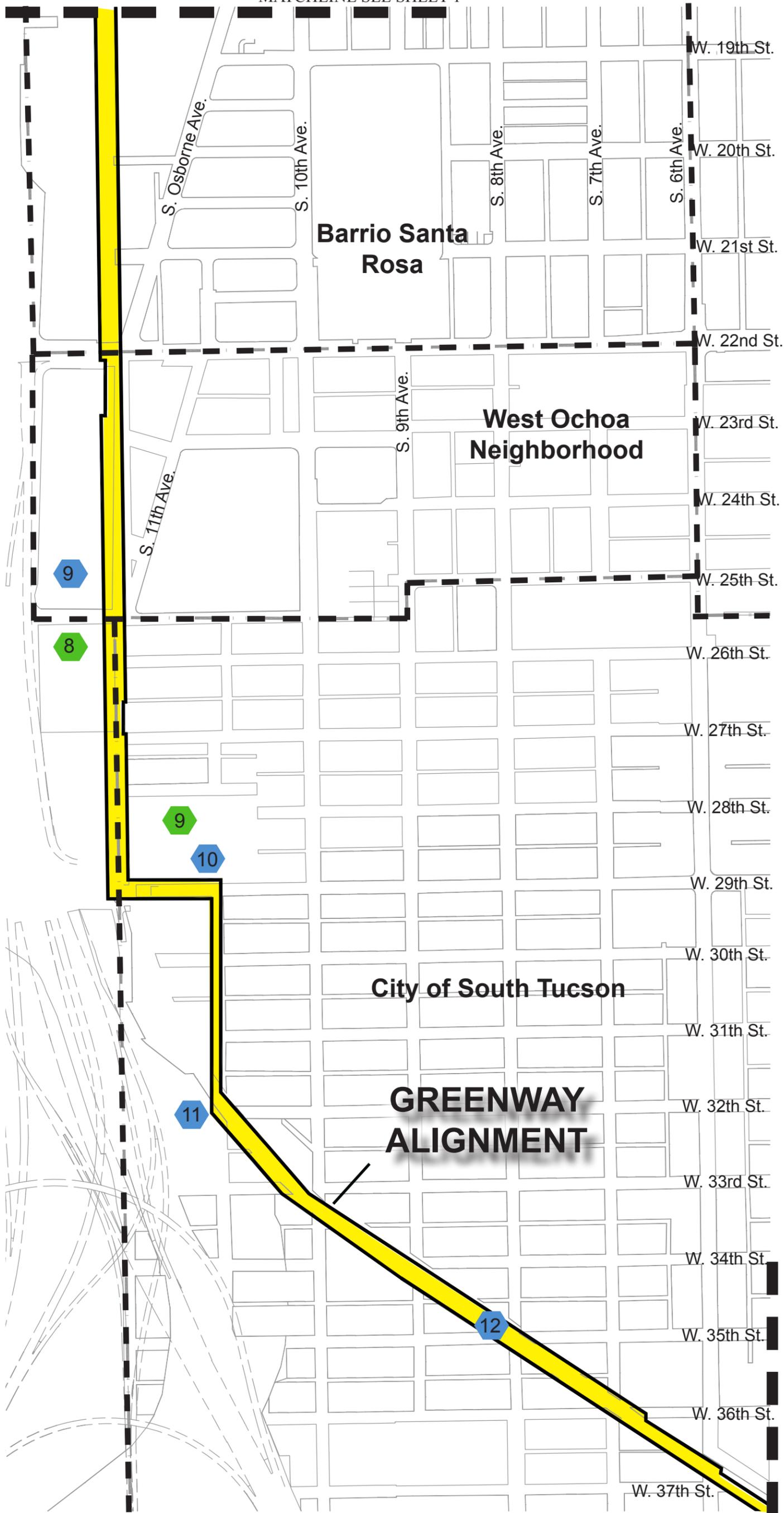
### Landmarks

- ⬡ Historic Landmarks
  - 1 Holy Family Catholic Church
  - 2 Oury Park
  - 3 Davis School
  - 4 Historic Rail Tracks
  - 5 Manning House
  - 6 Historic Railroad Depot
  - 7 Carillo School
  - 8 Historic Rail Road Office Bldg.
  
- ⬡ Non-Historic Landmarks
  - 1 Dunbar Spring Community Garden
  - 2 Interstate 10
  - 3 United States Federal Courthouse
  - 4 Tucson Community Center
  - 5 Fire Central, Station #1 City of Tucson
  - 6 Gem and Mineral Show Grounds
  - 7 Santa Cruz River Park
  
- Neighborhood Boundaries



**Figure 4**

MATCHLINE SEE SHEET 2



### LEGEND

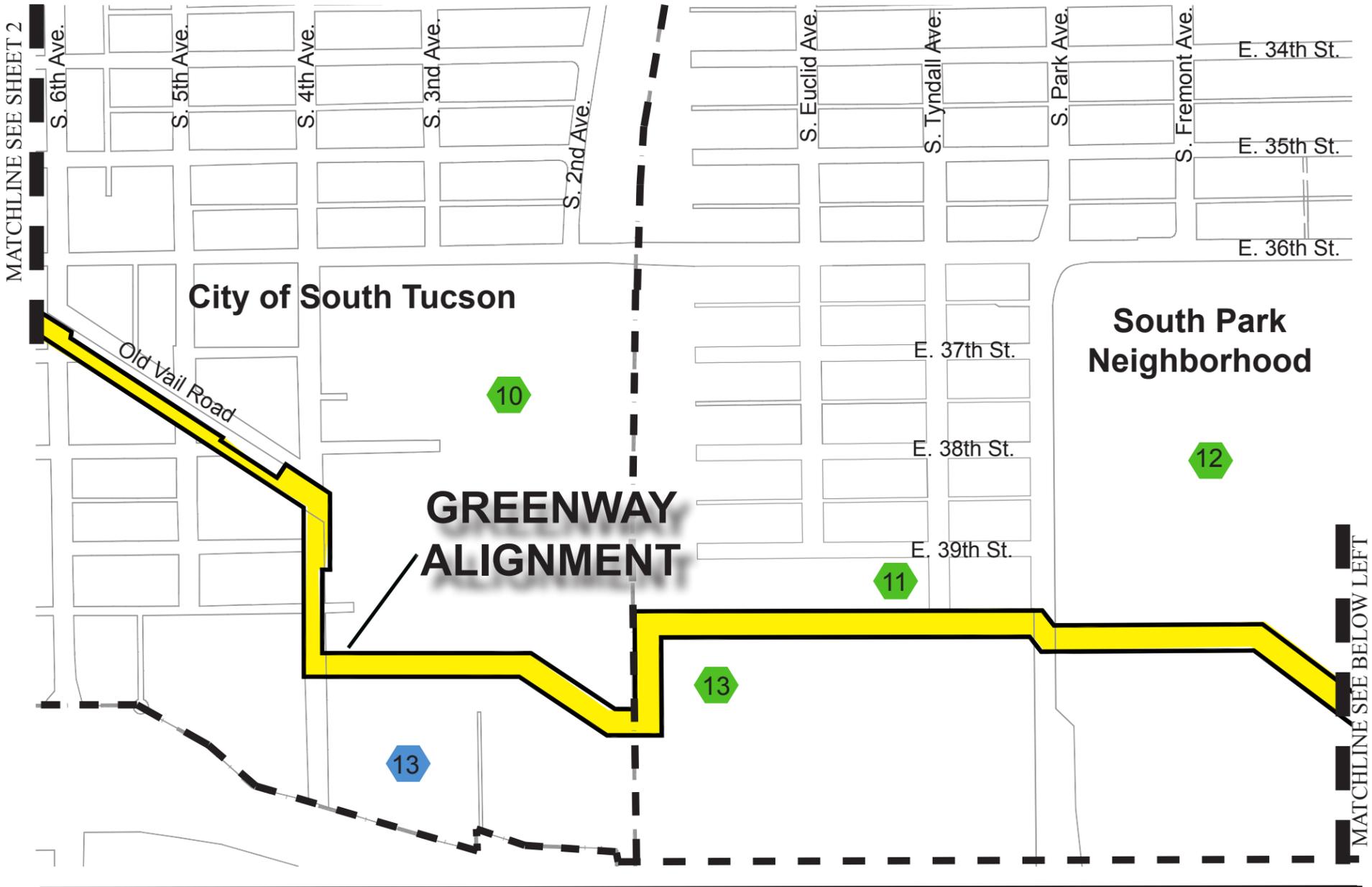
Landmarks

- ⬡ Historic Landmarks
  - 9 Round House
  - 10 Historic Auction House
  - 11 Historic Railway Bridge
  - 12 Raised Railway Alignment
- ⬡ Non-Historic Landmarks
  - 8 City of South Tucson Border
  - 9 La Frontera Center
- Neighborhood Boundaries

MATCHLINE SEE SHEET 3



**Figure 4**



**LEGEND**

Landmarks

--- Neighborhood Boundaries

● Historic Landmarks

13 Spanish Trail Motel

● Non-Historic Landmarks

10 Tucson Greyhound Park

11 Street Scene Park

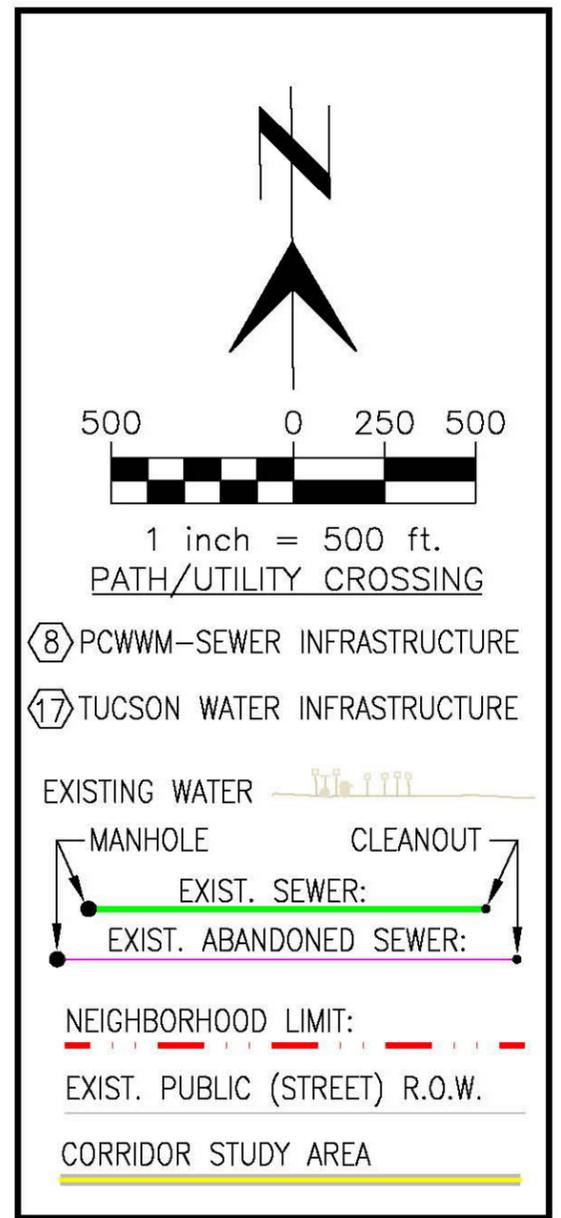
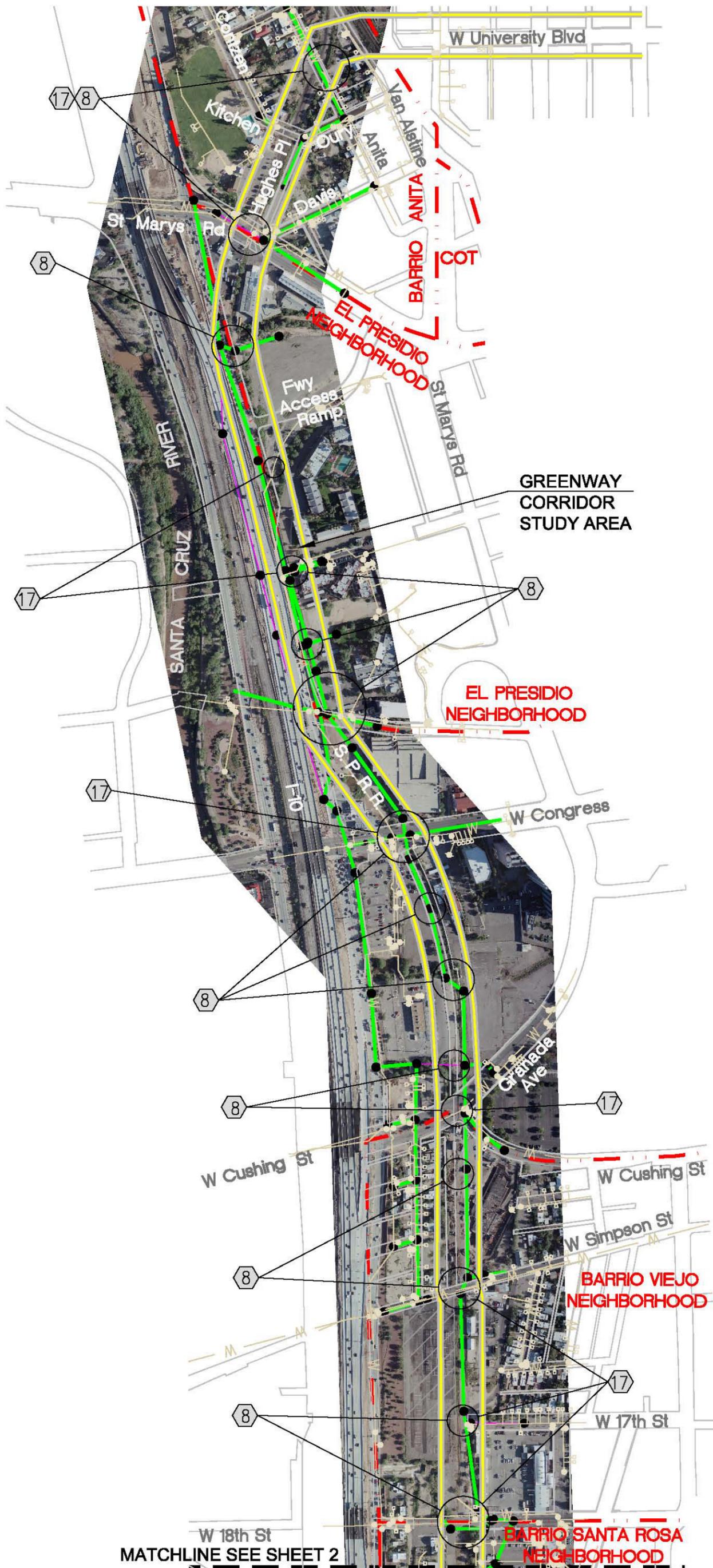
12 Bridges/KB Homes

13 Concrete Structure

14 Ajo Detention Basin

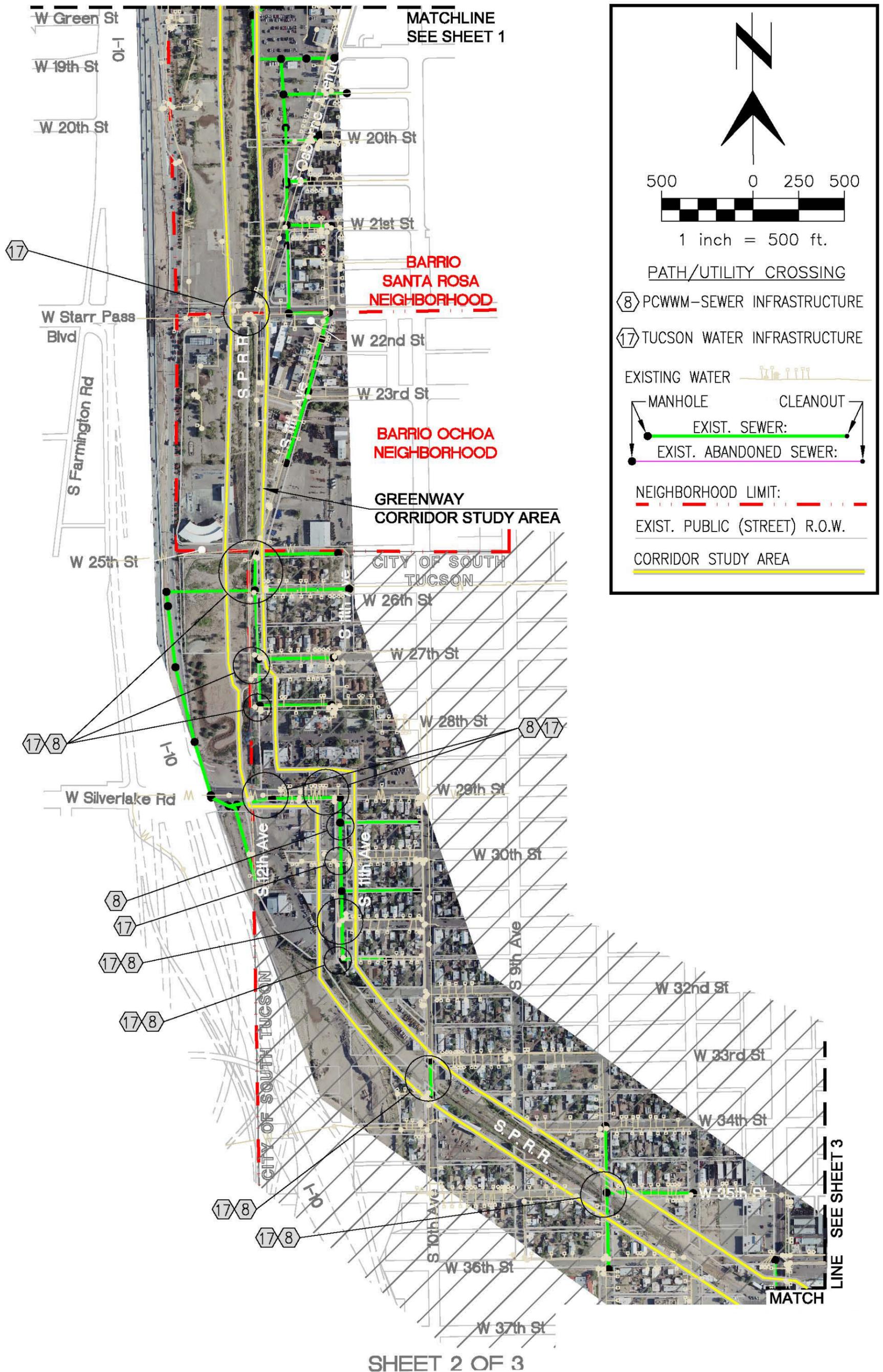
15 Pima County Juvenile Detention Center

**Figure 4**

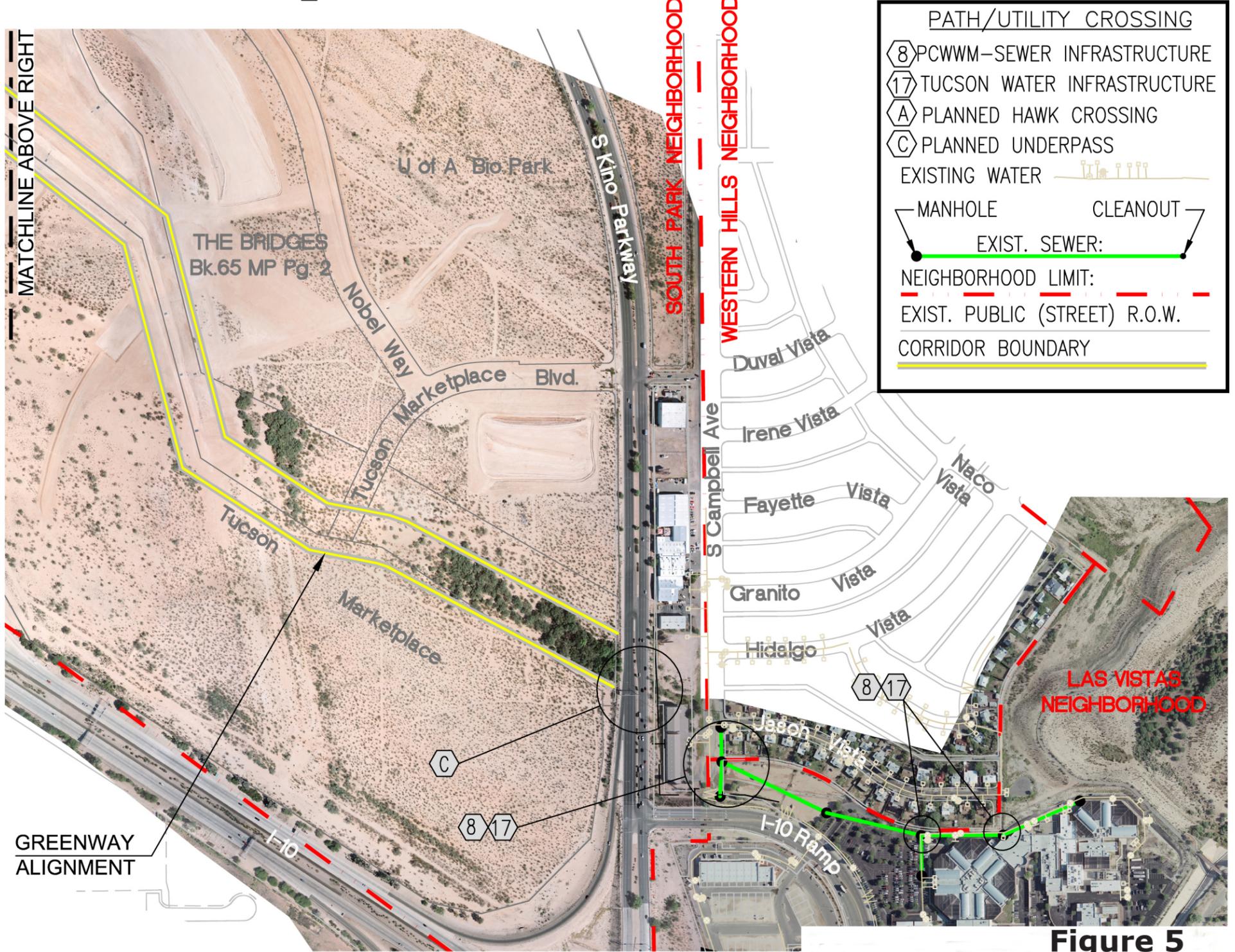
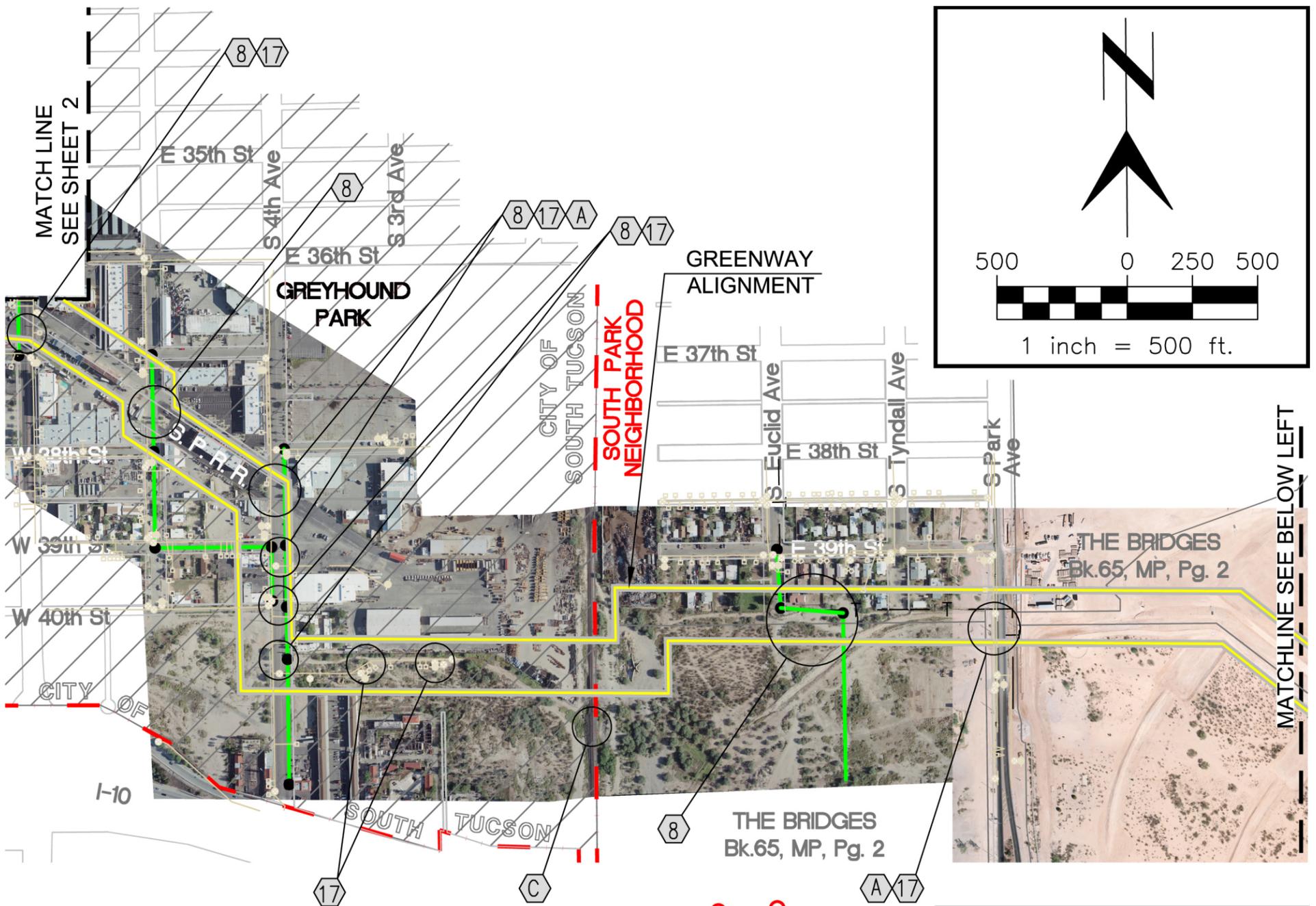


SHEET 1 OF 3

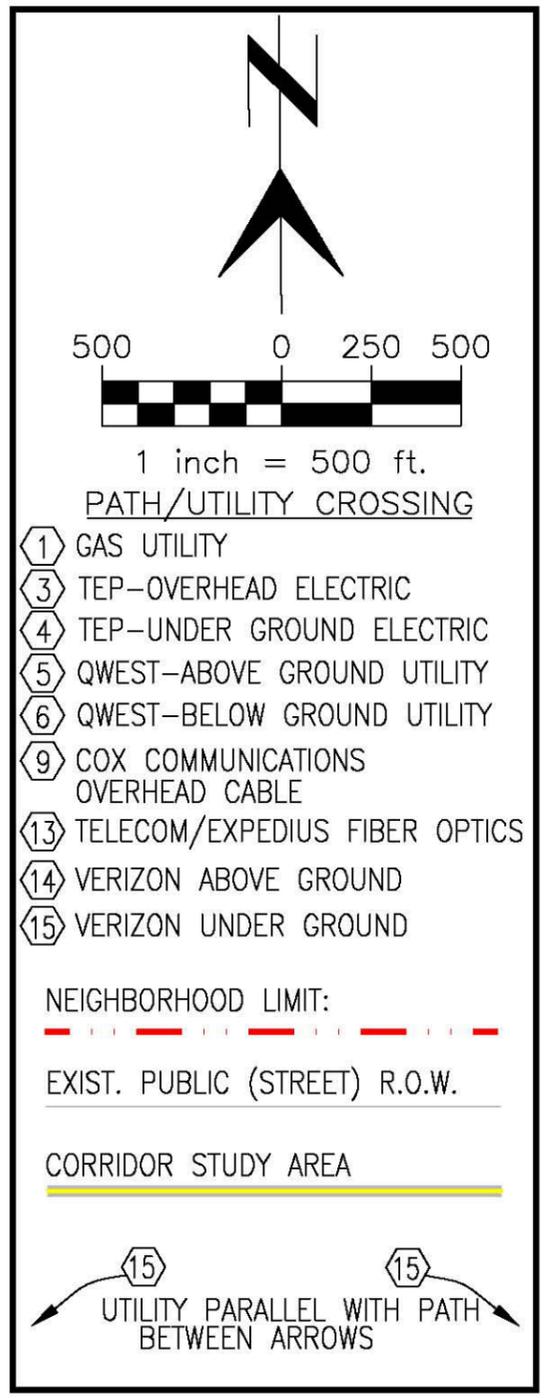
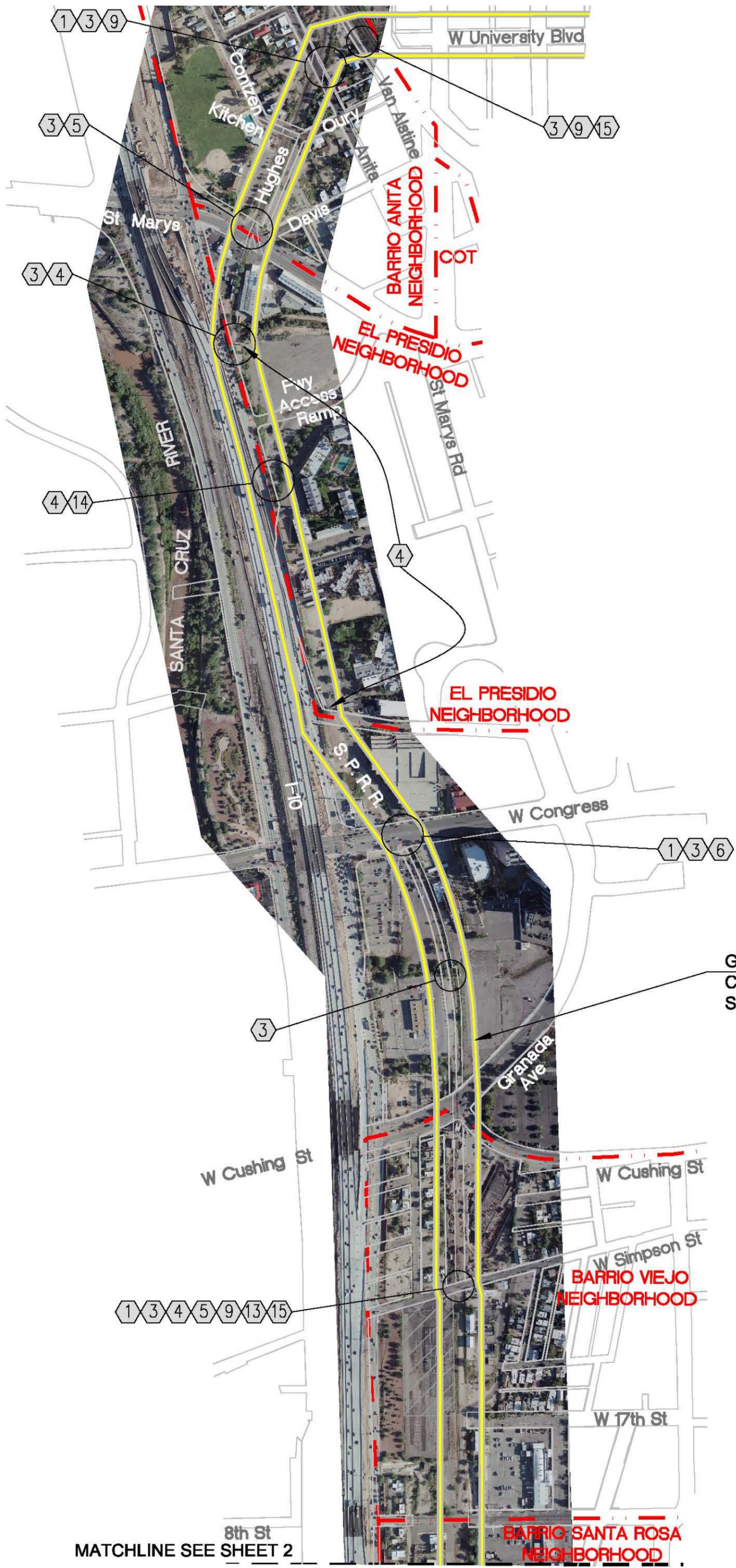
Figure 5



**Figure 5**

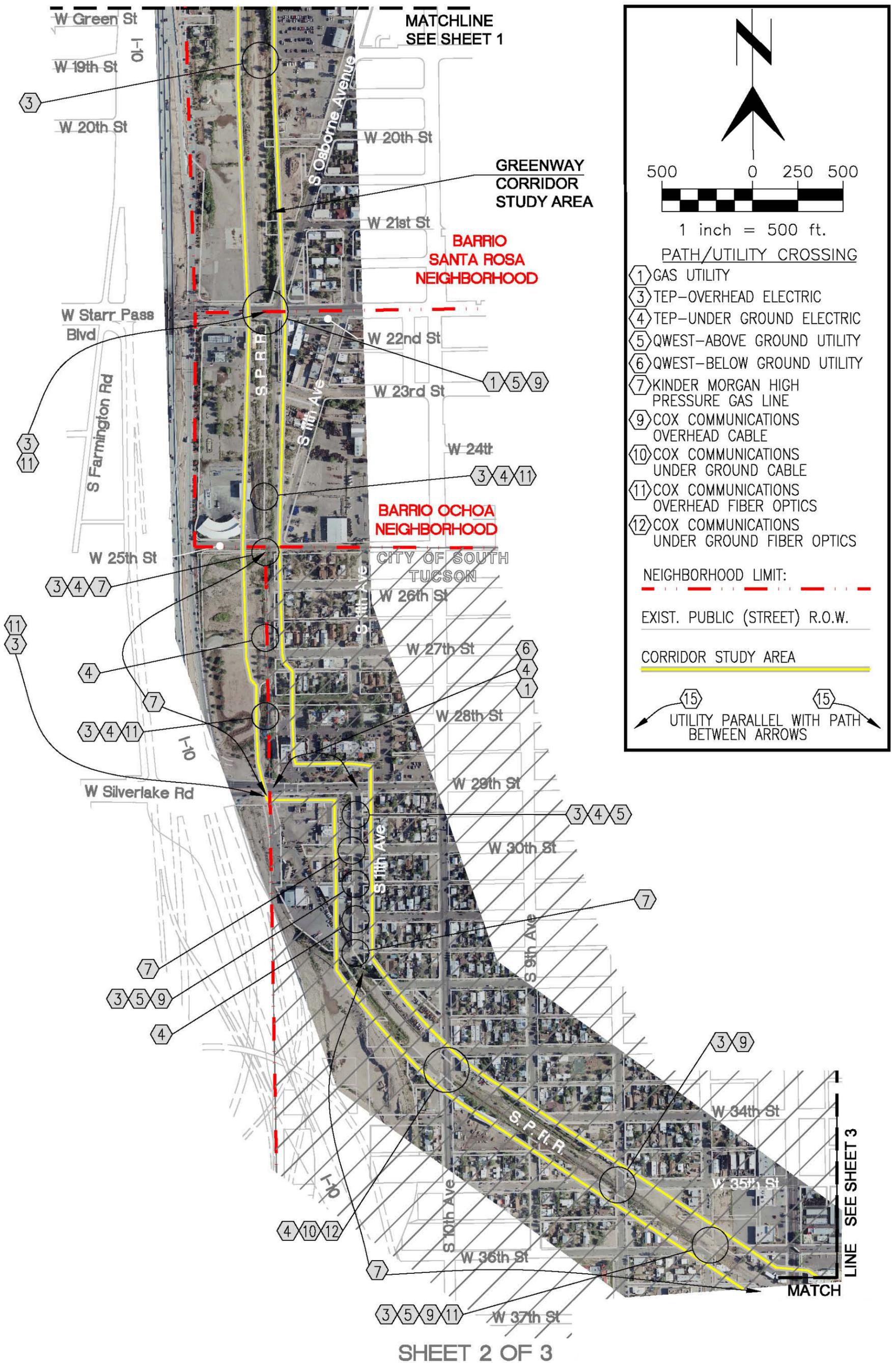


**Figure 5**

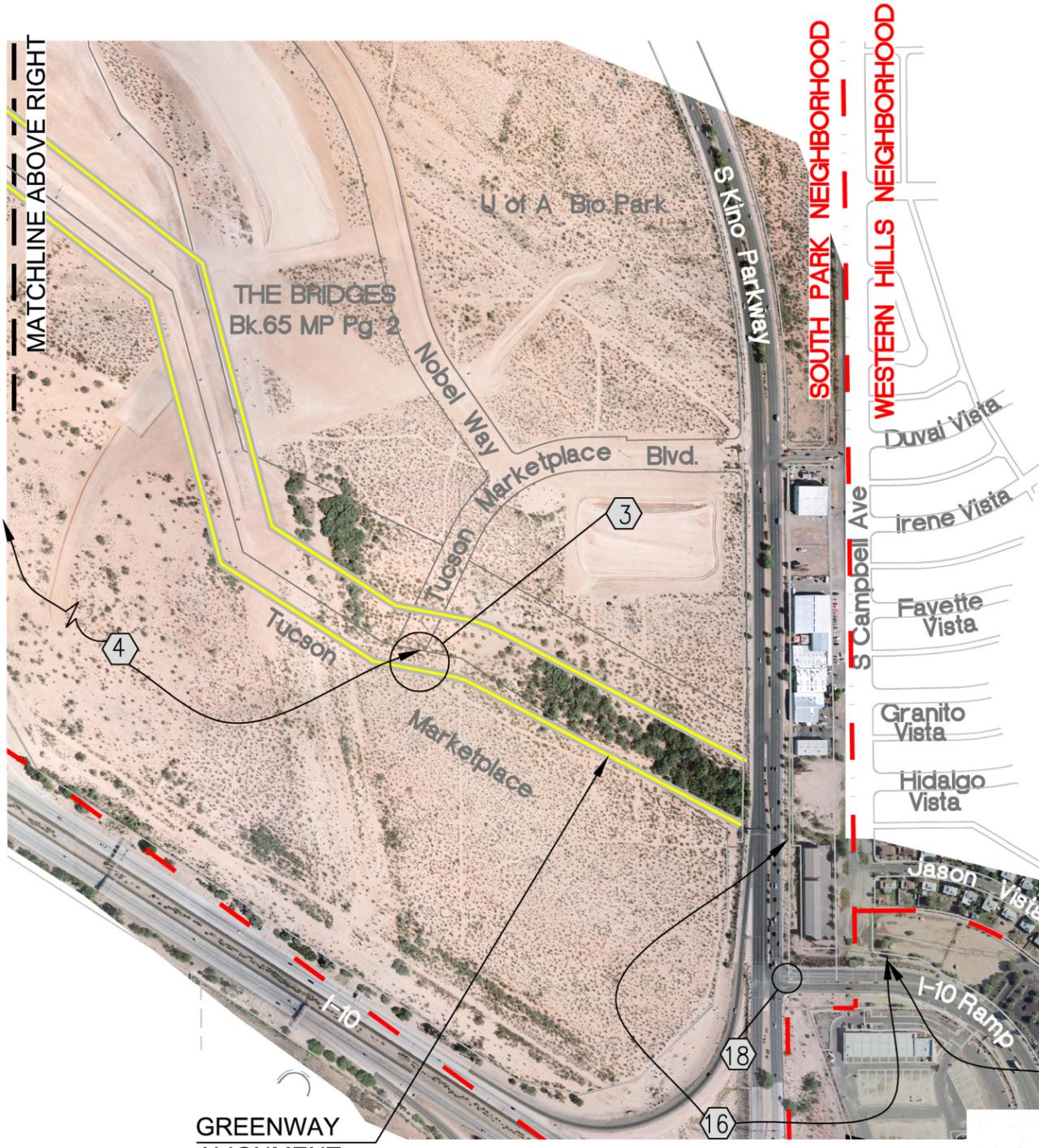
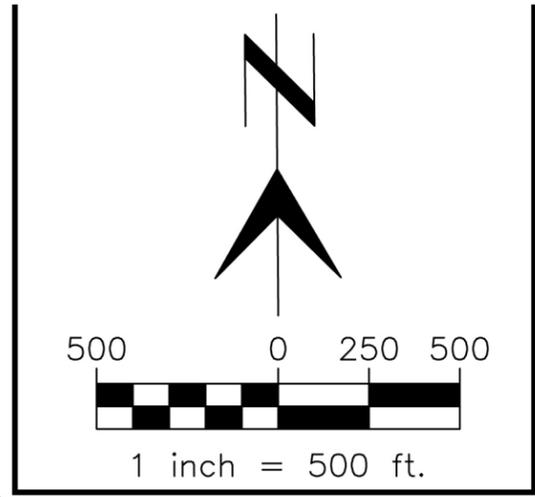
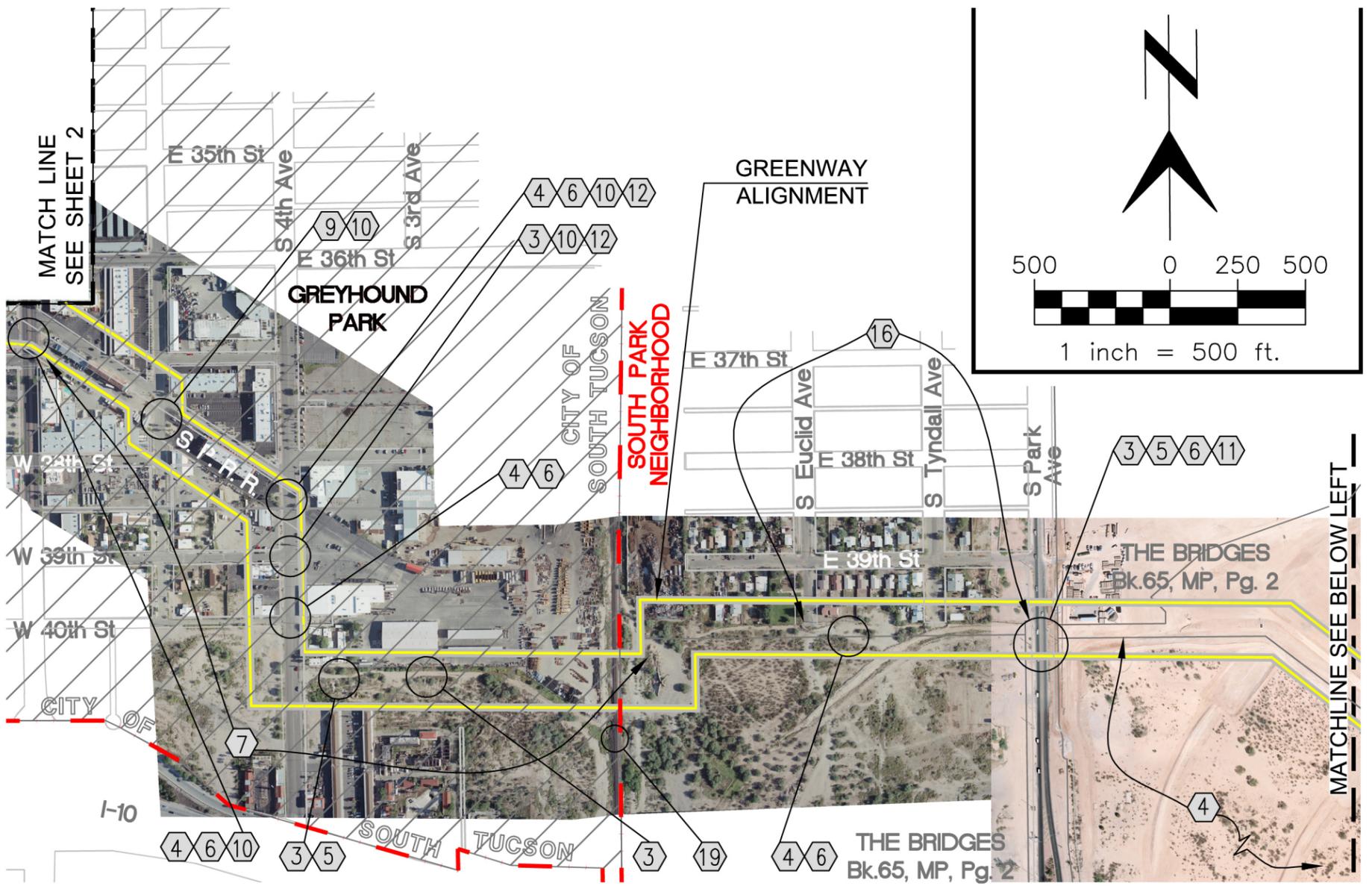


SHEET 1 OF 3

Figure 6



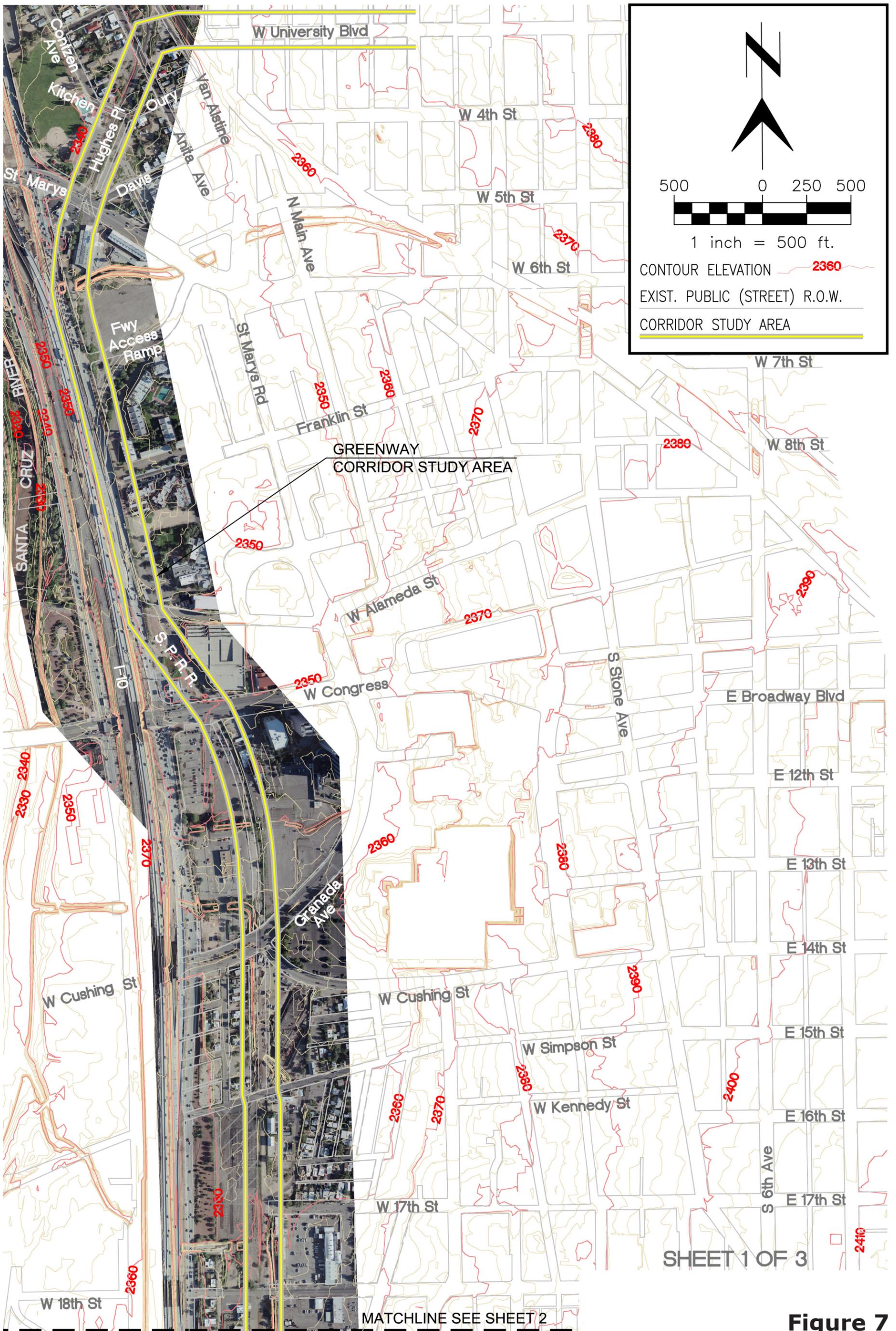
**Figure 6**



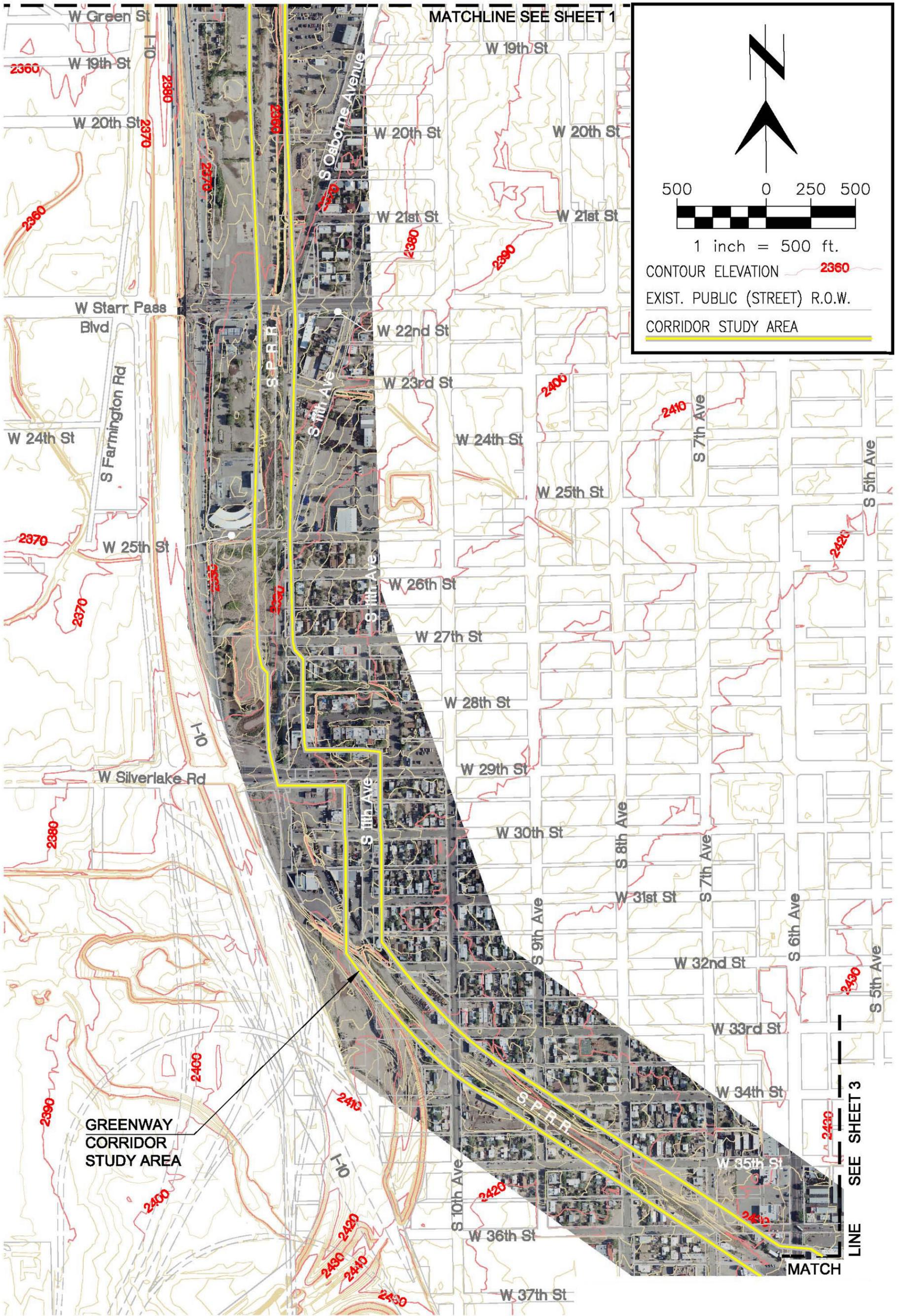
PATH/UTILITY CROSSING	
①	GAS UTILITY
③	TEP-OVERHEAD ELECTRIC
④	TEP-UNDER GROUND ELECTRIC
⑤	QWEST-ABOVE GROUND UTILITY
⑥	QWEST-BELOW GROUND UTILITY
⑦	KINDER MORGAN HIGH PRESSURE GAS LINE
⑨	COX COMMUNICATIONS OVERHEAD CABLE
⑩	COX COMMUNICATIONS UNDER GROUND CABLE
⑪	COX COMMUNICATIONS OVERHEAD FIBER OPTICS
⑫	COX COMMUNICATIONS UNDER GROUND FIBER OPTICS
⑬	AT&T UNDER GROUND FIBER
⑱	SIGNALIZED INTERSECTION
⑲	GREENWAY/RAILROAD TRACK CROSSING
NEIGHBORHOOD LIMIT: <span style="color:red">---</span>	
EXIST. PUBLIC (STREET) R.O.W. <span style="color:red">---</span>	
CORRIDOR BOUNDARY <span style="color:yellow">---</span>	
⑮	UTILITY PARALLEL WITH PATH BETWEEN ARROWS

SHEET 3 OF 3

Figure 6

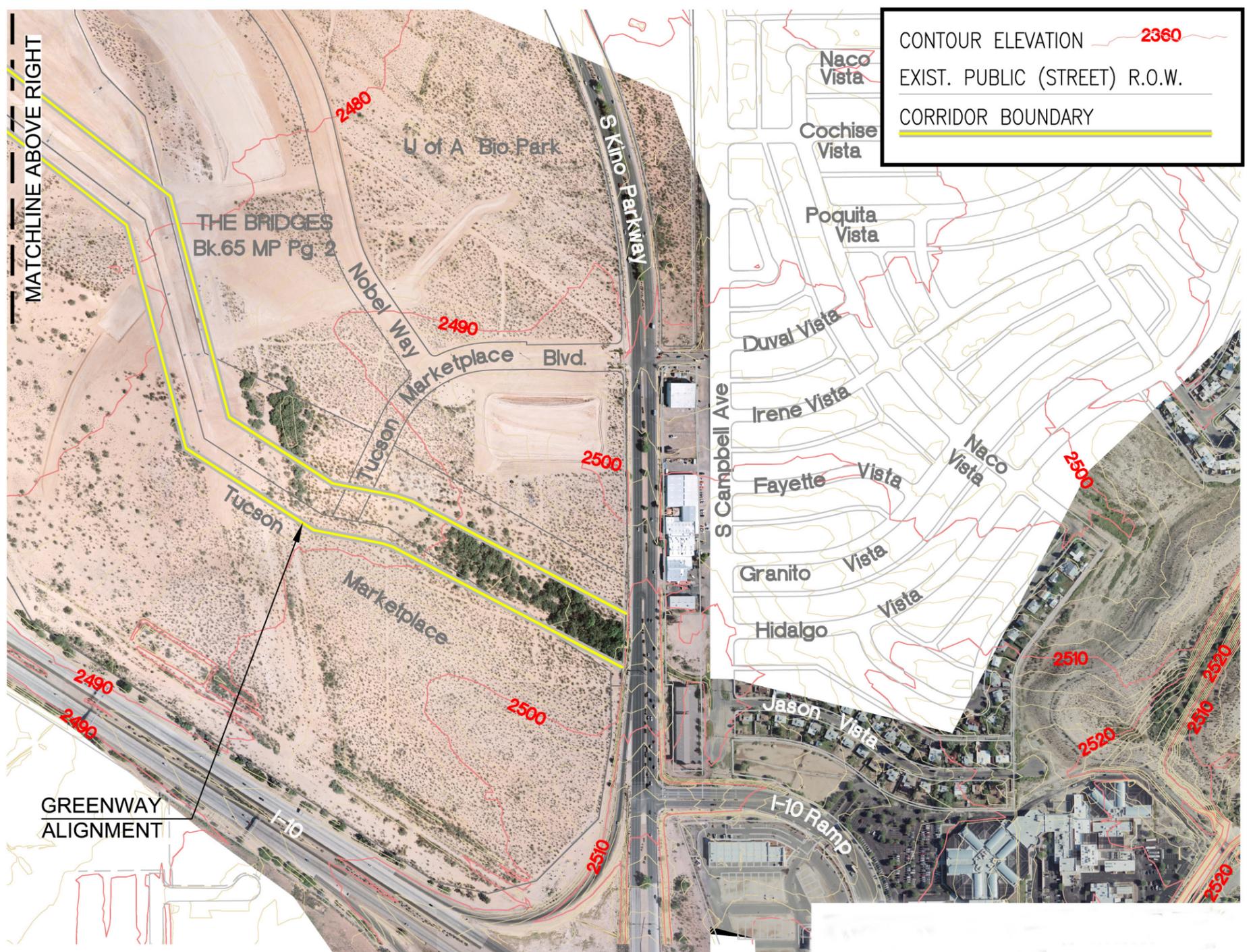
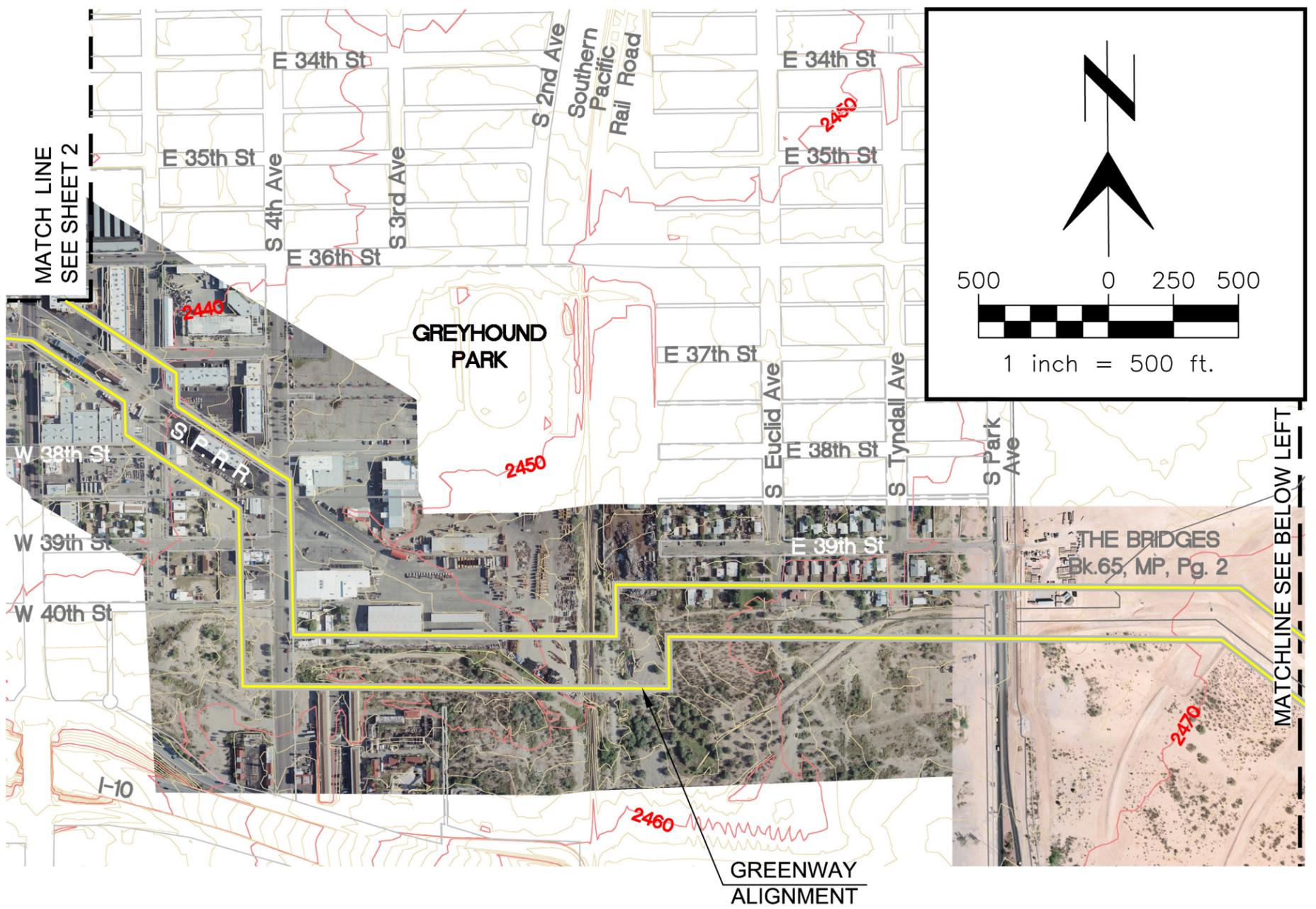


**Figure 7**



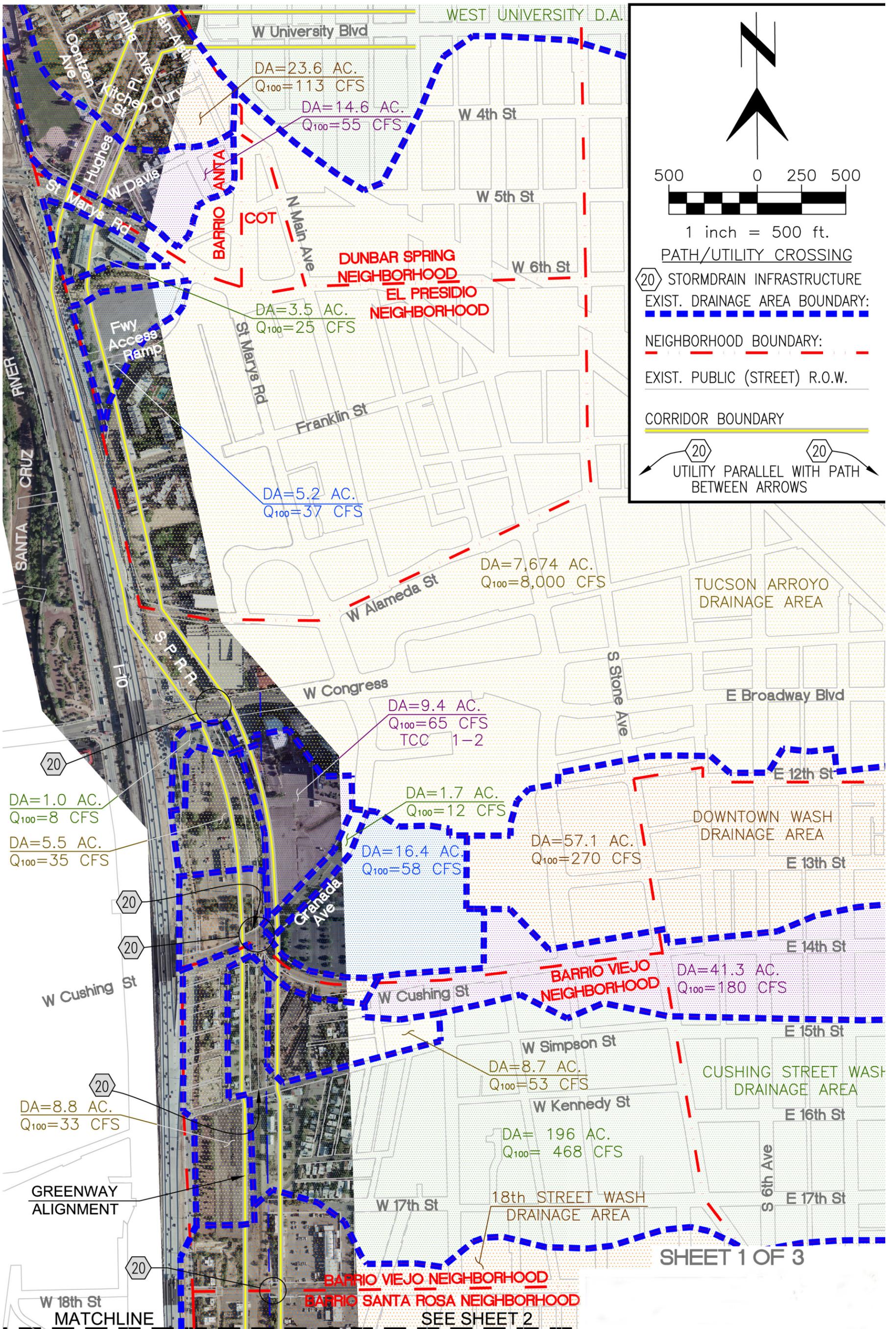
SHEET 2 OF 3

Figure 7

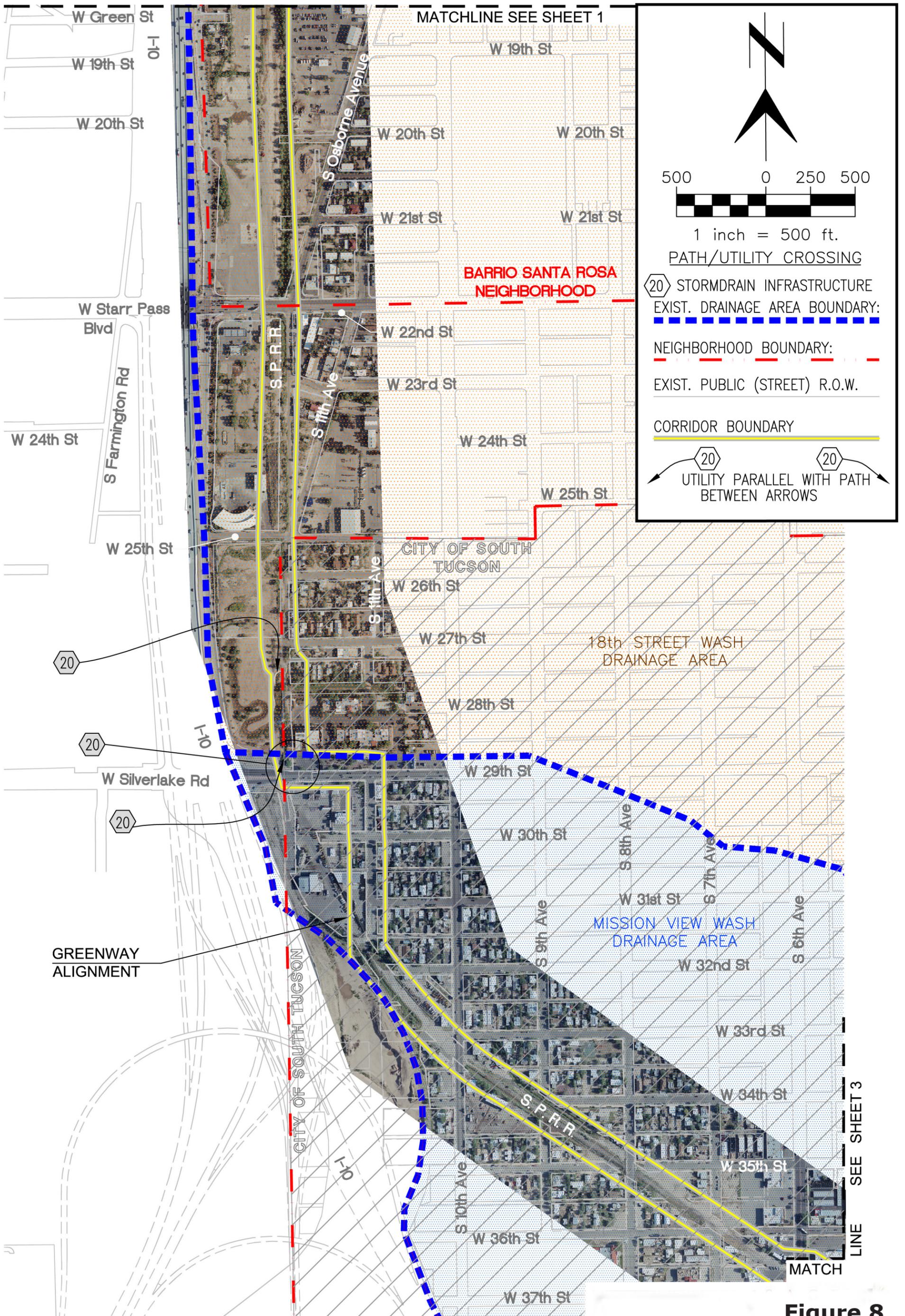


SHEET 3 OF 3

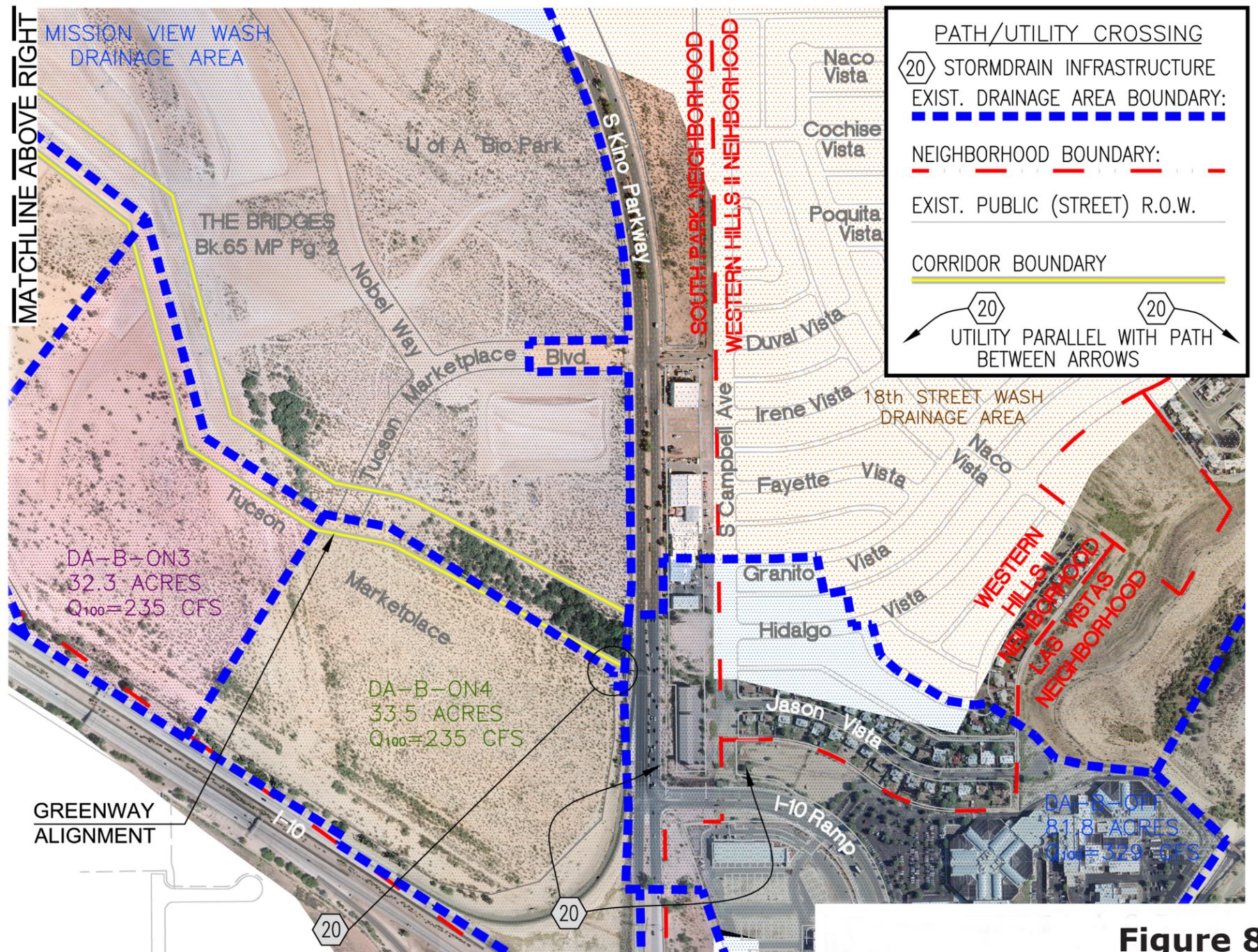
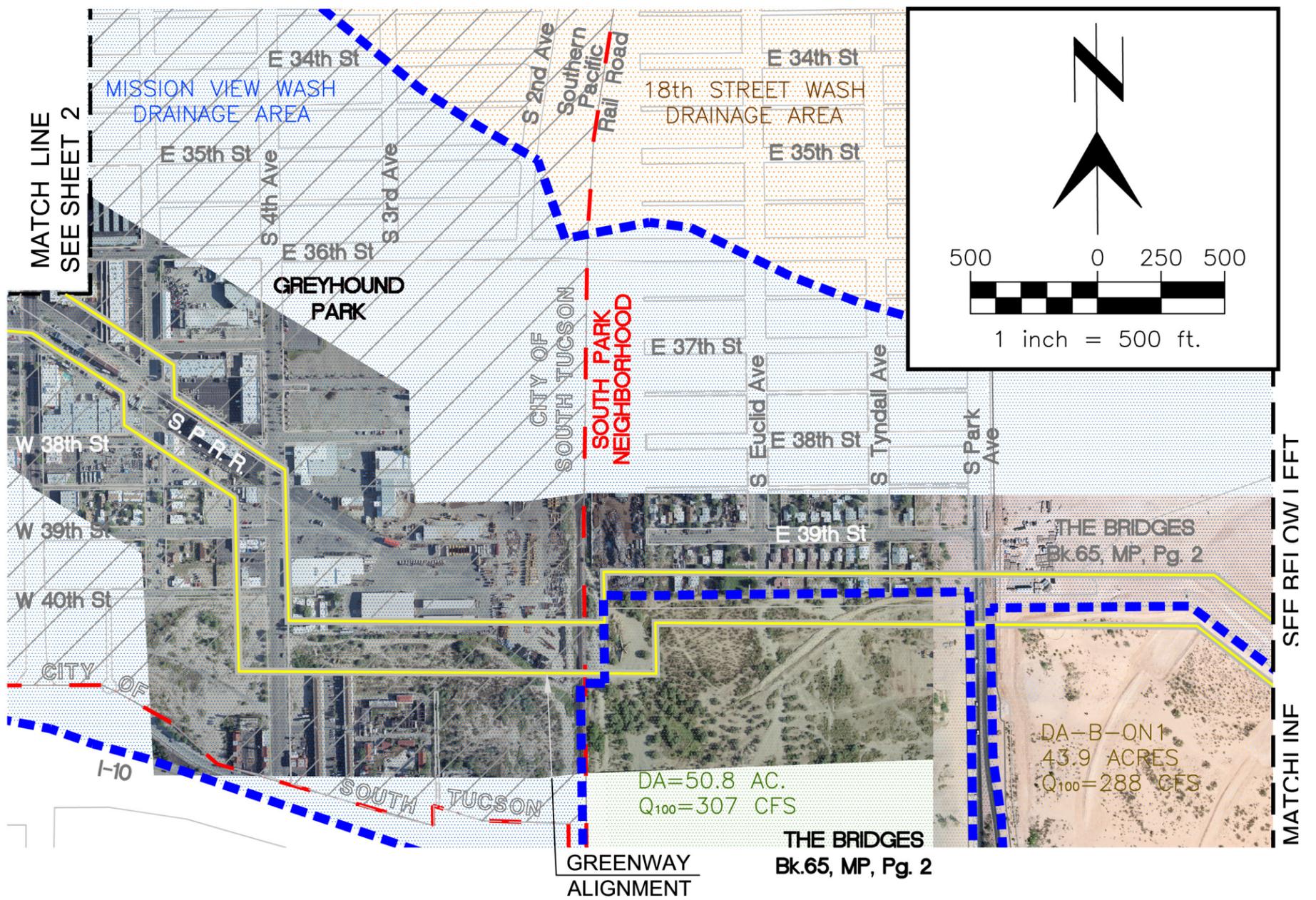
Figure 7



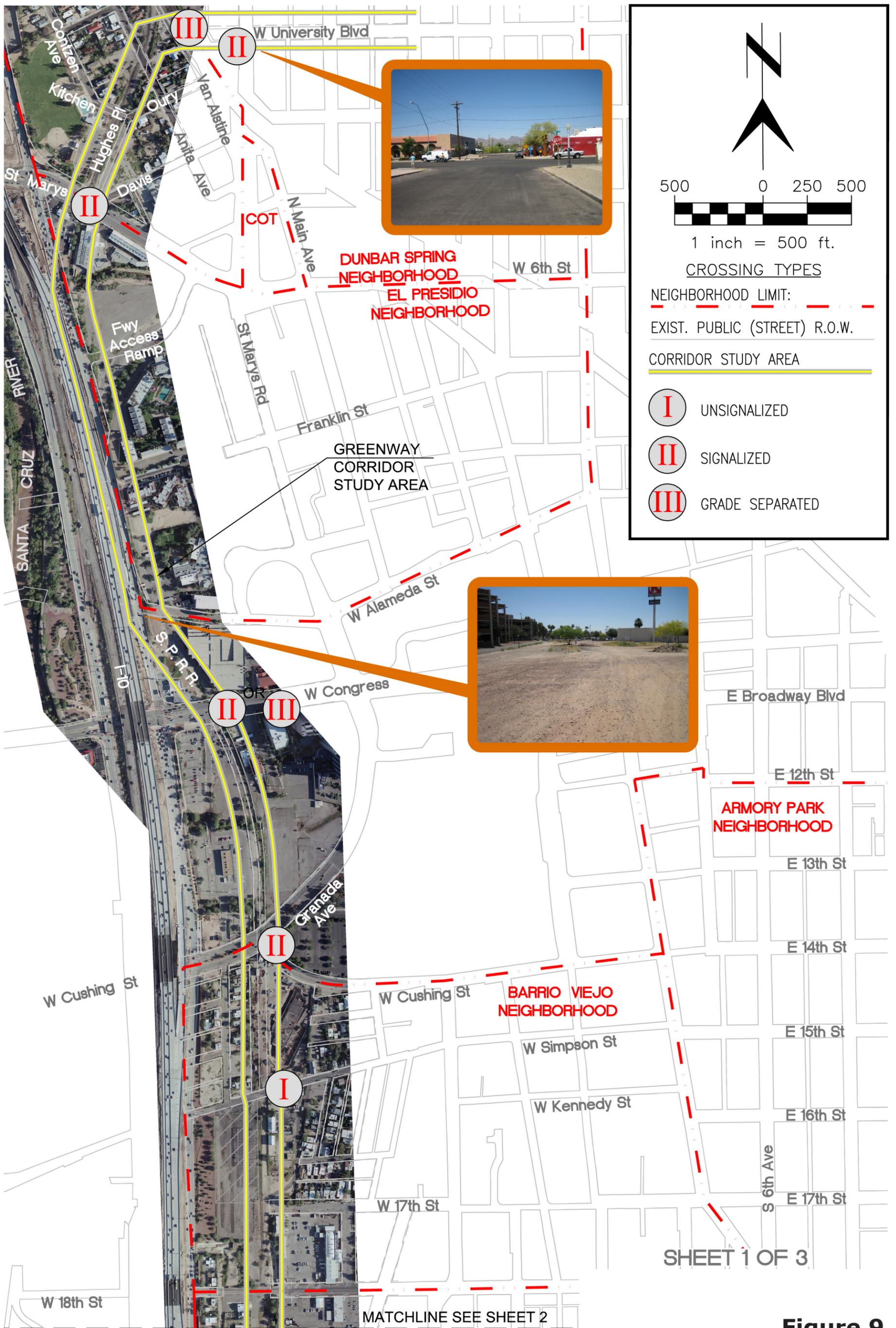
**Figure 8**



**Figure 8**

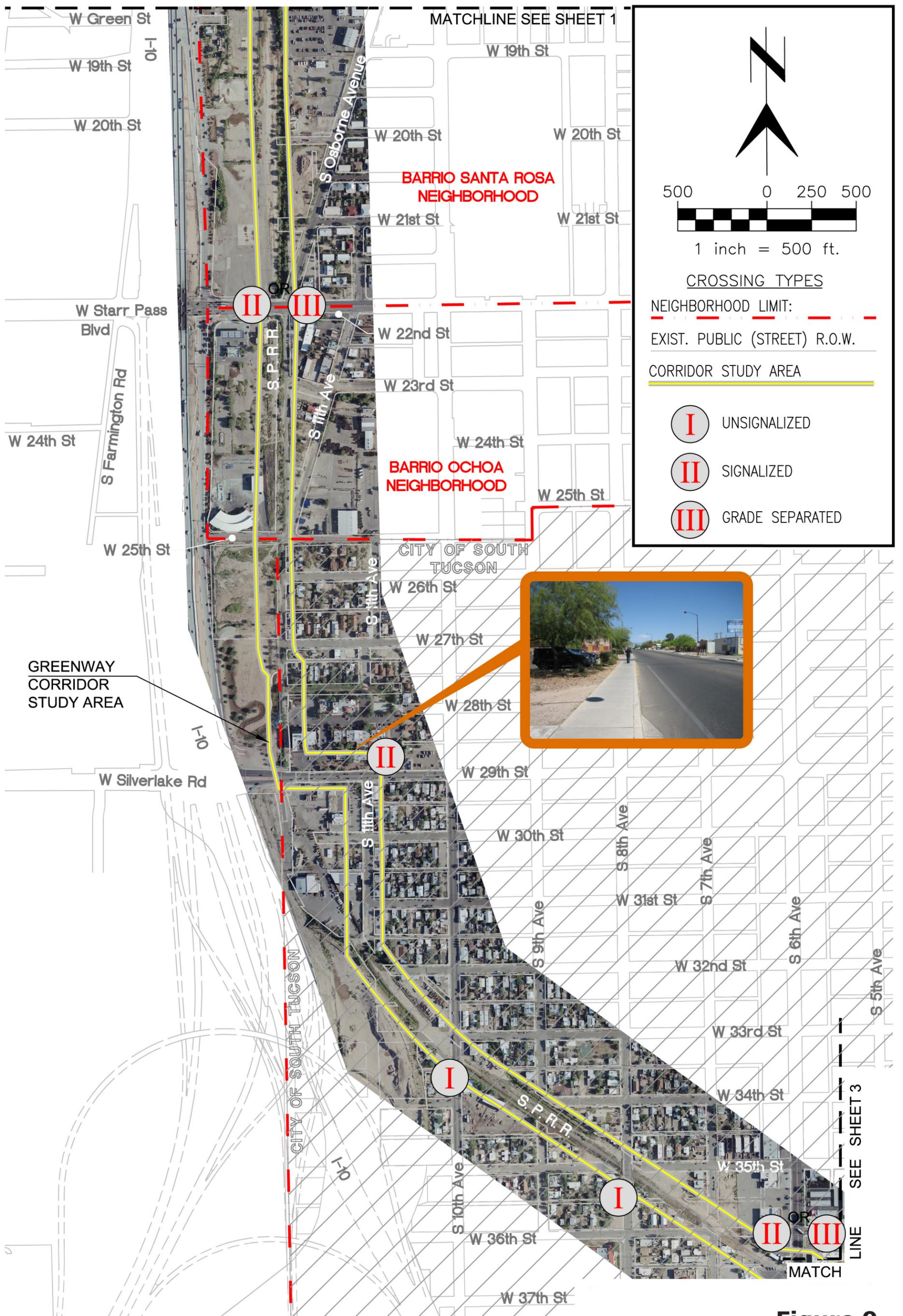


**Figure 8**



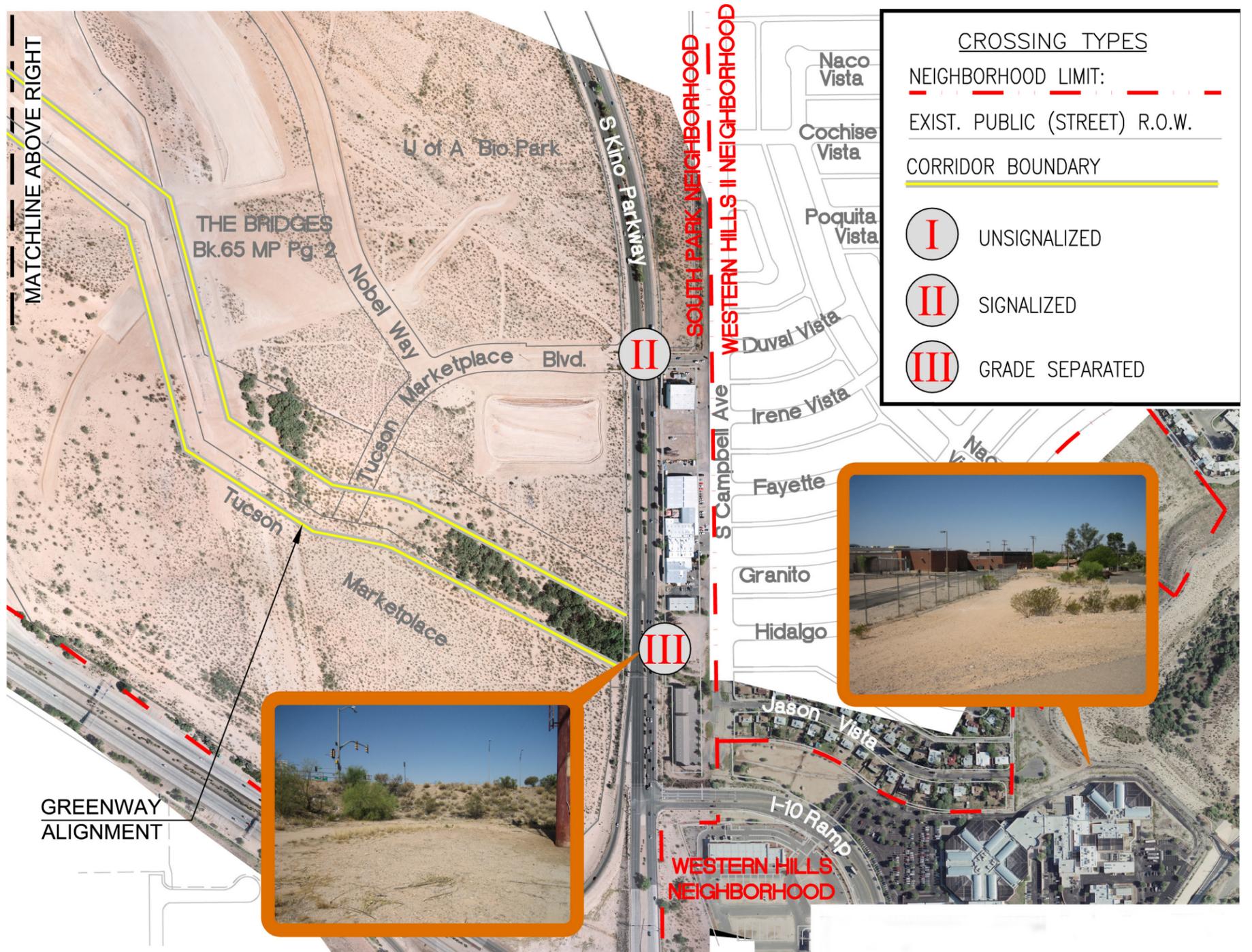
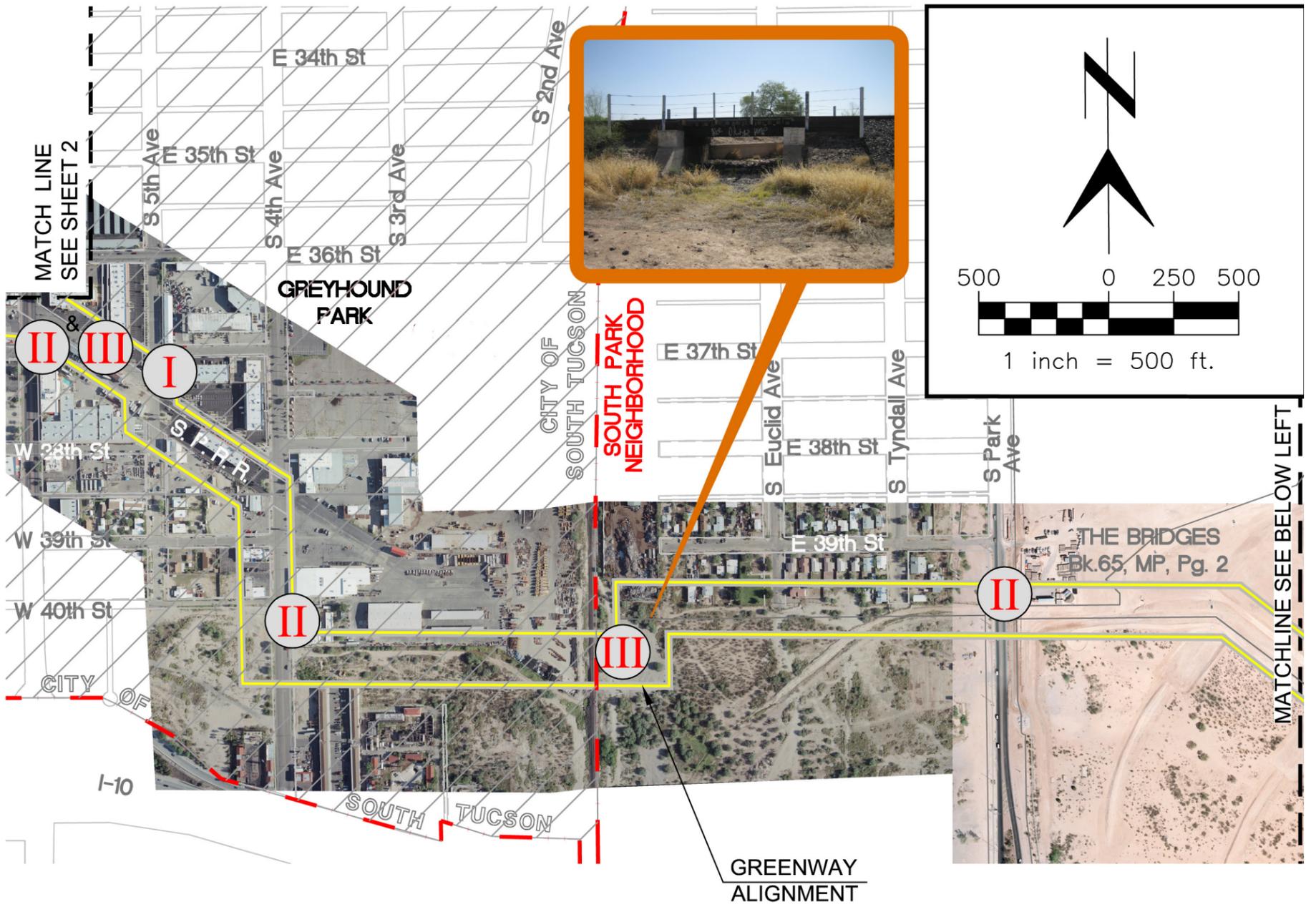
SHEET 1 OF 3

**Figure 9**



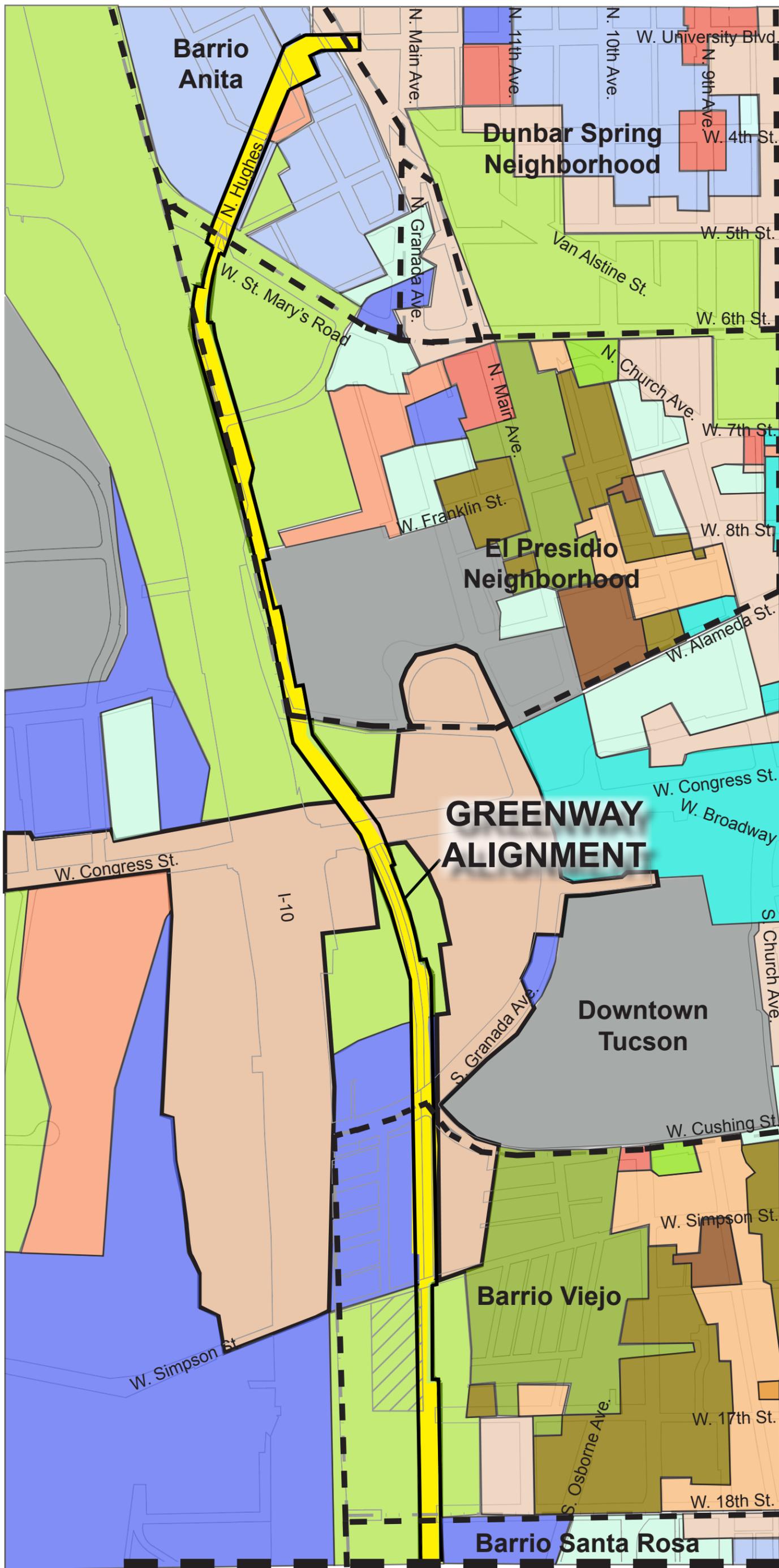
SHEET 2 OF 3

**Figure 9**



SHEET 3 OF 3

Figure 9



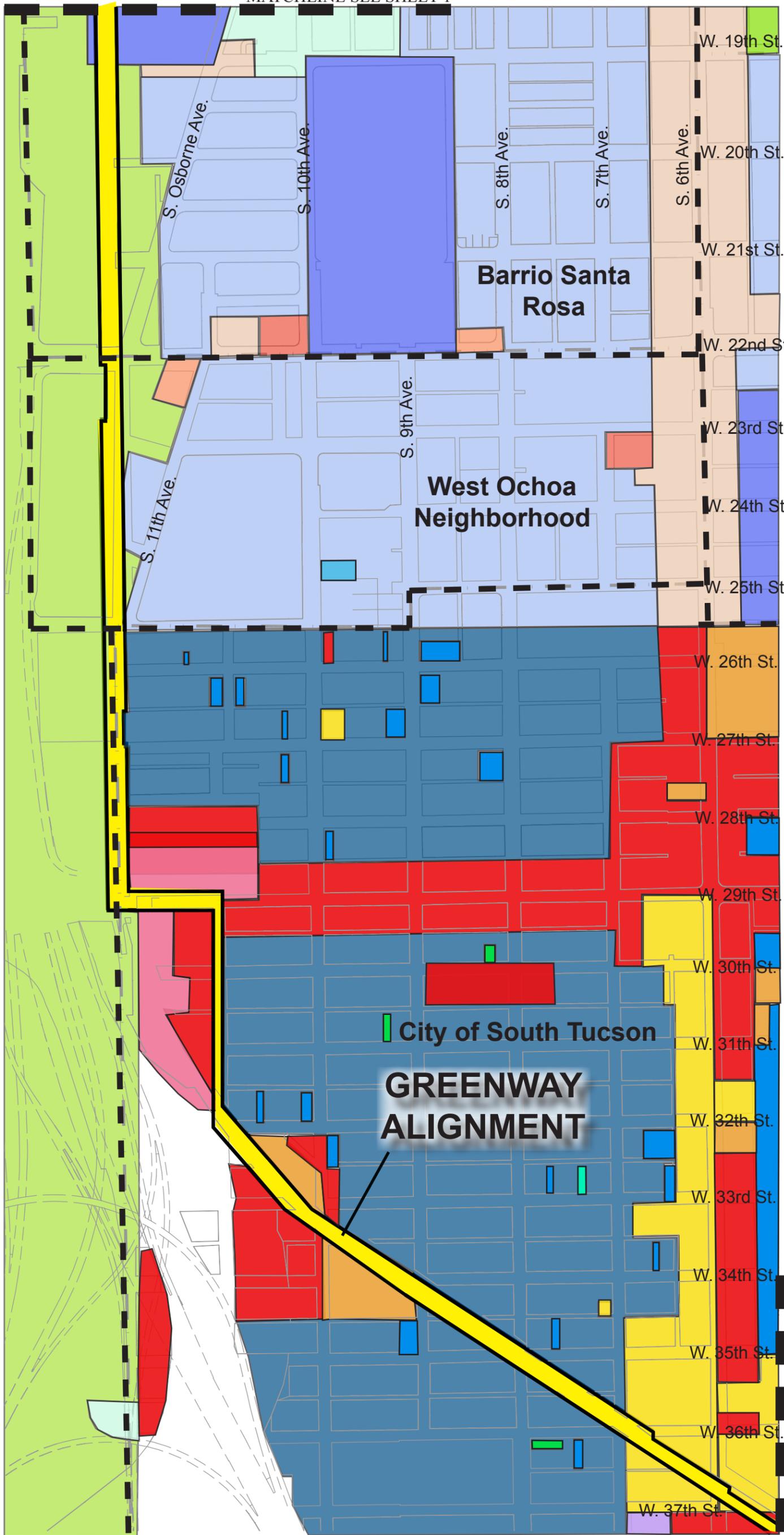
**LEGEND**

- Tucson Zoning
- C-1
  - C-2
  - C-3
  - HC-1
  - HC-2
  - HC-3
  - HR-2
  - HR-3
  - HO-3
  - I-1
  - O-3
  - OCR-2
  - P
  - P-1
  - PAD-4
  - PAD-15
  - R-1
  - R-2
  - R-3
- South Tucson Zoning Type
- SB-1
  - SB-2
  - SB-2A
  - SI-1
  - SMH
  - SP-1
  - SR-1
  - SR-2
  - SR-3
- Neighborhood Boundaries



**Figure 10**

MATCHLINE SEE SHEET 2



### LEGEND

- Zoning Type**
- C-1
  - C-2
  - C-3
  - HC-1
  - HC-2
  - HC-3
  - HO-3
  - HR-2
  - HR-3
  - I-1
  - O-3
  - OCR-2
  - P
  - P-1
  - PAD-4
  - PAD-15
  - R-1
  - R-2
  - R-3

**South Tucson Zoning Type**

- SB-1
- SB-2
- SB-2A
- SI-1
- SMH
- SP-1
- SR-1
- SR-2
- SR-3

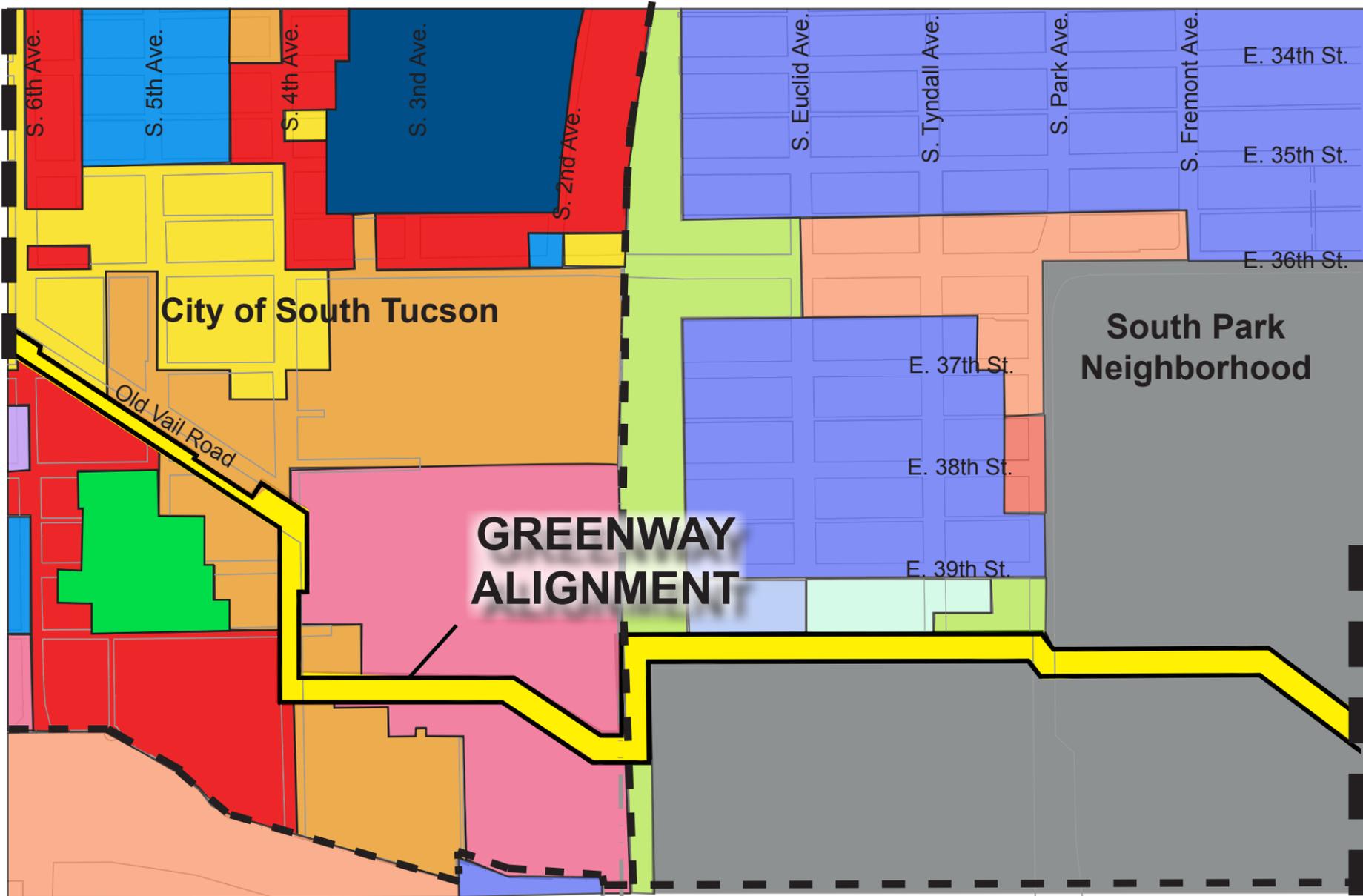
--- Neighborhood Boundaries

MATCHLINE SEE SHEET 3



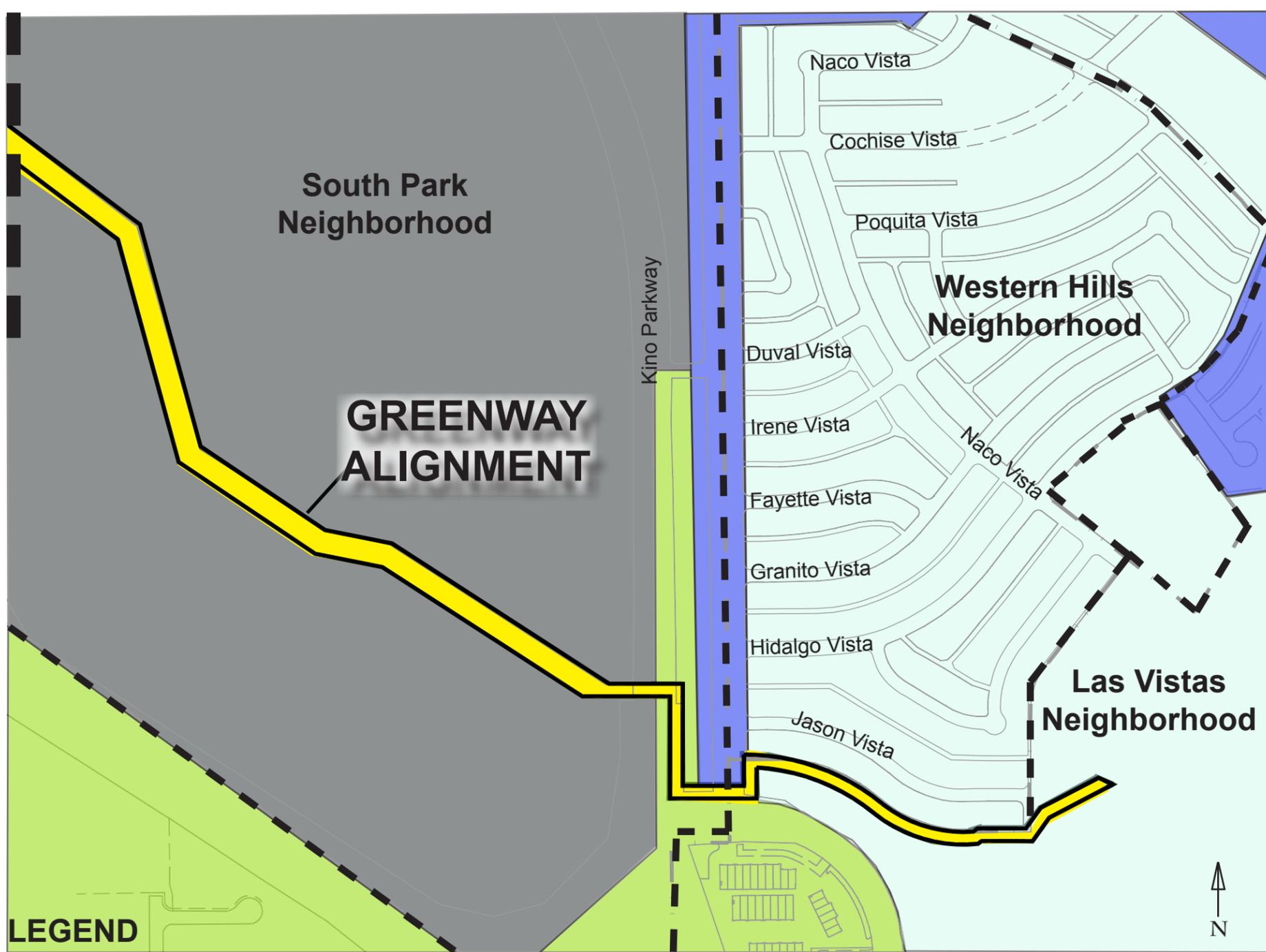
**Figure 10**

MATCHLINE SEE SHEET 2



MATCHLINE SEE BELOW LEFT

MATCHLINE SEE ABOVE RIGHT

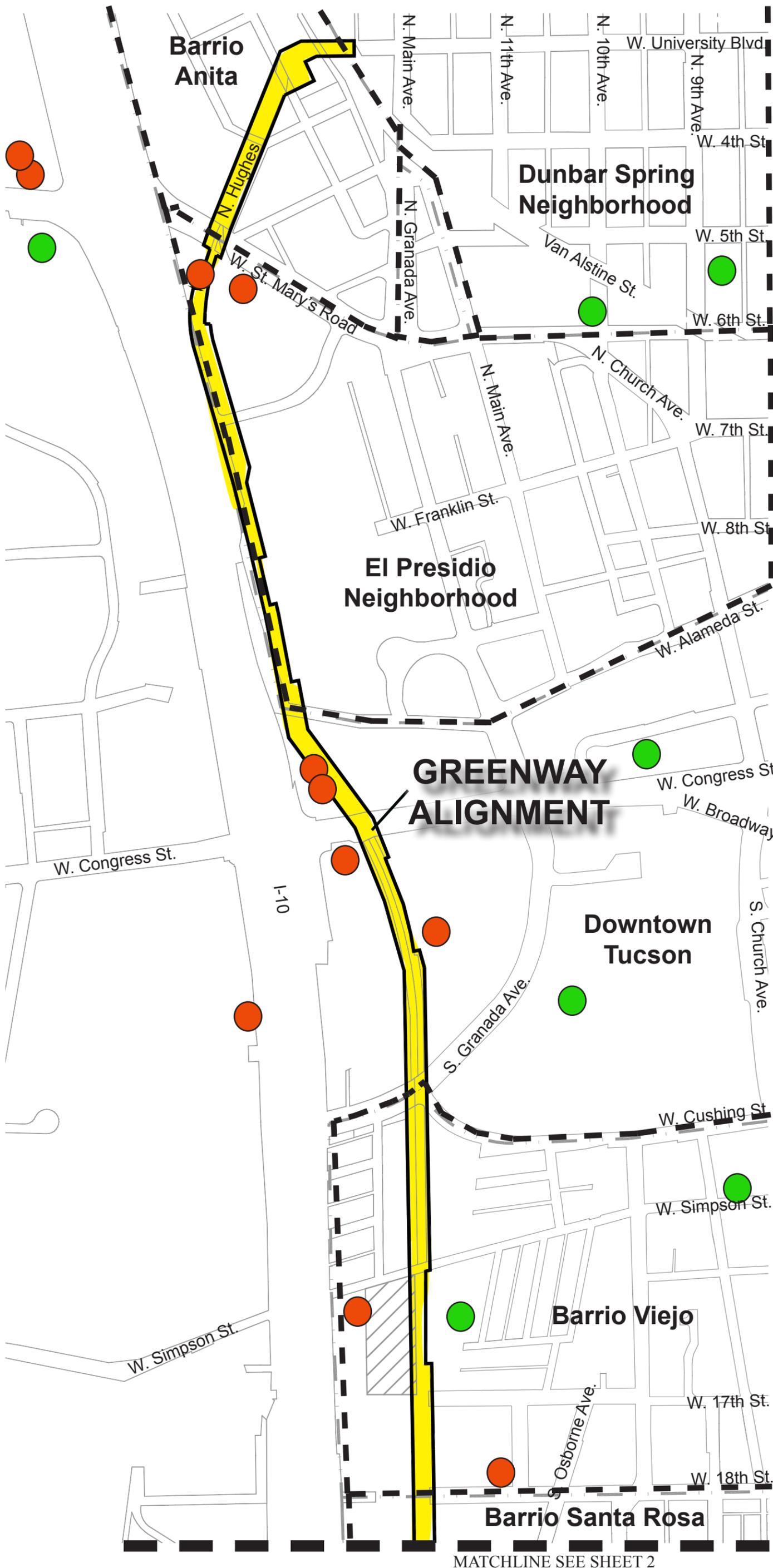


**LEGEND**

Tucson Zoning	HO-3	O-3	PAD-4	R-3	South Tucson Zoning	SB-2A	SR-1
C-1	HC-1	HR-2	PAD-15	R-3	SB-1	SI-1	SR-2
C-2	HC-2	HR-3	R-1	R-3	SB-2	SMH	SR-3
C-3	HC-3	I-1	R-2	R-3		SP-1	
							Neighborhood Boundaries

**Figure 10**



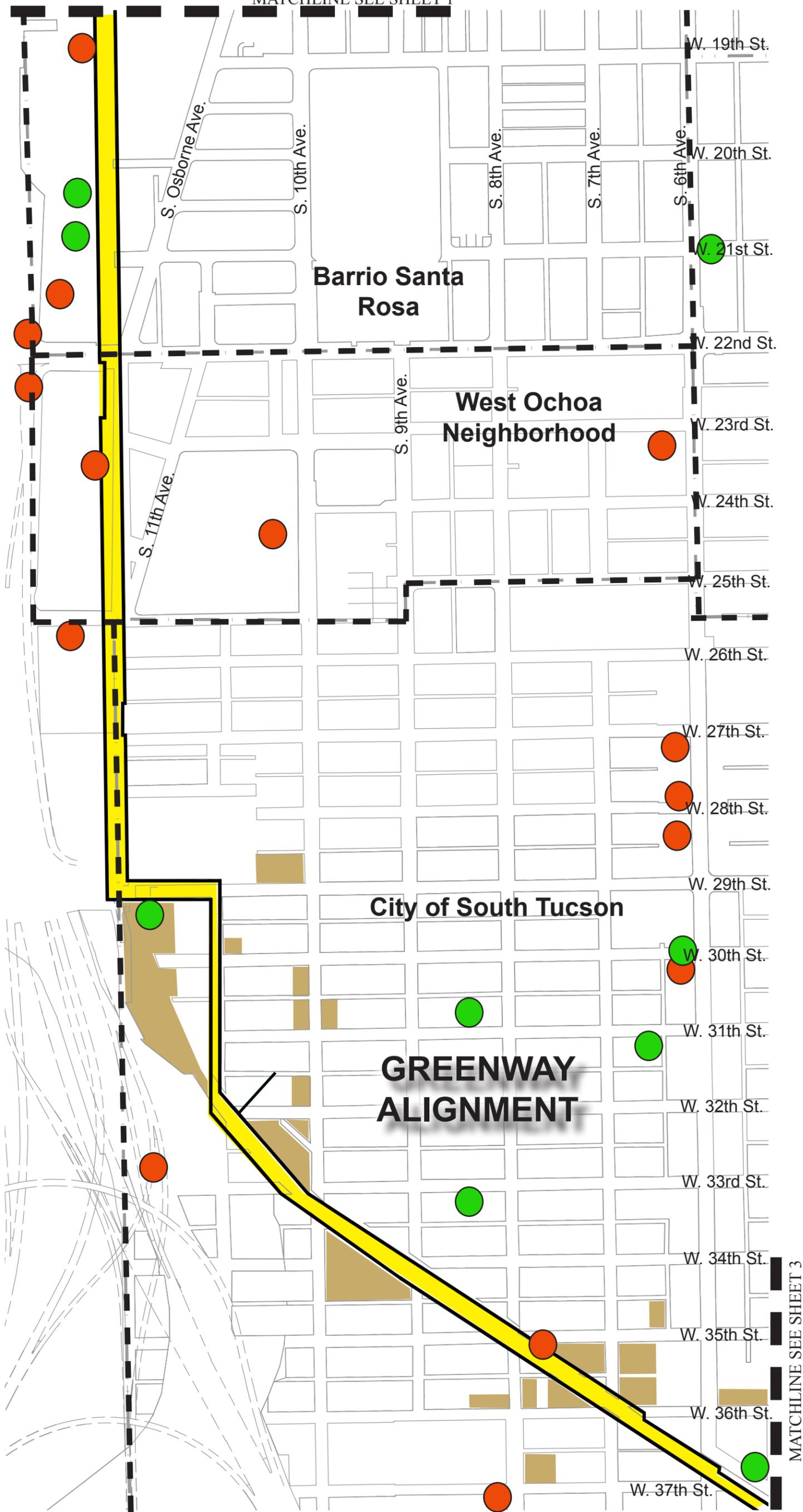


**LEGEND**

- Hazardous Materials
- Non-Leaking Storage Tanks
- Leaking Storage Tanks
- Neighborhood Boundaries



**Figure 11**



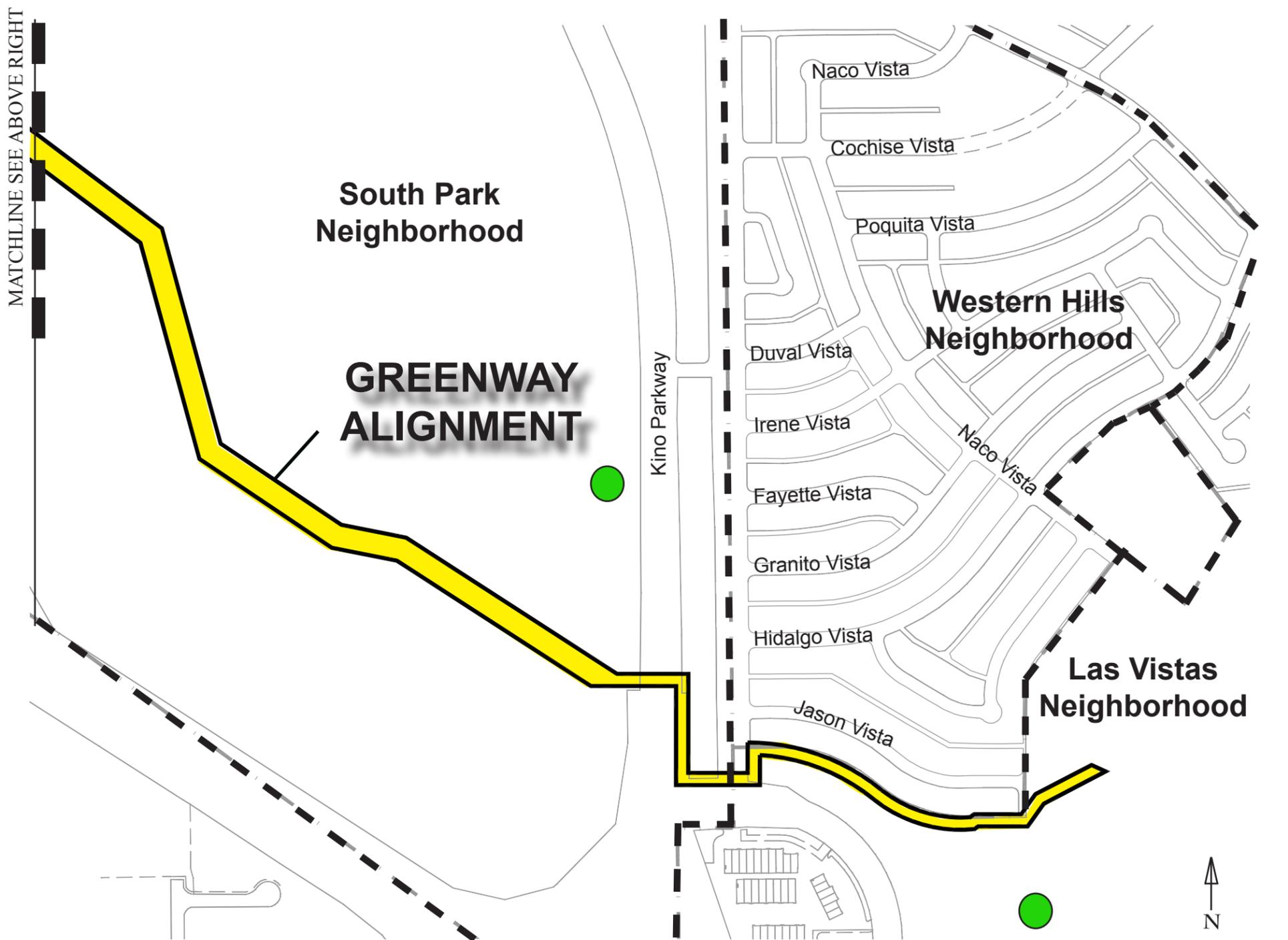
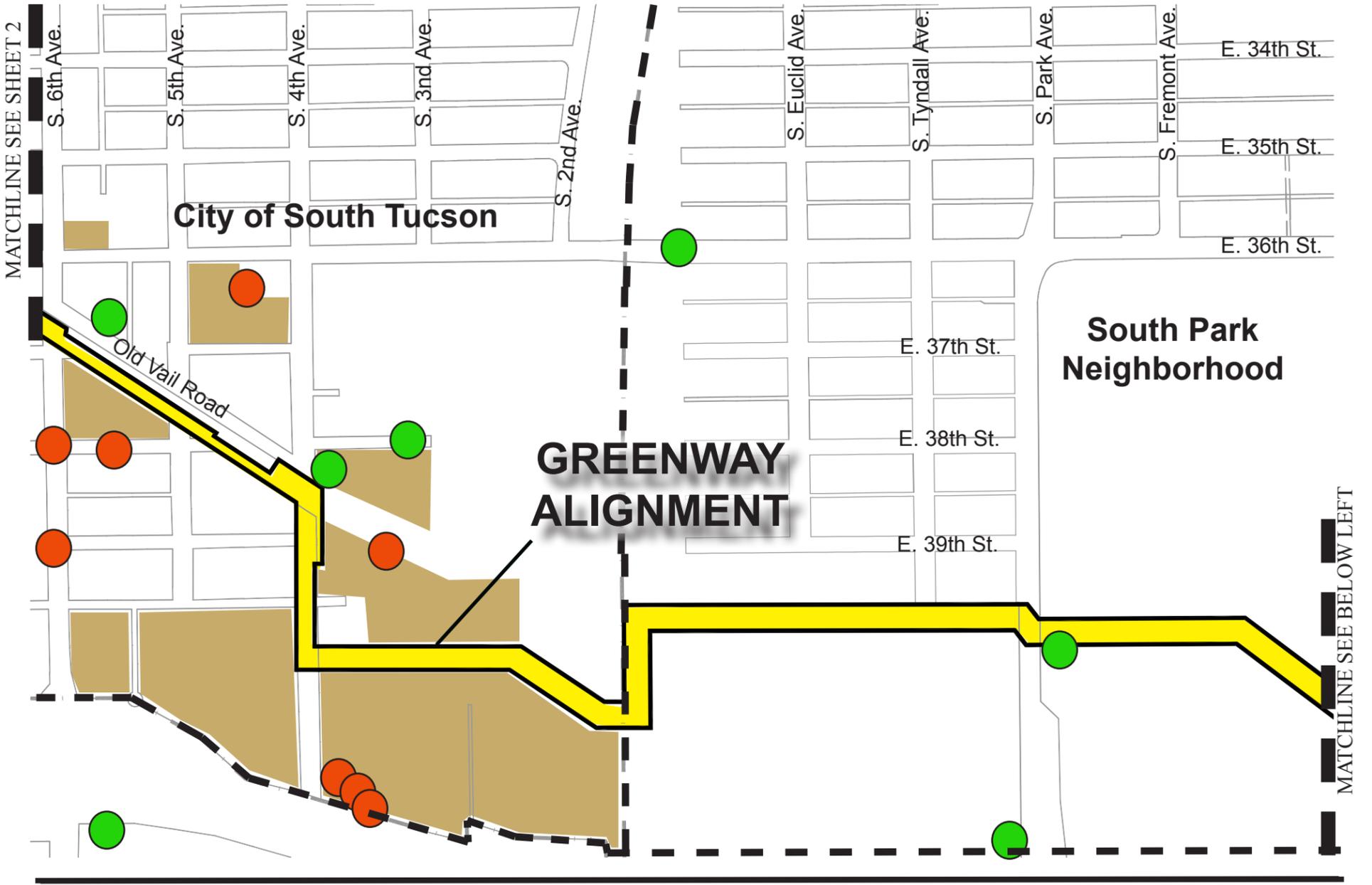
### LEGEND

- Hazardous Materials
- Non-Leaking Storage Tanks
- Leaking Storage Tanks
- COST Brownfield Grant Active Properties
- Neighborhood Boundaries

MATCHLINE SEE SHEET 3



**Figure 11**



**LEGEND** Hazardous Materials  
 ● Non-Leaking Storage Tanks    ● Leaking Storage Tanks    - - Neighborhood Boundaries    ■ COST Brownfield Grant Active Properties

**Figure 11**



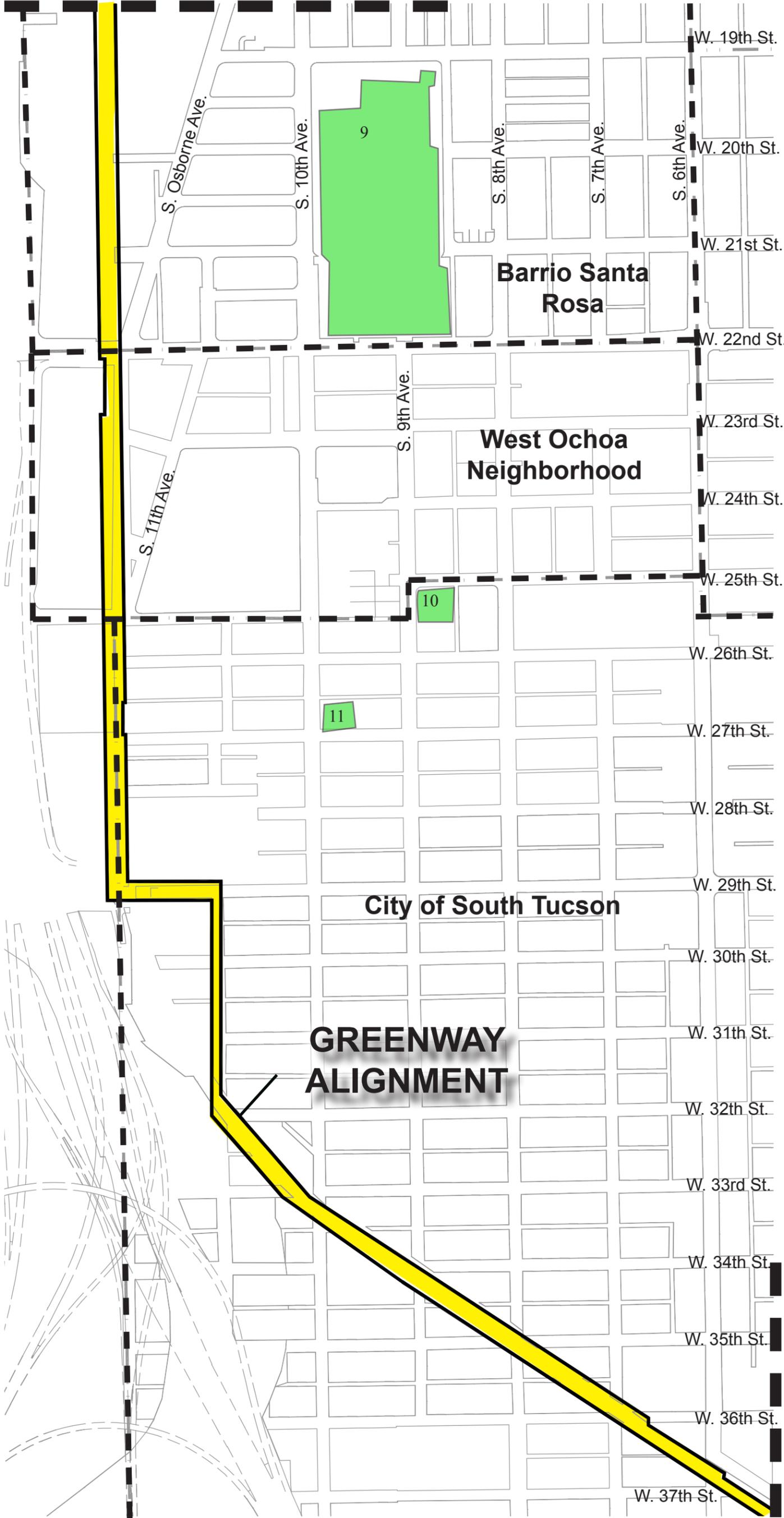
**LEGEND**

- 1 Oury Park
  - 2 Santa Cruz River Park
  - 3 Sculpture Garden
  - 4 El Presidio de Tucson Mini Park
  - 5 El Presidio Plaza
  - 6 Viente de Agosto Park
  - 7 La Placita Park
  - 8 El Tiradito Shrine
- Neighborhood Boundaries



**Figure 12**

MATCHLINE SEE SHEET 2



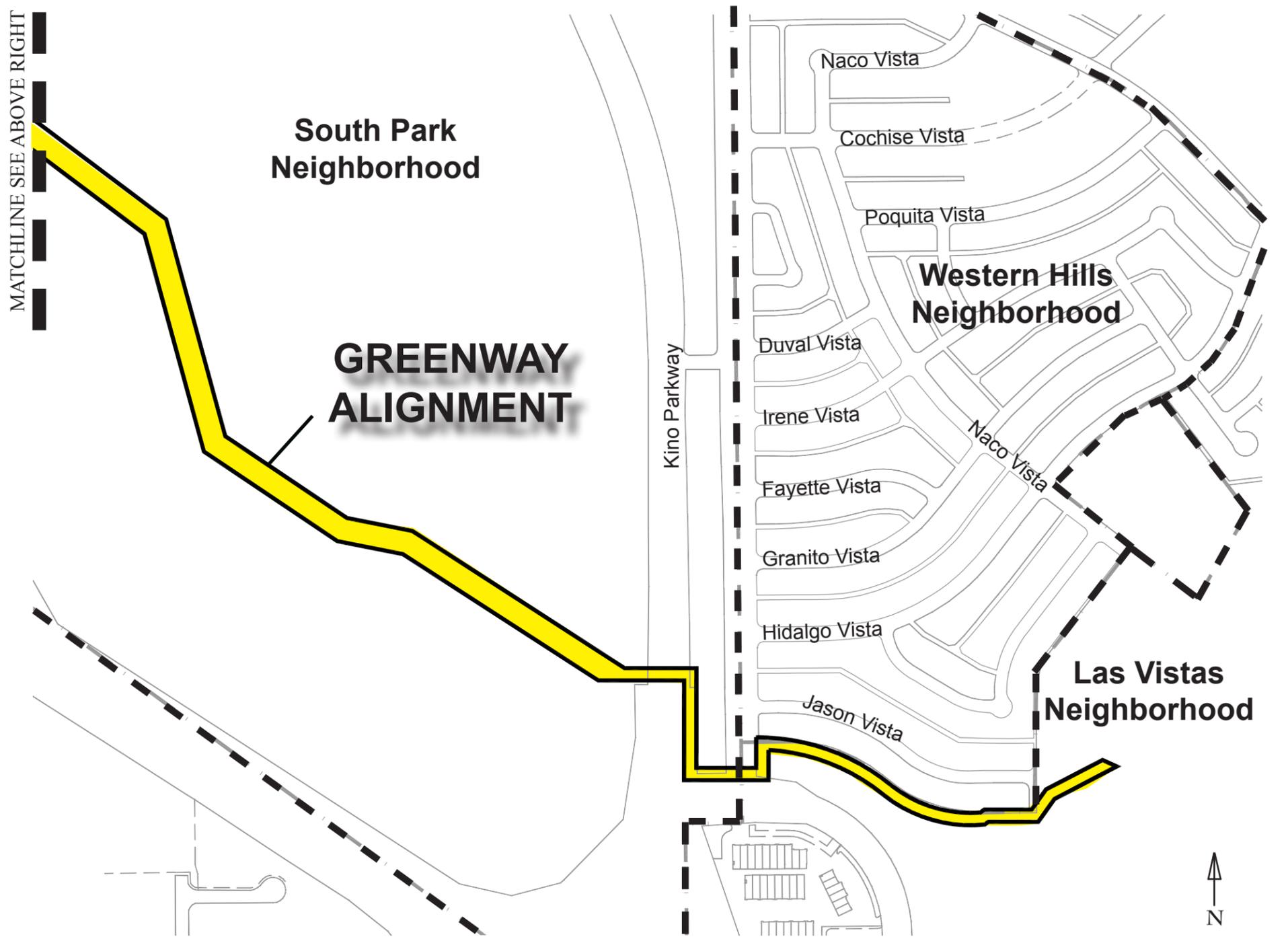
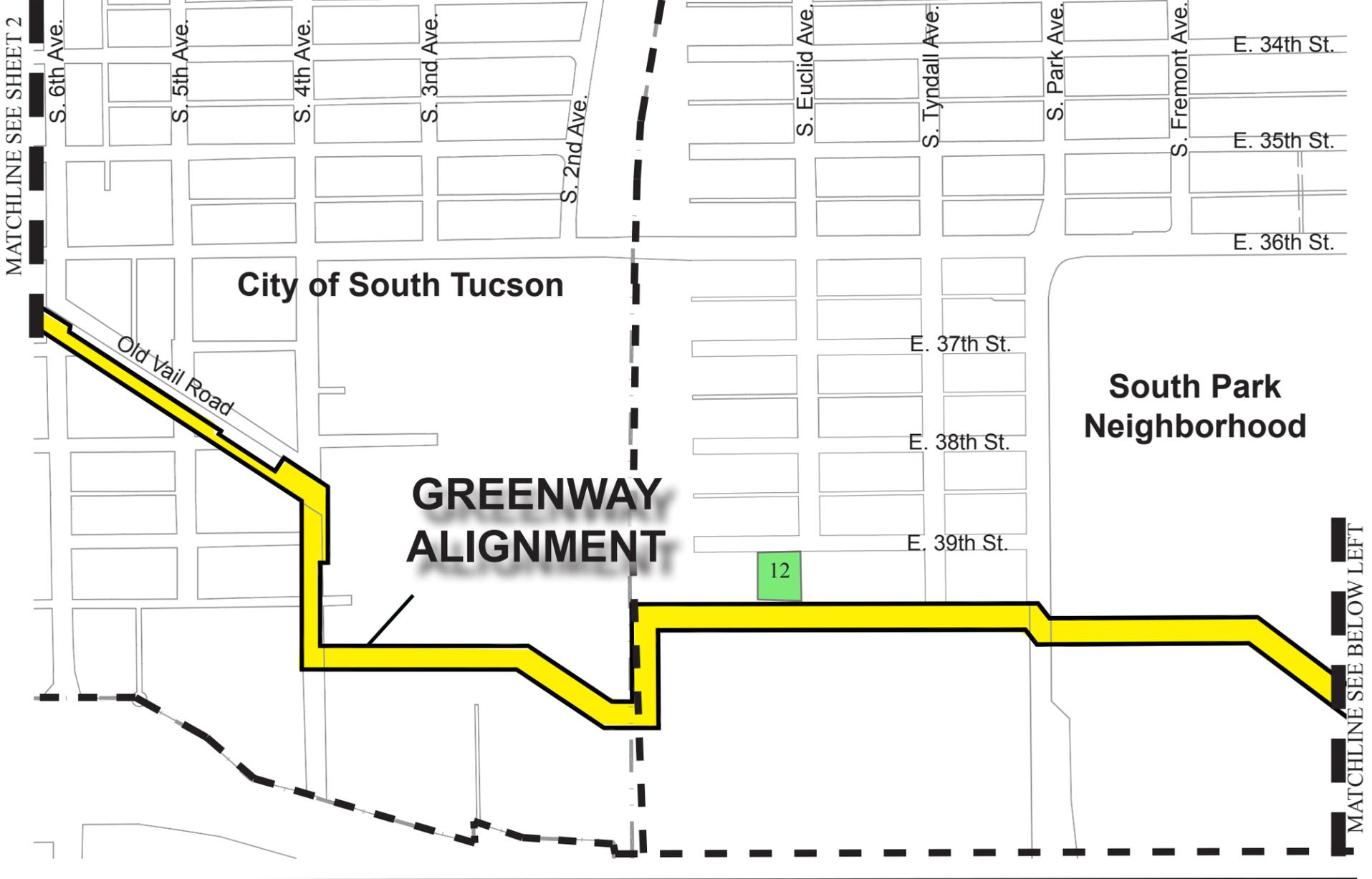
### LEGEND

- 9 Santa Rosa Park
- 10 Ochoa Mini Park
- 11 Centro Del Sur Community Center
- Neighborhood Boundaries

MATCHLINE SEE SHEET 3



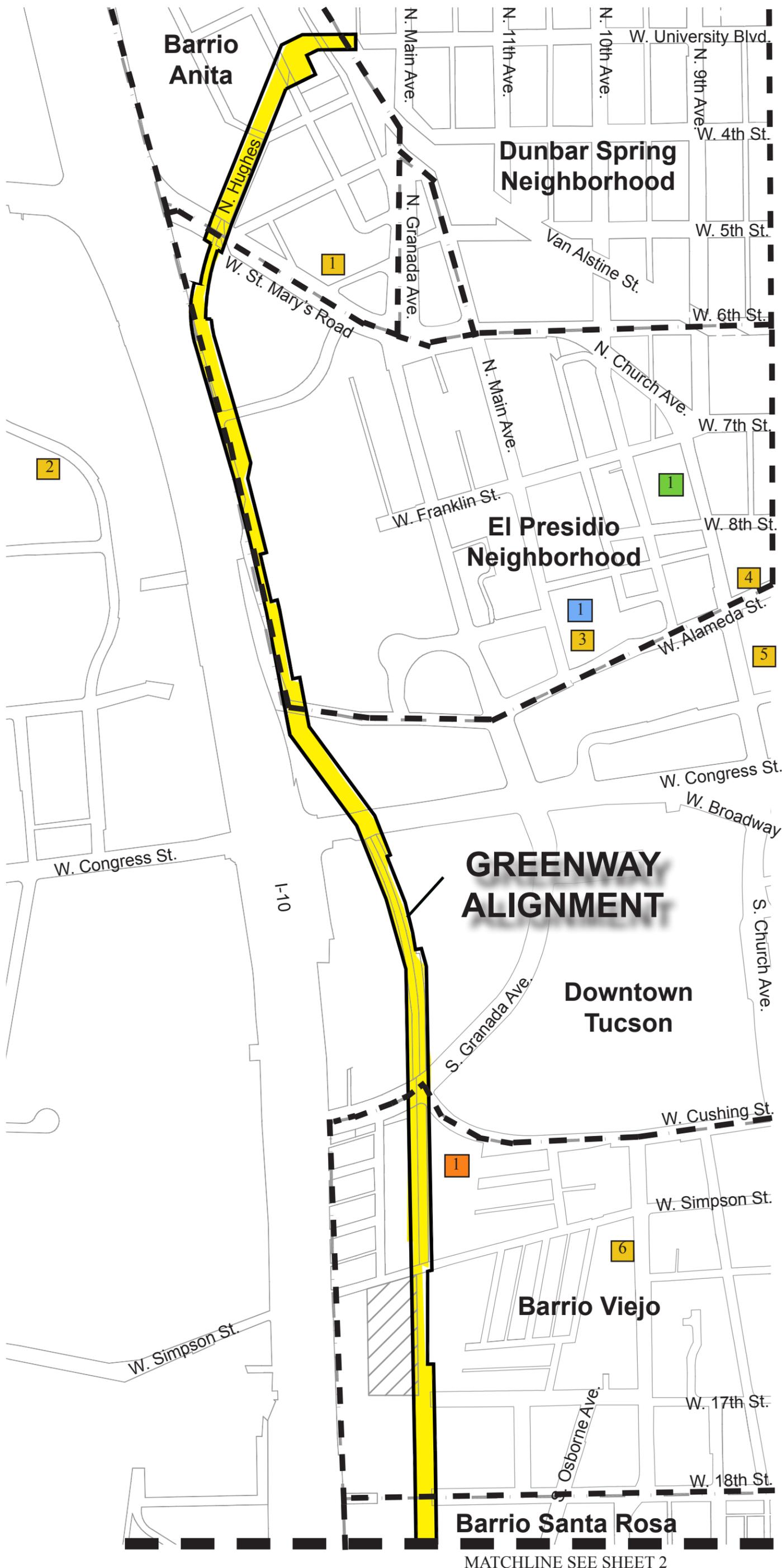
**Figure 12**



**LEGEND**

- 12 Street Scene Park
- Neighborhood Boundaries

**Figure 12**



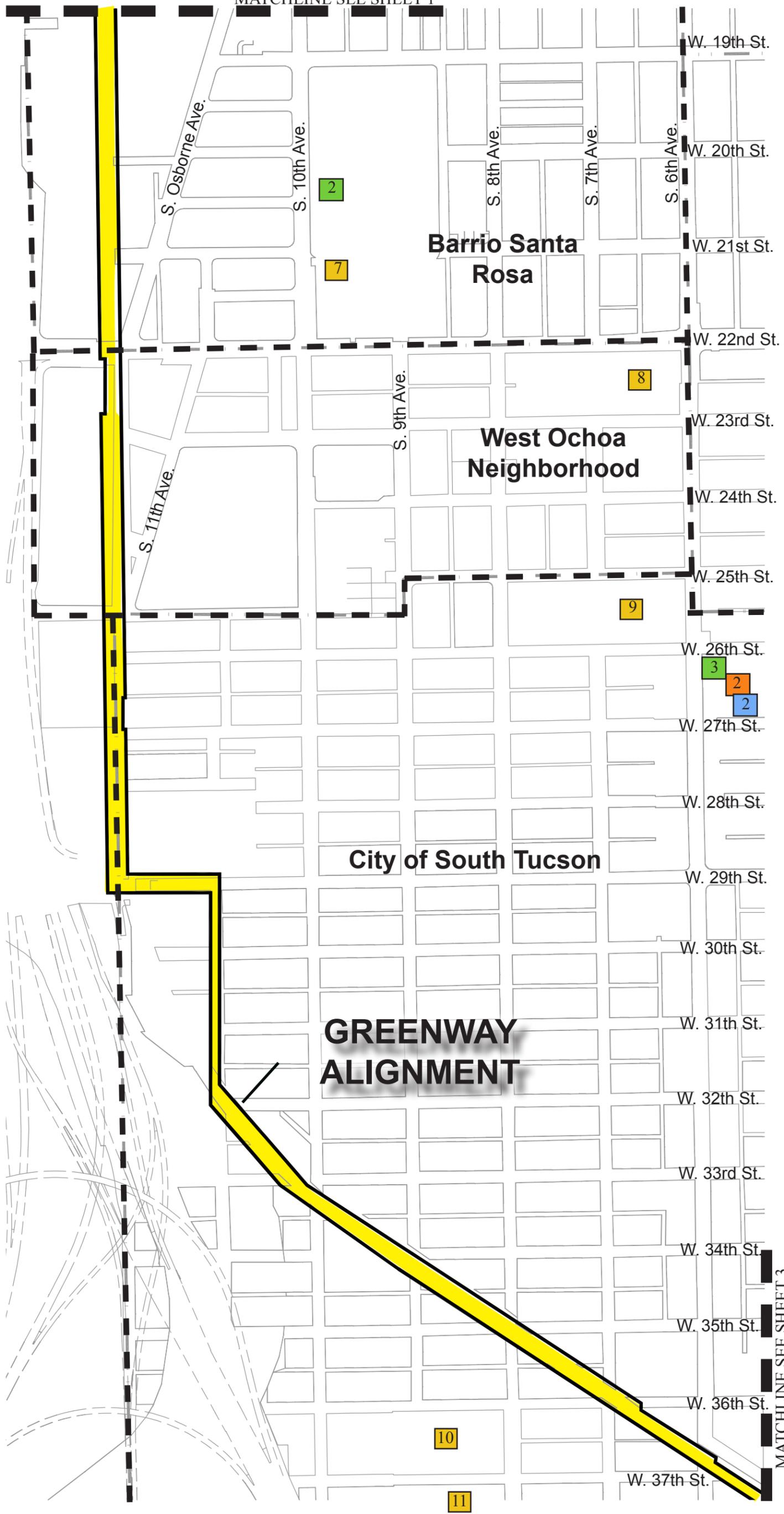
**LEGEND**

- Schools
  - 1 Davis Bilingual Elementary Magnet
  - 2 Pima College Community Campus
  - 3 Artworks Academy
  - 4 Calli Olin Academic Charter
  - 5 City High School
  - 6 Carrillo Intermediate Magnet
- Fire Stations
  - 1 Station 1, City of Tucson
- Police Stations
  - 1 Station 1, City of Tucson
- Libraries
  - 1 Joel Valdez, Main, City of Tucson
- Neighborhood Boundaries



**Figure 13**

MATCHLINE SEE SHEET 2

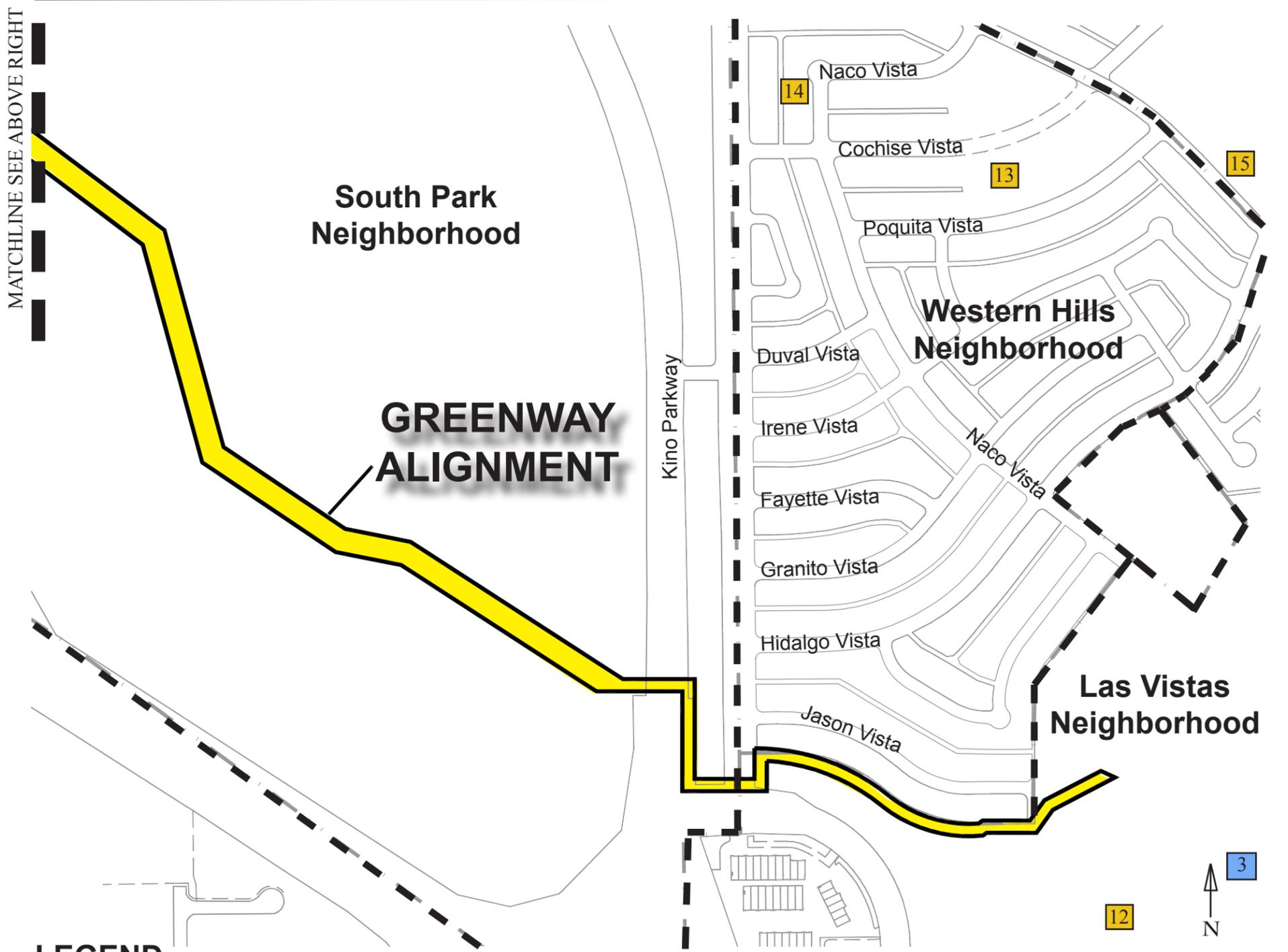
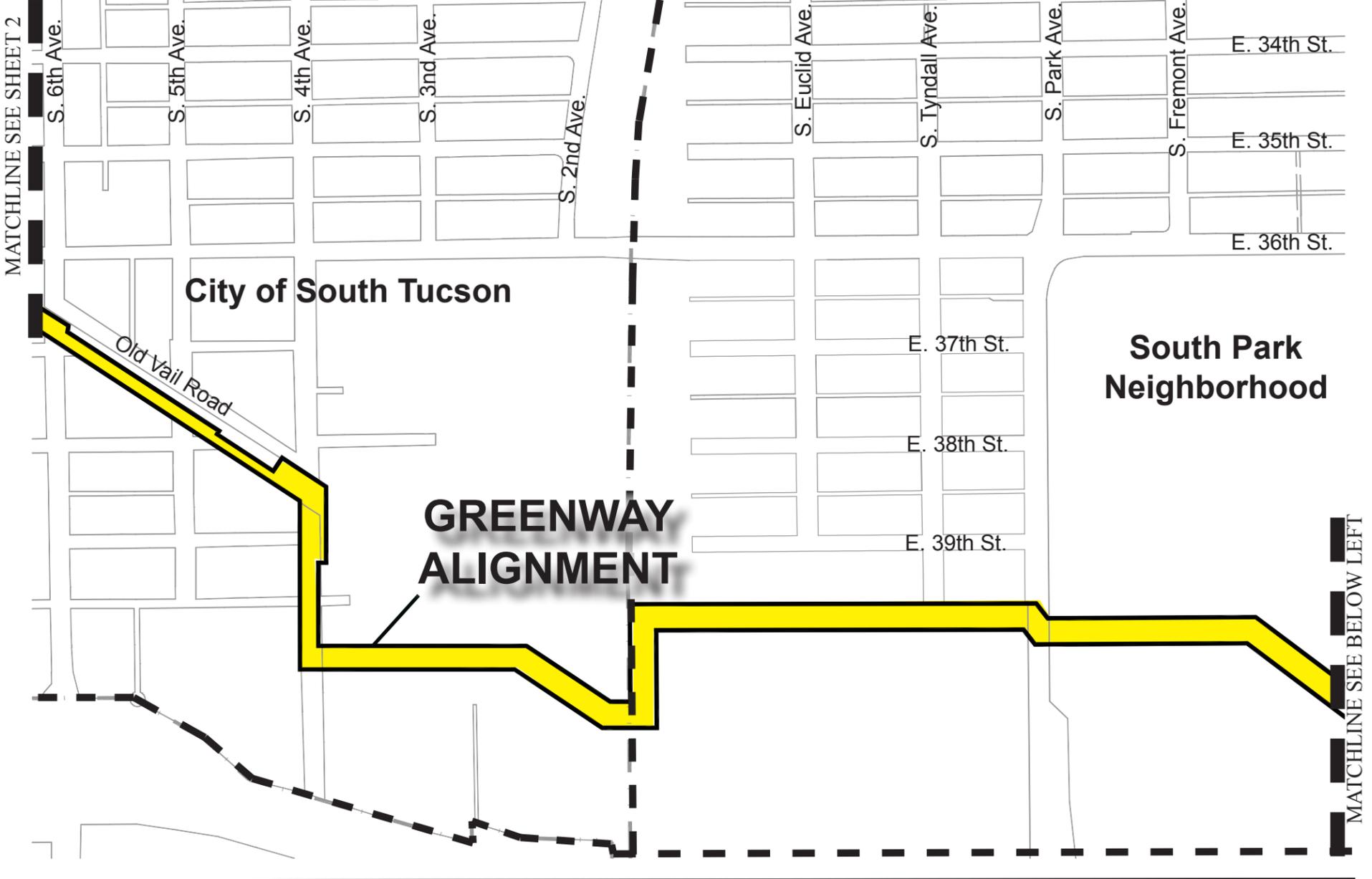


### LEGEND

- Schools
  - 7 Drachman Montessori Magnet School
  - 8 Santa Cruz Catholic School
  - 9 Ochoa Elementary School
  - 10 Mission View Elementary School
  - 11 Nellie Covert School
- Fire Stations
  - 2 Station 1, City of South Tucson
- Police Stations
  - 2 Station 1, City of South Tucson
- Libraries
  - 2 Santa Rosa Branch
  - 3 Sam Lena Branch
- Neighborhood Boundaries



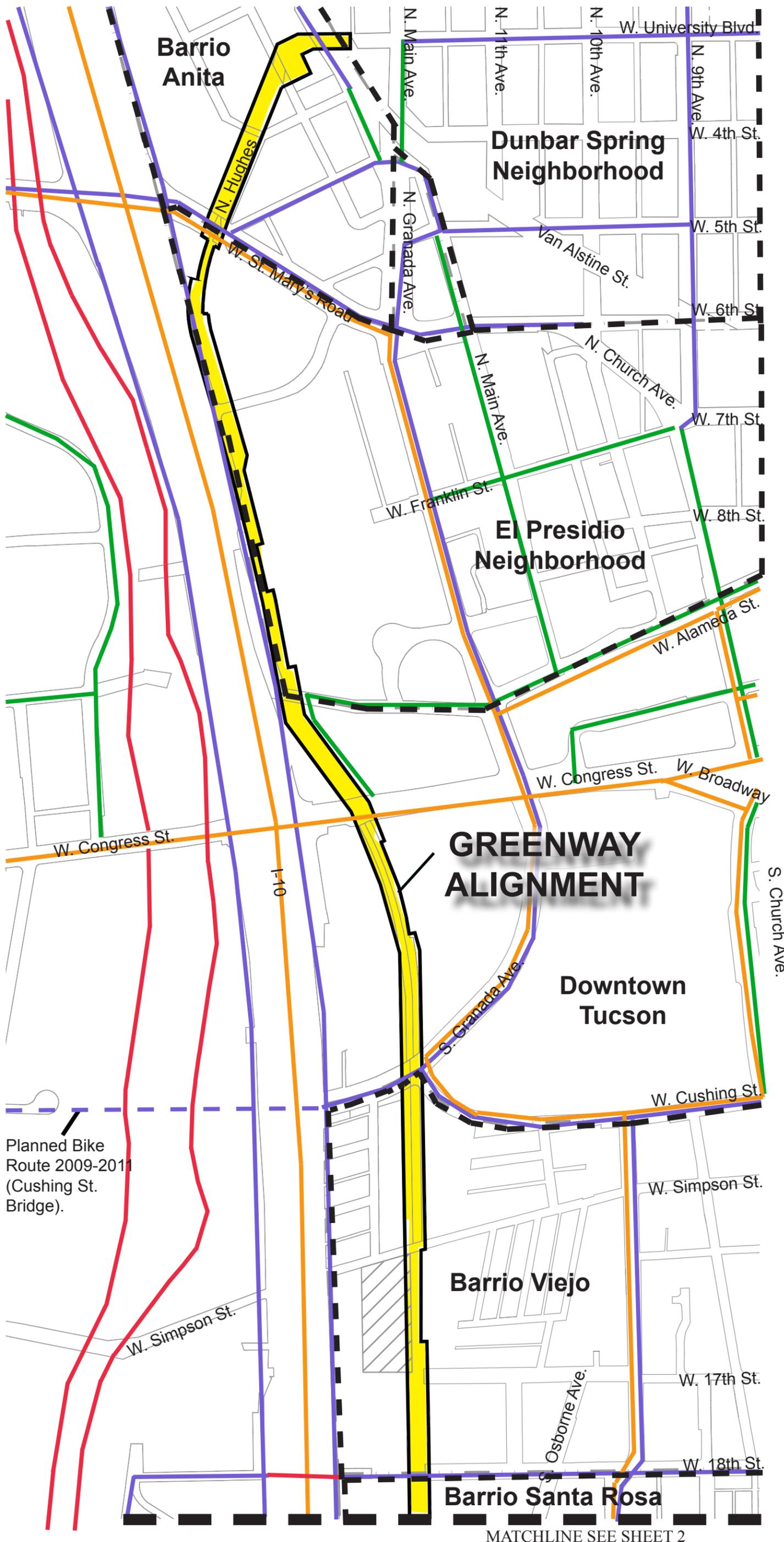
**Figure 13**



**LEGEND**

- Schools
- Neighborhood Boundaries
- 12 Cape School Juvenile Detention Center
- 13 Cavett Elementary School
- 14 Southside Community School
- 15 Utterback Middle Magnet
- Police Stations
- 3 Pima County Sheriff-San Xavier

**Figure 13**



**LEGEND**

- Linkages
- Key Bike Route
- Connecting Street
- Shared-use Path
- Bike Route
- Proposed Bike Route
- Bus Routes-Suntran
- Neighborhood Boundaries

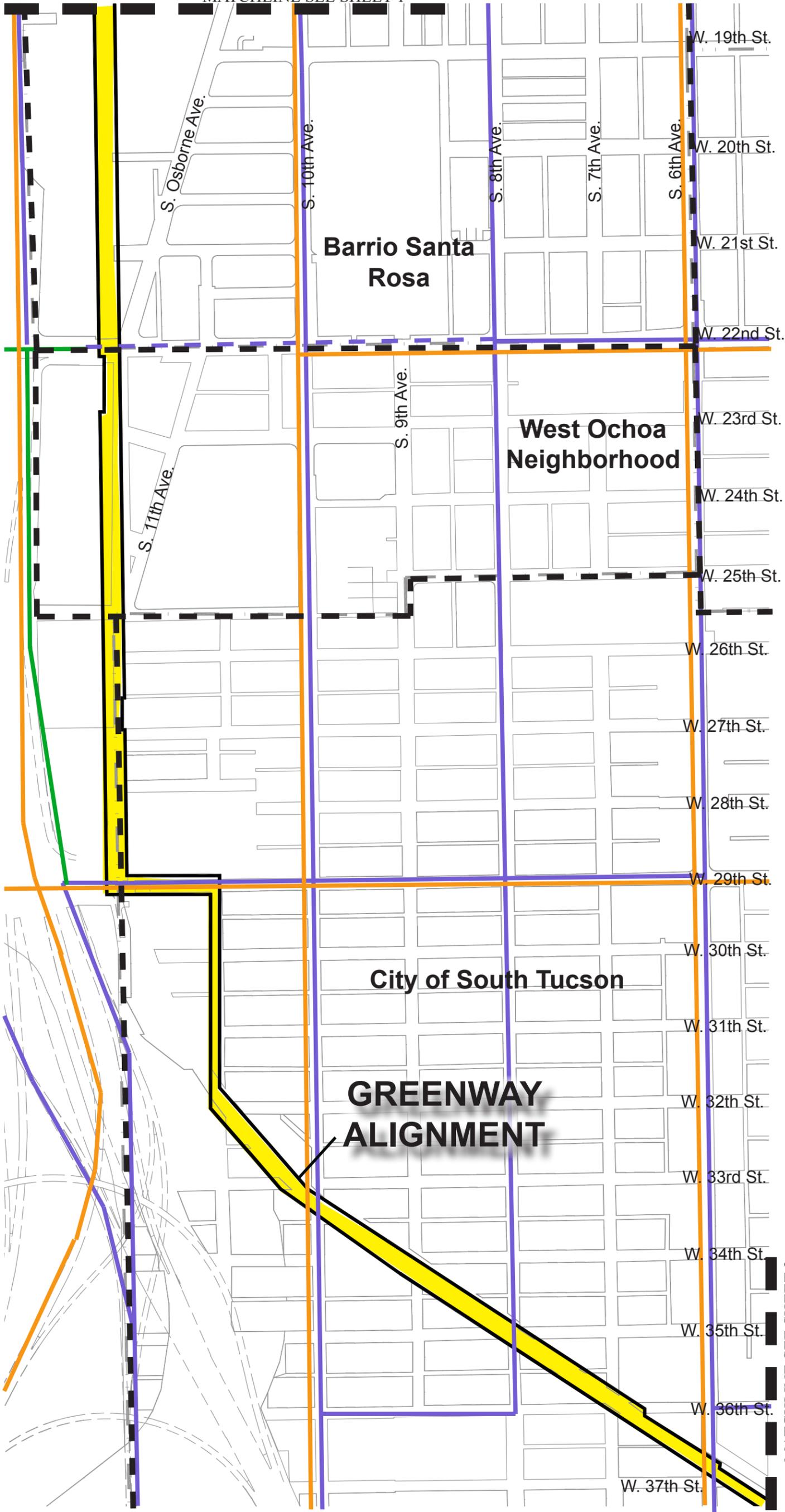
Planned Bike Route 2009-2011 (Cushing St. Bridge).

MATCHLINE SEE SHEET 2



**Figure 14**

MATCHLINE SEE SHEET 1



### LEGEND

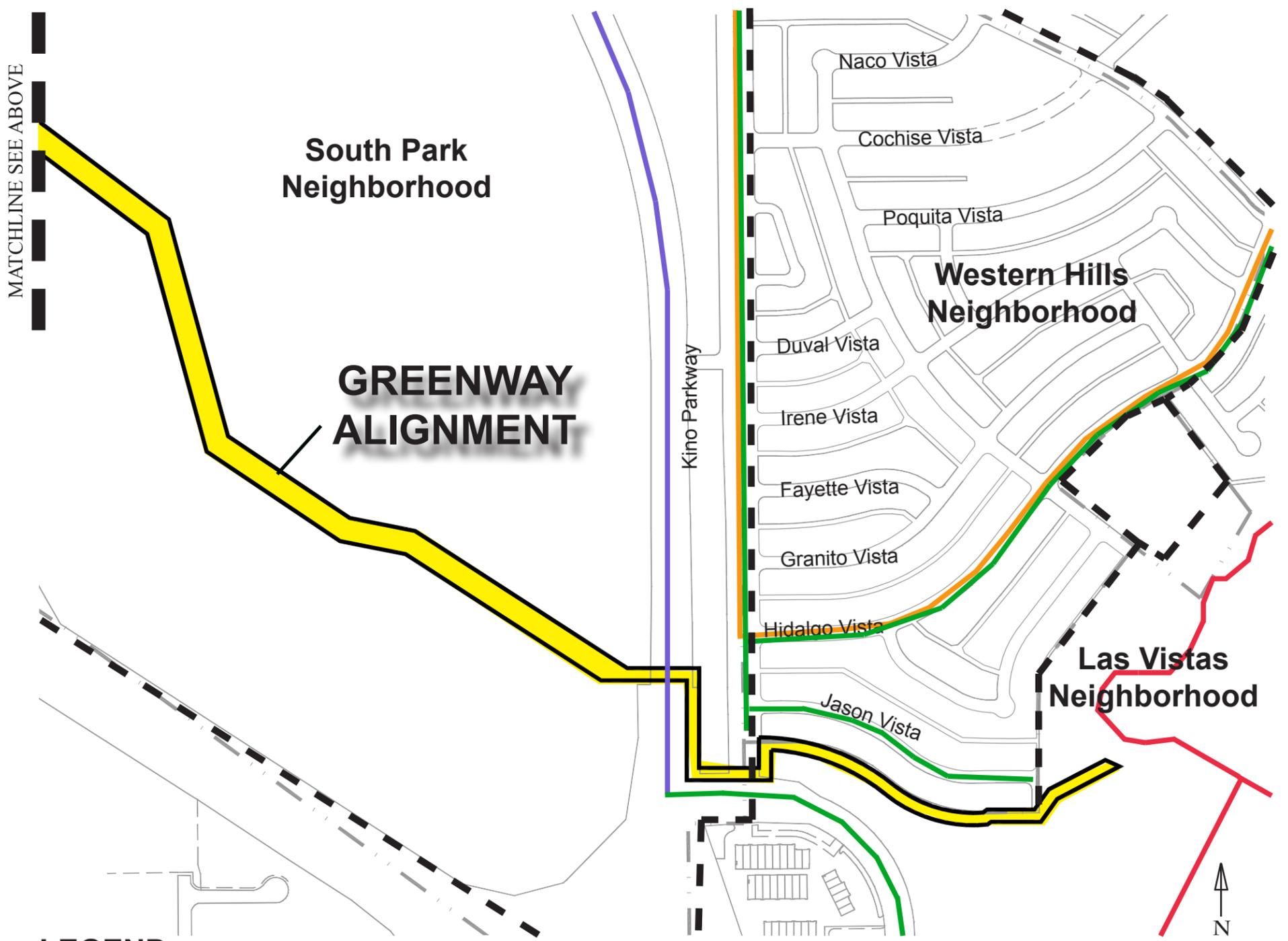
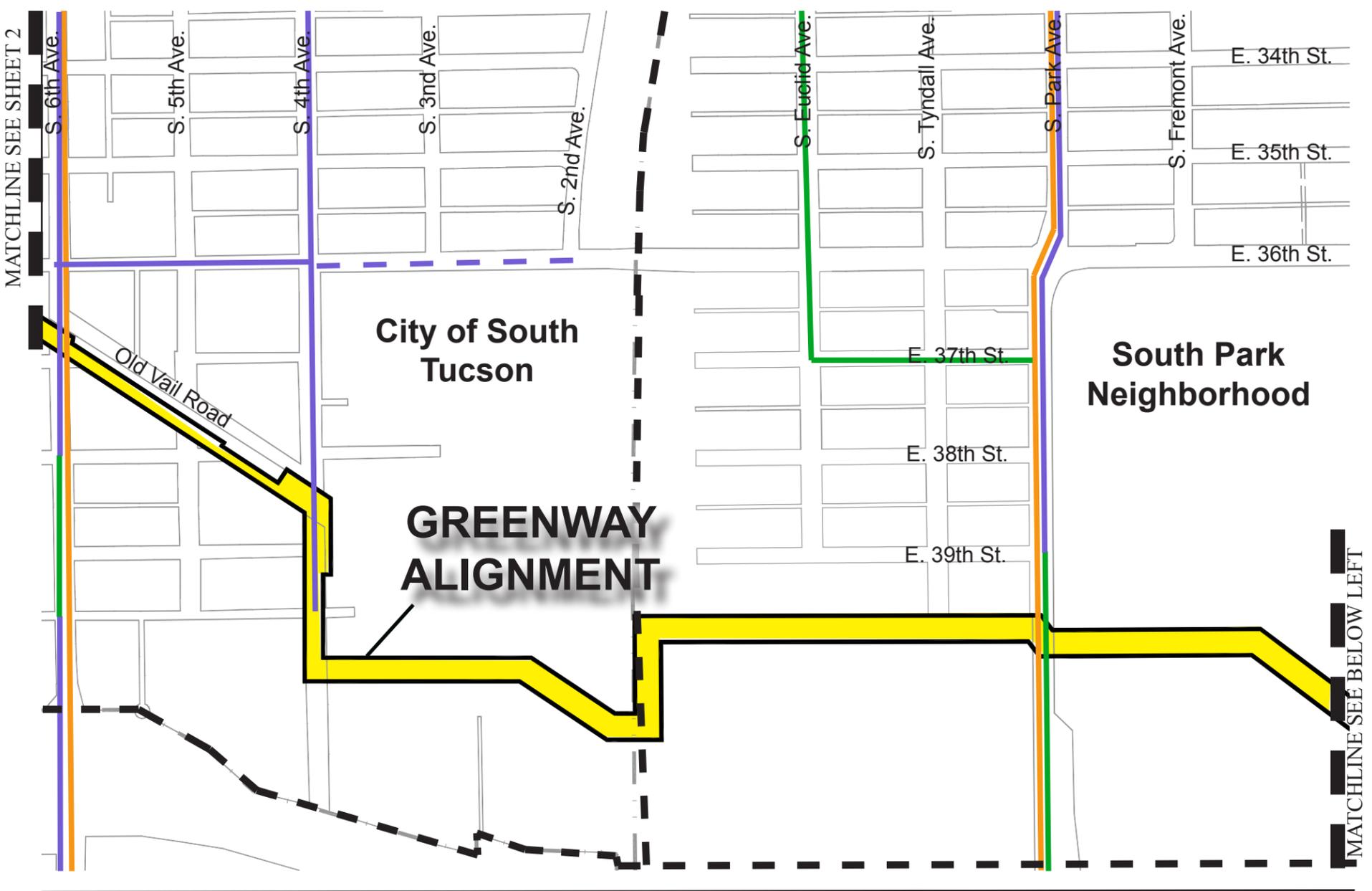
- Linkages
- Key Bike Route
  - Connecting Street
  - Shared-use Path
  - Bike Route
  - Proposed Bike Route
  - Bus Routes-Suntran
  - Neighborhood Boundaries

NOTE: No Designated Trails occur in this project area.

MATCHLINE SEE SHEET 3

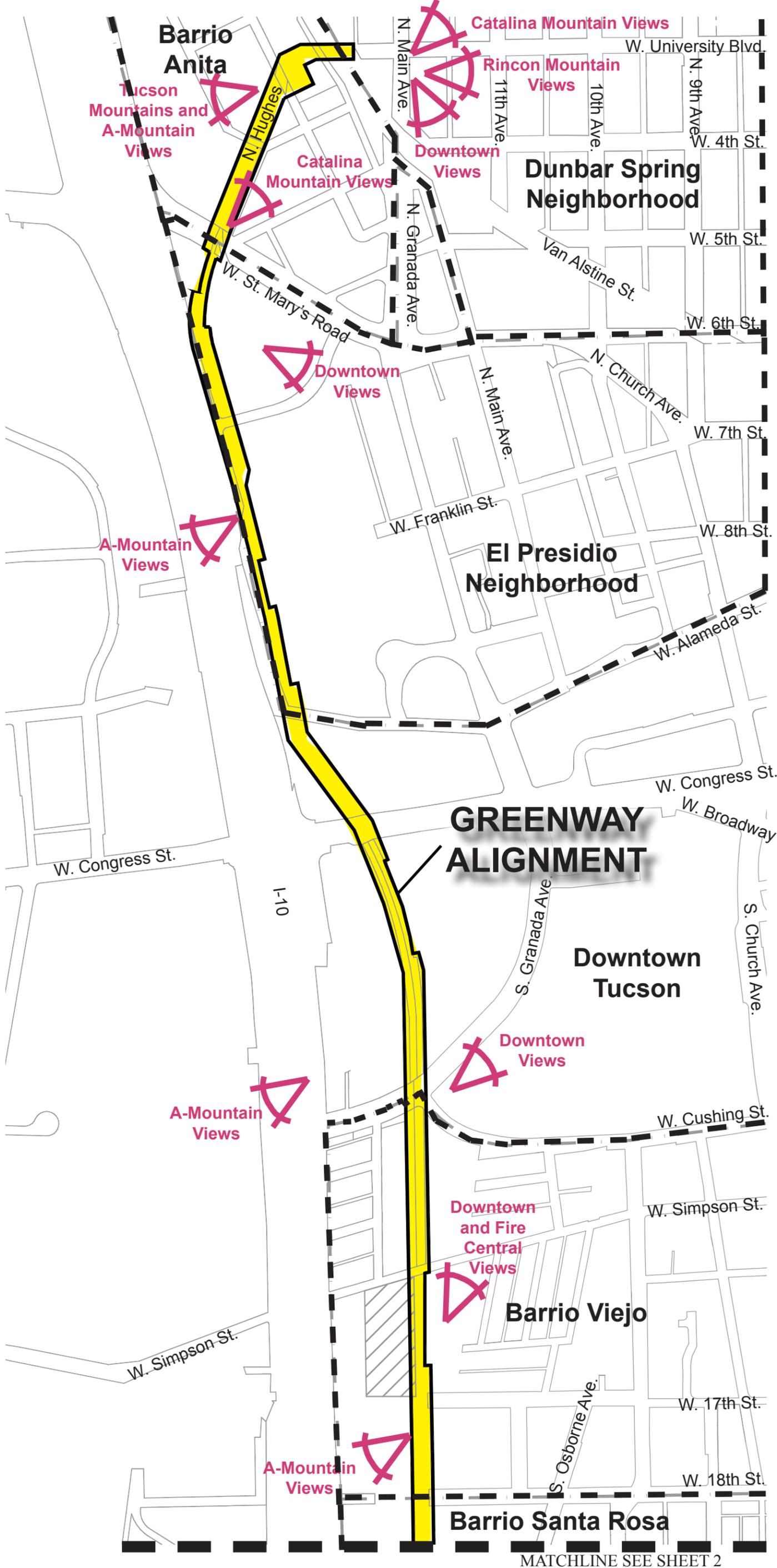


### Figure 14



- LEGEND** Linkages
- Key Bike Route
  - Shared-use Path
  - Proposed Bike Route
  - - - Neighborhood Boundaries
  - Connecting Street
  - Bike Route
  - Bus Routes-Suntran

**Figure 14**



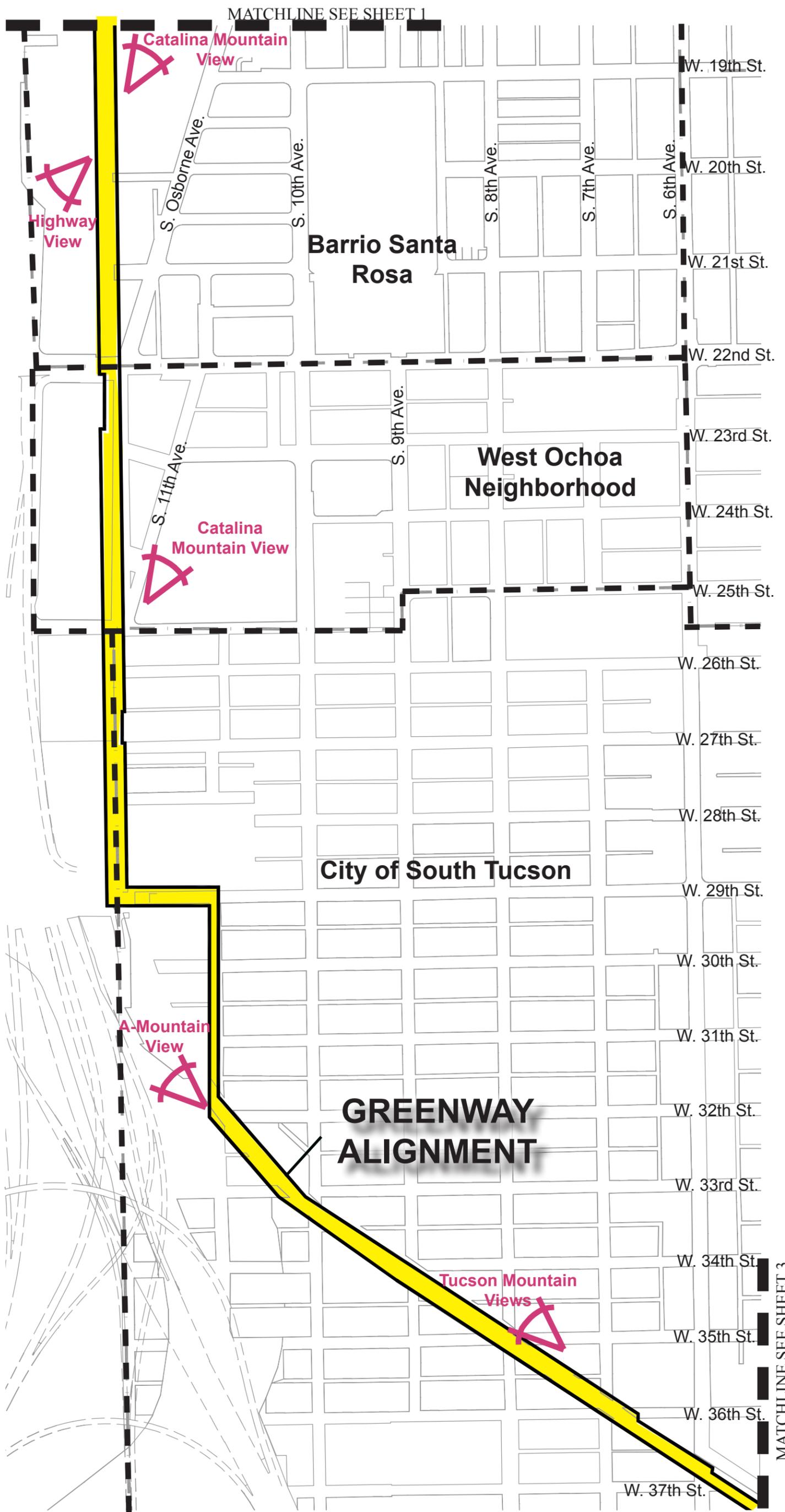
**LEGEND**

- Viewsheds
- View Direction
- Neighborhood Boundaries



**Figure 15**

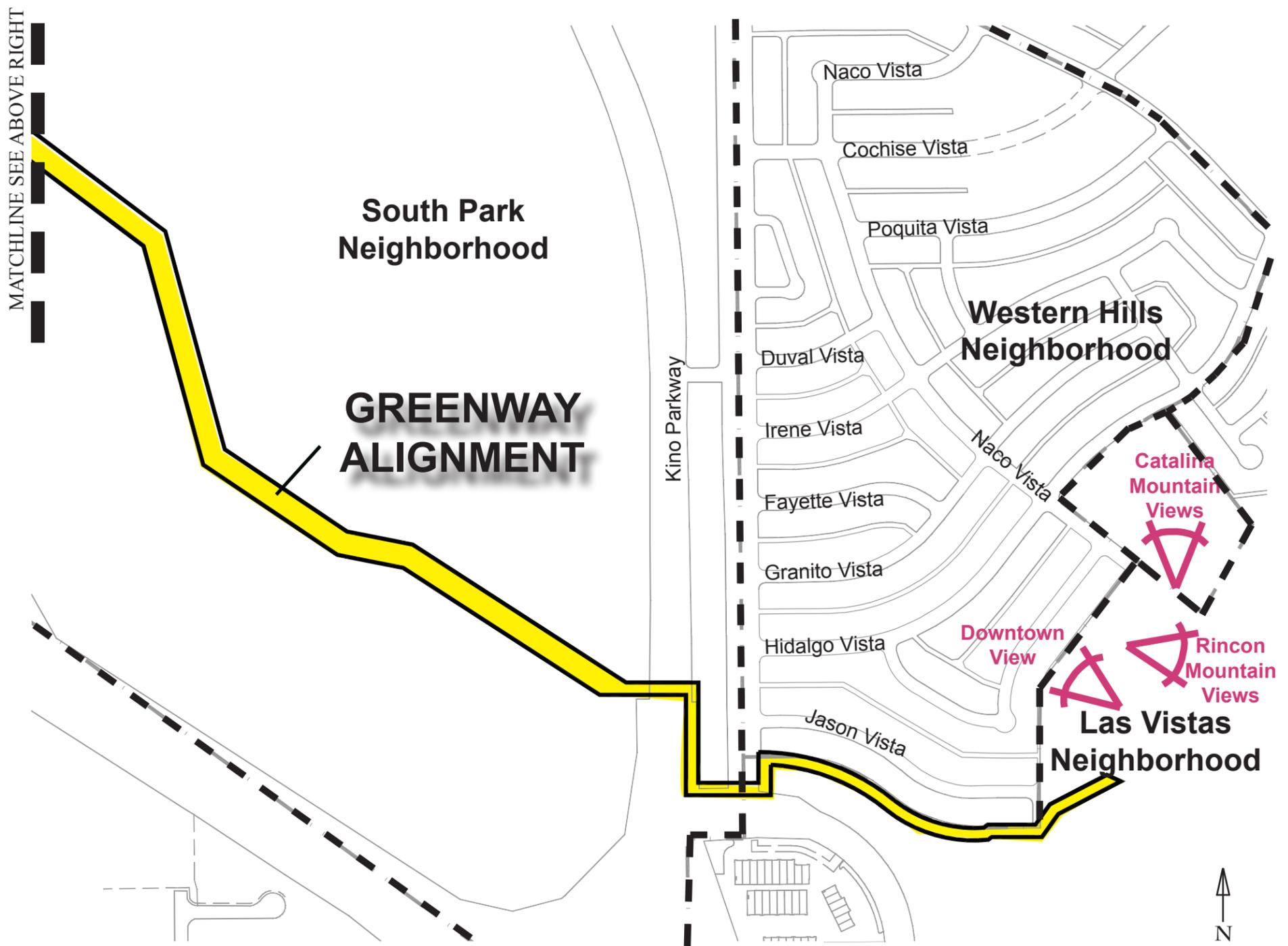
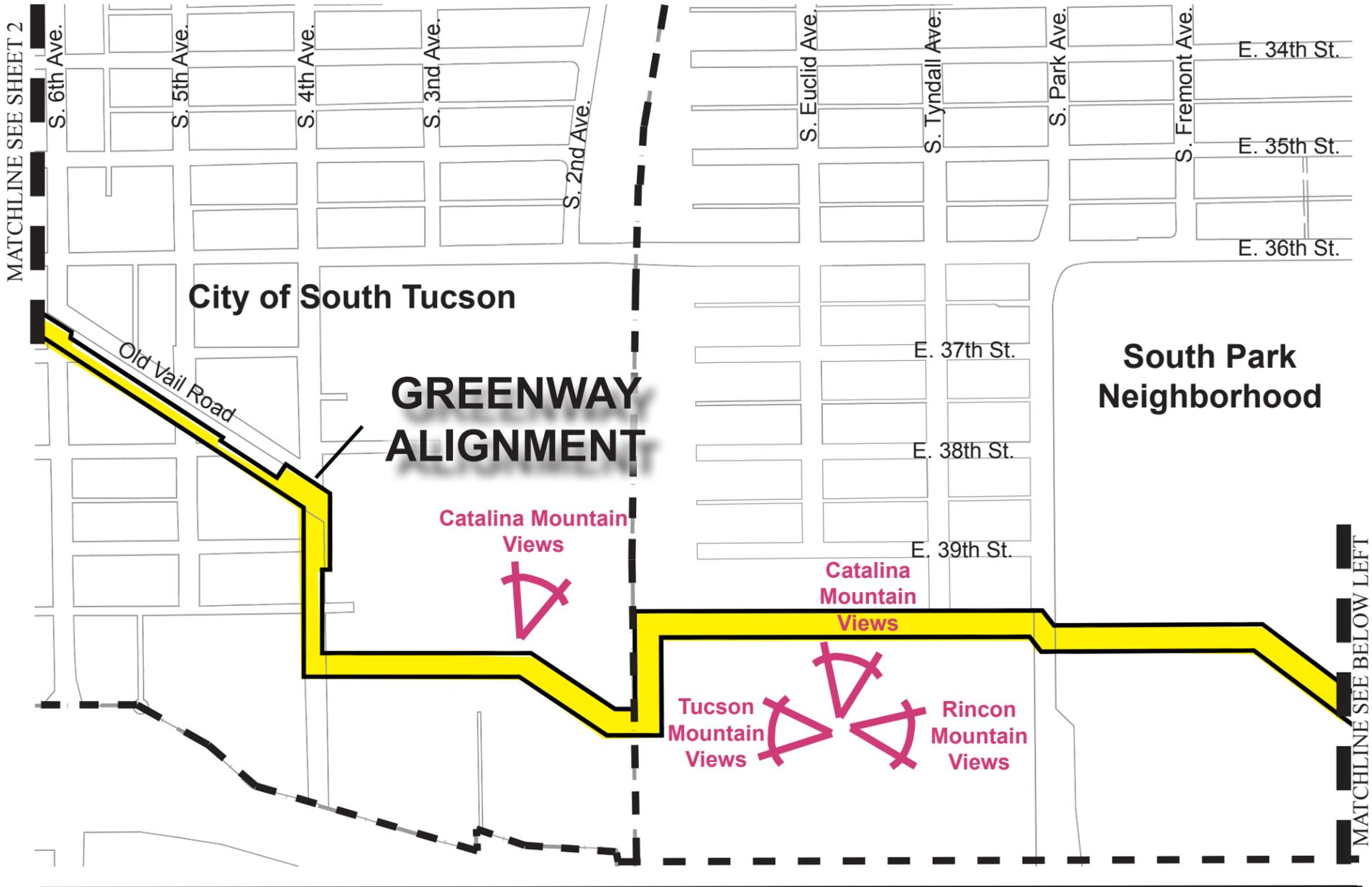
MATCHLINE SEE SHEET 2



**LEGEND**

- Viewsheds
-  View Direction
-  Neighborhood Boundaries

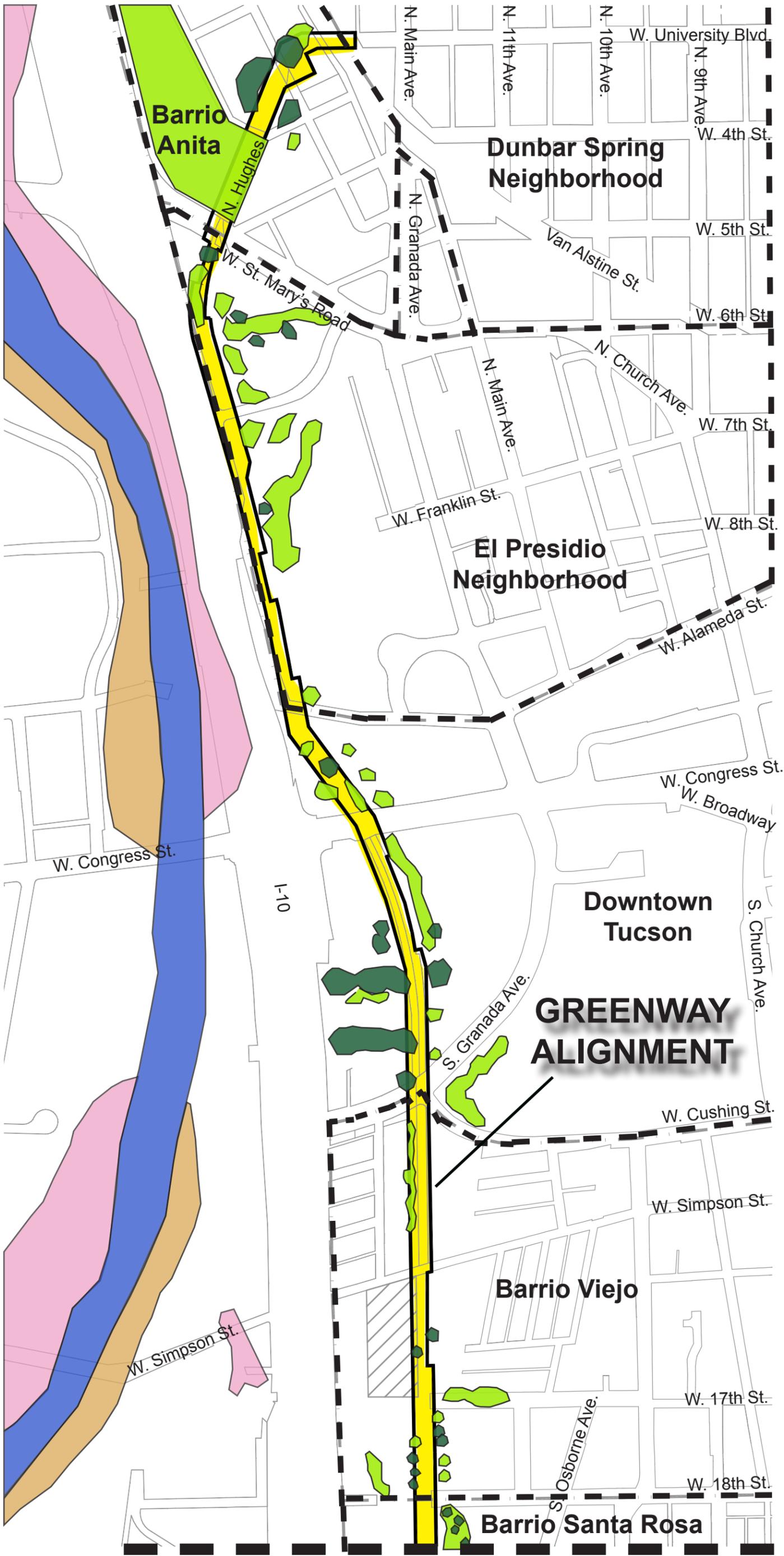
**Figure 15**



**LEGEND**

-  Viewsheds
-  View direction
-  Neighborhood Boundaries

**Figure 15**



## LEGEND

- Riparian Type\*
- Hydromesoriparian
  - Xeroriparian B
  - Xeroriparian C
  - Xeroriparian D

NOTE: All riparian areas along the Santa Cruz are designated Important Riparian Areas

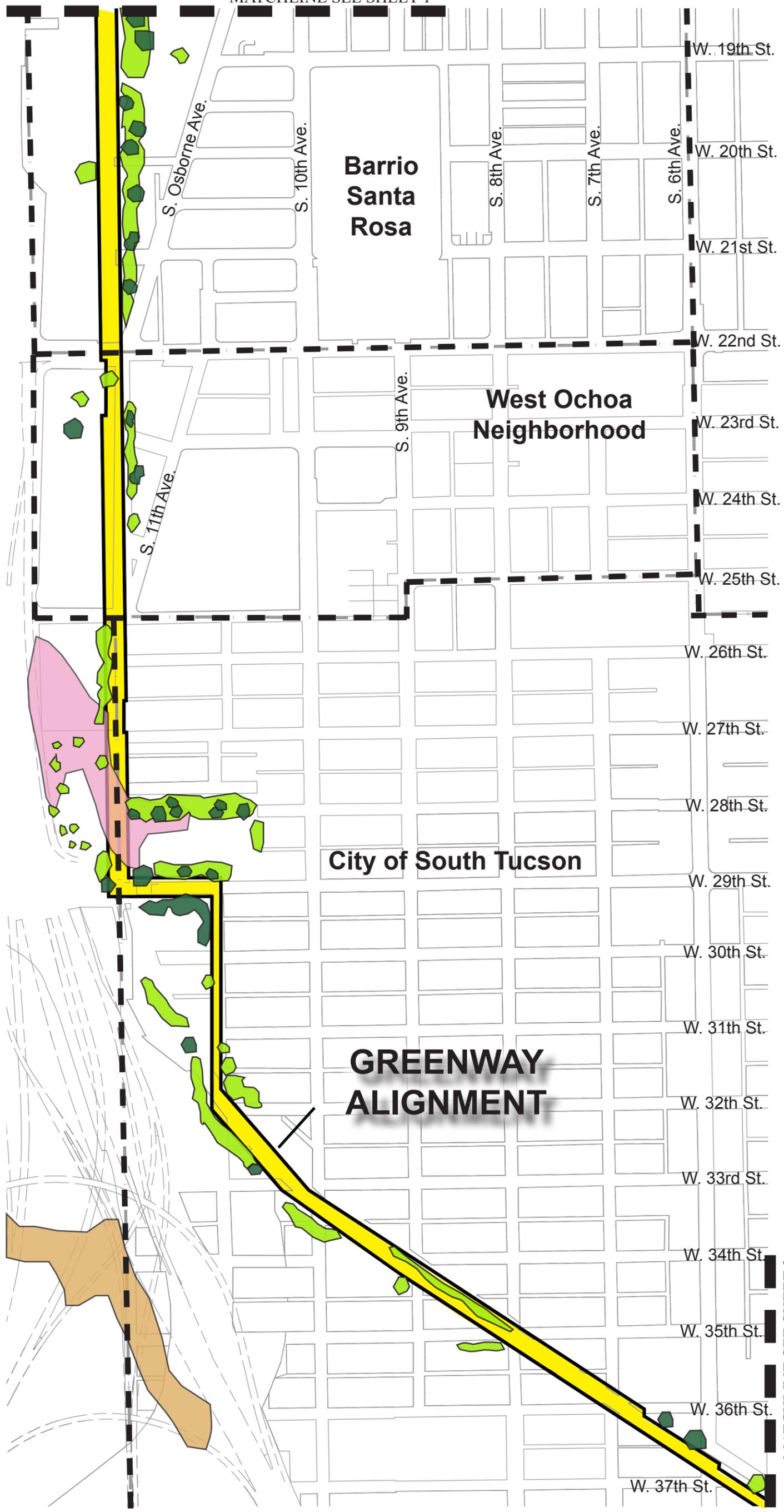
\*Information source: Pima County Mapguide

- Significant Native Vegetation
- Non-Native and Other Vegetation
- Neighborhood Boundaries



**Figure 16**

MATCHLINE SEE SHEET 2



### LEGEND

- Riparian Type\*
- Hydromesoriparian
  - Xeroriparian B
  - Xeroriparian C
  - Xeroriparian D

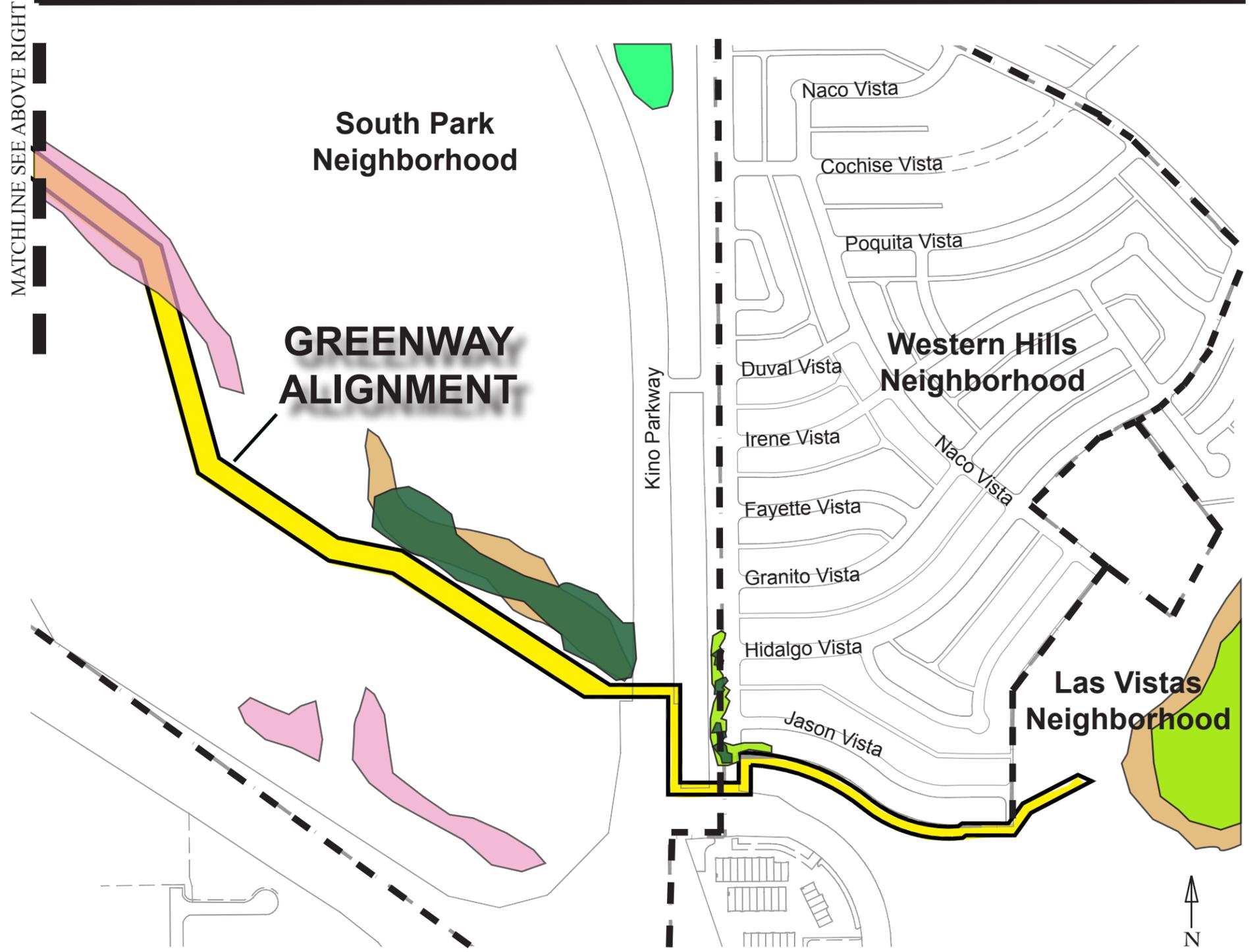
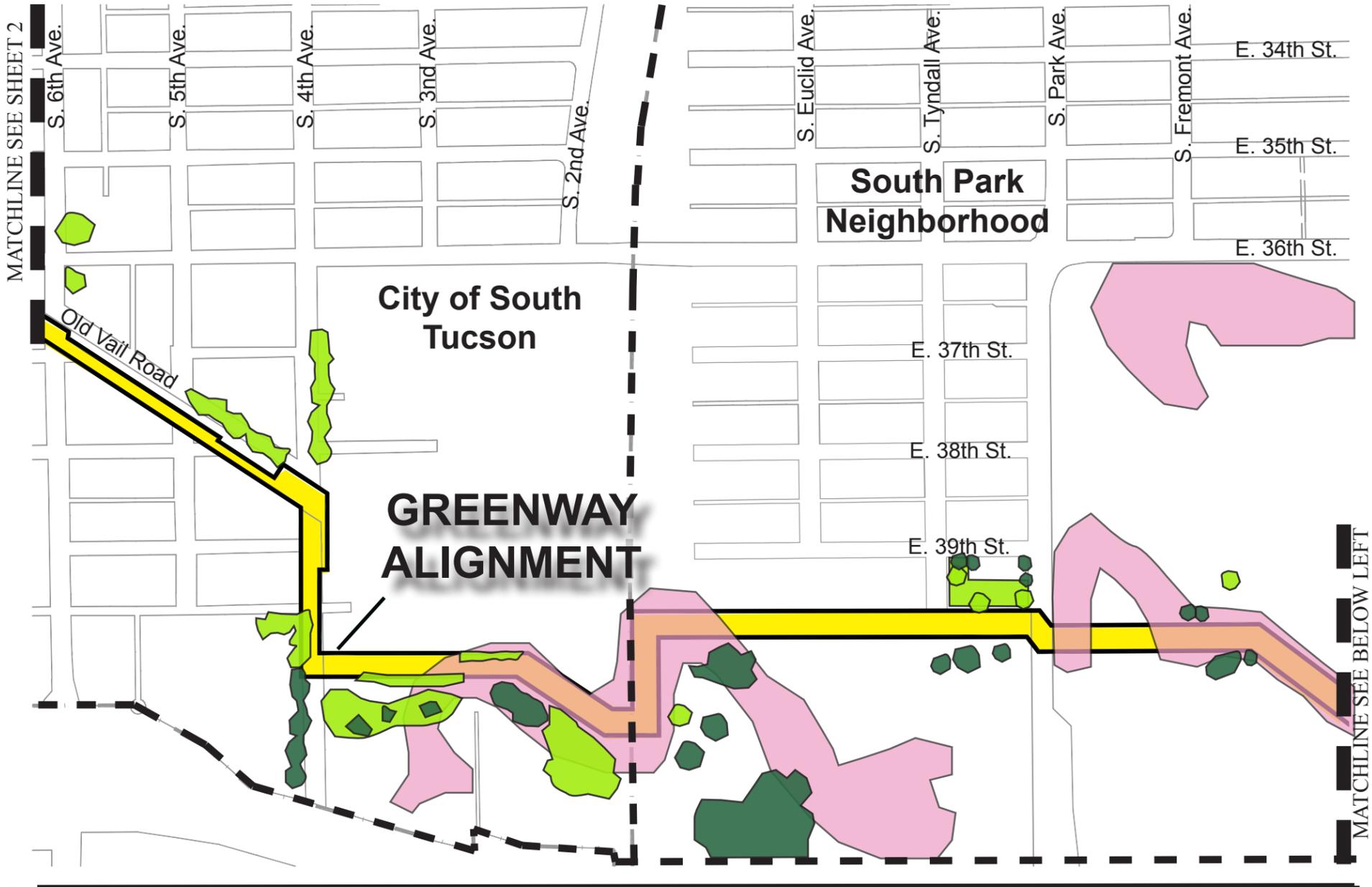
\*Information source: Pima County Mapguide

- Vegetation Type
- Significant Native Vegetation
  - Non-Native and Other Vegetation

- Neighborhood Boundaries



### Figure 16



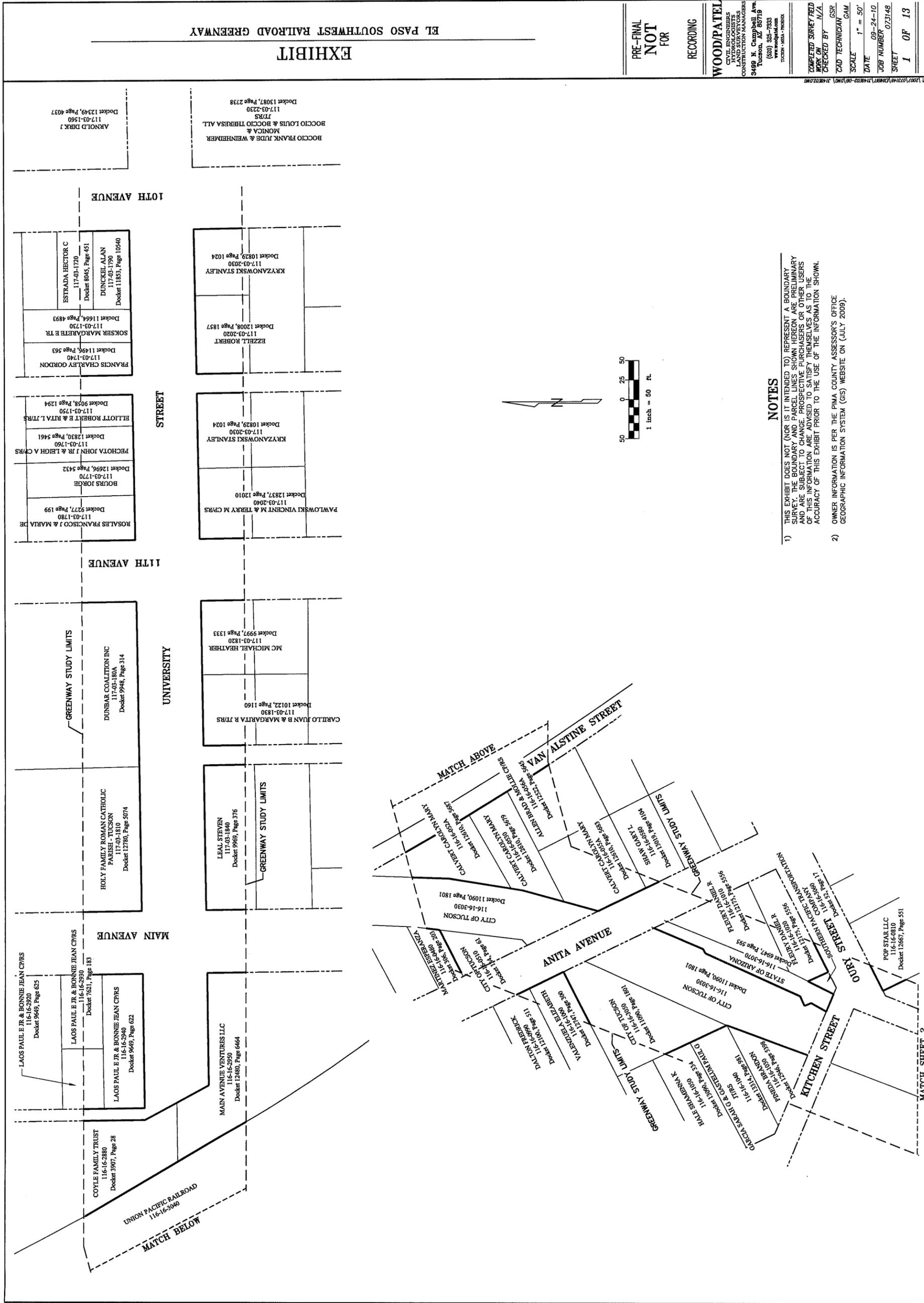
**LEGEND** Riparian Type

- Hydromesori-riparian
- Xerori-riparian B
- Xerori-riparian C
- Xerori-riparian D

- Neighborhood Boundaries

Information source: Pima County Mapguide

**Figure 16**



EL PASO SOUTHWEST RAILROAD GREENWAY

EXHIBIT

PRE-FINAL  
NOT  
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WOOD/PATEL

CIVIL ENGINEERS  
LAND SURVEYORS  
CONSTRUCTION MANAGERS  
3498 N. Campbell Ave.  
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(520) 325-7833  
www.woodpatel.com

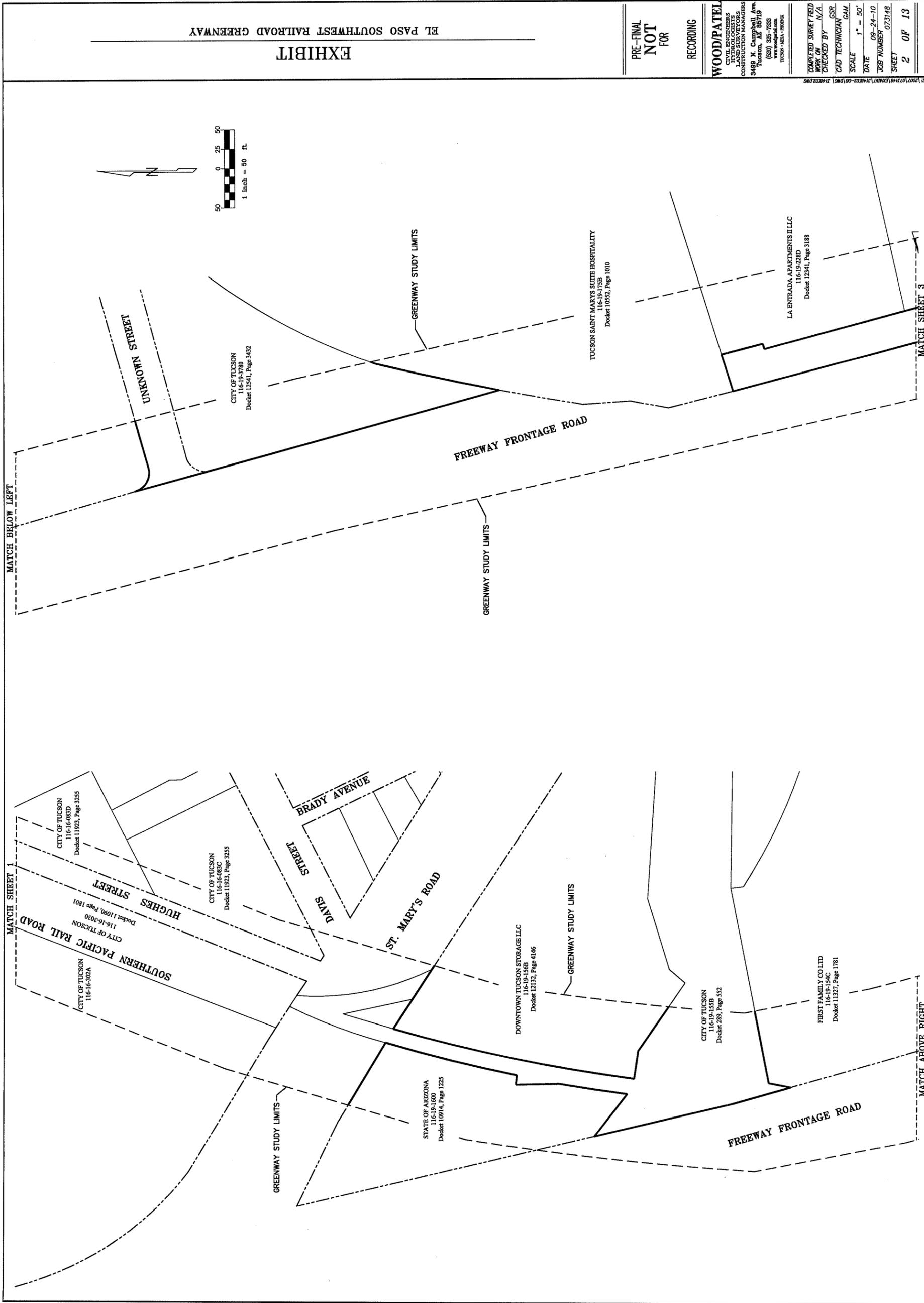
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WORK ON N/A  
CHECKED BY N/A  
CAD TECHNICIAN GJM  
SCALE 1" = 50'  
DATE 09-24-10  
JOB NUMBER 073148  
SHEET 1 OF 13

NOTES

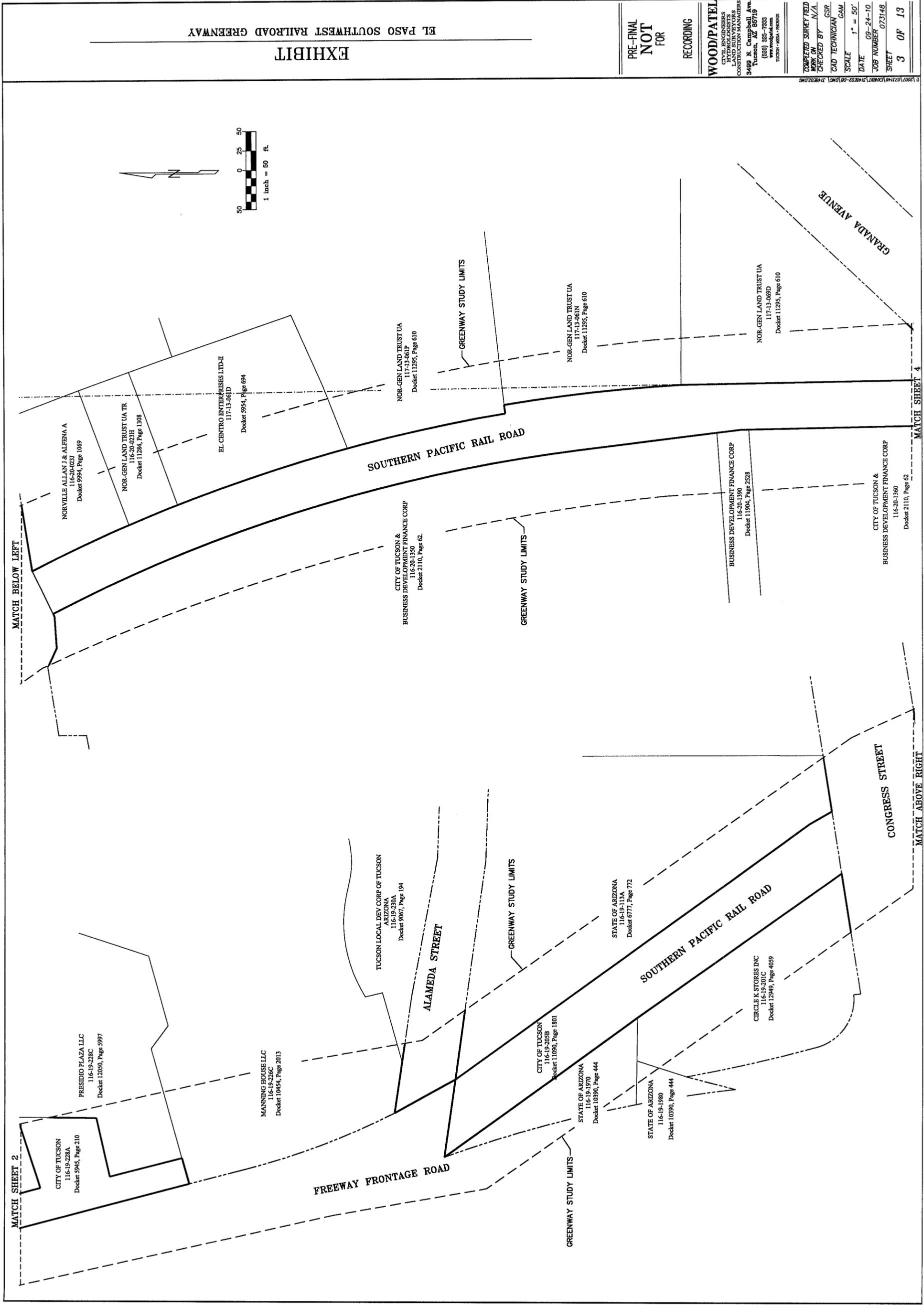
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Figure 17



**Figure 17**



**Figure 17**

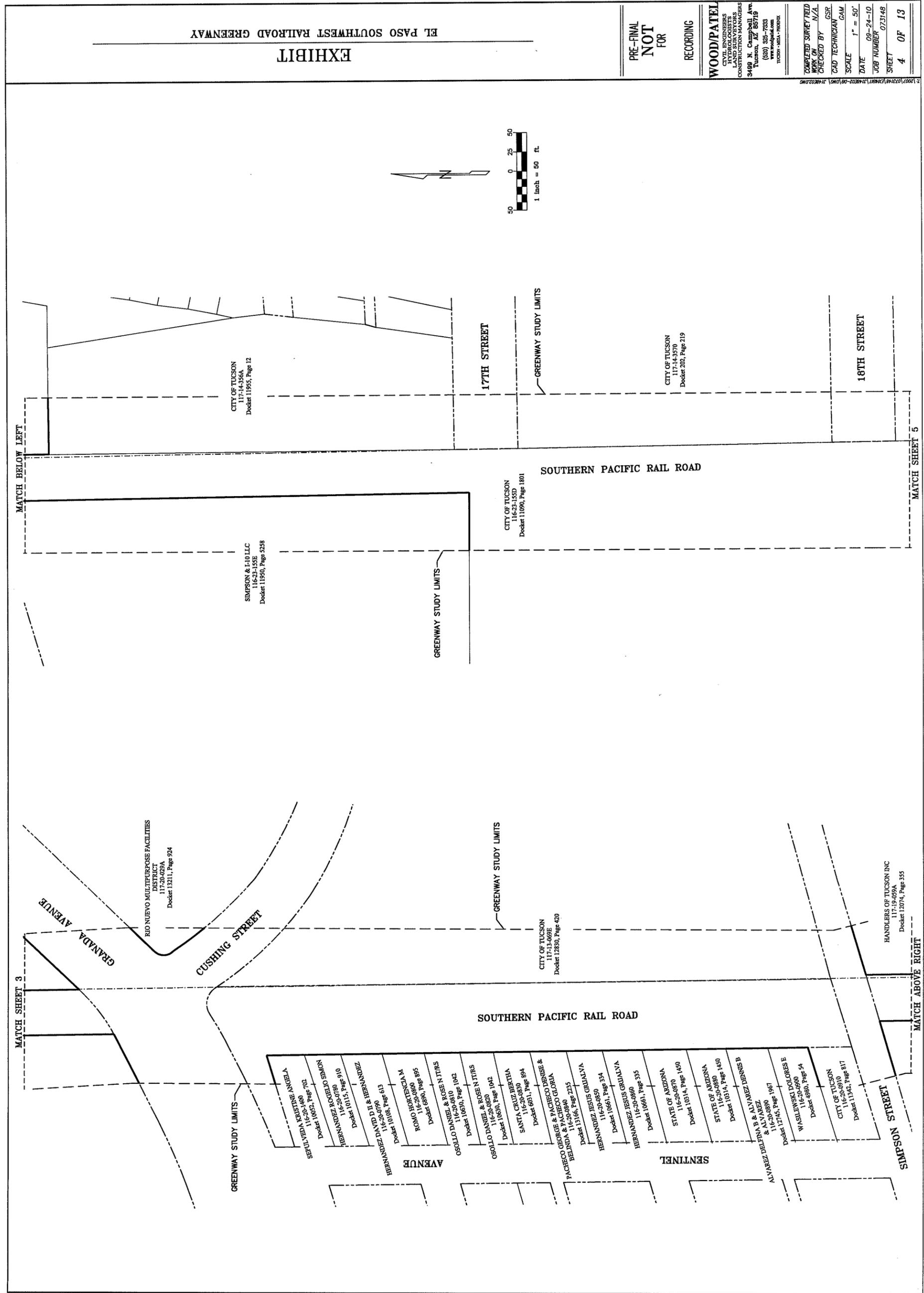


EXHIBIT  
EL PASO SOUTHWEST RAILROAD GREENWAY

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TUCSON - MESA - PHOENIX

COMPLETED SURVEY FIELD	N/A
WORK ON	N/A
CHECKED BY	GSR
CAD TECHNICIAN	GAM
SCALE	1" = 50'
DATE	09-24-10
JOB NUMBER	073149
SHEET	4 OF 13

Figure 17

EXHIBIT

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COMPLETED SURVEY FIELD  
WORK ON N/A  
CHECKED BY GSR  
CAD TECHNICIAN GAM  
SCALE 1" = 50'  
DATE 09-24-10  
JOB NUMBER 073148  
SHEET 5 OF 13

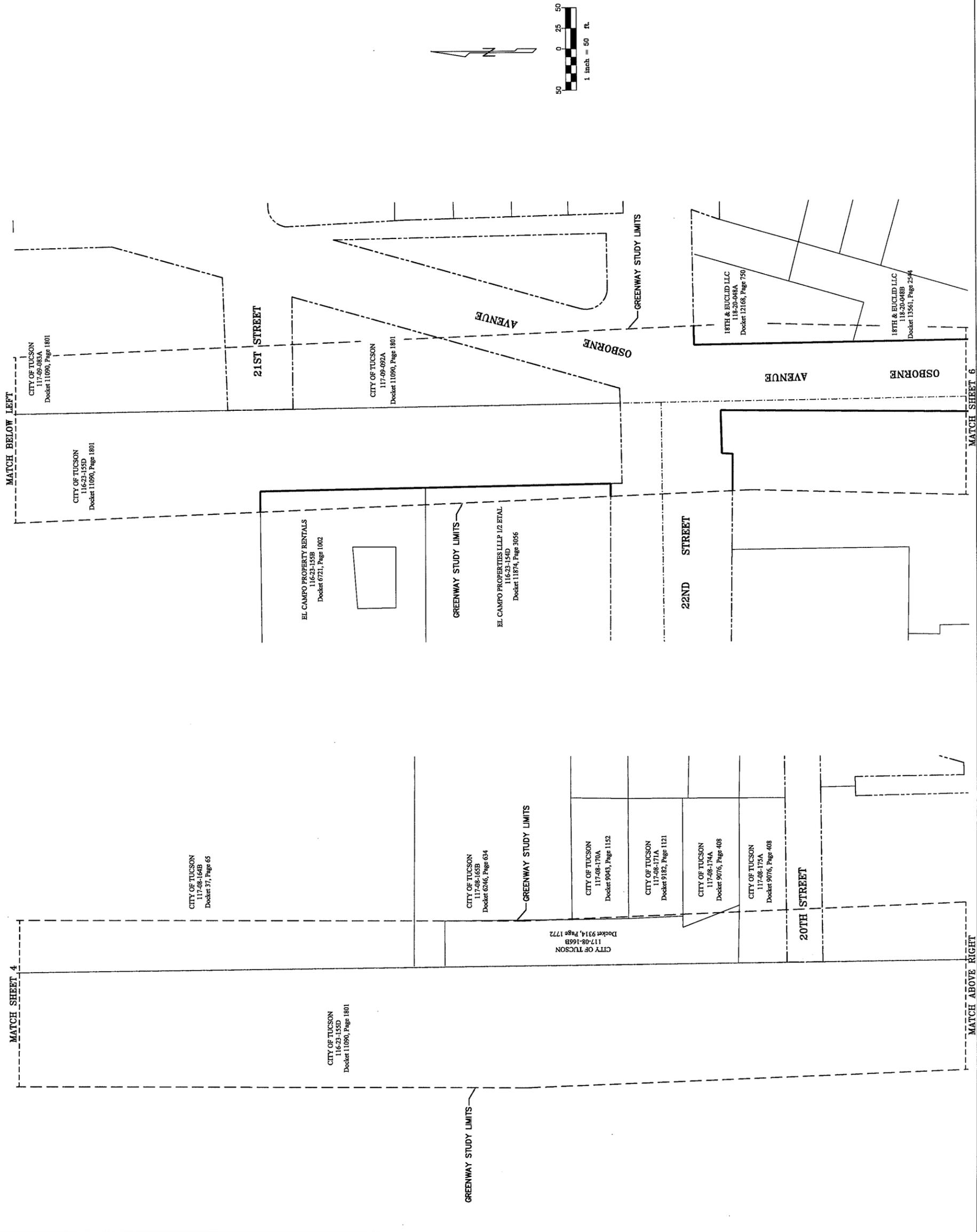
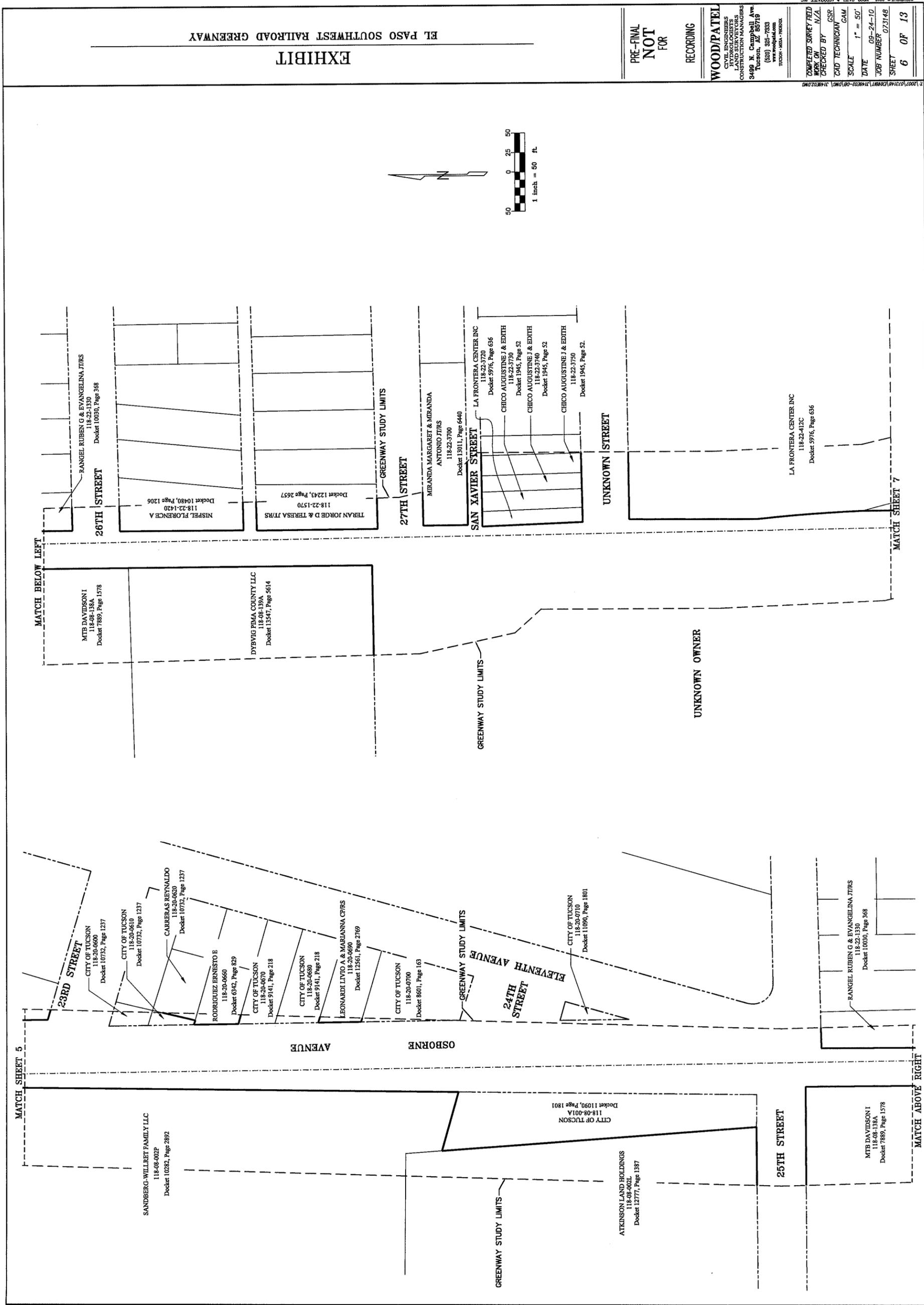


Figure 17



EL PASO SOUTHWEST RAILROAD GREENWAY

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(602) 925-7833  
www.woodpatel.com  
tucson@woodpatel.com

COMPLETED SURVEY FIELD	N/A
WORK ON	N/A
CHECKED BY	GSR
CAD TECHNICIAN	GAM
SCALE	1" = 50'
DATE	09-24-10
JOB NUMBER	073148
SHEET	6 OF 13

Figure 17

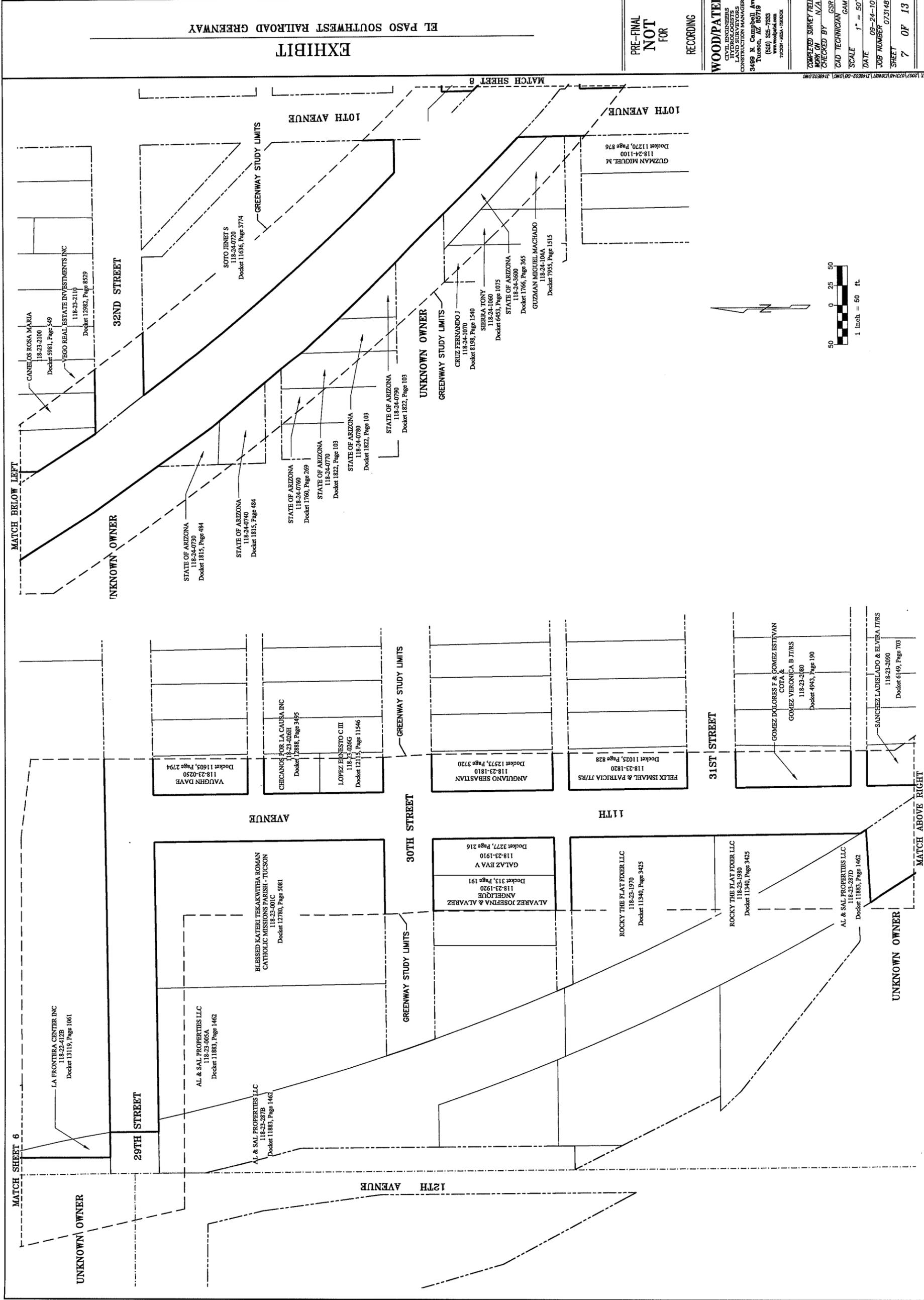


Figure 17

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COMPLETED SURVEY FIELD  
 WORK ON  
 CHECKED BY N/A  
 CAD TECHNICIAN GSR  
 SCALE 1" = 50'  
 DATE 09-24-10  
 JOB NUMBER 073148  
 SHEET 7 OF 13

EL PASO SOUTHWEST RAILROAD GREENWAY  
**EXHIBIT**

MATCH BELOW LEFT  
 MATCH ABOVE RIGHT  
 MATCH SHEET 6  
 MATCH SHEET 8



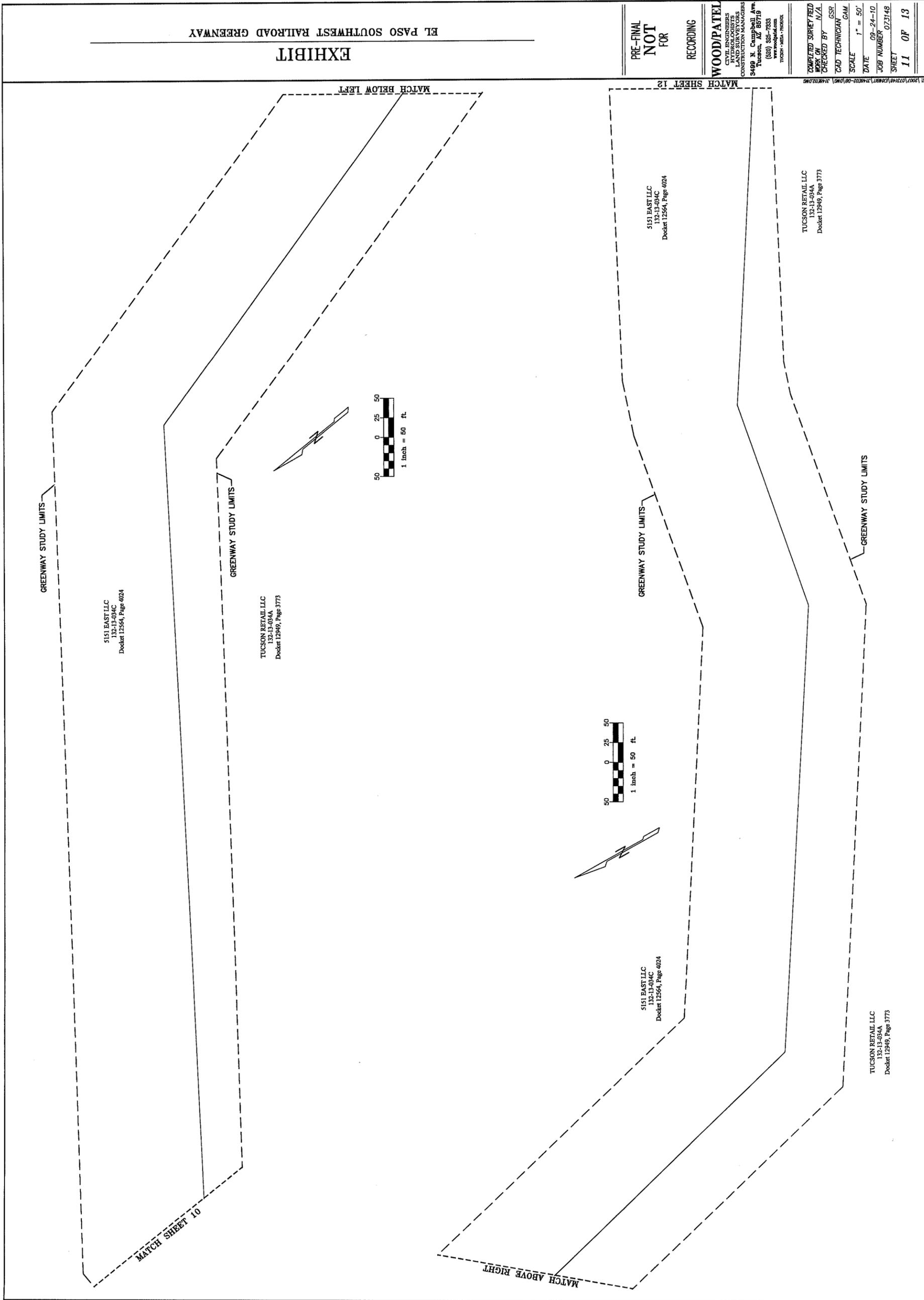




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**EXHIBIT**  
 EL PASO SOUTHWEST RAILROAD GREENWAY



**Figure 17**



COMPLETED SURVEY FIELD  
 MARK ON N/A  
 CHECKED BY N/A  
 CAD TECHNICIAN GSE  
 GMM  
 SCALE 1" = 50'  
 DATE 09-24-10  
 JOB NUMBER 073148  
 SHEET 13 OF 13

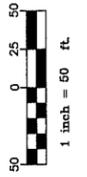
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 & HYDROLOGISTS  
 LICENSED PROFESSIONAL  
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 FOR

EL PASO SOUTHWEST RAILROAD GREENWAY

EXHIBIT



PIMA COUNTY  
 132-08-0073  
 Docket 776, Page 416

PIMA COUNTY  
 132-08-0062  
 Docket 10917, Page 1457

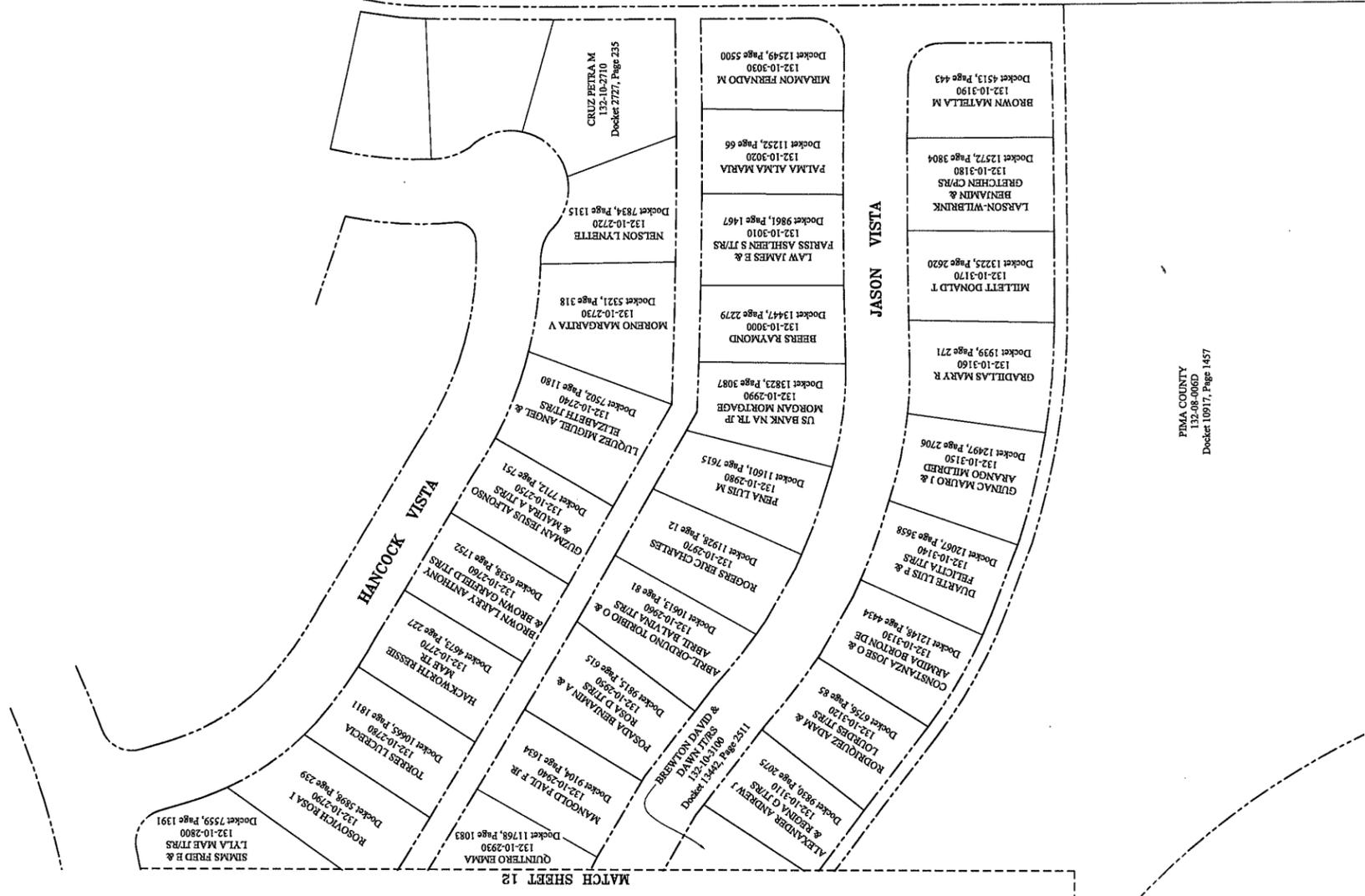


Figure 17





# EL PASO & SOUTHWESTERN GREENWAY

## Appendix

### List of Appendices

- A. Open House Materials
- B. History of the El Paso & Southwestern Railroad
- C. Traffic Report
- D. Union Pacific Railroad Crossing Schematics





## Appendix A - Open House Materials

Note: All materials presented in both English & Spanish.





## EL PASO AND SOUTHWESTERN GREENWAY FACT SHEET



### Overview

The El Paso and Southwestern Greenway will be a six-mile long multi-use path for bicyclists and pedestrians. The pathway will extend along a corridor that was once used by the railroad, from north of downtown Tucson, through the City of South Tucson to the Kino Sports Complex. The new path will be car-free and will connect to other regional bikeways and to many of the neighborhoods that the path travels through.

In 2005, a preliminary concept plan for the Greenway was developed by the Drachman Institute at the University of Arizona. This document will provide guidance for the master planning process that is currently underway. Some of the objectives of the plan are to promote connectivity and recreation; coordinate with other active projects to ensure compatibility; reflect local/regional identity and character; celebrate local history; and serve as a catalyst for positive development.

The Greenway is documented in the City of Tucson Parks and Recreation Strategic Plan, the City of Tucson General Plan, the Downtown Infrastructure Plan, the Regional Transportation Authority's (RTA) transportation plan, the Eastern Pima County Trails Master Plan and the Parks, Open Space and Trails (PROST) plan. The cost for planning, design, right-of-way acquisition, site improvements, traffic devices and construction is estimated to cost \$8 to \$10 million.

### Location

The El Paso and Southwestern Greenway alignment begins near the western terminus of the University Bikeway, near Main Avenue and University Boulevard. It travels south and passes along the west edge of downtown, parallel to Interstate 10, and continues south past St. Mary's Road, Congress Street and 22nd Street. The Greenway enters the City of South Tucson at approximately 29th Street and briefly continues south before diverting on a southeast angle along the old railroad corridor. It proceeds past the Greyhound Park where it exits the City of South Tucson. The Greenway then travels generally east, crosses Park Avenue, then southeast to cross Kino Boulevard and ends at the Kino Sports Complex/Ajo Detention Basin.

### Recent Activity and Progress History

- 2006 – Pima County voters approved \$3.26 million as part of the RTA Plan to fund the development of the El Paso and Southwestern Greenway.
- 2006 – The City of Tucson was awarded a Federal Transportation Enhancement (TE) Grant for the construction of the Greenway from 22nd Street to Cushing Street.
- 2007 – Consulting team, headed by SAGE Landscape Architecture & Environmental was selected to design a master plan for the Greenway.
- 2007 – 'The Bridges' master planned development commits to building one mile of the Greenway through their project.
- 2008 – Design and construction of the downtown Fire Central project will include a portion of the Greenway.

### Contact Information

Tom Thivener – City of Tucson Department of Transportation, Project Manager, (520) 837-6691

Sandra Tolley – SAGE Landscape Architecture & Environmental, Inc., Design Team Project Manager – (520) 740-0950

Corky Poster – The Drachman Institute, University of Arizona – (520) 882-6310

Paki Rico – Gordley Design Group, Community Outreach – (520) 327-6077

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**EL PASO AND SOUTHWESTERN RAILROAD  
GREENWAY PROJECT**

**DRAINAGE FACT SHEET**



The El Paso and Southwestern Railroad Greenway project is subject to over 17 square miles of runoff from Tucson's urban areas, which drains northerly and westerly towards the Santa Cruz River. These drainage areas were evaluated in the Tucson Stormwater Management Study and include the: West University Wash; Tucson Arroyo; Downtown Watershed; Cushing Street Wash; 18th Street Wash; and Mission View Wash. During a 100-year storm event, the peak rate of runoff from those drainage areas ranges from as little as a few cubic feet per second (cfs) to over 8,000 cfs at the Tucson Arroyo. Appurtenant to a variety of projects, there are several recent and planned drainage improvements affecting the runoff that approaches the Greenway Alignment, including the following:

**Recently Completed – Drainage Improvements:**

Army Corps of Engineers (COE)/Pima County (PC)/City of Tucson (COT) – Detention Basins at Cherry Field; COT – Detention Basins at Quincie Douglas Park; Detention Basins at Sam Lena Park and the Arizona Department of Transportation (ADOT) Interstate 10 Stormwater Detention Basins at 29th Street.

**Underway – Drainage Projects:**

ADOT – Culverts at channels attendant to the widening of I-10; Mission View Wash Regional Flood Control Stormwater Detention Basin and the storm drain at Fire Central – Tucson's newest fire station.

**Planned – Drainage Projects:**

COE/PC/COT – Detention Basins at Park Avenue; storm drains associated with the 22nd Street Improvements; storm drains associated with the Downtown Arena Improvements; storm drains associated with the Tucson Convention Center Hotel Improvements; Greyhound Wash runoff re-direction into the Mission View Wash Stormwater Detention Basin and the Fiesta Wash Stormwater Detention Basin.

**Contact Information**

Tom Thivener – City of Tucson Department of Transportation,  
Project Manager, (520) 837-6691  
Sandra Tolley – SAGE Landscape Architecture & Environmental, Inc.,  
Design Team Project Manager – (520) 740-0950  
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## EL PASO AND SOUTHWESTERN RAILROAD GREENWAY PROJECT



### SAFETY FACT SHEET

People and businesses that own land along the proposed Greenway corridor comprise an important group on the El Paso and Southwestern Railroad Greenway Project. The enhanced corridor will not only add beauty to benefit the surrounding properties, but it will build community pride. As with any linear park or greenway project, safety is always a concern among not only those who live or work along it, but for the end user of the pathway. Listed below are some ways the City of Tucson and the Greenway Team will help to make the El Paso and Southwestern Railroad Greenway a safe and attractive transportation and recreation corridor for residents and visitors:

#### **Security Plans:**

- Use of the Crime Prevention Through Environmental Design (CPTED) guidelines throughout the design process.
- Inclusion of Tucson Police Department (TPD) staff on the project's technical advisory committee.
- Lighting and landscaping will be evaluated for appropriate placement in strategic locations along the corridor. These amenities play an important part in crime prevention.
- Clear guidance to access points along the Greenway.
- Movement along the Greenway will consist of a Divided Urban Pathway (DUP) where space allows. A DUP consists of an eight-foot soft path for pedestrians and a 12-foot asphalt path for bikers and skaters with a landscape buffer in-between. This design helps to reduce conflicts between the different users.
- City of Tucson Parks and Recreation Department will handle the maintenance of the Greenway. Places that are regularly maintained deter criminal activity. Increased public activity along the corridor results in increased interest, awareness and intolerance of criminal activities.

#### **Contact Information**

Tom Thivener – City of Tucson Department of Transportation, Project Manager, (520) 837-6691  
Sandra Tolley – SAGE Landscape Architecture & Environmental, Inc., Design Team  
Project Manager – (520) 740-0950  
Corky Poster – The Drachman Institute, University of Arizona – (520) 882-6310  
Paki Rico – Gordley Design Group, Community Outreach – (520) 327-6077

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## Appendix B - History of the El Paso & Southwestern Railroad



### 1853: The Gadsden Purchase

### 1863: Arizona Territory is Established

### 1875: Copper is Discovered in Arizona Territory

Prospector Hugh Jones discovers copper and stakes the first mining claim in the Mule Mountains of Arizona Territory, 10 miles north of the Mexican border.

### 1877: Word Spreads Quickly

A group of scouts from the 10th U.S. Cavalry out on Apache reconnaissance in the Sulphur Spring Valley see silver float in a streambed of the Mule Mountains while searching for water. Officers stake several claims including on the north face of Sacramento Hill. Sergeant John Dunn grubstakes a prospector named George Warren to work the claim while he fulfills his remaining Army service requirement. Dunn returns two years later to find Warren working his own claim, and numerous others nearby.

Disgusted, Dunn sells his stake for \$4,000 and leaves the area. Later his claim will come to be known as the Copper Queen claim, one of the richest copper ore deposits ever discovered, with grades running as high as an unheard of 23%.

### 1878: Mules and Men

Copper mining in Bisbee expands. Ore is hauled by mule train over Mule Pass and north to Benson to the Southern Pacific line for transport to smelter facilities in Pennsylvania.

### 1879: Smelting Begins

And how! The Mule Mountains, part of a biological chain of southwestern sky islands forested with Douglas-fir and other conifer, at elevations ranging from 6,000 to 7,500 feet, is denuded at a rapid rate and fed to the local smelters. Within several years Bisbee's canyons and gulches are choked with polluted air of the smelters; flooding becomes a chronic problem, the result of the extensive deforestation.

### 1880: "Bisbee" is Named

Entrepreneur Ed Reilly purchases the Copper Queen claim and begins working it with \$80,000 he raises from Judge Dewitt Bisbee, a San Francisco investor who will never see the town that is named after him.

### 1881: Dr. James Douglas

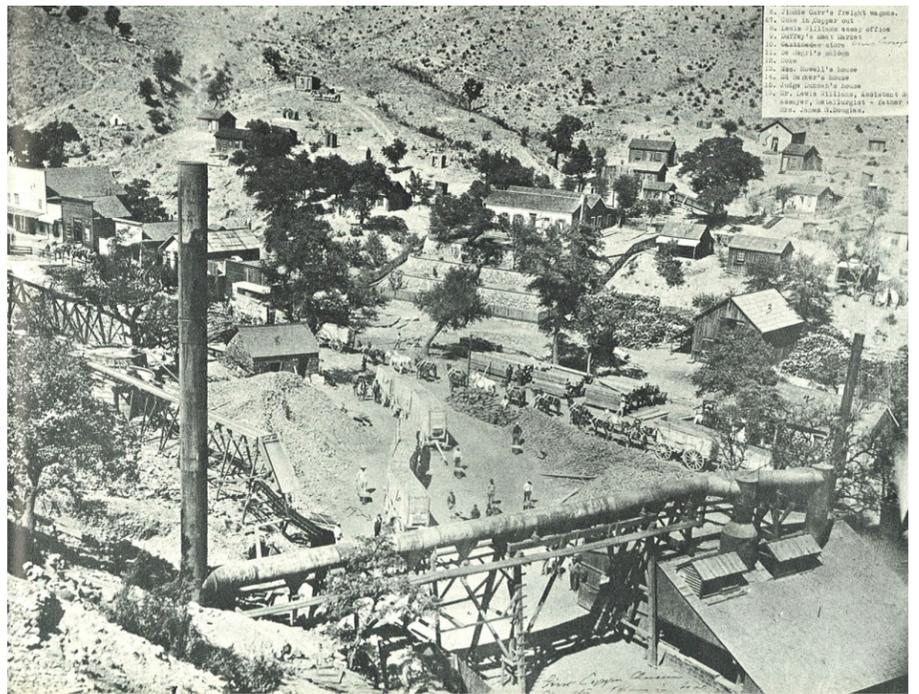
A young educated metallurgist and mining engineer, employed by Phelps Dodge sees high quality ore from Bisbee in a Pennsylvania smelter. He travels to Bisbee, and Phelps Dodge, already mining in Morenci, purchases a mining company and several mining claims in Bisbee.

### 1882: The New Mexico and Arizona Railroad Co.

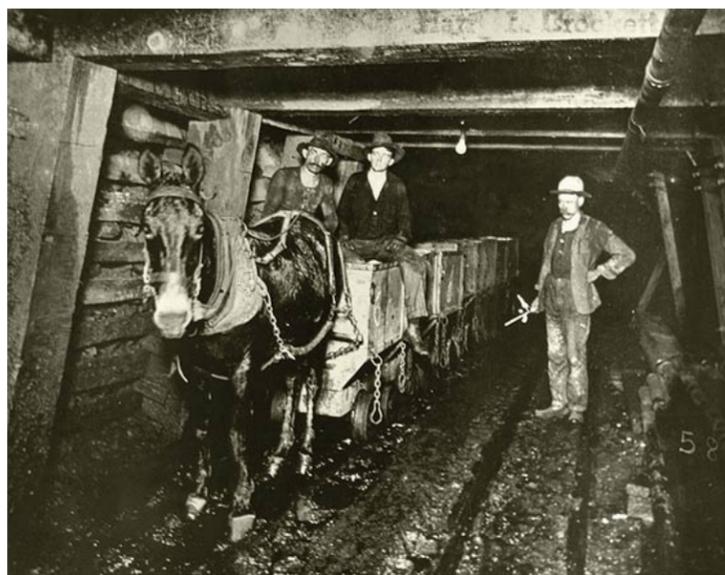
The Atchison, Topeka & Santa Fe subsidiary sees opportunity in the area and develops a new line between Benson on the Southern Pacific line, south to Fairbank (and half-way to Bisbee).

### 1884: Phelps Dodge Acquires the Copper Queen Claim

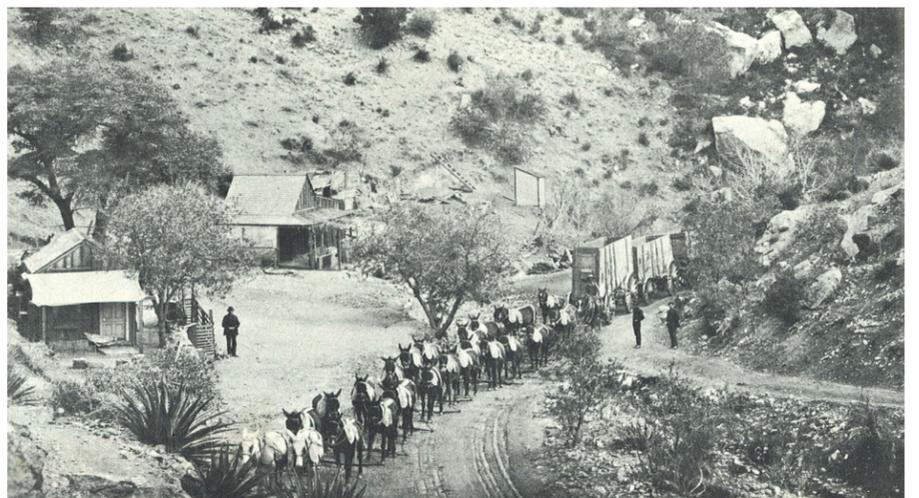
Through the leadership of James Douglas, Phelps Dodge begins mining operations on what will become the third largest copper haul in the world. He introduces organized management and begins the first of several mining operation consolidations. He introduces a policy of racial segregation for mine workers: Mexican workers are not permitted to perform skilled jobs and are paid less than their Anglo counterparts. Phelps Dodge owns the Bisbee library, newspaper and company store.



Bisbee in 1883, at 5300' elevation, in a canyon of the Mule Mountains, 10 miles north of Mexico; the Copper Queen claim is at center (Myrick p. 181).



Men and mules worked long, exhausting days underground <http://www.library.arizona.edu/exhibits/bisbee>.



A 20-mule freight wagon stopped at Castle Rock before surmounting the summit just west of Bisbee circa 1887 (D. Myrick p. 178).



Smelting operations, by 1895 had fouled the air and deforested the surrounding hills and canyons. Ravaging floods and water shortages were frequent occurrences (D. Myrick p. 183).

### 1885: Mining Consolidation

Phelps Dodge acquires its largest competitor and the Copper Queen Consolidated Mining Company begins operations as the principal mining property of Phelps Dodge. The mine produces a steady output of copper bullion and requires constant input of coal and coke to fuel smelter operations. The expense of establishing a railroad into the rugged hills of Bisbee is enormous and all freight options are considered before a railroad is established.

### 1887: Freight Volume Grows

The Copper Queen's smelters are now turning out 20,000 tons of copper annually. Phelps Dodge surveys two rail routes out of Bisbee. One follows the toll road over Mule Pass and includes tight curves and steep grades requiring narrow gauge and subsequent transfer to standard gauge at the Fairbank junction. The route selected heads south out of Bisbee around the Mule Mountains, and though seven miles longer, holds grades to 2 ½ percent. This reduces construction costs and transportation time along the route, an important consideration given the friable nature and considerable expense of imported Colorado coke.

### 1888: A Railroad is Born

Phelps Dodge starts a railroad subsidiary, initially named the Arizona and Southeastern (AS&E), and later renamed to the El Paso and Southwestern. In June, twenty-eight rail cars arrive attached to the New Mexico and Arizona Railroad line in Fairbank. Phelps Dodge unloads multiple scrapers and mule teams, opens a Fairbank office and begins construction of thirty-six miles of railroad, crossing valuable river front ranch land along the east bank of the San Pedro River. From Fairbank, to Charleston, to Lewis Spring, river access is hotly contested, the many users of the frequent ditches, fields, crops along the way cause numerous delays in construction.

### 1889: The First Train from Fairbank to Bisbee

The citizens of Bisbee line the tracks on February 1, 1889. The line costs a total of \$457,419 to build. The Phelps Dodge Copper Queen Consolidated Mining Co. finances construction with \$400,000 in cash plus \$85,000 of debt through 6% mortgage bonds due in 4 years. The AS&E operates a mixed train of passengers and freight, leaving Bisbee at 7:00 AM and arriving at Fairbank two-and-a-half hours later, the return trip to Fairbank at Noon. Trips run daily, except on Sundays, in deference to the religious feelings of the partners.

### 1894: Freight Rate Dispute Promises End of NM&A

In rapid response to a disagreement with the New Mexico and Arizona Railroad (NM&A) over freight rates from Fairbank to Benson, Phelps Dodge begins transporting ore directly to Benson in continuous round trips of eight 14-mule teams.

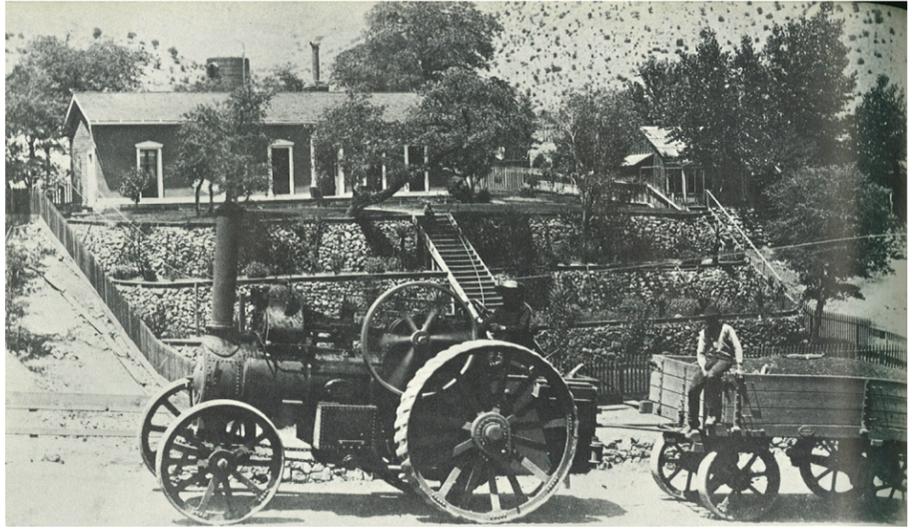
Mule teams collect ore wagons from the (Phelps Dodge) AS&E arriving in Fairbank from Bisbee. The mules pull 19 miles north to the Southern Pacific line in Benson, returning the next day with the equipment and supplies to build a new rail line and operate the mine. The New Mexico and Arizona Railroad will soon be unused and a stop at Fairbank unnecessary.

### 1894: AS&E From Benson to Bisbee

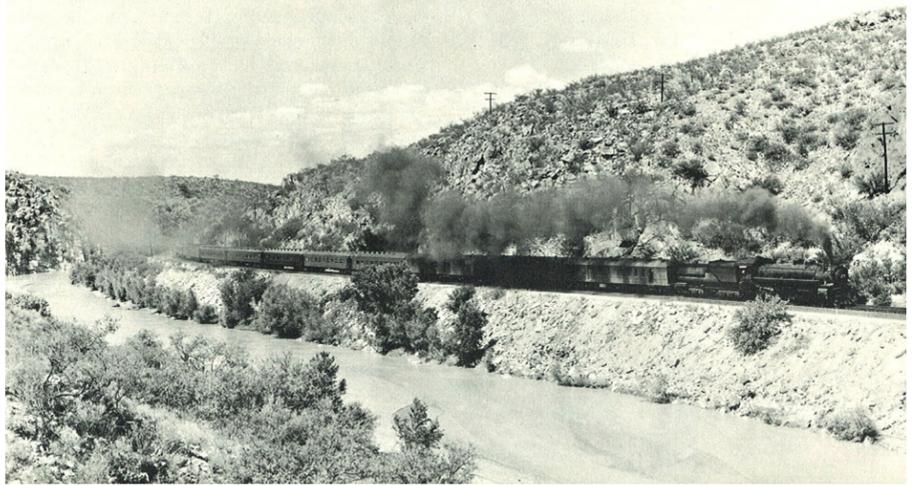
Phelps Dodge extends the El Paso and Southwestern track nineteen miles north to Benson, a complete duplication of track running parallel to the New Mexico and Arizona track.

### 1899: The Douglas Family Dynasty

The son of Dr. James S. Douglas, Walter Douglas is placed in charge of Bisbee copper operations and named managing director of the railroad company. Dr. James Douglas turns his attention to expansion of smelter operations outside of Bisbee and the founding of Douglas.



Phelp Dodge attempts to use a Fowler steam engine to haul heavy ore trains but it proves no match for the slick wet grades of the Mule Mountains. (Myrick p. 180)



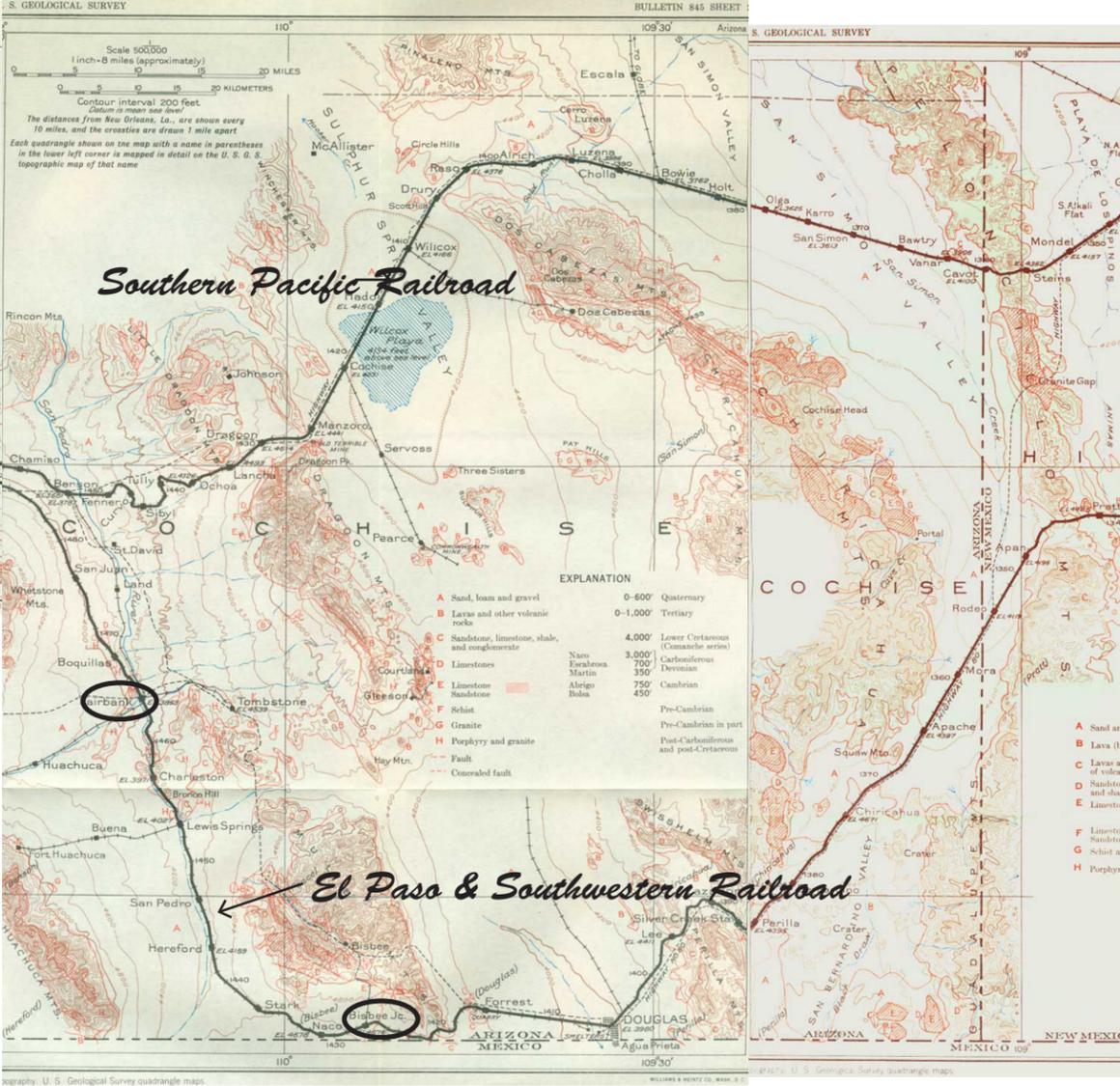
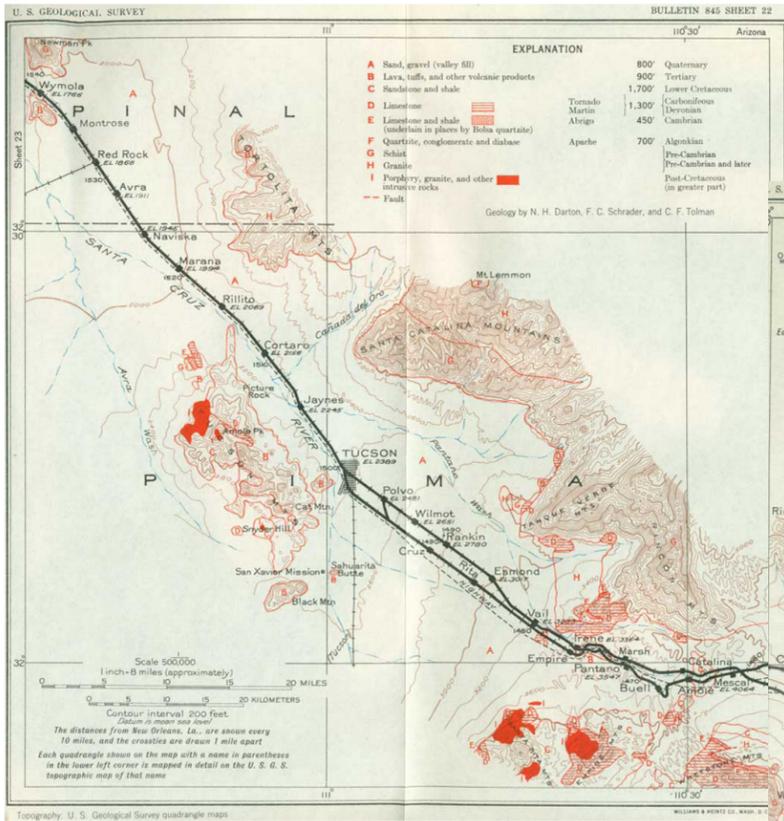
The San Pedro River in flow stage. The route to from Fairbank to Bisbee required acquisition of valuable land along the river. (Myrick p. 233)



Fairbank was an important watering, feeding and overnight stop for well travelled routes by trains and mules. The establishment of Douglas in 1901 turns copper's focus east, drastically reducing travel through Fairbank. (<http://www.arizonaghosttowntrails.com/fairbank.html>)



The busy Fairbank station supported a bustling town. "The mixed train is on the (left) mainline, the SP 1623 engine is on the house track and a combine is standing on the Tombstone branch line" (D. Myrick p. 201).



Bisbee, 4th of July jack rock drilling contest, cr. 1903 (D. Myrick p. 197).

**1900: Chronic Water Shortages in Bisbee**

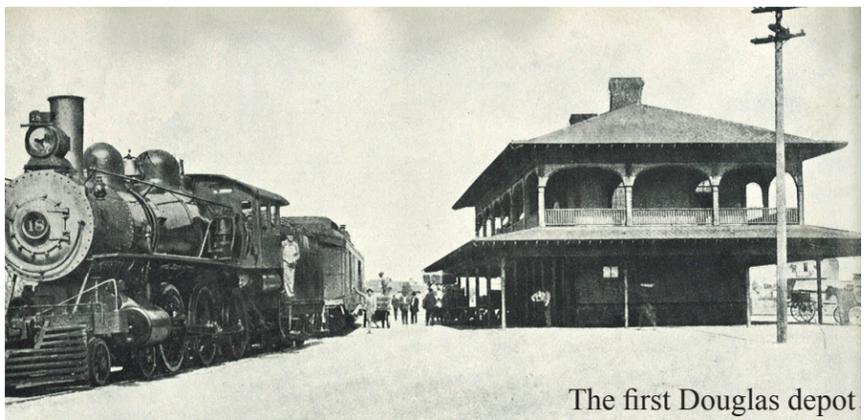
In July water is nearly scarcer than whisky; the water company can serve homes for only two hours per day, around noontime. The town is dependent on the daily train bringing water cars from Lewis Springs during the hot, parched summer months.

**1901: The Town of Douglas**

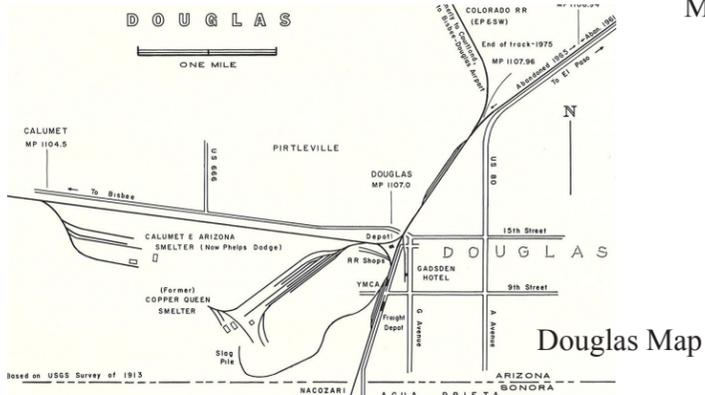
Phelps Dodge, under the direction of Dr. James Douglas, acquires Douglas Townsite, Arizona Territory, and immediately extends the El Paso and Southwestern Railroad twenty-six miles east and south to the new town. Douglas is the site of Phelps Dodge principal smelter and becomes the new boom town. The location is carefully selected for its proximity to the Nacozari and Cananea mine subsidiaries located in Sonora, Mexico, and its well-accessible groundwater supply capable of supporting water-intensive smelting operations and town expansion.

**1902: The El Paso and Southwestern**

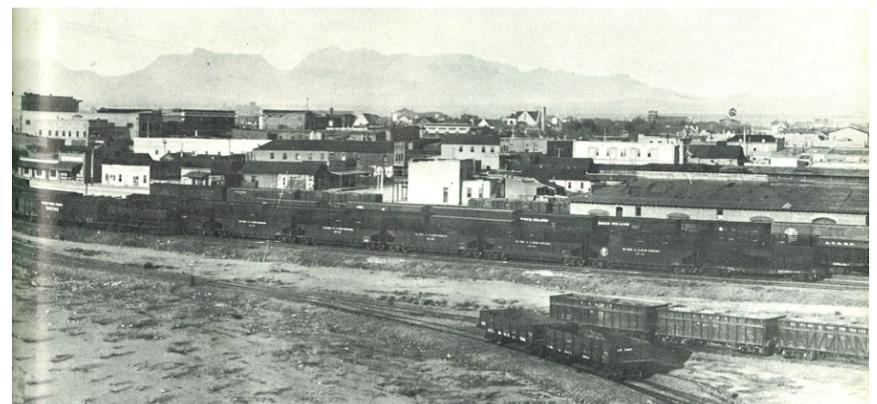
For its expanding range, The Arizona & Southeastern Railroad is renamed The El Paso and Southwestern. Track is extended 600 miles east across New Mexico Territory to El Paso, Texas and 100 miles north to Deming, New Mexico Territory (Arizona and New Mexico became states in 1912).



The first Douglas depot Myrick p. 216.



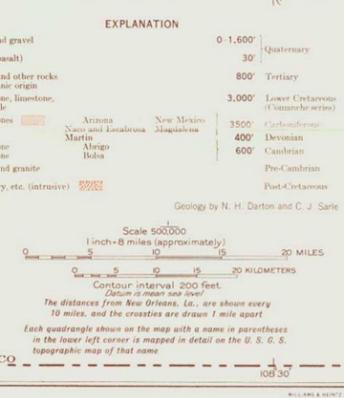
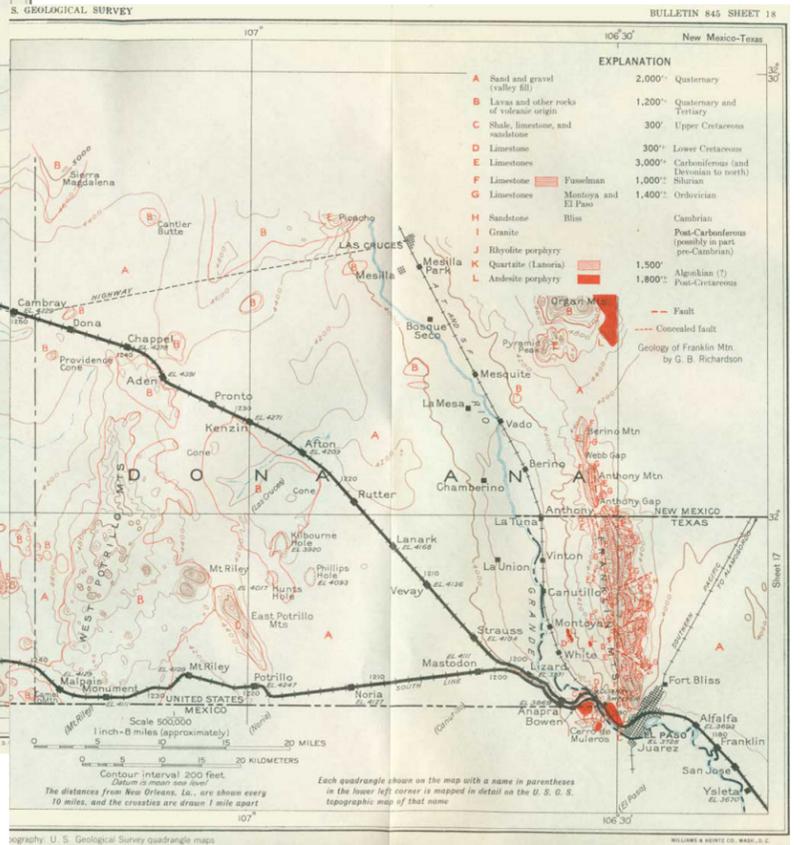
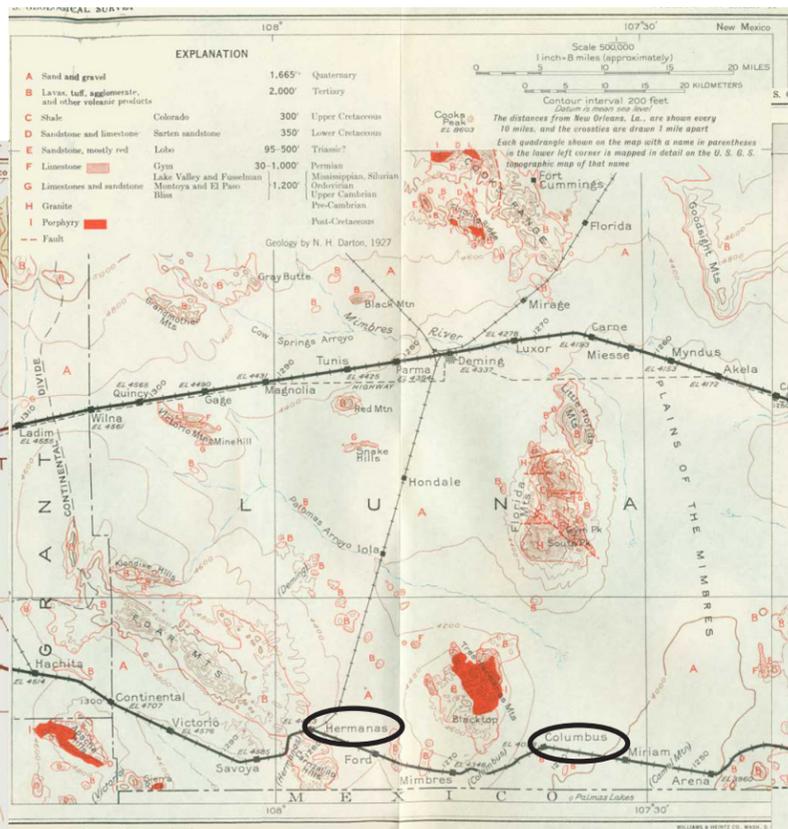
Douglas Map



Looking east over the Douglas rail yard. The freight house is at the right, the Gadsden Hotel far left (all photos D. Myrick p. 217).



Bisbee panorama

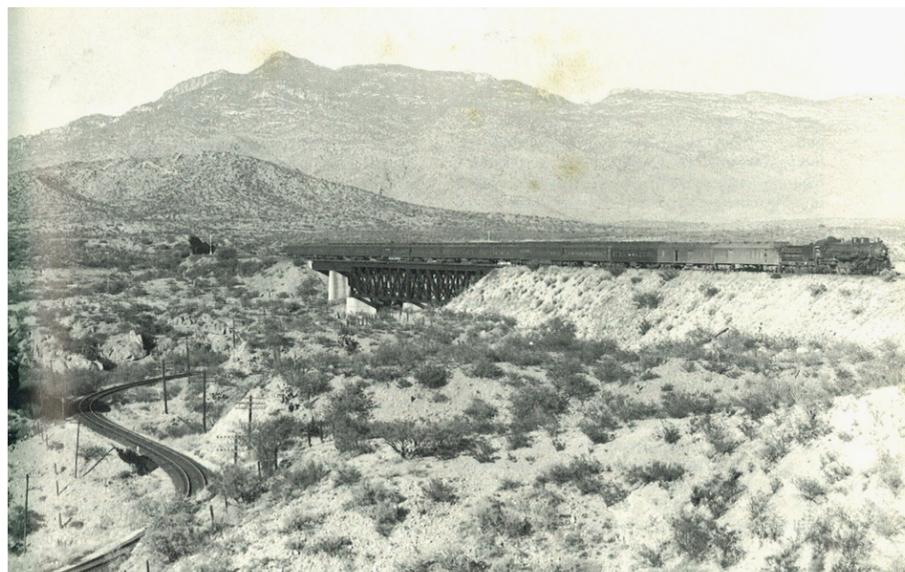


The EP&SW Logo  
AHS #73574

### 1910: Tucson Emerges as a Growing City

With a population of 13,193, and a logical stop on a route westward to California, Walter Douglas announces that he is considering expansion of the EP&SW 66 miles west from Fairbank to Tucson. Tucson leaders and businessmen jump at the opportunity for another train and offer land, terminal facilities and other inducements. The Tucson Chamber of Commerce forms a business consortium to raise \$75,000 for right-of-way procurement. In a form letter to property owners they write "it is absolutely imperative that this money be raised, to the end that Tucson be made the great railroad and business center that she should be. With two trans-continental railroads advertising us, we should within a short time grow to be a city of 30,000 people" (Myrick, p. 227).

"Along the 66 mile extension frame station buildings, agents' quarters and section houses were built at Whetstone, Pantano and Rita. In Tucson an 11-stall roundhouse, eighty-foot turntable, cinder pit and coal chute are constructed within a few months after the celebration. Section men's quarters are built at Tucson and Boquillas; a coal station is established at Pantano.



Between Fairbank and Tucson, the El Paso and Southwestern track crossed over the Southern Pacific twice, once at Mescal and again at Irene (D. Myrick p. 235).



In 1911 the steam shovel, dinky engine and dump cars cut and fill hills and gulches along the route between Fairbank and Tucson (D. Myrick p. 228).



In 1912 the grading teams prepped the final alignment, just ahead of the track layers (D. Myrick p. 228).



Track layers and spike drivers along the graded alignment to Tucson (D. Myrick p. 229).

### 1911: Fairbank to Tucson Opens

The Tucson Chamber of Commerce asks businesses to close their doors between 10:30 AM and 1:00 PM to properly welcome the first train to arrive on November 20, 1912. 3,000 people gather around the tracks at Congress Street to welcome the first train, arriving 15 minutes late. Sixty-five passengers arrive on the train originating in Douglas.

### 1913: Tucson's El Paso & Southwestern Depot

The freight station is completed in March and a city ticket office is opened on Congress Street next to the Consolidated National Bank, but the Tucson passenger station rises slowly much to the city's frustration. As construction activity intensifies in May the asking price of lots along Congress Street double to \$200 a front-foot.

The El Paso & Southwestern Railroad Depot finally opens in **December of 1913**, at a cost of \$45,000. The design of the impressive structure is greatly influenced by the wife of Walter Douglas and requires imported materials and craftsmen. Its opulent classical design including a 30' high rotunda and stained glass dome is unusual for railroad station design in the southwest at the time. For the design of Douglas Park, Mrs. Douglas employs the services of Cammillo Fenzi, (who later changed his name to Franceschi), a Santa Barbara landscape architect who spends the better part of six months between Tucson and Douglas (working on a similar project there). \$5,000 was allocated for the landscaping of the park and included a grand fountain at the center where six footpaths converged. The park displayed many rare and exotic plants and integrated the freight building and the depot while providing an entry sequence between the depot and the city. Several public fountains provided cool relief from the hot desert sun.

### 1917: The U. S. Enters World War I, April 6

#### 1917: The Bisbee Deportation, July 12

1,286 men, including striking miners, their supporters, and innocent citizen bystanders from the town of Bisbee are rounded up at gunpoint, marched three miles to the Warren baseball field and loaded onto 23 cattle cars belonging to El Paso & Southwestern Railroad. They are transported nearly 200 miles across the desert and dropped off in Hermanas, New Mexico. These 1,300 penniless men are eventually housed in U.S. Army tents in Columbus, New Mexico. Only a handful of the men are ever allowed to return to their homes in Bisbee.

#### 1917: Railroads are Nationalized, December 28

The federal government takes over operations, management, scheduling and pricing for all rail lines until March 1, 1920.

### 1921: Copper Prices Plummet

Copper prices peak during wartime, but suffer a severe slump after the war. In 1921 copper prices fall as low as 11 ½ cents, one-third of 1917 peak. Mine and smelter production collapse. Railroads are hit by severe declines in freight traffic, falling 18 percent on average. Between the 1917 and 1921 volume, the El Paso & Southwestern ton-mile volume, heavily dependent on mining, falls by 60 percent (Myrick, p. 242).



Nearly 3,000 people gather along the tracks in Tucson at 11AM on November 20, 1912, to welcome the first train from Bisbee. AHS #22134



The freight house was converted into the Southern Pacific Sanatorium in 1934 and was renamed the Carl C. Hayden Hospital in 1967. The structure is demolished during Tucson's urban renewal. AHS #B38353



Laborers from the Tucson workforce worked long hours to complete construction at the Tucson depot. AHS #B38381



Looking southwest along Congress street toward Douglas Park and the El Paso & Southwestern Passenger Depot. The freight house is at left. AHS #B89213

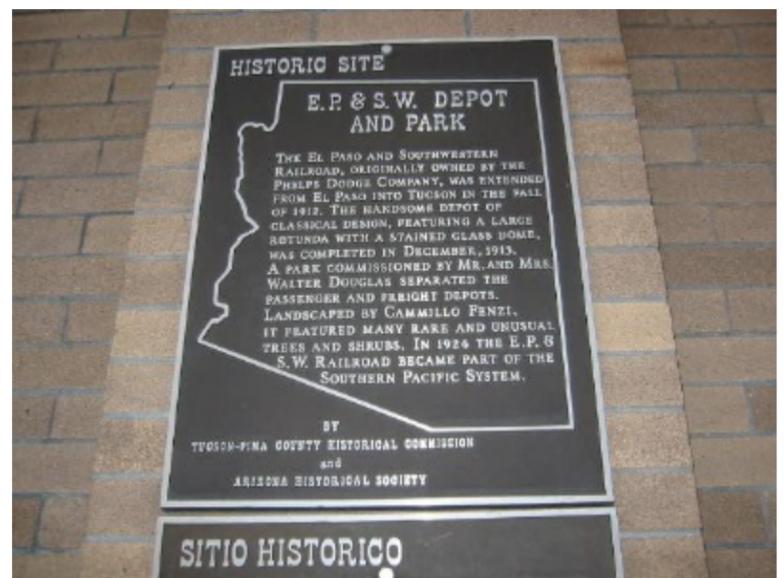
### 1924: The El Paso & Southwestern Closes

Phelps Dodge negotiates a sale of the El Paso & Southwestern Railroad to the Southern Pacific and decides to focus on its core business of copper production rather than running a hemorrhaging railroad.

On November 1, 1924, Southern Pacific purchases 1,193 miles of rail for \$64 million in cash, stock and bonds and closes the EP&SW station within 15 days after taking control, diverting all traffic to the Southern Pacific station at Congress and Toole.

The redundant EP&SW line running parallel to the Southern Pacific until Mescal, lays unused until 1952 when the route is picked up by the Southern Pacific at the Vail crossover, abandoning the former line beneath the new Davis-Monthan Air Force Base.

The line east of Douglas to El Paso is closed December 1961, leaving ghost-towns along the entire route.



The El Paso and Southwestern Depot is listed on the National Register of Historic Places.



AHS #PAN26756



## Appendix C - Traffic Report





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# El Paso and Southwestern Greenway

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Transportation, Access and Circulation Study

Prepared for:

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Tucson, Arizona 85719

Prepared by:



February 23, 2010

# El Paso and Southwestern Greenway Transportation, Access and Circulation Study

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February 23, 2010

## NOTICE

This study has been prepared using available traffic data and forecasts, as well as limited field data collected specifically for this study. It is intended for use in making a determination regarding the transportation infrastructure needs of the study area. It is not intended for use as a design document, nor does it represent a standard or specification. The document is copyrighted by Curtis Lueck & Associates, 5460 W. Four Barrel Court, Tucson, AZ 85743, telephone 520-743-8748. All rights are reserved pursuant to United States copyright law. The document may not be reproduced digitally or mechanically, in whole or in part, without the prior written approval of CLA, except as noted in the following. (1) Limited quotations may be made, for technical purposes only, as long as proper citation to the authors is provided. (2) Governmental agencies to which this report is submitted for review may make limited copies for internal use or to fulfill public requests under the Freedom of Information Act.

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## **1. Introduction and Summary of Key Findings**

### **Project Overview**

The El Paso and Southwestern Greenway is a proposed 6-mile long multi-use trail along the old El Paso and Southwestern Railroad Corridor. It is intended to accommodate pedestrians, bicyclists, and joggers. The Greenway would connect west side Tucson neighborhoods and the City of South Tucson to downtown Rio Nuevo redevelopment and to each other. It will extend from Barrio Anita, north of Saint Mary's Road, through downtown Tucson to the Kino Sports Complex, east of Kino Parkway.

The Greenway was envisioned in part to help to revitalize low income areas through which it will pass, provide a recreational multi-use path, and serve an alternative commuter corridor for bicyclists. The project would link nine historic neighborhoods/barrios in downtown Tucson. The Greenway is intended to follow the original alignment of the old railroad corridor.

Exhibit 1 shows the Greenway alignment within the jurisdictions and neighborhoods.

### **Purpose of Report**

In 2005, the Drachman Institute, a community outreach unit within the UA College of Architecture and Landscape Architecture, presented a concept to the City of Tucson for the Greenway. This presentation included design concepts for the trails and recommended intersection concepts for where the Greenway would cross major roads.

The purpose of this transportation study is to revisit the transportation design concepts, and provide recommendations that may support the original intersection concepts for the Greenway or identify additional alternative intersection concepts.

### **Safety Considerations**

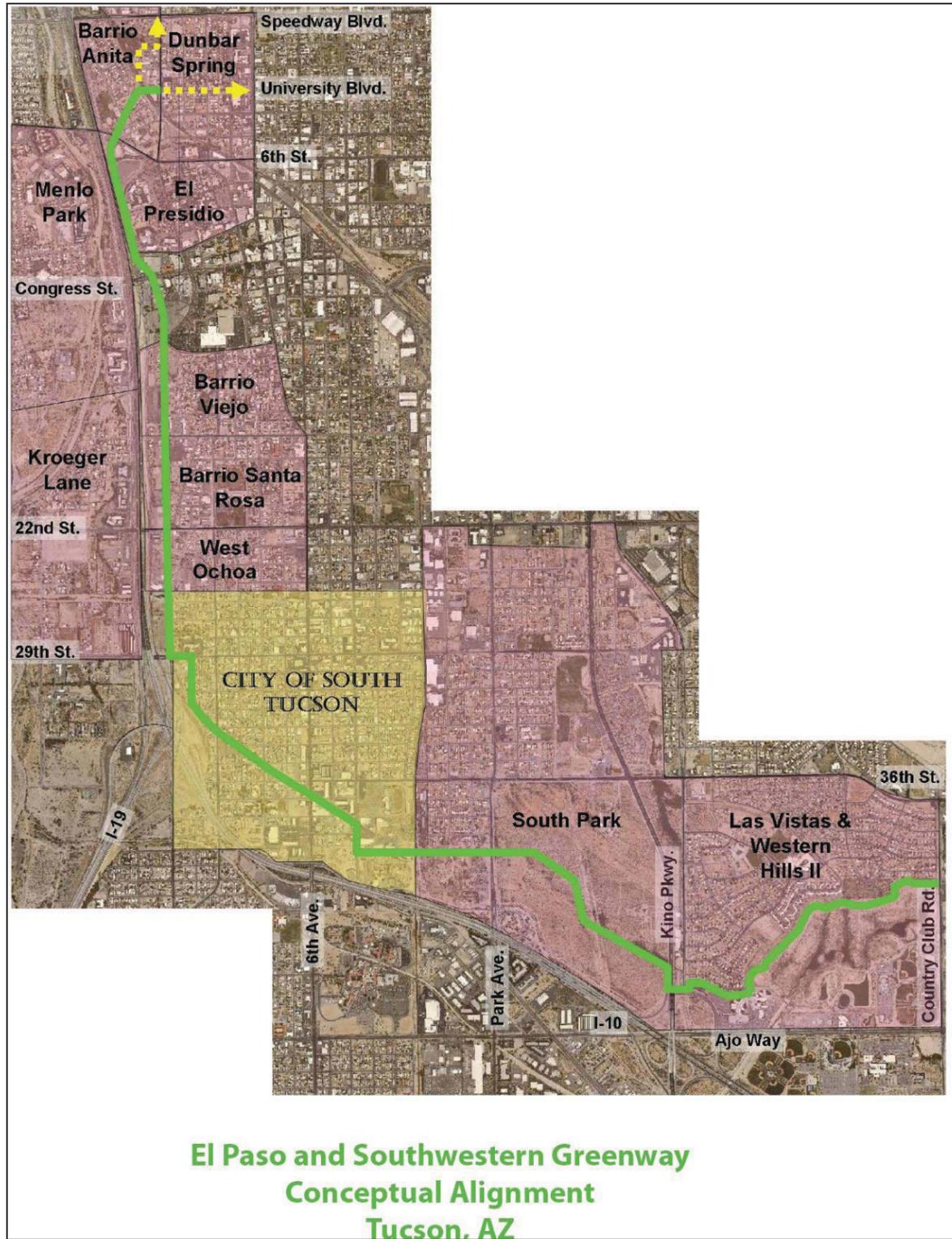
The safe design of the trail and the crossings should be of utmost importance. The locations of the crossings and the ease with which the greenway users are able to cross the more important streets will be critical to having a safe and well used greenway trail. Although this is a long-range plan which will be implemented as opportunities arise, Tucson Department of Transportation Traffic Engineering staff should be a major contributor to this project at the earliest stages of planning and design.

At some locations, the greenway may need to deviate from the railroad right-of-way, or conceptual alignment, in order to direct the users to the best crossing location. At several crossings, initial concepts include trail use diverted to intersections with existing traffic signals rather than cross at the alignment locations at major streets. Expecting some users to walk or bike hundreds of feet along a roadway to use an existing traffic signal may not be realistic. More than likely, they will cross the roadway at the point where the greenway intersects the roadway, at their risk and at the risk of crossroad users (motor vehicle drivers, bicyclists and pedestrians). For some crossings, the path itself should be routed to the nearby signalized location in advance of its intersection with the cross street.

However, pedestrians and bicyclists are treated differently than motor vehicle drivers by statutes. For instance, it is usually illegal to route bikes down a sidewalk or through a crosswalk unless the rider dismounts. Therefore, solutions that support crossing at the Greenway location, **whenever practicable**, may be the most effective solution to promote flow and continuity of the greenway

Also, if a future roadway crossing is envisioned due to a yet to be constructed development, perhaps the crossing should be at that location, with or without temporary enhancements, e.g., temporary HAWK flashers or traffic signals.

Exhibit 1 Project Location



There are several resources available to apply safe crossing approach and intersection design. These include the following:

- *Manual on Uniform Traffic Control Devices* (MUTCD)
- *Transportation Access Management Guidelines for the City of Tucson, Arizona*
- *Guide for the Development of Bike Facilities* (AASHTO)
- *Designing Sidewalks and Trails for Access* (FHWA)
- *The Effects of Traffic Calming Measures on Pedestrian and Motorist Behavior* (FHWA)

### Trail Crossings

There are many locations along the Greenway where public or private roads or pathways will be crossed. For each of these crossings, it will be necessary to design the approaches and intersections on the Greenway and on the cross streets or paths to optimize safe crossing. Rails-to-Trails Conservancy is a nonprofit organization working with communities to preserve unused rail corridors by transforming them into trails, enhancing the health of America's environment, economy, neighborhoods and people. The Rails to Trails Conservancy<sup>1</sup> provides information on crossing design based on existing design guidelines from the American Association of State Highway and Transportation Officials (AASHTO):

A good first resource for crossings is the *Guide for the Development of Bicycle Facilities*, produced by the American Association of State Highway and Transportation Officials (AASHTO), which provides guidelines for traffic engineers designing bicycle facilities (see "Additional Resources" box to the right for more information). It includes a section on intersections and crossings. The AASHTO guide addresses three types of crossings: midblock, adjacent path and complex. These crossings can include public roadways, private driveways and railroads.

**Midblock crossings:** This type of crossing is the simplest and most common, and it involves a trail crossing a roadway or railroad when there are no other adjacent intersections or crossings. There are two types of midblock crossings: perpendicular crossings, which occur when the trail and the roadway intersect at right angles, and skewed crossings, which occur most often when the trail and the roadway intersect at an angle. Skewed crossings usually require a swerve in the trail path so that the trail crossing itself is perpendicular to the roadway.

**Adjacent path crossings:** These crossings occur most often when a trail, running parallel to a roadway, crosses an existing roadway intersection. Due to the presence of turning vehicles, this type of crossing presents more challenges than a midblock crossing. Appropriate signage, traffic signals and distance between the roadway intersection and the trail crossing often play important roles in the design of adjacent path crossings.

**Complex crossings:** This category acts as a catch-all for most crossings that cannot be categorized as midblock or adjacent path crossings. Due to the nonstandard challenges these crossings often present, the AASHTO guide instructs engineers to treat these crossings on a case-by-case basis.

One of the advantages of using a trail is that it provides a dedicated right-of-way that minimizes interactions with vehicles and signalized intersections. An important consideration to remember when designing a trail crossing is that many trail users, especially cyclists desiring to maintain momentum, may have a low tolerance for long delays at crossings. In addition, children using the trail may not be

<sup>1</sup> From the Rails-to-Trails Conservancy website, "Rails-to-Trails Conservancy is a nonprofit organization working with communities to preserve unused rail corridors by transforming them into trails, enhancing the health of America's environment, economy, neighborhoods and people."  
<http://www.railstotrails.org/>

aware of traffic rules. Crossings should also be ADA-accessible so they can be used by all trail users. When planning a crossing, be sure to design with these considerations in mind.<sup>2</sup>

### **Crossings**

Because the Greenway will be crossing various roadway or path types, there will not be a simple treatment that can be used for each crossing. The following describe what will be encountered on the Greenway.

#### *1. Physical barriers (railroad tracks, interchange).*

There are two locations where the Greenway alignment will cross the active Union Pacific Railroad (UPRR) tracks; one at the north terminus at University Boulevard, and the other between 4<sup>th</sup> Avenue and Park Avenue. There is also a crossing at Kino Parkway where an underpass may be necessary.

These barriers will require a grade separation, or diversion from the Greenway alignment to an at-grade crossing.



*Underpass along Aviation Parkway in Tucson, Arizona*

#### *2. Major Streets*

The Greenway must cross several major streets and many of these are four or five lane arterials. These are:

- St. Mary's Road
- Congress Street
- 22<sup>nd</sup> Street
- 29<sup>th</sup> Street
- 10<sup>th</sup> Avenue
- 6<sup>th</sup> Avenue
- 4<sup>th</sup> Avenue
- Park Avenue

<sup>2</sup> [http://www.railstotrails.org/whatwedo/trailbuilding/technicalassistance/toolbox/20080908\\_crossings.html](http://www.railstotrails.org/whatwedo/trailbuilding/technicalassistance/toolbox/20080908_crossings.html)

Several of the crossing locations are near existing or planned traffic signals, either at street intersections, or mid-block pedestrian signals. Options for crossing along the Greenway at these major streets can include providing a non-signalized crossing area (typical or specialized crosswalk; i.e. Zebra), a signalized pedestrian crossing (HAWK, Pelican, or Toucan), routing Greenway users to existing traffic signal locations, or providing a grade separation (overpass, underpass).

### *3. Local Streets*

The Greenway will cross through several neighborhoods, and thus will cross local, or neighborhood streets. The Greenway will also skirt several streets, especially between 22<sup>nd</sup> Street and 29<sup>th</sup> Street where an access point, or trailhead, rather than a crossing at the Greenway will be located. Yield or stop signs can be provided along the Greenway in advance of these cross streets.

## **General Design Considerations for Crossings**

Several items must be considered in the design of the Greenway trail crossings. Some of these include:

- At unsignalized intersection crossings, motorists many times do not expect to see bicyclists and pedestrians.
- Along the Greenway, most of the roadways to be crossed have light to moderate traffic volumes, and there is good visibility on the trail users' and roadway users' approaches. However, some of the crossings will be at roadways that carry (or will carry) over 15,000 vpd.
- The alignment of the Greenway right-of-way as shown in the conceptual plan show many of the trail crossings aligned at a skew to the roadways they cross. Skewed alignments extend crossing distances and make the design treatments more difficult to implement. Efforts should be made to align crossings so that the crossings are made at 90 degree angles to the roadways.
- The crossing treatments should consider traffic speed, street width, traffic volumes, line of sight, and trail user profile (age distribution, destinations).
- A traffic study should be completed for roadway crossings as a part of the preliminary design phase for each segment as it moves toward implementation to determine the most appropriate and safe design features. Initial crossing design concepts can be refined during the design and construction document stages.

Proposed crossing treatments are based on established standards, preliminary evaluation of the available data, and experience on similar existing facilities.

The goals of determining crossing treatments include:

- Reducing conflicts commensurate to the users of the Greenway and the crossroads. Signalized crossings would not be recommended at low volume roadways in most cases, but may be recommended where Greenway users would encounter high traffic volumes or complicated crossing conditions.
- Providing a cost effective crossing that maintains safe conditions for all who encounter the Greenway intersection.
- Recognizing that grade-separated crossings may be necessary to ensure the safety of the Greenway user. These would occur at existing railway crossings and at locations where Gateway crossers would experience great risks crossing the roadway.

For each of the crossing treatments, established regulatory and warning and signing and accompanying pavement markings will be necessary at the approaches to the crossings and to establish the right-of-way hierarchy for users at the Greenway intersections.

For this study, three crossing categories are used:

**Type I** – uncontrolled crossing (unsignalized, but possibly with other traffic control devices) are recommended where vehicles travel at speeds of less than 35 mph and are used by fewer than 10,000 vehicles per day. Other devices may include high visibility crosswalks, signing, curb extensions and pedestrian refuges. Most of the crossings along the Greenway will be Type I crossings.



*Type I Crossing Location*

**Type II** – signalized crossings are recommended for crossings where posted speeds are 35 mph and above and/or ADT exceeds 15,000 vehicles, and where it is recommended that trails receive a high level of crossing protection. Each crossing, regardless of traffic speed or volume, requires additional review by a registered engineer to identify sight lines, potential impacts on traffic progression, timing with adjacent signals, capacity, and safety.

Trail signals are normally activated by push buttons, but also may be triggered by motion or loop detectors. Minimum crossing times should be determined by the width of the street, trail user profile, or other factors determined by the jurisdiction. Trail signals should be supplemented by standard advanced warning and regulatory signs.

Many of the trail crossings that would fit the Type II crossing criteria are close to existing signalized intersection. Some of these crossings may be better provided at these existing signalized intersections. Up to eight of these crossings will be Type II crossings.



Type II Crossing Location

**Type III** – grade-separated crossings may be needed when a physical barrier can not be relocated (railroad track), and/or based on high traffic volumes and with the posted speed over 40 mph. Personal safety may be a concern with overcrossings and undercrossings when trail users may be temporarily out of sight from public view and may have poor visibility themselves. At least three of the crossings will be Type III crossings (at the railroad crossing west of Main/University, at the railroad crossing east of 4<sup>th</sup> Avenue, and at Kino Boulevard. Consideration could also be given to crossings at major roadways, such as at 22<sup>nd</sup> Street.)

Design and operational measures are available which can address these trail user safety concerns. For example, an undercrossing can be designed to be spacious and well-lit, equipped with emergency phones at each end, and completely visible for its entire length prior to entering.



Type III Crossing Location (Rillito Bike Path under La Cholla Boulevard)

### Signage and Pavement Marking Guidelines

A variety of signs should be used along the Greenway based on the specific locations, crossings, and guidance needs. For instance near the downtown venues, informational signs should be provided to direct Greenway users to specific uses. Several resources can be used to guide trail and cross street designers in determining the best signing and markings for this project.

Monument Entry or Gateway Sign – These should identify a main entrance point to the Greenway. These signs can be constructed typically like other roadway signs, or artistically if the City wishes to promote a specific theme for the Greenway. A Greenway project logo should be provided on the sign, along with a map of the entire Greenway, or a map of a segment of the gateway near the entry.

Wayfinding or Directional Sign - These signs can be provided with a map of the Greenway path alongside, showing the user's position within the length of the Greenway path. The sign should identify the Greenway and perhaps upcoming locations.

Regulatory, Warning and Informational Signs – These signs may inform users of upcoming conflicts, specific trail conditions, regulatory use of the path and other information relevant to the users. These signs should be erected whenever necessary along the Greenway. The size and shape of the signs will vary depending on the type of sign. The *Manual of Uniform Traffic Control Devices* (MUTCD) provides a comprehensive set of standards for regulatory, warning and informational signs.

Pavement Markers – Pavement markings such as white/yellow striping delineate path use direction, and accompany regulatory and warning signing (i.e., where passing is restricted, stopping is regulated).

**2. Greenway Crossing Recommendations**

Exhibit 2 is a list of all local and major roadway crossings along the Greenway as currently conceived. An exhibit map of the locations of Greenway intersections with recommended crossing types (Types I, II, or III) is provided in the appendix to this report. Major roadways are identified as are minor crossings at local streets.

**Exhibit 2 List of Greenway Crossing Locations**

Roadway Crossing Locations	ADT	Posted Speed	Interim Recommendation	Ultimate Recommendation
Main Avenue	11,000 (2005)	30 mph	HAWK	Same
University	1,000 vpd (2005)	25 mph	South on Main (at grade over RR)	Underpass at RR
Van Alstine Street	< 1000 vpd	25 mph	South on Main (at grade over RR)	Underpass at RR
Anita Avenue	< 1000 vpd	25 mph	Sign/Stripe approaches	Same
Oury/Kitchen Street	< 1000 vpd	25 mph	Sign/Stripe approaches	Same
Hughes Street	< 1000 vpd	25 mph	Sign/Stripe approaches	Same
St Mary's	22,500 vpd (2004, 2005)	35 mph	HAWK crossing, or cross at I-10 signal	Same
Manning House Road (merge?)	NP	NP	Merge in Road	Same
Congress Street	36,384 vpd (2006)	30 mph	HAWK crossing*, or cross at I-10 signal	Under/Overpass
Granada/Cushing	4,441 vpd (2007)	30 mph	Align with Fire Central design	Same
Simpson Street	< 1000 vpd	25 mph	Sign/Stripe approaches	Same
17th Street	< 1000 vpd	25 mph	Entrance	Same
18th Street	< 1000 vpd	25 mph	Entrance	Same
22nd Street	29,939 vpd (2007)	35 mph	HAWK crossing*, or cross at I-10 signal	Under/Overpass
25th Street	< 1000 vpd	25 mph	Entrance	Same
26th Street	< 1000 vpd	25 mph	Entrance	Same
27th Street	< 1000 vpd	25 mph	Entrance	Same
Silverlake Road/29th Street (Along)	11,931 vpd (2007)	35 mph	The preferred alignment is along the north edge of 29th Street over to 11th Avenue to a HAWK crossing*.	Same
11th Avenue (Along)	< 1000 vpd	25 mph	No Change - Trail Signs	Same
30th Street	< 1000 vpd	25 mph	Bridge	Same
31st Street	< 1000 vpd	25 mph	Bridge	Same
10th Avenue	6,347 vpd (2007)	35 mph	Zebra	Same
8th Avenue	< 1000 vpd	25 mph	Zebra (note existing guardrail)	Same
6th Avenue	21,365 vpd (2005)	35 mph	Cross at 36th Street signal, (or 37th Street crosswalk)	Under/Overpass
5th Avenue	< 1000 vpd	25 mph	Sign/Stripe approaches	Same
4th Avenue (Along)	3,970 vph (2007)	25 mph	Zebra, or HAWK	Same
UPRR	< 1000 vpd		Underpass at RR	Same
Park Avenue	20,660 vpd (2006)	35 mph	New "Bridges" HAWK	Same
Kino Parkway (and WB I-10 On Ramp)	33,121 vpd (2007)	40 mph	At grade crossing at Duwall Vista	Underpass

Note: The Downtown Links project has recommended a HAWK at the Greenway alignment crossing location.  
\*HAWK would not meet COT signal spacing criteria at crossing location.



The following section describes the major and local crossings along the proposed Greenway alignment. The discussion begins with crossings beginning at the northwest terminus of the alignment.

**University Boulevard Connection**

The Greenway will ultimately connect with University Boulevard and cross the existing UPRR tracks. In the interim condition, Greenway users can use Main Avenue from University Boulevard to Davis Street, then Davis Street to St. Mary's Road. It may be necessary to provide a HAWK crossing on Main Avenue at University Avenue. For the ultimate condition, the Drachman Institute presentation shows an underpass for the Greenway at the railroad tracks. Based on the recommended crossing treatment for an underpass from the Drachman Institute study, this underpass would require 10 feet of under clearance and a 16 foot cross section with 12 feet of path and 2 feet of "shoulder" on each side of the path. This underpass would create a gateway setting for the beginning of the Greenway.



*Looking west along the University Avenue alignment east of Main Avenue.  
An underpass at the railroad tracks (on the west side of Main Avenue) is the long term recommendation.*



*Looking east along the University Avenue alignment from west of the railroad tracks. An underpass at the railroad tracks (on the west side of Main Avenue) is the long term recommendation*

#### **University Boulevard to St. Mary's Road**

With the ultimate condition of an underpass at the railroad, the Greenway then would cross three streets between University Boulevard and St. Mary's Road. These streets are all local roads with speed limits of 25 mph that serve the Barrio Anita neighborhood. The Greenway would cross Van Alstine Road, Anita Road and Oury Drive before following along the Hughes Road alignment to St. Mary's Road. Van Alstine Road is very close to the railroad tracks, so the Greenway may even cross under this road in addition to crossing under the railroad. Stop signs and other traffic control devices should be located on the Greenway on the approaches to each of the cross streets. Greenway theme signs should be located on the cross streets identifying them as access points to the Greenway.



*Looking west along the Greenway alignment from east of Anita Avenue. Signs and striping on the cross streets and the Greenway will be needed.*



### St. Mary's Road Connection

The Greenway alignment follows Hughes Street and is shown to cross St. Mary's Road approximately 300 feet east of the I-10 westbound frontage road. The Drachman Institute presentation shows two options associated with this crossing; a "PELICAN" (Pedestrian Light Actuation) crossing, and crossing at the westbound I-10 frontage road intersection. However, the City of Tucson's Downtown Links project has included a HAWK crossing at this location as part of the project alignment.

It should be noted that the *Transportation Access Management Guidelines for the City of Tucson, Arizona* provides guidance for transportation access planning and design for local, collector and arterial streets in the City of Tucson. In the sub-section entitled Guidelines for Consideration of Pedestrian and Bicycle Crossings, the warrant criteria for a HAWK includes a spacing limitation, "The proposed location is not within 600 feet of another signalized crossing or STOP sign or flashing beacon and sign crossing." Because the signal on St. Mary's at the I-10 westbound frontage road is closer than 600 feet, this criterion is not met. The other alternative for this crossing is the crossing at the existing I-10 westbound frontage road intersection. This would require the Greenway user to go west 300 feet to cross to the south side of St. Mary's Road and return to the Greenway.



Looking southwest along the Greenway alignment on Hughes Avenue, north of St. Mary's Road.

### St. Mary's Road to Congress Street

No local streets would cross the Greenway alignment between St. Mary's Road and Congress Street. The Greenway alignment is shown through several privately owned properties including the Inn Suites Hotel, La Encantada Apartments and the Manning House.

### Congress Street Crossing

The Greenway alignment shows crossing options at Congress Street that are similar to those at St. Mary's Road. Both a PELICAN and crossing at the existing signal are shown as alternative crossing schemes in the Drachman Institute presentation. A HAWK could also be considered at this location. However, the spacing constraint for the HAWK or PELICAN is the same at this location as the crossing is shown to be approximately 300 feet from the I-10 westbound frontage road signal at on Congress Street.

The ultimate crossing for this location should be a grade separation of the path with Congress Street.



*Congress Street to Cushing Street/Granada Road*

This section of the Greenway will provide access to the civic area planned as part of the Rio Nuevo development. A new downtown hotel, a new arena and several retail establishments are planned for this part of downtown. The Greenway may experience the highest traffic in this location as it can also serve as a commuter corridor for downtown employees who bike to work. It will also provide access for non-motorized vehicle users who wish to attend events at the arena, hotel, or other downtown venues. The plan for access to adjacent land uses should be incorporated into the Greenway alignment and design plans.

**Cushing Street/Granada Road Crossing**

The Greenway alignment continues south and crosses at the Cushing Street/Granada Avenue intersection. A recommendation for a crossing design is not provided in the Drachman Institute presentation, and the type of crossing will need to be evaluated very carefully. Several elements must be considered:

1. The crossing is shown at an existing intersection. A creative design for the approach and passage for bicycle and pedestrian traffic must be developed.
2. The crossing is just west of the new Fire Station south of Cushing Street. Warning devices on the Greenway approaches can be considered to stop Greenway traffic when a fire vehicle is leaving the station. This should be discussed at the design stage with City of Tucson Department of Transportation and Tucson Fire staff.
3. With the development of the civic area to the north (Arena, hotel, retail uses), it is expected that vehicular, pedestrian and bicycle traffic will increase along Cushing Street and Granada Avenue.

*Cushing Street/Granada Road to 22<sup>nd</sup> Street*

There are three streets that cross (or meet) the Greenway alignment along this section. Simpson Street, 17<sup>th</sup> Street and 18<sup>th</sup> Street would connect to the Greenway. The Drachman Institute report also shows a potential connection along the La Paz Street alignment (between 20<sup>th</sup> Street and 21<sup>st</sup> Street) for access to Santa Rosa Park on the east side of 10<sup>th</sup> Avenue. Stop signs and other traffic control devices should be located on the Greenway on the approaches to each of the cross streets. Greenway theme signs should be located on the cross streets identifying them as access points to the Greenway.

The first section of the Greenway has already been constructed as part of the new Downtown Fire Station campus, which was recently opened. This site plan for this is shown in Exhibit 2.

**Exhibit 2 Downtown Fire Station with Greenway Shown**



Source: WSM Architects.

**22<sup>nd</sup> Street Crossing**

The Drachman Institute presentation shows a HAWK crossing at 22nd Street. A HAWK, or **H**igh Intensity **A**ctivated **C**rosswalk, is a marked crosswalk with pedestrian actuated beacon lights. The *Transportation Access Management Guidelines for the City of Tucson, Arizona* includes warrant criteria for the installation of HAWK crossings. There is a 600 foot spacing from an existing traffic signal requirement that would not be met based on the location of the crossing. The crossing would be approximately 470 feet east of the I-10 westbound frontage road signal on 22<sup>nd</sup> Street. The Drachman Institute recommendations do not show the option of using the existing signal at 22<sup>nd</sup> Street/I-10 westbound frontage road, although, this should be considered.

The ultimate crossing at this high volume location should be a grade separation of the Greenway with 22<sup>nd</sup> Street.

**22<sup>nd</sup> Street to Silverlake Road/29<sup>th</sup> Street**

South of 22<sup>nd</sup> Street, the Greenway follows the Osborne Avenue alignment to the west. There are streets that cross (or meet) the Greenway alignment along this section. 23rd Street, 25<sup>th</sup> Street, 26<sup>th</sup> Street and 27<sup>th</sup> Street could connect directly to the Greenway. The Drachman Institute report also shows a potential connection just south of 22<sup>nd</sup> Street at 23<sup>rd</sup> Street that would continue east toward 6<sup>th</sup> Avenue.

Stop signs and other traffic control devices should be located on the Greenway on the approaches to each of the cross streets. Greenway theme signs should be located on the cross streets identifying them as access points to the Greenway.

### **29<sup>th</sup> Street Crossing**

The conceptual alignment of the Greenway turns east along 29<sup>th</sup> Street and continues south on 11<sup>th</sup> Avenue. The Drachman Institute presentation shows a HAWK crossing at 11<sup>th</sup> Street presuming that the Greenway would follow along the north side of 29<sup>th</sup> Street between the old UPRR tracks and 11<sup>th</sup> Street. The HAWK crossing would be approximately 460 feet west of the traffic signal at 29<sup>th</sup> Street/10<sup>th</sup> Avenue and thus the spacing criteria for HAWKs would not be met based on the location of the crossing.

The continuation of the Greenway alignment along 29<sup>th</sup> Street has some challenges. 29<sup>th</sup> Street has sidewalks and a striped shoulder for bike use on each side of the road. Additional right-of-way would need to be purchased if a separated two-way path along the north side of 29<sup>th</sup> Street is desired. Existing buildings may be too close to the roadway for this to be feasible. Otherwise, bicyclists would need to dismount and walk their bikes along the sidewalk toward 11<sup>th</sup> Street.



*Looking south along 11<sup>th</sup> Avenue from 29<sup>th</sup> Street*

### *29<sup>th</sup> Street to 10<sup>th</sup> Avenue*

South of 29<sup>th</sup> Street, the Greenway would continue along 11<sup>th</sup> Avenue, an existing South Tucson local street. Greenway signs should be located along the street to direct path users to the continued path south of 31<sup>st</sup> Street.

South of 31<sup>st</sup> Street, the path would cross an existing twelve-foot wide bridge, continuing along a southeast alignment to its intersection with 10<sup>th</sup> Avenue. Stop signs and other traffic control devices should be located on the Greenway on the approaches to each of the cross streets. Greenway theme signs should be located on the cross streets identifying them as access points to the Greenway.



*Looking south along 11<sup>th</sup> Avenue at 30<sup>th</sup> Street*



*Bridge Crossing south of 33<sup>rd</sup> Avenue*

#### **10<sup>th</sup> Avenue and 11<sup>th</sup> Avenue Crossings**

The Greenway alignment is shown to cross 10<sup>th</sup> Avenue, just south of 33<sup>rd</sup> Street. The Greenway would cross diagonally as shown in the alignment plans. 10<sup>th</sup> Avenue has a 3-lane cross section and is along a Sun Tran bus route. It is also shown on the Tucson Bike Map as a road “for experienced riders”. The Drachman Institute recommends a ZEBRA crossing at this location.

According to COT DOT staff, South Tucson has indicated that they would support converting flow on 11<sup>th</sup> Avenue for northbound one-way traffic to allow for additional right-of-way for the Greenway.



At 10<sup>th</sup> Avenue Greenway Crossing



Source: Drachman Institute.

*10<sup>th</sup> Avenue to 6<sup>th</sup> Avenue*

Between 10<sup>th</sup> Avenue and 6<sup>th</sup> Avenue, the Greenway would continue on a raised rail bed through South Tucson. The existing rail bed continues to 8<sup>th</sup> Avenue where guardrail sections are on both sides of the road. On the east side of 8<sup>th</sup> Avenue, the rail bed grade is reduced until it continues at-grade with the surrounding area. The alignment continues through to 6<sup>th</sup> Avenue. On its approach to 6<sup>th</sup> Avenue, the alignment would go between the Pico de Gallo restaurant on the north and Discount Tires on the south. Both businesses use the Greenway right-of-way as parking areas.





*Looking east along Greenway alignment, east of 8<sup>th</sup> Avenue*



*Looking west toward 8<sup>th</sup> Avenue*



Looking east toward 6<sup>th</sup> Avenue

#### 6<sup>th</sup> Avenue Crossing

The Greenway alignment is shown to cross 6<sup>th</sup> Avenue, a major corridor through the City of Tucson and South Tucson. The Pima Association of Governments traffic volumes map show 21,000 vehicles per day in 2005 on 6<sup>th</sup> Avenue. As an interim condition, it may be better to provide the Greenway crossing at an existing signal, such as at 6<sup>th</sup> Avenue/36<sup>th</sup> Street, which is just to the north of the Greenway alignment on 6<sup>th</sup> Avenue, or at 37<sup>th</sup> Street, where there is an existing crosswalk across 6<sup>th</sup> Avenue, just south of the Greenway alignment. The Drachman Institute recommendation was to cross either at 36<sup>th</sup> Street or to provide a HAWK at 37<sup>th</sup> Street which is 450 feet from the 36<sup>th</sup> Street signal, and would not meet the City of Tucson's HAWK spacing warrants. (It should be noted that this would be within South Tucson, but South Tucson generally defers to City of Tucson transportation design standards). The ultimate condition to cross at this high volume roadway would be to provide a grade separation of the Greenway.



View of Greenway alignment from east of 6<sup>th</sup> Avenue. Note parking areas within Greenway ROW





*Looking west at 37<sup>th</sup> Street crosswalk on 6<sup>th</sup> Avenue*

#### *6<sup>th</sup> Avenue to 4<sup>th</sup> Avenue*

East of 6<sup>th</sup> Avenue, the Greenway continues along its southeast alignment north of the Salvation Army Center, and parallel to the Old Vail Highway, north of the alignment. The Greenway then crosses 5<sup>th</sup> Avenue, a local street and continues along an existing paved parking aisle that serves the Madera Business Park on the north side of the Greenway to its intersection with 4<sup>th</sup> Avenue.



*Looking southeast along Greenway between 6<sup>th</sup> and 5<sup>th</sup> Avenues*

#### **4<sup>th</sup> Avenue Crossing**

The Greenway alignment is shown to continue to 4<sup>th</sup> Avenue and then continue south where it crosses 4<sup>th</sup> Avenue 200 feet south of 40<sup>th</sup> Street. The Drachman Institute recommends a ZEBRA crossing at this location.





*Looking east across 4<sup>th</sup> Avenue toward continuation of Greenway ROW*

*4<sup>th</sup> Avenue to Park Avenue*

East of 4<sup>th</sup> Avenue, the Greenway continues along an east-west alignment to its intersection with the UPRR tracks. There is an existing underpass at the railroad tracks, although it appears to serve drainage purposes. On the east side of the tracks, the alignment continues along an unpaved trail just south of an existing residential neighborhood until its intersection with Park Avenue.



*Looking east along Greenway ROW, east of 4<sup>th</sup> Avenue*



*Looking south along 11<sup>th</sup> Avenue from 29<sup>th</sup> Street*



*Looking west along Greenway ROW, west of Park Avenue*

**Park Avenue Crossing**

As part of a large mixed-use project called “The Bridges” between Park Avenue and Kino Boulevard, a HAWK crossing was recommended on Park Avenue. This crossing was recommended for pedestrian and bicycle access between The Bridges and the residential neighborhood on the west side of Park. The Greenway crossing is shown at this location. The HAWK is to be provided as part of the roadway widening on Park Avenue (to a four-lane divided urban arterial) that will be constructed because of the additional site traffic associated with The Bridges.



*Looking south along Park Avenue future Greenway crossing*

*Park Avenue to Kino Boulevard*

The Greenway alignment will follow the trail path developed within The Bridges project. The Bridges planned area development (PAD) was documented in February 2007 and included a concept of the Greenway alignment (see Exhibit X). The following excerpt from the PAD document describes the Greenway through The Bridges:

A combination 12' wide asphalt paved and an 8' wide meandering decomposed granite pathway consistent with the Pima County Divided Urban Pathway model will extend the Greenway from the railroad tracks west of Park Avenue east to Kino Parkway. A minimum 50' wide corridor will be provided for the Greenway. The Greenway will cross Park Avenue at-grade by way of a "HAWK" crossing. This "HAWK" crossing will follow TDOT standards and will be constructed as part of the improvements of Park Avenue. The Greenway will cross under the Commercial Spine Road (Public) via an underpass to be constructed by the Developer in conjunction with the construction of the Commercial Spine Road (Public). In areas where the Greenway approaches/enters areas of Significant Vegetative Habitat, the Greenway will be sited to minimize disturbance to the area (see CD in Appendix E for conceptual Greenway placement). The Greenway's extension beyond The Bridge's eastern boundary at Kino Parkway may be achieved by a future pedestrian underpass that will be installed and funded outside of this PAD. The El Paso and Southwestern Greenway will eventually provide a connection to the Ajo Detention Basin Park east of the Site.

Trailhead: A trailhead for the Greenway will be provided for general public access and will be located approximately at the midpoint of the Central Park, accessed from the commercial site. The trailhead will include signage indicating the trail and designated parking, and an asphalt path connecting the parking lot to the regional trail. The designated parking available at the trailhead will not be for exclusive use for the trail, but any nearby unused spaces in the parking lot may be occupied by trail users. Additional Greenway connections to the commercial area will be provided at the Commercial Spine Road (Public) bridge, where the Greenway meets grade on either side.



Source: The Bridges, Planned Area Development document, February 2007



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Curtis Lueck & Associates  
Tucson, Arizona

### Kino Boulevard Crossing

The Bridges PAD document indicates that the Greenway will continue through an underpass at Kino Boulevard. This may be necessary given the crossing location shown which would be under the westbound I-10 on-ramp, and Kino Boulevard itself. The underpass will need to consider access from Kino Boulevard to the Greenway. As an interim condition, the Greenway alignment could shift north to the future signalized intersection at Kino Boulevard/Duvall Vista Road.



*Looking west along Greenway ROW, east of Kino Boulevard. The Greenway would likely continue through an underpass under Kino Boulevard.*

### Kino Boulevard to Eastern Terminus

The Greenway alignment is shown to continue east of Kino Boulevard, along an existing alley south of Jason Vista (a local east-west road). The trail continues to its terminus at a recreational path at Sam Lena Park. The alignment could continue along Jason Vista, a residential street north of the alley.

### Roadway Improvements

Planned and programmed improvements in Tucson and South Tucson will affect the Greenway. These include the following projects that are listed in the FY 2009-2013 Pima Association of Governments Transportation Improvement Program:

- 22<sup>nd</sup> Street: I-10 to Tucson Boulevard – Widen to 6 lanes
- El Paso & Southwestern Greenway: 22<sup>nd</sup> to Cushing – Construct New Bike Path
- El Paso & Southwestern Greenway: Ajo/Kino to Speedway/Main – Shared Use Path and Trail
- 36<sup>th</sup> Street: East City (South Tucson) Limit to 4<sup>th</sup> Avenue – Reconstruct pavement, walk, curb, add lighting
- South 10<sup>th</sup> Avenue Rehabilitation: 22<sup>nd</sup> Street to 44<sup>th</sup> Street – Mill and Overlay
- South 4<sup>th</sup> Avenue: I-10 to 40<sup>th</sup> Street – Reconstruct Pavement, Add Safety and Aesthetic Features
- South 4<sup>th</sup> Avenue Rehabilitation: 40<sup>th</sup> Street to 25<sup>th</sup> Street – Mill & Overlay
- South 6<sup>th</sup> Avenue Roadway Improvement: N. City Limits to 40<sup>th</sup> Street – Resurfacing



*Looking east along Greenway ROW (alleyway south of Jason Vista)*



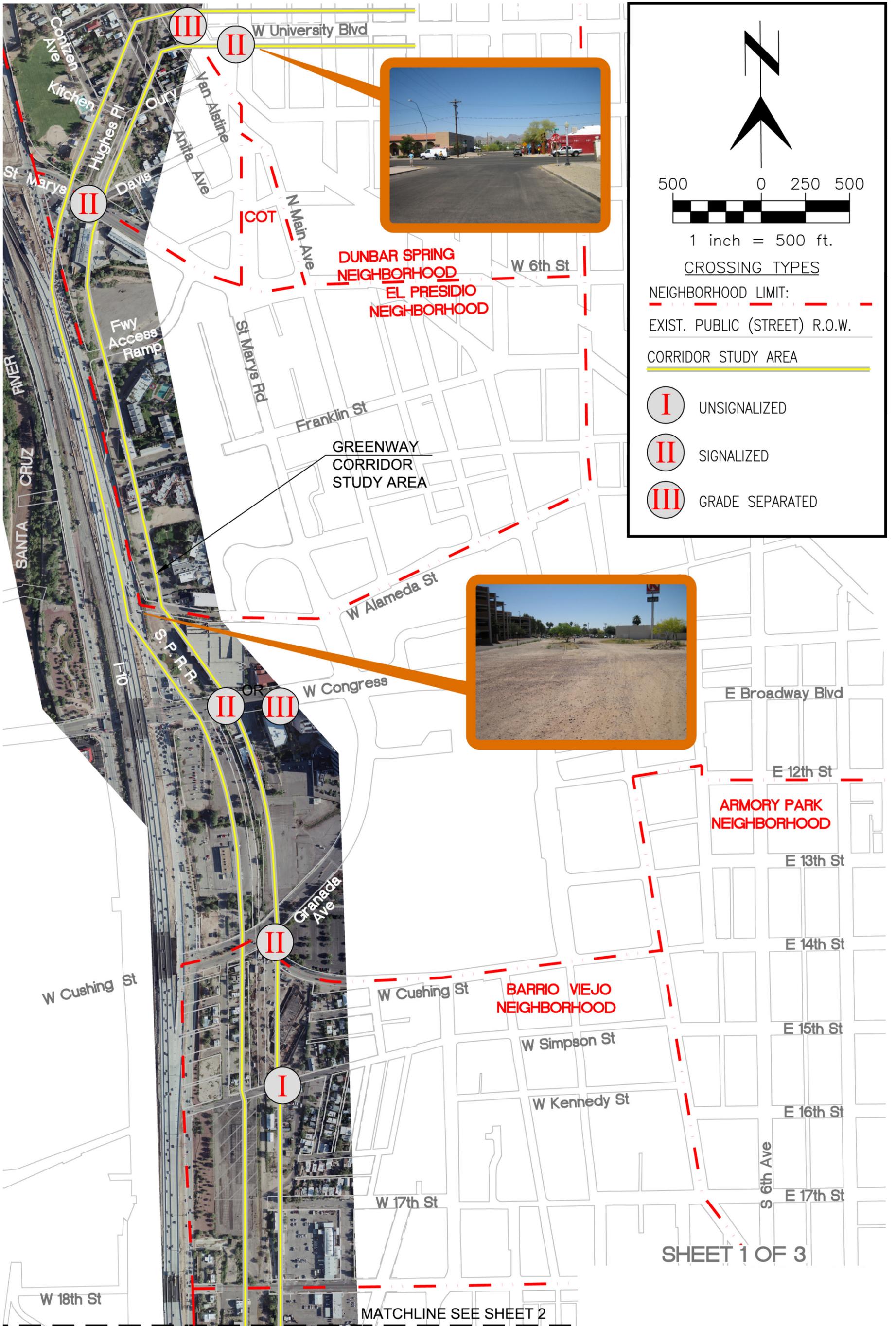
*Looking west at Greenway alignment from Sam Lena Recreational Area jogging path*

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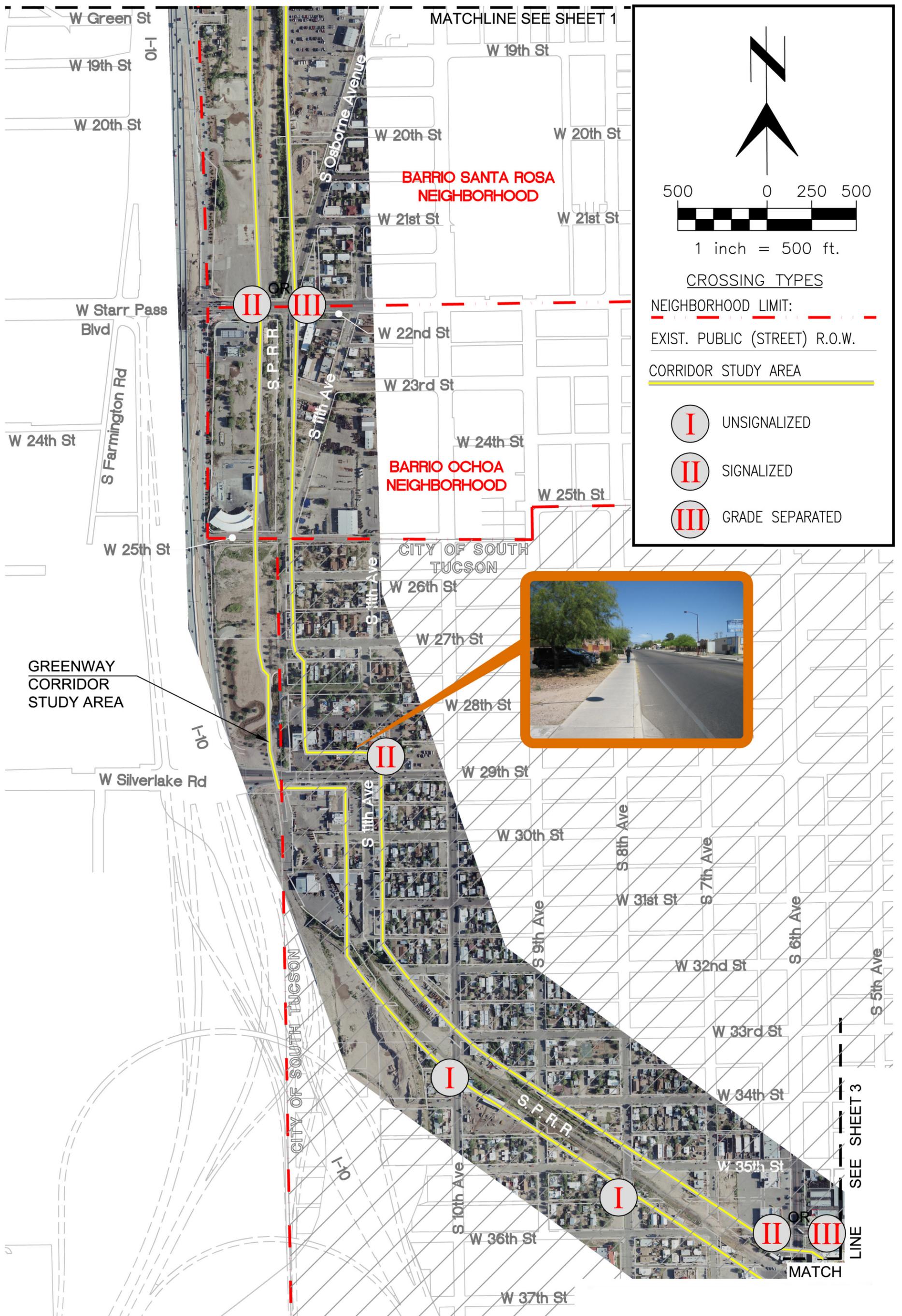
## APPENDIX

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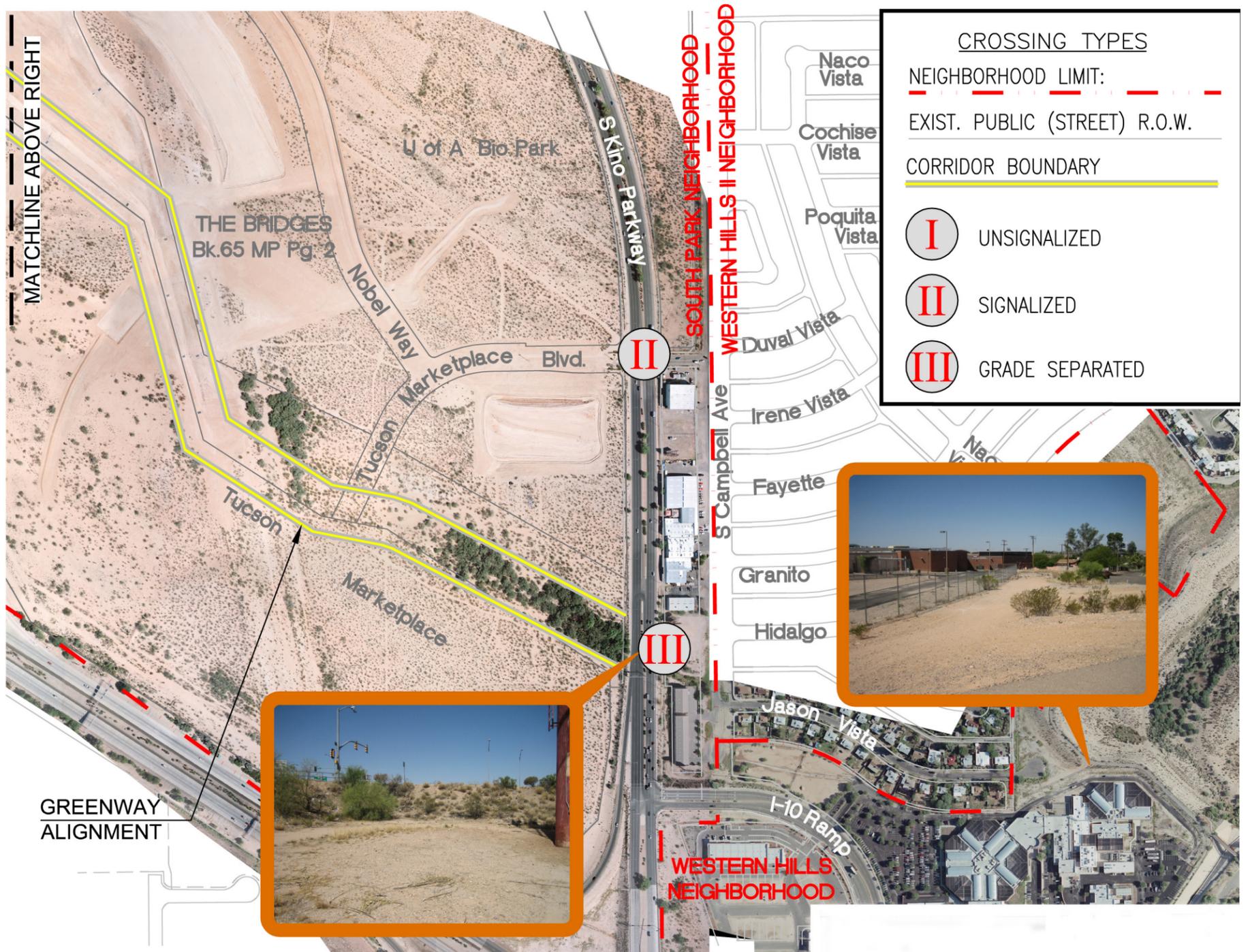
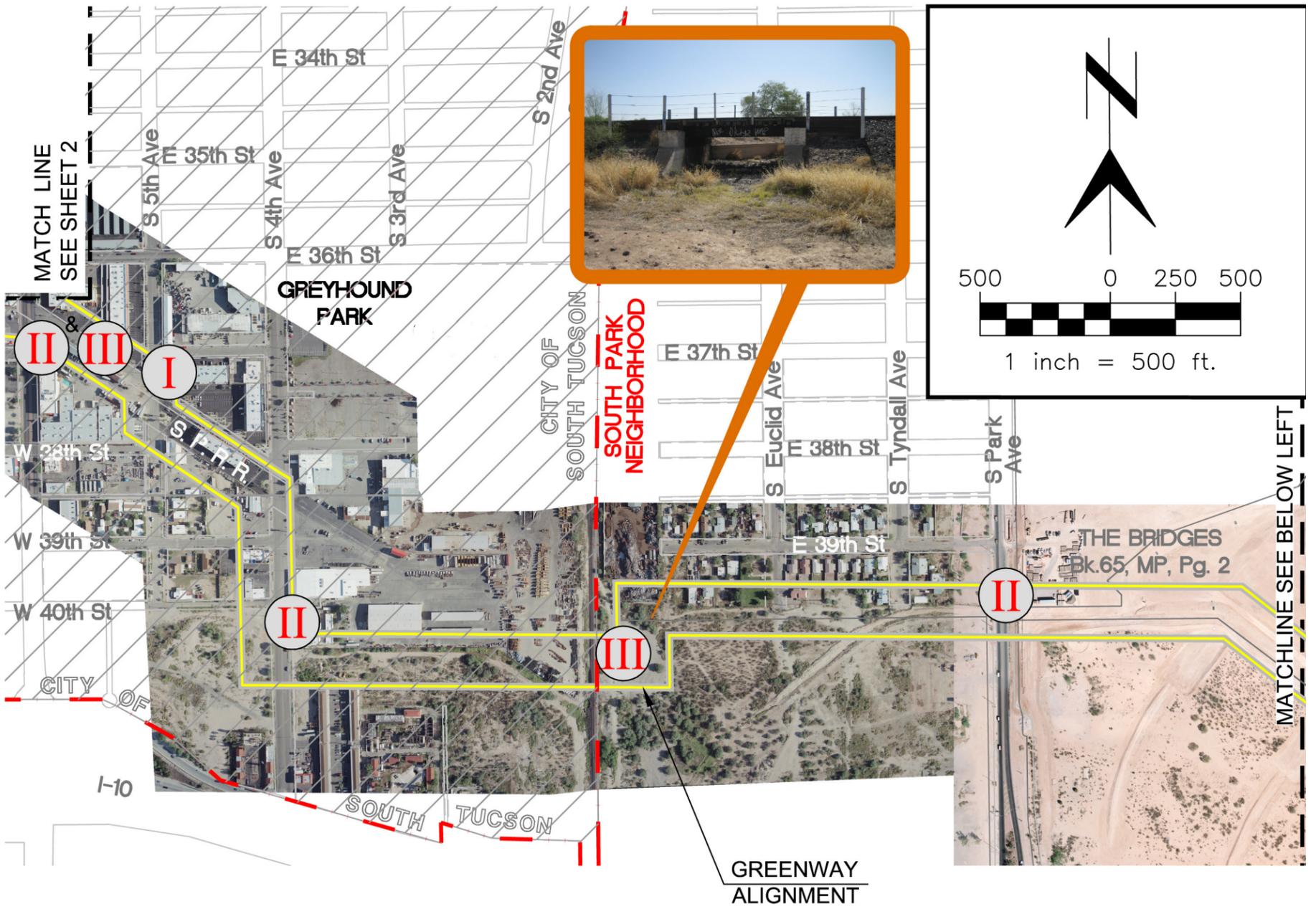
- **Location Map of Greenway Crossings**



SHEET 1 OF 3



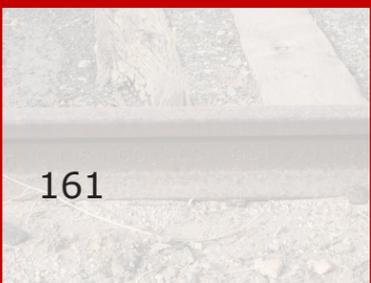
SHEET 2 OF 3

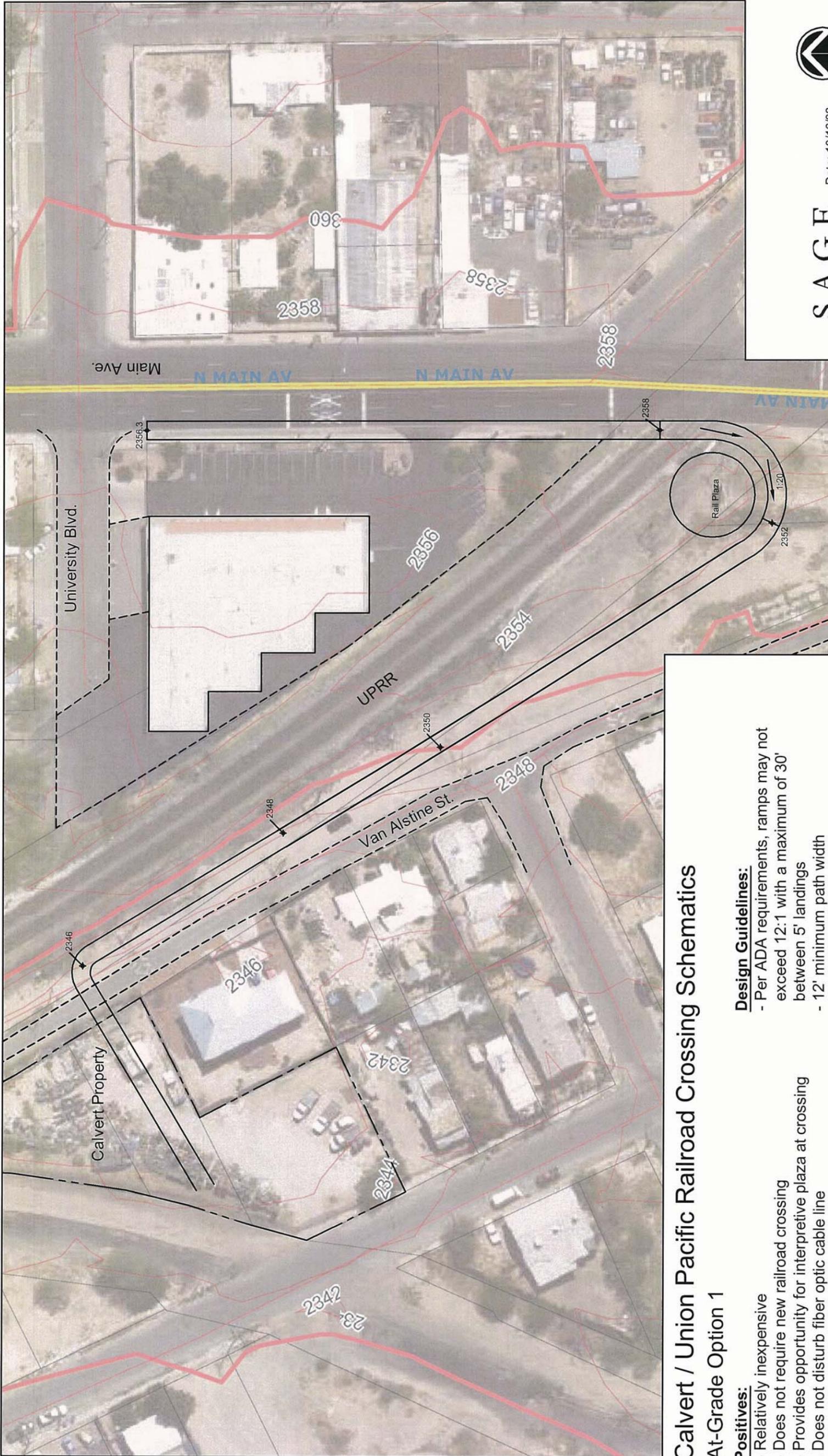


SHEET 3 OF 3

Figure 9

## Appendix D - Union Pacific Railroad Crossing Schematics





Date: 10/16/08



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 FAX: 520.743.0707  
 www.sageplans.com

### Calvert / Union Pacific Railroad Crossing Schematics

#### At-Grade Option 1

**Positives:**

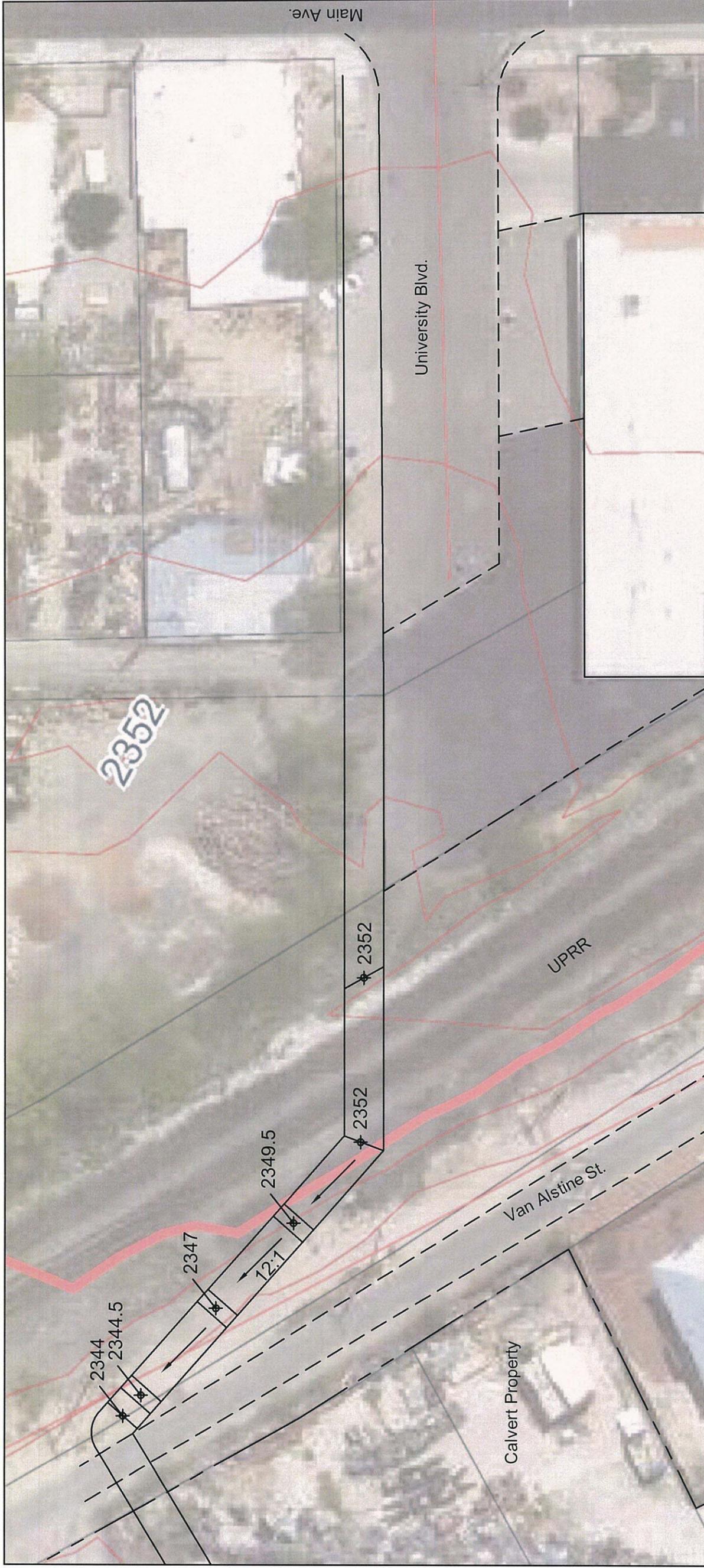
- Relatively inexpensive
- Does not require new railroad crossing
- Provides opportunity for interpretive plaza at crossing
- Does not disturb fiber optic cable line

**Negatives:**

- Lengthy detour
- Path is parallel to Main Ave. & railroad
- May require acquisitions to south

**Design Guidelines:**

- Per ADA requirements, ramps may not exceed 12:1 with a maximum of 30' between 5' landings
- 12' minimum path width



### Calvert / Union Pacific Railroad Crossing Schematics

#### At-Grade Option 2

**Positives:**

- Access to all properties is uninterrupted
- Fits in between Main & Van Alstine
- Straight, clean alignment
- No acquisitions needed for path alignment
- Does not disturb fiber optic cable line

**Negatives:**

- At-grade rail crossing at new location, will require negotiation with UPRR and another at-grade location will be closed

**Design Guidelines:**

- Per ADA requirements, ramps may not exceed 12:1 with a maximum of 30' between 5' landings
- 12' minimum path width

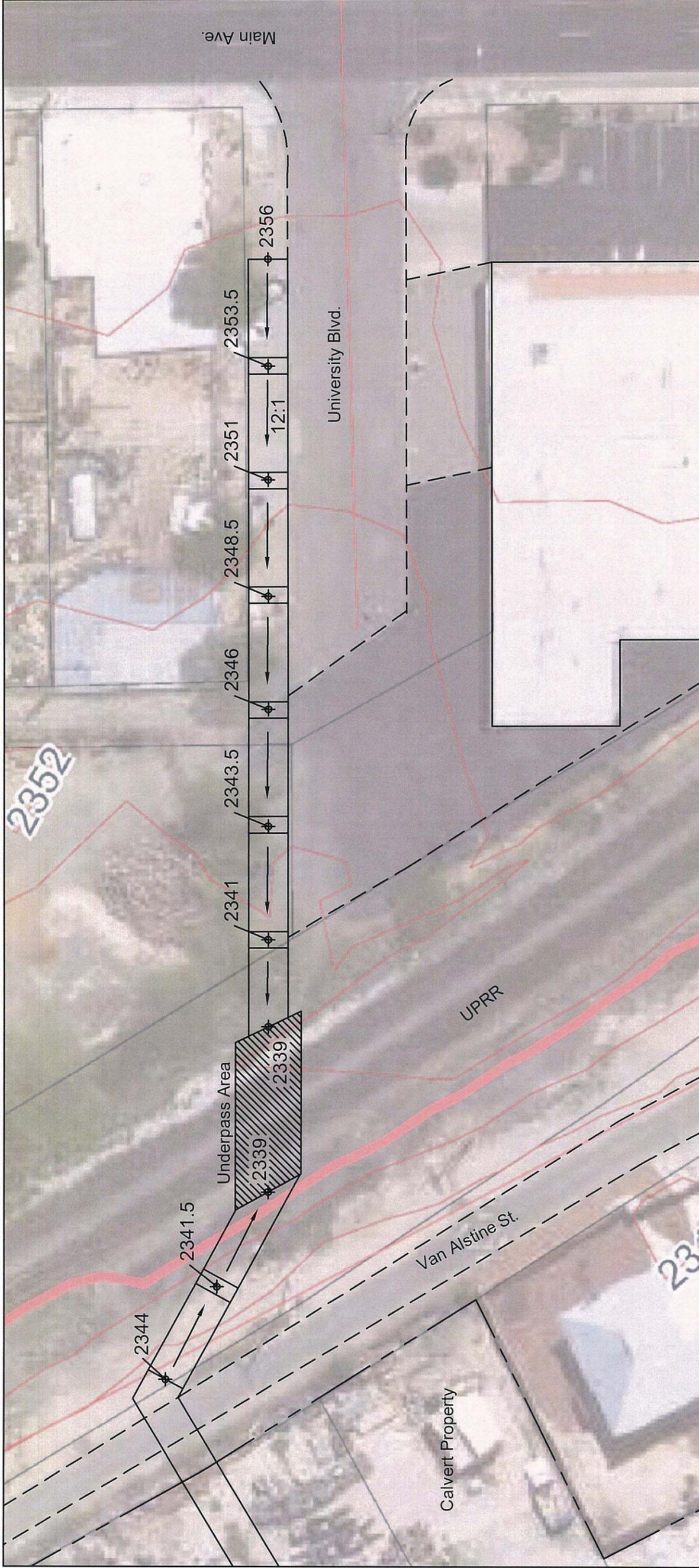


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### Calvert / Union Pacific Railroad Crossing Schematics Below-Grade Option 1

**Positives:**

- Circulation to warehouse & cul-de-sac is uninterrupted
- Fits in between Main & Van Alstine
- Straight, clean alignment
- No acquisitions needed for path alignment

**Negatives:**

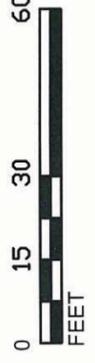
- Circulation to Ironworks & alley is blocked
- Shoefly needed for rail alignment, may affect surrounding structures & require property acquisition, length of detour and area of impacts is unknown
- Disrupts fiber optic cable line

**Underpass Design Guidelines:**

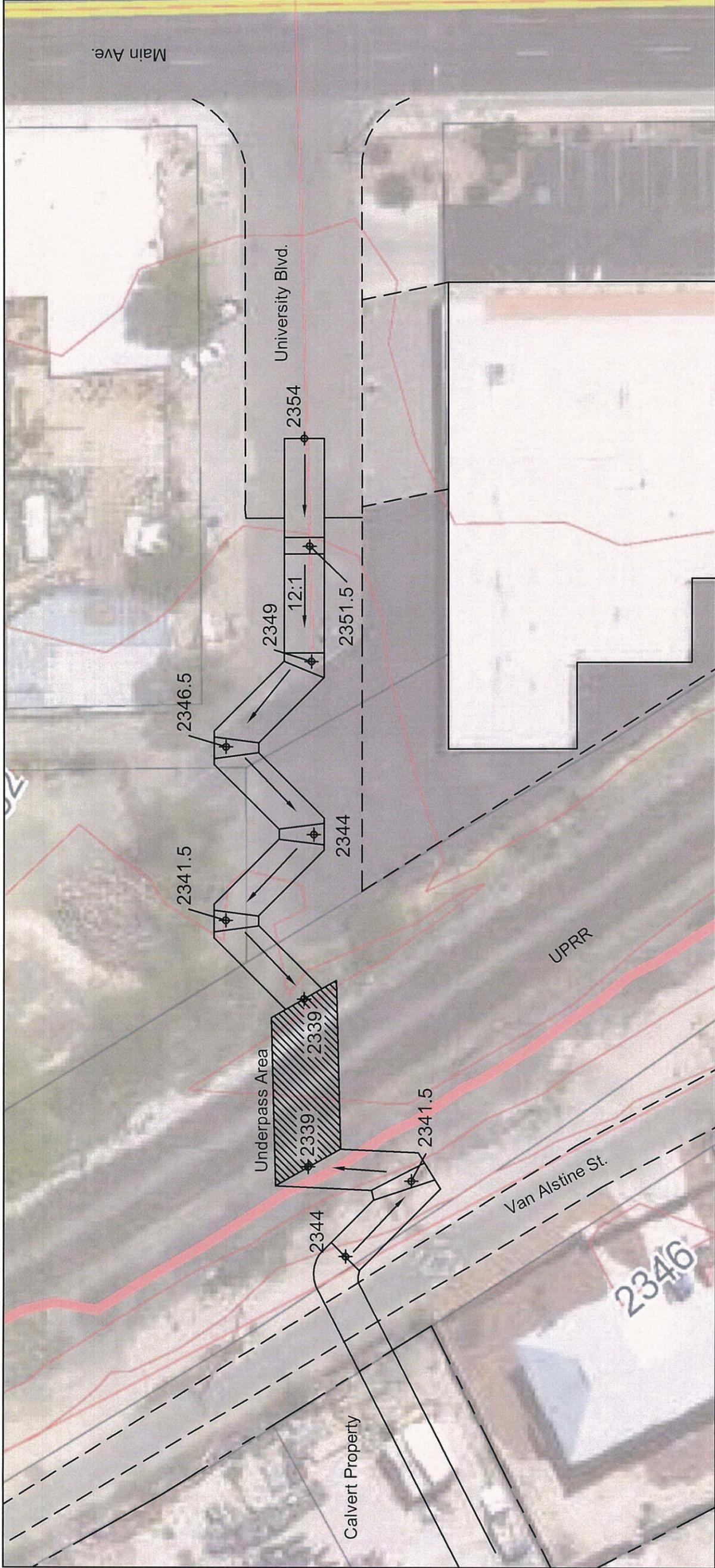
- 12' minimum clearance required for underpass
- 15' offset from centerline of each track is provided for the underpass area
- Per ADA requirements, ramps may not exceed 12:1 with a maximum of 30' between 5' landings
- 12' minimum path width



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**Calvert / Union Pacific Railroad Crossing Schematics**  
**Below-Grade Option 2**

**Positives:**

- Retains access to all properties
- Fits in between Main & Van Alstine

**Negatives:**

- Circulation to warehouse & cul-de-sac is impacted, although it appears workable
- Awkward transition to Van Alstine
- May require property acquisition to north
- Shoefly needed for rail alignment, may affect surrounding structures & require property acquisition, length of detour and area of impacts is unknown
- Disrupts fiber optic cable line

**Underpass Design Guidelines:**

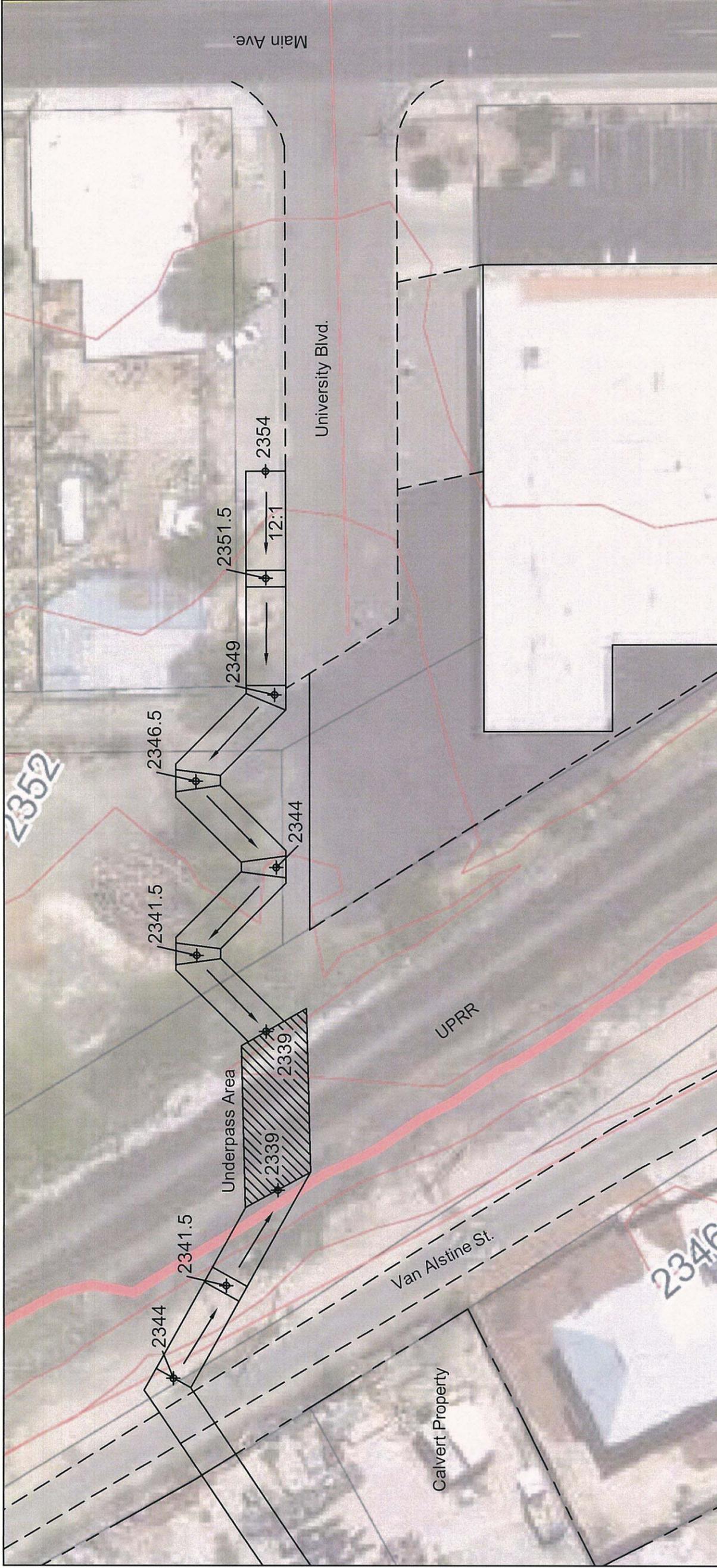
- 12' minimum clearance required for underpass
- 15' offset from centerline of each track is provided for the underpass area
- Per ADA requirements, ramps may not exceed 12:1 with a maximum of 30' between 5' landings
- 12' minimum path width



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 ARCHITECTURE  
 & ENVIRONMENTAL  
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### Calvert / Union Pacific Railroad Crossing Schematics Below-Grade Option 3

**Positives:**

- Retains access to all properties
- Fits in between Main & Van Alstine
- Street and cul-de-sac circulation is uninterrupted

**Negatives:**

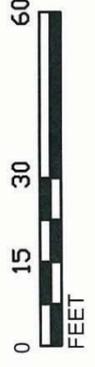
- Requires property acquisition to north
- Blocks access to alley
- Shoefly needed for rail alignment, may affect surrounding structures & require property acquisition, length of detour and area of impacts is unknown
- Disrupts fiber optic cable line

**Underpass Design Guidelines:**

- 12' minimum clearance required for underpass
- 15' offset from centerline of each track is provided for the underpass area
- Per ADA requirements, ramps may not exceed 12:1 with a maximum of 30' between 5' landings
- 12' minimum path width



Date: 10/16/08



**S A G E**  
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