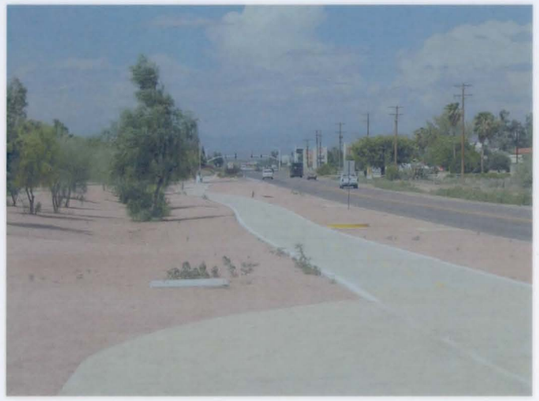

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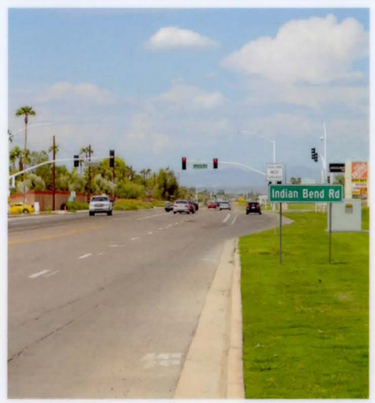


PREPARED BY

PARSONS BRINCKERHOFF

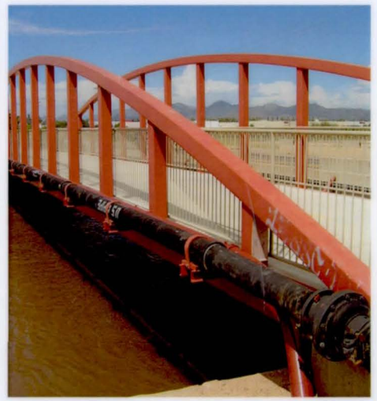
PREPARED FOR

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

CITY OF SCOTTSDALE

ADOT

Pima Road - McDowell Road to Via De Ventura



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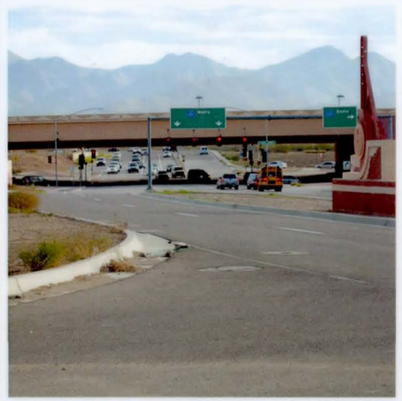

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PIMA ROAD – McDOWELL ROAD TO 90TH STREET

Final Design Concept Report

Tracs. No. H3344 01D

OCTOBER 2009

Prepared for:

City of Scottsdale *Salt River Pima-Maricopa Indian Community*

Arizona Department of Transportation

Registered Professional Engineer (Civil)
CERTIFICATE NO.
40972
REBECCA L.
FLY
Date Signed 10/9/09
ARIZONA, U.S.A.
EXPIRES: 6/30/2010

Prepared by:

PARSONS BRINCKERHOFF

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Executive Summary

EXECUTIVE SUMMARY

Introduction

A joint study project between the City of Scottsdale (COS), Salt River Pima-Maricopa Indian Community (SRP-MIC) and Arizona Department of Transportation (ADOT) has been commissioned to develop a Design Concept Report regarding the future improvements of Pima Road. The project limits on Pima Road are from McDowell Road, north, to the COS/SRP-MIC boundary just north of the 90th Street/Pima Freeway traffic interchange. The project is located in Maricopa County along a portion of the COS and SRP-MIC boundary.

The City of Scottsdale, Salt River Pima-Maricopa Indian Community and the Arizona Department of Transportation (ADOT) entered into an Inter-Governmental Agreement (IGA) in July, 2006 with the purpose of developing an initial and final design concept report (DCR), as well as an environmental document for Pima Road. The ADOT TRACS number associated with this project is H3344 01D.

Background

The original projects to construct Pima Road were completed between 1968 and 1979. Various intersection improvement projects and installation of traffic signals at the major crossroad intersections occurred between 1979 and 1994. The majority of the roadway existed as a two-lane facility from the initial construction until the City of Scottsdale improvement projects began in 1994 and continued until 2003.

The existing Pima Road corridor is generally bordered along the west side by single-family residential development and along the east side by a combination of commercial, office and retail buildings, agricultural use, and vacant land. The existing right-of-way along the west side of the corridor varies from 65' to 95' wide. 87th Terrace ("Little Pima") provides access to the neighborhoods along the west side of Pima Road and is included within the existing Pima Road right-of-way. Along the east side of the corridor, a 55' roadway and utility easement was purchased by ADOT from SRP-MIC as a part of the Pima Freeway easement acquisition completed in the early 1990s.

The existing roadway centerline generally falls on the west side of the section line, however, significant variations occur throughout the corridor. The posted speed limit on Pima Road ranges from 40 to 45 mph throughout the project limits.

Purpose and Scope

The project is being developed based on the need to improve the operational characteristics of Pima Road from McDowell Road, north, to the COS/SRP-MIC community boundary just north of the 90th Street/Pima Freeway interchange. The existing roadway consists of primarily one-lane in each direction with portions having been widened to multiple lanes in each direction with left turn lanes at the crossroad intersections.

The project will focus on addressing the following concerns which exist along the Pima Road corridor:

- Accommodate current and future traffic generators – including regional and local traffic generators
- Improve safety
- Meet COS and SRP-MIC General Plan guidelines
- Incorporate multi-modal features

The completion of the study process requires the identification of a preferred alternative, which will then be used to develop final design plans and the construction of the Pima Road improvements. The preferred alternative will achieve the project objectives, be cost effective, timely and incorporate public and agency inputs. The following project objectives were identified by the project team for incorporation into the study:

- Provide a safe facility
- Increase traffic capacity
- Improve north-south circulation
- Improve east-west circulation
- Reduce cut through traffic (proceeding east of the Pima Freeway, through SRP-MIC)
- Improve business access
- Accommodate multi-modal access (bus, bikes, etc)
- Enhance corridor character
- Safeguard adjacent neighborhoods and community resources

Design Concept Alternatives

A number of typical section alternatives were identified and briefly evaluated for implementation along the Pima Road corridor. The typical section alternatives are summarized as follows:

Table 1: Summary of Typical Section Alternatives

Alternative	Number of Lanes	Description
6 Lane (Raised Median)	6	Widen existing Pima Road to facilitate 6-11' lanes with a 16' raised median and 5' bike lanes
6 Lane (Paved Median)	6	Widen existing Pima Road to facilitate 6-11' lanes with a 14' paved median and 5' bike lanes
A	4	Widen existing Pima Road to facilitate 4-12' lanes with a 16' raised median and 5.5' bike lanes, holding existing west curb
B	4	Widen existing Pima Road to facilitate 4-11' lanes with a 14' raised median and 4.5' bike lanes, holding existing west curb
C	4	Widen existing Pima Road to facilitate 4-12' lanes with a 16' raised median and 5.5' bike lanes, relocating existing west curb
D	4	Widen existing Pima Road to facilitate 4-12' lanes with a 12' paved median and 5.5' bike lanes, holding existing west curb
E	4	Widen existing Pima Road to facilitate 4-11' lanes with a 12' paved median and 4.5' bike lanes, holding existing west curb
F	4	Widen existing Pima Road to facilitate 4-12' lanes with a 12' paved median and 5.5' bike lanes, relocating existing west curb
No Build	Existing	No construction

Based on an evaluation of the project objectives, agency input and ongoing interagency negotiations between the two communities, the nine alternatives referenced above have been consolidated down to include Alternative A, Alternative B and No Build. The selected typical section alternatives differ according to the lane widths, median widths and bike lane widths. The existing roadway centerline is not a constant offset from the section line throughout the corridor, so the existing west curb line will be used as a point of reference for the discussion of the typical section alternatives. The following descriptions provide reference to the typical section alternatives identified for further study

No-Build Alternative

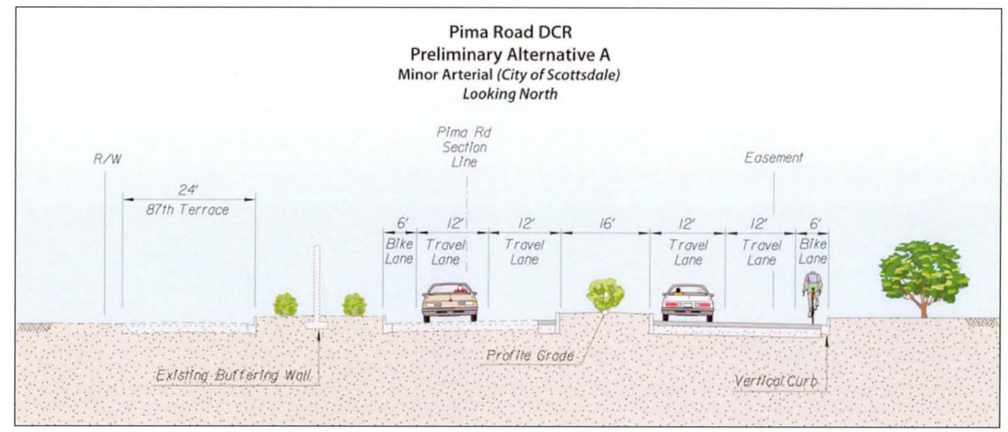
This alternative maintains the current width and intersection configuration for Pima Road, as such the project needs and objectives will not be met.

Alternative A

Alternative A consists of widening the existing roadway to a width that accommodates 2-12' through lanes in each direction with 2-6' on-street bike lanes and a 16' raised median, shown in Figure 1. This alternative maintains the location of the west curb line and widens to the east.

- Impacts to Safety: The continuous raised median provides an opportunity to control the access points to the new development.
- Impacts to Right-of-Way: This alternative results in the back of the east curb line falling outside of the ADOT 55' easement by a maximum of 7'. No conflicts are identified on the west side.
- Impacts to Drainage: The existing catch basin and storm drain system can continue to be utilized.
- Impacts to Corridor Character: By maintaining the west curb line, the aesthetic features and alignment of the existing buffering wall can be maintained, as well as allowing an area that can be used for landscape between the buffering wall and the roadway. The 16' wide raised median also provides space for landscaping and mounding.

Figure 1: Alternative A



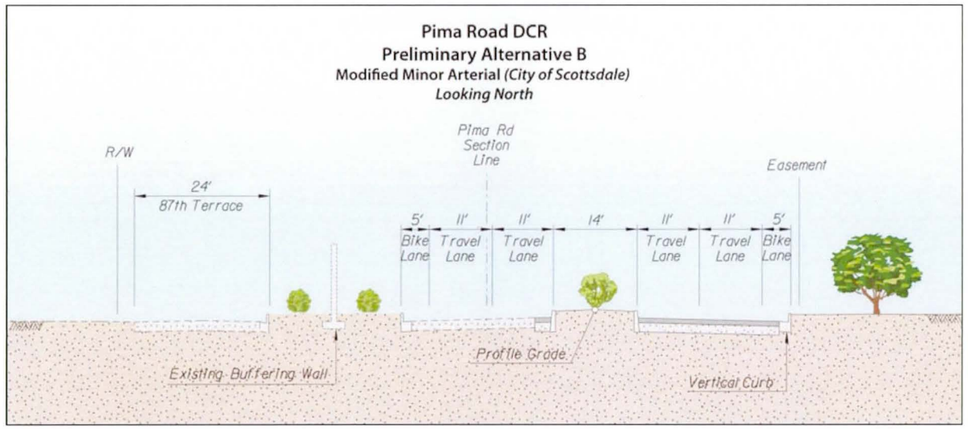
Alternative B

Alternative B consists of widening the existing roadway to a width that accommodates 2-11' through lanes in each direction with 2-5' on-street bike lanes and a 14' raised median, shown in Figure 2. This alternative maintains the location of the west curb line and widens to the east.

- Impacts to Safety: The continuous raised median provides an opportunity to control the access points to the new development.
- Impacts to Right-of-Way: This alternative results in the back of the east curb line falling inside of the ADOT 55' easement by a distance ranging from a maximum of 11' to a minimum of 1'. No conflicts are identified on the west side.

- Impacts to Drainage: The existing catch basin and storm drain system can continue to be utilized.
- Impacts to Corridor Character: By maintaining the west curb line, the aesthetic features and alignment of the existing buffering wall can be maintained, as well as allowing an area that can be used for landscape between the buffering wall and the roadway. The 14' wide raised median also provides slightly less space for landscaping and mounding.

Figure 2: Alternative B



Public Involvement

The public involvement activities implemented as a function of this project have been completed to a level which meets National Environmental Policy Act (NEPA) standards, so that the efforts can be incorporated into the environmental documentation. As a function of the NEPA standards, agency and public meetings have been held to solicit input throughout the design process. The public involvement activities documented in the environmental document have consisted of the following meetings:

- Agency Scoping meeting – In May 2007, the project was presented to agency members including the project team, neighboring agencies, and utility companies to help identify elements of the project scope.
- Public Scoping meeting – In May 2007, a public meeting in open house format was held to present the project concept to the public to solicit comments to help identify elements of the project scope.
- Public Information meeting – In May 2009, a series of public information meetings were held in an open house format. At the meetings, the alternatives identified in the March 2009 Initial DCR submittal for further study: Alternatives A, B and the No build alternative were presented. The public comments received during the meetings will be documented in the environmental document.
- Public Information meeting – An additional public information meeting will be held in October 2009 to present the final recommendations of the project study as documented in this Final Design Concept Report.

Preferred Alternative

The completion of the study process requires the identification of a preferred alternative, which will then be used to develop final design plans and the construction of the Pima Road improvements. Throughout the study process, a number to alternatives have been identified, studied, and eliminated or studied in greater detail. In addition to the engineering analysis, both public and agency input has been solicited and incorporated into the project's development.

With the identification of Alternatives A & B, and the No Build, as the alternatives to be studied further, the major design features associated with both of the alternatives were identified and evaluated. The discussion of the major design features provides the final designers with a basis for the project assumptions, design guidelines and a compilation of information discovered through the study process. In addition to providing information to the final designers, the discussion of the major design features included in this report will provide the planned and future developers along the Pima Road corridor a reasonable set of guidelines to aid in developing a uniform lane configuration and appearance along the corridor.

After developing Alternatives A & B to a level at which the advantages, disadvantages and costs could be identified and summarized, an evaluation matrix was developed. The advantages and disadvantages of the two alternatives were fairly similar, except for the need for new right-of-way associated with Alternative A and the lack thereof for Alternative B. The challenges associated with the right-of-way acquisition process along the corridor far out weighs the benefit of additional lane and median widths, especially when the proposed lane and median widths associated with Alternative B are acceptable to both COS and SRP-MIC.

Based on the advantages and disadvantages associated with Alternatives A & B, as well as factoring in the estimated costs for the project, Alternative B has been identified as the preferred alternative for the Pima Road corridor.

Considerations for Future Development

As shown in Figure 3, the implementation of the preferred alternative can be divided into a series of intersection and arterial improvement projects. The improvement projects can then be combined into a series of 4 construction packages to be constructed over the next 4 years.

- Package 1 – FY 2010 – FY 2011
- Package 2 – FY 2011 – FY 2012
- Package 3 – FY 2012 – FY 2013
- Package 4 – FY 2012 – FY 2014

There are several tasks that will require special consideration and attention through the study and design processes to insure that the projects are developed successfully. During a preliminary review of the packages, the following tasks were identified:

- Obtain Right-of-Way Clearance: Confirm that acquisition of right-of-way is not required
- Obtain Environmental Clearance: Complete Environmental Document and gain approval from FHWA
- Obtain Utility Clearance: Coordinate proposed improvements with identified utility companies
- Complete Final Design Documents: Using City of Scottsdale guidelines and procurement processes
- Complete signal warrant studies for additional signal locations along the corridor
- Gain approval from Salt River Project for construction of Arizona Canal bridge widening (See SRP Bridge Design Guidelines)
- Coordinate on-site drainage design with Granite Reef Wash storm drain project

Figure 3: Project Implementation Plan

1.0 Introduction

1.0 INTRODUCTION

1.1 Foreword

PB Americas, Inc is currently under contract (Contract #2006-203-COS) with the City of Scottsdale (COS) to conduct a Design Concept Study regarding the future improvements of Pima Road. The project limits on Pima Road are from McDowell Road, north, to the COS/Salt River Pima-Maricopa Indian Community (SRP-MIC) boundary just north of the 90th Street/Pima Freeway traffic interchange. The project is located in Maricopa County along a portion of the COS and SRP-MIC boundary. Figure 1.1 shows the project location.

The City of Scottsdale, Salt River Pima-Maricopa Indian Community and the Arizona Department of Transportation (ADOT) entered into an Inter-Governmental Agreement (IGA) in July, 2006 with the purpose of developing an initial and final design concept report (DCR), as well as an environmental document for Pima Road. The ADOT TRACS number associated with this project is H3344 01D.

Several governmental agencies have been involved in the development of the alternatives considered under this project. The Federal Highway Administration (FHWA) is serving as the lead federal agency, with the Bureau of Indian Affairs (BIA) serving as a cooperating federal agency. Both federal agencies, as well as COS, SRP-MIC and ADOT Valley Project Management have provided input and oversight for the alternatives identification and evaluation process.

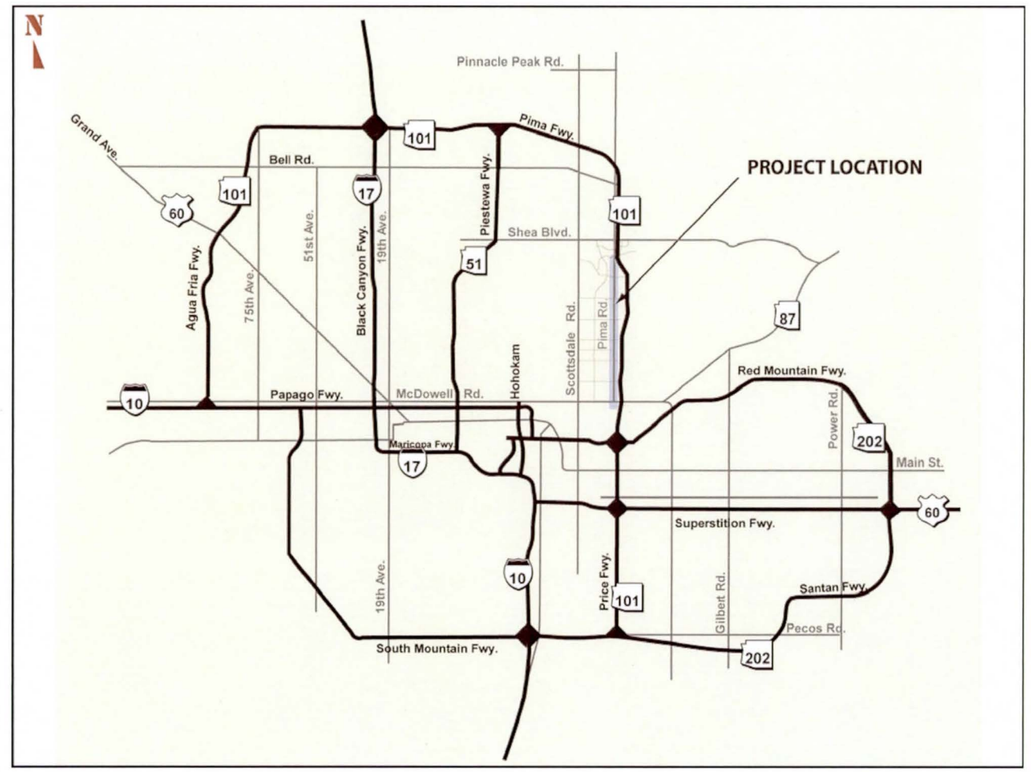
The following Final Design Concept Report (DCR) presents the results of the study of future improvements of Pima Road.

Several studies and reports are currently being developed for the DCR study as stand alone documents or to be incorporated within the DCR. A summary of the information gathered in the development of these reports will be discussed in this document. The studies and reports include the following:

- AASHTO Controlling Design Criteria Report
- Traffic and Accident Data Analysis Report
- Structural Type Selection Report
- Preliminary Geotechnical Report
- Initial Drainage Report
- Landscape and Corridor Character Report
- Environmental Document including Noise Analysis
- Initial Utility Report

The DCR was developed in accordance with the ADOT project development process. The technical review of the study documents were provided by various COS, SRP-MIC and ADOT representatives.

Figure 1.1: Vicinity Map



The environmental document will be developed to meet National Environmental Policy Act (NEPA) standards. As a function of the NEPA standards, agency and public meetings will be held to solicit input throughout the design process. The public involvement activities documented in the environmental document will consist of the following meetings:

- Agency Scoping meeting – In May 2007, the project was presented to agency members including the project team, neighboring agencies, and utility companies to help identify elements of the project scope.
- Public Scoping meeting – In May 2007, a public meeting in open house format was held to present the project concept to the public to solicit comments to help identify elements of the project scope.
- Public Information meeting – In May 2009, a series of public information meetings were held in an open house format. At the meetings, the alternatives identified in the March 2009 Initial DCR submittal for further study: Alternatives A, B and the No build alternative were presented. The public comments received during the meetings will be documented in the environmental document.
- Public Information meeting – An additional public information meeting will be held in October 2009 to present the final recommendations of the project study as documented in this Final Design Concept Report.

1.2 Need for the Project

The project is being developed based on the need to improve the operational characteristics of Pima Road from McDowell Road, north, to the COS/SRP-MIC community boundary just north of the 90th Street/Pima Freeway interchange. The existing roadway consists of primarily one-lane in each direction with portions having been widened to multiple lanes in each direction with left turn lanes at the crossroad intersections.

There are a number of current and future traffic generators affecting Pima Road within the study area. A traffic generator can be described as a facility that attracts trips, both from a local and regional perspective. Examples of local traffic generators are businesses, stores, schools, offices or neighborhoods, while regional examples of traffic generators can be freeways or expressways, which attract higher traffic volumes than the neighboring roadway facilities.

Looking North at the Pima Road / Indian School Road Intersection

A significant regional traffic generator identified for this study is the close proximity of Pima Road to the Pima and Red Mountain Freeways (Loops 101 and 202). As the freeways reach a diminished level of service (LOS), the traveling public tends to use the adjacent north-south arterials as alternates. Hayden Road is used as a north-south alternate to the Pima Freeway beginning at the Red Mountain Freeway (Loop 202). North of McDowell Road, Pima Road is used as an alternate to the Pima Freeway. Currently, there is not a viable north-south alternative east of the Pima Freeway.

Another traffic generators affecting Pima Road are the local traffic attractions along the corridor. The current and planned land use along the corridor consists of residential, retail and office, each of which generate or attract traffic. Most of the residential development along the corridor, within the Scottsdale city limits has been completed, while the SRP-MIC development plans are broad and in varying states of completion along the corridor. SRP-MIC development plans call for commercial, office and light industrial facilities to be constructed in the area between Pima Road and the Pima Freeway. As the corridor continues to develop, the existing Pima Road facilities need to be improved to efficiently and safely convey the local traffic.

In addition to the regional traffic and local traffic created by the development along the corridor, there are safety concerns associated with the southbound left turn movements from Pima Road to the new development, as well as the turning movements exiting the developments. The increased number of access points has an effect on the safety and flow of traffic as well as the operational characteristics of the corridor.

The need for additional lanes on Pima Road becomes a necessity based on the reasons listed above, in addition, the City of Scottsdale's *Transportation Master Plan* dated January, 2008, lists Pima Road as a minor arterial-suburban. A minor arterial-suburban consists of two lanes each way, with a median island, sidewalk and bike lanes. Maricopa Association of Governments (MAG) and SRP-MIC also list Pima Road as a minor arterial with two lanes each way.

Currently there are no on-street bike lanes or transit features along Pima Road. As the area develops, the project should incorporate multi-modal features, such as pedestrian facilities, bus stops and bike lanes.

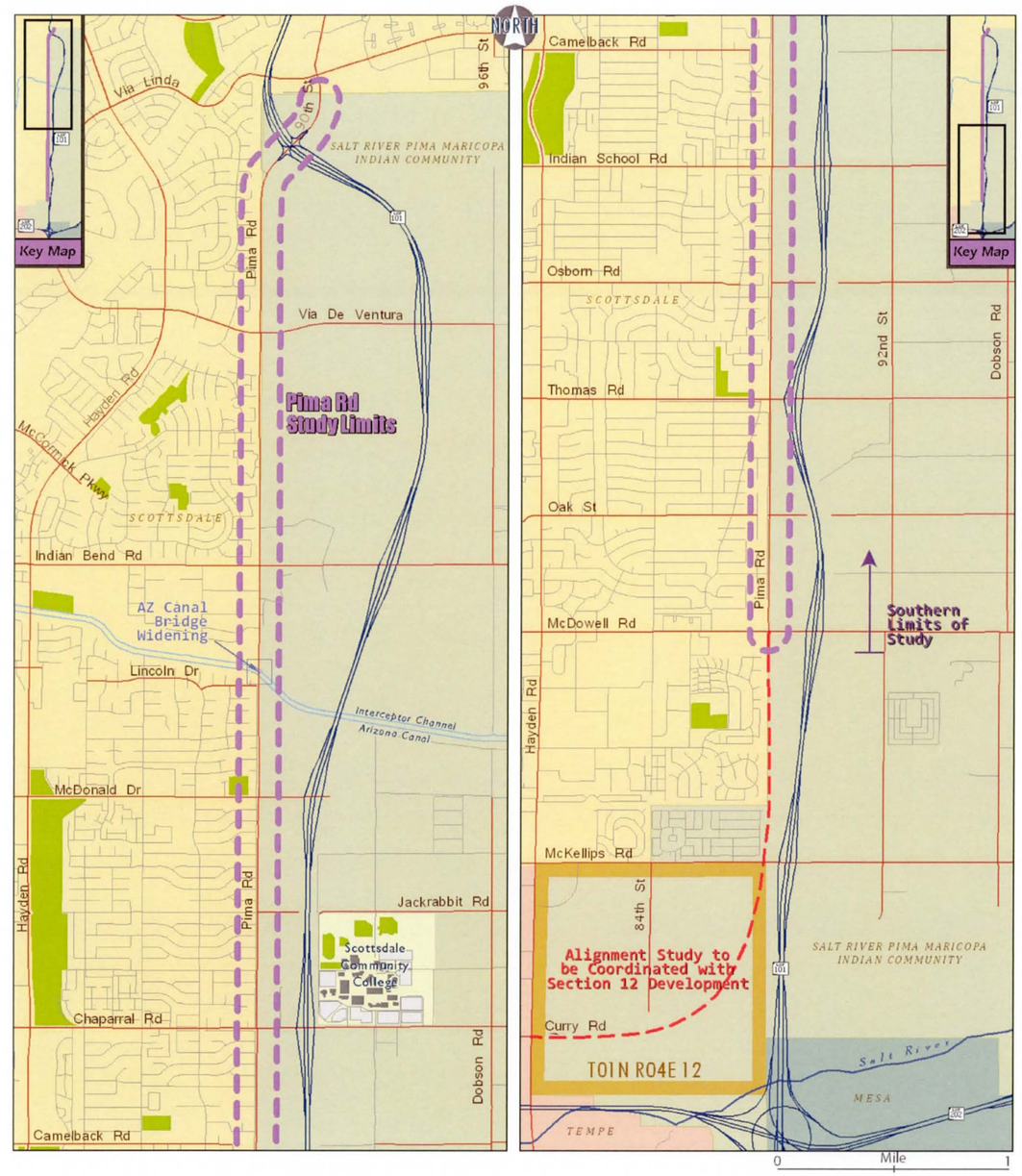
There is also an opportunity to enhance the overall feel of the corridor, through the development of community compatible corridor characteristics. The corridor character should incorporate the culture and history of both the COS and SRP-MIC communities. A Pima Road Corridor Aesthetic Character Design Concept Report has been developed and is included in this report.

1.3 Description of Project

Project Limits

The immediate project vicinity is illustrated in Figure 1.2. The project is located within the City of Scottsdale and the Salt River Pima-Maricopa Indian Community. The project limits extend along Pima Road between McDowell Road and the COS/SRP-MIC community boundary just north of the 90th Street/ Pima Freeway interchange. Also shown on this map are the jurisdictional boundaries and some of the other projects being studied along the corridor.

Figure 1.2: Project Map



1.4 Project Objectives

With the need for the project having been established, specific goals and objectives have to be identified through the solicitation of input from agency representatives and the public. These project objectives guide the development of the study process by identifying areas of focus and concern.

Based on input received at both agency and public scoping and information meetings, the project objectives for this study are listed below:

- Provide a safe facility
- Increase traffic capacity
- Improve north-south circulation
- Improve east-west circulation
- Reduce cut through traffic (proceeding east of the Pima Freeway, through SRP-MIC)
- Improve business access
- Accommodate multi-modal access (bus, bikes, etc)
- Enhance corridor character
- Safeguard adjacent neighborhoods and community resources

The study process will develop a recommended solution which achieves the identified project objectives.

1.5 Characteristics of the Corridor

The original projects to construct Pima Road were completed between 1968 and 1979. Various intersection improvement projects and installation of traffic signals at the major crossroad intersections occurred between 1979 and 1994 (limited as-built information showing these intersection improvements is available). The majority of the roadway existed as a two-lane facility from the initial construction until the City of Scottsdale buffering projects began in 1994 and continued until 2003. The buffering projects consisted of constructing a new buffering wall between 87th Terrace and Pima Road, as well as the construction of curb and gutter and a storm drain system along the west side of Pima Road.

The existing Pima Road corridor is generally bordered along the west side by single-family residential development and along the east side by a combination of commercial, office and retail buildings, agricultural use, and vacant land. The existing corridor right-of-way along the west side of the section line is 65' wide south of Inner Circle Drive and 95' wide north of Inner Circle Drive. 87th Terrace ("Little Pima") provides access to the neighborhoods along the west side of Pima Road and is included within the existing Pima Road right-of-way. Along the east side of the corridor, a 55' roadway and utility easement was purchased by ADOT from SRP-MIC as a part of the Pima Freeway easement acquisition completed in the early 1990s.

Pima Road Looking North of Chaparral Road

The existing roadway centerline generally falls on the west side of the section line, however, significant variations occur throughout the corridor. The relationship between the COS and SRP-MIC boundary line/section line and the existing pavement limits are shown on the corridor exhibits in Appendix A. There are no roadway facilities currently south of McDowell Road.

The posted speed limit on Pima Road is 45 mph throughout the project limits. The existing Pima Road roadway width varies from 1 lane in each direction to multiple lanes with left turn bays at the major signalized crossroad intersections. The existing signalized intersection spacing is as follows:

Table 1.1: Signal Spacing

Signalized Crossroad	McDowell Road	Thomas Road	Indian School Road	Chaparral Road	McDonald Drive	Indian Bend Road	Inner Circle Road	Via de Ventura	90th Street & Pima Freeway
Spacing from Previous Signal (mi)		One-mile	One-mile	One-mile	One-mile	One-mile	½ mile	½ mile	¾ mile

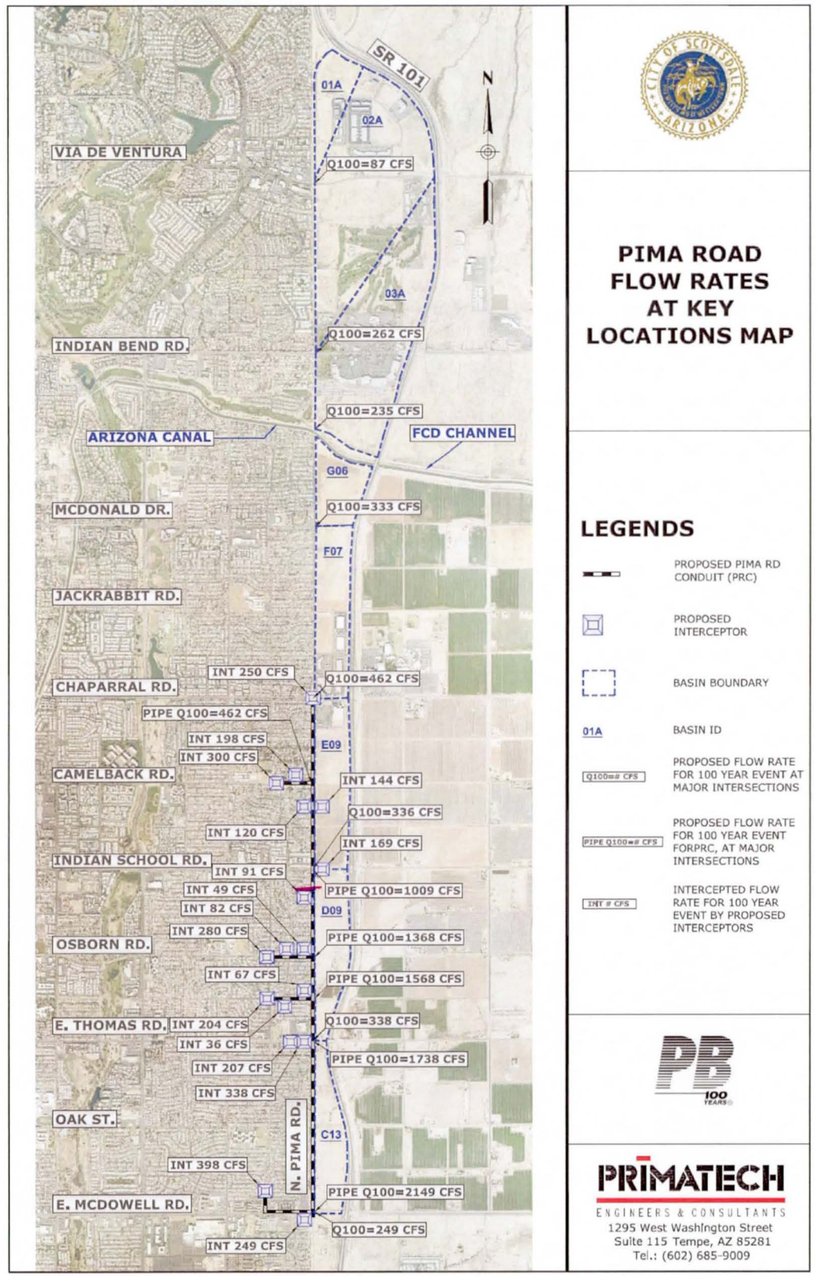
The topography of the existing watershed north of the Arizona Canal slopes southwest with a general slope of 0.5%. South of the Arizona Canal, the watershed has a flatter slope towards the south that ranges from 0.2% to 0.4%. The watersheds contributing to the off-site flows that can potentially impact Pima Road are located between Pima Road and Loop 101 as shown in Figure 1.3. Observations from field investigation suggest that the drainage channel running east of the Pima freeway intercepts offsite water coming from the farmlands east of the Pima Freeway. The area west of the Pima freeway and east of Pima Road contributes to the offsite flow along Pima Road. The Flood Control Channel intercepts offsite flow coming from the northern area of the Arizona Canal. The flow generated from the offsite area south of the Arizona Canal is channelized into an earthen/concrete irrigation canal along the east side of Pima Road.

The existing drainage facilities along the corridor consist of curb opening catch basins along the western edge of Pima Road where a storm drain network collects the onsite drainage. To the east of Pima Road, an open irrigation/drain channel exists along the road. This channel conveys the eastern offsite flow between Pima Road and Loop 101, in addition to, tail water from the fields east of the freeway, as well as, part of the Pima Road pavement drainage downstream to the south. There are existing siphon crossings under the Loop 101 freeway for tail water crossings located at: Jackrabbit Road, Camelback Road, and Osborn Road, in addition there is a delivery ditch crossing the freeway at Oak Street. North of the Arizona Canal, the storm drain begins to the south of Del Arbor and continues south to the Flood Control Channel north of the Arizona Canal.

Existing canal along east side of Pima Road

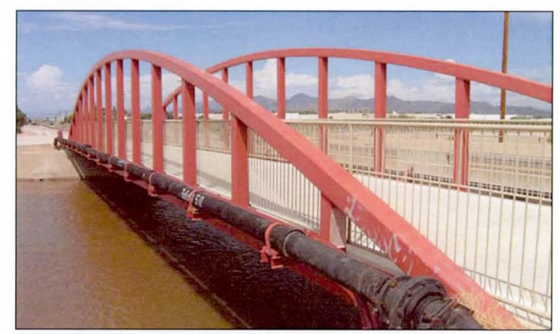
South of the Arizona Canal, the existing storm drain system starts near the southern end of the Arizona Canal Bridge and continues to McDonald Road where the storm drain is diverted towards the west. South of McDonald Road along Pima Road, a new storm drain begins and continues south to the Chaparral Road intersection, where the storm drain is diverted to the west along Chaparral Road. Similarly, south of Chaparral Road, a storm drain begins and continues south to Indian School Road, where the storm drain is then diverted to the west. The next section of storm drain starts to the south of Indian School Road and continues south to Thomas Road. At Thomas Road, the Granite Reef Wash starts and the storm drain is then diverted southwest to 87th Street along Granite Reef Wash. At this point, the flow from the SRPMIC ditch combines with the storm drain flow by crossing at Thomas Road to enter Granite Reef Wash. Another storm drain begins to the south of Thomas Road, and it is directed to the west after the storm drain reaches McDowell Road. The storm drains south of the Arizona Canal are designed for 2-year 2-hour rainfall events. (Granite Reef Wash Master Drainage Master Plan, Entellus, 2002).

Figure 1.3: Offsite Drainage Area Map



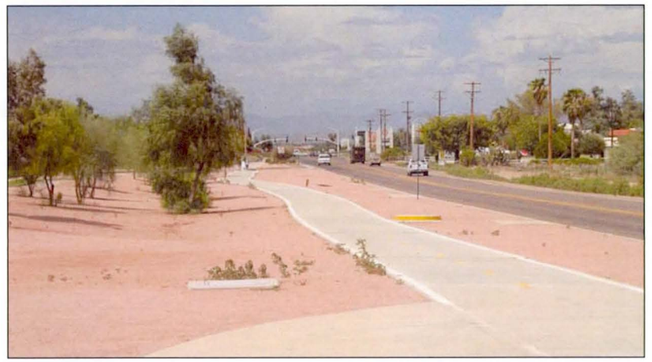
The existing drainage structures located within the Pima Road study corridor consist of the Pima Outfall channel, the Pima Freeway channel and the Granite Reef wash. The Pima Outfall channel collects the runoff north of the Arizona canal and outlets through the Pima Freeway drainage system to the Salt River. There is a 7-bay 10' by 8' by 170' pre-cast concrete box culvert that crosses Pima Road just north of the Arizona Canal. Preliminary review identifies that this box culvert will not be in conflict with the proposed improvements to Pima Road. South of the Arizona Canal is the Granite Reef Wash area. City of Scottsdale has an ongoing drainage project studying the Granite Reef Wash and the Pima Road Corridor area to mitigate the existing flood issues. Preliminary results of the study recommend the installation of a conduit ranging in size from 1-~~84"~~ 72" to 2-120" pipe culverts to approximately a 12' x 16' concrete box culvert in the Pima Road alignment from Indian School Road south to the Salt River.

There is one existing bridge structure located within the Pima Road study corridor limits. The existing structure is a three-span voided slab bridge, located at the Pima Road crossing of the Arizona Canal. This structure will require widening to accommodate any of the proposed typical section alternatives. The requirements of widening or reconstruction of the existing bridge, as well as the direction of the improvements have been evaluated in a separate structure selection report.



Shared Use Pathway Structure over the Arizona Canal

Multiple roadway and utility improvements were constructed along the Pima Road corridor as a function of the Pima Freeway construction. The improvements included the cross road improvements between the Pima Freeway and Pima Road and the installation of sewer and water lines along the east side of the Pima Road Corridor. The Pima Freeway construction was divided into segments that were constructed from the south to the north. These segments were opened to traffic from the mid to late 1990s.



Shared Use Pathway Looking North of Arizona Canal

A table summarizing past projects within the study limits is shown as follows:

Table 1.2: Past Project History

Project No.	Begin Termini	End Termini	Construction Date	Description
P-6612	Thomas Road	Indian Bend Road	1968	New Pima Road
P-6823	Indian Bend Road	Shea Boulevard	1968	New Pima Road
P-07464C	McDowell Road	Thomas Road	1973	New Pima Road
Unknown	Indian Bend Road	Via de Ventura	1973	New Pima Road
Unknown	Via Linda	Pima Inn	1979	New Pima Road
93E130	Pima Outfall Channel	Pima Outfall Channel	1998	Pima Outfall Channel, concrete box culvert crossing of Pima Road
B6729	Arizona Canal Bridge	Arizona Canal Bridge	1967	Pima Road crossing of Arizona Canal
S4702 94-109	McDowell Road	Thomas Road	1994	Buffering Project – Buffering wall, C&G, Storm drain, Shared use path
S4702 95-120	Thomas Road	Indian School Road	1995	Buffering Project – Buffering wall, C&G, Storm drain, Shared use path
S4702 96-01	Indian School Road	Chaparral Road	1996	Buffering Project – Buffering wall, C&G, Storm drain, Shared use path
S4702 96-70	Fillmore Road	McDowell Road	1996	Buffering Project – Buffering wall, Shared use path
S4702 97-115	Arizona Canal	Inner Circle	1997	Buffering Project – Buffering wall, C&G, Storm drain, Shared use path
S4702 98-107	Chaparral Road	McDonald Road	1998	Buffering Project – Buffering wall, C&G, Storm drain, Shared use path
S4702 99IB073	McDonald Road	Arizona Canal	1999	Buffering Project – Buffering wall, C&G, Storm drain, Shared use path
S4702 03PB116	Inner Circle	Via de Ventura	2003	Buffering Project – Buffering wall, C&G, Storm drain, Shared use path
101 MA 045	McDonald Drive	Thomas Road	1998	Pima Freeway Construction: 90th Street TI, water and sewer connections to SRPMIC
101 MA 041 Part B	90th Street	McDonald Drive	1998	Pima Freeway Construction: Pima Road widening at Via de Ventura, sewer connections to SRPMIC
101 MA 052 Part A	Thomas Road	McKellips	1995	Pima Freeway Construction: Eastside widening of Pima Road north and south of Thomas Road

2.0 Traffic and Accident Data

2.0 TRAFFIC AND ACCIDENT DATA

This chapter presents a preliminary summary of existing, as well as future traffic volume projections for the Pima Road corridor. Detailed information and analysis has been formally documented in the project traffic report. By studying the current and future traffic along the corridor, the need for proposed improvements can be evaluated to determine the maximum benefit to the flow of traffic, while providing a cost effective, reasonable improvement recommendation.

Existing traffic volumes have been collected and future traffic projections were obtained from the Maricopa Association of Governments (MAG) regional travel demand model. Additional traffic volume information has been collected from the City of Scottsdale TransCAD model, which includes updated socio-economic and planned development data within the local area. The updates include current and planned developments within the COS and SRP-MIC portions of the Pima Road corridor.

In addition, turning movement counts at the existing intersections were collected in October 2007. Collision data has been obtained from the City of Scottsdale for the Pima Road corridor from McDowell Road to Via De Ventura Road.

2.1 Existing Conditions

In order to develop a baseline for the existing traffic conditions along the corridor, Twenty-four hour traffic counts were collected along Pima Road at five locations on October 24, 2007. A monthly adjustment factor of 1.02 was applied to the raw counts as a function of the COS traffic counts data and the resulting AM and PM peak hour traffic is shown in Table 2.1 along with the average daily traffic (ADT) for Pima Road.

Table 2.1: Existing Average Daily Traffic and Peak Hour Volumes

Location	Average Daily Volume	AM Peak Volume	PM Peak Volume
between McDowell Road and Thomas Rd	6169	634	847
between Thomas Rd and Indian School Rd	7931	743	974
between Chaparral Rd and McDonald Dr	10129	884	1212
between McDonald Dr and Indian Bend Rd (S of Arizona Canal)	12703	1007	1503
between Indian Bend Rd and Via De Ventura	10727	938	1238

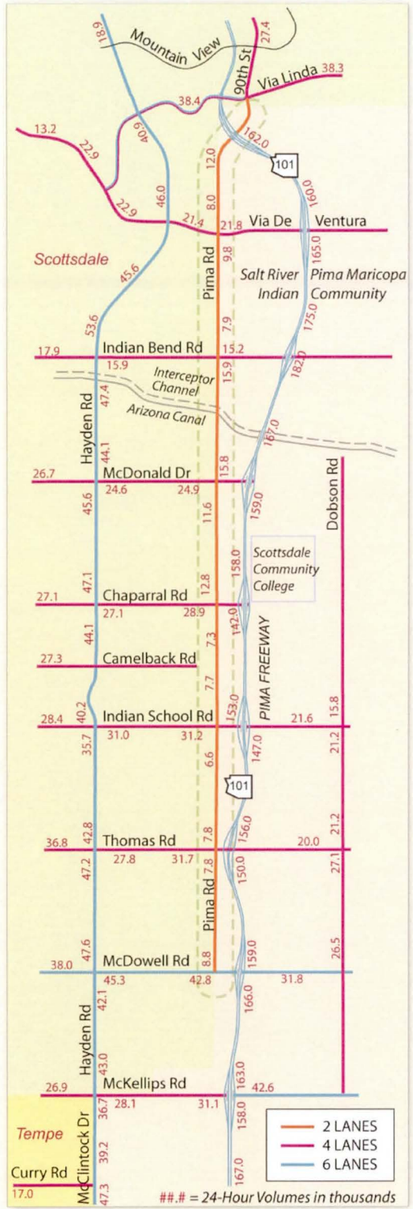
As shown in Table 2.1, the existing traffic volumes on Pima Road range from 6,100 vehicles per day north of McDowell Road to 12,700 vehicles per day south of the Arizona Canal. Also, the results show that the PM Peak hour is a greater volume then the AM Peak hour.

In order to validate and confirm the reasonableness of the traffic counts collected, existing condition volumes were also obtained from MAG. The MAG Traffic Data Forecasts and Modeling Group provided the travel forecasting for this project. Figure 2.1 lists the average daily traffic on Pima Road corridor for the 2006 Existing Conditions Alternative. Figure 2.1 shows that daily traffic volumes on Pima Road range from 6,600 south of Indian School Road to 15,900 vehicles per day south of Indian Bend Road. Even though the twenty-four hour counts shown in Table 2.1 and the MAG projections on Figure 2.1 do not exactly match, overall, they are similar enough to consider the model valid.

Additionally, turning movement counts at the Pima Road intersections were completed on October 25, 2007. Turning movement counts were collected for three hour periods each in the morning (6-9 AM) and afternoon (3-6 PM) peak periods. A peak hour was identified from both the AM and PM peak periods and the results are shown in Figure 2.2.

Figure 2.3 displays the existing lane geometry at the Pima Road intersections. Pima Road generally consists of one through lane in the northbound and southbound directions. However, there are two through lanes northbound and southbound at the intersections of McDonald Drive, Indian Bend Road and Via De Ventura. The existing cross roads have a minimum of 2 through lanes in the eastbound and westbound directions, with the exception of McDowell Road which has 3 through lanes in each direction. An exclusive left turn lane is present on all the approaches of all of the intersections on Pima Road. Only one dual left turn lane configuration currently exists along the corridor, located at southbound Pima Road at McDowell Road. There is a fairly even ratio of dedicated right turn lanes and optional through-right turn lanes along all of the approaches of all of the intersections.

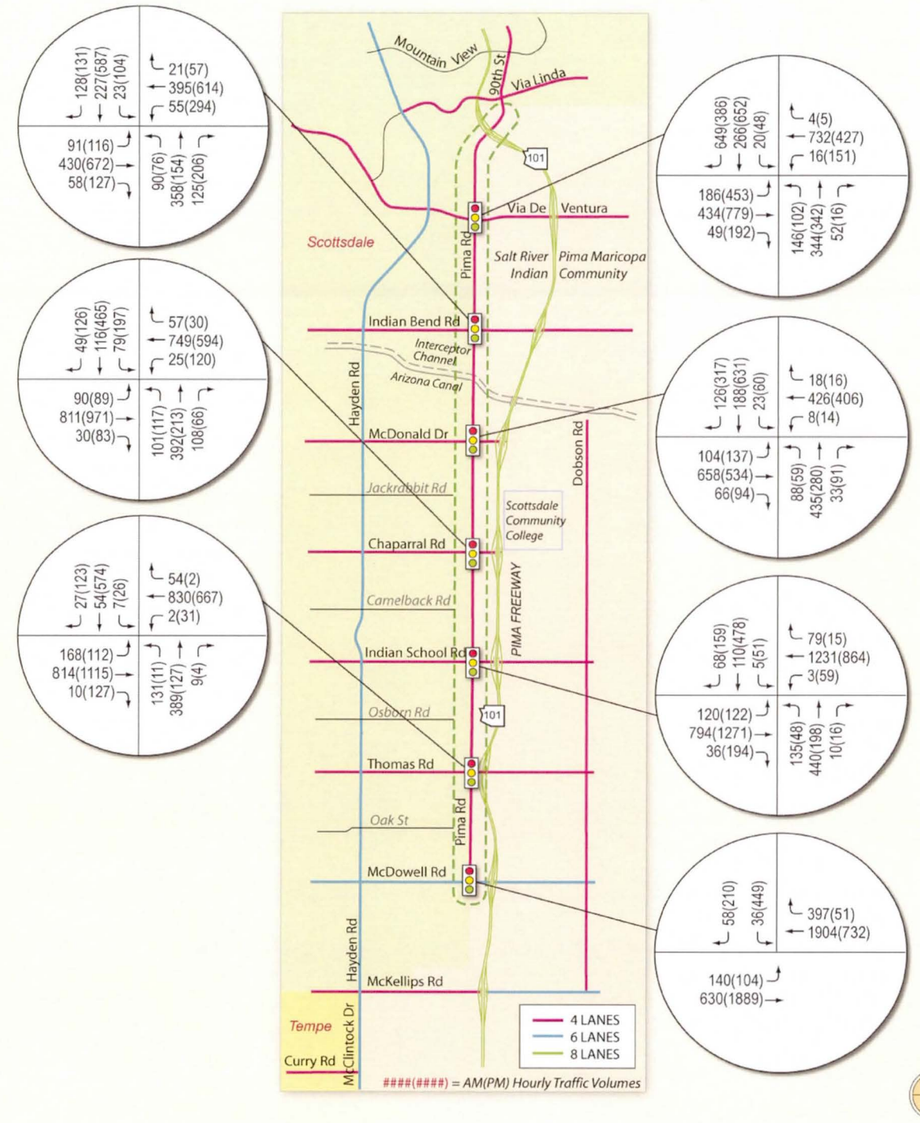
Figure 2.1: Existing Traffic Volume Projections



SOURCE: MAG

Existing Conditions
Traffic Volumes

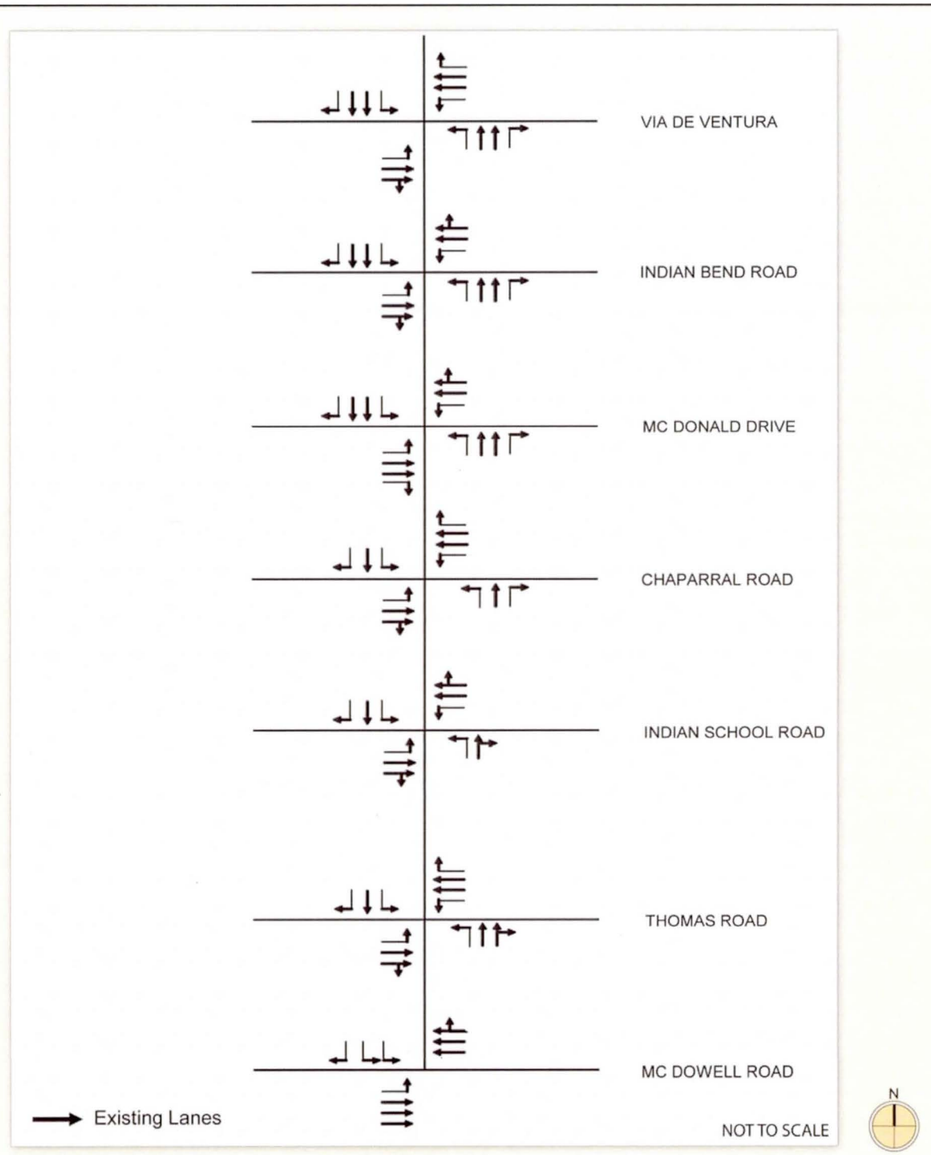
Figure 2.2: 2007 Peak Hour Turning Movement Volumes



COUNT DATE: October 25, 2007

Intersection Turning Movement Volumes on Pima Road
2007 Existing Conditions

Figure 2.3: Existing Pima Road Intersection Lane Geometry



Existing Intersection Lane Geometry

2.2 Existing Intersection Capacity Analysis

A level of service analysis for signalized intersections was performed utilizing the methodology presented in the 2000 Highway Capacity Manual (HCM). This method uses the critical volumes passing through the intersection in one hour and compares those volumes to the capacity of the intersection and an associated delay. The analysis incorporates the effects of traffic volumes, geometry, traffic signal operation, truck and local bus volumes, pedestrian activity, and peaking characteristics. The result is a level of service determination for each approach and for the intersection as a whole.

Level of Service is a term used to describe traffic operations. The various levels of service, which range from A to F, are generally defined as follows:

- **LEVEL OF SERVICE A** represents free flow operation.
- **LEVEL OF SERVICE B** is in the range of free flow, but the presence of other users in the traffic stream begins to be noticeable.
- **LEVEL OF SERVICE C** is in the range of stable flow, but marks the beginning of the range in which the operation of individual users becomes significantly affected by others.
- **LEVEL OF SERVICE D** represents high density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
- **LEVEL OF SERVICE E** represents operating conditions at or near the capacity level. All speed is reduced to a low but relatively uniform value.
- **LEVEL OF SERVICE F** is used to define forced or stop and go travel. This condition exists wherever the amount of traffic approaching a point exceeds the amount that can traverse the point.

The capacity criteria are presented in terms of average vehicle delay in Table 2.2. A LOS of E or F will be assumed to be the threshold of concern for the analysis associated with this project.

Table 2.2: Capacity Criteria for Signalized Intersections*

Level of Service (LOS)	Control Delay per Vehicle (sec)
A	less than 10
B	10.1-20
C	20.1-35
D	35.1-55
E	55.1-80
F	over 80

*Source: Highway Capacity Manual

Utilizing the intersection lane geometry shown in Figure 2.3, the turning movement volumes shown in Figure 2.2, the Level of Service for the Pima Road signalized intersections were calculated. These calculations followed the operational analysis method set forth in Synchro 7.0, which is based on the HCM procedure. All the signals in the study area were set-up as pre-timed signals. The signal at Thomas Road was coordinated with the Loop 101 ramp terminal signals east of the intersection. A majority of the cycle length and clearance times provided by City of Scottsdale were input into Synchro 7.0. The cycle length for the intersection at Thomas Road used the value optimized by Synchro 7.0.

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Figure 2.4 depicts the movement and intersection level of service with the intersection delay for both AM and PM peak periods. The detailed results of the AM peak hour analysis are summarized in Table 2.3. Table 2.3 lists the intersection approach volumes, delay per movement in seconds per vehicle, approach level of service, turn bay length input in Synchro 7.0, and average queue and maximum queue output from Synchro 7.0. As can be seen from Table 2.3, there are 3 movements which experience a LOS of E or F. Except for these movements, all the approaches and intersections experience level of service D or better for the AM peak hour. Synchro 7.0 output is shown in Appendix A of the Traffic Report. The results of the PM peak hour analysis are shown in Table 2.4. Except for the 5 highlighted movements experiencing LOS E, all the approaches and intersections experience level of service D or better. When compared to AM peak hour, the PM turning movements experience longer queues.

Figure 2.4: Existing Intersection and Approach LOS

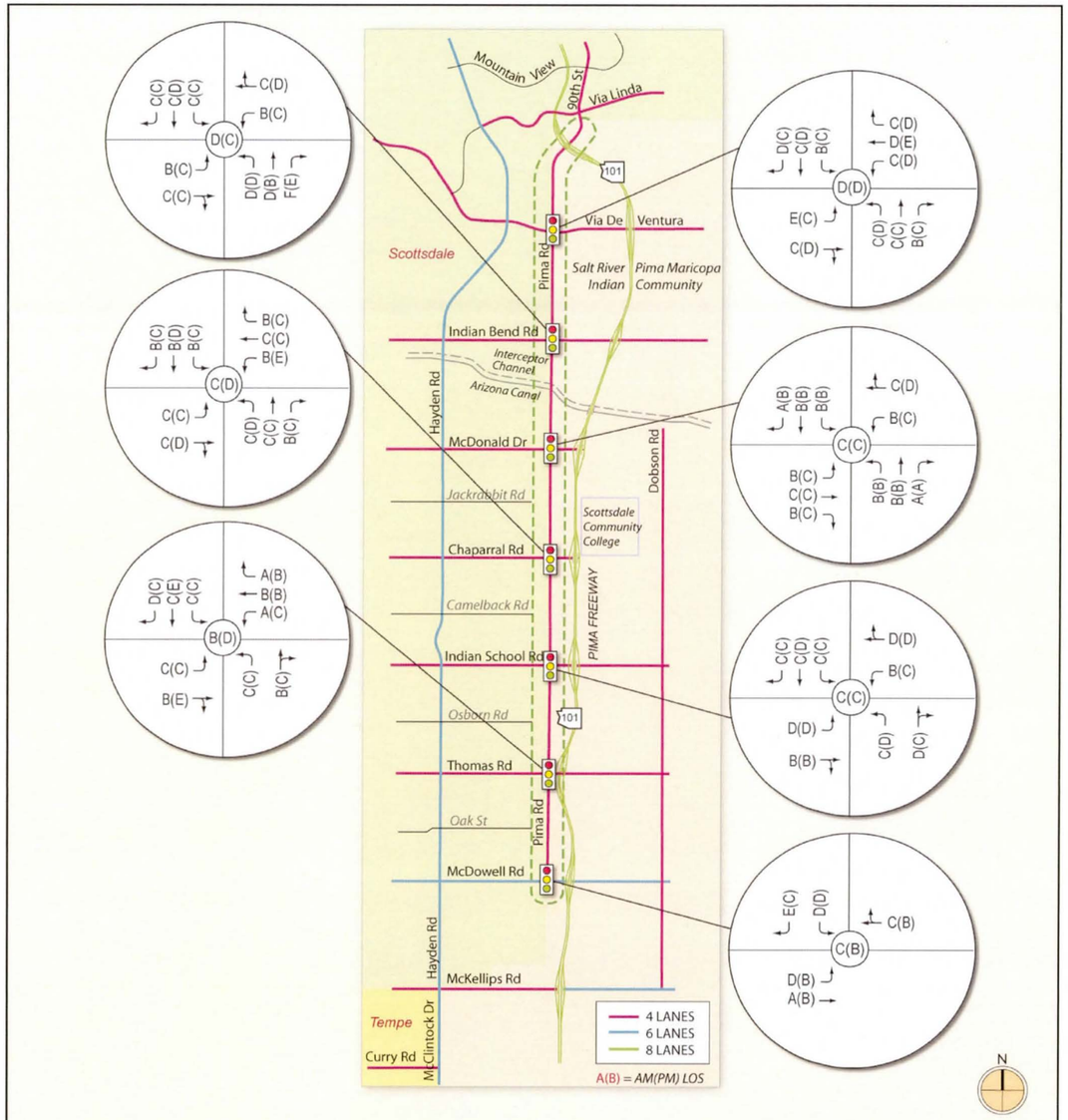


Table 2.3: Existing AM Peak Hour Intersection LOS and Queue Length Summary

#	Intersection Name	Approach	EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND			INTERSECTION
		Movement	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
		Peak Hour	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	
1	Pima Road @ Via De Ventura	Volume (vph)	186	434	49	16	732	4	146	344	52	20	266	649	
		Delay (Sec)	57.7	33.4		30.8	53.7	33.0	22.2	21.9	19.7	19.9	21.3	40.9	38.4
		LOS	E	C		C	D	C	C	C	B	B	C	D	D
		Turn Bay Length (ft)	230		S	167		235	200		200	495		215	-
		Avg Queue(ft)	103	165		8	311	0	72	94	0	9	71	340	107
		Max Queue(ft)	230	218		23	413	9	117	130	25	25	101	591	591
2	Pima Road @ Indian Bend Road	Volume (vph)	91	430	58	55	395	21	90	358	125	23	227	128	
		Delay (Sec)	18.2	27.0		18.6	26.9		43.3	52.5	142.8	23.3	29.5	27.9	39.2
		LOS	B	C		B	C		D	D	F	C	C	C	D
		Turn Bay Length (ft)	250		S	150		S	210		255	270		225	-
		Avg Queue(ft)	34	134		20	115		63	138	45	9	66	0	62
		Max Queue(ft)	62	183		42	160		116	188	98	25	100	45	188
3	Pima Road @ Mc Donald Drive	Volume (vph)	104	658	66	8	426	18	88	435	33	23	188	126	
		Delay (Sec)	17.8	25.9	19.9	18.8	25.6		14.1	18.2	8.5	15.0	16.3	8.0	21.0
		LOS	B	C	B	B	C		B	B	A	B	B	A	C
		Turn Bay Length (ft)	170		200	125		S	210		225	250		220	-
		Avg Queue(ft)	39	186	0	3	121		21	64	0	6	26	2	43
		Max Queue(ft)	70	243	28	11	166		39	92	4	15	40	11	243
4	Pima Road @ Chaparral Road	Volume (vph)	90	811	30	25	749	57	101	392	108	79	116	49	
		Delay (Sec)	24.6	21.4		17.5	20.4	15.2	20.3	25.8	18.8	18.8	13.6	11.6	20.9
		LOS	C	C		B	C	B	C	C	B	B	B	B	C
		Turn Bay Length (ft)	150		S	600		I	100		100	200		150	-
		Avg Queue(ft)	42	220		10	189	0	45	207	13	16	23	0	70
		Max Queue(ft)	94	281		29	244	22	84	304	48	59	61	10	304
5	Pima Road @ Indian School Road	Volume (vph)	120	794	36	3	1231	79	135	440	10	5	110	68	
		Delay (Sec)	40.5	16.5		18.3	39.1		31.7	47.0		26.9	28.4	26.6	33.1
		LOS	D	B		B	D		C	D		C	C	C	C
		Turn Bay Length (ft)	115		S	150		S	150		S	90		125	-
		Avg Queue(ft)	44	206		1	523		83	340		3	65	0	141
		Max Queue(ft)	126	257		7	638		144	459		12	112	33	638
6	Pima Road @ Thomas Road	Volume (vph)	168	814	10	2	830	54	131	389	9	7	54	27	
		Delay (Sec)	25.6	10.3		7.1	10.4	7.2	21.3	20.0		26.3	27.4	50.8	14.3
		LOS	C	B		A	B	A	C	B		C	C	D	B
		Turn Bay Length (ft)	150		S	120		I	150		S	115		165	-
		Avg Queue(ft)	46	100		0	102	0	42	67		5	34	0	40
		Max Queue(ft)	148	142		3	144	14	87	105		16	69	33	148
7	Pima Road @ Mc Dowell Road	Volume (vph)	140	630	0	0	1904	397				36	0	58	
		Delay (Sec)	36.5	4.4			23.2					48.5		72.7	21.2
		LOS	D	A			C					D		E	C
		Turn Bay Length (ft)	290					S				415		360	-
		Avg Queue(ft)	56	48			536					15		0	131
		Max Queue(ft)	126	60			610					34		51	610

S – Shared Right

I – Exclusive Right Turn Lane

2.3 Accident Analysis

Collision data for eight years from January 2000 to August 2007, provided from the City of Scottsdale Accident Data report were reviewed. The collisions were tabulated by segments on Pima Road and in the vicinity of intersections and shown in Table 2.5. On Pima Road, between Via De Ventura and McDowell Road, 262 accidents were reported. The intersections of Via De Ventura with 58 accidents and Thomas Road with 60 accidents experienced the highest number of collisions. It is evident from Table 2.5, that the majority of accidents on Pima Road took place at the intersections. All the accidents reported within 100 feet of the intersection were classified as intersection related.

Table 2.5: Accident History for Pima Road

Cross Street	Location	Year								Sum
		2000	2001	2002	2003	2004	2005	2006	2007 (to Aug.)	
Via De Ventura	North of Intersection	1	3	2		1	2	1	1	11
	At the Intersection	8	7	9	9	10	8	5	2	58
	South of Intersection	1			1	1		2		5
Sum		10	10	11	10	12	10	8	3	74
Indian Bend Rd	North of Intersection								1	1
	At the Intersection	2		3	1	5	2	3	1	17
	South of Intersection		1							1
Sum		2	1	3	1	5	2	3	2	19
McDonald Dr	North of Intersection	1		1	1	1	1			5
	At the Intersection	2	2	3	4	5	1	2	2	21
	South of Intersection					1	1	1		3
Sum		3	2	4	5	7	3	3	2	29
Chaparral Rd	North of Intersection					1	1			2
	At the Intersection	3	3	2	2	3	3	8	3	27
	South of Intersection			1		1	1		2	5
Sum		3	3	3	2	5	5	8	5	34
Indian School Rd	North of Intersection				1				1	2
	At the Intersection	3	1	4	4	3	2	6	4	27
	South of Intersection			1						1
Sum		3	1	5	5	3	2	6	5	30
Thomas Rd	North of Intersection									0
	At the Intersection	4	8	10	7	9	8	9	5	60
	South of Intersection									0
Sum		4	8	10	7	9	8	9	5	60
McDowell Rd	North of Intersection						1	1		2
	At the Intersection		2	1	3	4	1		2	13
	South of Intersection				1					1
Sum		0	2	1	4	4	2	1	2	16
Total		25	27	37	34	45	32	38	24	262

Accident data is also displayed by year in Figure 2.5 with 45 accidents taking place in 2004. Figure 2.6 shows that highest number of accidents was reported near Via De Ventura intersection. There were 195 day time accidents versus 67 night time accidents. Figure 2.7 lists the accidents by severity with 153 Property Damage Only accidents, 105 injury accidents, and one fatal accident. Appendix B of the Traffic Report lists the accident data.

Figure 2.5: Pima Road Accidents by Year

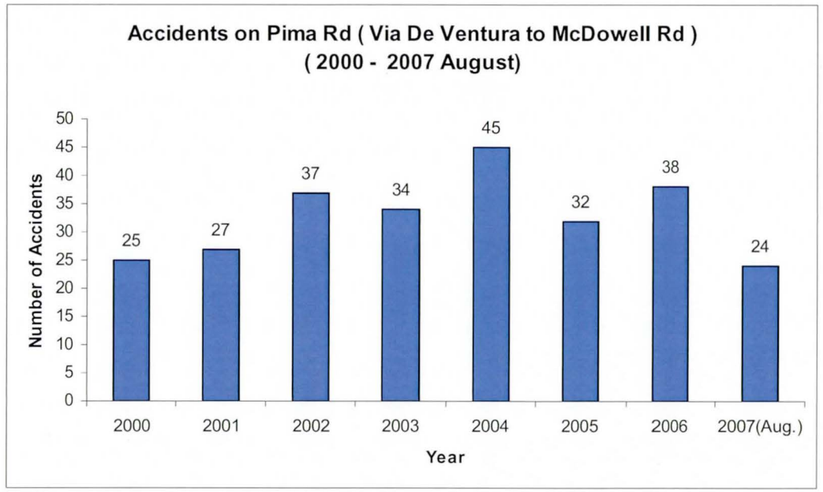


Figure 2.6: Pima Road Accidents by Location

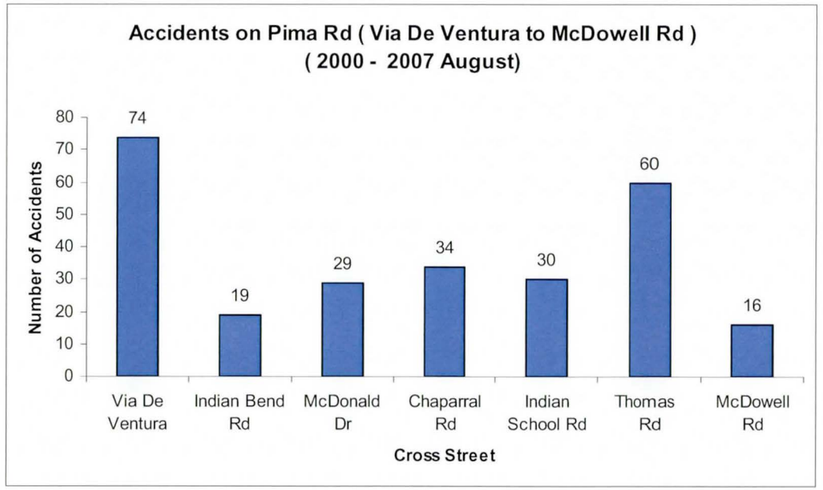
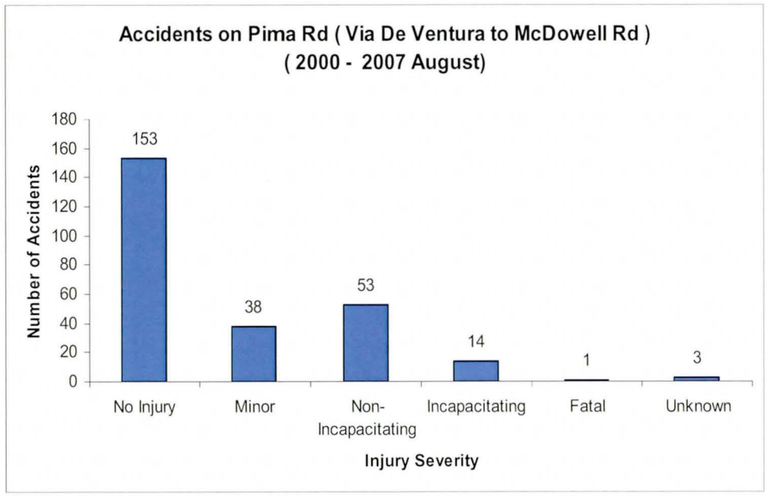


Figure 2.7: Pima Road Accidents by Severity



2.4 Future Conditions

This section summarizes the development of the future average daily traffic volumes and the future design hour volumes within the Pima Road study area. Future projections using both the Maricopa Association of Governments (MAG) model and the City of Scottsdale TransCAD model were requested and analyzed.

The MAG model utilizes the land use elements of adopted general comprehensive plans for the Cities and Native American Communities within Maricopa County, including the specific planned development along the Pima Road study area as the basis for its traffic forecasts. A series of geographic areas are used to locate the incremental population and employment growth within the Phoenix Metropolitan Area. These areas included Municipal Planning Areas (MPAs), which typically correspond with the incorporated boundaries of cities and towns; Regional Analysis Zones (RAZs), which are geographical subsets of the MPAs; and Traffic Analysis Zones (TAZs), which can be as small as one square mile and reflect land use density or activity.

The MAG Traffic Data Forecasts and Modeling Group provided the travel forecasting for this project. The following model runs were used for the analysis:

- 2006 Existing Conditions
- 2030 Design Year No Build Alternative
- 2030 Design Year 4-lane Via de Ventura to McDowell Road
- 2030 Design Year 4-lane Via de Ventura to McKellips
- 2030 Design Year 4-lane Via de Ventura to Hayden Road.

As part of this report, only the No Build and 4-lane alternative from Via De Ventura to McDowell Road are presented in this section. Figure 2.8 lists the average daily traffic on Pima Road for the 2030 No Build condition. As seen in Figure 2.8, the daily traffic volumes on Pima Road are projected to increase slightly compared to the existing condition while daily traffic on Loop 101 increased significantly from 150,000 vehicles per day to 250,000 vehicles per day. South of Chaparral Road, the daily traffic on Pima Road ranged from 6,000 vpd to 8,000 vpd which is similar to the existing condition. The increase in traffic volumes on Loop 101 reduced the north south traffic on Hayden Road.

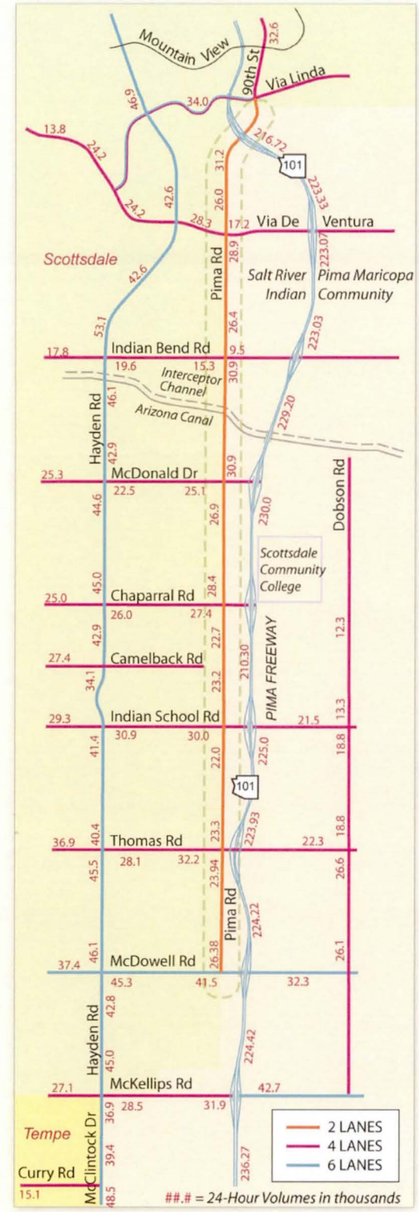
In addition to reviewing the forecasts provided from the MAG model, separate model runs were provided by the COS TransCAD model. The COS TransCAD model represents more detailed information concerning planned and current development in the area. The MAG model focus as a regional model uses approximately 1 square mile as its smallest increment, while the COS TransCAD model evaluates the specific type of development within a square mile providing more detailed forecast results for a localized area. Figure 2.9 shows the ADT for the 2030 No Build condition obtained from COS TransCAD model. Compared to MAG No Build model, Figure 2.9 shows less traffic volume on Hayden Road, but more traffic on Pima Road north of Indian Bend Road which accurately represents the existing four lane roadway.

The ADT for 2030 4-lane Via de Ventura to McDowell Road was obtained from MAG and shown in Figure 2.10. However, additional traffic volume projections have been included from the COS TransCAD model, which includes updated socio-economic and planned development data along the SRP-MIC portion of the Pima Road corridor. These traffic volumes represent Pima Road and most of the east west streets modeled as two through lanes each way. McDowell Road was modeled as three lanes each way. Compared to MAG 2030 ADT projections, the result from the COS TransCAD model as depicted in Figure 2.11 shows higher volumes on east-west cross roads and lower traffic projections on Pima road. Figure 2.11 shows the average daily traffic on Pima Road range from 14,000 to 23,000 vehicles per day. McDowell Road, Thomas Road and Indian School Road are expected to carry heavy traffic volumes (over 45,000 per day) west of Pima Road. Chaparral Road will be expected to carry more than 35,000 vehicles per day. Loop 101 traffic volumes from COS TransCad model are slightly lower than the MAG projections. Since the COS TransCAD model is specifically developed for the City and the local area, it is recommended to use ADT projections from the City of Scottsdale model to derive the design hour volumes.

The 2007 Turning Movement Counts and the City of Scottsdale 24 Hour Volume Counts collected during 2004-2006 provided the peak direction patterns in Pima road study area. In the AM peak hour except for Indian Bend Road, which has equal amount of traffic eastbound and westbound, McDonald Road with a westbound peak direction, all the traffic is traveling west and north into Scottsdale. In the PM peak hour all the traffic is traveling east and south out of Scottsdale. Figure 2.12 depicts the existing peak hour traffic volumes by approaches in the AM and PM peak hours.

The design hour volumes were derived by applying a 8% K factor (percentage of peak hour traffic to the daily traffic) and a 55% D factor (directional factor with the high amount of traffic in the peak direction) to get the approach design hour volumes. These factors are representative of the conditions in the study area.

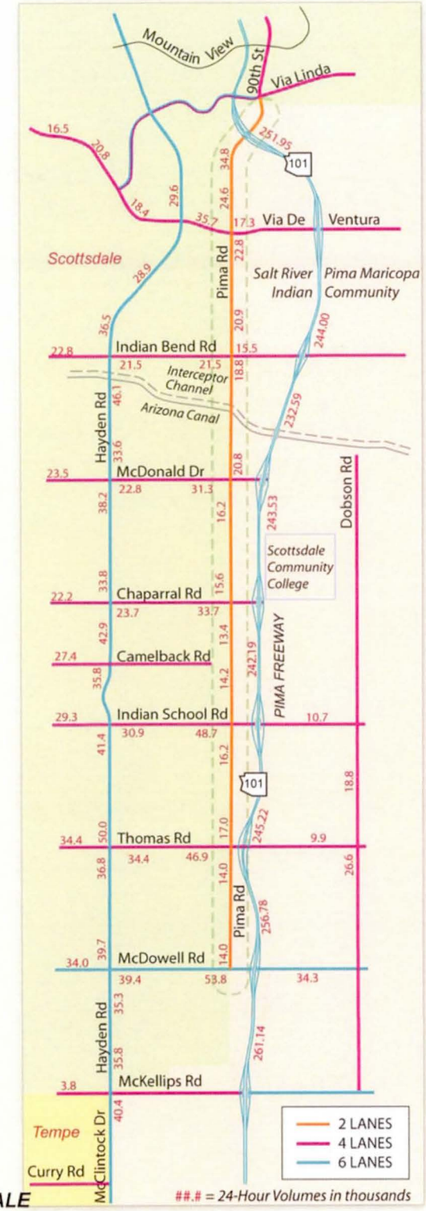
Figure 2.10: 2030 ADT Pima Road, 4 Lane Via de Ventura to McDowell Road (MAG)



SOURCE: MAG

Future
4-Lane Conditions
Traffic Volumes

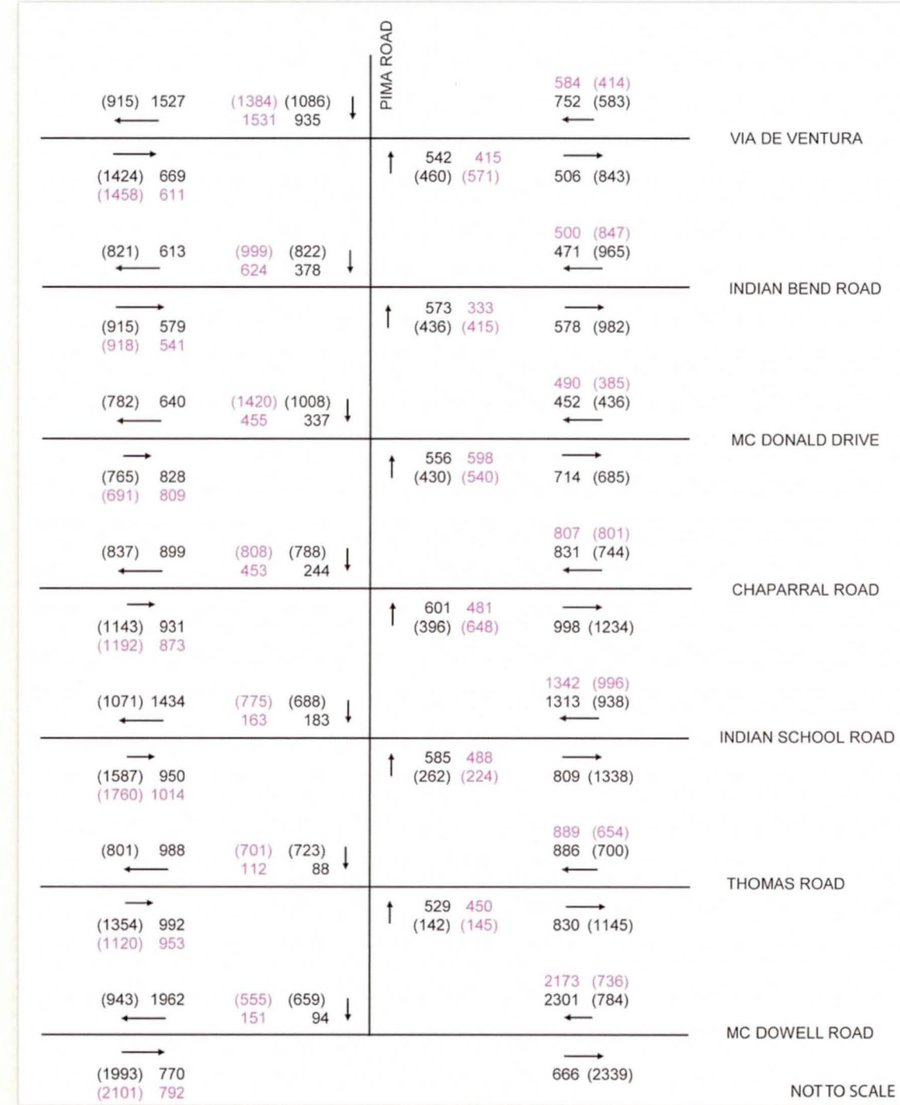
Figure 2.11: 2030 ADT Pima Road, 4 Lane Via de Ventura to McDowell Road (COS)



SOURCE: CITY OF SCOTTSDALE

Future
4-Lane Conditions
Traffic Volumes

Figure 2.12: Entrance Approach Volumes by Peak Hour



Existing Entrance Approach Volumes
by Peak Hours

(##) AM (PM) Peak Hour Volumes based on 2007 Field TMC
(##) AM (PM) Peak Hour Volumes based on 2004-2006 Scottsdale 24 Hour Volume Counts

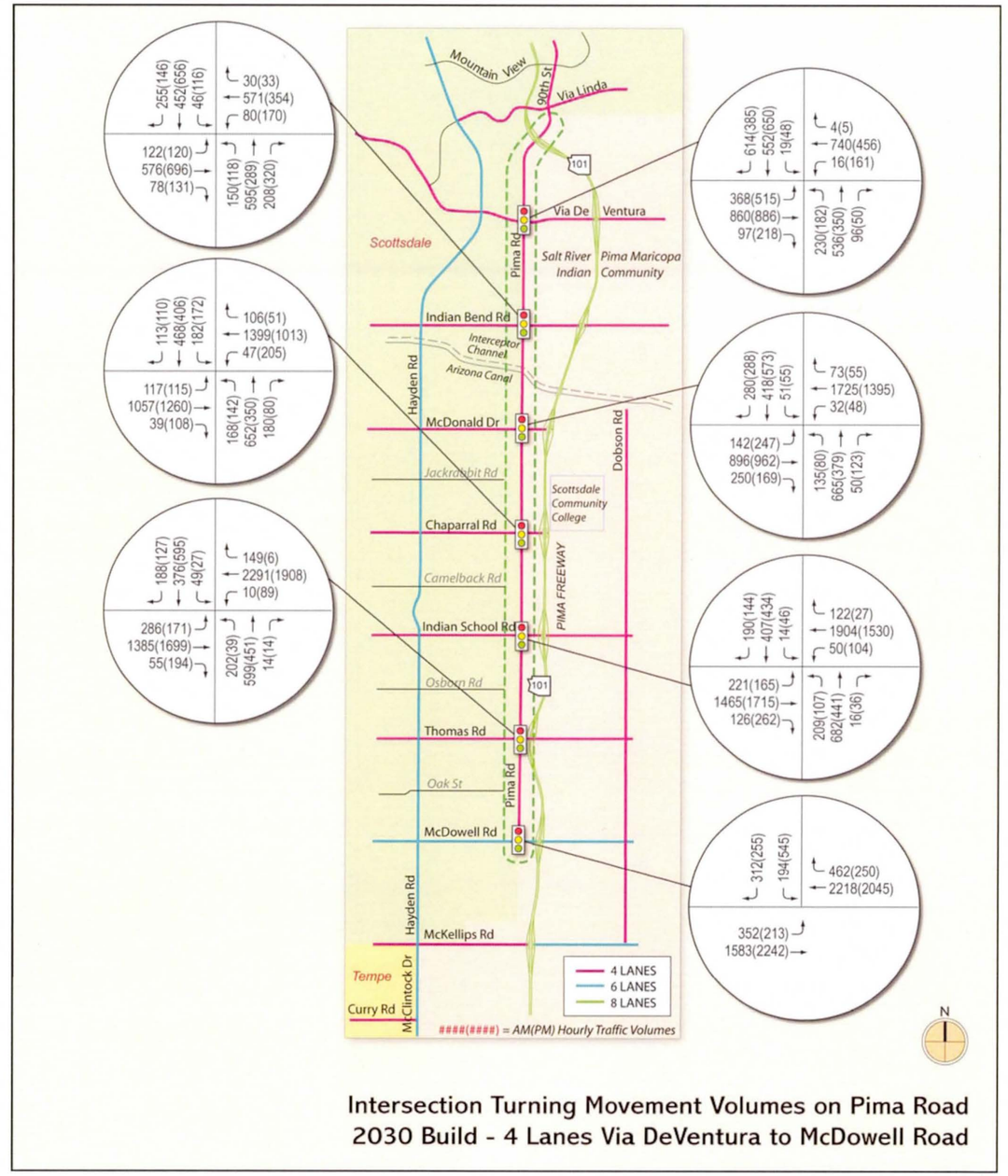
2.5 Future Intersection Capacity Analysis

MAG provided the 2030 AM and PM peak hour turning movement volumes at the Pima Road intersection volumes and for the 4 lane Pima Road alternative from Via De Ventura to McDowell Road. These traffic volumes showed higher turning volumes than through volumes which required dual left turn lanes at most of the intersections. To replicate the existing traffic patterns, turning movement volumes were developed using the design hour approach volumes derived from City of Scottsdale TransCAD model and the turning movement distribution from existing turning counts taken on October 25th, 2007. These intersection turning movement volumes are shown in Figure 2.13 for the 4 lane Pima Road alternative from Via De Ventura to McDowell Road.

For the four lane alternative, the intersection capacity analysis was started with two lanes northbound and southbound on Pima Road, and keeping an exclusive left turn lane and right turn lane on each approach. The turning movement volumes shown in Figure 2.13 were analyzed and Level of Service calculations were completed for the Pima Road signalized intersections. The intersection lane geometry on east-west cross roads was iteratively revised by adding necessary turn lanes such as exclusive right turn lanes and dual left turn lanes. The final intersection lane geometry was determined as shown in Figure 2.14. Arrows shown in red are changes to existing intersection geometry. The LOS calculations followed the operational analysis method set forth in Synchro 7.0, which is based on the HCM procedure.

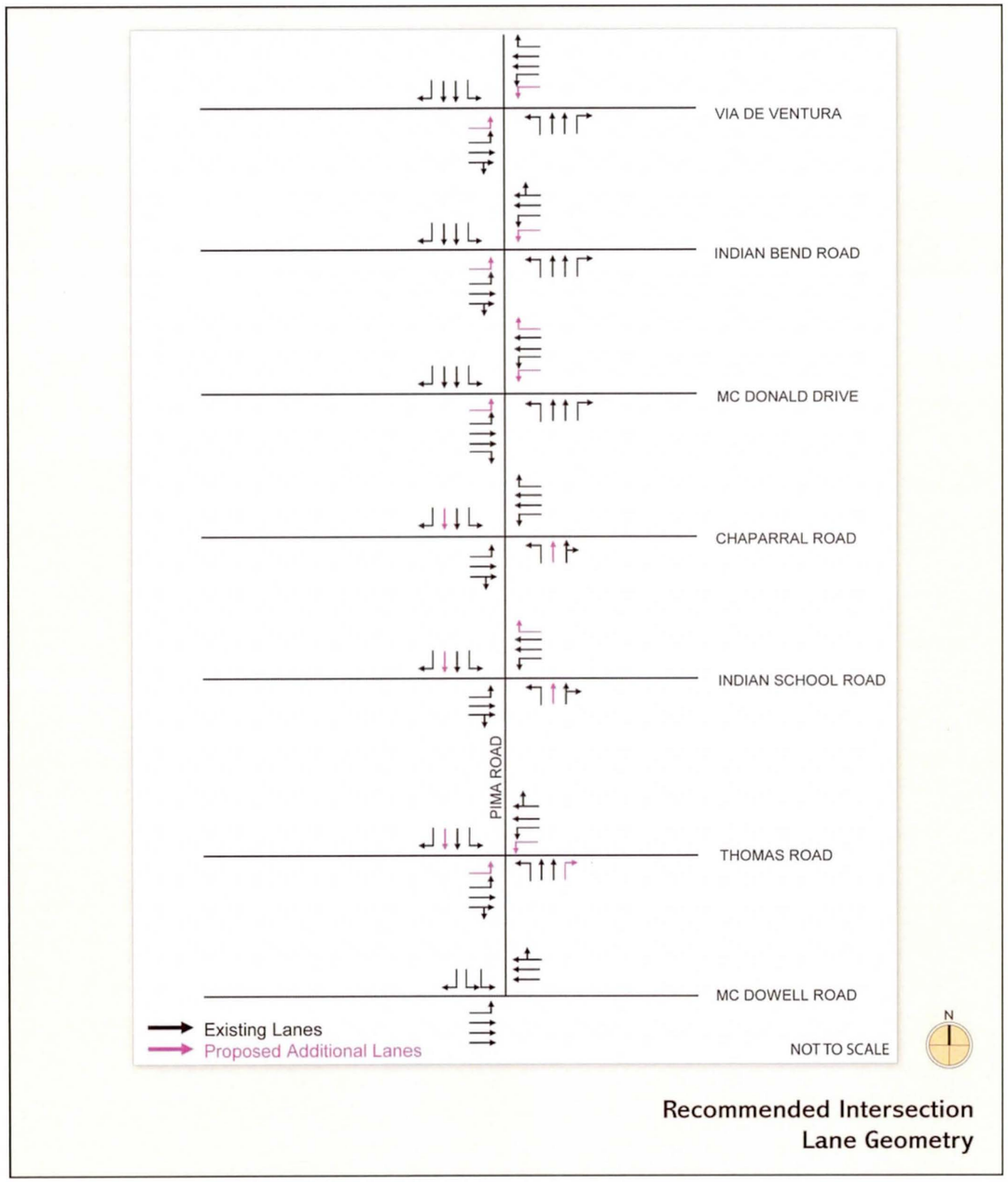
A number of adjustments to the proposed intersection lane geometry have been made to accommodate the physical constraints identified along the corridor, such as: existing right-of-way constraints, existing lane geometry beyond the Pima Road project limits, and existing improvements in the area.

Figure 2.13: 2030 Turning Movement Volumes 4 Lane Via de Ventura to McDowell Road



Intersection Turning Movement Volumes on Pima Road
2030 Build - 4 Lanes Via DeVentura to McDowell Road

Figure 2.14: Proposed Pima Road Intersection Lane Geometry



The results of the AM peak hour analysis for 2030 traffic volumes are summarized in Table 2.6. Table 2.6 lists the intersection approach volumes, delay per movement in seconds per vehicle, approach level of service, and average queue and maximum queue output from Synchro 7.0. The turn bay length was initially input as a minimum 150 feet and then adjusted based on the maximum queue length. As can be seen from Table 2.6, the overall intersections experience LOS D or better except at Indian School Road and Thomas Road. Heavy westbound through traffic at Indian School Road and Thomas Road would be the primary reason for the unacceptable overall intersection level of service. In addition, on McDowell Road westbound and McDonald Drive westbound, a spillback to the adjacent Loop 101 ramp terminals would be expected due to the heavy westbound through traffic in the morning peak hour. Several left turn movements will be operating at LOS E or F. Westbound through movement at McDowell Road and northbound through movement at McDonald Drive will be expected to be at LOS E or F. Synchro 7.0 output is shown in Appendix A of the Traffic Report.

The results of the PM peak hour analysis are shown in Table 2.7. The overall intersection LOS is calculated to be D or better for all the Pima Road intersections except Thomas Road. When compared to AM peak hour, less left turn and through movements experience LOS E or F. Eastbound through movement at Indian School Road and Thomas Road, both eastbound and westbound through movements, would have long queues. Figure 2.15 depicts the movement and intersection level of service with the intersection delay for both AM and PM peak periods.

The operation at intersections of Pima Road at Indian School Road and at Thomas Road would be borderline unacceptable level of service during PM peak period. The heavy east west traffic on Indian School Road and Thomas Road uses most of the intersection capacity.

Table 2.6: 2030 Build AM Peak Hour Intersection LOS and Queue Length Summary

#	Intersection Name	Approach	EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND			INTERSECTION
		Movement	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
		Peak Hour	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	
1	Pima Road @ Via De Ventura	Volume (vph)	368	860	97	16	740	4	230	536	96	19	552	614	4132
		Delay (Sec)	87.5	32.9		48.7	44.5	26.2	35.0	21.3	17.7	21.4	28.0	41.9	38.8
		LOS	F	C		D	D	C	D	C	B	C	C	D	D
		Turn Bay Length (ft)	250		S	150		150	250		150	150		400	-
		Avg Queue(ft)	118	251		5	235	0	83	109	0	8	147	165	102
		Max Queue(ft)	207	421		15	350	8	203	177	32	24	201	394	421
2	Pima Road @ Indian Bend Road	Volume (vph)	122	576	78	80	571	30	150	595	208	46	452	255	3163
		Delay (Sec)	15.1	24.9		14.8	22.8		14.3	19.1	14.9	13.5	18.0	15.9	19.8
		LOS	B	C		B	C		B	B	B	B	B	B	B
		Turn Bay Length (ft)	150		S	150		S	150		150	150		150	-
		Avg Queue(ft)	13	119		8	110		35	110	0	10	78	0	48
		Max Queue(ft)	27	175		19	161		68	161	44	26	120	48	175
3	Pima Road @ Mc Donald Drive	Volume (vph)	142	896	250	32	1725	73	135	665	50	51	418	280	4717
		Delay (Sec)	70.1	38.6	28.5	38.6	50.8	15.0	51.9	85.0	41.5	41.1	49.5	50.6	51.8
		LOS	E	D	C	D	D	B	D	F	D	D	D	D	D
		Turn Bay Length (ft)	150		150	150		150	200		150	150		250	-
		Avg Queue(ft)	67	375	23	11	839	18	94	340	14	33	184	130	177
		Max Queue(ft)	116	397	75	29	1013	45	166	466	51	66	243	238	1013
4	Pima Road @ Chaparral Road	Volume (vph)	117	1057	39	47	1399	106	168	652	180	182	468	113	4528
		Delay (Sec)	45.7	24.1		18.5	55.0	16.2	26.0	69.9		96.7	36.7	28.7	46.8
		LOS	D	C		B	D	B	C	E		F	D	C	D
		Turn Bay Length (ft)	150		S	200		150	150		S	200		150	-
		Avg Queue(ft)	35	307		14	498	16	69	262		76	138	0	142
		Max Queue(ft)	102	395		31	633	49	119	398		188	193	43	633
5	Pima Road @ Indian School Road	Volume (vph)	221	1465	126	50	1904	122	209	682	16	14	407	190	5406
		Delay (Sec)	205.9	28.7		130.0	106.3	19.5	123.0	74.2		55.8	72.3	60.1	78.0
		LOS	F	C		F	F	B	F	E		E	E	E	E
		Turn Bay Length (ft)	500		S	250		150	200		S	150		150	-
		Avg Queue(ft)	283	695		53	1227	44	192	370		11	225	47	315
		Max Queue(ft)	464	807		123	1358	82	338	553		30	310	134	1358
6	Pima Road @ Thomas Road	Volume (vph)	286	1385	55	10	2291	149	202	559	14	49	376	188	5564
		Delay (Sec)	225.5	18.9		17.0	179.5		258.5	80.8	43.1	64.5	86.6	61.7	121.1
		LOS	F	B		B	F		F	F	D	E	F	E	F
		Turn Bay Length (ft)	300		S	150		S	500		150	150		200	-
		Avg Queue(ft)	173	380		1	1553		254	311	4	35	182	63	296
		Max Queue(ft)	270	549		2	1657		417	434	24	70	284	151	1657
7	Pima Road @ Mc Dowell Road	Volume (vph)	352	1583			2218	462				194		312	5121
		Delay (Sec)	103.9	4.3			73.5					63.7		40.3	51.8
		LOS	F	A			E					E		D	D
		Turn Bay Length (ft)	600					S				I		400	-
		Avg Queue(ft)	358	146			1071					94		244	383
		Max Queue(ft)	569	164			1151					138		350	1151

S – S – Shared Right

I – Exclusive Right Turn Lane

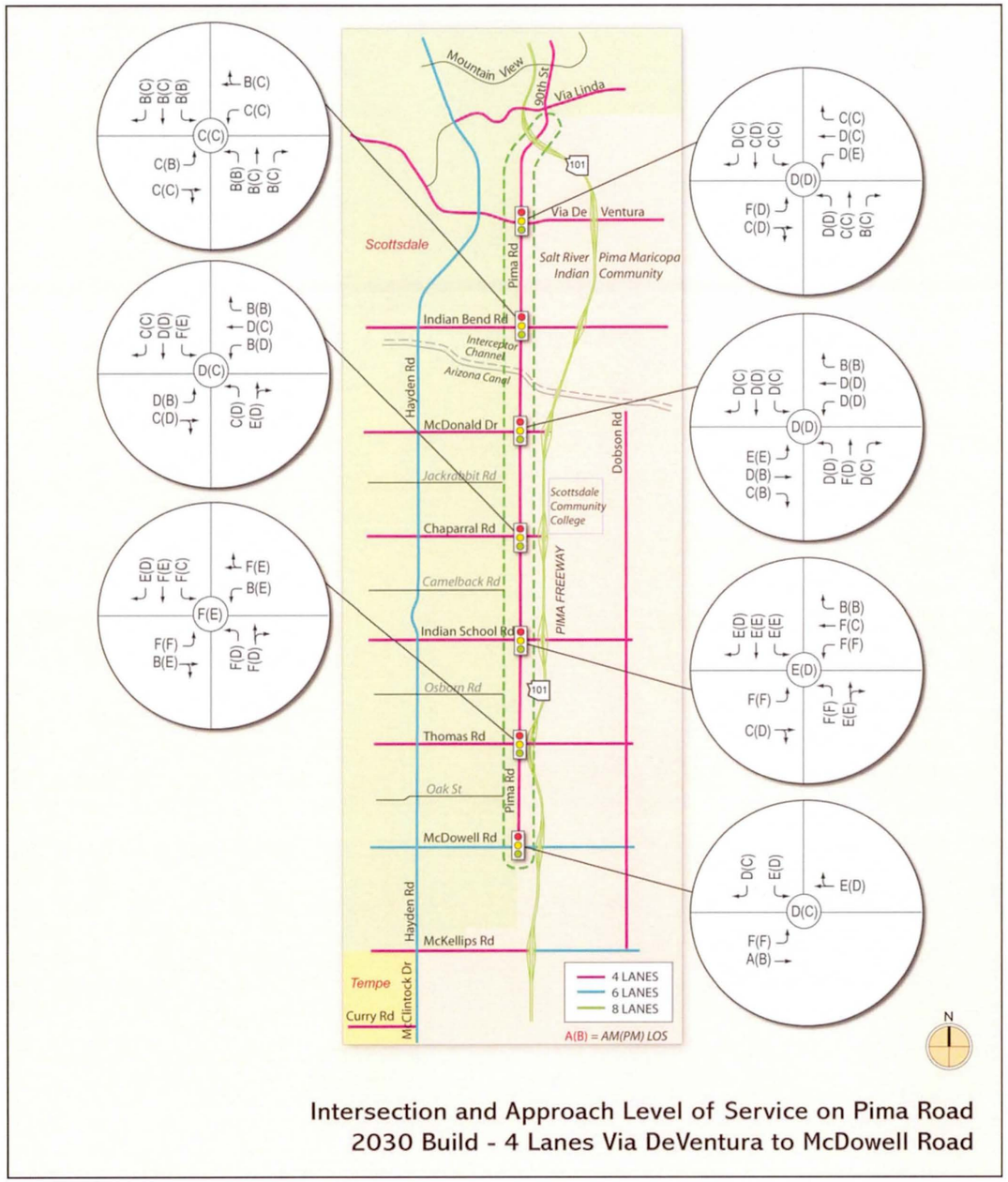
Table 2.7: 2030 Build PM Peak Hour Intersection LOS and Queue Length Summary

#	Intersection Name	Approach	EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND			INTERSECTION
		Movement	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
		Peak Hour	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	
1	Pima Road @ Via De Ventura	Volume (vph)	515	886	218	161	456	5	182	350	50	48	650	385	3906
		Delay (Sec)	40.3	41.1		56.6	33.3	27.3	46.3	24.1	21.2	24.9	37.0	28.2	37.0
		LOS	D	D		E	C	C	D	C	C	C	D	C	D
		Turn Bay Length (ft)	250		S	150		150	250		150	150		400	-
		Avg Queue(ft)	154	325		51	134	0	87	90	0	22	200	0	97
		Max Queue(ft)	207	461		103	191	9	181	131	27	51	285	74	461
2	Pima Road @ Indian Bend Road	Volume (vph)	120	696	131	170	354	33	118	289	320	116	656	146	3149
		Delay (Sec)	17.4	33.9		17.5	22.0		20.0	23.8	24.7	19.3	31.3	22.7	26.9
		LOS	B	C		B	C		B	C	C	B	C	C	C
		Turn Bay Length (ft)	150		S	150		S	150		150	150		150	-
		Avg Queue(ft)	19	227		27	86		42	70	21	41	185	0	72
		Max Queue(ft)	33	311		44	124		81	108	95	80	256	45	311
3	Pima Road @ Mc Donald Drive	Volume (vph)	247	962	169	48	1395	55	80	379	123	55	573	288	4374
		Delay (Sec)	66.3	18.3	13.3	42.8	43.2	14.8	35.9	38.0	30.9	24.8	41.9	33.1	35.5
		LOS	E	B	B	D	D	B	D	D	C	C	D	C	D
		Turn Bay Length (ft)	150		150	150		150	200		150	150		250	-
		Avg Queue(ft)	79	264	3	13	457	8	34	115	0	23	176	36	101
		Max Queue(ft)	148	294	37	34	617	31	69	165	48	51	243	118	617
4	Pima Road @ Chaparral Road	Volume (vph)	115	1260	108	205	1013	51	142	350	80	172	406	110	4012
		Delay (Sec)	14.5	42.8		45.4	21.1	13.9	37.9	39.8		62.3	38.9	30.5	35.9
		LOS	B	D		D	C	B	D	D		E	D	C	D
		Turn Bay Length (ft)	150		S	200		150	150		S	200		150	-
		Avg Queue(ft)	28	422		72	256	2	66	124		81	123	0	117
		Max Queue(ft)	52	590		198	331	23	127	177		185	174	45	590
5	Pima Road @ Indian School Road	Volume (vph)	165	1715	262	104	1530	27	107	441	36	46	434	144	5011
		Delay (Sec)	85.9	53.4		150.6	31.2	14.6	128.2	74.0		56.1	74.2	53.3	54.9
		LOS	F	D		F	C	B	F	E		E	E	D	D
		Turn Bay Length (ft)	500		S	250		150	200		S	150		150	-
		Avg Queue(ft)	160	1082		105	665	7	88	246		36	225	18	263
		Max Queue(ft)	280	1216		236	779	23	181	356		74	321	88	1216
6	Pima Road @ Thomas Road	Volume (vph)	171	1699	194	89	1908	6	39	451	14	27	595	127	5320
		Delay (Sec)	115.9	60.6		71.8	69.9		37.4	46.0	35.2	34.7	60.2	36.2	63.7
		LOS	F	E		E	E		D	D	D	C	E	D	E
		Turn Bay Length (ft)	300		S	150		S	500		150	150		200	-
		Avg Queue(ft)	69	815		37	877		22	176	0	15	264	0	228
		Max Queue(ft)	143	957		83	1020		51	250	19	39	381	54	1020
7	Pima Road @ Mc Dowell Road	Volume (vph)	213	2242			2045	250				545		255	5550
		Delay (Sec)	92.4	10.3			44.6					48.2		25.1	32.1
		LOS	F	B			D					D		C	C
		Turn Bay Length (ft)	600					S				I		200	-
		Avg Queue(ft)	134	286			513					169		111	243
		Max Queue(ft)	278	340			647					257		181	647

S – Shared Right

I – Exclusive Right Turn Lane

Figure 2.15: 2030 Intersection and Approach LOS Via De Ventura to McDowell Road



2.6 Findings

The intersection lane geometry shown in Figure 2.14 is proposed based on the intersection capacity analysis and existing design constraints, including available right-of-way. The 2030 traffic volumes developed using Scottsdale TransCAD model were analyzed with the proposed lane geometry. It was found that the intersections of Pima Road at Indian School Road would experience unacceptable level of service in the morning peak period and experience borderline unacceptable level of service in the afternoon peak period. The intersection of Pima Road at Thomas Rd would experience unacceptable level of service for both peak periods.

In the previous Traffic Analysis report submitted December 2008, three through lanes were recommended for both Indian School Road and Thomas Road westbound. However, it is not implementable due to the existing right-of-way constraints. It is possible that the potential congestion at the Indian School Road and Thomas Road intersections may encourage some commuters to use McDowell Road and Chaparral Road as alternate routes to their destinations.

On Pima Road, several locations need a long turn bay storage length to accommodate the maximum queue, as identified in Tables 2.6 and 2.7. The southbound right turn lane at Via de Ventura and McDowell Road may need at least 250 feet storage length. At least 300 feet long turn bay is needed to accommodate northbound left turns at Thomas Road. It is recommended to provide at least 200 feet of left turn storage and 150 feet of right turn storage at every intersection on Pima Road.

3.0 AASHTO Controlling Design Criteria

3.0 AASHTO CONTROLLING DESIGN CRITERIA

3.1 Introduction

The existing design features of Pima Road from McDowell Road to 90th Street were examined and evaluated relative to the American Association of State Highway Transportation Officials (AASHTO) Controlling Criteria outlined in *A Policy on Geometric Design of Highways and Streets* (2001 Edition), which will be referred to as the "AASHTO Green Book" in the following sections. The ADOT *Procedural Guide for Review of the AASHTO Controlling Design Criteria on Existing Roadways*, a draft guide dated May 1997, was also used to evaluate the existing design features on this project. The ADOT *Roadway Design Guidelines* (1994 edition and 2005 updates) were utilized for additional design reference. The complete evaluation can be found in a separate document entitled "Pima Road: McDowell Road to 90th Street, AASHTO Controlling Design Criteria Report" dated September 2007. A copy of this report is provided in Appendix E.

The elements of this project were evaluated using urban classifications as indicated in the General Plan of the City of Scottsdale. Pima Road is a major north-south arterial that runs through an urban area that consists of residential, retail and commercial areas. There is existing curb, gutter and a shared-use path present on the west side of the roadway within the project limits. Future improvements will include adding new curb and gutter and bike lanes to both sides of Pima Road.

The improvements recommended for this project meet current AASHTO and ADOT design criteria. Design Exceptions or Design Variances will not be required for this project.

3.2 Lane and Shoulder Widths

Pima Road is a 2-lane roadway with 12-foot lanes. The lane widths within the project limits meet AASHTO recommendations of 10-feet to 12-feet. However, existing Pima Road does not have shoulders in a majority of the corridor. Based on AASHTO, shoulders are desirable but not required therefore a shoulder width criterion is not applicable.

All lane and shoulder widths used in developing the typical section alternatives for this report conform to current AASHTO and ADOT design recommendations.

3.3 Vertical Alignment and Stopping Sight Distance

The existing vertical alignment consists of minimal longitudinal grade breaks. The as-builts indicate no vertical curves; as a result, stopping sight distance and curve length criteria are not applicable.

The proposed typical section alternatives are based on making modifications to the existing roadway, therefore the proposed vertical alignment will mimic the existing which meets the current AASHTO and ADOT design criteria.

Pima Road looking north of the Arizona Canal

3.4 Horizontal Alignment and Stopping Sight Distance

Given that the existing Pima Road horizontal alignment follows the monument line, it does not have any curves. Therefore, AASHTO recommendations for degree of curve, superelevation rates and stopping sight distance are not applicable.

The horizontal geometry of the proposed improvements for Pima Road in each design concept alternative is consistent with AASHTO and ADOT design criteria.

3.5 Design Speed

The AASHTO roadway classification was used to determine the appropriate design speed for the existing roadway. Pima Road is considered an urban minor arterial on level terrain within the project

limits. The AASHTO Green Book suggests a minimum design speed of 50 mph for the Pima Corridor. The posted speed is 45 mph.

3.6 Grades

The AASHTO Green Book recommends a 6.0% maximum grade for urban minor arterial roadways on level terrain with 50 mph design speeds. The highest grade along Pima Road is 5.0%, hence existing roadway is consistent with AASHTO design criteria.

The proposed typical section alternatives are based on making modifications to the existing roadway, therefore the proposed vertical grades will mimic the existing which meets the current AASHTO and ADOT design recommendations.

3.7 Cross Slopes

The normal cross slopes are 2.0% from McDowell Road to Thomas Road, as well as from Indian Bend Road to Via de Ventura. The cross slope is 1.5% from Thomas Road to Indian Bend Road. AASHTO recommends a minimum of 1.5% to a maximum of 3.0%. Existing cross slopes conform to current AASHTO design criteria.

Pima Road near Indian Bend Road

3.8 Vertical Clearance

There are no existing or proposed Pima Road underpasses within the project limits. The Arizona Canal widening will meet the vertical clearance requirements of 1.5' above the water level as identified by the Salt River Project Bridge Design Guidelines.

3.9 Bridge Structures

There is one bridge structure within the project limits. The location and bridge evaluation is shown in Table 3.1. The information shown is based on the bridge evaluation report completed by ADOT in April 2006.

Table 3.1: Bridge Evaluation Summary

Structure Name	ADOT Structure No.	Milepost	Year Built	Sufficiency Rating	Bridge Structure		Bridge Rail		
					Width, Curb to Curb (ft)	Capacity	Type	Geometry OK?	Structure Ok?
Arizona Canal Bridge	9353	N/A	1968	F 75.53	29.7'	HS 20	Concrete Barrier	No	No

4.0 Typical Section Alternatives

4.0 TYPICAL SECTION ALTERNATIVES

4.1 Introduction

This section of the Initial Design Concept Report summarizes the information presented in the Pima Road Corridor Master Plan (December 2008). The purpose of the Corridor Master Plan was to present the various typical section alternatives possible for the corridor, as well as provide a brief analysis and evaluation for the project team and agencies to review. The typical section alternatives remaining at the completion of the Pima Road Corridor Master Plan evaluation have been identified for further review and will be studied in greater depth and presented to the agencies, public and other stakeholders for input through the study process.

4.2 Design Concept Typical Section Alternatives

To date, there have been nine typical section alternatives identified and briefly evaluated for implementation along the Pima Road corridor. The typical section alternatives are summarized as follows:

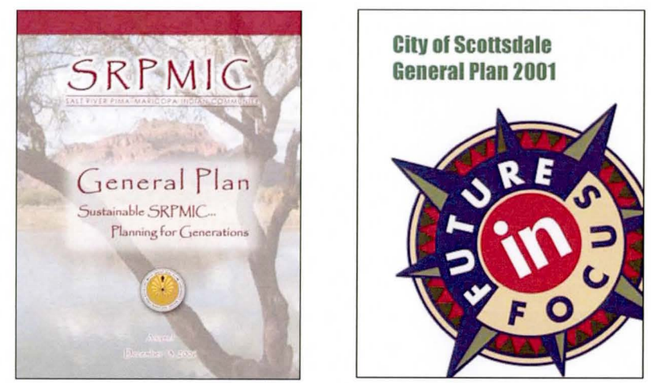
Table 4.1: Summary of Typical Section Alternatives

Alternative	Number of Lanes	Description
6 Lane (Raised Median)	6	Widen existing Pima Road to facilitate 6-11' lanes with a 16' raised median and 5' bike lanes
6 Lane (Paved Median)	6	Widen existing Pima Road to facilitate 6-11' lanes with a 14' paved median and 5' bike lanes
A	4	Widen existing Pima Road to facilitate 4-12' lanes with a 16' raised median and 5.5' bike lanes, holding existing west curb
B	4	Widen existing Pima Road to facilitate 4-11' lanes with a 14' raised median and 4.5' bike lanes, holding existing west curb
C	4	Widen existing Pima Road to facilitate 4-12' lanes with a 16' raised median and 5.5' bike lanes, relocating existing west curb
D	4	Widen existing Pima Road to facilitate 4-12' lanes with a 12' paved median and 5.5' bike lanes, holding existing west curb
E	4	Widen existing Pima Road to facilitate 4-11' lanes with a 12' paved median and 4.5' bike lanes, holding existing west curb
F	4	Widen existing Pima Road to facilitate 4-12' lanes with a 12' paved median and 5.5' bike lanes, relocating existing west curb
No Build	Existing	No construction

These typical section alternatives have been generated through review of the COS and SRP-MIC General Plans, previous Pima Road Corridor studies, public and agency scoping meetings and general discussions among the project team members. Upon review of the COS Transportation Master Plan (2008) and the SRP-MIC General Plan (2006) documents, the Pima Road corridor through the project limits has been identified to be a 4-lane or 6-lane facility.

Table 4.2: Summary of Community General Plans

Study Document	Functional Classification	Number of Lanes	Right-of-Way	Bike Lane
COS Transportation Master Plan (2008)	Minor Arterial - Suburban	4	110'	Yes
SRP-MIC General Plan (2006)	Principal Arterial – BIA Class 2	4-6	110'	Yes



SRP-MIC and COS General Plans

Below are descriptions of the identified typical section alternatives.

6-Lane Alternatives

With the possibility of either a 4-lane or a 6-lane facility meeting the lane recommendations of the SRP-MIC General Plan (2006), two 6-lane alternatives have been identified for preliminary review. One alternative consists of 6-lanes with a raised median, and the other 6-lanes with a paved median. The 6-lane typical section alternatives based on the SRP-MIC design guidelines consists of 6-11' through lanes with a 16' median and 2-5' bike lanes. There are a number of characteristics associated with implementing the 6-lane typical section alternative rather than a 4-lane typical section alternative along the study corridor, they are summarized below:

- Pima Freeway Proximity and Traffic Analysis: Throughout the study corridor, the Pima Road alignment is approximately ¼ to ¾ miles to the west of the Pima Freeway. The close proximity of the two facilities and the drastic difference in the facility capacities causes a discrepancy in both the MAG and COS Transcad models for the area. As a general function of the models, the results identify a relationship that as additional capacity is added to Pima Road, the freeway traffic tends to be diverted to Pima Road until the capacity is filled. Likewise, the reverse is also true, as capacity is removed from Pima Road, the traffic is diverted back to the freeway because of the unlimited capacity of the freeway relative to Pima Road. Therefore, a 6-lane facility versus a 4-lane facility for the Pima Road has been determined to have no significant effect to the level of service (LOS) for the overall corridor.
- Traffic Characteristics: In addition to the volume of regional traffic of the Pima Freeway affecting the Pima Road traffic projections, the type of traffic using the two facilities also conflicts. Particularly with the local land uses being identified as residential, retail, commercial, industrial and agriculture, the local traffic that would be using Pima Road would have different priorities, such as accessing driveways, conflicting with the regional freeway traffic using Pima Road as a reliever to the Pima Freeway.
- Freeway Reliever: Project purpose is not to improve the capacity of the Pima Freeway
- Right-of-Way Constraints: As a function of the easement along the eastside of Pima Road, as procured by ADOT from SRP-MIC during the Pima Freeway Right-of-Way negotiations, the eastern right-of-way corridor has been identified to be 55' from the section/boundary line. In addition, the right-of-way limits along the western side of the roadway have been developed and exist based on the residential development. Both sides of the right-of-way corridor have challenges associated with acquisition of new right-of-way involving cost, acquisition time, public opposition, etc. The 6-lane section as dimensioned above would exceed the right-of-way constraints existing along the corridor.
- Established Features within the Corridor: The 6-lane typical section alternative would generally require the removal of the existing buffering wall, storm drain and frontage road improvements along the western side of the corridor, which have been identified as project constraints.
- Previously Agreed to BRW Study: The previous Design Concept Report for the Pima Road developed by BRW in 1993 identified the preferred typical section alternative to be 4-lanes.
- General Plan Documents: The 6-lane typical section alternative conflicts with the recommended classification for Pima Road as documented in the COS Transportation Master Plan, the Functional Classification exhibit is attached in Appendix C.

Based on incompatibility of the characteristics of the 6-lane alternatives discussed above with the existing and envisioned Pima Road corridor, the 6-lane typical section alternatives were eliminated from further evaluation.

4-Lane Alternatives

With the elimination of the 6-lane alternatives as discussed in the previous section, there were six 4-lane typical section alternatives preliminarily developed for evaluation. Three of the alternatives incorporate raised medians and the other three feature paved medians. The typical section alternatives are shown in Figure 4.1.

Alternative A:

- General Description: This is a 4-lane typical section alternative with a raised median and bike lanes in each direction. The existing western curb line is to remain, with the improvements to be constructed to the east.
- Lane Widths: 4-12' through lanes with a 16' wide raised median and 2-5.5' bike lanes.
- Impacts to Existing Features: The existing buffering wall, storm drain and curb & gutter improvements along the western curb line can remain.
- Impacts to Current Easement and Right-of-Way: The lane width configuration of this alternative extends beyond the existing ADOT Easement limits by as much as 7'. The dimensions are tabulated on typical section alternative exhibits shown in Appendix D.

Alternative B:

- General Description: This is a 4-lane typical section alternative with a raised median and bike lanes in each direction. The existing western curb line is to remain, with the improvements to be constructed to the east.
- Lane Widths: 4-11' through lanes with a 14' wide raised median and 2-4.5' bike lanes.
- Impacts to Existing Features: The existing buffering wall, storm drain and curb & gutter improvements along the western curb line can remain.
- Impacts to Current Easement and Right-of-Way: The lane width configuration of this alternative is contained within the ADOT Easement limits by a minimum dimension of 1' from the back of curb to the easement line. The dimensions are tabulated on typical section alternative exhibits shown in Appendix D.

Alternative C:

- General Description: This is a 4-lane typical section alternative with a raised median and bike lanes in each direction. An assumed minimum distance of 10' from the back of curb of the existing frontage road (87th Terrace) to the new back of curb along the western limits was used to provide the minimum space required for the relocation of the buffering wall. From this western back of curb location the improvements to be constructed to the east.
- Lane Widths: 4-12' through lanes with a 16' wide raised median and 2-5.5' bike lanes.
- Impacts to Existing Features: The existing buffering wall, storm drain and curb & gutter improvements along the western curb line must be removed and reconstructed.
- Impacts to Current Easement and Right-of-Way: The lane width configuration of this alternative is contained within the ADOT Easement limits by a minimum dimension of 4' from the back of curb to the easement line. With the maintenance of the existing frontage road, the right-of-way acquisitions along the western limits can be minimized. The comprehensive effects the right-of-way requirements can be determined with additional development of the typical section alternative. The dimensions are tabulated on typical section alternative exhibits shown in Appendix D.

Alternative D:

- General Description: This is a 4-lane typical section alternative with a paved median and bike lanes in each direction. The existing western curb line is to remain, with the improvements to be constructed to the east.
- Lane Widths: 4-12' through lanes with a 12' wide paved median and 2-5.5' bike lanes.
- Impacts to Existing Features: The existing buffering wall, storm drain and curb & gutter improvements along the western curb line can remain.
- Impacts to Current Easement and Right-of-Way: The lane width configuration of this alternative extends beyond the existing ADOT Easement limits by as much as 3'. The dimensions are tabulated on typical section alternative exhibits shown in Appendix D.

Alternative E:

- General Description: This is a 4-lane typical section alternative with a paved median and bike lanes in each direction. The existing western curb line is to remain, with the improvements to be constructed to the east.
- Lane Widths: 4-11' through lanes with a 12' wide paved median and 2-4.5' bike lanes.
- Impacts to Existing Features: The existing buffering wall, storm drain and curb & gutter improvements along the western curb line can remain.
- Impacts to Current Easement and Right-of-Way: The lane width configuration of this alternative is contained within the ADOT Easement limits by a minimum dimension of 3' from the back of curb to the easement line. The dimensions are tabulated on typical section alternative exhibits shown in Appendix D.

Alternative F:

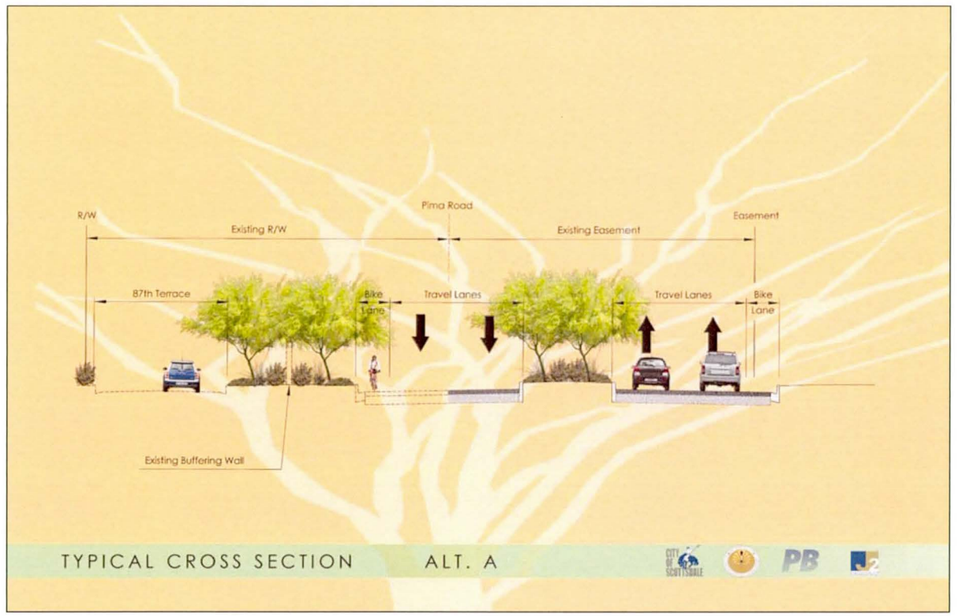
- General Description: This is a 4-lane typical section alternative with a paved median and bike lanes in each direction. An assumed minimum distance of 10' from the back of curb of the existing frontage road (87th Terrace) to the new back of curb along the western limits was used to provide the minimum space required for the relocation of the buffering wall. From this western back of curb location the improvements to be constructed to the east.
- Lane Widths: 4-12' through lanes with a 12' wide paved median and 2-5.5' bike lanes.
- Impacts to Existing Features: The existing buffering wall, storm drain and curb & gutter improvements along the western curb line must be removed and reconstructed.
- Impacts to Current Easement and Right-of-Way: The lane width configuration of this alternative is contained within the ADOT Easement limits by a minimum dimension of 7' from the back of

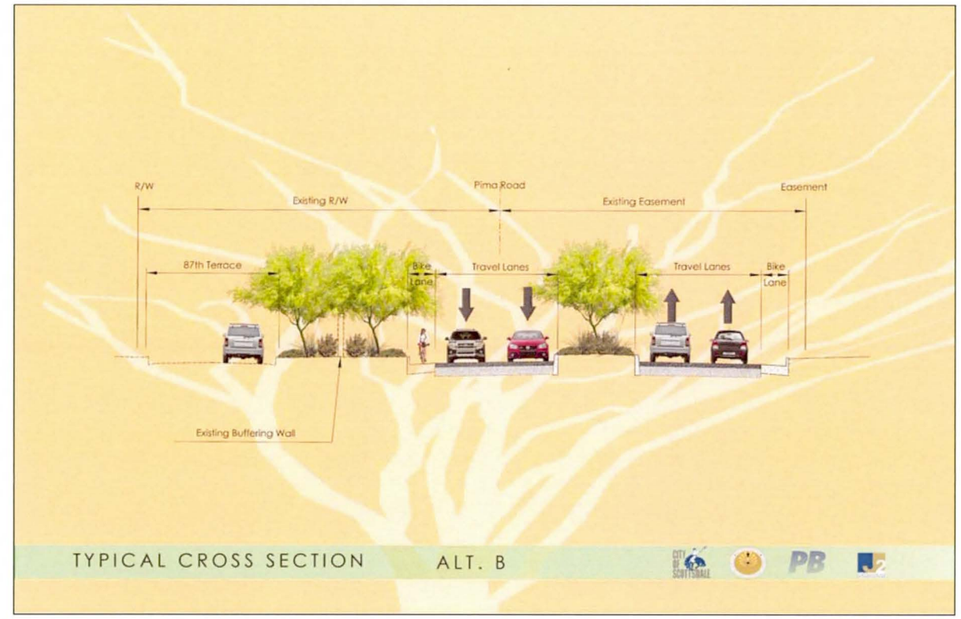
curb to the easement line. With the maintenance of the existing frontage road, the right-of-way acquisitions along the western limits can be minimized. The comprehensive effects the right-of-way requirements can be determined with additional development of the typical section alternative. The dimensions are tabulated on typical section alternative exhibits shown in Appendix D.

No Build Alternative:

- General Description: This alternative maintains the current width and intersection configuration for Pima Road, as such the project needs and objectives will not be met.

Figure 4.1: Typical Section Alternatives





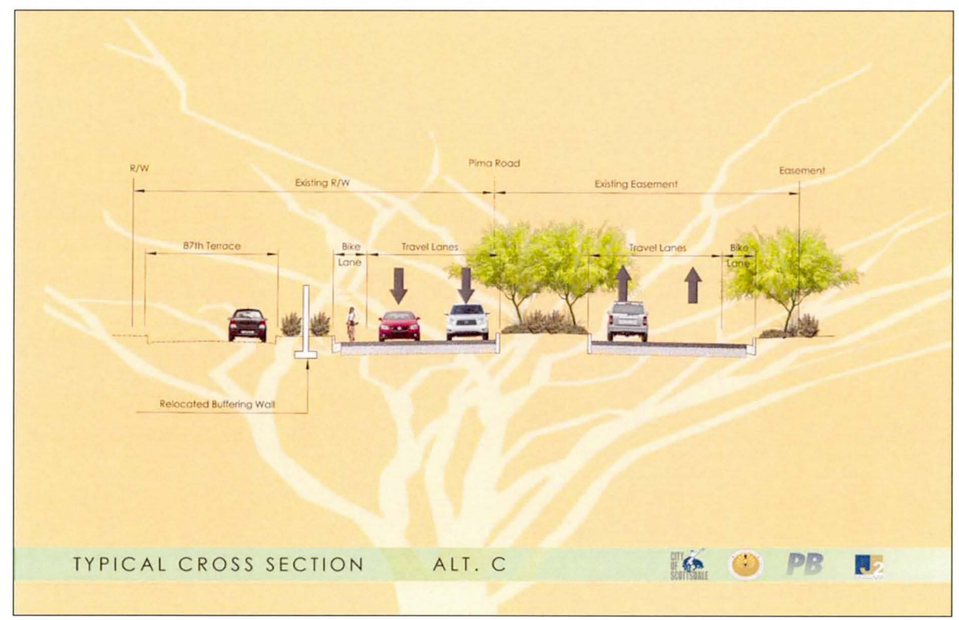
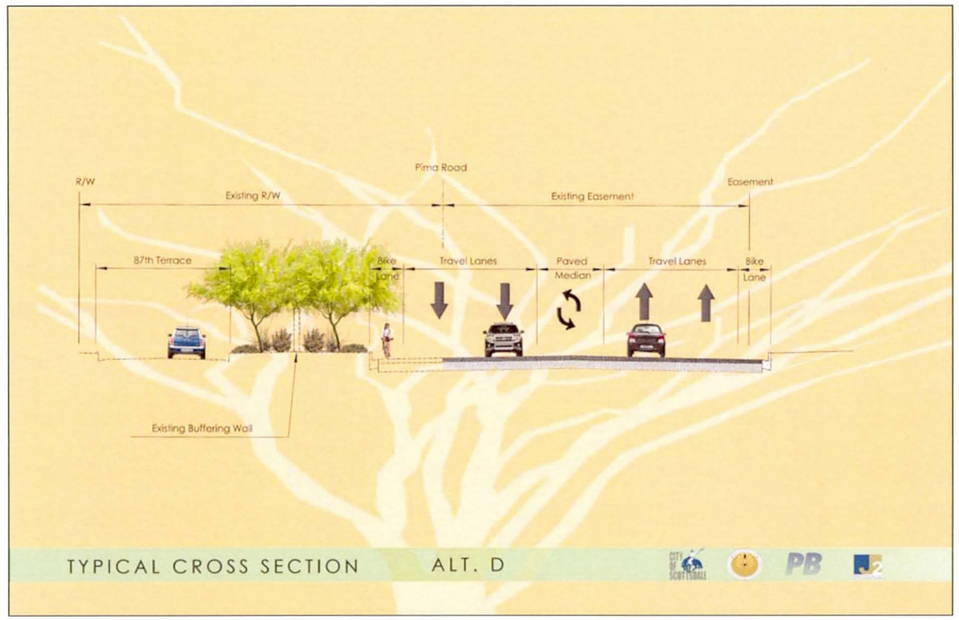
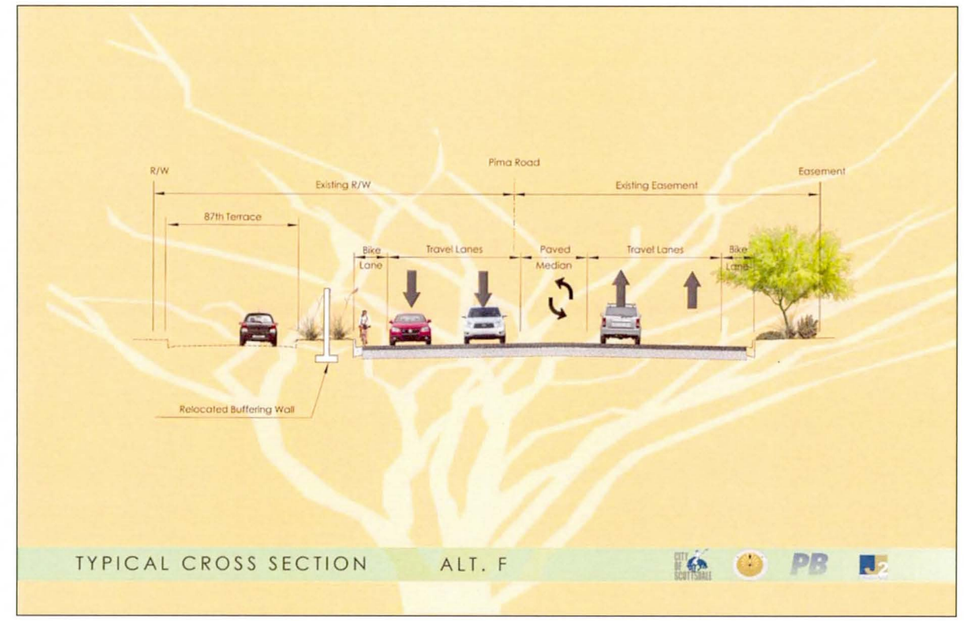
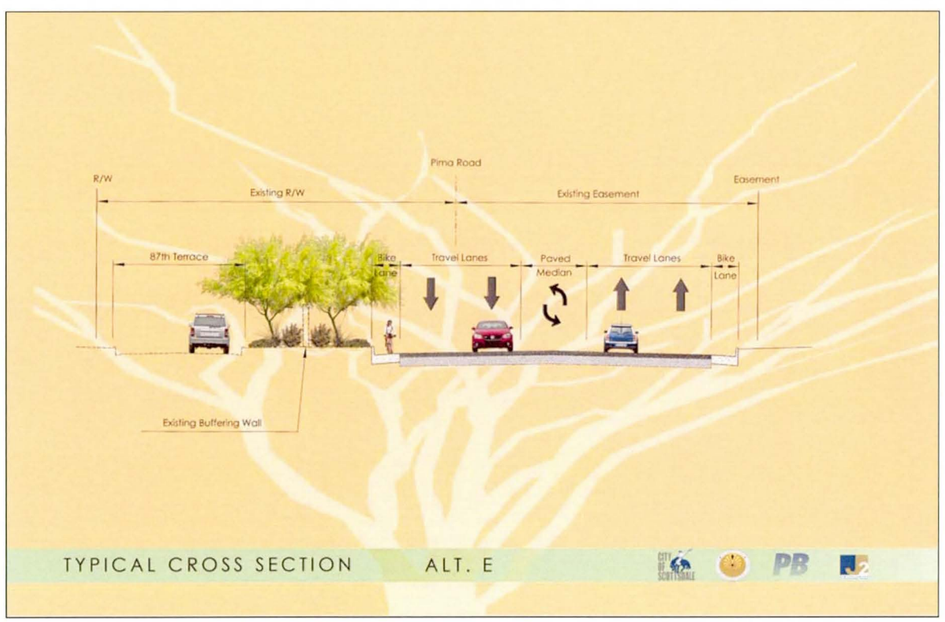


Figure 4.1: Typical Section Alternatives (Continued)







4.3 Evaluation of Typical Section Alternatives

In this section, the typical section alternatives developed and presented in the previous section will be evaluated for achieving the purpose and need previously identified in the study process. Based on an evaluation of the project objectives, agency input and ongoing interagency negotiations between the two communities, the following evaluation criteria have been developed. The criteria will be used to evaluate the typical section alternatives presented in the previous section. Table 4.2 summarizes the results of the alternatives meeting or conflicting with the following criteria.

- Meets agency general plan recommendations
- Provides for local traffic rather than as a reliever for regional freeway traffic
- Minimizes impacts to existing features along the corridor
- Provides access control characteristics
- Provides increased areas for landscape

Table 4.2: Summary of Evaluation Results

Alternative	Meets agency general plan recommend-ations	Provides for local traffic rather than as a reliever for regional freeway traffic	Minimizes Impacts to existing features along the corridor	Provides access control characteristics	Provides increased areas for landscape
6-Lane (Raised)	O	O	O	X	X
6-Lane (Paved)	O	O	O	O	X
A	X	X	X	X	X
B	X	X	X	X	X
C	X	X	O	X	X
D	X	X	X	O	O
E	X	X	X	O	O
F	X	X	O	O	O

X = Meets Criteria; O = Conflicts with Criteria

As a result of these criteria, the following typical section alternatives have been eliminated from further evaluation:

- 6-lane raised median
- 6-lane paved median
- Alternative C
- Alternative D
- Alternative E
- Alternative F

The typical section alternatives remaining to be studied in greater detail are:

- Alternative A
- Alternative B
- No Build

4.4 Typical Section Alternatives To Be Studied

Detailed descriptions of the two typical section alternatives (A and B) are included in this section, as well as reference to the No Build Alternative. For information purposes, the recommended typical section from the 1993 Pima Road Geometric Concept Report has been included in Appendix B.

The selected typical section alternatives differ according to the lane widths, median widths and bike lane widths. As shown in Appendix A, the existing roadway centerline is not a constant offset from the section line throughout the corridor, so the existing west curb line will be used as a point of reference for the development of the typical section alternatives.

No-Build Alternative

General Description: This alternative maintains the current width and intersection configuration for Pima Road, as such the project needs and objectives will not be met.

Alternative A: Raised Median (16') with 2-12' through lanes in each direction and on-street bike lanes maintaining existing west curb location

Alternative A consists of widening the existing roadway to a width that accommodates 2-12' through lanes in each direction with 2-6' on-street bike lanes and a 16' raised median, shown in Figure 4.2. This alternative maintains the location of the west curb line and widens to the east.

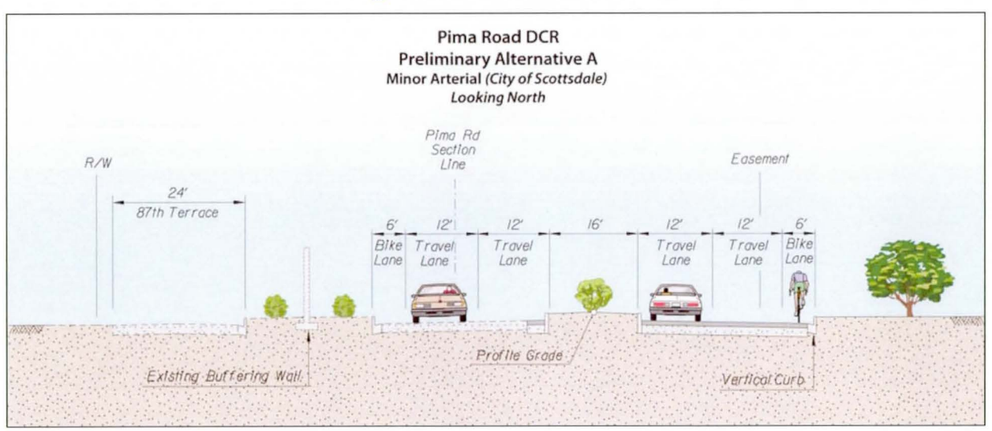
Impacts to Safety: The continuous raised median provides an opportunity to control the access points to the new development. Median breaks can be constructed at ¼ mile spacing, which can be used for traffic signals should they become warranted in the future.

Impacts to Right-of-Way: This alternative results in the back of the east curb line falling outside of the ADOT 55' easement by a maximum of 7'. No conflicts are identified on the west side.

Impacts to Drainage: The existing catch basin and storm drain system can continue to be utilized.

Impacts to Corridor Character: By maintaining the west curb line, the aesthetic features and alignment of the existing buffering wall can be maintained, as well as allowing an area that can be used for landscape between the buffering wall and the roadway. The 16' wide raised median also provides space for landscaping and mounding.

Figure 4.2: Alternative A



Alternative B: Raised Median (14') with 2-11' through lanes in each direction and on-street bike lanes maintaining existing west curb location

Alternative B consists of widening the existing roadway to a width that accommodates 2-11' through lanes in each direction with 2-5' on-street bike lanes and a 14' raised median, shown in Figure 4.3. This alternative maintains the location of the west curb line and widens to the east.

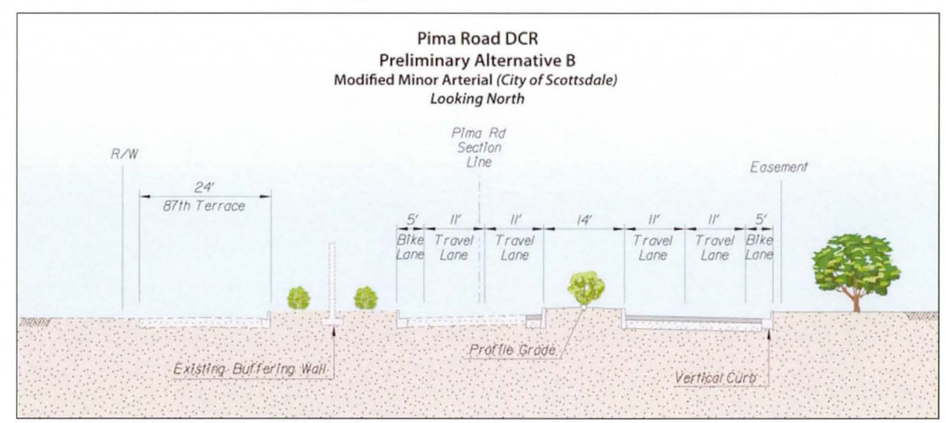
Impacts to Safety: The continuous raised median provides an opportunity to control the access points to the new development. Median breaks can be constructed at ¼ mile spacing, which can be used for traffic signals should they become warranted in the future.

Impacts to Right-of-Way: This alternative results in the back of the east curb line falling inside of the ADOT 55' easement by a distance ranging from a maximum of 11' to a minimum of 1'. No conflicts are identified on the west side.

Impacts to Drainage: The existing catch basin and storm drain system can continue to be utilized.

Impacts to Corridor Character: By maintaining the west curb line, the aesthetic features and alignment of the existing buffering wall can be maintained, as well as allowing an area that can be used for landscape between the buffering wall and the roadway. The 14' wide raised median also provides slightly less space for landscaping and mounding.

Figure 4.3: Alternative B



5.0 Major Design Features Of The Alternatives

5.0 MAJOR DESIGN FEATURES OF THE ALTERNATIVES

5.1 Introduction

As discussed in the previous section, two typical section alternatives and the No Build alternative have been identified to be studied in greater detail. The alternatives are: No Build, Alternative A and Alternative B. In this section, we will analyze the major design features associated with the identified alternatives. Plan sheet exhibits for each of the alternatives are shown in Appendix A.

5.2 Design Controls

The design criteria summarized below for this project was determined using the "COS Design Standards and Policies Manual" (DS&PM) (July, 2006), "Development and Design Standards for Commercial Corridors in the Salt River Pima-Maricopa Indian Community" (January 1992), "ADOT Roadway Design Guidelines" (January 2007) and the AASHTO "A Policy on Geometric Design of Highways & Streets" (2001). Another document providing background information and a basis for design include a previous Design Concept Report, Geometric Concept created by BRW (December, 1993).

For purposes of design of the Pima Road improvements, Pima Road is classified as a minor arterial with suburban character based on the COS Design Standards and Policies Manual (DS&PM) (July, 2006). The posted speed along the corridor will be 45 mph, with a design speed of 50 mph. The existing crossroad classifications will remain. The crossroad information is described in Table 5.1.

Table 5.1: Existing Crossroad Classification

E/W Crossroad	Number of Lanes in each direction	Classification	Posted Speed
McDowell Road	3	Fringe-urban arterial	45
Thomas Road	2	Fringe-urban arterial	40
Indian School Road	2	Urban arterial	40
Chaparral Road	2	Urban arterial	40
McDonald Drive	2	Urban arterial	40
Indian Bend Road	2	Urban arterial	45
Via de Ventura	2	Urban arterial	40

The following design controls were used in the development of the design concept for the identified alternatives. The design criteria for the proposed improvements are summarized in Table 5.2.

Table 5.2: Design Controls

Design Controls	
Design Year	2030
2030 ADT	34,800 vpd (Forecasted by COS)
Design Vehicle	WB-67 (Interstate Semi-Trailer)
Design Speed	50 mph
Pavement Design Life	20 Years
Pavement Section	COS Technical Design Requirements, including rubberized AC
Horizontal Alignment	Curve Length 500 feet Min, e = 6% Max
Vertical Alignment	Vertical curve is required for algebraic grade difference greater than 1.5%. Minimum grade for new construction = 0.4 '/feet
Profile Grades at Intersections	6 % Max (For Arterials and Collectors) 8 % Max (For Local Streets).
Roadway Cross Slope	2%
Lane Widths	Travel Lanes: 11-12 feet (Depending on the chosen alternative) Median: Raised or Paved (Width and selection depending on chosen alternative).
Curb Return Radii (Face of Curb)	30 feet (Arterials and Major Intersections) 25 feet (Local Street Intersections and Residential)
Clear Zone (From Edge of Travel Lane)	10 feet Desirable, 4' Minimum
Cut & Fill Slopes	For areas greater than 10 feet back of curb, slopes of 4:1 or flatter will be provided. Steeper slopes may be approved in areas more than 30 feet back of curb when soils are highly susceptible to erosion, or when a cut is more than 4 feet.
Curb and Gutter Types	MAG Standard Detail 220, Type A (Vert. Curb & Gutter) MAG Standard Detail 222, Type A (Single Curb)
Access, Driveway Design	COS Design Standards and Policy Manual (DS&PM), Figure 5.3-36.
Tapers	Lane Drop: L, Where L=WS, W=Change in width and S=Design Speed Add a Lane: d/3, Where d=15S
Right-of-Way	110 feet total width

5.3 Horizontal and Vertical Alignments

The survey information obtained for the DCR development has been based on the following datum:

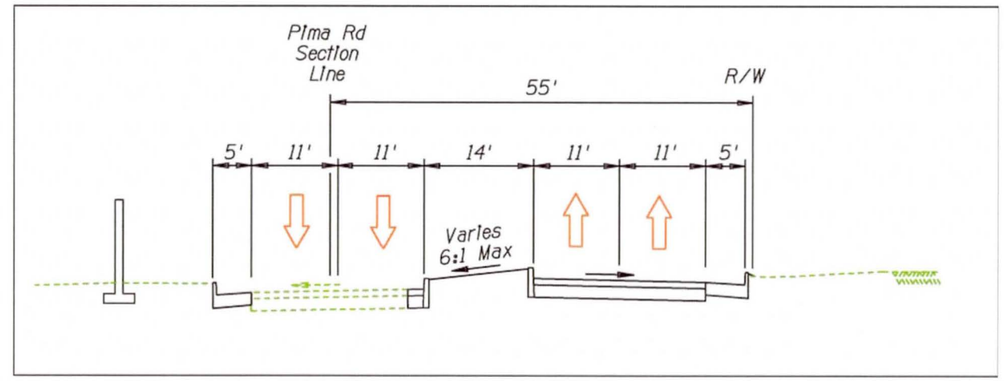
- Horizontal Datum: State Plane Coordinate System – Central Zone
- Vertical Datum: North American Vertical Datum 1988 (NAVD '88)

The horizontal control survey was completed by Premier Engineering (March 2007). The existing vertical digital terrain model (DTM) data was obtained from the Flood Control District of Maricopa County (FCDMC) 10-foot contours.

The horizontal and vertical alignments of the recommended alternative are based on the location of the existing western curb line relative to the section line. The horizontal alignment and stationing has been established along the section lines based on the horizontal control survey completed as a part of this study by Premier Engineering (March 2007). The relationship of the western curb line to the section line varies throughout the corridor as shown in the No-build plan sheets in Appendix A. Based on review of as-builts and available topographic files, the western curb line is composed of segments parallel to the section line, as well as varying at constant taper rates. As shown in the Alternative A and Alternative B plan sheets, the proposed eastern curb has been set parallel to the western curb following the same parallel and taper segments, see Appendix A.

The vertical alignments shown in the 30% plans in Appendix G have been developed for the proposed northbound roadway. The vertical alignments shown for the northbound median curb line and the northbound east curb line were established to minimize impacts to existing utilities, match the existing ground, provide a 2% cross slope for roadway drainage, and meet COS and AASHTO criteria. Vertical alignments were not established for the southbound roadway, because the existing roadway will be sawcut and widened to match the existing cross slope and vertical profile. As shown in Figure 5.1, the cross slope of the 14' wide median will vary within the corridor to transition the northbound and southbound median curb lines. The existing southbound west curb and gutter, and catch basins will remain throughout a majority of the project limits. Areas that require the construction of southbound right turn lanes and reconstruction of the west curb will be located to match the existing Pima Road cross slope. During the final design of the Pima Road improvements the vertical alignment of the northbound roadway near driveways and crossroads will have to be further analyzed for grades and cross slopes using detailed survey.

Figure 5.1: Modified Roadway Cross Slope

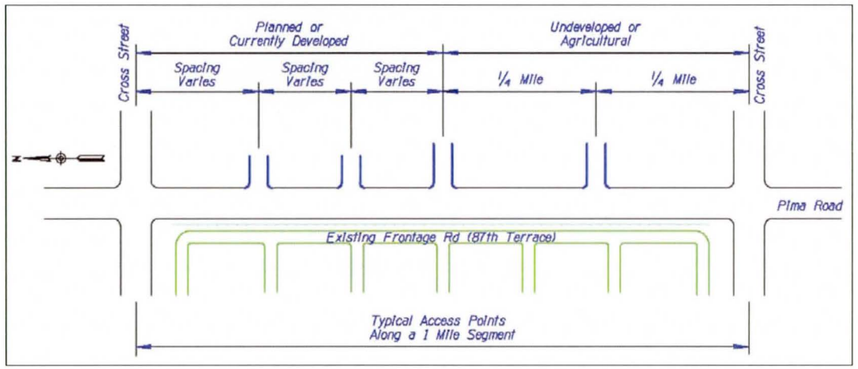


5.4 Access Management

Access management involves managing access to land development while simultaneously preserving the flow of traffic on the road in terms of safety, capacity and speed. The functional advantage of providing access control on an arterial street is the management of the interference with through traffic. This interference is created by vehicles entering, leaving and crossing the street. There are varying degrees of access control characteristics depending on the functional classification identified for a facility. For instance, an interstate facility has full access control which gives preference to the through traffic by using ramps and eliminating any at grade intersections. While a street with no access control can develop haphazardly with numerous access points, such as driveways. The interference from the driveways can become a major factor in reducing the capacity, increasing the crash potential and eroding the mobility function of the facility.

An arterial, like the Pima Road, must have an access management policy which lands somewhere in the middle of the spectrum. The proposed access management guidelines will be incorporated into the alternatives in a manner which balances the desire to provide limited conflicts with the through traffic, while providing access to the neighboring developments at consolidated locations. Figure 5.2 shows the typical access points which have been incorporated into the alternatives. In general, the corridor has been divided into segments of planned or currently developed and undeveloped or agricultural. Through the areas of planned or currently developed properties, the driveway spacing will match the existing driveway and proposed driveway locations. Through the limits of the undeveloped or agricultural properties the driveways will be identified at a ¼ mile spacing.

Figure 5.2: Typical Access Points



After identifying the general spacing of the driveway access points along the corridor as discussed above, the physical layout of the median cut and driveway entrances have been developed. The driveway access options are shown below in Figures 5.3 through 5.5. Figure 5.3 shows the first driveway access option which has been incorporated into areas along the corridor which are in preliminary development or have not had a specialized median treatment identified yet.

Figure 5.3: Driveway Access – Option 1

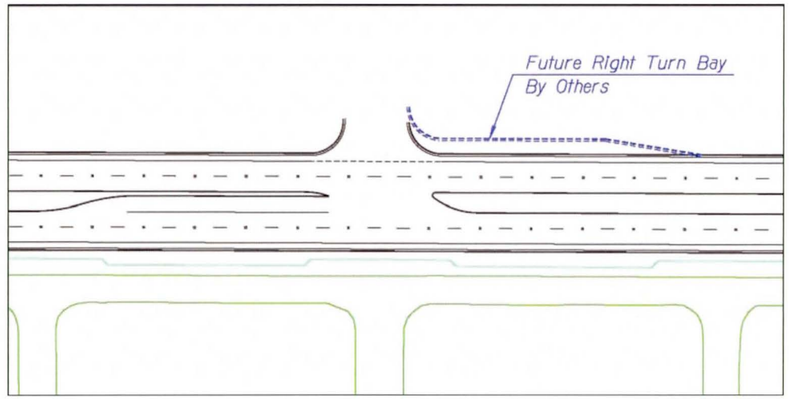


Figure 5.4 shows the second driveway access option which has been incorporated into areas along the corridor which have existing development. The diverter median and refuge area median concept has been used on several COS arterial improvement projects to simplify the left turn exit movement operation by providing space to break the movement into two phases. One phase involves crossing the opposing traffic and moving into the refuge area, then allowing for the second phase to merge from the refuge area into the through traffic, completing the movement. This driveway access option allows for the access control benefits of a raised median, while providing the dual phase movement provided by a paved median. This option has also been modified to provide only left in and right out movements in areas where the refuge area would conflict with the turn lanes of an adjacent traffic signal or intersection.

Figure 5.4: Driveway Access – Option 2

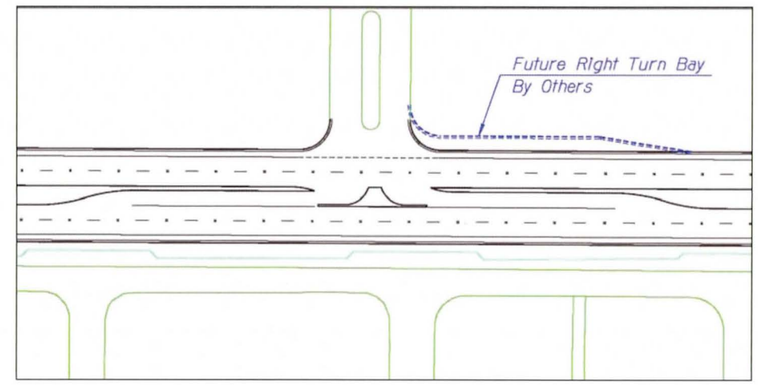
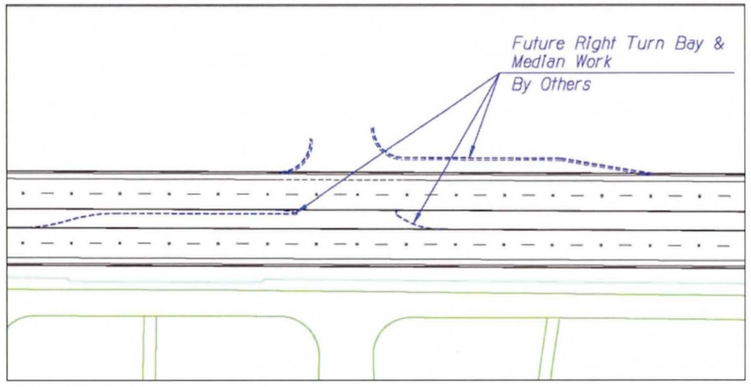


Figure 5.5 shows the third driveway access option which has been incorporated into the undeveloped or agricultural segments of Pima Road. These driveways are shown in the alternatives at ¼ mile spacing which is the preferred spacing, but as development occurs through these segments, the property may be divided in such a way that the driveways and median breaks would have to be reconstructed or relocated. To address the possible difference in preferred locations, the median cuts and driveway construction has been identified as future work by others. The current recommendations are to construct the east curb with approximately fifty-feet of rolled curb which can be used for access by farmers and the current land owners.

Figure 5.5: Driveway Access – Option 3



5.5 Right-of-Way

A significant cost and time constraint identified for the implementation of any improvements along the Pima Road corridor involve the identification and acquisition of new right-of-way or easements (including temporary construction easements). Through the agency scoping process, the containment of the proposed improvements within the existing right-of-way and ADOT easement limits were identified as a constraint. The alternatives have been developed to minimize the need for additional right-of-way or easement acquisition. Through the development of the alternatives, segments of the corridor could not be modified to fit within the existing right-of-way and easement. The areas identified for additional right-of-way needs are shown in the Alternative A & B plan sheets in Appendix A. In addition, Figures 5.6 & 5.7 have been developed to show the assumptions associated with labeling additional right-of-way and easement needs on the plan sheets. Figure 5.6 shows the minimum clearance required to construct the roadway improvements within the existing easement.

Figure 5.6: No Right-of-Way Required

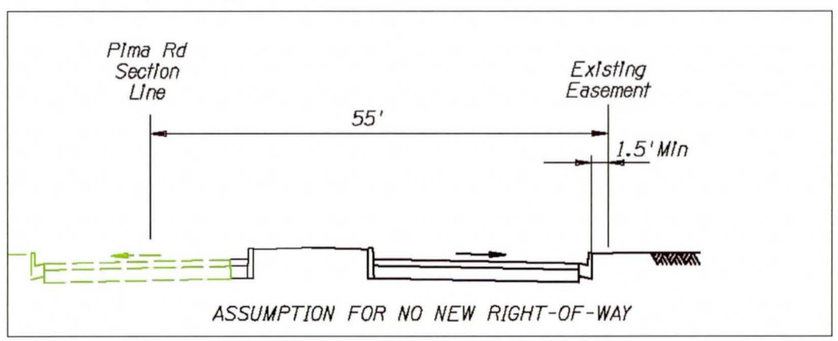


Figure 5.7 shows the additional easement identified when the improvements extended outside of the existing easement limits. The new easement line was identified to be located a minimum of five feet from the back of curb, then the dimension from the existing fifty-five foot easement limit was rounded to the next five foot increment. For example, when the improvements pushed the new back of curb to be three feet outside of the existing easement, then the five foot buffer dimension was added to reach a total of eight feet, which was then rounded to an even increment of five feet, so the new easement line was shown at a sixty-five feet from the section line.

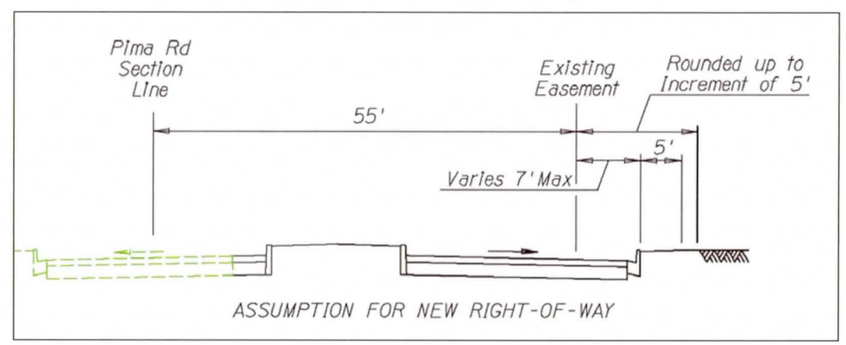
Alternative B has been further refined to show the following features being constructed in the future by others, as development occurs along the corridor:

- 8' wide detached sidewalk along the east curb
- Right turn bays at the driveway locations
- Bus bays
- Median curb cuts
- Driveways

In addition, the following major signalized intersection turn lane improvements should be considered as soon as right-of-way acquisition is achievable:

- Northbound right turn bay at Chaparral Road

Figure 5.7: New Right-of-Way



Through the development and construction of recommended Pima Road improvements an agreement between the three agencies (ADOT, COS and SRP-MIC) will be developed to identify the responsible parties for maintenance and operations of the roadway and traffic signals, as well as ownership of the

right-of-way along the corridor. It is currently assumed that ADOT would prefer the development of an agreement which meets the standard ADOT turn-back processes, to disperse the property within the fifty-five foot easement back to the local agency.

Any field investigations for design and construction work on the SRP-MIC easement requires all personnel to complete the SRP-MIC cultural training prior to any ground disturbing activities.

5.6 Drainage

Below is a summary of the information presented in a separate drainage report by Primatech Engineers.

This study includes a comprehensive analysis of the existing and future drainage conditions within the project corridor and alternatives that could be implemented as part of the proposed improvements. The drainage analysis will study the existing and proposed drainage condition for offsite flows. As well as develop drainage alternatives for the concept design of the Pima Road improvements.

The following reports of previous studies were obtained and reviewed for this project:

- Granite Reef Wash Drainage Study & Preliminary Design improvements, submitted by PSOMAS to COS 2008
- Granite Reef Wash, Drainage Master Plan Report, submitted by Entellus to the Flood Control District, 2002.
- Pima Freeway-90th Street to Indian School Road, Final Drainage Report Amendment, submitted by MK Centennial, May 1997.
- Updated Hydrology Analysis, Arizona Canal Drainage Channel, Pima Freeway, Via Linda Drive to Arizona Canal, Maricopa County, Arizona, Prepared for Salt River Pima-Maricopa Indian Community, by Robert L. Ward, P.E., Consulting Engineer, August 20, 1996.
- Pima Freeway, 90th Street to Indian School Road, Drainage Report, Final Submittal, Prepared for Arizona Department of Transportation by Morrison-Knudsen Engineers, June 1993.
- Offsite Drainage Report, Pima Freeway, Station 2639+00 to Station 2840+00, prepared by Arizona Department of Transportation, April 1993.
- Final Hydrology Report Outer Loop Highway Camelback Walk Channel to the Arizona Canal, submitted by Simons, Li and Associates, Inc., May 1989.
- Final Hydrology Report Outer Loop Highway Arizona Canal to Salt River, submitted by Simons, Li and Associates, Inc., April 1989.
- SRP-MIC Drainage Master Plan (In-Progress)

Offsite Drainage

In general, the slope of the landform in the project area is to the southwest. Pima Road runs from north to south. Therefore, only the area to the east of Pima road is taken into consideration for offsite flows. The offsite watershed for Pima Road with specified concentration points as well as the existing storm drain system are shown in Figure 1.3. The property that forms the offsite area between Loop 101 and Pima Road belongs to SRPMIC and has a potential for future commercial development. Currently, some portion of the area has already been commercially developed. In the future, when a property is fully commercially developed, it is assumed that all of the developed property will build a retention basin capable of holding the 100-year 2-hour runoff or use the GRW storm drain as an outfall. In essence, no offsite drainage will be addressed as a function of this Pima Road improvement project.

Hydrologic Modeling

The objective of hydrologic modeling is to compare flow conditions under existing conditions with flow conditions under future conditions wherein the SRPMIC property is developed. Currently, all of the flow from east of Loop 101 is intercepted by a drainage channel as discussed in section 1.5. Only the area to the west of Loop 101 is considered to contribute to the Pima Road offsite drainage. The concentration points have been defined as shown in Figure 1.3.

A HEC-1 model was prepared for both the existing condition and the future condition. For the existing condition model, the commercial development as per end of August 2007 was considered. The commercially developed areas were assumed to retain 100-year 2-hour flow. For the future conditions, all of the SRPMIC property was considered to have a full commercial development. It is assumed that the widening of Pima Road will be completed and the existing drainage facilities along the west side of Pima Road are not going to change in the future.

Hydraulic Modeling

The objective of performing a hydraulic analysis is to determine the difference in flow pattern along the Pima Road corridor for the 100-year 6-hour flow between the existing condition and the future condition. The hydraulic analysis of the flow was carried out using the HEC-RAS model.

Under the existing conditions, the area north of the Arizona Canal, the road section between Via Taz Norte and the northern end of Krail Street becomes flooded in the case of the 100-year 6-hour flood. The flow depth here varies from 0.74 feet to 1.9 feet. The City of Scottsdale Design Policies and Standards, 2004 regulates that flow depth over streets with curb and gutter should not be greater than 8 inches. The sound barrier wall acts as a restriction so that the water does not flow into the residential property west of Pima Road. However, under this condition, the golf course immediately north of the Arizona Canal and west of Pima Road will be flooded up to a depth of 4.5 feet. South of the Arizona Canal, the flow depth over Pima Road is within the limits permissible by the City of Scottsdale Design Policies and Standards, 2008.

Under the future conditions, it was found that the road around the Via Taz Norte area and Indian Bend Road area is still flooded. The flow depth around the area of Via Taz Norte is estimated to be 0.75 feet, and about 1 foot around Indian Bend Road. The improvement in depth is due to the incorporation of retention basins capable of holding the 100-year 2-hour runoff into the developed property.

Onsite Drainage

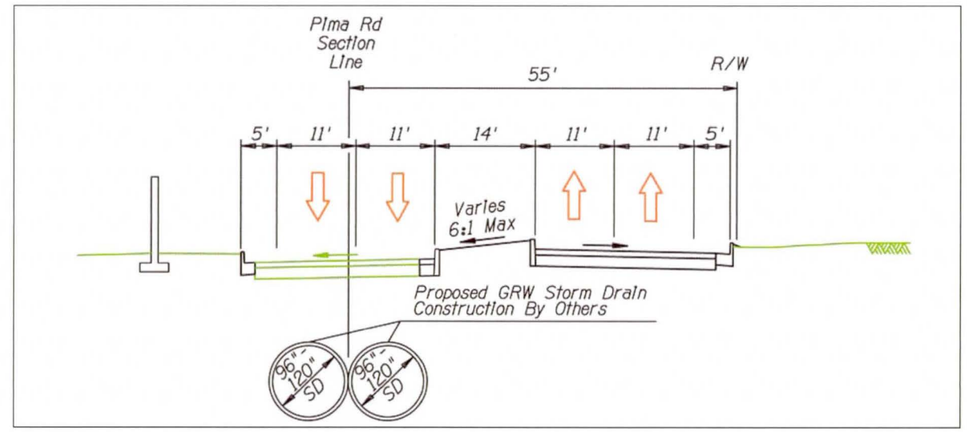
During the study process, the design team has received direction to assume that the Granite Reef Wash (GRW) Storm Drain project (to be constructed by others) will be constructed and in place providing an outfall for the proposed onsite drainage improvements. Figure 5.8, shows the proposed installation location for the GRW storm drain concept and Figure 5.9 shows the proposed GRW storm drain concept with pipe sizes.

The proposed typical cross section for Pima Road, as shown in Figure 4.2, will have a vertical curb and gutter on the both sides of the roadway. The on-site drainage system will be designed to collect and convey runoff from the pavement and discharge it into the proposed Granite Reef Wash Storm Drain System. As the Pima Road roadway project progresses through final design, additional coordination will be required to determine if the Granite Reef Wash storm drain will be in place, if not, then the onsite drainage concept discussed as a part of this study will require amendment to reuse the existing storm drain system as the project outfall.

The onsite flow from Pima Road will be collected in the existing and new curb-opening inlets along both the east and west sides of the corridor. Currently, Pima Road has curb-type catch basins along the western edge of the road under the jurisdiction of the City of Scottsdale. The eastern side of the road is under the jurisdiction of the SRPMIC, and there are no catch basins on the eastern side of the road. Currently, flow from the eastern half of the road goes into the roadside ditch and is then routed downstream along with the offsite flow.

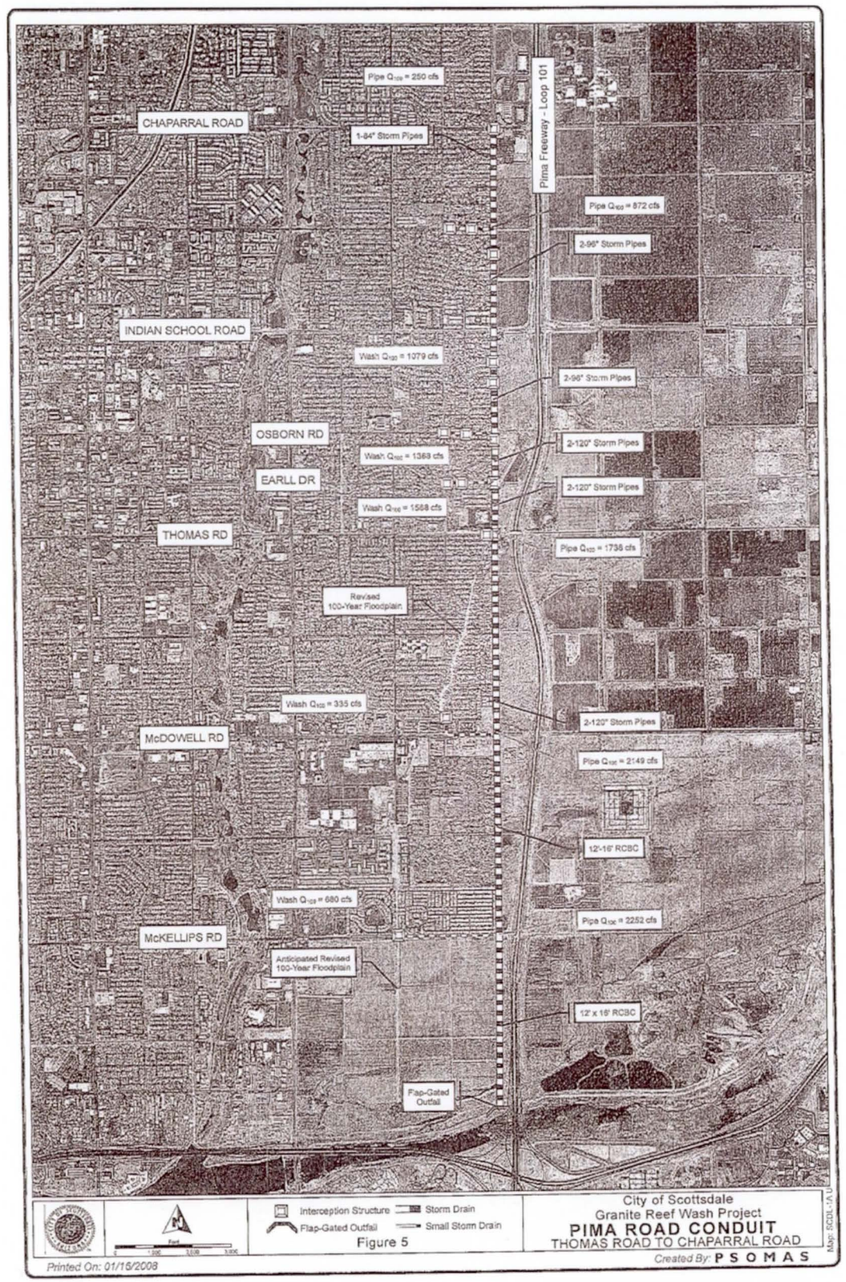
Based on the cross-section and profile information furnished by PB Americas, spread and curb depth computations were made for the 10-year storm event. Discharge points are located as necessary where the allowable spread or depth is exceeded. The discharge is through curb-opening catch basins. The proposed improvements associated with the drainage alternative are shown on the Alternative A and B plan sheets in Appendix A.

Figure 5.8: Granite Reef Wash Storm Drain Concept (Typical Section)



The Thomas Road intersection is the low spot along the Pima Road corridor south of the Arizona Canal. The historic flows along the corridor run from north to south along Pima Road, then turn to the west along Thomas Road, then turn south along the Granite Reef Wash. Interception at the Thomas Road intersection will be a key component of the GRW storm drain project. The project team was directed to incorporate a raised median along Thomas Road to deter the westbound to southbound left turn movement from Thomas Road to Granite Reef, but because of the historic flows, the median will need a break to allow the flows to continue. See Appendix G plan sheets for Thomas Road concept. In addition to providing a traffic barrier, the median curb may also be used to intercept the drainage using curb-opening inlets.

Figure 5.9: Granite Reef Wash Storm Drain Concept



5.7 Earthwork

The recommended alternative has been modeled using Inroads software with the results being 62,500 cubic yards of cut and 20,500 cubic yards of fill.

5.8 Constructability and Traffic Control

Along the approximately 7 ¾ mile long project, there are basically two types of projects needed to implement the study recommendations; they consist of intersection improvements and arterial widenings. Depending on budget constraints and/or development along the segments, several combinations of construction projects can be identified (additional information is provided in Section 9.0 Project Implementation Plan). For example, two or three intersection improvement projects could be packaged together with the arterial improvements being completed at a later date, possibly by future development. Likewise a combination of one mile segments including an arterial widening and an intersection improvement could be developed. One constraint for the division of the intersection improvements would be that the complete intersection would be completed in a single construction project, including all legs of the intersection.

The constructability and traffic control efforts associated with the intersection improvements will mandate that the intersections must remain open at all times, except for limited weekend closures for paving operations. At all times, a minimum of one lane in each direction shall remain open along Pima Road. Depending on the adjacent lane configurations and traffic characteristics of the crossroads, a minimum of one lane must remain open at all times, the final determination of the number of additional lanes needing to remain open on the crossroad will be identified at final design with input from the agency staff.

The constructability and traffic control efforts associated with the arterial widenings will mandate that one lane in each direction be maintained at all times, as well as provide for local business access. The construction phasing would start with the construction of the new northbound roadway, while maintaining the traffic on the existing roadway. Then the traffic can be shifted to the new northbound facility, while completing the southbound improvements. Traffic shifts approaching the major intersections will be incorporated to meet MUTCD standards. A full closure of a mile long segment could be entertained during design development only if the entire segment is undeveloped, thus business access would not have to be maintained. This closure would require approval by the local agency staff.

5.9 Intersections

The existing major intersections along Pima Road as shown in Table 1.1 are currently signalized and will remain as such. New intersections will be shown as T-type and be located based on a typical ¼ mile spacing. As discussed in the Section 5.4 Access Management, the locations of future intersections and driveways can be adjusted through the development plans review process to accommodate a modified spacing.

5.10 Traffic Signals, Interconnect & Lighting

With the currently identified intersection lane additions identified along Pima Road and several of the existing major crossroads, the existing traffic signals will need extensive relocations or complete replacements. The relocated or new traffic signals will be developed in accordance with the current version of the City of Scottsdale Design Standards and Policy Manual. The current operations and maintenance agreement between COS and SRP-MIC identifies COS as the responsible party for the traffic signals throughout the corridor.

New traffic signals at various mid-mile points will most likely be incorporated along the corridor. The need for additional signals at the various locations along the corridor will be determined by either a Traffic Impact Study submitted during the agency plan reviews for new developments along the corridor, or a final designer will complete a signal warrant study for existing access points from already developed areas. Installation of signal interconnect is recommended along the Pima Road Corridor.

Street lighting is recommended to be installed along the corridor in addition to the standard intersection lighting requirements. Depending on the recommended alternative selected and the resulting right-of-way constraints, the preferred location of the light poles along the corridor will vary. The options being discussed preliminarily involve median lighting, one-side lighting and two-side lighting. Where one-side lighting involves lighting both the northbound and southbound roadways by the installation of the street lights on the west side only because of the limited space between the east side back of curb and the easement limits. Through further analysis and discussions with the local agencies, a combination of the lighting options can be developed and recommended.

Existing Signalized Intersection

5.11 Utilities

The existing utilities and contact information for the area are provided in Table 5.4. Both public and private utilities are present. The existing utilities include overhead power, underground electric, water, sewer, gas, telephone, fiber optic, irrigation and coaxial cable.

Potential existing utility conflicts include electric, water, gas, and telephone. Underground utility locating has not been performed for this DCR. A complete field investigation, including utility potholing will be required during final design of the roadway. Through the utility coordination process, the utility companies will be required to provide prior right documentation showing that their facilities have not been installed by permit. Additional project costs could be required for utility relocations, if it is determined that the utilities existing along the corridor have prior rights and are identified to be in conflict with the proposed improvements. The vertical alignment of the new roadway has been developed to minimize the potential conflicts with the existing utilities. After a preliminary review of the existing facilities in the area, a percentage of the estimated construction cost has been included in the engineers estimate.

The following table shows the utilities currently identified to exist within the project limits:

Table 5.4: Utility Contacts

Utility	Facility	Contact	Information
Arizona Department of Transportation	Storm Drain, Fiber Optics, Electric (No Conflicts)	Mapping Department	
Arizona Public Services	Electric	Mapping Department	
Arizona American Water Company	Water (No Conflicts)	Lee Huddelson	(602) 445-2460
Cox Communications	Cable TV, Fiber Optics	Deidra Bryant	(623) 328-3569
City of Phoenix Water Services Department	Water, Sewer, Reclaimed Water	Rudy Ramirez	(602) 722-4014
Qwest Local Networks	Fiber Optic, Telephone	Conflict Review	135 W. Orion Street Suite 100 Tempe, AZ 85283
Southwest Gas	Low Pressure Natural Gas	Kevin Souza	9 South 43rd Ave. Phoenix, AZ 85009 (480) 730-9675
Southwest Gas	High Pressure Natural Gas	Ron Arrington	9 South 43rd Ave. Phoenix, AZ 85009 (602) 484-5295
Salt River Pima Maricopa Indian Community	Water, Sanitary Sewer, Irrigation	Michael Byrd	(480)362-7819
Saddleback Communications	Fiber Optic, Cable	John Aker	(480) 362-7037
City of Scottsdale	Water, Sewer, Reclaimed Sewer	Doug Mann	(480) 312-5636
Salt River Project	Electric	Tim Rinn	PO Box 52025 Phoenix, AZ 85072-2025 (602) 236-8694
City of Scottsdale	Traffic Electric, Fiber Optic	Bruce Dressel	7447 E Indian School St 205 Scottsdale, AZ 85251 (480) 312-2358
Salt River Project	Irrigation	Harold Biever	PO Box 52025 Phoenix, AZ 85072-2025 (602) 236-2977

5.11.1 Electric

The existing electric facilities consist of overhead and underground power lines that run parallel both the east and west of the existing Pima Road between Loop 101 and the Arizona Canal crossing. South of the Arizona Canal, existing electric facilities are primarily west of existing Pima Road. The power lines north of Via De Ventura are not in conflict with the proposed roadway. The underground power will primarily be under the proposed northbound roadway for a distance of 8,700 feet between Via De Ventura and the Arizona Canal.

South of the Arizona Canal, both overhead and underground power lines are west of existing Pima Road and primarily not in conflict. The exception is widening at major roadway intersections with McDonald Drive, Indian School Road, and Thomas Road. At these intersections overhead power lines cross the roadway and are potentially in conflict. The total length of overhead power potentially in conflict is approximately 2,800 feet, with the longest stretch installed from Indian Bend Road and the Arizona Canal.

SRP-MIC is in the process of developing a new substation in the Scottsdale Pavilions development area, near the Indian Bend Road and Pima Road intersection. The substation will need to be serviced by a 69kV service from the existing substation located on the northeast corner of Jackrabbit Road and the Loop 101 freeway. The existing right-of-way along the east side of the Pima Road corridor is limited from the Jackrabbit Road alignment to Indian Bend Road along which a majority of the back of curb will be constructed within 1.5' of the existing 55' ADOT easement. A minimum of 10' of additional right-of-way would need to be acquired to install the facilities along the Pima Road corridor.

Pima Road looking south at the Arizona Canal

5.11.2 Water

Existing water facilities run the full length of the project. Generally, existing water lines are both east and west of existing Pima Road. The water line east of existing Pima Road will primarily be under new pavement as a result of the roadway widening. Horizontal and vertical adjustments will be required at the Arizona Canal. The 24" transmission line shown to exist from Thomas Road to Indian School Road has been identified to be in conflict with the proposed alignment of the GRW storm drain and will require realignment as a function of the GRW work. During the final design of the GRW storm drain

alignment, the possibility of shifting the GRW storm drain alignment to the east for this segment should be evaluated to allow the waterline to remain in its current location.

In general, along the rest of the corridor, only minor conflicts with the waterlines are anticipated however, vertical adjustments to the waterline at drainage crossings and grade adjustments to the waterline appurtenances may be required. An inline booster station has been identified along the 12" water line along the east side of Pima Road just south of the Arizona Canal. The facility has a large buried vault with two manhole access points, the vault is assumed to not be in conflict, but the manholes will require extension to match the new pavement grade.

5.11.3 Communications

Existing underground telephone lines are also located within the project limits. Both cable television and telephone lines run parallel to existing Pima Road between Loop 101 and McDowell Road. Telephone lines run parallel east of Pima Road, and outside of the proposed pavement, between Loop 101 and Via De Ventura. Between Via De Ventura and Thomas Road the telephone line will be under new pavement. The telephone line then shifts to the west side of Pima Road south of Thomas Road.

The cable television lines are located west of existing Pima Road between Loop 101 and Oak Street. As previously mentioned, the roadway profile will minimize impacts to underground facilities. Potential vertical adjustments to the telephone lines may be required at various drainage crossings.

5.11.4 Gas

Several existing gas lines are located in the project limits. An existing line is located under existing pavement from 1200' north of Via De Ventura to the south side of the Via De Ventura intersection with Pima Road. Another gas line runs parallel east of existing Pima Road between Via De Ventura and Thomas Road. This line is located east of the proposed Pima Road pavement. There are also several lines crossing Pima Road to service properties east of the roadway. In general, conflicts with the gas lines are not anticipated however, vertical adjustments to the gas lines at various crossings may be necessary.

5.11.5 Storm Drain & Sanitary Sewer

Existing storm sewer and sanitary sewer facilities are located in the project limits. The existing storm sewer is located under southbound Pima Road between Loop 101 and McDowell Road. The existing storm sewer was designed to pass the storm water for a 10-year event for the five-lane Pima Road section. With the construction of the GRW storm drain project, the existing storm drain system can be abandoned or removed. The flows enter through the existing catchbasins will be redirected to the new GRW storm drain.

The existing sanitary sewer facilities are located under existing pavement or in areas that will be under the proposed northbound pavement. Potential vertical adjustments to the sewer lines may be required at various drainage crossings.

5.12 Structures

Major Structures

A major structure is defined as having a span length greater than 20 feet. The recommended alternative has one major structure; a widening of the Pima Road Bridge over Arizona Canal.

Pima Road Bridge over Arizona Canal

The proposed widened structure will carry the northbound and southbound Pima Road traffic over the Arizona Canal. The criteria considered during the bridge selection process will ensure compatibility with the existing bridge and compliance with the requirements of Salt River Project (SRP) for construction and maintenance access as well as provide the most economical structure type and configuration. The length of the proposed Pima Road Bridge is 134'-11 $^5/_8$", intersecting the Arizona Canal at a 41 degree skew. The bridge will span the entire canal and meet the required 1.5 feet of freeboard above the high water elevation, which was provided by SRP to be 1282.15 feet (NAVD '88). Although several structure types have been reviewed, only the two most viable and economical bridge alternatives for this location will be discussed.

Alternative 1 – Prestressed Concrete Voided Slab Beams

A simply supported three-span precast prestressed AASHTO Type SIII-48 Voided Slab Beam Bridge with stub abutments and pier walls is the recommended bridge type and configuration for this bridge widening. The superstructure of the bridge widening will require nine 4'-0" wide precast slab beams placed side by side next to the east side of the existing bridge with a 1" longitudinal bituminous joint placed between the existing bridge and the widened structure. Since the existing structure is 32'-0" wide and the voided slab beam unit comes in 4'-0" widths, the out-to-out width of the bridge will be 68'-1". Each slab beam unit is 1'-6" deep with a two inch asphaltic concrete (AC) deck on top of the beams. A minimum total superstructure depth of 1'-8" at the widened section is assumed for this alternative. The bridge will consist of two 47'-6" end spans and one 39'-0" center span with a total bridge length of 134'-11 $^5/_8$". A 1" transverse bituminous joint will be required at both piers and abutments.

The 3'-6" wide by roughly 3'-6" deep stub abutments will be founded on five 36 inch diameter drilled shafts. The abutments will be constructed on a skew of approximately 41 degrees. The shafts will not need to be designed for scour since the canal is concrete lined.

A 1'-4" thick concrete pier wall with a 4'-0" wide by 1'-6" deep concrete spread footing will extend from the east side of the existing bridge, matching the existing piers in the canal. Pier construction is assumed to occur under a wet condition, thus a dewatering system around the piers will be required. Other bridge construction activities will be performed outside of the canal footprint and therefore are not dependent on canal flow levels. The dewatering system can be removed after the substructures are firmly in place. No debris shall enter the canal during construction.

Phased construction for the abutments and piers will not be necessary since the bridge is only being widened to the east. Girder lengths and common construction equipment are reasonable for standard shipping and site access. Underground utility locating has not been performed for this DCR. A complete field investigation, including potholing will be required during final design.

Alternative 2 – Cast-in-Place Concrete Deck Slab

A continuous three-span cast-in-place slab bridge with stub abutments and pier walls is the bridge type and configuration for this alternative. The bridge will consist of two 47'-6" end spans and one 39'-0" center span with a total bridge length of 134'-11 $^{5}/_{8}$". The out-to-out width of the bridge will be 68'-1". The superstructure consists of a 1'-10" thick concrete slab with a two inch asphaltic concrete (AC) deck on top. A total superstructure depth of 2'-0" is anticipated for this alternative, except at the pier locations where the depth is expected to be 2'-4" to include a 4" deep haunch. A 1" wide longitudinal bituminous joint will be placed between the existing bridge and the widened structure. Falsework construction is required for casting the bridge deck. The falsework towers can be placed within the dewatered area and be constructed concurrently with the substructures.

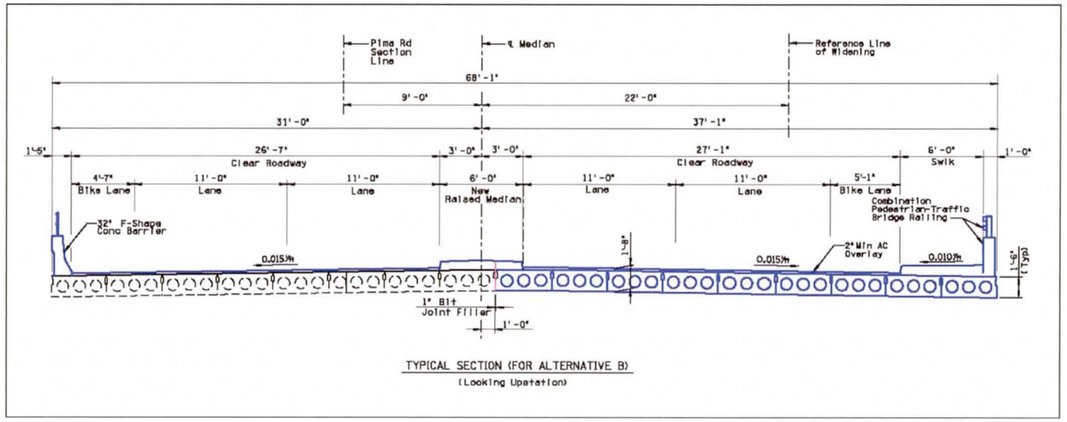
The substructure and foundations for this alternative will be very similar to those of alternative 1. However, due to the increased thickness and type of superstructure, the abutment and pier reactions will be higher than alternative 1. Consequently, longer drilled shafts at the abutments and larger spread footings at the piers may be anticipated.

This alternative will require falsework to be placed over the canal to construct the cast-in-place concrete concrete superstructure and thus the construction duration will be longer than that of the precast options. In addition, placing falsework in the canal is costly and unfavorable. Freeboard will also be reduced because this cast-in-place slab is deeper than the existing superstructure.

Recommended Alternative

Alternative 1, a three-span precast prestressed AASHTO Voided Slab Beam Bridge with stub abutments on drilled shafts and pier walls on spread footings is the recommended bridge type and configuration for this location. This precast girder bridge can be built without falsework and is highly constructible by local contractors. With detailed planning, coordination and cooperation from key stakeholders, the bridge can be constructed within the timeframe allowed while meeting the requirements of this project.

Figure 5.10: Arizona Canal Structure Typical Section



5.13 Pavement Design

The Preliminary Geotechnical Assessment Study for this project was prepared by Terracon in March 2009. The report provided a preliminary geotechnical assessment relative to preliminary pavement design, preliminary bridge foundation design, and construction considerations.

Existing Pavements

The existing pavements generally appear to be in good to very good condition, based on a site visit and observations along the northbound and southbound lanes of Pima Road extending from 90th Street to McDowell Road. Sections of the pavement appear to have been constructed more recently, especially

along the northbound lanes due to the additions or resurfacing of right turn lanes and center lanes. In general, the pavements do not display any cracking, raveling, or potholes. In certain cases, survey markers set in the pavement have the appearance of potholes due to the resurfacing of the pavement above the fixed level of the marker. Along the majority of the pavement, transverse and longitudinal cracking are evident to varying degrees and are attributable to hardening of the asphalt and/or temperature cycling. However, without proper maintenance or rehabilitation, this type of cracking can progress to more severe forms of pavement distress including block or alligator cracking. Generally the more recently paved sections or sealed portions of the pavement exhibit less of the transverse and longitudinal cracking.

Indian School Road approaching Pima Road

Proposed Pavement

The resulting recommendations were based on City of Scottsdale technical design requirements, the draft Traffic Analysis Report, and existing subgrade soil conditions according to the USDA Soil Survey. Based on the input data, the required pavement structural number for the roadway varies between 3.63 and 4.25. Two separate pavement structural sections are recommended, one north of McDonald Drive and a one south of McDonald Drive.

The preliminary recommended pavement structural sections are:

Table 5.5: Recommended Pavement Structural Sections

Limits	Rubberized AC	AC	ABC	Mill
North of McDonald Drive	½"	6 ½"	20"	---
South of McDonald Drive	½"	6 ½"	18"	---
Existing Pavement	½"	1 ½"	---	2"

5.14 Design Exceptions

Based on the AASHTO Controlling Design Criteria Report completed for the project, no design exceptions or variances are required.

5.15 Corridor Aesthetics and Character Concepts

A preliminary Aesthetic Character Design Concept Report (ACDCR) has been prepared for the Pima Road corridor by J2 Engineering and Environmental Design (J2). The ACDCR, as shown in Appendix F, will attempt to present to the reviewing committees, and the general public, several ideas that will help to create the aesthetic thread that can weave into the engineering, the creative spirit, and sense of arrival and destination along and through this corridor. The overall goal will be to create a space that generates an inspired energy that will serve as a catalyst for other imaginative and unique approaches to all elements within and along this corridor.

The primary objectives listed below are the first steps in addressing the aesthetic nature of this important corridor. Our overall objective is to provide a design aesthetic and a vision that speaks to:

1. Sustainability and the Sonoran Desert
2. Cultural Elements, Colors and Textures
3. An Imaginative and Unique Approach to Street Elements
4. Creating a Signature Destination
5. Creating a Maintainable Aesthetic
6. Creating a Balanced and Harmonious Blend of Man-made and Natural Elements

In order to achieve the goal of meeting the objectives stated above, we need to create a corridor that speaks to each objective uniquely. The following design principles were applied to the concepts that are contained in the ACDCR:

- Recycle/Reuse
- Accessibility
- Local Materials
- Create Connections
- Respect the Setting
- Create Discovery Zones

The purpose of establishing an overall aesthetic approach for this project will set the vocabulary for all aesthetics located along side and within the corridor. These guidelines will serve as the design aesthetic principals that will establish the character development and approach to the project. The attached concepts, in Appendix F, provide a graphical representation of several ideas and concepts that speak to the objectives, goals, and design principals discussed above.

6.0 Alternative Evaluation Matrix

6.0 ALTERNATIVE EVALUATION MATRIX

Table 6.1: Alternative Evaluation Matrix

	NO BUILD ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B
Description	▪ This alternative maintains the current width and lane configuration.	▪ This alternative consists on widening Pima Road approximately 48' to the east by keeping the west curb as a control. ▪ The Minor Arterial, Suburban Character typical section from The City of Scottsdale was used. ▪ The Alignment follows the section line. It concurs with current design standards. ▪ This alignment matches the existing alignment throughout the corridor.	▪ This alternative consists on widening Pima Road approximately 40' to the east by keeping the west curb as a control. ▪ A modified Minor Arterial, Suburban Character typical section from the City of Scottsdale Minor was used. ▪ The Alignment follows the section line. It concurs with current design standards. ▪ This alignment matches the existing alignment throughout the corridor.
Advantages	▪ No new Right-of-Way is required.	▪ The existing buffering wall along the west side of Pima Road is slightly impacted, mainly at intersections. ▪ The storm drain, catch basins & curb and gutter along the western side of Pima Road can remain for the majority of the corridor. ▪ It meets agency general plan recommendations. ▪ Provides increased areas for landscaping. ▪ Provides desirable widths for lanes and bike lanes.	▪ The existing buffering wall along the west side of Pima Road is slightly impacted, mainly at intersections. ▪ The storm drain and catch basins along the western side of Pima Road can remain for the majority of the corridor. ▪ It meets agency general plan recommendations. ▪ No new Right-of-Way acquisition. ▪ Agency supported.
Disadvantages	▪ Does not meet project objectives for improved safety, aesthetics and traffic flow. ▪ Does not meet capacity requirements for on-going and future developments along the corridor.	▪ Requires the most Right-of-Way among all alternatives. ▪ Lane configuration extends beyond the existing ADOT 55' Easement by as much as 7'.	▪ Narrower median width which represents less area available for landscaping. ▪ Narrower lane and bike lane widths.
New Right-of-Way	▪ N/A	▪ 6 Acres	▪ None
Estimated Cost (Current Dollars)	▪ N/A	▪ $56,844,807	▪ $48,318,173
Assumptions	1) Drainage needs are similar among alternatives. 2) Cost of Right-of-Way is $8/square foot.		
Recommendation	**ALTERNATIVE B**		

7.0 Itemized Cost Estimate

7.0 ITEMIZED COST ESTIMATE

Project Name: Pima Road DCR
Termini: McDowell to 90th St
Date: October 2009

2009 SUMMARY COST ESTIMATES (Current Dollars)

COST CATEGORIES	*Factors*	*Alternative A*	*Alternative B*
Construction		$39,103,434	$34,512,981
Design (10% TO 15%)	10%	$3,910,343	$3,451,298
Construction Management	15%	$5,865,515	$5,176,947
Right-of-Way		$2,100,000	$0
Utility Relocation (Prior Rights Currently Unkown)	5%	$1,955,172	$1,725,649
Administration (8% TO 13%)	10%	$3,910,343	$3,451,298
Total		**$56,844,807**	**$48,318,173**

PRELIMINARY SUMMARY COST ESTIMATES (Adjusted for Inflation)

Assumed Annual Inflation Rate = 2.90%
Assumed Number of Years = 5

Adjusted Construction Cost		$45,111,967	$39,816,158
Design	10%	$4,511,197	$3,981,616
Construction Management	15%	$6,766,795	$5,972,424
Right-of-Way		$2,422,681	$0
Utility Relocation (Prior Rights Currently Unkown)	5%	$2,255,598	$1,990,808
Administration	10%	$4,511,197	$3,981,616
Adjusted Total		$65,579,435	$55,742,621

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2009 Pima Rd DCR Construction Cost Worksheet
Alternative A

Preferred Alternative				
Item Description	***Unit***	***Quantity***	***Unit Cost***	***Total***
Earthwork	CY	74,820	$7.00	$523,740
Removal of Existing Improvements	Lump Sum	1	$1,050,000.00	$1,050,000
Utility Adjustments	Allowance	1	$50,000.00	$50,000
Subgrade Preparation	SQ YD	172,340	$6.00	$1,034,042
Aggregate Base Course	C YD	95,272	$45.00	$4,287,245
Asphalt Concrete Pavement (Superpave, 19mm Mix, Heavy)	TON	73,053	$90.00	$6,574,788
Rubberized Asphalt Concrete	TON	7,975	$100.00	$797,500
Milling	SQ YD	77,733	$2.00	$155,466
Bituminous Tack Coat	TON	64	$575.00	$36,685
Median Pavers	SQ FT	36,380	$10.00	$363,804
Relocated Wall	L FT	5,191	$450.00	$2,335,950
Concrete Curb & Gutter , MAG Det 220, Type A, H=6"	L FT	59,591	$16.00	$953,456
Single Curb	L FT	72,887	$13.00	$947,531
Roll Curb	L FT	614	$15.00	$9,210
Concrete Sidewalk, MAG Det 230	SQ FT	16,500	$8.00	$132,000
Concrete Sidewalk Ramp, MAG 232, Type B	EA	57	$2,000.00	$114,000
Traffic Signing & Striping - 4 lanes	L FT	36,960	$5.00	$184,800
Traffic Signal, Full Intersection	EA	7	$300,000.00	$2,100,000
Interconnect/Traffic Signals	L FT	36,960	$8.00	$295,680
Irrigation Relocation	L FT	13,500	$130.00	$1,755,000
Drainage	Lump Sum	1	$1,470,280.00	$1,470,280
Bridges	Lump Sum	1	$676,709.00	$676,709
Lighting	Mile	7	$160,000.00	$1,120,000
	Subtotal Roadway & Structures			$26,967,886
Mobilization/Demobilization @ 5%	Lump Sum	1	$1,348,394.00	$1,348,394
Traffic Control @ 5%	Lump Sum	1	$1,348,394.00	$1,348,394
Contingency @ 25%	Lump Sum	1	$6,741,971.00	$6,741,971
Landscape/Irrigation with Intersection Hardscape @ 10%	Lump Sum	1	$2,696,789.00	$2,696,789
	Subtotal Construction			$39,103,434
Right-of-Way	Acre	6	$350,000	$2,100,000
	Subtotal Right-of-Way			$2,100,000

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2009 Pima Rd DCR Construction Cost Worksheet
Alternative B

Preferred Alternative				
Item Description	***Unit***	***Quantity***	***Unit Cost***	***Total***
Earthwork	C YD	62,350	$7.00	$436,450
Removal of Existing Improvements	Lump Sum	1	$915,000.00	$915,000
Utility Adjustments	Allowance	1	$0.00	$0
Subgrade Preparation	SQ YD	156,673	$6.00	$940,038
Aggregate Base Course	C YD	86,611	$45.00	$3,897,495
Asphalt Concrete Pavement (Superpave, 19mm Mix, Heavy)	TON	66,412	$90.00	$5,977,080
Rubberized Asphalt Concrete	TON	7,250	$100.00	$725,000
Milling	SY	77,733	$2.00	$155,466
Bituminous Tack Coat	TON	58	$575.00	$33,350
Median Pavers	SQ FT	27,286	$10.00	$272,860
Relocated Wall	L FT	1,635	$450.00	$735,750
Concrete Curb & Gutter , MAG Det 220, Type A, H=6"	L FT	48,546	$16.00	$776,736
Single Curb	L FT	67,194	$13.00	$873,522
Roll Curb	L FT	614	$15.00	$9,210
Concrete Sidewalk, MAG Det 230	SQ FT	81,342	$8.00	$650,736
Concrete Sidewalk Ramp, COS 2232	EA	26	$2,000.00	$52,000
Concrete Sidewalk Ramp, COS 2233-2	EA	3	$2,000.00	$6,000
Concrete Sidewalk Ramp, COS 2234	EA	5	$2,000.00	$10,000
Traffic Signing & Striping - 4 lanes	L FT	31,800	$5.00	$159,000
Traffic Signal, Full Intersection	EA	7	$300,000.00	$2,100,000
Interconnect/Traffic Signals	L FT	31,800	$8.00	$254,400
Irrigation Relocation	L FT	13,500	$130.00	$1,755,000
Drainage	Lump Sum	1	$1,470,280.00	$1,470,280
Bridges	Lump Sum	1	$620,682.00	$620,682
Lighting	Mile	6	$160,000.00	$976,000
	Subtotal Roadway & Structures			$23,802,055
Mobilization/Demobilization @ 5%	Lump Sum	1	$1,190,103.00	$1,190,103
Traffic Control @ 5%	Lump Sum	1	$1,190,103.00	$1,190,103
Contingency @ 25%	Lump Sum	1	$5,950,514.00	$5,950,514
Landscape/Irrigation with Intersection Hardscape @ 13%	Lump Sum	1	$2,380,206.00	$2,380,206
	Subtotal Construction			$34,512,981

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Project Name: Pima Road DCR
Termini: McDowell to 90th St
Date: October 2009

2009 SUMMARY COST ESTIMATES (Current Dollars)

COST CATEGORIES	***Factors***	***Package 1***	***Package 2***	***Package 3***	***Package 4***
Construction		$9,150,220	$10,123,782	$7,505,067	$7,733,899
Design (10% TO 15%)	10%	$915,022	$1,012,378	$750,507	$773,390
Construction Management	15%	$1,372,533	$1,518,567	$1,125,760	$1,160,085
Right-of-Way		$0	$0	$0	$0
Utility Relocation (Prior Rights Currently Unkown)	5%	$457,511	$506,189	$375,253	$386,695
Administration (8% TO 13%)	10%	$915,022	$1,012,378	$750,507	$773,390
Total		**$12,810,308**	**$14,173,295**	**$10,507,094**	**$10,827,459**

PRELIMINARY SUMMARY COST ESTIMATES (Adjusted for Inflation)

Assumed Annual Inflation Rate = 2.90%
Assumed Number of Years = 5

Adjusted Construction Cost		$10,556,219	$11,679,376	$8,658,276	$8,922,270
Design	10%	$1,055,622	$1,167,938	$865,828	$892,227
Construction Management	15%	$1,583,433	$1,751,906	$1,298,741	$1,338,341
Right-of-Way		$0	$0	$0	$0
Utility Relocation (Prior Rights Currently Unkown)	5%	$527,811	$583,969	$432,914	$446,114
Administration	10%	$1,055,622	$1,167,938	$865,828	$892,227
Adjusted Total		$14,778,707	$16,351,127	$12,121,587	$12,491,178

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2009 Pima Rd DCR Construction Cost Worksheet
Package 1 AltB

Preferred Alternative				
Item Description	***Unit***	***Quantity***	***Unit Cost***	***Total***
Earthwork	C YD	18,088	$7.00	$126,616
Removal of Existing Improvements	Lump Sum	1	$240,000.00	$240,000
Utility Adjustments	Allowance	1	$0.00	$0
Subgrade Preparation	SQ YD	41,618	$6.00	$249,708
Aggregate Base Course	C YD	24,038	$45.00	$1,081,710
Asphalt Concrete Pavement (Superpave, 19mm Mix, Heavy)	TON	17,189	$90.00	$1,547,010
Rubberized Asphalt Concrete	TON	1,881	$100.00	$188,100
Milling	SQ YD	20,289	$2.00	$40,578
Bituminous Tack Coat	TON	15	$575.00	$8,625
Median Pavers	SQ FT	5,625	$10.00	$56,250
Relocated Wall	L FT	0	$450.00	$0
Concrete Curb & Gutter , MAG Det 220, Type A, H=6"	L FT	13,047	$16.00	$208,752
Single Curb	L FT	15,549	$13.00	$202,137
Roll Curb	L FT	164	$15.00	$2,460
Concrete Sidewalk, MAG Det 230	SQ FT	45,027	$8.00	$360,216
Concrete Sidewalk Ramp, COS 2232	EA	8	$2,000.00	$16,000
Concrete Sidewalk Ramp, COS 2233-2	EA	3	$2,000.00	$6,000
Concrete Sidewalk Ramp, COS 2234	EA	4	$2,000.00	$8,000
Traffic Signing & Striping - 4 lanes	L FT	8,300	$5.00	$41,500
Traffic Signal, Full Intersection	EA	2	$300,000.00	$600,000
Interconnect/Traffic Signals	L FT	8,300	$8.00	$66,400
Irrigation Relocation	L FT	0	$130.00	$0
Drainage	Lump Sum	1	$383,752.00	$383,752
Bridges	Lump Sum	1	$620,682.00	$620,682
Lighting	Mile	1.6	$160,000.00	$256,000
	Subtotal Roadway & Structures			$6,310,496
Mobilization/Demobilization @ 5%	Lump Sum	1	$315,525.00	$315,525
Traffic Control @ 5%	Lump Sum	1	$315,525.00	$315,525
Contingency @ 25%	Lump Sum	1	$1,577,624.00	$1,577,624
Landscape/Irrigation with Intersection Hardscape @ 13%	Lump Sum	1	$631,050.00	$631,050
	Subtotal Construction			$9,150,220

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2009 Pima Rd DCR Construction Cost Worksheet
Package 2 AltB

Preferred Alternative				
Item Description	***Unit***	***Quantity***	***Unit Cost***	***Total***
Earthwork	C YD	21,131	$7.00	$147,917
Removal of Existing Improvements	Lump Sum	1	$300,000.00	$300,000
Utility Adjustments	Allowance	1	$0.00	$0
Subgrade Preparation	SQ YD	43,941	$6.00	$263,646
Aggregate Base Course	C YD	25,146	$45.00	$1,131,570
Asphalt Concrete Pavement (Superpave, 19mm Mix, Heavy)	TON	19,772	$90.00	$1,779,480
Rubberized Asphalt Concrete	TON	2,217	$100.00	$221,700
Milling	SQ YD	25,789	$2.00	$51,578
Bituminous Tack Coat	TON	17	$575.00	$9,775
Median Pavers	SQ FT	6,227	$10.00	$62,270
Relocated Wall	L FT	822	$450.00	$369,900
Concrete Curb & Gutter , MAG Det 220, Type A, H=6"	L FT	14,622	$16.00	$233,952
Single Curb	L FT	18,169	$13.00	$236,197
Roll Curb	L FT	50	$15.00	$750
Concrete Sidewalk, MAG Det 230	SQ FT	10,719	$8.00	$85,752
Concrete Sidewalk Ramp, COS 2232	EA	8	$2,000.00	$16,000
Concrete Sidewalk Ramp, COS 2233-2	EA	0	$2,000.00	$0
Concrete Sidewalk Ramp, COS 2234	EA	0	$2,000.00	$0
Traffic Signing & Striping - 4 lanes	L FT	10,550	$5.00	$52,750
Traffic Signal, Full Intersection	EA	2	$300,000.00	$600,000
Interconnect/Traffic Signals	L FT	10,550	$8.00	$84,400
Irrigation Relocation	L FT	4,050	$130.00	$526,500
Drainage	Lump Sum	1	$487,781.00	$487,781
Bridges	Lump Sum	0	$0.00	$0
Lighting	Mile	2.0	$160,000.00	$320,000
	Subtotal Roadway & Structures			$6,981,918
Mobilization/Demobilization @ 5%	Lump Sum	1	$349,096.00	$349,096
Traffic Control @ 5%	Lump Sum	1	$349,096.00	$349,096
Contingency @ 25%	Lump Sum	1	$1,745,480.00	$1,745,480
Landscape/Irrigation with Intersection Hardscape @ 13%	Lump Sum	1	$698,192.00	$698,192
	Subtotal Construction			$10,123,782

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2009 Pima Rd DCR Construction Cost Worksheet
Package 3 AltB

Preferred Alternative				
Item Description	***Unit***	***Quantity***	***Unit Cost***	***Total***
Earthwork	C YD	10,602	$7.00	$74,214
Removal of Existing Improvements	Lump Sum	1	$180,000.00	$180,000
Utility Adjustments	Allowance	1	$0.00	$0
Subgrade Preparation	SQ YD	29,445	$6.00	$176,670
Aggregate Base Course	C YD	16,595	$45.00	$746,775
Asphalt Concrete Pavement (Superpave, 19mm Mix, Heavy)	TON	13,172	$90.00	$1,185,480
Rubberized Asphalt Concrete	TON	1,439	$100.00	$143,900
Milling	SQ YD	15,400	$2.00	$30,800
Bituminous Tack Coat	TON	12	$575.00	$6,900
Median Pavers	SQ FT	14,017	$10.00	$140,170
Relocated Wall	L FT	629	$450.00	$283,050
Concrete Curb & Gutter , MAG Det 220, Type A, H=6"	L FT	11,071	$16.00	$177,136
Single Curb	L FT	16,627	$13.00	$216,151
Roll Curb	L FT	150	$15.00	$2,250
Concrete Sidewalk Ramp, COS 2232	EA	6	$2,000.00	$12,000
Concrete Sidewalk Ramp, COS 2233-2	EA	0	$2,000.00	$0
Concrete Sidewalk Ramp, COS 2234	EA	1	$2,000.00	$2,000
Concrete Sidewalk, MAG Det 230	SQ FT	23,904	$8.00	$191,232
Traffic Signing & Striping - 4 lanes	L FT	6,300	$5.00	$31,500
Traffic Signal, Full Intersection	EA	2	$300,000.00	$600,000
Interconnect/Traffic Signals	L FT	6,300	$8.00	$50,400
Irrigation Relocation	L FT	3,400	$130.00	$442,000
Drainage	Lump Sum	1	$291,281.00	$291,281
Bridges	Lump Sum	0	$0.00	$0
Lighting	Mile	1.2	$160,000.00	$192,000
	Subtotal Roadway & Structures			$5,175,909
Mobilization/Demobilization @ 5%	Lump Sum	1	$258,795.00	$258,795
Traffic Control @ 5%	Lump Sum	1	$258,795.00	$258,795
Contingency @ 25%	Lump Sum	1	$1,293,977.00	$1,293,977
Landscape/Irrigation with Intersection Hardscape @ 13%	Lump Sum	1	$517,591.00	$517,591
	Subtotal Construction			$7,505,067

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2009 Pima Rd DCR Construction Cost Worksheet
Package 4 AltB

Preferred Alternative				
Item Description	***Unit***	***Quantity***	***Unit Cost***	***Total***
Earthwork	C YD	12,529	$7.00	$87,703
Removal of Existing Improvements	Lump Sum	1	$195,000.00	$195,000
Utility Adjustments	Allowance	1	$0.00	$0
Subgrade Preparation	SQ YD	41,669	$6.00	$250,014
Aggregate Base Course	C YD	20,832	$45.00	$937,440
Asphalt Concrete Pavement (Superpave, 19mm Mix, Heavy)	TON	16,279	$90.00	$1,465,110
Rubberized Asphalt Concrete	TON	1,713	$100.00	$171,300
Milling	SQ YD	16,256	$2.00	$32,512
Bituminous Tack Coat	TON	14	$575.00	$8,050
Median Pavers	SQ FT	1,417	$10.00	$14,170
Relocated Wall	L FT	184	$450.00	$82,800
Concrete Curb & Gutter , MAG Det 220, Type A, H=6"	L FT	9,806	$16.00	$156,896
Single Curb	L FT	16,849	$13.00	$219,037
Roll Curb	L FT	250	$15.00	$3,750
Concrete Sidewalk, MAG Det 230	SQ FT	1,691	$8.00	$13,528
Concrete Sidewalk Ramp, COS 2232	EA	4	$2,000.00	$8,000
Concrete Sidewalk Ramp, COS 2233-2	EA	0	$2,000.00	$0
Concrete Sidewalk Ramp, COS 2234	EA	0	$2,000.00	$0
Traffic Signing & Striping - 4 lanes	L FT	6,650	$5.00	$33,250
Traffic Signal, Full Intersection	EA	1	$300,000.00	$300,000
Interconnect/Traffic Signals	L FT	6,650	$8.00	$53,200
Irrigation Relocation	L FT	6,050	$130.00	$786,500
Drainage	Lump Sum	1	$307,464.00	$307,464
Bridges	Lump Sum	0	$0.00	$0
Lighting	Mile	1.3	$160,000.00	$208,000
	Subtotal Roadway & Structures			$5,333,724
Mobilization/Demobilization @ 5%	Lump Sum	1	$266,686.00	$266,686
Traffic Control @ 5%	Lump Sum	1	$266,686.00	$266,686
Contingency @ 25%	Lump Sum	1	$1,333,431.00	$1,333,431
Landscape/Irrigation with Intersection Hardscape @ 13%	Lump Sum	1	$533,372.00	$533,372
	Subtotal Construction			$7,733,899

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8.0 Preferred Alternative

8.0 PREFERRED ALTERNATIVE

8.1 Recap of Study Process:

The completion of the study process requires the identification of a preferred alternative, which will then be used to develop final design plans and the construction of the Pima Road improvements. Throughout the study process, a number to alternatives have been identified, studied, and eliminated or studied in greater detail. In addition to the engineering analysis, both public and agency input has been solicited and incorporated into the project's development. The preferred alternative will achieve the project objectives, be cost effective, timely and incorporate public and agency inputs. As discussed in Section 1.4, the following project objectives were identified for the project:

- Provide a safe facility
- Increase traffic capacity
- Improve north-south circulation
- Improve east-west circulation
- Reduce cross through traffic (proceeding east of the Pima Freeway, through SRP-MIC)
- Improve business access
- Accommodate multi-modal access (bus, bikes, etc)
- Enhance corridor character
- Safeguard adjacent neighborhoods and community resources

After the identification of the project objectives, a number of typical section alternatives were identified. The typical section alternatives varied the number of lanes, median treatment, lane widths and offset from the section line. As discussed in Section 4.0, a number of the typical section alternatives were evaluated and eliminated, with Alternatives A & B, as well as the No Build alternative remaining for further study.

With the identification of Alternatives A & B as the alternatives to be studied further, the major design features associated with both of the alternatives were identified and discussed in Section 5.0. The discussion of the major design features provides the final designers with a basis for the project assumptions, design guidelines and a compilation of information discovered through the study process. In addition to providing information to the final designers, the discussion of the major design features included in this report will provide the planned and future developers along the Pima Road corridor a reasonable set of guidelines to aid in developing a uniform lane configuration and appearance along the corridor.

After developing Alternatives A & B to a level at which the advantages, disadvantages and costs could be identified and summarized, an evaluation matrix was developed as shown in Section 6.0. The advantages and disadvantages of the two alternatives were fairly similar, except for the need for new Right-of-Way associated with Alternative A and the lack thereof for Alternative B. The challenges associated with the Right-of-Way acquisition process along the corridor far out weighs the benefit of additional lane and median widths, especially when the proposed lane and median widths associated with Alternative B are acceptable to both COS and SRP-MIC.

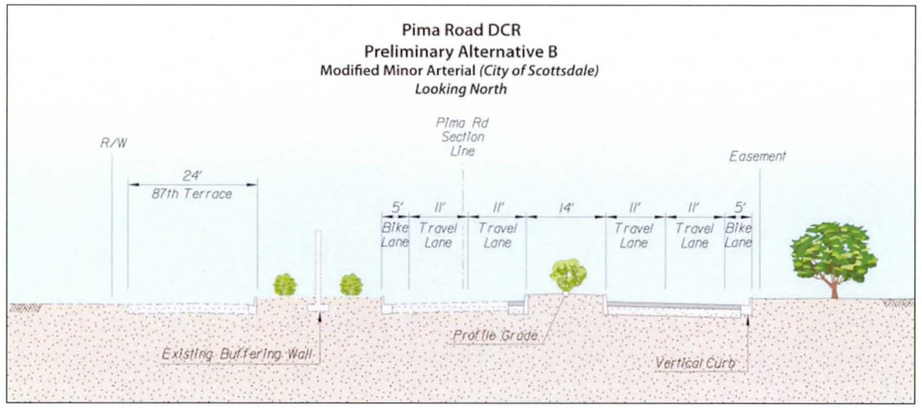
Based on the advantages and disadvantages associated with Alternatives A & B, as well as factoring in the estimated costs for the project, Alternative B has been identified as the preferred alternative for the Pima Road corridor.

8.2 Preferred Alternative:

Alternative B has been identified as the preferred alternative for the Pima Road corridor improvements. The following description, as well as, the major design features as discussed in Section 5.0 and the 30% plans shown in Appendix G should be used in the development of final design plans for improvements along the Pima Road Corridor.

The preferred alternative, Alternative B, consists of widening the existing roadway to a width that accommodates 2-11' through lanes in each direction with 2-4.5' on-street bike lanes and a 14' raised median, as shown in Figure 8.1. This alternative maintains the location of the west curb line and widens to the east and remains within the existing ADOT 55' easement.

Figure 8.1: Preferred Alternative



9.0 Project Implementation Plan

9.0 PROJECT IMPLEMENTATION PLAN

9.1 Purpose:

This implementation plan will provide a strategy for the execution of the improvements associated with the applying the preferred recommendations as provided in this Design Concept Report. The limits of the Pima Road improvements extend from McDowell Road north to Via Linda, the preferred recommendations also include improvements to the major cross roads as a function of the intersection projects. The implementation plan will identify the scope of work, approximate size of construction projects and the order in which they should be designed and constructed, as well as provide a preliminary schedule for the project completion.

9.2 Assumed Implementation Priorities:

Along the approximately 7 ¾ mile long project, there are basically two types of projects needed to implement the study recommendations; they consist of intersection improvements and arterial widenings. Depending on budget constraints and/or development along the segments, several combinations of construction projects can be identified. For example, two or three intersection improvement projects could be packaged together with the arterial improvements being completed at a later date, possibly by future development. Likewise a combination of one mile segments including an arterial widening and an intersection improvement could be developed.

The priorities identified below will serve as a basis for the development of the project packages:

- Preserve and secure Right-of-Way along the corridor
- Maximize traffic flow improvements
- Implement access management policies
- Size of construction packages (assume $15 - $20M)
- Schedule/duration of construction work
- Coordination with Granite Reef Wash Drainage Improvement projects
- COS and SRP-MIC highest priority segment is from Indian Bend Road, north to 90th Street (construction completed by February 2011)
- Coordination with outside development along the corridor
- Construct the complete intersection as a single construction project, including all legs of the intersection
- At no one time will two consecutive intersections be under construction at the same time

9.3 General Implementation Recommendations:

As shown in Figure 9.1, the implementation of the preferred alternative can be divided into a series of intersection and arterial improvement projects. The improvement projects can then be combined into the construction packages shown and discussed in Table 9.1.

There are several tasks that will require special consideration through the study and design processes to insure that the projects are developed successfully. During a preliminary review of the packages, the following tasks were identified:

- Obtain Right-of-Way Clearance: Confirm that acquisition of right-of-way is not required, if identified, then adjust the design to avoid acquisition
- Obtain Environmental Clearance: Complete Environmental Document and gain approval from FHWA
- Obtain Utility Clearance: Coordinate proposed improvements with identified utility companies
- Complete Final Design Documents: Using City of Scottsdale guidelines and procurement processes
- Complete signal warrant studies for additional signal locations along the corridor
- Gain approval from Salt River Project for construction of Arizona Canal bridge widening (See SRP Bridge Design Guidelines)
- Coordinate on-site drainage design with Granite Reef Wash storm drain project

Figure 9.1: Project Implementation Plan

Table 9.1: Project Implementation Plan

Package	Work Components	Component Benefits	Component Cons	Estimated Cost	Package Pros	Package Cons
Package 1A & 1B: **Package 1A extends from Indian Bend intersection to the north project limits – completion by February 2011** **Package 1B completes the remaining work from Indian Bend intersection to Arizona Canal bridge**				**Package 1A** **$9.0M** **Package 1B** **$3.8M** **Total $12.8M**	• **Completes most work that benefits the north developments (which are currently more existing than planned)** • **Stays away from Granite Reef Wash improvements** • **Covers limits of drainage outfall for segments north of Arizona Canal** • **Sufficient R/W exists currently** • **Developers can complete much of the construction – saving budget dollars**	• **Significant developer coordination will be required**
Package 1A	Intersection improvement – Via de Ventura	• Adds intersection capacity by adding dual left turn lanes to east/west legs • Adds width for bike lanes to crossroad and Pima south leg • Sufficient right-of-way exists • New traffic signal • ADA accessible s/w ramps		$2.3M		
Package 1A	Intersection improvement – Indian Bend Road	• Adjusts vertical profile through the intersection • ADA accessible s/w ramps	• Coordination with developer improvements	$2.9M		
Package 1A	Roadway Improvement – Landscaping Via de Ventura, north to Via Linda	• Roadway improvements have already been completed • Access control is set for Pima Commons • Will need to coordinate access points for Windstone – possibly with ADOT access control limits • Matches Pima Corridor Character		$1.5M		
Package 1A	Roadway Improvement – Indian Bend Road to Via de Ventura	• Sufficient right-of-way exists • Installs a tradition signal and intersection at Inner Circle • Median construction improves safety by limiting access points	• Coordination with developer improvements	$2.3M		
Package 1B	Roadway Improvement – Indian Bend Road to South of Arizona Canal	• Widens bridge while Pima Road is 1 lane in each direction, so not the constriction point • Sufficient right-of-way exists • Median construction improves safety by limiting access points	• Coordination with developer improvements	$3.8M		

Package	Work Components	Component Benefits	Component Cons	Estimated Cost	Package Pros	Package Cons
Package 2: Package 2 extends from Arizona Canal to Chaparral Road				**Total $14.1M**	• **Stops before r/w gets tight** • **Stops before conflicting with GRW work** • **Completes most work that benefits the currently planned developments**	• **Developer coordination will be required**
	Intersection improvement – McDonald Road	• Adds intersection capacity by adding dual left turn lanes to east/west legs • Adds wb right turn lane • Adds width for bike lanes to crossroad • Sufficient right-of-way exists • New traffic signal • ADA accessible s/w ramps	• Coordination with developer improvements	$3.7M		
	Intersection improvement – Chaparral Road	• New traffic signal • ADA accessible s/w ramps	• Beginning of GRW improvement limits • Need new r/w (se corner for nb right turn bay) • No width for bike lanes on crossroads • Coordination with developer improvements	$3.7M		
	Roadway Improvement – Arizona Canal to McDonald Road	• Sufficient right-of-way exists • No development planned currently • Median construction improves safety by limiting access points		$2.9M		
	Roadway Improvement – McDonald Road to Chaparral Road	• Sufficient right-of-way exists • Median construction improves safety by limiting access points		$3.8M		

Package	Work Components	Component Benefits	Component Cons	Estimated Cost	Package Pros	Package Cons
Package 3: Extends from McDowell Road to Thomas Road, including the GRW drainage work				**Roadway $10.5M Drainage $10.4M Total $20.9M**	**• Stops before r/w gets tight • Accommodates GRW phasing (south to north) • Minimal traffic volumes and no current development – possible total closure for construction • Completes last intersection improvement**	**• Largest construction project**
	Intersection improvement – Thomas Road	• Adds intersection capacity by adding dual left turn lanes to east/west legs • Adds sb thru lane • Adds wb right turn lane • Adds width for bike lanes to crossroad • New traffic signal • ADA accessible s/w ramps • Can incorporate drainage interception for GRW project		$3.5M		
	Intersection improvement – McDowell Road	• New traffic signal • ADA accessible s/w ramps • Sufficient right-of-way exists • Adds width for bike lanes to crossroad • Median construction on crossroad		$3.4M		
	Roadway Improvement – McDowell Road to Thomas Road	• Coordinates with GRW construction • Sufficient right-of-way exists • No development planned currently • Entire segment could be closed for construction • Additional thru lanes		$3.6M		
	Drainage Improvement – McDowell to Thomas Road	• Helps GRW project by providing an outlet for Thomas Road intersection		$10.4M		

Package	Work Components	Component Benefits	Component Cons	Estimated Cost	Package Pros	Package Cons
Package 4: Completes the arterial improvements from Thomas Road to Chaparral, including the Indian School Road intersection, plus the GRW drainage work				**Roadway $10.8M Drainage $11.7M Total $22.5M**	• **Accommodates GRW phasing (south to north)** • **Completes last roadway improvement**	•
	Roadway improvement – Thomas Road to Indian School Road	• Can be coordinated with GRW construction • Possible full closure during construction • Additional thru lanes	• Tighter r/w	$4.0M		
	Roadway improvement – Indian School Road to Chaparral Road	• Can be coordinated with GRW construction • Additional thru lanes	• Tighter r/w • Some development considerations	$4.0M		
	Intersection improvement – Indian School Road	• Adds additional thru lanes on Pima • Ties into recent COS improvements • Adds width for bike lanes to crossroad • Sufficient right-of-way exists • New traffic signal • ADA accessible s/w ramps		$2.8M		
	Drainage Improvement – Thomas Road to Chaparral Road	• Can be coordinated with roadway improvements to not require pavement reconstruction		$11.7M		

Table 9.2: Project Schedule

		FY 2009		FY 2010				FY 2011				FY 2012				FY 2013				FY 2014	
Work	**Total Package Cost**	**Jan 09-Mar 09**	**Apr 09-Jun 09**	**Jul 09-Sep 09**	**Oct 09-Dec 09**	**Jan 10-Mar 10**	**Apr 10-Jun 10**	**Jul 10-Sep 10**	**Oct 10-Dec 10**	**Jan 11-Mar 11**	**Apr 11-Jun 11**	**Jul 11-Sep 11**	**Oct 11-Dec 11**	**Jan 12-Mar 12**	**Apr 12-Jun 12**	**Jul 12-Sep 12**	**Oct 12-Dec 12**	**Jan 13-Mar 13**	**Apr 13-Jun 13**	**Jul 13-Sep 13**	**Oct 13-Dec 13**
DCR Completion																					
Final Design Package 1A	$9.0M					* Design – $0.8M															
Construction Package 1A								Construction - $8.2M													
Final Design Package 1B	$3.9M							* Design – $0.5M													
Construction Package 1B									Construction - $3.4M												
Final Design Package 2	$14.1M								* Design - $ 1.1M												
Construction Package 2												Construction - $13.0M									
Final Design Package 3	Roadway $10.5M Drainage $10.4M Total $20.9M											* Design – Rdwy $ 0.8M Drng $ 0.8M									
Construction Package 3															Construction – Rdwy $9.7M Drng $9.6M						
Final Design Package 4	Roadway $10.8M Drainage $11.7M Total $22.5M														* Design – Rdwy $ 0.9M Drng $ 0.9M						
Construction Package 4																		Construction – Rdwy $9.9M Drng $10.8M			
				FY 2010 Cost - $2.6M				FY 2011 Cost - $11.4M				FY 2012 Cost - $20.0M (Rdwy - $16.5M; Drng - $3.5M)				FY 2013 Cost - $26.0M (Rdwy - $12.8M; Drng - $13.2M)				FY 2013 Cost - $10.4M (Rdwy - $5.0M; Drng - $5.4M)	

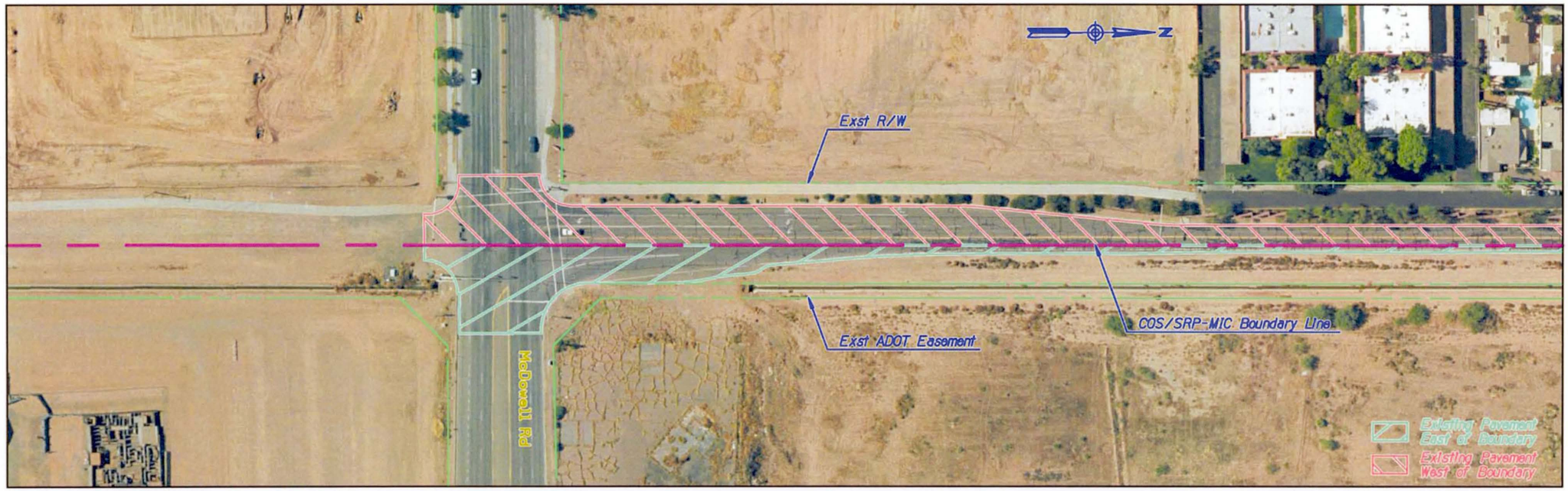
* Design – Assumed to be 8% of Construction Costs

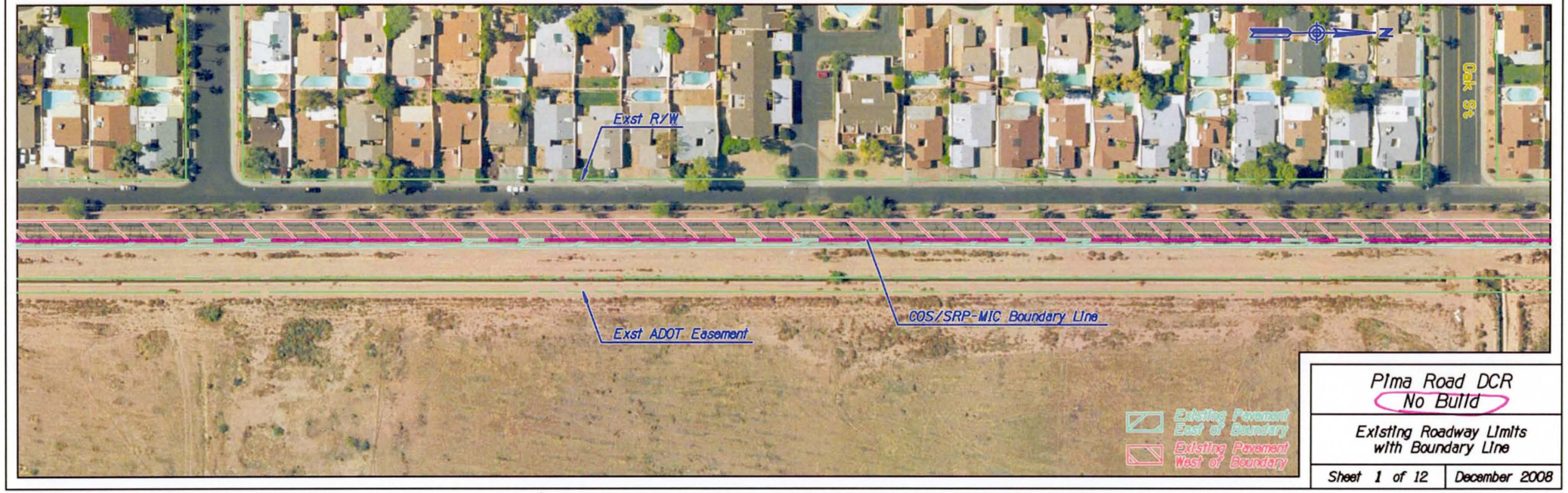
10.0 Appendices

10.0 APPENDICES

Appendix A: Alternative Plan Sheets

Existing Corridor Pavement Relative to Boundary Line Exhibits..... Sheets A-1 thru A-13
Alternative A – Plan Sheets..... Sheets A-14 thru A-32
Alternative B – Plan Sheets..... Sheets A-33 thru A-51

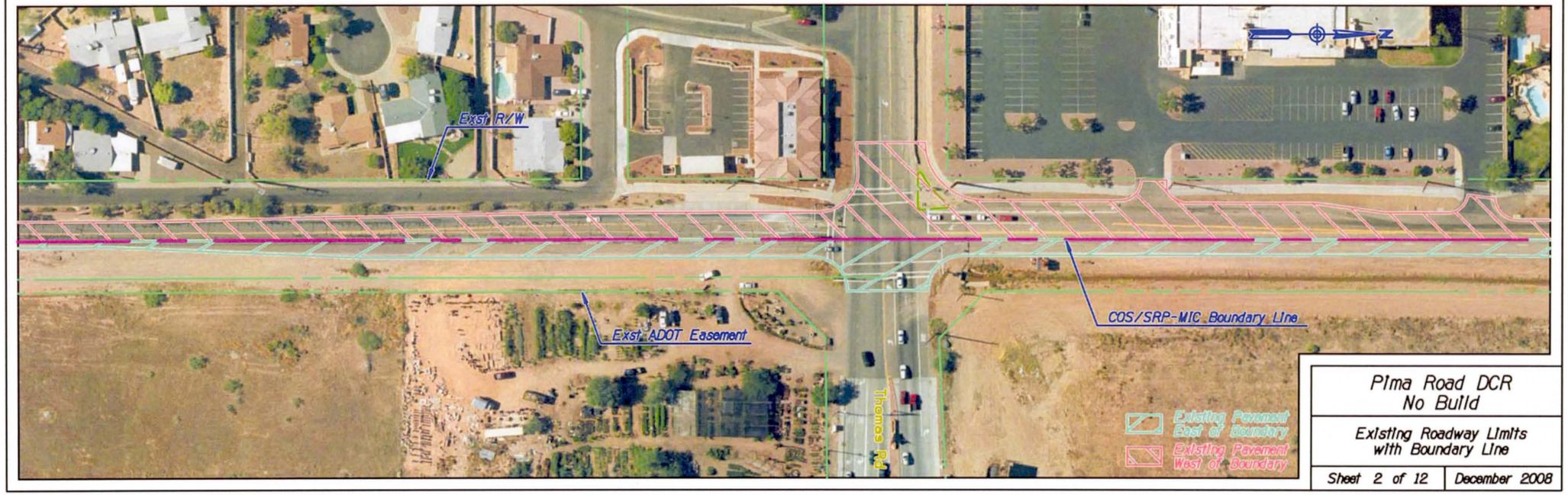




Pima Road DCR
No Build

Existing Roadway Limits with Boundary Line

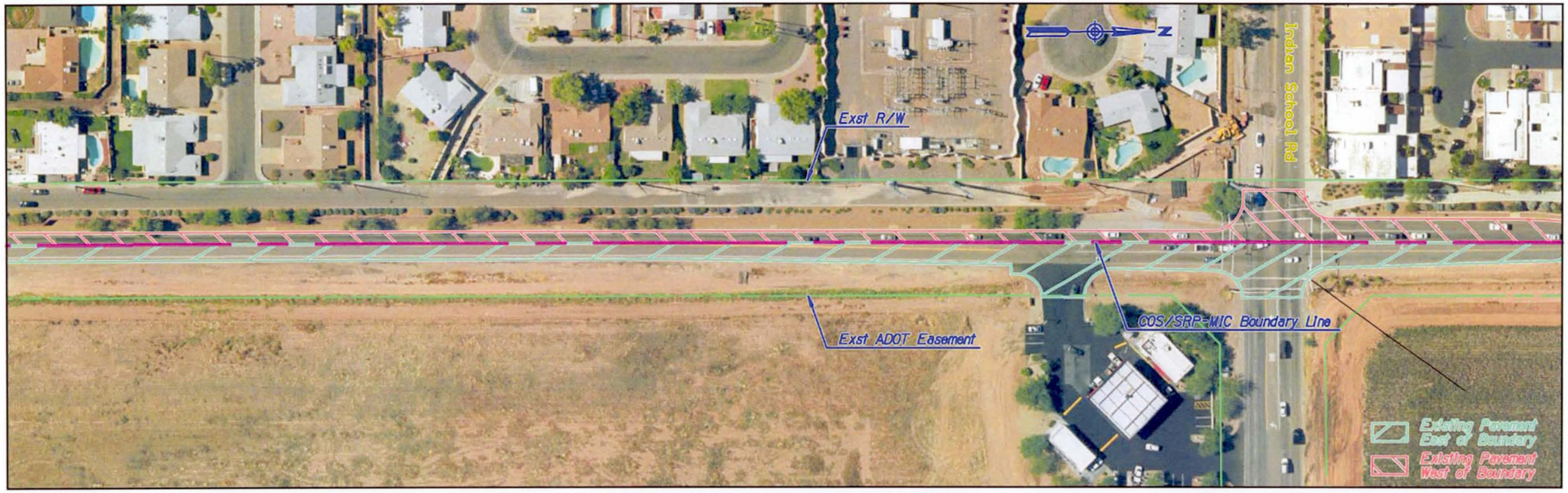
Sheet 1 of 12 | December 2008



Pima Road DCR
No Build

Existing Roadway Limits with Boundary Line

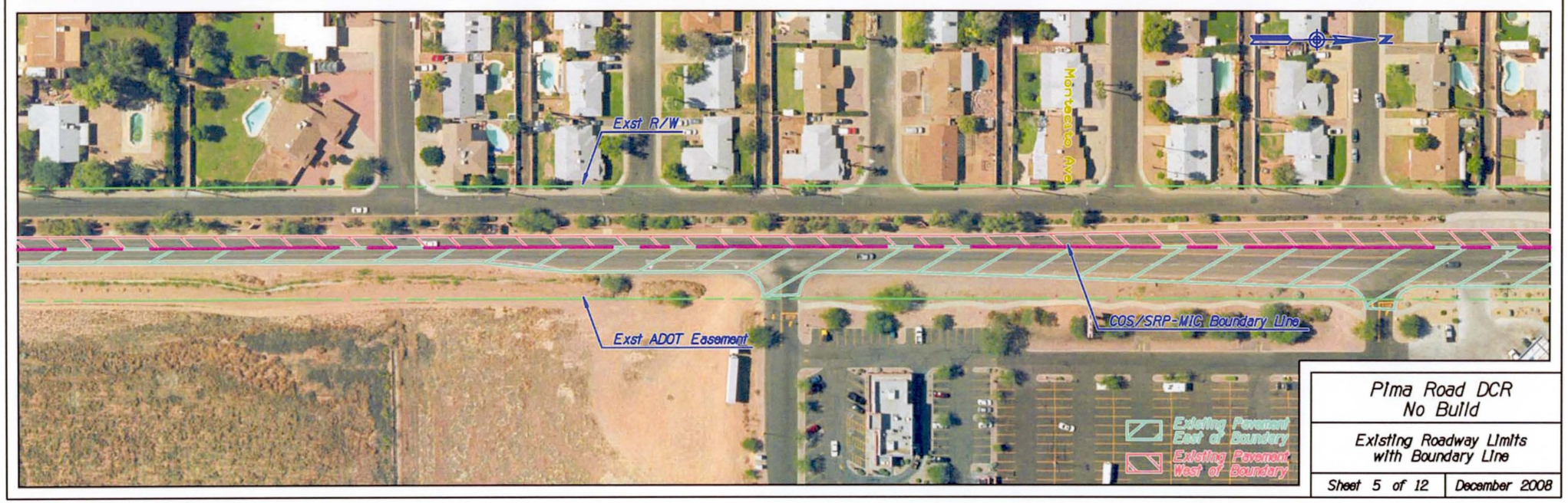
Sheet 2 of 12 | December 2008



Pima Road DCR
No Build

Existing Roadway Limits with Boundary Line

Sheet 4 of 12 | December 2008



Pima Road DCR
No Build

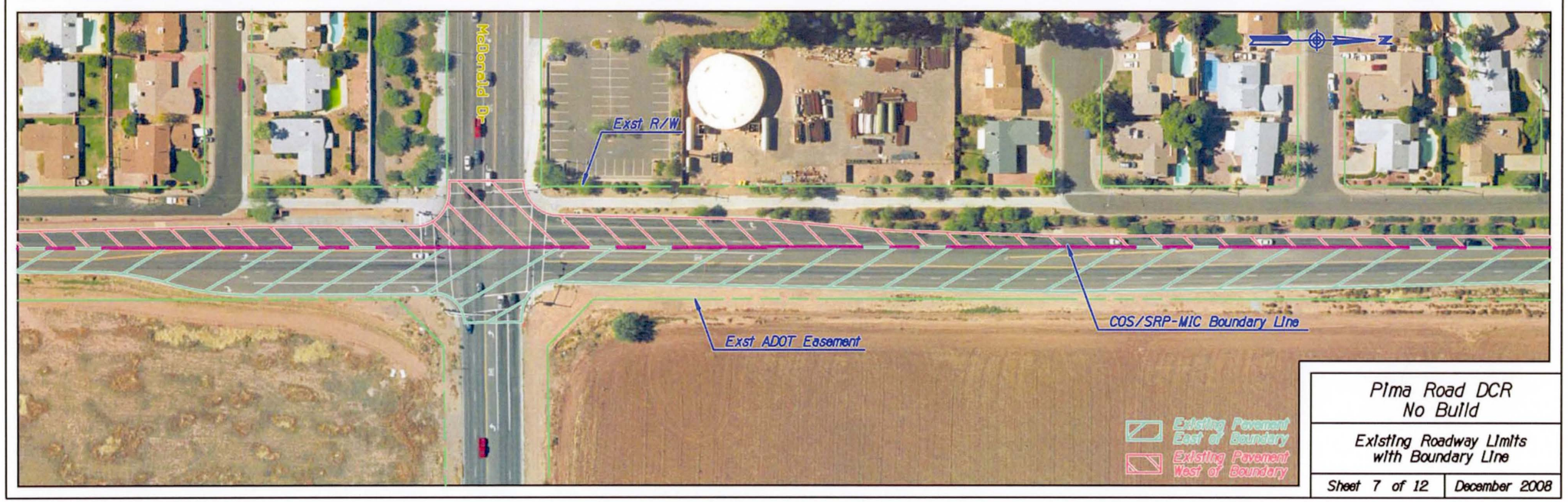
Existing Roadway Limits
with Boundary Line

Sheet 5 of 12 | December 2008

Pima Road DCR
No Build

Existing Roadway Limits with Boundary Line

Sheet 6 of 12 | December 2008



Pima Road DCR
No Build

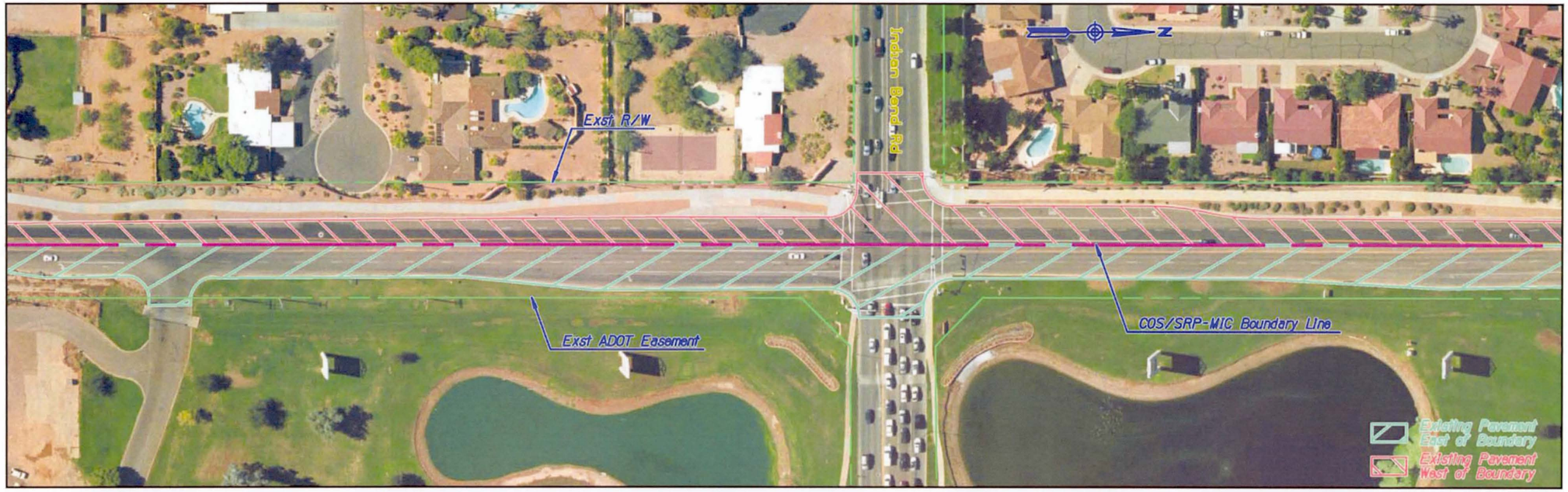
Existing Roadway Limits
with Boundary Line

Sheet 7 of 12 | December 2008

Pima Road DCR
No Build

Existing Roadway Limits with Boundary Line

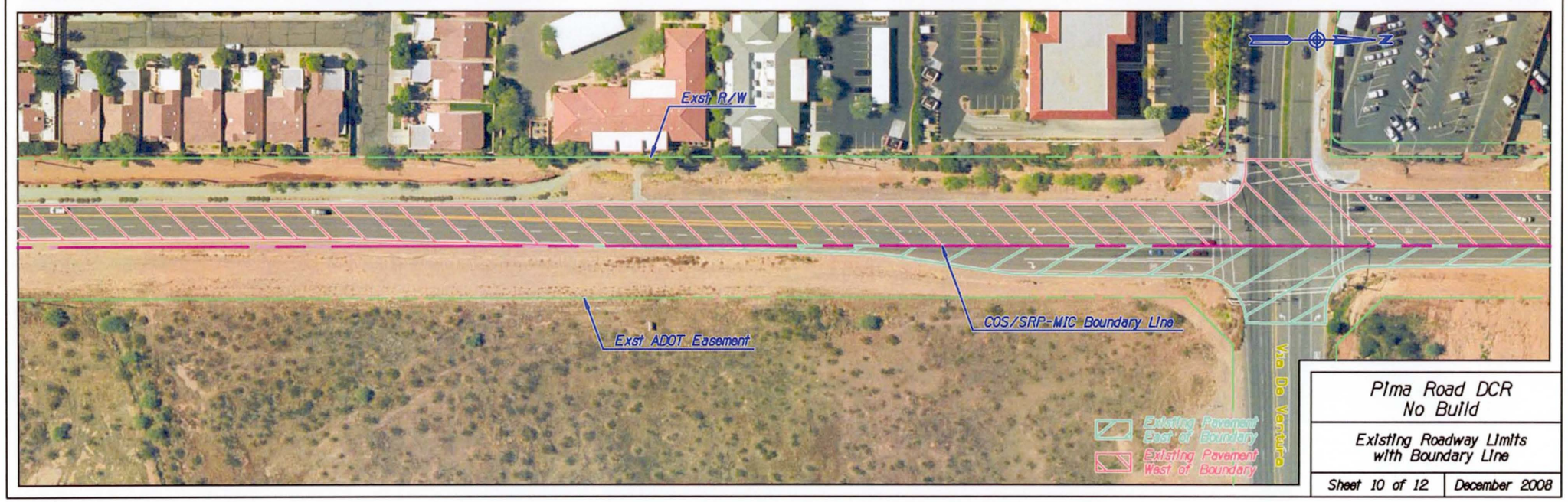
Sheet 8 of 12 | December 2008



Pima Road DCR
No Build

Existing Roadway Limits with Boundary Line

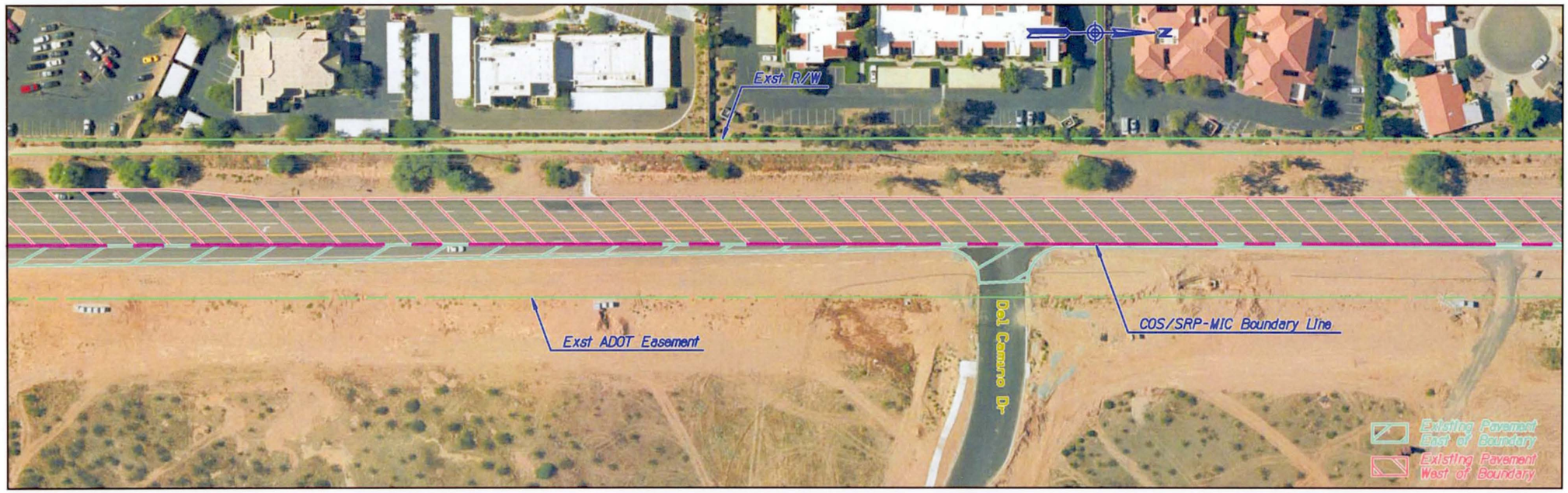
Sheet 9 of 12 | December 2008

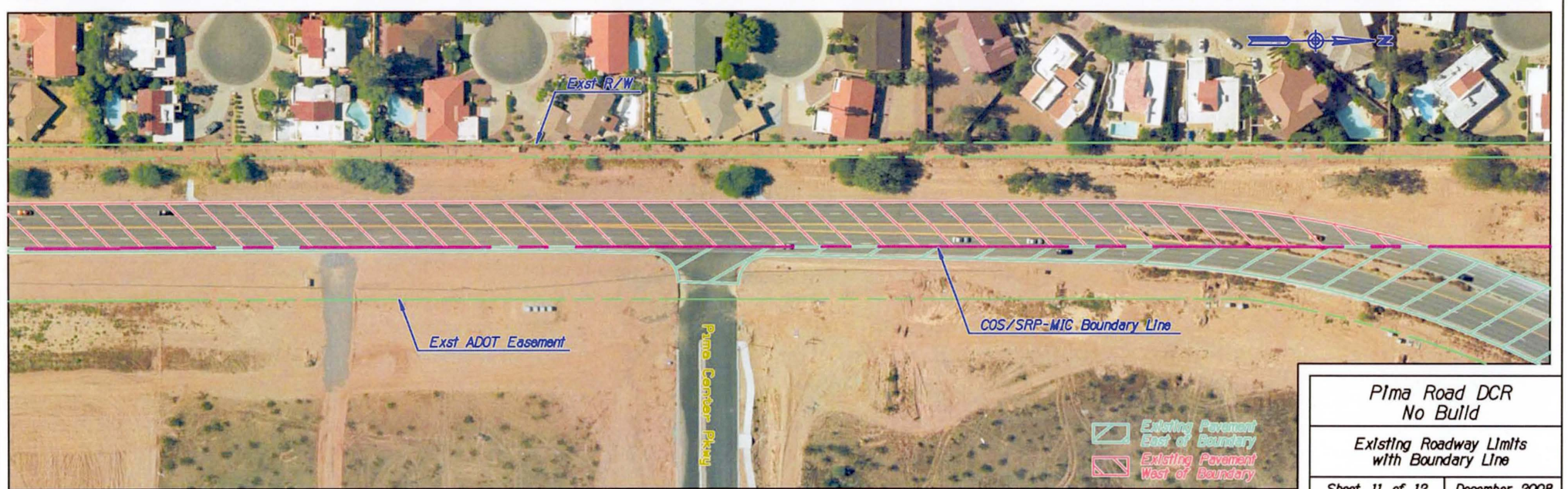


Pima Road DCR
No Build

Existing Roadway Limits with Boundary Line

Sheet 10 of 12 | December 2008





Pima Road DCR
No Build

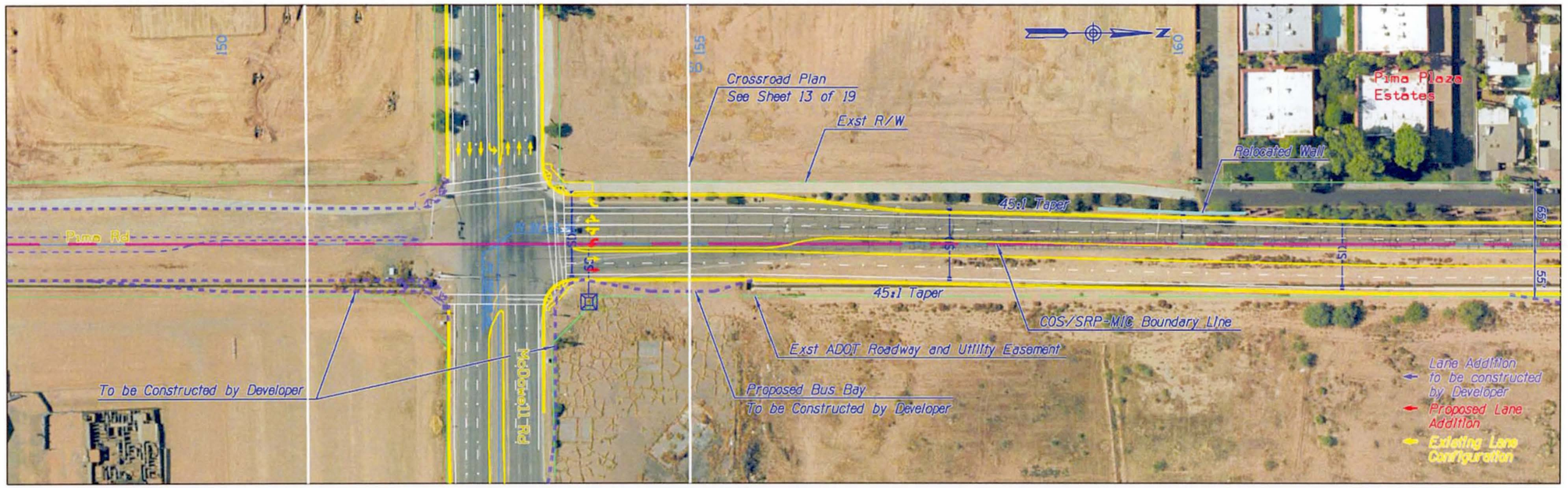
Existing Roadway Limits with Boundary Line

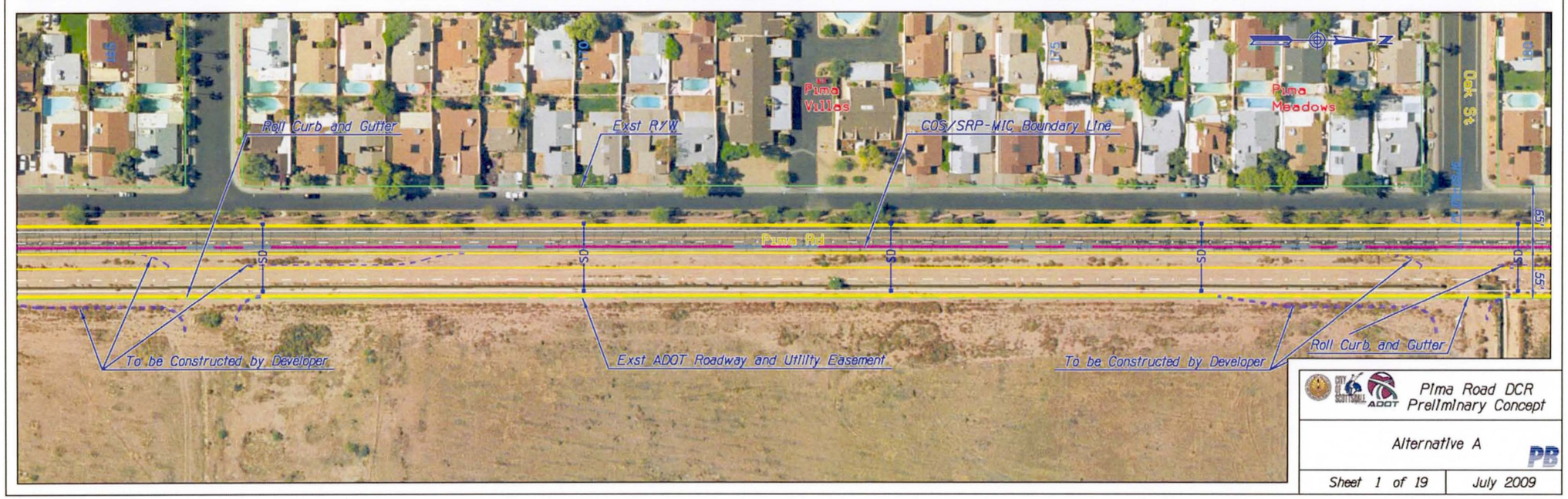
Sheet 11 of 12 | December 2008

Pima Road DCR
No Build

Existing Roadway Limits with Boundary Line

Sheet 12 of 12 | December 2008

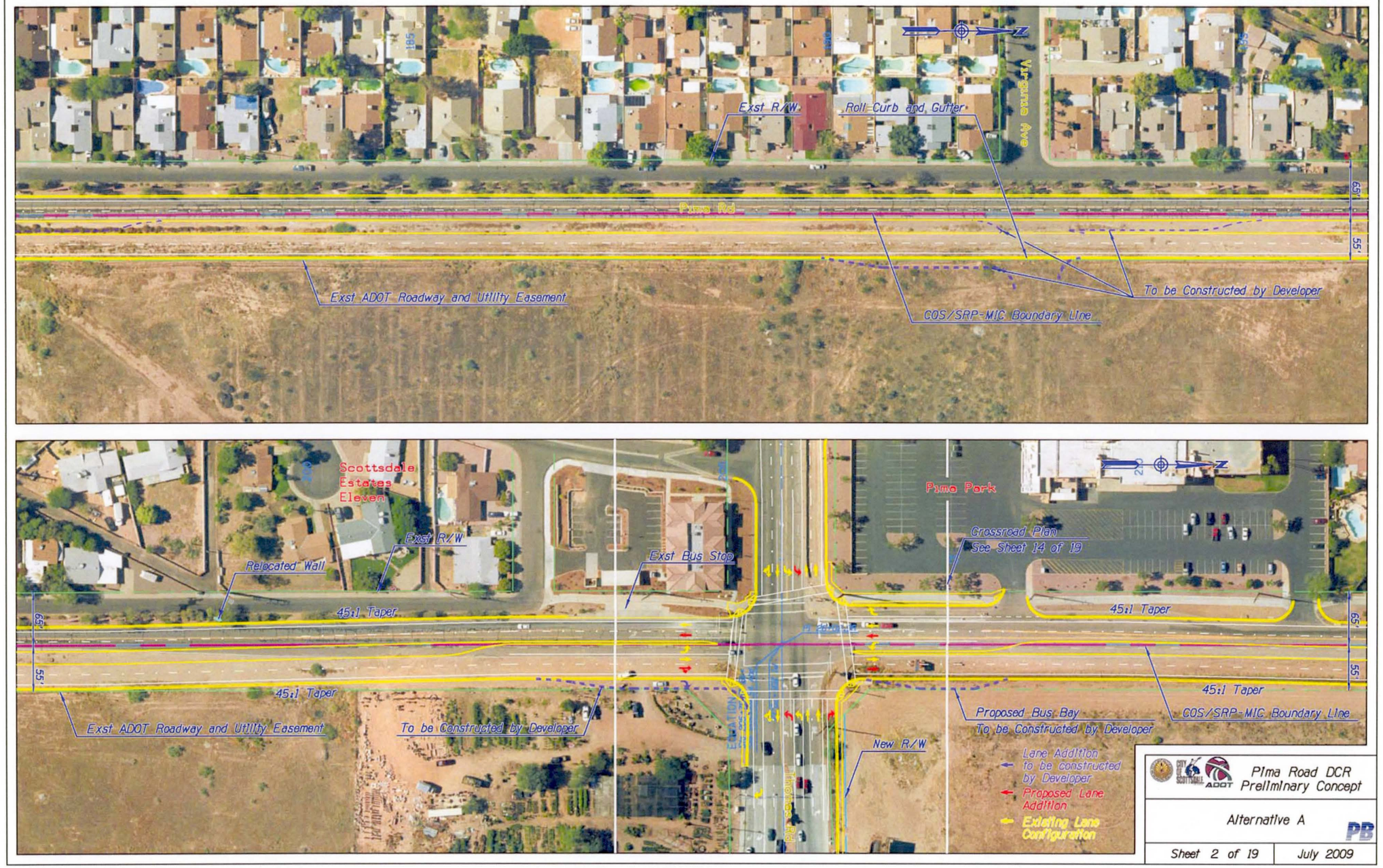




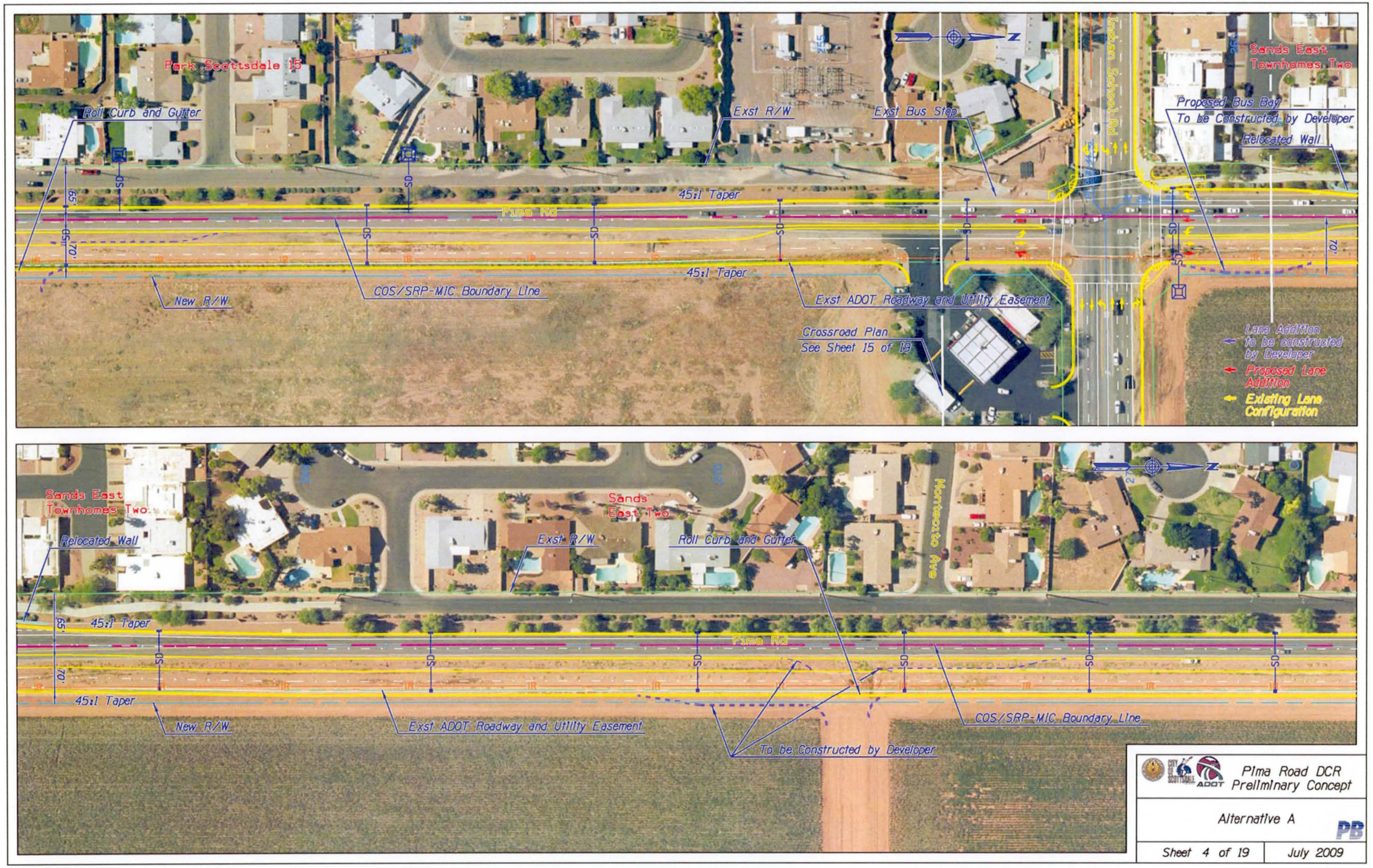
Pima Road DCR
Preliminary Concept

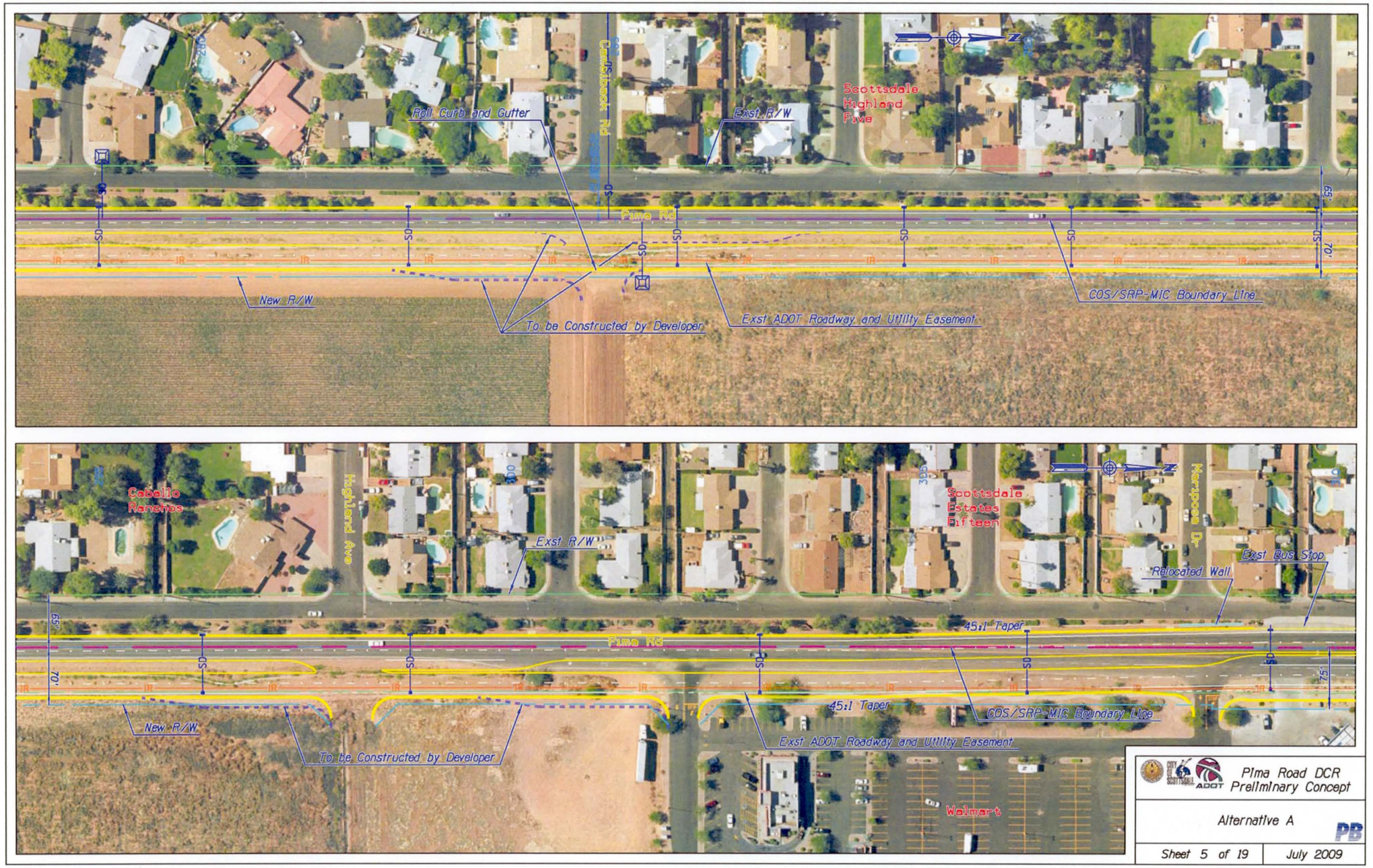
Alternative A

Sheet 1 of 19 | July 2009

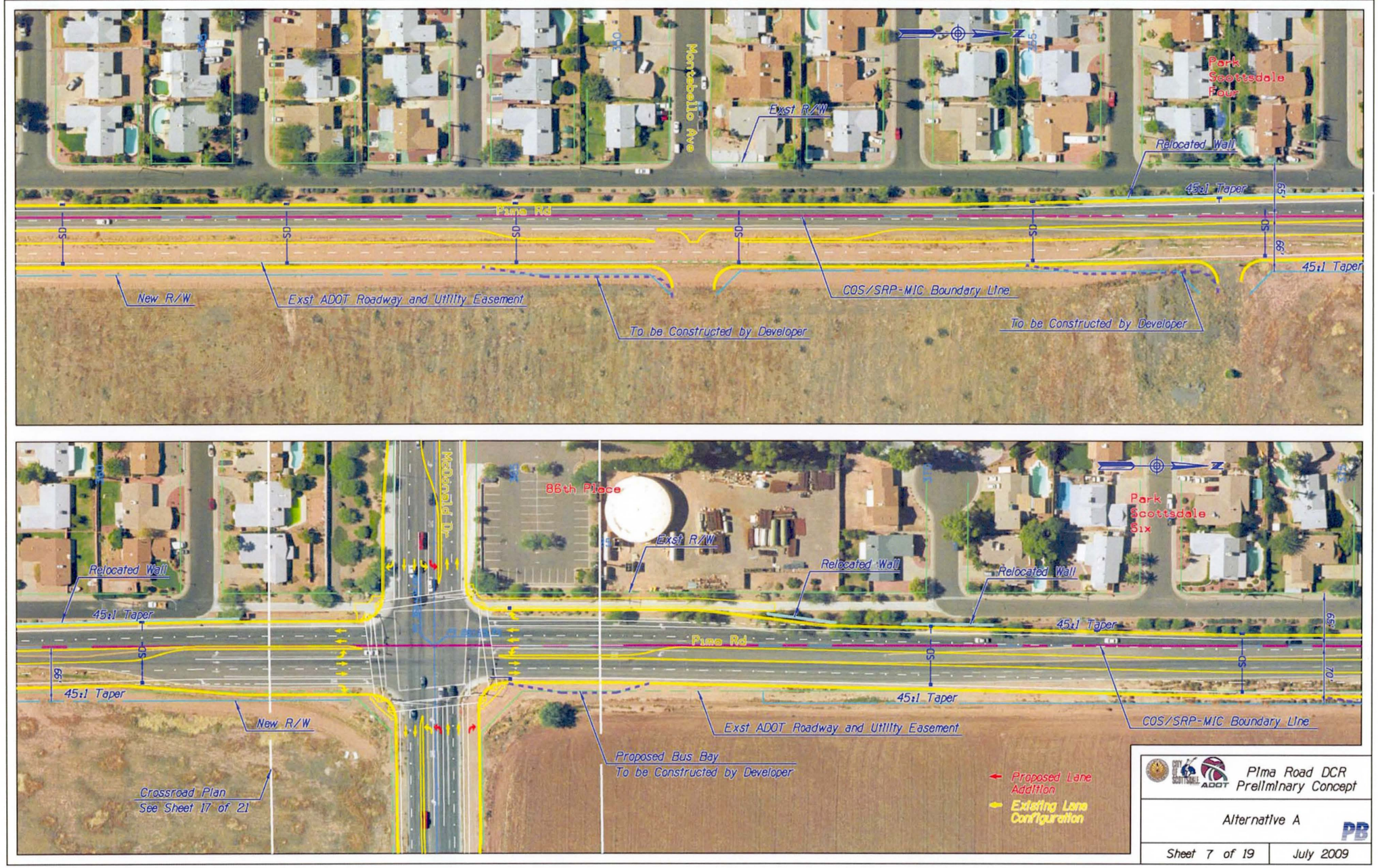

Exst R/W
Roll Curb and Gutter
Virginia Ave
Pima Rd
65'
55'
Exst ADOT Roadway and Utility Easement
COS/SRP-MIC Boundary Line
To be Constructed by Developer
Scottsdale Estates Eleven
Pima Park
Exst R/W
Relocated Wall
Exst Bus Stop
Crossroad Plan See Sheet 14 of 19
45:1 Taper
45:1 Taper
45:1 Taper
45:1 Taper
Exst ADOT Roadway and Utility Easement
To be Constructed by Developer
Proposed Bus Bay To be Constructed by Developer
COS/SRP-MIC Boundary Line
New R/W
Lane Addition to be constructed by Developer
Proposed Lane Addition
Existing Lane Configuration
Pima Road DCR Preliminary Concept
Alternative A
Sheet 2 of 19
July 2009

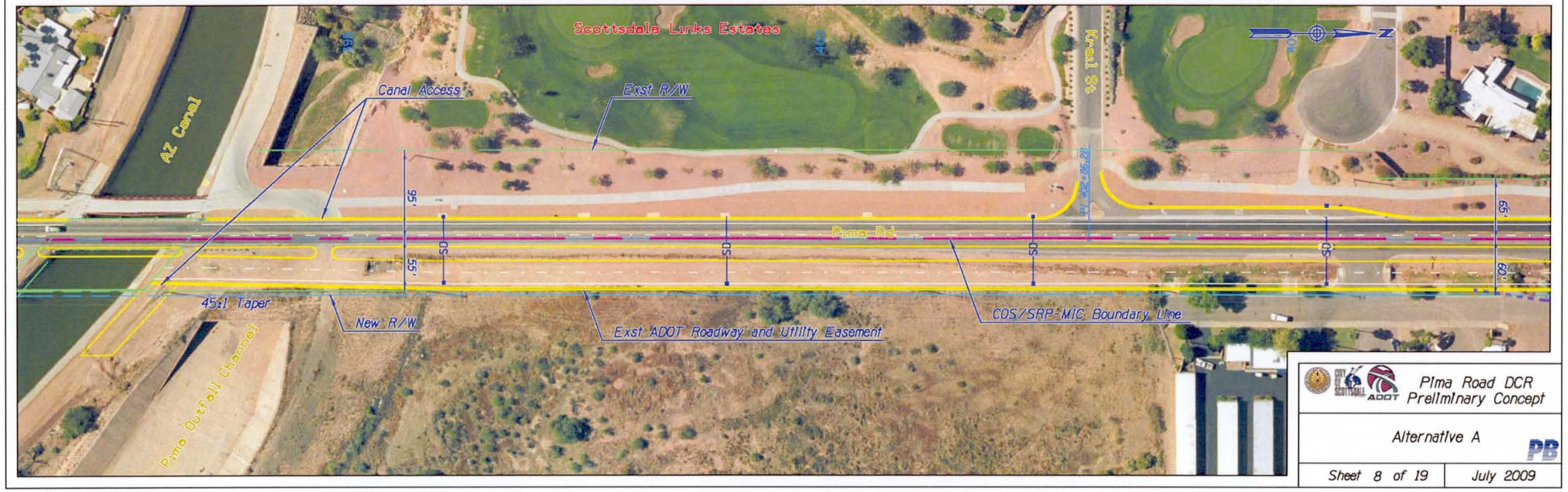
Scottsdale Summit
Roll Curb and Gutter
Cheery Lynn Rd
Exst R/W
45:1 Taper
Pima Rd
65'
70'
45:1 Taper
New R/W
To be Constructed by Developer
Exst ADOT Roadway and Utility Easement
COS/SRP-MIC Boundary Line
Park Scottsdale 20
Exst R/W
Columbus Ave
COS/SRP-MIC Boundary Line
Rolled Curb
65'
70'
Pima Rd
To be Constructed by Developer
Roll Curb and Gutter
New R/W
Exst ADOT Roadway and Utility Easement
To be Constructed by Developer
Pima Road DCR
Preliminary Concept
Alternative A
Sheet 3 of 19
July 2009


Park Scottsdale 15
Roll Curb and Gutter
Exst R/W
Exst Bus Stop
Sands East Townhomes Two
Proposed Bus Bay To be Constructed by Developer
Relocated Wall
45:1 Taper
Pima Rd
Lincoln Scholars Rd
65'
70'
New R/W
COS/SRP-MIC Boundary Line
Exst ADOT Roadway and Utility Easement
Crossroad Plan See Sheet 15 of 19
Lane Addition to be constructed by Developer
Proposed Lane Addition
Existing Lane Configuration
Sands East Townhomes Two
Relocated Wall
Sands East Two
Exst R/W
Roll Curb and Gutter
Montecito Ave
To be Constructed by Developer
Pima Road DCR Preliminary Concept
Alternative A
Sheet 4 of 19
July 2009


Roll Curb and Gutter
Exst R/W
Scottsdale Highland Five
Pima Rd
New R/W
To be Constructed by Developer
Exst ADOT Roadway and Utility Easement
COS/SRP-MIC Boundary Line
65'
70'
Cabalio Ranchos
Highland Ave
Exst R/W
Scottsdale Estates Fifteen
Marquesa Dr
Exst Bus Stop
Relocated Wall
45:1 Taper
75'
Walmart
Pima Road DCR Preliminary Concept
Alternative A
Sheet 5 of 19
July 2009

Park Scottsdale Eleven
Crossroad Plan
See Sheet 16 of 19
Relocated Wall
Chaparral Rd
315
325
Exst R/W
Indian Shadows
Vista Dr
COS/SRP-MIC Boundary Line
45:1 Taper
Pima Rd
Exst ADOT Roadway and Utility Easement
Proposed Bus Bay
To be Constructed by Developer
To be Constructed by Developer
To be Constructed by Developer
New R/W
To be Constructed by Developer
Lane Addition to be constructed by Developer
Proposed Lane Addition
Existing Lane Configuration
330
335
Park Scottsdale
Jackrabbit Rd
Exst R/W
Future Signal
Park Scottsdale THree
Pima Rd
New R/W
Exst ADOT Roadway and Utility Easement
To be Constructed by Developer
COS/SRP-MIC Boundary Line
Pima Road DCR
Preliminary Concept
Alternative A
Sheet 6 of 19
July 2009

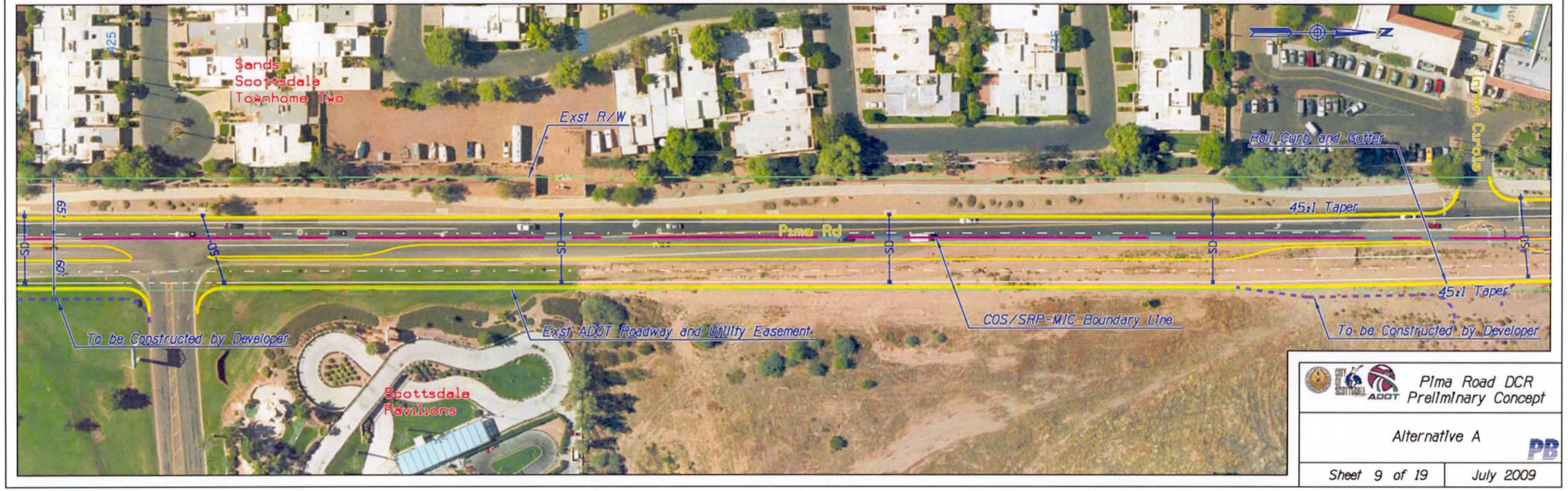

Montebello Ave
Pima Rd
Exst R/W
Relocated Wall
Park Scottsdale Four
45:1 Taper
55'
66'
New R/W
Exst ADOT Roadway and Utility Easement
To be Constructed by Developer
COS/SRP-MIC Boundary Line
To be Constructed by Developer
McDonald Dr
86th Place
Park Scottsdale Six
Relocated Wall
Exst R/W
Relocated Wall
Relocated Wall
45:1 Taper
Pima Rd
45:1 Taper
45:1 Taper
65'
70'
New R/W
Exst ADOT Roadway and Utility Easement
COS/SRP-MIC Boundary Line
Proposed Bus Bay
To be Constructed by Developer
Crossroad Plan
See Sheet 17 of 21
Proposed Lane Addition
Existing Lane Configuration
Pima Road DCR
Preliminary Concept
Alternative A
Sheet 7 of 19
July 2009



Pima Road DCR
Preliminary Concept

Alternative A

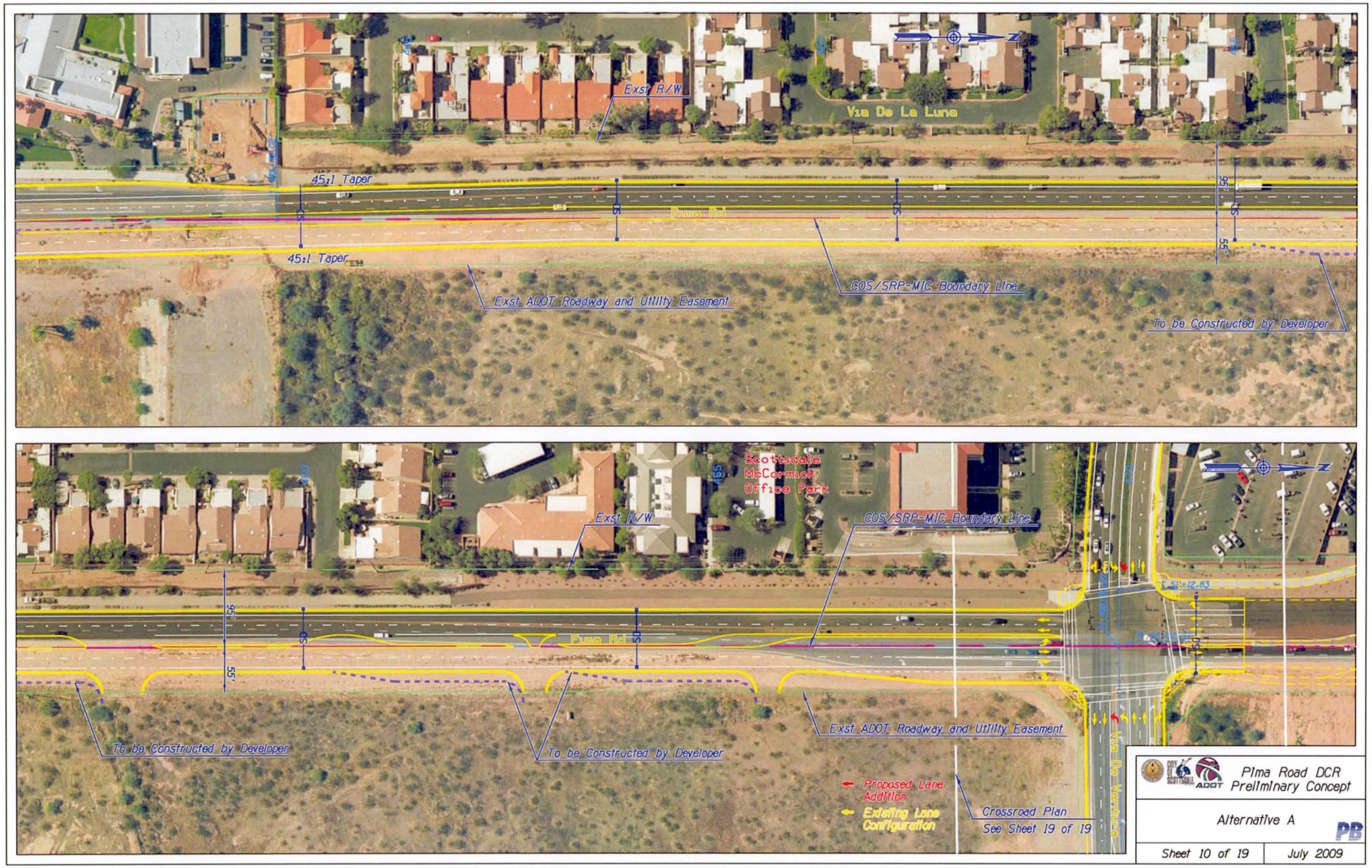
Sheet 8 of 19 | July 2009

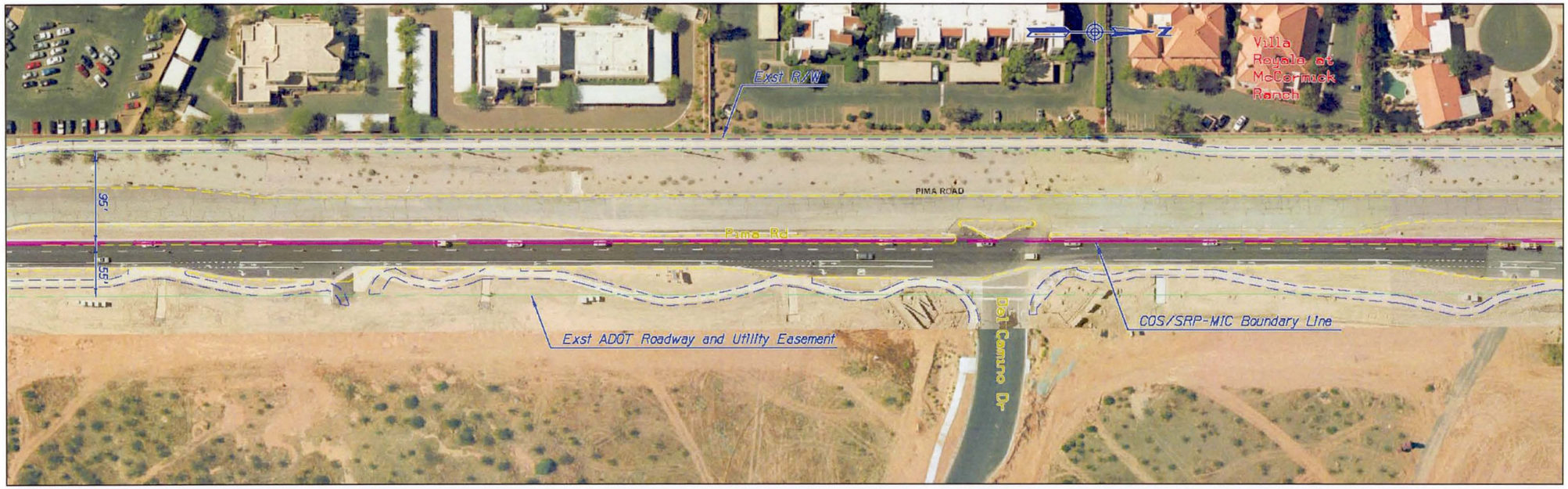


Pima Road DCR
Preliminary Concept

Alternative A

Sheet 9 of 19 | July 2009


Exst R/W
Via De La Luna
45:1 Taper
Pima Rd
45:1 Taper
COS/SRP-MIC Boundary Line
Exst ADOT Roadway and Utility Easement
To be Constructed by Developer
Scottsdale McCormick Office Park
Exst R/W
COS/SRP-MIC Boundary Line
Pima Rd
To be Constructed by Developer
To be Constructed by Developer
Exst ADOT Roadway and Utility Easement
Proposed Lane Addition
Existing Lane Configuration
Crossroad Plan
See Sheet 19 of 19
Via De Varamus
Pima Road DCR
Preliminary Concept
Alternative A
Sheet 10 of 19
July 2009



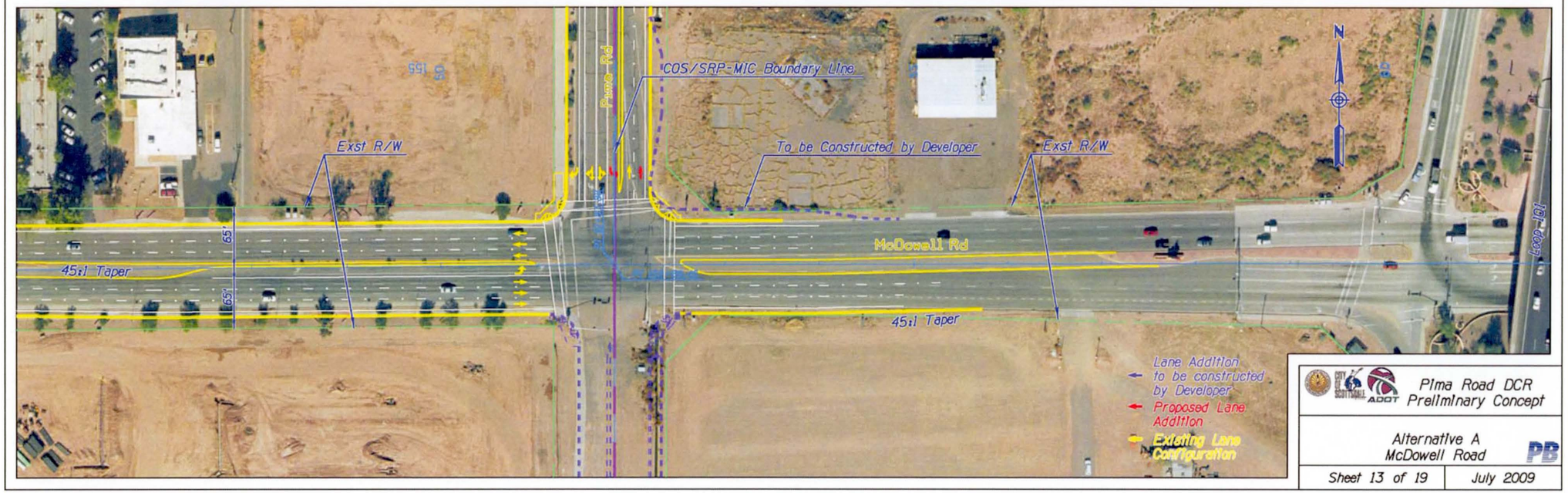
Pima Road DCR
Preliminary Concept

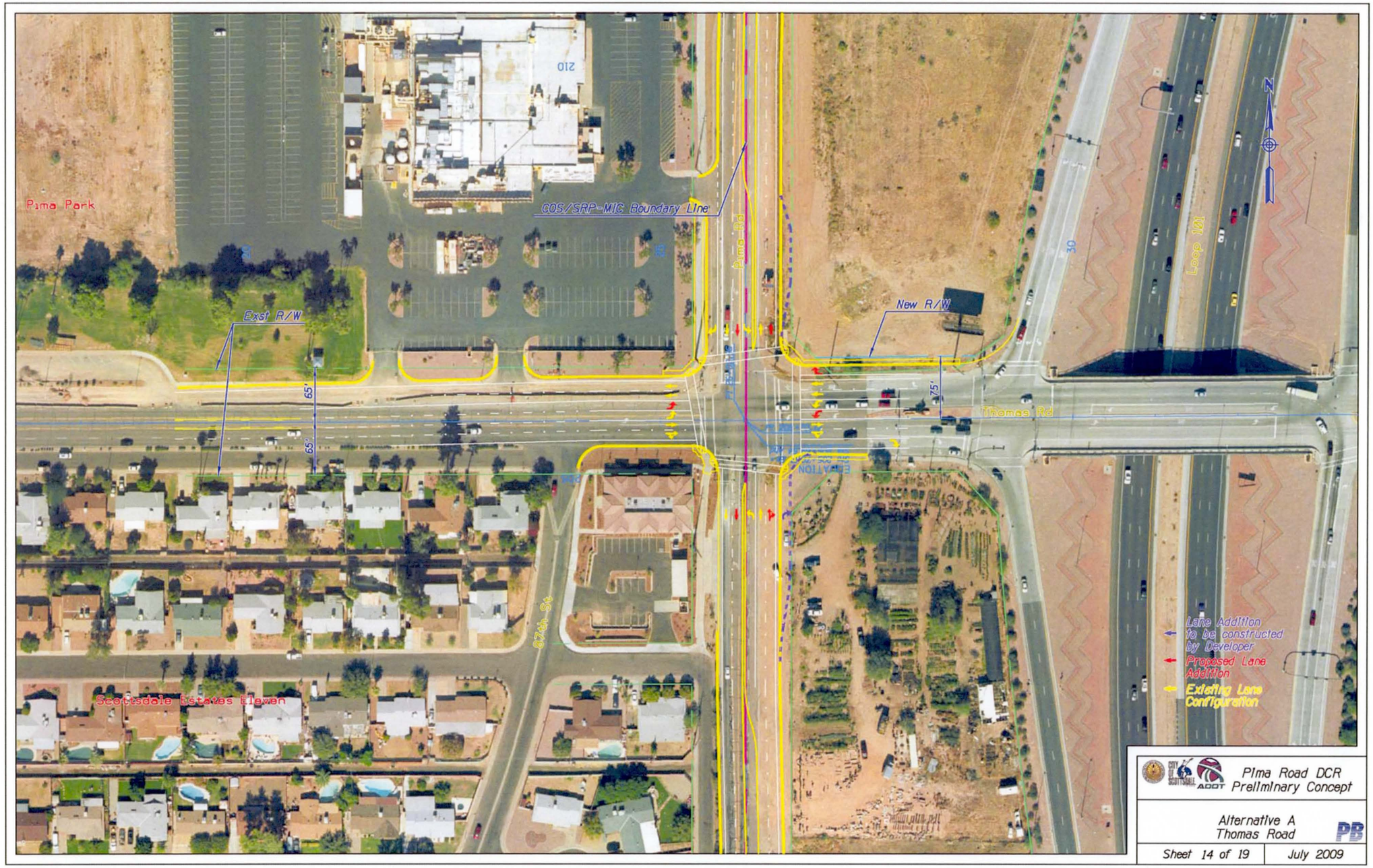
Alternative A

Sheet 11 of 19 | July 2009

COS/SRP-MIC Boundary Line
Exst R/W
Pima Rd/90th St
Loop 101
Exst R/W
Exst R/W
Exst R/W
Doubletree Ranch Rd
Via Linda
Exst R/W
90th St
Exst R/W
Pima Road DCR
Preliminary Concept
Alternative A
Sheet 12 of 19
July 2009

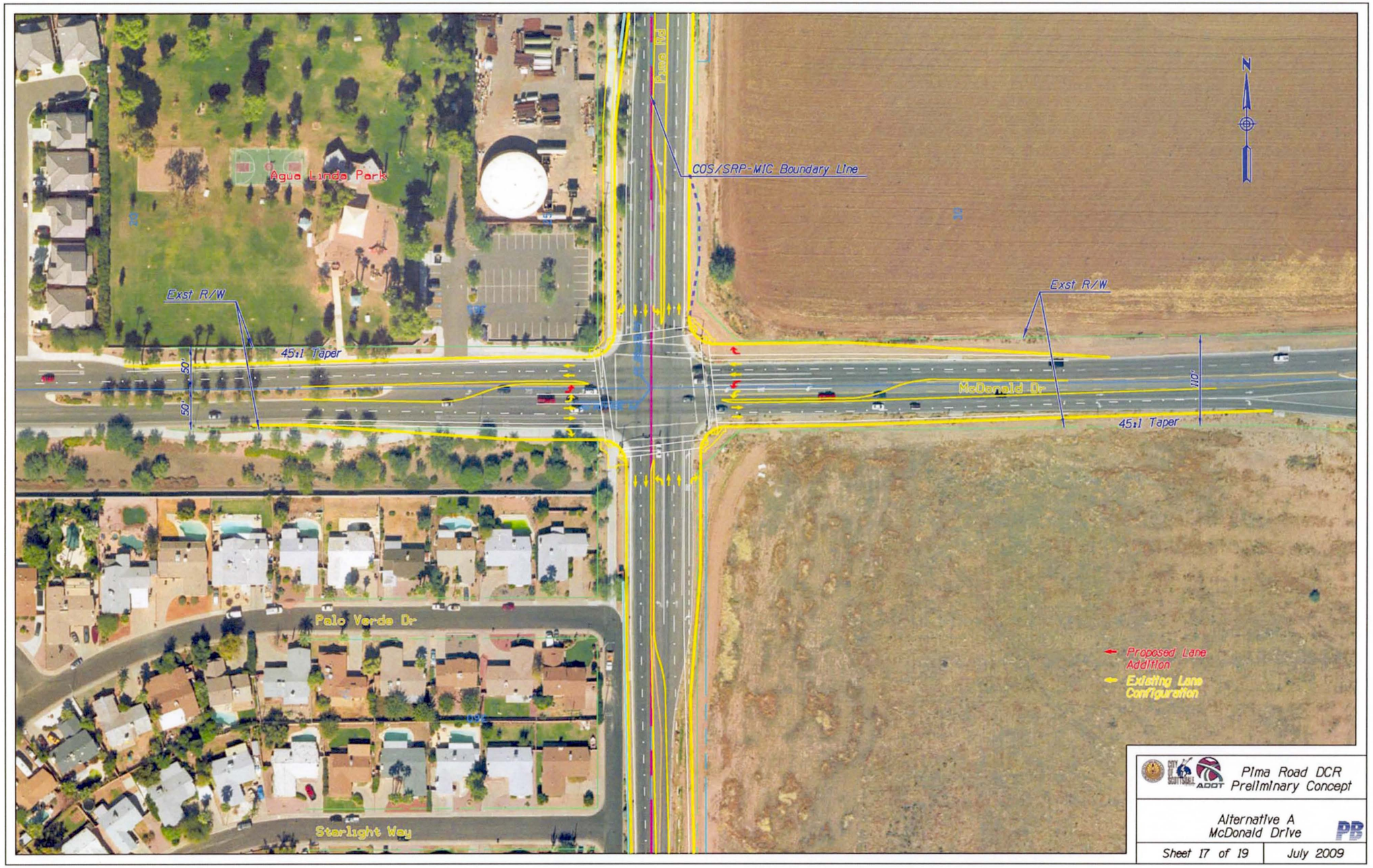
1525 North
Granite Reef
East
90th St
87th St
Irvine Park
McDowell Rd
Exst R/W
N


COS/SRP-MIC Boundary Line
Pima Rd
Exst R/W
To be Constructed by Developer
Exst R/W
McDowell Rd
45:1 Taper
45:1 Taper
65'
65'
N
Lane Addition
to be constructed
by Developer
Proposed Lane
Addition
Existing Lane
Configuration
Pima Road DCR
Preliminary Concept
Alternative A
McDowell Road
PB
Sheet 13 of 19
July 2009

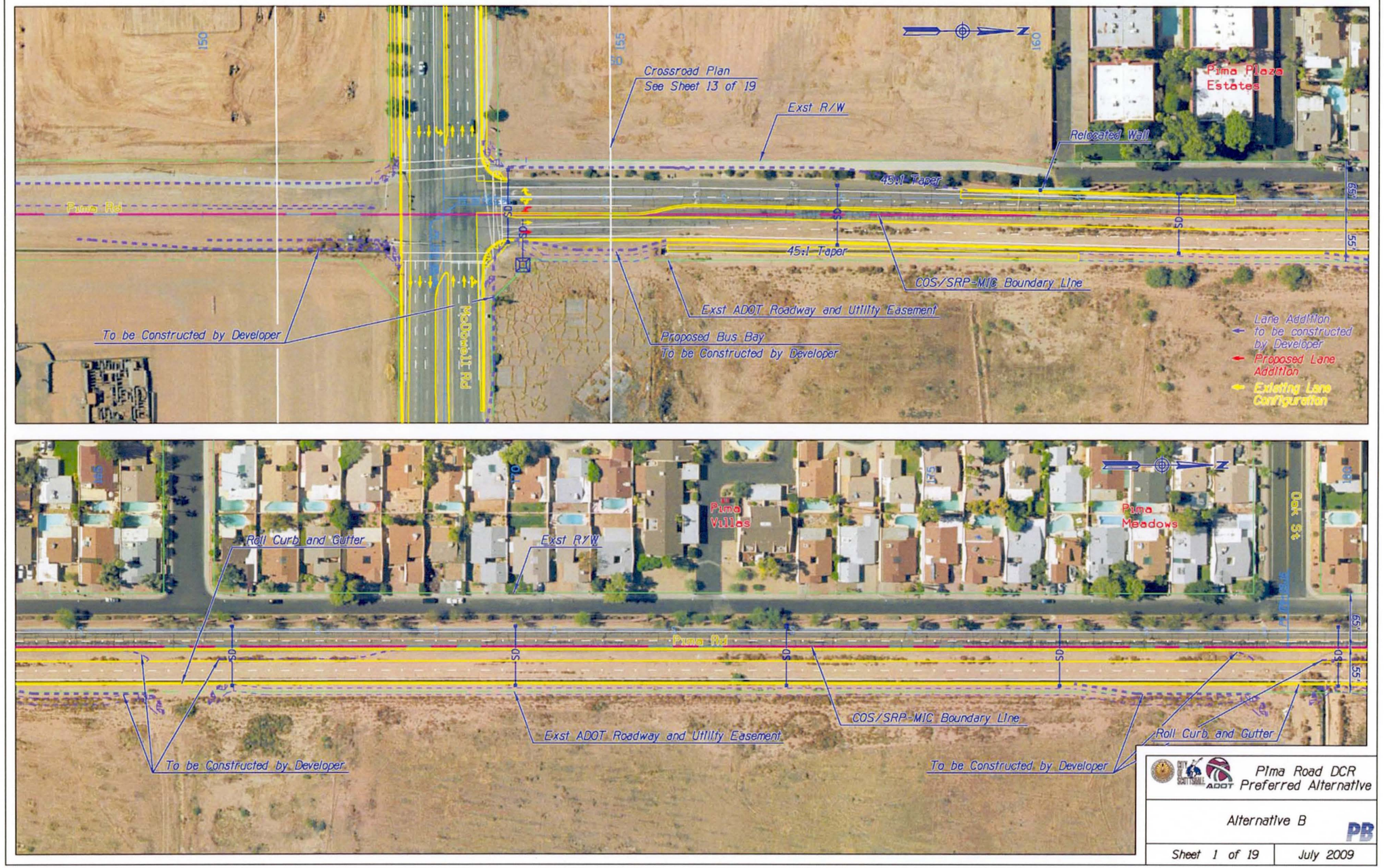

Pima Park
COS/SRP-MIC Boundary Line
Exst R/W
New R/W
65'
65'
75'
Pima Rd
Thomas Rd
Loop 101
90th St
Scottsdale Estates Eleven
Lane Addition to be constructed by Developer
Proposed Lane Addition
Existing Lane Configuration
Pima Road DCR Preliminary Concept
Alternative A
Thomas Road
Sheet 14 of 19
July 2009

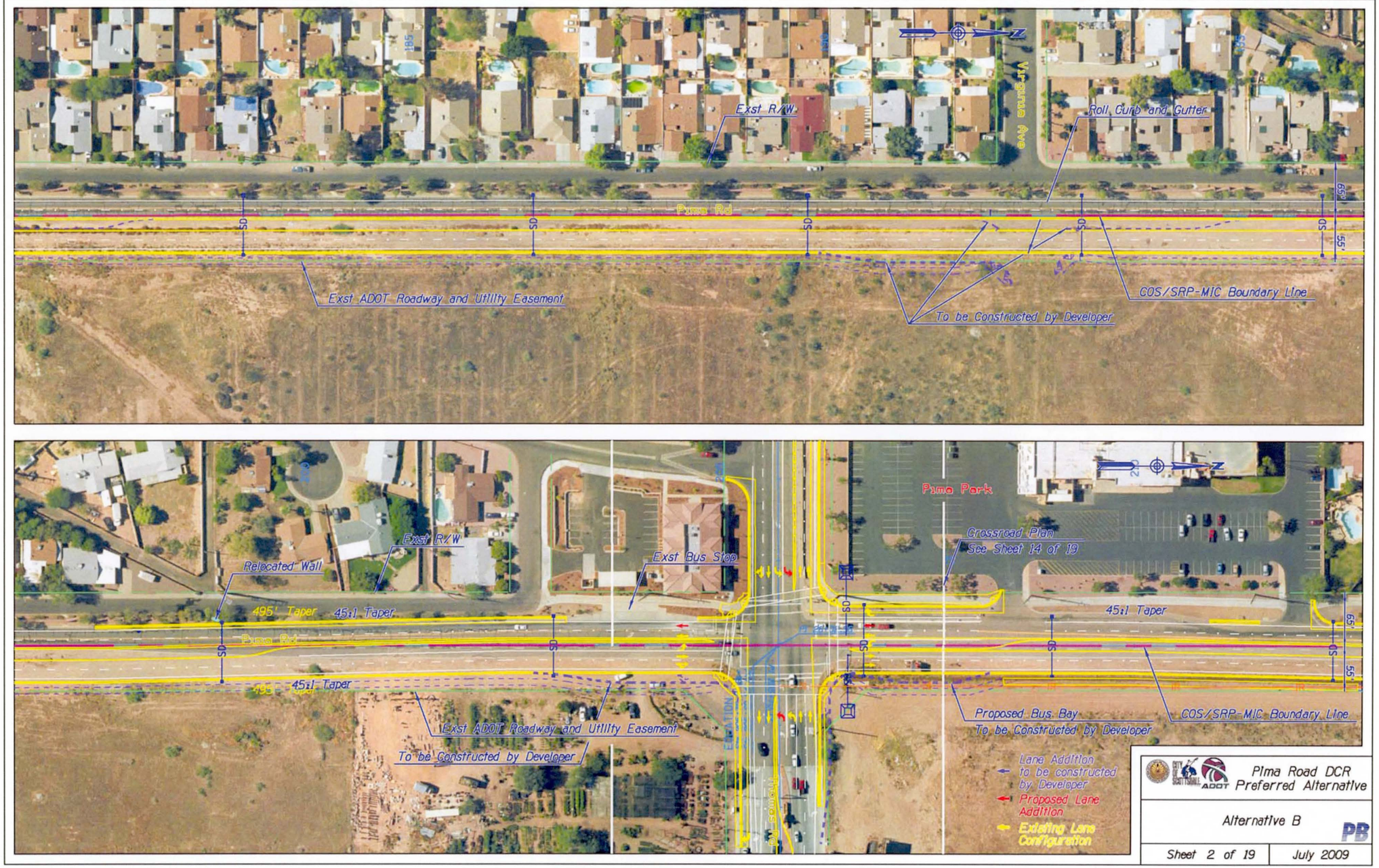
Sands East Townhomes Two
Montecosa Ave
Pima Rd
New R/W
Exst Improvements
Exst R/W
Indian School Rd
55'
55'
Current Construction
Proposed Lane Addition
Existing Lane Configuration
N
Amelia Ave
COS/SRP-MIC Boundary Line
New R/W
Pima Road DCR
Preliminary Concept
Alternative A
Indian School Road
Sheet 15 of 19
July 2009

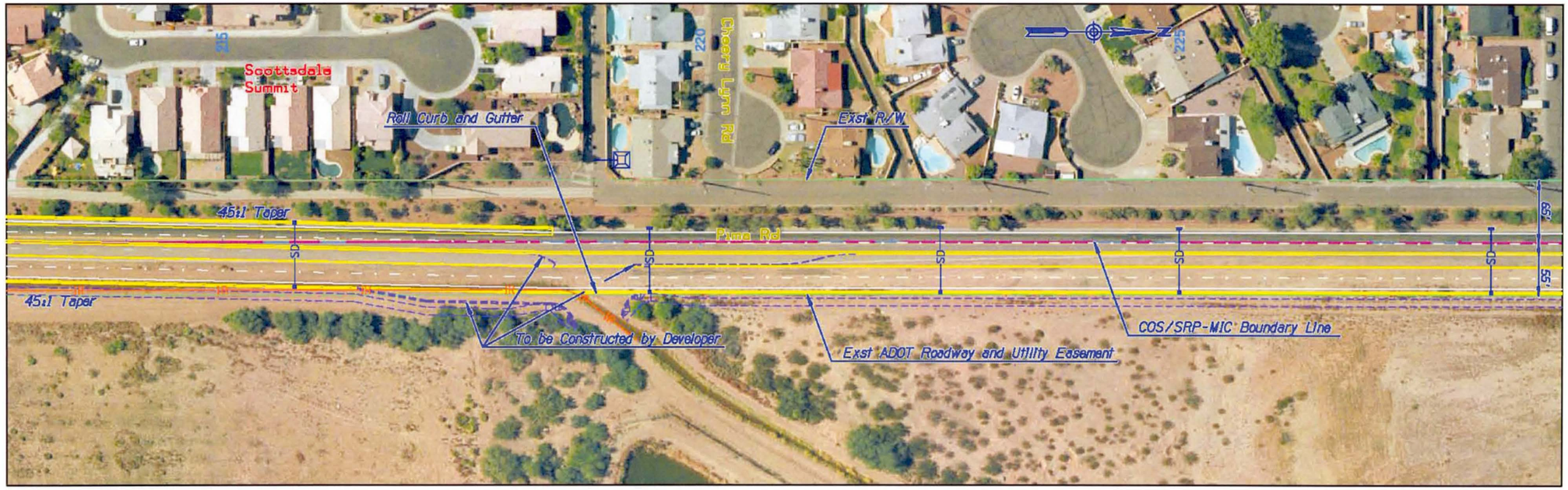
Pima Rd
Park Scottsdale Eleven
87th Way
Exst R/W
Chaparral Rd
To be Constructed by Developer
Exst R/W
55'
55'
30'
Scottsdale Estates Fifteen
Mariposa Dr
Walmart
COS/SRP-MIC Boundary Line
New R/W
Lane Addition to be constructed by Developer
Pima Road DCR Preliminary Concept
Alternative A
Chaparral Road
Sheet 16 of 19
July 2009


Agua Linda Park
Pima Road
COS/SRP-MIC Boundary Line
Exst R/W
45:1 Taper
50'
50'
Exst R/W
110'
McDonald Dr
45:1 Taper
Palo Verde Dr
Starlight Way
Proposed Lane Addition
Existing Lane Configuration
N
Pima Road DCR
Preliminary Concept
Alternative A
McDonald Drive
Sheet 17 of 19
July 2009

Carriage Square
Via de la Gente
Pima Rd
COS/SRP-MIC Boundary Line
Scottsdale Pavilions
Exst R/W
To be Constructed by Developer
Exst R/W
Indian Bend Rd
New R/W
Lane Addition to be constructed by Developer
Pima Road DCR
Preliminary Concept
Alternative A
Indian Bend Road
Sheet 18 of 19
July 2009


Crossroad Plan
See Sheet 13 of 19
Exst R/W
Relocated Well
Pima Plaza Estates
45:1 Taper
45:1 Taper
Pima Rd
COS/SRP-MIC Boundary Line
Exst ADOT Roadway and Utility Easement
Proposed Bus Bay
To be Constructed by Developer
To be Constructed by Developer
Lane Addition to be constructed by Developer
Proposed Lane Addition
Existing Lane Configuration
Roll Curb and Gutter
Exst R/W
Pima Villas
Pima Meadows
Dak St
Pima Rd
COS/SRP-MIC Boundary Line
Exst ADOT Roadway and Utility Easement
Roll Curb and Gutter
To be Constructed by Developer
To be Constructed by Developer
Pima Road DCR
Preferred Alternative
Alternative B
Sheet 1 of 19
July 2009


Exst R/W
Roll Curb and Gutter
Virginia Ave
Pima Rd
Exst ADOT Roadway and Utility Easement
To be Constructed by Developer
COS/SRP-MIC Boundary Line
Pima Park
Crossroad Plan
See Sheet 14 of 19
Relocated Wall
Exst R/W
Exst Bus Stop
495' Taper
45:1 Taper
Pima Rd
495' 45:1 Taper
Exst ADOT Roadway and Utility Easement
To be Constructed by Developer
Proposed Bus Bay
To be Constructed by Developer
COS/SRP-MIC Boundary Line
Lane Addition to be constructed by Developer
Proposed Lane Addition
Existing Lane Configuration
Pima Road DCR
Preferred Alternative
Alternative B
Sheet 2 of 19
July 2009



Pima Road DCR
Preferred Alternative

Alternative B

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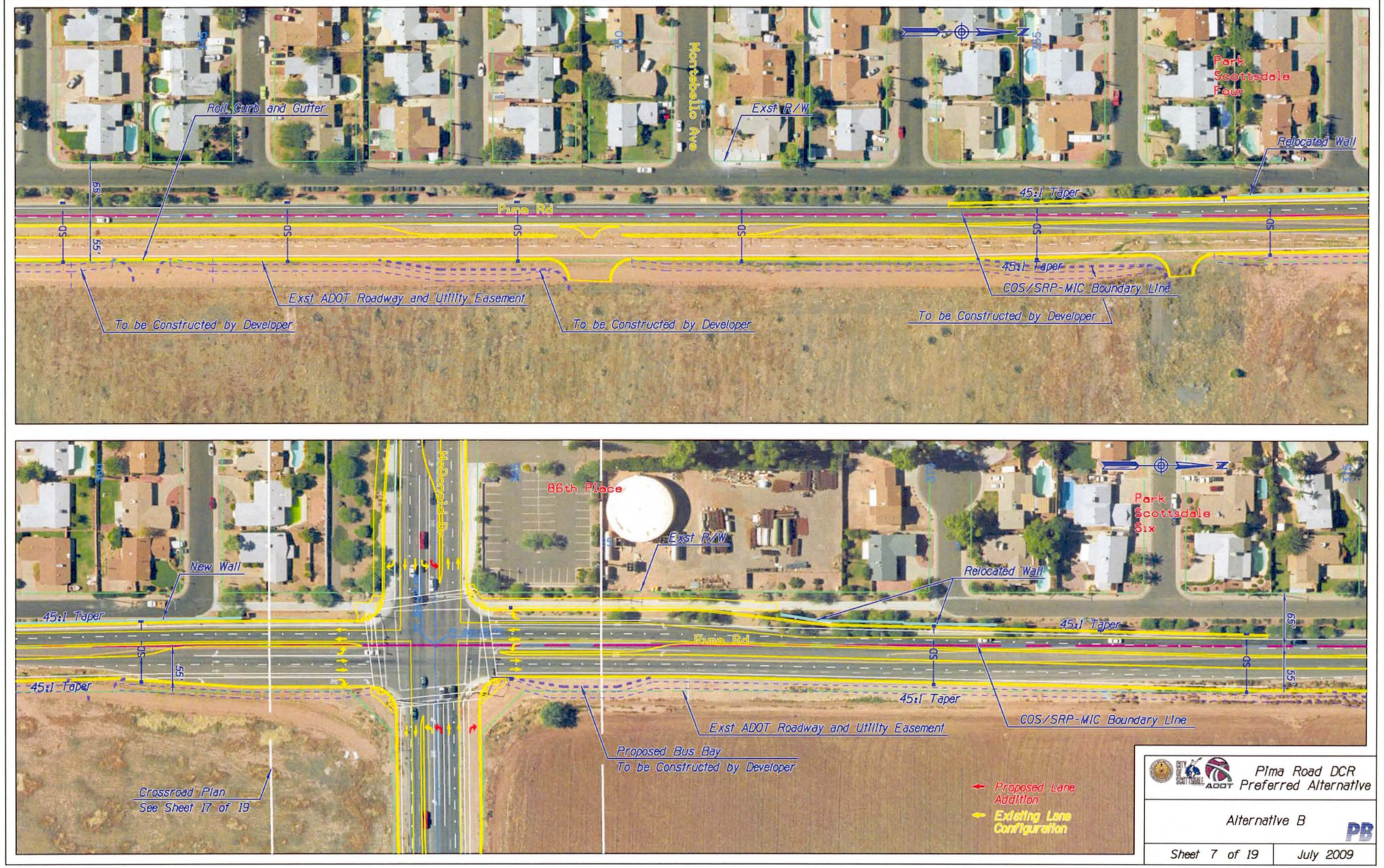
Park Scottsdale Eleven
Crossroad Plan
See Sheet 16 of 19
Relocated Wall
Exst R/W
Indian Shadows
Vista Dr
COS/SRP-MIC Boundary Line
45:1 Taper
Pima Rd
65'
55'
Exst ADOT Roadway and Utility Easement
To be Constructed by Developer
Proposed Bus Bay
To be Constructed by Developer
To be Constructed by Developer
To be Constructed by Developer
Lane Addition to be constructed by Developer
Proposed Lane Addition
Existing Lane Configuration
Greenwood Rd
Park Scottsdale
Jackrabbit Rd
Future Signal
Park Scottsdale Three
Exst R/W
Pima Rd
65'
55'
Exst ADOT Roadway and Utility Easement
To be Constructed by Developer
COS/SRP-MIC Boundary Line
Pima Road DCR
Preferred Alternative
Alternative B
PB
Sheet 6 of 19
July 2009


Roll Curb and Gutter
Montebello Ave
Exst R/W
Park Scottsdale Four
Relocated Wall
45:1 Taper
Pima Rd
55'
65'
Exst ADOT Roadway and Utility Easement
To be Constructed by Developer
To be Constructed by Developer
45:1 Taper
COS/SRP-MIC Boundary Line
To be Constructed by Developer
McDowell Rd
86th Place
Exst R/W
Park Scottsdale Six
New Wall
Relocated Wall
45:1 Taper
Pima Rd
45:1 Taper
45:1 Taper
Exst ADOT Roadway and Utility Easement
COS/SRP-MIC Boundary Line
Proposed Bus Bay
To be Constructed by Developer
Crossroad Plan
See Sheet 17 of 19
Proposed Lane Addition
Existing Lane Configuration
Pima Road DCR
Preferred Alternative
Alternative B
PB
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July 2009

Indian Band Ranchos
Exst Bus Stop
Indian Band Rd
Carriage Square
Exst R/W
To be Constructed by Developer
45:1 Taper
Pima Rd
65'
55'
To be Constructed by Developer
Exst ADOT Roadway and Utility Easement
COS/SRP-MIC Boundary Line
Proposed Bus Bay
To be Constructed by Developer
Crossroad Plan
See Sheet 18 of 19
Proposed Lane Addition
Lane Addition to be constructed by Developer
Existing Lane Configuration
Sands Scottsdale Townhomes Two
Roll Curb and Gutter
Scottsdale Pavilions
Pima Road DCR
Preferred Alternative
Alternative B
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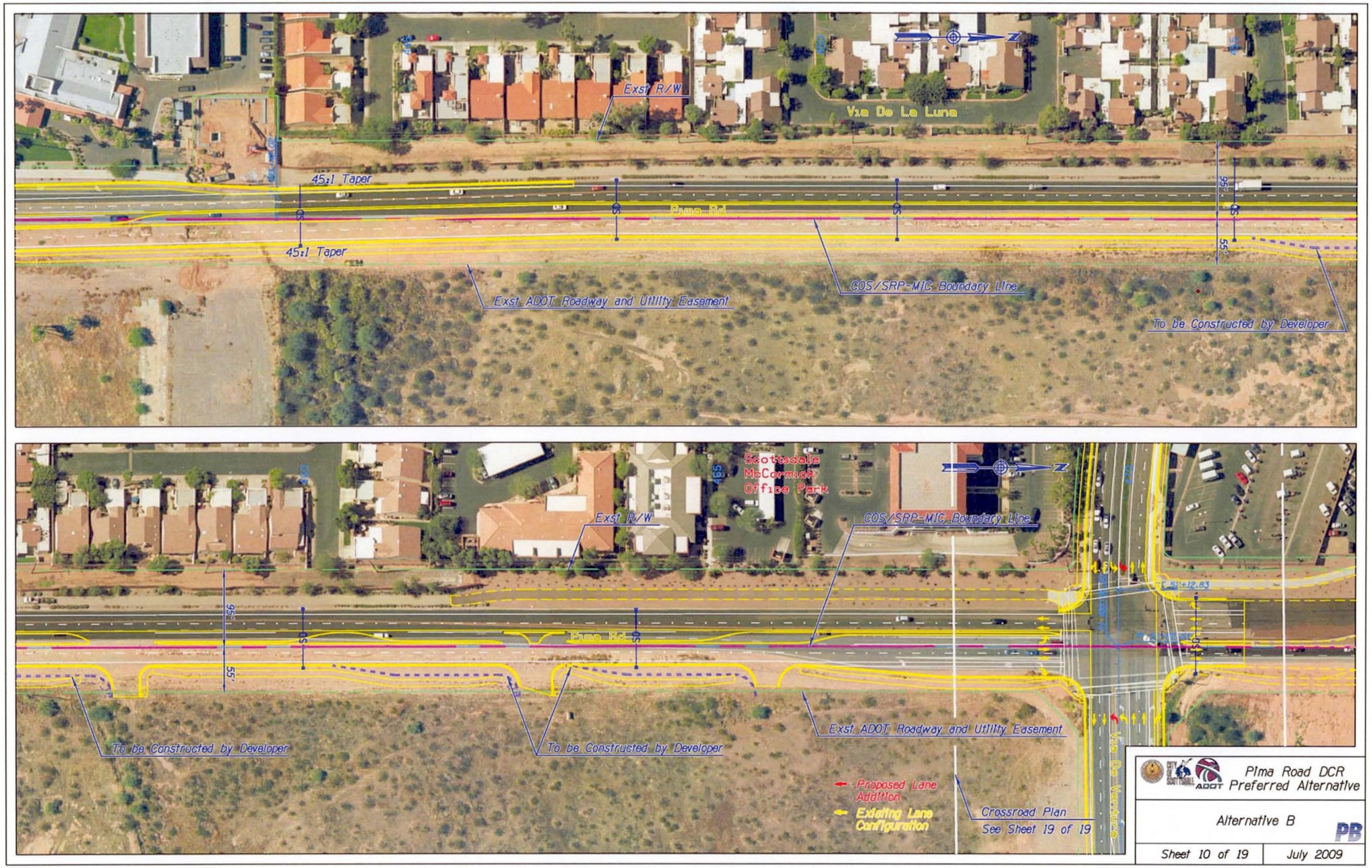
July 2009


Exst R/W
Via De La Luna
45:1 Taper
Pima Rd
45:1 Taper
COS/SRP-MIC Boundary Line
Exst ADOT Roadway and Utility Easement
To be Constructed by Developer
Scottsdale McCormick Office Park
Exst R/W
COS/SRP-MIC Boundary Line
Pima Rd
To be Constructed by Developer
To be Constructed by Developer
Exst ADOT Roadway and Utility Easement
Proposed Lane Addition
Existing Lane Configuration
Crossroad Plan
See Sheet 19 of 19
Via De Ventura
Pima Road DCR
Preferred Alternative
Alternative B
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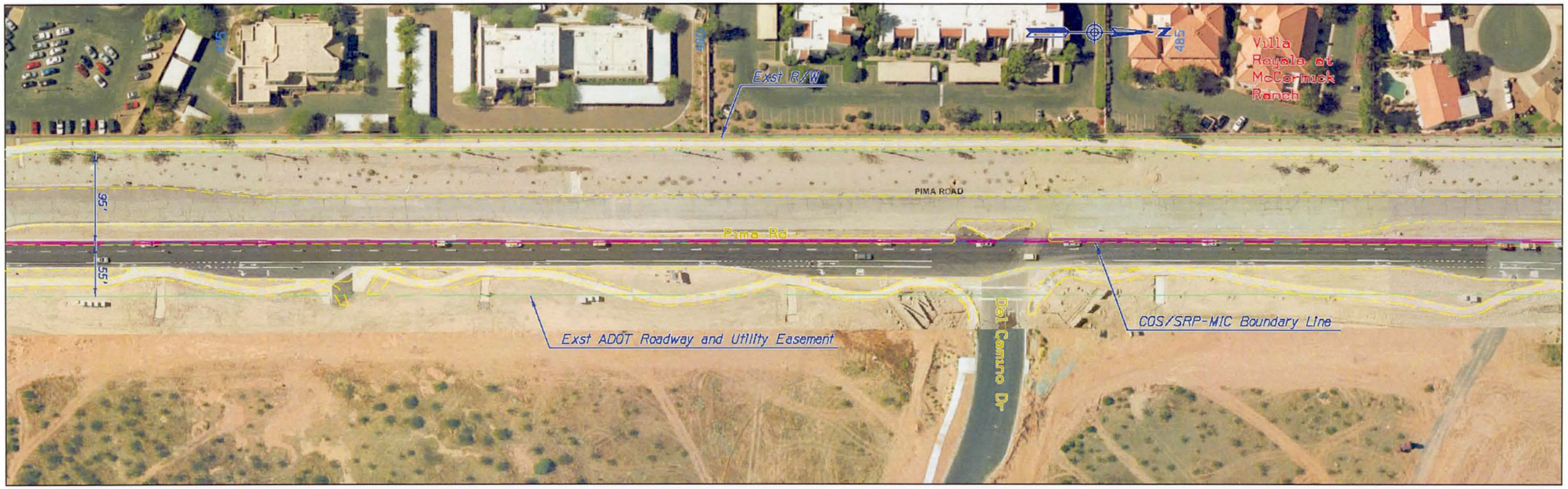
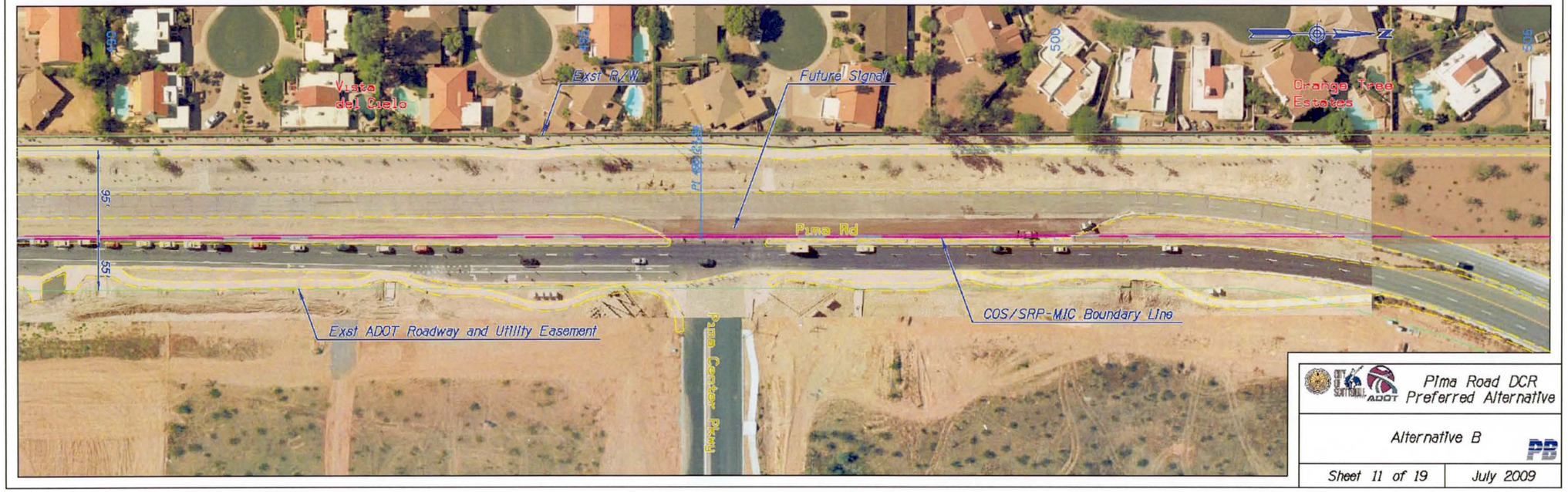
July 2009





Pima Road DCR
Preferred Alternative

Alternative B

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COS/SRP-MIC Boundary Line
Exst R/W
Pima Rd/90th St
Loop 101
Exst R/W
Exst R/W
Exst R/W
Doubletree Ranch Rd
Via Linda
Exst R/W
90th St
Exst R/W
Pima Road DCR
Preferred Alternative
Alternative B
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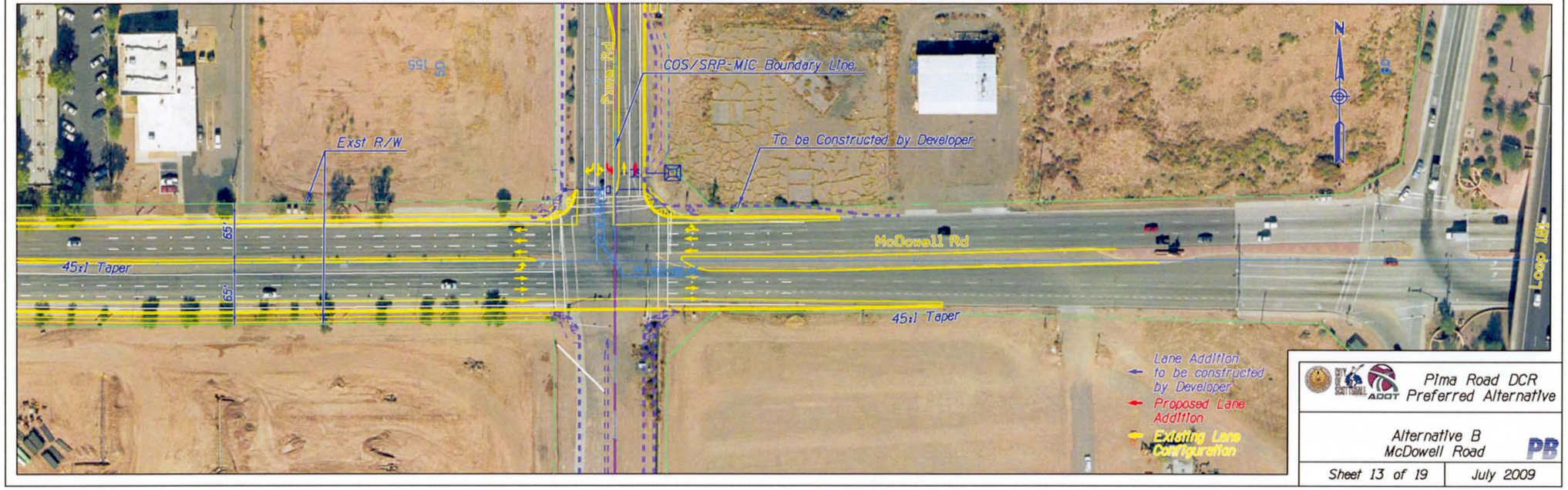
July 2009

N
Exst R/W
McDowell Rd
67th St
1525 North Granite Reef East
65th St
Irvine Park


N
COS/SRP-MIC Boundary Line
Pima Rd
Exst R/W
To be Constructed by Developer
65'
65'
45:1 Taper
45:1 Taper
McDowell Rd
Loop 101
Lane Addition to be constructed by Developer
Proposed Lane Addition
Existing Lane Configuration
Pima Road DCR Preferred Alternative
Alternative B
McDowell Road
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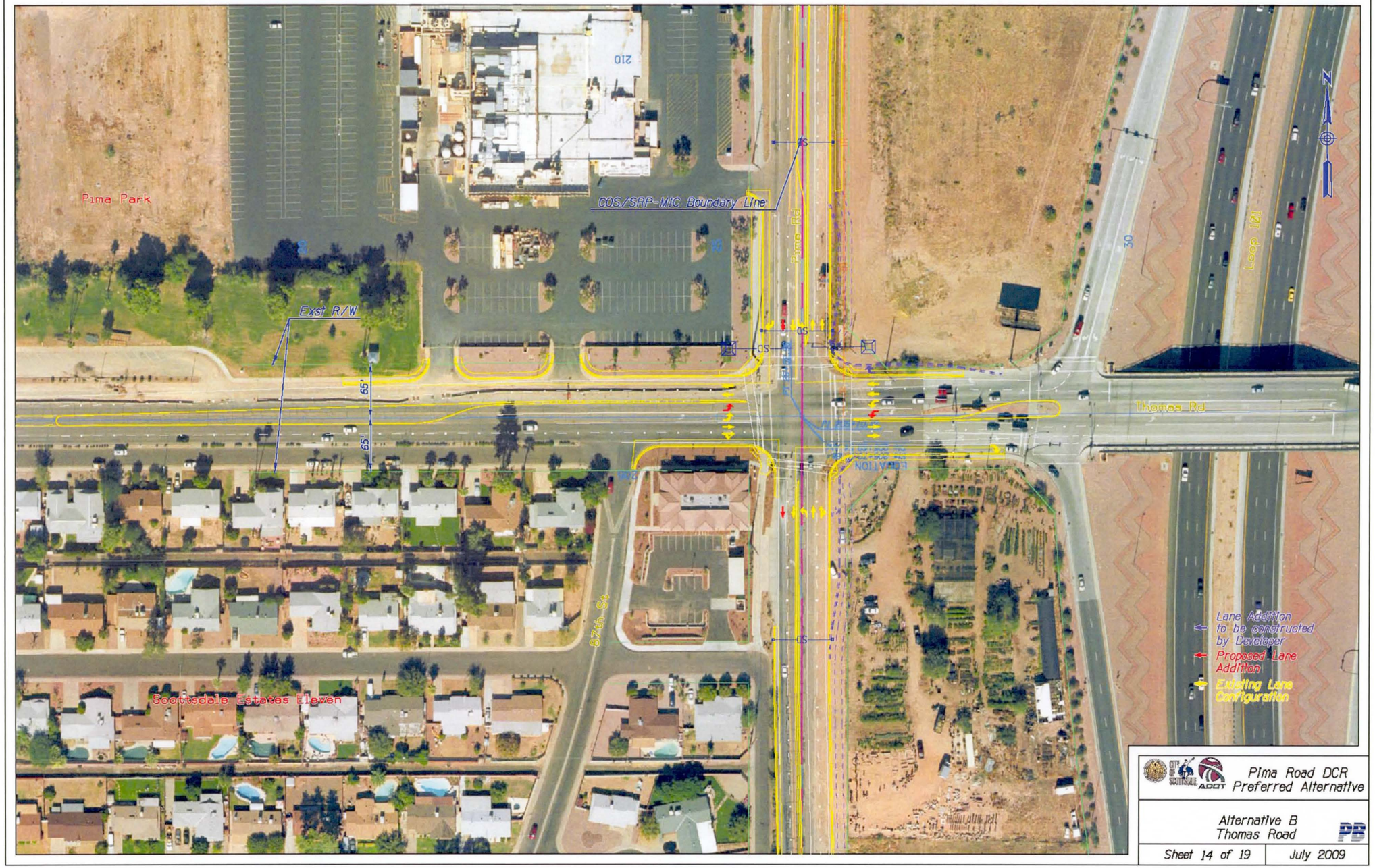
Pima Park
COS/SRP-MIC Boundary Line
Exist R/W
65'
65'
Pima Rd
Thomas Rd
Loop 101
87th St
Scottsdale Estates Eleven
Lane Addition to be constructed by Developer
Proposed Lane Addition
Existing Lane Configuration
Pima Road DCR Preferred Alternative
Alternative B
Thomas Road
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Sands East Townhomes Two
Montereosa Ave
Exst Improvements
Exst R/W
Indian School Rd
55'
55'
Amelia Ave
COS/SRP-MIC Boundary Line
SD
N
Current Construction
Proposed Lane Addition
Existing Lane Configuration
Pima Road DCR
Preferred Alternative
Alternative B
Indian School Road
PB
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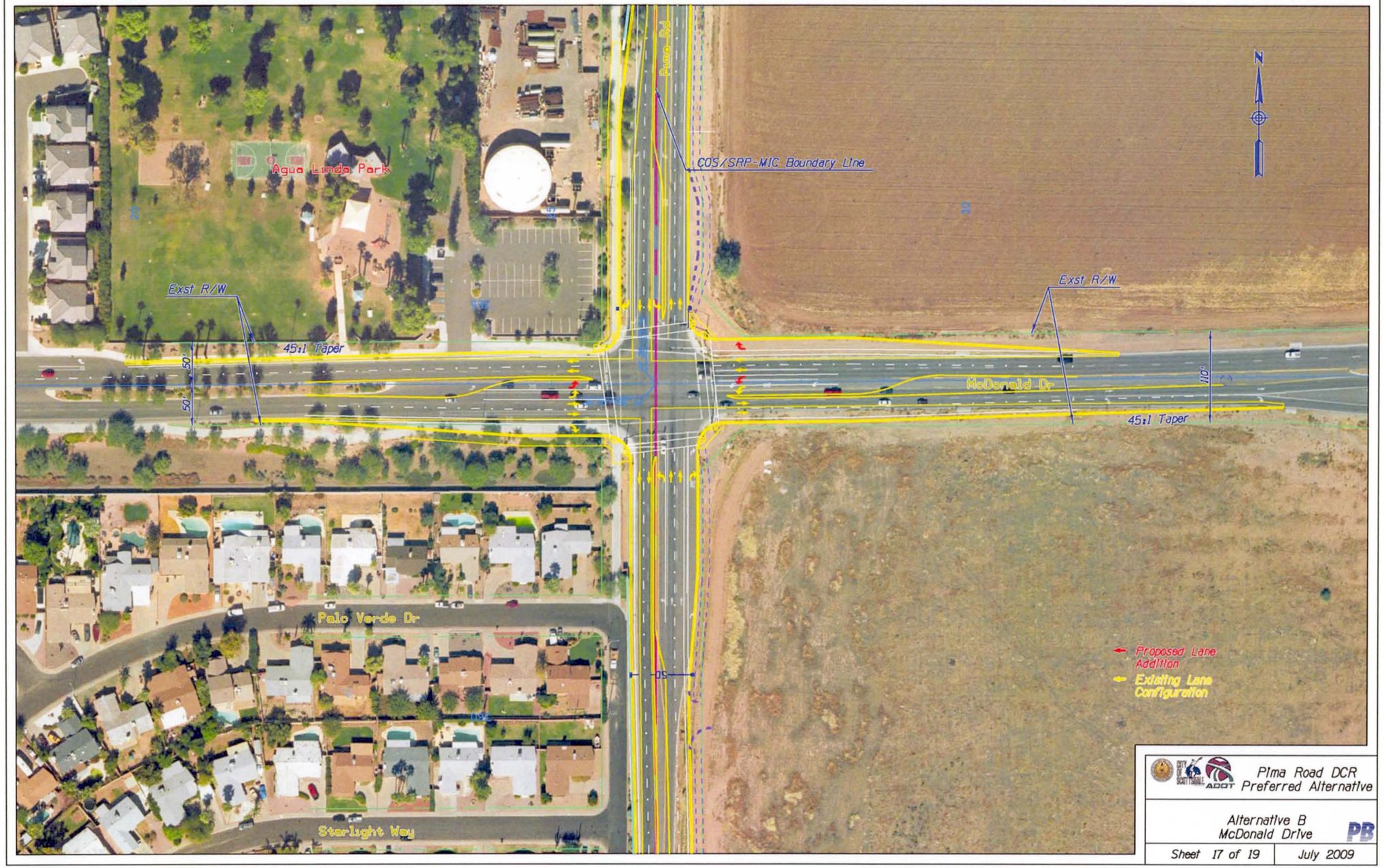
July 2009

Pima Rd
Park Scottsdale Eleven
87th Way
Exst R/W
Chaparral Rd
To be Constructed by Developer
Exst R/W
55'
55'
30'
To be Constructed by Developer
Scottsdale Estates Fifteen
Mariposa Dr
Walmart
Lane Addition to be constructed by Developer
Pima Road DCR Preferred Alternative
Alternative B
Chaparral Road
Sheet 16 of 19
July 2009


Agua Linda Park
COS/SRP-MIC Boundary Line
Future Rd
Exst R/W
45:1 Taper
50'
McDonald Dr
110'
Palo Verde Dr
Starlight Way
Proposed Lane Addition
Existing Lane Configuration
N
Pima Road DCR
Preferred Alternative
Alternative B
McDonald Drive
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July 2009

Carriage Square
Via de la Gente
Indian Bend Rd
COS/SRP-MIC Boundary Line
Exst R/W
To be Constructed by Developer
Scottsdale Pavilions
Proposed Lane Addition
Existing Lane Configuration
Lane Addition to be constructed by Developer
Pima Road DCR
Preferred Alternative
Alternative B
Indian Bend Road
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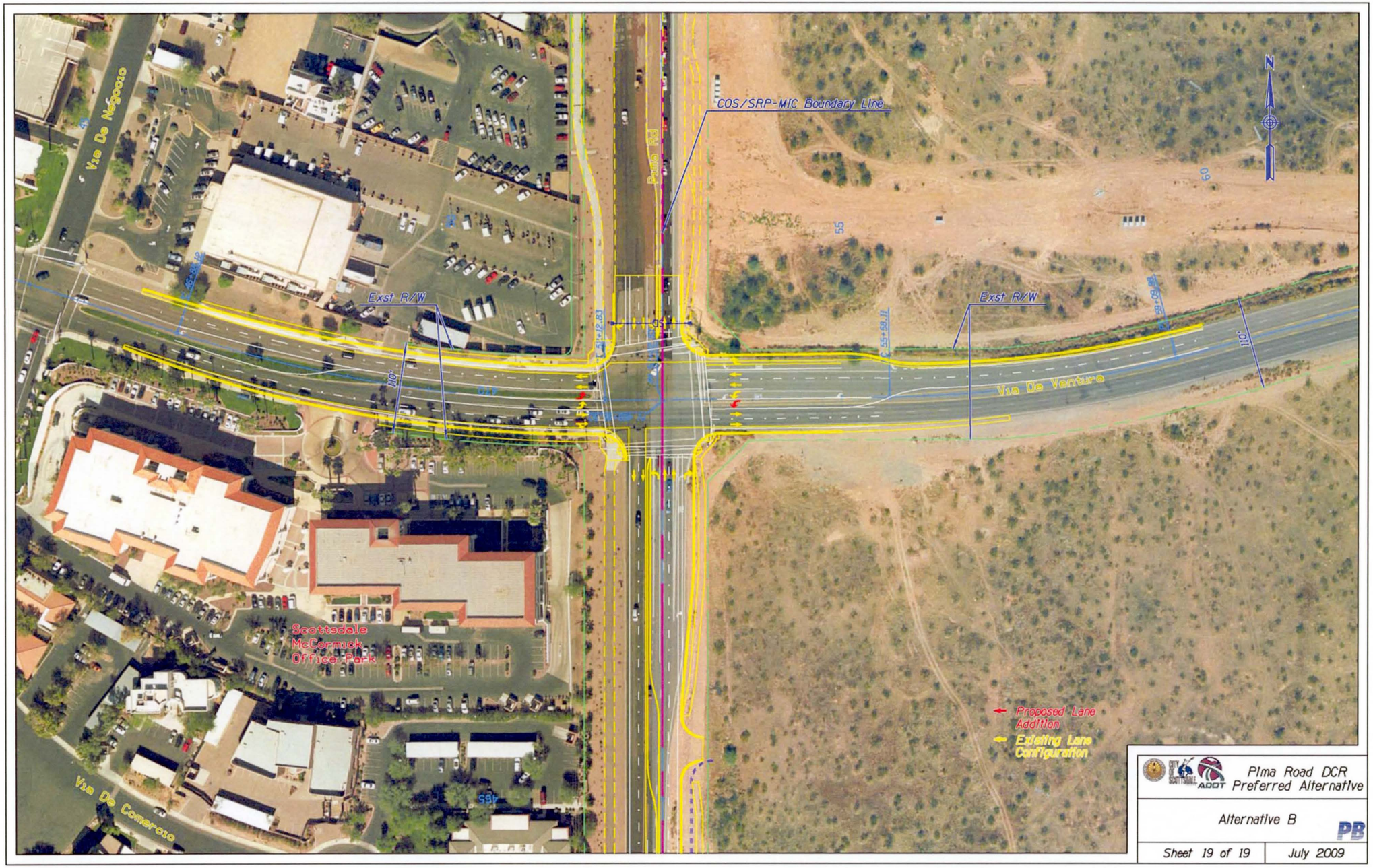
Via De Negocio
Pima Rd
COS/SRP-MIC Boundary Line
Exst R/W
Exst R/W
Via De Venture
Via De Comercio
Scottsdale McCormick Office Park
Proposed Lane Addition
Existing Lane Configuration
Pima Road DCR Preferred Alternative
Alternative B
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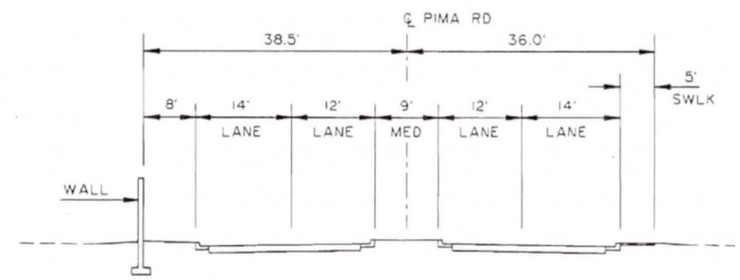
July 2009

Appendix B: Recommended Typical Section Alternative from 1993 BRW Study

SELECTED TYPICAL SECTION



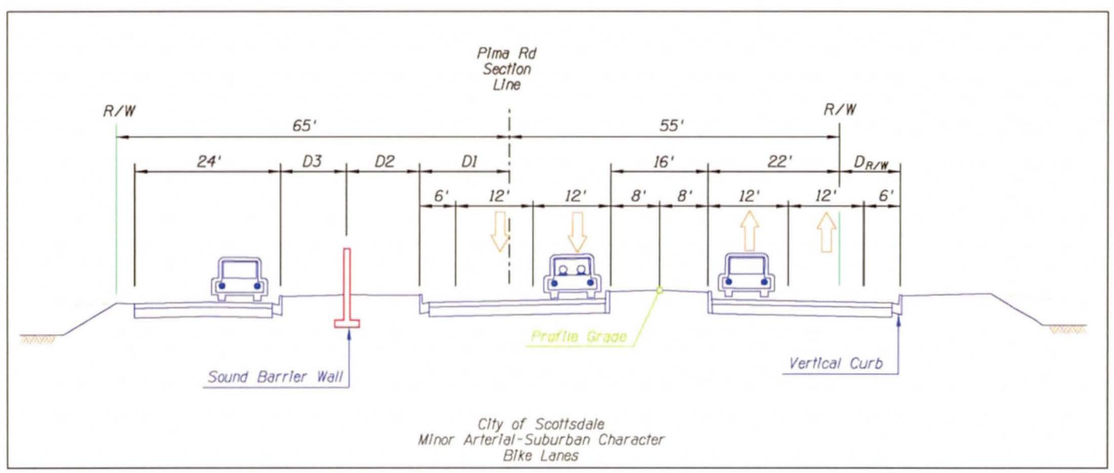
MODIFIED MINOR ARTERIAL STREET
(FOUR-LANE WITH RAISED MEDIAN)

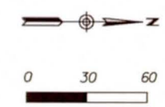
12 December 1992

Pima Road
Geometeric Concept

BRW

Appendix D: Typical Section Alternatives A-E Exhibits





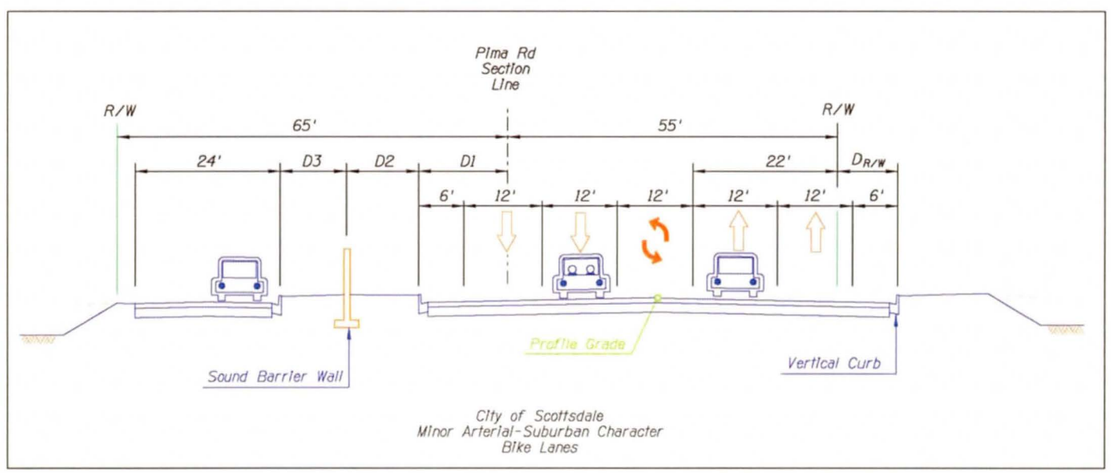
Section	D1		D2		D3		$D_{R/W}$ *
	Min	Max	Min	Max	Min	Max	Min
McDowell Rd to Thomas Rd	24'	24'	4'	14'	5'	9'	3'
Thomas Rd to Indian School Rd	15'	24'	6'	16'	5'	17'	-7'
Indian School Rd to Chaparral Rd	15'	16'	6'	17'	6'	14'	-7'
Chaparral Rd to McDonald Rd	15'	15'	7'	15'	4'	15'	-6'
McDonald Rd to Indian Bend Rd	16'	27'	7'	12'	6'	16'	-7'
Indian Bend Rd to Via de Ventura	27'	45'	-	-	-	-	-1

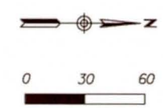
* Minimum Dimension Between Back of East Curb and Existing 55' Easement Line.

Pima Road DCR

Typical Section
Alternative A,
Raised Median, Bike Lanes

August, 2007





Section	D1		D2		D3		$D_{R/W}$ *
	Min	Max	Min	Max	Min	Max	Min
McDowell Rd to Thomas Rd	24'	24'	4'	14'	5'	9'	7'
Thomas Rd to Indian School Rd	15'	24'	6'	16'	5'	17'	-3'
Indian School Rd to Chaparral Rd	15'	16'	6'	17'	6'	14'	-3'
Chaparral Rd to McDonald Rd	15'	15'	7'	15'	4'	15'	-2'
McDonald Rd to Indian Bend Rd	16'	27'	7'	12'	6'	16'	-3'
Indian Bend Rd to Via de Ventura	27'	45'	-	-	-	-	3'

* Minimum Dimension Between Back of East Curb and Existing 55' Easement Line.

Pima Road DCR

Typical Section
Alternative D,
Paved Median, Bike lanes

August, 2007

Appendix E: Analysis of Existing Roadway Alignment

(AASHTO Controlling Design Criteria Report)

PROJECT H 3344 01C

Pima Road:
McDowell Road to 90th Street

AASHTO CONTROLLING DESIGN CRITERIA REPORT

Prepared for:

ADOT

Prepared by:

PB

September, 2007

TABLE OF CONTENTS

SUMMARY OF DESIGN FEATURES	1-2
SUMMARY OF AASHTO CONTROLLING DESIGN CRITERIA Pima Road	3-4
ATTACHMENT NO.1 Pima Road	5-8
BRIDGE SUMMARY	9

SUMMARY OF AASHTO CONTROLLING DESIGN CRITERIA
MAIN LINE SUMMARY (URBAN)

PROJECT NUMBER:
PROJECT LOCATION: PIMA ROAD (MCDOWELL RD TO 90TH STREET)
HIGHWAY SECTION:
FUNCTIONAL CLASSIFICATION: URBAN ARTERIAL
ROUTE: PIMA ROAD
BEGINNING MP: -
ENDING MP: -

LANE AND SHOULDER WIDTH

	EXISTING (FEET)	AASHTO RECOMMENDED MINIMUM (FEET)
LANE WIDTH:	12	10-12
INSIDE SHOULDER WIDTH:	None	Desirable but not required
OUTSIDE SHOULDER WIDTH:	None	Desirable but not required

DESIGN SPEED
THE AASHTO RECOMMENDED MINIMUM DESIGN SPEED OF THE HIGHWAY IS: 50 mph
THE POSTED SPEED LIMIT IS: 45 mph
TERRAIN IS: Level

GRADES
EXISTING MAXIMUM GRADE IS: 5.00%
AASHTO ALLOWABLE MAXIMUM GRADE IS: 6%

CROSS SLOPE
EXISTING CROSS SLOPE IS: 2.00%
1.50%
AASHTO ALLOWABLE RANGE IS: 1.5-3.0%

TRAFFIC VOLUMES AND FACTORS

PROGRAM YEAR	DESIGN YEAR	TRAFFIC FACTORS
2007	2030	K=8%
		D=51%
ADT (VPD)	ADT (VPD)	T=5%
9,000	23,000	

REMARKS

* Design Exception Required

3

SUMMARY OF AASHTO CONTROLLING DESIGN CRITERIA
MAINLINE - CONTINUED

VERTICAL CLEARANCE

STRUCTURE	MILEPOST	PRECONSTRUCTION CLEARANCE	POSTCONSTRUCTION CLEARANCE	AASHTO MINIMUM ALLOWABLE CLEARANCE

STRUCTURES

STRUCTURE	NO.	MILEPOST	EXISTING BRIDGE WIDTH	RECOMMEND. BRIDGE WIDTH	BRIDGE RAIL GEOMETRY ADEQUATE?	BRIDGE RAIL STRUCTURE ADEQUATE?	EXISTING STRUCTURAL CAPACITY	RECOMMEND. STRUCTURAL CAPACITY
ARIZONA CANAL BRIDGE	9353	City of Scottsdale	29.7'	29	No	No	HS-20	HS-20

VERTICAL ALIGNMENT AND STOPPING SIGHT DISTANCE

VPI STATION	MILE POST	APPROACH GRADE (%)	DEPARTURE GRADE (%)	LENGTH OF CURVE (FEET)	EXISTING SIGHT DISTANCE (FEET)	RECOMMEND. SIGHT DISTANCE (FEET)	EXISTING SPEED (MPH)	RECOMMEND. DESIGN SPEED (MPH)

See Attachment No. 1 *

HORIZONTAL ALIGNMENT, SUPERELEVATION, AND STOPPING SIGHT DISTANCE

HPI STATION	MILE POST	SUPERELEVATION MAXIMUM (FT/FT)	SUPERELEVATION EXISTING (FT/FT)	SUPERELEVATION MINIMUM (FT/FT)	EXISTING SPEED (MPH)	DEGREE OF CURVE MAXIMUM	DEGREE OF CURVE EXISTING

No Horizontal Curves

See Attachment No. 2 *

REMARKS

* Design Exception Required

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ATTACHMENT 1 - VERTICAL CURVE INVENTORY

Project Name: Pima Road Design Concept Report (McDowell to 90th Street)
Project Number: H 3344 01C
Roadway Type: Arterial

VPI STATION	MILEPOST		TRAFFIC	GRADE	GRADE	CURVE	CURVE	STOPPING SIGHT DISTANCE		SPEED	
	BEGIN	END	DIRECTION (1w, 1a or 2)	IN (%)	OUT (%)	LENGTH (ft)	TYPE	AVAILABLE (ft)	AASHTO MINIMUM (ft)	AVAILABLE (mph)	DESIGN (mph)
160+00.00			2	0.1500	0.4275	0	GB	GB	GB	GB	55
164+00.00			2	0.4275	0.4000	0	GB	GB	GB	GB	55
179+00.00			2	0.4000	0.2500	0	GB	GB	GB	GB	55
203+00.00			2	0.2500	0.3000	0	GB	GB	GB	GB	55
215+00.			2	0.3000	0.1500	0	GB	GB	GB	GB	55
223+00			2	0.1500	0.4058	0	GB	GB	GB	GB	55
231+00.			2	0.4058	0.2767	0	GB	GB	GB	GB	55
250+00.			2	0.2767	0.1975	0	GB	GB	GB	GB	55
258+00.			2	0.1975	0.4630	0	GB	GB	GB	GB	55
268+00.			2	0.4630	0.3789	0	GB	GB	GB	GB	55
274+00.			2	0.3789	0.2550	0	GB	GB	GB	GB	55
300+00.			2	0.2550	0.1200	0	GB	GB	GB	GB	55
311+00.			2	0.1200	0.3415	0	GB	GB	GB	GB	55
328+00.			2	0.3415	0.8946	400	Sag	+9999	500	+100	55
338+95.44			2	0.8946	0.0805	0	GB	GB	GB	GB	55
340+44.55			2	0.0805	0.6829	0	GB	GB	GB	GB	55
345+00.			2	0.6829	0.4574	600	Crest	5085	498	+100	55
364+00.			2	0.4574	0.2500	0	GB	GB	GB	GB	55

Notes:

Traffic Direction:
1w = One Way Traffic in Station direction
1a = One Way Traffic against Station direction
2 = Two Way Traffic

Grades are with respect to Station direction.
* Indicates design exception required.
GB indicates grade break. Stopping Sight Distance and Speed not calculated.
Calculations are based on AASHTO 2001 and ADOT 2004 Roadway Design Guidelines formulas with adjustments for effective grade.

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ATTACHMENT 1 - VERTICAL CURVE INVENTORY

Project Name: Pima Road Design Concept Report (McDowell to 90th Street)
Project Number: H 3344 01C
Roadway Type: Arterial

VPI STATION	MILEPOST		TRAFFIC	GRADE	GRADE	CURVE	CURVE	STOPPING SIGHT DISTANCE		SPEED	
	BEGIN	END	DIRECTION (1w, 1a or 2)	IN (%)	OUT (%)	LENGTH (ft)	TYPE	AVAILABLE (ft)	AASHTO MINIMUM (ft)	AVAILABLE (mph)	DESIGN (mph)
366+00.			2	0.2500	0.3150	0	GB	GB	GB	GB	55
370+00.			2	0.3150	0.3893	0	GB	GB	GB	GB	55
403+00.			2	0.3893	0.5130	0	GB	GB	GB	GB	55
413+00.			2	0.5130	0.4650	0	GB	GB	GB	GB	55
441+00.			2	0.4650	0.5309	0	GB	GB	GB	GB	55
452+00.			2	0.5309	1.0000	400	Sag	+9999	501	+100	55
463+00.			2	1.0000	-0.1000	400	Crest	1181	501	92	55
478+00.			2	-0.1000	0.7520	800	Sag	+9999	498	+100	55
483+00.			2	0.7520	0.4700	0	GB	GB	GB	GB	55
500+00.			2	0.4700	0.7055	0	GB	GB	GB	GB	
513+00.			2	0.7055	0.6020	0	GB	GB	GB	GB	

Notes:

Traffic Direction:
1w = One Way Traffic in Station direction
1a = One Way Traffic against Station direction
2 = Two Way Traffic

Grades are with respect to Station direction.
* Indicates design exception required.
GB indicates grade break. Stopping Sight Distance and Speed not calculated.
Calculations are based on AASHTO 2001 and ADOT 2004 Roadway Design Guidelines formulas with adjustments for effective grade.

6

ATTACHMENT 1 - VERTICAL CURVE INVENTORY

Project Name: Pima Road Design Concept Report (McDowell to 90th Street)
Project Number: H 3344 01C
Roadway Type: Arterial

VPI STATION	MILEPOST		TRAFFIC	GRADE	GRADE	CURVE	CURVE	STOPPING SIGHT DISTANCE		SPEED	
	BEGIN	END	DIRECTION (1w, 1a or 2)	IN (%)	OUT (%)	LENGTH (ft)	TYPE	AVAILABLE (ft)	AASHTO MINIMUM (ft)	AVAILABLE (mph)	DESIGN (mph)
153+65.			2	-0.4670	0.5370	0	GB	GB	GB	GB	55
154+75.			2	0.5370	0.3070	0	GB	GB	GB	GB	55
155+50.			2	0.3070	0.1730	0	GB	GB	GB	GB	55
156+25.			2	0.1730	0.2670	0	GB	GB	GB	GB	55
157+60.			2	0.2670	0.6330	0	GB	GB	GB	GB	55
159+00.			2	0.6330	0.4660	0	GB	GB	GB	GB	55
159+75.			2	0.4660	0.2700	0	GB	GB	GB	GB	55
160+75.			2	0.2700	0.4170	0	GB	GB	GB	GB	55
163+75.			2	0.4170	0.3870	0	GB	GB	GB	GB	55
166+00.			2	0.3870	0.0630	0	GB	GB	GB	GB	55
167+75.			2	0.0630	0.1000	0	GB	GB	GB	GB	55
174+75.			2	0.1000	0.0400	0	GB	GB	GB	GB	55
176+50.			2	0.0400	0.1340	0	GB	GB	GB	GB	55
179+25.			2	0.1340	0.0640	0	GB	GB	GB	GB	55
180+50.			2	0.0640	0.1020	0	GB	GB	GB	GB	55
182+75.			2	0.1020	0.0880	0	GB	GB	GB	GB	55
184+00.			2	0.0880	0.1700	0	GB	GB	GB	GB	55
186+00.			2	0.1700	0.0514	0	GB	GB	GB	GB	55
189+50.			2	0.0514	0.2560	0	GB	GB	GB	GB	55
190+75.			2	0.2560	0.1880	0	GB	GB	GB	GB	55
192+40.			2	0.1880	-0.4090	0	GB	GB	GB	GB	55
193+50.			2	-0.4090	-0.0364	0	GB	GB	GB	GB	55
196+25.			2	-0.0364	-0.1280	0	GB	GB	GB	GB	55
197+50.			2	-0.1280	-0.2800	0	GB	GB	GB	GB	55
198+25.			2	-0.2800	-0.1200	0	GB	GB	GB	GB	55

Notes:

Traffic Direction:
1w = One Way Traffic in Station direction
1a = One Way Traffic against Station direction
2 = Two Way Traffic

Grades are with respect to Station direction.
* Indicates design exception required.
GB indicates grade break. Stopping Sight Distance and Speed not calculated.
Calculations are based on AASHTO 2001 and ADOT 2004 Roadway Design Guidelines formulas with adjustments for effective grade.

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ATTACHMENT 1 - VERTICAL CURVE INVENTORY

Project Name: Pima Road Design Concept Report (McDowell to 90th Street)
Project Number: H 3344 01C
Roadway Type: Arterial

VPI STATION	MILEPOST		TRAFFIC	GRADE	GRADE	CURVE	CURVE	STOPPING SIGHT DISTANCE		SPEED	
	BEGIN	END	DIRECTION (1w, 1a or 2)	IN (%)	OUT (%)	LENGTH (ft)	TYPE	AVAILABLE (ft)	AASHTO MINIMUM (ft)	AVAILABLE (mph)	DESIGN (mph)
200+50.			2	-0.1200	-0.2150	0	GB	GB	GB	GB	55
203+60.			2	-0.2150	-0.1080	0	GB	GB	GB	GB	55
204+25.			2	-0.1080	0.1600	0	GB	GB	GB	GB	55
204+50.			2	0.1600	0.5200	0	GB	GB	GB	GB	55
204+75.			2	0.5200	0.1870	0	GB	GB	GB	GB	55

Notes:

Traffic Direction:
1w = One Way Traffic in Station direction
1a = One Way Traffic against Station direction
2 = Two Way Traffic

Grades are with respect to Station direction.
* Indicates design exception required.
GB indicates grade break. Stopping Sight Distance and Speed not calculated.
Calculations are based on AASHTO 2001 and ADOT 2004 Roadway Design Guidelines formulas with adjustments for effective grade.

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ROADWAY ENGINEERING GROUP
ROADWAY PREDESIGN SECTION

DATE: 9/18/2007

TO: SUNIL ATHALYE
BRIDGE GROUP
BRIDGE MANAGEMENT SECTION, MD 635E

FEDERAL REFERENCE NO: _____ TRACS NO: H 3344 01C
HIGHWAY: _____
LOCATION: Pima Road, 0.6 mile South of Indian Bend on Pima Road
MP LIMITS: _____ TO: _____
PROJECT DESCRIPTION: Pima Road DCR (McDowell Rd to 90th Street)

FROM: Isabel Quintero
1501 W. Fountainhead Pkwy,
Suite 400, Tempe, Arizona, 85282

SUBJECT: BRIDGE EVALUATION REQUEST

Please evaluate the following structures per AASHTO guidelines:

ROUTE NO.	MILEPOST	STR. NO. AND NAME	BRIDGE LENGTH	BRIDGE ROADWAY WIDTH	BRIDGE RAIL / BARRIER TYPE	BRIDGE RAIL / BARRIER GEOM. OK	BRIDGE RAIL / BARRIER STRUC OK	AC OVERLAY THICKNESS (EXISTING)	AC OVERLAY REMOVE (MINIMUM)	AC OVERLAY REPLACE/NEW (MAXIMUM)	VERTICAL CLEARANCE (MINIMUM) NB/EB	VERTICAL CLEARANCE (MINIMUM) SB/WB	BRIDGE LOAD RATING	BRIDGE SUFFICIENCY RATING
Pima Rd	City of Scottsdale	9353 Arizona Canal Bridge	116'	29.7'	Conc. barrier	No	No	2"			NA	NA	HS20	F75.53
			Comments: AC cover on deck has large cracks over pier walls and is relatively worn. Both approach pavings have some settling with more on the N side. Both approaches have large cracks at abutment joints. Railing has cracks and spalls. Repair recommendation for railing is made.											
		X												
			Comments:											
		X												
			Comments:											
		X												
			Comments:											
		X												
			Comments:											

Evaluation Completed by: Homer Saidi, P.E. Date: 9/19/2007

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Appendix F: Aesthetic Character Design Concept Report (ACDCR)

Pima Road Character Aesthetics

A-1.1 Introduction

This preliminary Aesthetic Character Design Concept Report (ACDCR) was prepared for the Pima Road corridor from McDowell Road north to 90th Street. J2 Engineering and Environmental Design (J2), in association with PB Americas (PB), prepared this report for both the Salt River Pima Maricopa Indian Community (SRPMIC) and the City of Scottsdale (COS).

A-1.2 Project Objectives

The goals of this ACDCR are consistent with both the SRPMIC and the COS's overall approach to dealing with roadways that are considered roads of significance. The aesthetic objectives of this project are to create a signature traveling experience for both the pedestrian and the motoring public that currently utilize this important corridor. All design should be reviewed and evaluated against SRPMIC's development guidelines along with COS's *Scottsdale Sensitive Design Principles* document to ensure that both communities needs and design objectives are being met.

The passage of time along this corridor could speak volumes about its storied history. It is very different from just a simple border road between two communities. This road and its right-of-way now serve as a main artery for both commerce and residential uses. The growth and development along both the eastern and western limits of this roadway have undergone significant changes over the past 10 years that have altered and increased this corridor's importance to both communities. Currently, commercial development along the eastern edge stands in contrast to the single family homes that line the western edge. The capability to find common ground between these uses, and the communities that occupy them, can be successfully achieved through the creative use and planning of space. This creative use of space relates directly to the corridor's aesthetic.

This ACDCR will attempt to present to the reviewing committees, and the general public, several ideas that will help to create the aesthetic thread that can weave into the engineering, the creative spirit, and sense of arrival and destination along and through this corridor. The overall goal will be to create a space that generates an inspired energy that will serve as a catalyst for other imaginative and unique approaches to all elements within and along this corridor.

The primary objectives listed below are the first steps in addressing the aesthetic nature of this important corridor. Our overall objective is to provide a design aesthetic and a vision that speaks to:

- Utilize sustainability techniques that will preserve and showcase the Sonoran Desert
- Utilize cultural elements, colors, and textures to provide a cohesive thread throughout the corridor
- Provide an imaginative and unique approach to street elements that will add to the traveling experience
- Create a signature destination that invites the traveling public to linger
- Create a maintainable aesthetic quality through the use of durable materials and sensitive design
- Create a balanced and harmonious blend of man-made and natural elements that compliment each other, and the corridor aesthetic

In order to achieve the goal of meeting the objectives stated above, we need to create a corridor that speaks to each objective uniquely.
The following design principles were applied to the concepts that are contained within this ACDCR:

- Recycle/Reuse: Use both site-specific and manufactured recycled items in the Project as site furnishings and construction materials. These materials shall be illustrative of the surrounding community's history and use.
- Accessibility: Provide balanced, controlled, safe, and creative solutions for people of all ages and abilities without sacrificing the variety of both visual and tactile experiences often overlooked on roadway corridors.
- Local Materials: Use indigenous materials and facilities to minimize maintenance challenges for the future and educate the public to the diverse materials and solutions that are both locally and regionally significant and available.
- Create Connections: Promote the development of connections between different uses and facilities both within and outside the Project. These connections will include the development and design of several links into both the surrounding residential neighborhoods and commercial areas.
- Respect the Setting: Enhance the roadway corridor experience so that it is compatible and consistent with the rich and diverse Sonoran Desert ecosystem.
- Create Discovery Zones: Create spaces and areas along the corridor that serve as "discovery zones" and destinations that invite the visiting public in a positive and enlightened manner.

A-1.3 Project Purpose

The purpose of establishing an overall aesthetic approach for this project will set the vocabulary for all aesthetics located along side and within the corridor. These guidelines will serve as the design aesthetic principles that will establish the character development and approach to the project. The attached concepts provide a graphic representation of several ideas and concepts that speak to the objectives, goals, and design principles discussed above. The design team fully recognizes that these are guidelines .

A-2.0 Aesthetic Development

A-2.1 Approach to Aesthetics

The approach applied to the Pima Road Aesthetic was initiated after discussions with the steering committee, hearing from the local public and separate meetings with both the SRPMIC and COS Staff. The approach has its basis of inspiration from the surrounding Sonoran Desert. Everything from colors to hardscape materials have been derived from the diversity of the desert environment; whether it is color, shape, or texture.

A-2.2 Colors

The inspiration for the color palette is the greens, browns, reds, and oranges found in the native culture and lands of the SRPMIC. These colors are based upon the vegetation reflected in the greens and the browns, reds and oranges from the earth. Color has been used by the native culture dating back over 2000 years. Evidence of the use of these colors is in ancient pottery and baskets discovered in archaeological discoveries and in modern interpretations of these crafts passed down through descendants. Pottery colors are in the browns, reds and oranges which are reflective of the native clay soils. While baskets are in the browns, tans, black and greens which used native plants such as willow shoots, cattails and devils claws.

Use of color to connect the project to the significant cultural past and present, along with the native environment, is a key factor to the in situ design approach. Interpretations of pottery and basket patterns and colors in concrete paving and walls are a grounding design principle. Bringing the native colors into the third, or vertical, dimension creates an even bigger impact to the view of the traveler and user. Use of these colors in vertical elements may include signs, sign posts, lighting, ramadas/bus stops, walls, and environmental art.

A-2.3 Plants

Proposed plant palette for the project is comprised of all Sonoran Desert native plants. These plants are all adapted to perform robustly in the harsh lower sonoran desert soils, low rain fall and extreme heat. Other determining factors in plant selection were form, scale, size, texture, density and color. A variety of trees for over-story shade cover, large shrubs for buffering, small shrubs and ground cover plants for ground plane coverage, and strong forms for accents.

Trees include Ironwood, Mesquite, and Blue Palo Verde; all native to the location. These trees will provide shade and vertical relief in the landscape. The large shrubs include Creosote Bush, Jojoba, Gray Thorn, Desert Lavender, and Chuparosa. Small shrubs and ground covers proposed are Penstemon, Blackfoot Daisy, Arrow Weed, Globe Mallow, Devil's Claw, Goldeneye, Paperflower, Desert Marigold, Fairy Duster, Bur-Sage, Gooding Verbena, Purple Three-Awn, and Brittle Bush. Accents suggested include Santa Rita Prickly Pear, Soaptree Yucca, Golden Flowered Agave, Fishhook Barrel Cactus, Agave Parryi, Ocotillo, Saguaro, Desert Spoon, and Desert Milkweed.

Plant placement will, in general, be trees for shade along walkways and in open areas for shade relief. Large shrubs in open spaces and in front of walls reduce scale and as a background plant for lower shrubs, ground covers and accents. Accents will be placed in prominent view points to accentuate sight lines and hardscape elements. All plant placements will follow ASHTO, ADOT, SRPMIC and COS safety and maintenance requirements. Plants will be placed in a naturalistic regime, fashioned after how they occur in the Sonoran Desert.

A-2.4 Vato - Bus Stop - Living Roof

The current designs proposed for the corridor are meant to convey the culture of the SRPMIC with the "Vato" or "Brush Arbor" concept along with a "Living Roof" design. The "Vato," is a term applied to the ancient shelter used by the SRPMIC ancestors. The shelter also served as a living trellis to support several different food source vines. These two alternatives could be used individually or in combinations for the project area.

The "Vato" design is derived from historic cultural use of brush arbors by the Pima Indians. This design is an interpretation of the form, scale and texture in modern durable and sustainable steel material. The posts and beams would be formed of steel to look like mesquite tree trunks and branches with rebar used as lath emulating saguaro ribs. Wire mesh and wire art woven on the posts, beams and lath is reflective of arrow weed plant grown by native people on these brush arbor "Vatos."

A "Living Roof" design option which is again inspired by the "Vato" forms with the addition of a planting bed forming the roof. Xeric plants would be elevated into the roof bed providing cooling insulation and transpiration, while showily displaying the native plants selected.

A-2.5 Bus/Transit Stops

On the COS side of the road the COS transit is requiring use of the Standard Detail No. 2265 bus shelter at all bus stops.

For the portions of the roadway that are under COS jurisdiction the COS Standard Detail No. 2265 bus shelter will be used at all bus stops. This design is formed of a tube steel frame with a standing seam metal roof system. These materials form a shade cover over a bench with two bike racks and a trash receptacle adjacent in the open air. Colors of the standard shelter should be matched and or correlated with the other design elements of the corridor.

A-2.6 Aesthetic Walls

Along the corridor, aesthetic walls will be a major visual element. These accent panels will be, either offset from the existing neighborhood aesthetic walls to help with pedestrian connectivity to the commercial industries on the east side of Pima Road, or will be inline with the existing neighborhood aesthetic walls where the walls are required to be reconstructed due to the roadway improvements, or space is restricted. Accent panel concepts are all based in cultural and environmental connections to the SRPMIC. Four concepts proposed include: "Lima Beans," "Cotton Boles," "Prickly Pear," and "Saguaro." Each panel would be cast-in-place concrete which allows flexibility in panel rustication and coloring, while achieving all required structural and maintenance durability requirements. The rustication relief can readily be formed with standard form liners and form making materials. Colorant via integral color additives and or applied color is both standard roadway wall construction methods. The existing aesthetic walls should receive a new painted finish utilizing the color palette that will accentuate the new cast-in-place panels.

"Lima Beans" are a sustenance food historically of the SRPMIC. Opportunity to interpret this important life giver of the community, through "super graphic" relief forms of the vine and bean in the walls that will bring to life this important plant.

"Cotton Boles" displayed interpret this important crop that has historically provided commerce and clothing for the SRPMIC. The strong form of the "bole" reflects the crop which has historically grown on these exact lands.

"Prickly Pear Cactus" is one of the native plants that have many ethno-botanical roles in the lives of the SRPMIC. The pads of the prickly pear can be used as a food for both man and livestock. Juices from the plant are rich in life providing nutrients. The pad can be boiled, with the juice historically/culturally being used in building plasters for habitation shelter.

"Saguaro Cactus" the "sentinel of the desert," with its iconic form and stature, is a traditional visual cue. The flower and fruit of the Saguaro are culturally used for diet and drink, along with spiritual uses.

A-2.7 Site Amenities

To enhance the user experience along the corridor, a family of site furnishings has been selected which will provide functional uses from lighting, trash collection, seating, and bicycle parking. These fixtures complete the furnishing of the outdoor rooms and spaces. Forms and materials have been chosen for long term durability and aesthetic quality that blends with the overall project theme. All site amenities should conform to COS and SRPMIC standards where applicable. Proposed furnishings include:

- Traffic Signals will be COS's standard signals . Traffic Signals should finished in a complementary color/finish to the other metals furnished on the project.
- Pole Lights are mounted on square, exposed aggregate, integrally colored concrete poles. Pole type is SEQ Series, Coated Brown Jasper as manufactured by Ameron. Fixture type is "Mitre" manufactured by Architectural Area Lighting. Color is to match the pole.
- Bollard Lights are fixtures, mounted below eye level, on short concrete poles, 4'-0" maximum height. These lights serve pedestrian areas and landscape enhancement. A square, louvered light, mounted on the Ameron manufactured bollard.
- Benches are the "Austin" bench, manufactured by Landscape Forms Company. The bench is to have a back and be finished in a complementary color/finish to match the other metal furnishings on the project.
- Trash Receptacles are the "Austin" receptacle, manufactured by Landscape Forms Company. The receptacle is to be finished in a complementary color/finish to match the other metal furnishings on the project.
- Bike Racks are the "Round-Up" bike rack, manufactured by PW Athletic. The ring or circle was chosen due to the significance of the circle in native cultures.

A-2.8 Sidewalk Enhancements

Intermittently, at approximately one fourth (1/4) mile intervals, sidewalk paving enhancements are proposed. Three forms and textures have been selected for their design appropriateness relative to the theme of the project. The three concepts are: "Basket Pattern A," "Basket Pattern B," and "River Pattern." Each pattern is reflective of the historic culture of the SRPMIC and are of forms and patterns approved by the SRPMIC.

"Basket Pattern A" is a series of alternating broom finish textures with exposed aggregate finishes in dark browns and reds. The circle pattern is encompassed on two sides with a native pattern, and would be used on strait or linear sidewalks.

"Basket Pattern B" is a longer flowing curvilinear pattern, used in conjunction with a meandering sidewalk, composed of a series of alternating broom finish textures with exposed aggregate finishes in dark browns, tans, oranges, and reds.

"River Pattern," used in meandering walks, is a metaphor for the river which is so important in the SRPMIC member's life and culture. The pattern is both within, and breaks out of, the walkway edges. Finishes would be broom, swirl radial finishes, and varying sizes of exposed aggregate textures.

A-2.9 Intersection Improvements

The intersections of the major arterials with Pima Road offers an opportunity to enhance these areas through the creative use of pavement patterns within both the roadway and the pedestrian "waiting areas" at the adjacent corners. The aesthetic within the intersections gains its inspiration from the historic basket weave patterns of the SRPMIC. These patterns could be achieved within each intersection through the use of variety of materials including concrete pavers, colored concrete, enhanced pavement finishes (aggregate, recycled glass, etc.), or stamped and colored asphalt. The pedestrian "waiting areas" at the crosswalks are focused on providing sufficient space to accommodate significant shade from trees, seating areas for benches, and color accents on both the horizontal and vertical planes. These "waiting areas" provide tremendous opportunities for pedestrian focused enhancements that draw inspiration from the pavement intersection proposed improvements.

A-2.9.1 Cross Sections

The preferred alternative is a section that has been developed to show the programmed improvements that are developed within the existing easement line. This is a direct result of reducing the automotive lane width to eleven feet, bike lanes down to five feet, and a fourteen-foot median width. This results in the project cross section being developed within the established easements.

A-2.9.2 Typical One Mile Landscape

The proposed landscape treatment within the median is a blending of native Sonoran Desert plants. The planting is a combination of desert trees, accented through the creative placement of native boulders, shrubs, and cacti accent planting. The earthwork within the median would also be manipulated to mimic, where possible, the gentle rolling terrain of the surrounding Sonoran Desert.

This typical mile showcases several other important aesthetic proposals that the design team recommends as repetitive components throughout the corridor. These concepts include the use of water harvesting bio-swales that work in conjunction with the design of the roadway drainage system. The roadway drainage would be allowed to enter these areas through either the use of curb cuts and/or catch basin bubble-up structures. The intent of these areas is to harvest enough storm water to supplement the irrigation to the surrounding vegetation, as well as to serve as a "best management practice (BMP)" for capturing the "first flush" of each rain event. These water harvesting bio-swales have proven successful throughout the country in taking the peak off of storm water flows that typically dump directly into the storm drainage system, while at the same time benefiting the surrounding plant materials.

These water harvesting bio-swales would be balanced against other areas in the median that would be slightly raised to provide vertical and longitudinal relief to the median. The "berming" up of these areas helps to visually diversify the corridor, and allows for improved visibility of the accent colors that are afforded to the motoring public throughout the year. In addition to showcasing the diversity and beauty of the Sonoran Desert plant materials, it can also assist in minimizing headlight glare from the opposite lanes of travel.

In addition to the water harvesting bio-swales and topographic "berming" changes to the median, the design team is proposing that in targeted areas the design should include the placement of historically significant "rock mounds." These features are significant to the SRPMIC because of their historic nature related to tribal plant cultivation, water conservation, and cultural importance. These rock gardens would be placed as transitions in median width when approaching a significant intersection. It serves as a link to the past and also as a visual cue to the motorist that there is an intersection approaching.

SECTION A-3.0 Irrigation

A-3.1 Drip Irrigation System

The scope of the drip irrigation system includes the following:

- Points of connection to the overall water distribution system
- Drip irrigation mainline network
- Manually activated quick coupling valve assemblies
- Electrically activated drip remote control valve and filter assemblies
- Drip lateral pipe networks
- Drip emitters
- Automated system controls

These system components are described individually in this section. All irrigation system components should conform to the current version of COS Supplement ot Maricopa Association of Governments (MAG) Specification and Details

A-3.1.2 Drip Irrigation Points of Connection

Flow to the drip irrigation systems will be fed from a series of connection points to the overall water supply system. Each point of connection will be provided with a flow sensor and normally open master valve that is compatible with the drip irrigation control system. Each point of connection will service a drip irrigation mainline network within a specific reach of the Project. The points of connection will be located at appropriate intervals along the roadway corridor to provide reasonable control and monitoring of the mainline and drip irrigation control system. Exact size and location of new water tap, meter, backflow prevention assembly, etc. and exact power sources will be corridinated with, and will meet all COS standards.

A-3.1.3 Drip Irrigation Mainline Network

A network of polyvinyl chloride (PVC) drip irrigation mainlines will be installed within the medians to service the drip irrigation remote control valve and filter assemblies. Mainlines will be constructed from Class 200 PVC pipe with deep-bell ductile iron gasket fittings for sizes 3-inch and larger, and Schedule 40 PVC pipe with Schedule 40 PVC solvent-welded fittings for sizes 2.5-inch and smaller. Mainline and valve assemblies for the median irrigation system will be distributed throughout the length of the corridor as required to provide localized control of irrigation for similar plant material species as much as practical, and to provide access for maintenance and operation staff. Isolation gate valves will be provided along the drip irrigation mainline at appropriate intervals to isolate segments of the mainline for repairs, system control, and maintenance.

In addition to the automatic irrigation system, supplementary water will be collected as part of the storm water harvesting system.

A-3.1.4 Drip Remote Control Valve and Filter Assemblies

Drip remote control valve and filter assemblies will be provided at appropriate intervals in the median to facilitate system control, filtration, and pressure reduction for the drip irrigation lateral pipe networks. Based on the drip irrigation design concept, individual drip remote control valve and filter assemblies will service a maximum irrigated area of 2 acres (with a maximum 50-gallon per minute [gpm] flow potential per remote control valve). Understory and ground cover plants will be serviced by laterals and remote control valves that are separate from those serving tree planting.

All drip remote control valve, filter assemblies, and related equipment will be installed below grade inside of valve boxes located in the median area. Drip lateral pipe will extend the length of the median. Where practical, drip remote control valve assemblies will be located in groups or manifolds, near walkways or maintenance access areas, for ease of location and maintenance. Major components for the drip remote control valve assemblies are included in the following paragraphs.

A-3.1.4.1 Isolation Ball Valve

A manually operated brass full-port ball valve, rated at 600 psi will be installed immediately upstream of a manifold group of electric remote control valves to allow for maintenance and repair of isolated valve assemblies. Riser connections between the mainline and the isolation ball valve will be constructed from Schedule 80 PVC threaded nipples and fittings.

A-3.1.4.2 Electric Remote Control Valve

The electric remote control valves will be constructed from red brass, with stainless-steel trim and a rubber diaphragm, rated for operating pressures up to 200 psi. The remote control valves will be equipped with a 1-piece, 24-volt alternating current (VAC) solenoid, flow control, contamination-proof self-flushing screen for dirty water applications, and internally operated manual activation mechanism.

A-3.1.4.3 Drip Lateral Wye-Strainer

A 60-mesh bronze body wye-strainer, with stainless-steel screen and manually operated flush valve, will be installed immediately downstream of each electric remote control valve to provide secondary filtration for each drip lateral pipe network. The wye-strainer will be rated at 300 psi operating pressure.

A-3.1.4.4 Drip Lateral Pressure Regulator

A bronze body pressure regulator will be installed immediately downstream of each drip lateral wye-strainer to provide consistent operating pressure at the discharge of the drip remote control valve assemblies for each drip lateral pipe network. The pressure regulator will be spring and diaphragm operated, rated at 300 psi working pressure, with an adjustable spring range between 25 to 75 psi.

A-3.1.5 Drip Lateral Pipe Networks

All drip laterals for the system will be constructed from Schedule 40 PVC pipe, and will be buried below finish grade with Schedule 40 PVC risers to each emitter location. Where necessary, 0.25-inch linear low-density vinyl drip distribution tubing will extend from the individual emitter location to the individual plant rootball.

Each major segment of the drip irrigation lateral pipe network will be provided with a Schedule 40 PVC full-port ball valve at the end of the lateral pipe to allow for occasional flushing of the pipe network. Where necessary, specifically on the water harvesting bio-swale areas, Schedule 40 PVC spring-loaded lateral check valves will be installed to avoid excessive drainage from lower outlets on the drip lateral network.

A-3.1.6 Drip Emitters

Single-outlet and multiple-outlet self-flushing drip emitters will be used as appropriate for specific site conditions. The specification for the emitters is non-proprietary but will require an emitter, such as that manufactured by Bowsmith that is less prone to clogging than other emitter types.

A-3.1.7 Automatic Drip Irrigation Control System

A central control system, operated by the City of Scottsdale (COS) maintenance personnel, is planned for the overall Project irrigation system. The planned location for the central control computer workstation has yet to be determined but will be central to the Pima Road corridor.

The controllers will operate in a "stand-alone" condition until the central control computer system is installed.

Equipment that will be part of the automatic control system is included in the following paragraphs.

A-3.1.7.1 Irrigation Field Satellite Controllers

The specification for the irrigation field satellite controllers will be non-proprietary, but the system will be designed to conform with the Motorola Irrinet and Scorpio central/satellite control system that will match established COS equipment standards for this maintenance district. All controllers should be tuned to existing COS irrigation Central Control radio frequencies. Specific component requirements will include the following:

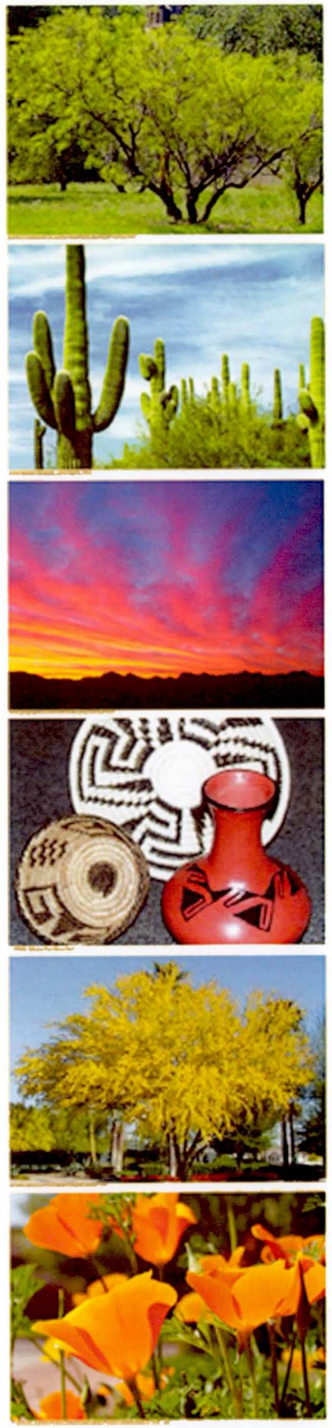
- Stand-alone flow sensing diagnostics and real-time master valve shutdown capability
- Interface capability with on-site weather station and evapotranspiration (ET) monitoring components
- Operation using a hand-held remote radio transceiver interface
- Cycle and soak, multiple start-time, and ET-based programming capabilities
- Two-way communication with IBM-compatible central controller via phone modem, hardwire, local radio, and digital radio communication methods
- Stainless-steel free-standing controller enclosures
- Up to 40-station capacity for satellite controller

A-3.1.7.2 Irrigation Central Control Computer

The irrigation central control computer will be IBM compatible with appropriate software and communication hardware to monitor and operate the irrigation field satellite controller assemblies and store operational data records.

A-3.1.8 Pipe Bedding

In response to the rocky soil conditions that will be encountered in all Project areas, the Project details specify sand or screened soil material as bedding material within 3 inches of all lateral line pipe and drip tubing installations.



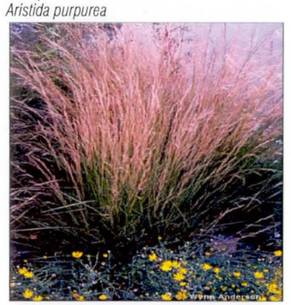
GREENS	BROWNS	REDS	ORANGES

Golden-Flowered Agave
Agave chrysanthia

Parry's Agave
Agave parryi v. parryi

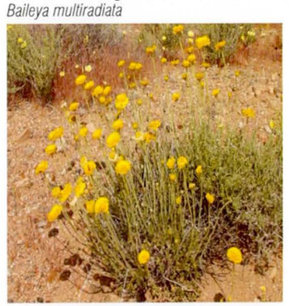
Bur-Sage
Ambrosia deltoidea

Purple Three-Awn
Aristida purpurea



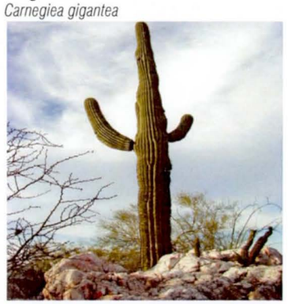
Desert Milkweed
Asclepias subulata

Desert Marigold
Baileya multiradiata



Fairy Duster
Calliandra eriophylla

Saguaro
Carnegiea gigantea



Desert Spoon
Dasylirion wheeleri

Brittlebush
Encelia farinosa

Fishhook Barrel Cactus
Ferocactus wislizenii

Ocotillo
Fouquieria splendens

Goodding-verbena
Glandularia gooddingii

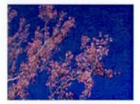
Desert Lavender
Hyptis emoryi

Chuparosa
Justicia californica

Creosote Bush
Larrea tridentata

Blackfoot Daisy
Melampodium leucanthum

Ironwood
Olneya tesota



Santa Rita Prickly-pear
Opuntia santa-rita

Blue Palo Verde
Parkinsonia florida

Desert Penstemon
Penstemon parryi

Arrow Weed
Pluchea sericea

Devil's Claw
Proboscidea parviflora

Velvet Mesquite
Prosopis juliflora

Paperflower
Psilostrophe coooperi

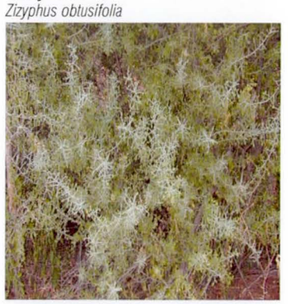
Jojoba
Simmondsia chinensis

Globemallow
Sphaeralcea ambigua

Goldeneye
Viguiera deltoidea

Soaptree Yucca
Yucca elata

Gray Thorn
Zizyphus obtusifolia

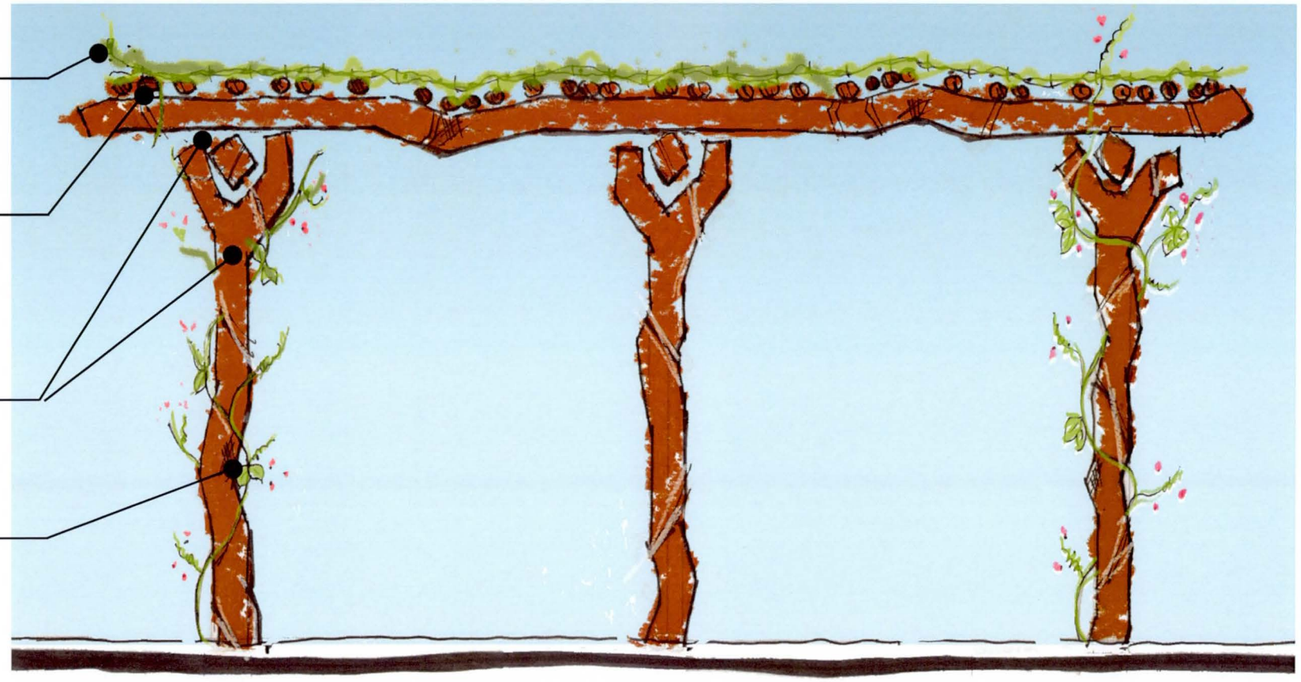


Wire Mesh Interwoven Around Rebar Lath to Reflect Native Arrow Weed

Rebar Element as Roof Lath to Resemble Saguaro Ribs

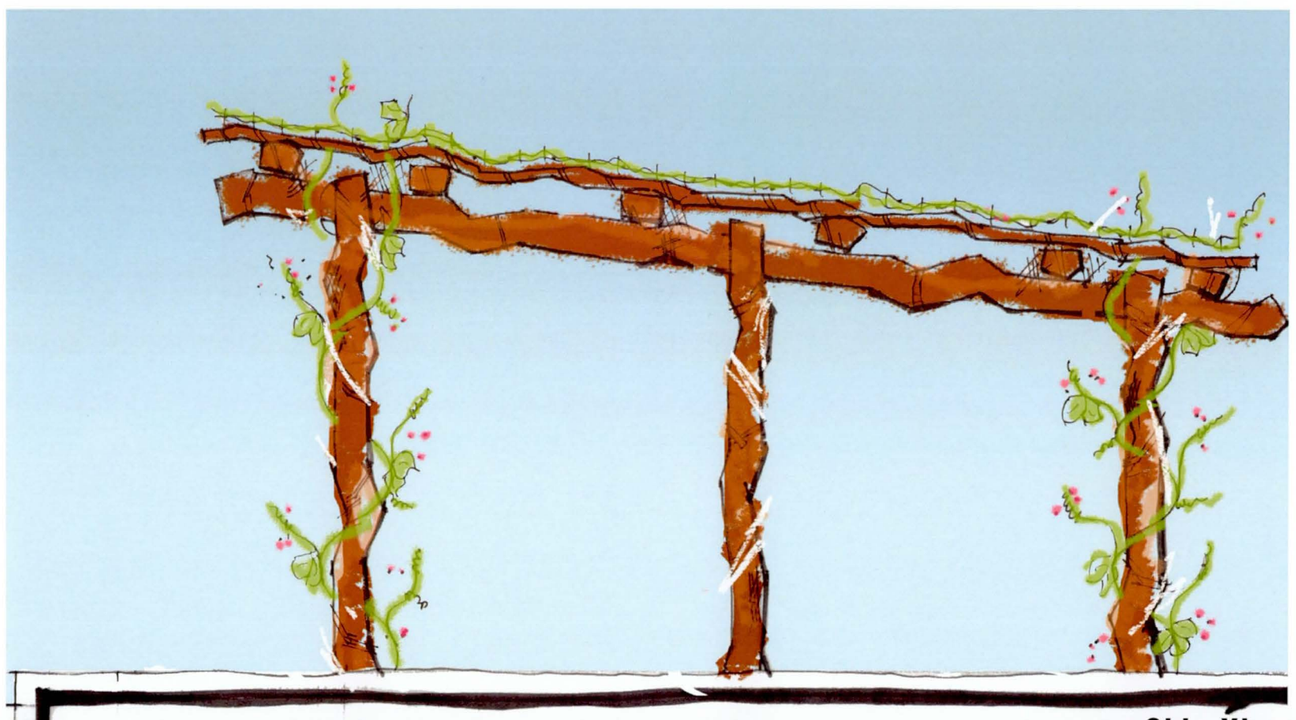
Support Post, Beams, and Joists Finished/ Formed to Resemble Mesquite Trunks.

Wire Artwork to Reflect Native Bean Vine Around Posts

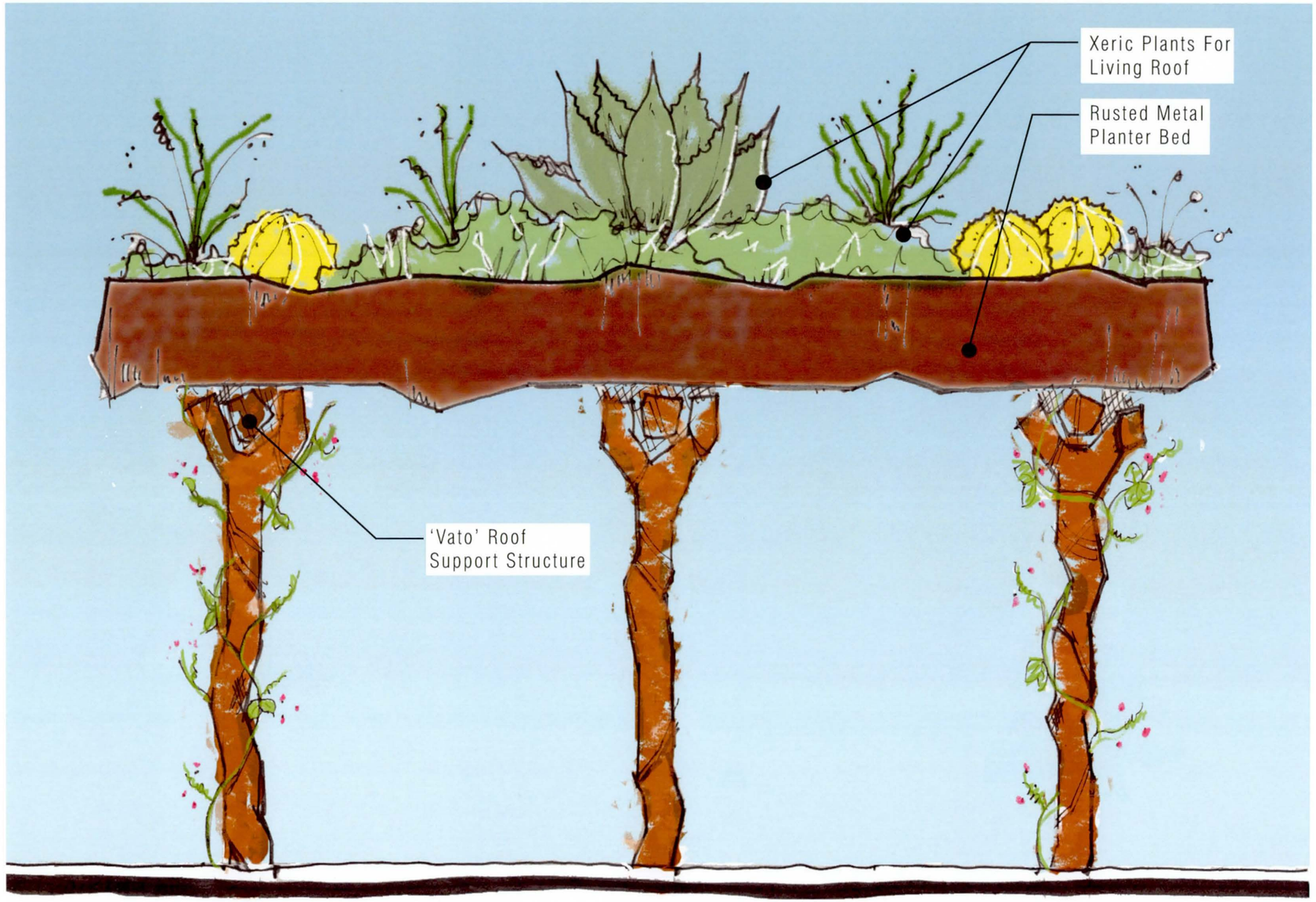


Front View

Plan View

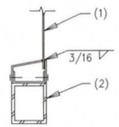


Side View



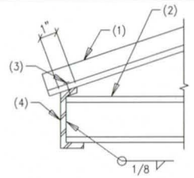
Pima Road
Character Aesthetic

A-2.4 Living Roof Elevation
Bus Stop



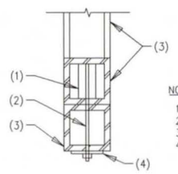
NOTES:
1. PREFORATED PANEL. COORDINATE WITH SITE FURNITURE.
2. STEEL TUBE.

01 PANEL TO FRAME CONNECTION
03-520 NO SCALE



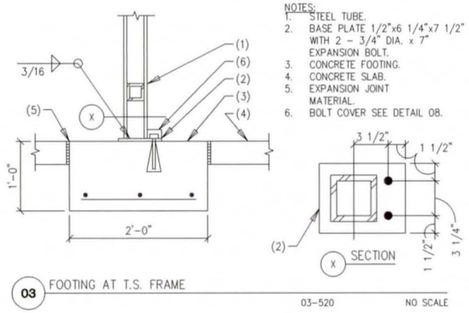
NOTES:
1. STANDING SEAM METAL DECK.
2. STEEL TUBE.
3. BLACK OXIDE SCREW FASTENER AT 6" O.C. (MIN 4" AT EACH END).
4. CLOSURE PANEL.

02 TYPICAL CLOSURE
03-520 NO SCALE



NOTES:
1. 3/4" THREAD INSERT.
2. 3/4" DIA. BOLT.
3. STEEL TUBE.
4. 3"x2"x1/4" PLATE WASHER.

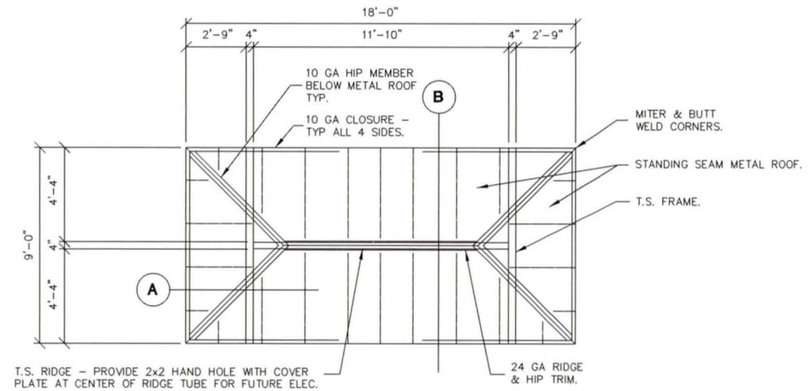
04 CONNECTION AT ROOF STRUCTURE
03-520 NO SCALE



NOTES:
1. STEEL TUBE.
2. BASE PLATE 1/2"x6 1/4"x7 1/2" WITH 2 - 3/4" DIA. x 7" EXPANSION BOLT.
3. CONCRETE FOOTING.
4. CONCRETE SLAB.
5. EXPANSION JOINT MATERIAL.
6. BOLT COVER SEE DETAIL 08.

03 FOOTING AT T.S. FRAME
03-520 NO SCALE

DETAIL NO.		APPROVED BY:		DETAIL NO.
2265-4	City of Scottsdale Standard Details	Scottsdale Standards & Specifications Committee	BUS SHELTER	2265-4

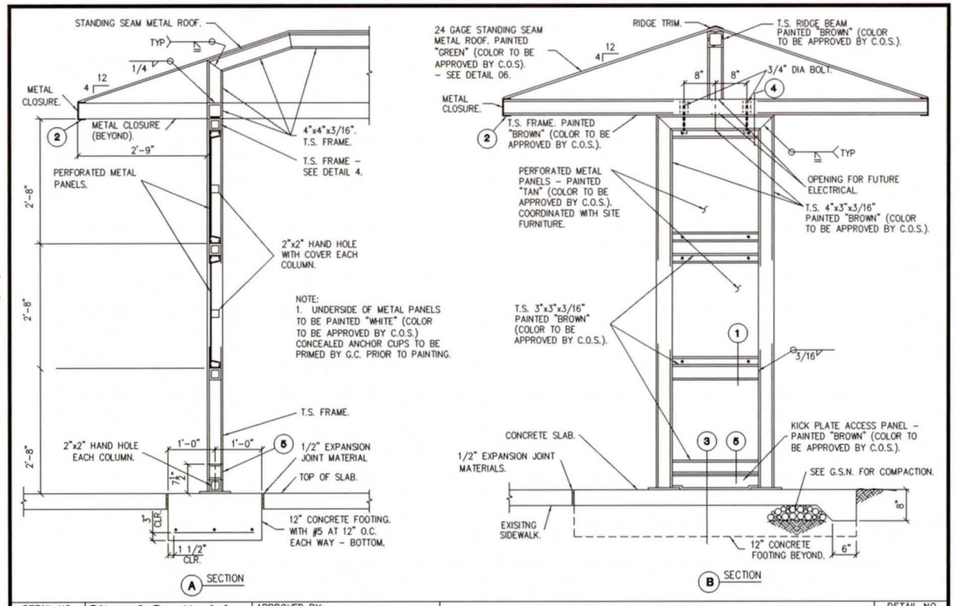


BUS SHELTER FRAMING PLAN

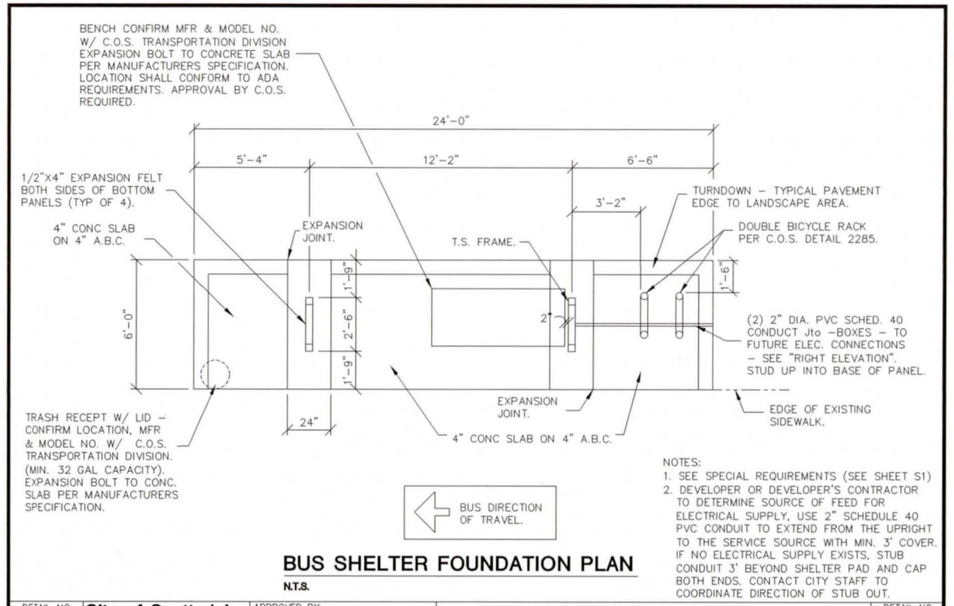
N.T.S.

DETAIL NO.		APPROVED BY:		DETAIL NO.
2265-2	City of Scottsdale Standard Details	Scottsdale Standards & Specifications Committee	BUS SHELTER	2265-2

REVISED 5/17/06



DETAIL NO.		APPROVED BY:		DETAIL NO.
2265-3	City of Scottsdale Standard Details	Scottsdale Standards & Specifications Committee	BUS SHELTER	2265-3

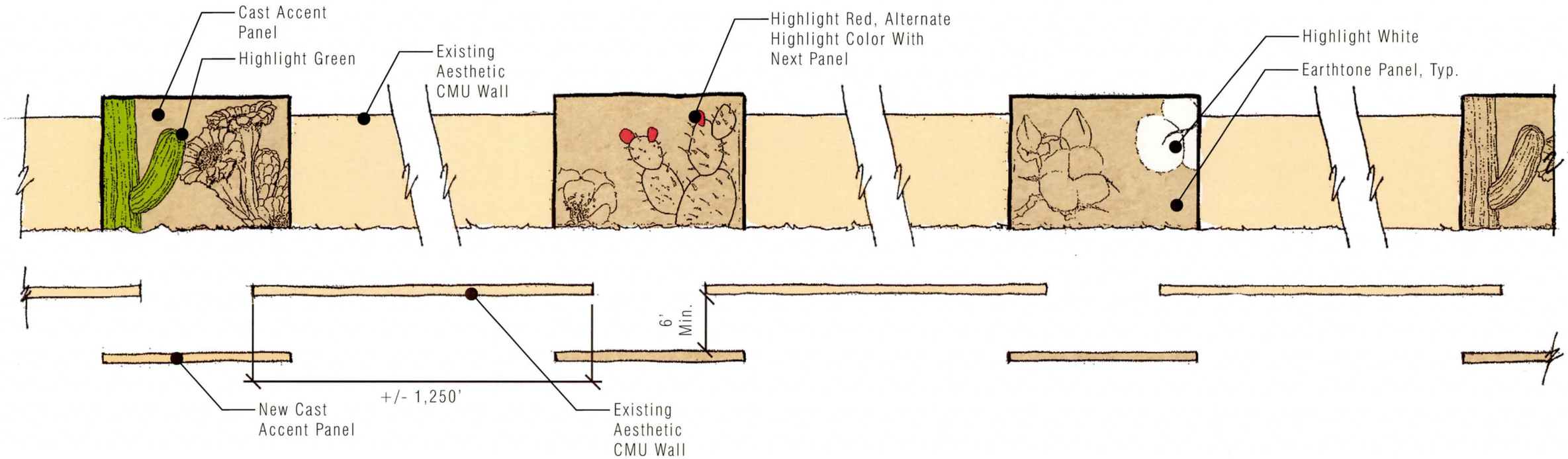


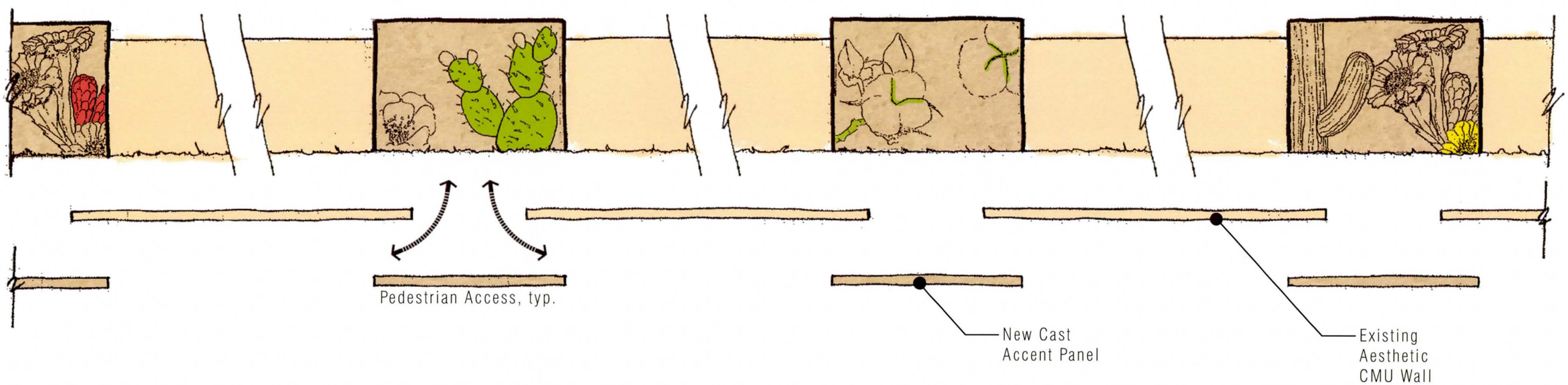
NOTES:
1. SEE SPECIAL REQUIREMENTS (SEE SHEET S1)
2. DEVELOPER OR DEVELOPER'S CONTRACTOR TO DETERMINE SOURCE OF FEED FOR ELECTRICAL SUPPLY, USE 2" SCHEDULE 40 PVC CONDUIT TO EXTEND FROM THE UPRIGHT TO THE SERVICE SOURCE WITH MIN. 3' COVER. IF NO ELECTRICAL SUPPLY EXISTS, STUB CONDUIT 3' BEYOND SHELTER PAD AND CAP BOTH ENDS. CONTACT CITY STAFF TO COORDINATE DIRECTION OF STUB OUT.

BUS SHELTER FOUNDATION PLAN

N.T.S.

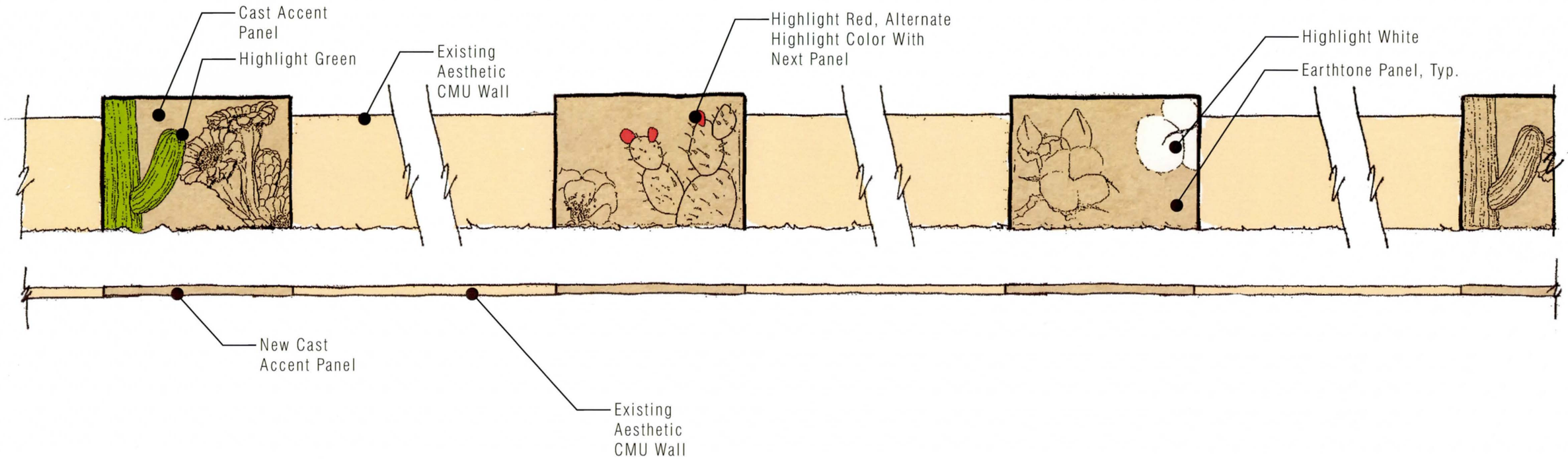
DETAIL NO.		APPROVED BY:		DETAIL NO.
2265-1	City of Scottsdale Standard Details	Scottsdale Standards & Specifications Committee	BUS SHELTER	2265-1

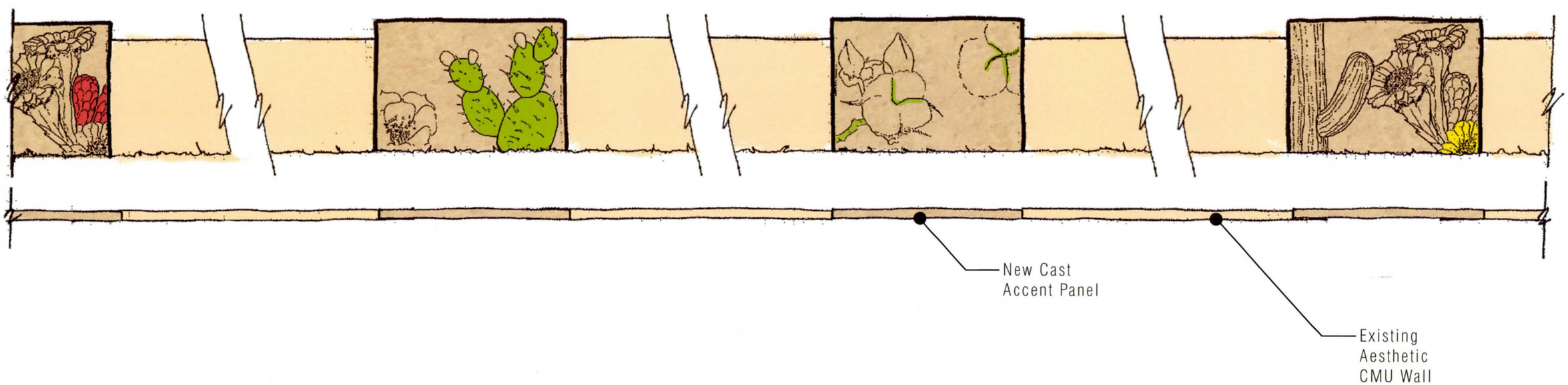


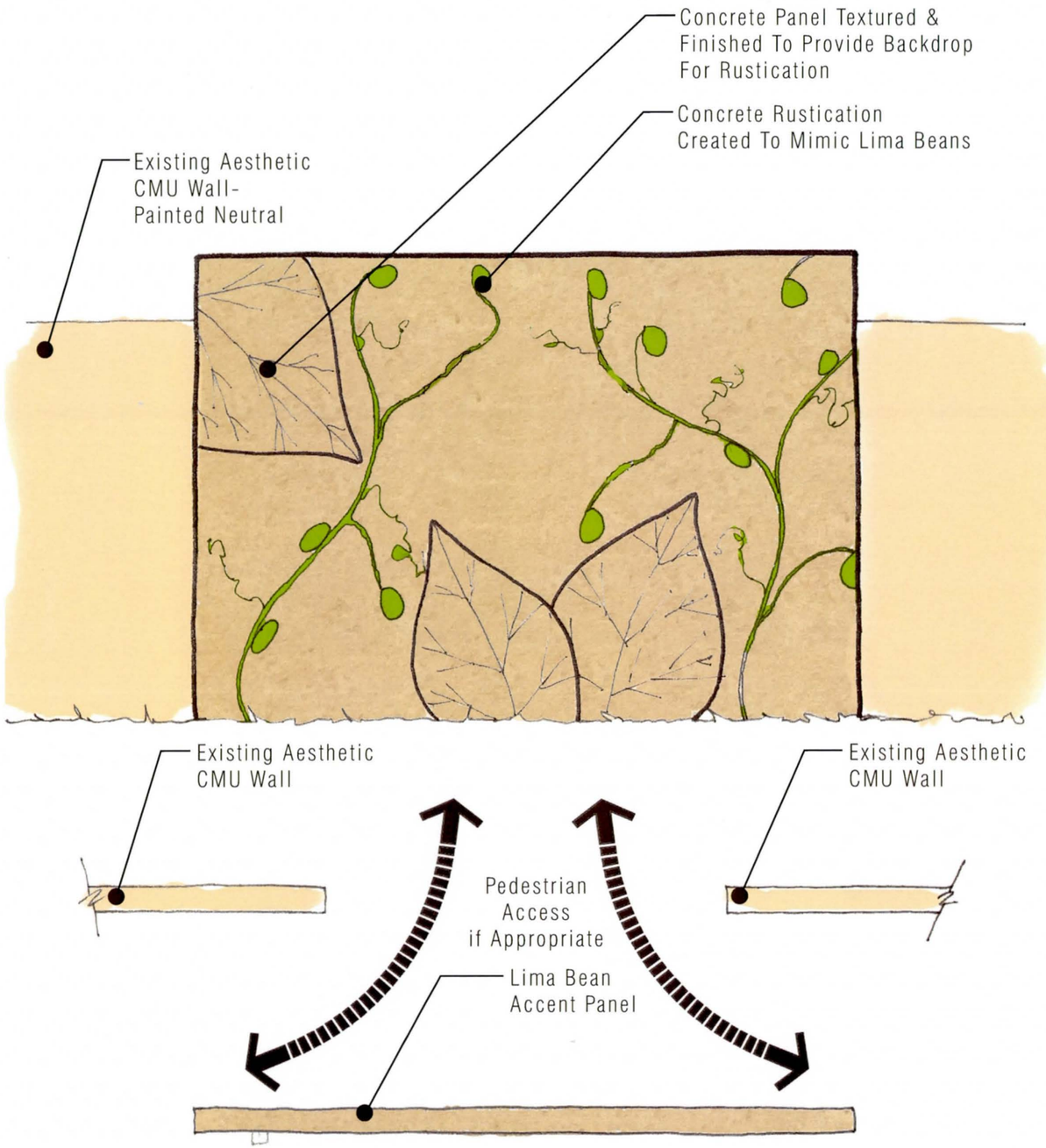


Pima Road
Character Aesthetic

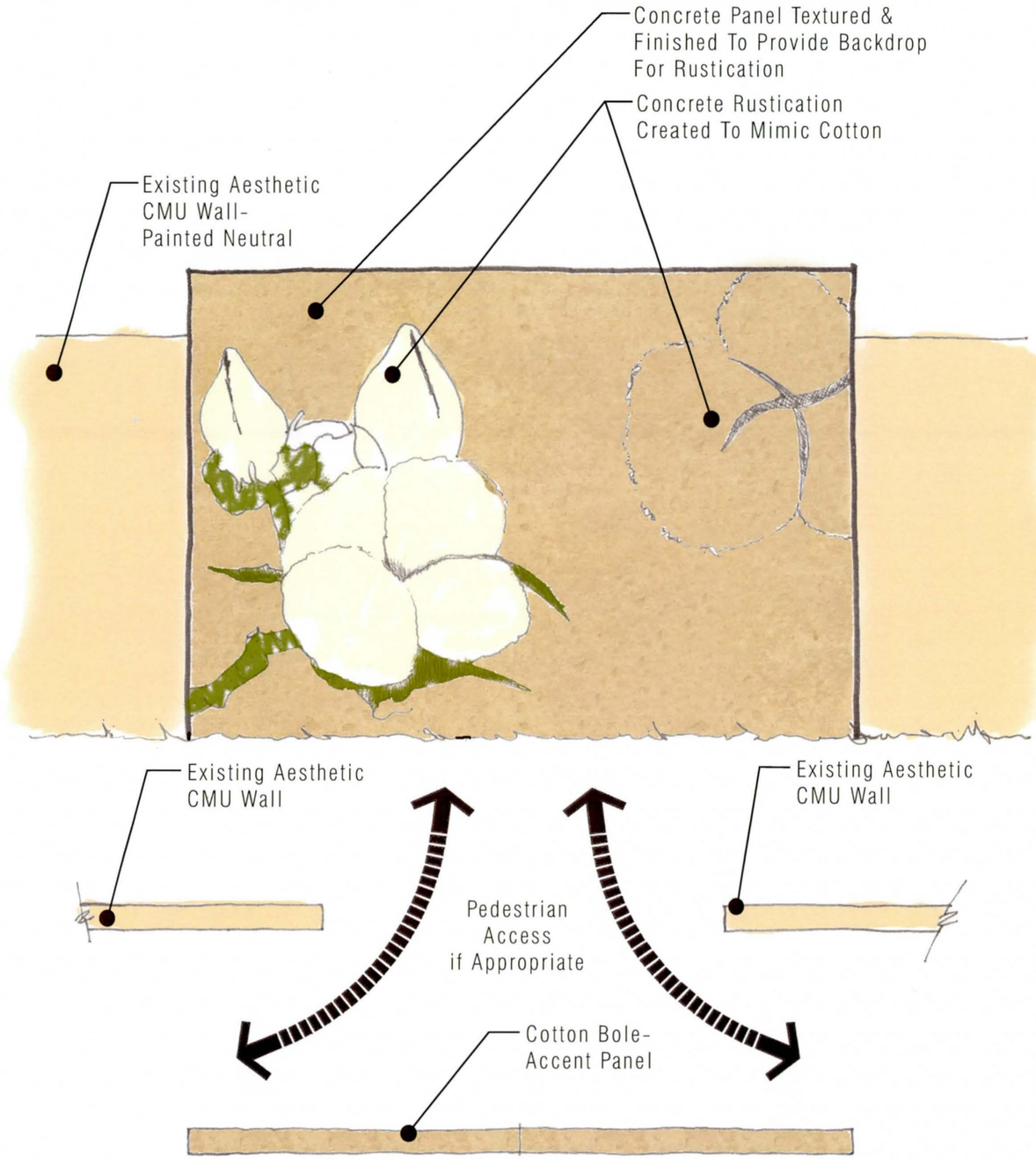
A-2.6 Cast and CMU Wall-Offset


Cast Accent Panel
Highlight Green
Existing Aesthetic CMU Wall
Highlight Red, Alternate Highlight Color With Next Panel
Highlight White
Earthtone Panel, Typ.
New Cast Accent Panel
Existing Aesthetic CMU Wall

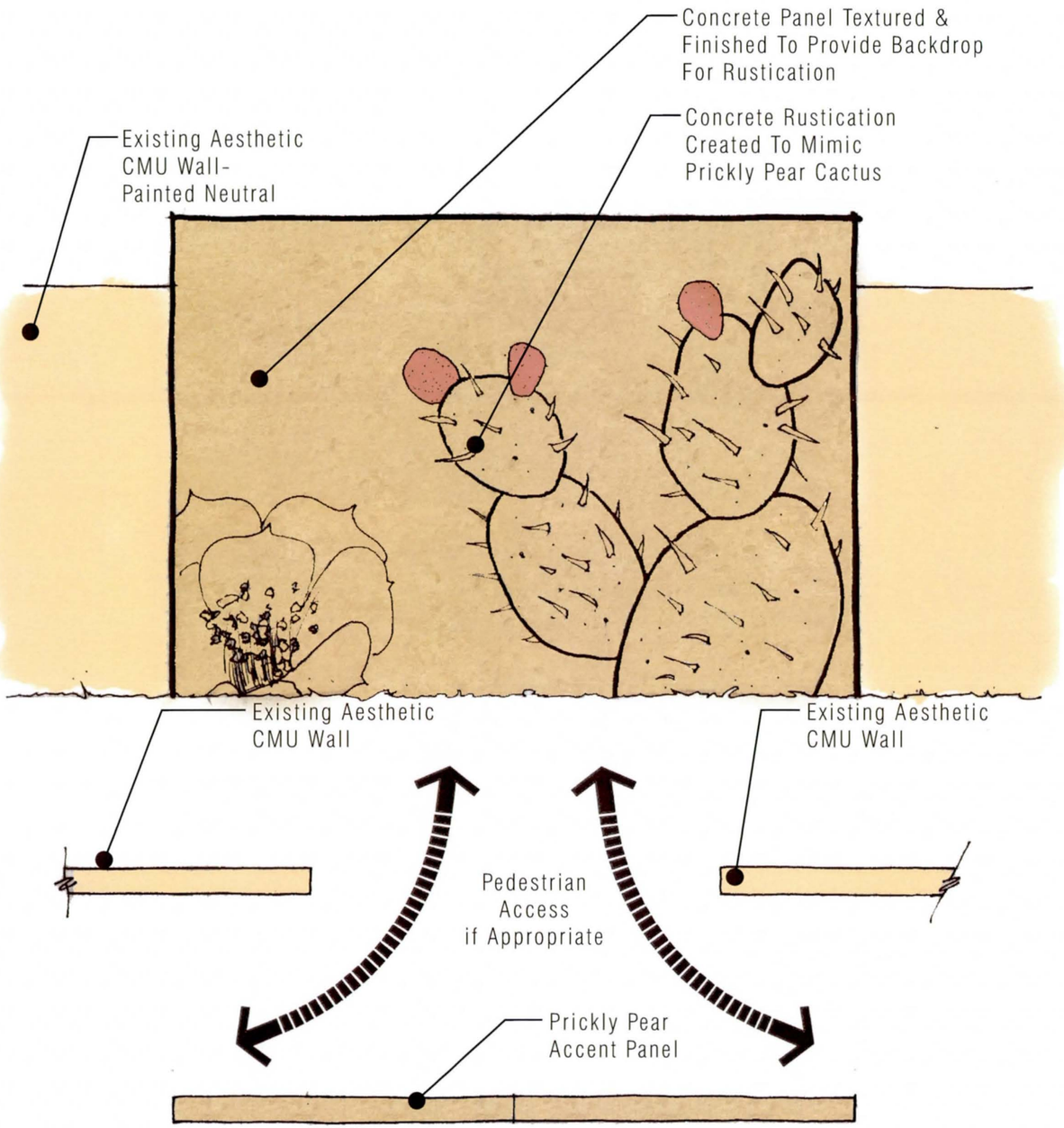

New Cast Accent Panel
Existing Aesthetic CMU Wall



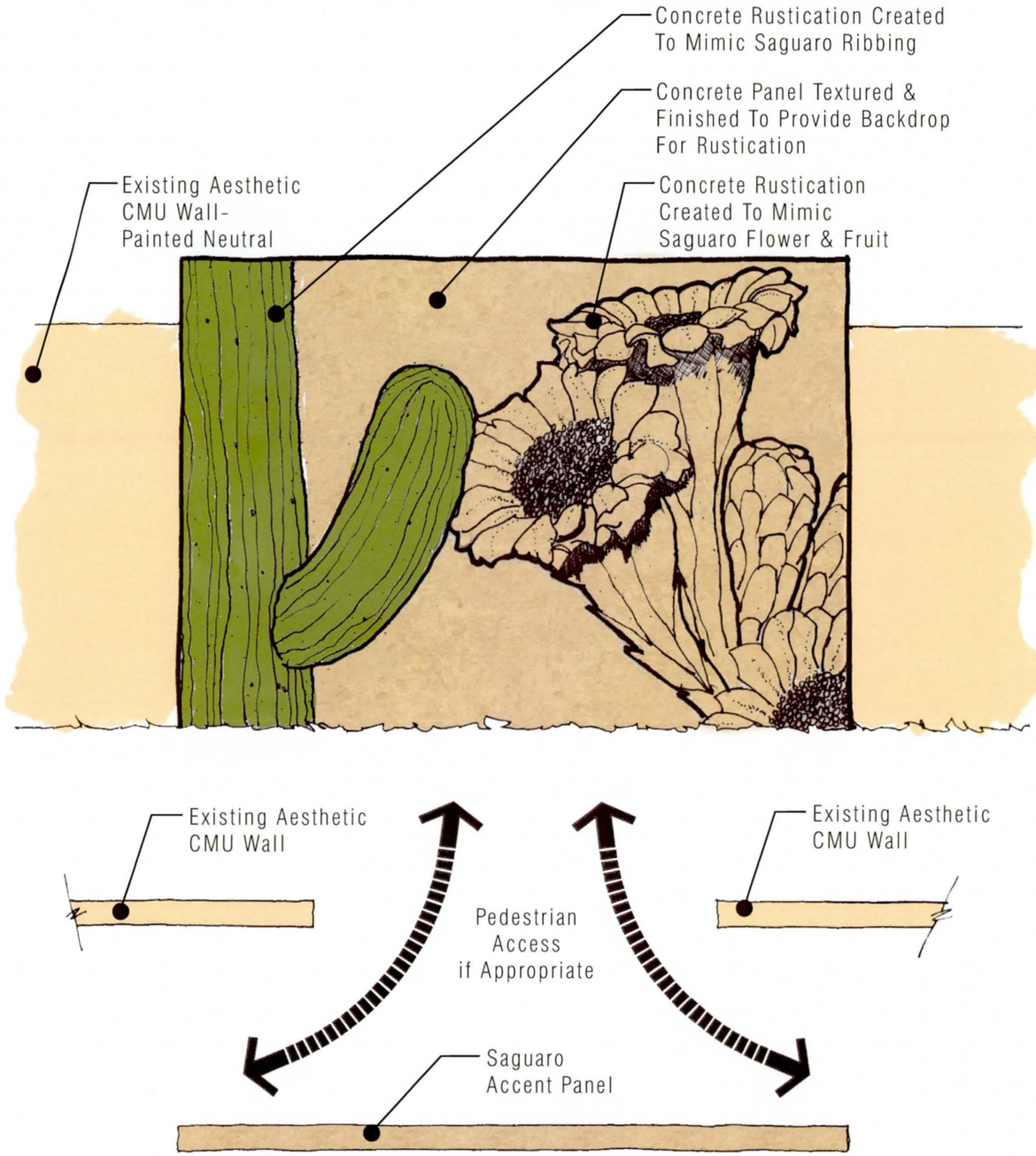
Lima Bean Accent Panel



Cotton Bole Accent Panel



Prickly Pear Accent Panel

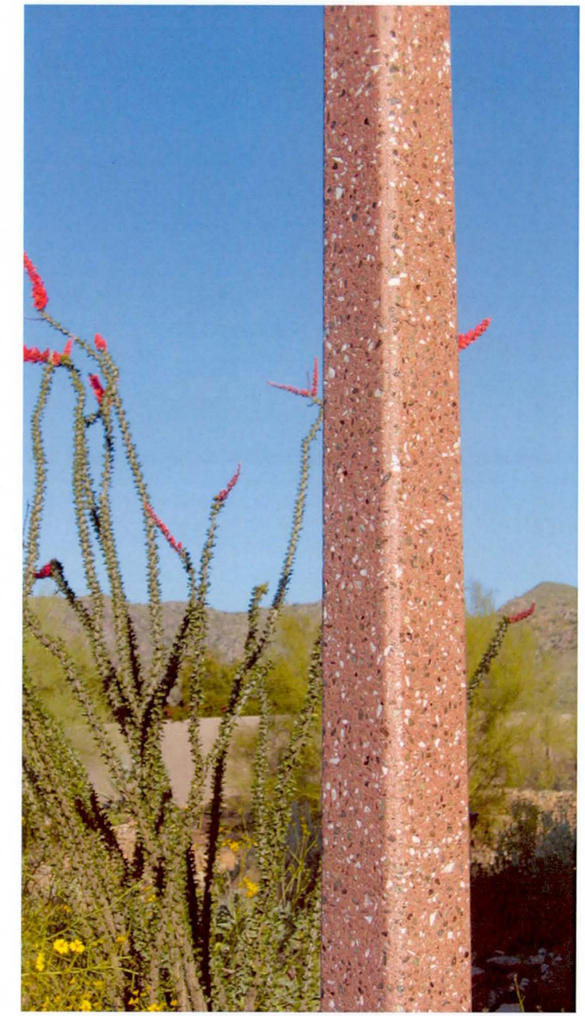


Saguaro Accent Panel

Product Name:
Round-Up Bike Rack
MFG: PW Athletic

Product Name:
Austin Bench
MFG: Landscape Forms

Product Name: Mitre
MFG: Architectural Area Lighting
Color to match pole

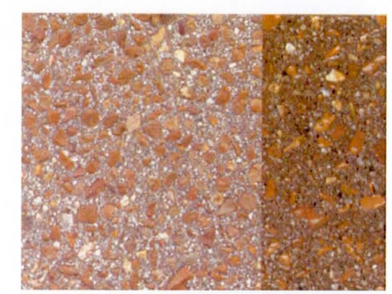


Product Name: SEQ series light pole
MFG:Ameron

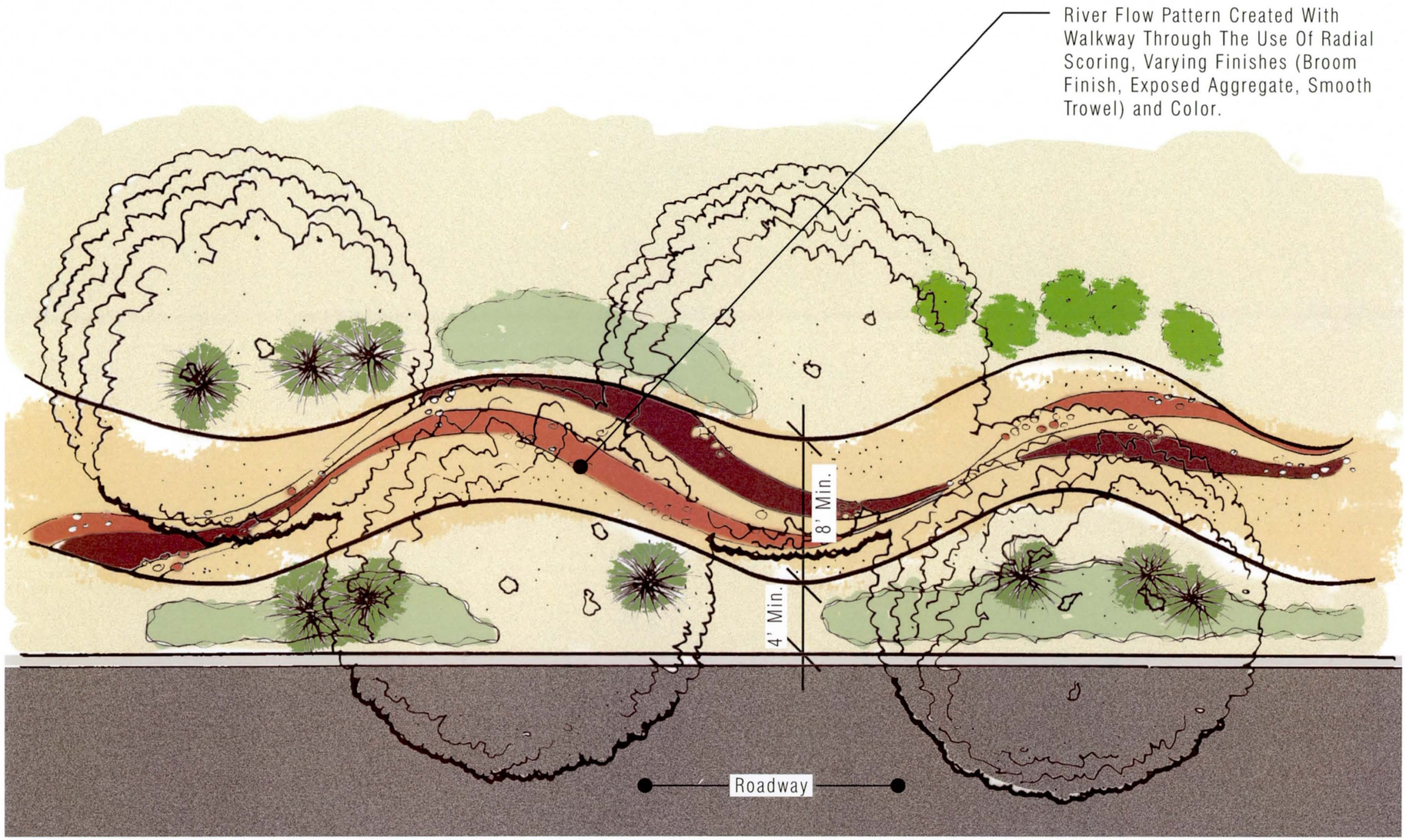
Product Name:
Square Louvered Bollard
MFG: Ameron

Product Name:
Austin Litter Receptacle
MFG: Landscape Forms

Mitre luminare mounted on SEQ series
square concrete light pole

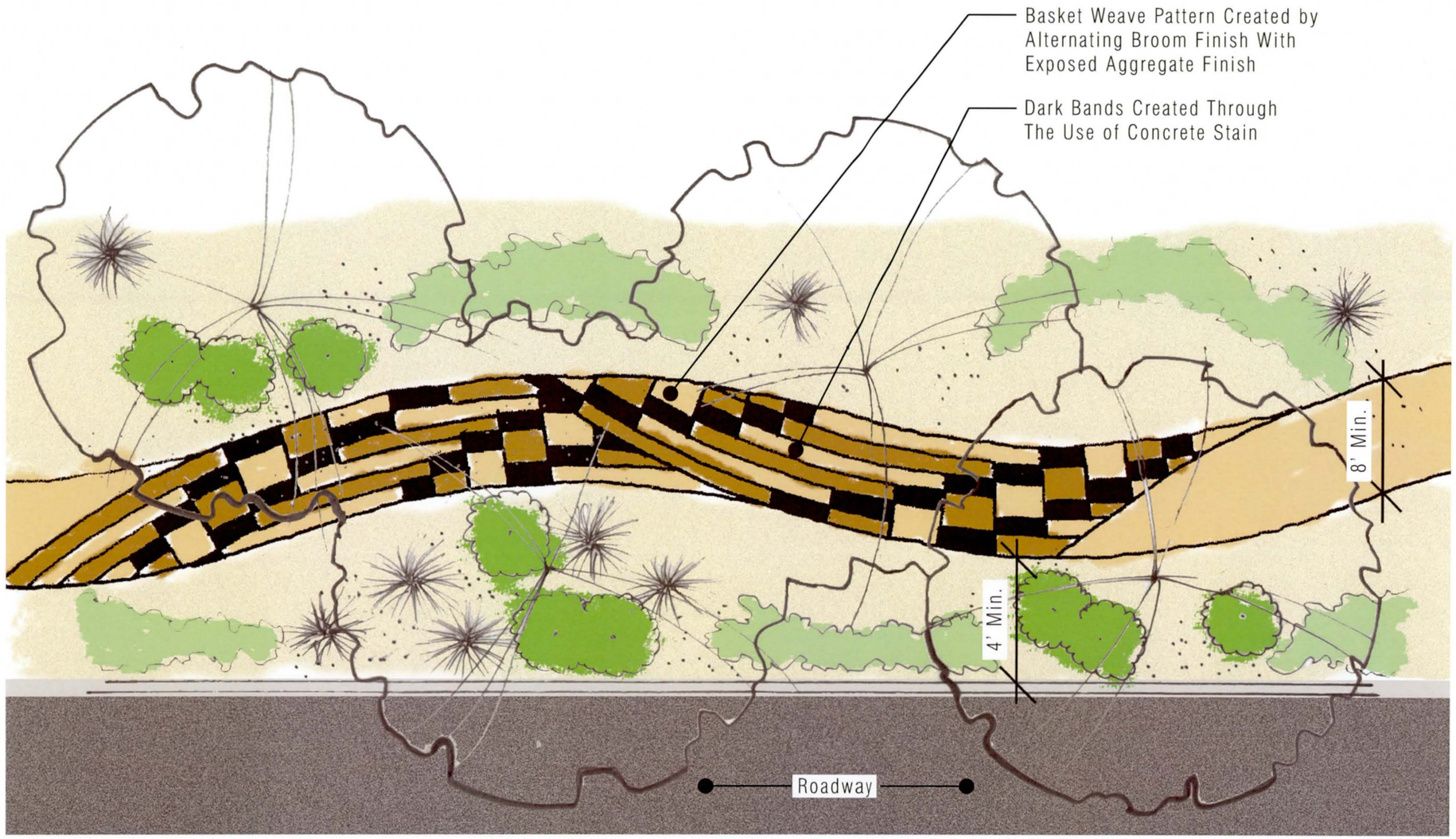


Brown Jasper Color
Exposed Finish (left) or Coated (right)



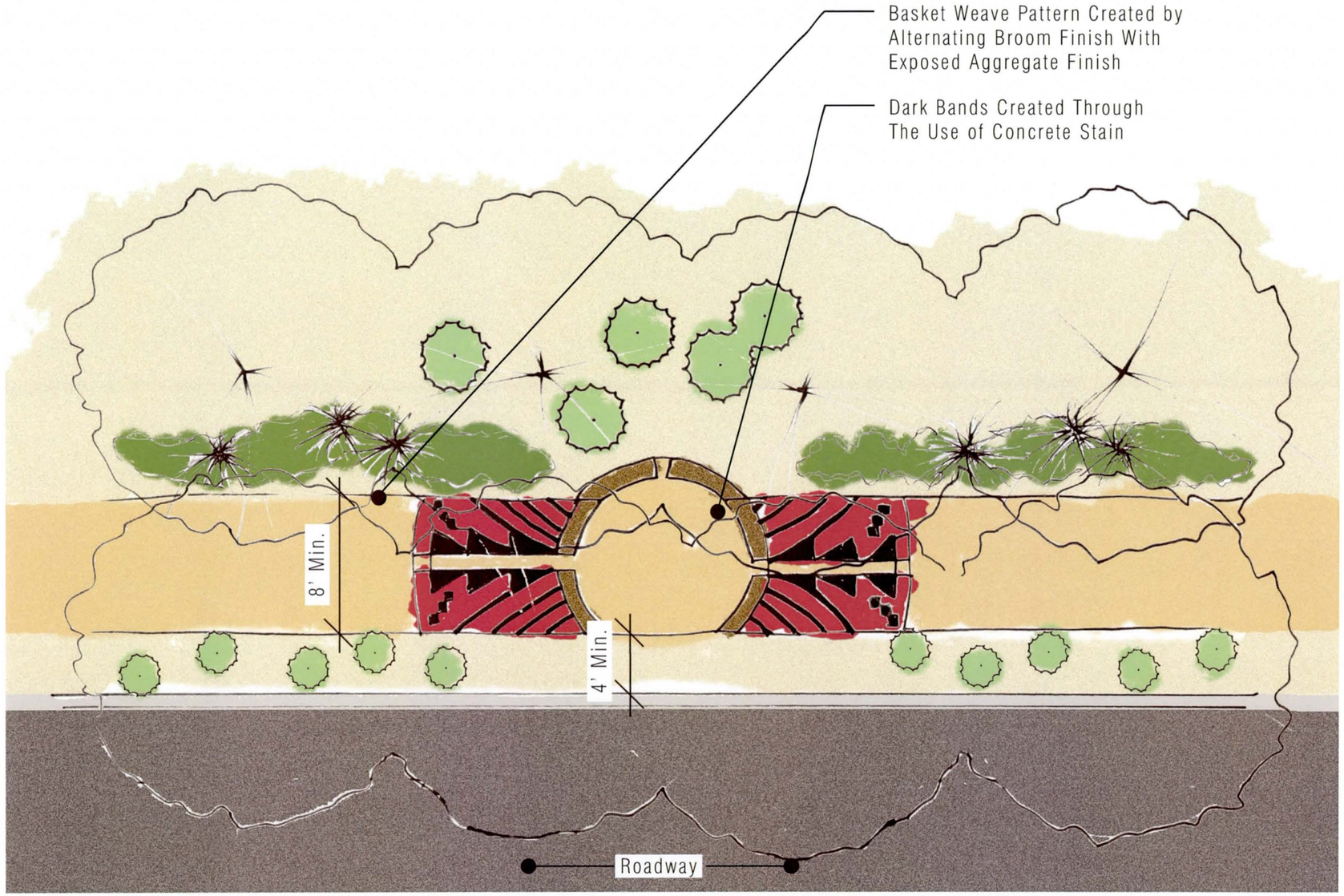
Pima Road
Character Aesthetic

A-2.8 River Pattern
Sidewalk Enhancement



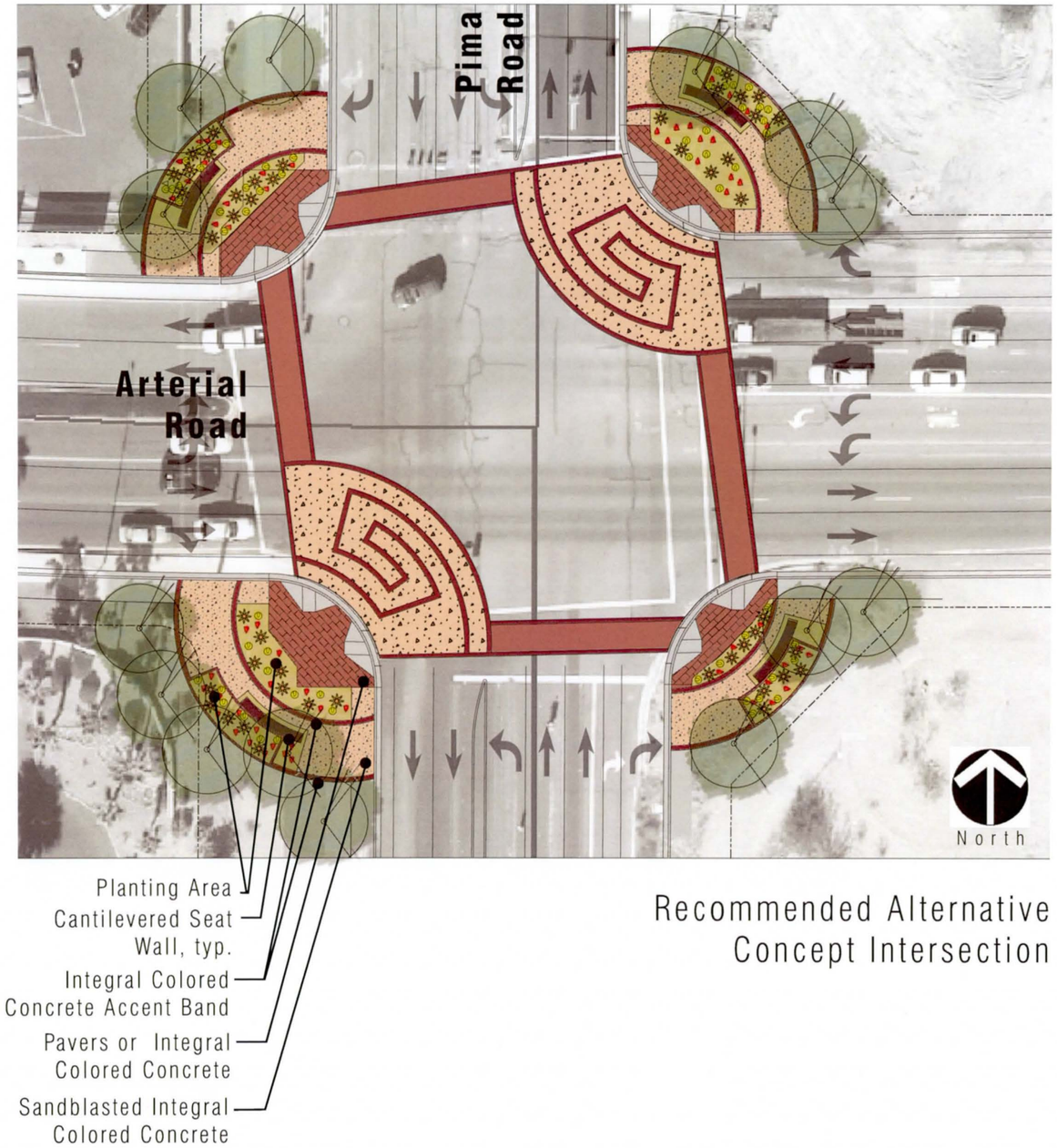
Pima Road
Character Aesthetic

A-2.8 Basket Pattern
Sidewalk Enhancement

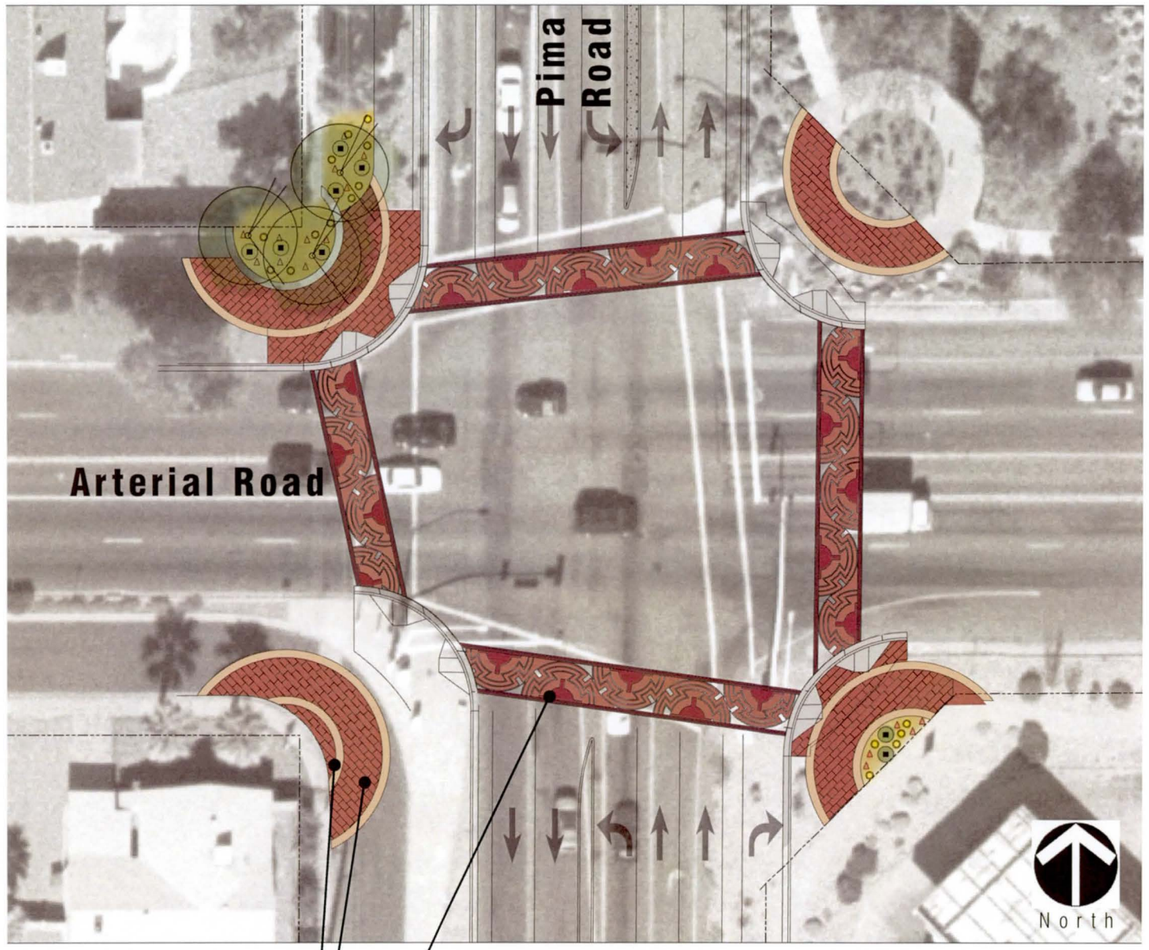


Pima Road
Character Aesthetic

A-2.8 Basket Pattern
Sidewalk Enhancement



Recommended Alternative Concept Intersection

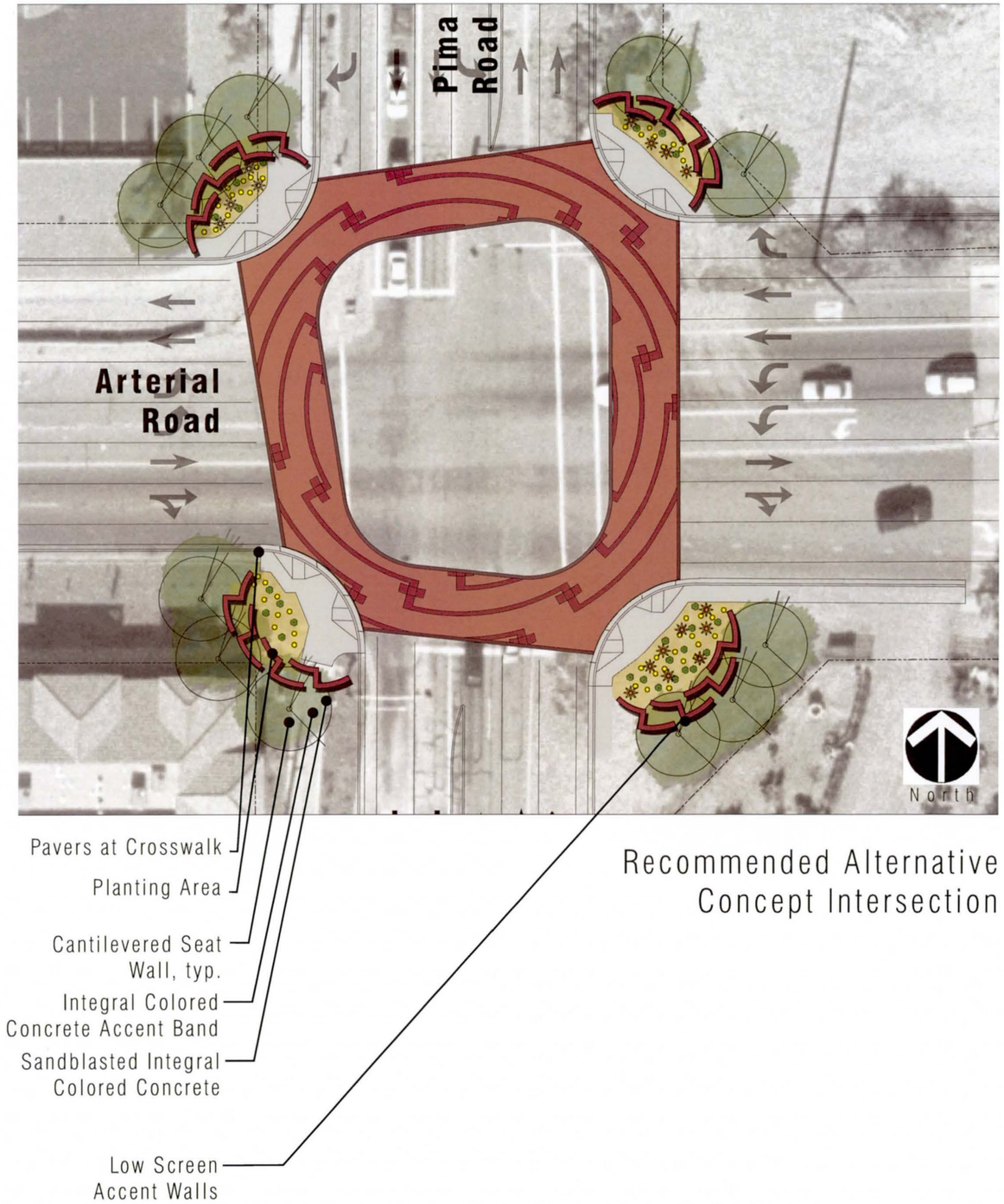


Integral Colored Concrete Band

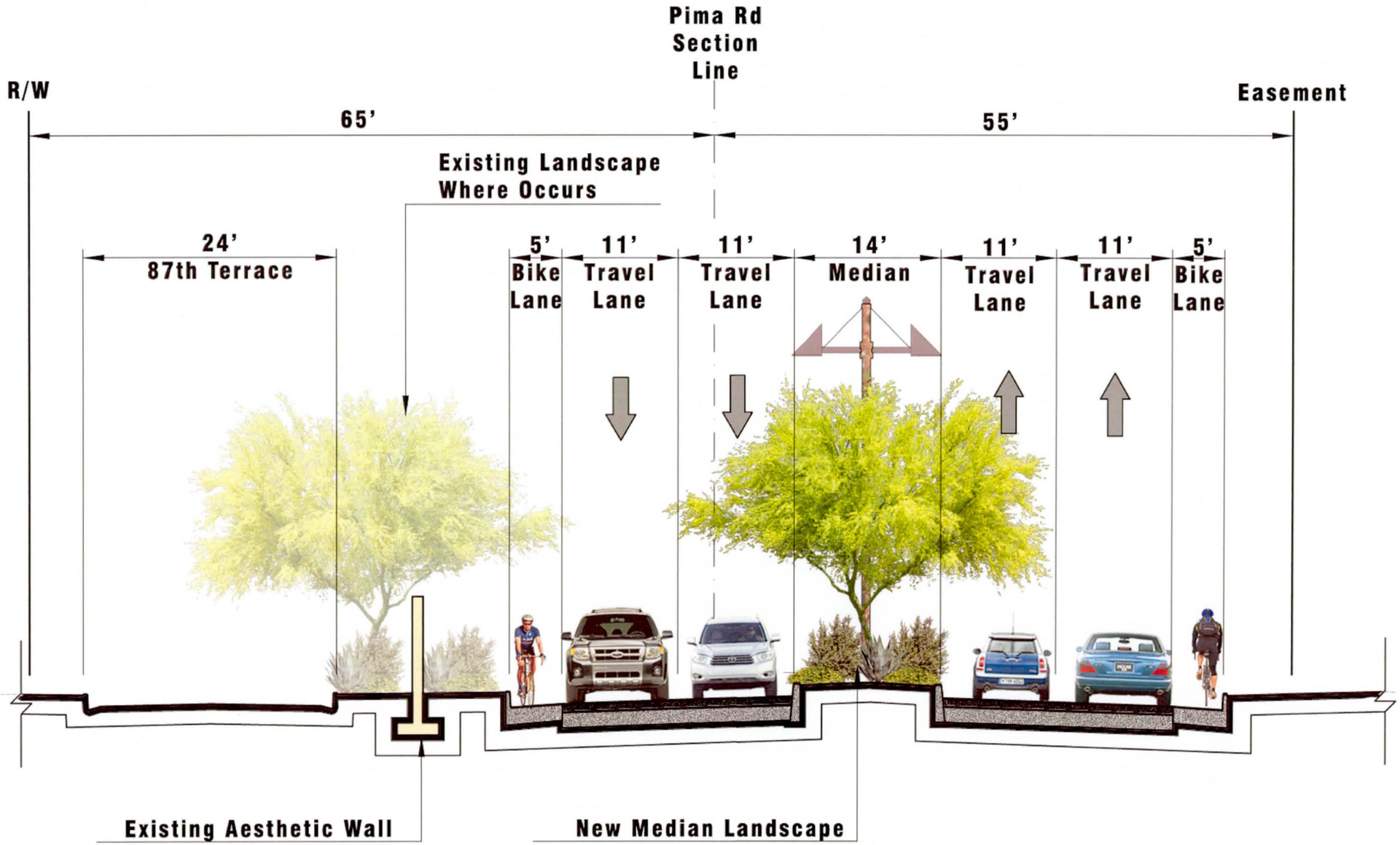
Pavers or Integral Colored Concrete

Stamped and Colored Asphalt Icon

Recommended Alternative Concept Intersection

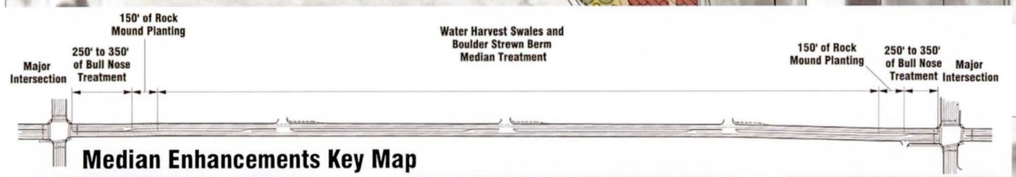


Recommended Alternative Concept Intersection



Recommended Alternative

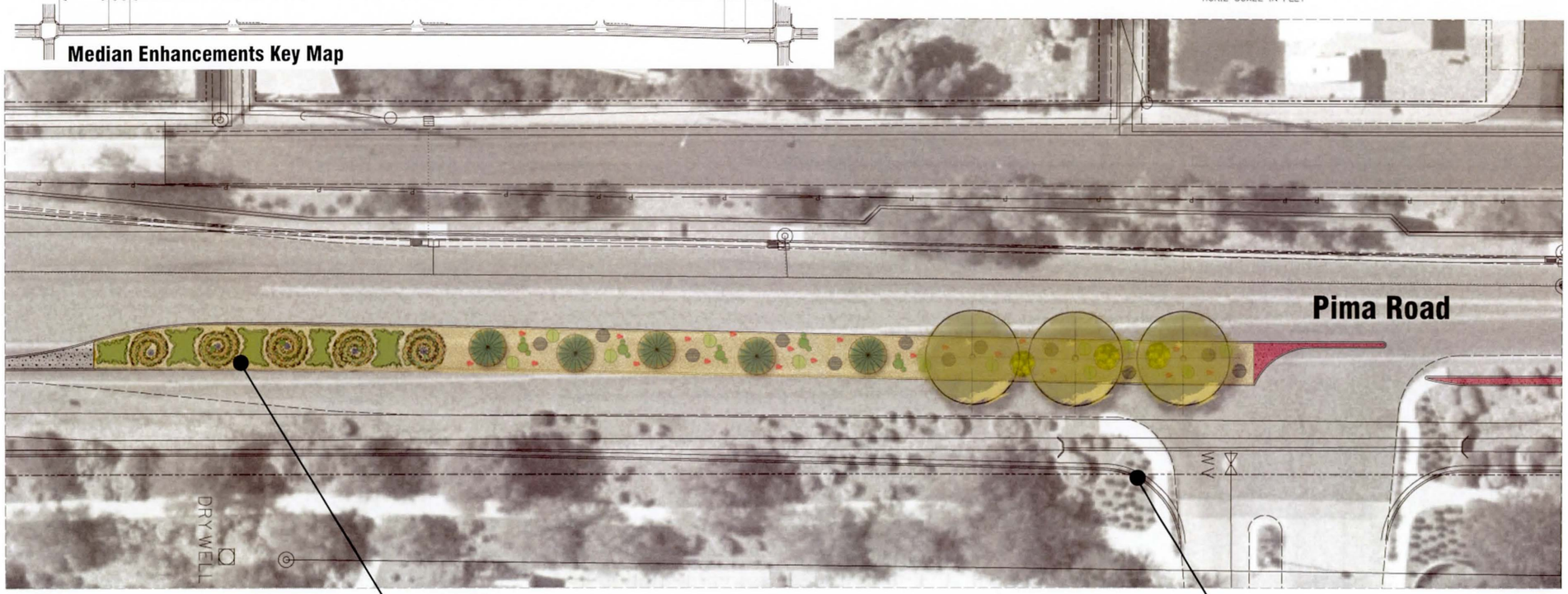
Recommended Alternative



Median Enhancements Key Map

10 0 10 20
HORIZ SCALE IN FEET

N



Trees

- Base Tree 'A'
- Base Tree 'B'
- Accent Tree 'A'
- Accent Tree 'B'

Shrubs/ Groundcovers

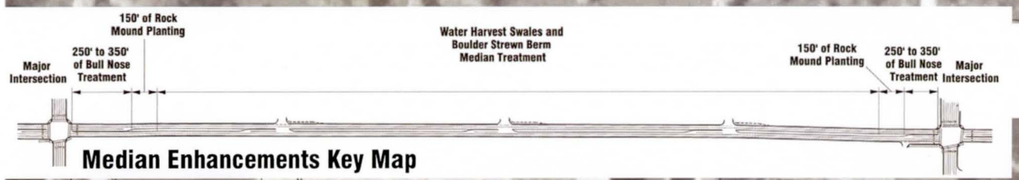
Cacti /Accents

Median Hardscape

Sandblasted Integral Colored Concrete

Pima Road Character Aesthetic

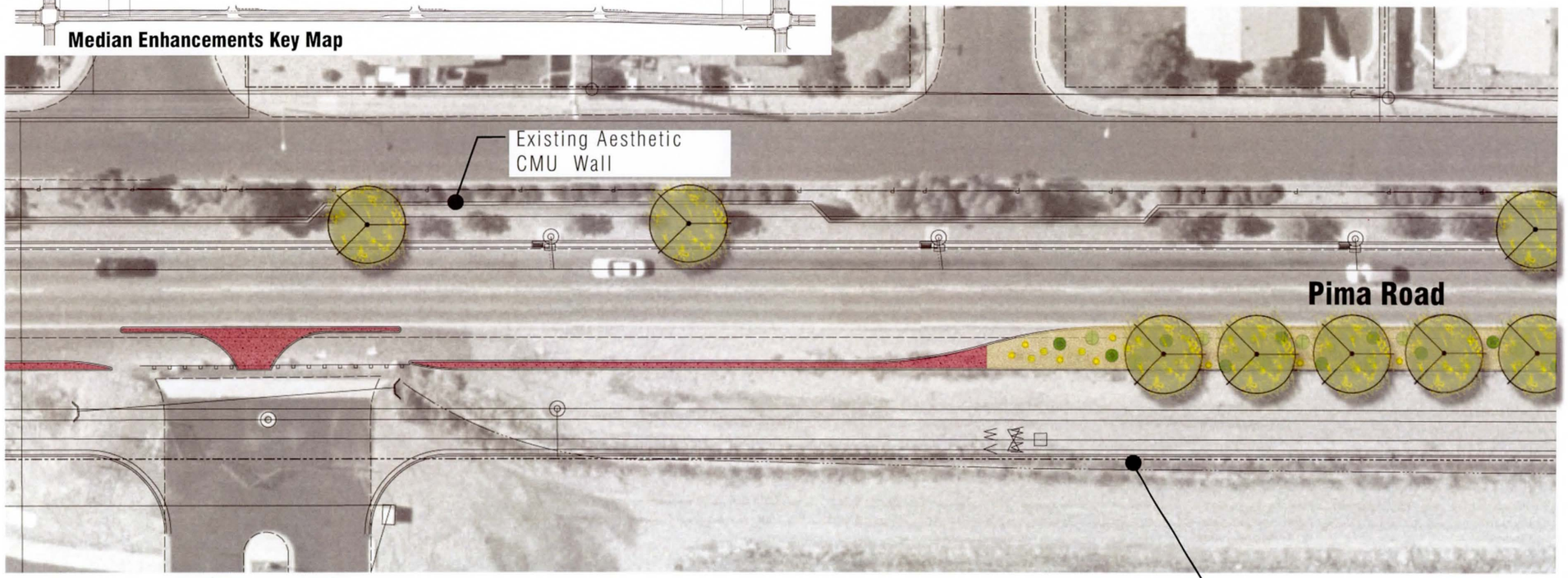
A-2.9.2 Typical One Mile Plan View



Median Enhancements Key Map

10 0 10 20
HORIZ SCALE IN FEET

N



Trees

- Base Tree 'A'
- Base Tree 'B'
- Accent Tree 'A'
- Accent Tree 'B'

Shrubs/ Groundcovers

Cacti /Accents

Median Hardscape

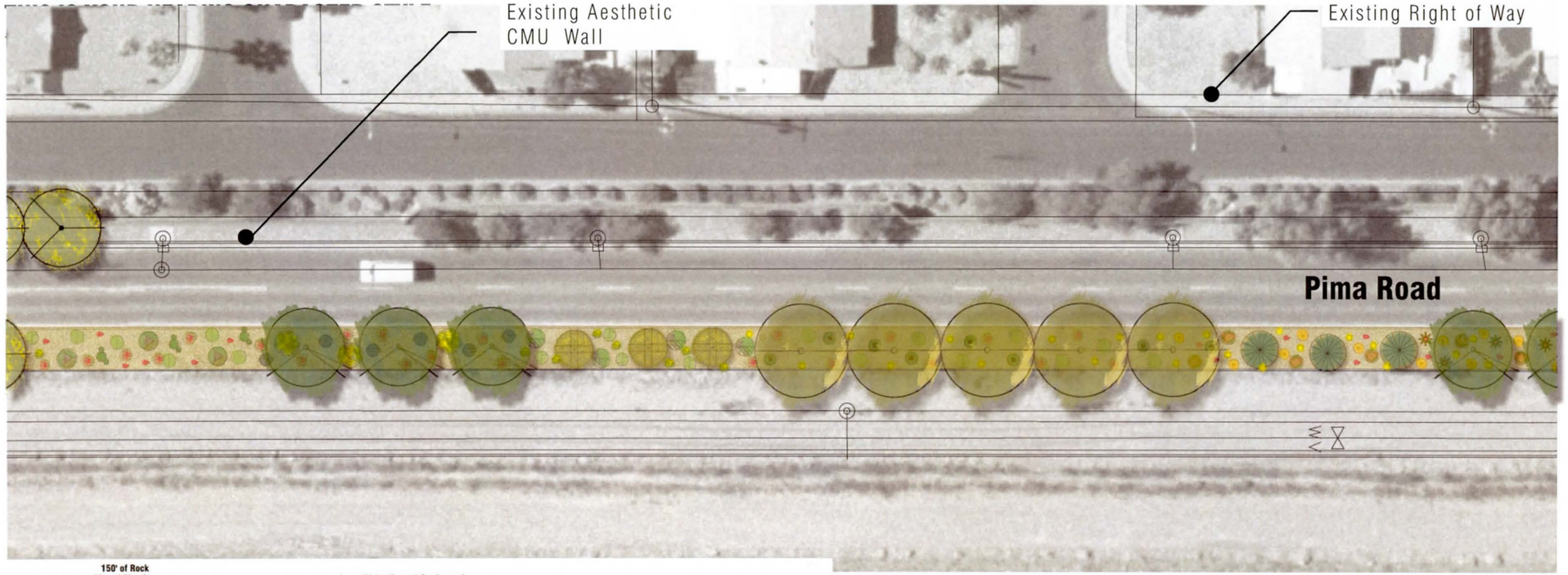
- Sandblasted Integral Colored Concrete

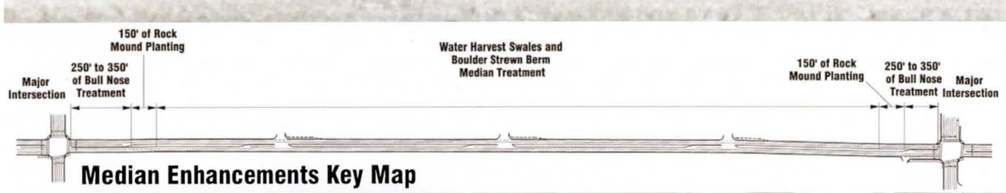
Recommended Alternative

A-2.9.2 Typical One Mile Plan View

Pima Road Character Aesthetic

Recommended Alternative

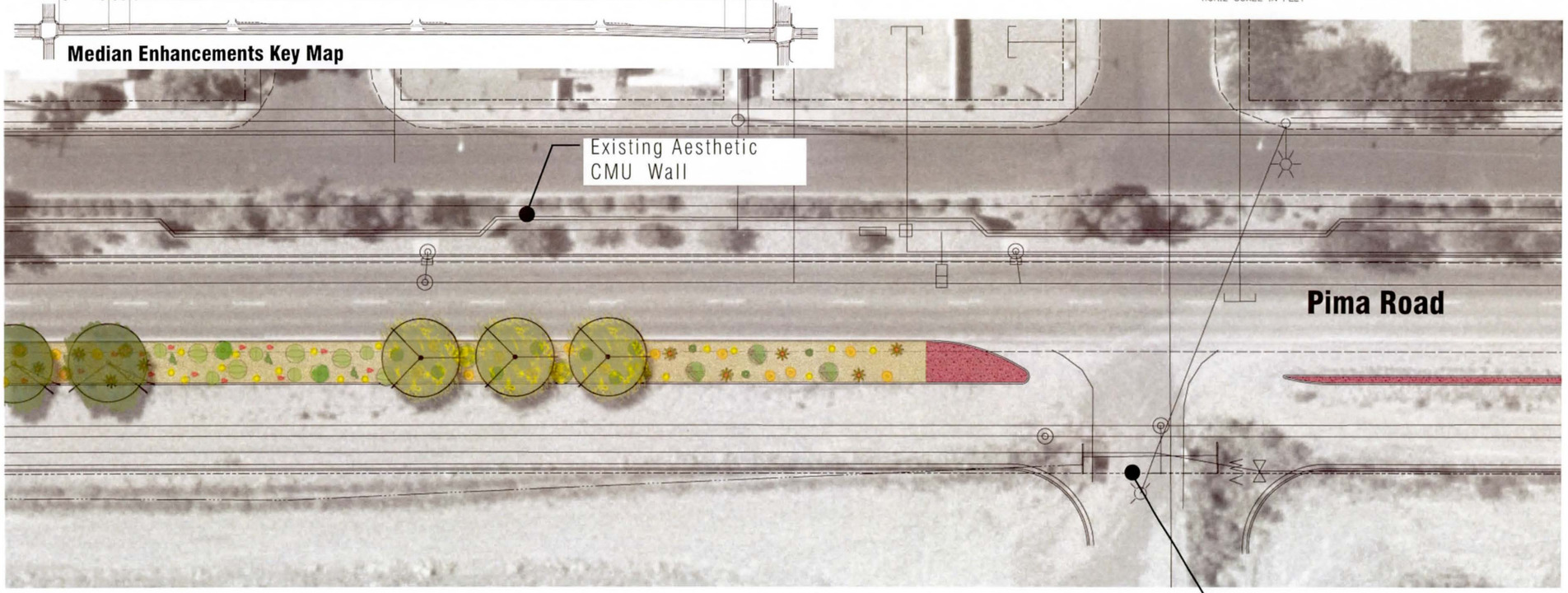




Median Enhancements Key Map

10 0 10 20
HORIZ SCALE IN FEET

N



Trees

- Base Tree 'A'
- Base Tree 'B'
- Accent Tree 'A'
- Accent Tree 'B'

Shrubs/ Groundcovers

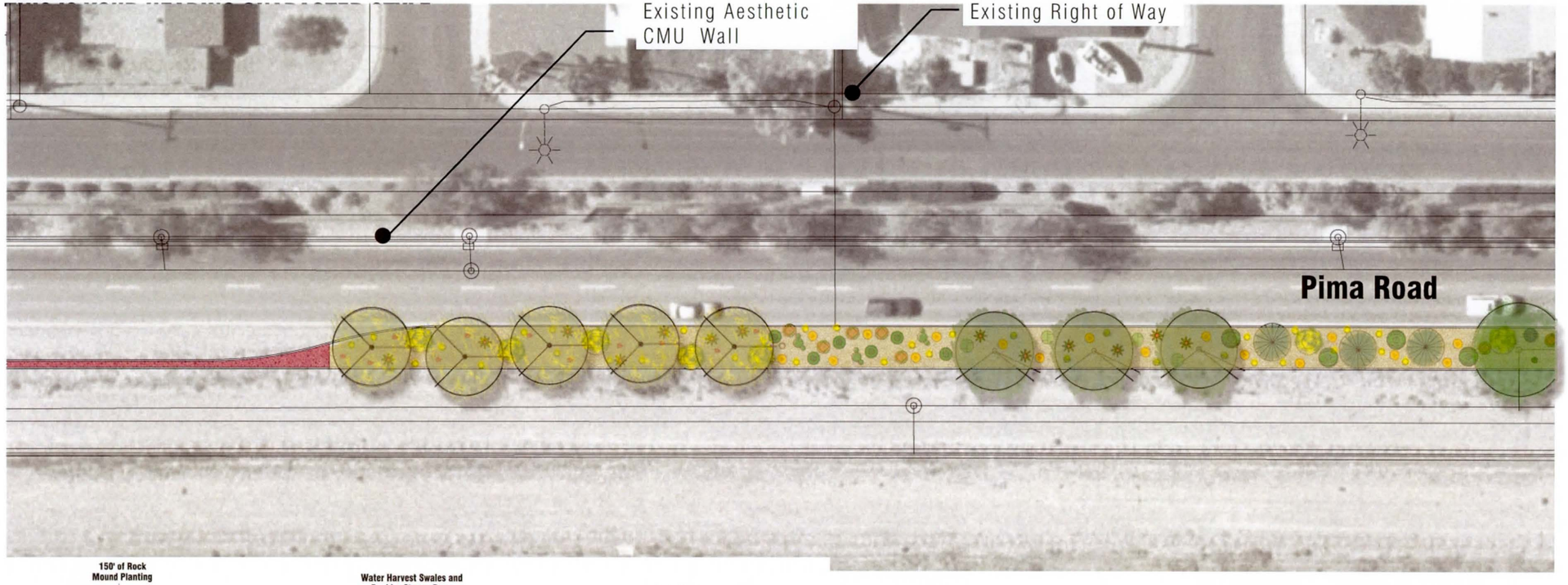
Cacti /Accents

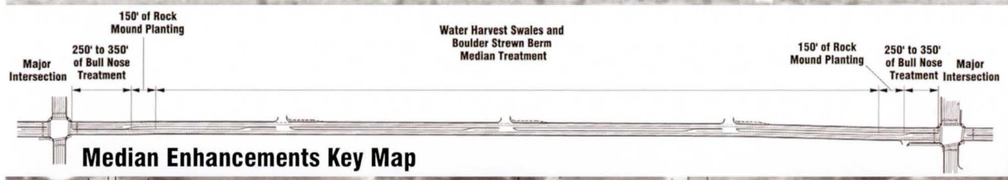
Median Hardscape

- Sandblasted Integral Colored Concrete

A-2.9.2 Typical One Mile Plan View

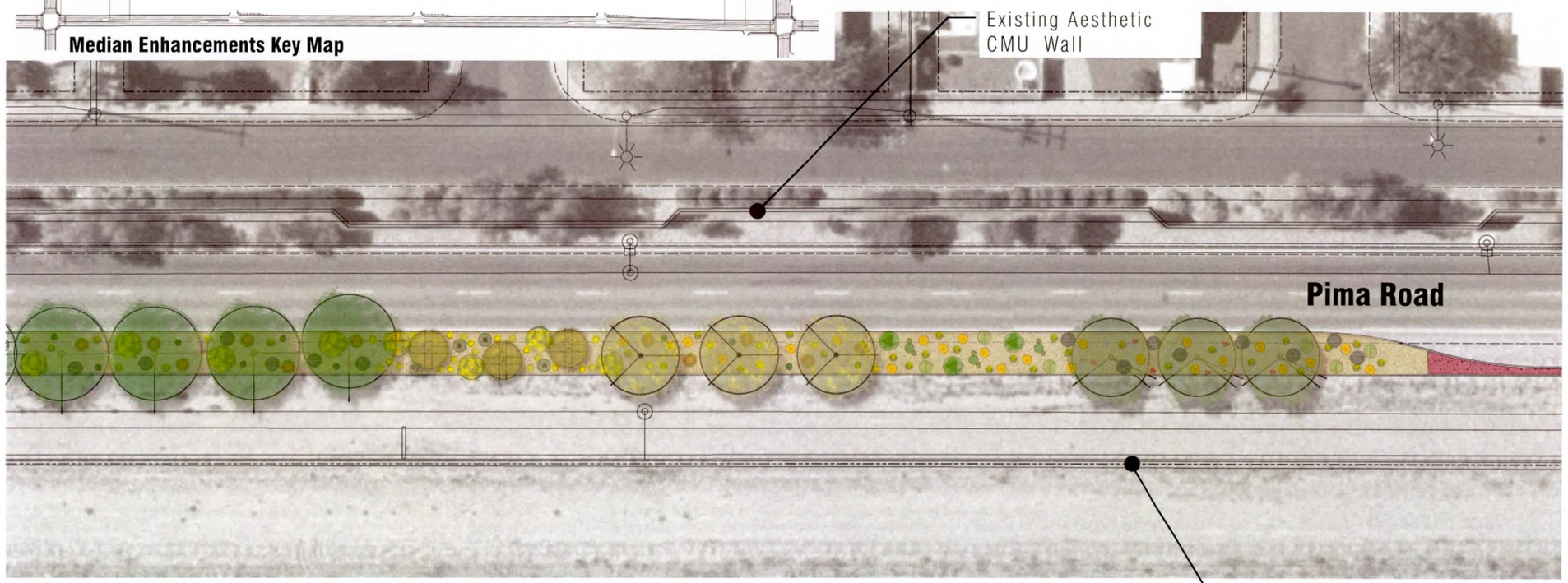
Pima Road Character Aesthetic





Median Enhancements Key Map

10 0 10 20
HORIZ SCALE IN FEET



Trees

- Base Tree 'A'
- Base Tree 'B'
- Accent Tree 'A'
- Accent Tree 'B'

Shrubs/ Groundcovers

Cacti /Accents

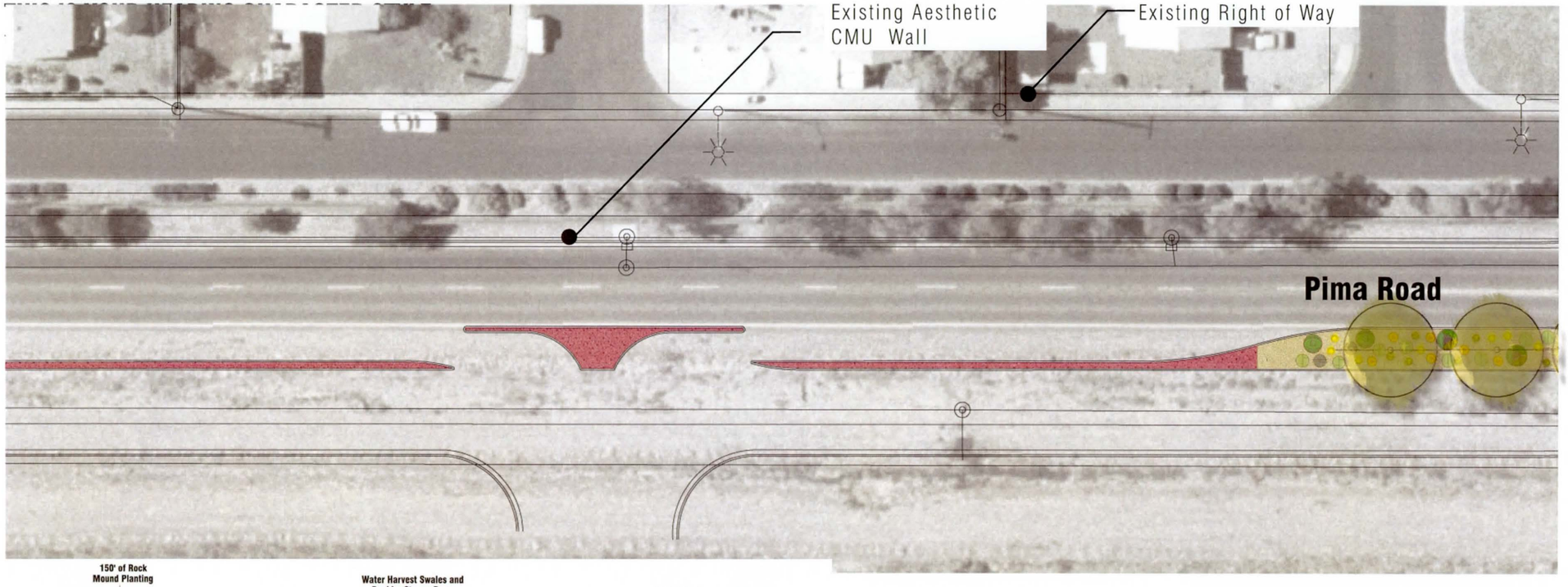
Median Hardscape

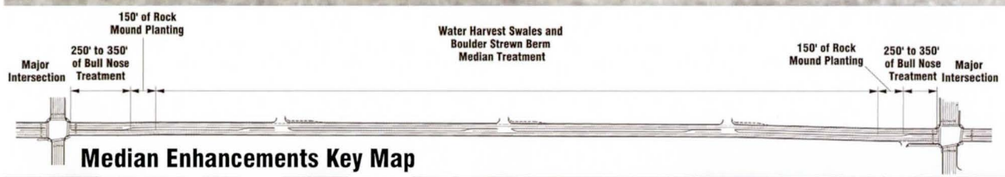
- Sandblasted Integral Colored Concrete

Recommended Alternative

A-2.9.2 Typical One Mile Plan View

Pima Road
Character Aesthetic

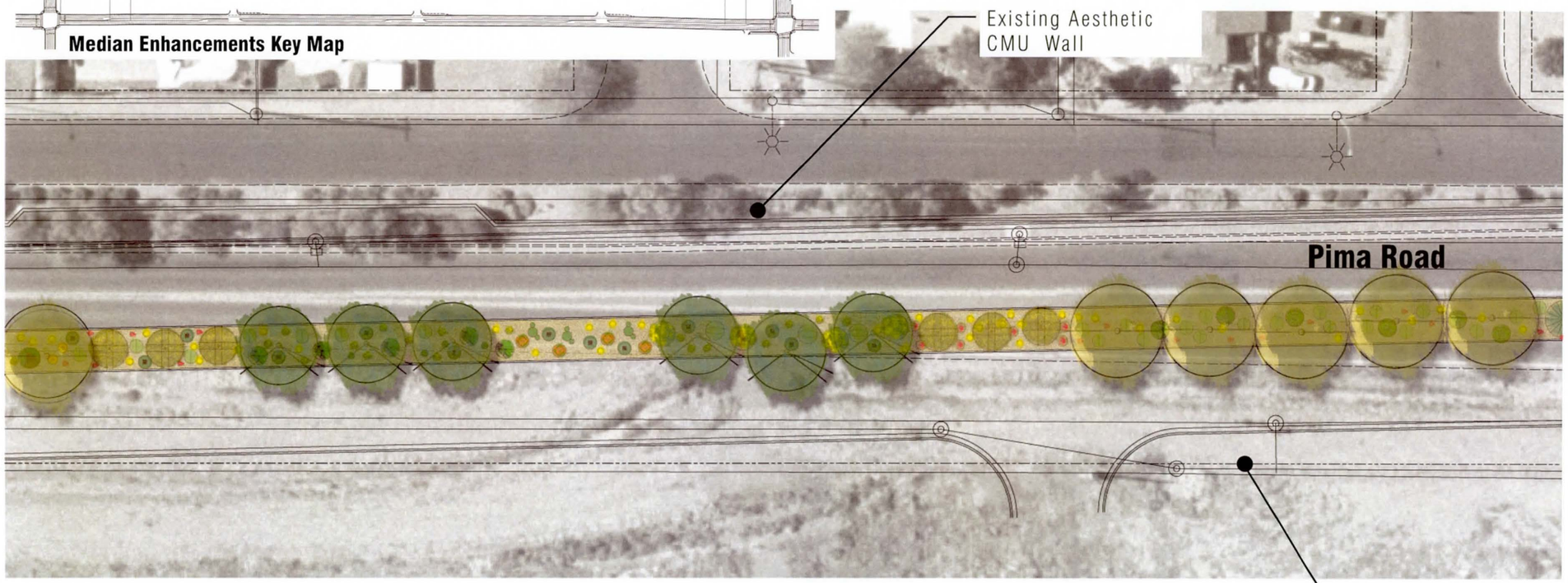




Median Enhancements Key Map

10 0 10 20
HORIZ SCALE IN FEET

N



Trees

- Base Tree 'A'
- Base Tree 'B'
- Accent Tree 'A'
- Accent Tree 'B'

Shrubs/ Groundcovers

Cacti /Accents

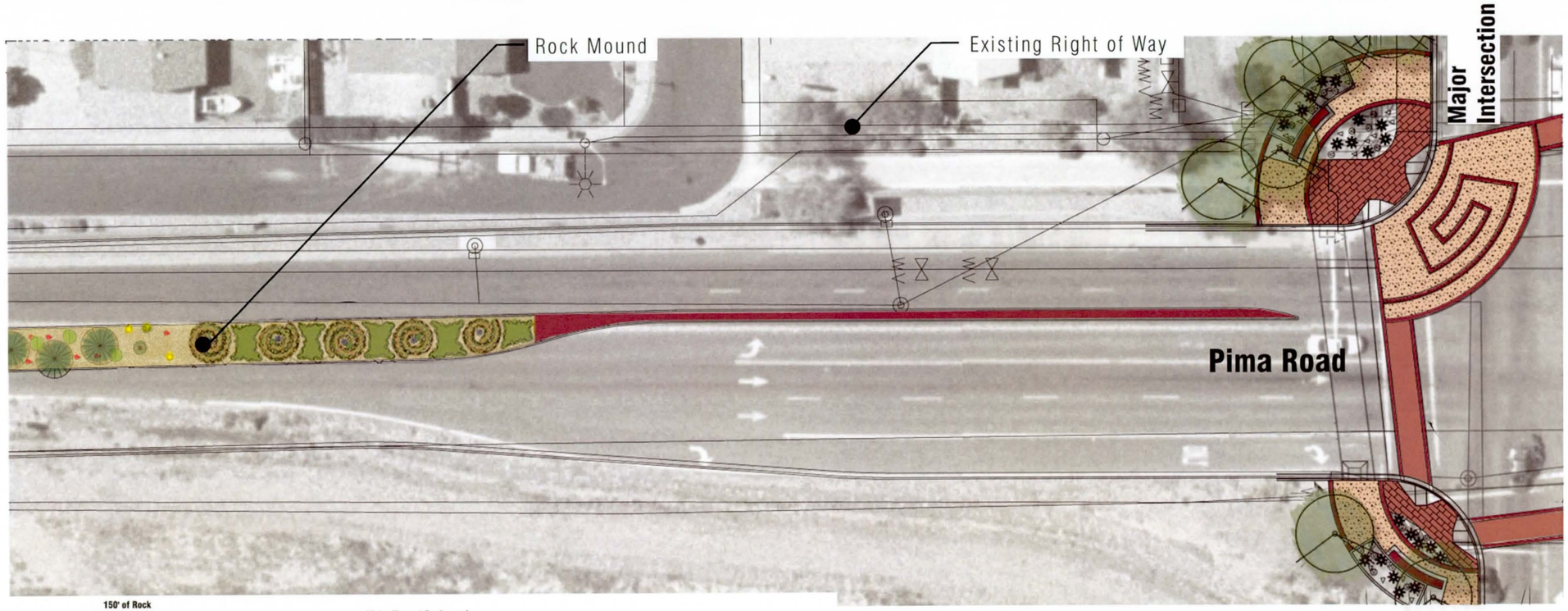
Median Hardscape

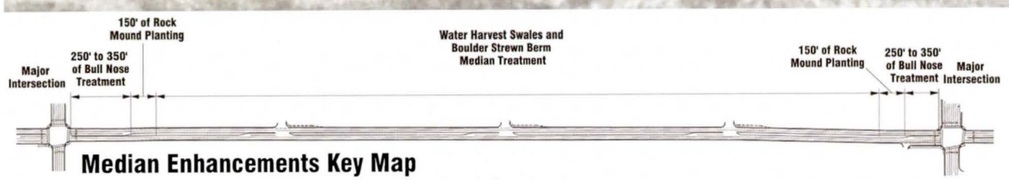
- Sandblasted Integral Colored Concrete

Recommended Alternative

A-2.9.2 Typical One Mile Plan View

Pima Road
Character Aesthetic





Median Enhancements Key Map

10 0 10 20
HORIZ SCALE IN FEET

N

Trees

Base Tree 'A'

Base Tree 'B'

Accent Tree 'A'

Accent Tree 'B'

Shrubs/ Groundcovers

Cacti /Accents

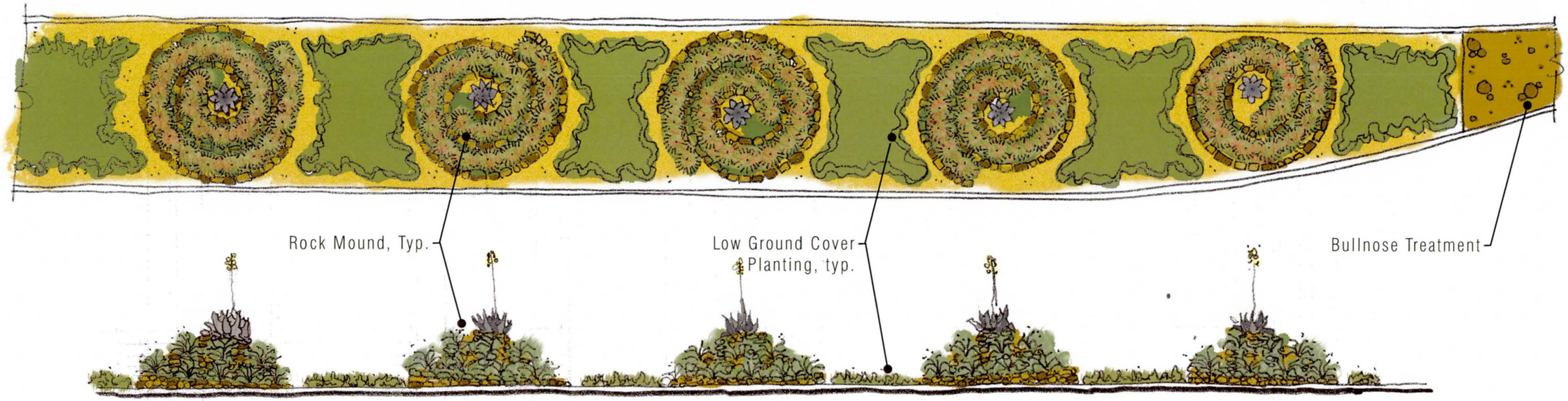
Median Hardscape

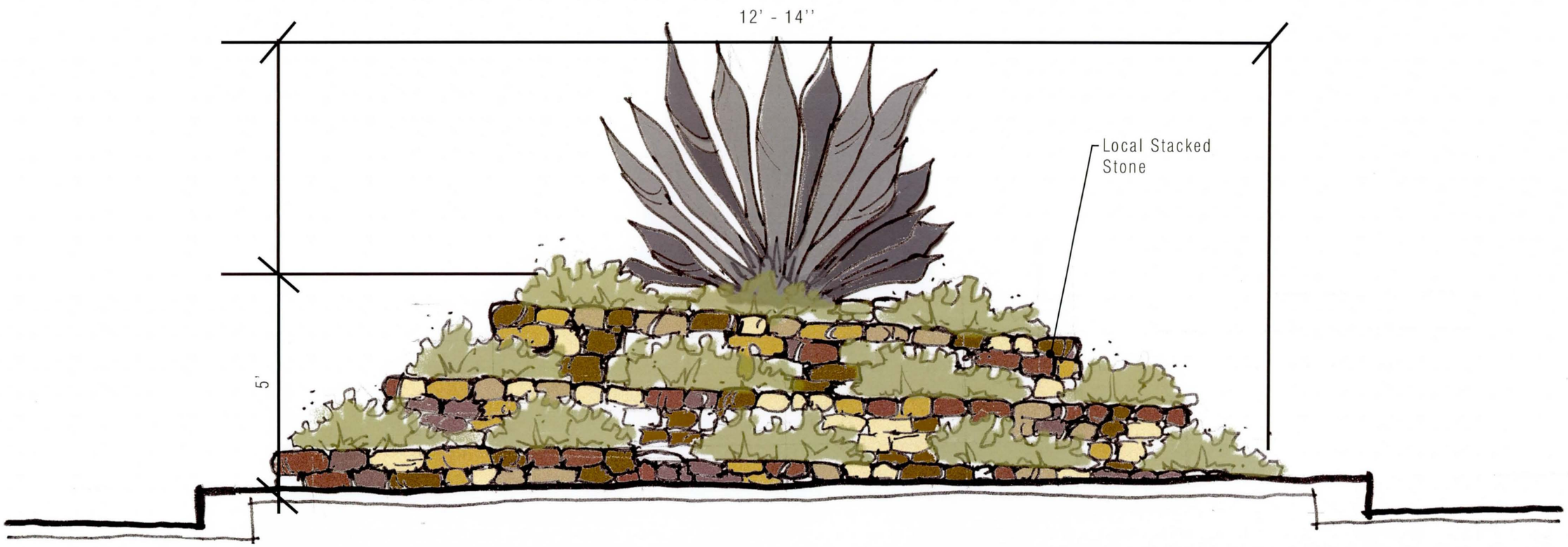
Sandblasted Integral Colored Concrete

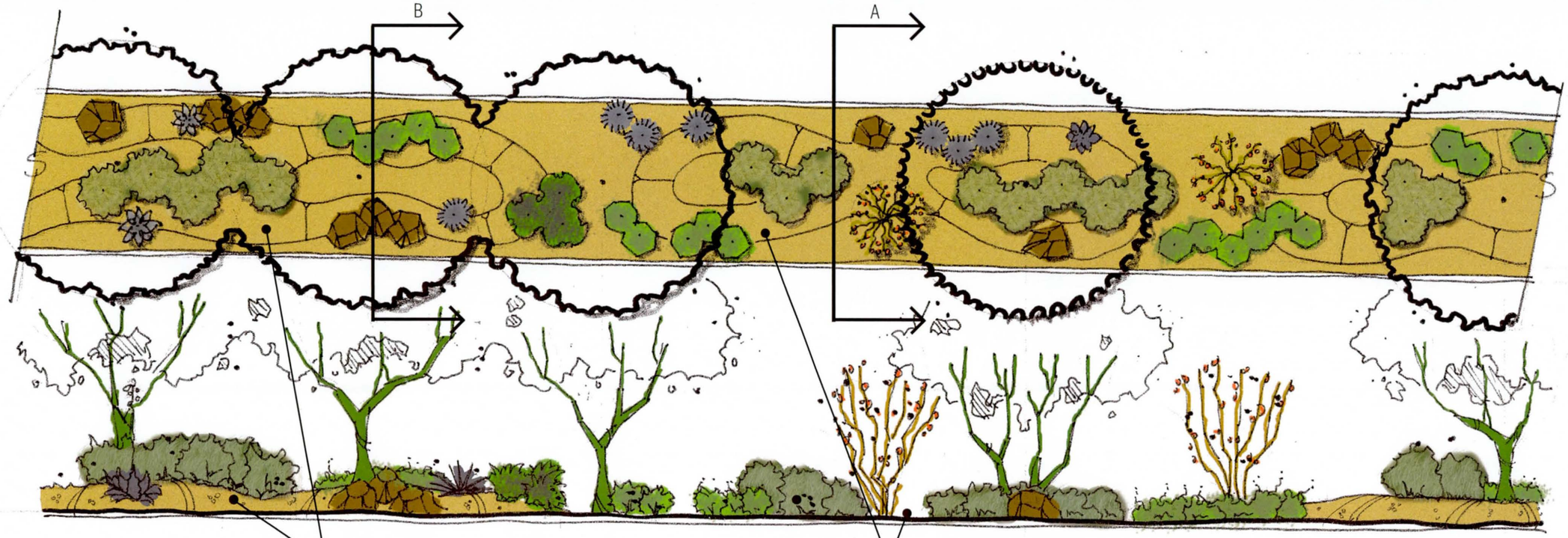
Recommended Alternative

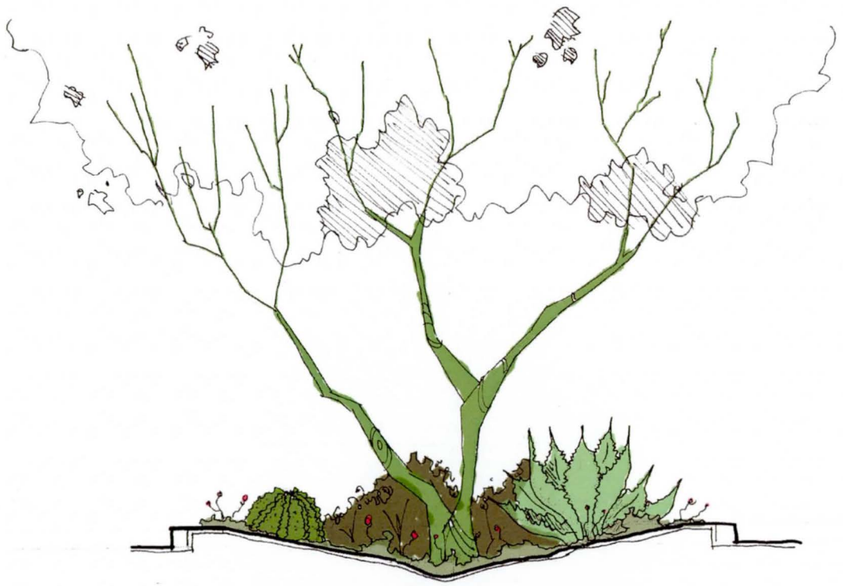
A-2.9.2 Typical One Mile Plan View

Pima Road Character Aesthetic

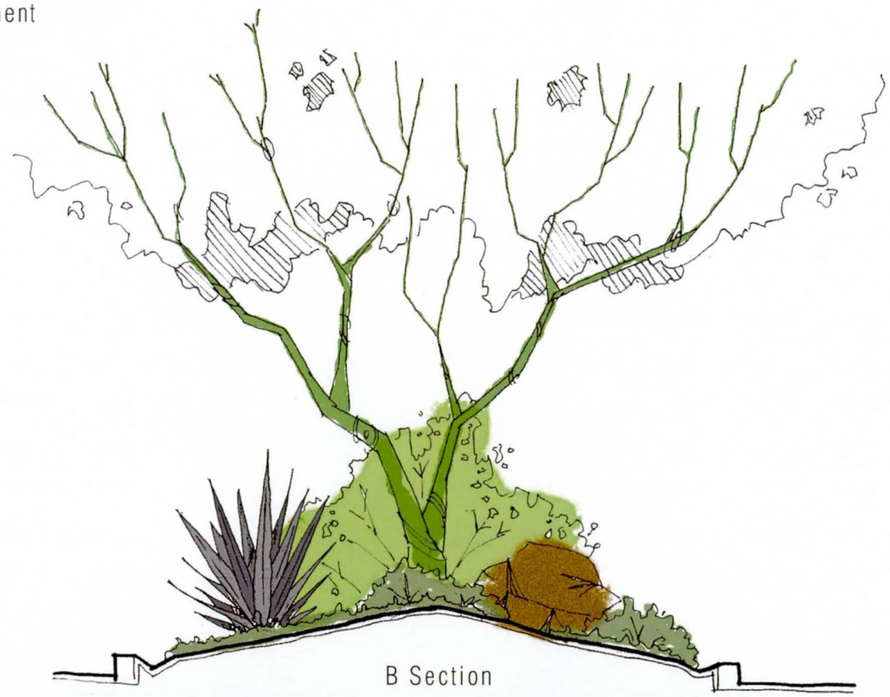

Rock Mound, Typ.
Low Ground Cover Planting, typ.
Bullnose Treatment


12' - 14''
5'
Local Stacked Stone





A Section



B Section

Pima Road
Character Aesthetic

A-2.9.2 Typical Median Treatment

Appendix G: Preferred Alternative - 30% Design Plans

CITY OF SCOTTSDALE

PUBLIC IMPROVEMENTS

COUNCIL
W.J. "JIM" LANE, MAYOR
LISA M. BOROWSKY
WAYNE ECTON
SUZANNE KLAPP
ROBERT W. LITTLEFIELD
RON McCULLAGH
TONY NELSSEN

CITY MANAGER
JOHN C. LITTLE

CITY ATTORNEY
DEBORAH W. ROBBERSON

CITY CLERK
CAROLYN JAGGER

"AS-BUILT" CERTIFICATION

I HEREBY CERTIFY THAT THE "AS-BUILT" IMPROVEMENTS AS SHOWN HEREON ARE LOCATED AS NOTED, AND THE LOCATIONS ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR DATE

CITY OF SCOTTSDALE

REVIEWED AND RECOMMENDED APPROVAL BY:

PAVING		STRUCTURES	
GRADING & DRAINAGE		BUILDING	
WATER & SEWER		PLUMBING	
TRAFFIC		MECHANICAL	
PLANNING IMPROVEMENTS		ELECTRICAL	
PLANNING FACILITIES		FIRE IMPROVEMENTS	
LANDSCAPE		FIRE FACILITIES	
NATIVE PLANT			

ENGINEERING COORDINATION MANAGER (OR DESIGNEE) DATE

BUILDING OFFICIAL (OR DESIGNEE) DATE

Two working days before you dig
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

ENGINEER

ENGINEERING FIRM
LOGO & ADDRESS
GOES HERE

$TIME$
$DATE$
DGN

PIMA ROAD
McDOWELL ROAD TO 90th STREET
PROJECT NO. H3344 01D
BID NO. TBD

NO CONFLICT SIGNATURE BLOCK

Utility	Utility Company	Name of Company Representative	Telephone Number	Date Signed
Electric				
Telephone				
Natural Gas				
Cable TV				
Water				
Sewer				

Engineer's Certification
I _____, as the Engineer of Record for this development, hereby certify that all utility companies listed above have been provided final improvement plans for review, and that all conflicts identified by the utilities have been resolved. In addition, "No Conflict" forms have been obtained from each utility company and are included in this submittal.

Signature Date

Certificate of Approval to Construct — Maricopa County Environmental Services Department, Water and Waste Management Division

MCESD #

Public Water System ID Number 0407- (and/or) Waste Water System ID Number 0437-
Project Description:

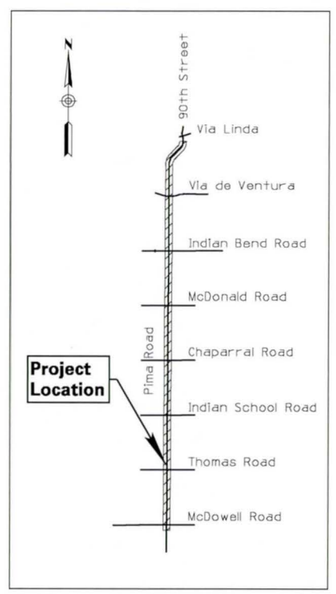
Project Location:
Project Owner:

Pursuant to AAC Title 18; Chapter 4, Article 5; or AAC Title 18; Chapter 9, Article 8; and/or Maricopa County Environmental Health Code Chapters II or V. This certificate of Approval To Construct the above described facilities as represented in the attached plan is valid upon review and signature by a Maricopa County Environmental Services Department's representative given the following provisions.
1.) A Request for Certificate of Approval of Construction, together with an Engineer's Certificate of Completion, and sealed engineered as-built plans, shall be submitted to this Department prior to Approval of Construction and startup.
2.) The Approval to Construct is void if major modifications occur to the plans without the knowledge and consent of the department.
If Construction has not started within one year of the approval date, this certificate will be void. An extension of time may be available upon written request.

Approved By: Date Approved:

CC: MCESD FILE; ADEQ
Engineer; AZ. Corp. Commission

ADDRESS
PARCEL/SECTION



Vicinity Map
N.T.S.

Either percent complete with date or seal with final drawings

30% DESIGN
OCTOBER 2009

XXXXX
L. R.
ENGINEER
Date Signed
ARIZONA, U.S.A.
Expires xx/xx/xx

SHEET INDEX

Sht. No.	Description
1	COVER SHEET
2–3	TYPICAL SECTIONS
4–11	RESULTS OF SURVEY
12–63	PLAN SHEETS
64–97	PROFILE SHEETS

BENCH MARKS (COS NAVD '88)

No.	Description
1.	
2.	

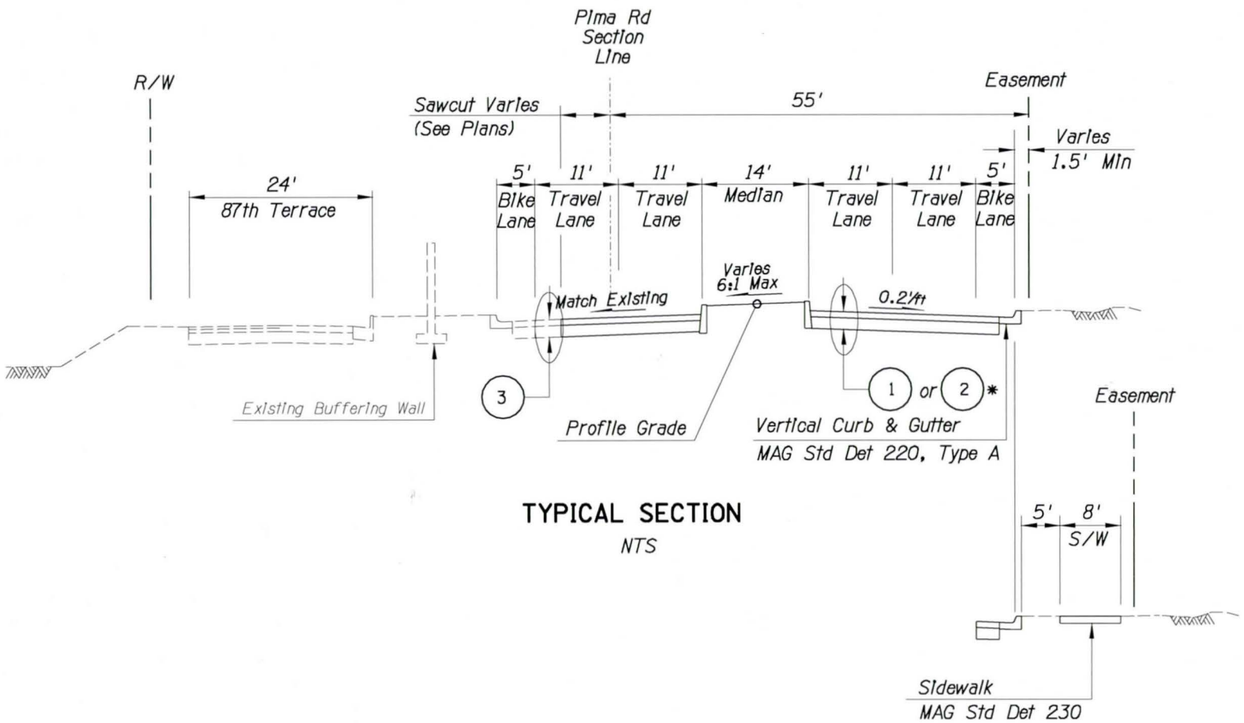
City of Scottsdale approved plans shall be kept on the job site at all times during the course of constuction.

PIMA ROAD - McDOWELL ROAD TO 90th STREET
PROJECT NO. H3344O 01D BID NO. TBD

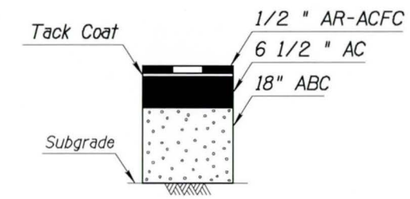
DR-STAFF APPROVAL NO.

PLAN REVIEW NO.

SHT. G1

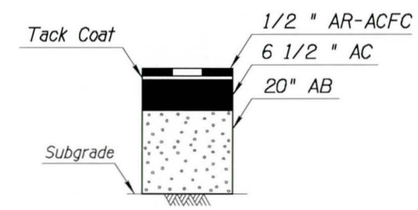


TYPICAL SECTION
NTS



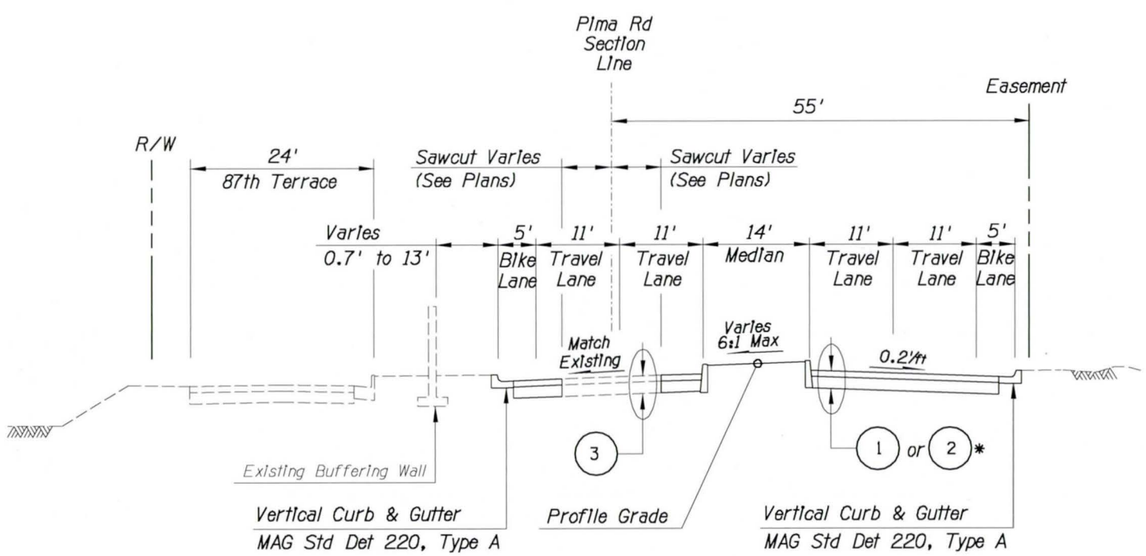
Total Thickness = 25"

PAVEMENT STRUCTURAL SECTION NO. 1
NTS

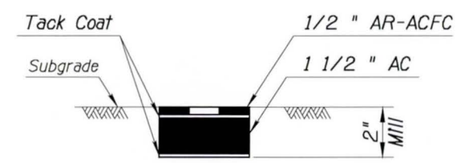


Total Thickness = 27"

PAVEMENT STRUCTURAL SECTION NO. 2
NTS



TYPICAL SECTION
NTS



Total Thickness = 2"

PAVEMENT STRUCTURAL SECTION NO. 3
NTS

Note:

* McDowell Rd to McDonald Dr, use PSS 1.
From McDonald Dr to Via de Ventura, use PSS 2.

DATE	REVISION	BY
ENGINEER		

SHEET TITLE: TYPICAL SECTIONS

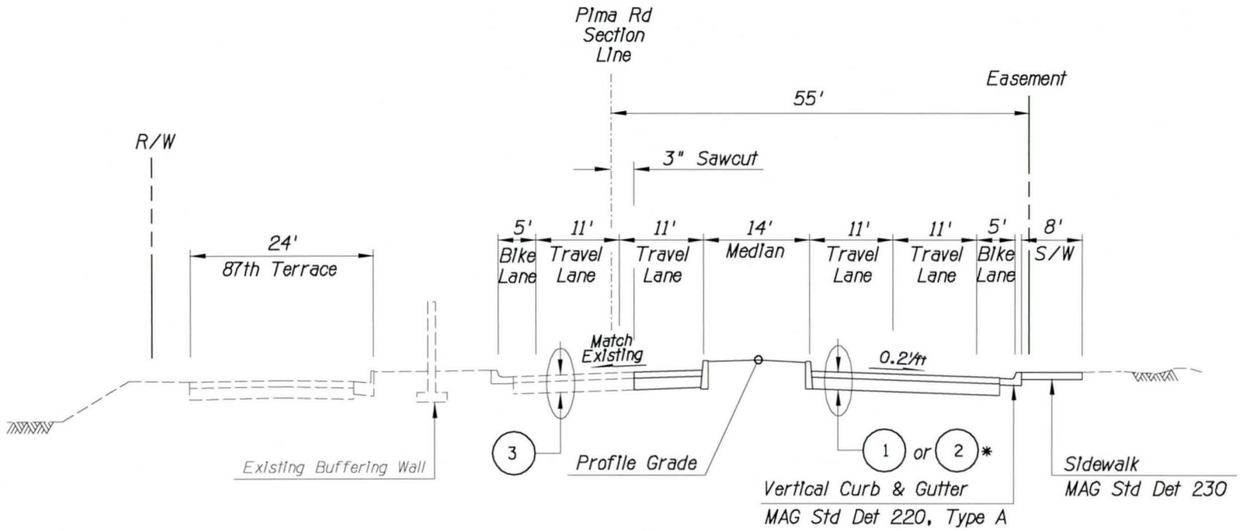
PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ.	IQ	07/09		1
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 2

TRACS NO.

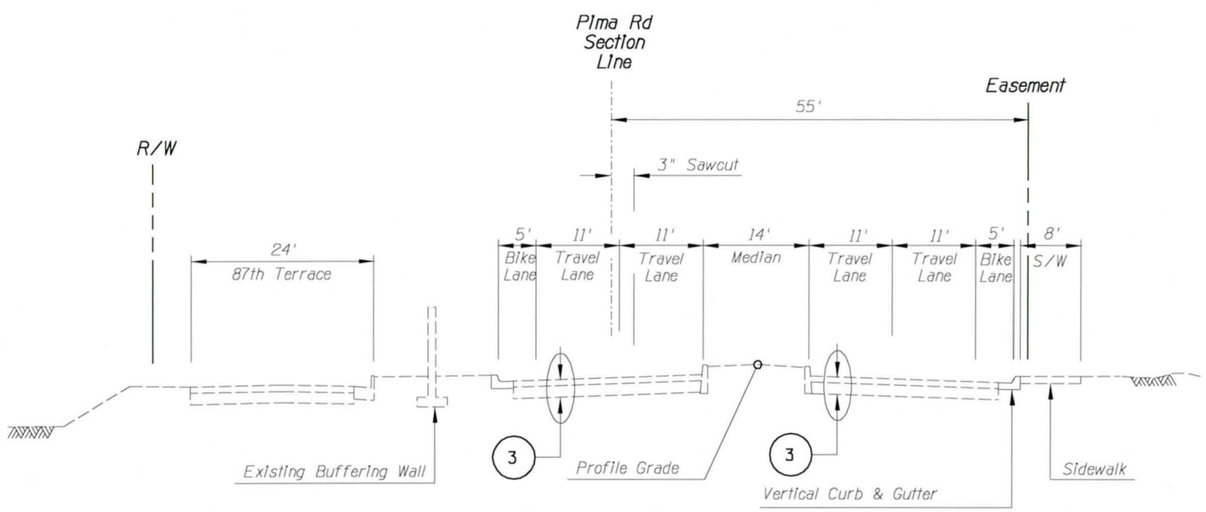
Tue 06 Oct 2009, 09:48:49
H:\Pima DCR\Data\typ01.dgn

PARSONS BRINCKERHOFF



TYPICAL SECTION

NTS



TYPICAL SECTION

NTS

VIA DE VENTURA TO 90th STREET

Note:

* McDowell Rd to McDonald Dr, use PSS 1.
From McDonald Dr to Via de Ventura, use PSS 2.

DATE	REVISION	BY
ENGINEER		

SHEET TITLE: TYPICAL SECTIONS

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ.	IQ	07/09		2
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 2

TRACS NO.

Tue 06 Oct 2009, 09:48:53
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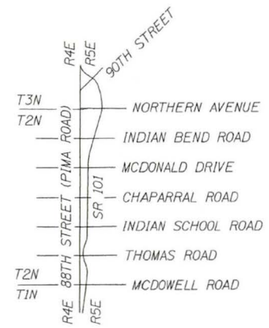
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.				

RESULTS OF BOUNDARY SURVEY CONTROL LINES FOR THE CITY OF SCOTTSDALE TRANSPORTATION DEPARTMENT DESIGN CONCEPT STUDY PIMA ROAD CORRIDOR MCDOWELL ROAD TO 90TH STREET TRACS NO. H334401C

PORTIONS OF: T1N, R4E T1N, R5E T2N, R4E T2N, R5E T3N, R4E T3N, R5E

VICINITY MAP
NOT TO SCALE



SURVEYOR'S NOTES:

COORDINATE SYSTEM

ARIZONA STATE PLANE CENTRAL ZONE AS DEFINED BY ARS 33-132 B.2 MODIFIED AS FOLLOWS: SCALED ABOUT THE CARTESIAN ORIGIN (0, 0, 0) USING A COMBINED SCALE FACTOR = 1.00016.

UNITS

ALL UNITS ARE INTERNATIONAL FEET.

PRIMARY CONTROL

NGS CONTROL POINTS USED TO ESTABLISH THE COORDINATE SYSTEM DEFINED ABOVE:

1E11 PID: AJ3683
T 473 PID: DU1340

MEASUREMENT PROCEDURES

POSITIONAL VALUES FOR THE SURVEYED MONUMENTS WERE DERIVED UTILIZING A WEIGHTED AVERAGE OF A MINIMUM OF TWO 90 SECOND (OR LONGER) RTK GPS OBSERVATIONS WITH INDEPENDENTLY GAINED ON-THE-FLY INITIALIZATIONS.

SURVEYOR'S STATEMENT

I, JESSE BOYD, DO HEREBY CERTIFY THAT THIS MAP ACCURATELY REPRESENTS A FIELD SURVEY MADE UNDER MY DIRECTION DURING THE MONTHS OF FEBRUARY AND MARCH OF 2007. FURTHERMORE, THIS SURVEY MEETS APPLICABLE ACCURACY STANDARDS AND IS TRUE AND CORRECT AS SHOWN.

JESSE BOYD, RLS #42937

MEASUREMENT NOTES

WITH THE EXCEPTION OF SRPMIC CONTROL LINES (AS INDICATED HEREON) ALL MEASUREMENTS WERE IN SUBSTANTIAL AGREEMENT WITH THE REFERENCE DOCUMENTS NOTED HEREON. ALL BEARINGS, DISTANCES, COORDINATES, AND OTHER DATA ARE BASED ON MEASUREMENTS AND CALCULATIONS PERFORMED AS A PART OF THIS SURVEY.

SRPMIC CONTROL LINES

INFORMATION SOURCES UNCOVERED AND REFERENCED HEREON REGARDING CONTROL LINES EAST OF PIMA ROAD ARE LIMITED TO GLO/BLM SUBDIVISION PLATS AND SRPMIC ELECTRONIC FILES (SEE REFERENCE NOTES #1A AND #4). SUBSTANTIAL DISCREPANCIES IN RECORD LOCATIONS WERE IDENTIFIED. NO ORIGINAL GLO MONUMENTS WERE LOCATED. MEASURED LOCATIONS OF MONUMENTS ARE IN SUBSTANTIAL AGREEMENT WITH SRPMIC ELECTRONIC FILES. HOWEVER, THIS SURVEYOR DOES NOT PURPORT THE IDENTIFICATION OF FOUND MONUMENTS IN THIS AREA; THIS SURVEY EXCLUDES ANY REPRESENTATION OF MONUMENTS IN THIS AREA AS DENOTING SECTION BOUNDARIES.

REFERENCES

THE FOLLOWING RECORD DOCUMENTS AND OTHER INFORMATION SOURCES WERE REFERENCED IN COMPLETION OF THIS SURVEY:

1. PLATS & RESULTS-OF-SURVEYS
   a. GLO/BLM SUBDIVISION PLATS
      i. T1N, R4E GSRB&M (00015) OFFICIALLY FILED 12/02/1870
      ii. T1N, R5E GSRB&M (00016) OFFICIALLY FILED 06/16/1913
      iii. T1N, R5E GSRB&M (00017) SURVEYED 06/14/1888
      iv. T1N, R5E GSRB&M (00018) OFFICIALLY FILED 12/02/1870
      v. T2N, R4E GSRB&M (00076) OFFICIALLY FILED 12/02/1870
      vi. T2N, R5E GSRB&M (00078) OFFICIALLY FILED 10/29/1924
      vii. T2N, R5E GSRB&M (00088) OFFICIALLY FILED 10/29/1924
      viii. T2N, R5E GSRB&M (00089) OFFICIALLY FILED 06/27/1913
      ix. T2N, R5E GSRB&M (00090) OFFICIALLY FILED 06/27/1913
      x. T2N, R5E GSRB&M (00091) OFFICIALLY FILED 12/02/1870
      xi. T3N, R4E GSRB&M (00134) OFFICIALLY FILED 09/05/1916
      xii. T3N, R4E GSRB&M (00035) OFFICIALLY FILED 05/20/1895
      xiii. T3N, R5E GSRB&M (00141) OFFICIALLY FILED 04/14/1932
      xiv. T3N, R5E GSRB&M (00142) OFFICIALLY FILED 09/18/1916
      xv. T3N, R5E GSRB&M (00143) OFFICIALLY FILED 06/16/1913
   b. INDIAN BEND RANCHOS MCR BOOK 82, PAGE 9 OF MAPS
   c. SCOTTSDALE ESTATES FOURTEEN MCR BOOK 84, PAGE 34 OF MAPS
   d. SCOTTSDALE ESTATES ELEVEN MCR BOOK 89, PAGE 17 OF MAPS
   e. SCOTTSDALE HIGHLANDS FIVE MCR BOOK 95, PAGE 37 OF MAPS
   f. PARK SCOTTSDALE FOUR MCR BOOK 96, PAGE 18 OF MAPS
   g. PARK SCOTTSDALE SIX MCR BOOK 103, PAGE 24 OF MAPS
   h. PARK SCOTTSDALE EIGHT MCR BOOK 107, PAGE 33 OF MAPS
   i. SANDS EAST MCR BOOK 110, PAGE 23 OF MAPS
   j. RANCH OFFICE PARK II AMENDED MCR BOOK 283, PAGE 4 MAPS
   k. INNER CIRCLE MCR BOOK 111, PAGE 42 OF MAPS
   l. CABALLO RANCHOS NO 2A MCR BOOK 114, PAGE 3 OF MAPS
   m. PARK SCOTTSDALE ELEVEN MCR BOOK 114, PAGE 7 OF MAPS
   n. SANDS EAST TWO BOOK 117, PAGE 37 OF MAPS
   o. SANDS EAST TOWNHOUSES TWO MCR BOOK 128, PAGE 14 OF MAPS
   p. PIMA MEADOWS 1 MCR BOOK 135, PAGE 19 OF MAPS
   q. PIMA MEADOWS 2 MCR BOOK 135, PAGE 20 OF MAPS
   r. PARK SCOTTSDALE 16 MCR BOOK 136, PAGE 42 OF MAPS
   s. PARK SCOTTSDALE 17 MCR BOOK 140, PAGE 1 OF MAPS
   t. PIMA MEADOWS 3 MCR BOOK 144, PAGE 21 OF MAPS
   u. PIMA MEADOWS 4 MCR BOOK 144, PAGE 22 OF MAPS
   v. SCOTTSDALE PARK VILLAGE MCR BOOK 154, PAGE 12 OF MAPS
   w. PASEO VILLAGE MCR BOOK 154, PAGE 13 OF MAPS
   x. PARK SCOTTSDALE 19 MCR BOOK 157, PAGE 34 OF MAPS
   y. PIMA PLAZA ESTATES MCR BOOK 176, PAGE 36 OF MAPS
   z. CARRIAGE SQUARE MCR BOOK 190, PAGE 5 OF MAPS
   aa. VISTA DEL CIELO MCR BOOK 194, PAGE 28 OF MAPS
   bb. TIERRA NUEVA MCR BOOK 196, PAGE 24 OF MAPS
   cc. TIERRA DE LOS REYES MCR BOOK 196, PAGE 49 OF MAPS
   dd. ORANGE TREE ESTATES UNIT TWO MCR BOOK 202, PAGE 3 OF MAPS
   ee. PARK SCOTTSDALE ONE MCR BOOK 93, PAGE 42 OF MAPS
   ff. INDIAN SHADOWS UNIT ONE MCR BOOK 95, PAGE 8 OF MAPS
   gg. PARK SCOTTSDALE THREE MCR BOOK 95, PAGE 15 OF MAPS
2. STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION RIGHT-OF-WAY PLANS:
   a. NORTHEAST OUTER LOOP 600-1-702
   b. NORTHEAST OUTER LOOP RBM-600-1-703
   c. PIMA FREEWAY 600-1-709
3. INSTRUMENTS (DEEDS, EASEMENTS, ETC):
   a. MCR 2005-0923763
   b. MCR 1999-1028997
4. SRPMIC ENGINEERING AND CONSTRUCTION SERVICES SURVEY DIVISION ELECTRONIC FILES (AUTOCAD FORMAT).

ABBREVIATIONS:

CALC	CALCULATED
PI	POINT OF INTERSECTION
PC	POINT OF CURVE
CL	POINT ON CENTERLINE
SEC	SECTION
BCHH	BRASS CAP IN HANDHOLE
BCF	BRASS CAP FLUSH
ACHH	ALUMINUM CAP IN HANDHOLE
ACF	ALUMINUM CAP FLUSH

PREMIER ENGINEERING CORPORATION
6437 West Chandler Boulevard, Suite 1
CHANDLER, AZ 85226
(480)829-6000 FAX (480)829-6016

	NAME	DATE
DESIGN	JB	04/07
DRAWN	DG	04/07
CHECKED	SM	04/07
TEAM LEADER	JB	

ARIZONA DEPARTMENT OF TRANSPORTATION
SALT RIVER PIMA MARICOPA INDIAN COMMUNITY AND
CITY OF SCOTTSDALE TRANSPORTATION DEPARTMENT

PIMA ROAD CORRIDOR
MCDOWELL ROAD TO 90TH STREET

ROUTE PIMA ROAD
LOCATION MCDOWELL ROAD TO 90TH STREET

REGISTERED LAND SURVEYOR 42937 JESSE BOYD 5/4/07 ARIZONA U.S.A.

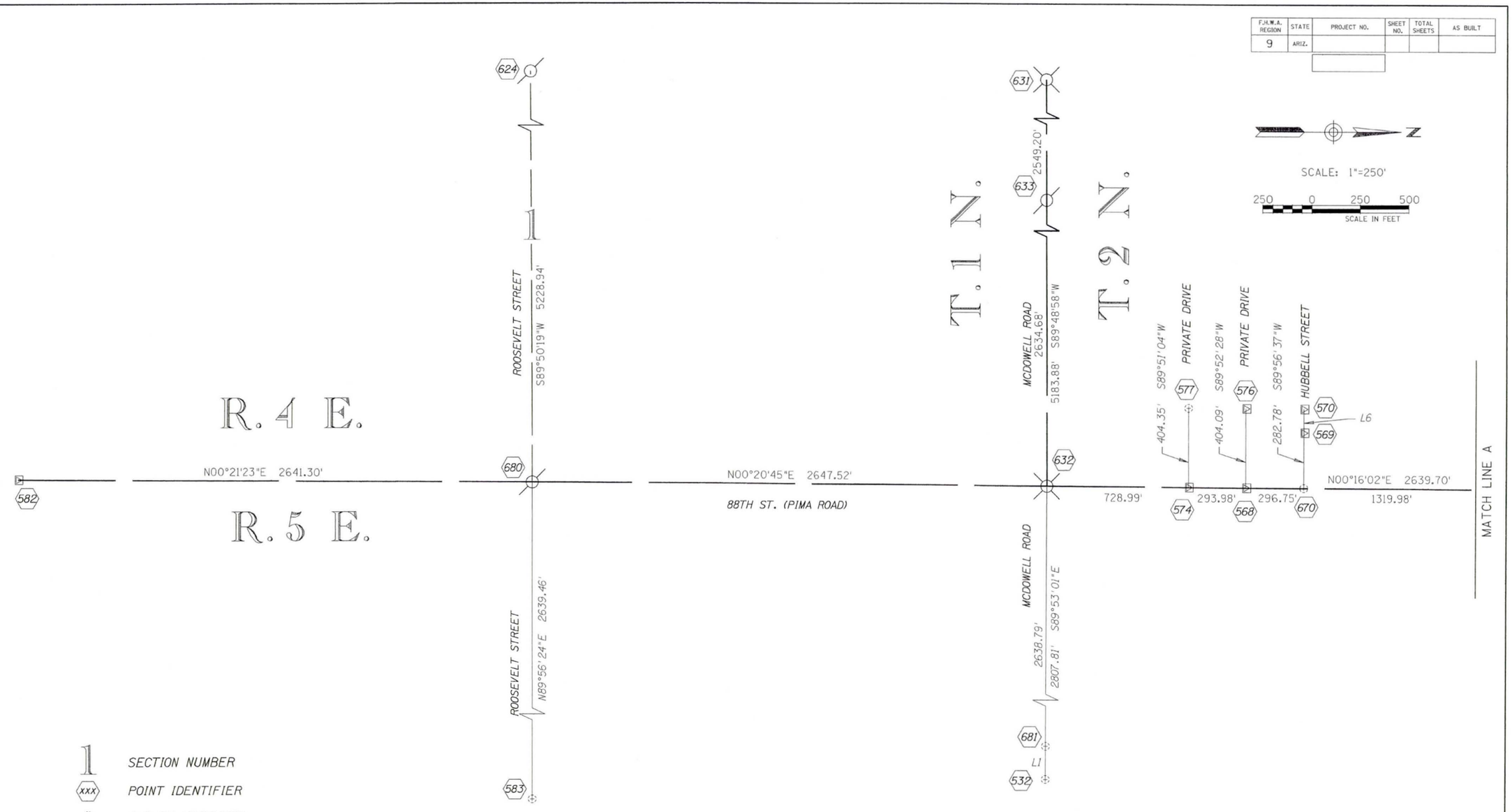
SHEET 1 OF 8

TRACS NO. H334401C

1 OF 8

05/04/2007 P:\2007003\Survey\Internal\Microstation\SHEETS\07003V_SHEET_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.				



1 SECTION NUMBER

XXX POINT IDENTIFIER

SURVEY MONUMENT

QUARTER CORNER

SECTION CORNER

CALCULATED POINT (NOT FOUND)

CENTERLINE

SECTION OR MID SECTION LINE

TOWNSHIP LINE

PREMIER ENGINEERING CORPORATION
6437 West Chandler Boulevard, Suite 1
CHANDLER, AZ 85226
(480)829-6000 FAX (480)829-6016

	NAME	DATE
DESIGN	JB	04/07
DRAWN	DG	04/07
CHECKED	SM	04/07
TEAM LEADER	JB	

ARIZONA DEPARTMENT OF TRANSPORTATION
SALT RIVER PIMA MARICOPA INDIAN COMMUNITY AND
CITY OF SCOTTSDALE TRANSPORTATION DEPARTMENT

PIMA ROAD CORRIDOR
MCDOWELL ROAD TO 90TH STREET

REGISTERED LAND SURVEYOR
JAMES H. SAFE JR.
42937
JESSE RODRIGUEZ
5/4/07
ARIZONA, U.S.A.

ROUTE PIMA ROAD
LOCATION MCDOWELL ROAD TO 90TH STREET

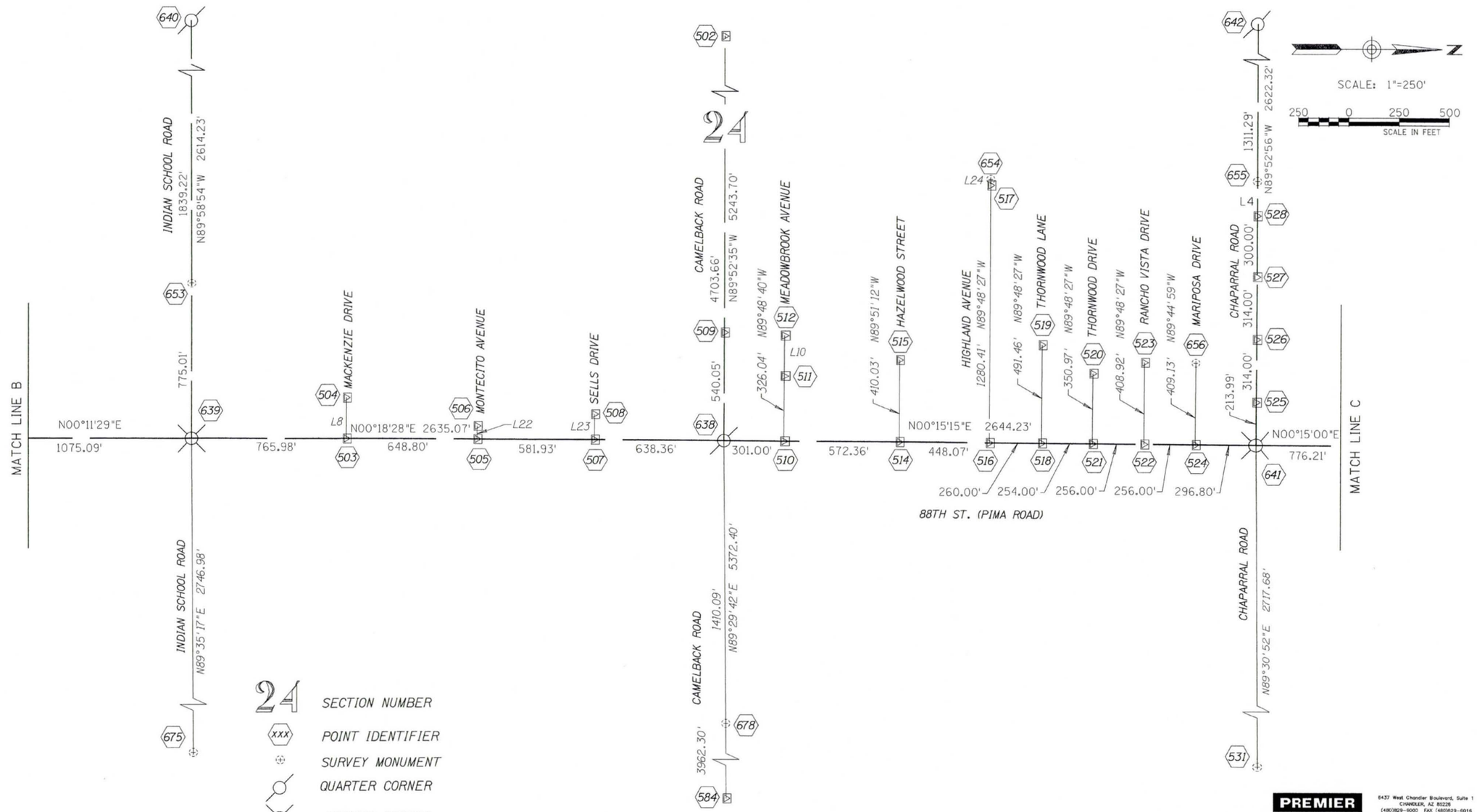
SHEET 3 OF 8

TRACS NO. H334401C

3 OF 8

05/04/2007 P:\2007003\Survey\Internal\Microstation\SHEETS\07003V_SHEET_3.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.				



PREMIER ENGINEERING CORPORATION

5437 West Chandler Boulevard, Suite 1
CHANDLER, AZ 85226
(480)829-9000 FAX (480)829-6016

	NAME	DATE
DESIGN	JB	04/07
DRAWN	DG	04/07
CHECKED	SM	04/07
TEAM LEADER	JB	

ARIZONA DEPARTMENT OF TRANSPORTATION
SALT RIVER PIMA MARICOPA INDIAN COMMUNITY AND
CITY OF SCOTTSDALE TRANSPORTATION DEPARTMENT

PIMA ROAD CORRIDOR
MCDOWELL ROAD TO 90TH STREET

REGISTERED LAND SURVEYOR
CERTIFICATE NO. 42937
JESSE BOYD
ARIZONA, U.S.A.

ROUTE PIMA ROAD
LOCATION MCDOWELL ROAD TO 90TH STREET

SHEET 5 OF 8

TRACS NO. H334401C

5 OF 8

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

05/04/2007 P:\2007003\Survey\Internal\Microstation\SHEETS\07003V_SHEET_5.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.				

SCALE: 1"=250'

250 0 250 500

SCALE IN FEET

MATCH LINE C

MATCH LINE D

88TH STREET (PIMA ROAD)

JACKRABBIT ROAD

MCDONALD DRIVE

BONITA DRIVE

SANDALWOOD DRIVE

VISTA DRIVE

PLAZA WAY

PLAZA AVENUE

BONNIE ROSE AVENUE

SAGE DRIVE

ARLINGTON ROAD

BUENA TERRA WAY

VALLEY VIEW RD

SAN MIGUEL AVE

MONTEBELLO AVENUE

SOLANO LANE

SOLANO DRIVE

STARLIGHT WAY

PALO VERDE AVENUE

BERRIDGE LANE

VALLEY VISTA DRIVE

KEIM DRIVE

ROSE LANE

N89°57'15"W 433.99' 530

N89°57'05"W 1008.43' 581

N89°57'05"W 1008.49' 578

N89°55'49"W 515.34' 609

N00°15'00"E 2645.02'

776.21' 529 276.00' 580 271.00' 579 268.82' 608 262.00' 607 262.00' 606 262.00' 605 267.00' 643 267.00' 590 262.00' 591 262.00' 592 262.00' 593 264.81' 533 262.60' 536 257.60' 537 257.60' 539 257.60' 541 281.52' 644 618.98' 545 258.00' 546 258.00' 548 269.44' 551 1149.00'

N00°14'47"E 2634.73'

N00°14'49"E 2645.31'

610 C10 612 C11 611 L17 613 C13 614 L18 603 C12 604 L26 601 C7 600 482.40' 599 C8 598 L15 597 C9 596 L9 595 C6 594 L11 534 1337.81' 535 484.61' 538 349.61' 540 418.13' 542 418.95' 543 1439.49' 1186.25' 645 549 L25 482.67' 552 657 L3 454.29' 547

N89°56'03"W 1323.68' 602 3927.36' 501 N89°55'28"W 5251.04'

N89°48'30"W 2625.74'

N89°48'51"W

N90°00'00"W

JACKRABBIT ROAD N89°36'33"E 2705.15' 627

MCDONALD DRIVE N89°32'49"E 2696.66' 626

13 SECTION POINT

xxx POINT IDENTIFIER

SURVEY MONUMENT

QUARTER CORNER

SECTION CORNER

CALCULATED POINT (NOT FOUND)

CENTERLINE

SECTION OR MID SECTION LINE

TOWNSHIP LINE

PREMIER ENGINEERING CORPORATION

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ARIZONA DEPARTMENT OF TRANSPORTATION
SALT RIVER PIMA MARICOPA INDIAN COMMUNITY AND
CITY OF SCOTTSDALE TRANSPORTATION DEPARTMENT

PIMA ROAD CORRIDOR
MCDOWELL ROAD TO 90TH STREET

REGISTERED LAND SURVEYOR
CERTIFICATE NO. 42537
JESSE BLOYD
ARIZONA, U.S.A.

ROUTE PIMA ROAD

LOCATION MCDOWELL ROAD TO 90TH STREET

SHEET 6 OF 8

TRACS NO. H334401C

6 OF 8

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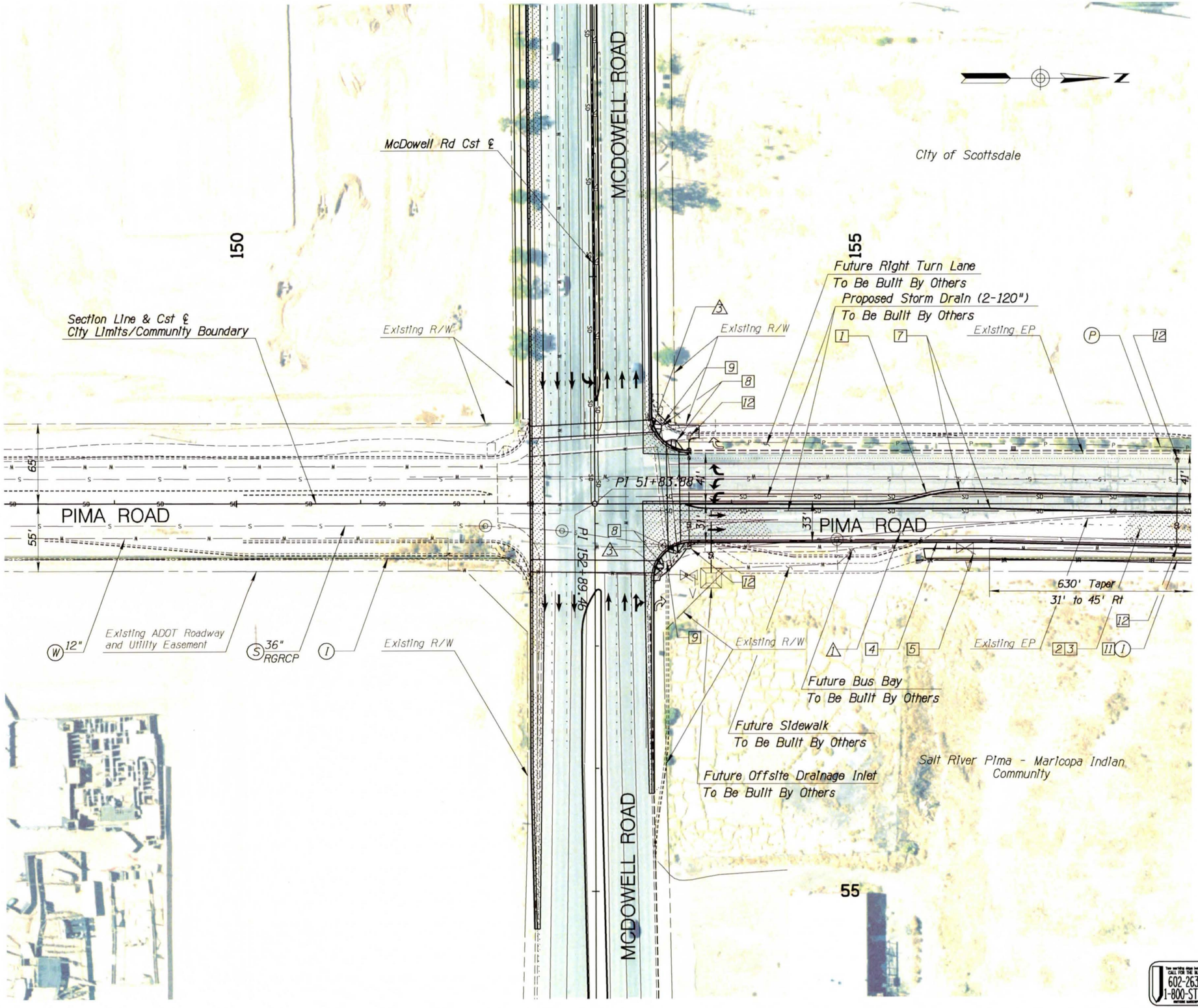

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	1699
3 Remove Curb & Gutter	LF	128

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	482
2 Subgrade Preparation	SY	1892
3 Install Pvmt per Structural Section 1	SY	1892
4 Install Curb & Gutter, MAG Std Det 220, Type A	LF	499
5 Install 8' Concrete Sidewalk	SF	1709
7 Install Single Curb, MAG Std Det 222	LF	818
8 Concrete Sidewalk Ramp, COS 2232	EA	2
9 Install Concrete Sidewalk	SF	716
11 Install 36" RGRCP for Irrigation	LF	220
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	4

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE
PLAN SHEET
BEGIN PROJECT TO STA 157+70

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		1
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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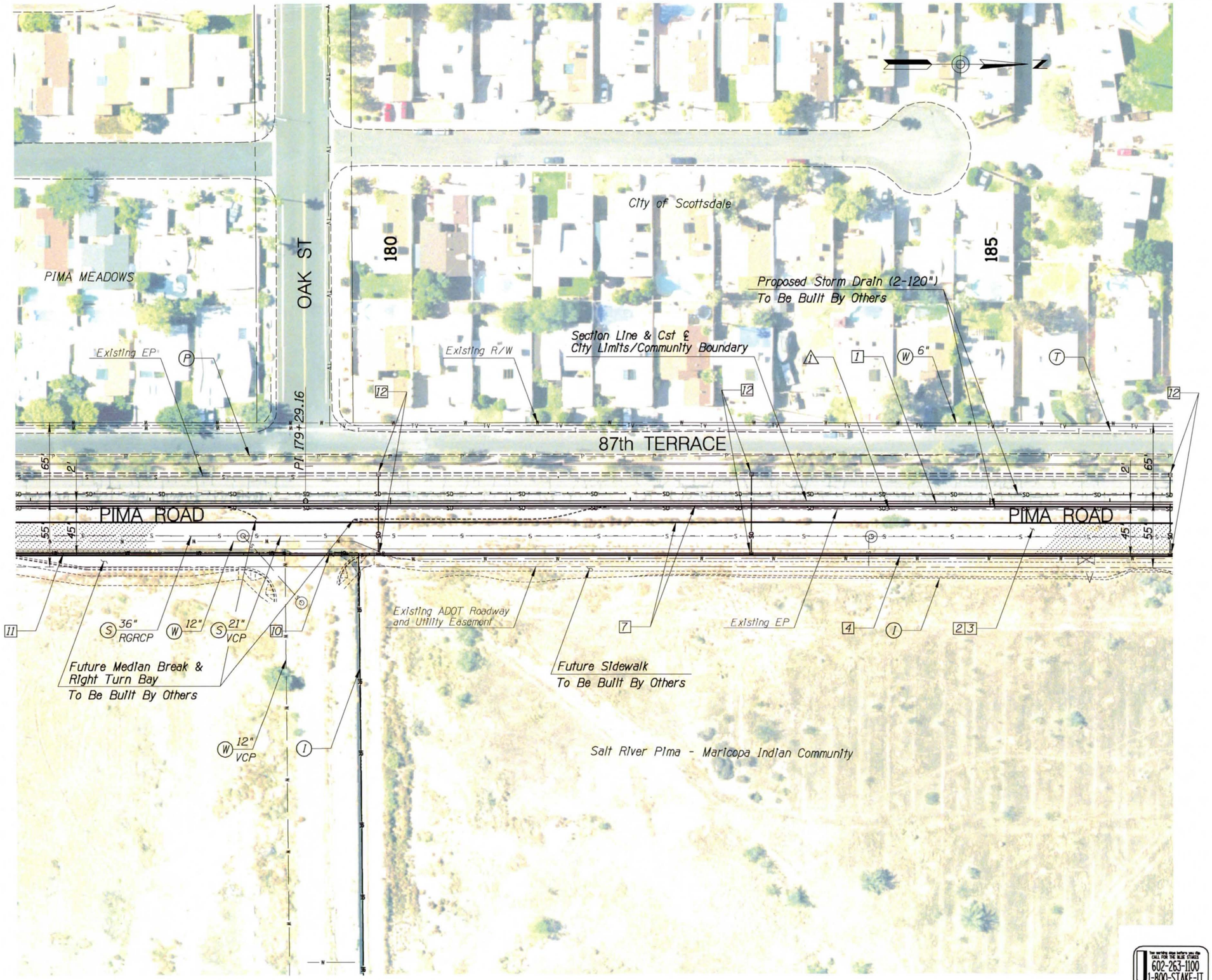

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	514

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	4436
3 Install Pvmt per Structural Section 1.	SY	4436
4 Install Curb & Gutter	LF	910
7 Install Single Curb, MAG Std Det 222	LF	1920
10 Install Roll Curb, MAG Std Det 220, Type C	LF	50
11 Install 36" RGRCP for Irrigation	LF	300
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	6

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PLAN SHEET
STA 176+90 TO STA 186+50

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	ID	10/09		4
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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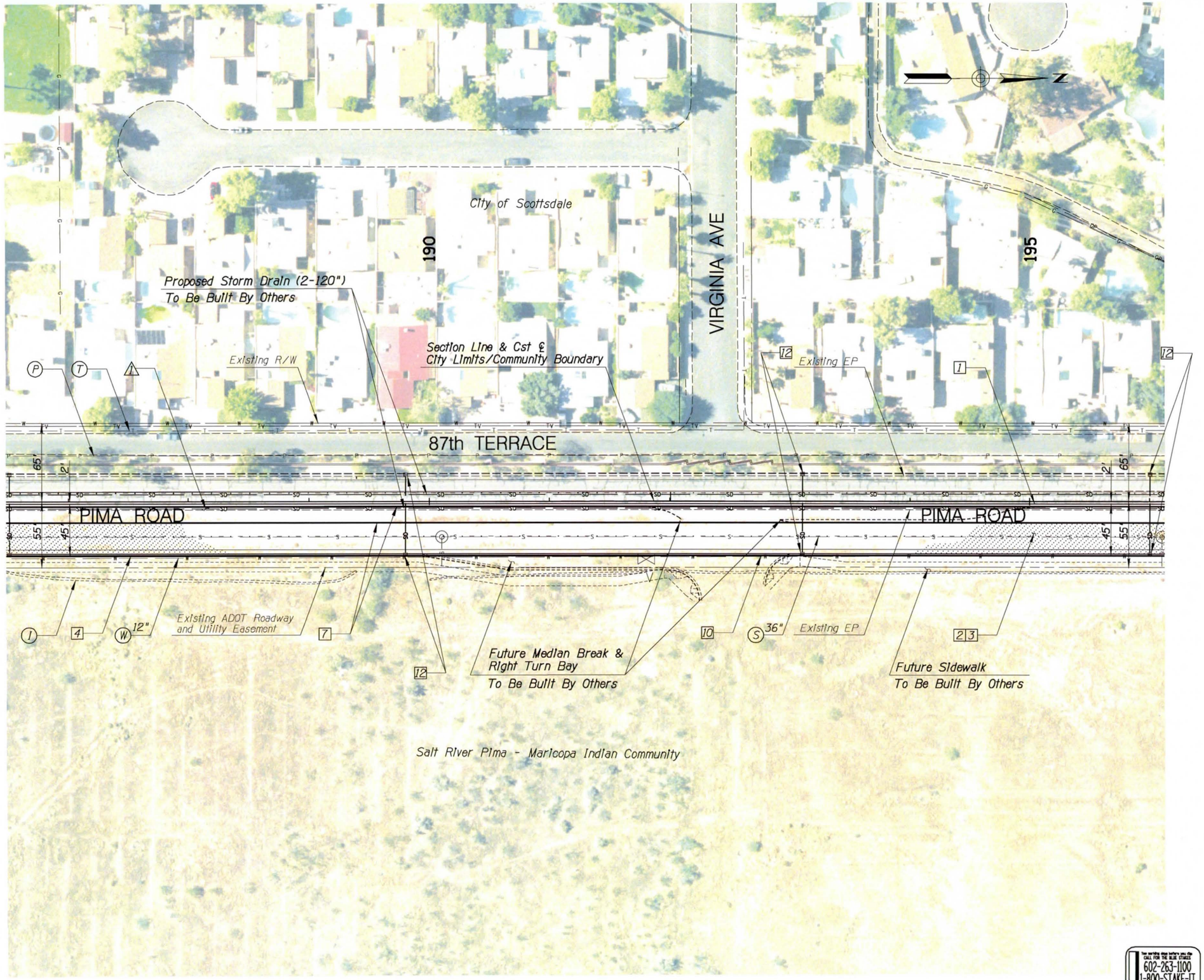
602-263-1100
1-800-STAKE-IT



PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	533

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	4436
3 Install Pvmt per Structural Section 1.	SY	4436
4 Install Curb & Gutter	LF	910
7 Install Single Curb, MAG Std Det 222	LF	1920
10 Install Roll Curb, MAG Std Det 220, Type C	LF	50
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	6

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE
PLAN SHEET
STA 186+50 TO STA 196+10

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IO	10/09		5
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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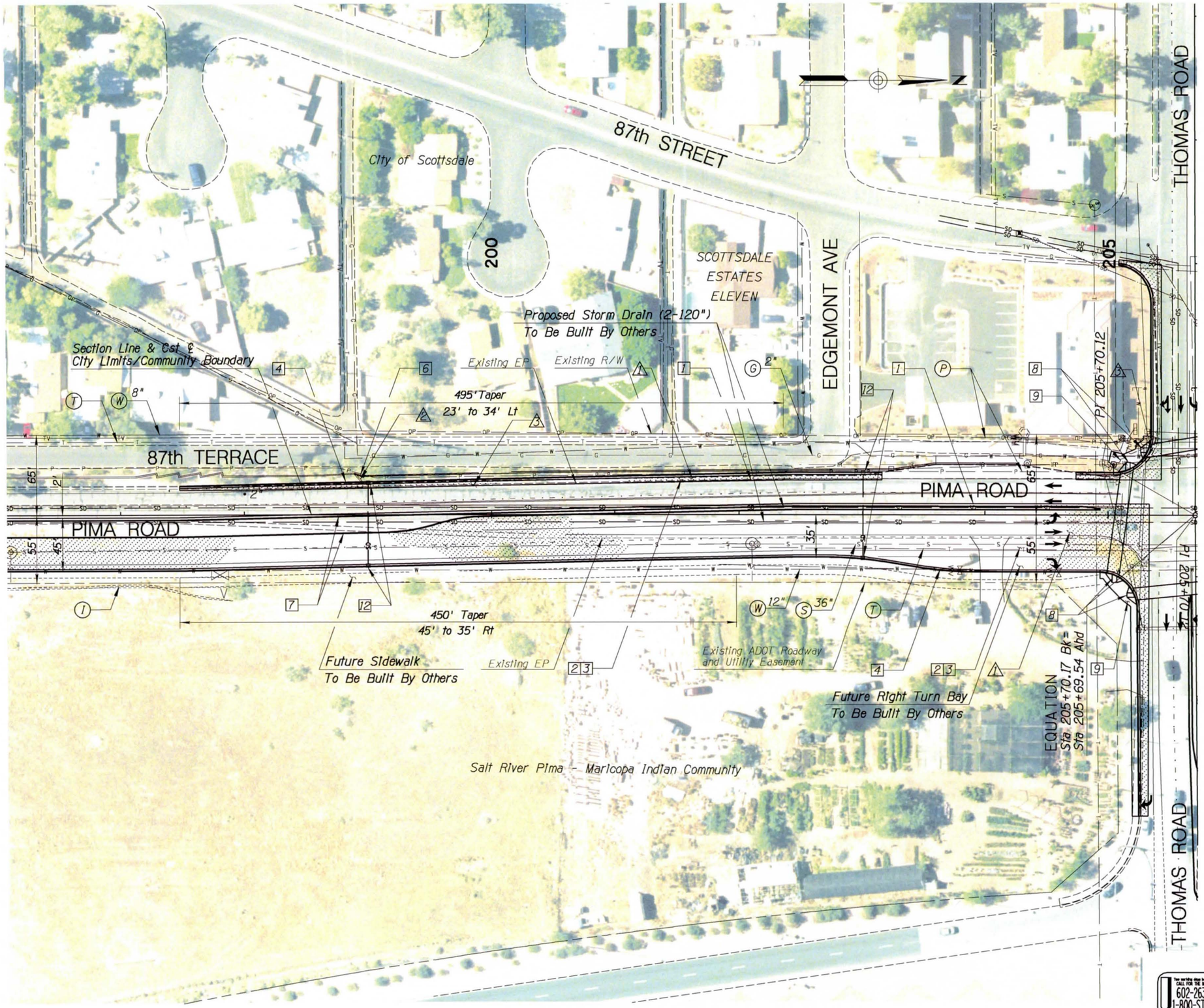

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	2195
2 Remove Exist Buffering Wall	LF	440
3 Remove Exst Curb & Gutter	LF	658

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1515
2 Subgrade Preparation	SY	4658
3 Install Pvmt per Structural Section 1	SY	4658
4 Install Curb & Gutter	LF	1580
6 Construct Masonry Wall	LF	537
7 Install Single Curb, MAG Std Det 222	LF	1769
8 Concrete Sidewalk Ramp, COS 2232	EA	2
9 Install Concrete Sidewalk,	SF	611
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	4

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET
STA 196+10 TO STA 205+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		6
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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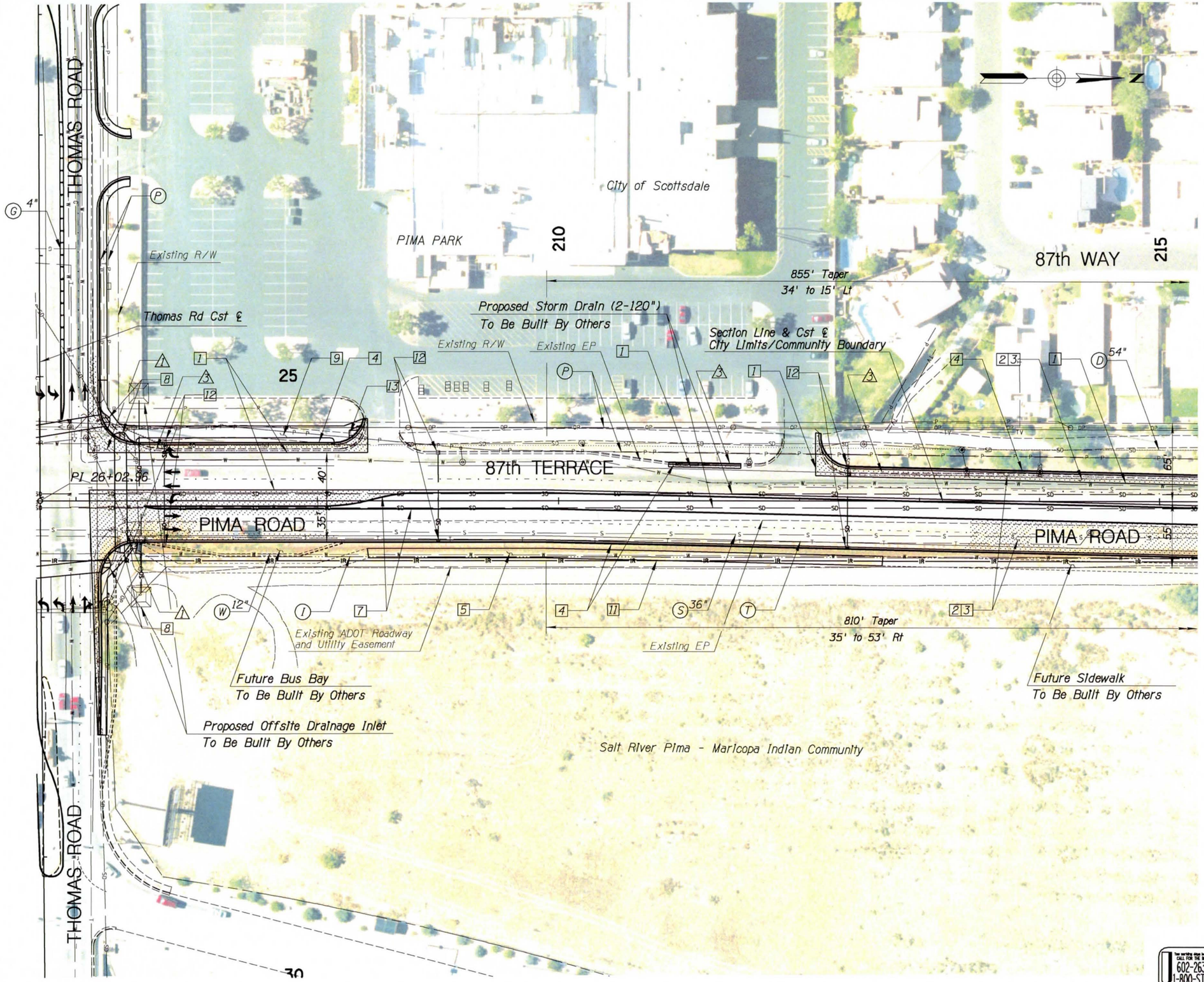

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	2691
3 Remove Exist Curb & Gutter	LF	661

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1598
2 Subgrade Preparation	SY	4835
3 Install Pvmt per Structural Section 1.	SY	4835
4 Install Curb & Gutter	LF	1535
5 Install 8' Concrete Sidewalk	SF	3414
7 Install Single Curb, MAG Std Det 222	LF	1749
8 Concrete Sidewalk Ramp, COS 2232	EA	2
9 Install Concrete Sidewalk	SF	2569
11 Install 36" RGRCP for Irrigation	LF	960
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	6
13 Concrete Sidewalk Ramp, COS 2234	EA	1

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PLAN SHEET
STA 205+70 TO STA 215+30

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	ID	10/09		7
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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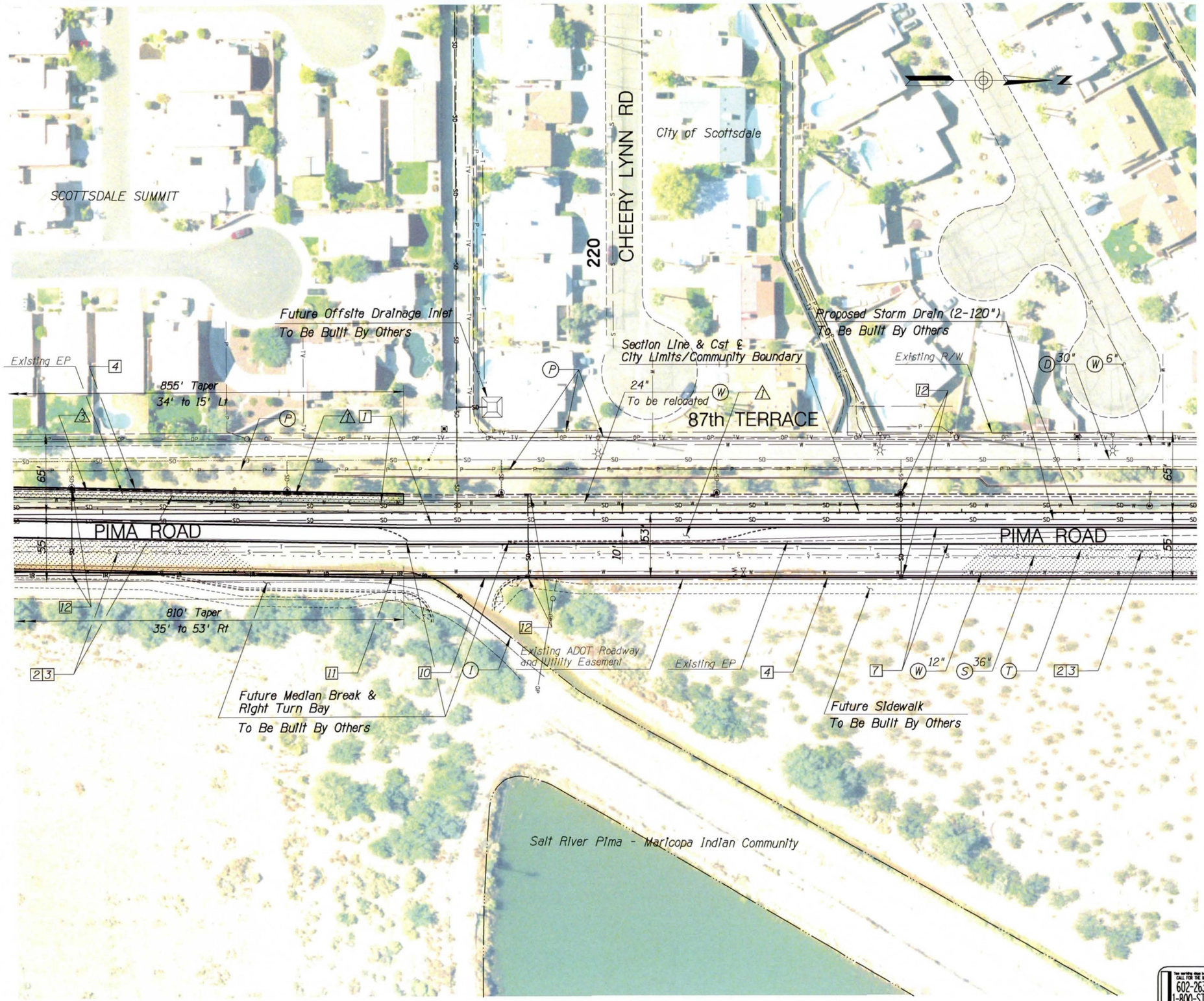

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	1707
3 Remove Exist Curb & Gutter	LF	315

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1281
2 Subgrade Preparation	SY	4667
3 Install Pvmt per Structural Section 1	SY	4667
4 Install Curb & Gutter	LF	1225
7 Install Single Curb, MAG Std Det 222	LF	1922
10 Install Roll Curb, MAG Std Det 220, Type C	LF	50
11 Install 36" RGRCP for Irrigation	LF	400
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	6

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET
STA 215+30 TO STA 224+90

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	ID	10/09		8
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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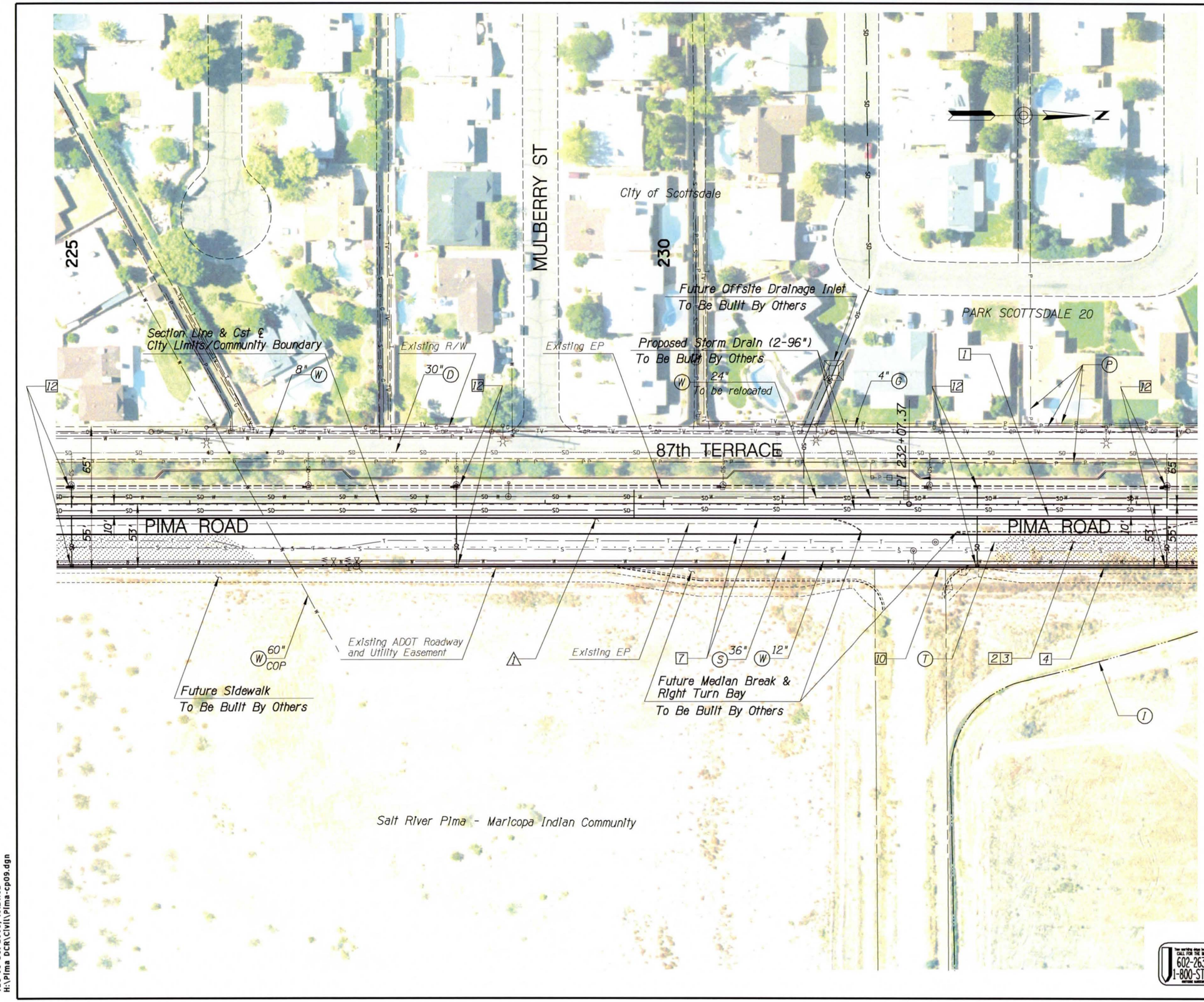

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	746

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	4436
3 Install Pvmt per Structural Section 1.	SY	4436
4 Install Curb & Gutter	LF	910
7 Install Single Curb, MAG Std Det 222	LF	1920
10 Install Roll Curb, MAG Std Det 220, Type C	LF	50
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	8

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PLAN SHEET
STA 224+90 TO STA 234+50

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		9
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H3344010	OF 52

TRACS NO.

CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT

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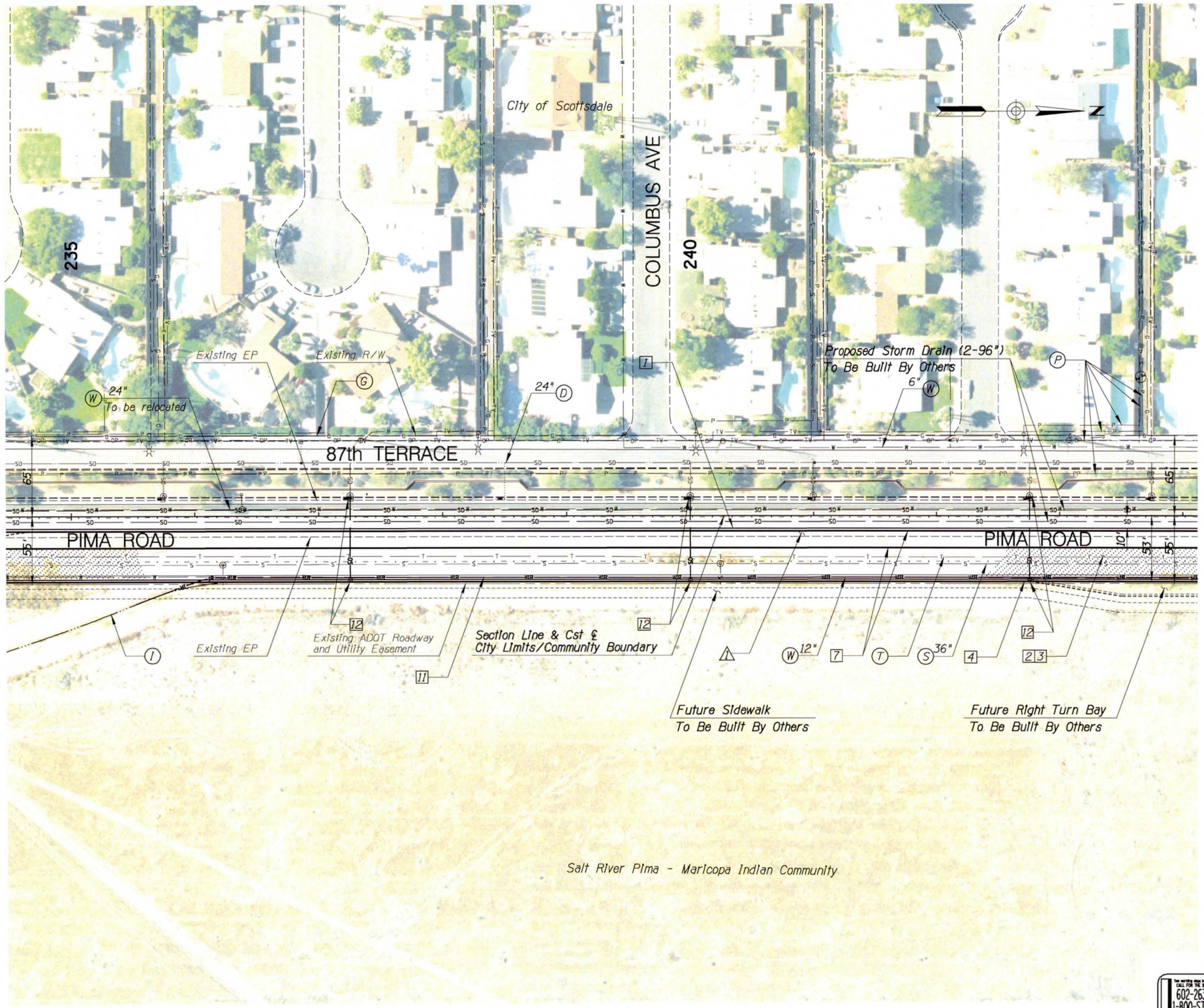

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	735

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	4436
3 Install Pvmt per Structural Section 1.	SY	4436
4 Install Curb & Gutter	LF	960
7 Install Single Curb, MAG Std Det 222	LF	1920
11 Install 36" RGRCP for Irrigation	LF	850
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	6

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET
STA 234+50 TO STA 244+10

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		10
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT

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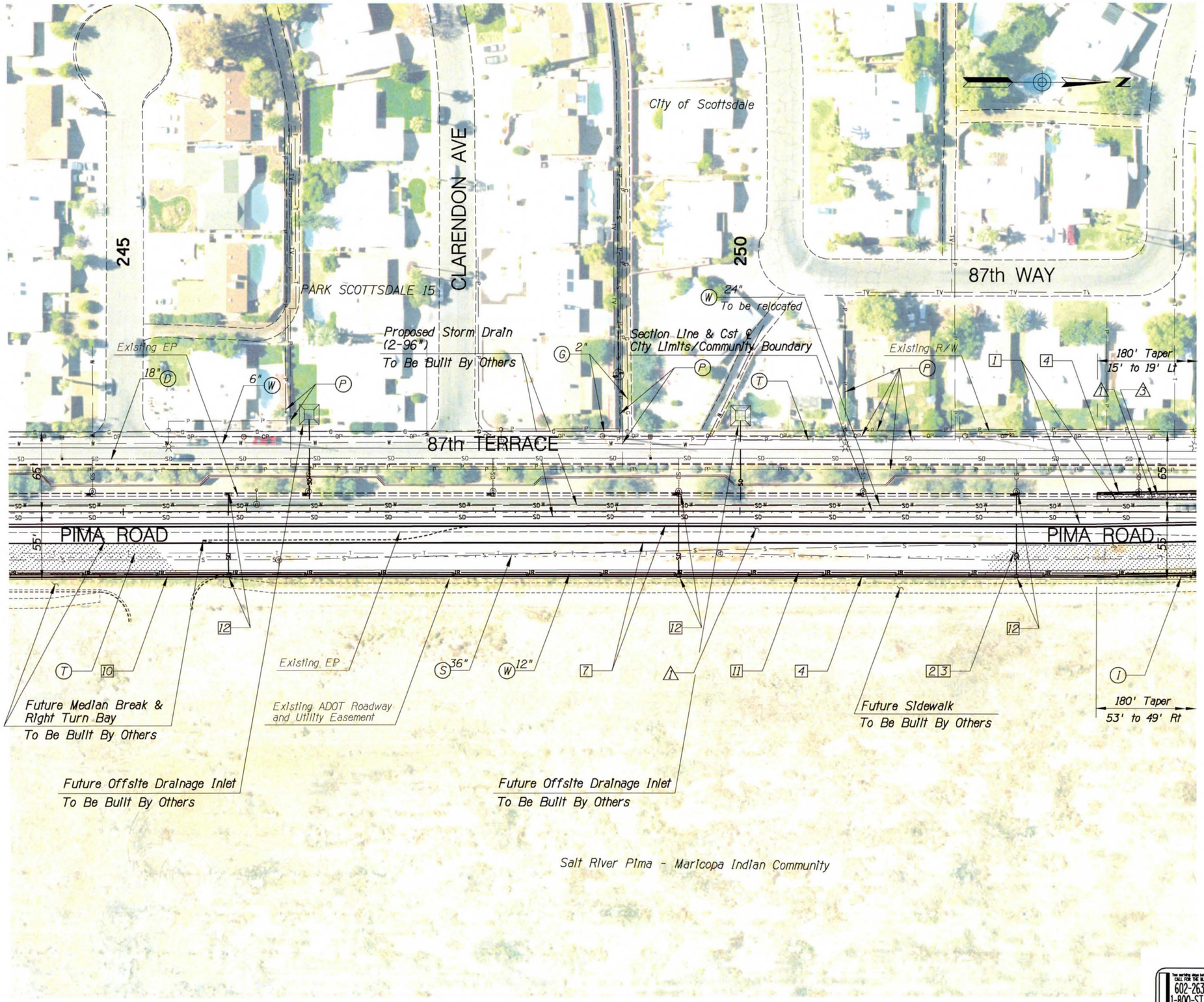

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	779
3 Remove Exist Curb & Gutter	LF	79

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1039
2 Subgrade Preparation	SY	4475
3 Install Pvmt per Structural Section 1.	SY	4475
4 Install Curb & Gutter	LF	989
7 Install Single Curb, MAG Std Det 222	LF	1920
10 Install Roll Curb, MAG Std Det 220, Type C	LF	50
11 Install 36" RGRCP for Irrigation	LF	960
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	6

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30% REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET STA 244+10 TO STA 253+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		11
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H3344010	OF 52

TRACS NO.

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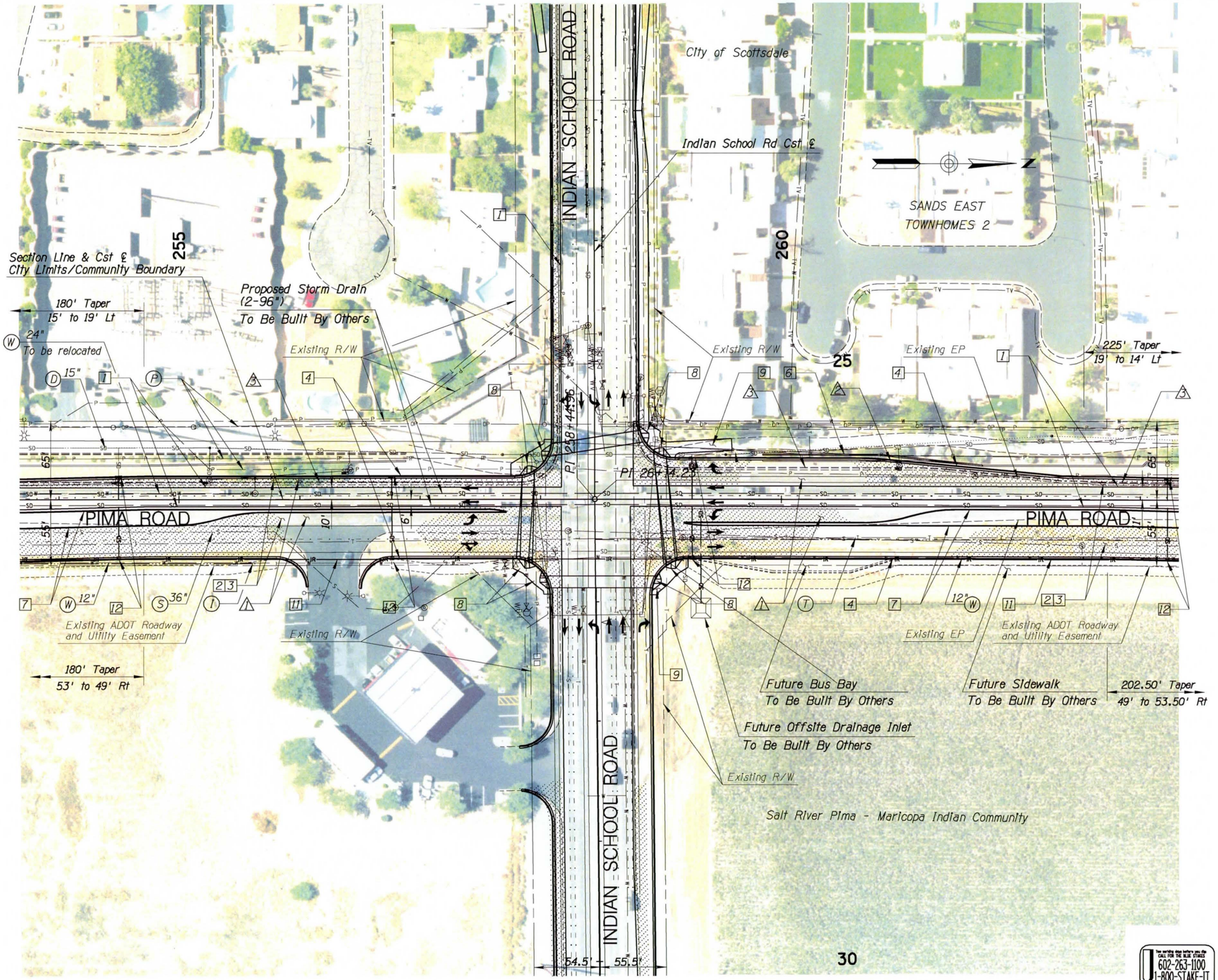

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	2641
2 Remove Exist Buffering Wall	LF	185
3 Remove Exist Curb & Gutter	LF	928

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1803
2 Subgrade Preparation	SY	5704
3 Install Pvmt per Structural Section 1.	SY	5704
4 Install Curb & Gutter	LF	1820
6 Construct Masonry Wall	LF	184
7 Install Single Curb, MAG Std Det 222	LF	1639
8 Concrete Sidewalk Ramp, COS 2232	EA	4
9 Install Concrete Sidewalk	SF	1691
11 Install 36" RGRCP for Irrigation	LF	960
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	8

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE
PLAN SHEET
STA 253+70 TO STA 263+30

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		12
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

CALL FOR THE BLUE STAKE 602-263-1100 1-800-STAKE-IT

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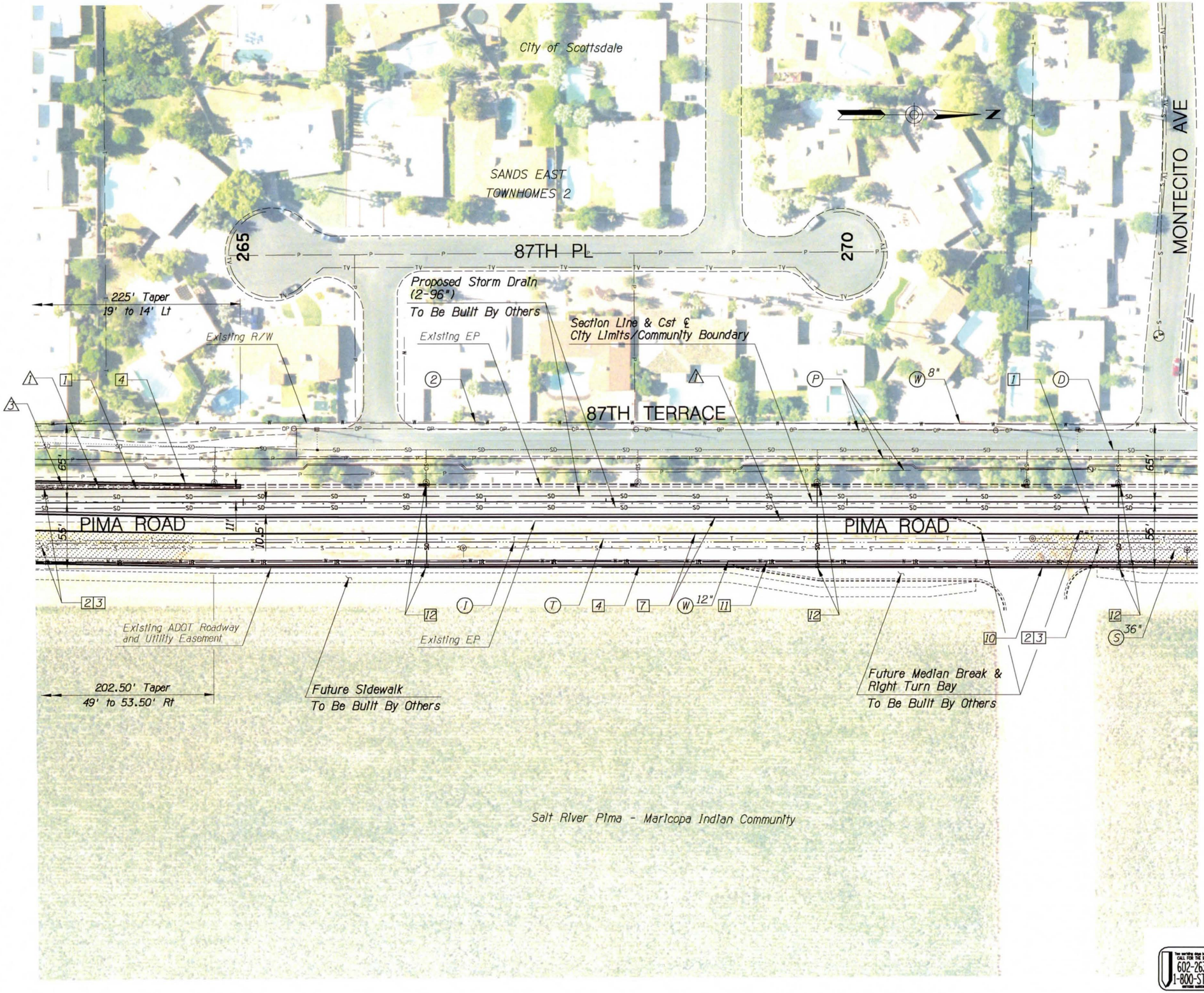

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	634
3 Remove Exist Curb & Gutter	LF	168

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1129
2 Subgrade Preparation	SY	4501
3 Install Pvmt per Structural Section 1.	SY	4501
4 Install Curb & Gutter	LF	1078
7 Install Single Curb, MAG Std Det 222	LF	1920
10 Install Roll Curb, MAG Std Det 220, Type C	LF	50
11 Install 36" RGRCP for Irrigation	LF	960
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	6

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET
STA 263+30 TO STA 272+90

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		13
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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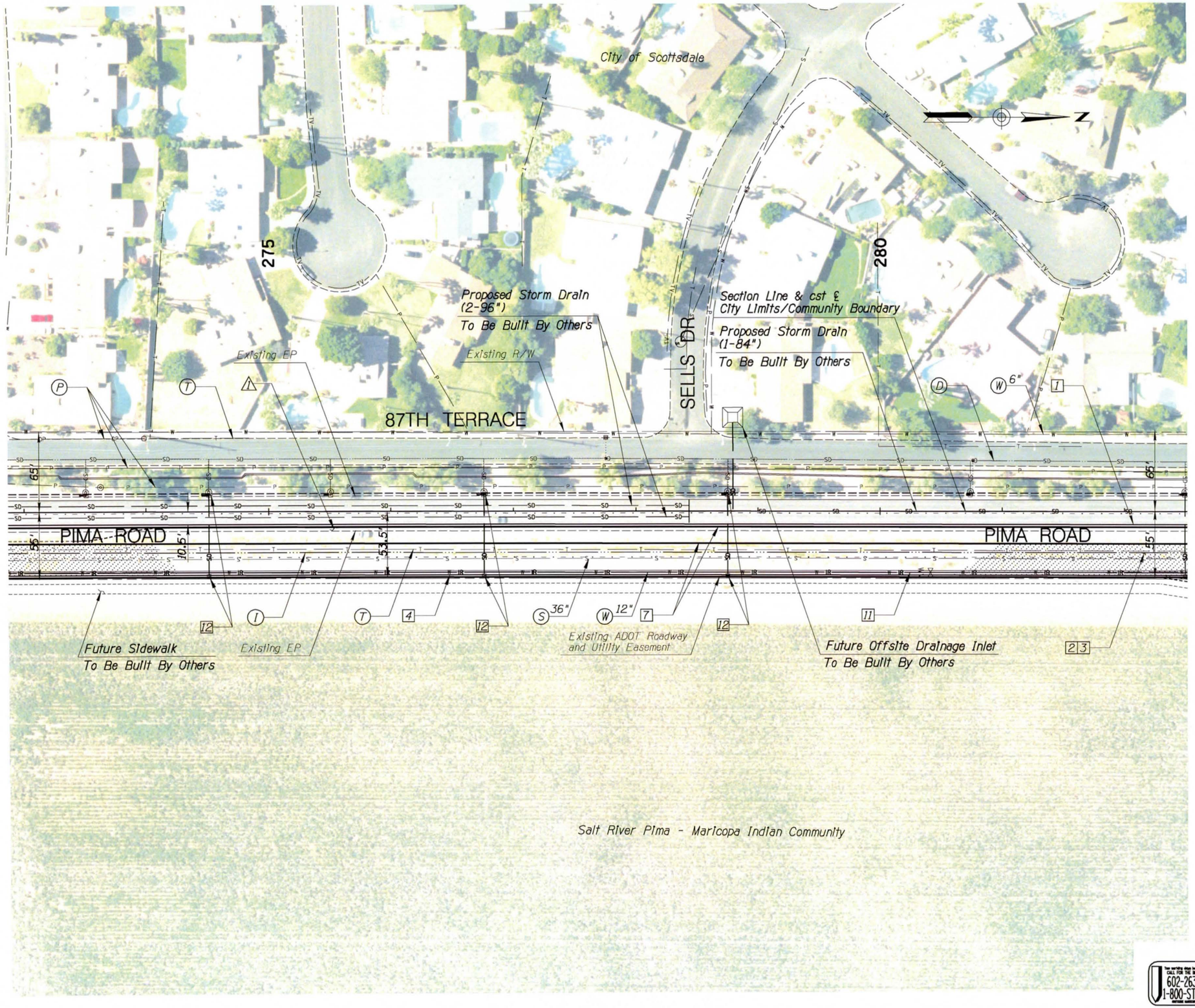

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	587

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	4436
3 Install Pvmt per Structural Section 1.	SY	4436
4 Install Curb & Gutter	LF	960
7 Install Single Curb, MAG Std Det 222	LF	1920
11 Install 36" RGRCP for Irrigation	LF	960
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	6

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE
PLAN SHEET
STA 272+90 TO STA 282+50

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	ID	10/09		14
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

The earth's crust belongs to us. CALL FOR THE BLUE STAKE 602-263-1100 1-800-STAKE-IT

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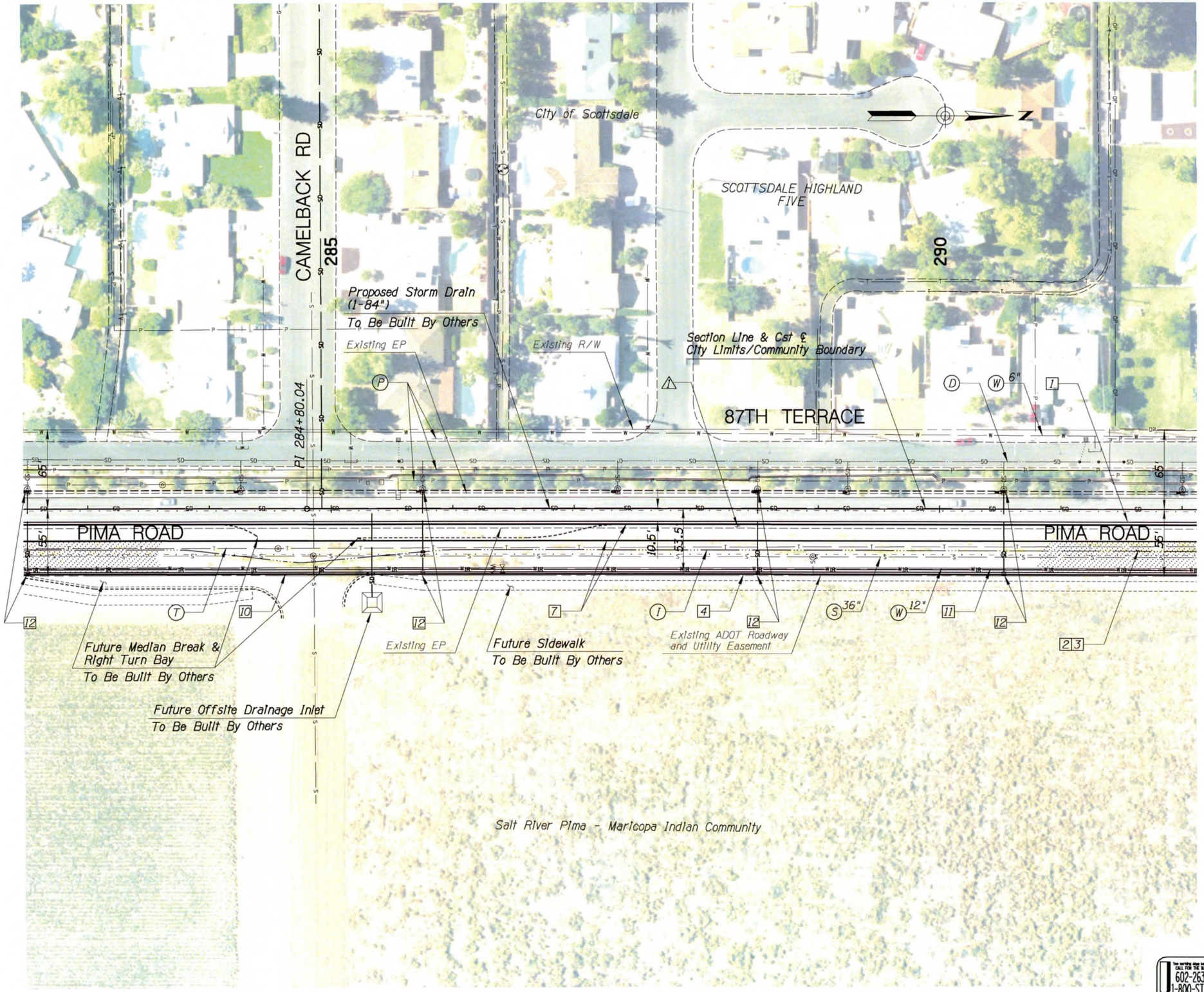

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	587

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	4436
3 Install Pvmt per Structural Section 1.	SY	4436
4 Install Curb & Gutter	LF	910
7 Install Single Curb, MAG Std Det 222	LF	1920
10 Install Roll Curb, MAG Std Det 220, Type C	LF	50
11 Install 36" RGRCP for Irrigation	LF	960
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	8

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE SALT RIVER-MARICOPA INDIAN COMMUNITY

SHEET TITLE
PLAN SHEET
STA 282+50 TO STA 292+10

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		15
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H3344010	OF 52

TRACS NO.

Two working days before you dig CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT ARIZONA BLUE STAKES, INC.

Tue 06 Oct 2009, 10:26:18
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PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	847

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	4578
3 Install Pvmt per Structural Section 1.	SY	4578
4 Install Curb & Gutter	LF	954
7 Install Single Curb, MAG Std Det 222	LF	1768
11 Install 36" RGRCP for Irrigation	LF	960
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	6

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER PRELIMINARY
30% REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PLAN SHEET
STA 292+10 TO STA 301+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		16
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT

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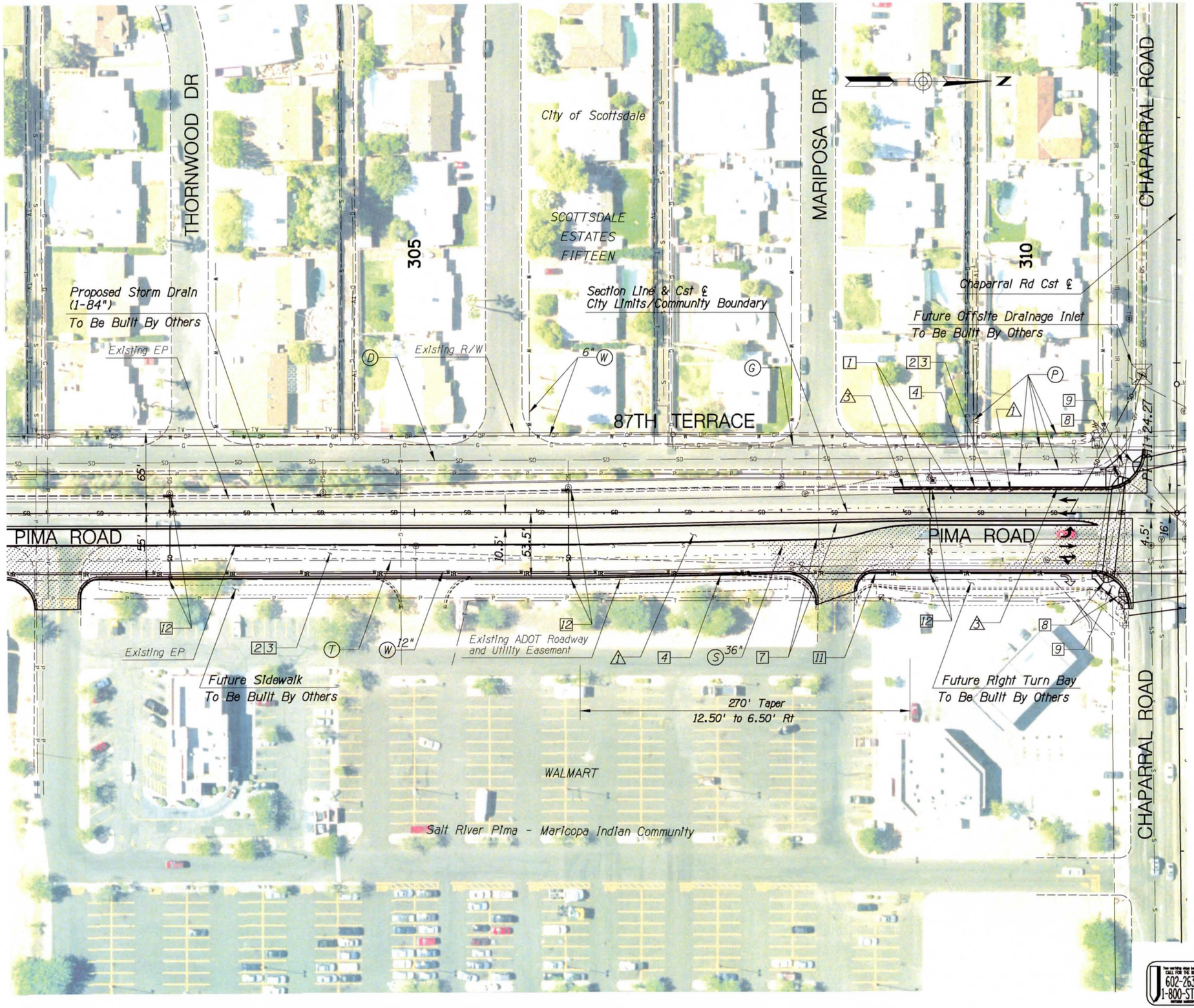

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	3261
2 Remove Exist Curb & Gutter	LF	221

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1244
2 Subgrade Preparation	SY	4621
3 Install Pvmt per Structural Section 1.	SY	4621
4 Install Curb & Gutter	LF	1144
7 Install Single Curb, MAG Std Det 222	LF	1781
8 Concrete Sidewalk Ramp, COS 2232	EA	2
9 Install Concrete Sidewalk	SF	732
11 Install 36" RGRCP for Irrigation	LF	960
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	6

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE
PLAN SHEET
STA 301+70 TO STA 311+30

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		17
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT

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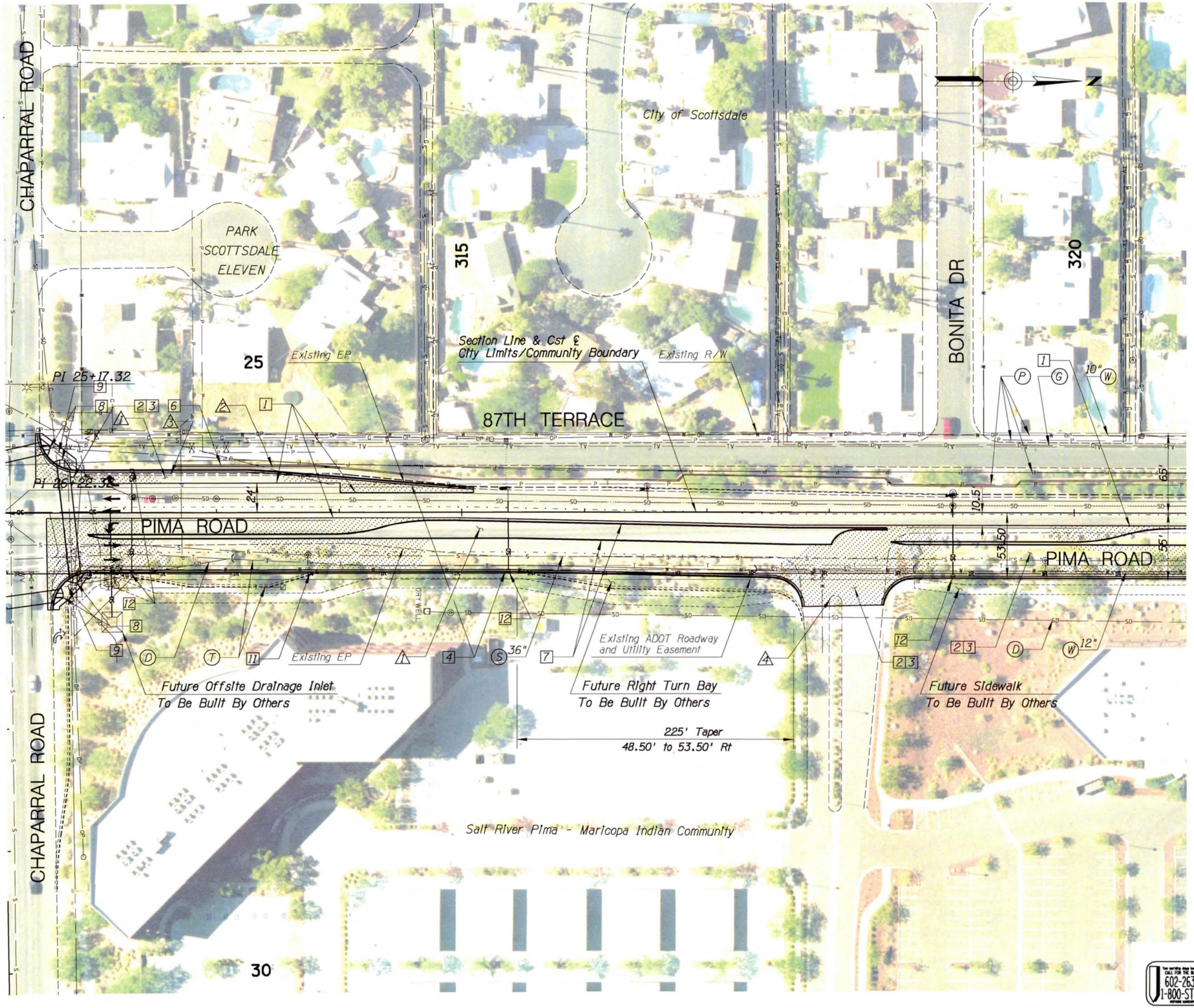

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	2777
2 Remove Exist Buffering Wall	LF	134
3 Remove Exist Curb & Gutter	LF	377
4 Remove Exist Curb	LF	23

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1422
2 Subgrade Preparation	SY	4916
3 Install Pvmt per Structural Section 2.	SY	4916
4 Install Curb & Gutter	LF	1275
6 Construct Masonry Wall	LF	135
7 Install Single Curb, MAG Std Det 222	LF	1805
8 Concrete Sidewalk Ramp, COS 2232	EA	2
9 Install Concrete Sidewalk	SF	556
11 Install 36" RGRCP for Irrigation	LF	960
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	4

(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET STA 311+30 TO STA 320+90

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		18
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT

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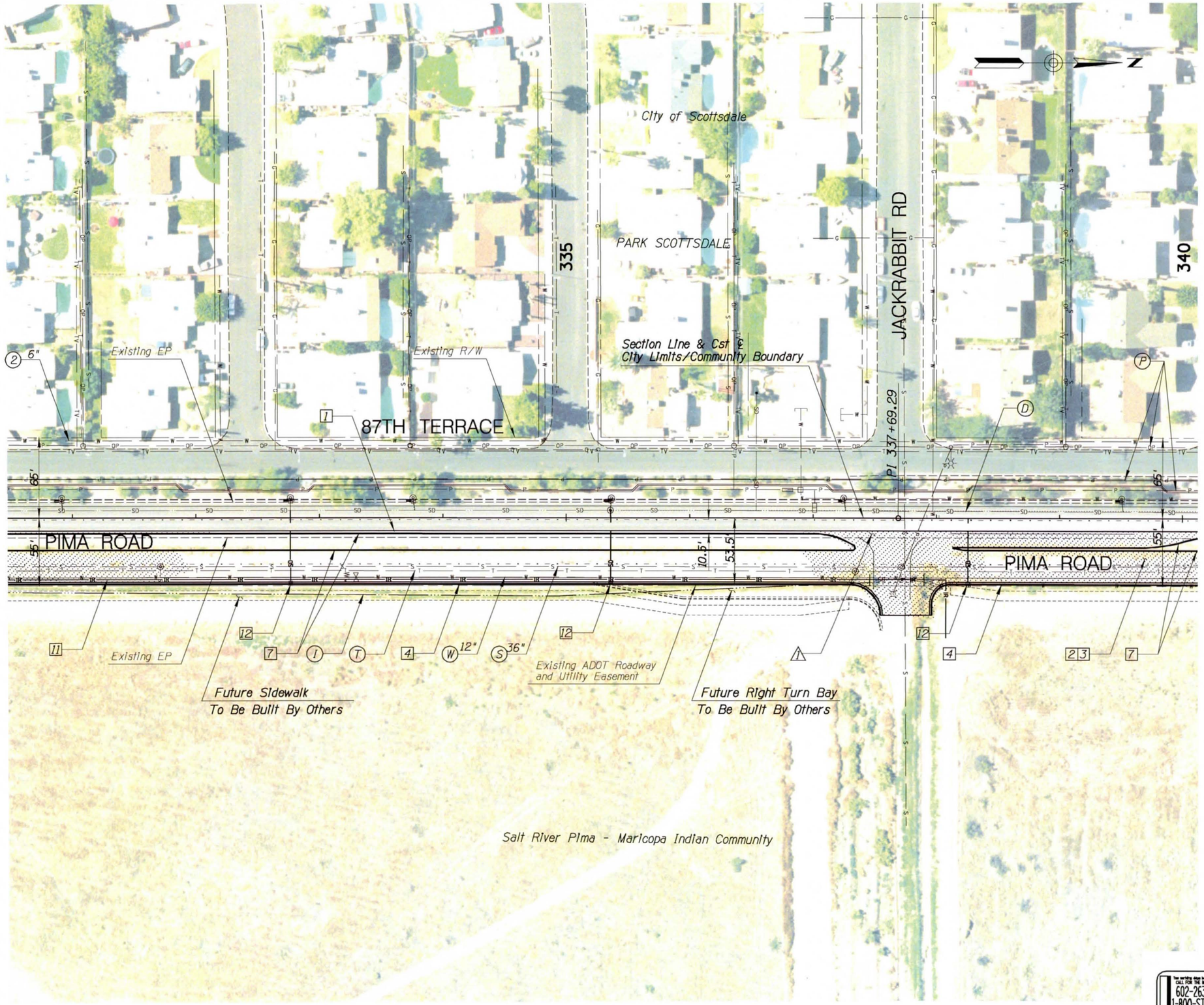

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	587

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	4574
3 Install Pvmt per Structural Section 2.	SY	4574
4 Install Curb & Gutter	LF	953
7 Install Single Curb, MAG Std Det 222	LF	1768
11 Install 36" RGRCP for Irrigation	LF	750
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	3

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT DEAL GREAT SCOTTSDALE GREAT PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PLAN SHEET
STA 330+50 TO STA 340+10

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		20
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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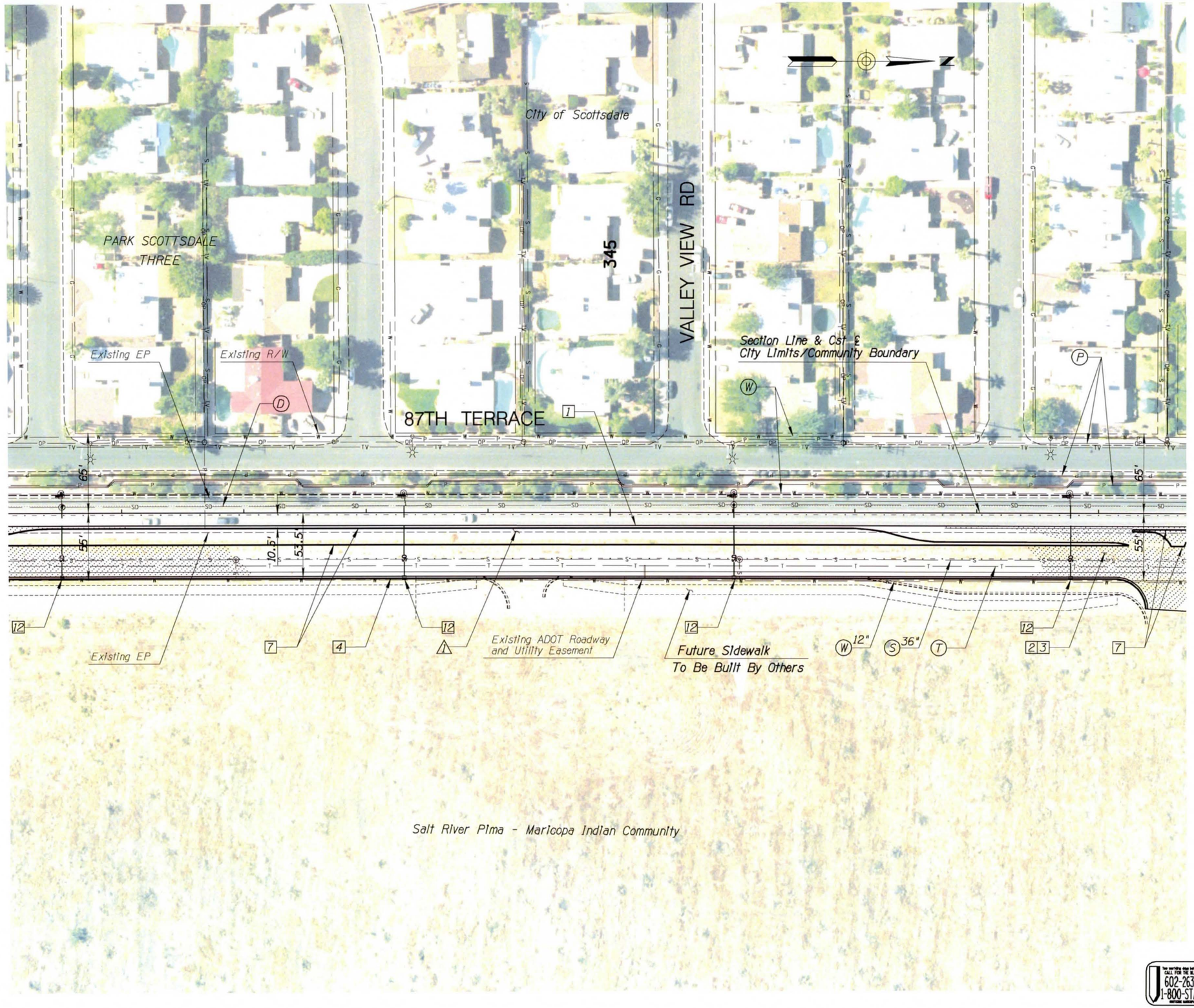
Two working days before you dig CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT



PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	587

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	4541
3 Install Pvmt per Structural Section 2.	SY	4541
4 Install Curb & Gutter	LF	960
7 Install Single Curb, MAG Std Det 222	LF	1922
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	4

(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE
PLAN SHEET
STA 340+10 TO STA 349+70

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		21
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H3344010	OF 52

TRACS NO.

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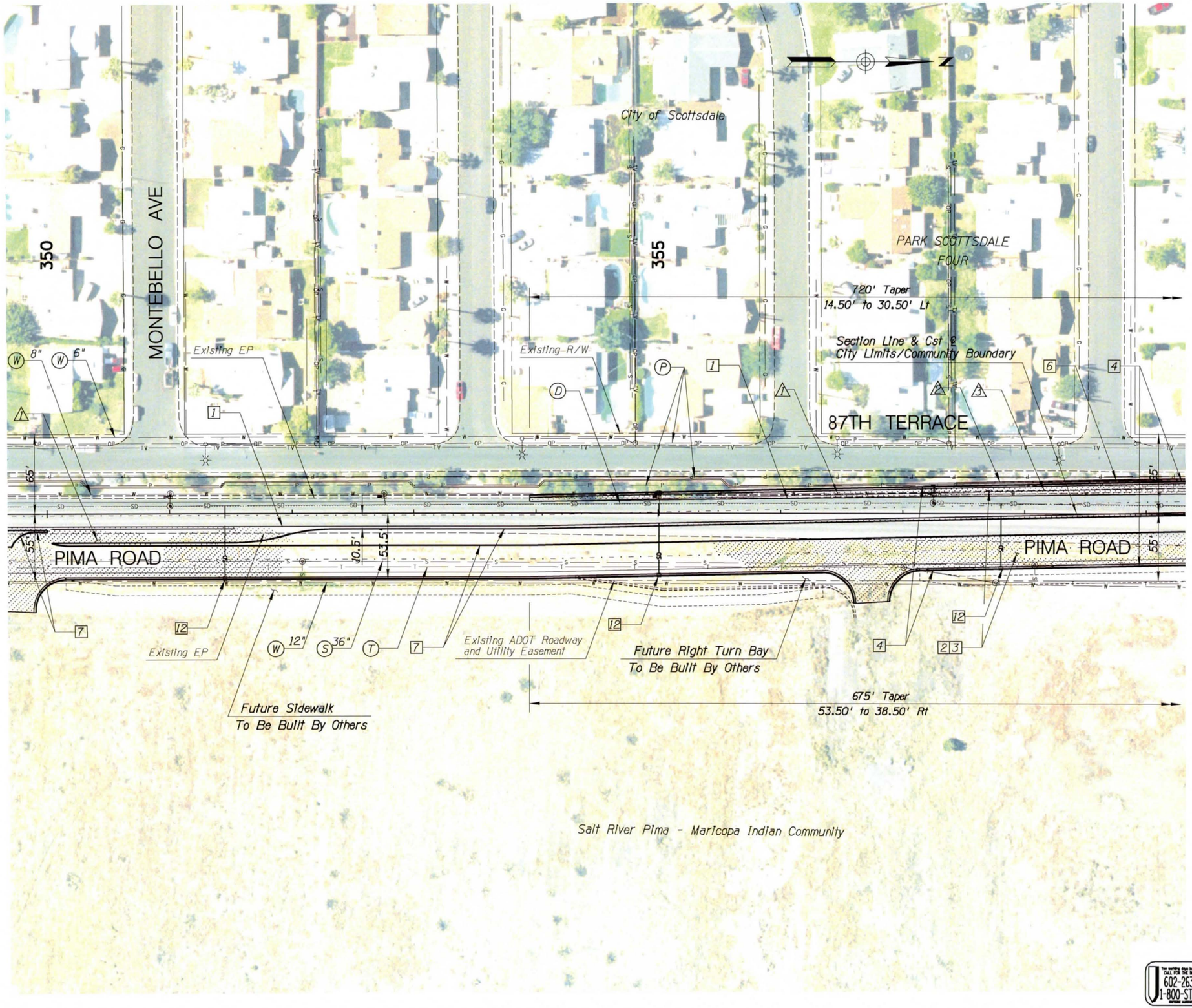

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	1327
2 Remove Exist Buffering Wall	LF	186
3 Remove Exist Curb & Gutter	LF	535

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1498
2 Subgrade Preparation	SY	4982
3 Install Pvmt per Structural Section 2.	SY	4982
4 Install Curb & Gutter	LF	1491
6 Construct Masonry Wall	LF	186
7 Install Single Curb, MAG Std Det 222	LF	1922
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	3

(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT DEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE
PLAN SHEET
STA 349+70 TO STA 359+30

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		22
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H33440ID	OF 52

TRACS NO.

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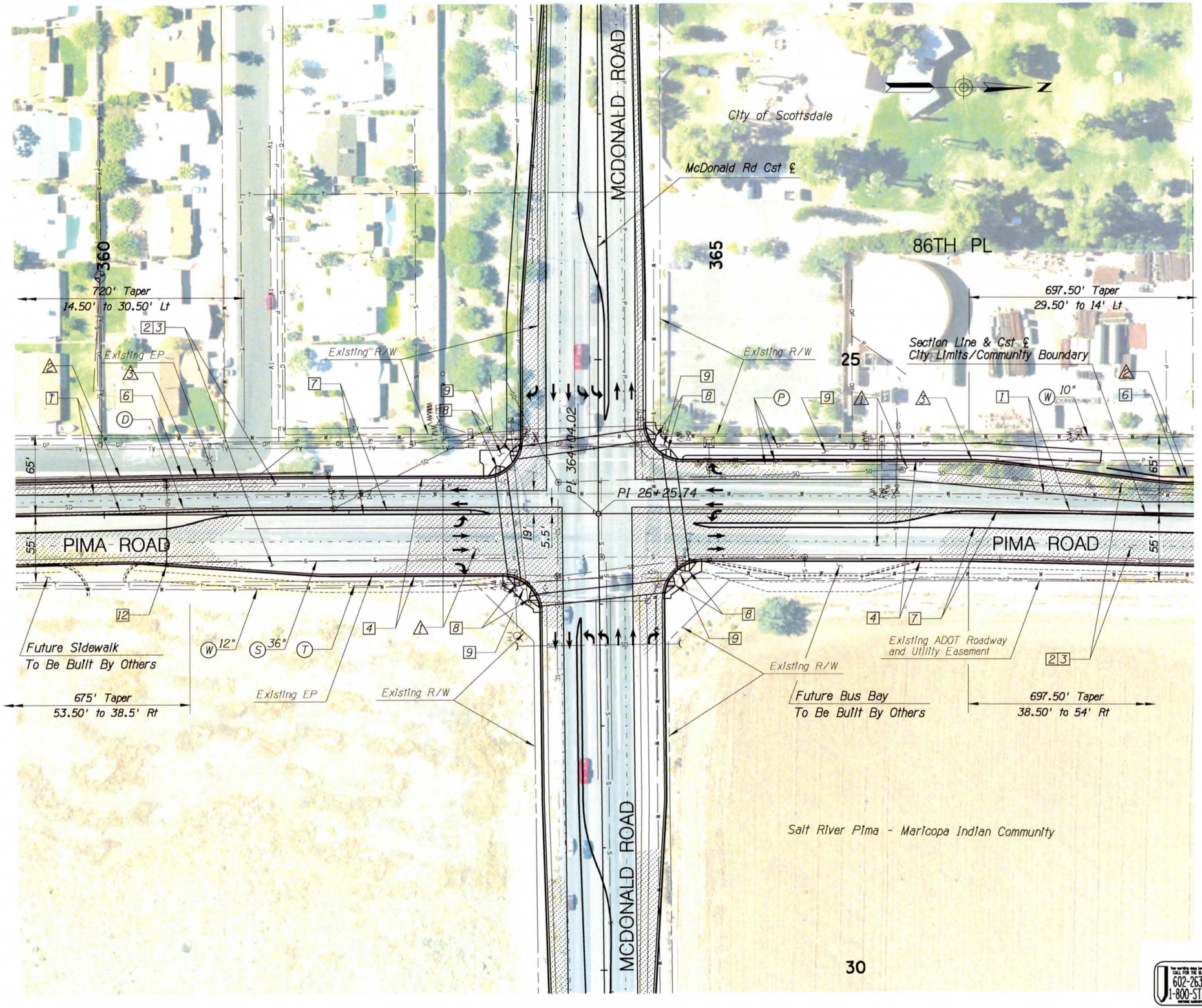

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	5179
2 Remove Exist Buffering Wall	LF	326
3 Remove Exist Curb & Gutter	LF	1024

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1792
2 Subgrade Preparation	SY	6237
3 Install Pvmt per Structural Section 2.	SY	6237
4 Install Curb & Gutter	LF	1787
6 Construct Masonry Wall	LF	310
7 Install Single Curb, MAG Std Det 222	LF	1595
8 Concrete Sidewalk Ramp, COS 2232	EA	4
9 Install Concrete Sidewalk,	SF	4756
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	1

(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET
STA 359+30 TO STA 368+90

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	ID	10/09		23
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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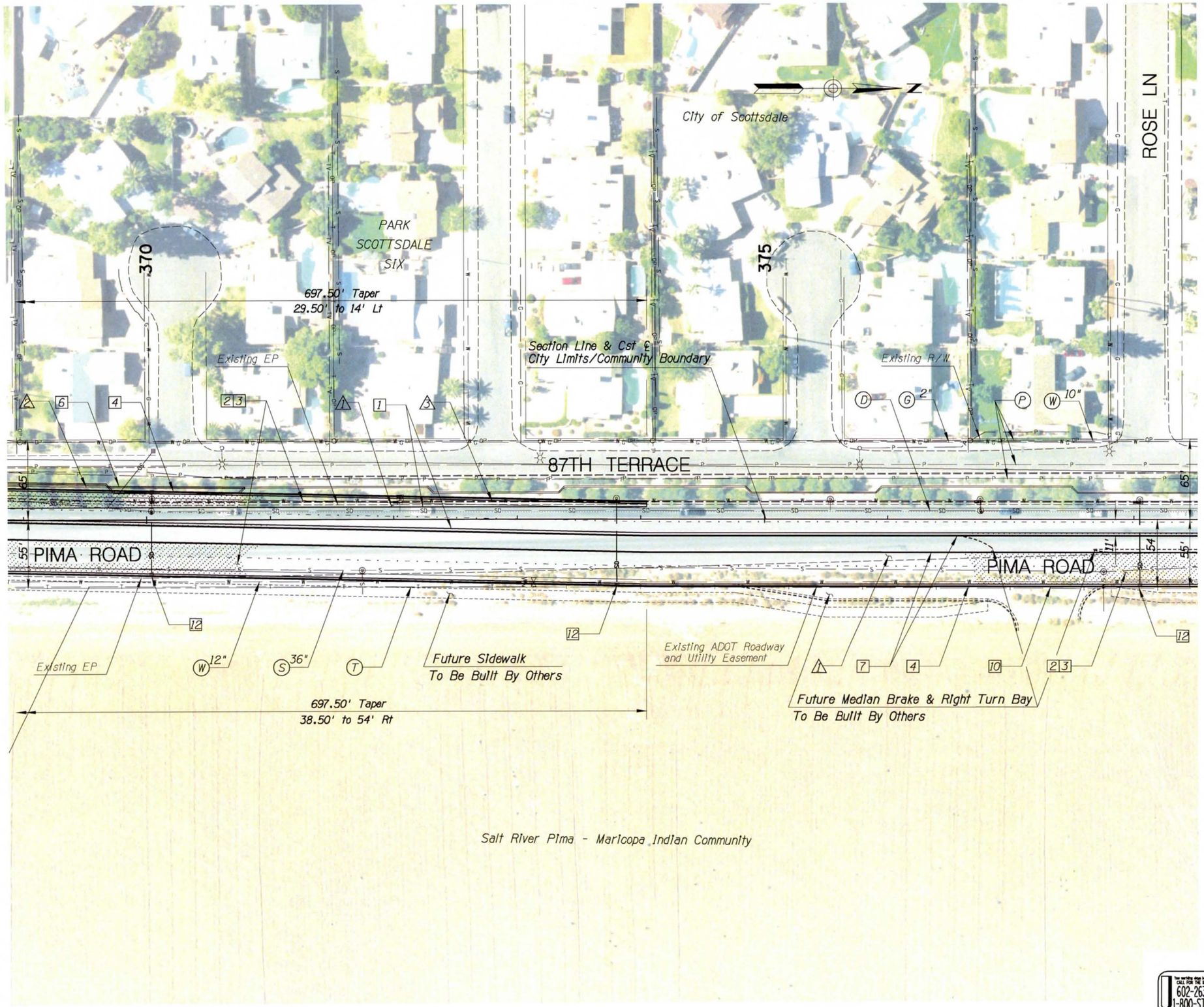

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	3448
2 Remove Exist Buffering Wall	LF	195
3 Remove Exist Curb & Gutter	LF	515

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1477
2 Subgrade Preparation	SY	4917
3 Install Pvmt per Structural Section 2.	SY	4917
4 Install Curb & Gutter	LF	1425
6 Construct Masonry Wall	LF	191
7 Install Single Curb, MAG Std Det 222	LF	1920
10 Install Roll Curb, MAG Std Det 220, Type C	LF	50
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	3

(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET
STA 368+90 TO STA 378+50

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IO	10/09		24
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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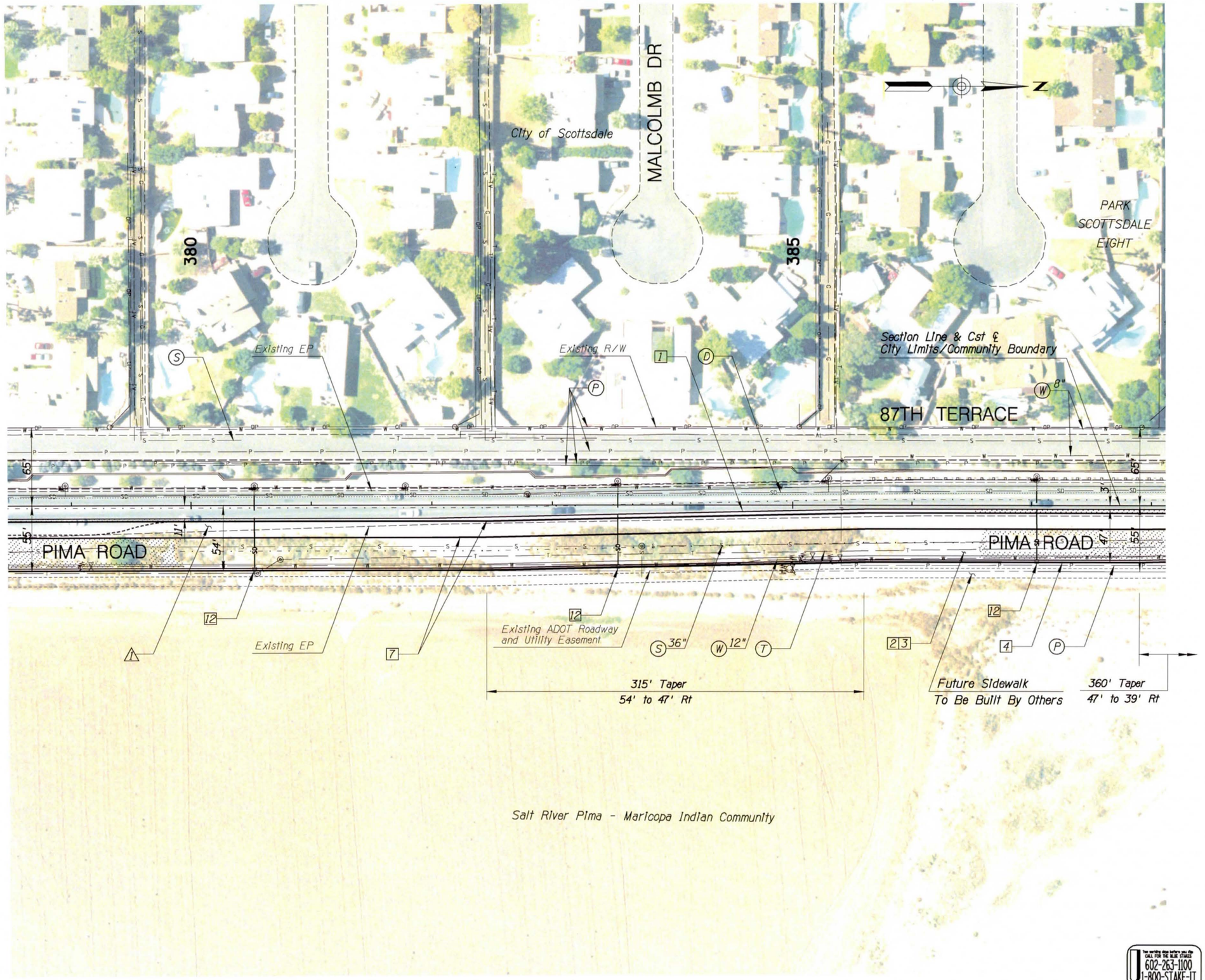

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	787

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	4505
3 Install Pvmt per Structural Section 2.	SY	4505
4 Install Curb & Gutter	LF	962
7 Install Single Curb, MAG Std Det 222	LF	1921
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	3

(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE
PLAN SHEET
STA 378+50 TO STA 388+10

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		25
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H3344010	OF 52

TRACS NO.

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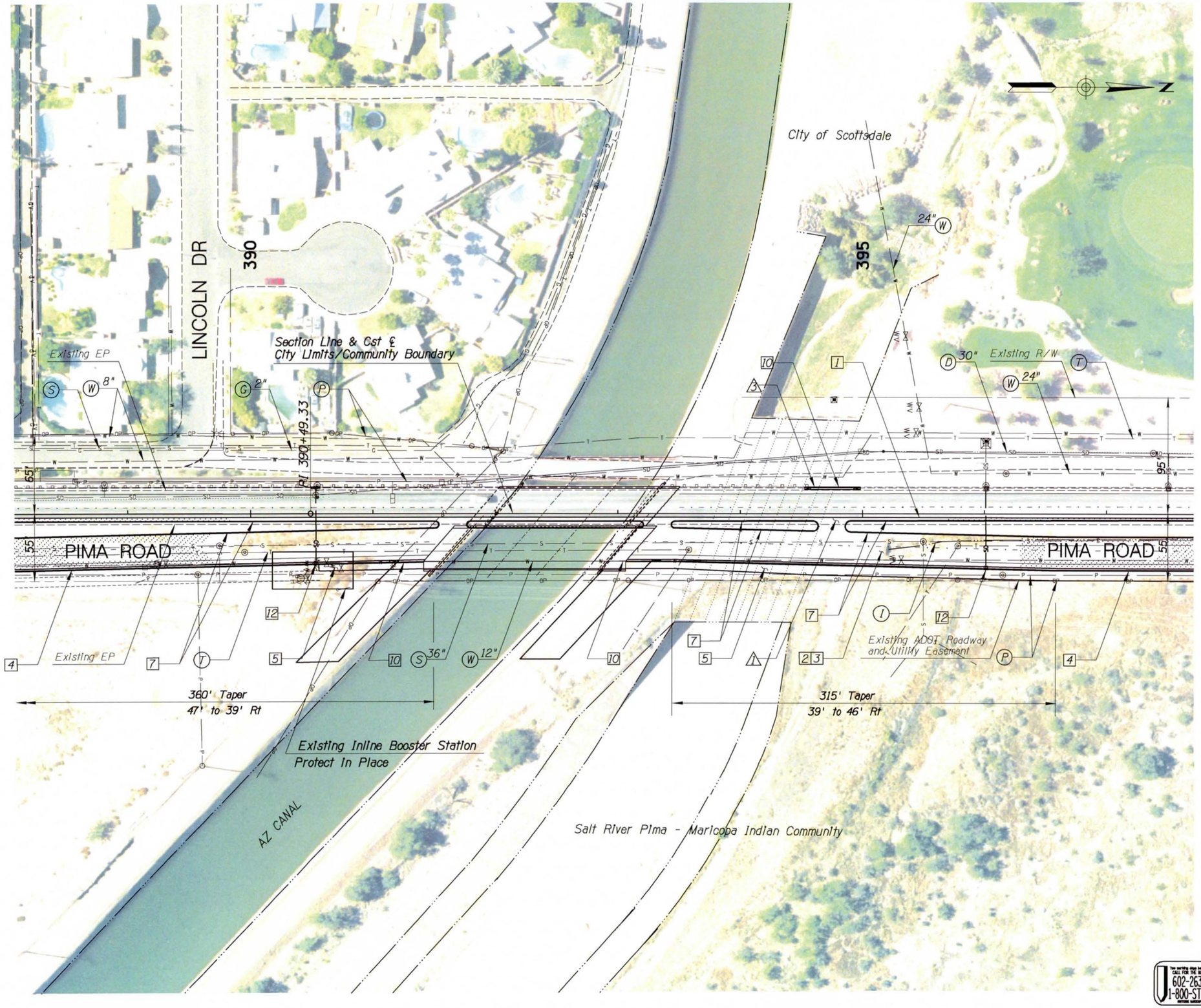

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	606
3 Remove Exist Curb & Gutter	LF	46

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	3420
3 Install Pvmt per Structural Section 2.	SY	3420
4 Install Curb & Gutter	LF	740
5 Install 8' Concrete Sidewalk	SF	3686
7 Install Single Curb, MAG Std Det 222	LF	1819
10 Install Roll Curb, MAG Std Det 220, Type C	LF	114
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	3

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET
STA 388+10 TO STA 397+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		26
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H3344010	OF 52

TRACS NO.

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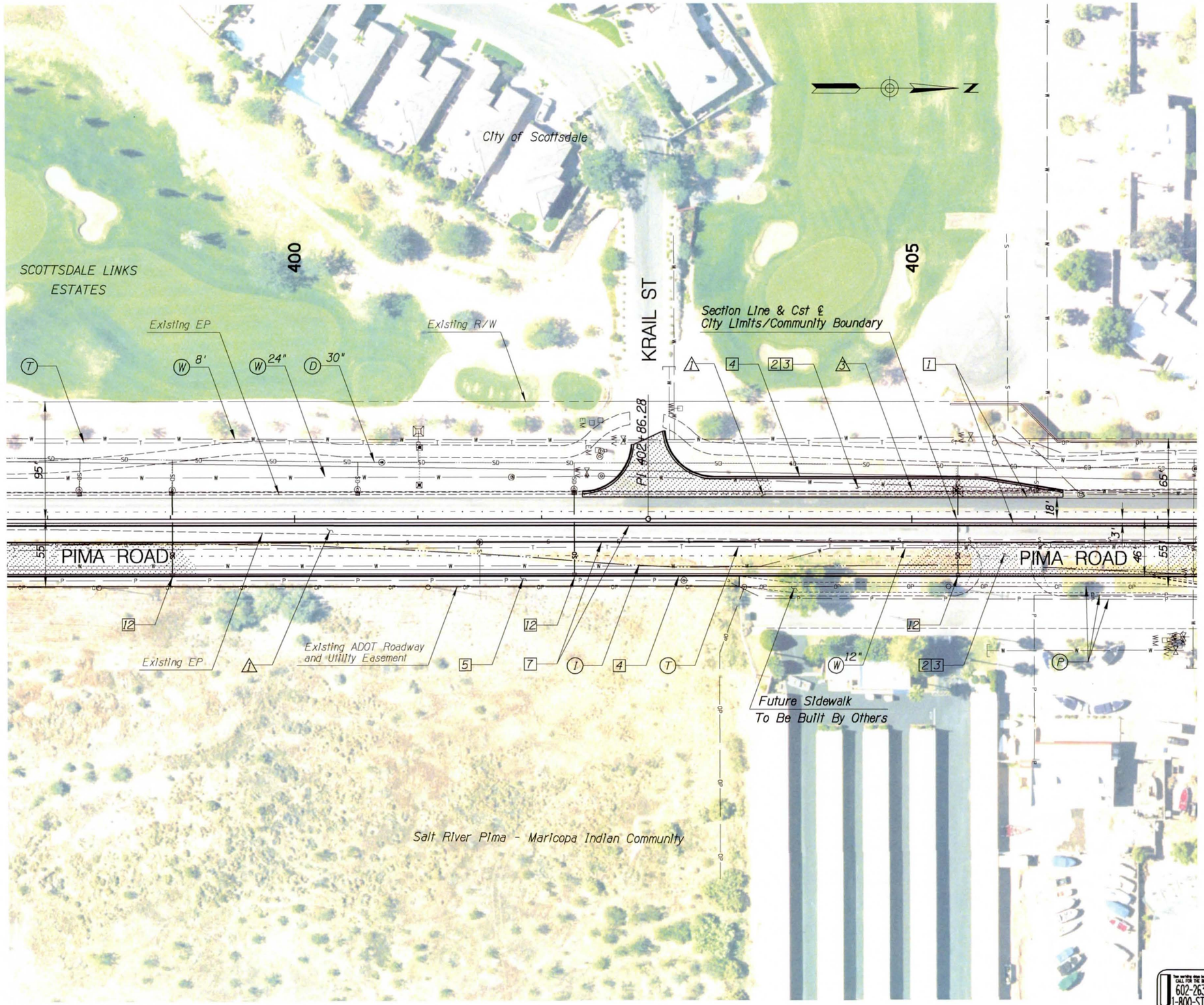

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	1484
3 Remove Exist Curb & Gutter	LF	390

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1356
2 Subgrade Preparation	SY	5140
3 Install Pvmt per Structural Section 2.	SY	5140
4 Install Curb & Gutter	LF	1368
5 Install 8' Concrete Sidewalk	SF	4720
7 Install Single Curb, MAG Std Det 222	LF	1920
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	3

(T) Existing Irrigation Ditch
(W) Existing Water Line
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE
PLAN SHEET
STA 397+70 TO STA 407+30

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	10	10/09		27
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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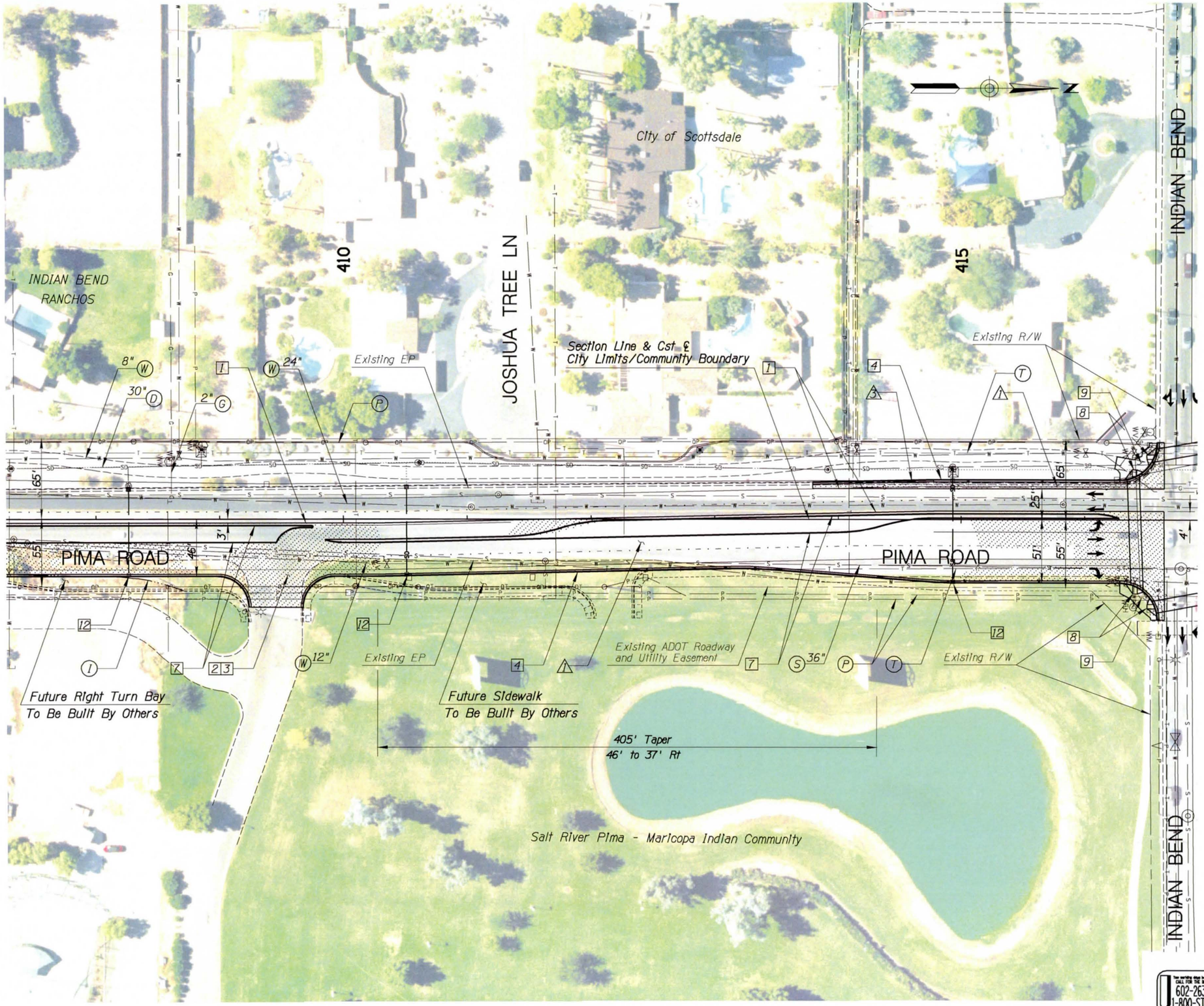

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	4444
3 Remove Exist Curb & Gutter	LF	297

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1356
2 Subgrade Preparation	SY	5153
3 Install Pvmt per Structural Section 2.	SY	5153
4 Install Curb & Gutter	LF	1233
7 Install Single Curb, MAG Std Det 222	LF	1798
8 Concrete Sidewalk Ramp, COS 2232	EA	2
9 Install Concrete Sidewalk	SF	656
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	3

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PLAN SHEET
STA 407+30 TO STA 416+90

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		28
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT

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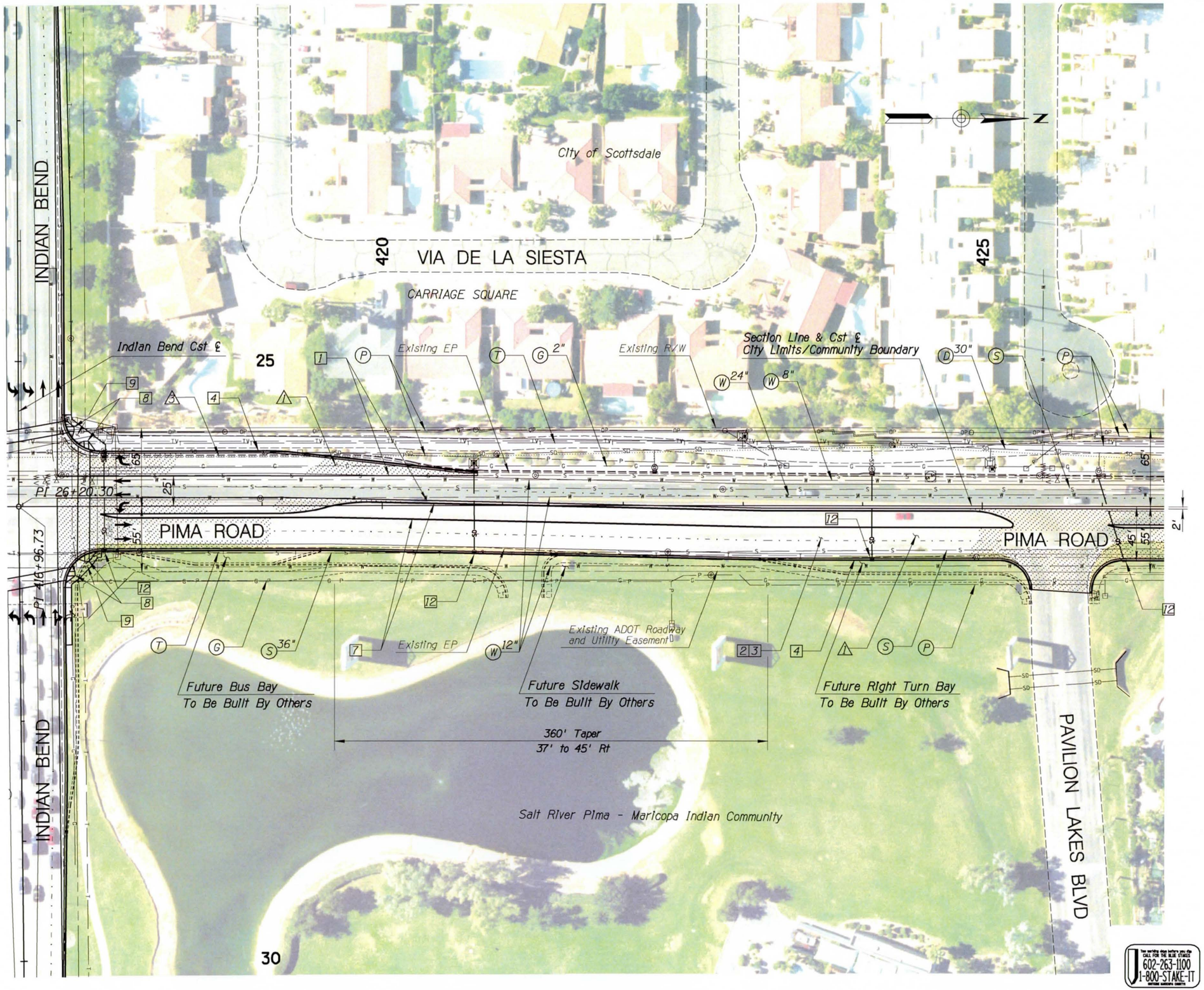

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	4893
3 Remove Exist Curb & Gutter	LF	369

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1274
2 Subgrade Preparation	SY	5116
3 Install Pvmt per Structural Section 2.	SY	5116
4 Install Curb & Gutter	LF	1285
7 Install Single Curb, MAG Std Det 222	LF	1621
8 Concrete Sidewalk Ramp, COS 2232	EA	2
9 Install Concrete Sidewalk	SF	594
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	4

(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE
PLAN SHEET
STA 416+90 TO STA 426+50

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		29
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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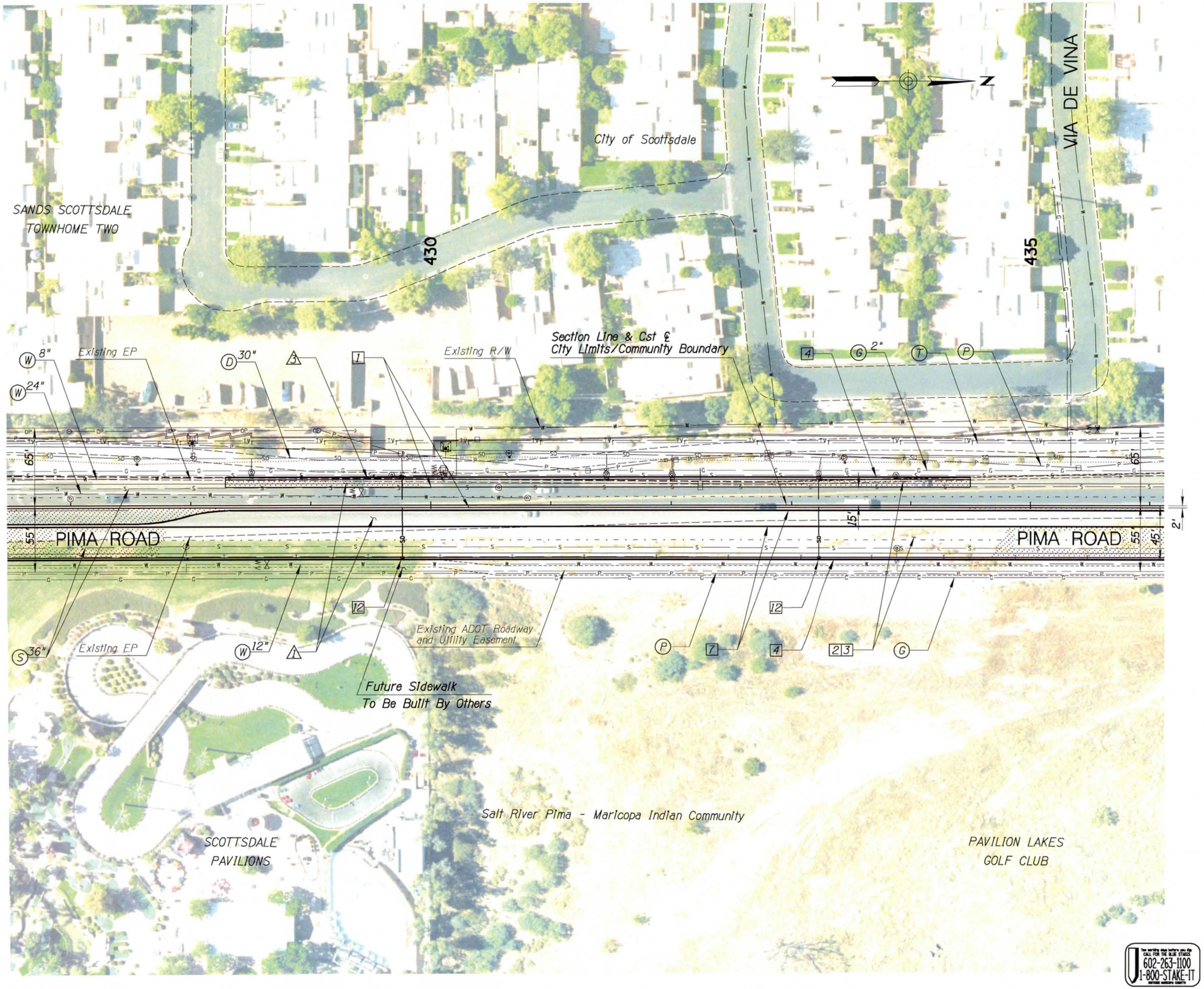

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	1988
5 Remove Exist Curb & Gutter	LF	621

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1593
2 Subgrade Preparation	SY	4890
3 Install Pvmt per Structural Section 2.	SY	4890
4 Install Curb & Gutter	LF	1581
7 Install Single Curb, MAG Std Det 222	LF	1921
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	2

W Existing Water Line
S Existing Sewer
P Existing Power
D Existing Stormdrain
T Existing Telephone
G Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE
PLAN SHEET
STA 426+50 TO STA 436+10

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		30
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H3344010	OF 52

TRACS NO.

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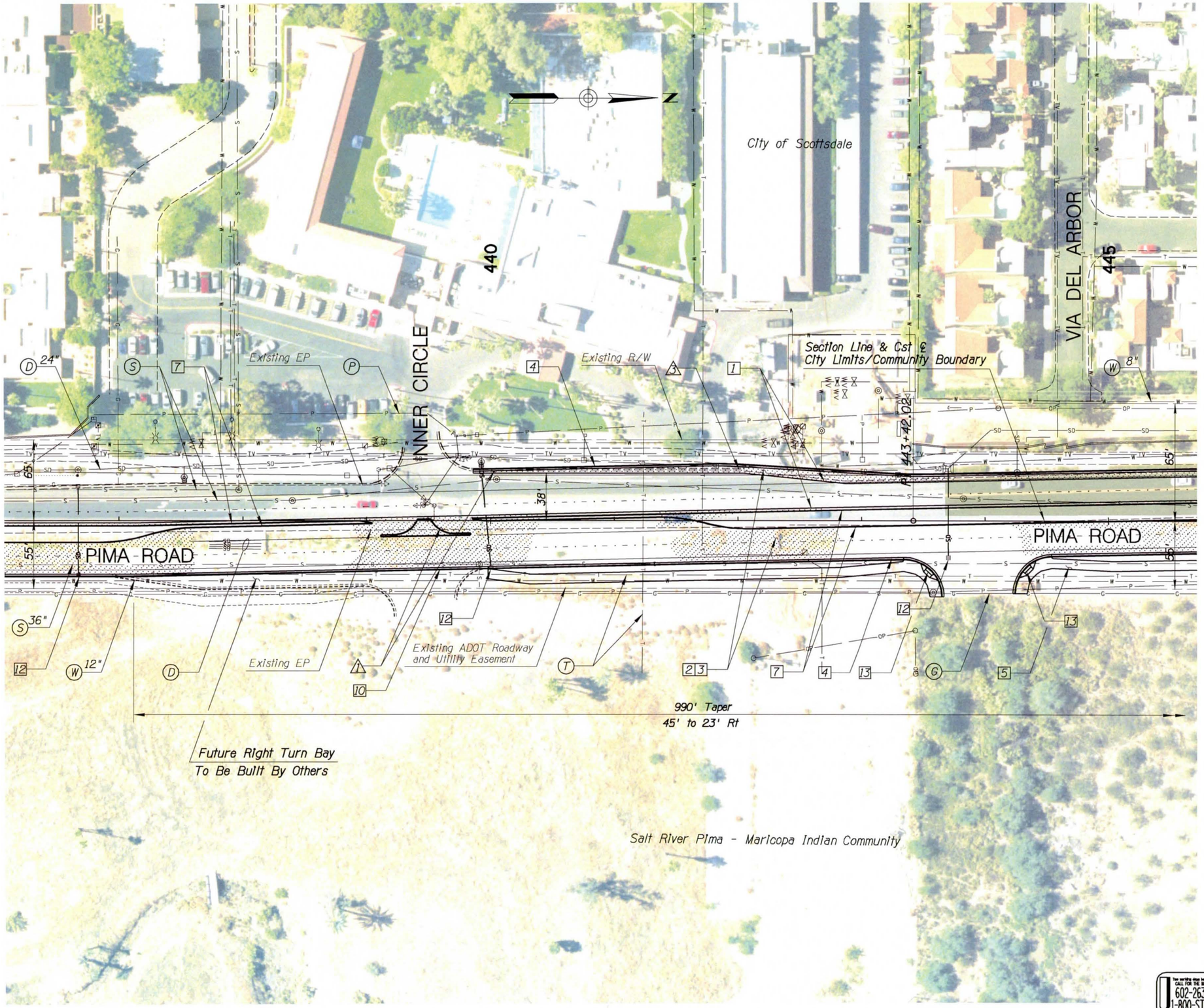

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	1446
3 Remove Exist Curb & Gutter	LF	587
5 Remove Exist Signal	EA	1

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1547
2 Subgrade Preparation	SY	5005
3 Install Pvmt per Structural Section X.	SY	5005
4 Install Curb & Gutter	LF	1520
5 Install 8' Concrete Sidewalk	SF	4578
7 Install Single Curb, MAG Std Det 222	LF	1921
10 Install Roll Curb, MAG Std Det 220, Type C	LF	50
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	3
13 Concrete Sidewalk Ramp, COS 2234	EA	2

(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE
PLAN SHEET
STA 436+10 TO STA 445+70

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		31
VERT.	DRAWN C.P.C.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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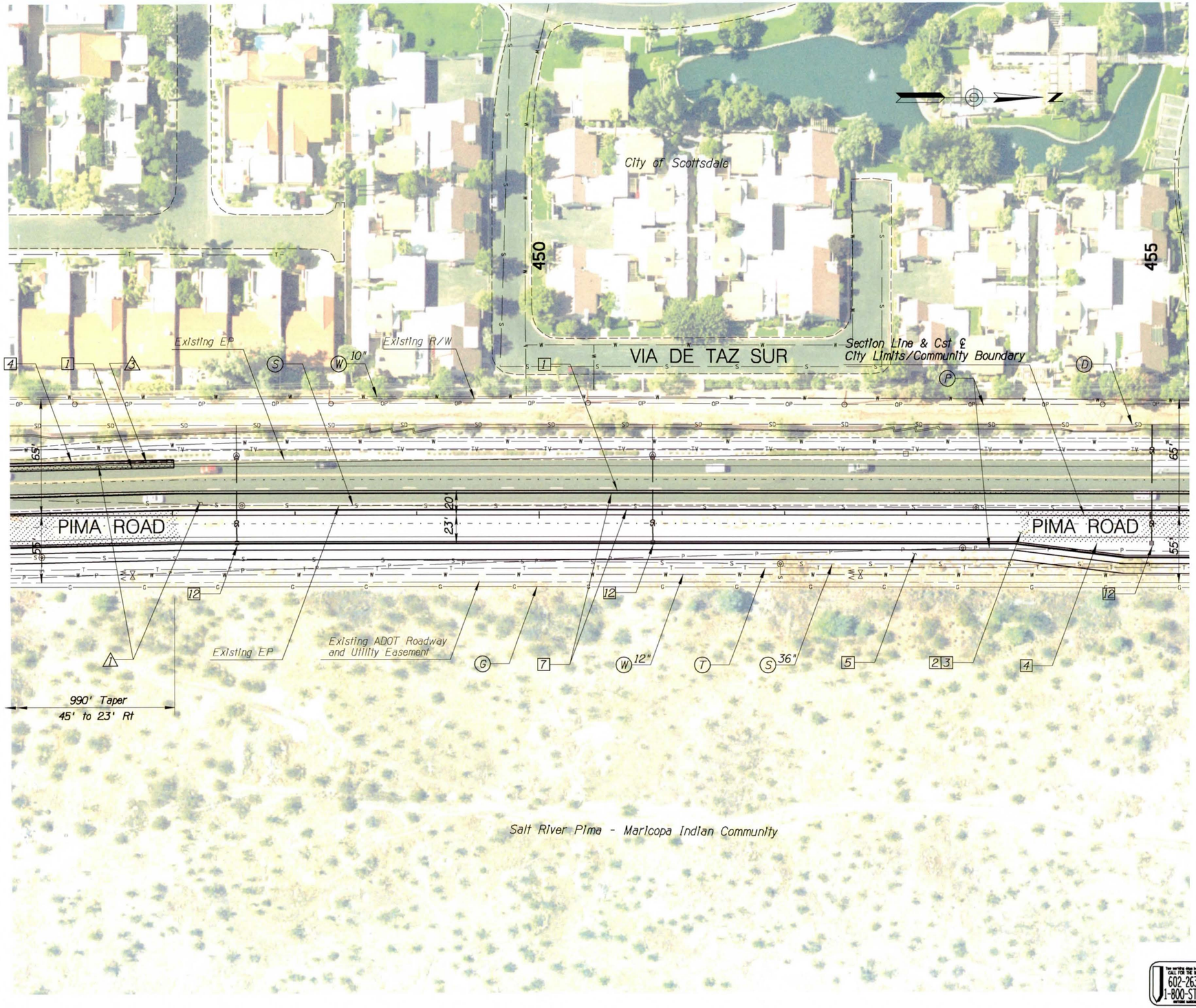

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	1370
3 Remove Exist Curb & Gutter	LF	131

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1092
2 Subgrade Preparation	SY	4620
3 Install Pvmt per Structural Section 2.	SY	4620
4 Install Curb & Gutter	LF	1092
5 Install 8' Concrete Sidewalk	SF	7686
7 Install Single Curb, MAG Std Det 222	LF	1921
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	3

(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET
STA 445+70 TO STA 455+30

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	ID	10/09		32
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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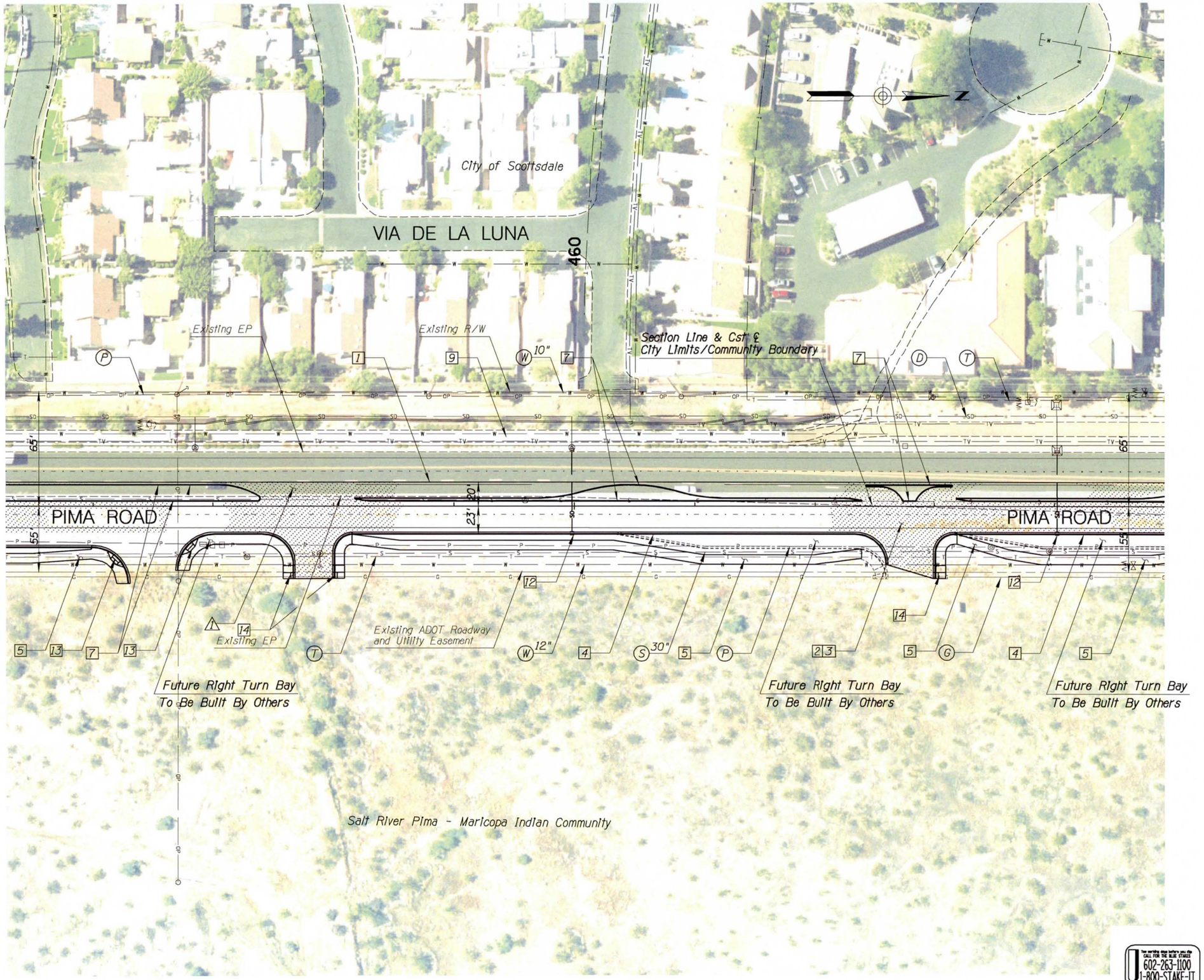

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
⚠ Remove Exist AC Pavement	SY	1691

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	960
2 Subgrade Preparation	SY	5089
3 Install Pvmt per Structural Section 2.	SY	5089
4 Install Curb & Gutter	LF	982
5 Install 8' Concrete Sidewalk	SF	6838
7 Install Single Curb, MAG Std Det 222	LF	1770
9 Install Concrete Sidewalk	SF	3947
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	2
13 Concrete Sidewalk Ramp, COS 2234	EA	2
14 Concrete Sidewalk Ramp, COS 2233-2	EA	3
(W) Existing Water Line		
(S) Existing Sewer		
(P) Existing Power		
(D) Existing Stormdrain		
(T) Existing Telephone		
(G) Existing Gas Line		

LEGEND:

- New AC Pavement
- Proposed Lane
- Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PLAN SHEET
STA 455+30 TO STA 464+90

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IO	10/09		33
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

Tow-away zone below water's edge CALL FOR THE BLUE STAKE 602-263-1100 1-800-STAKE-IT

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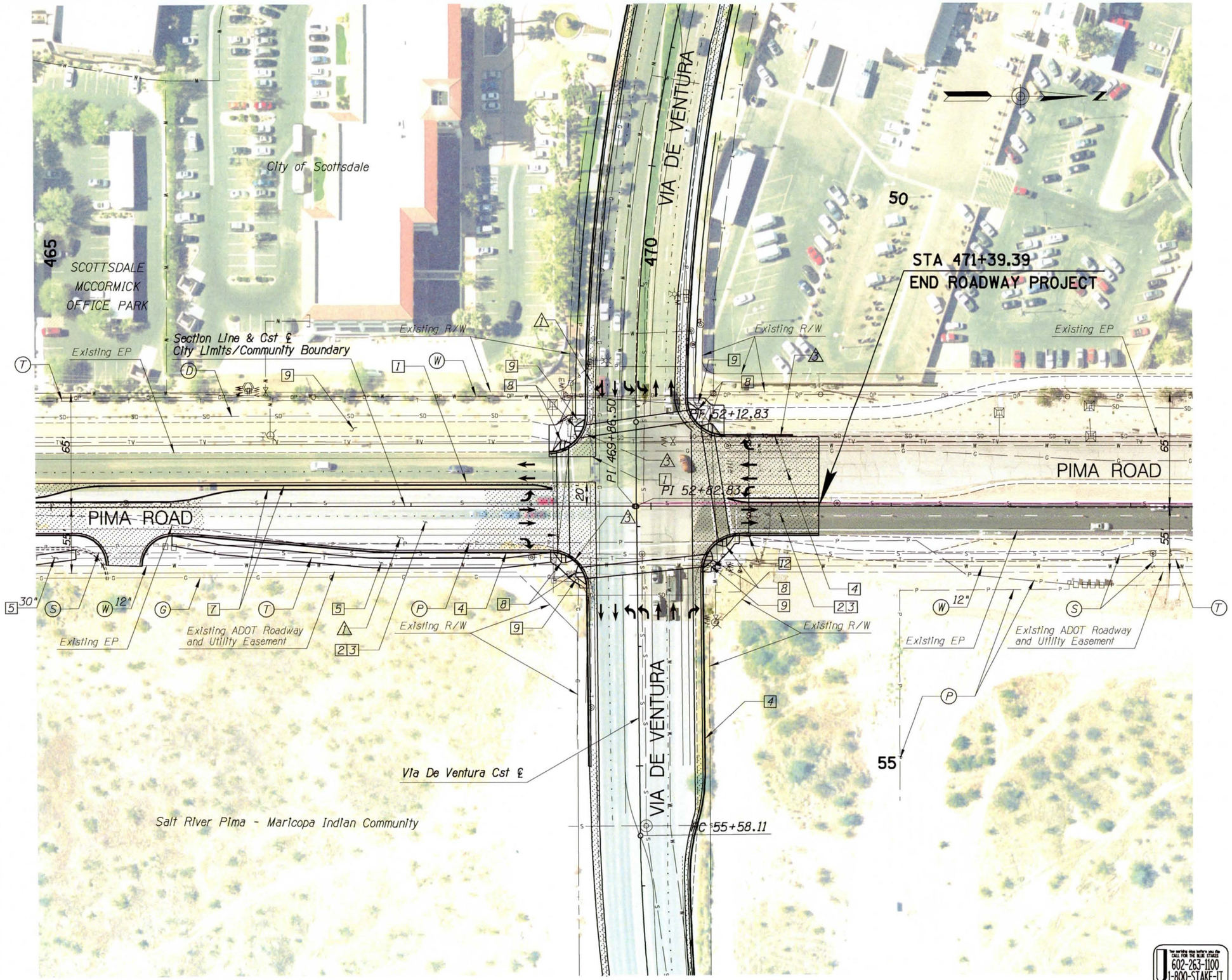

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	2392
2 Remove Exist Curb & Gutter	LF	190

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	503
2 Subgrade Preparation	SY	3185
3 Install Pvmt per Structural Section 2.	SY	3185
4 Install Curb & Gutter	LF	619
5 Install 8' Concrete Sidewalk	SF	2781
7 Install Single Curb, MAG Std Det 222	LF	858
8 Concrete Sidewalk Ramp, COS 2232	EA	4
9 Install Concrete Sidewalk	SF	6633
12 New Catch Basin & 24" Connector Pipe MAG Std Det 532, L=8"	EA	1

(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE
PLAN SHEET
STA 464+90 TO STA 474+50

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IO	10/09		34
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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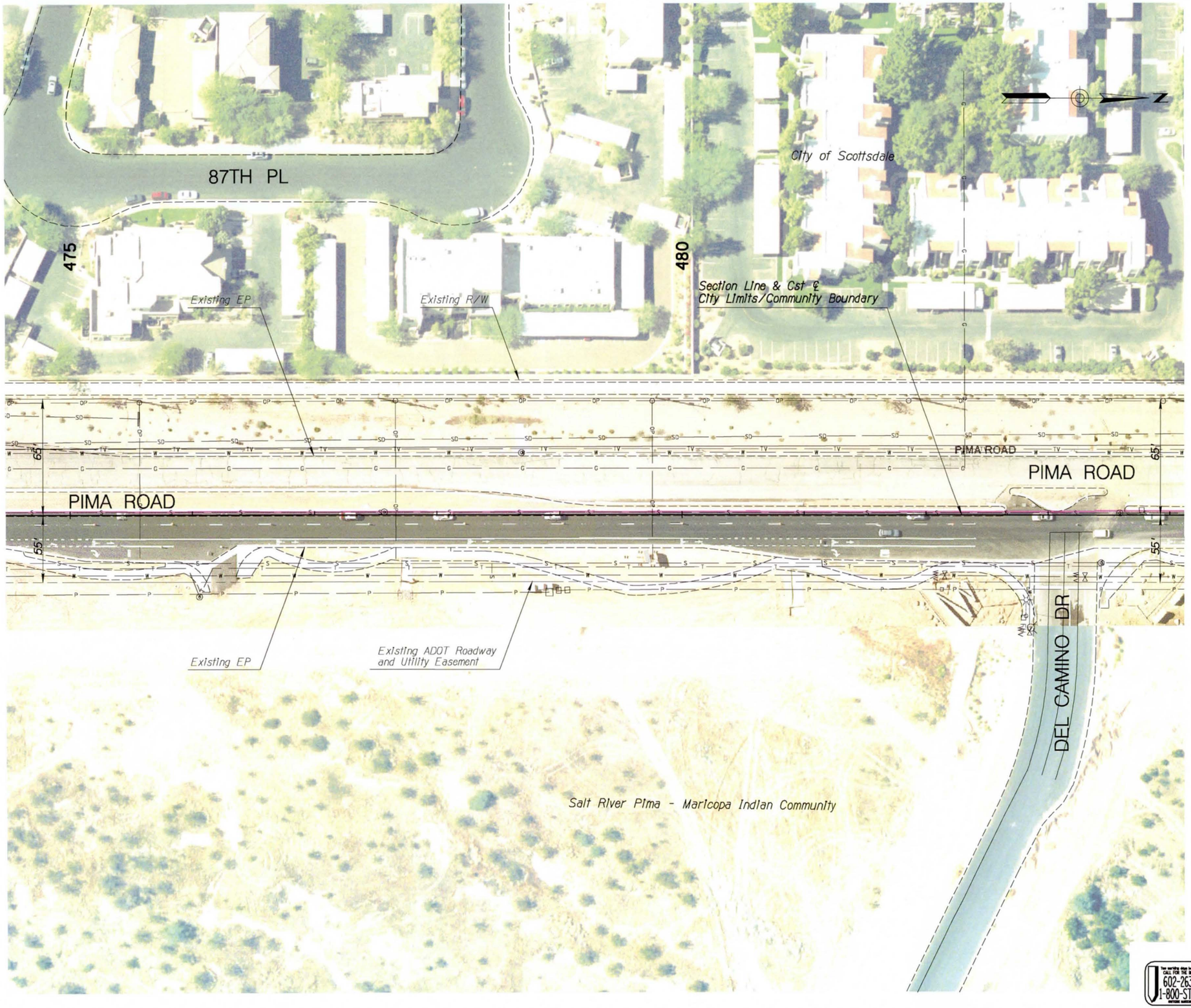
Two working days before you dig CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT



PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.

CONSTRUCTION NOTES

Description	Unit	Quant.

LEGEND:

- New AC Pavement
- Proposed Lane
- Future Lane

DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET
STA 474+50 TO STA 484+10

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		35
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.

CONSTRUCTION NOTES

Description	Unit	Quant.

LEGEND:

- New AC Pavement
- Proposed Lane
- Future Lane

DATE	REVISION	BY

ENGINEER

PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET
STA 484+10 TO STA 493+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	10	10/09		36
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

CALL FOR THE BLUE STAKES
602-263-1100
1-800-STAKE-IT

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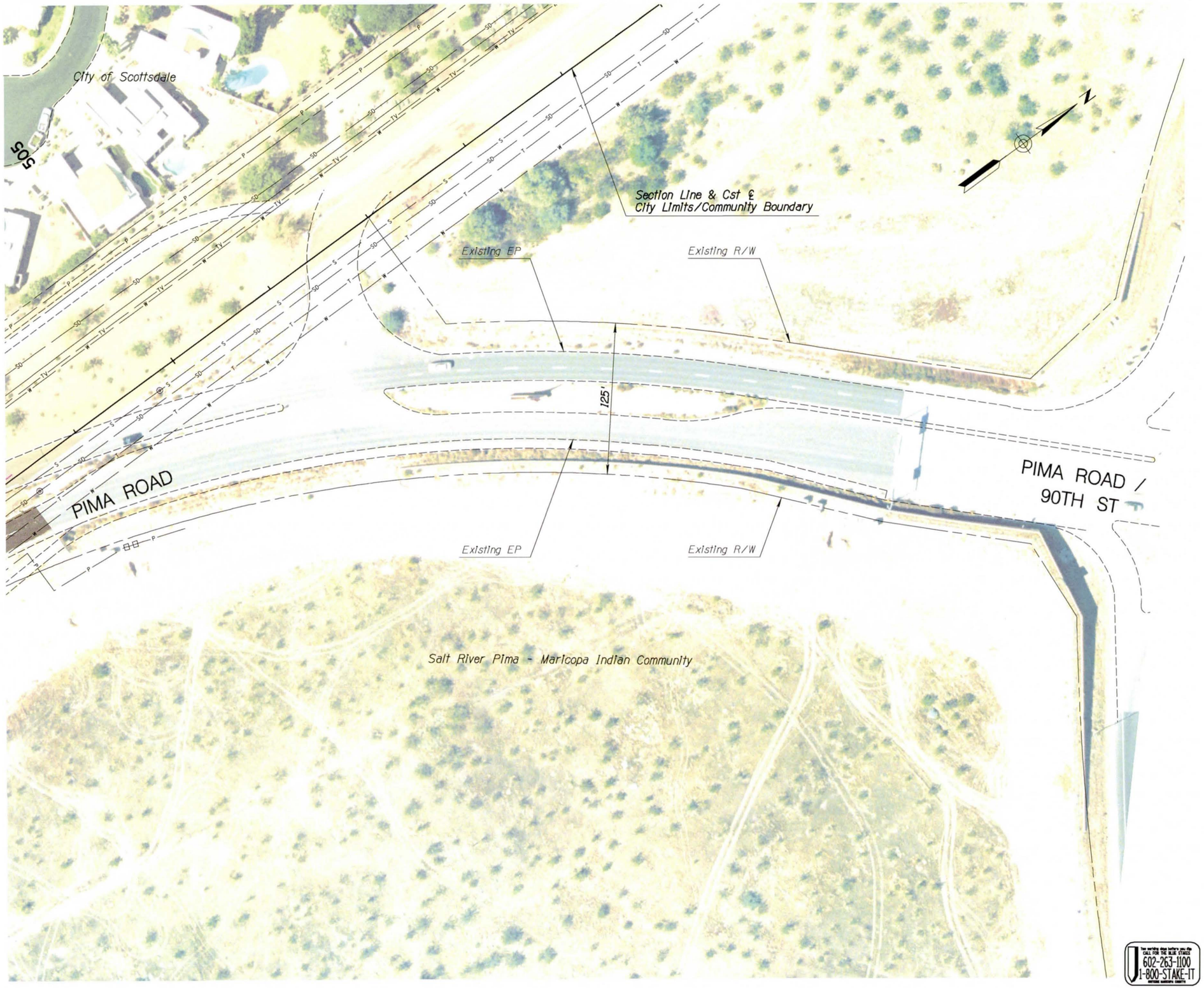

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.

CONSTRUCTION NOTES

Description	Unit	Quant.

LEGEND:

- New AC Pavement
- Proposed Lane
- Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PLAN SHEET
STA 503+30 TO STA XXXX

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		38
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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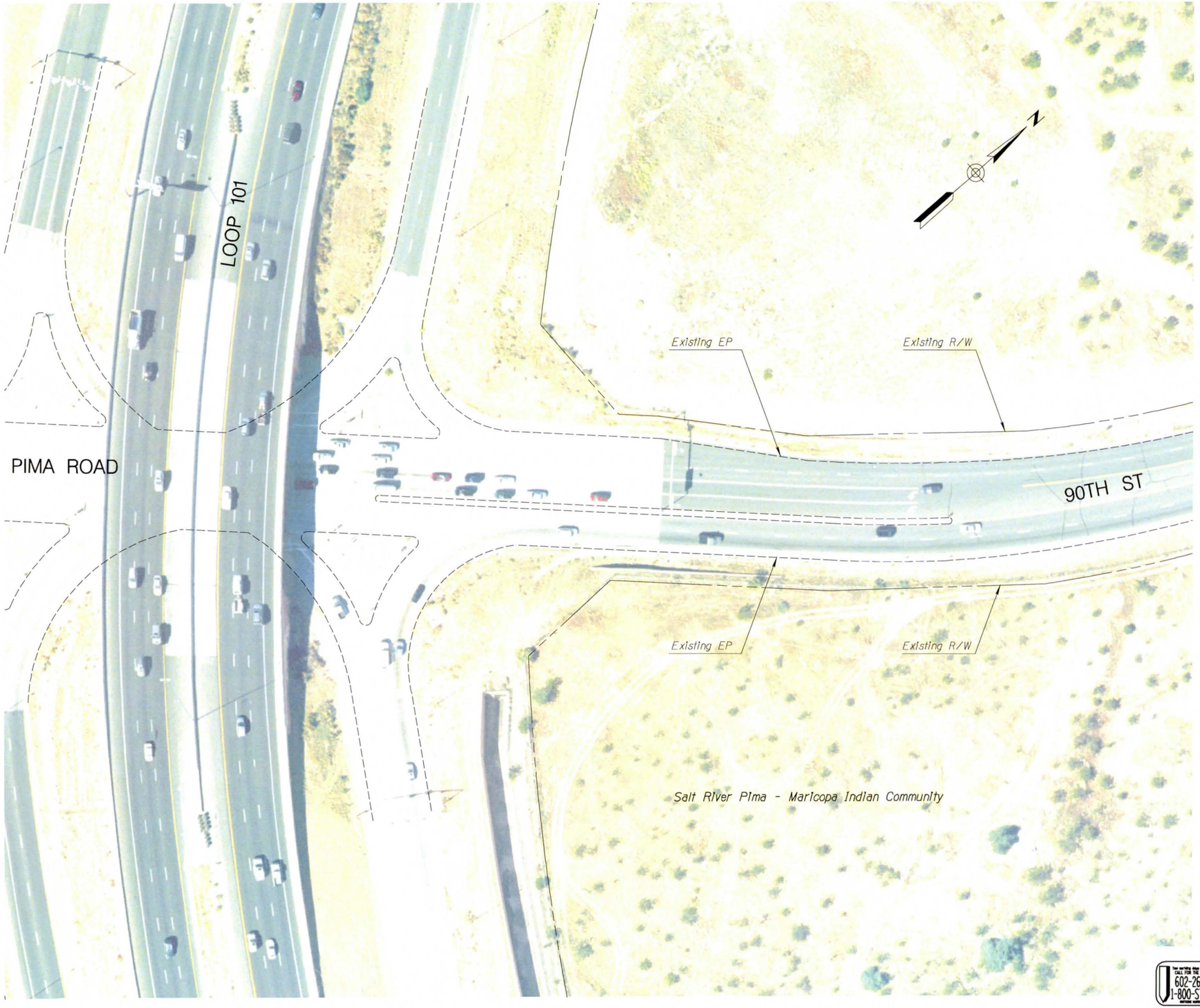

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.

CONSTRUCTION NOTES

Description	Unit	Quant.

LEGEND:

- New AC Pavement
- Proposed Lane
- Future Lane

DATE	REVISION	BY

ENGINEER

PRELIMINARY **30%** REVIEW NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PLAN SHEET STA XXXX TO STA XXXX

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		39
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT

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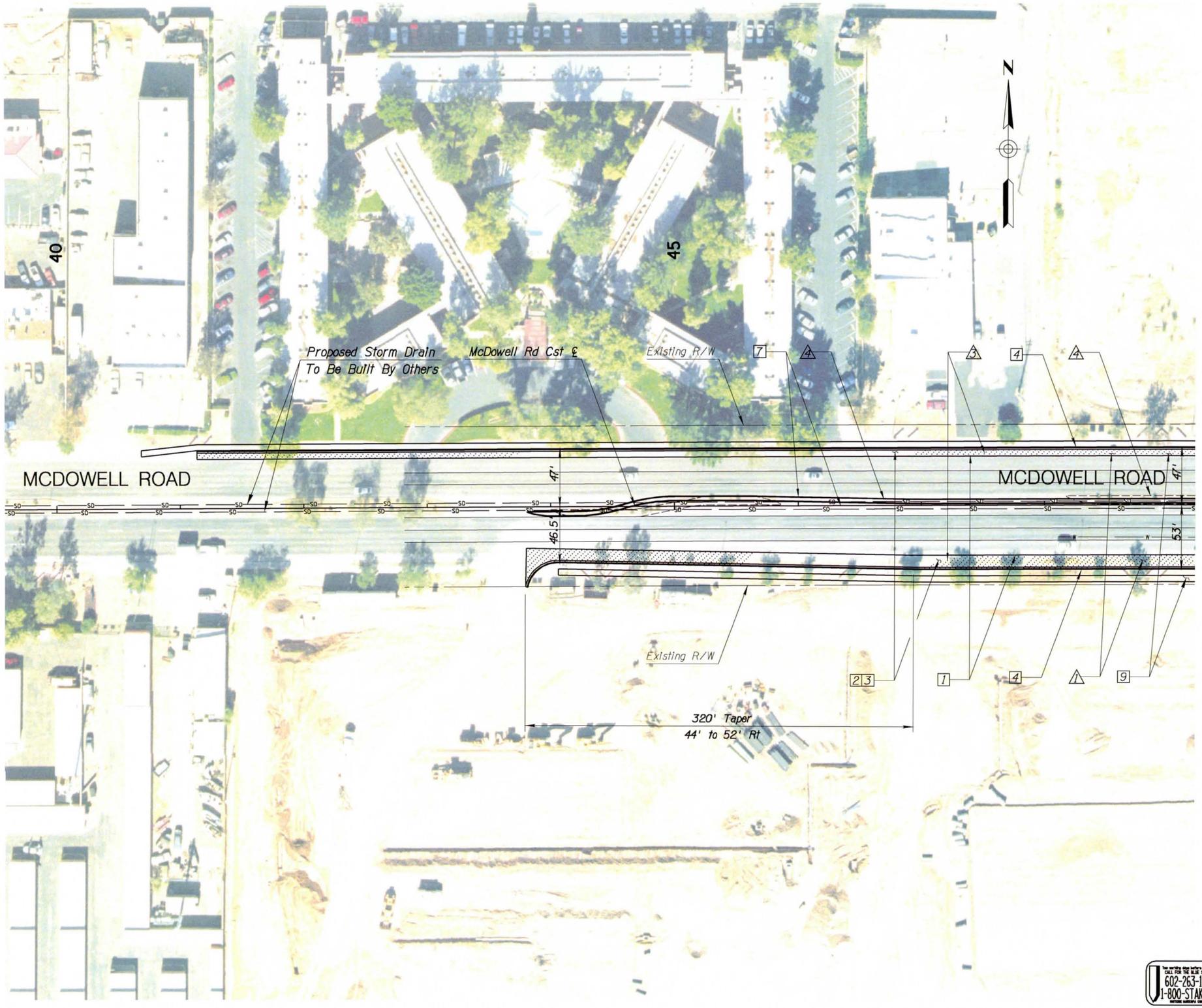

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	1084
3 Remove Curb & Gutter	LF	1738
4 Remove Exist Curb	LF	1282

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1390
2 Subgrade Preparation	SY	1238
3 Install Pvmt per Structural Section 1	SY	1238
4 Install Curb & Gutter, MAG Std Det 220, Type A	LF	1361
7 Install Single Curb, MAG Std Det 222	LF	1086
9 Install Concrete Sidewalk,	SF	6626

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: McDOWELL ROAD AT PIMA ROAD STA 41+20 TO STA 49+20

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		41
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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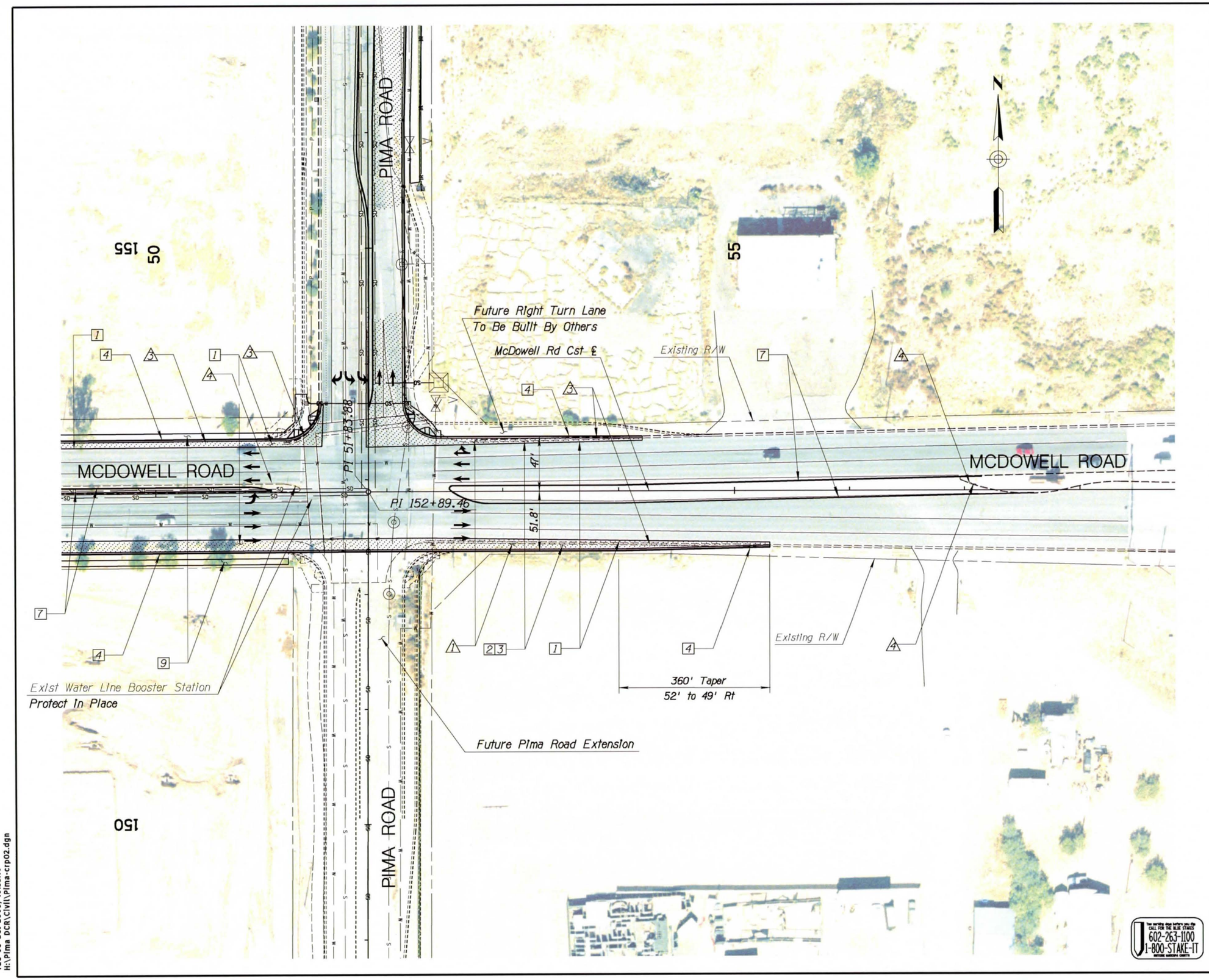

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	977
3 Remove Curb & Gutter	LF	442
4 Remove Exist Curb	LF	400

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1072
2 Subgrade Preparation	SY	1608
3 Install Pvmt per Structural Section 1	SY	1608
4 Install Curb & Gutter, MAG Std Det 220, Type A	LF	974
7 Install Single Curb, MAG Std Det 222	LF	1330
9 Install Concrete Sidewalk	SF	1908

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30% REVIEW
NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: McDOWELL ROAD AT PIMA ROAD STA 49+20 TO STA 55+20

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		42
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H33440ID	OF 52

TRACS NO.

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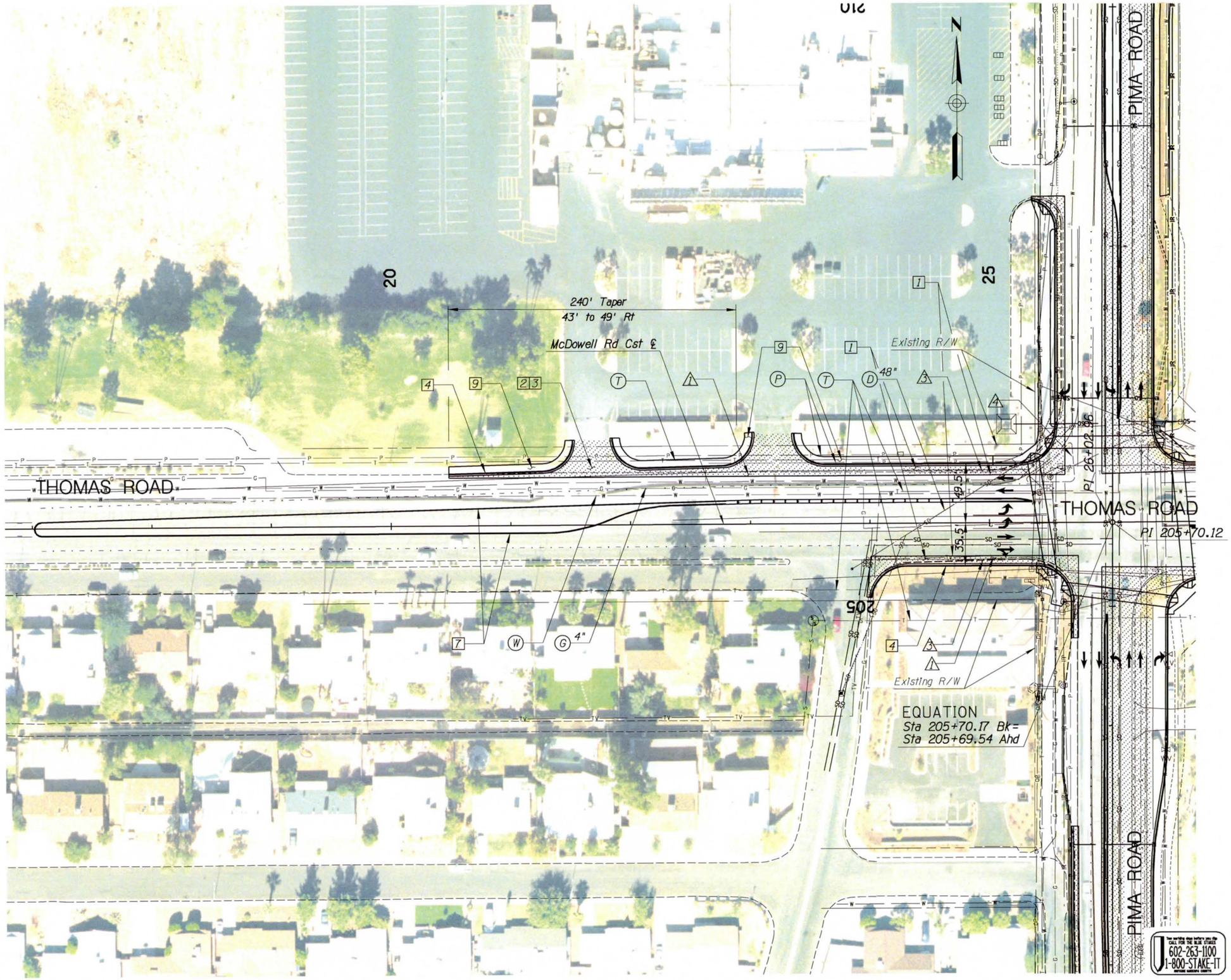

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	1254
3 Remove Curb & Gutter	LF	216
4 Remove Exist Curb	LF	121

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	884
2 Subgrade Preparation	SY	718
3 Install Pvmt per Structural Section 1	SY	718
4 Install Curb & Gutter, MAG Std Det 220, Type A	LF	807
7 Install Single Curb, MAG Std Det 222	LF	1679
9 Install Concrete Sidewalk	SF	2560

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: THOMAS ROAD AT PIMA ROAD
STA 20+50 TO STA 26+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	JO	10/09		43
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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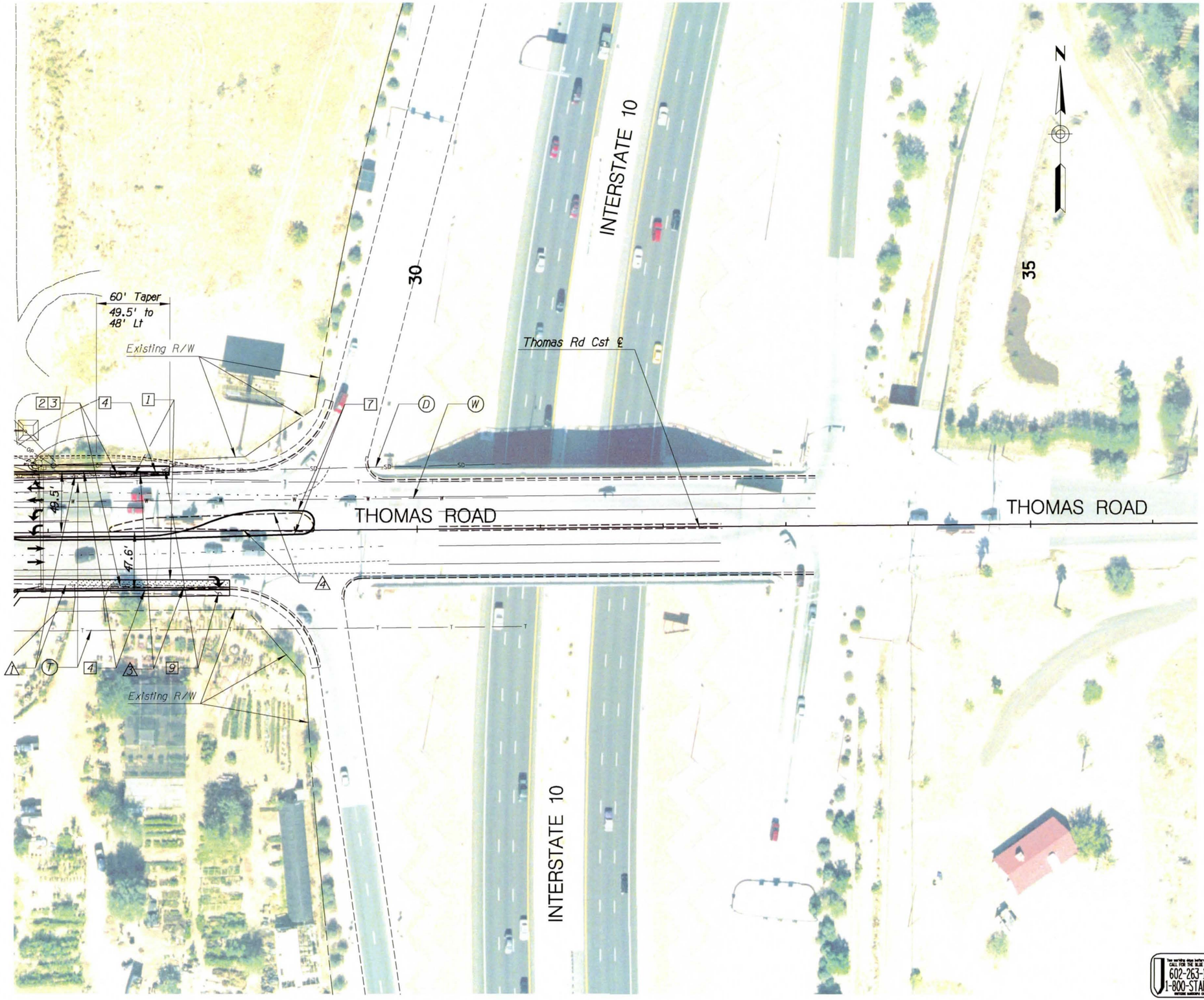

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	350
3 Remove Curb & Gutter	LF	145
4 Remove Exist Curb	LF	347

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	310
2 Subgrade Preparation	SY	187
3 Install Pvmt per Structural Section 1	SY	187
4 Install Curb & Gutter, MAG Std Det 220, Type A	LF	294
7 Install Single Curb, MAG Std Det 222	LF	516
9 Install Concrete Sidewalk	SF	1536

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(D) Existing Stormdrain
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL MARICOPA INDIAN COMMUNITY

SHEET TITLE: THOMAS ROAD AT PIMA ROAD STA 26+70 TO STA 28+50

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		44
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H3344010	OF 52

TRACS NO.

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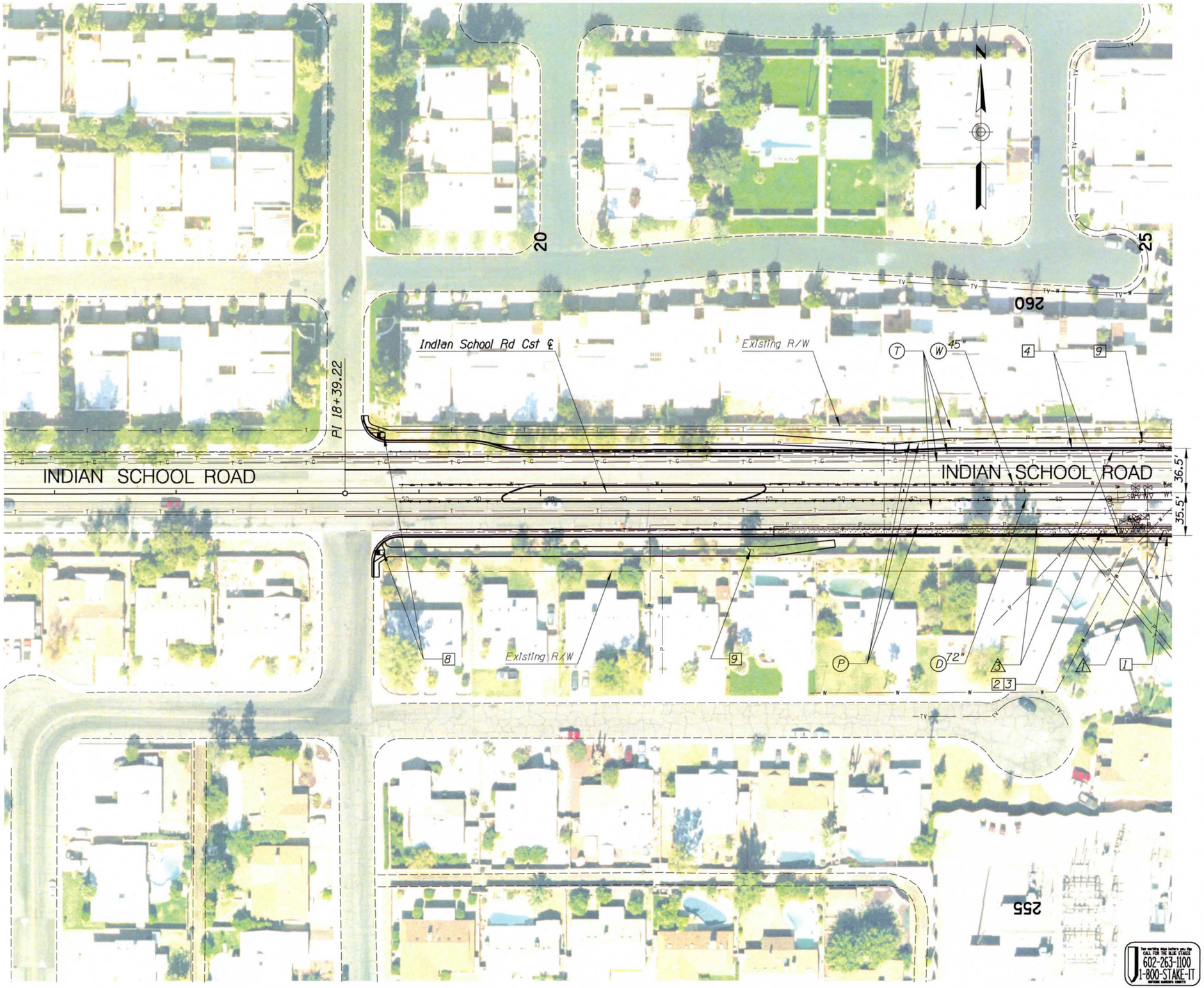

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	80
3 Remove Curb & Gutter	LF	515

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	333
2 Subgrade Preparation	SY	231
3 Install Pvmt per Structural Section 1	SY	231
4 Install Curb & Gutter, MAG Std Det 220, Type A	LF	515
8 Concrete Sidewalk Ramp, COS 2232	EA	2
9 Install Concrete Sidewalk	SF	1774

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(T) Existing Telephone

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE INTERTRIBAL COUNCIL OF THE PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE INDIAN SCHOOL ROAD AT PIMA ROAD STA 21+90 TO STA 25+20

PROJECT TITLE PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IO	10/09		45
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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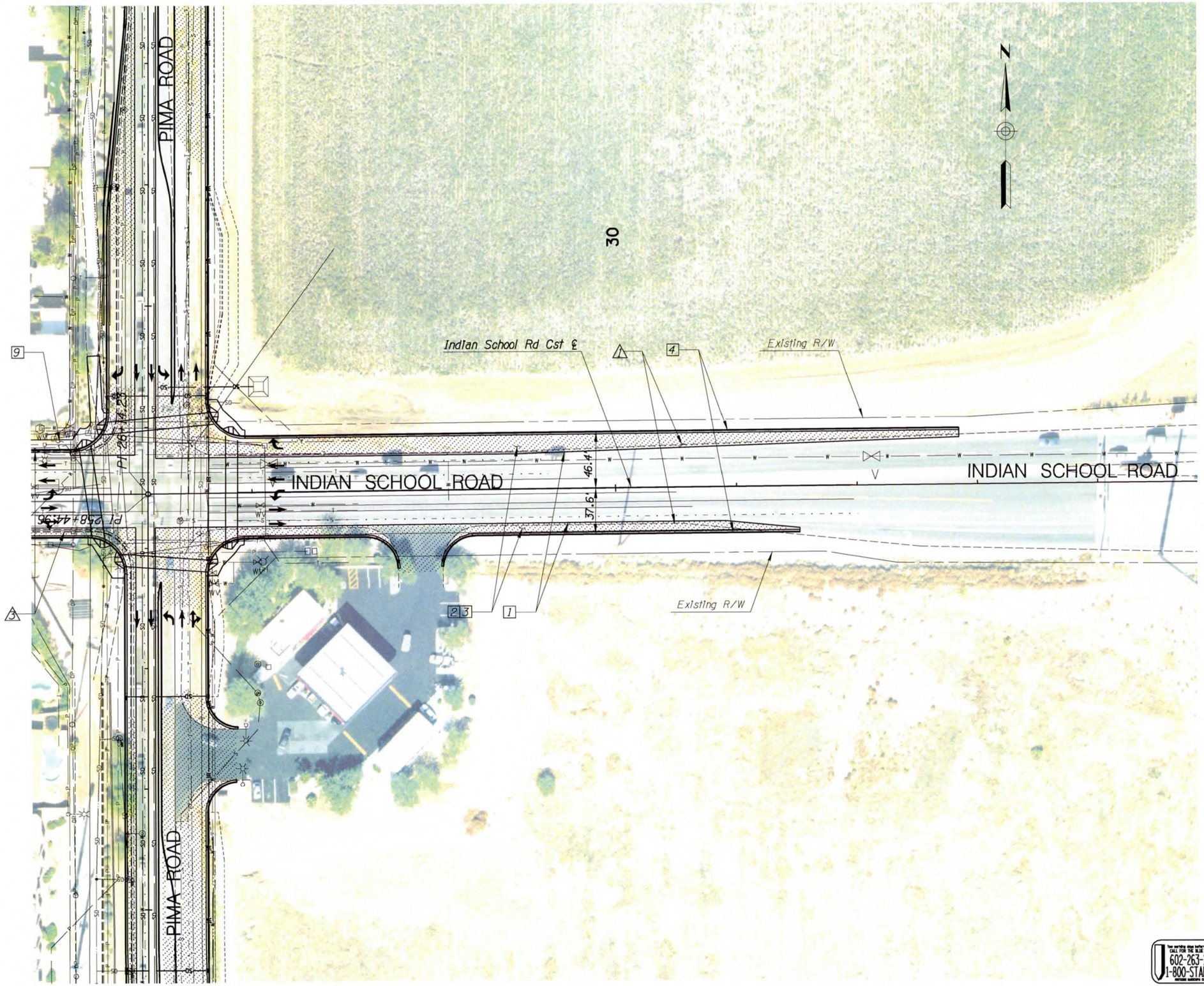

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	439
3 Remove Curb & Gutter	LF	85

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1340
2 Subgrade Preparation	SY	1309
3 Install Pvmt per Structural Section 1	SY	1309
4 Install Curb & Gutter, MAG Std Det 220, Type A	LF	1113
9 Install Concrete Sidewalk	SF	244

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE GILA RIVER INDIAN COMMUNITY

SHEET TITLE INDIAN SCHOOL ROAD AT PIMA ROAD
STA 25+20 TO STA 32+90

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		46
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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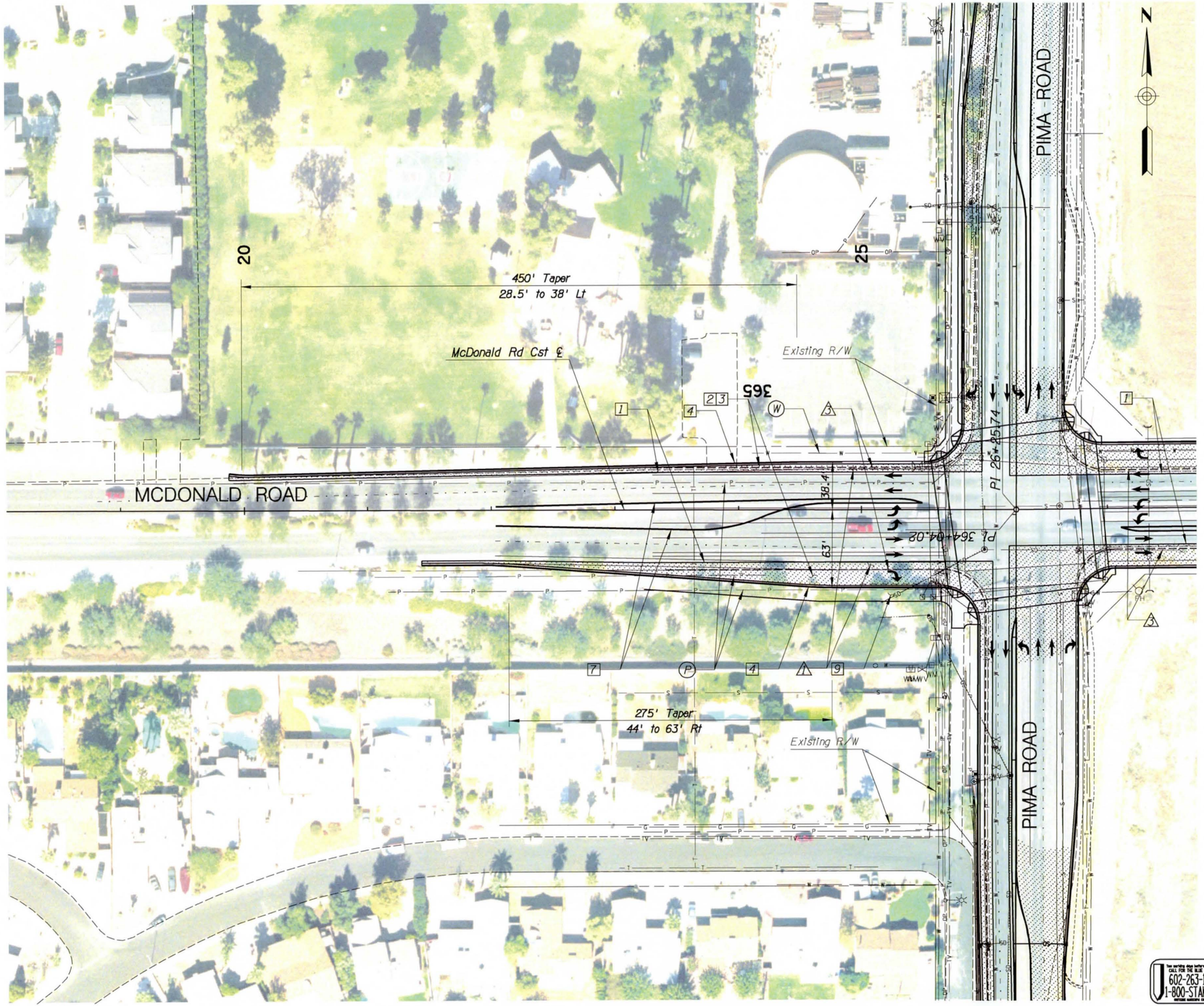

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	420
3 Remove Exist Curb & Gutter	LF	1131

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1382
2 Subgrade Preparation	SY	1644
3 Install Pvmt per Structural Section 1	SY	1644
4 Install Curb & Gutter, MAG Std Det 220, Type A	LF	1052
7 Install Single Curb, MAG Std Det 222	LF	720
9 Install Concrete Sidewalk,	SF	2658

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE McDONALD ROAD AT PIMA ROAD
STA 20+00 TO STA 27+60

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IO	10/09		47
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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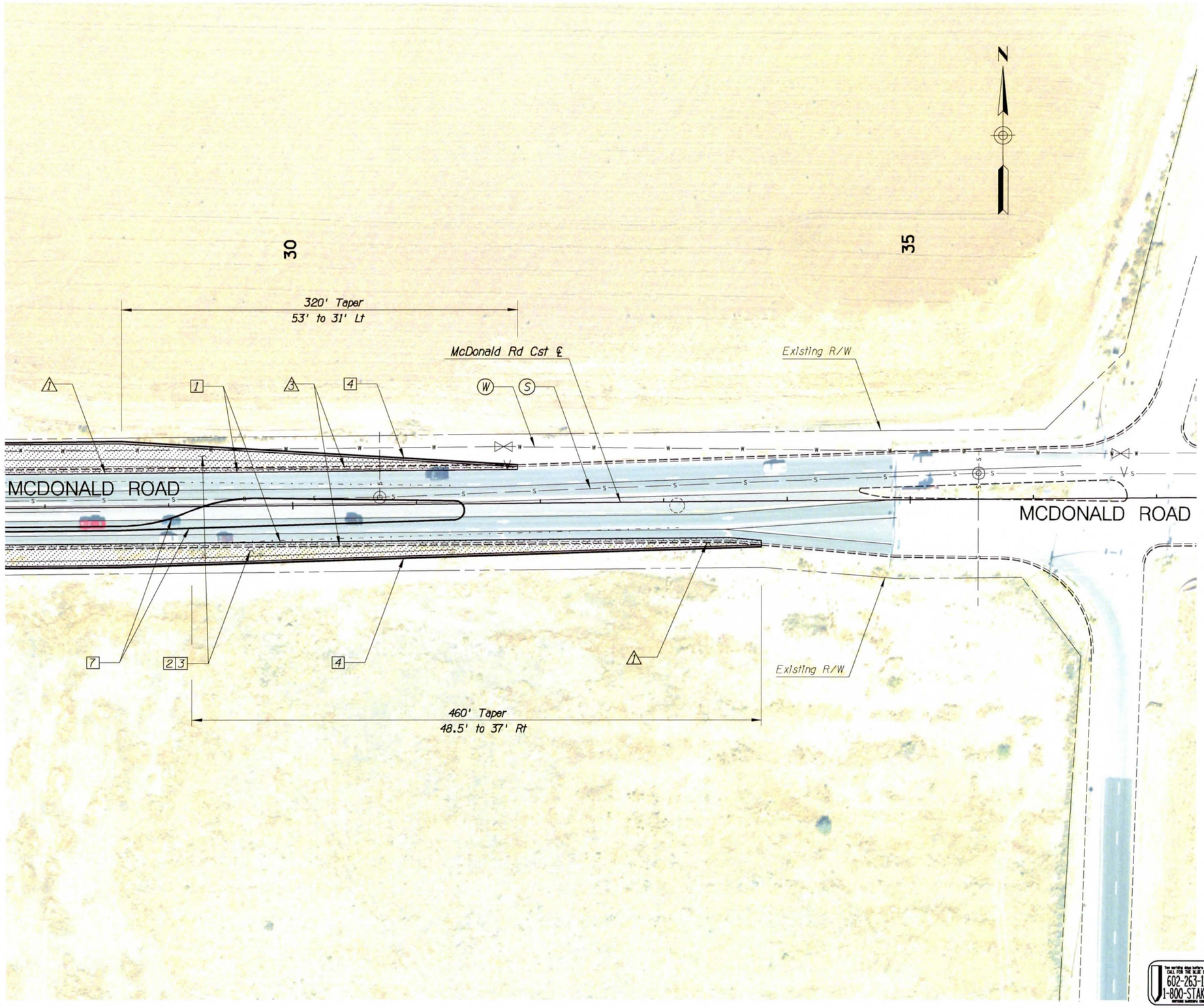

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	257
3 Remove Exist Curb & Gutter	LF	1016

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1020
2 Subgrade Preparation	SY	2096
3 Install Pvmt per Structural Section 1	SY	2096
4 Install Curb & Gutter, MAG Std Det 220, Type A	LF	1017
7 Install Single Curb, MAG Std Det 222	LF	869

(I) Existing Irrigation Ditch
(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL SALT RIVER-MARICOPA INDIAN COMMUNITY

SHEET TITLE McDONALD ROAD AT PIMA ROAD STA 27+60 TO STA 33+80

PROJECT TITLE PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		48
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

Tow months from today's date CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT ARIZONA BLUE STAKE, INC.

Tue 06 Oct 2009, 10:40:41
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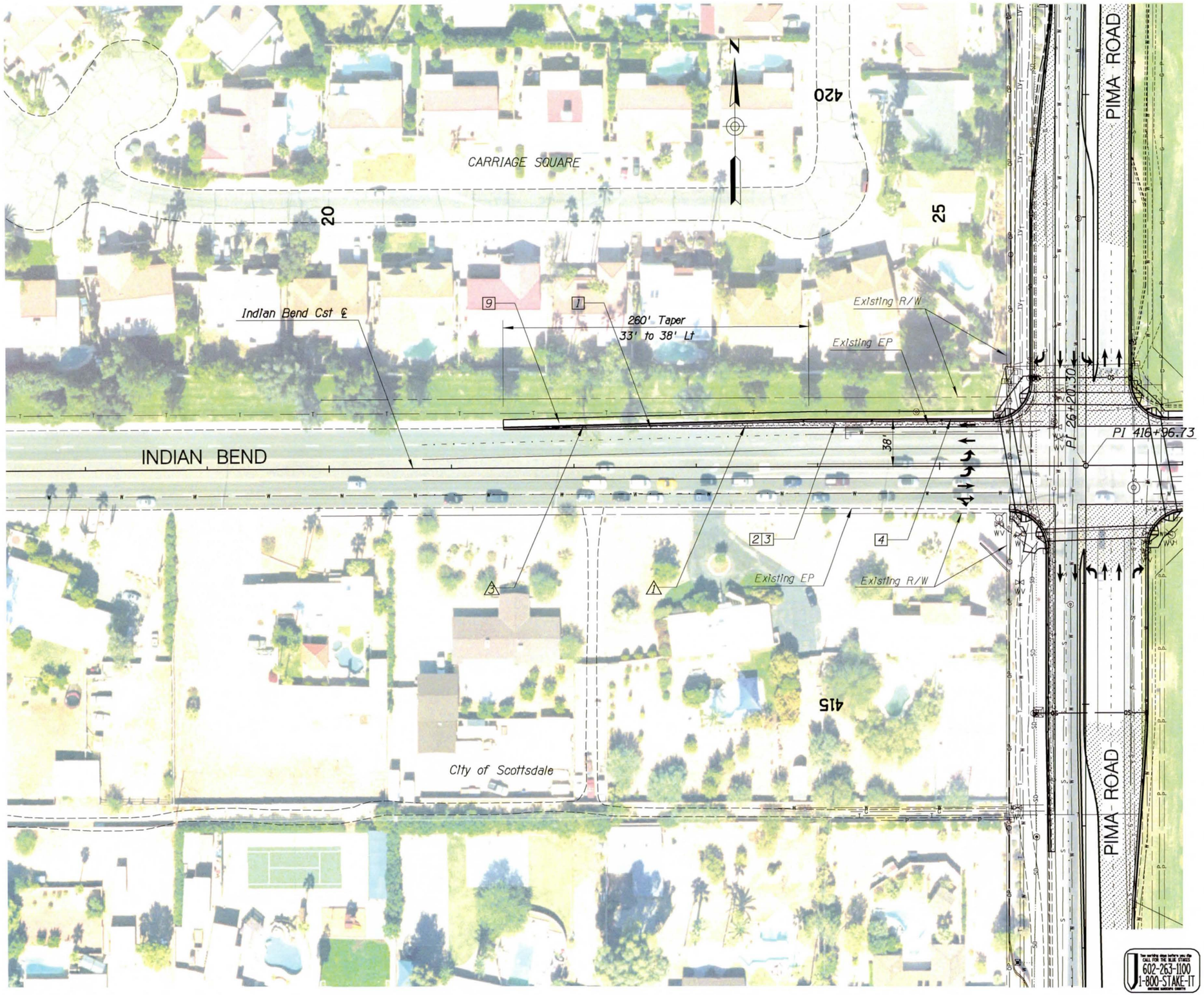

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	82
3 Remove Curb & Gutter	LF	403

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	453
2 Subgrade Preparation	SY	152
3 Install Pvmt per Structural Section 1.	SY	152
4 Install Curb & Gutter	LF	402
9 Install Concrete Sidewalk	SF	2411

LEGEND:

- New AC Pavement
- Proposed Lane
- Future Lane

DATE	REVISION	BY

ENGINEER PRELIMINARY **30% REVIEW** NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: INDIAN BEND AT PIMA ROAD STA 17+35 TO STA 27+00

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IO	10/09		49
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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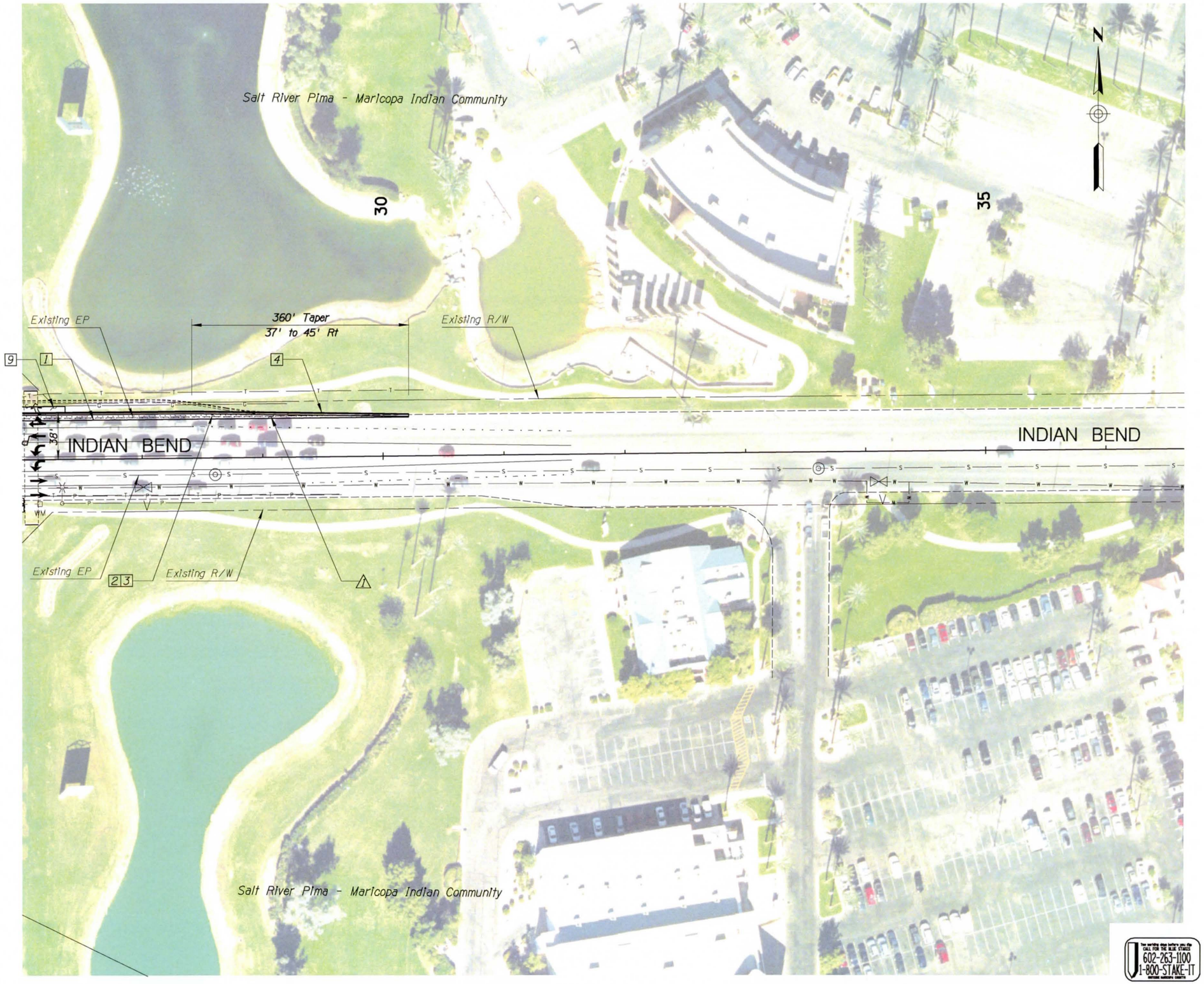

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	74

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	408
2 Subgrade Preparation	SY	130
3 Install Pvmt per Structural Section 1.	SY	130
4 Install Curb & Gutter	LF	333
9 Install Concrete Sidewalk	SF	240

LEGEND:

- New AC Pavement
- Proposed Lane
- Future Lane

DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: INDIAN BEND AT PIMA ROAD STA 27+00 TO STA 36+65

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		50
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

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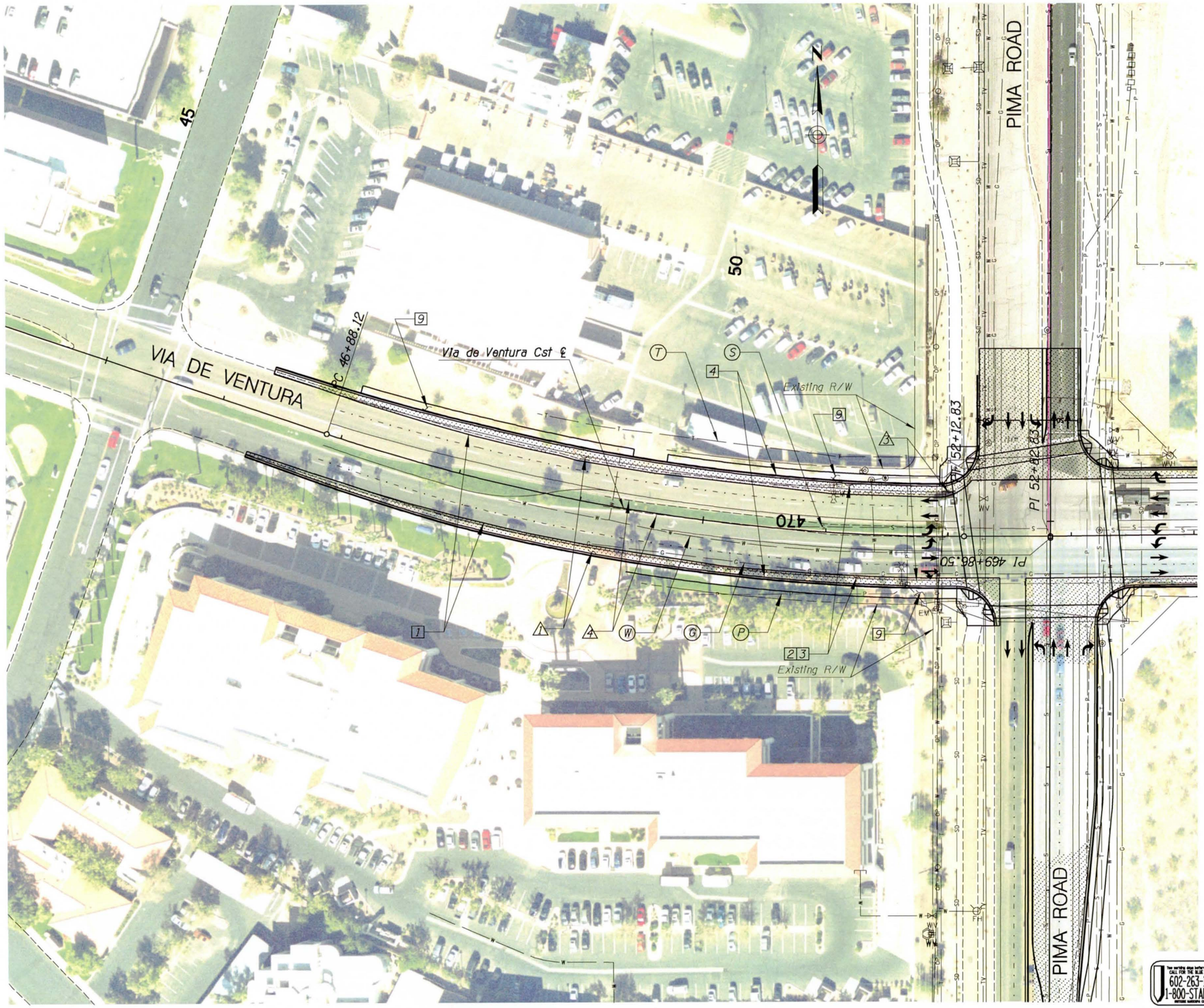

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	650
3 Remove Exist Curb & Gutter	LF	1135
4 Remove Exist Curb	LF	564

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	1530
2 Subgrade Preparation	SY	927
3 Install Pvmt per Structural Section 1	SY	927
4 Install Curb & Gutter, MAG Std Det 220, Type A	LF	1254
9 Install Concrete Sidewalk	SF	4835

(W) Existing Water Line
(S) Existing Sewer
(P) Existing Power
(T) Existing Telephone
(G) Existing Gas Line

LEGEND:

New AC Pavement
Proposed Lane
Future Lane

DATE	REVISION	BY

ENGINEER
PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL · SALT RIVER-MARICOPA INDIAN COMMUNITY

SHEET TITLE: VIA DE VENTURA AT PIMA ROAD STA 46+20 TO STA 54+00

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	IQ	10/09		51
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

Tue 06 Oct 2009, 10:41:01
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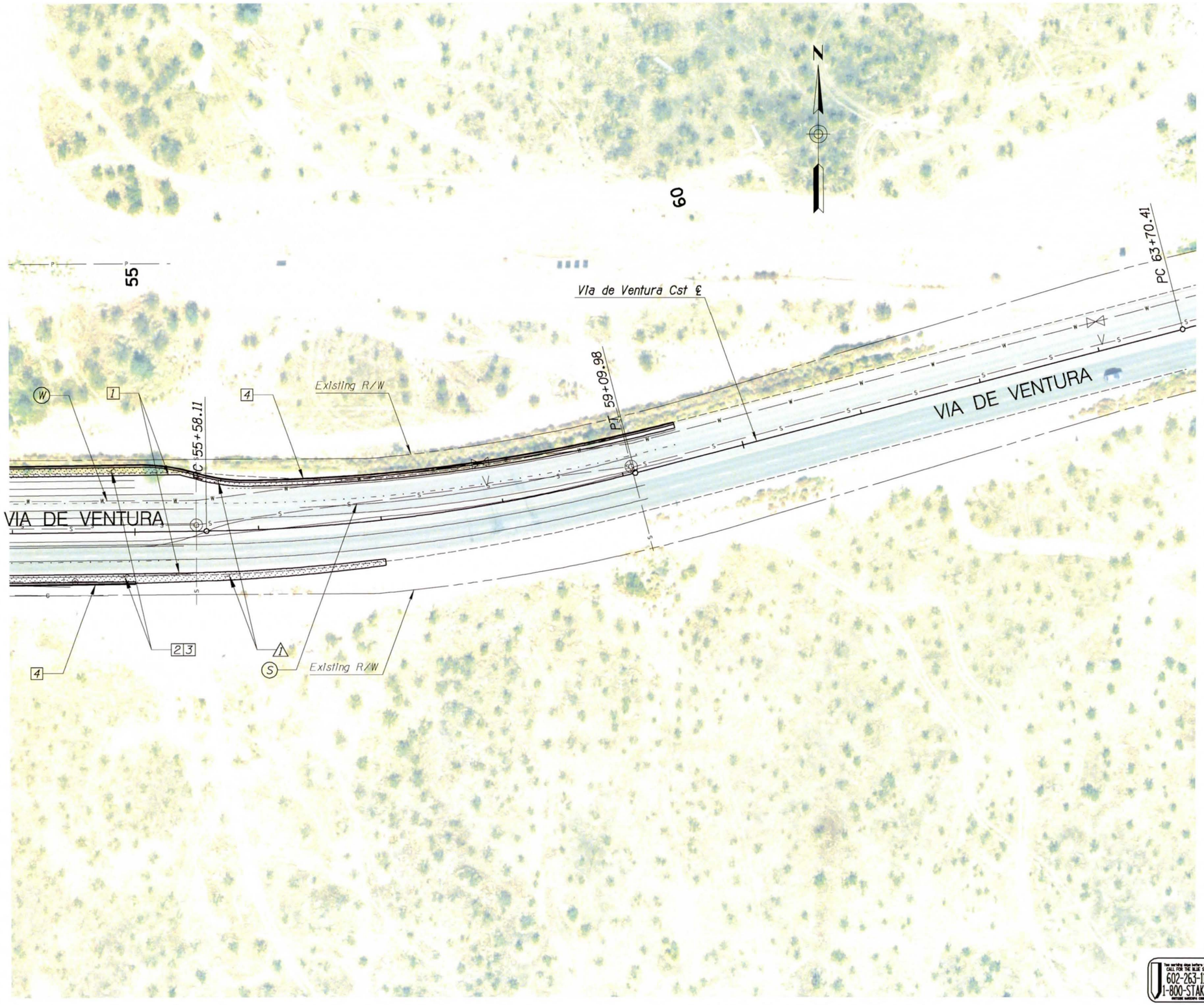

PARSONS BRINCKERHOFF

REMOVAL NOTES

Description	Unit	Quant.
1 Remove Exist AC Pavement	SY	119

CONSTRUCTION NOTES

Description	Unit	Quant.
1 Sawcut Pavement	LF	853
2 Subgrade Preparation	SY	448
3 Install Pvmt per Structural Section 1	SY	448
4 Install Curb & Gutter, MAG Std Det 220, Type A	LF	638
W Existing Water Line		
S Existing Sewer		

LEGEND:

- New AC Pavement
- Proposed Lane
- Future Lane

DATE	REVISION	BY

ENGINEER PRELIMINARY

30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE GILA RIVER INDIAN COMMUNITY PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: VIA DE VENTURA AT PIMA ROAD STA 54+00 TO STA 59+50

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	ID	10/09		52
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 52

TRACS NO.

THE NATIONAL ONE CALL CENTER CALL FOR THE BLUE STAKES 602-263-1100 1-800-STAKE-IT

Tue 06 Oct 2009, 10:41:50
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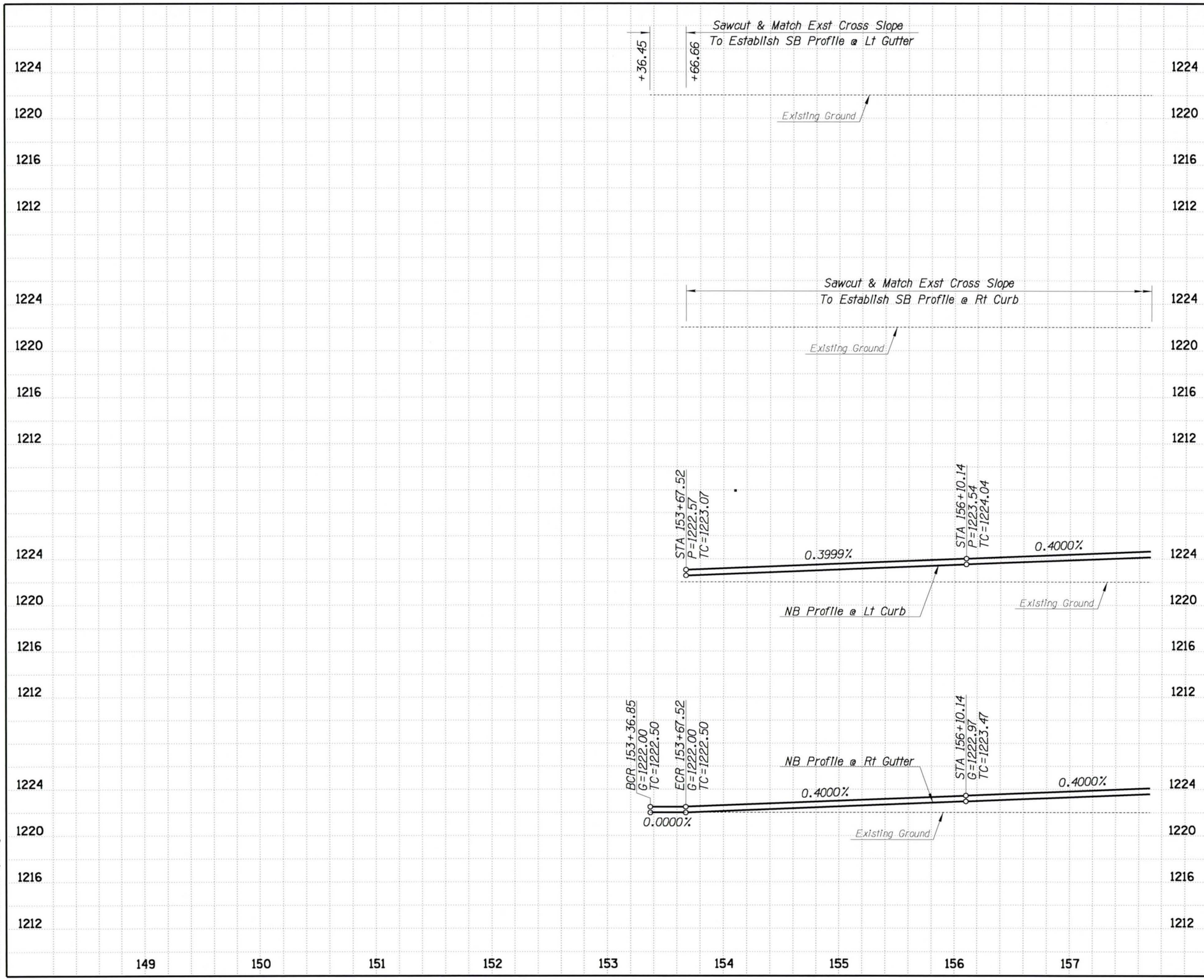
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PROFILE SHEET
BEGIN OF PROJECT TO STA 157+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		1
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

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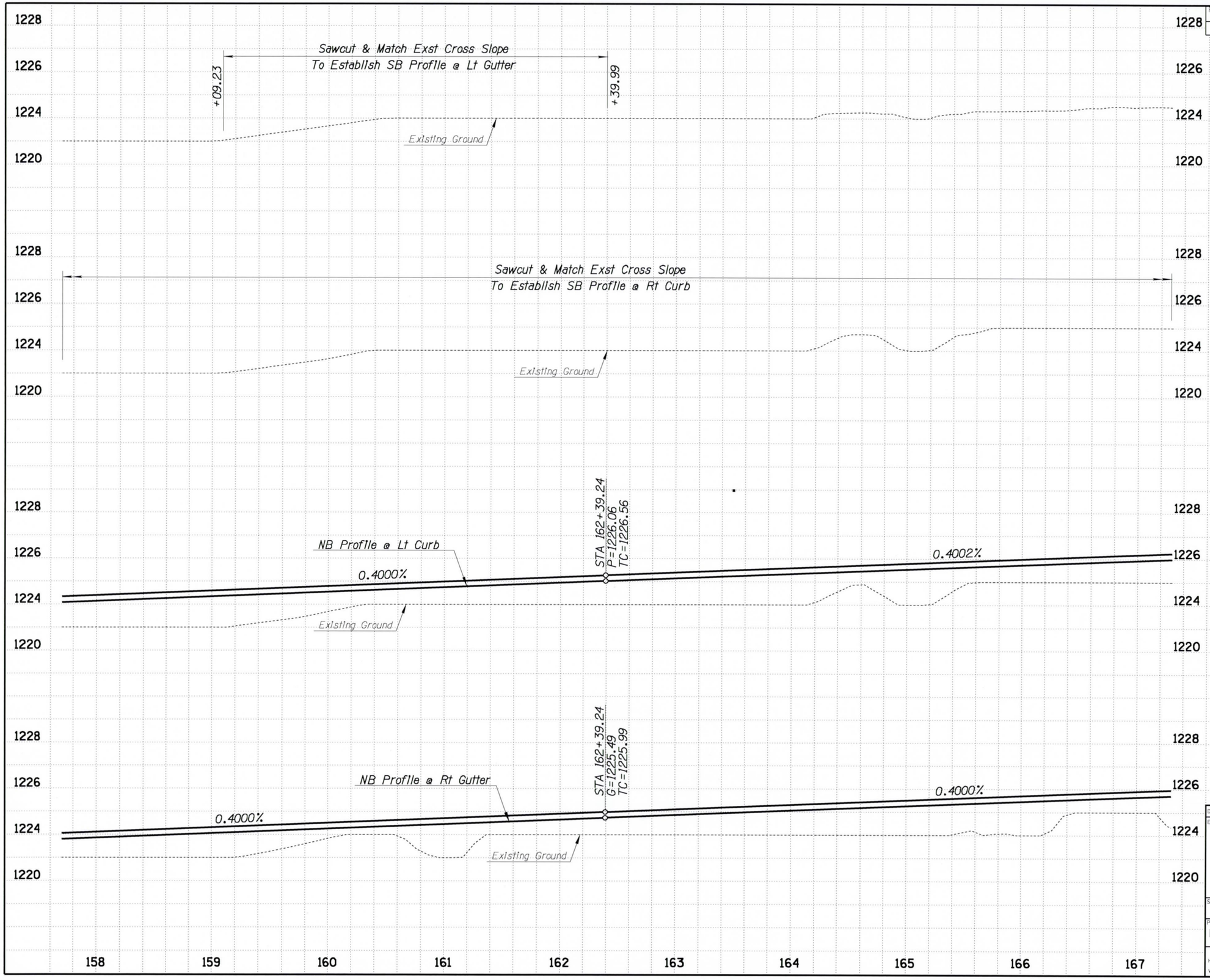

DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE INDIAN COMMUNITY PIMA-MARICOPA

SHEET TITLE

PROFILE SHEET
STA 157+70 TO STA 167+30

PROJECT TITLE

PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		2
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

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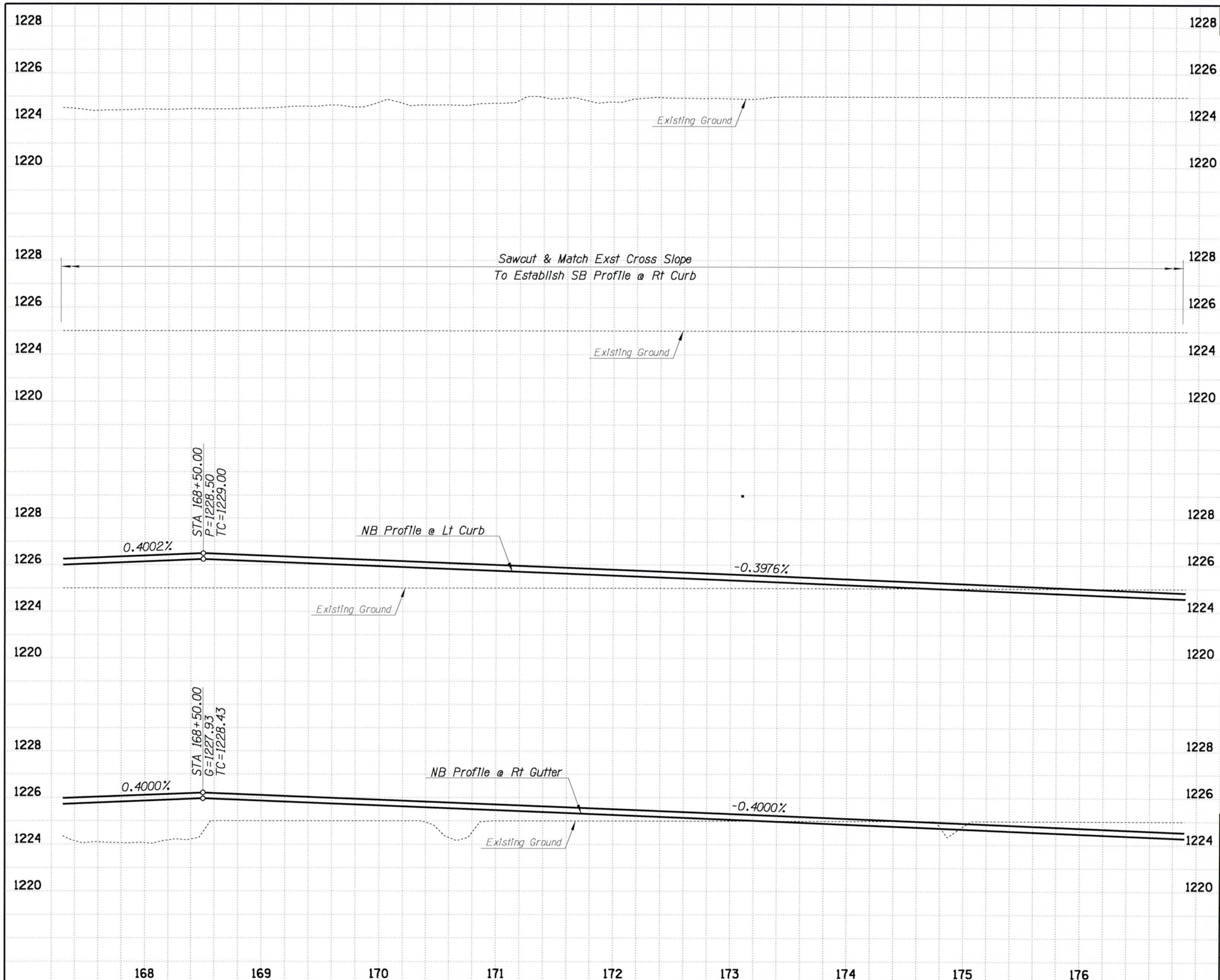

DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

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SHEET TITLE

PROFILE SHEET
STA 167+30 TO STA 176+90

PROJECT TITLE

PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		3
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

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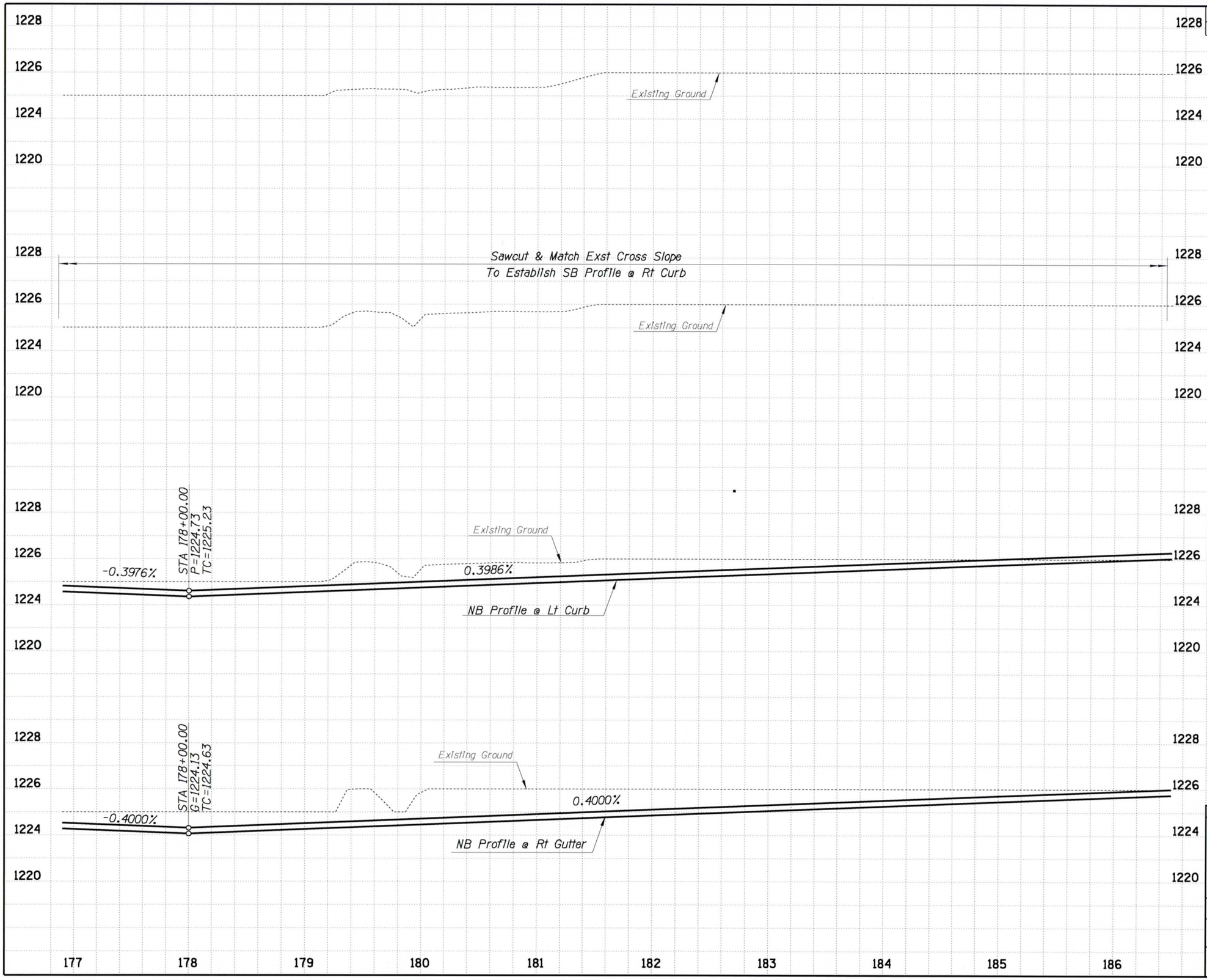

DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE GILA RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PROFILE SHEET STA 176+90 TO STA 186+50

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		4
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

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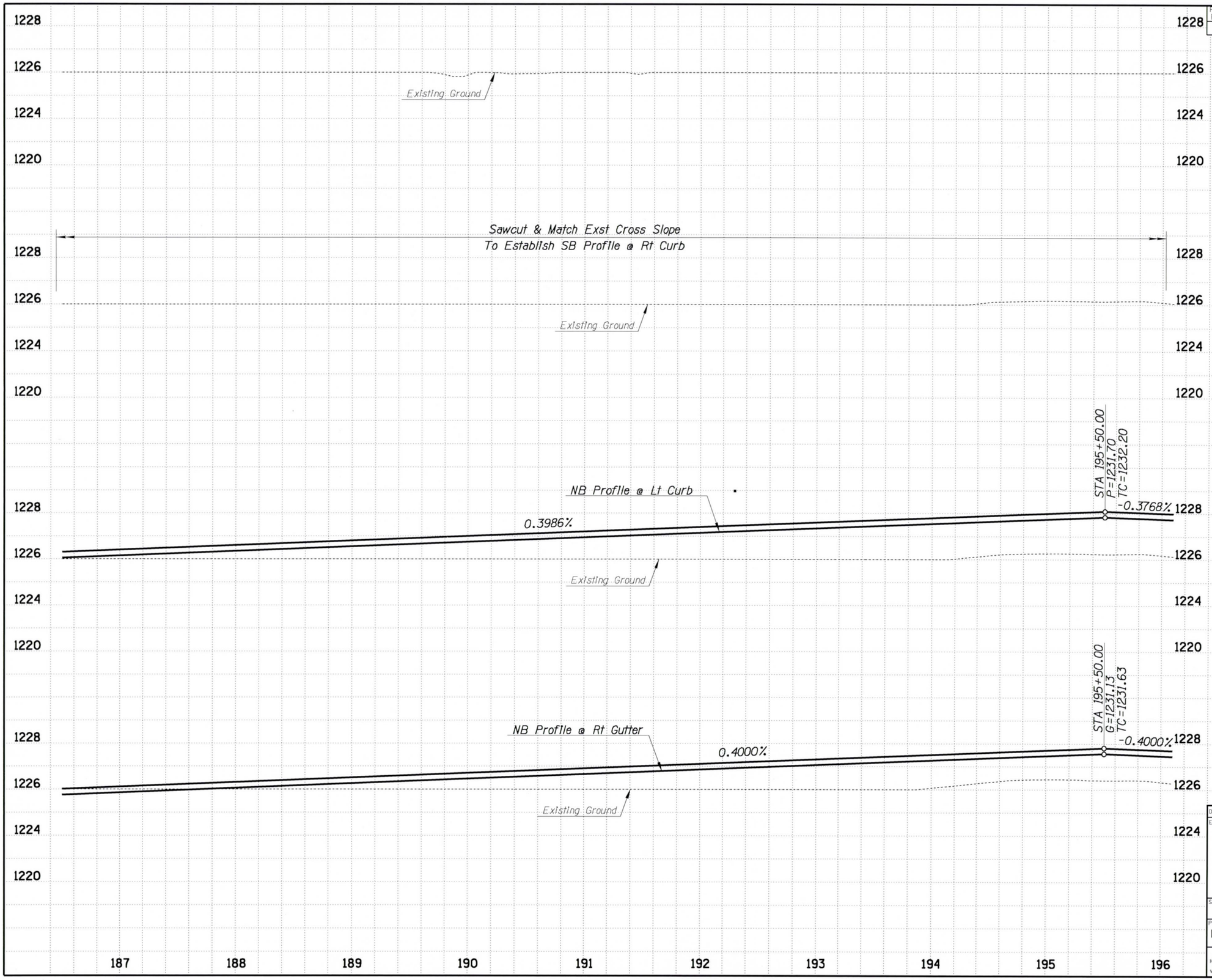

DATE | REVISION | BY

ENGINEER

PRELIMINARY

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REVIEW

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SHEET TITLE: PROFILE SHEET
STA 186+50 TO STA 196+10

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		5
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

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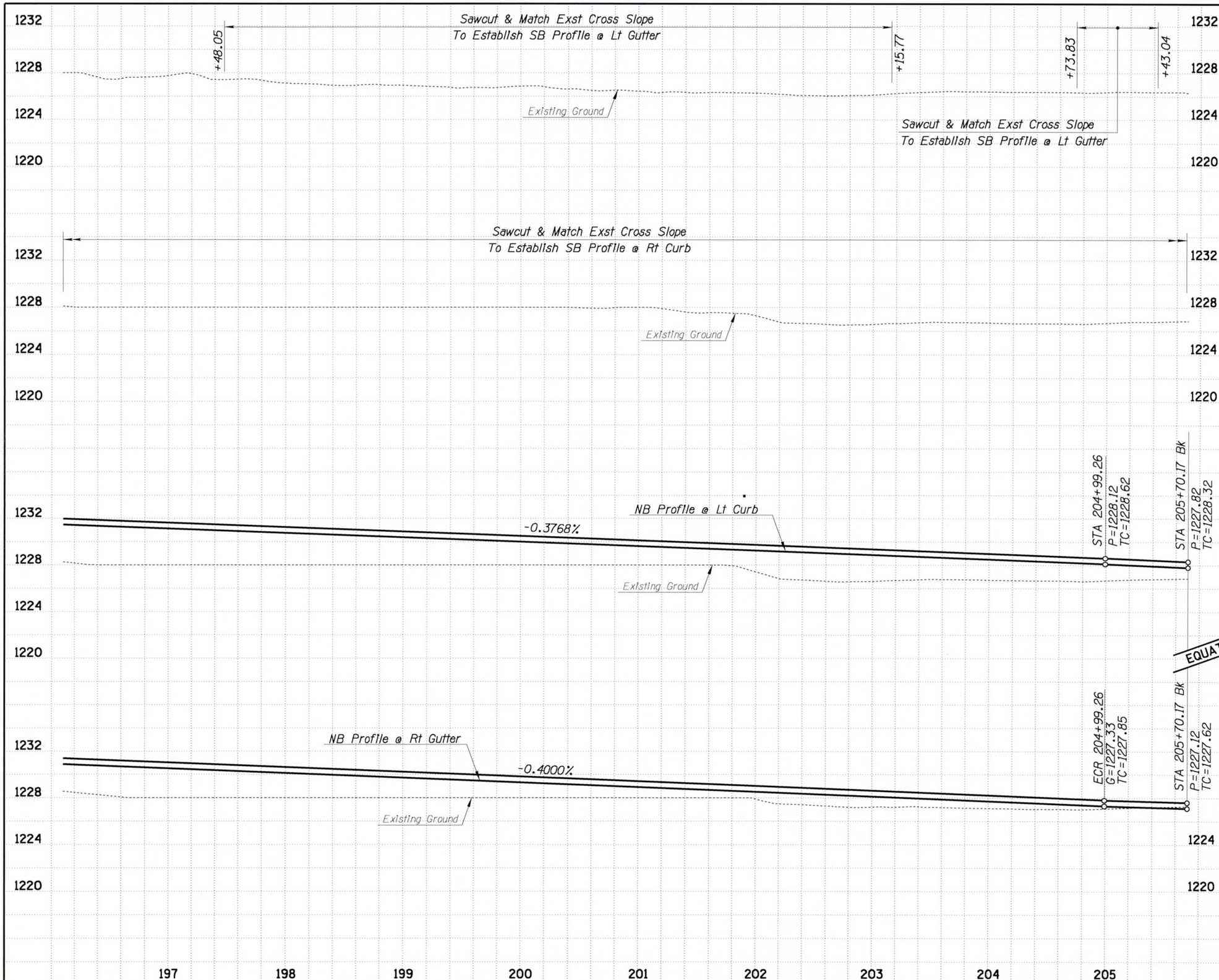

DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE NATIVE PIMA MARICOPA INDIAN COUNTRY

SHEET TITLE: PROFILE SHEET
STA 196+10 TO STA 205+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		6
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

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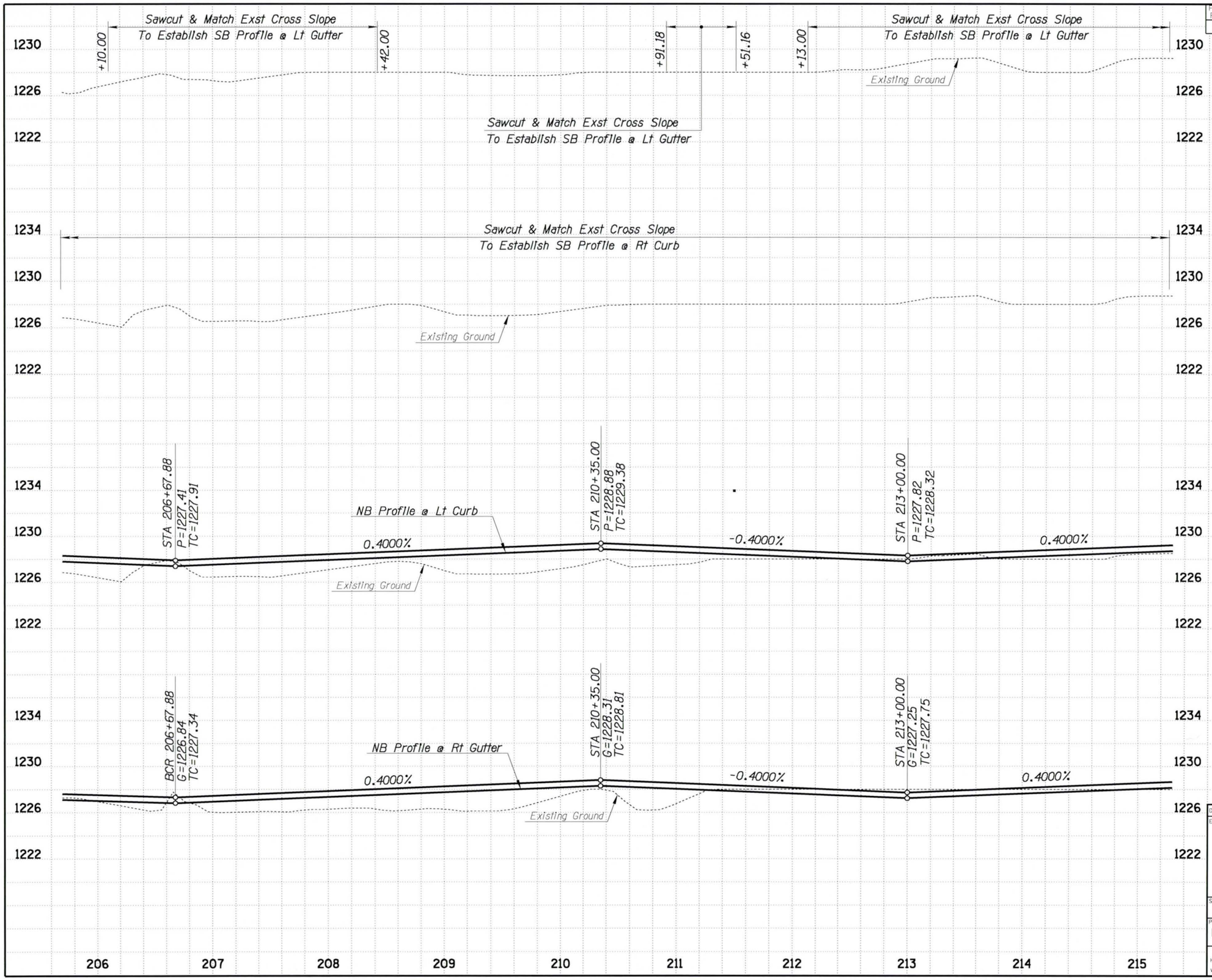

DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE GILA RIVER PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PROFILE SHEET STA 205+70 TO STA 215+30

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		7
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

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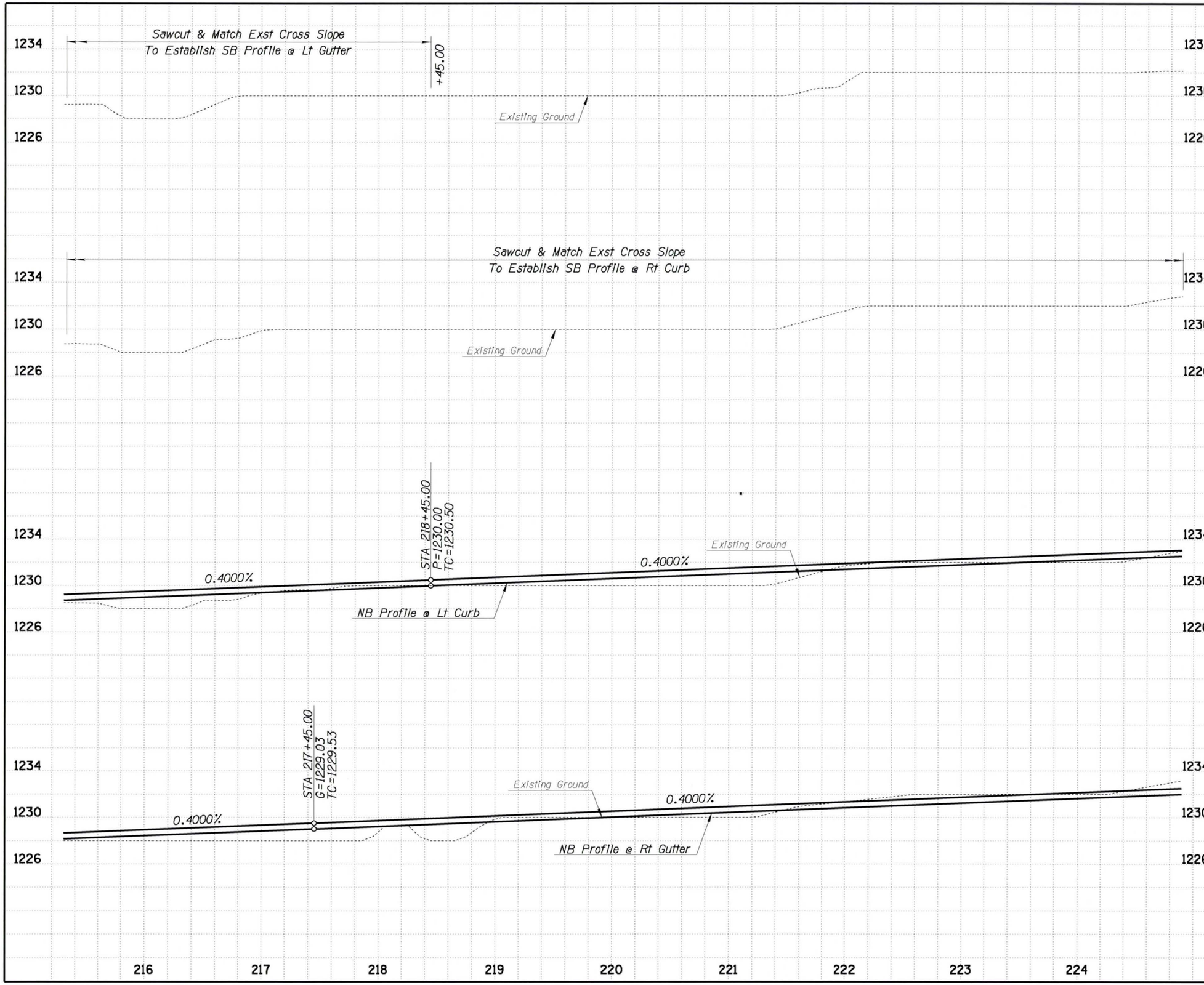

DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PROFILE SHEET STA 215+30 TO STA 224+90

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		8
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:06
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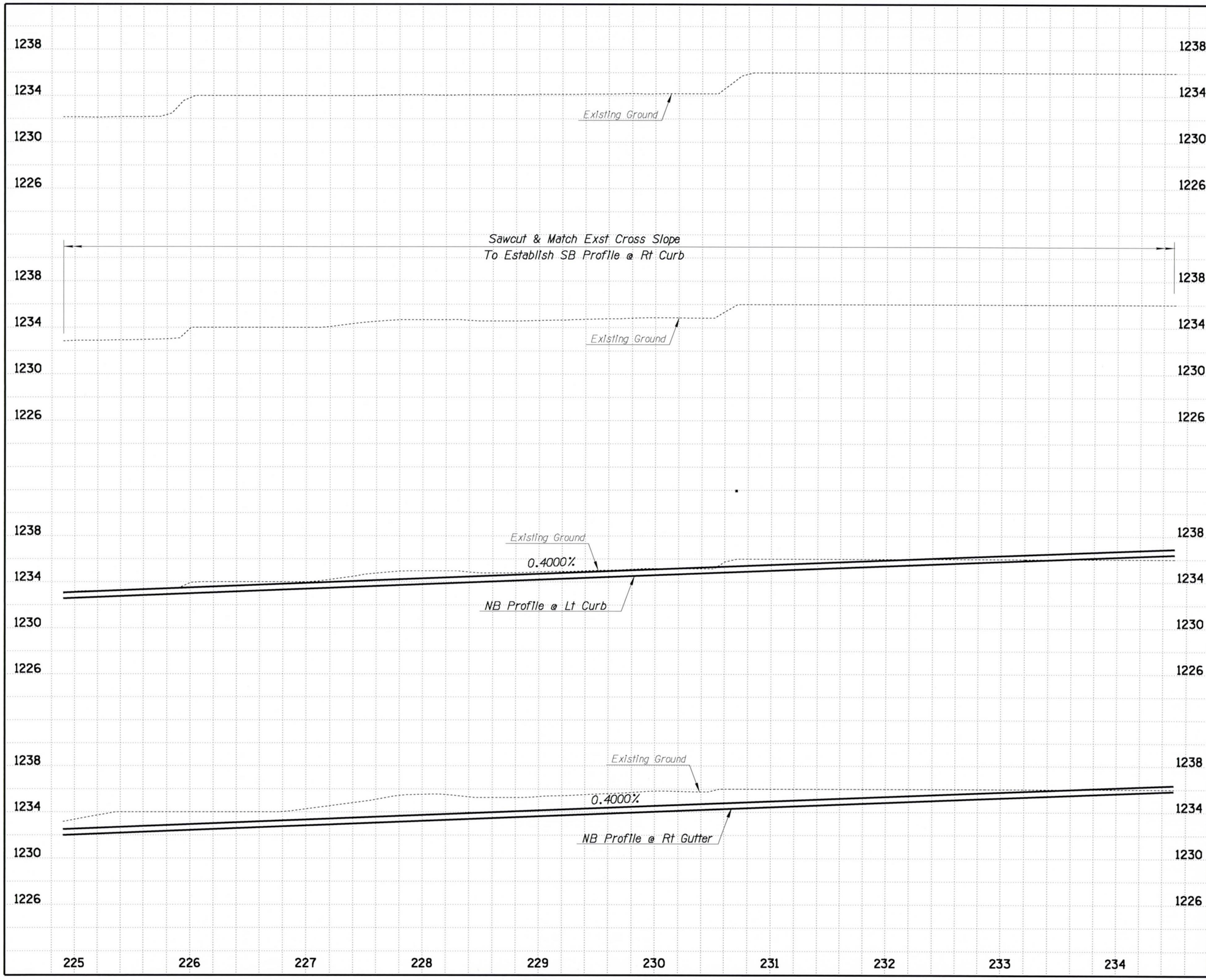

DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PROFILE SHEET STA 224+90 TO STA 234+50

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		9
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:07
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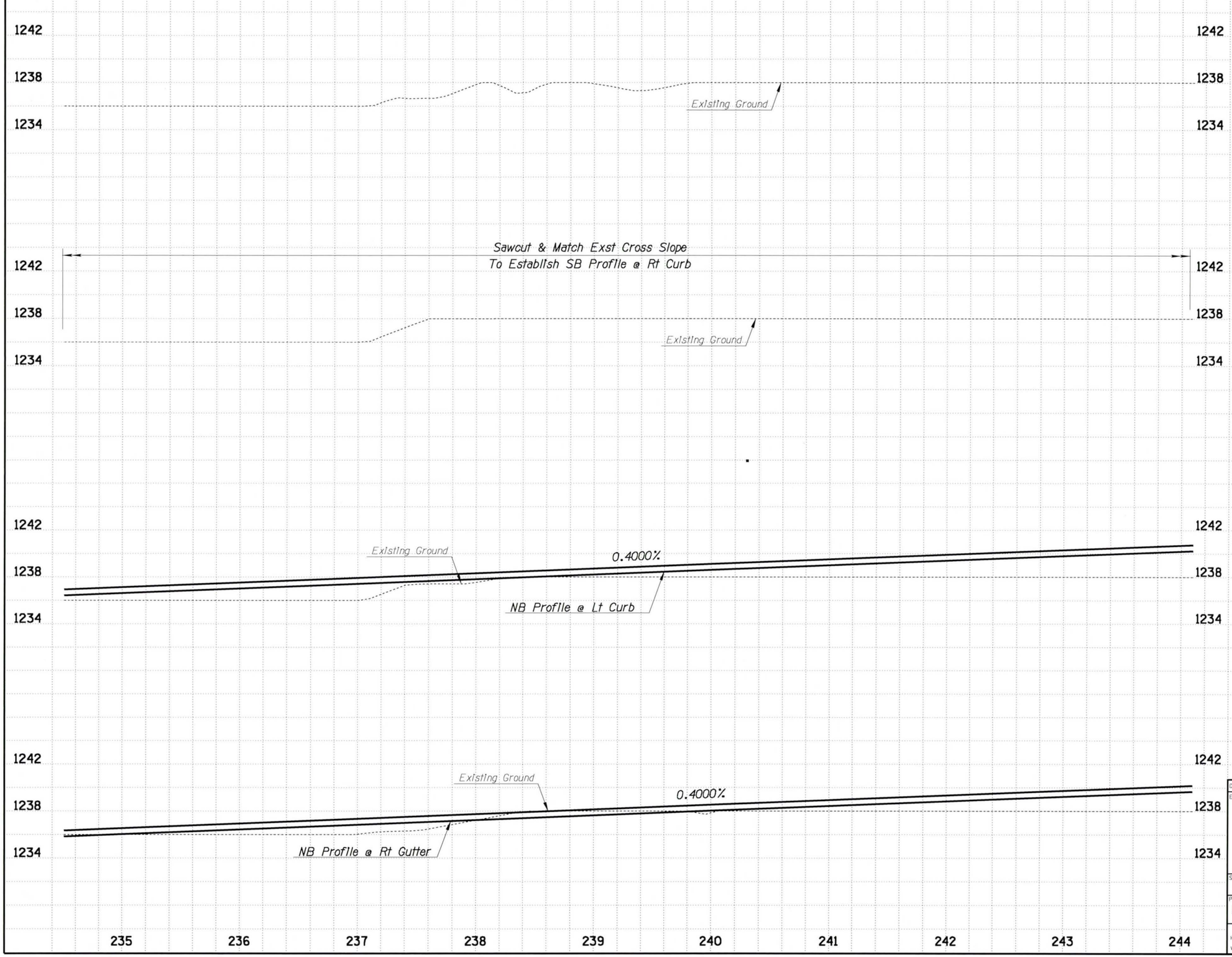

DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PROFILE SHEET STA 234+50 TO STA 244+10

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		10
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:09
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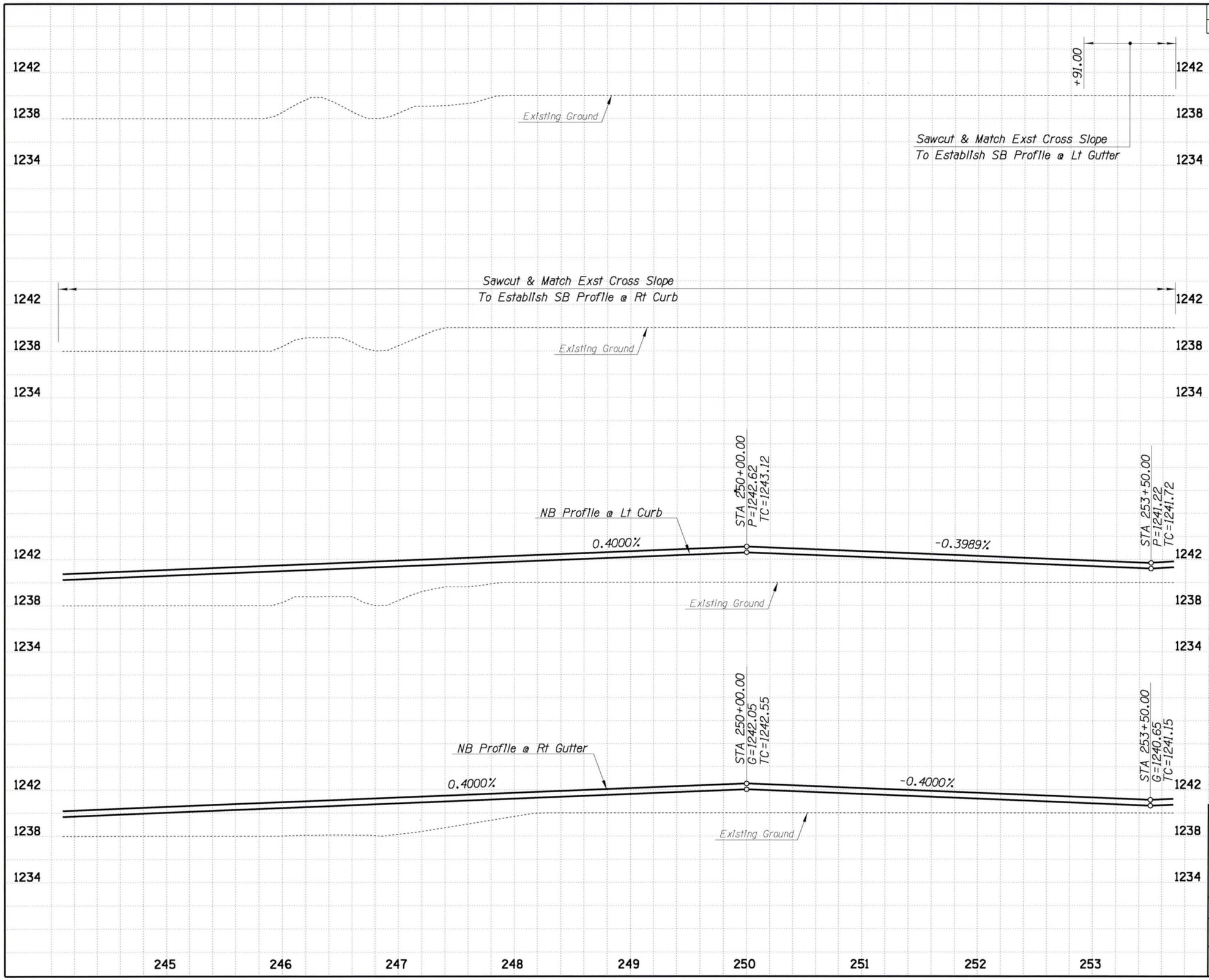
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE NATION OF THE PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PROFILE SHEET
STA 244+10 TO STA 253+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		11
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:11
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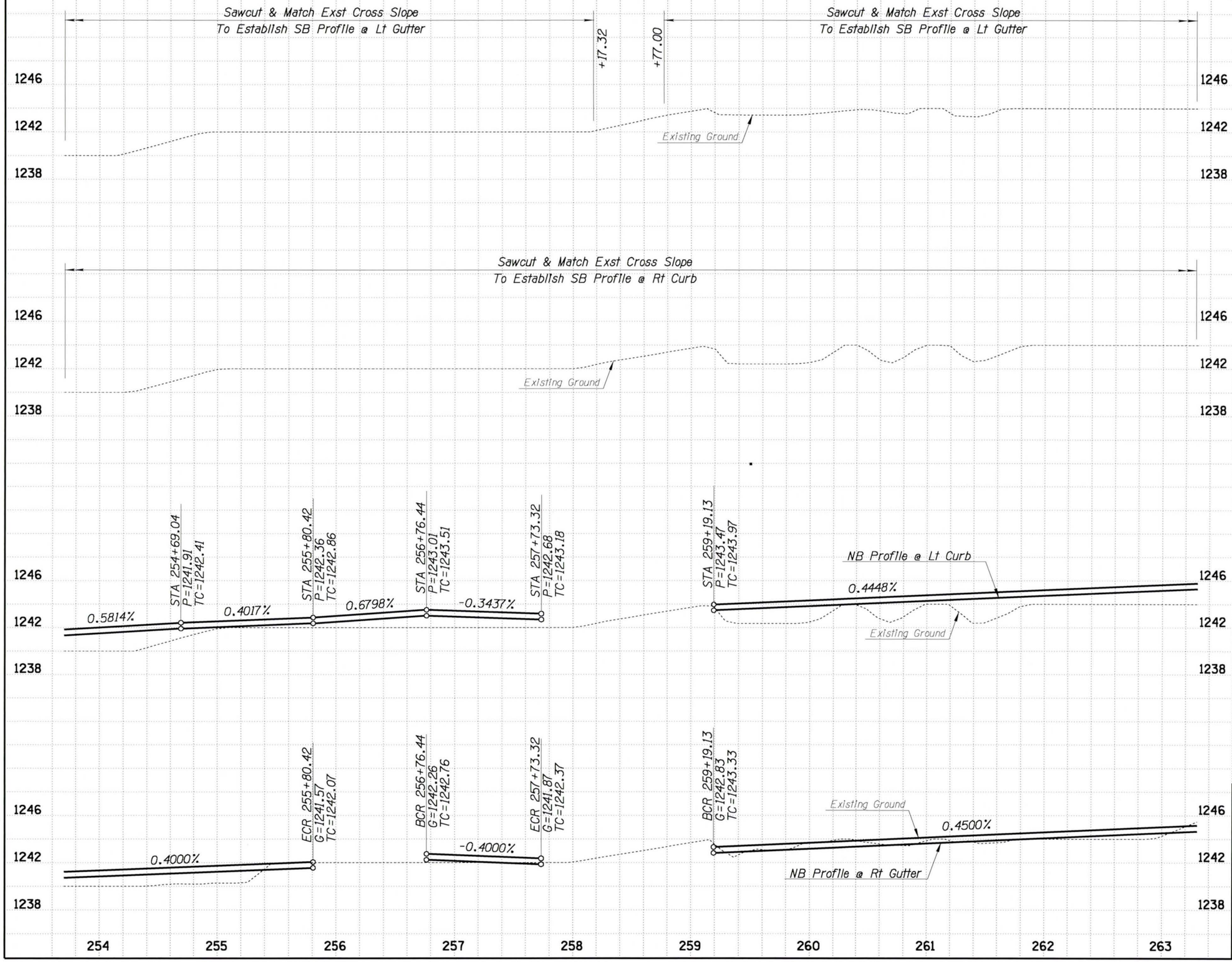
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE INDIAN COMMUNITY PIMA MARICOPA

SHEET TITLE: PROFILE SHEET
STA 253+70 TO STA 263+30

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		12
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:13
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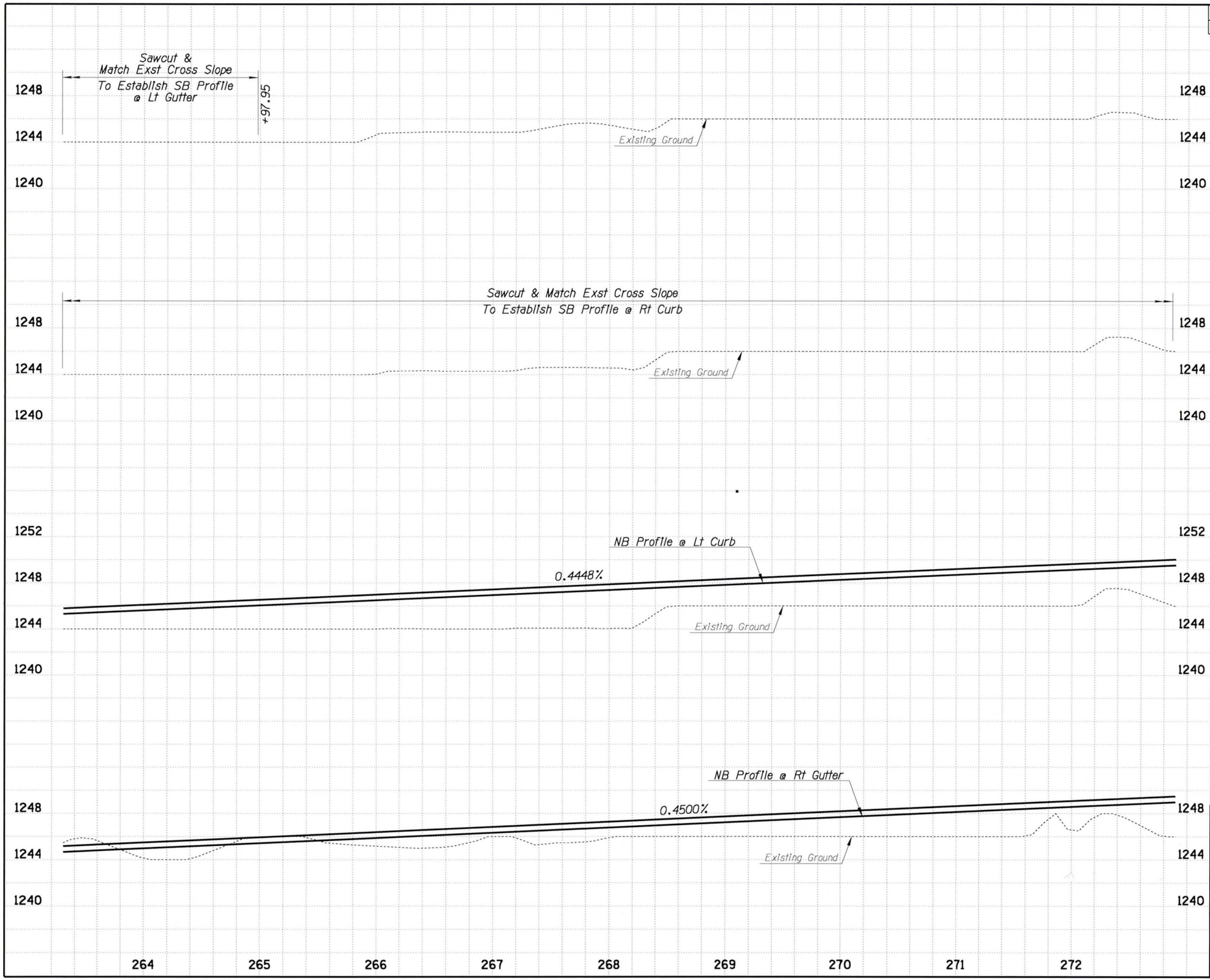
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PROFILE SHEET
STA 263+30 TO STA 272+90

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		13
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:15
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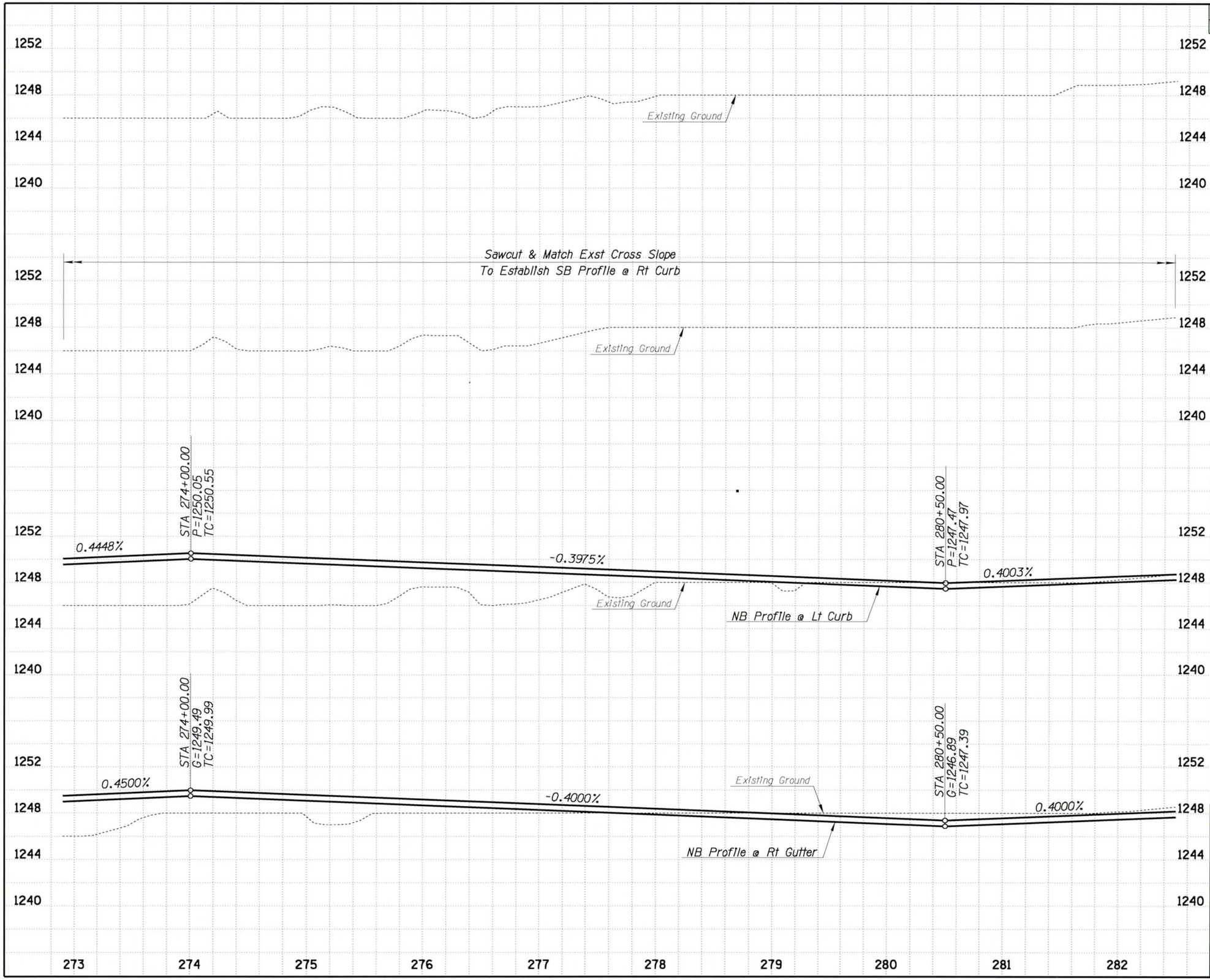
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PROFILE SHEET STA 272+90 TO STA 282+50

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		14
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:17
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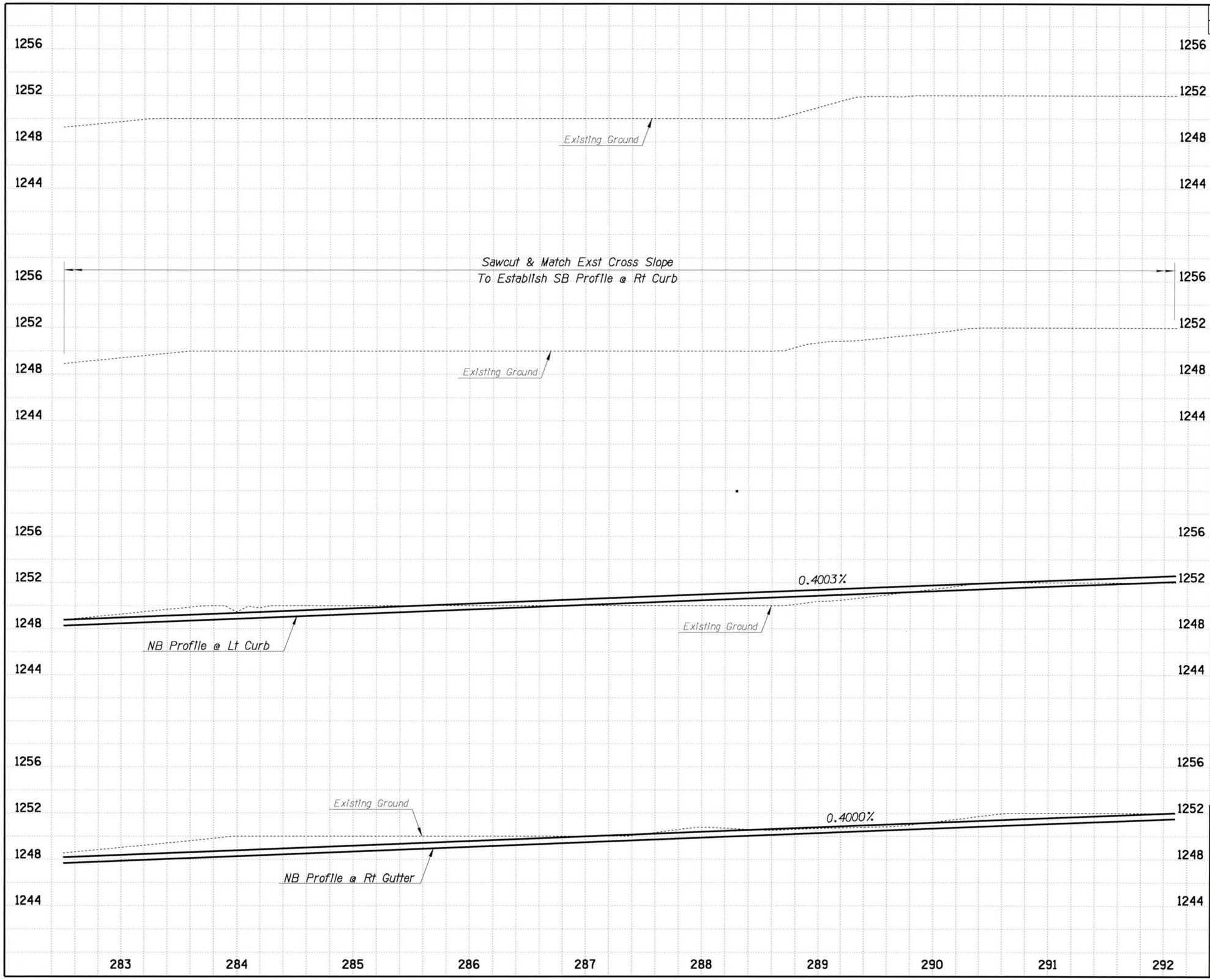
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE GILA RIVER INDIAN COMMUNITY PIMA MARICOPA INDIAN COMMUNITY

SHEET TITLE: PROFILE SHEET STA 282+50 TO STA 292+10

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		15
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009 20:18:18
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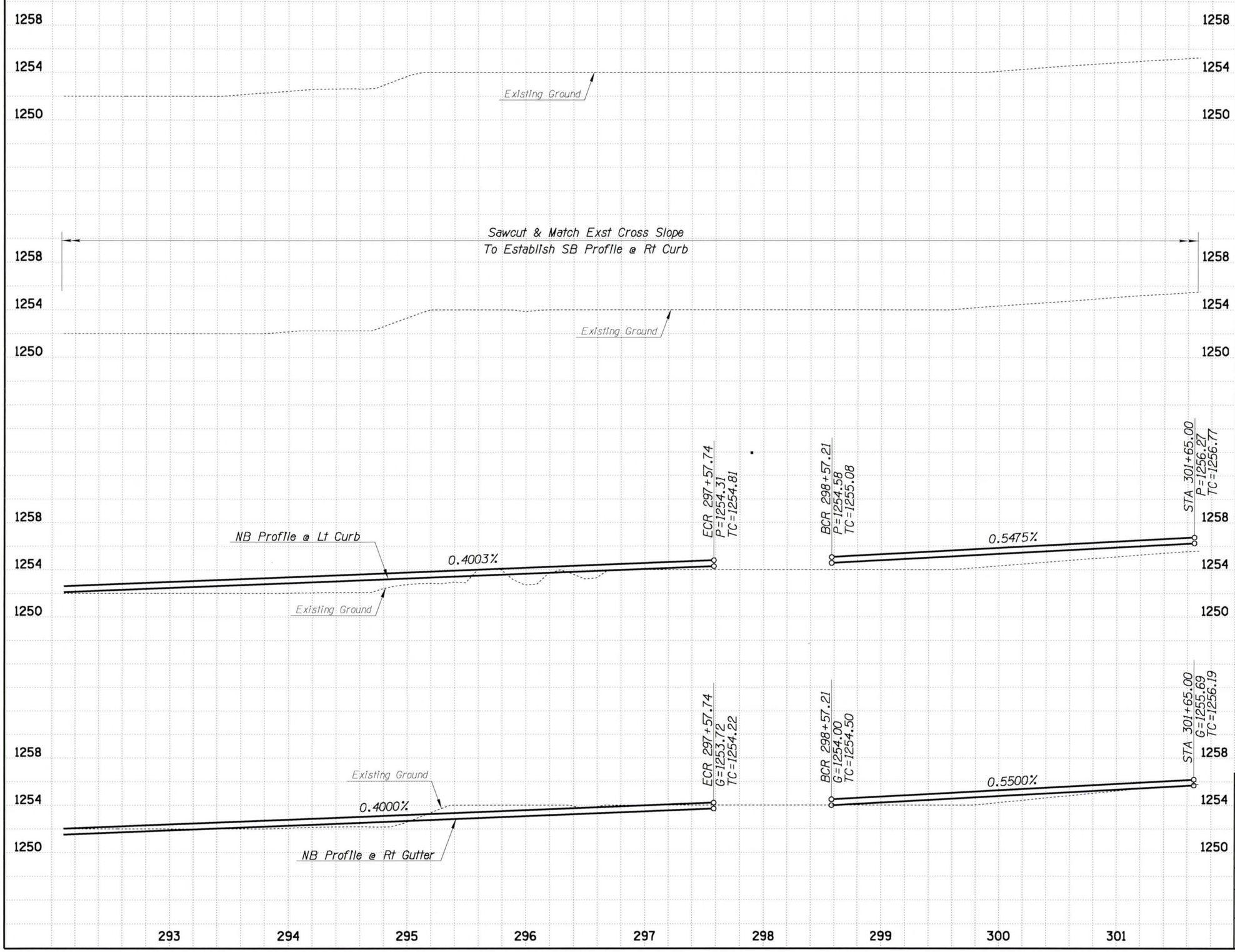
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE INDIAN COMMUNITY PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PROFILE SHEET STA 292+10 TO STA 301+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		16
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:20
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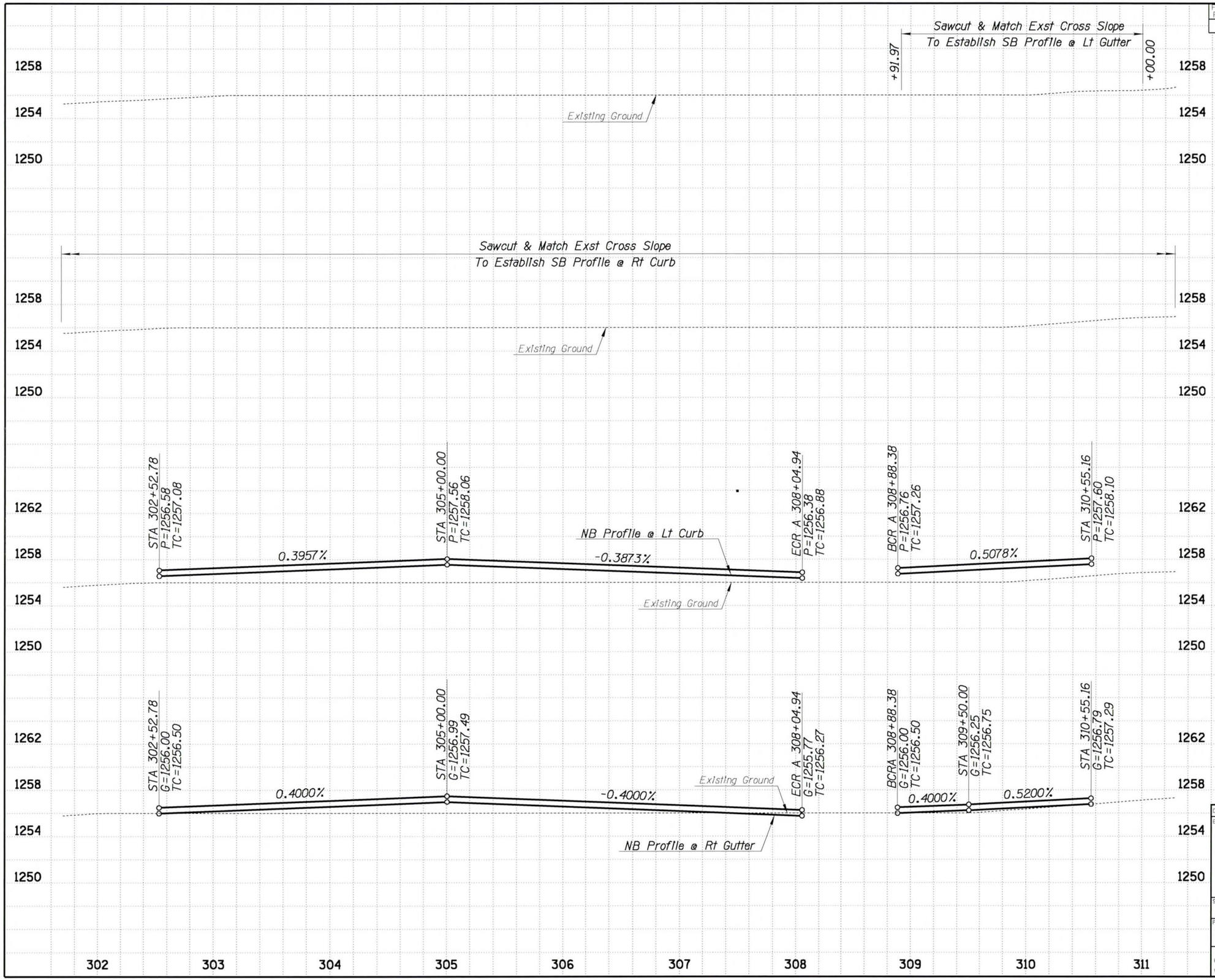
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE GILA RIVER INDIAN COMMUNITY PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PROFILE SHEET
STA 301+70 TO STA 311+30

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		17
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009 20:18:22
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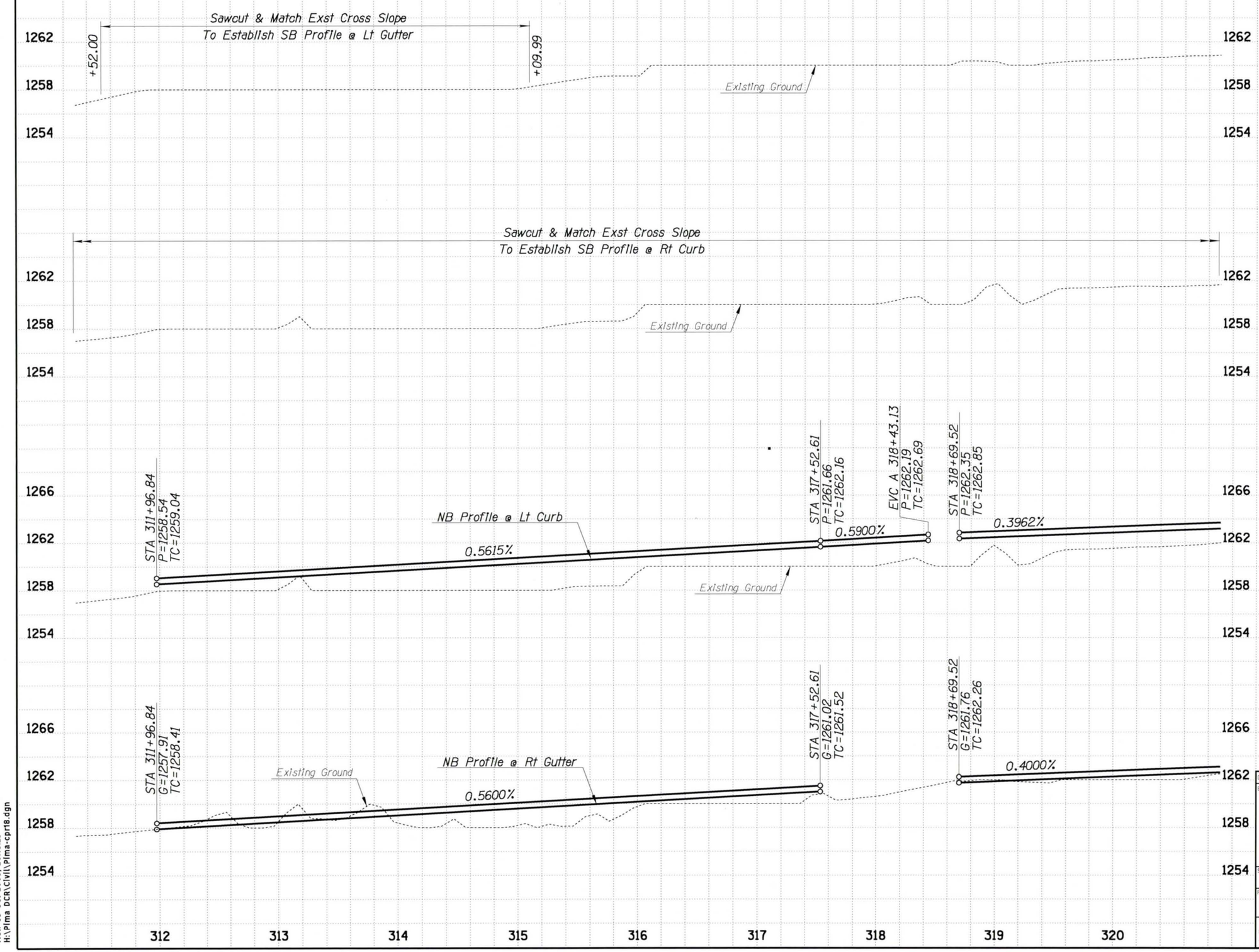
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PROFILE SHEET
STA 311+30 TO STA 320+90

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		18
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:23
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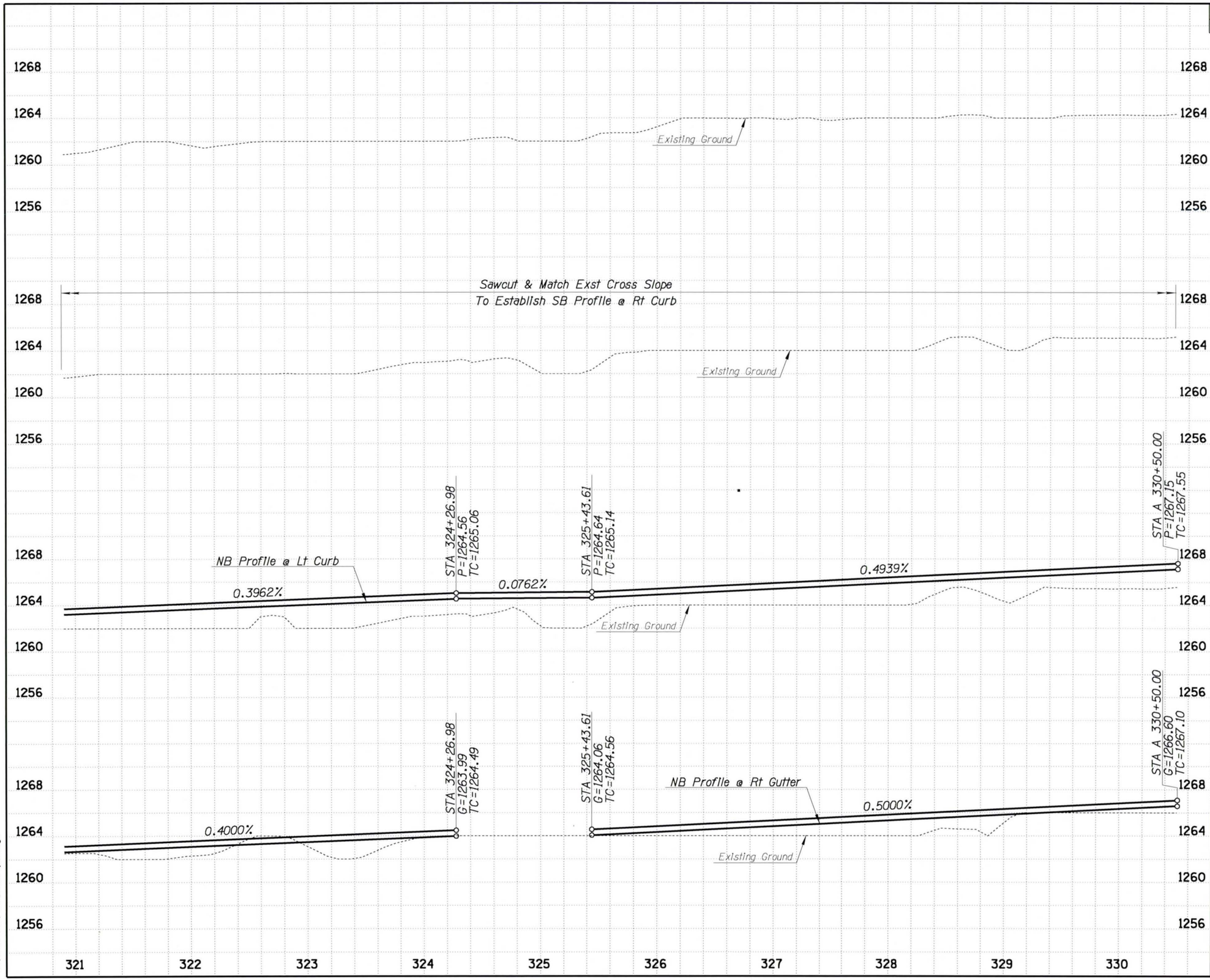
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PROFILE SHEET STA 320+90 TO STA 330+50

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		19
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:26
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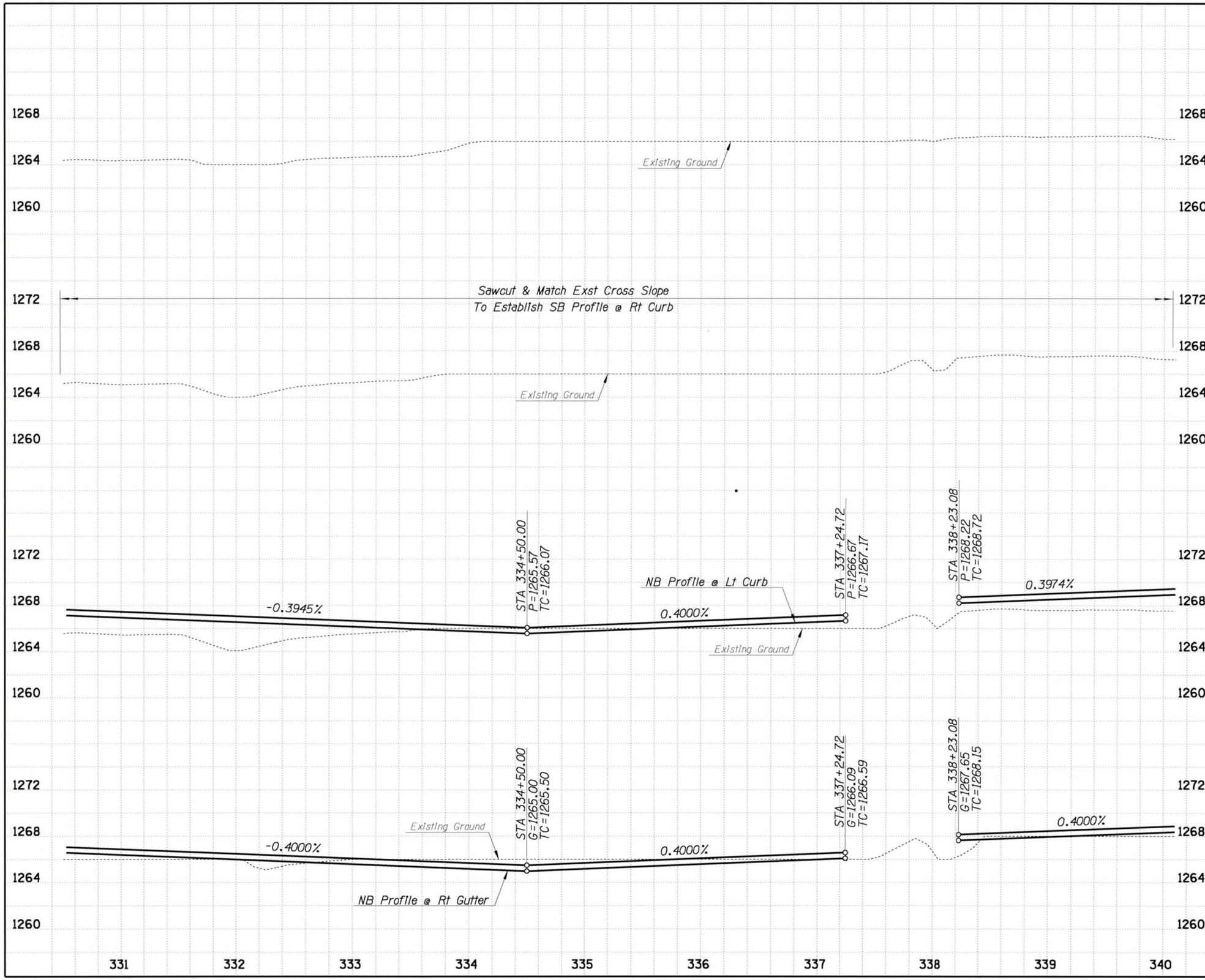
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PROFILE SHEET STA 330+50 TO STA 340+10

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		20
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:28
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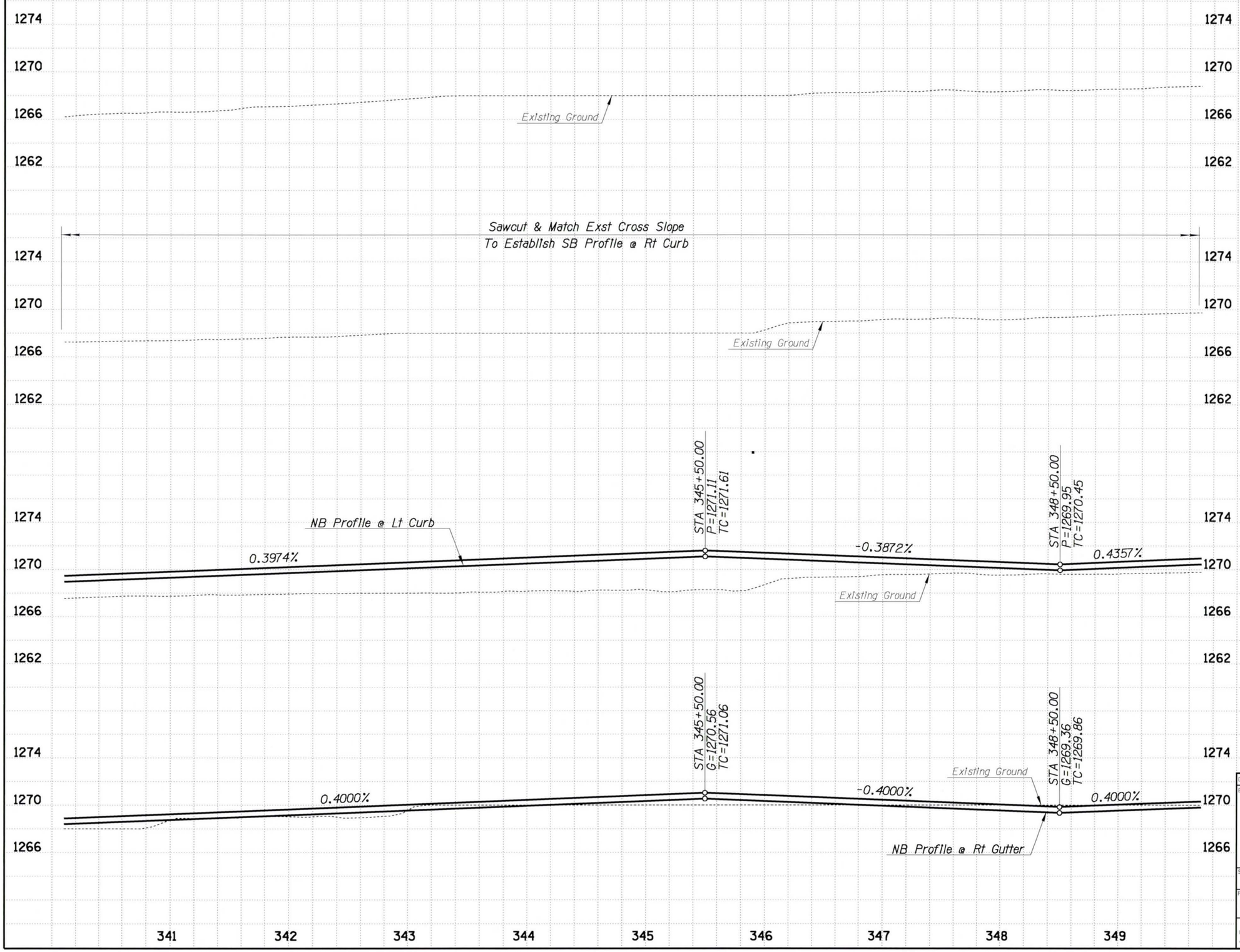
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE TERRITORY OF ARIZONA

SHEET TITLE: PROFILE SHEET STA 340+10 TO STA 349+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		21
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009 20:18:29
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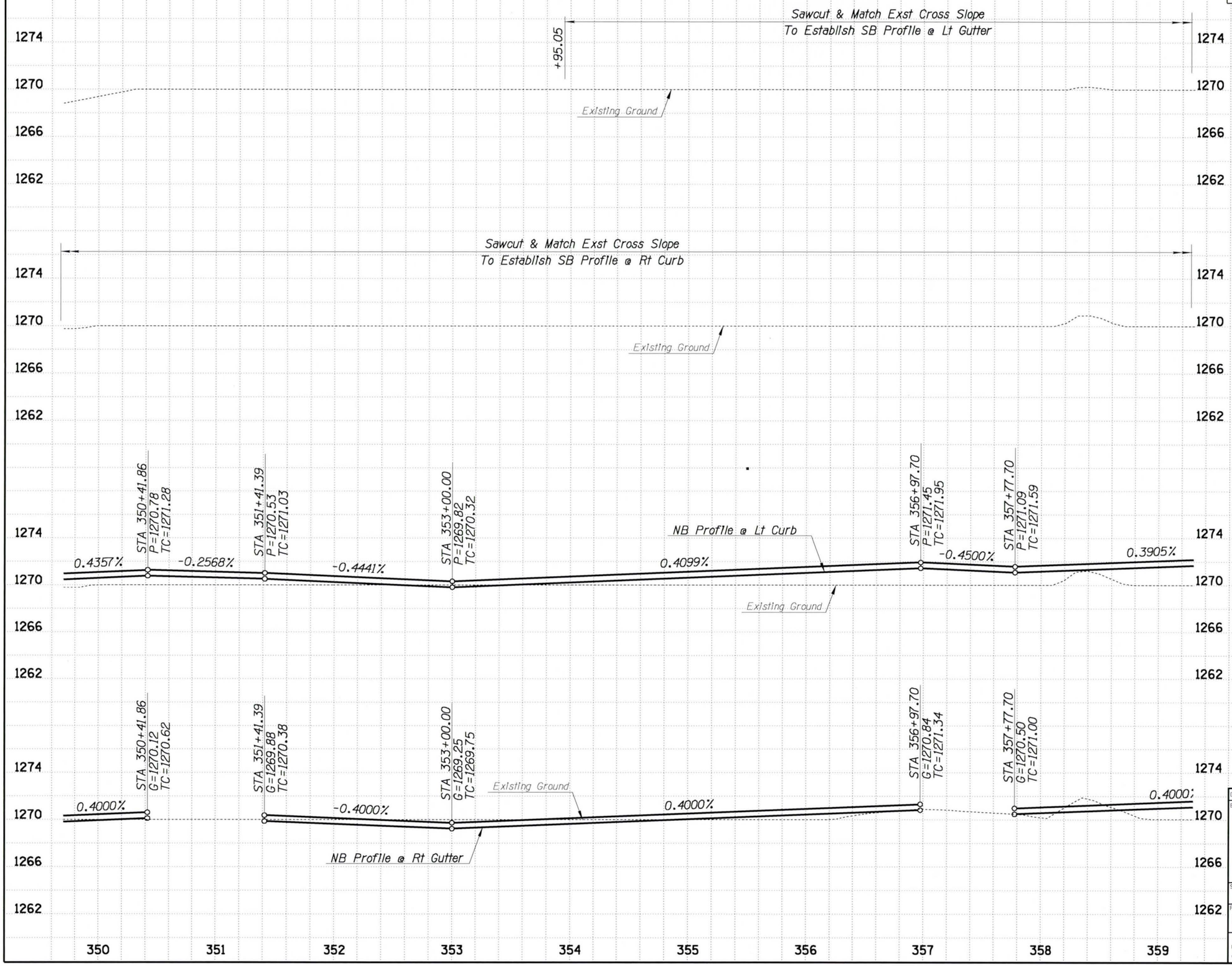
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE CITY OF PHOENIX

SHEET TITLE: PROFILE SHEET
STA 349+70 TO STA 359+30

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		22
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:31
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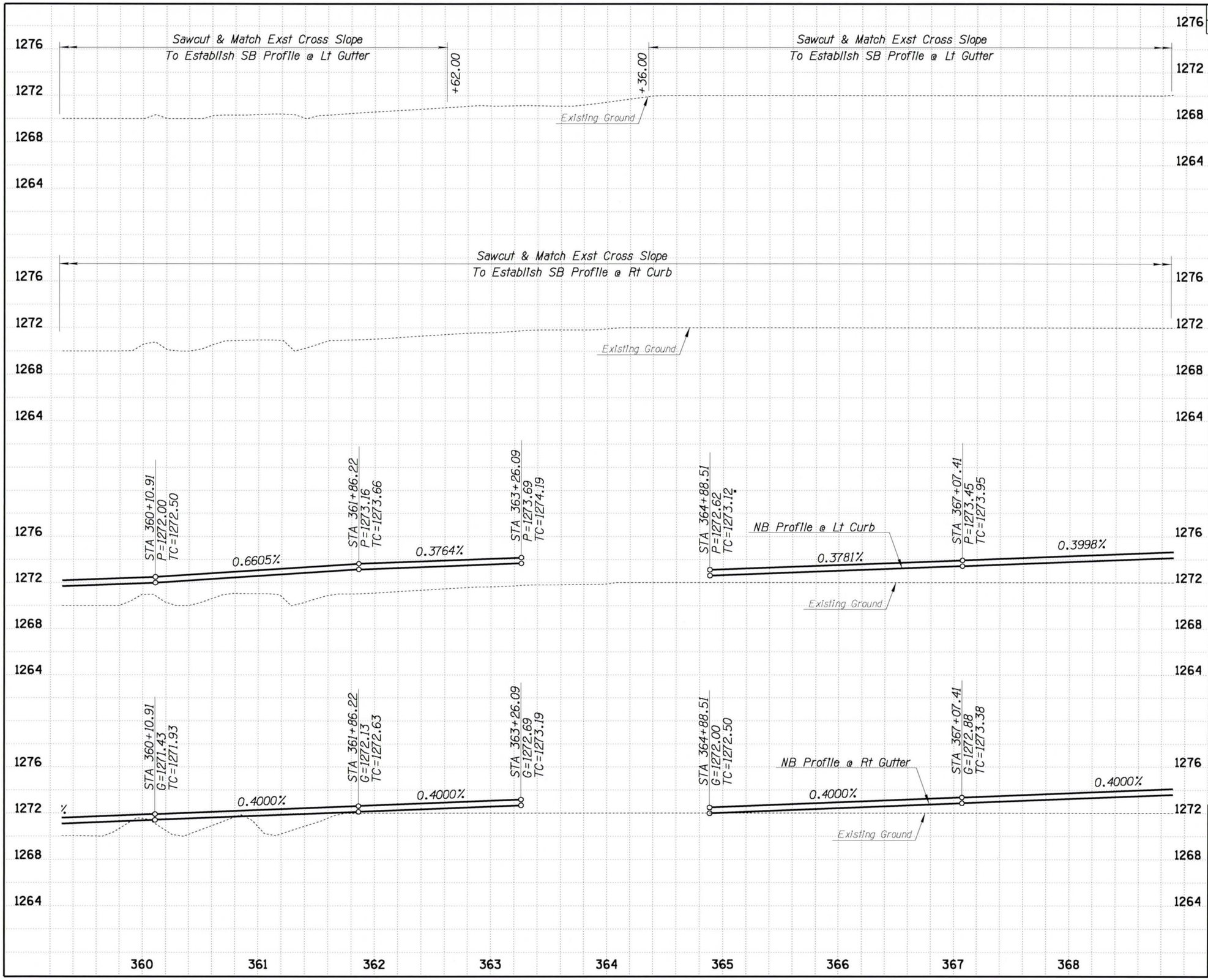
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE: PROFILE SHEET
STA 359+30 TO STA 368+90

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		23
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:33
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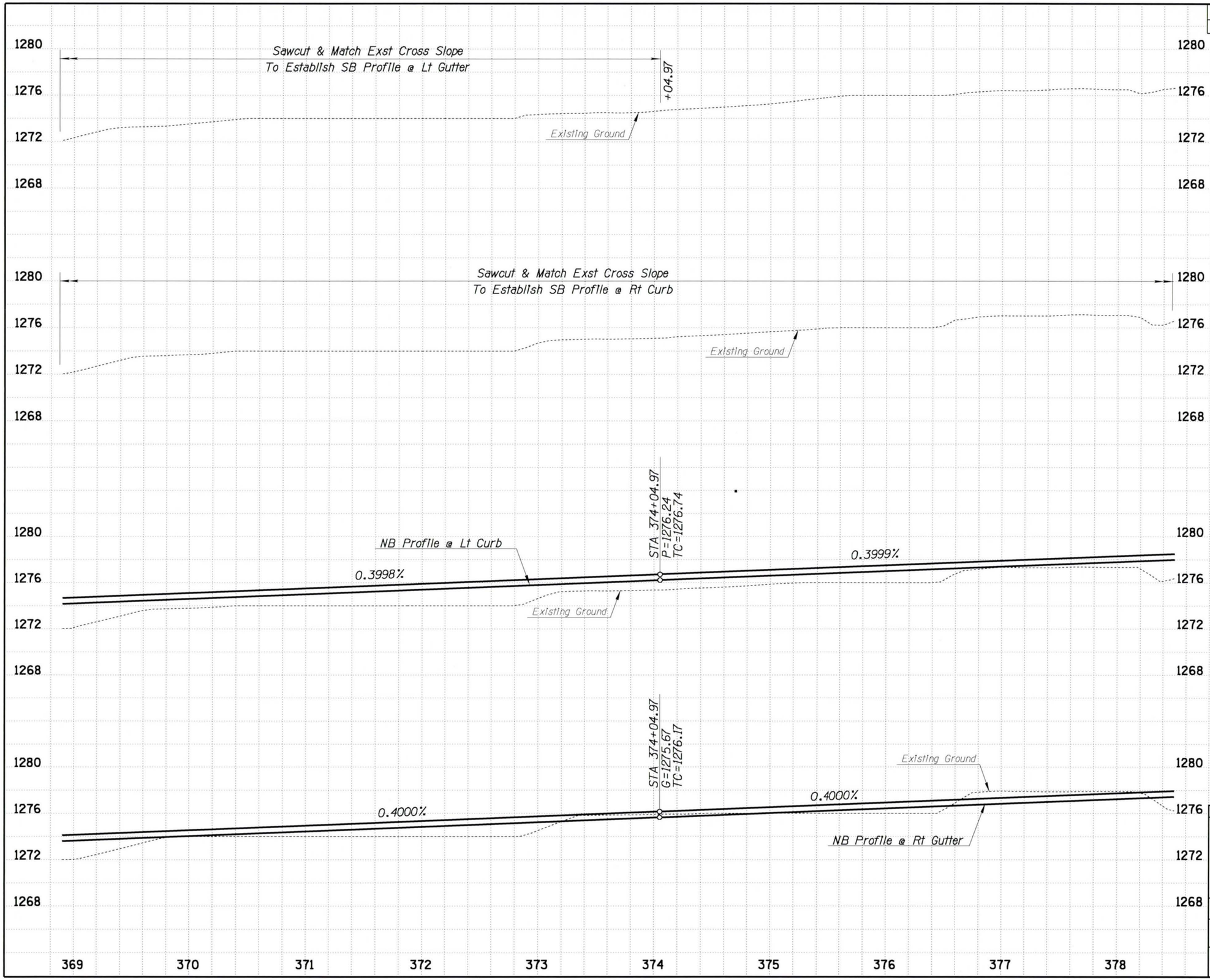
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE GILA RIVER INDIAN COMMUNITY

SHEET TITLE

PROFILE SHEET
STA 368+90 TO STA 378+50

PROJECT TITLE

PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		24
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

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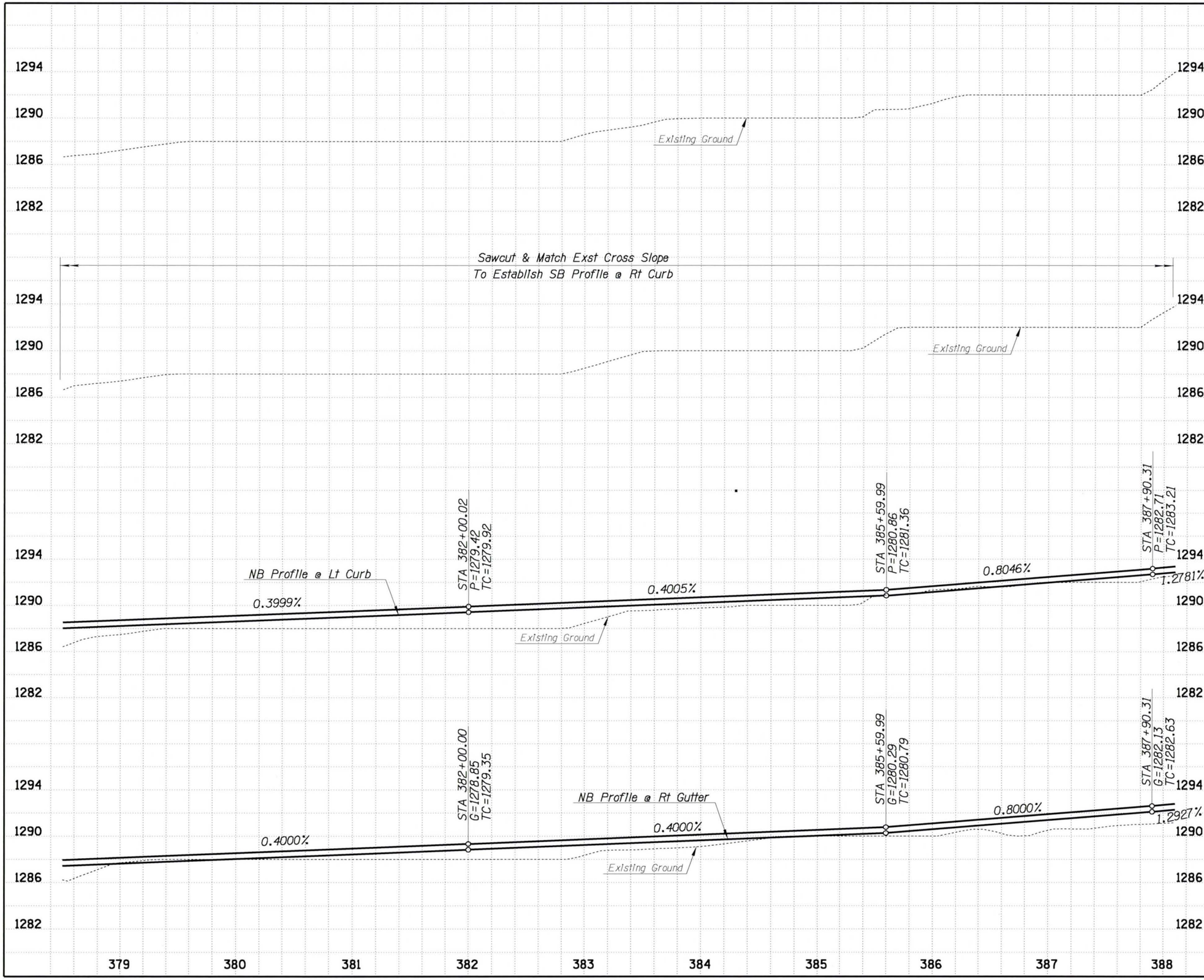
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE COMMUNITY PIMA-MARICOPA INDIAN COMMUNITY

SHEET TITLE: PROFILE SHEET
STA 378+50 TO STA 388+10

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		25
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009 20:18:36
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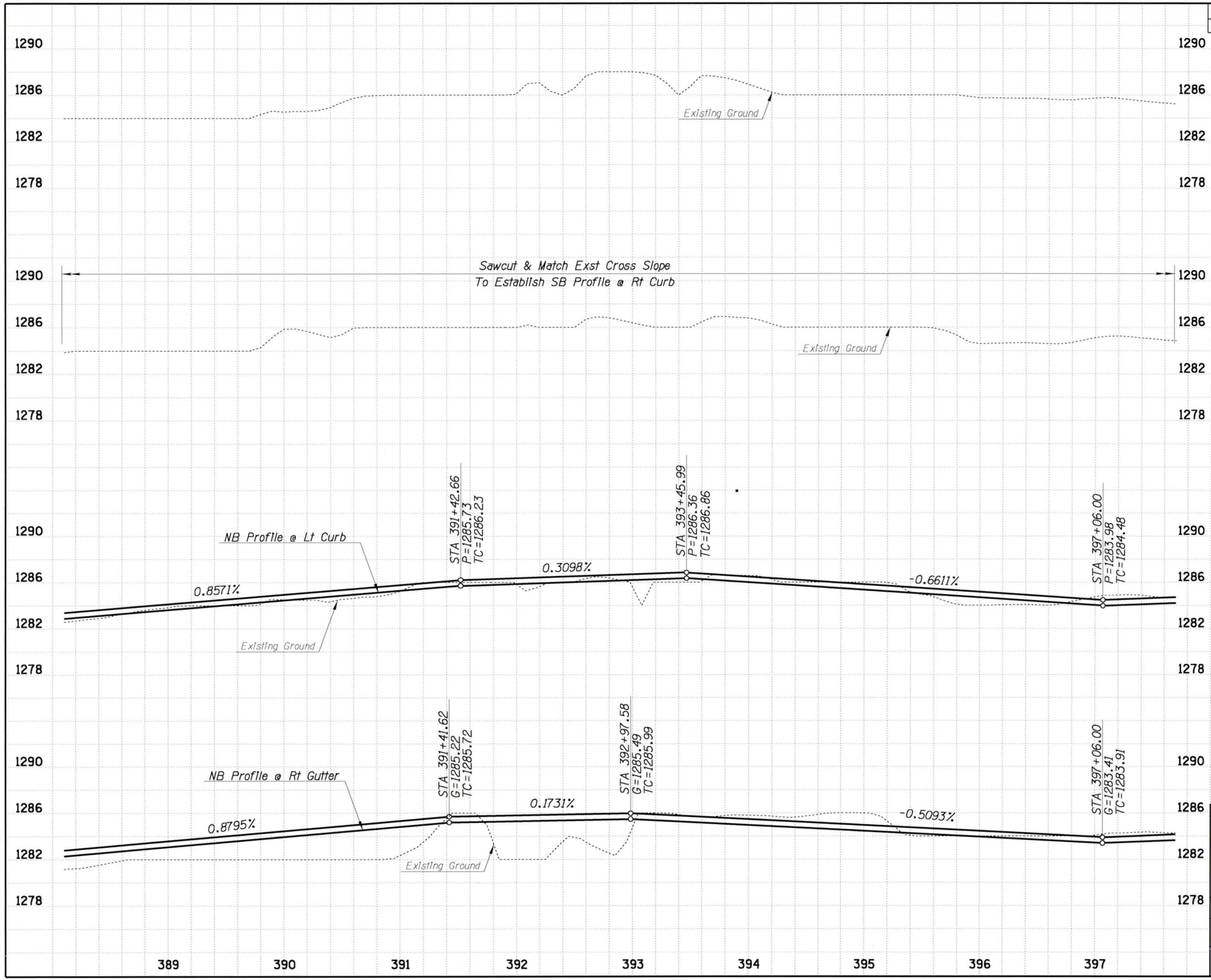
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE UNITED STATES

SHEET TITLE: PROFILE SHEET STA 388+10 TO STA 397+70

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		26
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:38
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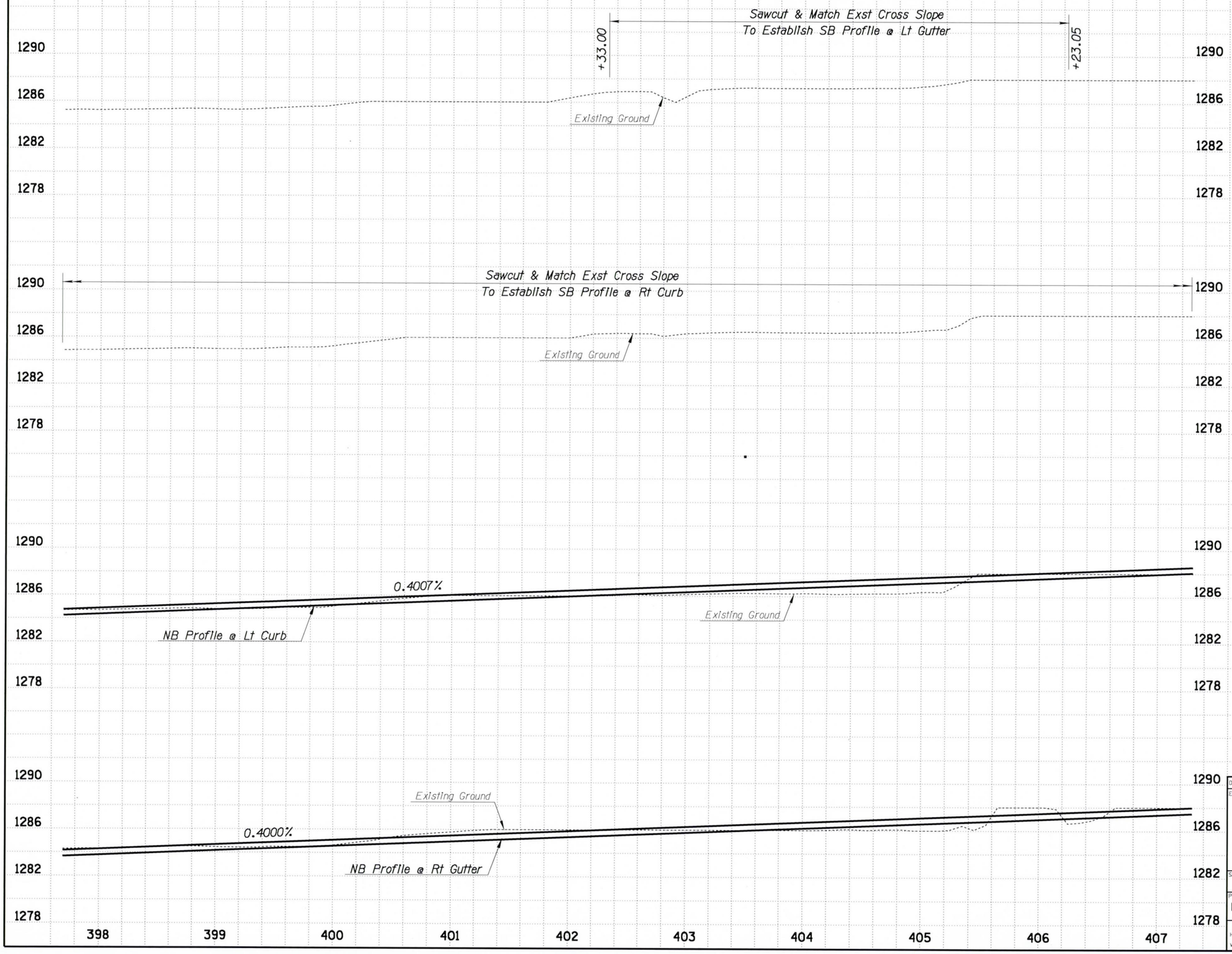
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE

PROFILE SHEET
STA 397+70 TO STA 407+30

PROJECT TITLE

PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		27
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

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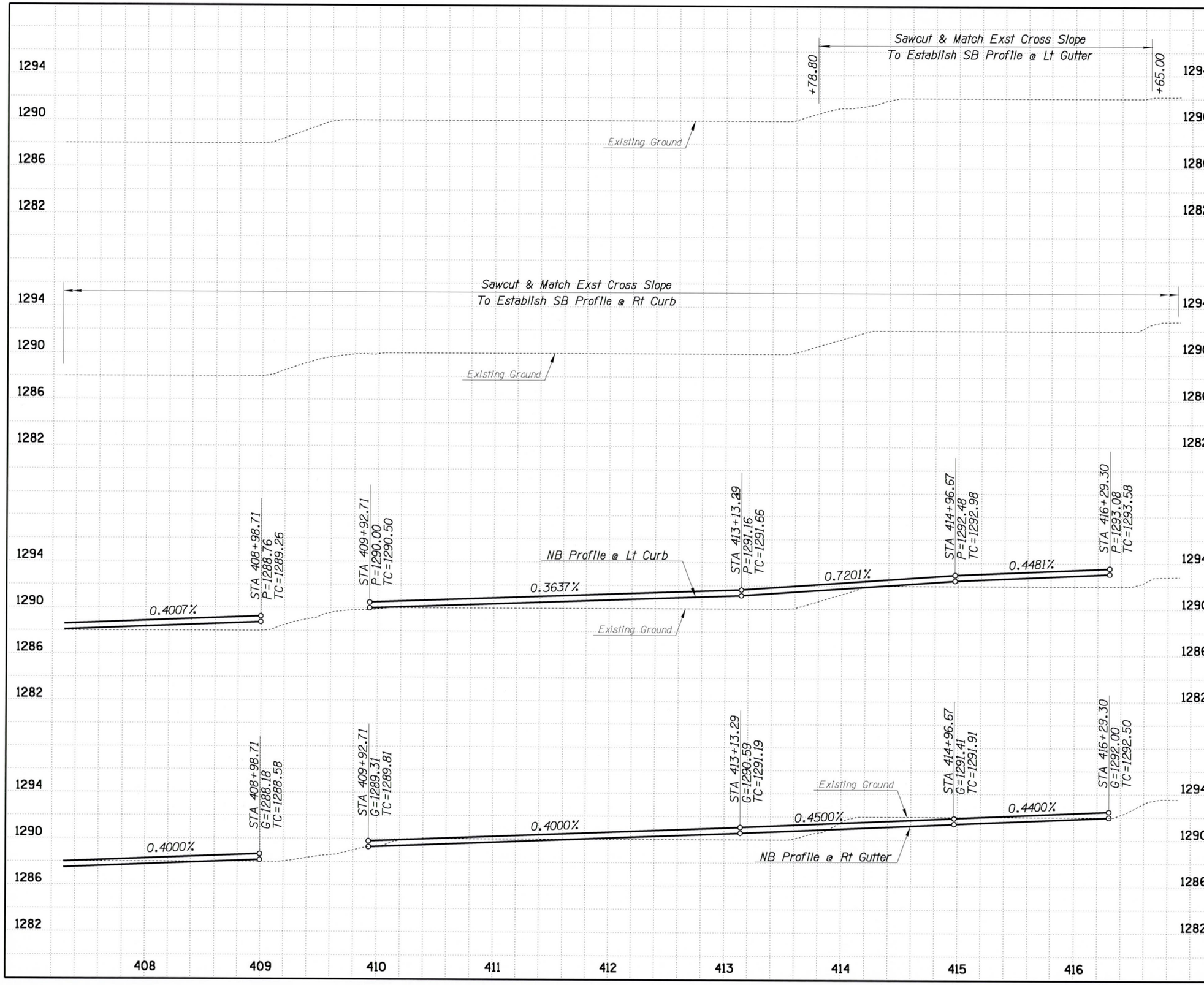
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



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DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE STATE OF ARIZONA

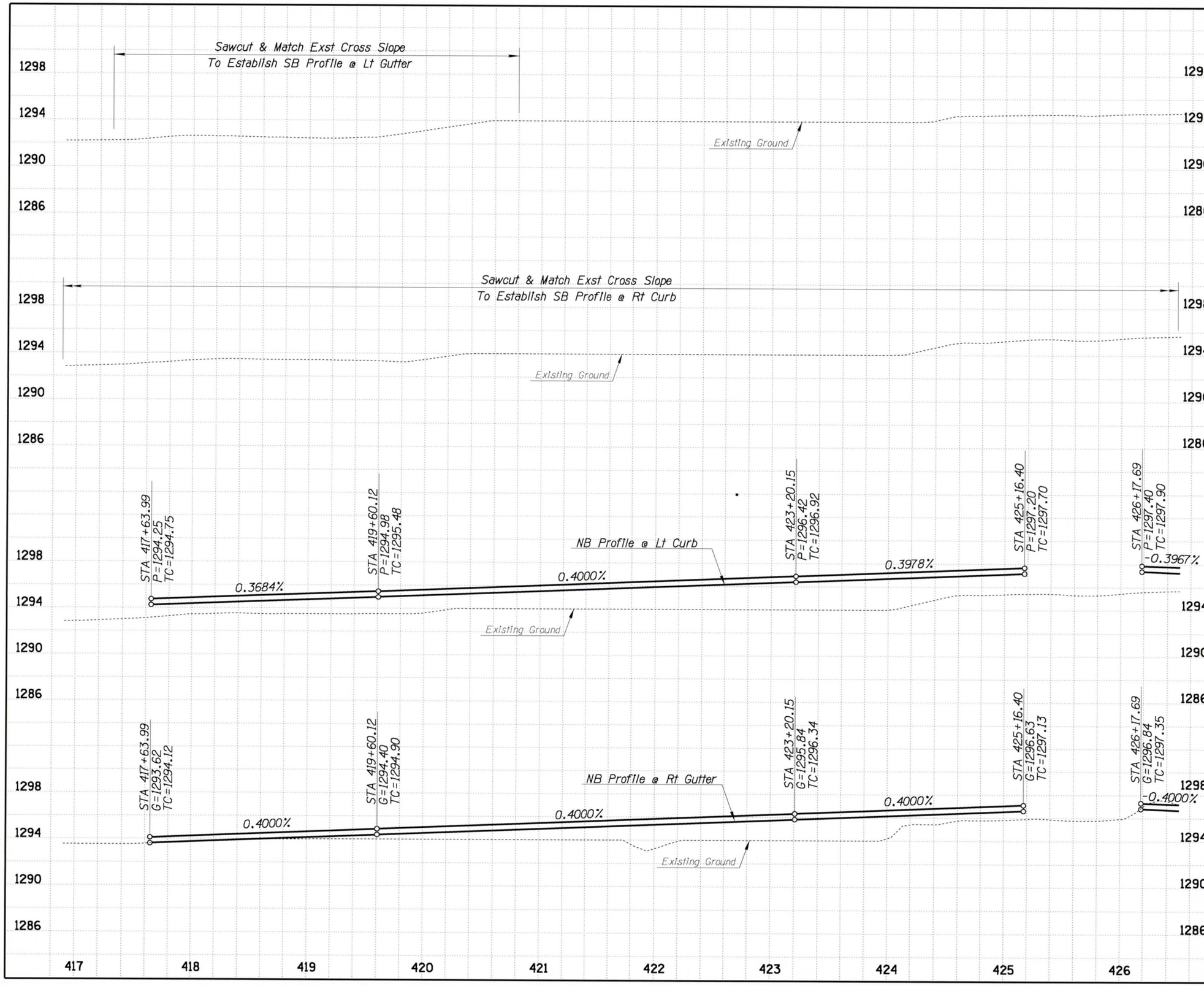
SHEET TITLE
PROFILE SHEET
STA 407+30 TO STA 416+90

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		28
VERT.	DRAWN C.P.C.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

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REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE TERRITORY OF ARIZONA

SHEET TITLE: PROFILE SHEET
STA 416+90 TO STA 426+50

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		29
VERT.	DRAWN C.P.C.	AS-BUILT	PROJECT NO. H3344010	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:43
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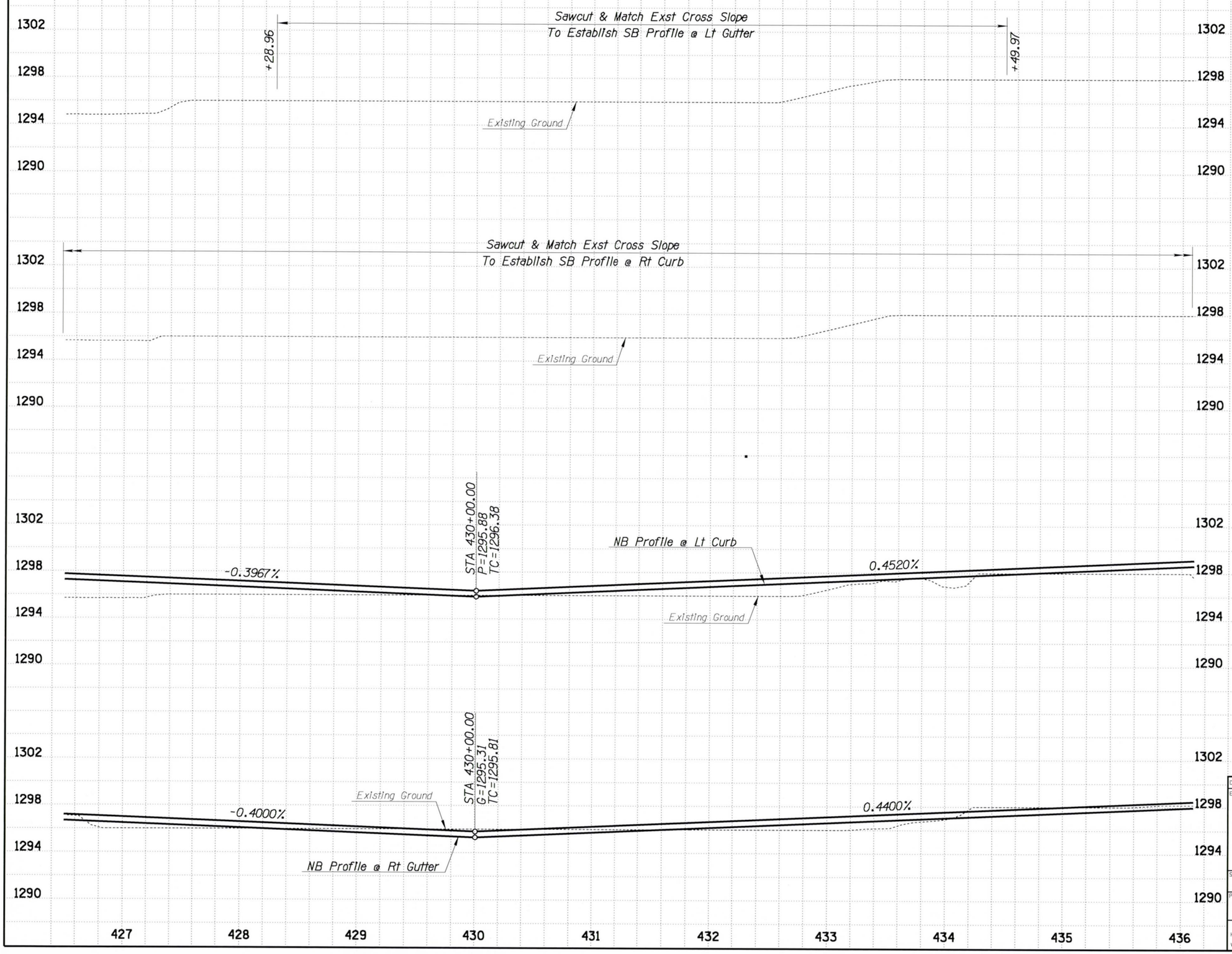
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



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DATE	REVISION	BY

ENGINEER

PRELIMINARY
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REVIEW
NOT FOR CONSTRUCTION OR RECORDING

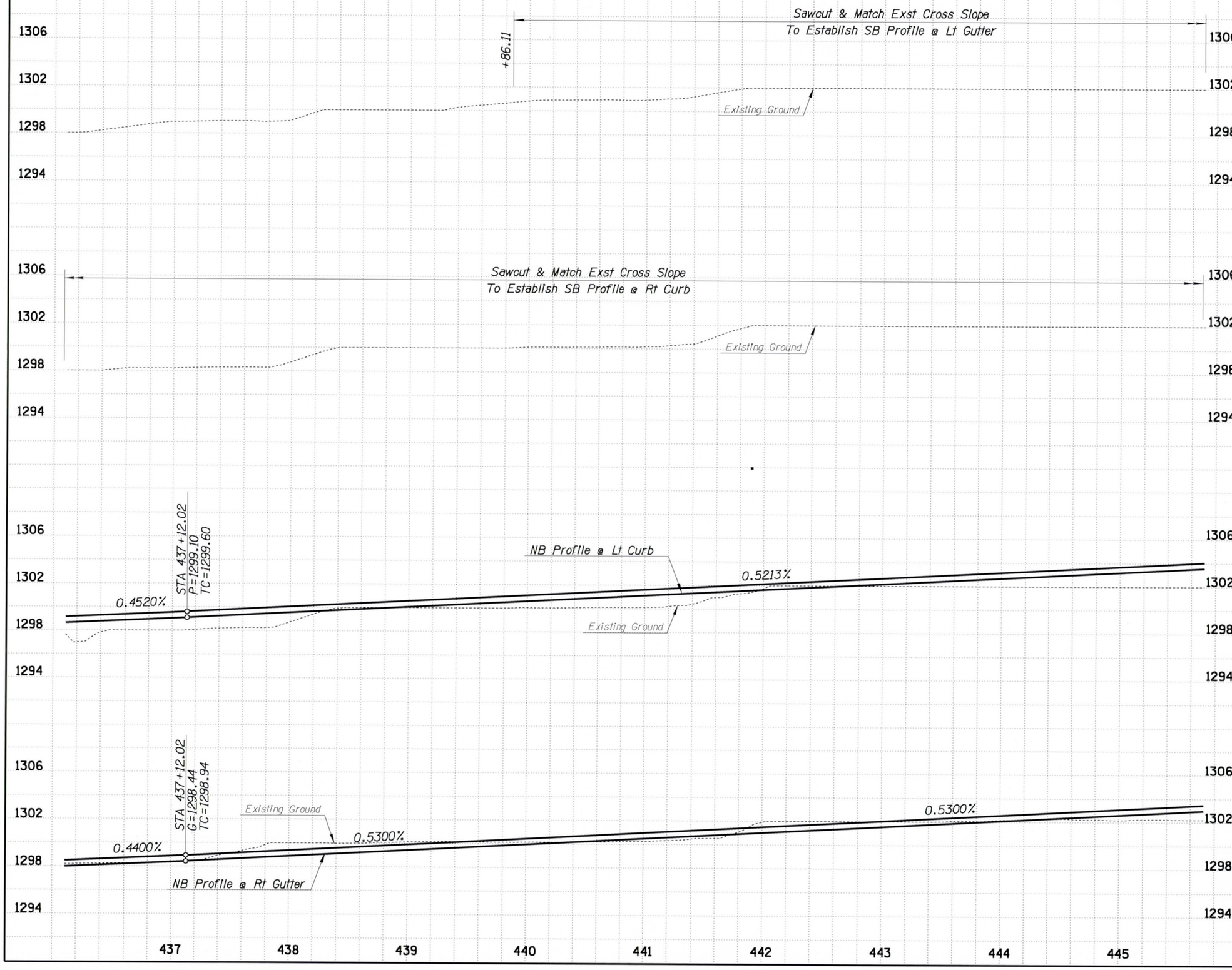
SHEET TITLE
PROFILE SHEET
STA 426+50 TO STA 436+10

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		30
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

SHEET TITLE

PROFILE SHEET
STA 436+10 TO STA 445+70

PROJECT TITLE

PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		31
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:46
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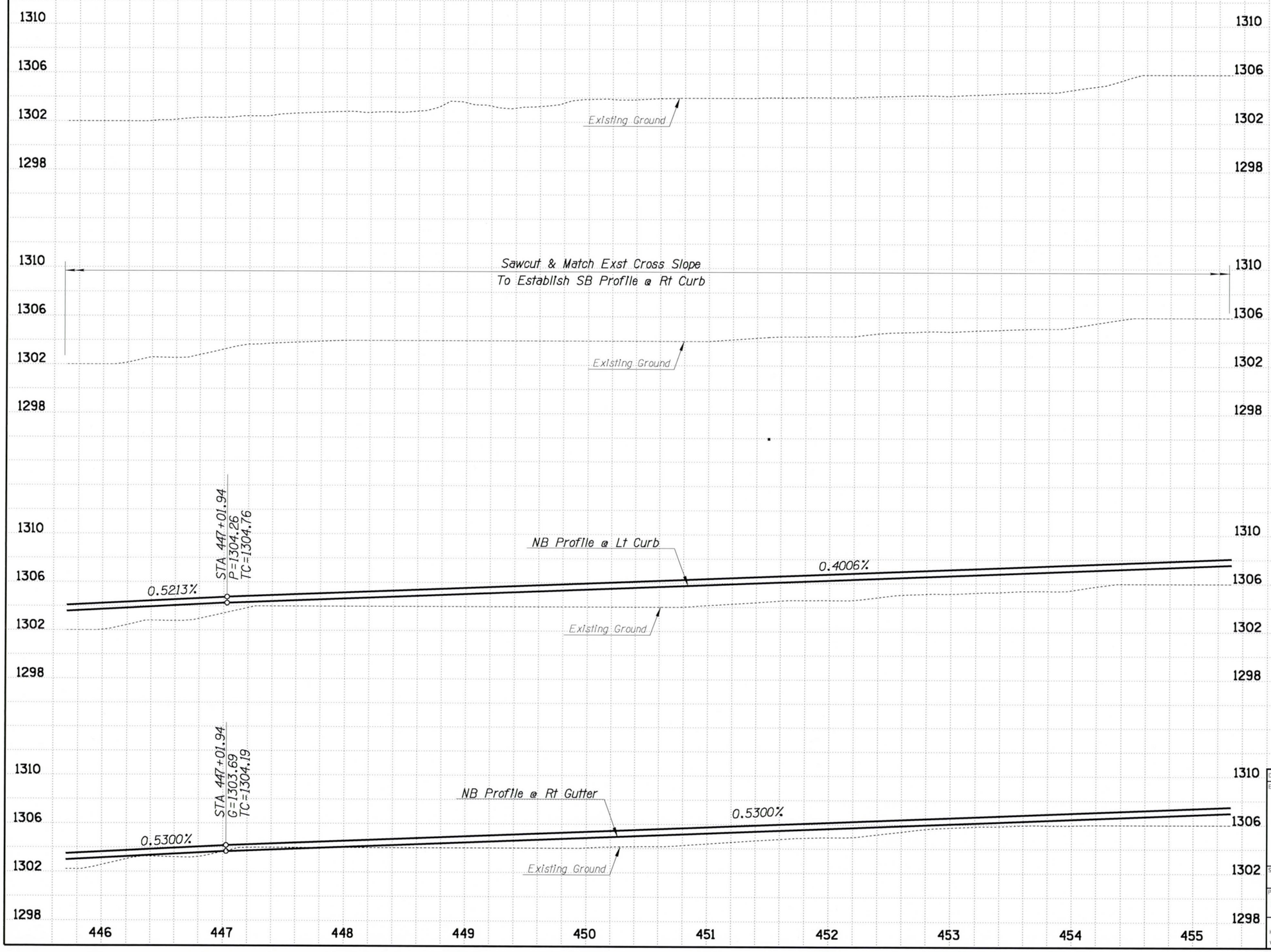
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



DATE	REVISION	BY

ENGINEER

PRELIMINARY

30%

REVIEW

NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE GILA RIVER PIMA-MARICOPA INDIAN COUNTRY

SHEET TITLE: PROFILE SHEET STA 445+70 TO STA 455+30

PROJECT TITLE: PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		32
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

Mon 05 Oct 2009, 20:18:48
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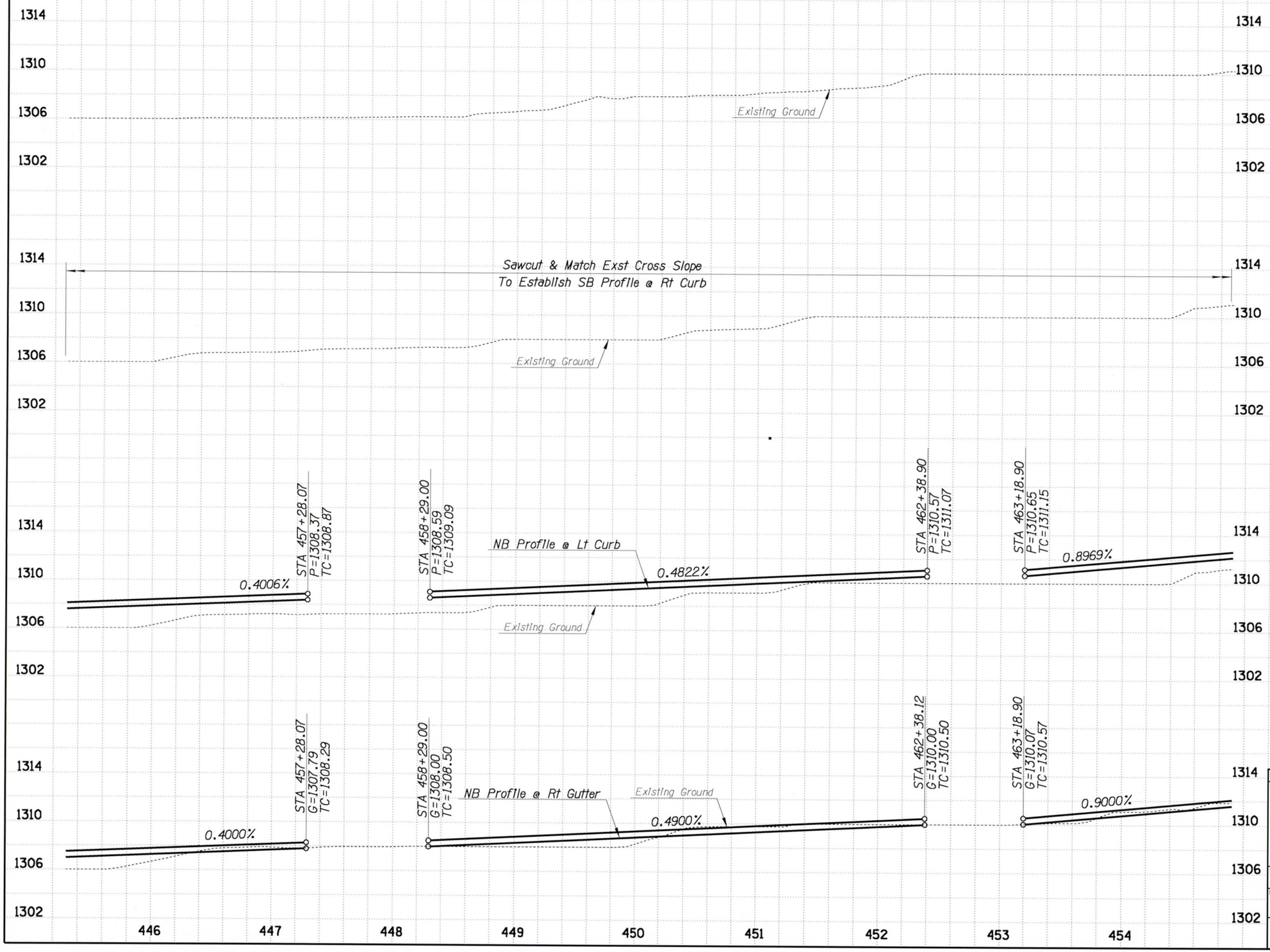
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	XXXXXX			



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DATE	REVISION	BY

ENGINEER PRELIMINARY

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REVIEW
NOT FOR CONSTRUCTION OR RECORDING

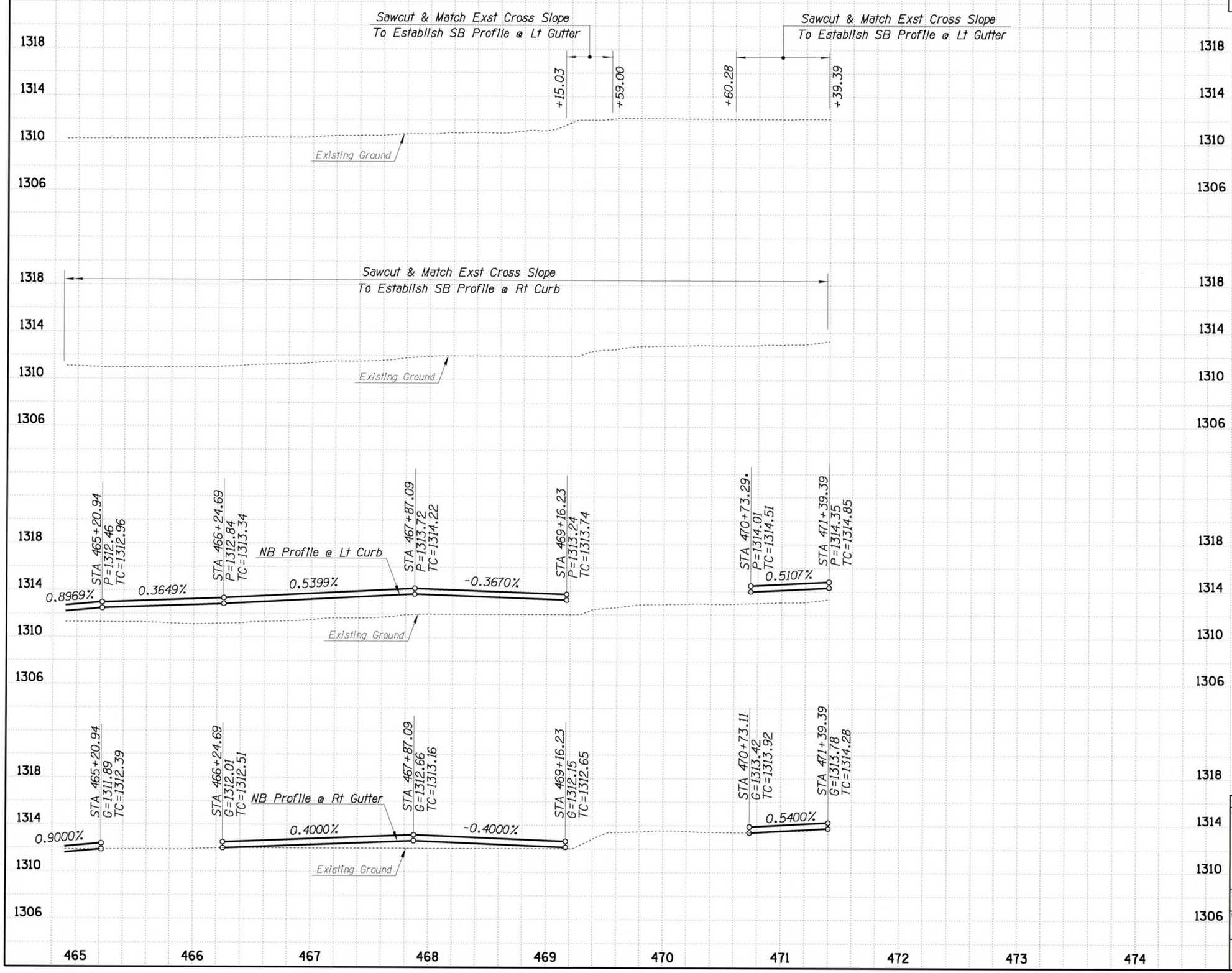
SHEET TITLE
PROFILE SHEET
STA 445+30 TO STA 464+90

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		33
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

TRACS NO.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	AZ	xxxxxx			



Mon 05 Oct 2009, 20:18:51
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DATE	REVISION	BY

ENGINEER

PRELIMINARY
30%
REVIEW
NOT FOR CONSTRUCTION OR RECORDING

CITY OF SCOTTSDALE ARIZONA

GREAT SEAL OF THE GILA RIVER INDIAN COMMUNITY

SHEET TITLE
PROFILE SHEET
STA 464+90 TO STA 474+50

PROJECT TITLE
PIMA ROAD-McDOWELL ROAD TO 90th STREET

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=40'	G. FLY	10/09		34
VERT.	DRAWN C.P.G.	AS-BUILT	PROJECT NO. H334401D	OF 34

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