Prepared for:

ADOT
ARIZONA DEPARTMENT OF TRANSPORTATION

205 South 17th Avenue
Phoenix, Arizona 85007

FHWA

RTA
Regional Transportation Authority

Initial Design Concept Report

October 2019

Interstate 10: Junction Interstate 19 to Kolb Road

Tucson – Benson Highway

State Route 210: Golf Links Road to I-10

Barraza – Aviation Parkway

Federal No.: 010-E(210)S
Project No.: 010 PM 260 H7825 01 L
Southcentral District – Pima County

Prepared by:

JACOBS®

101 North 1st Avenue, Suite 2600
Phoenix, Arizona 85003

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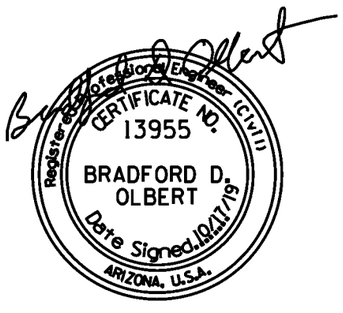

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EXECUTIVE SUMMARY

Introduction

The Arizona Department of Transportation (ADOT), the Federal Highway Administration (FHWA), the City of Tucson, and Pima County understood that a significant amount of future growth in population around the Tucson area would take place to the south and southeast of Tucson. Interstate 10 (I-10) cuts diagonally across this growth area and would be impacted by the future growth. East of the System Interchange with I-19, I-10 was constructed in the 1960's as a rural interstate highway with rural design criteria and typically with just two lanes of traffic in each direction. While a third lane in each direction from I-19 to west of Kino Parkway was added around 1990, the remainder of the I-10 corridor is virtually unchanged.

ADOT and FHWA commissioned the preparation of a two-phased study to define and evaluate future safety and capacity improvements to I-10 from the Junction with I-19 to the Junction with SR 83. The study also included the extension of the Barraza-Aviation Parkway (SR 210) from Golf Links Road to a connection with I-10 at a location to be determined.

The first phase of this study was a Feasibility Study (FS) and an Environmental Overview (EO). In summary, the FS and EO evaluated several alternatives for improving I-10 and for extending SR 210 to I-10. The subsequent Feasibility Study Update Report (February 2015) recommended three alternatives to be evaluated further as a part of the second phase of the study; the development of a Design Concept Study (DCR) and an Environmental Assessment (EA). Due to future construction funding limitations prior to the 2040 design year, the limits of the DCR were revised to end at Kolb Road, which is designated as a future north-south parkway and is a logical point of termini along I-10. The number of recommended alternatives to be evaluated further in the second phase of the study was also reduced to two after further review by the stakeholders.

The study area is located in the ADOT Southcentral District within the City of Tucson, the City of South Tucson and Pima County.

Portions of ADOT Project No. 010 PM 260 H7825 01L; Federal No. 010-E(210)S have been programmed in the Pima Association of Governments (PAG) Regional Transportation Highway Program for Fiscal Year (FY) 202042023. The following projects are programmed.

- TIP ID 39.13; A programmed amount of $1,914,000 in FY 2021 using ASTP funds for Kino Parkway TI utility relocation and $4,000,000 using HURF26 funds for design. A programmed amount of $2,086,000 in FY 2022 using ASTP funds for Design.
- TIP ID 74.07; A programmed amount of $8,000,000 in FY 2022 using ASTP funds for the design of the Country Club Road TI.

I-10 is a full access controlled interstate freeway.

The functional classification of SR 210 is Urban Other Freeway. SR 210 is a divided multi-lane urban highway that parallels I-10 and is located approximately 1.75 miles northeast of I-10. SR 210 begins at Broadway Boulevard and ends just past South Palo Verde Road. From Broadway Boulevard through the intersection of Country Club Road, SR 210 has three-lanes in each direction. The roadway then narrows and continues with two-lanes in each direction to the end of SR 210. However, the roadway continues east and connects to Golf Links Road.

FHWA is serving as the lead federal agency and will provide input and oversight for the alternative's identification and evaluation process.

The following agencies were involved in developing the Feasibility Study, the Environmental Overview, the Design Concept Study and the Environmental Assessment: FHWA, Pima Association of Governments (PAG), Pima County, Pima County Sherriff's Department, Davis-Monthan Air Force Base (DMAFB), City of Tucson, City of South Tucson, US Customs & Border Protection (CBP), Sunnyside Unified School District, Tucson Airport Authority, Sun Tran, Arizona Game and Fish Department (AGFD), Arizona State Land Department (ASLD), the Regional Transportation Authority (RTA), the University of Arizona (UofA), and the Union Pacific Railroad (UPRR).

Purpose and Need

The Interstate Highway System was intended to relieve congestion, improve safety, and enhance the economy by facilitating the movement of people and goods throughout the nation. Increasing traffic volumes on I-10 in the vicinity of Tucson, Arizona have contributed to reduced operational effectiveness, particularly the segment of I-10 between I-19 and Kolb Road.

The traffic modeling and analysis accomplished for the Feasibility Study demonstrated that north-south traffic demands through the project area are constrained by limitations on north-south arterial corridors. The UPRR switching yard located parallel to SR 210, north of I-10 prohibits any north-south arterials between Kino Parkway and Alvernon Way. The Davis-Monthan Air Force Base (AFB) prohibits any north-south arterials between Alvernon Way and Kolb Road. Traffic along I-10 concentrates at certain TIs where major north-south arterials exist.

Expected future growth in the Tucson area will be to the south and southeast of the downtown area. Since I-10 cuts diagonally across this growth area, it is also expected that I-10will be the primary travel corridor for this growth.

East of the System Interchange with I-19, I-10 was constructed in the 1960's as a rural interstate highway with rural design criteria and typically with just two lanes of traffic in each direction. Several of the TIs are partial cloverleaf type interchanges that have short ramp weave distances that adversely impact traffic operational efficiency, especially as traffic volumes increase over time. Some of the interchanges are spaced closer together than the recommended minimum of one mile, thus contributing to reduced operational efficiency.

In summary, the small number of north-south arterials, the diagonal alignment of I-10, and the projected growth pattern in Tucson contribute to an increase in local traffic using the Interstate Highway for short local trips. The numerous access points on I-10 and the old 1960's design present additional performance issues. These limitations further slow travel on the I-10 mainline and lead to more conflict between local and regional traffic. This is confirmed by the steady increase in crashes. Conflicting interaction between local and regional/interstate traffic has led to a reduction in the capacity of I-10 to accommodate through (regional) travel. Expected growth in both regional and local traffic on I-10 will further reduce the capacity of I-10.

SR 210 in the City of Tucson, Arizona, was built as an urban highway subsequent to the construction of I-10. SR 210 is approximately 3.4-miles long and is oriented in a northwest to southeast direction, extending southeast from West Broadway Boulevard at North 1st Avenue, with intersections at Kino Parkway, East 22nd Street, South Country Club Road, East 34th Street, Richie Road, and Dodge Boulevard, before terminating at Alvernon Way / Golf Links Road.

SR 210 is intended to provide motorists with an alternate route into Tucson's downtown business district from points east and south of downtown.

The use of SR 210 as a business spur is limited by the fact that motorists on westbound I-10 desiring to access downtown Tucson via SR 210 must currently use city arterials to get from I-10 to SR 210. The additional trips on the city arterials tend to exceed the capacity of the local roadway network, which causes motorists to stay on I-10. Commercial and

commuter traffic heading into downtown Tucson also use I-10 and add to peak hour congestion, causing increased volume and stress to the operation of the interstate highway. As is, the limited capacity and limited access for local trips prevents the existing roadway network in the study area from functioning as primarily intended.

Since I-10 runs parallel to SR 210 approximately 1.75 miles south of SR 210, connecting SR 210 and I-10 would facilitate the intended use of SR 210 as a business spur. It would provide westbound local traffic with an attractive alternative to using I-10 for accessing downtown Tucson and would allow the interstate route to better serve through-traffic.

For SR 210 traffic to increase to a level nearer capacity, local traffic currently using I-10 would require improved access via an extension of SR 210 to the south and east, likely connecting to I-10 somewhere between the existing Alvernon Way TI and the Rita Road TI south of DMAFB. This connection would allow SR 210 to become a viable alternative to I-10 for local traffic to and from the business, university and cultural districts in the downtown Tucson area.

The purpose of the proposed improvement to I-10 and the extension of SR 210 to a direct connection with I-10 is to address deficiencies in the interstate highway system and provide motorists with an alternate route into Tucson's downtown business district. The improvements to I-10 and the extension of SR 210 will provide satisfactory service levels on both I-10 and SR 210 through the 2040 design year.

Traffic Data

An Initial Traffic Report and Addendum were prepared for the Feasibility Study and Update that identified and evaluated the design year 2040 transportation needs for I-10 from I-19 east to SR 90 in Cochise County, and for the extension of SR 210 to connect with I-10. It used 2045 forecasted regional growth from the Pima Association of Governments (PAG) to identify study area travel demand for the 2040 Design Year. The report and addendum are the basis for an accompanying traffic report that supplements this Initial DCR.

The Traffic Report assessed the existing and forecasted traffic demand, using the 2014 PAG Travel Demand Model, to evaluate the current and potential corridor alternative improvements to address transportation deficiencies, reduced mobility, and bottleneck locations. The adopted 2015 PAG Travel Demand Model was obtained and reviewed for the consistency of the traffic projections to verify that no significant changes occurred in the study area.

The study limits for the traffic operational analysis included I-10 from I-19 to MP 272.3 east of Kolb Road, and SR 210 from 34th Street to Alvernon Way. The study area included freeway mainline, ramps, arterials, traffic interchange intersections, and intersections adjacent to the interchange that are directly affected by the interchange operations.

Traffic Operational Analysis

An Initial Traffic Operational Analysis was conducted as part of the Feasibility Study and Update. An updated traffic operational analysis was conducted as part of the Design Concept Study. It evaluated the effectiveness of the existing roadway system and to evaluate the improvement alternatives developed to address future traffic volumes as projected by the 2040 PAG Travel Demand Model.

The regional traffic modeling provided a macroscopic analysis of the potential improvement alternatives and provided information on the general number of lanes and general concept of the interchanges for future conditions. The traffic operational analysis evaluated the peak hour traffic volumes obtained from the regional modeling efforts, at a 'microscopic level', to refine and ensure that the improvement alternatives are operationally feasible. This is an iterative process and takes into account existing and future roadway characteristics, traffic volumes, traffic control measures, and access spacing.

The methodology involved in the operational analysis included the following:

- 'Spot Checks' were conducted on mainline freeway segments and merge/diverge areas, for the proposed improvement alternatives, per the Highway Capacity Manual (HCM) using the Highway Capacity Software (HCS).
- The optimal configuration and operation of the traffic interchange intersections and adjacent arterial intersections were evaluated using the Synchro/Sim Traffic software.
- The AM and PM peak-hour operations of the roadway network system within the study area were modeled using the *VISSIM* microsimulation software and included:
  - I-10: mainline, merge/weave areas, ramps, ramp junctions with cross streets, traffic interchange intersections and adjacent intersections directly impacted by the interchange operations.
  - SR 210 (Barraza-Aviation Parkway): arterial, signalized and unsignalized intersections, and ramps.

Traffic operational analysis consisted of the VISSIM microsimulation model for the following four scenarios:

1. Year 2010: Existing
   The existing roadway network within the study area was evaluated using traffic data collected in year 2010. The section of I-10 between I-19 and Kolb Road is considered urban in character.
2. Year 2040: No-Build
   The existing roadway network within the study area was evaluated with the projected year 2040 traffic volumes. Under this scenario there were no proposed improvements made to either I-10 or SR 210.
3. Year 2040: System I
   An improved roadway network (improvements to freeway/highway, ramps, and traffic interchange intersections) was evaluated with the projected year 2040 traffic volumes. In the System I roadway improvement alternative, SR 210 is extended as a freeway along the Alvernon Way alignment to connect to I-10 at a system interchange. The section of I-10 between I-19 and Kolb Road as well as SR 210 within the study area are considered urban in character.
4. Year 2040: System IV
   An improved roadway network (improvements to freeway/highway, ramps, and traffic interchange intersections) was evaluated with the projected year 2040 traffic volumes. In the System IV roadway improvement alternative, SR 210 is extended as a freeway along the Alvernon Way alignment to connect to I-10 at a system interchange. A collector-distributor roadway parallels I-10 in both directions between the I-10/SR 210 interchange and Kolb Road. The section of I-10 between I-19 and SR 83 as well as SR 210 within the study area are considered urban in character.

Per ADOT Roadway Design Guidelines, for I-10 and SR 210 mainline and ramp roadways, and for intersections of ramps and crossroads, LOS D is acceptable for urban conditions. The section of I-10 between I-19 and Kolb Road as well as SR 210 within the study area is considered urban in character for design year 2040.

Results of Operational Analysis

The operational analysis showed that the 2040 No Build Alternative will operate at an LOS E or worse for the mainline and traffic interchanges. The analysis also showed that System Alternative I and System Alternative IV will operate with satisfactory service levels. I-10 will have LOS C or better in both directions through the limits of the project for both alternatives. The traffic interchanges for both System Alternatives will have LOS D or better through the limits of the project. See **Section 2** for more operational information.

Alternatives Considered

Two alternatives have been identified to be carried forward for further study in the Design Concept Study.

- System Alternative I
- System Alternative IV

These two alternatives improve I-10 between the I-10/I-19 System Interchange and the Kolb Road TI and extend SR 210 from Golf Links Road along the Alvernon Way corridor to a connection with I-10 at the existing I-10/Alvernon Way TI. Both alternatives accommodate design year 2040 traffic at an acceptable level of service. Improvements to I-10 through the I-10/I-19 TI and to the north and west of the TI are not addressed in this study.

I-10 from I-19 to SR 210 System TI and SR 210

The two alternatives are identical for two segments of the project; I-10 between I-19 and the I-10/SR 210 System TI at Alvernon Way and the entire extension of SR 210 south to the I-10/SR 210 System TI.

For the I-10 segment, both alternatives improve existing conditions by improving weaving distances where ramps enter/exit I-10, improve interchange spacing by replacing the Palo Verde Road TI with a new TI at Country Club Road, and provide braided ramps to address both ramp weaving distances and retain the Park Avenue TI despite short TI spacing to 6th Avenue and Kino Parkway TIs. Improvements to I-10 will begin at Milepost 260.79.

Auxiliary lanes are required between successive entrance and exit ramps along both the eastbound and westbound I-10 roadways. I-10 mainline lanes will vary as follows:

- I-19 to Kino Parkway - 4 mainline lanes in each direction.
- Kino Parkway to Alvernon Way- 3 mainline lanes in each direction.

The existing I-10 horizontal centerline will be retained. From west of Park Avenue to Alvernon Way, the existing open median will be enclosed with a concrete median barrier located at existing centerline, a wide inside paved shoulder and, as needed, a new traffic lane.

From I-19 to west of Kino Parkway, existing I-10 consists of PCCP. The intent of the design is to retain this pavement and widen as additional lanes are needed. Throughout the PCCP section, the existing I-10 vertical profile will be retained. East of the PCCP section, I-10 will have a new vertical profile, which will be designed to accommodate overpass structure replacements at traffic interchanges and the new structure over Country Club Road.

West of the horizontal curve over Park Avenue, the fourth lanes in each direction are added to the outside. Through the curve, the median is enclosed with a concrete median barrier and widening occurring both to the inside and outside. East of the curve, new lanes are added in the median along with the new concrete median barrier and a wide paved shoulder that provides lateral space for a future additional general purpose lane.

East of Kino Parkway, Pima County has expressed an interest in expanding the Pima Sports Complex to the southerly side of I-10. It will require a grade-separated crossing under I-10 and a light-well grate in the median to provide natural light for the undercrossing. The actual location of the access road needs to be determined and will require future coordination with the County.

I-10 crosses over or under many cross streets and drainage channels via roadway structures. Given a combination of age, maintenance issues, existing vertical clearance issues, and changes in span lengths, most of these structures should be replaced. Structures can be widened at only four locations: 6th Avenue over I-10, I-10 over the UPRR east of 6th Avenue, I-10 over Park Avenue, and I-10 over Alvernon Way. Where I-10 crosses over existing drainage channels, care is needed to ensure that structure replacement does not adversely impact the capacity of the channel.

Each of the existing TIs will require improvements. Solutions typically involve enlarging the crossroads and ramp termini at the crossroads; providing additional through-lanes and turn lanes; modifications to eliminate successive loop ramps; and 'braiding' ramps to improve weaving distances and safety. A description of improvements for each existing and new TI is included in **Section 3.2.2.1** of this report. Improvements meet the capacity and operational requirements.

The areas adjacent to I-10 from I-19 to Alvernon Way are developed with commercial development along I-10. The existing I-10 ROW corridor is quite narrow and there is very little unused ROW between the existing outer edges of the roadways and the ROW lines. It will be necessary to widen the I-10 mainline roadways into the median to the extent feasible to reduce the impact to adjacent properties. Additional ROW will be required along I-10 where TIs and ramps are being modified.

The existing storm drain system between I-19 and Park Avenue will be retained with minor modifications to accommodate the extra pavement width. East of Park Avenue, the rural type drainage design will be converted to an urban type design with catch basins and an enclosed storm drain system. In areas where existing water ponds at slope toes, the storm drains will outlet into retention basins. Typically, they are located in the infields of traffic interchanges, but some may be needed between interchanges; requiring new right-of-way. In areas where water outlets into existing cross drainage structures, the storm drains will outlet into these structures. As needed to retain capacity in the cross drainages, the storm drains will outlet initially into detention basins.

For the SR 210 segment, both alternatives reconstruct the interchange at Golf Links Road to provide for the through movement of traffic on SR 210, reconstruct the bridge over the UPRR, provide a new TI at Ajo Way, and construct the new system interchange with I-10.

SR-210 mainline lanes will vary as follows:

- Richey Boulevard thru Golf Links TI - 2 mainline lanes in each direction.
- Golf Links TI to I-10 System TI- 4 mainline lanes in each direction.

At the I-10/SR 210 System Interchange, the two exterior lanes continue to connect with I-10 as system Ramps (South to East) SE and (West to North) WN, with each ramp having two lanes. Also, system Ramps (East to North) EN and (South to West) SW connect to I-10 to the west, with each ramp having one lane. The two interior lanes in each direction continue south as Alvernon Way. The Alvernon Way TI is designed with three lanes in each direction to match with the future Alvernon Way parkway to the south.

A description of improvements for SR 210 and each TI is included in **Section 3.2.2.2** of this report. Improvements meet the capacity and operational requirements.

The areas along the SR-210 corridor are developed with commercial and residential development. Typically, the corridor is adjacent to, crossing, or close to the UPRR. The existing SR-210/Alvernon Way ROW corridor south of the UPRR overpass is quite narrow and there is very little unused ROW between the existing outer edges of the roadways and the ROW lines. Additional ROW will be required for SR 210. Commercial businesses south of Aviation Parkway are within the limits of the new interchange with Golf Links Road and should be acquired. South of the UPRR overpass, new ROW is needed for the new Ajo Way TI, along Alvernon Way, and at Irvington Road to accommodate the new system interchange ramps.

SR 210 crosses over many cross streets and ramps. All will require new structures. A few existing structures can remain, including Alvernon Way over Aviation Parkway and northbound Golf Links over Aviation Parkway. The existing structure over the drainage channel just east of Palo Verde Road must be widened to the northeast to accommodate a third westbound SR 210 lane. North of Ajo Way, the existing structure over the UPRR has multiple spans over the two existing RR tracks. The UPRR expects to add tracks in the future and is requiring the reduction in the number of spans. The resulting longer spans will raise the SR 210 profile over the UPRR and require total structure replacement.

SR 210 pavement drainage will be addressed via an enclosed storm drain system that outlets to either retention basins or into existing crossing

drainage channels. Along Aviation Parkway, an existing storm drain system will be utilized to the maximum extent possible.

Regarding off-site drainage, there are three major crossings that convey storm water from east to west. The existing box culvert south of Aviation Parkway should be replaced with a lower skew angle. The existing box culvert just north of Ajo Way should be checked to determine if it will handle the additional SR 210 embankment dead load and should be lengthened under the TI ramps. The existing box culvert just north of Irvington Road should be extended to accommodate the wider SR 210 footprint and should be checked to determine if it will handle the additional SR 210 embankment dead load.

I-10 from SR 210 System TI to Kolb Road

The two alternatives differ only within the segment of I-10 between the I-10/SR 210 System TI and the Kolb Road TI. Alternative I east of Alvernon Way has five mainline lanes in each direction that mixes regional and local traffic. Alternative IV east of Alvernon Way provides a collector-distributor system that separates local traffic (entering and exiting I-10) from I-10 mainline regional traffic.

Auxiliary lanes are required between successive entrance and exit ramps along both the eastbound and westbound I-10 roadways. I-10 mainline lanes will vary as follows:

- System Alternative I: Five mainline lanes in each direction.
- System Alternative IV: Three mainline lanes plus two CD lanes in each direction.

The Alvernon Way TI, the Valencia Road TI, the Craycroft Road TI, the Wilmot Road TI, and the Kolb Road TI will connect with I-10 mainline roadways for System Alternative I. For System Alternative IV, these TIs will connect with the I-10 CD roadways.

The existing I-10 horizontal centerline will be retained from Alvernon Way to just north of Valencia Road. To the east, the horizontal centerline will shift from existing to accommodate a wider roadway footprint than existing and avoid right-of-way takes from developed residential neighborhoods adjacent to I-10. Differences in typical sections for the two system alternatives will result in differing horizontal alignments between Valencia Road and Kolb Road. For both system alternatives east of Kolb Road, the centerline will be shifted to 60 feet left of existing to create space to retain the existing two-way frontage road and the improvements will be transitioned to match into the two existing lanes in each direction. Improvements to I-10 end at MP 272.30.

Between Valencia Road and Kolb Road, there are eastbound and westbound frontage roads. Typically, they serve few parcels, either developed or undeveloped. The frontage roads between Craycroft Road and Kolb Road will be removed for both alternatives.

Between Valencia Road and Craycroft Road, the westbound frontage road will be retained for both system alternatives; primarily to provide access to adjacent parcels that have access strictly via the existing frontage road. The eastbound frontage road will be retained with System Alternative I. It will be removed with System Alternative IV. For System Alternative I, the two frontage roads are needed due to the short distance between the two interchanges. Traffic accessing Craycroft Road to/from Valencia Road will use the frontage roads instead of the west Craycroft Road ramps. This traffic will use the west Valencia Road ramps and must cross Valencia Road.

I-10 crosses over or under many cross streets and drainage channels via roadway structures. Given a combination of age, changes in structure width, and changes in horizontal alignment, these structures should be replaced. The Kolb Road structure over I-10 can be retained for System Alternative I only.

Each of the existing TIs will require improvements. Solutions typically involve retaining the interchange type; enlarging the crossroads and ramp termini at the crossroads; providing additional through-lanes and turn lanes; and modifications to tight diamond TIs to accommodate truck turning movements. The Kolb Road TI will be converted from a spread diamond type TI to a diverging diamond type TI that will accommodate the heavy turning and through movements on Kolb Road as it expands in the future to a parkway. A description of improvements for each existing TI is included in **Section 3.2.3** of this report. Improvements meet the capacity and operational requirements.

The areas adjacent to I-10 from Alvernon Way to Kolb Road are developed with commercial and residential development along I-10. The existing I-10 ROW corridor is quite narrow and there is very little unused ROW between the existing outer edges of the roadways and the ROW lines. It will be necessary to widen the I-10 mainline roadways into the median to the extent feasible to reduce the impact to adjacent properties. Additional ROW will be required along I-10 where TIs and ramps are being modified.

For both system alternatives, the rural type drainage design will be converted to an urban type design with catch basins and an enclosed storm drain system. In areas where existing water ponds at slope toes, the storm drains will outlet into retention basins. Typically, they are located in the infields of traffic interchanges, but some may be needed between interchanges; requiring new right-of-way. In areas where water outlets into existing cross drainage structures, the storm drains will outlet into these structures. As needed to retain capacity in the cross drainages, the storm drains will outlet initially into detention basins.

Evaluation of Alternatives

The following factors have been established for comparative evaluation of the improvement alternatives; System Alternatives I and IV.

- Safety Improvements
- Traffic Operations and LOS
- Access
- Right-of-Way
- Impacts to Utilities
- Earthwork
- Structures
- Drainage
- Environmental Impacts
- Displaced homes and businesses
- Constructability and Maintenance of Traffic
- Cost

A detailed evaluation of the two alternatives is included in **Section 3.3** of this report and is summarized below.

Alternatives I and IV are similar for much of the project length. They are identical for the section of I-10 between I-19 and Alvernon Way and for the entire length of the extension of SR 210. It is only within the Alvernon Way to Kolb Road section where there are differences between the two alternatives. Alternative I combines regional and local traffic within five mainline lanes in each direction, plus auxiliary lanes between successive entrance and exit ramps. Alternative IV keeps regional and local traffic separate by having three mainline lanes and two CD lanes in each direction separated by a concrete barrier. Auxiliary lanes between successive entrance and exit ramps merge with the CDs. The result is that Alternative IV has a wider footprint than Alternative I. While this impacts some evaluation factors differently, many other evaluation factors are identical or very similar.

For most of the evaluation factors, Alternative I and IV are either the same or the differences are slight. Significant differences in factors are:

- Right-of-Way

Alternative	Parcels Impacted	New R/W (Acres)
I	179	160.63
IV	190	175.32

- Earthwork
  System Alternative I Borrow = 3,396,800 Cu Yd
  System Alternative IV Borrow = 3,834,400 Cu Yd

- Structures
  Between Alvernon Way and Kolb Road, Alternative IV has a wider roadway footprint than Alternative I, thus requiring wider I-10 structures over the cross streets and drainage channels.
- Drainage
  Between Alvernon Way and Kolb Road, Alternative IV has longer cross culverts due to the wider roadway footprint. Also, Alternative IV has more catch basins and lateral pipes for collecting pavement runoff along the concrete barrier that separates mainline from the CD roadways.
- Cost
  System Alternative I Total Cost = $1,165,317,000
  System Alternative IV Total Cost = $1,255,095,000

Based on the evaluation of alternatives, Alternative I was selected as the Recommended Alternative for the following reasons:

- Alternative I provides a slightly higher level of service than Alternative IV but at a cost that is $90,000,000 less than Alternative IV.
- Alternative I has less of an impact on adjacent property owners, with less land taken and fewer properties affected. Alternative I fits well within the existing right-of-way.
- Alternative I provides better access to commercial properties between Alvernon Way and Kolb Road.
- Both alternatives provide excellent safety improvements, better spacing between traffic interchanges with reduced congestion and high levels of service.
- Environmental concerns are nearly identical between the two alternatives. Alternative IV relocates a short stretch (approximately 250') of the Rodeo Wash trail. Alternative I has no impact on the trail.

Draft Environmental Assessment

The Draft Environmental Assessment is briefly summarized in **Section 8.1**. Environmental concerns are nearly identical between the two alternatives. The entire Draft Environmental Assessment is a stand-alone report prepared by EcoPlan dated October 2019.

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1. INTRODUCTION

1.1 Forward

The Arizona Department of Transportation (ADOT), the Federal Highway Administration (FHWA), the City of Tucson, and Pima County understood that a significant amount of future growth in population around the Tucson area would take place to the south and southeast of Tucson. Interstate 10 (I-10) cuts diagonally across this growth area and would be impacted by the future growth. East of the System Interchange with I-19, I-10 was constructed in the 1960's as a rural interstate highway with rural design criteria and typically with just two lanes of traffic in each direction. While a third lane in each direction from I-19 to west of Kino Parkway was added around 1990, the remainder of the I-10 corridor is virtually unchanged.

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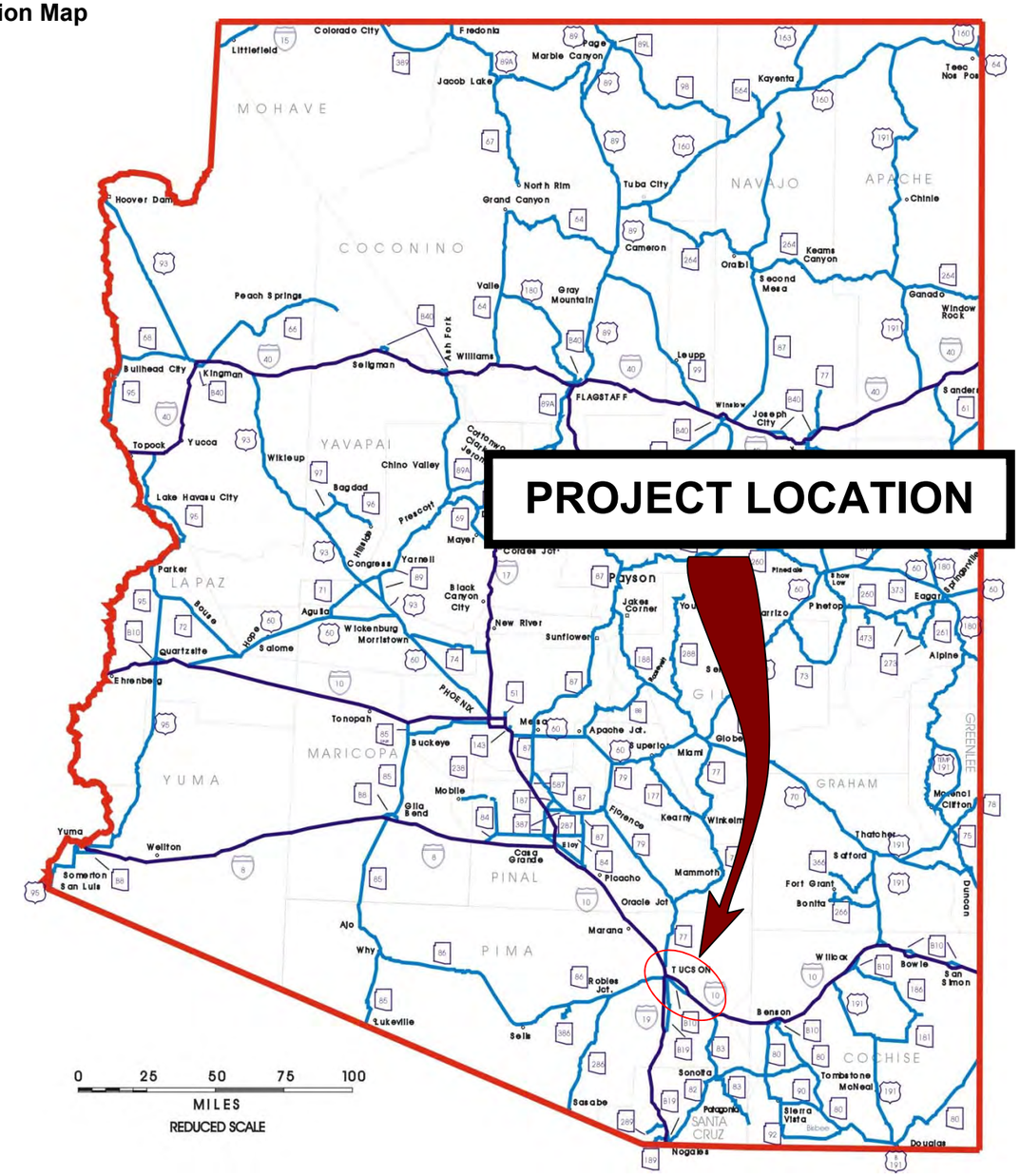
Figure 1.1 Project Location Map shows the location of the study area for both I-10 and SR 210 in the State of Arizona. The study area is located in the ADOT Southcentral District within the City of Tucson, the City of South Tucson and Pima County.

Portions of ADOT Project No. 010 PM 260 H7825 01L; Federal No. 010-E(210)S have been programmed in the Pima Association of Governments (PAG) Regional Transportation Highway Program for Fiscal Year (FY) 2019-2023. The following projects are programmed.

Figure 1.1 Project Location Map



- TIP ID 39.13; A programmed amount of $1,914,000 in FY 2021 using ASTP funds for Kino Parkway TI utility relocation and $4,000,000 using HURF26 funds for design. A programmed amount of $2,086,000 in FY 2022 using ASTP funds for Design.
- TIP ID 74.07; A programmed amount of $8,000,000 in FY 2022 using ASTP funds for the design of the Country Club Road TI.

I-10 is a full access-controlled interstate freeway.

The functional classification of SR 210 is Urban Other Freeway. SR 210 is a divided multi-lane urban highway that parallels I-10 and is located approximately 1.75 miles northeast of I-10. SR 210 begins at Broadway Boulevard and ends just past South Palo Verde Road. From Broadway Boulevard through the intersection of Country Club Road, SR 210 has three-lanes in each direction. The roadway then narrows and continues with two-lanes in each direction to the end of SR 210. However, the road continues east and connects to Golf Links Road.

FHWA is serving as the lead federal agency and will provide input and oversight for the alternatives identification and evaluation process.

The following agencies were involved in developing the Feasibility Study, the Environmental Overview, the Design Concept Study and the Environmental Assessment: FHWA, Pima Association of Governments (PAG), Pima County, Pima County Sherriff's Department, Davis-Monthan Air Force Base (DMAFB), City of Tucson, City of South Tucson, US Customs & Border Protection (CBP), Sunnyside Unified School District, Tucson Airport Authority, Sun Tran, Arizona Game and Fish Department (AGFD), Arizona State Land Department (ASLD), the Regional Transportation Authority (RTA), the University of Arizona (UofA), and the Union Pacific Railroad (UPRR).

1.2 Project Objectives

The primary objective of this project is to develop a Design Concept Study (DCR) that will be used as a long-range master plan that will guide future decisions and design parameters regarding the improvements to I-10 between I-19 and Kolb Road and for the extension of SR 210 from Golf Links Road to a connection with I-10. **Figure 1.2 Project Vicinity Map** shows the DCR limits. The Recommended Alternative will address the project's objectives and purpose.

The improvements will be based on optimizing traffic operations for the Design Year 2040. Development of Design Year traffic projections are to be in accordance with approved regional and local Transportation Planning Traffic Modeling from PAG. As needed, slight adjustments will be made to account for any localized anomalies within the model results. The goal is to identify the capacity requirements along I-10 and SR 210 and identify the number of traffic lanes and any auxiliary lanes needed to meet minimum Level of Service requirements set by ADOT.

Another objective of this project is to identify and evaluate alternative routes for the extension of SR 210 from Golf Links Road southerly to a connection with I-10. This process was performed during development of the Feasibility Study and the Environmental Overview. As input for the DCR, the Feasibility Study recommended three alternatives for further evaluation.

1.2.1 Scoping Process

Throughout both phases of the study, the project stakeholders and the public have provided valuable input in the form of issues, concerns, and opportunities (ICO's) that pertain to I-10 and SR 210 within the study limits for further evaluation. These are listed below.

Roadway/Design ICOs

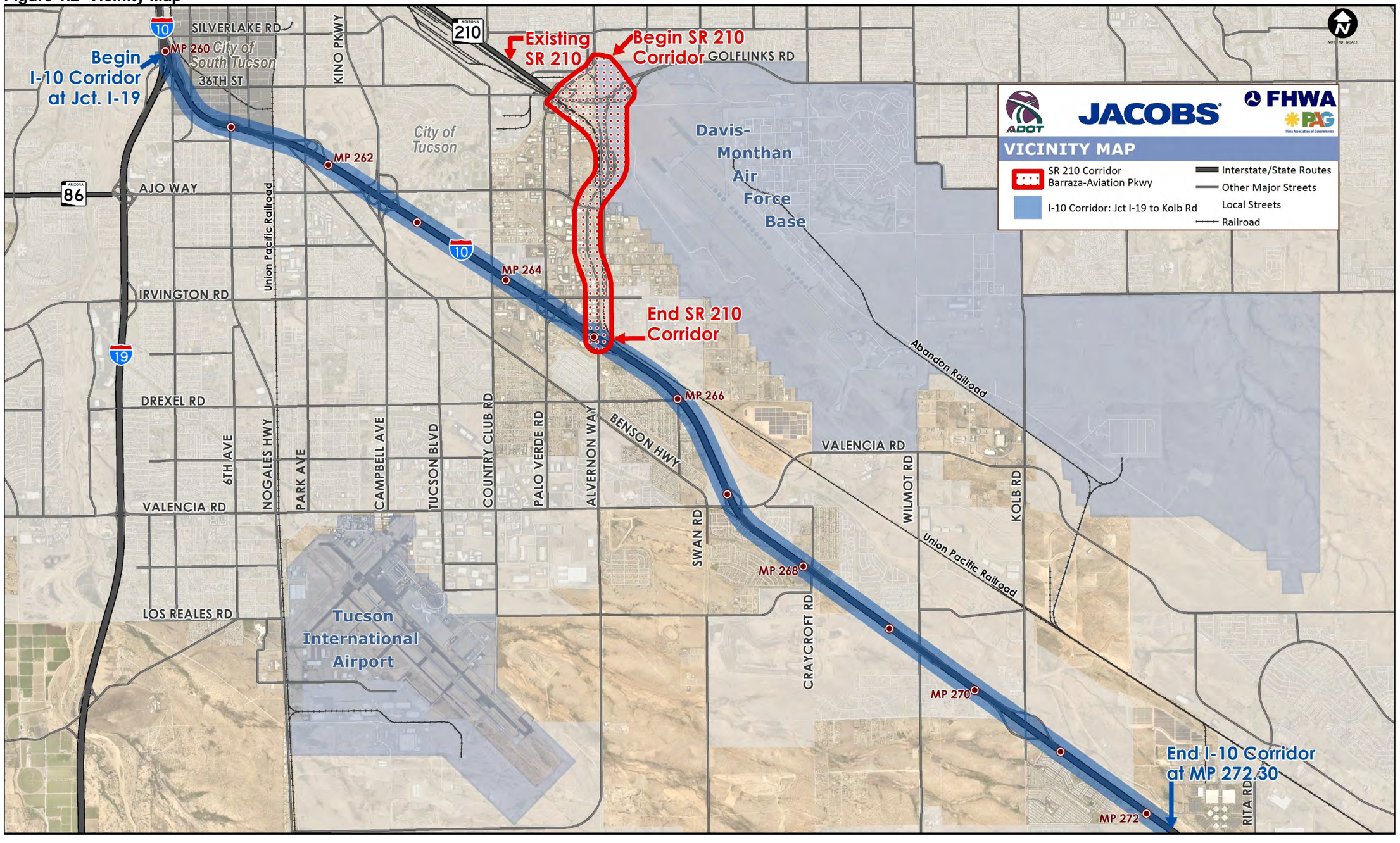
The following roadway design ICO's that involve the safe and efficient flow of traffic are:

- Expected future growth in the Tucson area will be to the south and southeast of the downtown area. Since I-10 cuts diagonally across this growth area, it is also expected that it will be the primary travel corridor for this growth. This will result in congestion and undesirable conditions, especially with a high percentage of regional and truck traffic also using the corridor. Identify and incorporate roadway improvements to meet transportation needs for the foreseeable future.
- The section of I-10 between I-19 and Craycroft Road exhibits congestion and undesirable conditions due to short weaving distances on many ramps. These short weaves are caused by the old 1960's design with loop ramps and traffic interchange spacing less than the standard of one mile. Identify and incorporate modifications to interchange spacing and/or ramp designs to improve traffic flow and safety, which will reduce crashes.
- Currently, much of the traffic to/from downtown Tucson uses the segment of I-10 between Kino Parkway and Alvernon Way instead of using the combination of Alvernon Way and the Barraza-Aviation Parkway. As traffic growth continues over time, this section of I-10 will develop capacity and operational issues. To resolve these issues, SR 210 should be extended southerly to a connection with I-10. Identify and evaluate alternative alignments for the extension of SR 210 to I-10.
- Currently, the primary traffic movement within the Barraza-Aviation/Alvernon Way/Golf Links interchange is between Barraza-Aviation Parkway and Golf Links Road. With the extension of SR 210 to the south, the primary movement through the interchange changes to through traffic on SR 210. Therefore, the interchange must be reconfigured to provide for 'route continuity' of SR 210, yet retain all other movements, especially those with Golf Links Road.
- The I-10/Alvernon Way TI does not provide access to westbound I-10 due to the close proximity to the Palo Verde Rd TI. Identify and incorporate modifications to provide this important movement.
- Most of the existing I-10 bridges over the cross streets are old and will probably need replacing. Replacements should accommodate future cross street capacity requirements. Identify and incorporate cross street lane requirements under I-10 that will accommodate future cross street traffic growth.
- Currently on 6th Avenue at the I-10 interchange, there are heavy left turn volumes (northbound 6th Avenue to westbound Ramp B and southbound 6th Avenue to eastbound Ramp D). Identify and incorporate additional left turn lanes on 6th Avenue.
- The City of Tucson is proposing to provide north-south transit via a Streetcar facility that will cross I-10 somewhere within a corridor that extends between I-19 and Kino Parkway. Therefore, coordination is needed to identify the Streetcar route and evaluate impacts to the I-10 and cross street designs.
- Currently, there is a designated bicycle route through the Barraza Aviation/Golf Links interchange and along Contractor's Way that provides connectivity between the Barraza Aviation Parkway and Alvernon Way in the vicinity of I-10. This route will likely be impacted by the extension of SR 210. Identify and incorporate a new bicycle and pedestrian route that will safely convey bicycle and pedestrian traffic along the SR 210 corridor.
- Coordinate with the development team for the Sonoran Corridor.

The following roadway design ICO's that involve providing or retaining safe access to properties and businesses are:

- Provide left turn access control along interchange cross streets in accordance with the current ADOT Access Control criteria and coordinate with local agencies to resolve any localized issues.

Figure 1.2 Vicinity Map



- Along I-10 between Valencia Road and Kolb Road, an existing frontage road system provides access to some parcels that have frontage along ADOT right-of-way. However, these frontage roads often are along undeveloped parcels and convey small traffic volumes. It may be applicable to eliminate the frontage road system and utilize the recovered right-of-way for additional general purpose lanes for mainline I-10. Identify and evaluate the impacts of removing the frontage road system and resolve access issues associated with frontage removal.
- An initial evaluation of interchange spacing and ramp weaving indicates a potential need to modify westbound ramps in the vicinity of Park Avenue. This would impact the westbound frontage road between Park Avenue and 6th Avenue by 'detaching' it from Park Avenue. A concern of the City of South Tucson is that this would disrupt the status quo of traffic flow in the area. Identify, evaluate, and incorporate a design change that re-establishes westbound traffic flow between Park Avenue and 6th Avenue.
- The Los Niños Elementary School, located on the east side of Alvernon Way south of I-10 currently has access issues associated with the flow (arrival and departure) of school buses and private vehicles at the front of the school. It is important that any design improvements to Alvernon Way south of the interchange with I-10 do not exacerbate the current situation.
- State Lands has an undeveloped parcel located in the southwest quadrant of I-10 and Kolb Road. State Lands has expressed a need for design improvements to Kolb Road south of the interchange to provide a point of access to this parcel.
- The existing intersection of Alvernon Way and Irvington Road is close to I-10. If the connection of SR 210 to I-10 occurs at the existing I-10/Alvernon Way TI, then ADOT design criteria dictates that direct access (via interchange ramps) between SR 210 and Irvington Road cannot be accommodated. This would impact access between the Tucson Electric Power Company (TEP) and westbound SR 210; redirecting traffic up Contractor's Way to Ajo Way and then onto westbound SR 210. In the event of a rail incident that blocks the at-grade UPRR crossing of Ajo Way just west of Contractor's way, TEP emergency vehicles would suffer a blockage of needed access. TEP has asked that emergency access be provided. Identify and incorporate emergency access into SR 210 improvements.

The following roadway design ICO's that involve drainage design are:

- In the section of I-10 between I-19 and Park Avenue, the existing pavement drainage is collected in a storm drain system. Modify the existing storm drain system to accommodate more pavement drainage area. Retain the existing storm drain outlets.
- Along I-10 east of Park Avenue, existing pavement drainage flows into existing drainage channels. The existing rural type pavement drainage system should be converted to an urban type drainage system with a combination of storm drain systems and some open channels that outlet into existing drainage channels. These channels cannot be enlarged downstream from the outlets. Therefore, it is important to regulate pavement drainage flows into these channels so as to not overwhelm them. Identify and incorporate drainage design facilities, such as detention basins to regulate drainage flows into these channels.

Additional roadway design ICO's are:

- There are several developed residential subdivisions that are adjacent to I-10 right-of-way. It is important to avoid acquiring new right-of-way from these subdivisions. Identify and incorporate shifts in the I-10 centerline alignment to avoid acquiring new right-of-way from these subdivisions while still providing sufficient right-of-way width to support the I-10 typical section.
- Along the SR 210 corridor between Ajo Way and Irvington Road, it would be advantageous to acquire new right-of-way from only one side. Identify and incorporate shifts in the SR 210 alignment to accommodate this condition.
- Reduce impacts to existing major utilities. Identify and incorporate adjustments in alignments to avoid impacts to major utilities. For example, adjust the vertical profile of Alvernon Way just north of I-10 to provide adequate vertical clearance under the existing overhead transmission power lines that extend west out of the TEP plant.

Environmental ICOs

The following environmental ICO's were identified:

- Identify, evaluate and avoid environmental impacts. If environmental impacts cannot be avoided, identify and incorporate mitigation measures.
- Eliminate or reduce impacts to the Littletown area.
- Eliminate or reduce impacts to Davis-Monthan AFB.
- Widening I-10 and extending SR 210 to handle more traffic will increase traffic noise. Identify reasonable and feasible noise mitigation measures per the ADOT Noise Abatement Requirements (ADOT, 2017).
- Identify, evaluate and avoid nearby historic building structures and mitigate impacts if any.
- Identify, evaluate and avoid nearby cultural resources and mitigate impacts if present.
- Identify, evaluate and avoid nearby parks, trails and recreational areas. Mitigate impacts if present.

The ICOs identified above will be addressed by the study and will be used to evaluate alternatives.

1.2.2 Feasibility Study

A project study team, in cooperation with participating agencies, initiated a study of the feasibility of improving I-10 from the I-19 traffic interchange (TI) (MP 260.2) easterly through the SR 83 TI (MP 282.0) and extending SR 210 from its current easterly end at Golf Links Road to an interchange connection with I-10 at a location to be determined. The study team also prepared an Environmental Overview that helped identify environmental impacts from the evaluated improvements and alternatives.

All improvements to I-10 and the extension of SR 210 to I-10 are to accommodate design year 2040 traffic. A traffic study was prepared that used 2040 traffic volume projections from PAG and identified the number of traffic lanes needed on I-10 and SR 210 to provide an adequate Level of Service (LOS) as per ADOT criteria. The traffic study also evaluated 'no-build' scenarios with design year volumes. This identified which existing ramps do not provide an adequate LOS for the design year and require modification. Each ramp modification was tested to ensure that it provided an adequate LOS.

The traffic study also evaluated several alternatives for the extension of SR 210 and the system interchanges where they connect to I-10. In summary, simultaneous design development and LOS evaluation resulted in alternatives that adequately provide traffic capacity for the 2040 design year and an adequate LOS.

The Feasibility Study presented various alternatives for accomplishing the necessary improvements and evaluated each alternative with recommendations for alternatives to be retained and carried forward for further study.

During development of the Feasibility Report, improvement alternatives I, II and IIIc were identified and evaluated for the extension of SR 210 to several connection locations with I-10.

- Alternative I extends SR 210 along the Alvernon Way corridor to I-10.
- Alternative II extends SR 210 along the western edge of Davis-Monthan AFB and then south along the Swann Road alignment to I-10 just north of Valencia Road.

- Alternative IIIc extends SR 210 along the entire western edge of Davis-Monthan AFB to connect with I-10 at the existing Wilmot Road TI.

The alternatives included improvements to I-10 interchanges and system interchanges where SR 210 connects to I-10. The Feasibility Study was completed in October 2012 and submitted for review. It recommended that three alternatives (I, II and IIIc) move forward into the DCR phase of the study.

1.2.3 Feasibility Study Update

After the Feasibility Report was submitted, the traffic study was redone, significantly reducing the expected growth rate in the Tucson metropolitan area due to the downturn in the economy. In summary, the 2040 projected traffic volumes reduced, but not enough to result in the reduction in general purpose lanes on either I-10 or SR 210. Therefore, the alternatives remain unchanged so that they should accommodate traffic at an acceptable LOS beyond the 2040 design year.

In addition, a third alternative was added for evaluation. Regarding the extension of SR 210, Alternative IV is similar to Alternative I. The difference between these two alternatives is in their configuration along I-10 between the system interchange with SR 210 and Kolb Road.

Alternative I has five general purpose lanes in each direction. Alternative IV has three general purpose lanes in each direction and adjacent collector-distributors (CD's) in each direction.

The Feasibility Report Update for I-10; Jct. I-19 to SR 83 & SR 210; Golf Links Road to I-10 was initiated in January of 2014 and the Final Feasibility Study Update was issued in February of 2015. It recommended three alternatives (I, II & IV) to carry forward into the DCR phase of the study.

During preparations for Phase II (preparation of the DCR and the EA), stakeholder concerns related to taking property from Davis-Monthan AFB for Alternative II were discussed with FHWA, ADOT, the City of Tucson and Pima County. The proposed route for Alternative II could pose additional risk to the security of the AFB and require a number of additional business relocations that would not occur for Alternatives I and IV. Subsequently, Alternative II was eliminated from further consideration.

1.2.4 Design Concept Study

Phase II of the study is the development of both the DCR and the EA. The DCR refines the designs of Alternatives I and IV to a level that allows for finite comparisons and evaluations of the two alternatives. The EA identifies environmental impacts of the two alternatives and any environmental mitigation measures needed.

1.3 Purpose and Need for the Project

1.3.1 Purpose and Need for Improvement of I-10

The Interstate Highway System was intended to relieve congestion, improve safety, and enhance the economy by facilitating the movement of people and goods throughout the nation. Increasing traffic volumes on I-10 in the vicinity of Tucson, Arizona have contributed to reduced operational effectiveness, particularly the segment of I-10 between I-19 and Kolb Road.

The traffic modeling and analysis accomplished for the Feasibility Study demonstrated that north-south traffic demands through the project area are constrained by limitations on north-south arterial corridors. The UPRR switching yard located parallel to SR 210, north of I-10 prohibits any north-south arterials between Kino Parkway and Alvernon Way. The Davis-Monthan Air Force Base (AFB) prohibits any north-south arterials between Alvernon Way and Kolb Road. Traffic along I-10 concentrates at certain TIs where major north-south arterials exist.

Expected future growth in the Tucson area will be to the south and southeast of the downtown area. Since I-10 cuts diagonally across this growth area, it is also expected that it will be the primary travel corridor for this growth.

East of the System Interchange with I-19, I-10 was constructed in the 1960's as a rural interstate highway with rural design criteria and typically with just two lanes of traffic in each direction. Several of the TIs are partial cloverleaf type interchanges that have short ramp weave distances that adversely impact traffic operational efficiency, especially as traffic volumes increase over time. Some of the interchanges are spaced closer together than the recommended minimum of one mile, thus contributing to reduced operational efficiency.

Crash data analysis accomplished for the Feasibility Study and updated for the DCR demonstrated that annual crash rates within the study area have been increasing. Some of these crashes may be attributed to the old 1960's design of I-10 and the interchanges.

Table 1.1 5-Year Crash Summary (July 2011-June 2016)

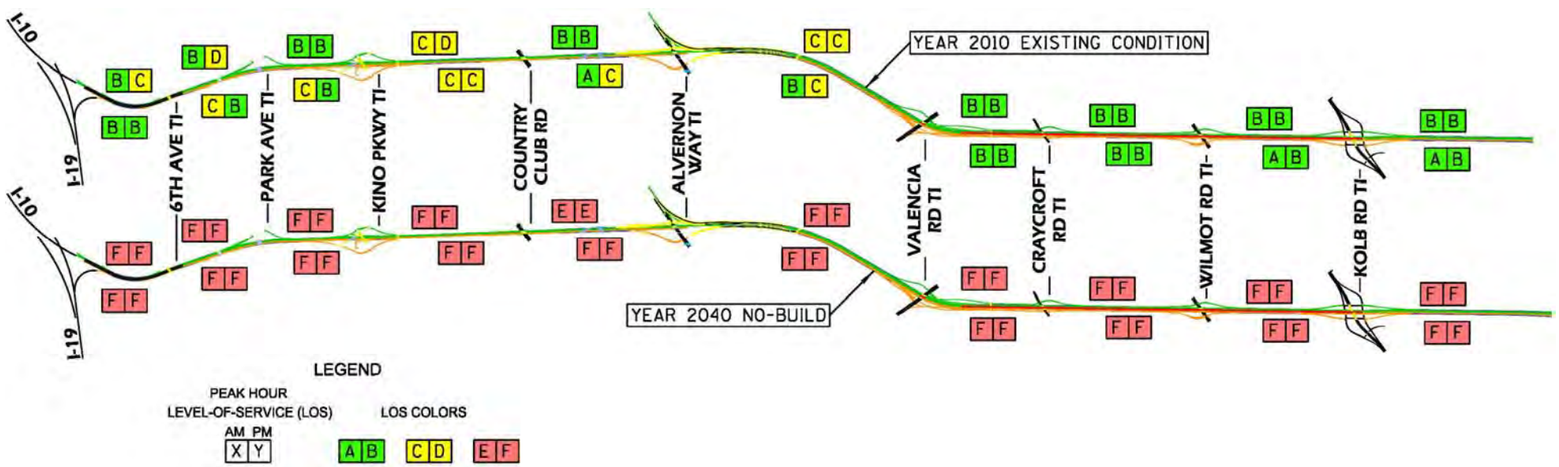
Year	Total Crashes
July 2011 – June 2012	335
July 2012 – June 2013	372
July 2013 – June 2014	393
July 2014 – June 2015	470
July 2015 – June 2016	486
Total	**2,056**

In summary, the small number of north-south arterials, the diagonal alignment of I-10, and the projected growth pattern in Tucson contribute to an increase in local traffic using the Interstate Highway for short local trips. The numerous access points on I-10 and the old 1960's design present additional performance issues. These limitations further slow travel on the I-10 mainline and lead to more conflict between local and regional traffic. This is confirmed by the steady increase in crashes. Conflicting interaction between local and regional/interstate traffic has led to a reduction in the capacity of I 10 to accommodate through (regional) travel. Expected growth in both regional and local traffic on I-10 will further reduce the capacity of I-10.

Analysis of 2010 traffic shows that I-10 in the study area operates at level of service (LOS) D or better in the AM and PM peak hours except for isolated areas where AM or PM peak hour LOS is less than LOS D, as discussed in the Feasibility Report Update. See **Figure 1.3**.

In the future, increasing traffic volumes on this segment of I-10 originating from anticipated growth to the south and east of downtown Tucson, as well as growing demands on I-10 as an interstate facility, will lead to capacity and access restrictions on and along the interstate. Poor operational performance for local, regional, and interstate traffic will result from operations on this portion of I-10 declining to LOS D then to LOS F by 2040. The decline to LOS F will show the roadway is failing to function as intended with forced flow and extensive delays. See **Figure 1.3**.

Figure 1.3 Existing and Future Mainline Lanes & LOS Summary



The combination of demand exceeding capacity and poor access along I 10 will restrict and compromise the primary functions of the roadway network in the study area. This will contribute to a growing degradation of the primary purpose and operational characteristics of I-10 as originally designed and compromise the purposes of the overall roadway network in the study area.

The purpose of the proposed improvements to I-10 is to address deficiencies in the Interstate highway system through the study area and ultimately develop improvements that will provide satisfactory service levels on the Interstate highway through the 2040 design year.

1.3.2 Purpose and Need for Extension of SR 210 to a Connection with I-10

SR 210 in the City of Tucson, Arizona, was built as an urban highway subsequent to the construction of I-10. SR 210 is approximately 3.4-miles long and is oriented in a northwest to southeast direction, extending southeast from West Broadway Boulevard at North 1st Avenue, with intersections at Kino Parkway, East 22nd Street, South Country Club Road, East 34th Street, Richie Road, and Dodge Boulevard, before terminating at Alvernon Way / Golf Links Road.

Much of SR 210 was constructed adjacent to the Union Pacific Railroad (UPRR); they share a number of grade separations from the City's street network. This proximity to the railroad minimizes the number of cross streets and access points to SR 210, which is advantageous to the use of SR 210 as an urban parkway. However, the presence of the UPRR switch yard serves as a barrier to north-south city arterials, which has a negative effect on traffic that is destined to and from North Tucson. Much of the north-south traffic that is blocked by the UPRR remains on I-10 to access major north-south arterials to reach their destinations.

SR 210 is intended to provide motorists with an alternate route into Tucson's downtown business district from points east and south of downtown.

The use of SR 210 as a business spur is limited by the fact that motorists on westbound I-10 desiring to access downtown Tucson via SR 210 must currently use city arterials to get from I-10 to SR 210. The additional trips on the city arterials tend to exceed the capacity of the local roadway network, which causes motorists to stay on I-10. Commercial and commuter traffic heading into downtown Tucson also use I-10 and add to peak hour congestion, causing increased volume and stress to the operation of the interstate highway. As is, the limited capacity and limited access for local trips prevents the existing roadway network in the study area from functioning as primarily intended.

Since I-10 runs parallel to SR 210 approximately 1.75 miles south of SR 210, connecting SR 210 and I-10 would facilitate the intended use of SR 210 as a business spur. It would provide westbound local traffic with an attractive alternative to using I-10 for accessing downtown Tucson and would allow the interstate route to better serve through-traffic.

For SR 210 traffic to increase to a level nearer capacity, local traffic currently using I-10 would require improved access via an extension of SR 210 to the south and east, likely connecting to I-10 somewhere between the existing Alvernon Way TI and the Rita Road TI south of DMAFB. This connection would allow SR 210 to become a viable alternative to I 10 for local traffic to and from the business, university and cultural districts in the downtown Tucson area.

The purpose of extending SR 210 to an interchange with I-10 is to provide traffic originating east and south of downtown Tucson an alternative route to access the city center. Improved operational performance for local, regional, and interstate traffic would result from better utilization of SR 210 and improved operations on I-10.

1.4 Description of the Project

1.4.1 Project Limits

Figure 1.2 Project Vicinity Map shows the limits of the DCR study, beginning to the east of the I-19 TI (MP 260.79) and extending easterly through the Kolb Road TI (MP 272.30). The study also extends SR 210 from its current easterly end at Golf Links Road to I-10 with a system interchange connection at Alvernon Way (I-10 MP 265.04). See Appendix A for Existing Conditions along the I-10 and SR 210 corridors.

1.4.2 History of the Project Route

I-10 within the project limits was constructed in the 1960's with two 12-foot lanes, two-foot inside shoulders, and 10-foot outside shoulders in each direction. An open median typically separates the eastbound and westbound roadways. At the time, the I-10 corridor was designed as a rural interstate highway with rural highway criteria and rural drainage facilities. Some of the traffic interchanges were Pima County projects within Pima County acquired right-of-way.

While a third lane in each direction from I-19 to west of Kino Parkway was added around 1990, the remainder of the I-10 corridor is virtually unchanged; with several partial cloverleaf type interchanges remaining.

For SR 210, the Barraza-Aviation Parkway was designed and constructed between Broadway Boulevard and Golf Links Road in the 1980's and 1990's. The parkway parallels the UPRR facilities and connects downtown Tucson with Golf Links Road, south Alvernon Way, and south Palo Verde Road by way of Richie Boulevard. It typically has two lanes in each direction with a raised median. Connections with major local streets are via signalized intersections.

1.4.3 Proposed Improvements

Modifications are needed to improve the safety and capacity to I-10 within the project limits and to extend SR 210 to a connection with I-10.

- The purpose of the study is to: Identify the scope of work and design concept for safety and capacity improvements for Design Year 2040 to both the eastbound and westbound roadways of I-10 and for the extension of SR 210 to a connection with I-10.
- Additional right-of-way (R/W) will be required for the addition of general purposes lanes, adding parallel drainage facilities, and for reconfiguring several traffic interchanges along the I-10 corridor. Additional R/W will be required along the SR 210/Alvernon Way corridor for additional general purpose lanes, for the reconfiguration of the interchange with Golf Links Road, and for new traffic interchange ramps at Ajo Way.
- Convert the rural type drainage facilities to an urban type design with a combination of storm drains and drainage channels to either existing drainage facilities or to new drainage basins.
- Coordinate with local utilities to identify and evaluate any major utilities that could potentially be impacted by the preferred improvements.
- Coordinate with ADOT and local agencies to establish left turn access control along interchange cross streets in accordance with current ADOT policy.
- Coordinate with ADOT and local agencies to establish cross street typical sections to meet both current and future capacity needs. The goal is to identify cross street width impacts on overpass structure span lengths and impacts to freeway profiles.
- Coordinate with ADOT and local agencies to identify and evaluate any potential transit features that could be affected by the preferred improvements.
- Develop an Implementation Plan that identifies a potential chronological order of construction projects.
- Prepare an environmental document (Environmental Assessment) to identify and evaluate any potential environmental features that could be affected by the preferred improvements.

1.5 Characteristics of the I-10 and SR 210 Corridors

1.5.1 Characteristics of the I-10 Corridor

The Design Concept Study area begins to the east of the limits of the I-10/I-19 System Interchange at MP 260.79 and extends eastward approximately 5 miles to I-10 MP 272.3, east of the I-10/Kolb Road TI. See **Figure 1-2 Vicinity Map**.

The Union Pacific Railroad approaches I-10 from the north along the east side of Alvernon Way. The railroad turns and continues southeast approximately 250-feet north of I-10 for a short distance. The railroad and I-10 then separate and continue south-east about three-quarters of a mile apart.

At the beginning of the project, I-10 turns from a north-south direction to an east-west direction as the corridor proceeds to the east. Just east of Park Avenue, I-10 turns to the southeast. From Park Avenue to the end of the project I-10 is oriented on a northwest to southeast diagonal that intersects the city street grid at approximately a 45-degree angle.

From the beginning of the project at I-19 to Kino Parkway, I-10 has three lanes eastbound and three lanes westbound with 10-foot inside and outside shoulders. From Kino Parkway to the end of the project east of Kolb Road, I-10 has two eastbound lanes and two westbound lanes with 10-foot outside shoulders and 4-foot inside shoulders.

I-10 has a variable width median running through the project area. From the beginning of the project through 6th Avenue the median width is 32-feet, with a concrete barrier located in the center of the median. Through the horizontal curve east of 6th Avenue the median narrows to 26-feet. The 26-foot median continues to Park Avenue, where the median transitions to 60-feet wide and the concrete barrier ends. The 60-foot wide median continues to Kino Parkway, where the width of the median transitions to 84-feet wide. The 84-foot wide median continues to Valencia Road. The median width narrows to 68-feet wide through the horizontal curve on I-10 at Valencia Road. The 68-foot wide median continues through Houghton Road to approximately MP 277.4.

The existing cross-slope of the I-10 roadway in tangent sections as shown on as-built plans is:

Beginning of Project @ MP 260.2 to MP 267.5: roadway cross-slope is -0.01ft/ft from median to shoulder.

MP 267.5 to End of Project @ MP 270.6: roadway cross-slope is -0.015ft/ft from median to shoulder.

TIs are located at major cross streets including from west to east: 6th Avenue, Park Avenue, Kino Parkway, Palo Verde Road, Alvernon Way, Valencia Road, Craycroft Road, Wilmot Road, and Kolb Road.

The Design Speed on I-10 through the project limits is 65 mph in accordance with the ADOT RDG for urban/fringe urban Controlled Access Highways.

The speed limit on I-10 is 55 mph from I-19 through the Kino Parkway TI where the speed limit increases to 65 mph through Kolb Road TI. The speed limit then increases to 75 mph east of the study area.

Previous I-10 Projects

Based upon available data at ADOT Engineering Records, the following I-10 projects have been completed within the Study Area.

Table 1.2 Previous Projects Within the I-10 Study Area

Project No.	Begin MP	End MP	Const. Date	Description
UI-141(4)	259.8	261.2	1955	2-24' PCC + 10'AC
IR 10-5(54)	260	262.4	1989	I-19 – Park Ave. Remove & Replace Exist. EB, WB & Structures
NH 10-5(71)	260	262		I-19 – Park Ave. Landscape & Irrigation
ARRA 010-D(206)A	260.2	267.2		I-19 – Valencia Rd. FMS
I-10-5(32)	260.7	261.5	1965	6th Ave. TI Ramps, Vet OP & Fr. Rd.
F 002-4(1)	261.2	261.5	1958	Veterans OP and Approaches MBS
I-10-4-927	260.4	-	1976	Jct. I-19 TI Groove Ramps
IM 10-5(77)P	260.5	268.8	2001	Jct. I-19 – Craycroft Rd. Signing
I-10-5(16)	261.4	264	1964	Vet OP – Hughes Access Rd. GD
I-10-5(28)	261.4	268.3	1967	Vet OP – Valencia Rd. BC PCC
I-10 -5(42)	261.4	267.5	1983	Lighting & Safety
ACIR-10-5(58)	262	267	1988	Park Ave. – Valencia Rd. Pavement Rehab
I-10-5-910	262.4	-	1976	Ajo Way OP (EB) Bridge Repair
N-900-0-543	262.6, 268.1		1999	Kino & Craycroft TIs Minor Improvements
I-10-5(30)	262.7	263	1966	Campbell Rd TI GD/Str

Table 1.2 Previous Projects Within the I-10 Study Area

Project No.	Begin MP	End MP	Const. Date	Description
I-10-5(17)	264	267.5	1965	Hughes Access Rd. – East GD
010 E NFA	264.1	264.9	2008	Palo Verde TI Construct TI Lighting
IR 10-5(55)	265	-	1984	Alvernon Way (Valencia-Irvington Rd) GD
IR 10-5(61)	265	265.4	1986	Alvernon Way OP
BP-IR-10-5(57) & BP-F 084-1(9)	267	-	1983	Kolb Rd. (I-10 – Valencia Rd.) New TI
I-10-5(56)	267.1	267.5	1986	I-10 @ Valencia Rd. New TI
I-10-5(5) & F 002-4(6)	267.5	272.8	1958	1-36' AC (EB)
I-10-5(12)	267.5	272.8	1958	GD/AC (WB)
IR-10-5(62)	267.5	272	1990	Valencia – Rita Rd. Remove, Recycle, AC Overlay
IR-I-10-5(40)	267.53	281.2	1978	Valencia Rd. – Mtn. View TI Resurface
IR-10-5(30)	268	-	1986	I-10 Access Ramps (Kino Blvd/Ajo Way) Mod. TI, GD/AC Pave
NHPP-010-E(219)T	267.81	268.36	2017	Remove and replace Craycroft Road Bridge decks (STR # 594 & #595)
IM-010-E(010)A	268.0	350.0	2016	I-10 Sign Rehabilitation Project
NH-010-E(214)T	268.0	268.3	2016	I-10 Craycroft Road TI signals

Existing I-10 Right-of-Way

The existing right-of-way (ROW) width of I-10 varies through the length of the project. At each TI the right-of-way increases substantially, depending on the configuration of the TI. The ROW is also increased to accommodate frontage roads. The following ROW mainline widths provide a general overview of the ROW corridor. However, it will be necessary to refer directly to the ADOT ROW plans for detailed information.

- From the I-19 TI to the 6th Avenue TI – Mainline ROW width is 200-feet.
- From the Park Avenue TI to the Valencia Road TI – Mainline ROW width is 300-feet.
- From the Valencia Road TI to the Kolb Road TI – Mainline ROW width is 280-feet.

- From the Kolb Road TI to the Rita Road TI – Mainline ROW width varies from 300-feet to 400-feet.

Existing I-10 Structures

The following existing structures are located along I-10 within the study area:

Table 1.3 Existing I-10 Structures

Milepost	Structure No.	Structure Name	Spans/Str. Length	Br. Rdwy. Width
260.37	2599	12th Ave. Connector Br.	1/95	55.2’
260.55	2194	10th Avenue OP	4/310’	147.3’
260.99	2195	6th Ave. TI UP	2/209’	82’
261.41	2164	Frontage Road. UPRR OP WB	3/167’	40’
261.41	2196	Loop Road. UPRR PB EB FR	3/167’	40’
261.41	2197	Veterans UPRR OP	3/168’	125.8’
261.72	2162	Park Ave. TI OP EB	4/251’	72.5’
261.72	2163	Park Ave. TI OP WB	4/248’	72’
262.38	2012	Ramp K3 Over Ajo Way	2/176’	26’
262.44	1107	Ajo Way OP EB	4/261’	38’
262.44	1108	Ajo Way OP WB	4/261’	38’
262.53	1162	Kino Pkwy TI UP NB	7/504’	49’
262.53	1163	Kino Pkwy TI UP SB	6/461’	38’
262.82	1109	Diversion Channel Br EB	1/90’	64’
262.82	1110	Diversion Channel Br WB	1/90’	50’
263.82	1111	Country Club OP EB	3/150’	38’
263.82	1112	Country Club OP WB	3/150’	38’
264.27	1217	Irvington Road. OP EB	4/261’	42’
264.27	1218	Irvington Road. OP WB	4/261’	42’
264.37	1219	Palo Verde TI OP EB	4/195’	42’
264.37	1220	Palo Verde TI OP WB	4/195’	42’
265.02	2018	Alvernon Way TI OP EB	2/215’	60’
265.02	2019	Alvernon Way TIOPWB	2/215’	60’
265.80	5555	Julian Wash RCB	6Brl/74’	-
266.00	1223	Drexel Road. OP EB	3/141’	38’
266.00	1224	Drexel Road. OP WB	3/141’	38’
267.10	1225	Valencia Road. TI OP EB	4/183’	38’
267.10	1226	Valencia Road. TI OP WB	4/183’	38’
267.65	1044	Earp Wash Trib Br EB	4/96’	48.8’
267.65	1045	Earp Wash Trib Br WB	4/96’	48.8’
267.65	1052	Earp Wash Trib Br FR Br	4/96’	24’
267.65	6814	Earp Trib RCB/EB FR	3Brl/32’	-
268.08	594	Craycroft TI OP EB	4/177’	38.2’
268.08	595	Craycroft TI OP WB	4/177’	38.2’
269.36	596	Wilmot Road TI OP EB	4/177’	38’
269.36	597	Wilmot Road. TI OP WB	4/177’	38’
270.58	1823	Kolb Road TI UP	2/280’	76.2’

1.5.2 Characteristics of the SR 210 Corridor

The study area begins at the east end of SR 210 near Golf Links Road and Alvernon Way. The north-west end of the Davis-Monthan AFB is located just east of the end of SR 210. Alignments to extend SR 210 south-east to connect with I-10 will be identified east from Alvernon Way. The northern limits of the study area will be the southern boundary of Davis-Monthan AFB. Alignments to extend SR 210 will have to turn to the south to avoid Davis-Monthan AFB.

Property through the study area for extending SR 210 is primarily industrial and commercial along Alvernon Way from Golf Links Road south to I-10. South of I-10 along Alvernon Way the property is primarily residential with some undeveloped commercial land. The Los Niños Elementary School is located to the east of Alvernon Way south of the Julian Wash.

Previous SR 210 Projects

Based upon available data at ADOT Engineering Records and Pima County, the following projects have been completed within the project limits.

Table 1.4 Previous Projects within the SR 210 Study Area

Project No.	Begin MP	End MP	Const. Date	Description
M-824-9-522	2.4	4.5	1995	Grade, Drain, Pave, Structures SR 210
AZ-IMX-505-4(4)	4.5	--	1985	Grade, Drain, Pave, Structures Golf Links Road
IXD-508-4(5) & IXM-508-4(5)	-	-	1984	Grade, Drain, Pave, Structures Golf Links Road and Alvernon Way
IXD-508-4(4)	-	-		Grade, Drain, Pave, Structures

Existing SR 210 Right-of-Way and Access Control

Existing Right-of Way (ROW) for SR 210 is shown on the ADOT Right of Way Plan for the Aviation Corridor Highway; Park Avenue – Palo Verde Road, SR 210; Project No. AZP-824-9-704. The northern ROW line and the southern ROW line and access control line is shown on this set of plans.

The north access control line is defined on the Results of Survey; Aviation Corridor Highway; 6th Avenue – Palo Verde Road; Project No. 210 PM 001 H0888 01R, Federal No. N 810-601-PM(1). Access control is broken at 22nd Street, 34th Street and Richie Boulevard.

The southern ROW and Access Control line is a common line with the northern UPRR Right-of-Way line.

East of Palo Verde Road all existing ROW is Tucson City Street Right-of-Way.

Existing SR 210 Structures

The following existing structures are located along SR 210 within the study area.

Table 1.5 Existing Structures - SR 210 Study Area

Roadway	Struct. No.	Structure Name	Spans/Str. Length	Br. Rdwy. Width
Golf Links Rd.	9815	Aviation Hwy. Ramp OP	3/250	72’
Alvernon Way	9809	Aviation Hwy. UP Br.	1/86	76’
Alvernon Way	9811	Alvernon NB FR. OP	3/146	100’
Alvernon Way	9813	Alvernon UPRR & SB FR OP	5/417	100’
Alvernon Way	-	RCBC (north of Ajo Way)	4/32	205’
Alvernon Way	-	RCBC (north of Irvington Road)	4/40	156’
Alvernon Way	8733	Small Wash RCB	3/30	80

2. TRAFFIC AND CRASH DATA

2.1. Forward

A separate traffic report was prepared to supplement this study that provides more details into the traffic analysis. The traffic report assessed the existing and forecasted traffic demand, using the 2014 PAG Travel Demand Model, to evaluate the current and potential corridor alternative improvements to address transportation deficiencies, reduced mobility, and bottleneck locations. The adopted 2015 PAG Travel Demand Model was obtained and reviewed for the consistency of the traffic projections to verify that no significant changes occurred in the study area. This section will summarize the evaluation and major findings of the report. **Appendix B. Initial Traffic Report Figures** contains the figures of traffic volumes and Level of Service (LOS) for all the analysis scenarios.

2.2. Traffic Operational Analysis

A Traffic Operational Analysis was conducted to evaluate the effectiveness of the existing roadway system and to evaluate the improvement alternatives developed to address future traffic volumes as projected by the 2040 PAG Travel Demand Model.

The study limits for the traffic operational analysis included I-10 from I-19 to MP 272.3 east of Kolb Road, and SR 210 from 34th Street to Alvernon Way. The study area included freeway mainline, ramps, arterials, traffic interchange intersections, and intersections adjacent to the interchange that are directly affected by the interchange operations.

2.3.1 Methodology

The regional traffic modeling provided a macroscopic analysis of the potential improvement alternatives and provided information on the general number of lanes and general concept of the interchanges for future conditions. The traffic operational analysis evaluated the peak hour traffic volumes obtained from the regional modeling efforts, at a 'microscopic level', to refine and ensure that the improvement alternatives are operationally feasible. This is an iterative process and takes into account existing and future roadway characteristics, traffic volumes, traffic control measures, and access spacing.

The methodology involved in the operational analysis included the following:

- 'Spot Checks' were conducted on mainline freeway segments and merge/diverge areas, for the proposed improvement alternatives, per the Highway Capacity Manual (HCM) using the Highway Capacity Software (HCS).
- The optimal configuration and operation of the traffic interchange intersections and adjacent arterial intersections were evaluated using the Synchro/SimTraffic software.
- The AM and PM peak-hour operations of the roadway network system within the study area were modeled using the *VISSIM* microsimulation software and included:
  - I-10: mainline, merge/weave areas, ramps, ramp junctions with cross streets, traffic interchange intersections and adjacent intersections directly impacted by the interchange operations.
  - SR 210 (Barraza-Aviation Parkway): arterial, signalized and unsignalized intersections, and ramps.

VISSIM is a microscopic time step and behavior-based simulation model developed to model urban traffic and public transit operations. The program can analyze traffic and transit operations under constraints such as lane configuration, traffic composition, traffic signals, transit stops, etc. This makes it a useful tool for the evaluation of various alternatives based on transportation engineering and planning measures of effectiveness. The measures of effectiveness (MOE's) obtained from the VISSIM microsimulation model include delay, speed, volume/ density, queues, etc. These are then translated into a level-of-service (LOS) description by facility type, based on the 2010 Highway Capacity Manual definitions. Level-of-service is a qualitative measure of the operational efficiency or effectiveness of a roadway. Six levels of service are defined and are designated by letters ranging from A through F, with LOS A representing the best range of operating conditions and LOS F representing the worst. The specific terms in which each level of service is defined vary with the type of facility involved. Per ADOT Roadway Design Guidelines, for mainline I-10 and SR 210, LOS D is the design criteria for urban conditions while LOS B is the design criteria for rural conditions.

2.3.2 Operational Analysis

A traffic operational analysis was conducted as part of the Feasibility Study Update which consisted of the VISSIM microsimulation model for the following five scenarios:

1. Year 2010: Existing
   The existing roadway network within the study area was evaluated using traffic data collected in year 2010. The section of I-10 between I-19 and Houghton is considered urban in character, and the section of I-10 between Houghton and SR 83 is considered rural in character. SR 210 within the study area is considered urban in character.
2. Year 2040: No-Build
   The existing roadway network within the study area was evaluated with the projected year 2040 traffic volumes. Under this scenario there were no proposed improvements made to either I-10 or SR 210. The section of I-10 between I-19 and SR 83 as well as SR 210 within the study area are considered urban in character.
3. Year 2040: System I
   An improved roadway network (improvements to freeway/highway, ramps, and traffic interchange intersections) was evaluated with the projected year 2040 traffic volumes. In the System I roadway improvement alternative, SR 210 is extended as a freeway along the Alvernon Way alignment to connect to I-10 at a system interchange. The section of I-10 between I-19 and SR 83 as well as SR 210 within the study area are considered urban in character.
4. Year 2040: System II
   An improved roadway network (improvements to freeway/highway, ramps, and traffic interchange intersections) was evaluated with the projected year 2040 traffic volumes. In the System II roadway improvement alternative, the freeway connection from I-10 to SR 210 begins just west of Valencia Road and continues parallel to the Davis-Monthan Air Force Base (AFB) before tying into the existing SR 210. The section of I-10 between I-19 and SR 83 as well as SR 210 within the study area are considered urban in character.
5. Year 2040: System IV
   An improved roadway network (improvements to freeway/highway, ramps, and traffic interchange intersections) was evaluated with the projected year 2040 traffic volumes. In the System IV roadway improvement alternative, SR 210 is extended as a freeway along the Alvernon Way alignment to connect to I-10 at a system interchange. A collector-distributor roadway parallels I-10 in both directions between the I-10/SR 210 interchange and Kolb Road. The section of I-10 between I-19 and SR 83 as well as SR 210 within the study area are considered urban in character.

An updated traffic operational analysis was conducted as part of the Design Concept Study which consisted of the VISSIM microsimulation model for the following two scenarios:

1. Year 2040: System I
   A refined roadway network (improvements to freeway/highway, ramps, and traffic interchange intersections) was evaluated with the projected year 2040 traffic volumes. In the System I roadway improvement alternative, SR 210 is extended as a freeway along the

Alvernon Way alignment to connect to I-10 at a system interchange. The section of I-10 between I-19 and Kolb Road as well as SR 210 within the study area are considered urban in character.

2. Year 2040: System IV
   A refined roadway network (improvements to freeway/highway, ramps, and traffic interchange intersections) was evaluated with the projected year 2040 traffic volumes. In the System IV roadway improvement alternative, SR 210 is extended as a freeway along the Alvernon Way alignment to connect to I-10 at a system interchange. A collector-distributor roadway parallels I-10 in both directions between the I-10/SR 210 interchange and Kolb Road. The section of I-10 between I-19 and Kolb Road as well as SR 210 within the study area are considered urban in character.

2.3.3 Results of Updated Operational Analysis

The following figures summarize the results of the I-10 Mainline Operational Analysis:

Year 2010 – Existing Conditions

I-10 Mainline:

For more details, refer to **Figure 2.1: I-10 No-Build Alternative 2010 – Mainline Lanes & LOS Summary** on page 13.

- For the section of I-10 between I-19 and Kolb Road, the LOS is D or better in both the AM and PM peak hour.

I-10 Ramps:

For more details, refer to **Table 2.1 I-10 Ramps LOS Summary** on page 17.

- For the section of I-10 between I-19 and Kolb Road, the LOS is D or better in both the AM and PM peak hour, except:
  - I-10 EB Off-ramp to Kino Parkway NB operates at LOS E in the AM peak hour due to queuing backups at the stop control.

Intersections:

For more details, refer to **Table 2.3 I-10 Intersection LOS Summary** and **Table 2.4 SR 210 Intersection LOS Summary** on page 19.

- For the section of I-10 between I-19 and Kolb Road, all the intersections in the vicinity of the project operate at LOS D or better during the AM and PM peak hour, except:
  - I-10 WB ramp and Valencia Road intersection operates at LOS E during the AM peak hour.
- For the section of SR 210 between Broadway Boulevard and Alvernon Way, all the intersections operate at LOS C or better during the AM and PM peak hour.

Year 2040 – No Build

I-10 Mainline:

For more details, please refer to **Figure 2.2: I-10 No-Build Alternative 2040 – Mainline Lanes & LOS Summary** on page 14.

- For the section of I-10 between I-19 and Kolb Road, the LOS is E or worse in both the AM and PM peak hour.

I-10 Ramps:

For more details, please refer to **Table 2.1 I-10 Ramps LOS Summary** on page 17.

- For the section of I-10 between I-19 and Kolb Road, the LOS is E or worse in both the AM and PM peak hour, except:
  - I-10 WB off-ramp to I-19 operates at LOS D in the AM peak hour and LOS F in the PM peak hour.
  - I-10 EB off-ramp to 6th Avenue operates at LOS C in the AM peak hour and LOS B in the PM peak hour.
  - I-10 EB on-ramp from 6th Avenue operates at LOS D in the AM peak hour and LOS B in the PM peak hour.
  - I-10 EB on-ramp from 6th Avenue operates at LOS D in the AM peak hour.
  - I-10 WB on-ramp from 6th Avenue operates at LOS C in the AM peak hour and LOS D in the PM peak hour.
  - I-10 WB off-ramp to 6th Avenue operates at LOS B in both the AM and PM peak hour.
  - I-10 EB off-ramp to Park Avenue operates at LOS D in the AM peak hour.
  - I-10 WB on-ramp from northbound Park Avenue operates at LOS C in the AM and at LOS D in the PM peak hour.
  - I-10 WB off-ramp to Park Avenue operates at LOS D in the AM peak hour.
  - I-10 EB on-ramp from northbound Kino Parkway operates at LOS A in both the AM and PM peak hour.
  - I-10 WB on-ramp from Kino Parkway operates at LOS B in the AM peak hour and LOS D in the PM peak hour.
  - I-10 WB on-ramp from Ajo Way operates at LOS D in the AM peak hour and LOS C in the PM peak hour.
  - I-10 WB off-ramp to Ajo Way operates at LOS C in the PM peak hour.
  - I-10 WB on-ramp from Irvington Road operates at LOS A in the AM peak hour and LOS B in the PM peak hour.
  - I-10 WB off-ramp to Irvington Road operates at LOS C in the AM peak hour and LOS B in the PM peak hour.
  - I-10 EB off-ramp to Alvernon Way operates at LOS A in both the AM and PM peak hour.
  - I-10 WB off-ramp to Alvernon Way operates at LOS B in both the AM and PM peak hour.
  - I-10 WB on-ramp from Valencia Road operates at LOS C in both the AM and PM peak hours.
  - I-10 EB off-ramp to Craycroft Road operates at LOS C in the AM peak hour.
  - I-10 WB on-ramp from Craycroft Road operates at LOS C in the PM peak hour.
  - I-10 WB on-ramp from Wilmot Road operates at LOS C in both the AM and PM peak hour.
  - I-10 WB off-ramp to Wilmot Road operates at LOS C in the PM peak hour.
  - I-10 EB off-ramp to Kolb Road operates at LOS C in the PM peak hour.
  - I-10 WB on-ramp from Kolb Road operates at LOS A in both the AM and PM peak hour.

Intersections:

For more details, please refer to **Table 2.3 I-10 Intersection LOS Summary** and **Table 2.4 SR 210 Intersection LOS Summary** on page 19.

- For the section of I-10 between I-19 and Kolb Road, all the intersections in the vicinity of the project operate at LOS E or worse during the AM and PM peak hour, except:
  - Palo Verde Road and Irvington Road operates at LOS D in both the AM and PM peak hour.
  - Hotel Drive and Irvington Road operates at LOS D in both the AM and PM peak hour.
  - Alvernon Way and Irvington Road operates at LOS D in the AM peak hour.

  - I-10 EB ramp and Alvernon Way operates at LOS B in the AM peak hour.
- For the section of SR 210 between 34th Street and Alvernon Way, all the intersections operate at LOS E or worse during the AM and PM peak hour, except:
  - SR 210 and 34th Street operates at LOS A in both the AM and PM peak hour.
  - Palo Verde Road and the Frontage Road operates at LOS A in both the AM and PM peak hour.
  - Palo Verde Road and 37th Street operates at LOS A in both the AM and PM peak hour.
  - SR 210 and Alvernon Way operates at LOS C in both the AM and PM peak hour.

Year 2040 – System Alternative I Improvements

I-10 Mainline:

For more details, refer to **Figure 2.3 I-10 System Alternative I – 2040 Build - Mainline Lanes & LOS Summary** on page 15.

- For the section of I-10 between I-19 and Kolb Road, the LOS is C or better in both the AM and PM peak hour.

SR 210 Mainline:

For more details, please refer to **Figure 2.3: I-10 System I Alternative – 2040 Build - Mainline Lanes & LOS Summary** on page 15.

- For the section of SR 210 between 34th Street and the I-10/SR 210 system interchange, the LOS is C or better in both the AM and PM peak hour.

I-10 Ramps:

For more details, please refer to **Table 2.1 I-10 Ramps LOS Summary** on page 17.

- For the section of I-10 between I-19 and Kolb Road, the LOS is D or better in both the AM and PM peak hour.

SR 210-Ramps:

For more details, refer to **Table 2.2 SR 210 Ramps LOS Summary Table** on page 18.

- For the section of SR 210 between Golf Links Road and the I-10/SR 210 system interchange, the LOS is D or better in both the AM and PM peak hour.

Intersections:

For more details, refer to **Table 2.3 I-10 Intersection LOS Summary** and **Table 2.4 SR 210 Intersection LOS Summary** on page 19.

- For the section of I-10 between I-19 and Kolb Road, all the intersections in the vicinity of the project operate at LOS D or better during the AM and PM peak hour.
- For the section of SR 210 between 34th Street and the I-10/SR 210 system interchange, all the intersections operate at LOS C or better during the AM and PM peak hour.

Year 2040 – System Alternative IV Improvements

I-10 Mainline:

For more details, please refer to **Figure 2.4: I-10 System IV Alternative – 2040 Build - Mainline Lanes & LOS Summary** on page 16.

- For the section of I-10 between I-19 and Kolb Road, the LOS is D or better in both the AM and PM peak hour.
- For the CD roadway between the I-10/SR 210 system interchange and Kolb Road, the LOS is C or better in both the AM and PM peak hour.

SR 210 Mainline:

For more details, please refer to **Figure 2.4: I-10 System IV Alternative – 2040 Build - Mainline Lanes & LOS Summary** on page 16.

- For the section of SR 210 between 34th Street and the I-10/SR 210 system interchange, the LOS is C or better in both the AM and PM peak hour.

I-10 Ramps:

For more details, please refer to **Table 2.1: I-10 Ramps LOS Summary** on page 17.

- For the section of I-10 between I-19 and Kolb Road, the LOS is D or better in both the AM and PM peak hour.

SR 210 Ramps:

For more details, please refer to **Table 2.2: SR 210 Ramps LOS Summary** on page 18.

- For the section of SR 210 between Golf Links Road and the I-10/SR 210 system interchange, the LOS is D or better in both the AM and PM peak hour.

Intersections:

For more details, please refer to **Table 2.3: I-10 Intersection LOS Summary** and **Table 2.4 SR 210 Intersection LOS Summary** on page 19.

- For the section of I-10 between I-19 and Kolb Road, all the intersections in the vicinity of the project operate at LOS D or better during the AM and PM peak hour.
- For the section of SR 210 between 34th Street and the I-10/SR 210 system interchange all the intersections operate at LOS C or better during the AM and PM peak hour.

Figure 2.1 I-10 Existing Conditions 2010 – Mainline Lanes & LOS Summary

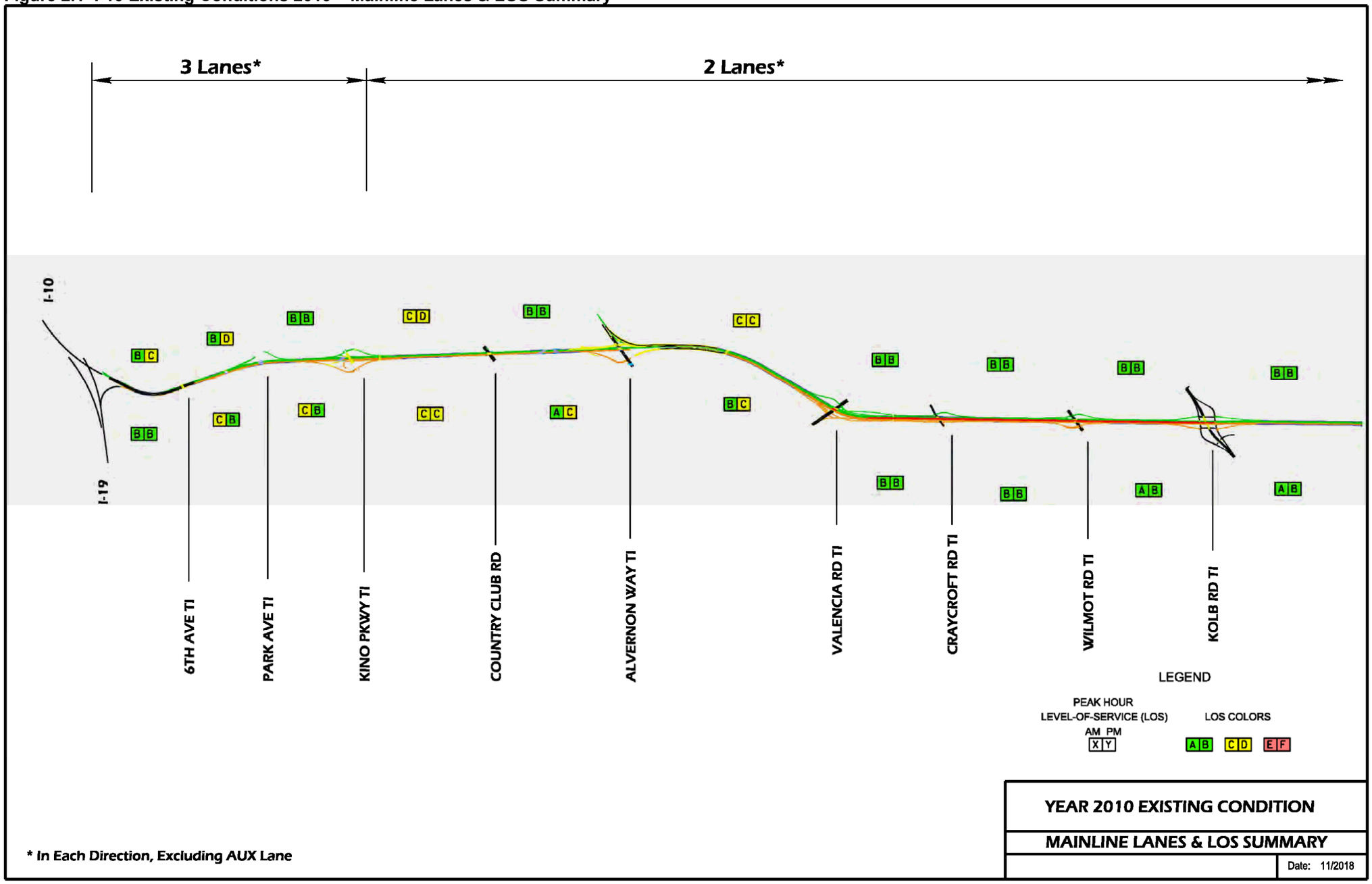


Figure 2.2 I-10 No Build Alternative 2040 – Mainline Lanes & LOS Summary

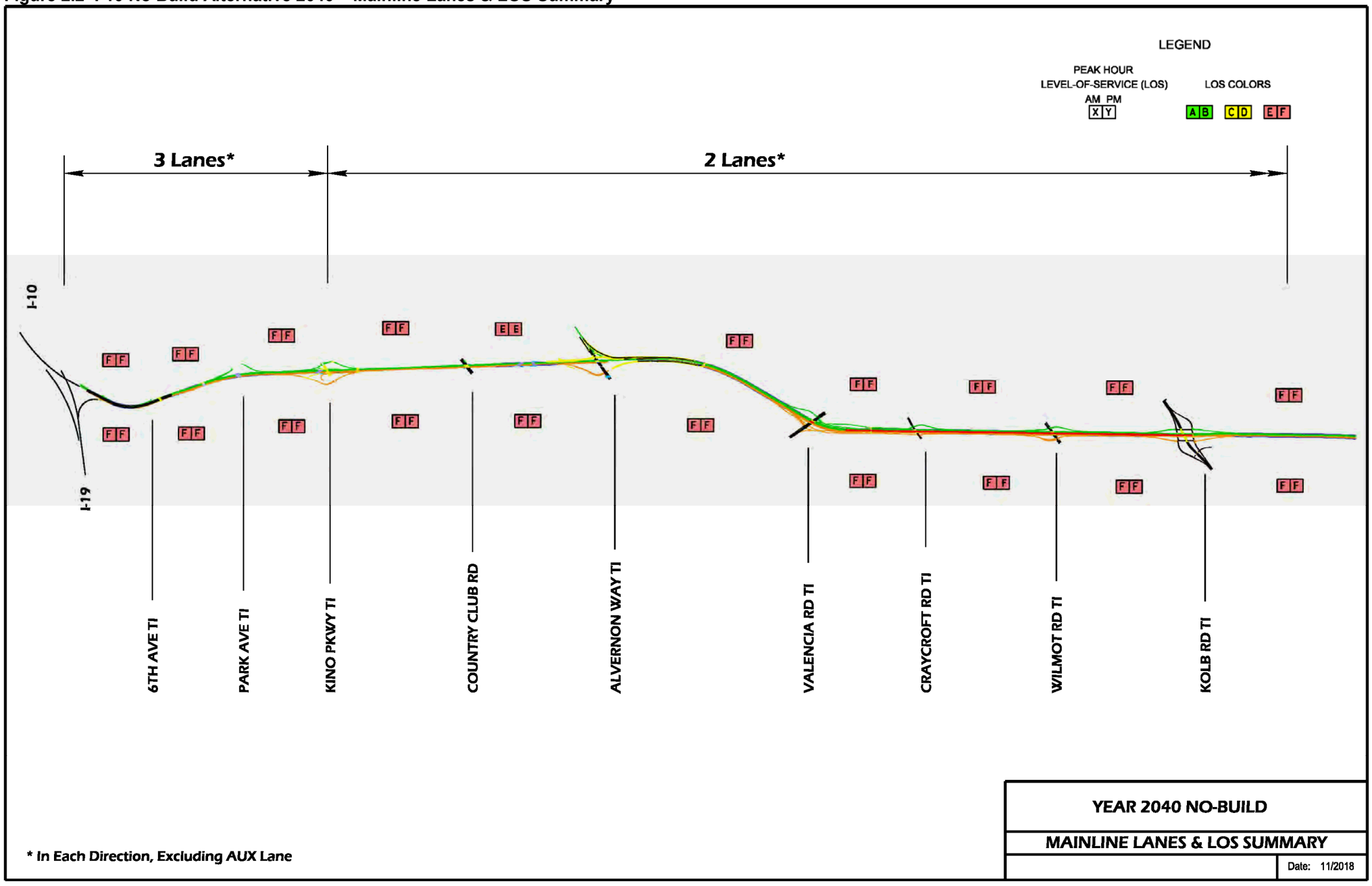


Figure 2.3 I-10 System Alternative I – 2040 Build – Mainline Lanes & LOS Summary

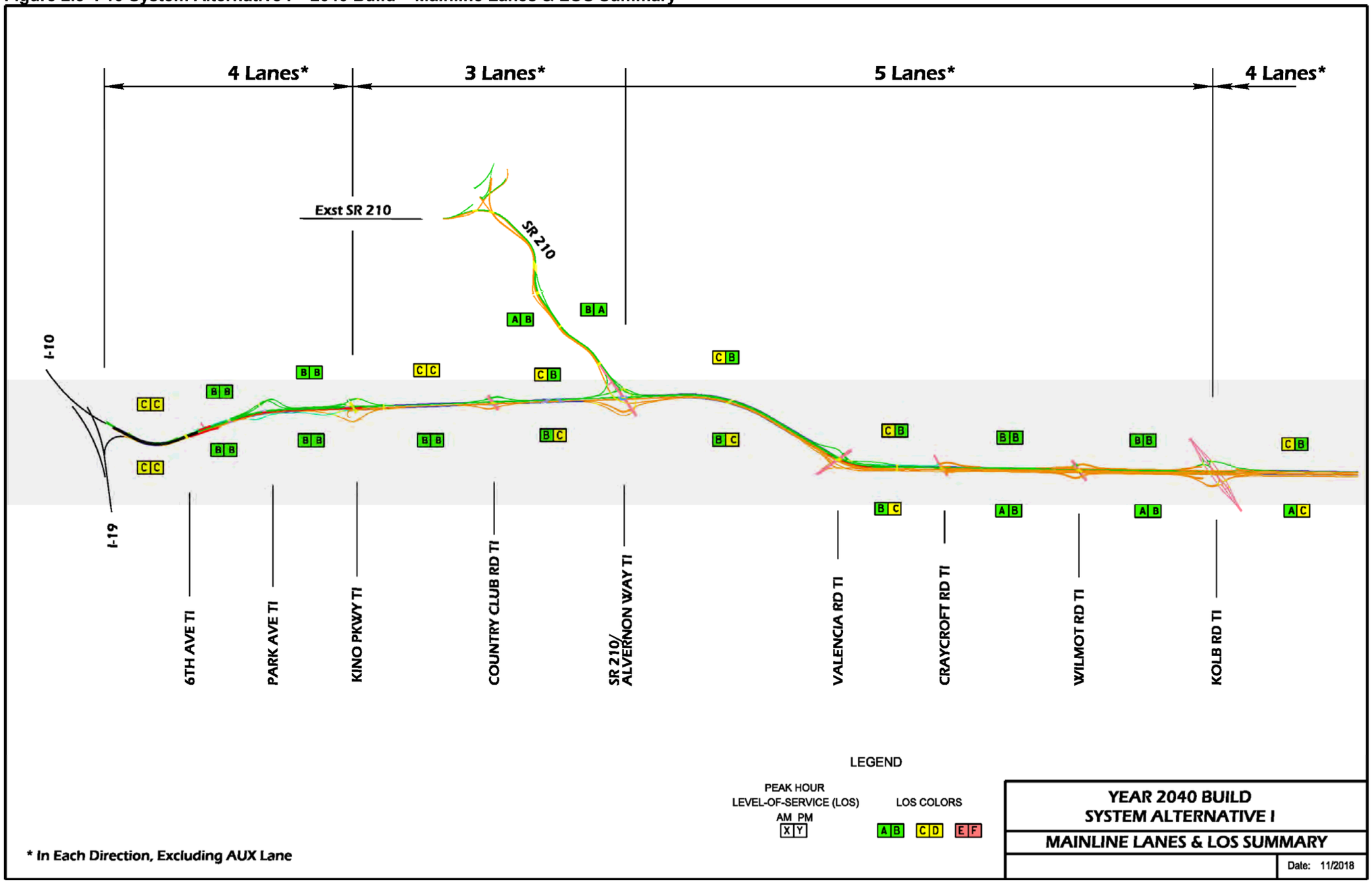


Figure 2.4 I-10 System Alternative IV – 2040 Build – Mainline Lanes & LOS Summary

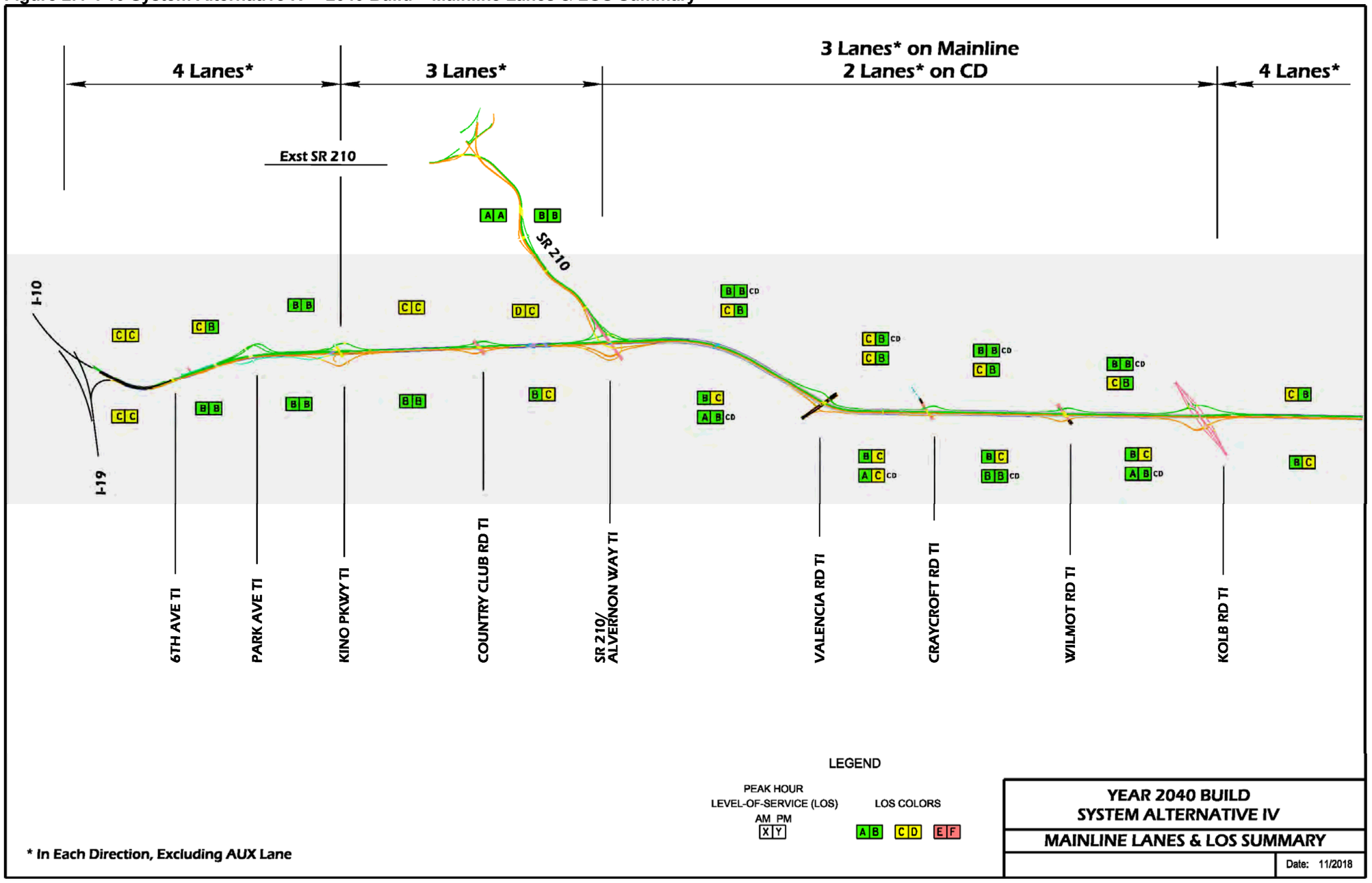


Table 2.1 I-10 Ramps LOS Summary Table

Traffic Interchange (TI)	Ramp Name	Operational Analysis Scenarios							
		2010 – Existing LOS		2040 – No Build LOS		2040 - System I LOS		2040 - System IV LOS	
		AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr
I-10 & I-19 System	I-10 WB to I-19 SB Ramp	A	C	D	F	C	D	C	D
	I-19 NB to I-10 EB Ramp	C	B	F	F	C	B	C	C
6th Ave.	WB Off-Ramp	A	A	B	B	B	B	B	B
	WB On-Ramp	A	B	C	D	B	B	B	B
	EB Off-Ramp	B	A	C	B	B	B	B	B
	EB On-Ramp	A	A	D	F	A	B	B	B
Park Ave.	WB Off-Ramp	A	A	D	E	B	C	C	C
	WB On-Ramp	A	B	C	D	B	C	B	C
	EB Off-Ramp	B	A	D	F	B	B	B	B
	EB On-Ramp	A	A	F	F	A	A	A	A
Kino Pkwy.	EB Off-Ramp to SB Kino Pkwy.	B	A	F	F	(2)	(2)	(2)	(2)
	EB Off-Ramp to NB Kino Pkwy.	E	A	F	F	(2)	(2)	(2)	(2)
	EB On-Ramp from SB Kino Pkwy.	A	A	F	F	B	C	B	C
	EB On-Ramp from NB Kino Pkwy.	A	A	A	A	(2)	(2)	(2)	(2)
	WB Off-Ramp	(1)	(1)	(1)	(1)	C	B	C	B
	WB On-Ramp	B	B	B	D	B	C	B	C
	EB Off-Ramp	(1)	(1)	(1)	(1)	B	B	B	B
	EB On-Ramp	(1)	(1)	(1)	(1)	A	A	A	A
Ajo Way	WB Off-Ramp	B	A	F	C	(2)	(2)	(2)	(2)
	WB On-Ramp	A	C	D	C	(2)	(2)	(2)	(2)
Country Club Rd.	WB Off-Ramp	(1)	(1)	(1)	(1)	B	B	C	C
	WB On-Ramp	(1)	(1)	(1)	(1)	C	D	C	C
	EB Off-Ramp	(1)	(1)	(1)	(1)	C	B	C	B
	EB On-Ramp	(1)	(1)	(1)	(1)	B	B	B	B
Palo Verde Rd.	EB Off-Ramp to SB Palo Verde Rd.	A	A	F	F	(2)	(2)	(2)	(2)
	EB Off-Ramp to NB Palo Verde Rd.	B	A	F	F	(2)	(2)	(2)	(2)
	EB On-Ramp from SB Palo Verde Rd.	A	D	F	F	(2)	(2)	(2)	(2)
	WB On-Ramp from SB Palo Verde Rd.	A	B	F	F	(2)	(2)	(2)	(2)
Irvington Rd.	WB Off-Ramp	A	A	C	B	(2)	(2)	(2)	(2)
	WB On-Ramp	B	D	A	B	(2)	(2)	(2)	(2)
Alvernon Way	WB Off-Ramp	B	A	B	B	A	A	A	A
	WB On-Ramp	(1)	(1)	(1)	(1)	A	B	B	B
	EB Off-Ramp	A	A	A	A	A	A	A	B
	EB On-Ramp	A	B	E	F	A	B	A	A

Notes: (1) Currently not a ramp.

(2) Not a future ramp.

Table 2.1 (Continued) I-10 Ramps LOS Summary Table

Traffic Interchange (TI)	Ramp Name	Operational Analysis Scenarios							
		2010 – Existing LOS		2040 – No Build LOS		2040 - System I LOS		2040 - System IV LOS	
		AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr
I-10 & SR 210 System	I-10 WB to SR 210 NB	(1)	(1)	(1)	(1)	B	A	B	A
	I-10 EB to SR 210 NB	(1)	(1)	(1)	(1)	A	A	B	A
	SR 210 SB to I-10 EB	(1)	(1)	(1)	(1)	A	B	A	B
	SR 210 SB to I-10 WB	(1)	(1)	(1)	(1)	A	A	A	A
Valencia Rd.	WB Off-Ramp	B	A	F	F	C	B	B	B
	WB On-Ramp	B	A	C	C	D	D	B	B
	EB Off-Ramp	A	B	F	F	C	D	B	B
	EB On-Ramp	A	A	F	F	B	C	B	C
Craycroft Rd	WB Off-Ramp	A	A	F	F	B	A	A	A
	WB On-Ramp	A	A	F	C	(2)	(2)	(2)	(2)
	EB Off-Ramp	A	A	C	F	(2)	(2)	(2)	(2)
	EB On-Ramp	A	A	F	F	A	B	A	B
Wilmot Rd	WB Off-Ramp	A	A	F	C	A	A	A	A
	WB On-Ramp	A	A	C	C	C	C	D	C
	EB Off-Ramp	A	A	F	F	B	C	B	C
	EB On-Ramp	A	A	E	E	A	A	A	B
Kolb Rd.	WB Off-Ramp	A	A	F	F	B	B	B	B
	WB On-Ramp	A	A	A	A	B	B	C	B
	EB Off-Ramp	A	A	F	C	A	B	B	C
	EB On-Ramp	A	A	F	F	A	B	A	B

Notes: (1) Currently not a ramp.
(2) Not a future ramp.

Table 2.2 SR 210 Ramps LOS Summary Table

Traffic Interchange (TI)	Ramp Name	Operational Analysis Scenarios							
		2010 – Existing LOS		2040 – No Build LOS		2040 - System I LOS		2040 - System IV LOS	
		AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr
Ajo Way	NB Off-Ramp	(1)	(1)	(1)	(1)	A	A	A	A
	NB On-Ramp	(1)	(1)	(1)	(1)	B	C	B	C
	SB Off-Ramp	(1)	(1)	(1)	(1)	B	A	B	B
	SB On-Ramp	(1)	(1)	(1)	(1)	B	D	B	D
Golf Links Rd.	NB Off-Ramp	(1)	(1)	(1)	(1)	B	B	B	B
	SB On-Ramp	(1)	(1)	(1)	(1)	A	B	A	B
Alvernon Way	NB Off-Ramp	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)
	SB On-Ramp	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)

Notes: (1) Currently not a ramp.
(2) Not a future ramp.

Table 2.3 I-10 Intersection LOS Summary Table

Traffic Interchange (TI)	Ramp Name	Operational Analysis Scenarios							
		2010 – Existing LOS		2040 – No Build LOS		2040 - System I LOS		2040 - System IV LOS	
		AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr
6th Ave.	I-10 WB Ramps & 6th Ave.	B	B	F	F	B	D	B	D
	I-10 EB Ramps & 6th Ave.	A	B	F	F	B	B	B	B
Park Ave.	I-10 WB Ramps & Park Ave.	B	A	F	F	B	C	B	C
	I-10 EB Ramps & Park Ave.	A	A	E	F	B	B	B	C
Kino Pkwy.	Kino Pkwy. & Ajo Connector	C	B	F	F	C	C	C	C
	I-10 WB Ramps & Kino Pkwy.	(1)	(1)	(1)	(1)	B	C	C	C
	I-10 EB Ramps & Kino Pkwy.	(1)	(1)	(1)	(1)	B	B	B	B
	Ajo Connector & Ajo Way	D	C	F	F	B	B	B	B
Country Club Rd.	I-10 WB Ramps & Country Club Rd.	(1)	(1)	(1)	(1)	B	C	C	C
	I-10 EB Ramps & Country Club Rd.	(1)	(1)	(1)	(1)	B	B	B	B
Palo Verde Rd.	Palo Verde Rd & Irvington Rd.	C	C	D	D	C	C	C	C
	I-10 EB Ramp & Palo Verde Rd.	(1)	(1)	(1)	(1)	A	A	A	A
	Hotel Dr. & Irvington Rd.	B	C	D	D	(2)	(2)	(2)	(2)
Alvernon Way	I-10 WB Ramps & Alvernon Way	(1)	(1)	(1)	(1)	B	B	B	B
	I-10 EB Ramps & Alvernon Way	B	B	B	E	B	B	B	B
Valencia Rd.	I-10 EB Ramps & Valencia Rd.	B	C	F	F	B	C	B	C
	I -10 WB Ramps & Valencia Rd.	E	B	F	F	B	C	B	C
Craycroft Rd.	I-10 EB Ramps & Craycroft Rd.	A	A	F	F	B	C	B	C
	I-10 WB Ramps & Craycroft Rd.	A	A	F	F	B	B	B	B
Wilmot Rd.	I-10 WB Ramps & Wilmot Rd.	A	A	F	F	B	B	B	B
	I-10 EB Ramps & Wilmot Rd.	A	B	F	F	B	B	B	B
Kolb Rd.	I-10 WB Ramps & Kolb Rd.	A	A	F	F	B	B	B	B
	I-10 EB Ramps & Kolb Rd.	A	A	F	F	A	A	A	A

Notes: (1) Currently not a ramp.
(2) Not a future ramp.

Table 2.4 SR 210 Intersection LOS Summary Table

Traffic Interchange (TI)	Ramp Name	Operational Analysis Scenarios							
		2010 – Existing LOS		2040 – No Build LOS		2040 - System I LOS		2040 - System IV LOS	
		AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr	AM Peak Hr	PM Peak Hr
Ajo Way	SR 210 SB Ramps & Ajo Way	(1)	(1)	(1)	(1)	C	C	C	C
	SR 210 NB Ramps & Ajo Way	(1)	(1)	(1)	(1)	B	B	C	B
N/A	SR 210 & Alvernon Way	C	B	C	C	B	B	B	B
N/A	Alvernon Way & 37th St.	(1)	(1)	(1)	(1)	B	B	A	A
N/A	Palo Verde Rd. & 37th St.	B	B	A	A	B	C	B	B
N/A	Palo Verde Rd. & Frontage Rd.	B	B	A	A	B	B	B	AB
N/A	SR 210 & Richey Blvd.	B	B	F	F	A	A	A	A
N/A	SR 210 & 34th St.	A	A	A	A	B	B	B	B

Notes: (1) Currently not a ramp. (2) Not a future ramp.

2.3. Crash Data

Historic crash data for the 5-year period from July 2011 to June 2016 was obtained from ADOT's Accident Location Identification Surveillance System (ALISS) database for the study corridors within the extent of the DCR:

- I-10: I-19 to MP 271 east of Kolb Road
- SR 210: Broadway Road to Alvernon Way
- Alvernon Way/Golf Links Road: SR 210 to I-10 and Alvernon Way TI.

Crash Summary

The number of crashes per year for the mainline and all other roads including ramps, frontage roads, and cross-streets between and within 250 feet of ramp junctions along the corridors are summarized in **Table 2.5 Summary of Crashes**. A year was measured from July 1st of one year to June 30th of the following year. A total of the 2,056 crashes occurred during the 5-year period on the study corridors; the number of incidents, primarily on the I-10 mainline, increased each year.

Table 2.5 Summary of Crashes (July 2011-June 2016)

Year[1]	I-10		SR 210		Alvernon Way		Total
	Mainline	Other Roads[2]	Mainline	Other Roads[2]	Mainline	Other Roads[2]	
July 2011-June 2012	122	123	21	23	29	17	**335**
July 2012-June 2013	147	143	16	13	35	18	**372**
July 2013-June 2014	164	145	12	17	37	18	**393**
July 2014-June 2015	239	140	14	22	39	16	**470**
July 2015-June 2016	254	132	18	27	39	16	**486**
Total	**926**	**683**	**81**	**102**	**179**	**85**	**2,056**

Notes: [1] A year is measured from July 1 of one year to June 30 of the following year.
[2] Includes ramps, frontage roads, and cross streets between ramp junctions.

More than half of the total crashes during the 5-year period resulted in property damage only and no injuries were reported. An estimated 24 crashes were fatal during the 5-year period; 15 crashes occurred along the I-10 corridor. **Table 2.6 Severity of Crashes** details the severity of the crashes along the study corridors.

Table 2.6 Severity of Crashes (July 2011-June 2016)

Severity	I-10		SR 210		Alvernon Way		Total
	Mainline	Other Roads[1]	Mainline	Other Roads[1]	Mainline	Other Roads[1]	
Fatal	8	7	1	3	3	2	**24**
Incapacitating Injury	15	19	10	6	3	2	**55**
Non-incapacitating Injury	89	80	24	27	22	13	**255**
Possible Injury	123	128	11	17	33	13	**325**
Property Damage Only	691	449	35	49	118	55	**1,397**
Total	**926**	**683**	**81**	**102**	**179**	**85**	**2,056**

Notes: [1] Includes ramps, frontage roads, and cross streets between ramp junctions.

Figure 2.5 Crash Locations visually displays the location of all crashes including the fatal and incapacitating crashes for the mainlines and all other roads such ramps, frontage roads, and cross streets between and within 250 feet of ramps junctions along the corridors. **Figure 2.6 Crash Density** displays the overall density of the crashes as well as the fatal crashes by mode.

I-10 Mainline: I-19 to MP 271 east of Kolb Road

A total of 926 crashes occurred on the I-10 mainline; most of the crashes were rear end collisions, sideswipe (same direction) collisions or single vehicle crashes that occurred during the day under clear weather conditions. Crashes were typically cited as speed too fast for conditions, unknown, or no improper driving. Of the crashes cited as unknown and no improper driving, nearly a third occurred at night.

Table 2.7 I-10 Mainline 5-Year Crash Summary details the crashes by segment for the mainline. Segments were divided as follows: Segment 1: I-19 to Valencia Road and Segment 2: Valencia to MP 271. A total of 450 crashes occurred in the eastbound direction and 476 in the westbound direction.

- Most of the crashes, 334 in both directions, are in Segment 1.
- No fatal crashes were reported in the eastbound direction.
- In the westbound direction, 8 fatal crashes occurred with 6 crashes in Segment 1 and 2 crashes in Segment 2. Crashes were predominantly cited as speed too fast for conditions and other.
- The highest number of reported incidents for each direction is between Kino Parkway and Palo Verde Road in Segment 1: 112 eastbound crashes and 111 westbound with 4 fatal crashes. At least 2 fatal crashes were pedestrian related collisions that occurred at night.

Table 2.7 I-10 Mainline 5-Year Crash Summary

Segment		EB		WB	
Beginning TI[1] or MP	Ending TI[1] or MP	All Crash Types	Fatal Crashes	All Crash Types	Fatal Crashes
Segment 1[3]					
I-19[2]	6th Ave	24	0	11	0
6th Ave	Park Ave	33	0	32	0
Park Ave	Kino Pkwy	73	0	54	0
Kino Pkwy	Palo Verde Rd	112	0	111	4
Palo Verde Rd	Alvernon Way	30	0	68	1
Alvernon Way	Valencia Rd	62	0	58	1
Segment 2[3]					
Valencia Rd	Craycroft Rd	38	0	57	1
Craycroft Rd	Wilmot Rd	35	0	47	1
Wilmot Rd	Kolb Rd	31	0	30	0
Kolb Rd	MP 271	12	0	8	0
TOTAL Segment 1		334	0	334	6
TOTAL Segment 2		116	0	142	2
TOTAL - ALL SEGMENTS		**450**	**0**	**476**	**8**

Notes: [1] From/to crossroad overpass or underpass, unless otherwise noted.
[2] From the east most ramp eastward (does not include the area within the TI).
[3] I-10 Segments are divided as follows:
- Segment 1, I-10, 6th Avenue to Alvernon Way is urban in character.
- Segment 2, I-10, from Alvernon Way to Kolb Road is urban fringe in character.

SR 210 Mainline: Broadway Boulevard to Alvernon Way

An estimated 81 crashes occurred on SR 210 mainline; crashes were primarily single vehicle crashes or rear end collisions that occurred during the day under clear weather conditions. Mainline crashes were generally cited as speed too fast for conditions, unknown, and other.

Figure 2.5 Crash Locations

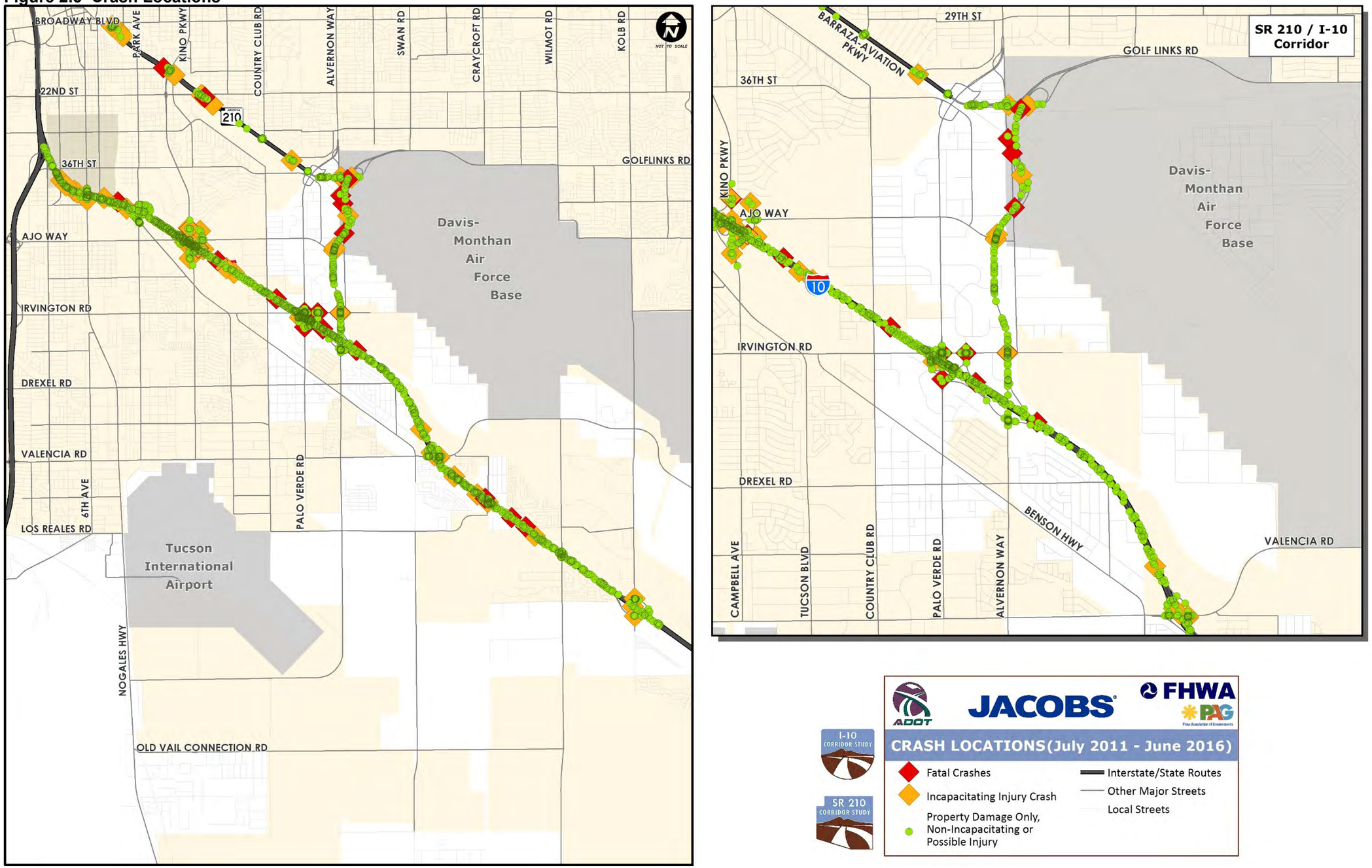


Figure 2.6 Crash Density

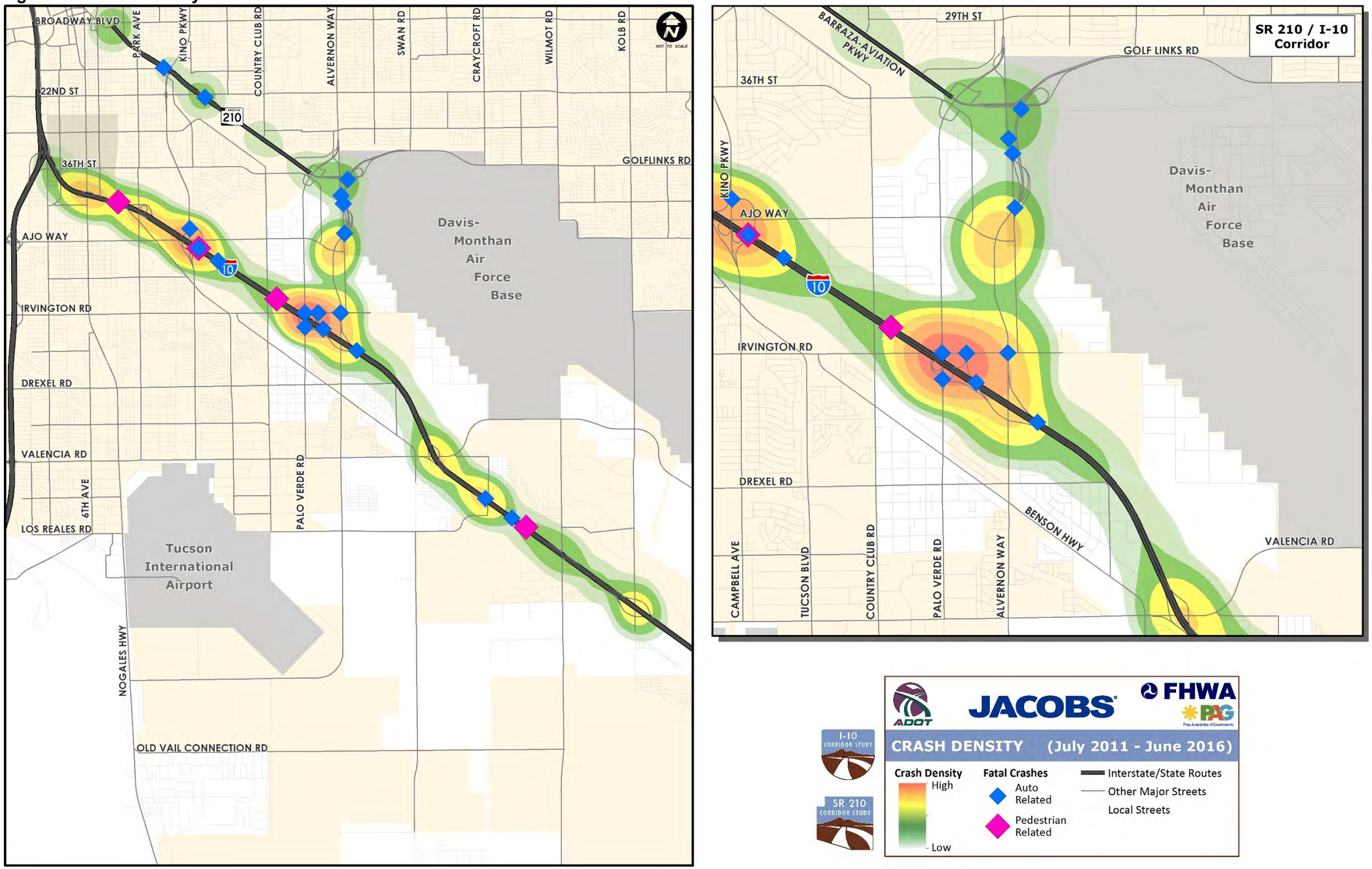


Table 2.8 SR 210 Mainline 5-Year Crash Summary details the crashes by segment for the mainline. Crashes were nearly equal in each direction; 41 crashes occurred in the eastbound direction and 40 crashes in the westbound direction.

- The highest number of reported incidents for each direction is between 22nd Street and Country Club Drive: 13 eastbound and 11 westbound.
- No fatal crashes were reported in the westbound direction.
- In the eastbound direction, 1 fatal crash occurred between Broadway Boulevard and Kino Parkway. The crash was cited as speed too fast for condition.
- The sections from Dodge Boulevard to the end of SR 210 had a combined total of 12 crashes in the eastbound direction and 15 in the westbound direction.

Table 2.8 SR 210 Mainline 5-Year Crash Summary

Segment		EB		WB	
Beginning Crossroad[1]	Ending Crossroad[1]	All Crash Types	Fatal Crashes	All Crash Types	Fatal Crashes
Broadway Blvd	Kino Pkwy	7	1	7	0
Kino Pkwy	22nd St	2	0	3	0
22nd St	Country Club Dr	13	0	11	0
Country Club Dr	34th St	4	0	2	0
34th St	Richey Blvd	0	0	2	0
Richey Blvd	Dodge Blvd	3	0	1	0
Dodge Blvd	Alvernon Way	8	0	8	0
Alvernon Way	End of SR 210	4	0	6	0
TOTAL - ALL SEGMENTS		**41**	**1**	**40**	**0**

Notes: [1] From/to crossroad overpass or underpass, unless otherwise noted.

Alvernon Way/Golf Links Road Mainline: Aviation Parkway to I-10 and Alvernon Way TI

A total of 264 crashes occurred on the mainline from Aviation Parkway to I-10 WB off ramp at Alvernon Way TI. Most of the crashes were rear end collisions, left turn collisions or sideswipe (same direction) collisions that occurred during the day under clear weather conditions. Crashes were generally cited as speed too fast for conditions, inattention or distraction, or unknown.

Table 2.9 Alvernon Way/Golf Links Road Mainline 5-Year Crash Summary details the crashes by segment for the mainline. Crashes were nearly equal in each direction; 89 crashes occurred in the northbound direction and 90 crashes in the southbound direction.

- The highest number of reported incidents for the northbound direction is from Ajo Way to Irvington Road with 42 crashes.
- In the southbound direction the sections from Golf Links Road to Irvington Rd have an estimated 37 and 35 crashes respectively.
- No fatal crashes were reported in the northbound direction.
- A total of 3 fatal crashes occurred in the southbound direction; 2 along Golf Links Road mainline from Aviation Parkway to Alvernon Way and 1 crash along Alvernon Way mainline from Aviation Parkway to Golf Links Road. Crashes were primarily cited as speed too fast for condition and exceeded lawful speed.

Table 2.9 Alvernon Way/Golf Links Mainline 5-Year Crash Summary

Segment		NB		SB	
Beginning Crossroad[1]	Ending Crossroad[1]	All Crash Types	Fatal Crashes	All Crash Types	Fatal Crashes
Aviation Pkwy[2]	Alvernon Way	15	0	10	2
Aviation Pkwy[3]	Golf Links Rd	9	0	5	1
Golf Links Rd	Ajo Way	8	0	37	0
Ajo Way	Irvington Rd	42	0	35	0
Irvington Rd	I-10 and Alvernon Way TI	15	0	3	0
TOTAL - ALL SEGMENTS		**89**	**0**	**90**	**3**

Notes: [1] From/to crossroad overpass or underpass, unless otherwise noted.
[2] Golf Links Road mainline from Aviation Parkway to Alvernon Way.
[3] Alvernon Way mainline from Aviation Parkway to Golf Links Road

3. DESIGN CONCEPT ALTERNATIVES

3.1 Introduction

The Feasibility Study Update Report that was completed in October of 2014 evaluated the I-10 corridor between I-19 and SR 83 and evaluated the extension of SR 210 to several potential connections with I-10. It is the basis of further evaluation within this Design Concept Study.

The Feasibility Study evaluated several 'no-build' scenarios and determined that improvements to I-10 and the extension of SR 210 to a connection with I-10 are required to provide improved mobility and an acceptable level of service on both highways for the 2040 design year.

Evaluated alternatives for I-10 improvements occur within the existing I-10 study corridor. They include improving existing conditions, such as; short weaving distances (especially regarding successive loop ramps), TIs spaced closer than the desirable one mile spacing, and short driver decision-making distances. Improvements also include modifying TI configurations and mainline roadways to improve traffic operations and safety and to reduce new right-of-way requirements. The primary improvement is the addition of general purpose lanes and auxiliary lanes to increase traffic capacity and improve the level of service.

Evaluated alternatives for the extension of SR 210 involved several different connection points with I-10 and subsequently different routes for SR 210. During development of the Feasibility Study Update, System Alternative II that routed SR 210 along the southwest edge of Davis-Monthan Air Force Base to a connection with I-10 north of Valencia Road was eliminated due to environmental impact concerns. In summary, all SR 210 alternatives with alignments east of the Alvernon Way corridor were eliminated due mostly to environmental impacts and impacts to Davis-Monthan AFB.

Two alternatives have been identified to be carried forward for further study in the Design Concept Study. See **Figure 3.1 Overview**.

- System Alternative I
- System Alternative IV

These two alternatives improve I-10 between the I-10/I-19 System Interchange and the Kolb Road TI and extend SR 210 from Golf Links Road along the Alvernon Way corridor to a connection with I-10 at the existing I-10/Alvernon Way TI. Both alternatives accommodate design year 2040 traffic at an acceptable level of service. Improvements to I-10 through the I-10/I-19 TI and to the north and west of the TI are not addressed in this study.

The two alternatives are identical for two segments of the project; I-10 between I-19 and the I-10/SR 210 System TI at Alvernon Way and the entire extension of SR 210 south to the I-10/SR 210 System TI.

For the I-10 segment, both alternatives improve existing conditions by improving weaving distances where ramps enter/exit I-10, improve interchange spacing by replacing the Palo Verde Road TI with a new TI at Country Club Road, and provide braided ramps to address both ramp weaving distances and retain the Park Avenue TI despite short TI spacing to 6th Avenue and Kino Parkway TIs. For the SR 210 segment, both alternatives reconstruct the interchange at Golf Links Road to provide for the through movement of traffic on SR 210, reconstruct the bridge over the UPRR, provide a new TI at Ajo Way, and construct the new system interchange with I-10.

The two alternatives differ only within the segment of I-10 between the I-10/SR 210 System TI and the Kolb Road TI. Alternative I east of Alvernon Way has five mainline lanes in each direction that mixes regional and local traffic. Alternative IV east of Alvernon Way provides a collector-distributor system that separates local traffic (entering and exiting I-10) from I-10 mainline regional traffic.

3.1.1 General Modifications to Existing I-10

Modifications to existing I-10 from I-19 to Kolb Road are required to provide an acceptable LOS for design year 2040 and to resolve interchange spacing and ramp weaving issues. The modifications include improvements to both the I-10 mainline roadway and to the existing I-10 TIs within the project limits.

The modifications to existing I-10 will be similar for both System Alternative I and System Alternative IV with the following exceptions between the SR 210 System Interchange and the Kolb Road TI:

- The number of mainline I-10 lanes will be different. System Alternative I will have five mainline lanes in each direction. System Alternative IV will have three mainline I-10 lanes and CD roadways parallel to the eastbound and westbound I-10 mainline roadways.
- The Alvernon Way TI, the Valencia Road TI, the Craycroft Road TI, the Wilmot Road TI, and the Kolb Road TI will connect with the I-10 CD roadways.
- Shifts in I-10 horizontal alignments will be needed to reduce right-of-way takes from adjacent residential subdivisions. Differences in typical sections for the two alternatives will result in differing horizontal alignments.

Evaluation Process for Existing I-10 Mainline and TIs

Using the 2040 PAG Forecast Traffic Volumes for peak hour traffic volumes and 'Synchro' micro-modeling software, traffic capacity problems at TIs were identified wherever levels of service are low using the existing crossroad and ramp configurations. Solutions were then identified and tested by re-running the micro-model with the proposed solution coded into the software. This iterative process was repeated until an adequate solution was produced.

All initial 'Synchro' micro-modeling runs, and solutions involved a default of a standard diamond type TI. If micro-modeling indicated that a diamond type TI will not adequately function, other TI types were tested. **Sections 3.2.2 thru 3.2.4** describe each TI and required improvements.

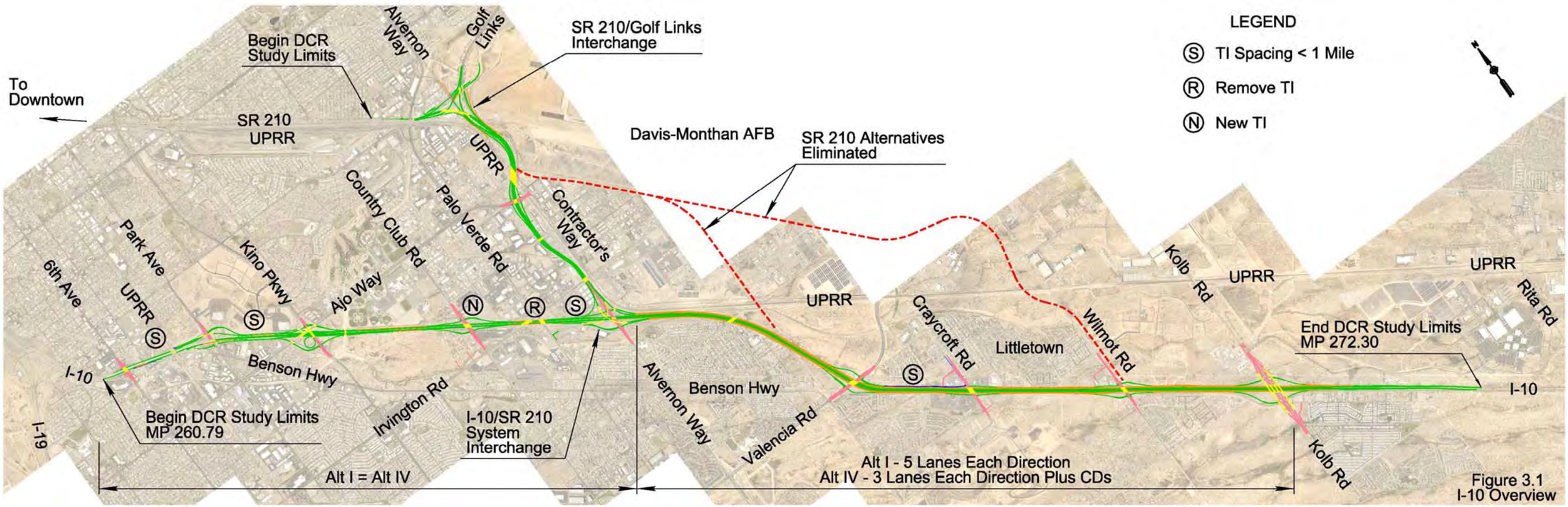
I-10 Capacity

Traffic demand on I-10 is relatively the same for both alternatives. This means that traffic volumes and the number of mainline I-10 lanes west of the SR 210 System Interchange are similar for both alternatives. East of the SR 210 System Interchange, the configurations of the mainline roadways and ramp connections between the I-10 mainline and crossroads at traffic interchanges are different for System Alternative IV because of the introduction of the CD lanes. Auxiliary lanes are required between successive entrance and exit ramps along both the eastbound and westbound I-10 roadways in addition to the mainline through lanes or CD lanes. I-10 mainline lanes will vary as follows:

- From the I-19 interchange easterly to the Kino Parkway interchange I-10 will have four mainline lanes in each direction.
- From the Kino Parkway interchange easterly to the I-10/SR 210 System Interchange at Alvernon Way, I-10 will have three mainline lanes in each direction.
- Between the System Interchange at Alvernon Way and the Kolb Road interchange, I-10 will have the following number of mainline lanes in each direction for the alternatives under consideration:
  - System Alternative I: Five mainline lanes in each direction.
  - System Alternative IV: Three mainline lanes plus two CD lanes in each direction.

I-10 will have LOS C or better in both directions through the limits of the project for both alternatives.

Figure 3.1 I-10 Overview



The western project limits of this study are at the I-10/I-19 System Interchange. Initial traffic evaluations suggested the potential need for improvements to extend into the interchange. Later traffic evaluations during the FS Update, with the adjusted traffic model numbers, indicated that improvements will not extend into the interchange. The eastbound entrance ramp from northbound I-19 becomes the 4th eastbound general purpose lane on I-10 and will require the reconstruction of the gore of the eastbound exit ramp to 6th Avenue. The 4th westbound general purpose lane on I-10 is dropped prior to the gore with the westbound entrance ramp from 6th Avenue.

I-10 Right-of-Way

The areas adjacent to I-10 from I-19 to Kolb Road are developed with both commercial and residential development along I-10. The existing I-10 ROW corridor is quite narrow and there is very little unused ROW between the existing outer edges of the roadways and the ROW lines.

Input from Stakeholders indicated a desire to widen the existing roadways to the outside where feasible. However, preliminary layout of additional lanes for the I-10 mainline roadway and the reconfiguration of TI ramps indicates that within the limits discussed above, it will be necessary to widen the I-10 mainline roadways into the median to the extent feasible to reduce the impact to adjacent properties that would occur if all widening is done to the outside of the existing roadways.

Additional ROW will be required along I-10 where TIs and ramps are being modified.

I-10 Median

At the west end of the project, existing I-10 has a closed median with Portland Cement Concrete Pavement (PCCP) and a concrete median barrier located at median centerline. Through the horizontal curve over Park Avenue, the existing median changes from the closed median to an open median that separates the eastbound and westbound roadways. The open median continues throughout the remainder of the project.

Because of the need to minimize the impact on adjacent developed areas, it is necessary to extend the closed median from Park Avenue east to Kolb Road.

I-10 TI Spacing

In urban conditions, TIs should nominally be one mile apart. This provides distance to develop adequate weaving distances associated with auxiliary lanes that normally occur between successive entrance and exit ramps. Since I-10 cuts angularly across the local street grid system with major arterials on one mile spacing, the distances between TIs are nominally more than one mile apart; typically, 1.4 miles. However, the location of some existing TIs results in distances between TIs of less than one mile.

- Park Avenue TI is approximately 0.7 miles from both 6th Avenue TI and Kino Parkway TI.
- Craycroft Road TI is approximately 0.85 miles from the Valencia Road TI.
- Palo Verde Road TI is approximately 0.6 miles from the Alvernon Way TI.

Elimination of the Park Avenue and Craycroft Road TIs is not practical, as they provide needed access to local businesses and governmental services. Therefore, reconfiguration of TI ramps is needed to maintain access, yet maximize weaving distances and safety for the traveling public. See **Section 3.2.2.1** for the Park Avenue TI ramp modifications. See **Sections 3.2.3 and 3.2.4** for the Craycroft Road TI modifications.

The Palo Verde Road TI can be removed, and a new TI at Country Club Road is needed and will be added. Country Club Road is located approximately 1.2 miles from Kino Boulevard TI and Alvernon Way TI. All other TIs within the project limits meet or exceed the minimum one-mile spacing criteria.

A Change of Access Report will be prepared that details traffic operations and address FHWA policy requirements for new or revised access points to the interstate system.

Cross Streets Between TIs

Pima County had advised during the Feasibility Study that consideration should be given to extending half-mile minor arterial or major collector streets across I-10 between I-10 TIs to improve the connectivity of neighborhoods across I-10 and to relieve the traffic volume of arterial streets at the TIs. A review of the local street system indicates that potential intermediate streets either don't currently exist or are unlikely to be developed in the future. The substitution of Country Club Rd TI for the Palo Verde Rd TI addresses this issue. Pima County has expressed an interest in expanding the Pima Sports Complex to the southerly side of I-10 and will participate in developing access under I-10 between Kino Parkway and Country Club Road by extending Forgeus Avenue to the south. The actual location of the access road needs to be determined and will require future coordination with the County.

I-10 Drainage

At the west end of the project, from I-19 to Park Avenue, existing I-10 pavement drainage is addressed via an enclosed storm drain system. East of Park Avenue to the east end of the project, I-10 pavement drainage consists of a rural type design that typically has embankment curbs and downdrains at the outer pavement edges. In many areas, water sheet-flows off the pavement. Open medians are drained via median catch basins and outlet culverts. All pavement drainage collects at embankment slope toes and typically ponds there. Occasionally, storm water is conveyed along the slope toes to outlet into cross drainage structures, typically man-made channels.

For both alternatives, the existing storm drain system between I-19 and Park Avenue will be retained with minor modifications to accommodate the extra pavement width. East of Park Avenue, the rural type drainage design will be converted to an urban type design with catch basins and an enclosed storm drain system. In areas where existing water ponds at slope toes, the storm drains will outlet into retention basins. Typically, they are located in the infields of traffic interchanges, but some may be needed between interchanges; requiring new right-of-way. In areas where water outlets into existing cross drainage structures, the storm drains will outlet into these structures. As needed to retain capacity in the cross drainages, the storm drains will outlet initially into detention basins.

I-10 Structures

I-10 crosses over or under many cross streets and drainage channels via roadway structures. Given a combination of age, maintenance issues, existing vertical clearance issues, and changes in span lengths, most of these structures should be replaced. Structures can be widened at only four locations: 6th Avenue over I-10, I-10 over the UPRR east of 6th Avenue, I-10 over Park Avenue, and I-10 over Alvernon Way. Where I-10 crosses over existing drainage channels, care is needed to ensure that structure replacement does not adversely impact the capacity of the channel.

3.1.2 Extension of SR 210

Typically, traffic from the southeast part of Tucson accesses downtown Tucson via westbound I-10 to either Alvernon Way or Kino Parkway and then northerly towards downtown. The primary route is I-10 to Kino Parkway. This adds local traffic to the regional traffic already on I-10, adversely affecting traffic operations and safety. To decrease the local traffic on I-10, SR 210 is to be extended southerly to connect with I-10.

From the Feasibility Study Update, alternative routes for SR 210 to different connection points along I-10 were developed and evaluated. All of the alternatives with connection points east of Alvernon Way passed along the edge of Davis-Monthan AFB and required right-of-way from businesses that have environmental issues. Because of these issues and concerns about security to the AFB, all of these alternatives were eliminated from further study. The remaining alternative follows the Alvernon Way alignment to I-10. North of Palo Verde Road, existing SR 210 (Barraza-Aviation Parkway) is an access-controlled facility with traffic signals at major street intersections. South of the Palo Verde Road

undercrossing, SR 210 remains an access-controlled facility, but without at-grade intersections.

Evaluation Process for SR 210

Using the 2040 PAG Forecast Traffic Volumes for peak hour traffic volumes and 'Synchro' micro-modeling software, traffic capacity issues on proposed SR 210 and at TIs were identified. Solutions were then identified and tested by re-running the micro-model with the proposed solution coded into the software. This iterative process was repeated until an adequate solution was produced.

Once the 2040 Build scenario was validated, it was presented to the project stakeholders. Stakeholder comments that impact the design solution were addressed by developing revised solutions and checking them through the micro-modeling process. The resulting combined solution was checked using VISSIM regional micro-modeling software. This identified levels of service and numbers of lanes for mainline SR 210, ramps, crossroads, and turn lanes.

SR 210 Capacity

The results of traffic modeling indicated that in 2040 two lanes will be required in each direction on SR 210 between Richey Boulevard and the southerly ramps to/from Golf Links Road. In addition, two lanes will be required in each direction to/from Golf Links Road to SR 210. From Golf Links Road ramps south to the System Interchange with I-10, four lanes will be required in each direction.

At the I-10/SR 210 System Interchange, the two exterior lanes continue to connect with I-10 as system Ramps (South to East) SE and (West to North) WN, with each ramp having two lanes. Also, system Ramps (East to North) EN and (South to West) SW connect to I-10 to the west, with each ramp having one lane. The two interior lanes in each direction continue south as Alvernon Way.

SR 210 mainline between Richey Boulevard and the I-10/SR 210 system interchange at Alvernon Way will have LOS B or better, both AM and PM in 2040.

The SR 210 ramps between Golf Links Road and the I-10/SR 210 system interchange will have LOS B or better for the AM in 2040 and LOS D or better for the PM in 2040. The Golf Links Road ramps to SR 210 will have LOS B or better, both AM and PM in 2040.

SR 210 Right-of-Way

Along the SR 210 corridor and the Golf Links interchange between Palo Verde Road and the UPRR overpass just north of Ajo Way, the corridor is adjacent to the UPRR on the west side and City of Tucson property or Davis-Monthan AFB on the east side. The area along Aviation Parkway, which connects SR 210 directly to Golf Links Road, is developed with commercial businesses. The area along the Alvernon Way alignment south of the UPRR overpass is developed with commercial developments. Near Irvington Road, the east side of Alvernon Way is against the UPRR. The existing SR 210/Alvernon Way ROW corridor south of the UPRR overpass is quite narrow and there is very little unused ROW between the existing outer edges of the roadways and the ROW lines.

Additional ROW will be required for SR 210. Commercial businesses south of Aviation Parkway are within the limits of the new interchange with Golf Links Road and should be acquired. South of the UPRR overpass, new ROW is needed for the new Ajo Way TI, along Alvernon Way, and at Irvington Road to accommodate the new system interchange ramps.

SR 210 Interchanges

There will be three interchanges along the extension of SR 210.

First is the SR 210/Golf Links interchange. The existing interchange will be reconfigured for the extension of SR 210. To accommodate SR 210 route continuity through the interchange, southbound Golf Links Road to eastbound SR 210 must be split out from existing Golf Links as a ramp. This increases the total roadway footprint of the interchange. Approximately 1/3 mile south of Aviation Parkway, the ROW corridor is restricted by the UPRR to the west and Davis-Monthan AFB to the east. To accommodate the wider footprint, existing Contractor's Way between Ajo Way and Aviation Parkway must be removed. That traffic can be shifted onto the SR 210 corridor.

Second is the new diamond type interchange at Ajo Way, which replaces the existing at-grade signalized intersection.

Third is the system interchange with I-10.

SR 210 Drainage

SR 210 pavement drainage will be addressed via an enclosed storm drain system that outlets to either retention basins or into existing crossing drainage channels.

Within the SR 210/Golf Links interchange, existing Aviation Parkway pavement drainage is addressed via an enclosed storm drain system that outlets into a concrete lined drainage channel that parallels Palo Verde Road. To the maximum extent possible, this storm drain system will be utilized for draining new east-west ramps in close proximity to Aviation Parkway. For the remainder of the interchange, pavement drainage will be collected in retention basins located in the infields of the interchange. DMAFB requested the retention basins in this area be drained by bleed off pipes or dry wells to eliminate ponding. Ponded water could attract birds that could be a hazard to their jet planes.

Regarding off-site drainage, there are three major crossings. The first is located approximately 1/3 mile south of Aviation Parkway. It conveys storm waters from Davis-Monthan AFB under two roadways and consists of two 3-cell concrete box culverts with high skew angles. Due to age and increased embankment dead load, they should be replaced with new box culverts at a lower skew angle to reduce culvert length.

The second is located just north of Ajo Way and it conveys storm waters from the western edge of the AFB to the west under existing Alvernon Way. It will be extended under the new Ajo Way interchange ramps. It should be checked to determine if the existing culvert will handle the additional SR 210 embankment dead load. This culvert will receive SR 210 and ramp pavement drainage between the UPRR overpass and Ajo Way.

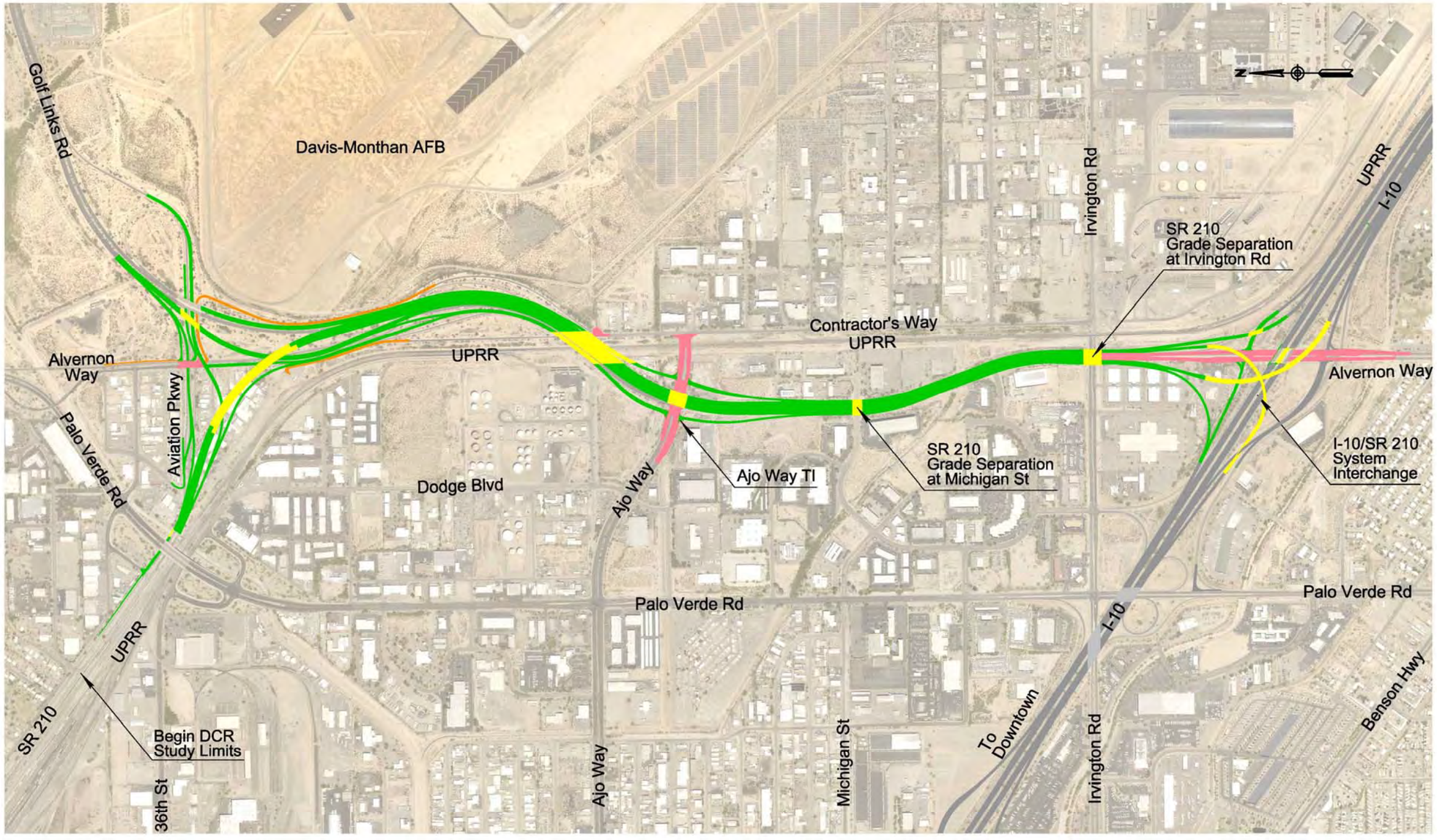
The third is located approximately ¼ mile north of Irvington Road and it conveys storm waters from east of Contractor's Way to the west under Alvernon Way. It will be extended to accommodate the wider SR 210 footprint and should be checked to determine if the existing culvert will handle the additional SR 210 embankment dead load.

SR 210 Structures

SR 210 crosses over many cross streets and ramps. All will require new structures. A few existing structures can remain, including Alvernon Way over Aviation Parkway and northbound Golf Links over Aviation Parkway. The existing structure over the drainage channel just east of Palo Verde Road must be widened to the northeast to accommodate a third westbound SR 210 lane.

North of Ajo Way, the existing structure over the UPRR has multiple spans over the two existing RR tracks. The UPRR expects to add tracks in the future and is requiring the reduction in the number of spans. The resulting longer spans will raise the SR 210 profile over the UPRR and require total structure replacement.

Figure 3.2 SR 210 Overview



3.2 Description of Alternatives

3.2.1 No-Build Alternative

The No-Build Alternative is provided for comparison purposes. It provides no improvements to the capacity, safety, and operational features of the existing roadways and involves only maintenance costs and no apparent change to the environmental conditions of the I-10 and SR 210 corridors. The No-Build Alternative (existing conditions) is shown in **Appendix A**.

The No-Build Alternative does not address the deficient operational and safety issues along I-10 between I-19 and Alvernon Way, the interchange spacing issues along I-10 or the need to accommodate for the future growth to the south and southeast of the Tucson area Therefore, the **No-Build Alternative was eliminated from further consideration**.

3.2.2 General Requirements - All Alternatives

General Requirements will apply to both Alternatives I and IV and involve improvements to I-10 between I-19 and System Interchange with SR 210 and the entire extension of SR 210 to I-10. While there are some I-10 design features east of the I-10/SR 210 System Interchange that are the same for both alternatives, they will be addressed in the text for each alternative. See **Appendices C, D, I and J** for plan views and typical sections of the proposed improvements – System Alternative I and IV.

3.2.2.1 I-10 (I-19 to SR 210)

I-10 Mainline Improvements

From I-19 to Alvernon Way, one additional I-10 mainline travel lane and auxiliary lanes between successive entrance and exit ramps will be needed to achieve an adequate level of service for the design year 2040. For both alternatives, the required lanes in each direction are:

- I-19 to Kino Parkway – 4 lanes (each direction)
- Kino Parkway to Alvernon Way – 3 lanes (each direction)

The existing I-10 horizontal centerline will be retained. From west of Park Avenue to Alvernon Way, the existing open median will be enclosed with a concrete median barrier located at existing centerline, a wide inside paved shoulder and, as needed, a new traffic lane.

From I-19 to west of Kino Parkway, existing I-10 consists of PCCP. The intent of the design is to retain this pavement and widen as additional lanes are needed. Throughout the PCCP section, the existing I-10 vertical profile will be retained. East of the PCCP section, I-10 will have a new vertical profile, which will be designed to accommodate overpass structure replacements at traffic interchanges and the new structure over Country Club Road.

West of the horizontal curve over Park Avenue, the fourth lanes in each direction are added to the outside. Through the curve, the median is enclosed with a concrete median barrier and widening occurring both to the inside and outside. East of the curve, new lanes are added in the median along with the new concrete median barrier and a wide paved shoulder that provides lateral space for a future additional general purpose lane.

East of Kino Parkway, Pima County has expressed an interest in expanding the Pima Sports Complex to the southerly side of I-10. It will require a grade-separated crossing under I-10 and a light-well grate in the median to provide natural light for the undercrossing. The actual location of the access road needs to be determined and will require future coordination with the County.

For both alternatives, the existing storm drain system between I-19 and Park Avenue will be retained with minor modifications to accommodate the extra pavement width. East of Park Avenue, the rural type drainage design will be converted to an urban type design with catch basins and an enclosed storm drain system. In areas where existing water ponds at slope toes, the storm drains will outlet into retention basins. Typically, they are located in the infields of traffic interchanges, but some may be needed between interchanges; requiring new right-of-way. In areas where water outlets into existing cross drainage structures, the storm drains will outlet into these structures. As needed to retain capacity in the cross drainages, the storm drains will outlet initially into detention basins.

I-10 TI Modifications

Each of the existing TIs within the project limits was evaluated from a capacity and safety standpoint to determine needed improvements. The evaluation process involved:

- Using the projected 2040 peak hour traffic volumes and micro-modeling software to identify problem areas or movements that have unacceptable levels of service.
- Identifying solutions.
- Testing solutions by re-running the micro-model with the proposed solutions coded into the software.
- Repeating the iterative process until adequate solutions were produced.

Solutions typically involved enlarging the crossroads and ramp termini at the crossroads; providing additional through-lanes and turn-lanes to accommodate the higher traffic demand.

- The existing TIs are typically diamond type TIs.
- Where right-of-way is limited, tight diamond TIs are used. The tight diamond TIs can remain but adjusted to accommodate truck turns.
- There are three partial cloverleaf TIs that will be modified to eliminate successive loop ramps. The successive loop ramps provide inadequate weaving distances, limiting capacity and create safety issues.

The existing TIs have been tested for capacity as diamond TIs with approximately 600 feet between the ramp termini, unless conditions dictated a different spacing. The 600 feet is the suggested distance between ramp for a standard diamond interchange as per the ADOT Roadway Design Guidelines. Where diamond TIs cannot provide the needed capacity, modifications were made to develop the capacity.

A description of improvements for each existing and new TI west of the Valencia Road TI is included below. Improvements meet the capacity and operational requirements.

I-10 / 6th Avenue TI (MP 260.99)

The existing diamond type TI has four ramps that provide full access between I-10 and 6th Avenue. I-10 is fully depressed and passes under 6th Avenue. Phase II traffic modeling evaluations have determined that the TI functions adequately but will require an additional left turn lane in each direction on the crossroad. See plan sheets 1 and 2 of 2040 Improvements - System Alternatives I and IV in **Appendices C, D, I and J**. Existing TI issues and improvements include:

- In the vicinity of the eastbound exit ramp to 6th Avenue, the auxiliary lane is extended easterly to create the 4th eastbound general purpose lane. This will require relocating the exit gore.
- The eastbound entrance ramp from 6th Avenue combines with the eastbound exit ramp from I-10 to Park Avenue via a weave on the frontage road. The combined ramp is impacted only by the outside widening of eastbound I-10.
- The existing westbound exit ramp from I-10 to 6th Avenue combines with the existing entrance loop ramp from Park Avenue to westbound I-10 via a short weave along mainline I-10. The Park Avenue loop ramp will be replaced with a conventional diamond ramp that will conflict with the existing westbound exit ramp. Therefore, the ramp exit will be relocated to the east side of Park Avenue with grade separated crossings over Park Avenue and the new westbound entrance ramp from Park Avenue. The exit ramp will then tie into the existing westbound frontage road to 6th Avenue.

- The existing westbound entrance ramp from 6th Avenue is not impacted.
- 6th Avenue across I-10 has two through lanes and single left turn lanes in each direction between the ramp termini. An additional left turn lane is needed in each direction to provide adequate turning traffic capacity. This will require widening the existing bridge; yet minimum vertical clearance over I-10 can be maintained. The outside pedestrian fencing has artistic enhancements that should be incorporated into the bridge widening.

The existing 'U-turn' ramp located near the UPRR crossing under I-10 connects the eastbound and westbound frontage roads and improves access. Discussions with local stakeholders indicated a need to retain this ramp. The vertical clearance under the I-10 bridge does not meet current design criteria therefore a design exception will be needed.

I-10 / Park Avenue TI (MP 261.72)

The existing partial cloverleaf TI has four ramps that provide full access between I-10 and Park Avenue. Existing TI conditions include:

- The weave along I-10 between the westbound loop entrance ramp and the exit ramp to 6th Avenue is too short.
- The eastbound exit ramp intersects Park Avenue approximately 600 feet south of I-10 with a signalized intersection and becomes the west end of Benson Highway. This intersection is too far away from the interchange.
- Benson Highway crosses Park Avenue at a 45 degree skew angle. Therefore, left turns onto northbound Park Avenue are a sharp 135 degrees, which is not desirable and impacts turning capacity.
- At I-10, Park Avenue has three through lanes and a single left turn lane in each direction. The outside northbound lane becomes the loop ramp. To the north, the curb line is continued for three lanes to the intersection with the westbound ramps, but the outside lane is striped for non-usage.

Modifications to the Park Avenue TI were identified and evaluated through the iterative process described previously. See plan sheet 2 of 2040 Improvements – System Alternatives I and IV in **Appendix C, D, I and J**. The modifications are:

- The loop ramp from Park Avenue to westbound I-10 will be replaced with a diamond entrance ramp from Park Avenue to westbound I-10. This converts the partial cloverleaf TI to a diamond type TI.
- The Park Avenue westbound exit ramp must be relocated to the east to avoid conflicts with the westbound exit ramp to 6th Avenue and the new westbound entrance ramp from Kino Parkway. The exit ramp to Park Avenue is relocated just inside the existing north right-of-way for I-10 to east of Kino Parkway and it 'braids' under Kino Parkway and the Kino entrance ramp to avoid weaving and improve safety.
- With the relocation of the westbound ramps (6th Avenue exit and Park Avenue entrance), access from Park Avenue to the westbound frontage road is eliminated. To restore this access, a connection ramp is needed between the westbound entrance ramp from Park Avenue and the westbound 6th Avenue exit ramp.
- The eastbound exit ramp from I-10 to Park Avenue currently connects to the eastbound frontage road and then to the Benson Highway. That connection will remain, and an additional connection will be extended from the frontage road to Park Avenue. This removes traffic from the skewed intersection with Benson Highway and improves traffic operations and safety.

Park Avenue will have 3-through lanes and single left-turn lanes in each direction. Existing Park Avenue has adequate width for this configuration.

I-10 / Kino Parkway TI (MP 262.53)

Kino Parkway is one of four continuous major north-south arterials/parkways from south of I-10 into central and north Tucson that does not encounter a physical obstacle, such as the UPRR switching yard and Davis-Monthan AFB. As such, the I-10/Kino Parkway TI is a major intermediate destination for traffic from the south and southeast part of the Tucson Metropolitan area to access downtown Tucson. The existing partial cloverleaf TI provides access between I-10, Kino Parkway, and Ajo Way. Existing TI conditions include:

- Through traffic on all three roadways are grade-separated.
- Majority of access to and from I-10 is through TI ramps.
- The Ajo Way Connector between Kino Parkway and Ajo Way in the northeast quadrant provides access to and from westbound I-10 and Kino Parkway. This requires all Kino/westbound I-10 traffic to travel through the at-grade intersection with Ajo Way. While this intersection provides access to Ajo Way, it reduces traffic capacity for traffic from westbound I-10 to downtown Tucson via northbound Kino Parkway.
- The westbound entrance ramp to I-10 serves only southbound Kino Parkway traffic. Northbound Kino Parkway traffic headed to westbound I-10 must use the Ajo Way Connector described above and then use the westbound entrance ramp from Ajo Way. This requires traffic to travel through the intersection at Ajo Way.
- Access between southbound Kino Parkway and eastbound I-10 uses a loop ramp in the southwest quadrant. Access between eastbound I-10 and northbound Kino Parkway uses a loop ramp in the southeast quadrant. The two loop ramps have a short weave distance, which is undesirable.

A diamond TI was evaluated through the iterative process described above. See plan sheet 3 of 2040 Improvements – System Alternatives I and IV in **Appendices C, D, I and J**. The improvements are:

- A new ramp from westbound I-10 to Kino Parkway is provided. It is grade-separated over Ajo Way, bypassing the at-grade intersection with Ajo Way and improving traffic operations and safety.
  - This new ramp allows for the removal of the two westbound ramps with I-10.
  - The westbound access to and from Ajo Way is relocated to a new TI at Country Club Road.
- A new westbound entrance from Kino Parkway to I-10 will directly serve both southbound and northbound Kino Parkway traffic.
- The eastbound I-10 exit loop ramp is removed and replaced with a new I-10 exit ramp west of Kino Parkway.
  - The eastbound exit ramp weaves with the new eastbound entrance ramp from Park Avenue.
  - The ramp terminus is located as far north as possible along Kino Parkway to increase the weave distance down to the left turn lanes onto Benson Highway.
- The southbound Kino Parkway to eastbound I-10 loop ramp was originally removed as a part of the effort to remove all loop ramps. However, the traffic simulations indicated that the heavy southbound left turn demand from Kino Parkway to eastbound I-10, along with the heavy northbound through traffic demand on Kino Parkway, causes the intersection of Kino Parkway and the I-10 eastbound entrance and exit ramps to fail.

  Therefore, a loop ramp is used to remove the southbound left-turn traffic from the ramp terminal intersection. The existing loop ramp will be modified to operate more safely. The loop ramp will merge with the diamond ramp. The ramp merge onto eastbound I-10 will be moved to the east to provide adequate length.

Kino Parkway will have three lanes in each direction. Dual left turn lanes will be used for the northbound Kino Parkway to westbound I-10 movement.

Traffic modeling evaluations determined that the TI will function adequately as a diamond TI with the loop ramp. The modeling also indicated that both TI intersections operate at a satisfactory LOS for all conditions. The modeling evaluations indicated that both intersections will operate at LOS C or better for 2040 AM and PM peak hours

I-10 / Country Club Road TI (MP 263.82)

A new diamond TI will be located at Country Club Road to replace the existing Palo Verde Road TI. See plan sheet 4 of 2040 Improvements – System Alternatives I and IV in **Appendices C, D, I and J**. Design criteria for skew angles of ramps at the crossroad will impact both the spacing between ramp termini and ramp alignments.

Traffic modeling evaluations determined that the diamond TI will function adequately, by providing three lanes and dual left turn lanes in each direction on the crossroad with external storage needed for the left turn lanes. The modeling evaluations also indicate that both intersections will operate at LOS B for 2040 AM and PM peak hours.

I-10 / Palo Verde Road TI (MP 264.37)

The existing TI at the junction of I-10 and Palo Verde Road will be removed. The proposed TI at I-10 and Country Club Road will provide access for traffic that currently uses the Palo Verde TI. See plan sheet 5 of 2040 Improvements – System Alternatives I and IV in **Appendices C, D, I and J**.

The existing eastbound frontage road on the south side of I-10 will remain. The intersection of the frontage road and Palo Verde Road will be modified to a "T" intersection to provide access from both northbound and southbound Palo Verde Road.

I-10 / Alvernon Way TI (MP 265.02)

Alvernon Way is one of four continuous major north-south arterials/ parkways from south of I-10 into central and north Tucson that does not encounter a physical obstacle, such as the UPRR switching yard and Davis-Monthan AFB. The I-10/Alvernon Way TI is a major connector for traffic from the south and southeast part of the Tucson Metropolitan area to access central and downtown Tucson.

Alvernon Way is the location for the SR 210 to I-10 System Interchange. The Service TI discussed here will be integrated with the System Interchange. See plan sheet 5 and 6 of 2040 Improvements – System Alternatives I and IV in **Appendices C, D, I and J**.

The existing partial diamond TI has three ramps; restricting full access between I-10 and Alvernon Way. There is no existing entrance ramp from Alvernon Way to westbound I-10. The existing westbound exit ramp from I-10 does not provide access to southbound Alvernon Way.

The initial evaluation involved retaining the existing TI, with the following changes:

- To complete the diamond TI, the westbound I-10 exit ramp to Palo Verde Road is eliminated and a new westbound entrance ramp from Alvernon Way is added
- The westbound exit ramp will be reconfigured to provide access to southbound Alvernon Way.
- The eastbound exit ramp will be reconfigured to improve the angle at the intersection with Alvernon Way.

The diamond TI ramps serve to provide access for the minor movements between I-10 and Alvernon Way south of I-10.

Traffic modeling evaluations determined that the TI will function adequately as a diamond TI with three lanes in each direction plus left turn lanes on the crossroad. The modeling evaluations also indicate that both intersections will operate at LOS C or better for 2040 AM and PM peak hours, but external storage for left turns is needed. While existing curb locations do not support the external storage, there is sufficient distance between the center bridge pier and the abutments to accommodate the additional lanes. Additional study should be done during final design to determine the final need for the external storage while providing an adequate LOS.

3.2.2.2 SR 210 Extension

SR 210 will be extended southerly along the Alvernon Way alignment from Golf Links Road to a new System Interchange at I-10. The System Interchange provides direct ramp access between I-10 and mainline SR 210 and overlays the diamond TI discussed above. See **Figure 3.2 SR 210 Extension.**

SR 210 improvements include:

- Extend SR 210 south along the Alvernon Way alignment to I-10.
- Reconstruct the existing Barraza-Aviation/Alvernon Way/Golf Links interchange to provide route continuity for SR 210 while providing all traffic movements to the greatest extent possible.
- Close Contractor's Way between Golf Links Road and Ajo Way. Provide alternative access along SR 210 via appropriate ramps at Ajo Way and Alvernon Way in the vicinity of Golf Links Road.
- Provide a diamond interchange with SR 210 and Ajo Way.
- Provide SR 210 overpass structures over E. Michigan Street and E Irvington Road.
- Provide a system interchange that will be integrated with the diamond interchange movements at the junction of Alvernon Way and I-10.
- Replace the Alvernon Way structure over the UPRR with a structure with longer span lengths as per discussions with the UPRR. The UPRR expects to add tracks in the future and is requiring the reduction in the number of spans. The resulting longer spans will raise the SR 210 profile over the UPRR and require total structure replacement.
- Provide gated maintenance access for ADOT, Tucson Electric Power (TEP) and Tucson Water along the SR 210 corridor by using the abandoned southbound portion of Contractor's Way north of Ajo Way.
- Provide gated maintenance access for ADOT and TEP vehicles between Ajo Way and Golf Links Road along the eastern edge of the SR 210 corridor. It will use a portion of the abandoned northbound Contractor's Way.
- Additional right-of-way will be required for SR 210, the SR 210/Golf Links interchange, the SR 210/Ajo Way interchange and the I-10/SR 210 system interchange.
- Shift the SR 210 alignment south of Ajo Way to minimize new right-of-way takes from both sides of the Alvernon Way corridor. The goal is to take new right-of-way from just one side of the Alvernon Way corridor through a given section.

The extension of SR 210 typically has an elevated profile, with overpass structures over: Golf Links TI directional ramps, the UPRR, Ajo Way, Michigan Street, and Irvington Road. South of Irvington Road, the profile drops to closely match the existing Alvernon Way profile as it passes under the existing east-west overhead power transmission lines coming from the TEP plant located in the northeast quadrant of the I-10/Alvernon Way TI. By maintaining the Alvernon Way profile under I-10, the intent is to retain adequate vertical clearance under I-10 to avoid the need for structure replacement due to vertical clearance.

3.2.3 System Alternative I

System Alternative I includes the General Requirements addressed above in **Section 3.2.2** and the improvements to I-10 between the I-10/SR 210 System Interchange at Alvernon Way and the Kolb Road TI. See **Appendix C and D** for plan views and typical sections of the proposed improvements.

I-10 Mainline Improvements

From Alvernon Way to Kolb Road, additional I-10 mainline travel lanes and auxiliary lanes between successive entrance and exit ramps will be needed to achieve an adequate level of service for the design year 2040. For System Alternative I, five lanes in each direction plus auxiliary lanes are needed and will provide an LOS C or better in both directions for 2040 AM and PM peak hours. I-10 will have a closed median with a new concrete median barrier and a wide paved shoulder that provides lateral space for a future additional general purpose lane.

The existing I-10 horizontal centerline will be retained from Alvernon Way to just north of Valencia Road. To the east, the horizontal centerline will shift from existing to accommodate a wider roadway footprint than existing and avoid right-of-way takes from developed residential neighborhoods adjacent to I-10. East of Kolb Road, the centerline will be shifted to 60 feet left of existing to create space to retain the existing two-way frontage road. East of the east Kolb Road ramps, the five mainline lanes in each direction will be transitioned to match the existing two lanes in each direction.

Between Valencia Road and Kolb Road, there are eastbound and westbound frontage roads. Typically, they serve few parcels, either developed or undeveloped. Between Craycroft Road and Kolb Road, the frontage roads will be removed to make room for the I-10 roadway footprint and utility corridors. Between Valencia Road and Craycroft Road, the distance between the TIs is 0.85 miles. Back-to-back diamond TIs with auxiliary lanes adjacent to five mainline lanes will not function adequately. Therefore, the easterly Valencia Road ramps will be retained and the westerly Craycroft Road ramps will be eliminated. The ramp traffic will be shifted onto the retained/reconstructed frontage roads. This will require that the westerly Valencia ramps will also serve traffic to/from Craycroft Road and that Craycroft ramp traffic must cross Valencia Road. Also, along the westbound frontage road, there are a few access driveways near Craycroft Road and several undeveloped parcels to the west that have access only to the frontage road. Retaining the westbound frontage road preserves access to these parcels and avoids total parcel ROW takes, including the Triple T truck stop.

Between Wilmot Road and Kolb Road adjacent to the westbound frontage road, there are a few access driveways for utility facilities. It is intended to relocate these access points to the local street system identified in the La Estancia de Tucson future development. An evaluation has determined that access to these properties can be achieved and that the westbound frontage road can be removed.

East of Alvernon Way, the rural type drainage design will be converted to an urban type design with catch basins and an enclosed storm drain system. In areas where existing water ponds at slope toes, the storm drains will outlet into retention basins. Typically, they are located in the infields of traffic interchanges, but some may be needed between interchanges; requiring new right-of-way. In areas where water outlets into existing cross drainage structures, the storm drains will outlet into these structures. As needed to retain capacity in the cross drainages, the storm drains will outlet initially into detention basins.

I-10 TI Modifications

Each of the existing TIs east of Alvernon Way was evaluated from a capacity and safety standpoint to determine needed improvements. The evaluation process was the same used for I-10 west of Alvernon Way.

Solutions typically involved enlarging the crossroads and ramp termini at the crossroads; providing additional through-lanes and turn-lanes to accommodate the higher traffic demand.

- The existing TIs are typically diamond type TIs.
- Where right-of-way is limited, tight diamond TIs are used. The tight diamond TIs can remain but adjusted to accommodate truck turns.
- The Kolb Road TI will experience heavy left turn demand during the AM peak hour. Traffic evaluations during the Feasibility Study indicated that a diamond interchange will not adequately operate. A diverging diamond interchange is recommended.

A description of improvements for each existing TI between Alvernon Way and Kolb Road is included below. Improvements meet the capacity and operational requirements.

I-10 / SR 210 – System Alternative I Interchange (MP 265.02)

At the I-10/SR 210 System Interchange, I-10 and SR 210 traffic merge via four system interchange ramps. See sheet 5 of 2040 Improvements - System Interchange I in **Appendix C.** The System Interchange overlays the diamond type service interchange that provides access between I-10 and Alvernon Way south of I-10. The horizontal geometry of the directional ramps accommodates both system alternatives and the I-10/Alvernon Way service TI ramps.

The System Interchange provides direct access between SR 210 and I-10 via four directional ramps (S-E, W-N, S-W, and E-N). Directional Ramps S-E and W-N have two lanes each to accommodate the heaviest traffic volume demand between SR 210 and I-10 to the east. Directional Ramps S-W and E-N have one lane each to accommodate the lesser traffic demand between SR 210 and I-10 to the west.

Portions of the new system interchange are located within the existing Julian Wash 100-year floodplain. The Los Niños Elementary School and Los Niños Park are located south of Julian Wash on the east side of Alvernon Way. The existing Julian Wash box culvert under I-10 is adequate to convey the 100-year storm flow. See the environmental assessment regarding noise impacts to the Los Niños Elementary School and Los Niños Park. Future increases in traffic volumes along Alvernon Way south of I-10 will affect the ability of school buses to leave the school property in the morning and afternoon. The Sunnyside Unified School District requested a signal be installed to provide a traffic break for the busses to exit the property.

I-10 / Drexel Road (MP 266.00)

The existing bridge overpass at Drexel Road has no ramps to I-10. See sheet 6 of 2040 Improvements - System Interchange I in **Appendix C.** Drexel Road will be widened to provide three lanes, shoulders, sidewalks and a 12-foot wide multi-use path associated with the Julian Wash Linear Park. The increase in width of Drexel Road will require the replacement of the existing I-10 bridge.

I-10 / Valencia Road TI (MP 267.10)

The existing diamond TI has four ramps that provide full access between I-10 and Valencia Road. See sheet 7 of 2040 Improvements - System Interchange I in **Appendix C.** The horizontal alignment of I-10 east of Valencia Road is shifted to avoid the residential subdivisions and commercial businesses adjacent to the eastbound frontage road. This will shift the I-10 centerline and bridges alignments within the TI.

As addressed above, the eastbound and westbound frontage roads will tie into the east Valencia ramps and traffic to/from Craycroft Road will cross Valencia Road and use the west Valencia ramps.

Traffic modeling evaluations determined that a diamond TI will function adequately by reconstructing Valencia Road to provide three through lanes and dual left turn lanes in each direction. The increase in the width of Valencia Road and the shifting of I-10 to the east of the current Valencia Road crossing will require the replacement of the existing I-10 bridges.

I-10 / Craycroft Road TI (MP 268.08)

The existing tight diamond type TI has four ramps that provide full access between I-10 and Craycroft Road. See sheet 8 of 2040 Improvements – System Alternative I in **Appendix C**. There are commercial properties in all four quadrants of the TI, including the Triple T Truck Stop in the northwest quadrant, the Pilot Travel Center and Freightliner of Arizona in the northeast quadrant, Greater AZ Auto Auctions in the southwest

quadrant and Cornwell Truck Repair in the southeast quadrant. The four-span I-10 overpass structures accommodate one through lane in each direction on the crossroad and single left turn lanes.

As addressed above, the eastbound and westbound frontage roads will tie into the east Valencia ramps and traffic to/from Craycroft Road will cross Valencia Road and use the west Valencia ramps.

Traffic modeling evaluations determined that the existing tight diamond TI functions adequately, by providing two lanes and single left turn lanes in each direction on Craycroft Road. The increase in crossroad width will require the replacement of the existing I-10 bridges.

Additional evaluations determined that the tight diamond configuration will meet truck turning radii, required left turn storage and other elements. This will minimize the roadway footprint and right-of-way acquisitions from the developed properties.

After the Feasibility Study Update, two trucking oriented businesses were constructed in the northeast quadrant of the interchange (Pilot and Freightliner). The access point (Travel Plaza Way) onto Craycroft Road for these two businesses is located approximately 250 feet north of the northern ramp returns, which is in conflict with current ADOT cross street access control criteria. By 2040 Travel Plaza Way will operate at LOS F under existing conditions during peak hours. Future improvements to Craycroft Road include constructing a raised median extending north 660' to a new tee intersection with a 3-lane two-way connector roadway to the west connecting Craycroft Road to the westbound frontage road. Truck traffic will use the Craycroft connector road to access I-10 at the Valencia Road TI. See sheet 8 of 2040 Improvements – System Alternative I in **Appendix C**.

I-10 / Wilmot Road TI (MP 269.36)

The existing tight diamond type TI has four ramps that provide full access between I-10 and Wilmot Road. See sheet 9 of 2040 Improvements – System Alternative I in **Appendix C**. There are commercial properties in two of the four quadrants of the TI, including Chevron and Travel Inn in the northwest quadrant. The two-span I-10 overpass structure only accommodates two lanes in each direction on the crossroad.

There are existing eastbound and westbound frontage roads between Craycroft Road and Wilmot Road. They provide access to only two developed parcels, both on the westbound frontage road near Wilmot Road. Both frontage roads will be removed. Access to the Chevron gas station can be restricted to Wilmot Road. Alternative access for Travel Inn will be developed via a connector road to Wilmot Road. The break in the center median for Travel Inn should be located beyond the limit of ADOT left turn access control criteria.

Traffic modeling evaluations determined that the existing tight diamond TI functions adequately, by providing two lanes in each direction on Wilmot Road with a single left turn lane for the south to east movement and a double left turn lane for the north to west movement. The increase crossroad width will require the replacement of the existing I-10 bridges. All ramps will be realigned to improve the skew angles at the crossroad.

I-10 / Kolb Road TI (MP 270.58)

The existing spread diamond type TI has four ramps that provide full access between I-10 and Kolb Road. See sheet 10 of 2040 Improvements – System Alternative I in **Appendix C**. There are commercial properties in the southeast quadrant of the interchange. The Bureau of Land Management (BLM) owns the parcel in the southwest quadrant of the interchange.

The PAG identified improvements to Kolb Road as a needed but unfunded improvement south of I-10. The improvement would extend Kolb Road to the south of I-10 and tie it into Wilmot Road. Kolb Road will then be identified as a Parkway and will be one of four continuous major north-south arterials/parkways from south of I-10 into central and north Tucson that does not encounter a physical obstacle, such as the UPRR switching yard and Davis-Monthan AFB. The I-10/Kolb Road TI is a major connector for traffic from the southeast part of the Tucson Metropolitan area to access downtown Tucson via I-10 and north Tucson via Kolb Road. The major traffic movements at the TI are shown in **Appendix B.**

The combination of heavy through volumes on Kolb Road and heavy opposing turn volumes will create significant operational problems. Initial traffic modeling evaluations were performed with different types of TIs; diamond, single point urban (SPUI), and diverging diamond. None of these resolved the operational problems; particularly due to the projected heavy through volumes on Kolb Road. Finally, a diverging diamond TI with separate roadways for through traffic was developed and evaluated. It will function with a LOS of B or better for 2040 AM and PM peak hours.

With this configuration, existing Kolb Road including the existing structure over I-10 is used as the diverging portion of the interchange with signalized intersections where traffic shifts directions. Standard diamond type ramps tie to the diverging diamond. The northbound and southbound Kolb Road mainline roadways carry only through traffic. Thus, all turning movements are confined to the diverging diamond and do not interfere with through movements. I-10 remains at ground level. The Kolb Road mainline roadways are two levels above I-10 and the diverging diamond roadway is one level above I-10.

The diverging diamond roadway and the Kolb Road mainline roadways merge at the north end of the interchange just south of Science Park Drive, a significant east-west arterial. To provide for right turns from the center roadway to eastbound Science Park Drive, a connector road is needed, which will pass under northbound mainline Kolb Road in a box structure. It will end at Science Park Drive as a right turn lane.

East of Kolb Road, a two-way frontage road serves properties along the south side of I-10. The west end of the frontage road intersects Kolb Road approximately 300-ft. south of the existing ramp intersection. The frontage road parallels I-10 and ends approximately 7,000-ft. (1.3 miles) east of Kolb Road.

The diverging diamond roadway and the Kolb Road mainline roadways merge at the south end of the interchange. This restricts access to Wall Street, which is the access to Trails West Active Adult Community. To provide access, a new connector road to the frontage road is needed. It will partially utilize an existing street easement.

To retain the two-way frontage road and avoid new right-of-way, I-10 is shifted to the north. This also allows for the retention of the frontage road access point onto Kolb Road. However, due to the new interchange configuration, a new south connector is required to provide full access to/from the frontage road. The connector intersects with the center roadway but passes under the northbound and southbound Kolb Road mainline roadways via two-lane box structures. The connector will be extended westerly to provide access to the BLM property.

3.2.4 System Alternative IV

System Alternative IV includes the General Requirements addressed above in **Section 3.2.2** and the improvements to I-10 between the I-10/SR 210 System Interchange at Alvernon Way and the Kolb Road TI. See **Appendix I** for plan views and typical sections of the proposed improvements.

I-10 Mainline Improvements

From Alvernon Way to Kolb Road, additional I-10 mainline travel lanes and auxiliary lanes between successive entrance and exit ramps will be needed to achieve an adequate level of service for the design year 2040. For System Alternative IV, three mainline lanes in each direction will address the regional traffic demands. I-10 will have a closed median with a new concrete median barrier and a wide paved shoulder that provides lateral space for a future additional general purpose lane. Local traffic will be addressed via eastbound and westbound collector-distributors (CD) adjacent to the mainline lanes. A concrete barrier will separate mainline from each CD. Each CD will have a wide inside paved shoulder that provides lateral space for a future additional traffic lane. Auxiliary lanes

between successive entrance and exit ramps will be provided and they will connect to the CD roadways. The CD roadways will terminate within the eastern limits of the Kolb Road TI. The eastbound CD will taper into eastbound I-10. The westbound CD will separate from westbound I-10 and become the westbound ramp to SR 210. The I-10 mainline and the CD roadways will have LOS C or better in both directions for 2040 AM and PM peak hours.

The existing I-10 horizontal centerline will be retained from Alvernon Way to just north of Valencia Road. To the east, the horizontal centerline will shift from existing to accommodate a wider roadway footprint than existing and avoid right-of-way takes from developed residential neighborhoods adjacent to I-10. East of Kolb Road, the centerline will be shifted to 60 feet left of existing to create space to retain the existing two-way frontage road. East of the east Kolb Road ramps after merging mainlines and CDs, the merged lanes will be transitioned to match the existing two lanes in each direction.

Between Valencia Road and Kolb Road, there are eastbound and westbound frontage roads. Typically, they serve few parcels, either developed or undeveloped, and will be removed to make room for the I-10 roadway footprint and utility corridors. While the distance from Valencia Road to Craycroft Road is less than the desirable one-mile spacing, back-to-back diamond TIs with auxiliary lanes will function adequately as they will merge with lesser traffic on the CDs instead of the higher traffic on a five-lane mainline for Alternative I.

Along the westbound frontage road, there are a few access driveways near Craycroft Road and several undeveloped parcels to the west that have access only to the frontage road. Therefore, the westbound frontage road should be retained to preserve access to these parcels and avoid total parcel ROW takes, including the Triple T truck stop. The eastbound frontage road can be removed.

Between Wilmot Road and Kolb Road adjacent to the westbound frontage road, there are a few access driveways for utility facilities. It is intended to relocate these access points to the local street system identified in the La Estancia de Tucson future development. An evaluation has determined that access to these properties can be achieved and that the westbound frontage road can be removed.

Along the eastbound CD located west of Wilmot Road, a ramp will be provided to allow vehicles on eastbound I-10 to enter the CD. This ramp allows eastbound I-10 mainline traffic to exit at Kolb Road. Along the westbound CD located west of Kolb Road, a ramp will be provided to allow vehicles on the CD to enter westbound I-10. This ramp allows westbound traffic from Kolb Road (via the westbound CD) to enter I-10 mainline without having to travel the entire length of the CD.

At strategic points along each CD, special moveable gates will be provided in the median barriers that separate mainline from the CDs. These gates create emergency access between mainline I-10 and the CDs for first responders and enforcement vehicles. During non-emergency conditions, the gates will be closed to provide continuous physical separation between mainline and the CDs. During emergency conditions, first responders will open the gates to provide access for their vehicles. As needed, the gates can be used to route vehicles away from crash/emergency sites.

East of Alvernon Way, the rural type drainage design will be converted to an urban type design with catch basins and an enclosed storm drain system. In areas where existing water ponds at slope toes, the storm drains will outlet into retention basins. Typically, they are in the infields of traffic interchanges, but some may be needed between interchanges; requiring new right-of-way. In areas where water outlets into existing cross drainage structures, the storm drains will outlet into these structures. As needed to retain capacity in the cross drainages, the storm drains will outlet initially into detention basins.

I-10 TI Modifications

Each of the existing TIs east of Alvernon Way was evaluated from a capacity and safety standpoint to determine needed improvements. The evaluation process was the same used for I-10 west of Alvernon Way. Solutions typically involved enlarging the crossroads and ramp termini at the crossroads; providing additional through-lanes and turn-lanes to accommodate the higher traffic demand.

- The existing TIs are typically diamond type TIs.
- Where right-of-way is limited, tight diamond TIs are used. The tight diamond TIs can remain but adjusted to accommodate truck turns.
- The Kolb Road TI will experience heavy left turn demand during the AM peak hour. Traffic evaluations during the Feasibility Study indicated that a diamond interchange will not adequately operate. A diverging diamond interchange is recommended.
- Due to the wider overall roadway footprint for Alternative IV, the distance between the ramp termini is larger than for Alternative I.
- Traffic interchanges will provide access between the CD roadways and major cross streets.

A description of improvements for each existing TI between Alvernon Way and Kolb Road is included below. Improvements meet the capacity and operational requirements.

I-10/SR 210 – System Alternative I Interchange (MP 265.02)

At the I-10/SR 210 System Interchange, I-10 and SR 210 traffic merge via four system interchange ramps. See sheet 5 of 2040 Improvements - System Interchange IV in **Appendix I.** The System Interchange overlays the diamond type service interchange that provides access between I-10 and Alvernon Way south of I-10. The horizontal geometry of the directional ramps accommodates both system alternatives and the I-10/Alvernon Way service TI ramps.

The System Interchange provides direct access between SR 210 and I-10 via four directional ramps (S-E, W-N, S-W, and E-N). Directional Ramps S-E and W-N have two lanes each and connect directly to the CD roadways to the east. Ramp S-E becomes the eastbound CD. A ramp will be provided to allow vehicles on eastbound I-10 to exit I-10 and enter the eastbound CD roadway. The westbound CD becomes Ramp W-N. A ramp will be provided to allow vehicles on the westbound CD roadway to exit the CD roadway and enter westbound I-10. Directional Ramps S-W and E-N have one lane each to accommodate the lesser traffic demand between SR 210 and I-10 to the west.

Portions of the new system interchange are located within the existing Julian Wash 100-year floodplain. Los Niños Elementary School and Los Niños Park are located south of Julian Wash on the east side of Alvernon Way. The existing Julian Wash box culvert under I-10 is adequate to convey the 100-year storm flow. See the environmental assessment regarding noise impacts to the Los Niños Elementary School and Los Niños Park. Future increases in traffic volumes along Alvernon Way south of I-10 will affect the ability of school buses to leave the school property in the morning and afternoon. The Sunnyside Unified School District requested a traffic signal be installed to provide a traffic break for the busses to exit the property.

I-10 / Drexel Road (MP 266.00)

The existing bridge overpass at Drexel Road has no ramps to I-10. See sheet 6 of 2040 Improvements - System Interchange I in **Appendix I.** Drexel Road will be widened to provide three lanes, shoulders, sidewalks and a 12-foot wide multi-use path associated with the Julian Wash Linear Park. The increase in width of Drexel Road will require the replacement of the existing I-10 bridge.

I-10 / Valencia Road TI (MP 267.10)

The existing diamond TI has four ramps that provide full access between I-10 and Valencia Road. See sheet 7 of 2040 Improvements - System Interchange IV in **Appendix I.** The horizontal alignment of I-10 east of Valencia Road is shifted to avoid the residential subdivisions and

commercial businesses adjacent to the eastbound frontage road. This will shift the I-10 centerline and bridges alignments within the TI.

As addressed above, the westbound frontage road will tie into the Valencia westbound exit ramp and traffic from Craycroft Road will cross Valencia Road and use the Valencia westbound entrance ramp.

Traffic modeling evaluations determined that a diamond TI will function adequately by reconstructing Valencia Road to provide three through lanes and dual left turn lanes in each direction. The increased width of Valencia Road and the shifting of I-10 east of Valencia Road will require the replacement of the existing I-10 bridges.

I-10 / Craycroft Road TI (MP 268.08)

The existing tight diamond type TI has four ramps that provide full access between I-10 and Craycroft Road. See sheet 8 of 2040 Improvements - System Alternative IV in **Appendix I**. There are commercial properties in all four quadrants of the TI, including the Triple T Truck Stop in the northwest quadrant, Pilot Travel Center and Freightliner of Arizona in the northeast quadrant, Greater AZ Auto Auctions in the southwest quadrant and Cornwell Truck Repair in the southeast quadrant. The four-span I-10 overpass structures accommodate one through lane in each direction on the crossroad and single left turn lanes.

As addressed above, the westbound frontage road will tie into the Valencia westbound exit ramp and traffic from Craycroft Road will cross Valencia Road and use the Valencia westbound entrance ramp.

Traffic modeling evaluations determined that the existing tight diamond TI functions adequately, by providing two lanes and single left turn lanes in each direction on Craycroft Road. The increase in crossroad width will require the replacement of the existing I-10 bridges.

Additional evaluations determined that the tight diamond configuration will meet truck turning radii, required left turn storage and other elements. This will minimize the roadway footprint and right-of-way acquisitions from the developed properties.

After the Feasibility Study Update, two trucking oriented businesses were constructed in the northeast quadrant of the interchange (Pilot and Freightliner). The access point onto Craycroft Road for these two businesses is located approximately 300 feet north of the northern ramp returns, which conflicts with current ADOT cross street access control criteria. By 2040 Travel Plaza Way will operate at LOS F under existing conditions during peak hours. Future improvements to Craycroft Road include constructing a raised median extending north 660' to a new tee intersection with a 3-lane two-way connector roadway to the west connecting Craycroft Road to the westbound frontage road. Truck traffic will use the Craycroft connector road to access I-10 at the Valencia Road TI. See sheet 8 of 2040 Improvements – System Alternative IV in **Appendix I**.

I-10 / Wilmot Road TI (MP 269.36)

The existing tight diamond type TI has four ramps that provide full access between I-10 and Wilmot Road. See sheet 9 of 2040 Improvements – System Alternative IV in **Appendix I**. There are commercial properties in two of the four quadrants of the TI, including Chevron and Travel Inn in the northwest quadrant. The four-span I-10 overpass structure only accommodates two lanes in each direction on the crossroad.

There are existing eastbound and westbound frontage roads between Craycroft Road and Wilmot Road. They provide access to only two developed parcels, both on the westbound frontage road near Wilmot Road. Both frontage roads will be removed. Access to the Chevron gas station can be restricted to Wilmot Road. Alternative access for Travel Inn will be developed via a connector road to Wilmot Road. The break in the center median for Travel Inn should be beyond the limit of ADOT left turn access control criteria.

Traffic modeling evaluations determined that the existing tight diamond TI functions adequately, by providing two lanes in each direction on Wilmot Road with a single left turn lane for the south to east movement and a double left turn lane for the north to west movement. The increase in crossroad width will require the replacement of the existing I-10 bridges. All ramps will be realigned to improve the skew angles at the crossroad.

I-10/Kolb Road TI (MP 270.58)

The existing spread diamond type TI has four ramps that provide full access between I-10 and Kolb Road. See sheet 10 of 2040 Improvements – System Alternative IV in **Appendix I**. There are commercial properties in the southeast quadrant of the interchange. The Bureau of Land Management (BLM) owns the parcel in the southwest quadrant of the interchange.

The PAG identified improvements to Kolb Road as a needed but unfunded improvement south of I-10. The improvement would extend Kolb Road to the south of I-10 and tie it into Wilmot Road. Kolb Road will then be identified as a Parkway and will be one of four continuous major north-south arterials/parkways from south of I-10 into central and north Tucson that does not encounter a physical obstacle, such as the UPRR switching yard and Davis-Monthan AFB. The I-10/Kolb Road TI is a major connector for traffic from the southeast part of the Tucson Metropolitan area to access downtown Tucson via I-10 and north Tucson via Kolb Road. The major traffic movements at the TI are shown in **Appendix B.**

The combination of heavy through volumes on Kolb Road and heavy opposing turn volumes will create significant operational problems. Initial traffic modeling evaluations were performed with different types of TIs; diamond, single point urban (SPUI), and diverging diamond. None of these resolved the operational problems; particularly due to the projected heavy through volumes on Kolb Road. Finally, a diverging diamond TI with separate roadways for through traffic was developed and evaluated. It will function with a LOS of B or better for 2040 AM and PM peak hours.

With this configuration, existing Kolb Road and the existing bridge structure over I-10 are replaced with new approach roadways and two new bridges for the diverging portion of the interchange. Signalized intersections are used where traffic shifts directions. Standard diamond type ramps tie to the diverging diamond. The northbound and southbound Kolb Road mainline roadways carry only through traffic. Thus, all turning movements are confined to the diverging diamond and do not interfere with through movements. I-10 remains at ground level. The Kolb Road mainline roadways are two levels above I-10 and the diverging diamond roadways are one level above I-10.

The diverging diamond roadway and the Kolb Road mainline roadways merge at the north end of the interchange just south of Science Park Drive, a significant east-west arterial. To provide for right turns from the center roadway to eastbound Science Park Drive, a connector road is needed, which will pass under northbound mainline Kolb Road in a box structure. It will end at Science Park Drive as a right turn lane.

East of Kolb Road, a two-way frontage road serves properties along the south side of I-10. The west end of the frontage road intersects Kolb Road approximately 300-ft. south of the existing ramp intersection. The frontage road parallels I-10 and ends approximately 7,000-ft. (1.3 miles) east of Kolb Road.

The diverging diamond roadway and the Kolb Road mainline roadways merge at the south end of the interchange. This restricts access to Wall Street, which is the access to Trails West Active Adult Community. To provide access, a new connector road to the frontage road is needed. It will partially utilize an existing street easement.

To retain the two-way frontage road and avoid new right-of-way, I-10 is shifted to the north. This also allows for the retention of the frontage road access point onto Kolb Road. However, due to the new interchange configuration, a new south connector is required to provide full access to/from the frontage road. The connector intersects with the center roadway but passes under the northbound and southbound Kolb Road mainline roadways via two-lane box structures. The connector will be extended westerly to provide access to the BLM property.

3.3 Evaluation of Alternatives

3.3.1 Alternative Evaluation Factors

The following factors have been established for comparative evaluation of the improvement alternatives; System Alternatives I and IV.

- Safety Improvements
- Traffic Operations and LOS
- Access
- Right-of-Way
- Impacts to Utilities
- Earthwork
- Structures
- Drainage
- Environmental Impacts
- Displaced homes and businesses
- Constructability and Maintenance of Traffic
- Cost

3.3.2 Evaluation of Alternatives

Alternatives I and IV are similar for much of the project length. They are identical for the section of I-10 between I-19 and Alvernon Way and for the entire length of the extension of SR 210. It is only within the Alvernon Way to Kolb Road section where there are differences between the two alternatives. Alternative I combines regional and local traffic within five mainline lanes in each direction, plus auxiliary lanes between successive entrance and exit ramps. Alternative IV keeps regional and local traffic separate by having three mainline lanes and two CD lanes in each direction separated by a concrete barrier. Auxiliary lanes between successive entrance and exit ramps merge with the CDs. The result is that Alternative IV has a wider footprint than Alternative I. While this impacts some evaluation factors differently, many other evaluation factors are identical or very similar. Both alternatives have been evaluated against the evaluation factors listed in **Section 3.3.1** above.

Safety Improvements

Both alternatives reconstruct I-10 and existing interchanges to improve existing conditions, such as short weaving distances (particularly successive loop ramps), TIs spaced closer than the desirable one-mile spacing, and short driver decision-making distances. Existing Palo Verde Road TI is removed and replaced with a new interchange to Country Club Road.

Between Alvernon Way and Kolb Road, Alternative IV separates local and ramp weaving traffic from the regional traffic on the mainline lanes, thus potentially improving safety over Alternative I.

Both alternatives provide pedestrian and bicycle connectivity along the SR 210 corridor and across I-10.

Traffic Operations and LOS

For I-10 between I-19 and Alvernon Way and the extension of SR 210, both alternatives have similar improvements to traffic operations. The LOS differs in one location on westbound I-10 between Country Club Road and Alvernon Way. For Alternative IV, the weaving action between the mainline and the collector-distributor lowers the LOS in the AM peak period. See **Table 3.1** Mainline LOS below.

For I-10 between Alvernon Way and Kolb Road, improvements to traffic operations and LOS are similar. The LOS differs in one location on eastbound I-10 between Kolb Road and Rita Road. For Alternative IV, the weaving action between the mainline and the collector-distributor lowers the LOS in the AM peak period. See **Table 3.1** Mainline LOS below.

Table 3.1 Mainline LOS

Interstate 10	System Alternative I	System Alternative IV
I-19 to 6th Ave	WB – (C/C) EB – (C/C)	WB – (C/C) EB – (C/C)
6th Ave to Park Ave	WB – (B/B) EB – (B/B)	WB – (C/B) EB – (B/B)
Park Ave to Kino Parkway	WB – (B/B) EB – (B/B)	WB – (B/B) EB – (B/B)
Kino Parkway to Country Club Rd	WB – (C/C) EB – (B/B)	WB – (C/C) EB – (B/B)
Country Club Rd to Alvernon Way	WB – (C/B) EB – (B/C)	WB – (D/C) EB – (B/C)
Alvernon Way to Valencia Rd	WB – (C/B) EB – (B/C)	WB – (B/B) CD, (C/B) Main Line EB – (A/B) CD, (B/C) Main Line
Valencia Rd to Craycroft Rd	WB – (C/B) EB – (B/C)	WB – (C/B) CD, (C/B) Main Line EB – (A/C) CD, (B/C) Main Line
Craycroft Rd to Wilmot Rd	WB – (B/B) EB – (A/B)	WB – (B/B) CD, (C/B) Main Line EB – (B/B) CD, (B/C) Main Line
Wilmot Rd to Kolb Rd	WB – (B/B) EB – (A/B)	WB – (B/B) CD, (C/B) Main Line EB – (A/B) CD, (B/C) Main Line
Kolb Rd to Rita Rd	WB – (C/B) EB – (A/C)	WB – (C/B) EB – (B/C)
State Route 210		
Golf Links Rd to I-10	WB – (B/A) EB – (A/B)	WB – (B/B) EB – (A/A)

WB – westbound, EB – eastbound,
(B/A) – Peak Hour LOS (AM/PM), CD - Collector-Distributor

Access

For I-10 between I-19 and Alvernon Way and the extension of SR 210, both alternatives provide identical access to I-10 and SR 210 via the same traffic interchanges. Restrictions to left turns along interchange cross streets, based on current ADOT criteria, are identical for both alternatives for the entire project. Both alternatives provide the same pedestrian and bicycle access throughout the project limits.

The differences in access between the two alternatives occur between Alvernon Way and Kolb Road. While both alternatives provide access at the same traffic interchanges, the difference is that the ramp traffic merges with I-10 mainline traffic for Alternative I and merges with CD traffic for Alternative IV. The concrete barriers that separate mainline traffic from CD traffic for Alternative IV slightly change how directly the access is.

Right-of-Way

Right-of-way requirements are the same for both alternatives for I-10 between I-19 and Alvernon Way and for SR 210. As shown in **Table 3.2 Right-of-Way Impacts**, the differences in right-of-way between the two alternatives occur between Alvernon Way and Kolb Road. Since Alternative IV has a wider corridor footprint than Alternative I, the right-of-way required for Alternative IV is more than for Alternative I.

Table 3.2 Right-of-Way Impacts

Alternative	Parcels Impacted	New R/W (Acres)
I	179	160.63
IV	190	175.32

Environmental Impacts

While the right-of-way requirements and parcels affected for Alternative IV are slightly higher than for Alternative I, the impacts to the environment are virtually the same for air, noise, cultural, biological, hazardous materials and historic structures. For social impacts Alternative I is slightly better than Alternative IV. Alternative IV relocates a short stretch of the Rodeo Wash trail (approximately 250'). Alternative I has no impact on the trail.

Constructability and Maintenance of Traffic

Since both alternatives are identical west and north of the I-10/SR 210 System Interchange and nearly identical east of the system interchange, constructability and maintenance will be virtually the same.

Cost

Between Alvernon Way and Kolb Road, Alternative IV has a higher cost than Alternative I, due to a wider footprint. This increases the quantities for Borrow (for embankment), PCCP (for additional shoulders), concrete barriers (between mainline and the CDs), structures (for the wider I-10 footprint), and right-of-way. All of the above items will also increase due to the use of the two special ramps between the CDs and I-10 mainline and the special gates in the median barriers for first responder access.

System Alternative I Total Cost = $1,165,317,000

System Alternative IV Total Cost = $1,255,095,000

Impacts to Utilities

For the entire project limits, both alternatives impact utilities identically.

Earthwork

For I-10 between I-19 and Alvernon Way and the extension of SR 210, both alternatives have the same design and the same need for roadway embankment borrow. Between Alvernon Way and Kolb Road, Alternative IV has a wider roadway footprint than Alternative I, thus requiring more roadway embankment borrow.

System Alternative I Borrow = 3,396,800 Cu Yd

System Alternative IV Borrow = 3,834,400 Cu Yd

For both alternatives, the borrow quantity needs over the 20± years of the construction window will be substantial.

Structures

For I-10 between I-19 and Alvernon Way and the extension of SR 210, both alternatives have the same design and the same need for both new structures and widening existing structures. Between Alvernon Way and Kolb Road, Alternative IV has a wider roadway footprint than Alternative I, thus requiring wider I-10 structures over the cross streets and drainage channels.

Drainage

For the entire project limits, both alternatives require pavement and off-site drainage facilities that are virtually identical. For Alternative IV section between Alvernon Way and Kolb Road, the cross-culvert lengths are longer due to the wider roadway prism, but culvert sizing is the same. This section of Alternative IV has more catch basins for collecting pavement runoff because the barrier separating the mainline express lanes from the collector-distributor lanes blocks the runoff thus more catch basins are needed. A few additional storm drain laterals are needed to pick up the storm flow collected by the additional catch basins.

3.3.3 Evaluation Matrix

Advantages and disadvantages of the alternatives are tabulated in the following evaluation matrix. **See Table 3.3.** The purpose of this matrix is to present a side-by-side comparison of the alternatives, evaluated against the foregoing criteria.

3.4 Evaluation of Alternatives

Based on the evaluation of alternatives, Alternative I was selected as the Recommended Alternative for the following reasons:

- Alternative I provides a slightly higher level of service than Alternative IV but at a cost that is $90,000,000 less than Alternative IV.
- Alternative I has less of an impact on adjacent property owners, with less land taken and fewer properties affected. Alternative I fits well within the existing right-of-way.
- Alternative I provides better access to commercial properties between Alvernon Way and Kolb Road.
- Both alternatives provide excellent safety improvements, better spacing between traffic interchanges with reduced congestion and high levels of service.
- Environmental concerns are nearly identical between the two alternatives. Alternative IV relocates a short stretch (approximately 250') of the Rodeo Wash trail. Alternative I has no impact on the trail.

Table 3.3 Evaluation Matrix

Design Evaluation Factor	System Alternative I	System Alternative IV	Comments
Safety Improvements	Alternative I reconstructs I-10 and existing interchanges to improve existing conditions, such as short weaving distances, TIs spaced closer than the desirable one-mile spacing, and short driver decision-making distances. Existing Palo Verde Road TI is removed and replaced with a new interchange to Country Club Road.	Alternative IV reconstructs I-10 and existing interchanges to improve existing conditions, such as short weaving distances, TIs spaced closer than the desirable one-mile spacing, and short driver decision-making distances. Existing Palo Verde Road TI is removed and replaced with a new interchange to Country Club Road. Between Alvernon Way and Kolb Road, Alternative IV separates local and ramp weaving traffic from the regional traffic on the mainline lanes, thus potentially improving safety over Alternative I. Emergency Access Gates will be provided at half mile intervals along the barrier wall between the mainline and the collector-distributor lanes in both directions.	Separating mainline regional traffic from local and ramp weaving traffic is an improvement to safety for the stretch between Alvernon Way and Kolb Road for Alternative IV. Emergency Access Gates provided at intervals will allow access by emergency vehicles and a means to remove vehicles confined by the mainline barrier walls.
Transportation Performance WB – westbound EB – eastbound (B/A) – Peak Hour LOS (AM/PM) CD - Collector-Distributor	**I-10, I-19 to Alvernon Way (2040)** I-19 to 6th Ave: WB – (C/C), EB – (C/C) 6th Ave to Park Ave: WB – (B/B), EB – (B/B) Park Ave to Kino Pkwy: WB – (B/B), EB – (B/B) Kino Pkwy to Country Club Rd: WB – (C/C), EB – (B/B) Country Club Rd to Alvernon Way: WB – (C/C), EB – (B/B) **I-10, Alvernon Way to Kolb Road (2040)** Alvernon Way to Valencia Rd: WB – (C/B), EB – (B/C) Valencia Rd to Craycroft Rd: WB – (C/B), EB – (B/C) Craycroft Rd to Wilmot Rd: WB – (B/B), EB – (A/B) Wilmot Rd to Kolb Rd: WB – (B/B), EB – (A/B) Kolb Rd to Rita Rd: WB – (C/B), EB – (A/C) **State Route 210 (2040)** Golf Links Rd to I-10: WB – (B/A), EB – (A/B)	**I-10, I-19 to Alvernon Way (2040)** I-19 to 6th Ave: WB – (C/C), EB – (C/C) 6th Ave to Park Ave: WB – (C/B), EB – (B/B) Park Ave to Kino Pkwy: WB – (B/B), EB – (B/B) Kino Pkwy to Country Club Rd: WB – (C/C), EB – (B/B) Country Club Rd to Alvernon Way: WB – (D/C), EB – (B/C) **I-10, Alvernon Way to Kolb Road (2040)** Alvernon Way to Valencia Rd: WB – (B/B) CD, (C/B) Mainline EB – (A/B) CD, (B/C) Mainline Valencia Rd to Craycroft Rd: WB – (C/B) CD, (C/B) Mainline EB – (A/C) CD, (B/C) Mainline Craycroft Rd to Wilmot Rd: WB – (B/B) CD, (C/B) Mainline EB – (B/B) CD, (B/C) Mainline Wilmot Rd to Kolb Rd: WB – (B/B) CD, (C/B) Mainline EB – (A/B) CD, (B/C) Mainline Kolb Rd to Rita Rd: WB – (C/B), EB – (B/C) **State Route 210 (2040)** Golf Links Rd to I-10: WB – (B/B), EB – (A/A)	High levels-of-service are provided by both system alternatives. System Alternative IV Westbound LOS between Country Club Road and Alvernon Way (at the west end of the CD) decreases more than System Alternative I. Decrease is minor but due to CD traffic weaving with mainline traffic. System Alternative IV Eastbound LOS between Kolb Road and Rita Road (at the east end of the CD) decreases more than System Alternative I. Decrease is minor but due to CD traffic weaving with mainline traffic. The mainline lanes for Alternative I operate at a slightly higher LOS between Craycroft Road and Kolb Road than Alternative IV.
Land Impacts	Number of Parcels affected = 179 Right-of-Way takes (acres) = 160.63	Number of Parcels affected =190 Right-of-Way takes (acres) = 175.32	System Alternative I takes 9.1% less property and affects 6.1% fewer parcels than System Alternative IV.
Mobility	Mainline lanes provide a high level-of-service throughout the project. Traffic speeds are very good. Mobility around Davis Monthan AFB is greatly improved with the extension of SR210 along the Alvernon Way alignment.	Mainline lanes provide a high level-of-service throughout the project. Alternative IV provides an opportunity to separate regional passenger and truck traffic from commuter traffic. Traffic speeds for the mainline lanes between Alvernon Way and Kolb Road will be higher than Alternative I. Mobility around Davis Monthan AFB is greatly improved with the extension of SR210 along the Alvernon Way alignment.	Alternative IV provides an opportunity to separate regional passenger and truck traffic from local commuter traffic. Approximately 60% of regional traffic does not stop in Tucson. Mobility for both alternatives is excellent.

Table 3.3 Evaluation Matrix (continued)

Design Evaluation Factor	System Alternative I	System Alternative IV	Comments
Access	Access to local arterial streets is excellent. Traffic interchanges have been widened with more lanes to provide more capacity for turning movements. Access to the downtown area is greatly improved maximizing the use of the existing SR 210 corridor. Access control requirements restricting left-turn movements near traffic interchanges will affect a number of properties.	Access to local arterial streets is excellent. Traffic interchanges have been widened with more lanes to provide more capacity for turning movements. Access to the downtown area is greatly improved maximizing the use of the existing SR 210 corridor. The barrier between the CD lanes and mainline lanes for System Alternative IV will have an effect on direct access to residential and commercial properties between Alvernon Way and Kolb Road. Traffic on the mainline lanes will not have access to traffic interchanges at Valencia Road, Craycroft Road, and Wilmot Road. This may have an impact on local businesses. Access control requirements restricting left-turn movements near traffic interchanges will affect a number of properties.	Both alternatives provide greatly improved access along the I-10 and SR 210 corridors. Alternative I provides better access than Alternative IV. Access control requirements restricting left-turn movements near traffic interchanges are the same for both alternatives.
Right-of-Way	Right-of-Way required is 160.63 acres.	Right-of-Way required is 175.32 acres.	Alternative IV requires more land than Alternative I.
Social Impacts	Residences taken = 5 (2 near CC, 3 near Golf Links Road). Commercial Lots affected with structures taken = 28 Parcels affected = 179 No effect on the Rodeo Wash Trail.	Residences taken = 5 (2 near CC, 3 near Golf Links Road). Commercial Lots affected with structures taken = 28 Parcels affected = 190 Right of Way take requires a short stretch of Rodeo Wash trail to be relocated.	While there is no difference in the number of residences taken and the number of commercial lot affected between alternatives, the number of parcels affected by Alternative IV is more than Alternative I. Alternative IV relocates a short stretch of the Rodeo Wash trail. Alternative I has no impact on the trail.
Environmental Impacts	Improvements to the I-10 and SR 210 corridors follow existing alignment minimizing the impacts to air, noise, cultural resources, biological, hazardous materials and historic structures.	Improvements to the I-10 and SR 210 corridors follow existing alignment minimizing the impacts to air, noise, cultural resources, biological, hazardous materials and historic structures.	The environmental impacts caused by both alternatives is virtually the same.
Constructability and Maintenance of Traffic	Constructability and Maintenance of Traffic is the same as System Alternative IV.	Constructability and Maintenance of Traffic is the same as System Alternative I.	Constructability and Maintenance of Traffic is the same for both System Alternatives.
Financial Performance (Cost)	Construction Cost = $510,563,000 Miscellaneous = $226,185,000 Engineering and Contingency = $178,769,000 Right-of-Way = $74,669,000 Utility Relocation = $69,000,000 Indirect Cost Allocation (ICAP) = $106,131,000 Total Cost for Alt I = **$1,165,317,000**	Construction Cost = $553,489,000 Miscellaneous = $245,200,000 Engineering and Contingency = $194,001,000 Right-of-Way = $79,098,000 Utility Relocation = $69,000,000 Indirect Cost Allocation (ICAP) = $114,307,000 Total Cost for Alt IV = **$1,255,095,000**	System Alternative I is 7.2% less costly than System Alternative IV.
Impacts to Utilities	Impacts to Utilities is the same as System Alternative IV.	Impacts to Utilities is the same as System Alternative I.	Impacts to Utilities is the same for both System Alternatives.
Earthwork	System Alternative I requires 3,396,800 cubic yards of borrow for the project.	System Alternative IV requires 3,834,400 cubic yards of borrow for the project.	System Alternative IV requires 437,600 cubic yards of borrow more than System Alternative I. That is 12.9% more than System Alternative I.

4. MAJOR FEATURES

4.1. Introduction

This section describes the major design features used to develop and evaluate alternatives to meet current and future traffic needs and enhance safety and traffic operational features of I-10 and SR 210 including traffic interchanges and frontage roads.

The I-10/SR 210 improvement alternatives meet the design requirements in the ADOT Roadway Design Guidelines and the 2004 AASHTO Policy on Geometric Design of Highways and Streets. The improvements to I-10 satisfy requirements for interstate highways as contained in the AASHTO Policy on Design Standards Interstate System.

4.2. Major Design Features

4.2.1 Design Controls

The following design controls were used for both I-10 and SR 210 in the development of the alternatives:

- Design Year: 2040
- Design Speed
  - I-10 and SR 210 Mainline (Urban): 65 mph
  - I-10 and SR 210 Ramps – Service Interchange:
    - Main Body of Ramp: 50 mph
    - Parallel Exit Ramp: 60 mph
    - Parallel Entrance Ramp: 55 mph
    - Ramp at Crossroad: 35 mph
  - I-10 and SR 210 Ramps – System Interchange:
    - Main Body of Ramp: 55 mph
    - First Curve at Entrance: 55 mph
    - First Curve at Exit 65 mph
  - I-10 and SR 210 Ramps (At Crossroads): 35 mph
  - Crossroads through Interchange: 40 mph

    If the design speed of a crossroad outside the limits of an interchange is greater than 40 mph the higher design speed will be carried through the interchange.

  (Crossroads classified as Parkways may have 50 mph design speed.)
- Typical Sections:
  - I-10 Mainline, I-10 Collector-Distributor Roadway and SR 210 Mainline:

    Lane width: 12-feet

    Shoulder width:

    2 lanes in each direction:
    - Outside shoulder: 10-feet
    - Inside shoulder: 4-feet

    3 or more lanes in each direction:
    - Outside shoulder: 12-feet*
    - Inside shoulder: 12-feet *

    *Truck traffic DDHV is projected to exceed 250.
  - Number of Through Lanes – I-10:

    From I-19 to Kino Parkway:
    - Eastbound: 4-lanes
    - Westbound: 4-lanes

    From Kino Parkway to SR 210 connection to I-10:
    - Eastbound: 3-lanes
    - Westbound: 3-lanes

    From SR 210 connection to Kolb Road

    System Alternative I:
    - Eastbound: 5-lanes
    - Westbound: 5-lanes

    System Alternative IV:
    - Eastbound: 3 mainline lanes + 2 CD lanes
    - Westbound: 3 mainline lanes + 2 CD lanes
  - Through Lanes for SR 210 with System Alternative I and System Alternative IV:

    Through the main body of SR 210 with System Alternative I and System Alternative IV, the number of lanes will vary from 2-lanes in each direction to 4-lanes in each direction.

    (Note: Number of through lanes for SR 210 with System Alternatives I and IV includes lanes for both Alvernon Way local traffic and SR 210 traffic.)
  - Interchange Ramps (I-10 and SR 210):

All ramps shall be parallel type ramps. Two lane entrance ramps at service interchanges will have dual-lane metering of traffic onto the mainline.

1-Lane Directional Ramps:
- Lane width: 12-feet
- Left shoulder: 6-feet
- Right shoulder: 10-feet

2-Lane Directional Ramps:
- Lane width: 12-feet
- Left shoulder: 4-feet
- Right shoulder: 8-feet

1-Lane and 2-Lane Ramps:
- Lane width: 12-feet
- Left shoulder: 2-feet
- Right shoulder: 8-feet

  - Interchange Crossroads:

Crossroads will have raised curbs with 2-foot setback from the outside lane edge.

Crossroads will have raised medians with 2-foot setback to the median curb from the lane edge. Number of through lanes will vary per agreement with local agency having jurisdiction. Median width of crossroads within the ADOT R/W will be in accordance with RDG Chapter 500.

Lane width: 12-feet

- Slope Criteria:
  - I-10 and SR 210:

    Use ADOT RDG Figure 306.4B.
  - Interchange Ramps:

    Use ADOT RDG Figure 504.4A.
- Roadway Cross-slope:
  - Roadway Cross-slope of tangent sections of new or reconstructed roadways shall be 0.02'/'
- Maximum Gradient (Urban):
  - I-10 and SR 210 Mainline: 3%
  - Interchange Ramps: Use ADOT RDG Section 504.1.
  - Interchange Crossroads adjacent to ramp termini: 3%
- Maximum Superelevation:
  - I-10 and SR 210 Mainline (RDG Section 202): 0.06 ft/ft
  - Interchange Ramps (RDG Section 504.3): 0.06 ft/ft

  (Ramp curves should not have spirals, per RDG Section 504.2)
- Maximum Degree of Curve:
  - I-10 and SR 210 Mainline (RDG Table 202.3B): 3° 27'
  - I-10 and SR 210 Interchange Ramps (RDG Table 202.3B)

    Circular curves will be used for ramp alignment.

    Service Interchange:
    - Main Body of Ramp: 6° 53'
    - Parallel Exit Ramp: 4° 18'
    - Parallel Entrance Ramp: 5° 24'

    System Interchange:

Body of Ramp:	5° 24’
First Curve at Entrance	5° 24’
First Curve at Exit	3° 27’

4.2.2 Access Control

I-10 is an Interstate Freeway with full control of access along the mainline roadways and through the full extent of all interchange ramps.

Existing SR 210 is a partial access controlled Parkway with access breaks at major signalized intersections.

The extension of SR 210 is an Urban Access Controlled Freeway with full control of access along the mainline roadways and through the full extent of all interchange ramps.

- The limits of access control managed by ADOT at interchange crossroads will be in accordance with Section 506 of the ADOT RDG.
- Access control along interchange crossroads beyond the requirements of Section 506 of the RDG will be implemented by agreements with the local agencies having jurisdiction over the crossroad. See **Section 5 - Access Management** for access control concepts at interchange crossroads.

4.2.3 Horizontal and Vertical Alignments

All elements of the I-10 and SR 210 improvements will comply with the ADOT RDG and the AASHTO guidelines.

The existing horizontal alignment of the I-10 eastbound and westbound mainlines will be retained from I-19 to within ¼ mile north of Valencia Road. From ¼ mile north of Valencia Road to east of Kolb Road, the horizontal alignment of I-10 will be shifted to efficiently use the existing I-10 right-of-way corridor and to eliminate or reduce new right-of-way takes from developed parcels/subdivisions along the I-10 corridor.

The existing vertical alignment of I-10 will be retained from I-19 to within 1/3 mile west of Kino Parkway and at the I-10 bridge over Alvernon Way. For the remainder of I-10, it will be necessary to modify the vertical alignment to accommodate vertical clearance requirements for new or widened structures and to reconstruct the existing pavement. Additional through lanes will be added throughout the project and traffic interchanges will be modified.

The sections of existing I-10 that are to be retained horizontally and vertically have been reviewed and meet current AASHTO design criteria.

4.2.4 Right-of-Way

The existing ROW for I-10, including ROW for TI ramps and for Frontage Roads will be used. It will be necessary to acquire additional ROW, especially where interchanges are being extensively revised. The extent of new ROW has been identified for both alternatives. New ROW for System Alternative I will impact 179 parcels and require approximately 161 acres. New ROW for System Alternative IV will impact 190 parcels and require approximately 175 acres.

ROW required for revisions to the existing ROW corridor will be in conformance with requirements of the ADOT RDG and AASHTO.

The minimum right-of-way width for the extension of SR 210 will be 10-feet beyond the catch line of the mainline or ramp roadway in accordance with Figure 306.4B of the ADOT RDG. South of the Ajo Way interchange, the SR 210 right-of-way width and impacts to developed parcels is minimized by the use of retaining walls.

4.2.5 Drainage

Several major watercourse crossings that exist within the study segment of I-10 and the extension of SR 210 are listed below. The bridges and box culverts need to be lengthened or widened to accommodate the wider roadway prisms and storm flows.

1. Diversion Channel, EB (MP 262.82): single 85’ span bridge.
2. Diversion Channel, WB (MP 262.82): single 85’ span bridge.
3. Julian Wash (MP 265.80): 6 barrel, 74’ total span Reinforced Concrete Box Culvert (RCBC).
4. Earp Wash Tributary, WB Frontage Road (MP 267.65): four 25’ span bridge.
5. Earp Wash Tributary, EB (MP 267.65): four 25’ span bridge.
6. Earp Wash Tributary, WB (MP 267.65): four 25’ span bridge.
7. Earp Wash Tributary, EB Frontage Road (MP 267.65): three 10’ span bridge.
8. Julian Wash, Treat Avenue (north of Irvington Rd): New 6-barrel 10’x10’ RCBC.
9. Julian Wash, Country Club Road (north of Irvington Rd): 6-barrel 10’x10’ RCBC.
10. Drainage Channel, Alvernon Way (SR 210 mid-way between Golf Links Rd and UPRR): 3-barrel RCBC.
11. Drainage Channel, Alvernon Way (SR 210 just north of Ajo Way): 4-barrel RCBC.
12. Drainage Channel, Alvernon Way (SR 210 mid-way between Michigan St and Irvington Rd): 4-barrel RCBC.
13. Drainage Channel, Craycroft Rd (near Travel Plaza Way just north of I-10): New 2-barrel 6’x8’ RCBC.

Numerous smaller drainage crossing facilities existing along the study area. The adequacy of the culverts has been addressed in the Drainage Report prepared by J2, dated January 2019.

4.2.6 Section 401 and 404 Permits

Impacts to floodplains, water quality, or the sole source aquifer would not be expected to have a major role in determining I-10 or SR 210 improvements.

Any widening of the I-10 mainline and new interchange ramps on the north side of I-10 between Kino Parkway and Craycroft Road may encroach on the 100-to-500-year Julian Wash floodplain. Drainage analysis during design would be needed to determine the degree of impacts. Primarily, impacts could be expected at Country Club Road (new TI), and Alvernon Way (expanded TI under System Alternative I and System Alternative IV). A jurisdictional delineation should be conducted during final design to identify all Waters in the study area.

Julian Wash and several unnamed washes cross SR 210 in the study area and may be regulated by the Corps.

Section 404 of the Clean Water Act regulates the placement of fill or dredged material into Waters of the United States (Waters). The U. S. Army Corps of Engineers (Corps) has regulatory jurisdiction of Waters. A Section 401 Water Quality Certification, which is administered by the Arizona Department of Environmental Quality, is required for any action subject to Section 404; however, most projects that fall under a Nationwide Permit are conditionally certified under Section 401.

Coordination with the EPA during design would need to occur relative to sole source aquifer impacts. This study area is within the Upper Santa Cruz & Avra Basin Sole Source Aquifer designated area.

ADOT Environmental Planning shall apply for all permits required.

4.2.7 Floodplain Considerations

Research of known flood hazard areas or local flooding problem areas along or near existing I-10, and along or near the proposed extension of SR 210 within the study limits included review of the most recent Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMS), and discussions with City of Tucson and Pima County personnel.

Offsite drainage affecting the segment of I-10 from I-19 to SR 83 is characterized by washes flowing roughly parallel to I-10, from east-southeast towards the west-northwest. Inspection of FEMA FIRMS in the

study area shows that several Special Flood Hazard Areas (SFHAS) exist adjacent to I-10 along this corridor to include the following locations:

1. East of Kino Parkway: Zone A, Tucson Diversion Channel crossing of I-1.0
2. West of Palo Verde Road, Zone A, unnamed flooding area south of I-10.
3. South of Valencia Road: Zone A, "1% Annual Chance Flood Discharge Contained in Culvert."

Within the SR 210 study area there is one FEMA SFHA; Julian Wash (FEMA Zone X) south of Valencia Road and north of the UPRR tracks. Discussions with City of Tucson and Pinal County personnel revealed that they had no knowledge of additional local flooding problems within the I-10 and SR 210 extension study corridors.

4.2.8 Geology

The I-10 and SR 210 extension study corridors are located within the Basin and Range physiographic province, and are characterized as broad alluvial filled basins bounded by steeply dipping faults and fault-block mountains. The corridor within the limits of this project is within the Tucson Area (Upper Santa Cruz basin), which is a structural basin filled with alluvium and bounded by mountains.

The Upper Santa Cruz basin has a broad and gently sloping valley floor, generally trending north to northwest. Elevations in the basin range from about 2,490-feet in downtown Tucson to about 3,500-feet at the east edge of the basin near SR 83.

Geologic hazards along the I-10 study corridor include land subsidence and earth fissures, soil shrink and swell potential, floods and earthquakes.

- Land subsidence and earth fissures are associated with the draw-down of groundwater from the alluvial aquifers.
- Soil shrink and swell is a potential hazard in areas of the alluvial fan where sediment has been deposited from flood and mud flow events.
- Flood hazards may exist in low lying portions of the alignment near the stream channels. The I-10 alignment within the study area tends to parallel stream channels instead of crossing the channels. Flood hazards are therefore reduced to low lying portions of the alignment adjacent to the stream channels.
- Earthquake and seismic activity has been a low risk hazard in the Santa Cruz basin area. The Seismicity Map of the State of Arizona contains two events within 50 miles of the I-10/SR 210 study area. The intensity was such that damage to manmade structures would not be great.

Additional geotechnical information is available in the Materials Investigation Report for the I-10 Corridor Study, Junction I-19 to Pima/Cochise County Line prepared for ADOT.

4.2.9 Earthwork

Most of existing I-10 within the study area is constructed on earthwork embankments. Modifications to the I-10 mainline roadway, ramps and frontage roads will require importing fill material.

The extension of SR 210 under System Alternative I or System Alternative IV will be at-grade or above grade through the length of the extension to the connection with I-10. Borrow will be required.

Initial roadway modeling for the entire project identified the need for borrow to construct roadway embankments. System Alternative I will require approximately 3.4 million cubic yards of borrow. System Alternative IV will require approximately 3.8 million cubic yards of borrow. Borrow requirements will be spread out over a 20+ year period.

4.2.10 Traffic Design

I-10

The existing service interchange at Palo Verde Road will be removed and replaced with a new service interchange at Country Club Road to improve spacing of traffic interchanges and improve connections to the local street system.

All other I-10 service interchanges within the project limits will be modified as described in **Section 3**, Alternatives Considered.

A system interchange with the SR 210 Extension will be developed at Alvernon Way.

SR 210 Extension

The existing SR 210/Alvernon Way/Golf Links Road connection consists of a split interchange between Golf Links Road and Alvernon Way plus a diamond interchange between SR 210 and Alvernon Way.

System Alternative I and System Alternative IV will reconfigure the combined Golf Links/Alvernon Way interchange to extend SR 210 to a system interchange with I-10 at Alvernon Way. The interchange between SR 210 and Golf Links Road/Alvernon Way will be reconfigured with interchange connections with SR 210, Golf Links Road and Alvernon Way as shown in **Appendix C and I**.

A diamond interchange will connect Ajo Way with extended SR 210.

Due to the close proximity to the system interchange with I-10, access between SR 210 and Irvington Road will not be provided.

Signing and Pavement Marking

The project guide signing concept has been prepared for the I-10 and the SR-210 corridors within the project limits and any other impacted signing approaching the study corridor. The guide sign concept has been prepared for both the Alternatives I and IV to address the project improvements described in **Section 3**. The objective of the guide sign concept is to provide a clear and consistent advance guide signing and exit signage for each of the service and system interchanges for both the alternatives.

The preliminary project guide sign concept for each alternative is shown in plan sheets included in **Appendix P**. The guide sign concept has been prepared in accordance with the FHWA's *Manual of Uniform Traffic Control Devices (MUTCD)*, 2009 Edition, the *Arizona's Supplement to MUTCD*, 2009 Edition and ADOT's *Traffic Guidelines and Policies, TGP 300, Signs*. All the signs included in the guide sign concept shall conform to meet ADOT's retro-reflectivity standards and will not require any sign lighting for installation. The final location and the size of the sign structures will be determined during the final design of the project and the final designer must consider the conflicts associated with the installation of other infrastructure such as bridges, drainage features, noise/retaining walls, bridge structures, utilities, and other appurtenances.

The project improvements identified in **Section 3** show some major changes to the I-10 and SR 210 corridors within the project limits for the service/system interchanges. The existing signs and the sign structures are no longer applicable or are past the design life associated with the sign structures, hence all existing signs and sign structures will be removed and salvaged.

The pavement marking plans correspond with the new lane configurations for the mainline, auxiliary lanes, cross streets/local streets, and the service/system interchange ramps and ramp terminal intersections. The pavement marking plans have been developed to comply with ADOT's *Signing and Pavement Marking Standard Drawings*, May 2015.

Traffic Signals

The project improvements identified in **Section 3** for Alternatives I and IV will require modification to existing traffic signals or construction of new traffic signals at the impacted service traffic interchanges. The impacts of the project improvements on the traffic signals will need to be evaluated further during the final design for the project.

Lighting

High-mast lighting exists along I-10 from I-19 to S. Park Avenue and side-mount lighting for all the merge / diverge areas within the rest of the project limits. The existing lighting on the project corridor is High Pressure Sodium (HPS) fixtures on high mast or side mount poles.

A Lighting Assumptions memorandum has been prepared and submitted to ADOT. Any comments from ADOT have been incorporated to the memo and into the DCR. The complete Lighting Assumptions Memorandum is included in **Appendix P** and a summary is provided below:

Lighting Assumptions

1. LED luminaires will be used throughout the project limits.
2. Pole foundations, poles, mast arms, and junction boxes will comply with ADOT standard details.
3. The Light Loss Factor (LLF) for all LED lighting is 0.8.
4. RP-8-00 luminaire standard for freeway class B
   - Average Illuminance of 0.6 (cd/m^2)
   - Avg/Min Illum Ratio of 4:1
   - Minimum Illuminance of 0.2

Lighting Options

Upon review of the two roadway system alternatives, two separate lighting options were created for each alternative. It is to be noted that all lighting options described below use American Electric Luminaire with 10-foot mast arms atop 30ft type G poles, for all ramps.

System Alternative I Lighting Option 1
In this option, American Electric Luminaires are mounted with 20-foot mast arms atop 40-foot type H poles on opposite sides of roadway in a staggered formation along the shoulders.

System Alternative I Lighting Option 2
In this option, Holophane high mast luminaires are mounted with twin luminaires atop 50-foot type U poles along the median.

System Alternative IV Lighting Option 1
In System Alternative IV Option 1, American Electric Luminaires are mounted with 20-foot mast arms atop 40-foot type H poles on opposite sides of roadway in a staggered formation along the shoulders, except for the roadway section with the collector distributor. For the roadway section with the collector distributor, American Electric Luminaires are mounted with 20 ft mast arms atop 40 ft H poles on opposite sides of roadway along the shoulders and Holophane high mast luminaires mounted with twin luminaires atop 50-foot type U poles along the median, in a staggered formation.

System Alternative IV Lighting Option 2
In System Alternative IV Option 2, on I-10, Holophane High Mast luminaires are mounted on the outer medians (between the mainline and the collector-distributor road for each direction) with twin luminaire brackets atop 50-foot type U poles. On SR210, Holophane high mast luminaires are mounted with twin luminaire brackets atop 69 ft type U poles along the Median.

Lighting Analysis

Analysis to determine the layout of the luminaires was conducted by determining cross sectional lengths of the roadways lane configurations. ***AGi32-17.5*** software was utilized to determine spacing of the luminaires along the project limits for each system alternative. See the Lighting Assumptions Memo in **Appendix P** for analysis results tables and preliminary costs.

Intelligent Transportation Systems (ITS)

The existing Intelligent Transportation Systems (ITS) facilities includes Closed-Circuit Television (CCTV) cameras, Dynamic Message Signs (DMS), fiber optic trunk line conduit systems, pull boxes, and system detectors placed along the I-10 corridor between I-19 and Valencia Road. All the existing ITS devices are interconnected with fiber optic cables in the three 3-inch trunk line conduits back to the ADOT's Traffic Operations Center. The project improvements will impact the locations of several ITS devices/conduits and pull boxes. The existing ITS infrastructure such as the trunk line conduits, CCTV cameras and the detection systems do not meet the requirements identified in ADOT's *Intelligent Transportation Systems (ITS) Design Guide*, March 2018 for urban freeway facilities. Hence, all existing ITS infrastructure will be removed/salvaged/abandoned and new ITS infrastructure will be constructed along with the project improvements.

All new ITS infrastructure for Alternative I or Alternative IV will be compliant with ADOT's *ITS Design Guide*, March 2018 and will include all the field devices, cabinets, mainline and ramp detection systems, CCTV cameras, DMS, three 3-inch conduits on both sides of the freeway system, pull boxes, ITS load centers, and a provision for wrong-way detection systems.

The existing ITS system along I-10 from I-19 to Valencia Road will remain operational through construction until the permanent ITS devices are in place. All the proposed ITS infrastructure should be evaluated during the final design to determine any potential conflicts with other project infrastructure. The final designer shall coordinate with ADOT's Systems Technology group for design compliance reviews, and with the City of Tucson, the City of South Tucson and Pima County for any potential fiber optic connections to their infrastructure adjacent to the project limits.

The preliminary ITS design plans for each alternative is shown in plan sheets included in **Appendix P**.

4.2.11 Preliminary Pavement Design

Preliminary pavement design has been coordinated with the ADOT Pavement Design Section and the results are included in the Preliminary Geotechnical Evaluation report, dated January 19, 2017.

4.2.12 Transit

A report titled Transit Design Considerations for I-10 and State Route 210, dated July 2011, has been prepared (See **Appendix O**). The following future transit plans are identified in the report:

- The Regional Transportation Authority's (RTA) 20-year plan includes:
  - Express bus service between new park-and-ride lots at Wentworth Road (Old Vail Road) and Houghton Road, and downtown Tucson via I-10.
- PAG 2040 Regional Transit Plan (RTP) includes new express bus and Bus Rapid Transit (BRT) services that would operate along I-10 and across the corridor:
  - BRT along I-10 between Wentworth Road and downtown Tucson. Plans for this service are conceptual in nature.
  - BRT between southeast Tucson and downtown. This service could potentially use I-10 and SR 210.
  - New express bus services are proposed for the Kolb Road and Valencia Road corridors.
- PAG high capacity transit system plan includes both express bus and BRT on I-10.
  - Express bus along I-10 between the community of Vail, near Rita Road, and downtown Tucson. This service could also use SR 210.
  - BRT along I-10 between the community of Vail, near Rita Road and downtown Tucson. This service could also use SR 210.

4.2.13 Utilities and Rail Facilities

Table 4.1 lists Utility and Railroad contacts.

- Union Pacific Railroad (UPRR):
  - I-10 crosses the UPRR Nogales Subdivision tracks at MP 261.41.
  - The UPRR is located to the east of Alvernon Way and approaches I-10 from the north and turns to the east just north of I-10. The I-10 right-of-way line is parallel to and 42-feet south of the UPRR right-of-way line from approximate MP 265.25 to MP 265.55. I-10 then turns to the southeast and separates from the UPRR by approximately three-quarters of a mile.

– The extension of SR 210 with System Alternative I and System Alternative IV crosses over the UPRR south of the Alvernon/Golf Links Road TI.

4.2.14 Design Exceptions

No design exceptions are anticipated for the I-10 or SR 210 improvements.

Table 4.1 Utility and Railroad Contacts

Agency	Utility Type	Contact Name	Contact Information
American Telephone and Telegraph (AT&T)	Coaxial, Fiber	Joseph Forkert Forkert Engineering & Surveying, Inc.	(714) 963-7964 joef@forkertengineering.com
City of Tucson DOT - Traffic Eng	Street Lights, Traffic Signals	Luis Murrieta	(520) 791-3251
City of Tucson DOT - Streets & Traffic Maintenance Division	Irrigation	Paul Rosenboom	(520)837-6796 Paul.Rosenboom@tucson.az.gov
City of Tucson Facility Design and Maintenance	Electric, Gas, Sewer, Water	Carlos Carazo	(520) 837-6334
City of Tucson Inet Fiber	Fiber	Theo Christenson	520-791-3121 theo.christenson@tucsonaz.gov
Cox Communications	CATV, Fiber	Jeff Krause	(520) 867-7526 Jeff.Krause@cox.com
Century Link	Coaxial, Fiber	Leann Kysar Robert Jones	(520) 838-3043 Leann.Kysar@CenturyLink.com Robert.Jones@centurylink.com
El Paso Natural Gas	Gas	Kelly Sims	(520) 663-4223 Kelley_Sims@kindermorgan.com
Kinder Morgan Energy	Petroleum	Mark Sabeti	(714) 560-4770 mark_sabeti@kindermorgan.com
Level 3 Communications	Fiber	Alan Smith	alan.smith@level3.com
MCI	Fiber	John Bachelder	investigations@verizon.com
Pima County Traffic Engineering	Traffic Signals	Tim Scott	(520) 724-5887 Tim.Scott@pima.gov
Pima County Wastewater Management	Sewer	Bob Machen	(520) 724-9405
Ray Water Company	Water	Rhonda Rosenbaum	(520) 623-2366 raywaterco@gmail.com
Southwest Gas	Gas	Robert Daniels	(520) 794-6166 TUCSWGFranchiseGroup@swgas.com
Sprint Communications Company	Coaxial, Fiber	Colin Sword	(602) 430-3615 colin.sword@sprint.com
Tucson Electric Power	Electric	Jason Saline Environmental Land Use Planner Renee Darling Senior Environmental & Land Use Planner	(520) 396-2767 JSaline@tep.com (520) 884-3642 rdarling@tep.com
Tucson Water	Recaimed Water, Water	Edward Lopez	(520) 837-2125 edward.lopez@tucsonaz.gov
Voyager Water Company	Water	Keith Dojaquez	(520) 624-1460 ext 102 kdojaquez@southwesternutility.com
Zapco Energy Tactics Corp	Methane Gas	Phil Priebe	(815) 671-3576 ppriebe21@msn.com
Union Pacific Railroad	Railroad	Alex Popovici	Contact Sayeed Hani, ADOT Utilities and Railroad Engineering Liaison 520-712-7555

5 ACCESS MANAGEMENT PLAN

5.1 Introduction

The project improvements identified in the proposed alternatives will require reconstruction of crossroads at each traffic interchange. At each crossroad, access control will be established to meet both current design criteria and yet be customized to meet the specific access needs for the existing development along each crossroad.

Adequate access control is essential to the safe and efficient operation of traffic interchanges. Access control limits should be practicable to help minimize queue spillback, stop-and-go travel, heavy weaving volumes, and poor signal progression. Access control involves the restriction of left and right turns within close proximity to the interchange intersections with the ramps. For example, if left turns are allowed too close to the interchange, left turn traffic will adversely impact traffic operations on the cross street and at the interchange. Access control also involves restrictions on the location of the nearest signalized intersections. For example, if a signalized intersection is too close to the interchange intersection, poor signal progression may be the result.

However, access control must be customized to meet the specific development conditions for each crossroad. Development of access control along each crossroad will require coordination between ADOT and local jurisdictional stakeholders.

5.2 General Access Control Criteria

At each crossroad, access control will be established in accordance with the access control guidelines in Section 506 of the current ADOT Roadway Design Guidelines (RDG).

Partially, the guidelines establish that a raised median island that restricts left turns will extend a minimum of 660’ beyond the interchange ramp intersections. Also, the guidelines state that the desirable distance to the nearest signalized intersection should be at least 2,640 feet (1/2 mile) from any ramp intersection unless existing conditions dictate otherwise, or unless an operational analysis can justify a closer intersection.

Section 506 of the RDG recognizes that it may be difficult to obtain minimum access control distances along crossroad that are already have existing development. The goal is to assess current conditions and determine the practicality of obtaining desirable access control and signalized intersection distances and develop specific access control that meets both the goals of the RDG and the needs of the existing developments along each crossroad.

5.3 Access Control Along Crossroads

An access management plan has been developed for each crossroad. **Figures 5.1** through **5.9** illustrate the access management plan for each crossroad. Each access management plan shows existing and proposed signalized intersections, limits of raised median islands, and distances to the nearest signalized intersection from the ramp intersections. Special features at certain crossroads are outlined below.

6th Avenue (See **Figure 5.1**) is already fully developed commercially with signalized intersections close to the interchange signalized intersections. Limits of raised median island match the existing medians.

Park Avenue (See **Figure 5.2**) and Kino Parkway (See **Figure 5.3**) already have existing signalized intersections close to the interchange. Limits of raised median island match the existing medians. South of the Kino Parkway interchange two future median breaks will provide left-turn access into the South Kino Sports Park.

Country Club Road (See **Figure 5.4**) is currently not fully developed and access management can be established. South of the interchange is the existing signalized intersection with Irvington Road. The raised median should be extended to the intersection. North of the interchange, the goal is to establish the first signalized intersection at Milber Street. However, widening of Country Club north of Michigan Street may be needed and may require a traffic signal at Michigan Street.

Alvernon Way (See **Figure 5.5**) has raised median islands between Irvington and Drexel Roads. North of the interchange, Alvernon Way transitions into SR 210 with full access control. South of the interchange, Alvernon Way has an existing median break at Concord Stravenue. Limits of raised the median island will match the existing medians. A new traffic signal proposed at Concord Stravenue will improve access to the Los Niños Elementary School. The signal will provide a break in traffic and a safer egress for school buses leaving the school.

Valencia Road (See **Figure 5.6**) is already fully developed with signalized intersections close to the interchange signalized intersections. Limits of raised median island match the existing medians. Access to the Jack In The Box will be right in/right out for eastbound Valencia Road. Otherwise, the limits of raised median island will match the existing medians.

Craycroft Road (See **Figure 5.7**) serves three commercial trucking facilities, all located on the north side of the interchange. Currently, there are heavy volumes of left turning trucks in close proximity to the north interchange ramp intersection. The recommended access management plan requires special treatment to restrict these heavy left turn volumes, including a new connector road to the westbound frontage road. Also, see **Appendix L**.

Wilmot Road (See **Figure 5.8**) is not fully developed and access management can be established. South of the interchange, the nearest signalized intersection will be located at Garden Stone Road, which is also the end of the extension of Los Reales Road. Left turn access to the Shell Station from northbound Wilmot will be shifted to Los Reales Road Extension. North of the interchange, the goal is to establish the first signalized intersection at existing Los Reales Road. With the removal of the existing westbound frontage road, access to the Travel Inn, located a block west of Wilmot, will be impacted. Resolution of their access could be resolved with either a total right-of-way take or by providing access directly to Wilmot via a new connector road. If the solution is the later, then a break in the median island will be needed at the connector road. A traffic signal is not anticipated at this location.

Kolb Road (See **Figure 5.9**) is proposed to be a Diverging Diamond Interchange. It will have full access control between Science Park Drive on the north and Explorer Boulevard on the south. The northbound and southbound through movement are separate from the ramp turning movements. Because the movements are separate, full access is allowed for the frontage road east of Kolb Road south of the DDI. Medians beyond the ramp TI intersections will be a combination of open medians where the roadways are widely spaced and raised medians where the roadways are close together. A break in the median will be provided at the East Frontage Road, where the roadways are widely spaced and there is room in the median for storage. The entrance to the Trails West Active Adult Community will be relocated to this intersection via a new connector. Stop control will be used for the East Frontage Road.

Figure 5.1 6th Avenue TI

FIGURE 5.1
6th Avenue TI

Figure 5.2 Park Avenue TI

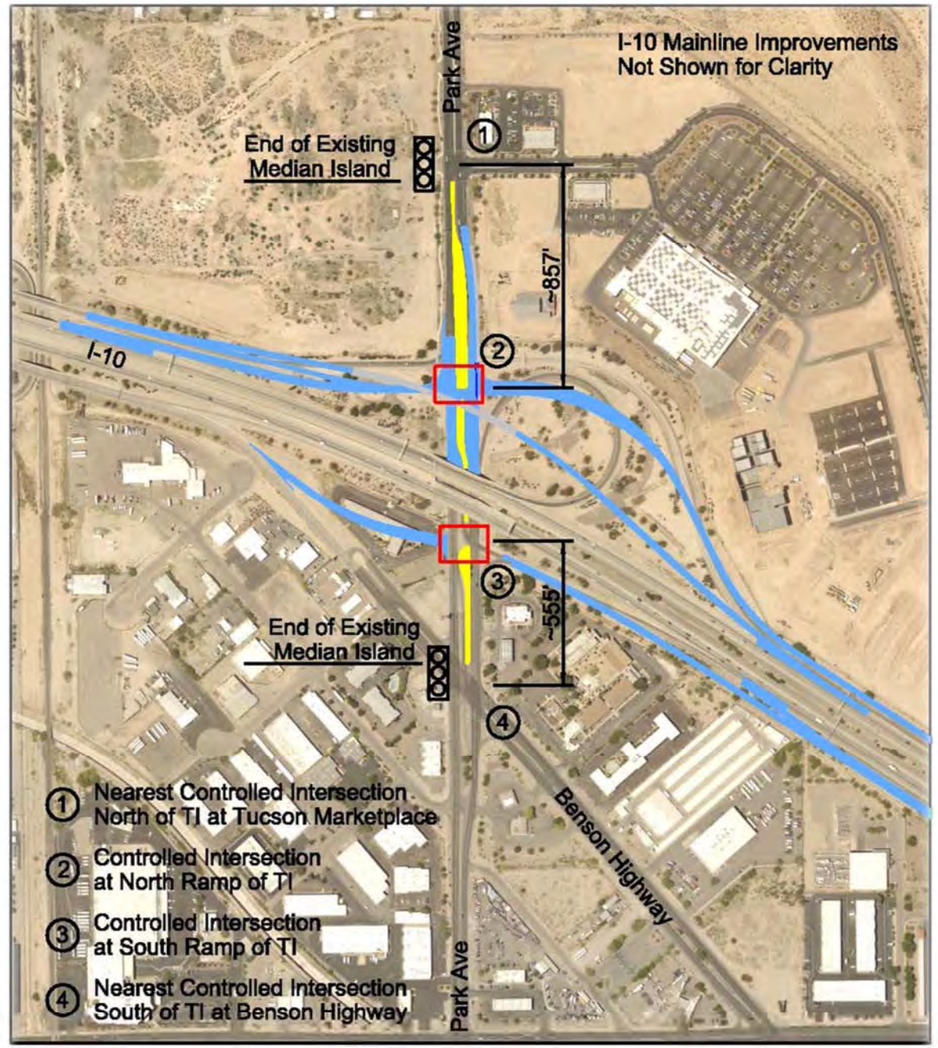


FIGURE 5.2
Park Avenue TI

Figure 5.3 Kino Parkway TI

FIGURE 5.3
Kino Parkway TI

Figure 5.4 Country Club Road TI

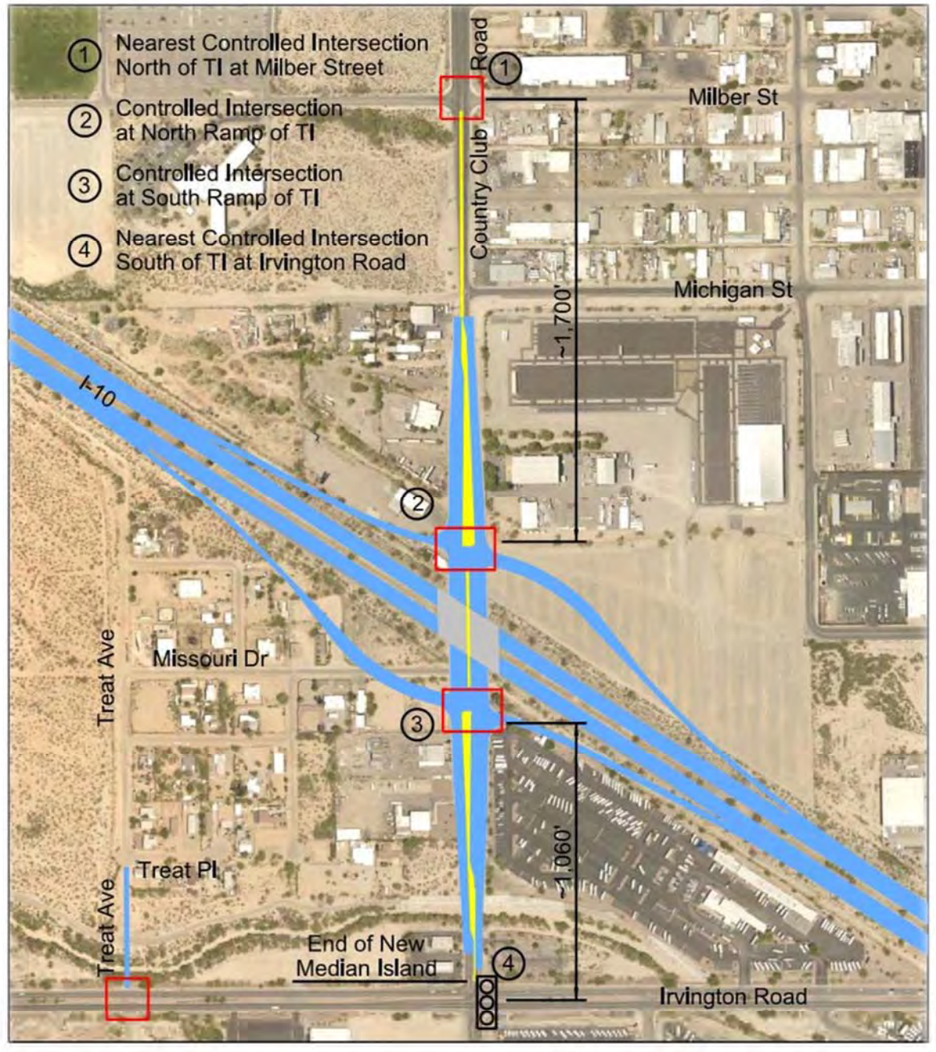


FIGURE 5.4
Country Club Road TI

Figure 5.5 Alvernon Way TI

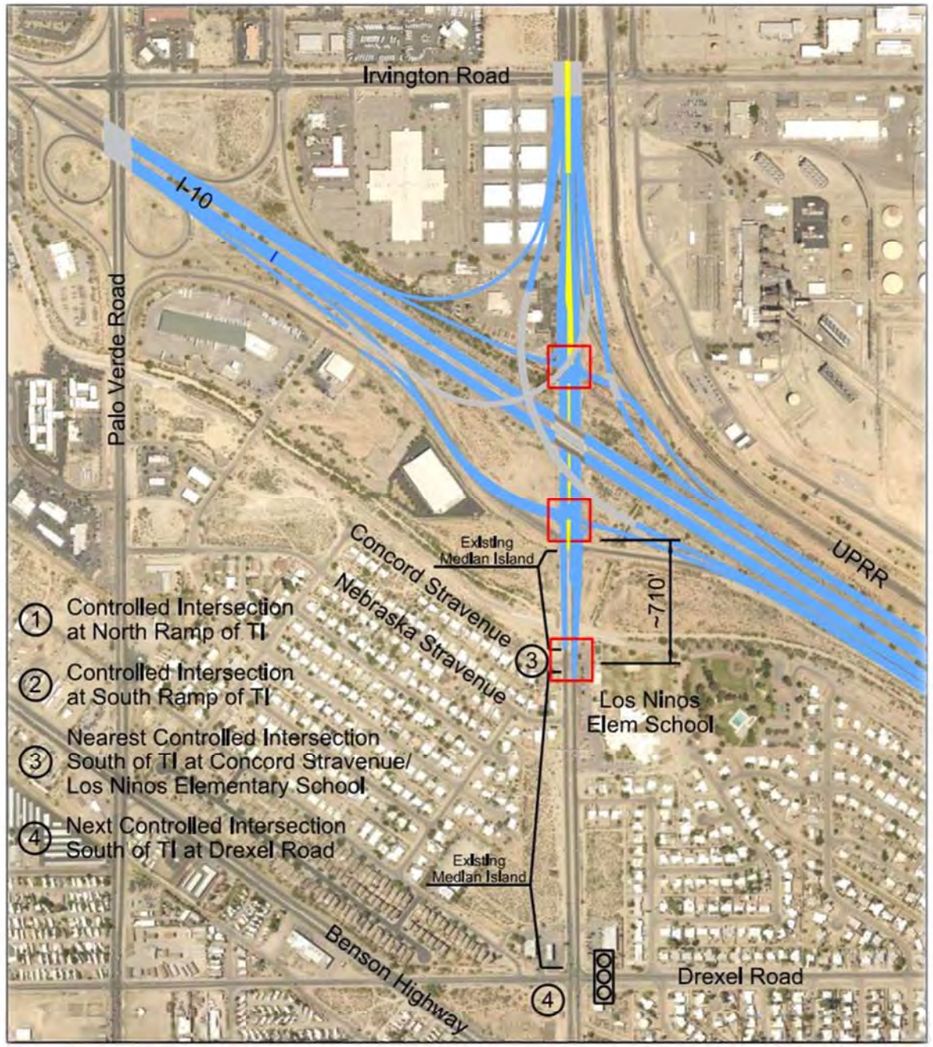


FIGURE 5.5
Alvernon Way TI

Figure 5.6 Valencia Road TI

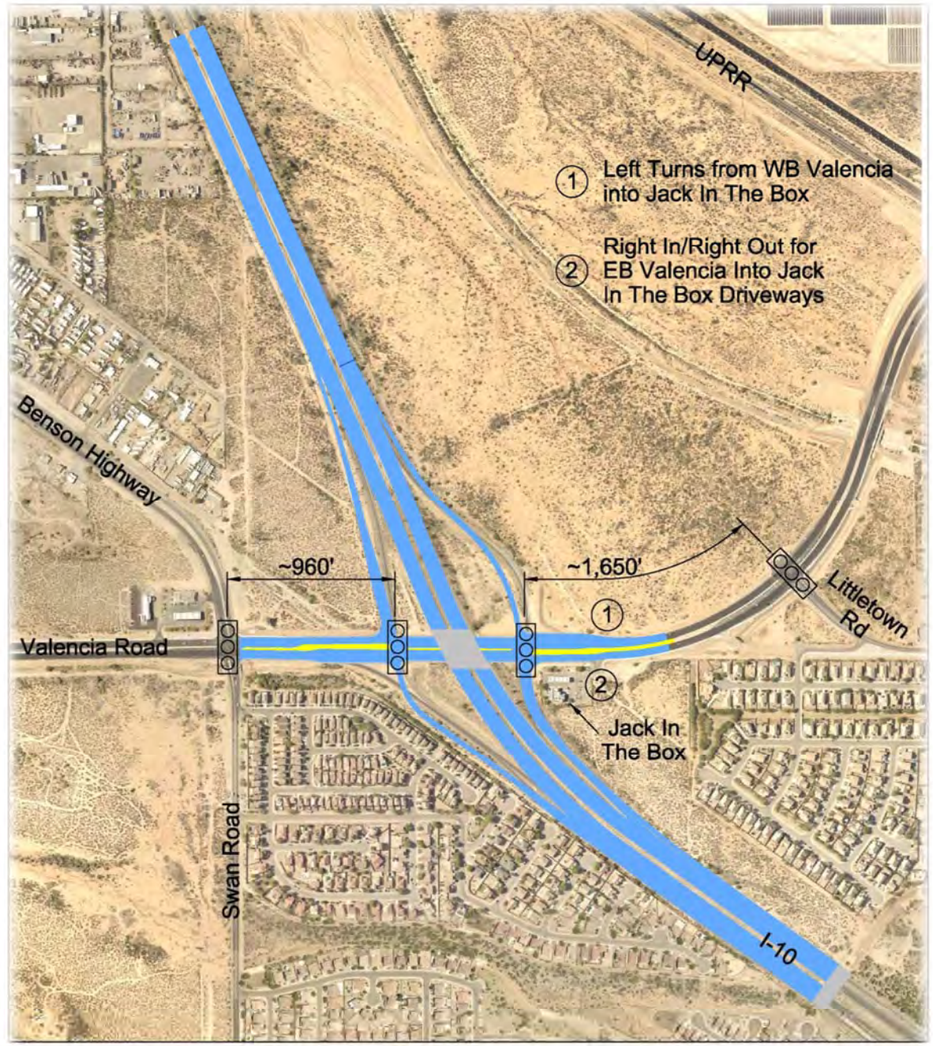


FIGURE 5.6
Valencia Road TI

Figure 5.7 Craycroft Road TI

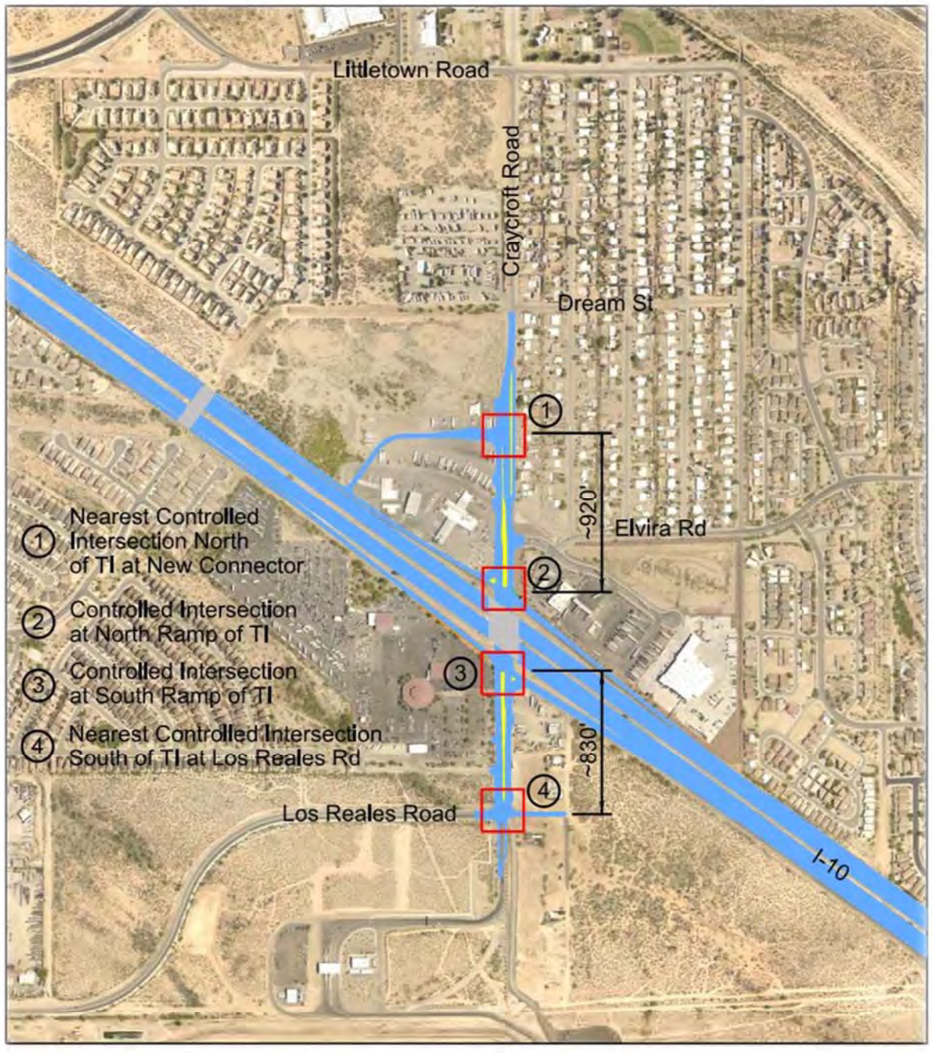


FIGURE 5.7
Craycroft Road TI

Figure 5.8 Wilmot Road TI

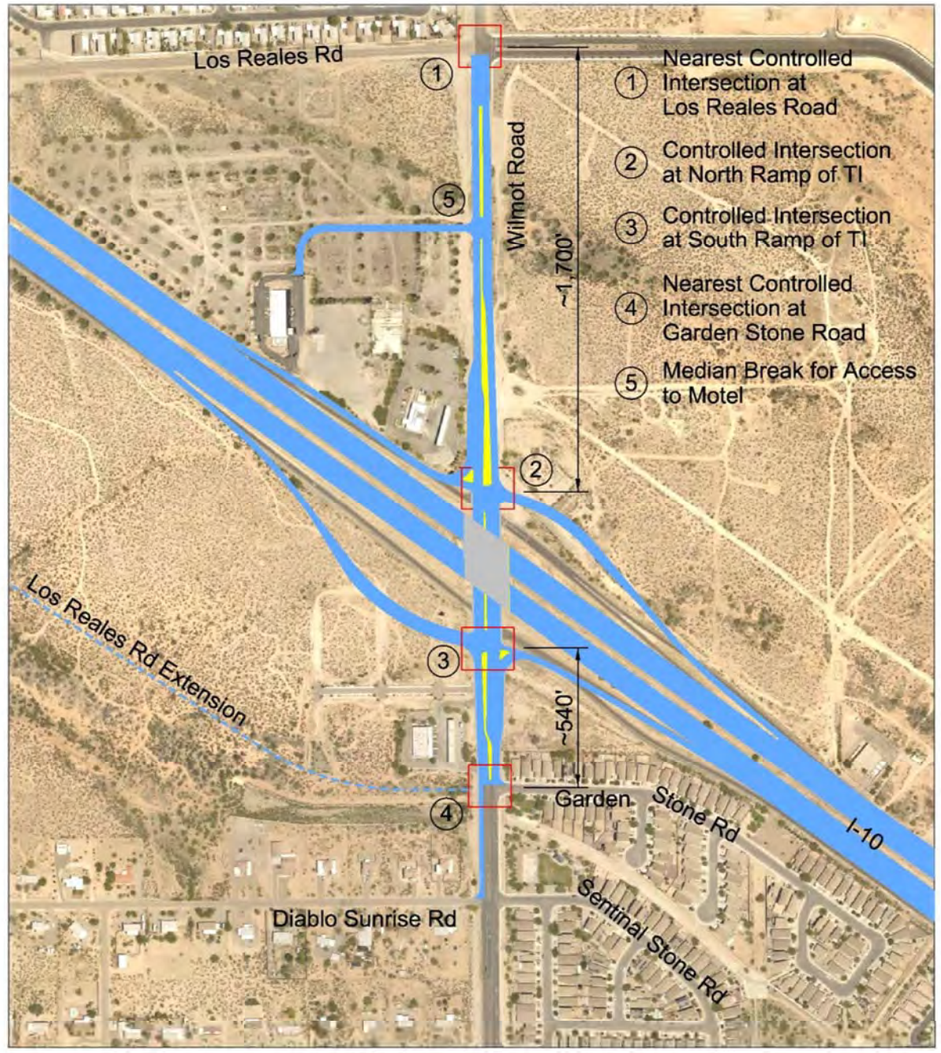


FIGURE 5.8
Wilmot Road TI

Figure 5.9 Kolb Road TI

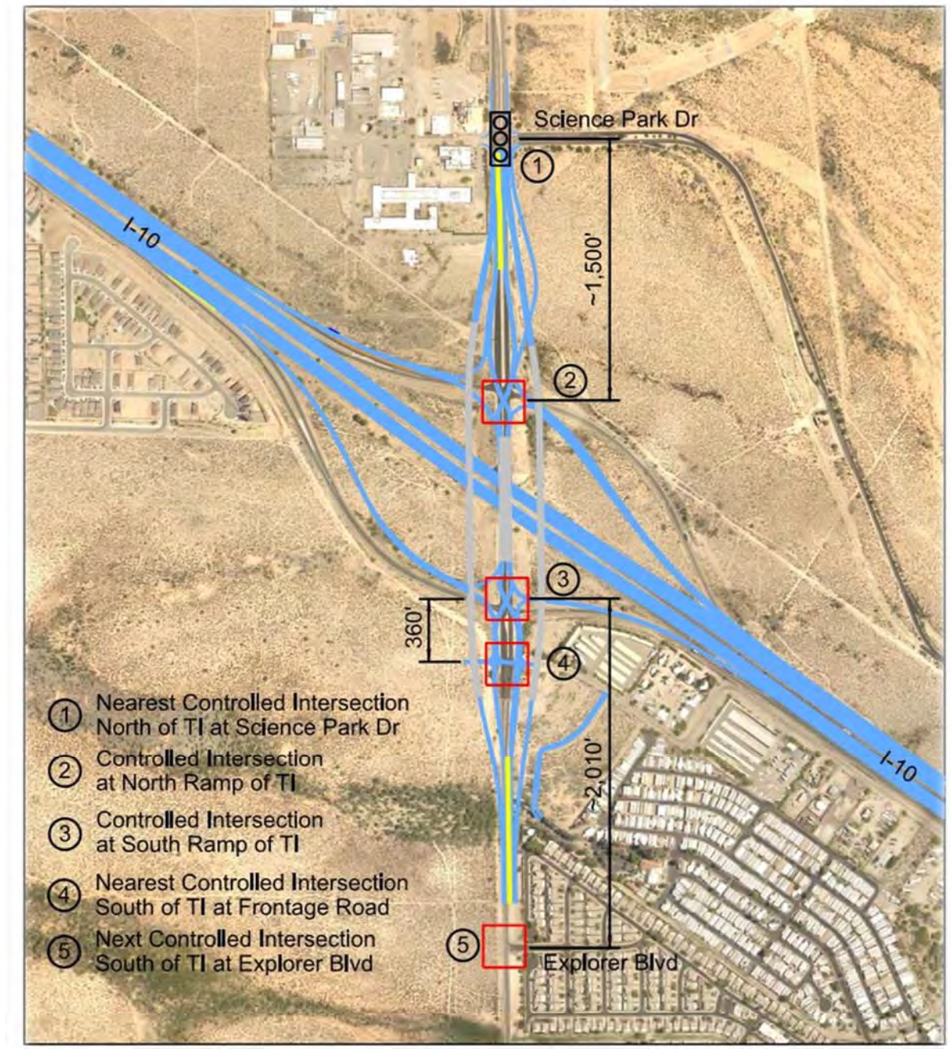


FIGURE 5.9
Kolb Road TI

6 ITEMIZED COST ESTIMATES

Preliminary cost estimates based on conceptual plans have been prepared for System Alternative I and System Alternative IV. The estimates are based on data available at the Feasibility Study level of development.

- The estimate items and the basis for the estimated cost of each item for I-10 and SR 210 improvements are summarized below.
- Removals – based on estimated quantities of various removals and estimated unit costs
- Earthwork (Roadway Excavation and Borrow) – based on estimated quantities and estimate unit cost
- Pavements – based on estimated quantities of various pavement structural sections and curbs for mainline, shoulders, and crossroads, and sidewalks and ramps for crossroads using estimated unit costs
- Barriers – based on estimated quantities of various concrete barrier types and using estimated unit costs
- Bridges – based on estimated square foot area for bridge widening and new bridges and using estimated unit cost per square foot, removal of existing structures is included in replacement of existing bridges cost
- Retaining Walls – based on estimated areas of exposed wall face and estimated unit cost
- Drainage (Pavement) – based on estimated quantities for excavation, pipe, catch basins, inlets, riprap, channel lining, and miscellaneous items per linear mile
- Traffic – based on estimated costs for traffic signals per intersection, signs, pavement marking, lighting and FMS per centerline mile, and wrong way driver warning system per interchange
- Environmental Mitigation (Noise Walls) – based on estimated quantities of noise walls needed per initial noise study and estimated unit cost
- Landscaping – based on estimated cost per mile for similar project
- Right-of-Way – based initial right-of-way requirements for each alternative and using estimated per square foot unit costs from ADOT initial investigation
- Utility Relocations – based on estimated costs for each service at the service interchanges
- Indirect Cost Allocation (ICAP) – based on a percentage of 10.02%

Total Estimated Cost

The total estimated costs for System Alternative I and IV are listed in **Table 6.1 Total Estimated Cost**. A more detailed breakdown of the costs associated with System Alternatives I and IV has been provided on the following pages.

Table 6.1 Total Estimated Cost

Item	Alternative I	Alternative IV
Removals	$8,493,895	$8,698,645
Earthwork	$57,285,300	$64,065,300
Pavements	$123,580,600	$138,060,400
Barriers	$14,348,500	$19,372,000
Bridges	$181,233,161	$194,866,386
Retaining Walls	$52,837,500	$51,982,500
Drainage	$17,925,500	$18,750,500
Traffic	$31,380,000	$34,215,000
Environmental Mitigation	$12,228,000	$12,228,000
Landscaping	$11,250,000	$11,250,000
Subtotal	**$510,563,000**	**$553,489,000**
Miscellaneous	$226,185,000	$245,200,000
Engineering & Contingencies	$178,769,000	$194,001,000
Right-of-Way	$74,669,000	$79,098,000
Utility Relocations	$69,000,000	$69,000,000
Indirect Costs (CAP)	$106,131,000	$114,307,000
Grand Total	**$1,165,317,000**	**$1,255,095,000**

Table 6.2 System Alternative I Estimated Cost

ESTIMATE OF PROBABLE COST - SYSTEM ALTERNATIVE I

Item Description		Unit	Quantity	Unit Price	Amount
Removals					
	Remove Structures and Obstructions	L.Sum	1	$1,687,775	$1,687,775
	Asphaltic Concrete Pavement Removal	Sq.Yd.	904,900	$3.00	$2,714,700
	Portland Cement Concrete Pavement Removal	Sq.Yd.	53,000	$10.00	$530,000
	Curb and Gutter Removal	L.Ft.	125,100	$5.00	$625,500
	Barrier Removal	L.Ft.	9,500	$20.00	$190,000
	Bridge Structure Removals	L.Sum	1	$365,820.00	$365,820
	Traffic Removals	L.Sum	1	$2,211,000.00	$2,211,000
	Lighting Removals	L.Sum	1	$169,100.00	$169,100
Earthwork					
	Roadway Excavation	Cu.Yd.	703,700	$9.00	$6,333,300
	Borrow	Cu.Yd.	3,396,800	$15.00	$50,952,000
Roadway Items					
	Portland Cement Concrete Pavement	Sq.Yd.	1,298,500	$70.00	$90,895,000
	Asphaltic Concrete Pavement	Ton	166,600	$80.00	$13,328,000
	Aggregate Base	Cu.Yd.	214,100	$45.00	$9,634,500
	Load Transfer Dowel Assembly	Each	29,500	$100.00	$2,950,000
	Concrete Curb and Gutter	L.Ft.	283,500	$20.00	$5,670,000
	Concrete Sidewalk	Sq.Ft.	123,300	$7.00	$863,100
	Concrete Sidewalk Ramp	Each	80	$3,000.00	$240,000
	Concrete Half Barrier	L.Ft.	116,300	$70.00	$8,141,000
	Concrete Retaining Barrier	L.Ft.	2,800	$200.00	$560,000
	Concrete Variable Height Median Barrier	L.Ft.	17,100	$90.00	$1,539,000
	Concrete Median Barrier	L.Ft.	43,600	$80.00	$3,488,000
	Moment Slab	L.Sum	1	$53,000.00	$53,000
	End Terminal Treatments	L.Sum	1	620,500	$620,500
Bridge Structures and Retaining Walls					
	Widening of Existing Bridges	L.Sum	1	$8,089,563.00	$8,089,563
	Replacement of Existing Bridges	L.Sum	1	$77,550,396.00	$77,550,396
	Modify Existing Bridges	L.Sum	1	$53,000.00	$53,000
	New Bridges	L.Sum	1	$95,487,202.00	$95,487,202
	Retaining Walls	Sq.Ft.	704,500	$75.00	$52,837,500
Drainage Improvements					
	On-Site Drainage Improvements	L.Sum	1	$11,140,000.00	$11,140,000
	New Reinforced Concrete Box Culverts	L.Sum	1	$6,785,500.00	$6,785,500
Traffic Improvements					
	Traffic Signals	L.Sum	1	$6,000,000.00	$6,000,000
	Signing	L.Sum	1	$7,960,000.00	$7,960,000
	Pavement Marking	L.Sum	1	$1,030,000.00	$1,030,000
	Lighting	L.Sum	1	$6,700,000.00	$6,700,000
Freeway Management Systems					
	FMS	L.Sum	1	$8,790,000.00	$8,790,000
	Wrong Way Driver Warning System	Each	18	$50,000.00	$900,000
Environmental Mitigation					
	Noise Walls	L.Sum	1	$12,228,000.00	$12,228,000
Landscaping					
	Landscaping and Irrigation	Mile	15	$750,000.00	$11,250,000
				Item Total:	**$510,563,000**

ESTIMATE OF PROBABLE COST - SYSTEM ALTERNATIVE I

Item Description		Unit	Quantity	Unit Price	Amount
Project Wide					
	Maintenance and Protection of Traffic	Cost	8%		$40,846,000
	Dust and Water Palliative	Cost	0.75%		$3,830,000
	Quality Control	Cost	1.00%		$5,106,000
	Construction Surveying	Cost	1.5%		$7,659,000
	Erosion Control	Cost	1.0%		$5,106,000
	Mobilization	Cost	8%		$40,846,000
				Project Wide Subtotal:	**$103,393,000**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	Cost	20%		$122,792,000
				Project Wide Total:	**$226,185,000**
Other Costs					
	Construction Engineering	Cost	8%		$58,940,000
	Construction Contingencies	Cost	5%		$36,838,000
	PCCP Quality Incentive	Sq.Yd.	1,298,500	$1.50	$1,948,000
	Engineering Design (Includes Predesign, Surveying and Geotechnical)	Cost	11%		$81,043,000
	Utility Relocation	L.Sum	1	$69,000,000.00	$69,000,000
	Right-of-Way	L.Sum	1	$74,669,000.00	$74,669,000
				Other Cost Total:	**$322,438,000**

Summary	
Item Total	**$510,563,000**
Project Wide Total	**$226,185,000**
Other Cost Total	**$322,438,000**
Subtotal Project Cost	**$1,059,186,000**
Indirect Cost Allocation (ICAP) (10.02%)	**$106,131,000**
Total Project Cost	**$1,165,317,000**

Table 6.3 System Alternative IV Estimated Cost

ESTIMATE OF PROBABLE COST - SYSTEM ALTERNATIVE IV

Item Description		Unit	Quantity	Unit Price	Amount
Removals					
	Remove Structures and Obstructions	L.Sum	1	$1,687,775	$1,687,775
	Asphaltic Concrete Pavement Removal	Sq.Yd.	904,900	$3.00	$2,714,700
	Portland Cement Concrete Pavement Removal	Sq.Yd.	53,000	$10.00	$530,000
	Curb and Gutter Removal	L.Ft.	125,100	$5.00	$625,500
	Barrier Removal	L.Ft.	9,500	$20.00	$190,000
	Bridge Structure Removals	L.Sum	1	$365,820.00	$365,820
	Traffic Removals	L.Sum	1	$2,415,750.00	$2,415,750
	Lighting Removals	L.Sum	1	$169,100.00	$169,100
Earthwork					
	Roadway Excavation	Cu.Yd.	727,700	$9.00	$6,549,300
	Borrow	Cu.Yd.	3,834,400	$15.00	$57,516,000
Roadway Items					
	Portland Cement Concrete Pavement	Sq.Yd.	1,542,600	$70.00	$107,982,000
	Asphaltic Concrete Pavement	Ton	132,400	$80.00	$10,592,000
	Aggregate Base	Cu.Yd.	236,400	$45.00	$10,638,000
	Load Transfer Dowel Assembly	Each	20,700	$100.00	$2,070,000
	Concrete Curb and Gutter	L.Ft.	283,800	$20.00	$5,676,000
	Concrete Sidewalk	Sq.Ft.	123,200	$7.00	$862,400
	Concrete Sidewalk Ramp	Each	80	$3,000.00	$240,000
	Concrete Half Barrier	L.Ft.	117,100	$70.00	$8,197,000
	Concrete Retaining Barrier	L.Ft.	2,700	$200.00	$540,000
	Concrete Variable Height Median Barrier	L.Ft.	16,800	$90.00	$1,512,000
	Concrete Median Barrier	L.Ft.	99,500	$80.00	$7,960,000
	Emergency Access Gates	Each	20	$25,000.00	$500,000
	Moment Slab	L.Sum	1	$52,882.00	$52,882
	End Terminal Treatments	L.Sum	1	663,000	$663,000
Bridge Structures and Retaining Walls					
	Widening of Existing Bridges	L.Sum	1	$8,089,563.00	$8,089,563
	Replacement of Existing Bridges	L.Sum	1	$84,256,965.00	$84,256,965
	Modify Existing Bridges	L.Sum	1	$52,882.00	$52,882
	New Bridges	L.Sum	1	$102,414,094.00	$102,414,094
	Retaining Walls	Sq.Ft.	693,100	$75.00	$51,982,500
Drainage Improvements					
	On-Site Drainage Improvements	L.Sum	1	$11,965,000.00	$11,965,000
	New Reinforced Concrete Box Culverts	L.Sum	1	$6,785,500.00	$6,785,500
Traffic Improvements					
	Traffic Signals	L.Sum	1	$6,000,000.00	$6,000,000
	Signing	L.Sum	1	$9,270,000.00	$9,270,000
	Pavement Marking	L.Sum	1	$1,085,000.00	$1,085,000
	Lighting	L.Sum	1	$7,510,000.00	$7,510,000
Freeway Management Systems					
	FMS	L.Sum	1	$9,450,000.00	$9,450,000
	Wrong Way Driver Warning System	Each	18	$50,000.00	$900,000
Environmental Mitigation					
	Noise Walls	L.Sum	1	$12,228,000.00	$12,228,000
Landscaping					
	Landscaping and Irrigation	Mile	15	$750,000.00	$11,250,000
				Item Total:	**$553,489,000**

ESTIMATE OF PROBABLE COST - SYSTEM ALTERNATIVE IV

Item Description		Unit	Quantity	Unit Price	Amount
Project Wide					
	Maintenance and Protection of Traffic	Cost	8%		$44,280,000
	Dust and Water Palliative	Cost	0.75%		$4,152,000
	Quality Control	Cost	1.00%		$5,535,000
	Construction Surveying	Cost	1.5%		$8,303,000
	Erosion Control	Cost	1.0%		$5,535,000
	Mobilization	Cost	8%		$44,280,000
				Project Wide Subtotal:	**$112,085,000**
	Unidentified Items (20% of Item Total and Project Wide Subtotal)	Cost	20%		$133,115,000
				Project Wide Total:	**$245,200,000**
Other Costs					
	Construction Engineering	Cost	8%		$63,896,000
	Construction Contingencies	Cost	5%		$39,935,000
	PCCP Quality Incentive	Sq.Yd.	1,542,600	$1.50	$2,314,000
	Engineering Design (Includes Predesign,Surveying and Geotechnical)	Cost	11%		$87,856,000
	Utility Relocation	L.Sum	1	$69,000,000.00	$69,000,000
	Right-of-Way	L.Sum	1	$79,098,000.00	$79,098,000
				Other Cost Total:	**$342,099,000**

Summary	
Item Total	**$553,489,000**
Project Wide Total	**$245,200,000**
Other Cost Total	**$342,099,000**
Subtotal Project Cost	**$1,140,788,000**
Indirect Cost Allocation (ICAP) (10.02%)	**$114,307,000**
Total Project Cost	**$1,255,095,000**

7 IMPLEMENTATION PLAN

7.1 Introduction

The project improvements identified in the Recommended Alternative are expected to be constructed over the next 20 years or more. Each I-10 project reconstructs I-10, including any additional lanes needed to accommodate the design year 2040 traffic demand and reconstructs any interchange within the project limits. Each project will include tapers needed to match to existing roadways. It is recommended that construction projects be prioritized by need, either to address traffic operational issues (such as reconfiguring or eliminating partial cloverleaf traffic interchanges), extend SR 210 to I-10, and to enlarge I-10 east of Alvernon Way to accommodate additional traffic from the extension of SR 210.

As a result, **Table 7.1** is a list of proposed construction projects; listed in proposed chronological order. Also, **Figure 7.1** shows an overall view of the projects. Projects 14 thru 18 are not shown for clarity. Projects 1 thru 3 and 5 thru 13 have figures provided below in **Section 7.2**. Each figure shows project limits and detours.

Table 7.1 Project Order of Construction

No.	Location	Description
1	Country Club Rd TI	Construct new TI and I-10 to 3 GP lanes in each direction
2	Kino Parkway TI	Reconstruct TI and I-10 to 3 GP lanes in each direction
3	Park Avenue TI	Reconstruct TI
4	6th Avenue TI	Widen crossroad and bridge over I-10
5	I-10 (Alvernon Way to Valencia Road)	Reconstruct I-10 to 3 GP lanes in each direction
6	I-10 (I-19 to Kino Parkway)	Widen I-10
7	SR 210 (Palo Verde Rd to Ajo Way) Stage 1	Construct Golf Links TI
8	SR 210 (Palo Verde Rd to Ajo Way) Stage 2	Construct new SR 210
9	SR 210 (Ajo Way to I-10)	Construct new SR 210
10	I-10 (Valencia Road TI)	Reconstruct TI and I-10 to 3 GP lanes in each direction
11	I-10 (Craycroft Road TI)	Reconstruct TI and I-10 to 3 GP lanes in each direction
12	I-10 (Wilmot Road TI)	Reconstruct TI and I-10 to 3 GP lanes in each direction
13	I-10 (Kolb Road TI)	Reconstruct TI and I-10 to 3 GP lanes in each direction
14	I-10 (Alvernon Way to Craycroft Rd)	Add one GP lane in each direction into the median
15	I-10 (Craycroft Rd to Kolb Rd)	Add one GP lane in each direction into the median
16	Kolb Road TI	Construct the Kolb Rd express lanes
17	I-10 (Alvernon Way to Craycroft Rd)	Add one GP lane in each direction into the median
18	I-10 (Craycroft Rd to Kolb Rd)	Add one GP lane in each direction into the median

The first six projects reconstruct I-10 between I-19 and Valencia Road to improve traffic flow and simplify traffic movements. Construction of the new Country Club Rd TI allows for the removal of the Palo Verde Rd TI, which improves interchange spacing and allows for the construction of a westbound entrance ramp from the Alvernon Way service TI. Early construction of Country Club Rd TI assists in providing additional detour routes during the Kino Parkway TI reconstruction. It is closer in proximity than Palo Verde and will provide better traffic operations. While not changing interchange spacing, the Kino Parkway TI, Park Avenue TI, and I-19 to Kino Parkway projects reconfigure interchange ramps to improve access and traffic flow. The 6th Avenue TI project widens 6th Avenue to add dual left turn lanes between the interchange ramps to improve traffic flow at the interchange and along 6th Avenue. The fifth project reconstructs I-10 between Alvernon Way and Valencia Road. It constructs the new system interchange ramps between I-10 and SR 210 and adds lanes to I-10 to the east to accommodate the additional traffic related to the extension of SR 210.

The next three projects involve the extension of SR 210 southerly from Palo Verde to I-10. The first project constructs the interchange with Golf Links Road to provide continuous access between Golf Links Road with Barraza Aviation Parkway to the northwest and with Alvernon Way (new SR 210) to the south. The final two projects construct SR 210 mainline and two ramps at the Ajo Way interchange.

The next four projects involve the reconstruction of I-10 at each of the four interchanges east of the I-10/SR 210 system interchange. Each project constructs a minimum of three I-10 mainline lanes in each direction; leaving an open median for future addition of general purpose lanes. Each project also reconstructs the crossroad and the interchange ramps.

Four of the final five projects involve the addition of I-10 general purpose lanes in the median. Depending on funding availability and project size, these projects can be grouped differently from what is shown above. The timing of these projects will be based on traffic needs as traffic volumes on I-10 increase over time.

Project #16 is the addition of the Kolb Road express lanes at the Kolb Road TI. The timing of this project will be based on the traffic needs and operational characteristics of the new DDI interchange at Kolb Road and how it handles through traffic on Kolb Road.

Construction sequencing and maintenance of traffic for the I-10 projects east of Alvernon Way may involve temporarily shifting traffic into the median to provide space for constructing the needed I-10 lanes. If there is sufficient funding, it may be prudent to include permanent paving in the median for shifting I-10 traffic. Further analysis is needed to determine any need to add at least some of the permanent pavement.

Maintenance of Traffic and Detours

Each project will require phased construction that will allow for maintenance of traffic during construction. This applies to construction along I-10 and SR 210, along crossroads, and for ramp replacement.

Between I-19 and Park Avenue, I-10 will be widened to the outside; typically only requiring shoulder closures. East of Park Avenue, I-10 will typically be widened to the inside during a first construction phase. Traffic will then be shifted to the new pavement in the median and the outside lanes will be constructed during a second construction phase. As needed, ramps will be closed and traffic routed via detours using local streets. Where the local street system does not support detours, construction will be performed via phased, half-width construction to keep traffic moving.

Detours will be needed to safely convey traffic around construction sites. **Section 7.2 Project Descriptions** describes specific construction phasing and detours on existing streets needed for each proposed project. Major detours are detours that need to be in place for prolonged periods of time. Minor detours are detours that are needed for short periods of time; e.g. a ramp closure or a weekend closure for bridge construction.

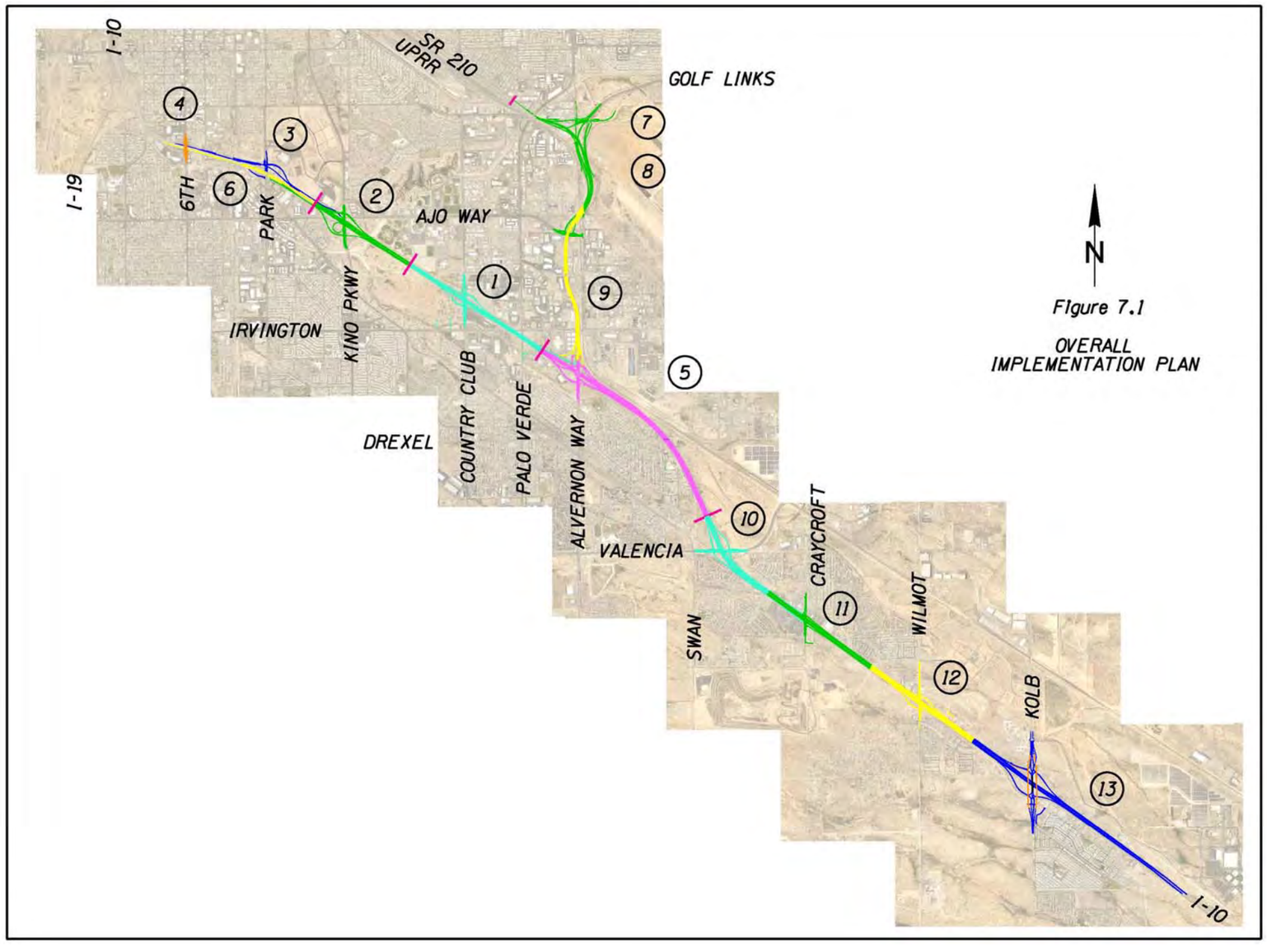
7.2 Project Descriptions

The first thirteen projects are discussed below in detail, including:

- Project Need
- Project Features
- Construction Phasing
- Construction Detours

The milepost limits shown are approximate and should be established during final design. However, the limits shown are based an initial determination of the end of mainline reconstruction that includes allowing an adequate distance for tapers between the end of widened I-10 and the next encountered roadway width restriction, such as an existing structure.

Figure 7.1 Implementation Plan



Country Club Rd TI (MP 263.25 to MP 264.66)

Project Need

The distance between the Palo Verde Rd TI and the Alvernon Way TI does not meet current interchange spacing criteria and the weaving issues between the two interchanges are undesirable. Also, the Palo Verde Rd TI is a partial cloverleaf with weaving and decision-making issues that impact traffic operations and safety. To resolve these issues, Palo Verde Rd TI will be removed and replaced with a new diamond traffic interchange at Country Club Road. Once the new interchange is constructed, the Palo Verde Rd TI will be removed and a new westbound entrance ramp from Alvernon Way will be constructed to improve access to I-10 from Alvernon Way. See **Figure 7.2.**

Project Features

I-10 is reconstructed with three general purpose lanes in each direction and replaces I-10 overpass structures at Country Club Road, Irvington Road and Palo Verde Road. Due to the need for new structures, the I-10 profile will be higher than the existing profile. The project replaces the existing grade separation at Country Club Road with a new diamond TI and reconstructed/widened crossroad. The new TI requires the relocation of access to the residential subdivision in the southwest quadrant of the interchange. The access will be relocated to an extension of Treat Avenue south across Julian Wash to Irvington Road. Pima County is expanding the Kino Sports Complex which includes the Forgeus Avenue undercrossing of I-10. See **Figure 7.2** for the location.

Country Club Road may be widened to five lanes north of the TI to Milber Street. The added capacity on Country Club Road will help with the detour traffic for the Kino Parkway TI construction project and the later SR 210 construction projects. If desired, the Country Club widening could be delayed until the SR 210 projects.

Construction Phasing

Reconstruction of I-10 and the construction of the new overpass structures will require phased construction to maintain two lanes of traffic open in each direction on I-10 during construction. Due to profile differentials at the Palo Verde TI ramps, care is needed with phasing development to avoid ramp reconstruction prior to their removal in a later phase. New I-10 overpass structures will be full width across I-10, allowing for temporarily shifting traffic into the median.

Ordinarily, construction on Country Club Road would be performed in stages to keep it open to traffic. However, since there aren't any existing ramps and traffic demand on Country Club Road is low, the contractor may opt to keep Country Club open to local traffic only and closed to through traffic. This would allow for crossroad reconstruction and new ramp construction to occur in a single phase.

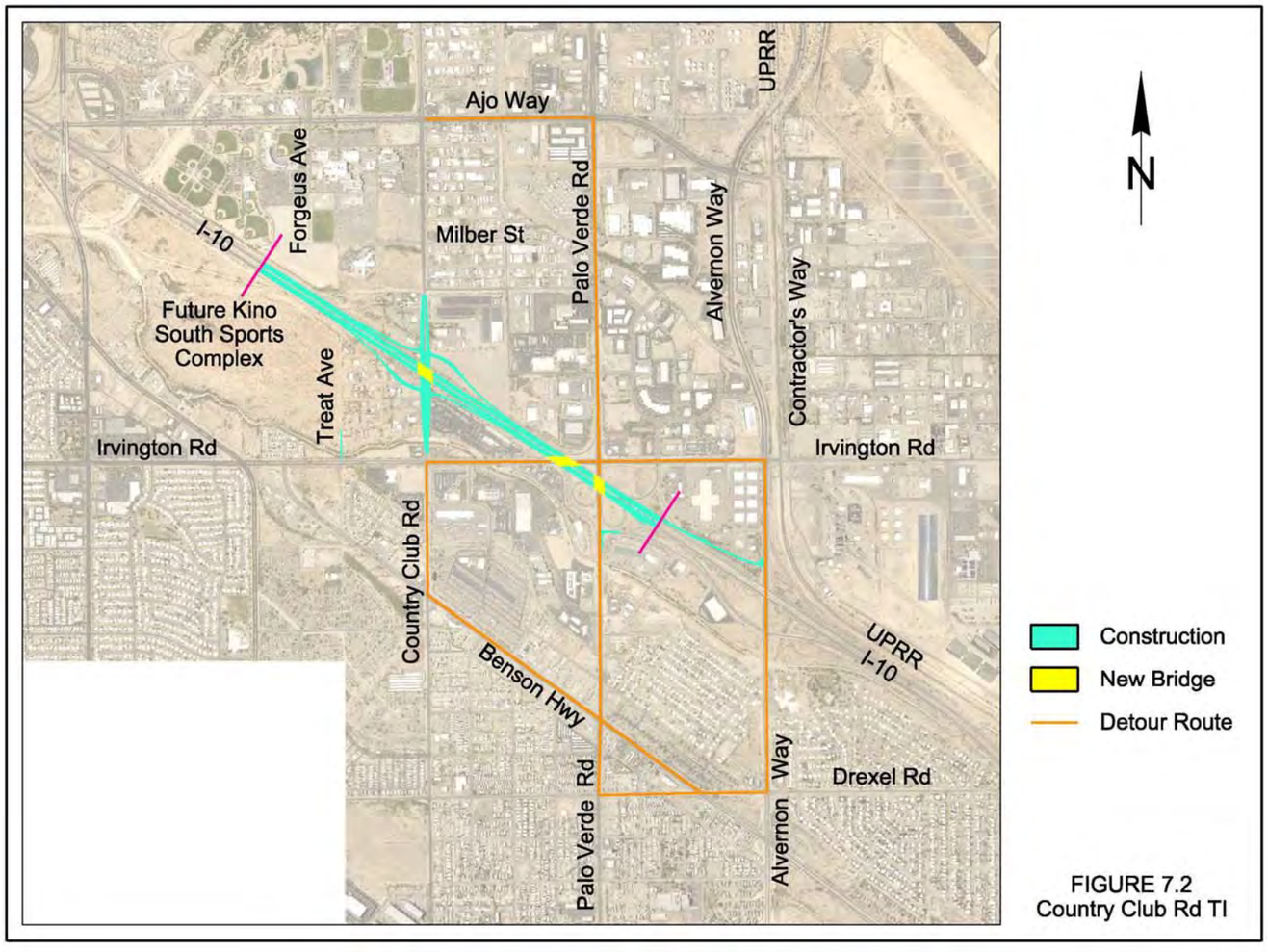
At each end of the project, tapers will be needed. The project termini should be developed to provide adequate space for the tapers before reaching existing I-10 overpasses at Ajo Way and Alvernon Way.

Construction Detours

Reconstruction of I-10 will not require detours, just shifts in traffic within the I-10 corridor. See **Figure 7.2** to view the following detours.

- If Country Club Road is constructed in one phase, crossroad traffic will be detoured to Palo Verde Rd.
- For I-10 structure replacement over Irvington Road and Palo Verde Road, crossroad traffic will require detours for temporary closures of the crossroads for bridge demolition and superstructure construction. Both detours will be between Country Club and Alvernon Way. For Irvington Road, traffic will be detoured to Drexel and Benson Hwy. For Palo Verde Road, traffic will be detoured to Drexel.

Figure 7.2 Country Club TI



Kino Parkway TI (MP 262.25 to MP 263.25)

Project Need

Existing Kino Parkway TI is a partial cloverleaf with weaving and decision-making issues that impact traffic operations and safety. Some interchange access must traverse through the two signalized intersections, which impacts traffic flow and safety. To resolve these issues, Kino Parkway TI will be reconstructed as a diamond traffic interchange. See **Figure 7.3**.

Project Features

I-10 is reconstructed with three general purpose lanes in each direction and replaces I-10 overpass structures at Ajo Way and Tucson Diversion Channel and replaces the Kino Parkway structure over I-10. Due to the need for new structures, the I-10 profile will be higher than the existing profile. The west end of the project is located near the east end of the existing PCCP on I-10; where the new I-10 profile begins.

The southbound Kino to eastbound I-10 loop ramp is needed and will be reconstructed to meet current design criteria. The southbound left turn volumes at the south ramp termini are restricted due to the heavy traffic on northbound Kino. The project constructs two new eastbound ramps to resolve weaving issues along eastbound I-10 between Park Avenue and Kino Parkway.

Construction Phasing

Reconstruction of I-10 and the construction of the new overpass structures will require phased construction to maintain two lanes of traffic open in each direction on I-10 during construction. The overpass structures will be full width across I-10, allowing for temporarily shifting traffic into the median. At the west end of the project, tapers will be needed.

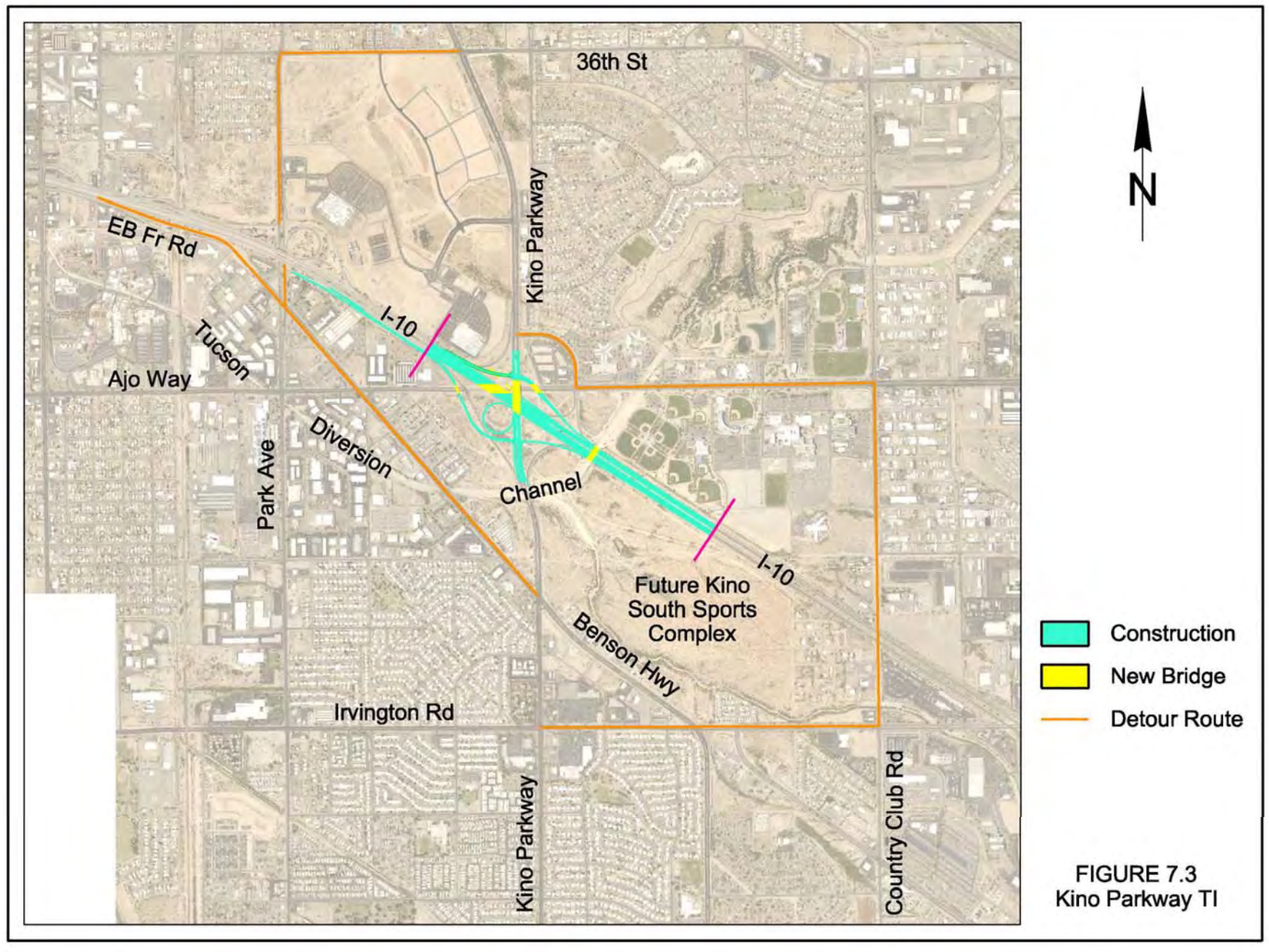
I-10 structure replacement over the Tucson Diversion Channel will be performed using the same phased construction for mainline I-10 reconstruction. Channel improvements for pedestrian, bicycle and maintenance access related to the expansion of the Kino Sports Park will be designed and paid by others. See **Figure 7.3** for the channel location. For I-10 structure replacement over Ajo way, crossroad traffic will be maintained.

Reconstruction of Kino Parkway will be performed via half-width construction phasing.

Construction Detours

Reconstruction of I-10 will not require detours, just shifts in traffic within the I-10 corridor. See **Figure 7.3** to view the following detours.

Figure 7.3 Kino Parkway TI



- Kino Parkway overpass replacement will require a temporary crossroad detour with traffic detoured to Country Club Road.
- Ramp construction will require temporary ramp closures and detours.

Park Avenue TI (MP 260.89 to MP 262.25)

Project Need

Existing Park Avenue TI is a partial cloverleaf with weaving and decision-making issues that impact traffic operations and safety. The distances from the Park Avenue TI to the 6th Avenue and Kino Parkway TIs do not meet current interchange spacing criteria and the weaving issues between the three interchanges are undesirable. To resolve these issues, Park Avenue TI ramps will be reconstructed with new configurations. See **Figure 7.4**

Project Features

All reconstruction along the I-10 corridor regards ramp reconstruction. The westbound loop entrance ramp is replaced with a traditional diamond ramp. However, the new ramp conflicts with the existing westbound exit ramp to the frontage road and 6th Avenue. It will be replaced with a new exit ramp that exits I-10 east of Park Avenue and crosses over Park Avenue via a flyover. However, the new ramp conflicts with the existing westbound exit ramp to Park Avenue. It will be replaced with a new exit ramp that exits I-10 near Kino Parkway and crosses under the westbound entrance ramp from Kino Parkway.

The existing eastbound exit ramp to Park Avenue becomes Benson Highway with a high skew angle with Park Avenue. While retaining the connection to Benson Highway, a new ramp connects more directly to Park Avenue. Due to new westbound ramp reconfigurations, the north half of Park Avenue is reconstructed.

Construction Phasing

The westbound ramps must be constructed in a specific order to simplify construction phasing and maintenance of traffic. The existing westbound exit ramp to the frontage road is closed and reconstructed before addressing the westbound loop entrance ramp. Since there is little reconstruction on Park Avenue, traffic will be maintained during construction via half-width phased construction.

Construction Detours

See **Figure 7.4** to view the following detours.

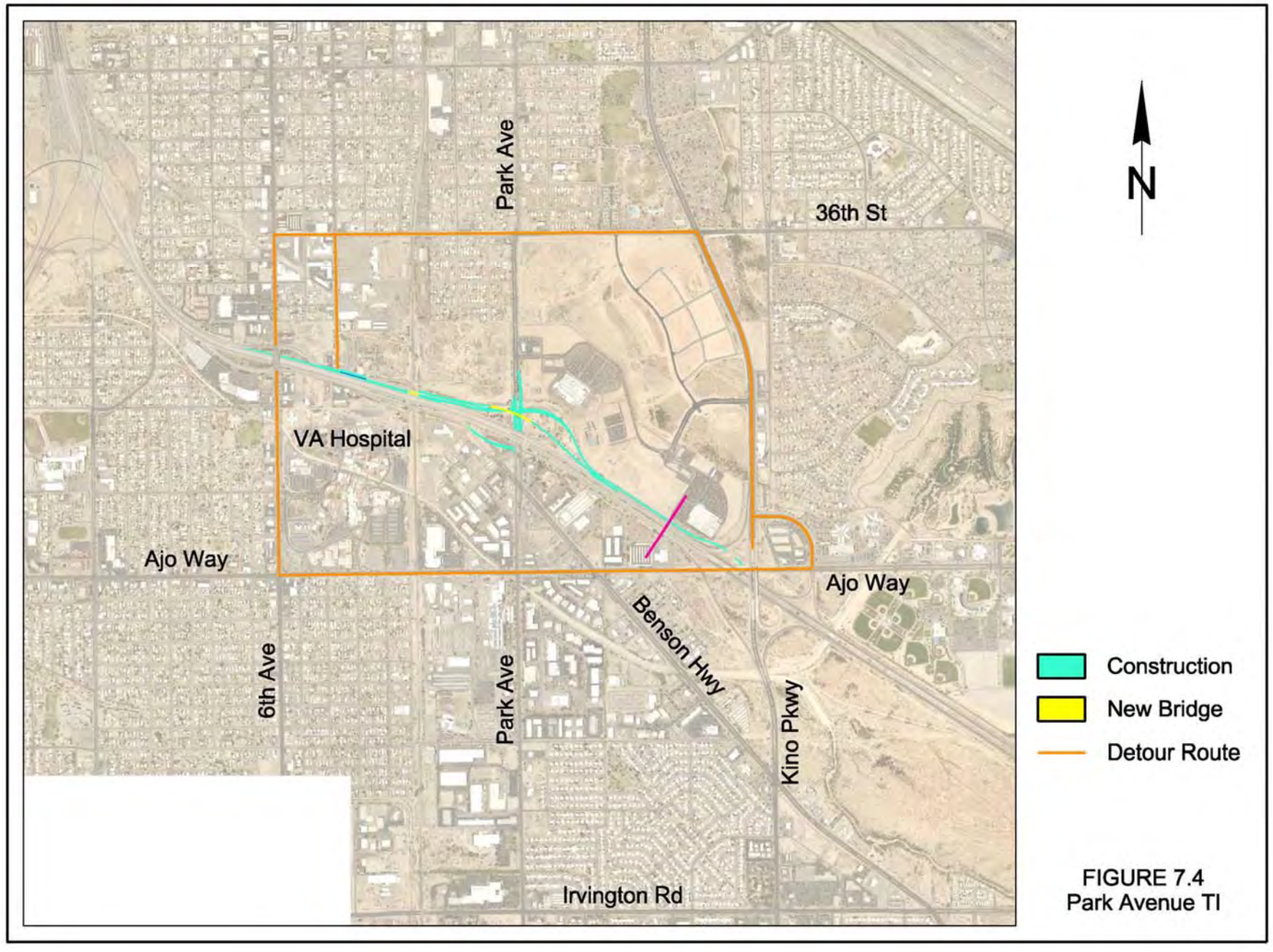
- Ramp construction will require temporary ramp closures and detours.

6th Avenue TI (MP 261.0)

Project Need

Existing 6th Avenue has single left turn lanes on the bridge over I-10. Currently, the interchange has left turn capacity issues due to high through traffic volumes on 6th Avenue. To resolve these issues, dual left turn lanes in each direction are needed. This requires the widening of the 6th Avenue structure and approaches. The 6th Avenue TI is the main access point to I-10 for the Veterans Administration (VA) Hospital located just south of I-10. See **Figure 7.4** for the location of the VA hospital.

Figure 7.4 Park Avenue TI



Project Features and Construction

All reconstruction involves 6th Avenue only. Existing special pedestrian fencing will be relocated. Traffic on 6th Avenue will be maintained during construction. No impacts to ramps. No detours required.

I-10 (Alvernon Way to Valencia Road) (MP 264.66 to MP 266.82)

Project Need

The first three projects address operational issues associated with the original 1960s design and widens I-10 to three lanes in each direction. With the widening of I-10 and the removal of the Palo Verde Rd TI, traffic demand to use the I-10/Alvernon Way TI and I-10 east of the interchange will increase. To meet the demand, I-10 will be widened to three lanes in each direction and the service interchange with Alvernon Way will be reconstructed. Also, with the extension of SR 210 to I-10 in the future, the system interchange ramps tie into I-10. To avoid future maintenance of traffic issues, the portions of the ramps near I-10 (tapers and structures over I-10) should be constructed with this project. See **Figure 7.5**.

Project Features

I-10 is reconstructed with three general purpose lanes in each direction and replaces I-10 overpass structures at Drexel Road. Construction will be to the outside; leaving an open median for the addition of lanes in the future with subsequent projects. The existing I-10 structure over Alvernon Way is widened into the median. Alvernon Way and three of the service TI ramps are reconstructed. The westbound entrance ramp was already constructed with the Country Club Road TI project. Portions of the I-10/SR 210 system interchange ramps are constructed.

The north ramps at Valencia Road are reconstructed to connect to the widened I-10. The location of these ramp gores marks the north ends of the I-10 mainline pavement tapers.

Construction Phasing

Reconstruction of I-10 and the construction of the new overpass structures at Drexel will require phased construction to maintain two lanes of traffic open in each direction on I-10 during construction. The overpass structures will be full width across I-10, allowing for temporarily shifting traffic into the median. At the east end of the project, tapers will be needed. I-10 structure replacement over Drexel Road will be performed using the same phased construction for mainline I-10 reconstruction. Reconstruction of Alvernon Way will be performed via half-width construction phasing.

Construction Detours

See **Figure 7.5** to view the following ramp closures and detours.

- EB exit to Alvernon Way- Exit at Country Club, then south to Irvington or Benson Hwy, then east to Alvernon.
- EB entrance from Alvernon- East on Benson Hwy to Valencia, then east to I-10.
- WB exit to Alvernon Way- Exit at Valencia, then west on Valencia and Benson Hwy to Alvernon.
- WB entrance from Alvernon- West on Benson Hwy or Irvington to Country Club, then north to I-10.
- EB exit to Valencia- Exit at Alvernon Way, then south to Benson Hwy to Valencia, then east to I-10.
- WB entrance from Valencia- West on Valencia and Benson Hwy to Alvernon, then north to I-10.

Figure 7.5 I-10 (Alvernon Way to Valencia Rd) TI

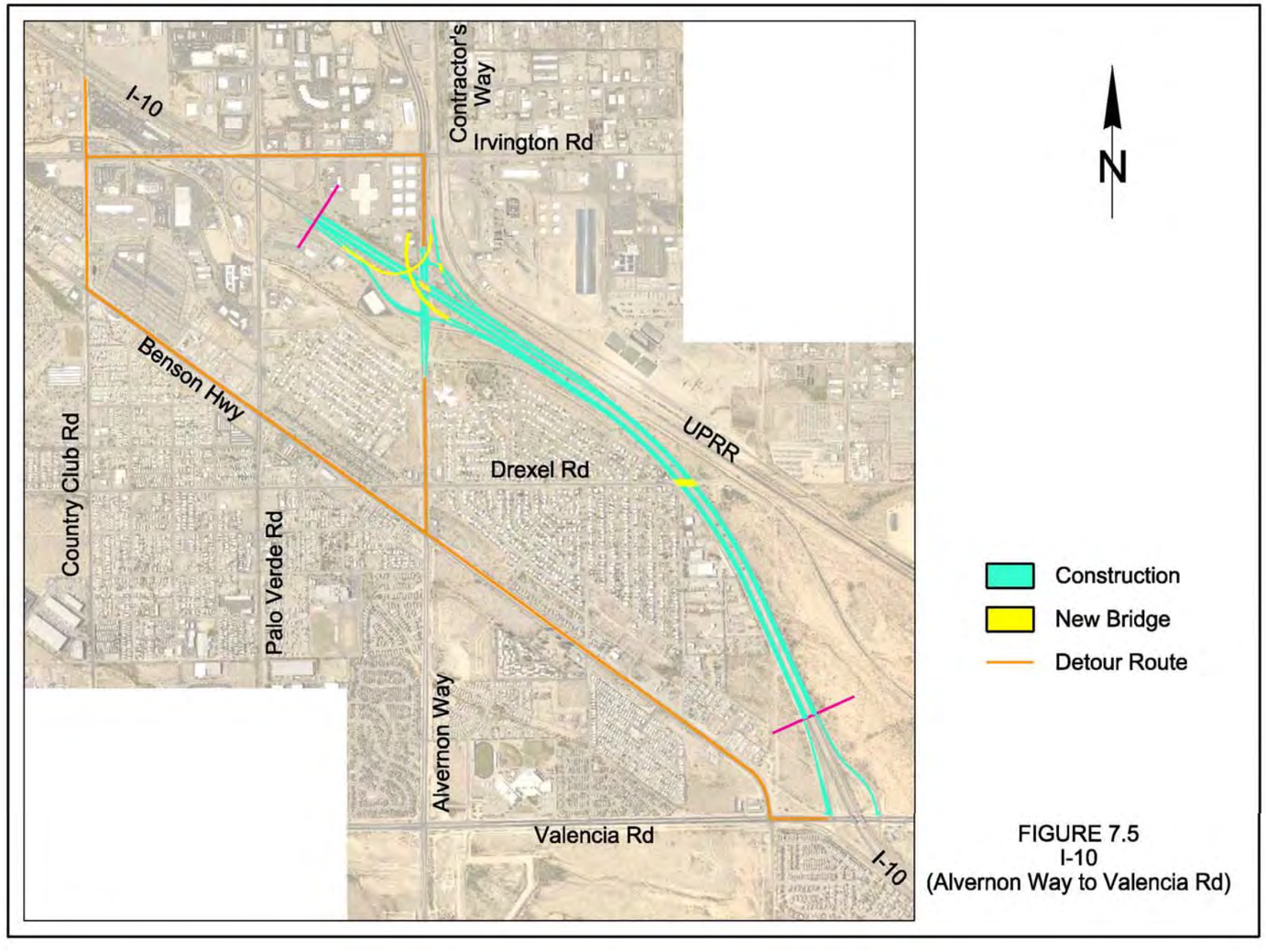


FIGURE 7.5
I-10
(Alvernon Way to Valencia Rd)

I-10 (I-19 to Kino Parkway) (MP 260.79 to MP 262.25)

Project Need

This project completes improvements to the I-10 corridor between I-19 and Valencia Road. See **Figure 7.6.**

Project Features

The fourth general purpose lane is added to the outside of eastbound I-10 between I-19 and the UPRR Spur. East of the UPRR Spur, the fourth general purpose lanes in each direction are added into the median. The existing I-10 structures over the UPRR Spur and Park Avenue are widened into the median.

For this project, I-10 is widened without replacement of the existing PCCP. However, the retention of the PCCP versus pavement replacement or rehabilitation should be determined by ADOT Materials.

Construction Phasing

Widening of I-10 and the overpass structures at the UPRR Spur and Park Avenue will require phased construction to maintain two lanes of traffic open in each direction on I-10 during construction. The overpass structures will be full width across I-10.

Traffic on I-10 will be maintained during construction, including widening to the outside and construction in the median.

Construction Detours

See **Figure 7.6** to view the following ramp closures and detours.

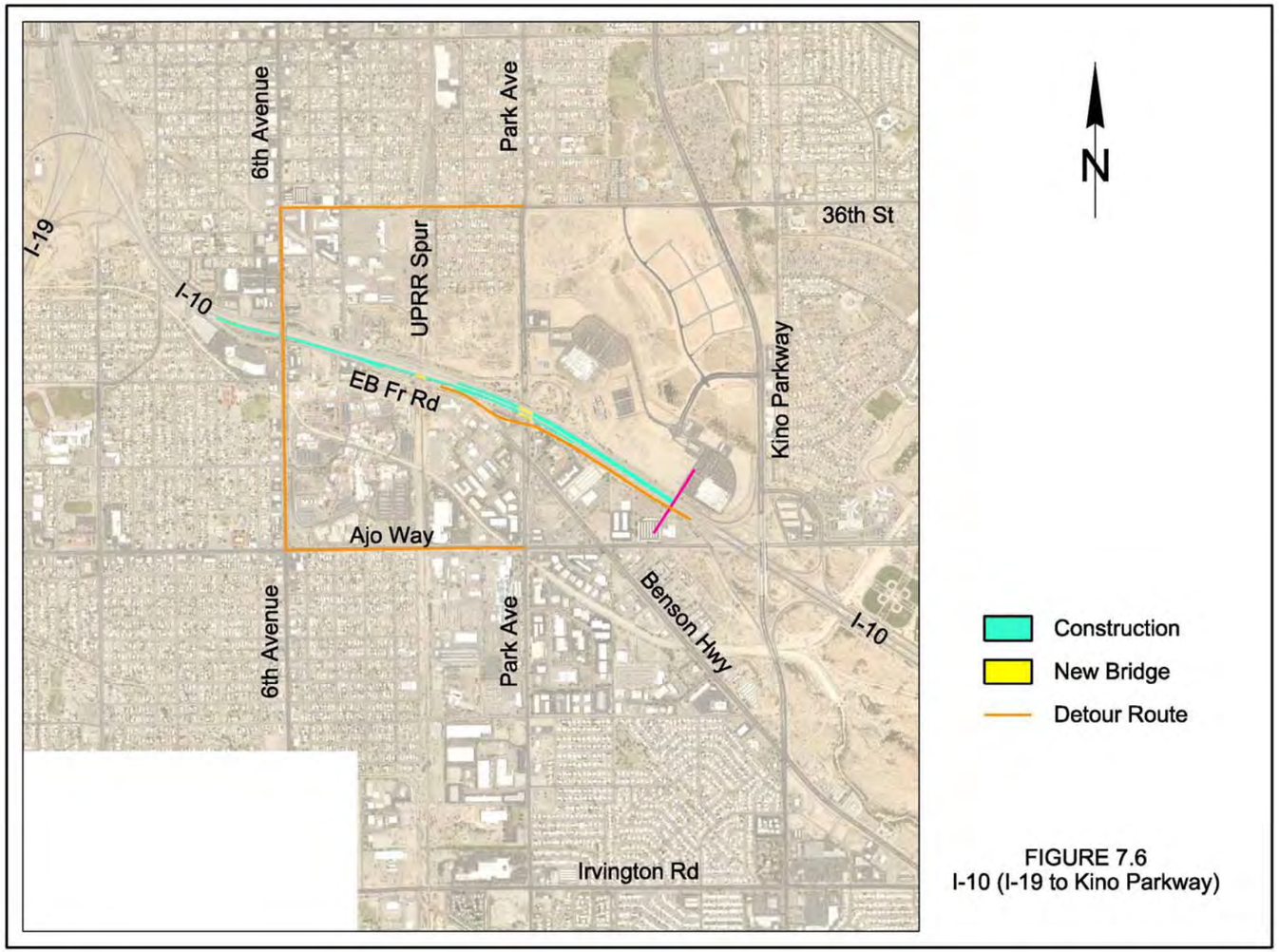
- EB exit ramp to Park Ave- Exit at 6th Avenue, then either north to 36th St or south to Ajo Way.
- EB entrance ramp from frontage road- Stay on the frontage road to Park, then onto the EB entrance ramp.

SR 210 Construction Projects

Project Identification

Construction of SR 210 between Palo Verde and I-10 is probably too large, dollar-wise, to be performed as a single project. It is logical to split the construction into two projects, with the split being at Ajo Way. However, the northern-most project, with its interchange with Golf Links Road, is much larger, dollar-wise, than the southern project. Therefore, it is reasonable to assume that splitting the northern project (Palo Verde to Ajo Way) into two projects is desirable. They will be designated as Stage I and Stage II projects.

Figure 7.6 I-10 (I-19 to Kino Parkway) TI



A review of existing traffic patterns indicates the need to preserve the north-south movement of traffic between Golf Links Road and Alvernon Way south of the interchange. While SB/WB Golf Links traffic can be detoured to Ajo Way via Palo Verde Road, it would be difficult to detour northbound Alvernon traffic up to NB/EB Golf Links, as there isn't a logical detour route. Therefore, a construction sequence and maintenance of traffic plan must maintain this connection with at least two lanes in each direction. Since much of new SR 210 is in conflict with existing Alvernon Way between Golf Links Road and Ajo Way, existing Alvernon Way will be preserved. Therefore, the first project will construct the main interchange ramps that connect to Golf Links

Road and also construct the outer lanes of SR 210; preserving the interior corridor for the bulk of SR 210. The second project then constructs mainline SR 210 between Palo Verde Road and Ajo Way.

SR 210 (Palo Verde Rd to Ajo Way) Stage I Project (MP 4.56 to 6.16)

Project Need

This project begins the extension of SR 210 to I-10. From the Feasibility Study Update, the extension of SR 210 to I-10 is needed to accommodate the increase in traffic demand for the design year 2040. See **Figure 7.7**.

Project Features

This project constructs the major ramps of the SR 210/Golf Links interchange, including; EB SR 210 to EB Golf Links, WB Golf Links to WB SR 210, WB Golf Links to EB SR 210 and WB SR 210 to EB Golf Links. The project replaces the existing structure over the UPRR with a structure with longer spans that allow for future UPRR tracks. The northern two diamond type ramps at Ajo Way are also constructed. The Aviation Bikeway is realigned along Alvernon Way to the 37th Street corridor.

Construction Phasing

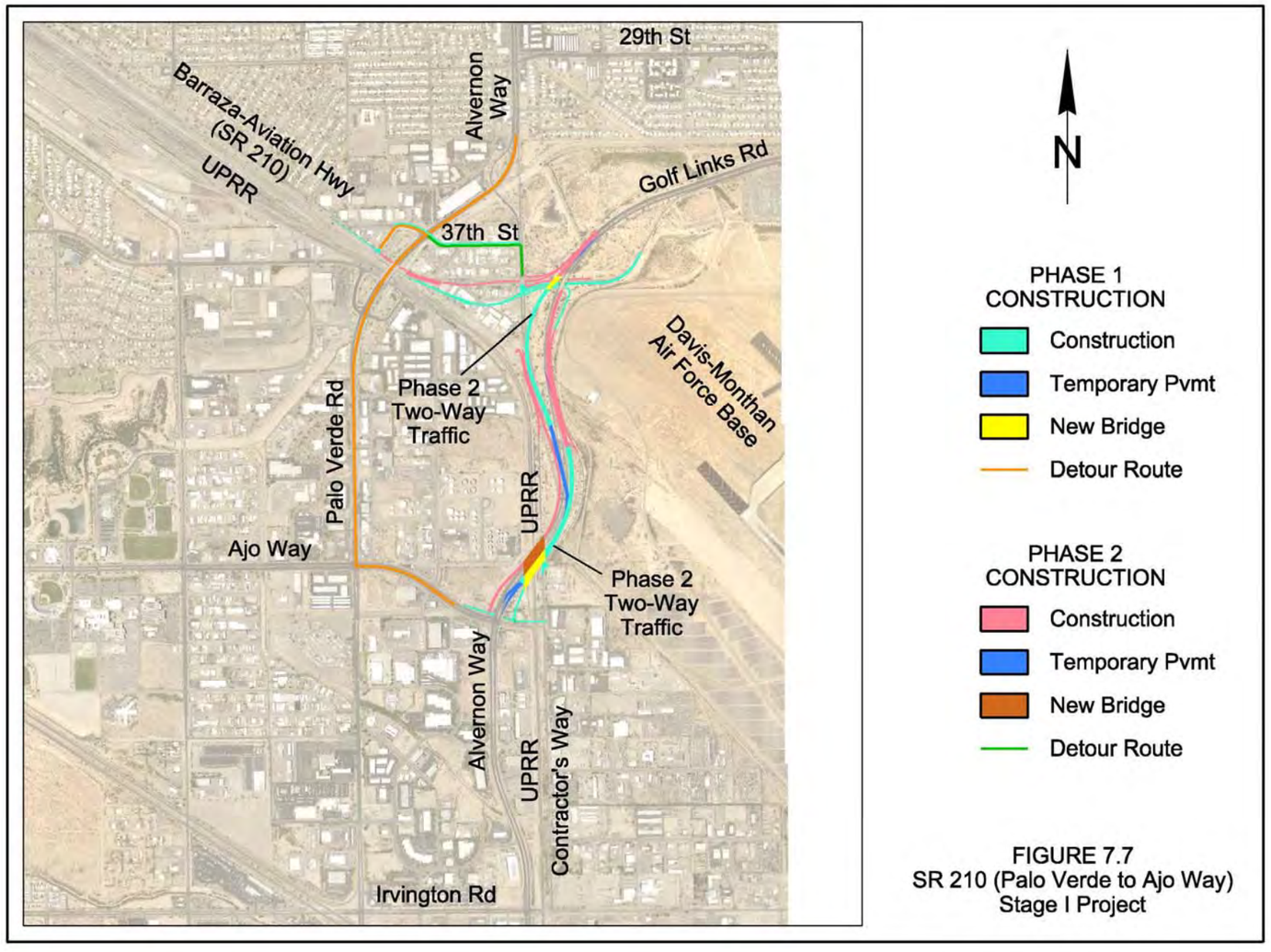
Construction will require phased construction, as shown in **Figure 7.7**. Prior to the first phase, Contractor's Way is closed between Golf Links Parkway on the north end and north of Ajo Way on the south end. Traffic is shifted to existing Alvernon Way. In the first phase, the following new roadways are constructed:

- South end WB SR 210 outer lanes, east half of the bridge over UPRR, WB entrance ramp from Ajo Way.
- North end of new WB Golf Links to EB SR 210 and WB exit ramp from Golf Links Road to Alvernon Way.
- New EB SR 210 ramp to EB Golf Links.
- New outer lane of SR 210 northwest from Palo Verde Road.
- Three temporary connectors for shifting traffic onto the new roadways at the end of the phase.

In the second phase, the following new roadways are constructed:

- New WB SR 210 ramp to EB Golf Links.
- New WB Golf Links ramp to WB SR 210.
- South end of Ajo Way Ramp A/EB exit ramp to Ajo Way.
- West half of the new bridge over UPRR.

Figure 7.7 SR 210 (Palo Verde to Ajo Way) Stage I Project



Construction Detours

See **Figure 7.7** to view the following ramp closures and detours.

- Alvernon Way and Contractor's Way traffic will be detoured over to Palo Verde Road for the entire project.

During phase two, WB Golf Links to WB SR 210 traffic will be detoured via the new WB exit ramp to Alvernon Way and 37th Street.

- Northbound and southbound traffic on Alvernon Way (north of the project) that wants to access I-10 may want to utilize the Country Club Road TI via a combination of Palo Verde, Ajo Way, and Country Club Road. To accommodate this traffic, Country Club Road will need to be widened to a five-lane roadway from I-10 to Milber Street. This widening could be accelerated to be included in the first project; Country Club Road TI.

SR 210 (Palo Verde Rd to Ajo Way) Stage II Project (MP 4.56 to MP 6.16)

Project Need

This project is the second of three projects to extend SR 210 to I-10. From the Feasibility Study Update, the extension of SR 210 to I-10 is needed to accommodate the increase in traffic demand for the design year 2040. **See Figure 7.8.**

Project Features

This project constructs the remainder of SR 210 and remaining ramps between Palo Verde Road and Ajo Way. It also reconstructs Ajo Way and constructs the major portion of the southerly Ajo Way ramps. Temporary connectors for the shifting of traffic and at the south ends of the new southerly Ajo Way ramps to connect to existing Alvernon Way.

Construction Phasing

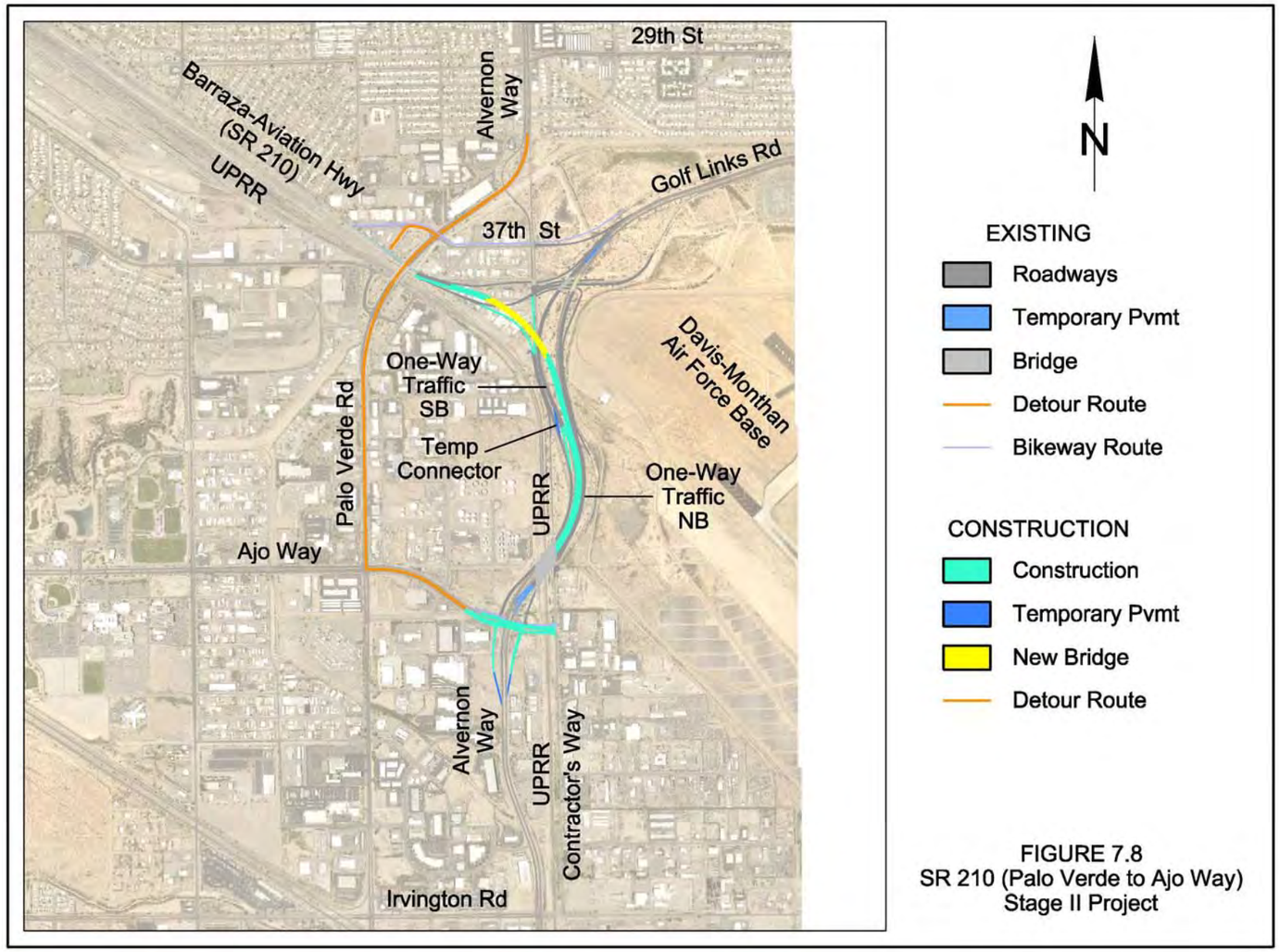
This project essentially has only one phase, as shown in **Figure 7.8**. The earliest construction activity constructs a temporary connector that allows the traffic that connects to/from Golf Links Road to be split; creating an open area in between. This area is for construction of SR 210. When all is complete, traffic travels on the outside portions of SR 210 and using the Ajo Way ramps to cross Ajo Way.

Construction Detours

See **Figure 7.8** to view the following ramp closures and detours.

- Alvernon Way and Contractor's Way traffic (north of Ajo Way) will be detoured over to Palo Verde Road for the entire project.
- Northbound and southbound traffic on Alvernon Way (north of the project) that wants to access I-10 may want to utilize the Country Club Road TI via a combination of Palo Verde, Ajo Way, and Country Club Road. To accommodate this traffic, Country Club Road will need to be widened to a five-lane roadway from I-10 to Milber Street. This widening could be accelerated to be included in the first project; Country Club Road TI.

Figure 7.8 SR 210 (Palo Verde to Ajo Way) Stage II Project



SR 210 (Ajo Way to I-10) (MP 6.16 to MP 7.31)

Project Need

This project is the third of three projects to extend SR 210 to I-10. From the Feasibility Study Update, the extension of SR 210 to I-10 is needed to accommodate the increase in traffic demand for the design year 2040. See **Figure 7.9.**

Project Features

This project constructs SR 210 between the bridge over the UPRR and the system interchange at I-10. This includes the northern portions of the I-10/SR 210 system interchange ramps; matching into the portions of these ramps constructed in the I-10 (Alvernon Way to Valencia Road) project.

Construction Phasing

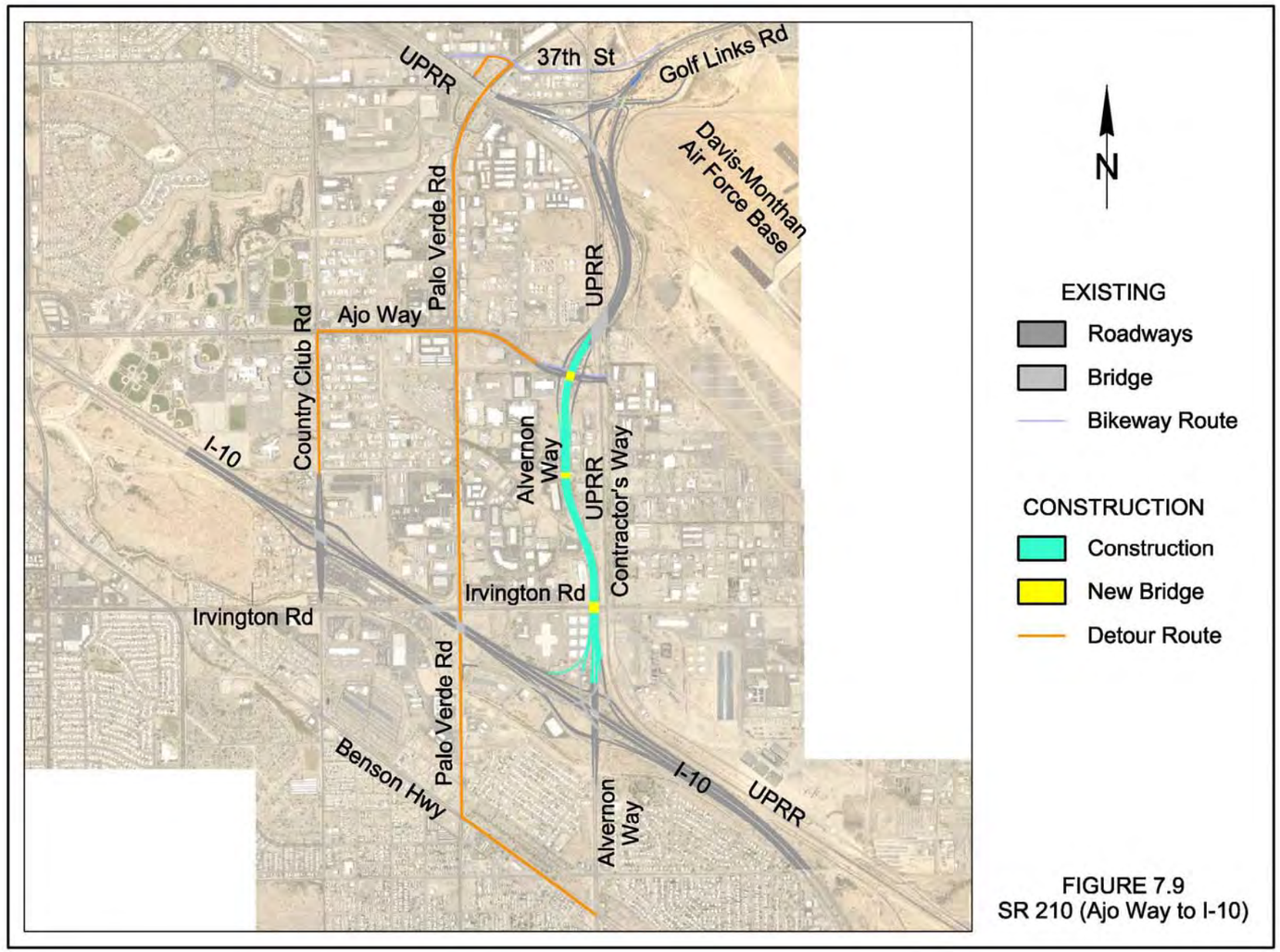
This project essentially has only one phase, as shown in **Figure 7.9**.

Construction Detours

See **Figure 7.9** to view the following ramp closures and detours.

- Alvernon Way and SR 210 traffic will be detoured over to Palo Verde Road for the entire project.
- Northbound and southbound traffic on Alvernon Way (north of the project) that wants to access I-10 may want to utilize the Country Club Road TI via a combination of Palo Verde, Ajo Way, and Country Club Road. To accommodate this traffic, Country Club Road will need to be widened to a five-lane roadway from I-10 to Milber Street. This widening could be accelerated to be included in the first project; Country Club Road TI.

Figure 7.9 SR 210 (Ajo Way to I-10)



I-10 (Valencia Road TI) (MP 266.82 to MP 267.69)

Project Need

This project is the first project to be constructed after the extension of SR 210 to I-10 at the system interchange at Alvernon Way. It is needed to accommodate the increase in traffic demand generated by the extension of SR 210. See **Figure 7.10.**

Project Features

I-10 is reconstructed with three general purpose lanes in each direction and replaces I-10 overpass structures at Valencia Road and a drainage channel. Due to the need for new structures, the I-10 profile will be higher than the existing profile. The project leaves an open median for future addition of general purpose lanes. It also reconstructs the crossroad and the interchange ramps.

This project includes the construction of a westbound frontage road between Craycroft Road and Valencia Road. It provides access to parcels along the north right-of-way of I-10. For System Alternative I, this project also constructs an eastbound long ramp between Valencia Road and Craycroft Road.

Construction Phasing

Reconstruction of I-10 and the construction of the new overpass structures will require phased construction to maintain two lanes of traffic open in each direction on I-10 during construction. The overpass structures will be full width across I-10, allowing for temporarily shifting traffic into the median. At the east end of the project, tapers will be needed.

The first phase constructs temporary pavements in the median during construction of the median portions of the bridges over Valencia Road and the drainage channel. Subsequent phases will construct the remainder of the new improvements.

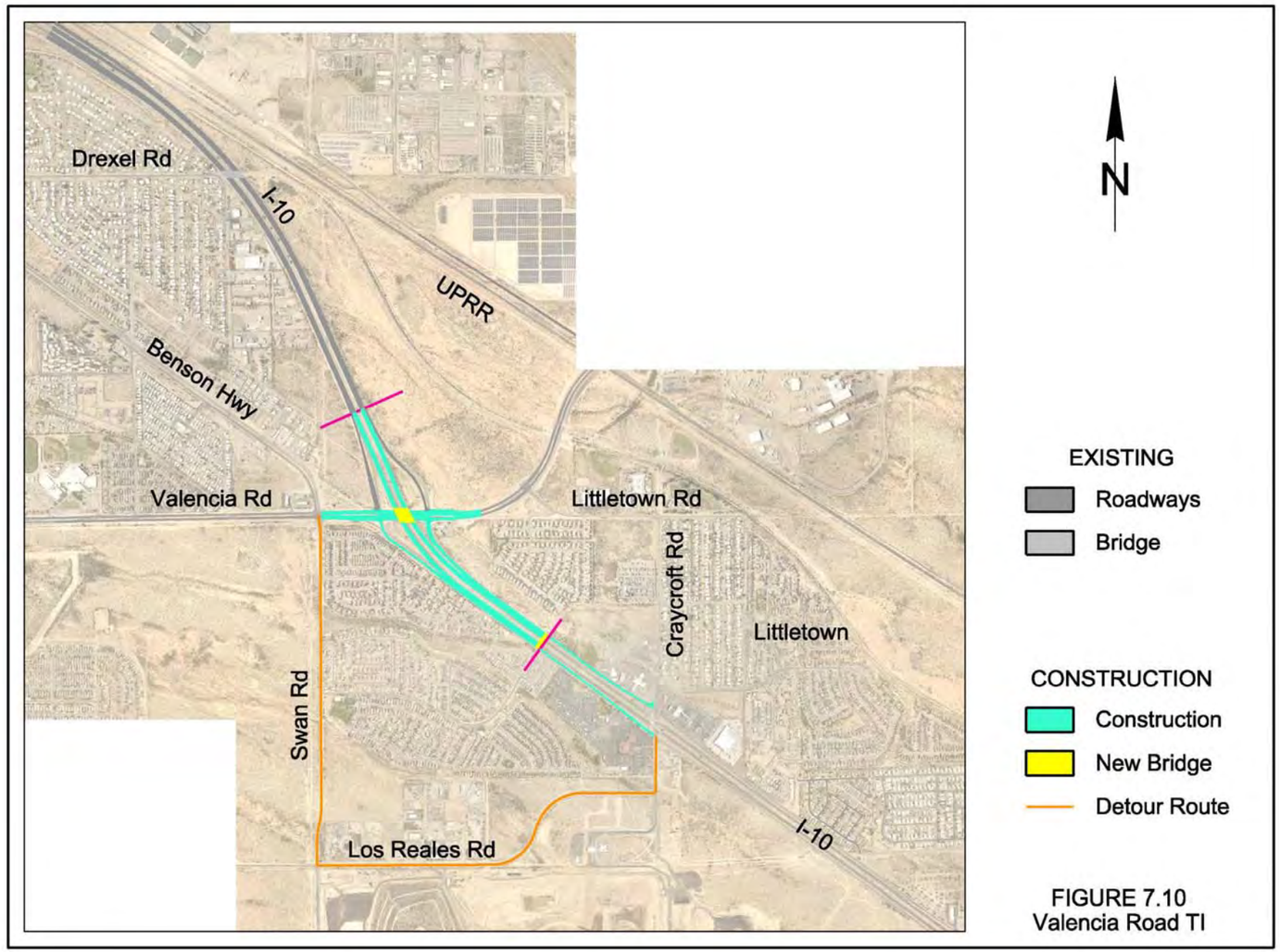
I-10 structure replacement over Valencia Road and the drainage channel will be performed using the same phased construction for mainline I-10 reconstruction. Reconstruction of Valencia Road will be performed via half-width construction phasing.

Construction Detours

Reconstruction of I-10 will not require detours, just shifts in traffic within the I-10 corridor. See **Figure 7.10** to view the following ramp closures and detours.

Reconstruction of ramps will require temporary detours during construction and will route traffic between Valencia Road and Craycroft Road via a combination of Swan Road and Los Reales Road. The goal is to NOT allow a detour north along Craycroft Road and through the Littletown neighborhood.

Figure 7.10 Valencia Road TI



I-10 (Craycroft Road TI) (MP 267.69 to MP 268.83)

Project Need

This project is the second project to be constructed after the extension of SR 210 to I-10 at the system interchange at Alvernon Way. It is needed to accommodate the increase in traffic demand generated by the extension of SR 210. **See Figure 7.11.**

Project Features

I-10 is reconstructed with three general purpose lanes in each direction and replaces I-10 overpass structures at Craycroft Road. Due to the need for new structures, the I-10 profile will be higher than the existing profile. The project leaves an open median for future addition of general purpose lanes. It also reconstructs the crossroad and the interchange ramps.

Construction Phasing

Reconstruction of I-10 and the construction of the new overpass structures will require phased construction to maintain two lanes of traffic open in each direction on I-10 during construction. The overpass structures will be full width across I-10, allowing for temporarily shifting traffic into the median. At the east end of the project, tapers will be needed.

The first phase constructs temporary pavements in the median during construction of the median portions of the bridges over Craycroft Road. Subsequent phases will construct the remainder of the new improvements.

I-10 structure replacement over Craycroft Road will be performed using the same phased construction for mainline I-10 reconstruction.

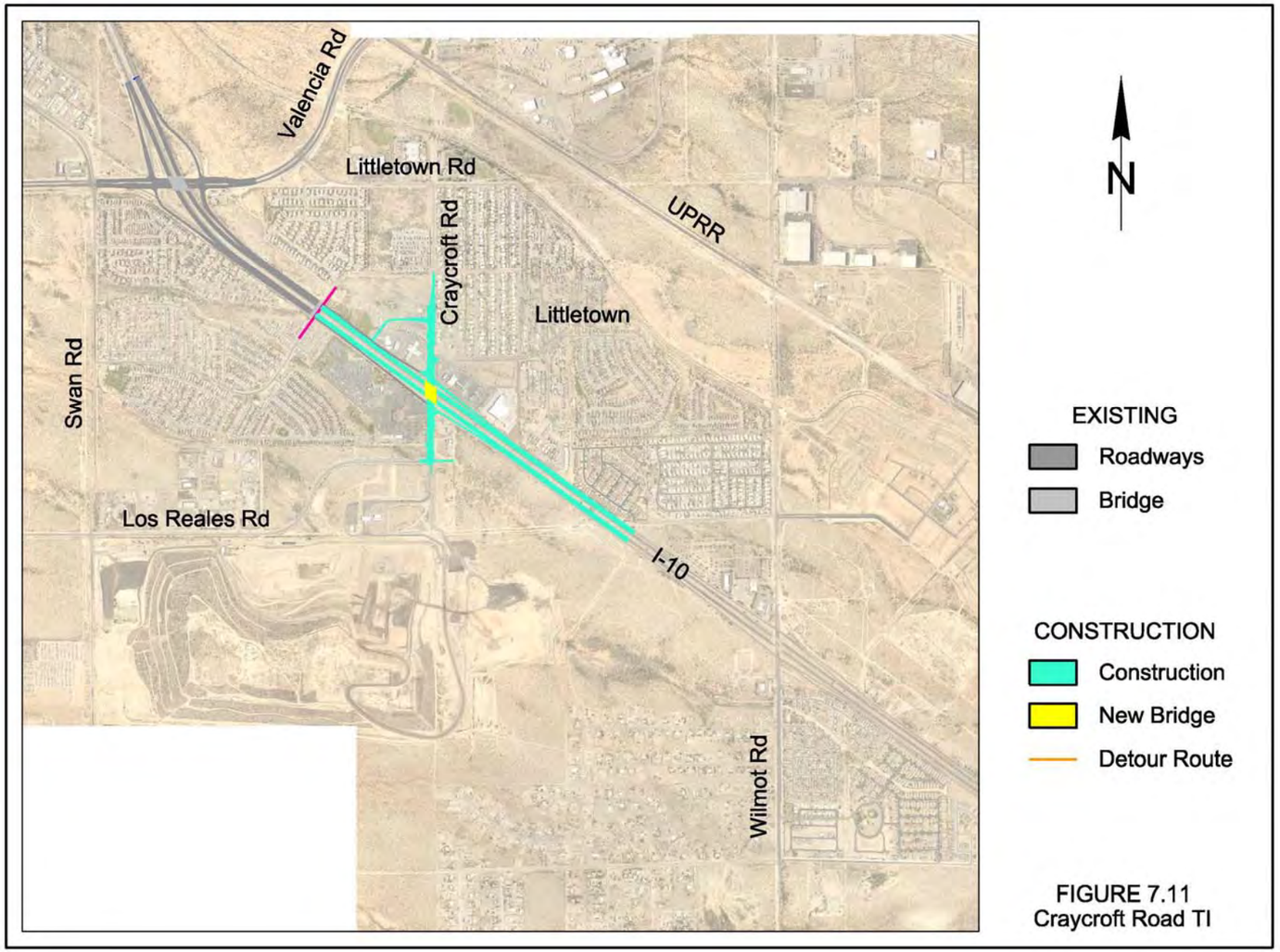
Reconstruction of Craycroft Road will be performed via half-width construction phasing.

Construction Detours

Reconstruction of I-10 will not require detours, just shifts in traffic within the I-10 corridor.

A detour for Craycroft Road will not be required. Craycroft Road is isolated from other major streets, especially south of I-10. There are not any viable detour routes via the local street system. While construction of the east ramps would normally require temporary closures with detours, the lack of detour routes via local streets dictates that these ramps must be reconstructed under traffic via phased construction techniques. See **Figure 7.11**.

Figure 7.11 Craycroft Road TI



I-10 (Wilmot Road TI) (MP 268.83 to MP 269.93)

Project Need

This project is the third project to be constructed after the extension of SR 210 to I-10 at the system interchange at Alvernon Way. It is needed to accommodate the increase in traffic demand generated by the extension of SR 210. See **Figure 7.12.**

Project Features

I-10 is reconstructed with three general purpose lanes in each direction and replaces I-10 overpass structures at Wilmot Road. Due to the need for new structures, the I-10 profile will be higher than the existing profile. The project leaves an open median for future addition of general purpose lanes. It also reconstructs the crossroad and the interchange ramps.

Construction Phasing

Reconstruction of I-10 and the construction of the new overpass structures will require phased construction to maintain two lanes of traffic open in each direction on I-10 during construction. The overpass structures will be full width across I-10, allowing for temporarily shifting traffic into the median. At the east end of the project, tapers will be needed.

The first phase constructs temporary pavements in the median during construction of the median portions of the bridges over Wilmot Road. Subsequent phases will construct the remainder of the new improvements.

I-10 structure replacement over Wilmot Road will be performed using the same phased construction for mainline I-10 reconstruction.

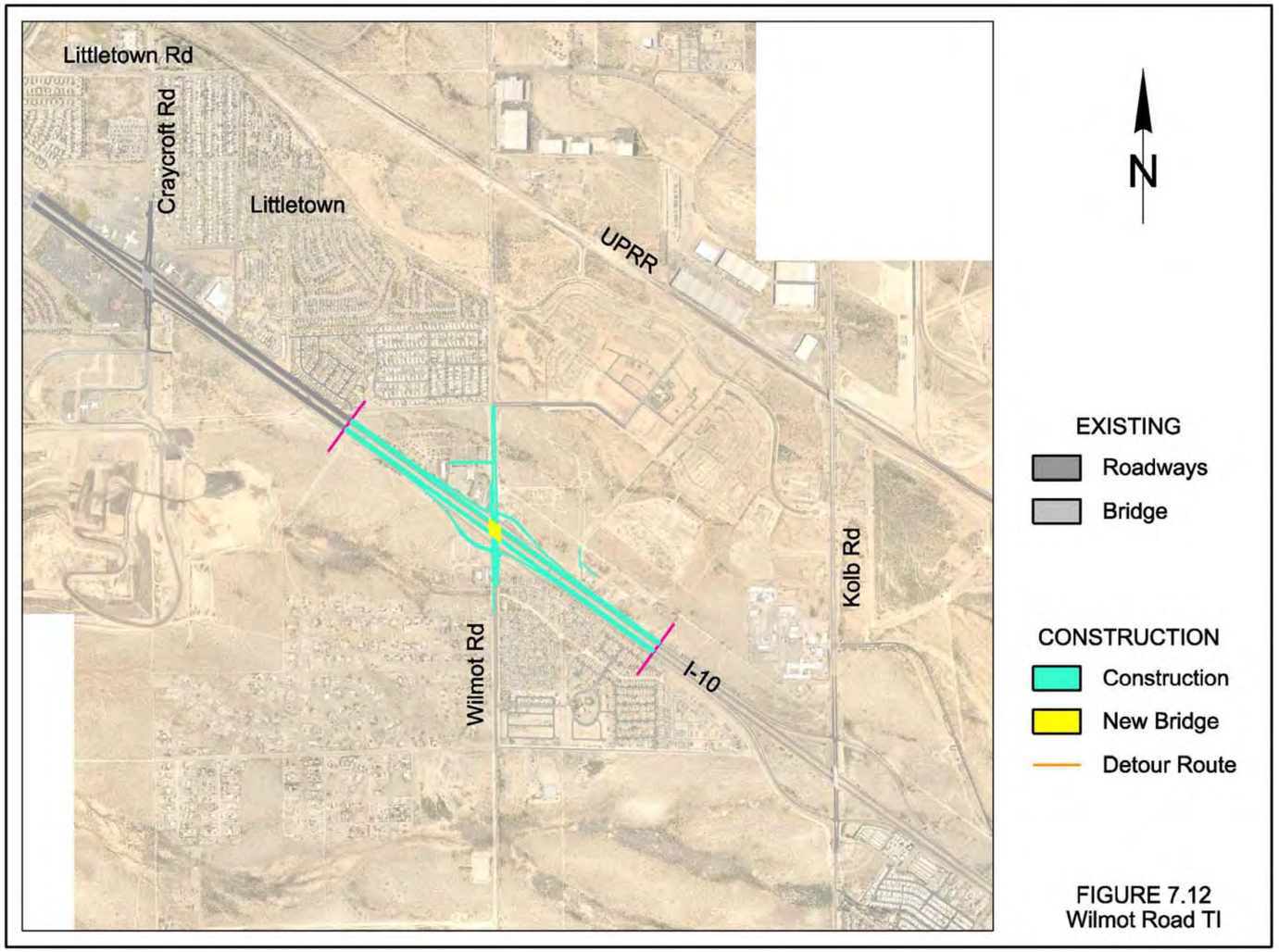
Reconstruction of Wilmot Road will be performed via half-width construction phasing.

Construction Detours

Reconstruction of I-10 will not require detours, just shifts in traffic within the I-10 corridor.

A detour for Wilmot Road will not be required. Wilmot Road is isolated from other major streets, especially south of I-10. There are not any viable detour routes via the local street system. While construction of the east ramps would normally require temporary closures with detours, the lack of detour routes via local streets dictates that these ramps must be reconstructed under traffic via phased construction techniques. See **Figure 7.12**.

Figure 7.12 Wilmot Road TI



I-10 (Kolb Road TI) (MP 269.93 to MP 272.30)

Project Need

This project is the third project to be constructed after the extension of SR 210 to I-10 at the system interchange at Alvernon Way. It is needed to accommodate the increase in traffic demand generated by the extension of SR 210. See **Figure 7.13.**

Project Features

I-10 is reconstructed with three general purpose lanes in each direction with tapers down to match existing pavement widths and number of lanes east of Kolb Road. The project leaves an open median for future addition of general purpose lanes. It also reconstructs the Kolb Road interchange; replacing the diamond type interchange with a Diverging Diamond Interchange (DDI). The center portion of the DDI utilizes the existing crossroad structure over I-10 for System Alternative I. For System Alternative IV, the existing structure is replaced with a pair of structures for the interior portion of the DDI.

Construction Phasing

Reconstruction of I-10 will require phased construction to maintain two lanes of traffic open in each direction on I-10 during construction. The first phase constructs temporary pavements in the median. Subsequent phases will construct the remainder of the new improvements.

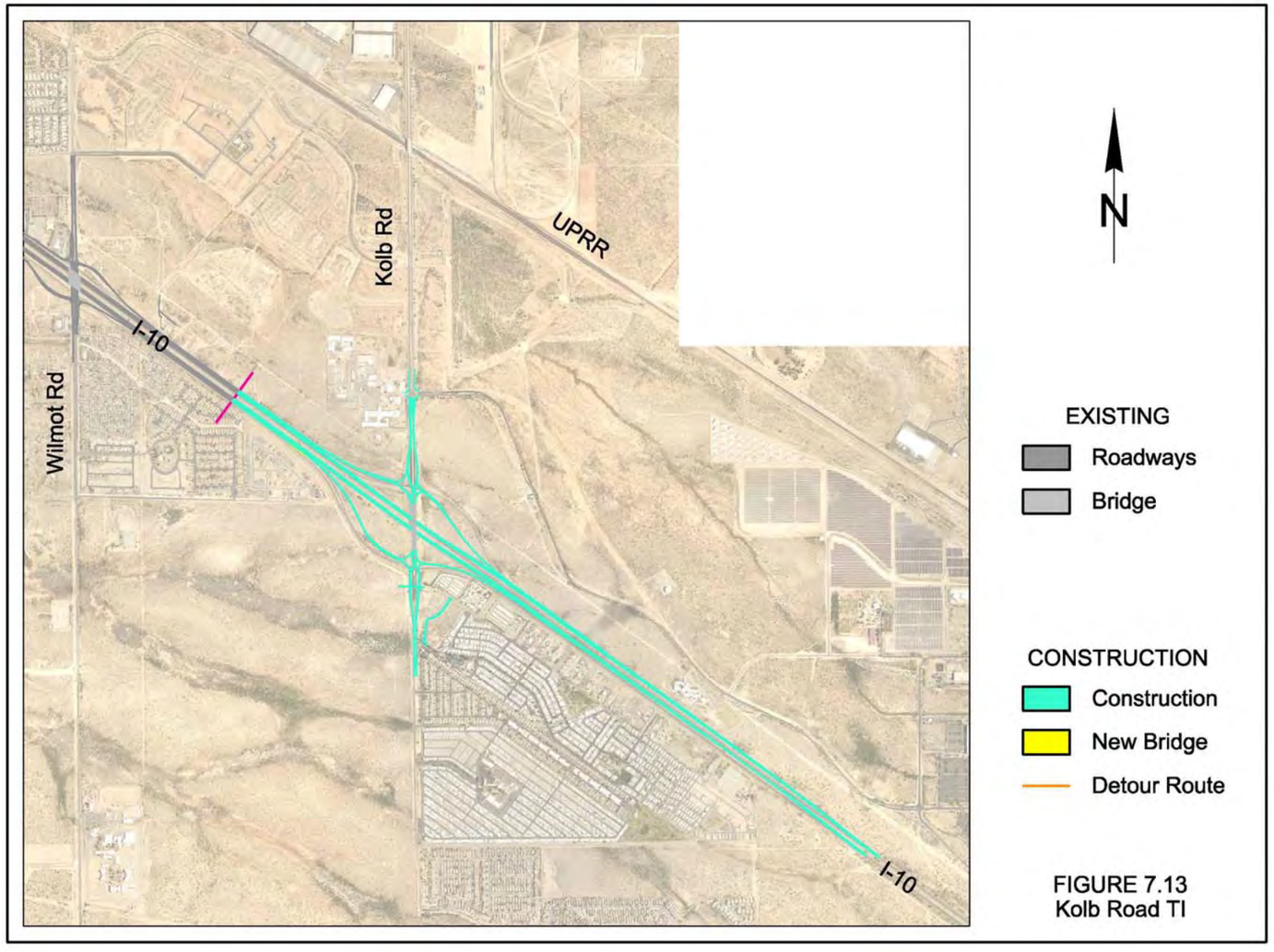
Reconstruction of Kolb Road will be performed via half-width construction phasing.

Construction Detours

Reconstruction of I-10 will not require detours, just shifts in traffic within the I-10 corridor.

A detour for Kolb Road will not be required. Kolb Road is isolated from other major streets, especially south of I-10. There are not any viable detour routes via the local street system. While construction of the east ramps would normally require temporary closures with detours, the lack of detour routes via local streets dictates that these ramps must be reconstructed under traffic via phased construction techniques. See **Figure 7.13.**

Figure 7.13 Kolb Road TI



8 ENVIRONMENTAL SUMMARY AND PUBLIC INVOLVEMENT

8.1 Environmental Summary

The Draft Environmental Assessment (EA) evaluates the alternatives being considered for this project. The Draft EA is a separate stand-alone document that is summarized in the following paragraphs. Separate reports were prepared to evaluate impacts from noise, air quality, cultural resources, hazardous materials, biological, and 4(f) resources due to freeway widening or TI reconstruction. These reports are included as appendices to the Draft EA.

I-10 (Junction I-19 to Kolb Road)

The evaluation of the socioeconomic environment, physical and natural resources, cultural resources, and regulatory requirements conducted for I-10 indicates the proposed improvements from I-19 to Kolb Road have no fatal flaws. The proposed improvements are located largely in or near the existing I-10 ROW. Impacts could occur with the TI connections to I-10 and SR 210; however, those impacts are moderate, with residential displacements unlikely, few business displacements, and limited impact on cultural resources.

The evaluation of the socioeconomic environment, physical and natural resources, cultural resources, and regulatory requirements conducted for I-10 from I-19 to Alvernon Way indicates the proposed improvements for Alternatives I & IV are the same.

The evaluation conducted for I-10 from Alvernon Way through Kolb Road indicated minor differences for noise, air quality, cultural resources, hazardous materials, biological, and 4(f) resources. Impacts due to land acquisition, parcels affected, and businesses affected were greater for Alternative IV than for Alternative I.

SR 210 (Golf Links Road to I-10)

The evaluation of the socioeconomic environment, physical and natural resources, cultural resources, and regulatory requirements conducted for SR 210 indicates the extension from Golf Links Road to a connection with I-10 has some substantive environmental issues.

The System IV alternative follows the same alignment as System I along the Alvernon Way corridor.

The issues related to the System I and IV alternatives, while notable with regard to economic impacts, would not be considered a fatal flaw resulting in a recommendation to not extend SR 210.

The greatest impacts to the SR 210 study corridor would be in the form of potential business displacements and changes in access for the System I and System IV alternatives. A single residential parcel containing three homes in the midst of industrial zoning could be displaced by both alternatives. System alternatives I and IV could require relocation of approximately 15 to 20 businesses and access changes to several others. Additionally, the system alternatives also encroach on a portion of DMAFB property.

The evaluation of the socioeconomic environment, physical and natural resources, cultural resources, and regulatory requirements conducted for SR 210 indicates the proposed improvements for Alternatives I & IV are the same.

8.2 Agency/Stakeholder Coordination

The I-10, I-19 to Kolb Road and SR 210, Golf Links Road to I-10 project was split into two Phases. Phase I included the development of a Feasibility Study and an Environmental Overview. Phase II involves the preparation of a Design Concept Report and Environmental Assessment. Coordination with stakeholder agencies and team progress meetings were jointly held throughout the two phases. Below is a summary of the Agency/Stakeholder coordination effort to date.

Agency/Stakeholder Coordination

The Phase I project kickoff meeting was held on July 21, 2010, at the City of Tucson Fire Central Station. Participants included representatives from:

- FHWA
- ADOT
- PAG
- Pima County Department of Transportation
- Cochise County Highway and Flood Control Departments
- City of South Tucson

The meetings were chaired by the ADOT Project Manager and Jacobs Engineering Group Inc. Agenda items were varied for each meeting, with a focus on soliciting input from the stakeholders. Presentations to the stakeholders provided data and graphics depicting existing conditions, LOS, operational issues, traffic modeling/forecasts, alternatives development, and environmental resource issues. Early discussions included the potential to enlarge the SR 210 study corridor farther west. The corridor was shifted west to Palo Verde Road. Preliminary traffic analysis indicated that connection locations west of Alvernon Way would not generate substantive traffic relief on I-10; therefore, no alternatives using Palo Verde Road were developed. The preliminary traffic analysis also indicated that connection locations east of Wilmot Road would not generate substantive traffic relief on I-10; therefore, no alternatives east of Wilmot Road were developed.

Several stakeholder-focused discussions supplemented the progress meetings, including:

- Sun Tran – August 22, 2010
- Utility Companies – September 27, 2010
- AGFD – November 11, 2010
- UPRR – March 9, 2011
- PAG – April 6, 2011, April 7, 2014, and October 15, 2014 (presentation to Transportation Planning Committee)
- DMAFB, PAG, and Pima County DOT – March 14, 2012 (Discussion of System IIIa, IIIb and IIIc alternatives)

A reevaluation of the traffic study was needed due to a reduction in the 2040 population projection from 2.0 million to 1.4 million for the Tucson metro area. Further evaluation of System Alternative IIIc and the introduction of System Alternative IV resulted in an update to the Feasibility Study beginning January 2014. Additional stakeholder-focused discussions supplemented the progress meetings, including meetings with:

- Pima County DOT – January 14 and 21, 2014 and July 30, 2014
- City of Tucson – March 6, 2014
- PAG –October 15, 2014 (presentation to Transportation Planning Committee)

Progress meetings resumed in 2014 including the above-mentioned participants plus the following participant agencies:

- City of Tucson
- Sun Tran
- DMAFB
- U.S. Customs and Border Protection
- UPRR

Feasibility Study materials were made available on the project website at www.jacobsaz.com. Phase I meeting notes can be found in **Appendix I** of the Feasibility Report Update. The Feasibility Report Update is available on ADOT's website.

An Agency Kickoff/Scoping meeting was held December 1, 2016 for Phase II to bring new attendees from participating agencies up to speed regarding the project and changes made since the distribution of the

Feasibility Report Update. The eastern limit of the project was shifted to the west to Kolb Road to reduce construction funding needs for the project. With the eastern limit change, ADOT believed they could realistically construct the overall project by the 2040 design year. A collective decision was made by ADOT, FHWA, Pima County and the City of Tucson to discontinue Alternative II from further study. Strong opposition from the US Customs and Border Protection, high potential for hazardous material discovery and cleanup, potential for unexploded ordinance being present along the alignment and high costs to relocate several commercial businesses were a few reasons given to discontinue development of the alternative.

Progress meetings with agencies and stakeholders were resumed in December 2017 for Phase II. Several stakeholder-focused discussions supplemented the progress meetings, including:

- UPRR – June 27, 2017
- City of South Tucson - March 16, 2017
- Sunnyside Unified School District – March 16, 2017
- ADOT Traffic Group – May 15, 2017
- Pima County Administration – May 16, 2017
- Tucson Electric Power – May 16, 2017
- ADOT Right-of-Way Group – August 8, 2017
- City of Tucson/Pima County – October 30, 2017
- City of South Tucson – March 29, 2018
- Tucson Aviation Authority – June 11, 2018
- City of Tucson – July 20, 2018
- Pima County – December 12, 2018
- Davis Monthan AFB – February 4, 2019

Development changes at the I-10/Craycroft Road TI after the Feasibility Report was updated changed the traffic volumes and traffic flow patterns. Discussions about the situation was presented to the project stakeholders. Meetings were held April 12, 2018 with local business owners, the Sunnyside Unified School District, Pima County Natural Resources, Parks and Recreation, FHWA and ADOT to determine an access control solution for the TI. Additional meetings with ADOT, FHWA, Pima County and the City of Tucson were held. Several concepts were developed and a consensus on the concept to move forward with in Phase II was reached with the project stakeholders.

A meeting held February 4, 2019 with Davis Monthan AFB personnel revealed the base was providing 100 acres of land to the City of Tucson for a new park called “100 Acre Wood Bike Park”. The new park is located in the northwest part of the base east of Alvernon Way and north or Golf Links Road. The park was in the final stages of approval. A memorandum was written to define the situation and recommend adjustments to the SR 210 / Golf Links Road TI. The westbound off-ramp from Golf Links Road to Alvernon Way needed to be relocated to the south to avoid taking right-of-way from the park. The existing Barraza-Aviation Bikeway will remain in its current location. See **Appendix R** for more information.

Phase II DCR Study materials and other documents are available on the ADOT website at www.azdot.gov for review. Meeting notes can be found in **Appendix Q** of this report.

8.3 Public Involvement

Public Involvement for the Phase I feasibility study was initiated with a Public Information Meeting held October 6, 2011 at the Holiday Inn Hotel and Suites, 4550 S. Palo Verde Road, Tucson, AZ. The format of the meeting was an open house with an informational video. System Alternatives I, II were displayed for public view.

Approximately seventy people attended the meeting. The following public agencies were represented at the meeting: FHWA, ADOT, Pima County, PAG, RTA, DMAFB, City of Tucson. Two news stations covered the meeting: Fox News 11 and KVOA News 4.

Public Involvement for the Phase II design concept study was initiated with a Public Scoping Meeting held on February 15, 2017 at the El Pueblo Regional Center located at 1010 W. Irvington Road, Tucson, AZ. The public scoping meeting was conducted in an open house format, including an approximate 30-minute presentation on study background, status, proposed alternatives, and next steps. During the open house portions of the meetings (before and after the presentation), study team members were available to talk with attendees and answer their questions. System Alternatives I and IV were displayed for the public to view and comment on. Seventy-two persons signed in at the meeting. The following public agencies were represented at the meeting: FHWA, ADOT, Pima County, PAG, RTA, and the City of Tucson.

Two public information meetings were held on November 28, 2018 at the Billy Lane Lauffer Middle School – located at 5385 E Littletown Rd. Tucson, AZ and on November 29, 2018 at the Apollo Middle School, located at 265 W. Nebraska St., Tucson, AZ. Both public information meetings were conducted in an open house format, including an approximate 30-minute presentation on study background, status, proposed alternatives, and next steps. During the open house portions of the meetings (before and after the presentation), study team members were available to talk with attendees and answer their questions. System Alternatives I and IV were displayed for the public to view and comment on. Approximately 35 persons attended each meeting. The following public agencies were represented at the meetings: FHWA, ADOT, Pima County, PAG, and the City of Tucson.

Two subsequent teleconference meetings were held with local business owners that missed the public meetings. Materials presented at the public information meeting was shared at both meetings. The first teleconference was held January 24th, 2019 with the owner of the Silver Saddle Stakehouse. The property is located east of 6th Avenue along the I-10 eastbound frontage road. The second teleconference was held June 27th, 2019 with the owners of the G&LW Tucson Gem Show located at the northeast corner of Country Club Road and I-10. Both property owners desired information on any impacts to their properties and the timing of future construction projects. Email and mailing information were provided by the owners and they requested information on any future public meetings.

The Initial Design Concept Report and Draft Environmental Assessment have been distributed for public review. Both reports are available on the ADOT project website, azdot.gov/i10sr210study. In addition, the reports can be viewed at the following locations:

- Littletown Community Center, 6465 S. Craycroft Road, Tucson, AZ 85756
- Joel D. Valdez Main Library, 101 N. Stone Avenue, Tucson, AZ 85701
- Sam Lena-South Tucson Public Library, 1607 S. 6th Avenue, Tucson, AZ 85713

A public hearing on the I-10/SR 210 study is scheduled for Wednesday, November 20th, 2019 from 5:30 to 7:30 p.m. at Billy L. Lauffer Middle School, 5385 E. Littletown Road in Tucson.

APPENDIX A
EXISTING CONDITIONS

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	16	
		010 PM 260			

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

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SCALE IN FEET

APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 EXISTING CONDITIONS
STA 314+00 TO STA 341+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
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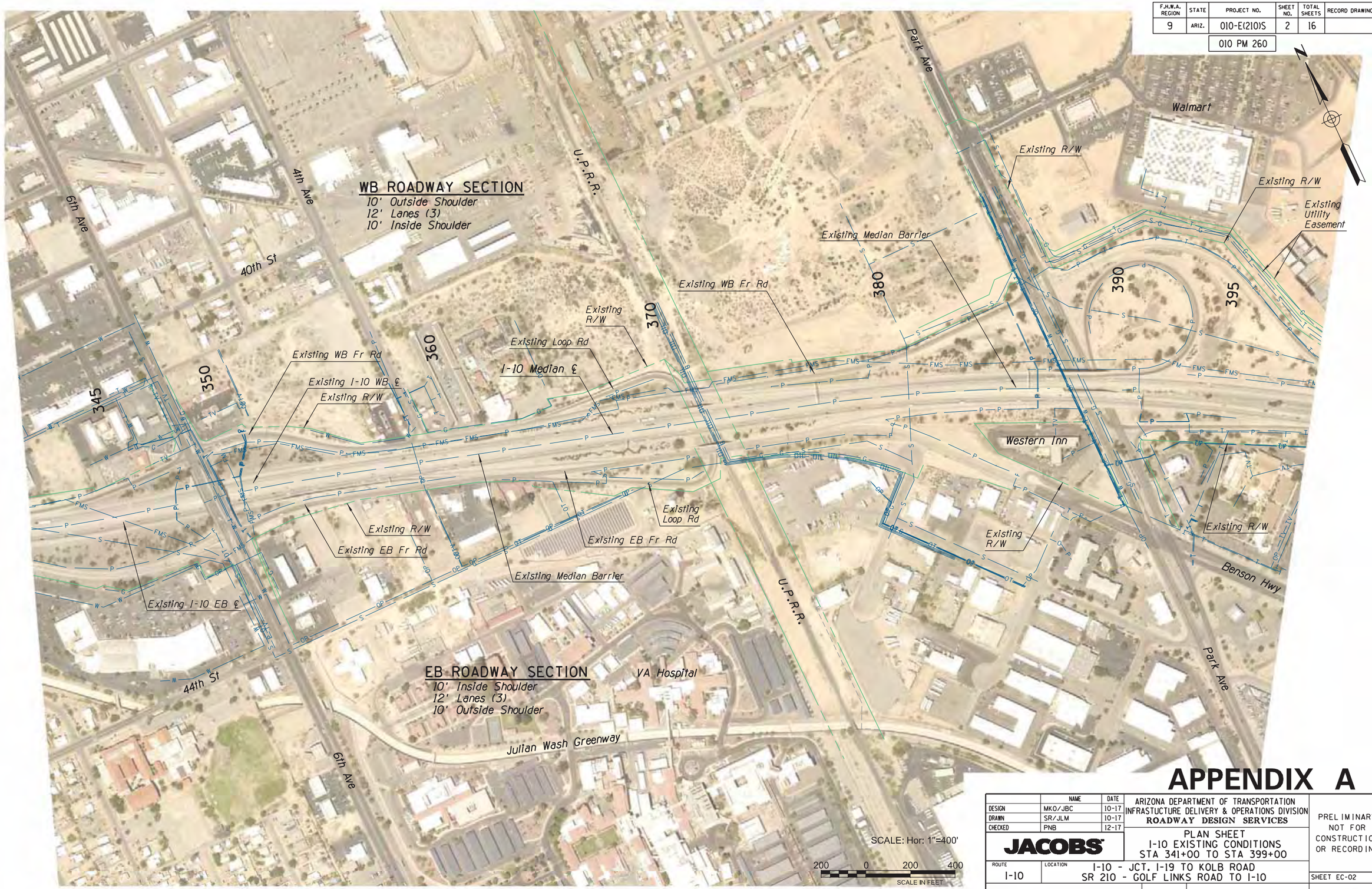

APPENDIX A

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DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 EXISTING CONDITIONS
STA 341+00 TO STA 399+00

ROUTE	LOCATION
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PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET EC-02

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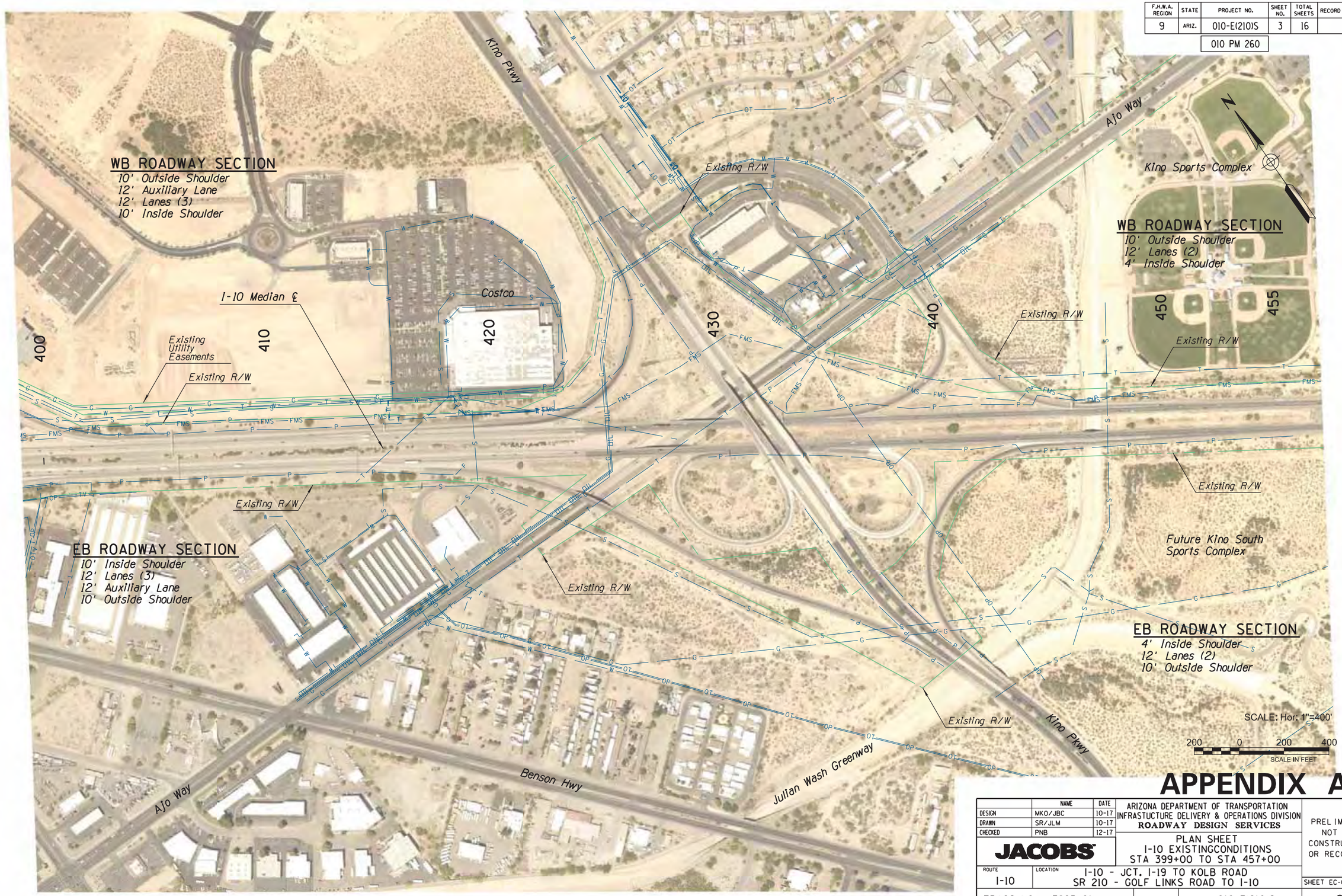

APPENDIX A

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DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PLAN SHEET
I-10 EXISTINGCONDITIONS
STA 399+00 TO STA 457+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
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SHEET EC-03

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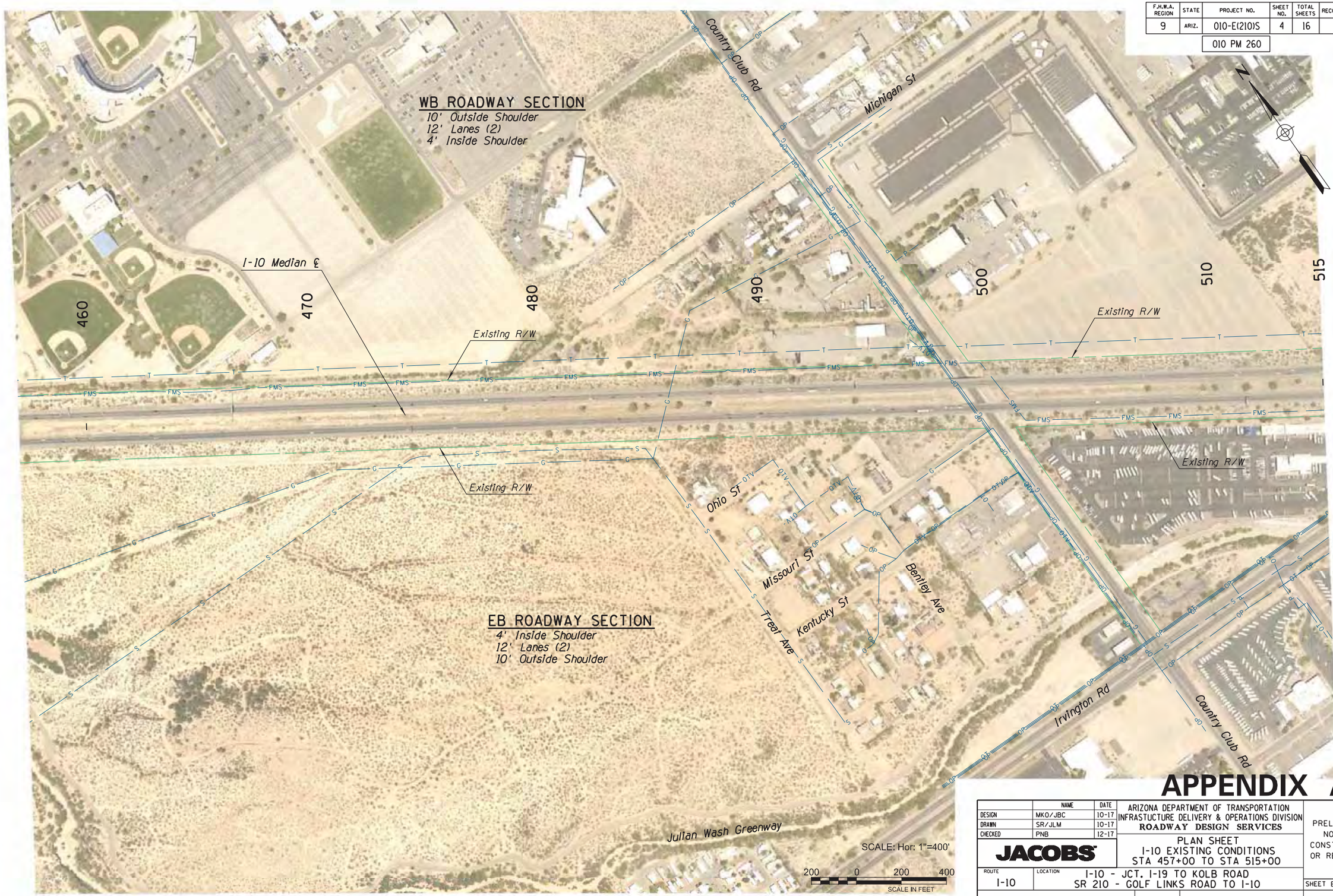

APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 EXISTING CONDITIONS
STA 457+00 TO STA 515+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
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010 PM 260

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

WB ROADWAY SECTION

10' Outside Shoulder
12' Lanes (2)
4' Inside Shoulder

EB ROADWAY SECTION

4' Inside Shoulder
12' Lanes (2)
10' Outside Shoulder

Palo Verde Rd
Irvington Rd
Alvernon Way
U.P.R.R.
Tucson Electric Power
Existing R/W
I-10 Median ℄
Julian Wash Greenway
515
520
530
540
550
560
570

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SCALE IN FEET

APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 EXISTING CONDITIONS
STA 515+00 TO STA 573+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET EC-05

___ OF ___

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x005.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	6	16	
		010 PM 260			

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

APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PLAN SHEET
I-10 EXISTING CONDITIONS
STA 573+00 TO STA 631+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET EC-06

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x006.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	7	16	
		010 PM 260			

U.P.R.R.

Julian Wash Greenway

Valencia Rd

Littletown Rd

WB ROADWAY SECTION
10' Outside Shoulder
12' Lanes (2)
4' Inside Shoulder

635 640 650 660 670 680 689

Existing R/W

I-10 Median ℄

Existing R/W

Existing R/W

EB ROADWAY SECTION
4' Inside Shoulder
12' Lanes (2)
10' Outside Shoulder

Benson Hwy

Valencia Rd

Swan Rd

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 EXISTING CONDITIONS
STA 631+00 TO STA 689+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET EC-07

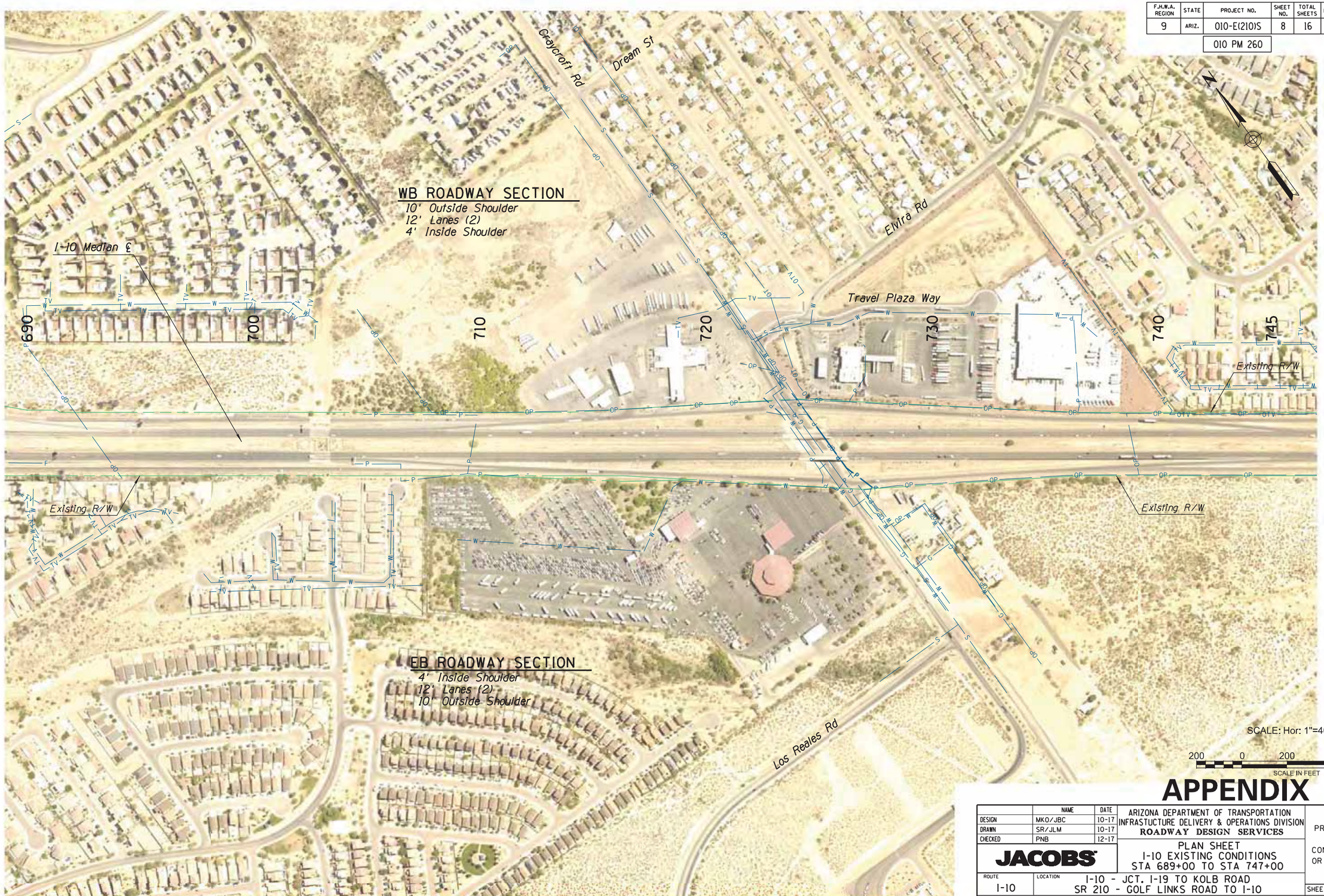
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x007.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	8	16	

010 PM 260



APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 EXISTING CONDITIONS
STA 689+00 TO STA 747+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET EC-08

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

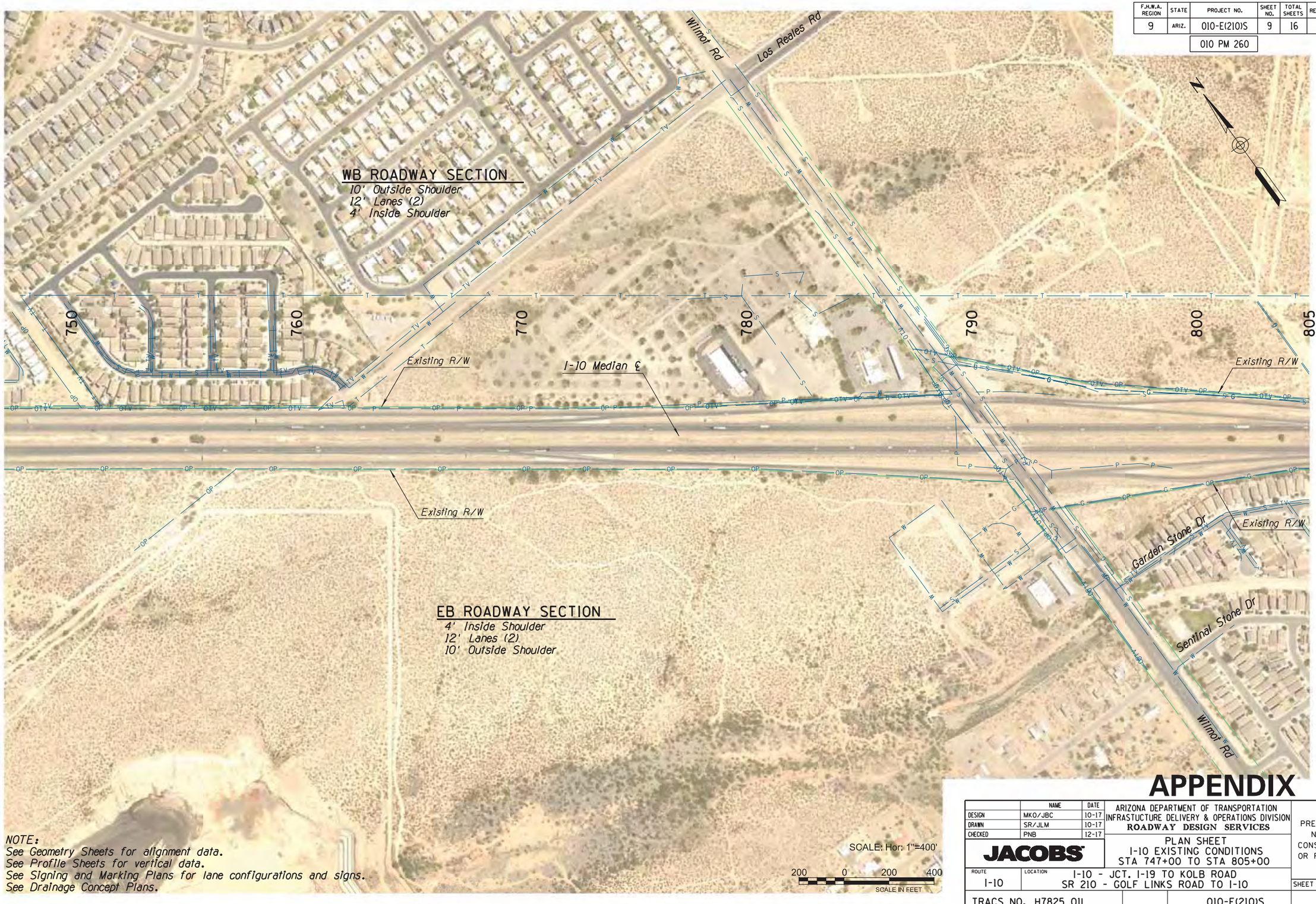
1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x008.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	9	16	

010 PM 260

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



NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 EXISTING CONDITIONS
STA 747+00 TO STA 805+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

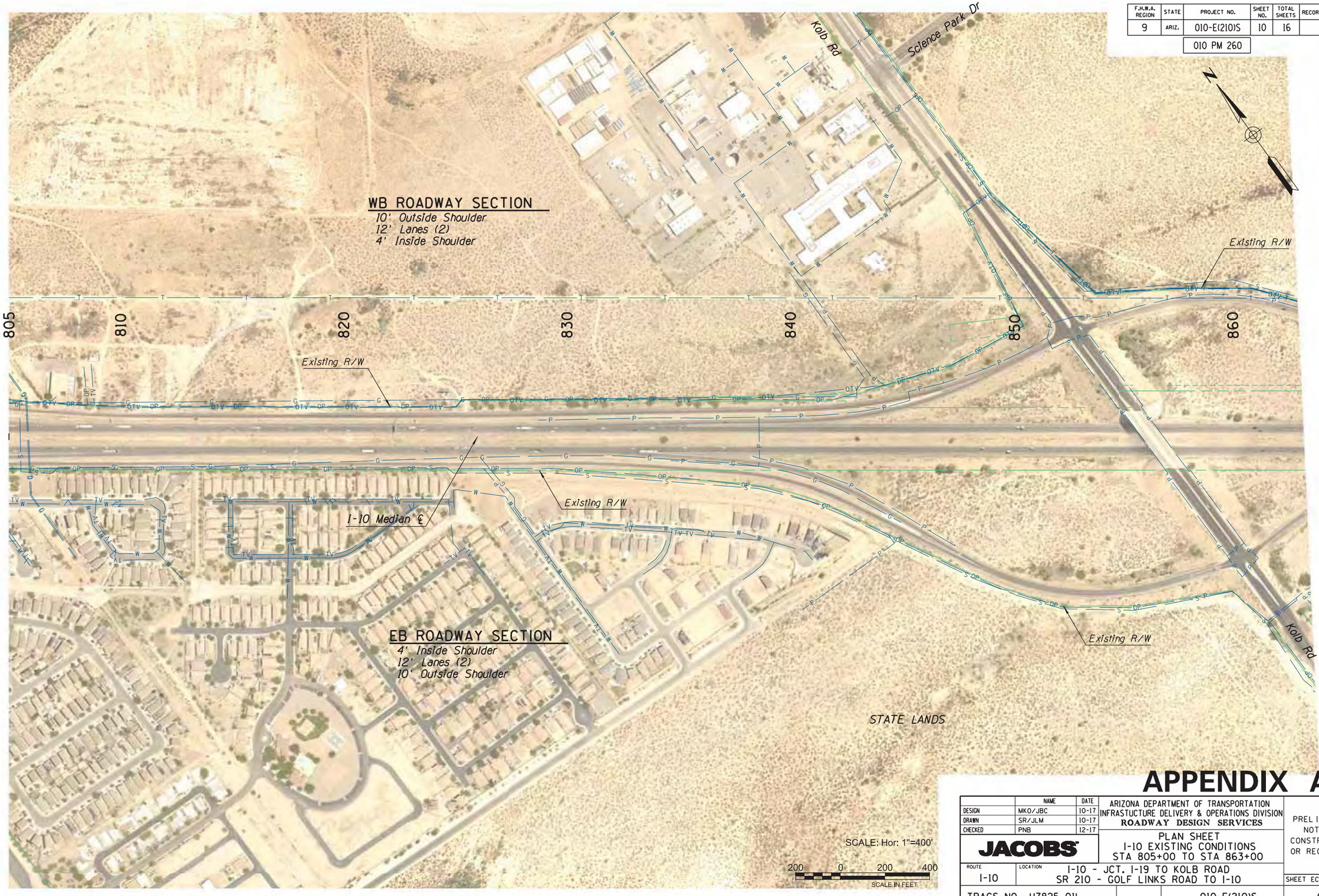
SHEET EC-09

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x009.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	10	16	
		010 PM 260			

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



APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 EXISTING CONDITIONS
STA 805+00 TO STA 863+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

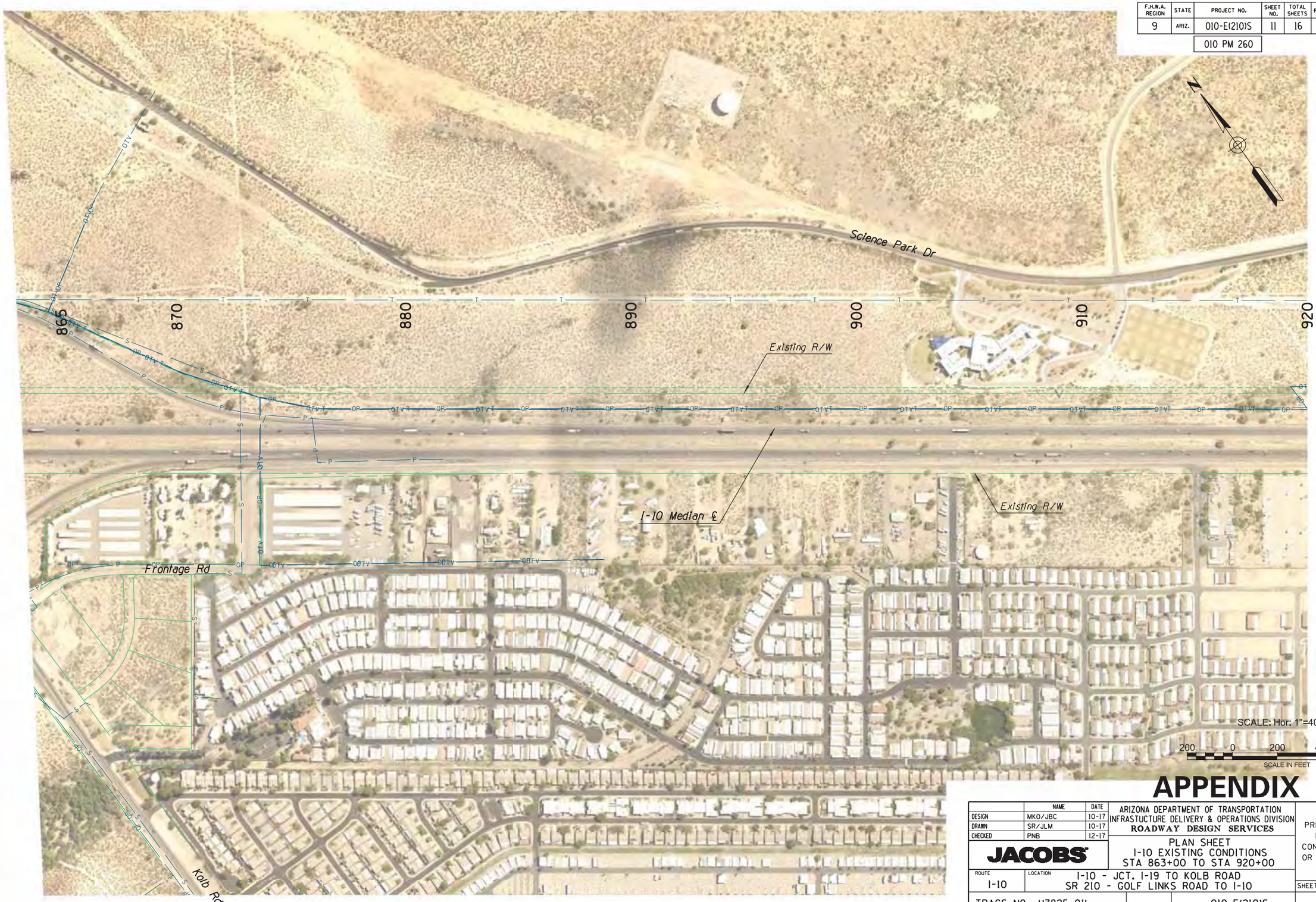
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	EC-10

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x010.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	11	16	

010 PM 260



APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 EXISTING CONDITIONS
STA 863+00 TO STA 920+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	EC-11

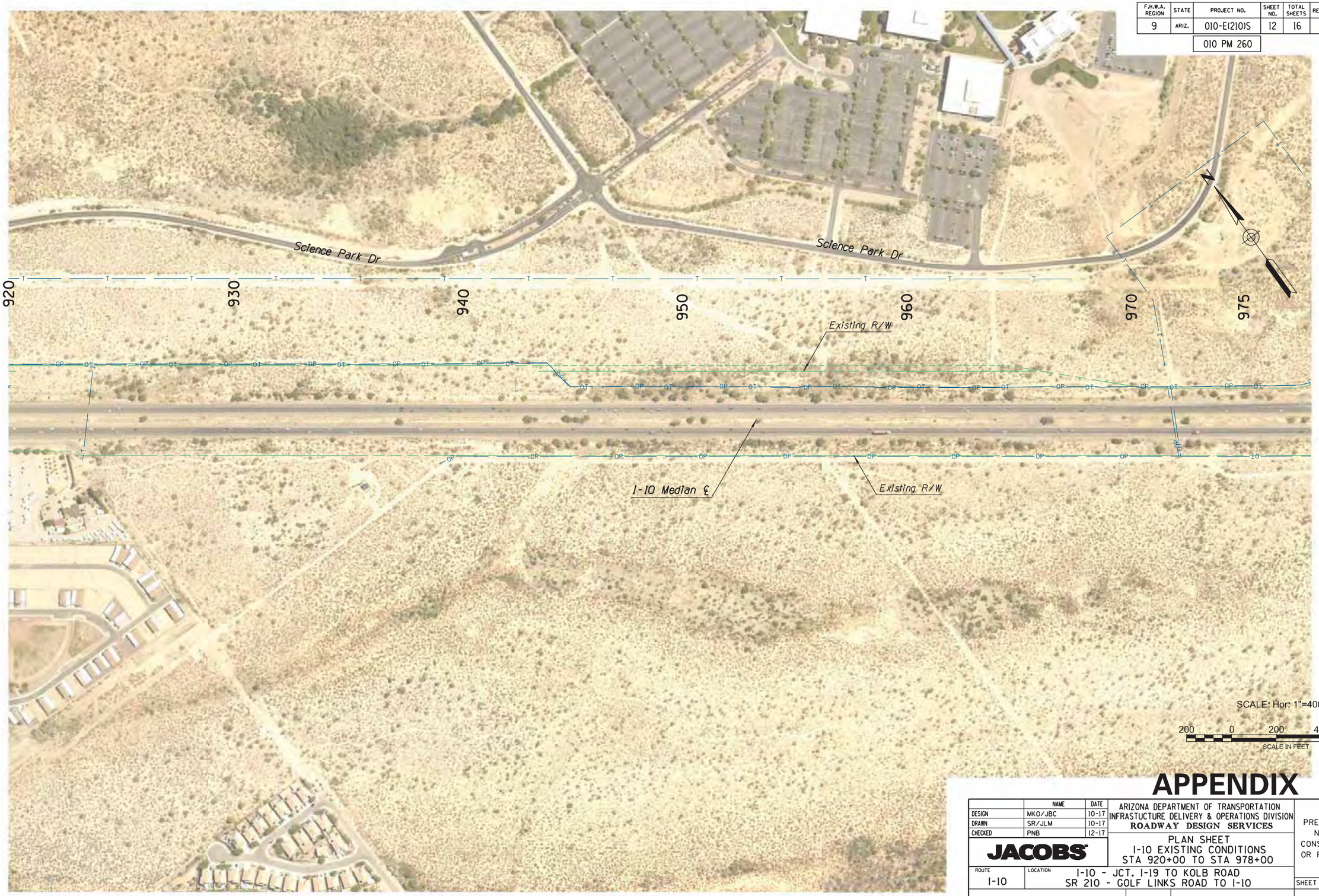
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x011.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	12	16	

010 PM 260



SCALE: Hor: 1"=400'

200 0 200 400

SCALE IN FEET

APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 EXISTING CONDITIONS
STA 920+00 TO STA 978+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET EC-12

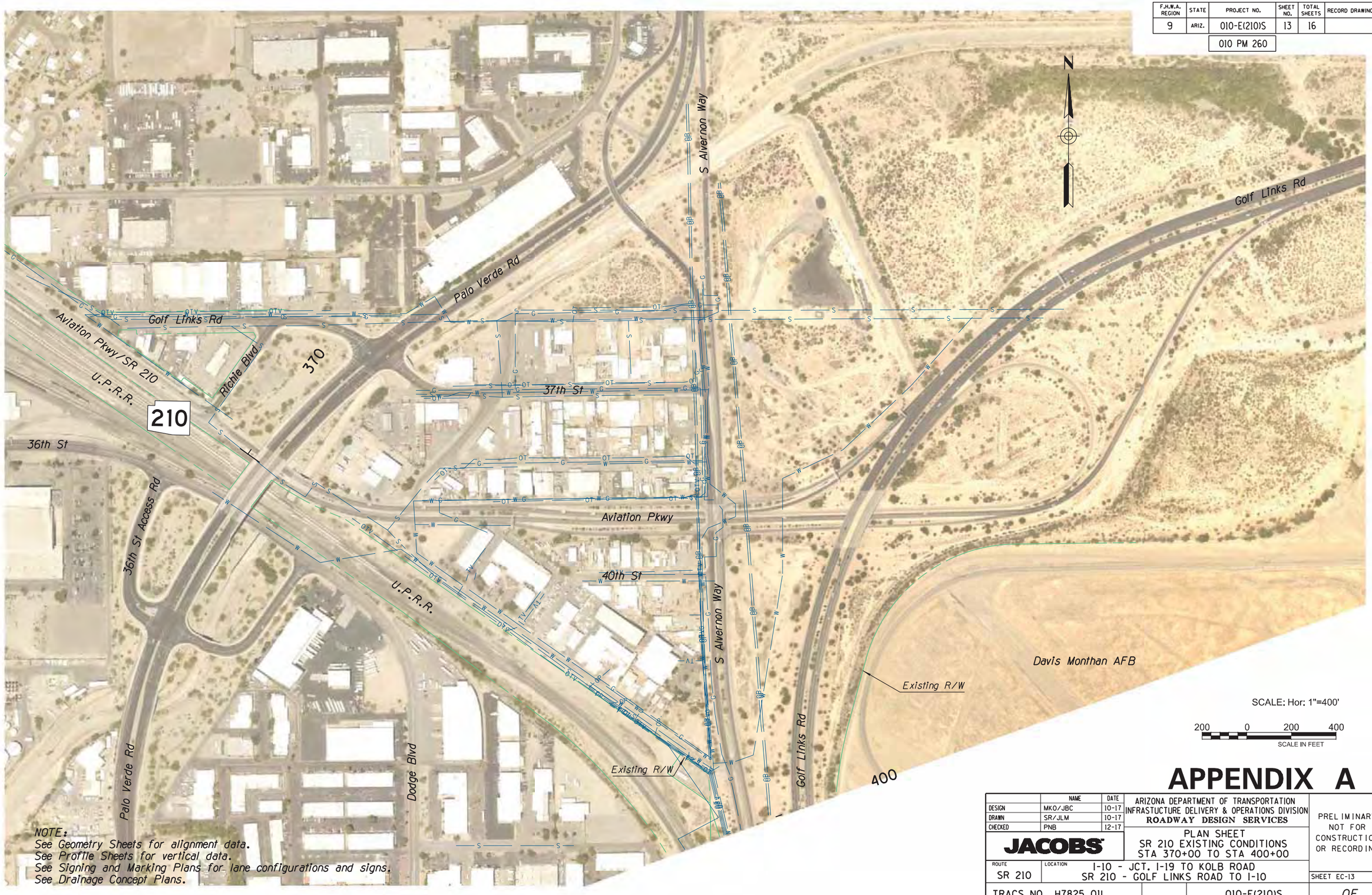
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x012.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	13	16	
		010 PM 260			

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



SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
SR 210 EXISTING CONDITIONS
STA 370+00 TO STA 400+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

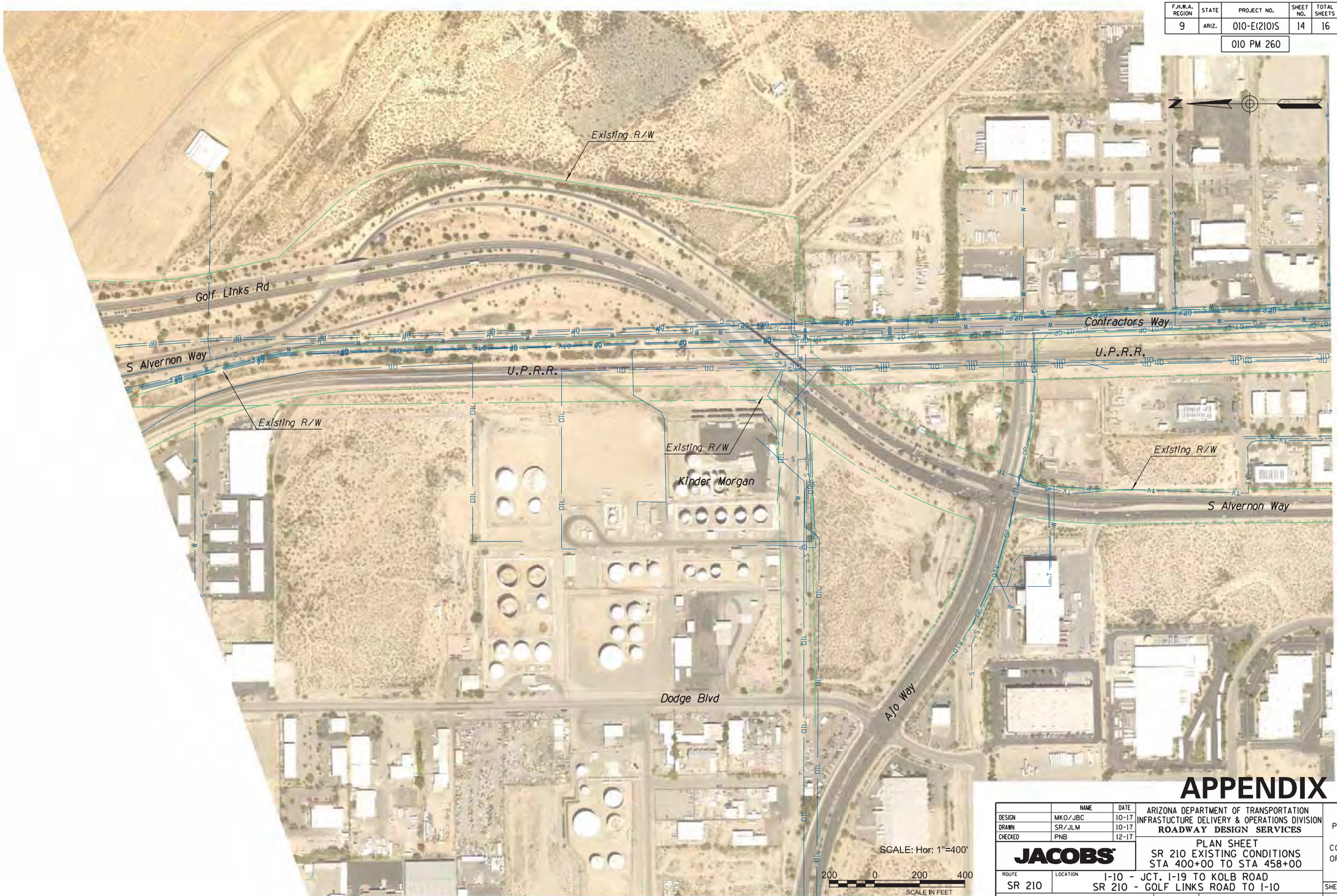
ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	EC-13

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x013.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	14	16	

010 PM 260



APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
SR 210 EXISTING CONDITIONS
STA 400+00 TO STA 458+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET EC-14

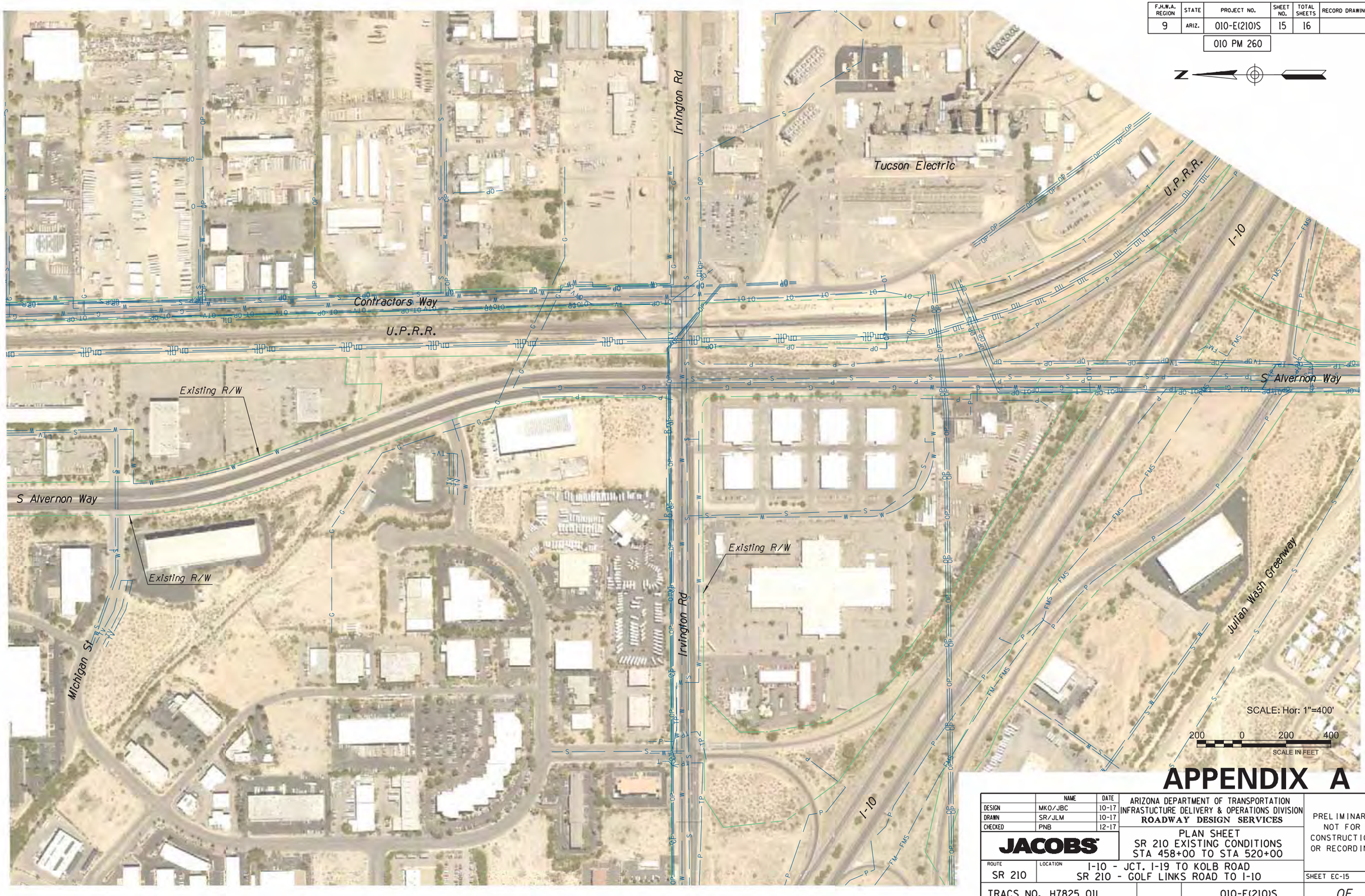
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x014.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	15	16	
		010 PM 260			

N



APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
SR 210 EXISTING CONDITIONS
STA 458+00 TO STA 520+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET EC-15

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

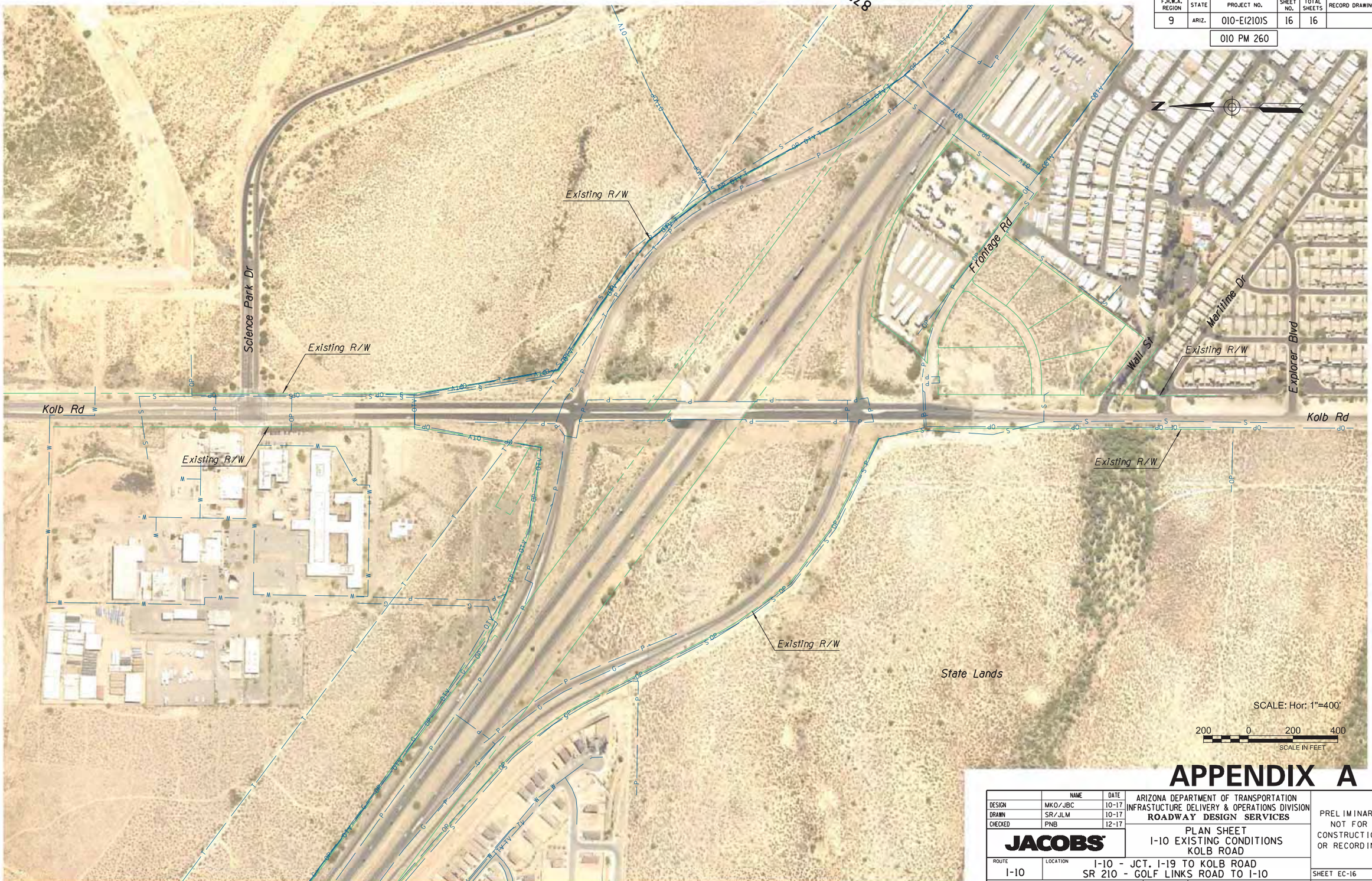
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x015.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	16	16	

010 PM 260

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



APPENDIX A

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 EXISTING CONDITIONS
KOLB ROAD

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET EC-16

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825x016.dgn

APPENDIX B
INITIAL TRAFFIC REPORT FIGURES

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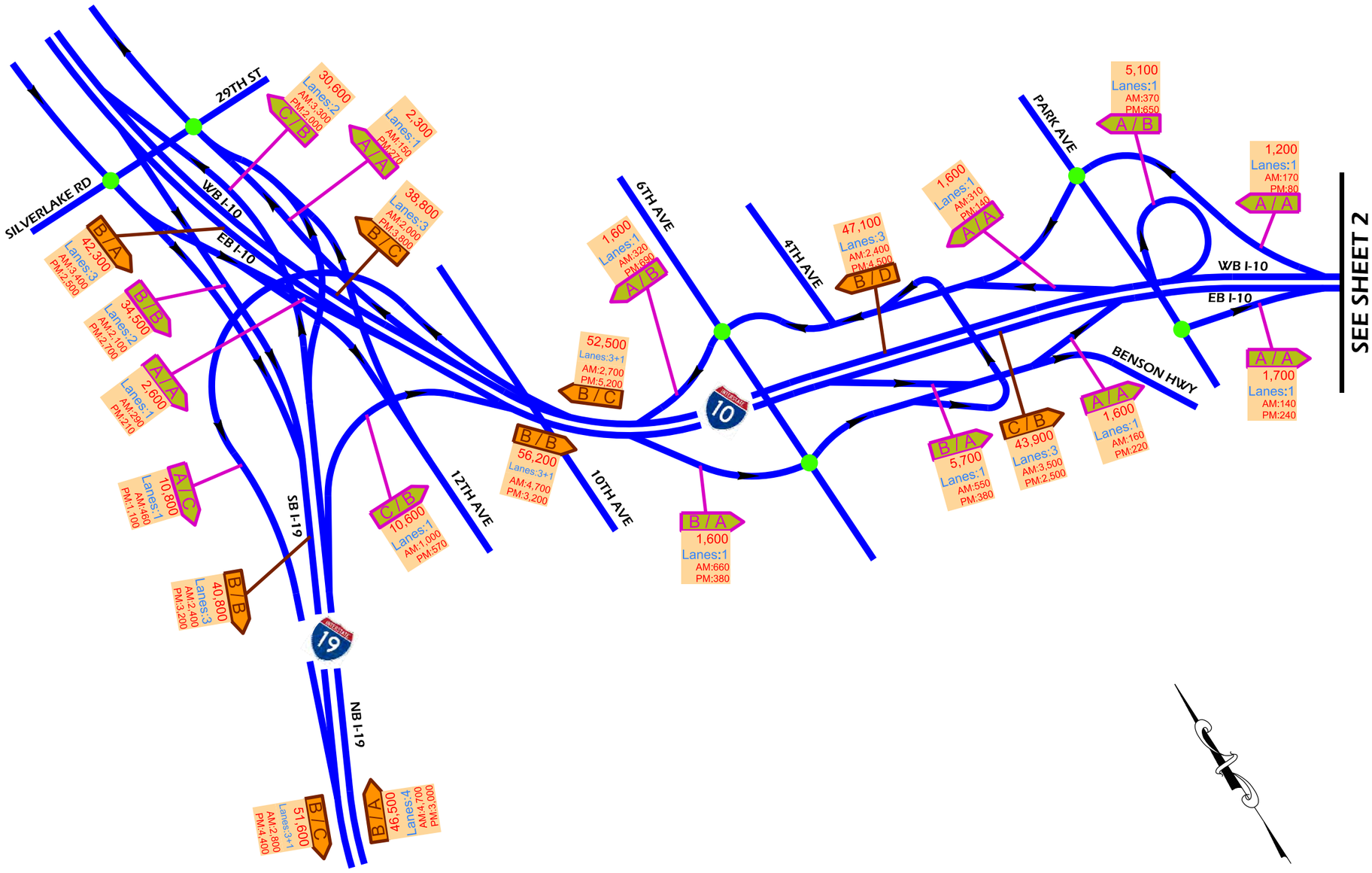

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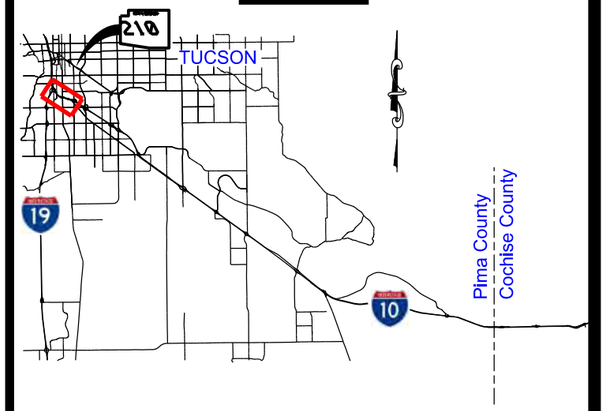


LEGEND

- X / X — Freeway/Multilane Highway Level of Service (LOS), Directional (AM/PM)
- X / X — Ramp Level of Service (LOS), Directional (AM/PM)
- XX,XXX — Directional Average Annual Daily Traffic (AADT)
- Lanes:Y+Z — Number of Freeway/Highway Mainline Lanes, or Ramp Lanes, + Number of Aux. Lanes
- AM:YYY PM:ZZZ — AM Peak Hour Volume, PM Peak Hour Volume
- Roadway
- Railroad Track
- Signalized Intersection
- Un-signalized Intersection

Freeway/Multilane Highway
Level-of-Service (LOS) Criteria

LOS	VEHICLE DENSITY (pc/mi/ln)*
A	0 - 11
B	> 11 - 18
C	> 18 - 26
D	> 26 - 35
E	> 35 - 45
F	> 45

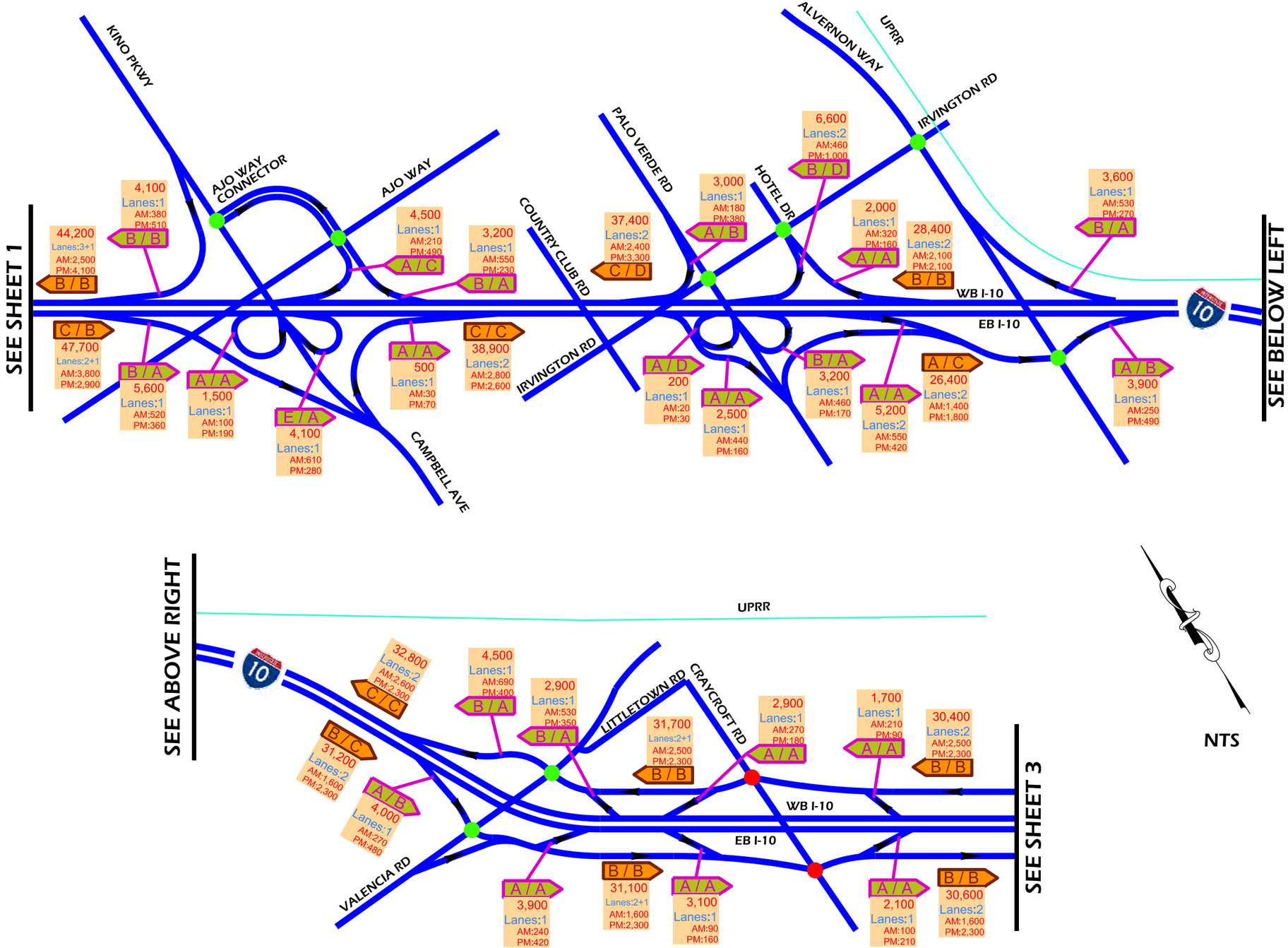
*Passenger cars per mile per lane

YEAR 2010 EXISTING

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

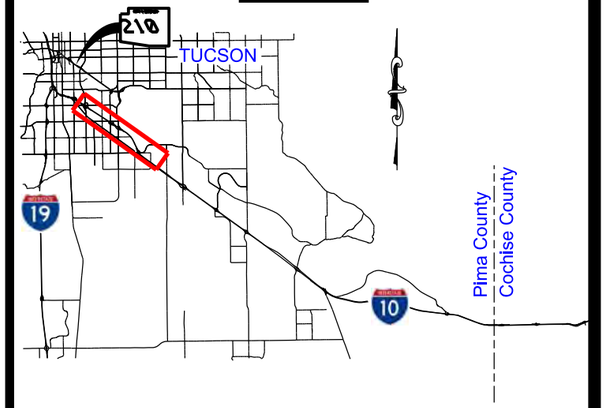
Date: 01/2019

Sheet: 1 of 4



NTS

KEYMAP



LEGEND

- X / X — Freeway/Multilane Highway Level of Service (LOS), Directional (AM/PM)
- X / X — Ramp Level of Service (LOS), Directional (AM/PM)
- XX,XXX Lanes:Y+Z — Directional Average Annual Daily Traffic (AADT); Number of Freeway/Highway Mainline Lanes, or Ramp Lanes, + Number of Aux. Lanes
- AM:YYY PM:ZZZ — AM Peak Hour Volume; PM Peak Hour Volume
- Roadway
- Railroad Track
- Signalized Intersection
- Un-signalized Intersection

Freeway/Multilane Highway
Level-of-Service (LOS) Criteria

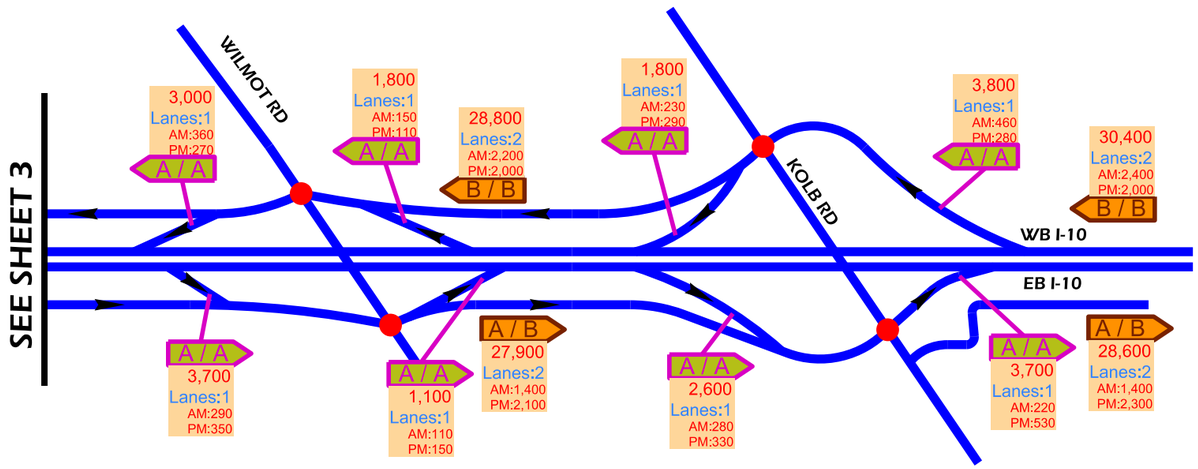
LOS	VEHICLE DENSITY (pc/mi/ln)*
A	0 - 11
B	> 11 - 18
C	> 18 - 26
D	> 26 - 35
E	> 35 - 45
F	> 45

*Passenger cars per mile per lane

YEAR 2010
EXISTING

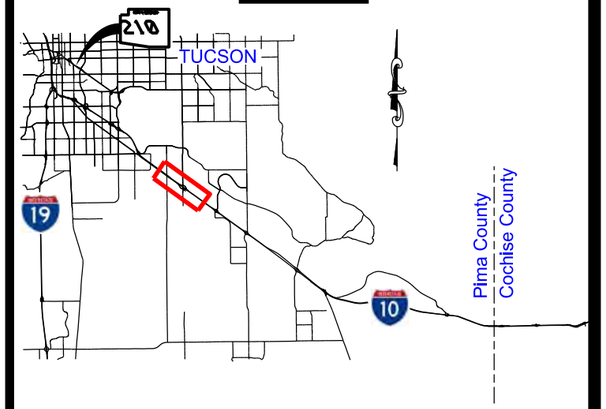
TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019



NTS

KEYMAP



LEGEND

- X / X — Freeway/Multilane Highway Level of Service (LOS), Directional (AM/PM)
- X / X — Ramp Level of Service (LOS), Directional (AM/PM)
- XX,XXX — Directional Average Annual Daily Traffic (AADT)
- Lanes:Y+Z — Number of Freeway/Highway Mainline Lanes, or Ramp Lanes, + Number of Aux. Lanes
- AM:YYY PM:ZZZ — AM Peak Hour Volume, PM Peak Hour Volume
- Roadway
- Railroad Track
- Signalized Intersection
- Un-signalized Intersection

Freeway/Multilane Highway
Level-of-Service (LOS) Criteria

LOS	VEHICLE DENSITY (pc/mi/ln)*
A	0 - 11
B	> 11 - 18
C	> 18 - 26
D	> 26 - 35
E	> 35 - 45
F	> 45

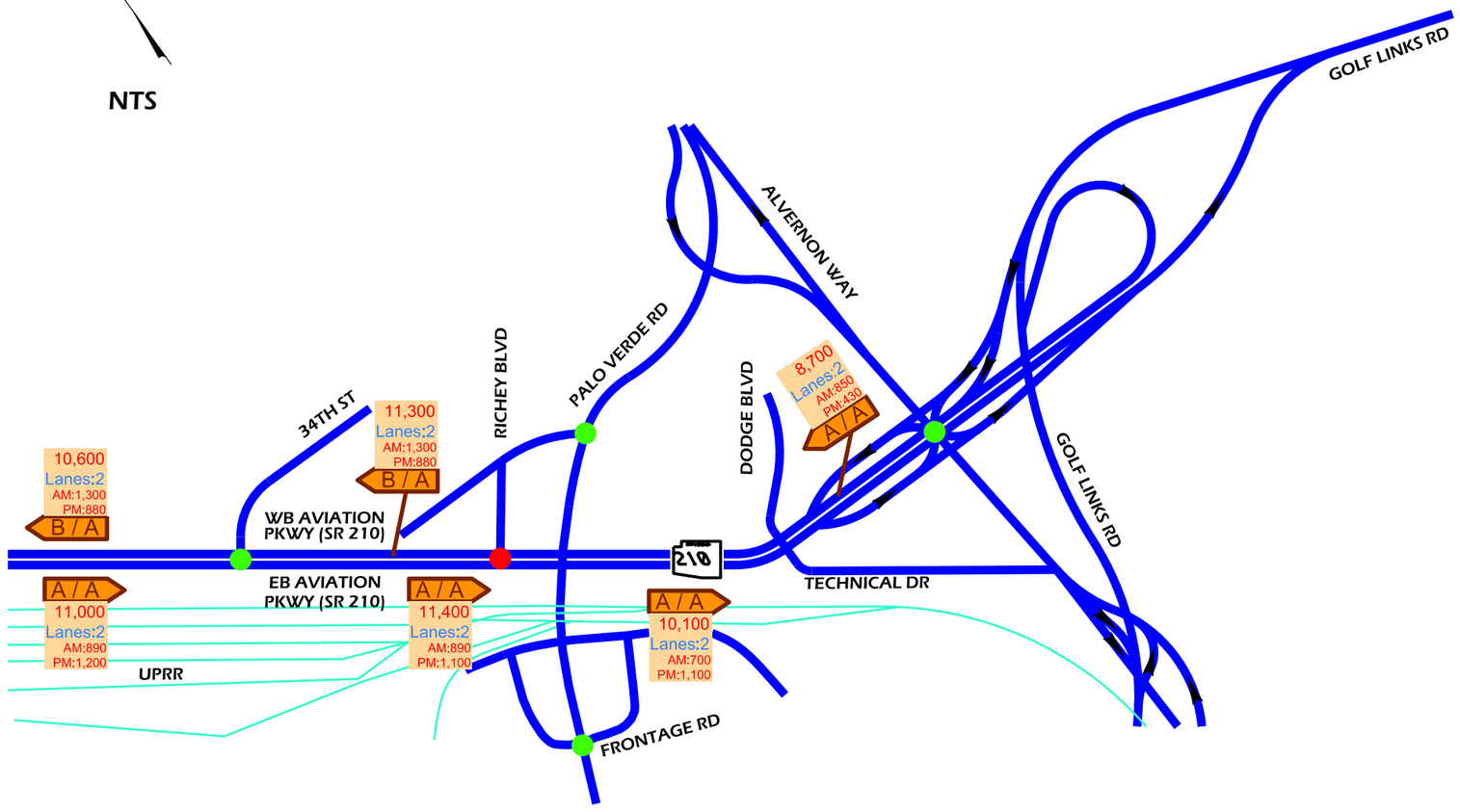
*Passenger cars per mile per lane

YEAR 2010 EXISTING

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019

NTS



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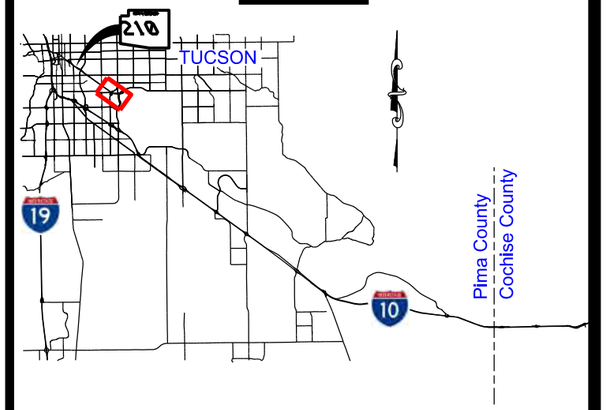


LEGEND

- X / X — Freeway/Multilane Highway Level of Service (LOS), Directional (AM/PM)
- X / X — Ramp Level of Service (LOS), Directional (AM/PM)
- XX,XXX / Lanes:Y+Z — Directional Average Annual Daily Traffic (AADT); Number of Freeway/Highway Mainline Lanes, or Ramp Lanes, + Number of Aux. Lanes
- AM:YYY / PM:ZZZ — AM Peak Hour Volume; PM Peak Hour Volume
- Roadway
- Railroad Track
- Signalized Intersection
- Un-signalized Intersection

Freeway/Multilane Highway
Level-of-Service (LOS) Criteria

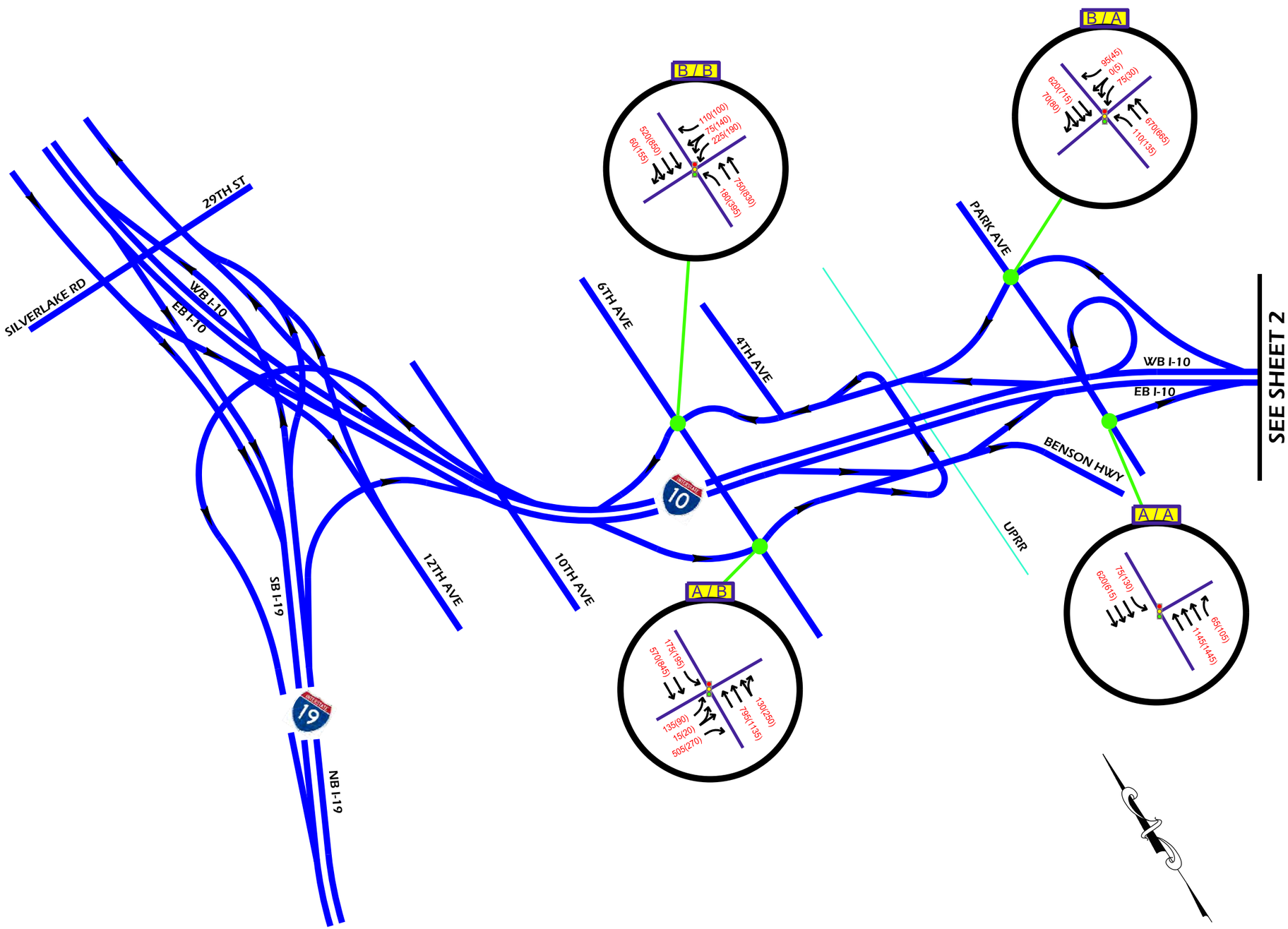
LOS	VEHICLE DENSITY (pc/mi/ln)*
A	0 - 11
B	> 11 - 18
C	> 18 - 26
D	> 26 - 35
E	> 35 - 45
F	> 45

*Passenger cars per mile per lane

YEAR 2010
EXISTING

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019



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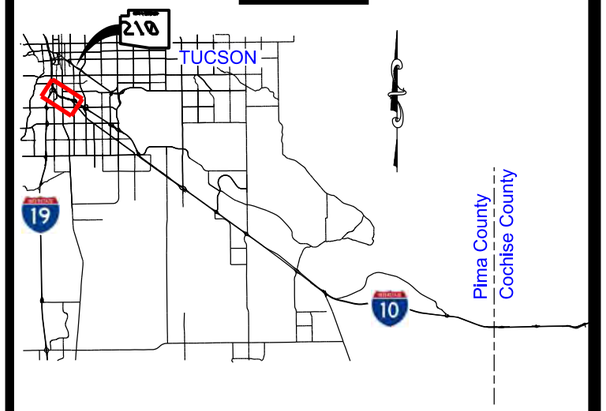


LEGEND

- X / X — Freeway/Multilane Highway Level of Service (LOS), Directional (AM/PM)
- X / X — Ramp Level of Service (LOS), Directional (AM/PM)
- XX,XXX — Directional Average Annual Daily Traffic (AADT)
- Lanes:Y+Z — Number of Freeway/Highway Mainline Lanes, or Ramp Lanes, + Number of Aux. Lanes
- AM:YYY PM:ZZZ — AM Peak Hour Volume, PM Peak Hour Volume
- Roadway
- Railroad Track
- Signalized Intersection
- Un-signalized Intersection

Freeway/Multilane Highway
Level-of-Service (LOS) Criteria

LOS	VEHICLE DENSITY (pc/mi/ln)*
A	0 - 11
B	> 11 - 18
C	> 18 - 26
D	> 26 - 35
E	> 35 - 45
F	> 45

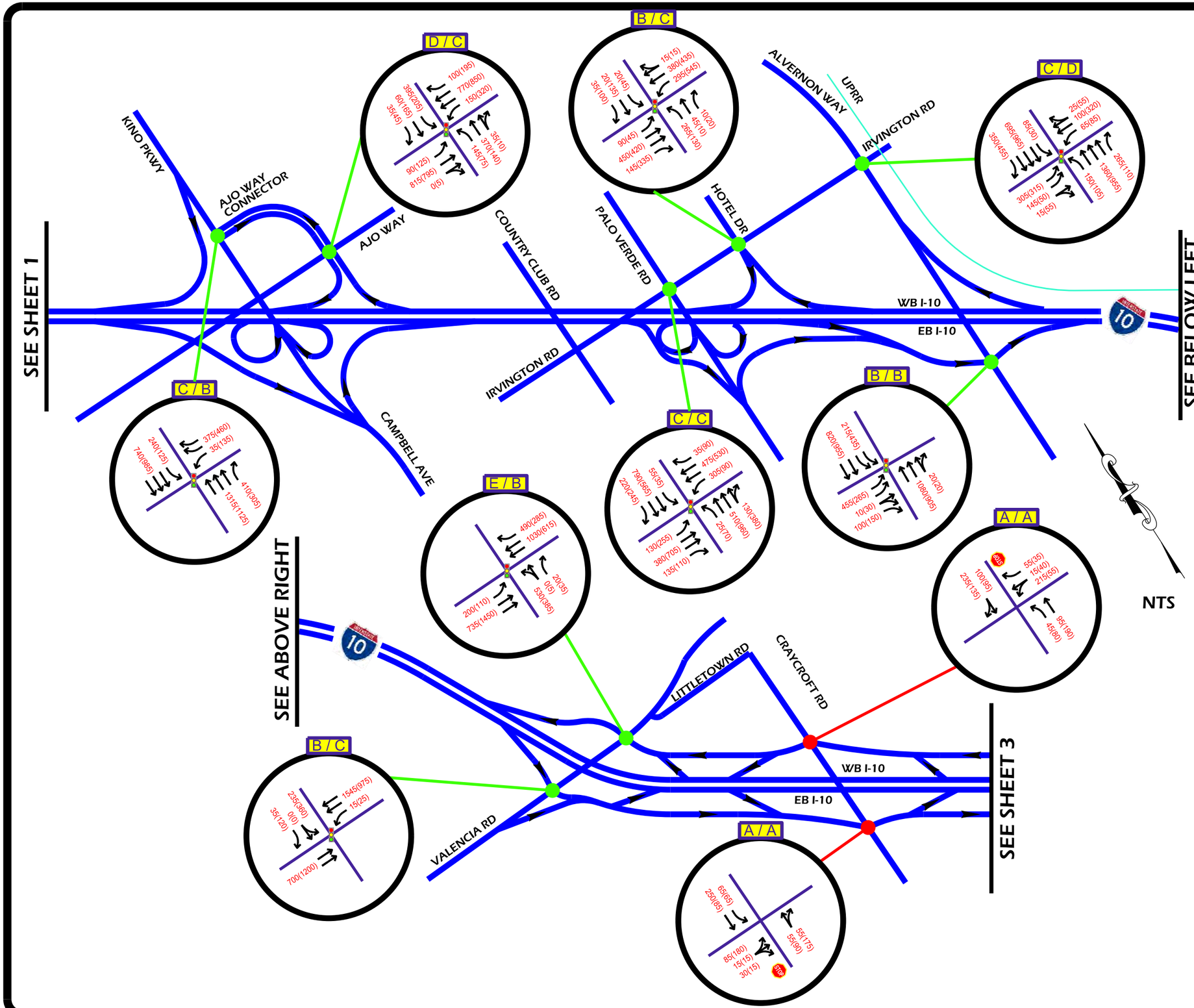
*Passenger cars per mile per lane

YEAR 2010 EXISTING

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019

Sheet: 1 of 4



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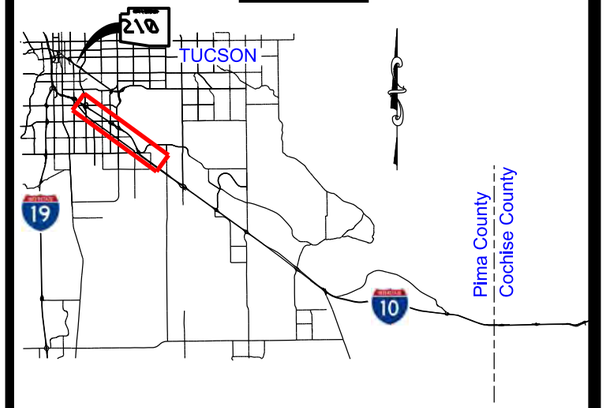

LEGEND

- X / X — Freeway/Multilane Highway Level of Service (LOS), Directional (AM/PM)
- X / X — Ramp Level of Service (LOS), Directional (AM/PM)
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Freeway/Multilane Highway
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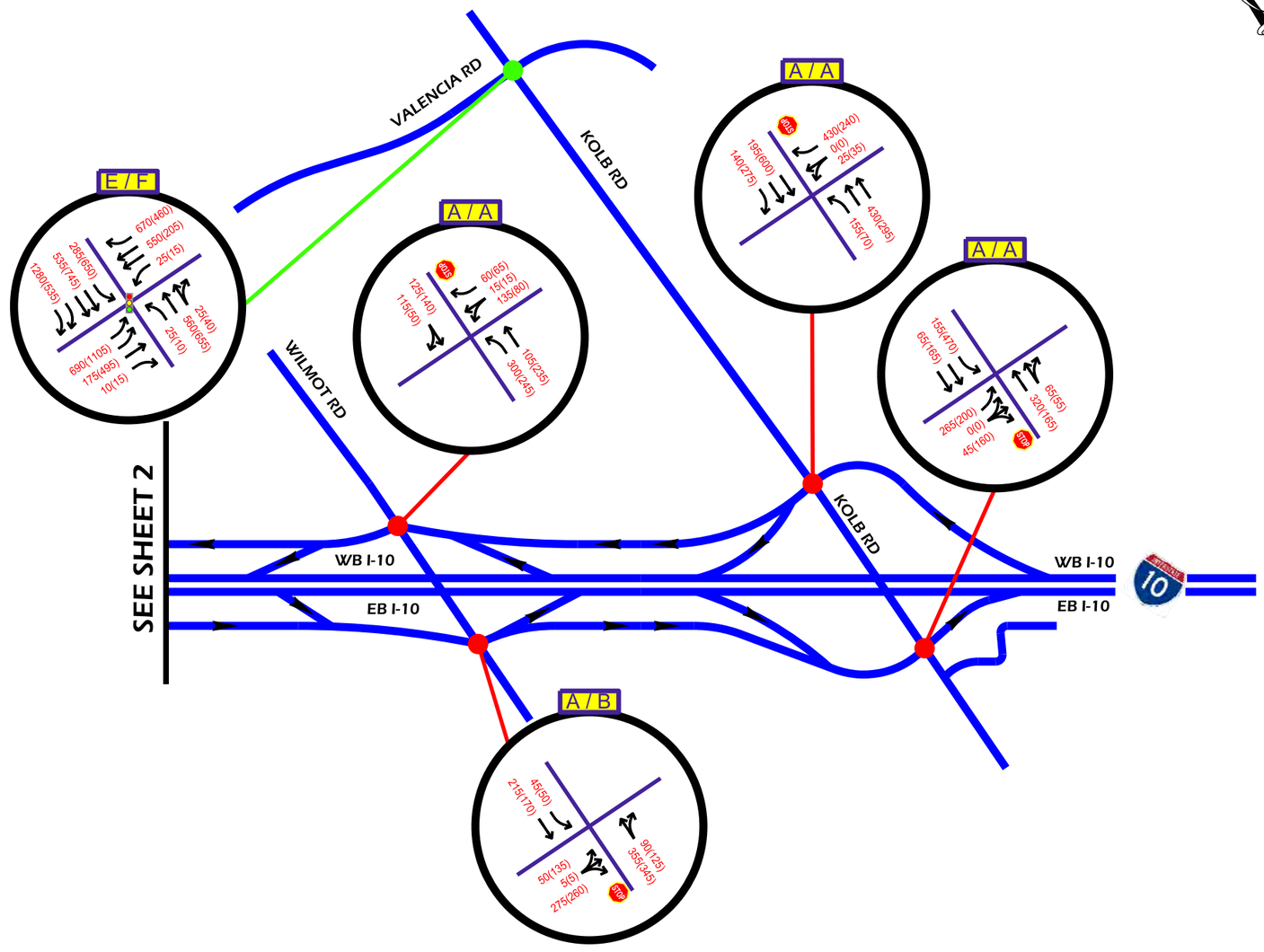
*Passenger cars per mile per lane

YEAR 2010
EXISTING

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019 | Sheet: 2 of 4



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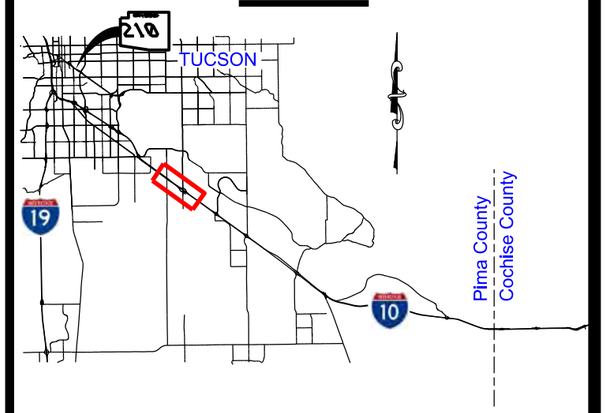

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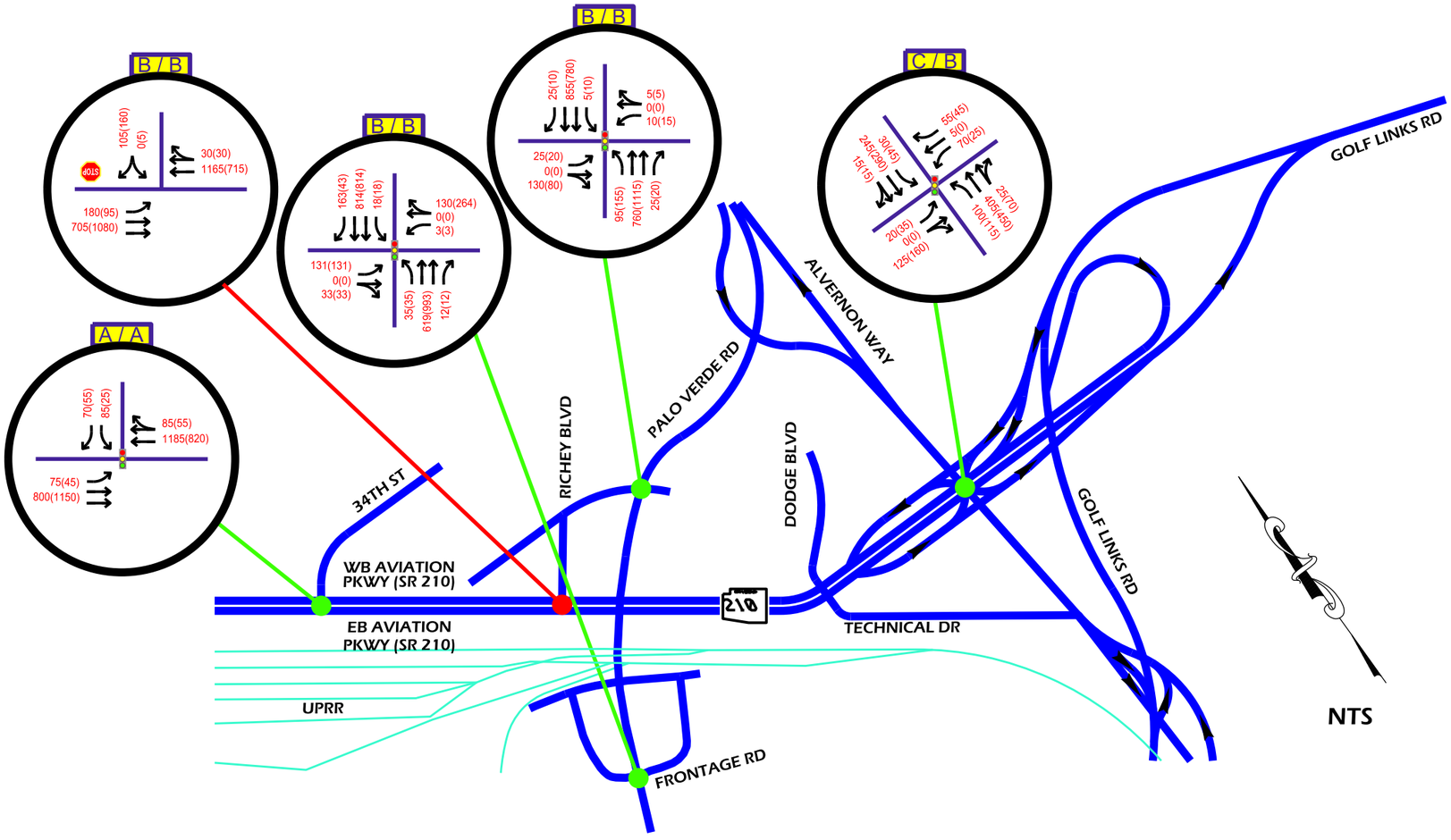
YEAR 2010 EXISTING

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019



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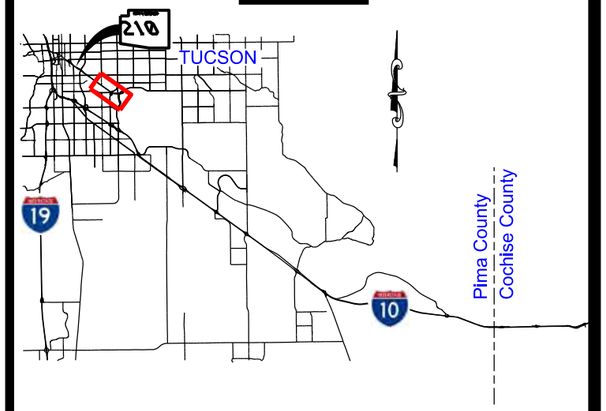

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Freeway/Multilane Highway
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YEAR 2010
EXISTING

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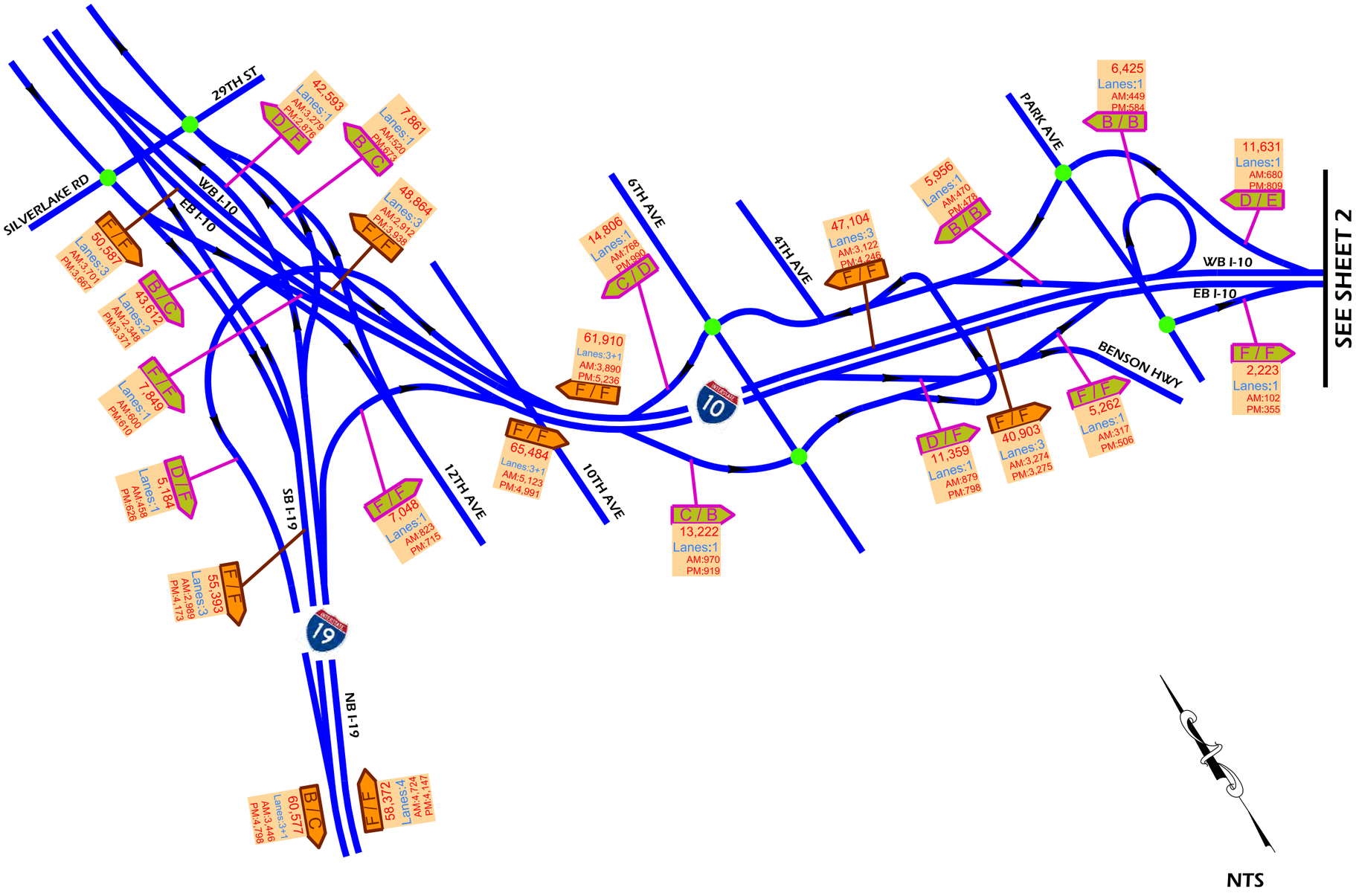
Date: 01/2019



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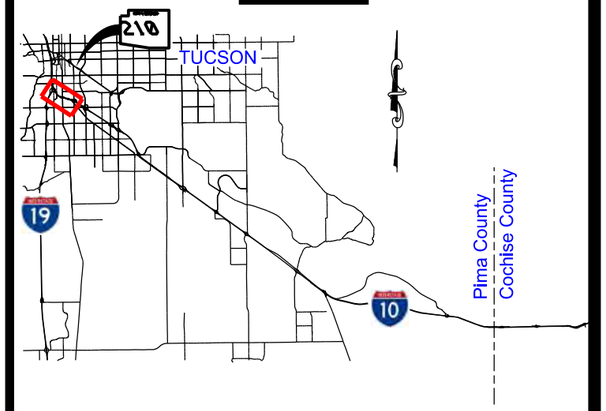

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Freeway/Multilane Highway
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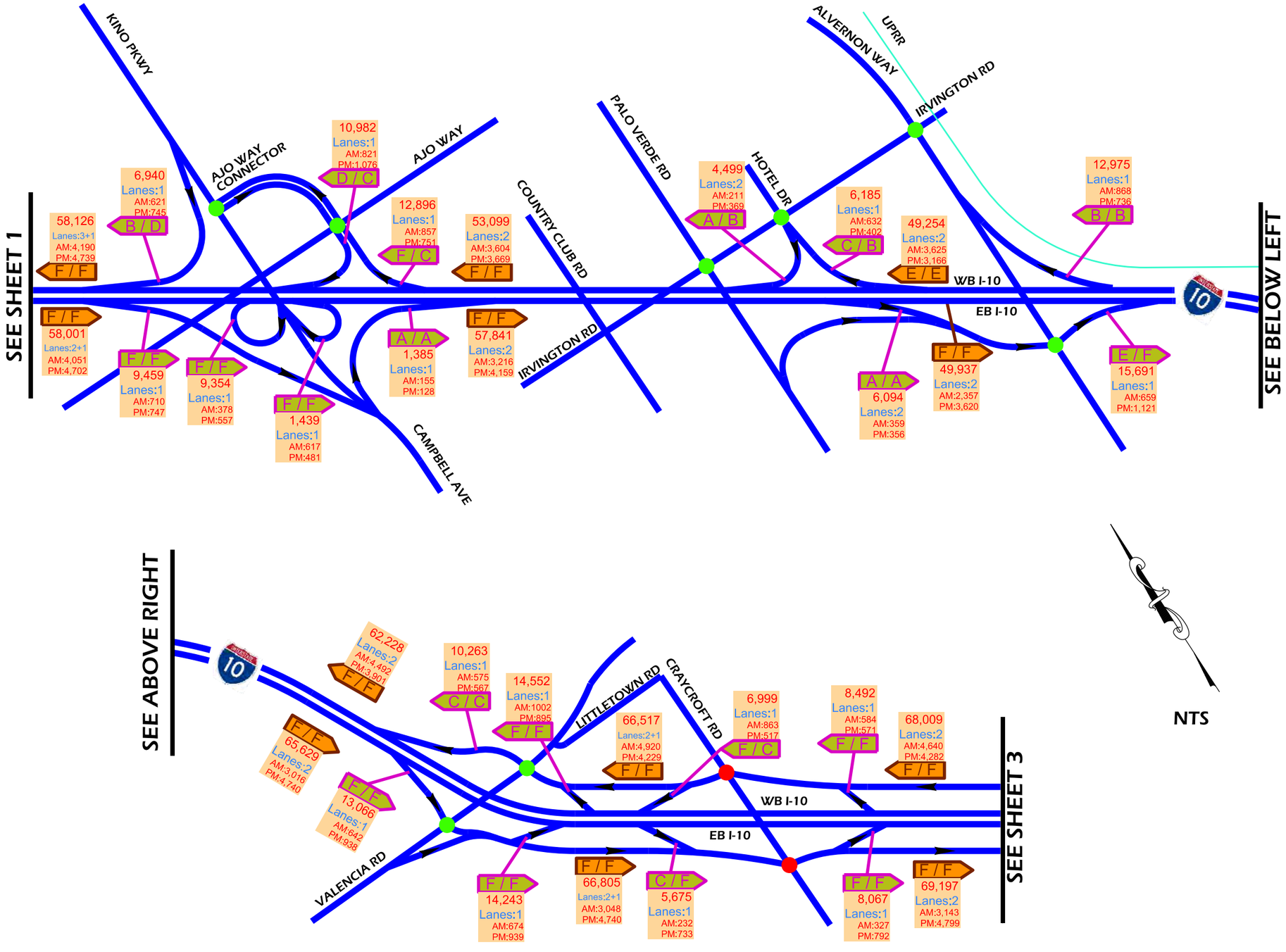
*Passenger cars per mile per lane

YEAR 2040
NO BUILD

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019



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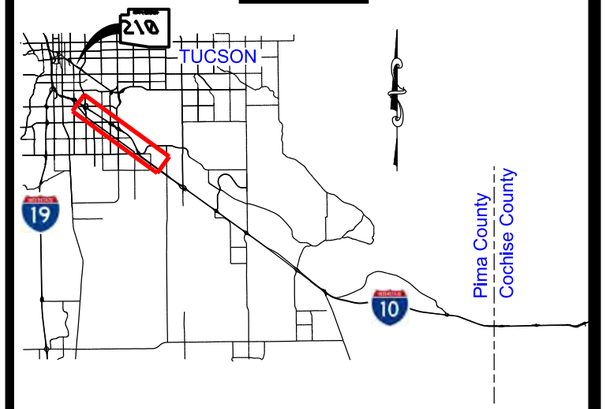

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Freeway/Multilane Highway
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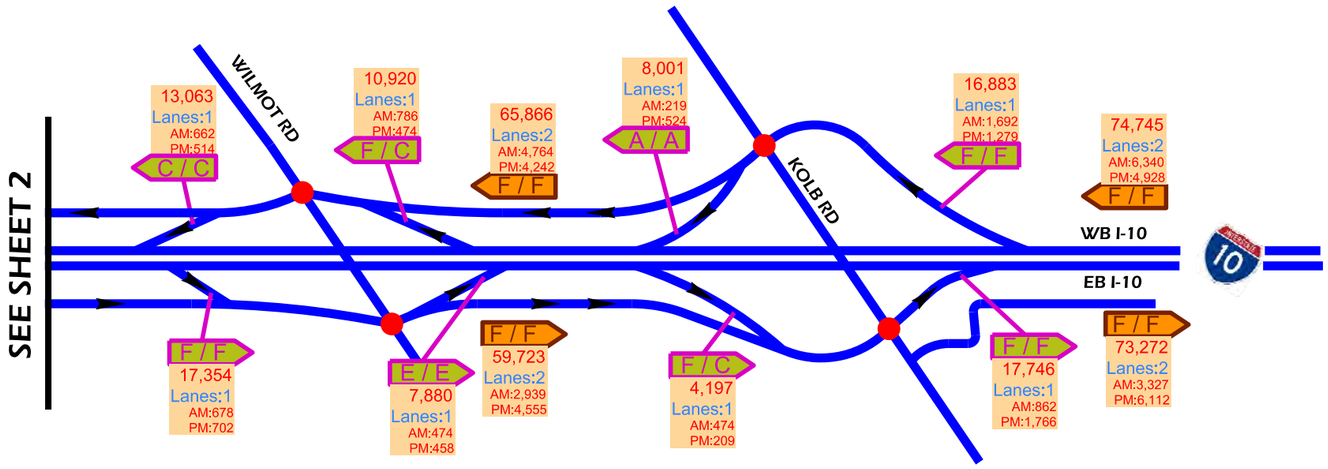
YEAR 2040 NO BUILD

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019



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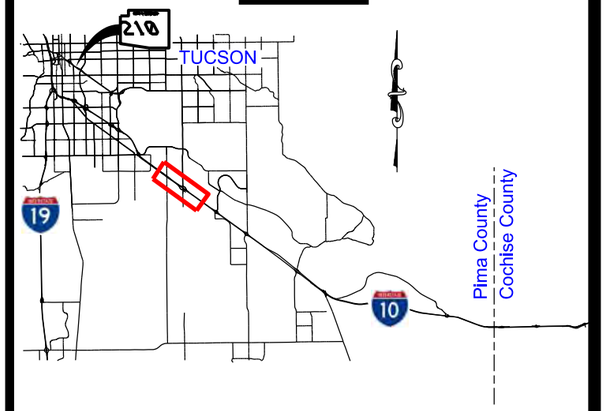

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Freeway/Multilane Highway
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YEAR 2040
NO BUILD

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019

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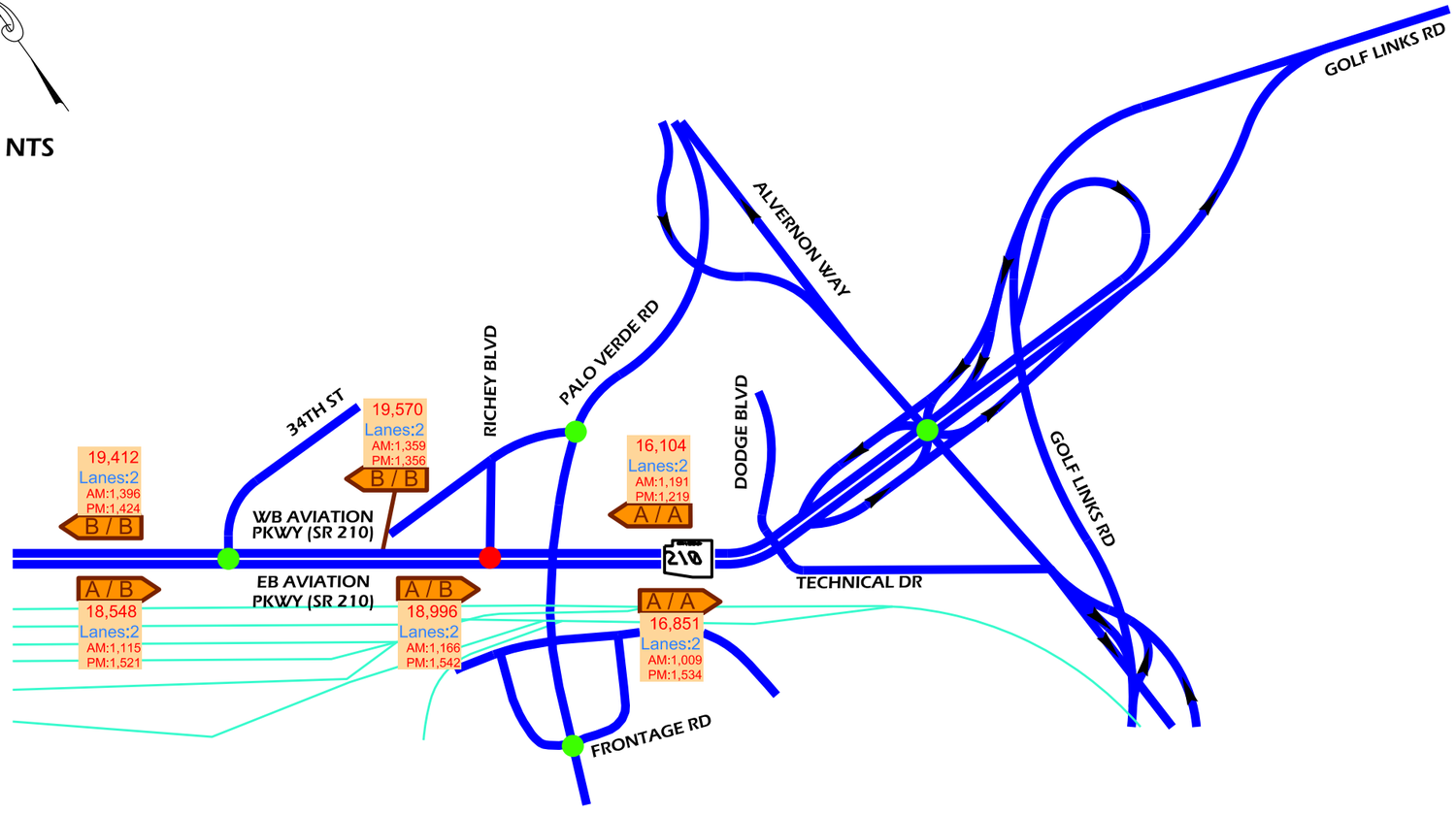

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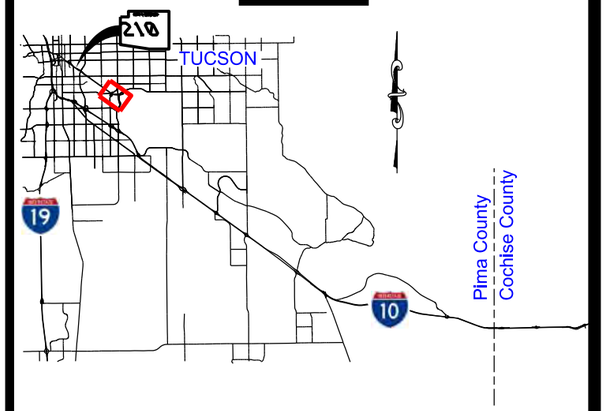

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Freeway/Multilane Highway
Level-of-Service (LOS) Criteria

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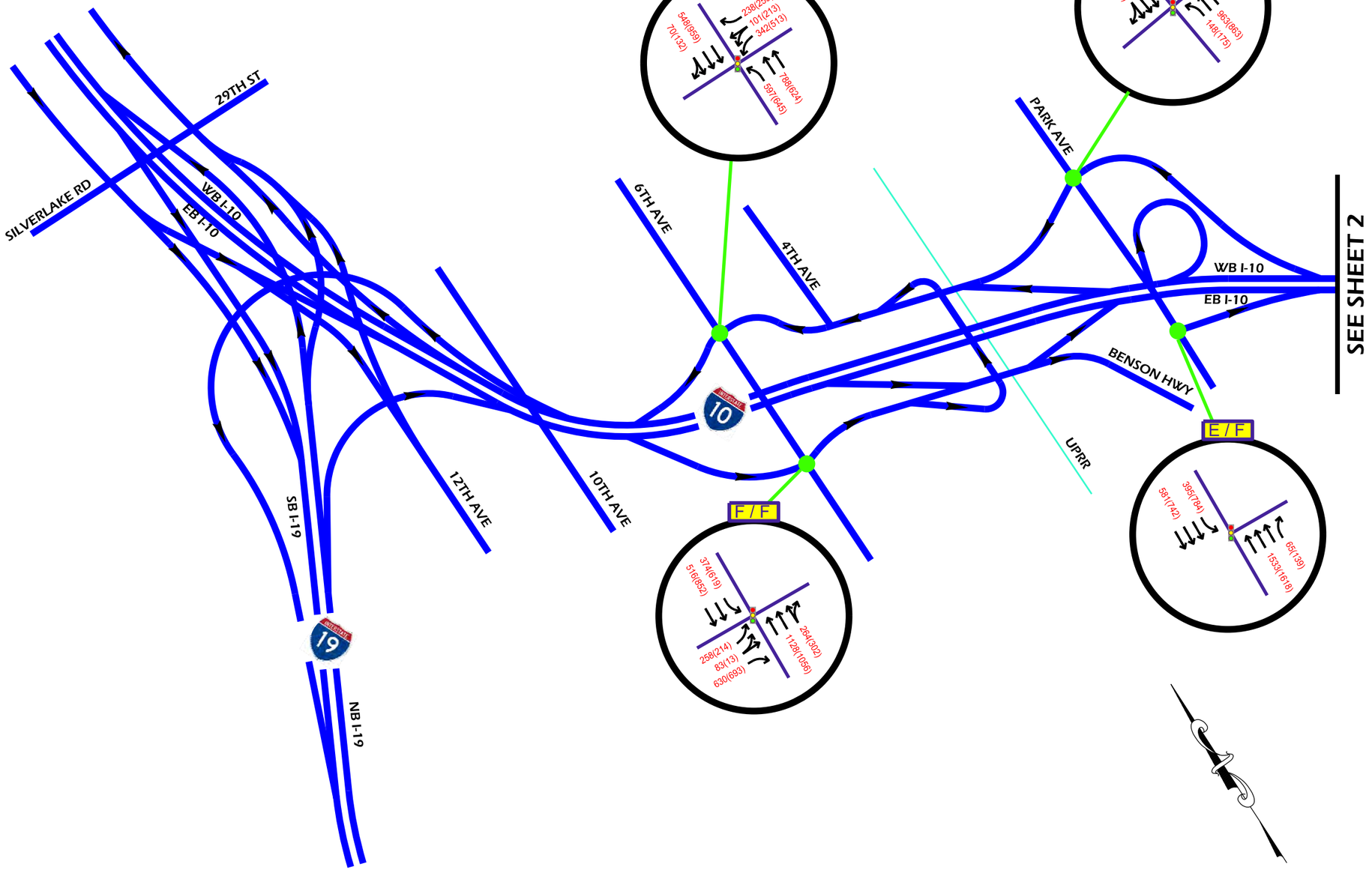
*Passenger cars per mile per lane

YEAR 2040
NO BUILD

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019



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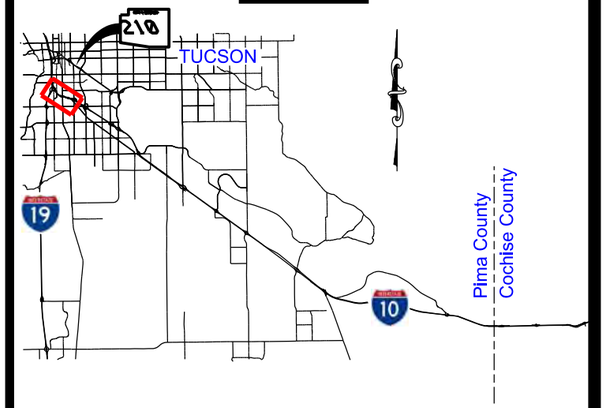


LEGEND

- X / X — Intersection Level of Service (LOS) (AM/PM)
- YYY(ZZZ) — Peak Hour Turning Movement Volume AM(PM)
- Lane Configuration
- Roadway
- Railroad Track
- Signalized Intersection
- Un-signalized Intersection

Signalized Intersection
Level-of-Service (LOS) Criteria

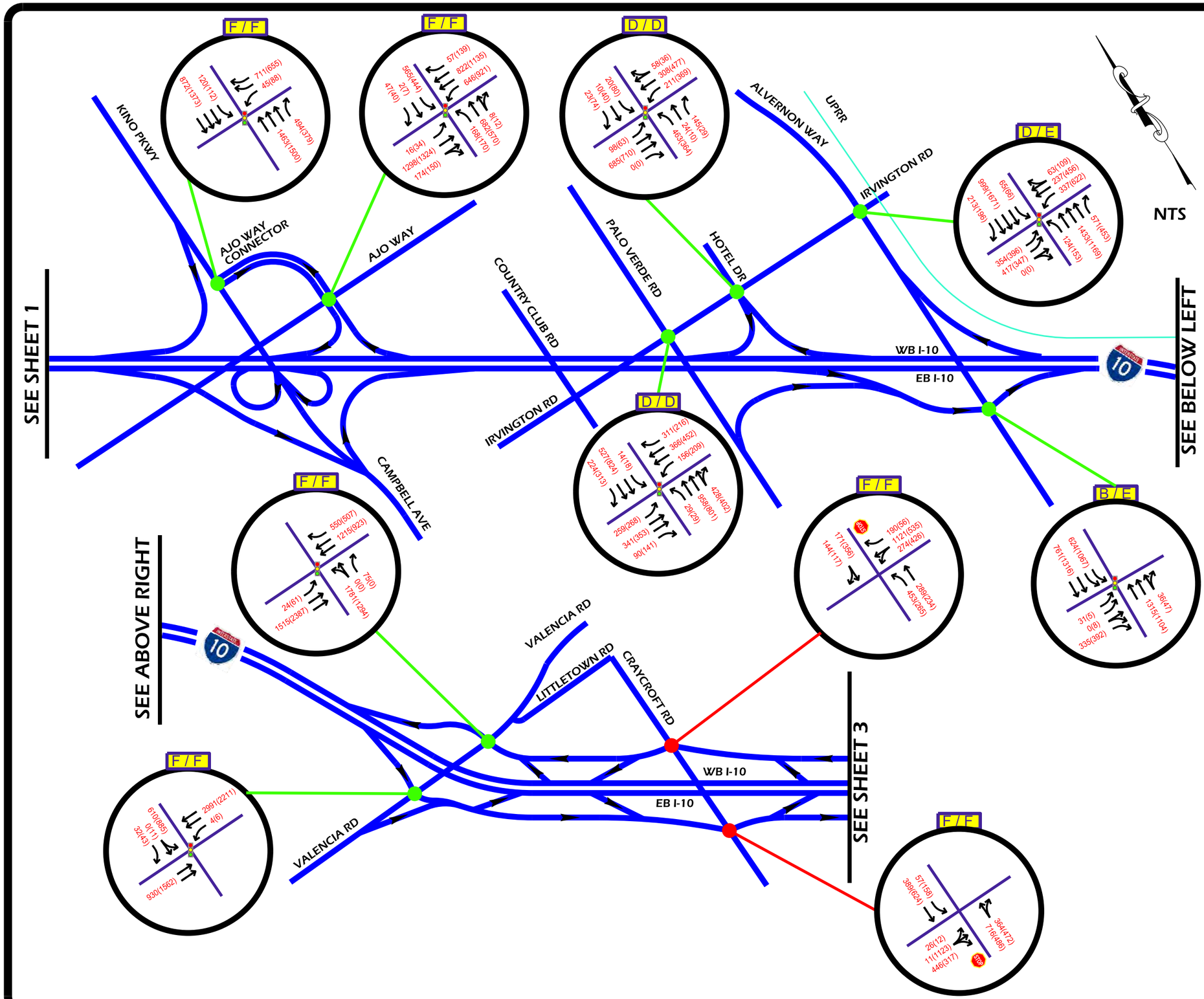
LOS	DELAY (sec/veh)**
A	≤ 10
B	> 10 ≤ 20
C	> 20 ≤ 35
D	> 35 ≤ 55
E	> 55 ≤ 80
F	> 80

**Seconds per vehicle

YEAR 2040
NO BUILD

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019



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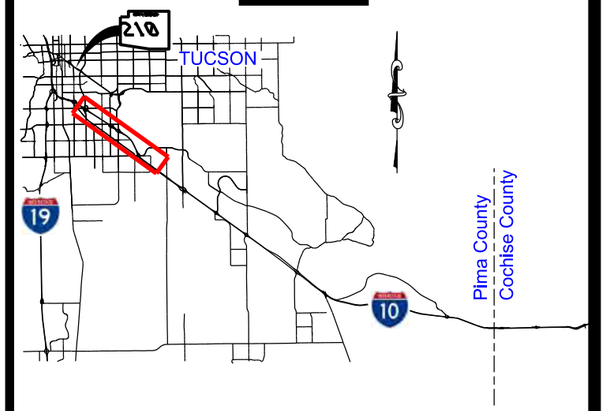

LEGEND

- X / X — Intersection Level of Service (LOS) (AM/PM)
- YYY(ZZZ) — Peak Hour Turning Movement Volume AM(PM)
- Lane Configuration
- Roadway
- Railroad Track
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Signalized Intersection
Level-of-Service (LOS) Criteria

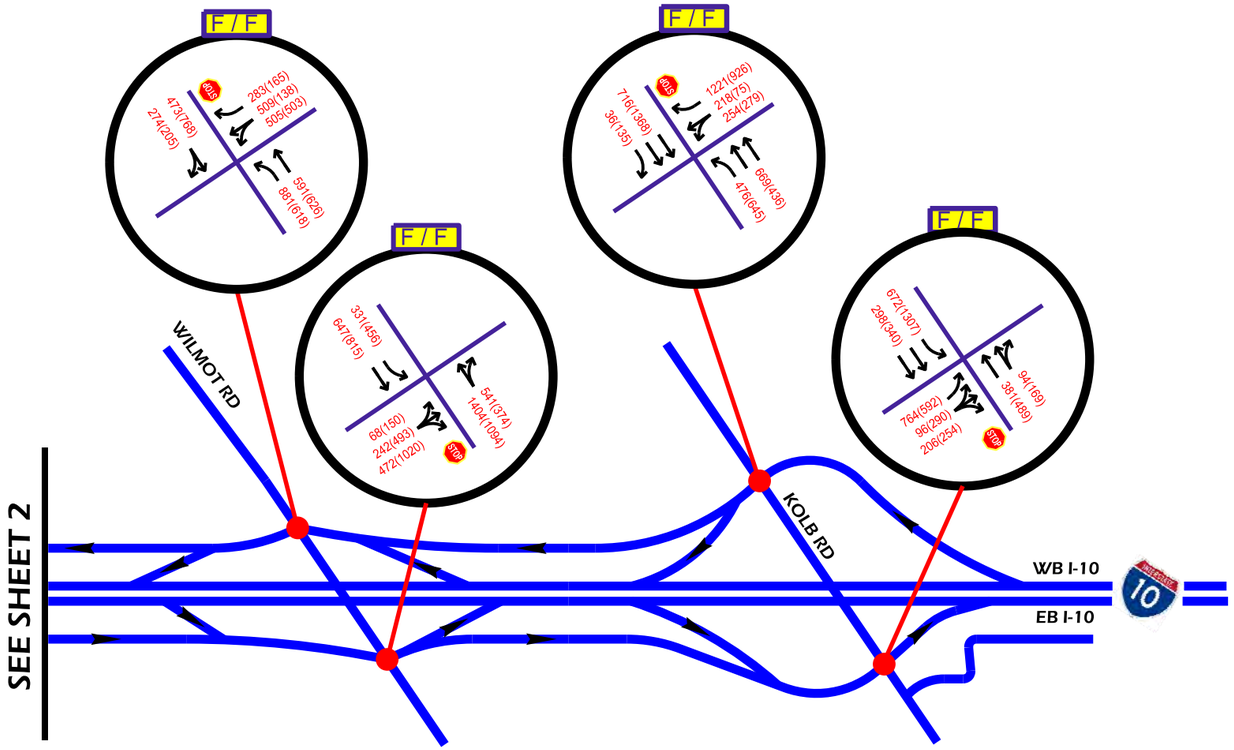
LOS	DELAY (sec/veh)**
A	≤ 10
B	> 10 ≤ 20
C	> 20 ≤ 35
D	> 35 ≤ 55
E	> 55 ≤ 80
F	> 80

**Seconds per vehicle

YEAR 2040 NO BUILD

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019



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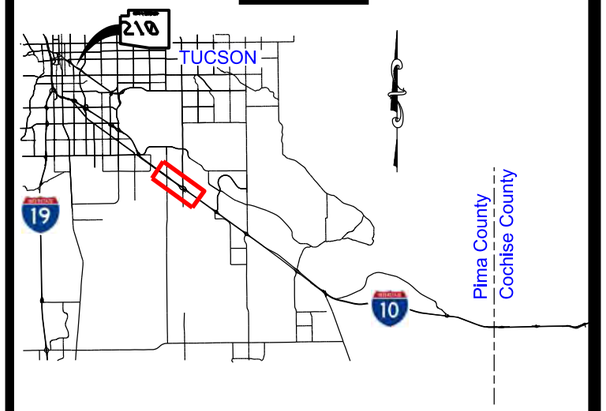

LEGEND

- X / X — Intersection Level of Service (LOS) (AM/PM)
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Signalized Intersection
Level-of-Service (LOS) Criteria

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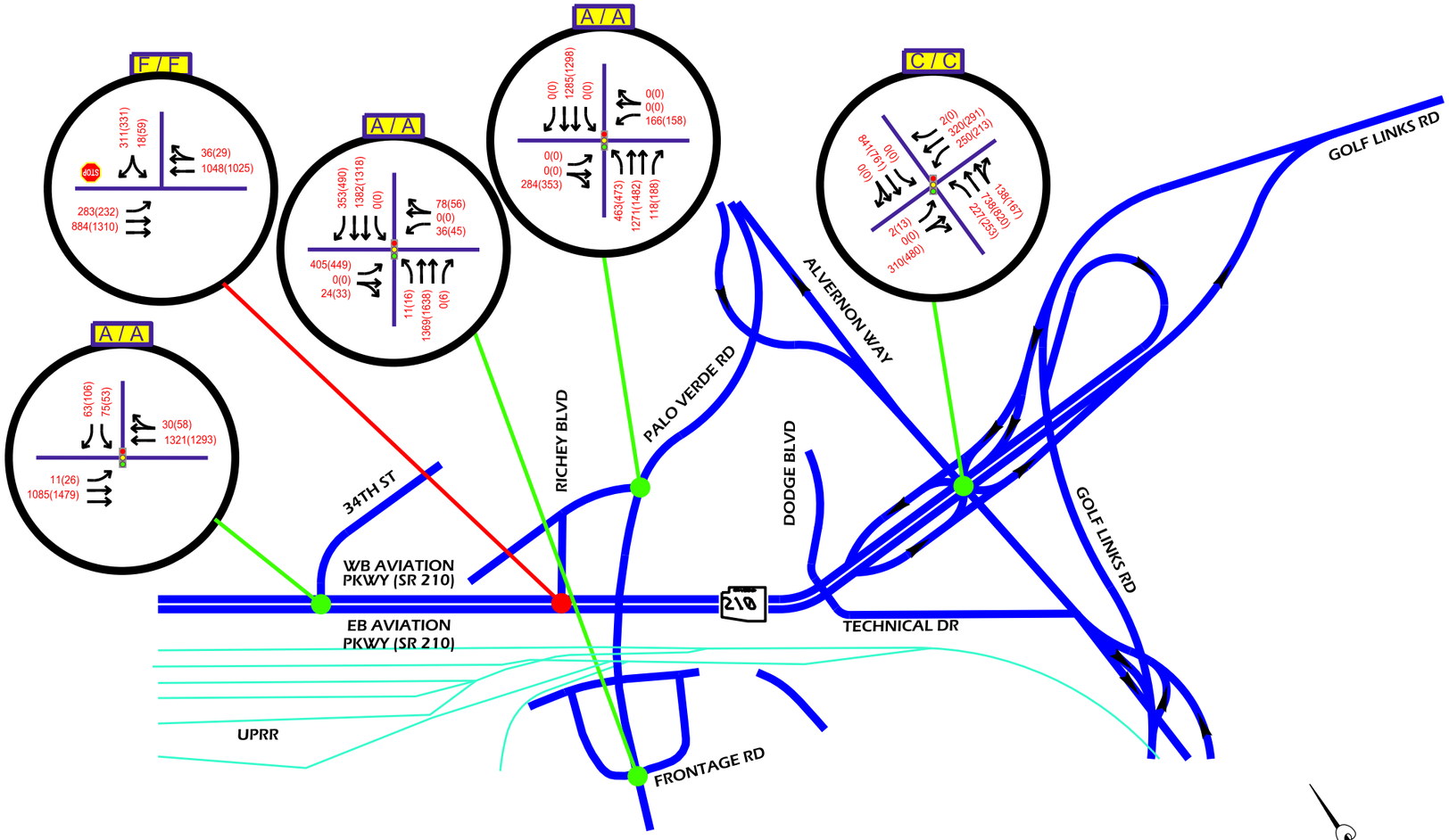
**Seconds per vehicle

YEAR 2040
NO BUILD

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019



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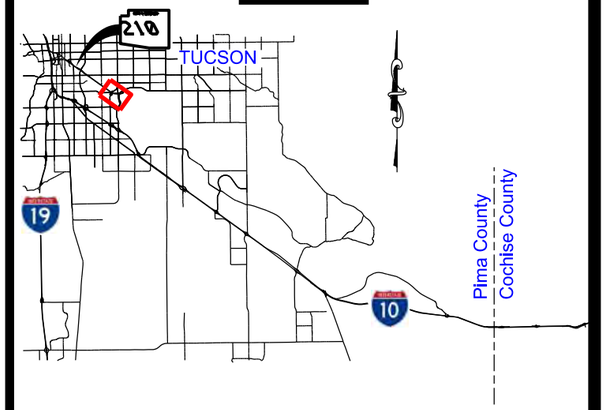

LEGEND

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- YYY(ZZZ) — Peak Hour Turning Movement Volume AM(PM)
- Lane Configuration
- Roadway
- Railroad Track
- Signalized Intersection
- Un-signalized Intersection (STOP)

Signalized Intersection
Level-of-Service (LOS) Criteria

LOS	DELAY (sec/veh)**
A	≤ 10
B	> 10 ≤ 20
C	> 20 ≤ 35
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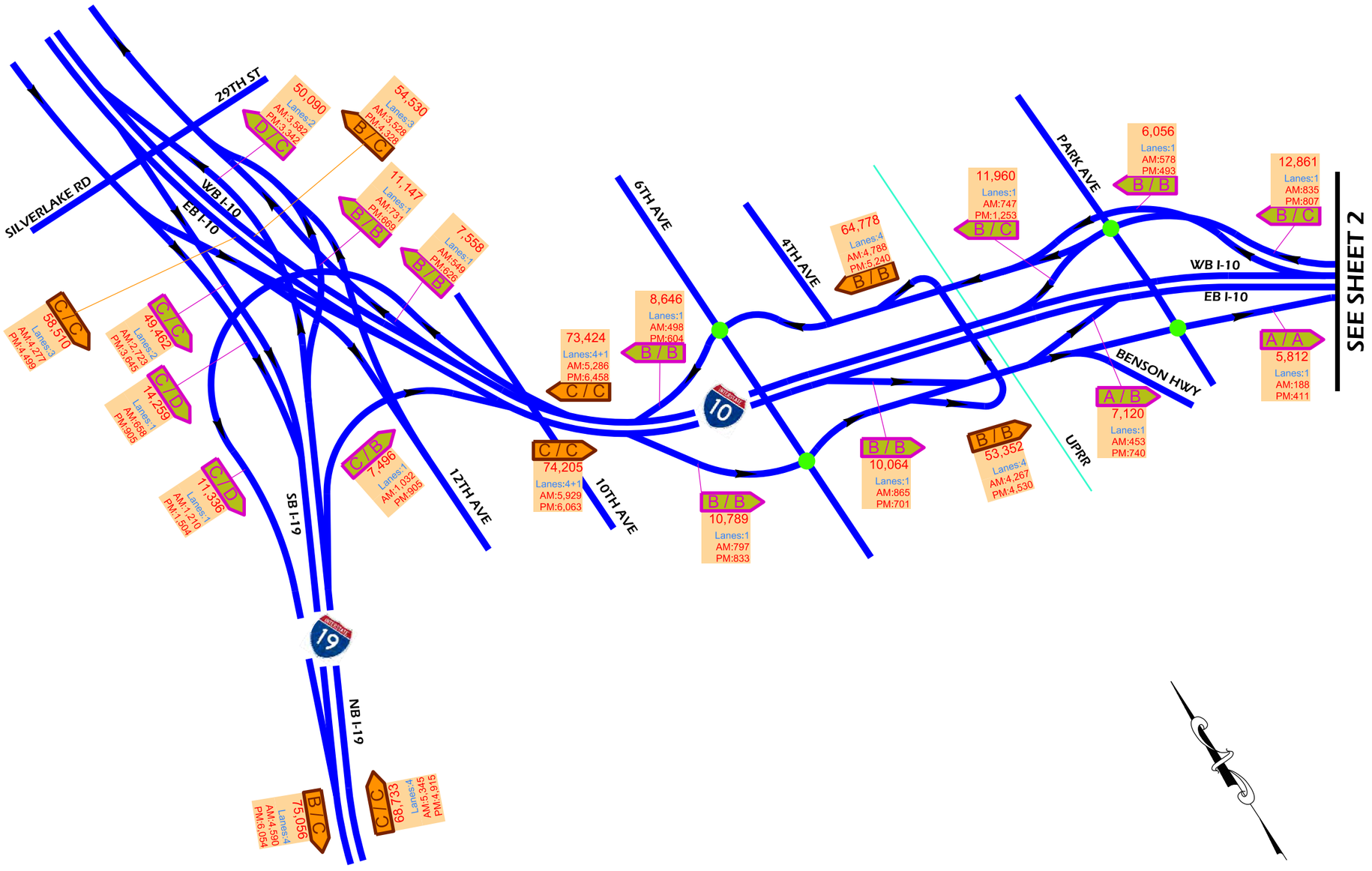
**Seconds per vehicle

YEAR 2040
NO BUILD

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019



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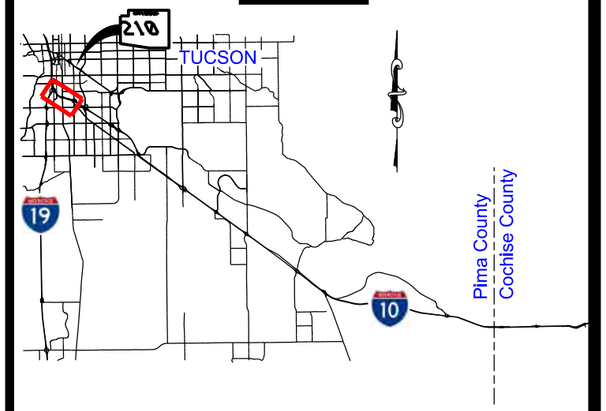

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Freeway/Multilane Highway
Level-of-Service (LOS) Criteria

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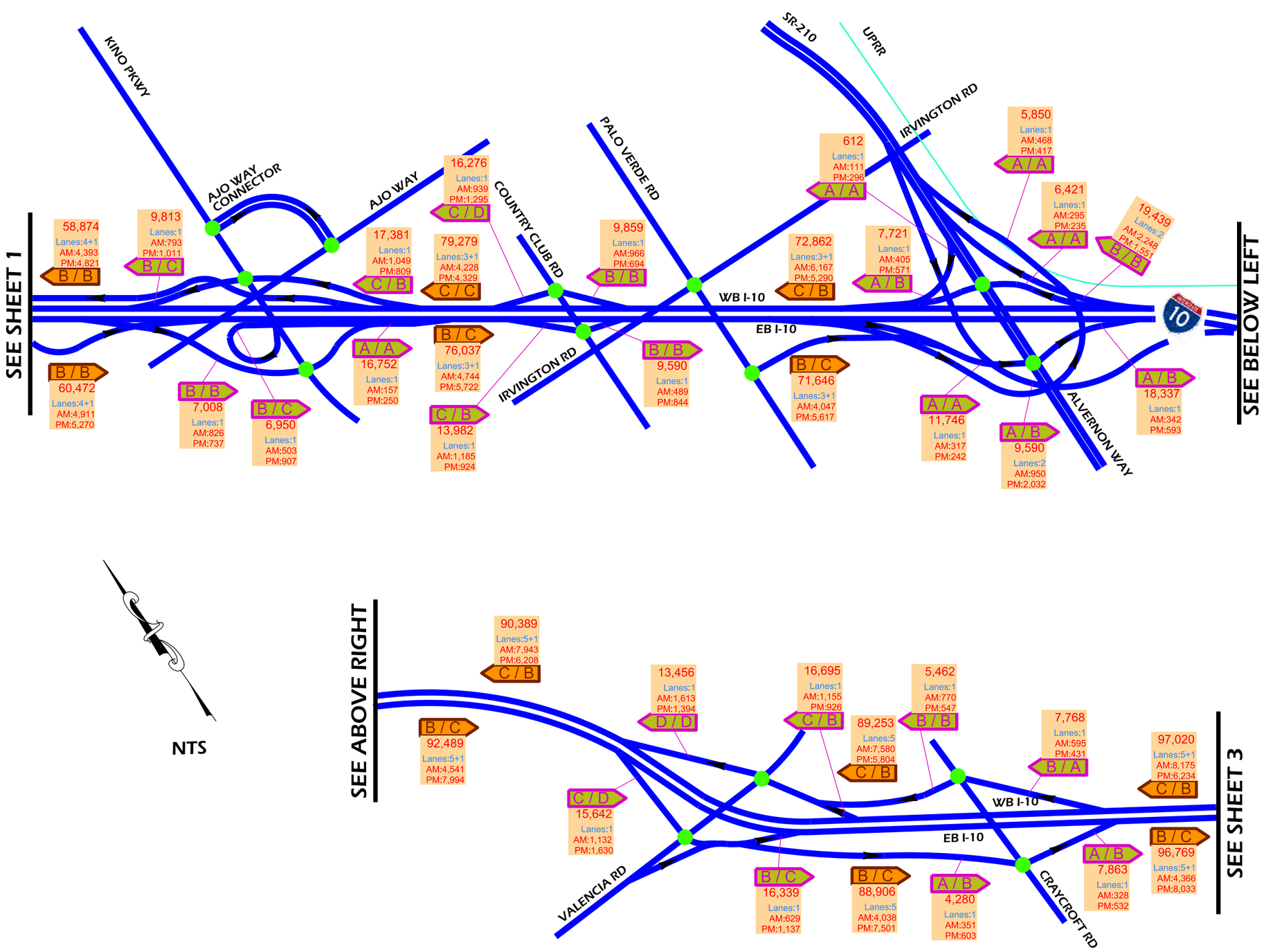
*Passenger cars per mile per lane

YEAR 2040
BUILD - SYSTEM ALTERNATIVE I

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019



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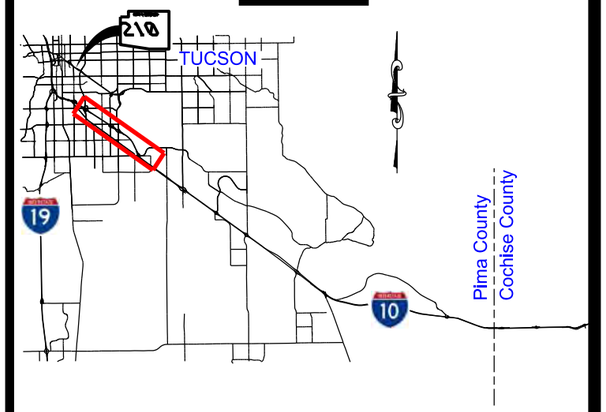

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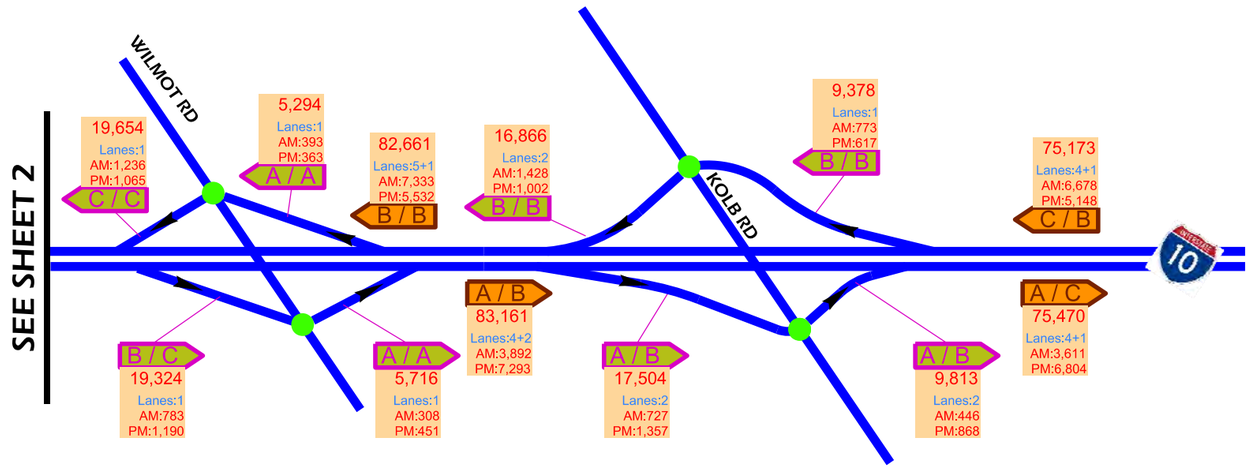
YEAR 2040
BUILD - SYSTEM ALTERNATIVE I

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019



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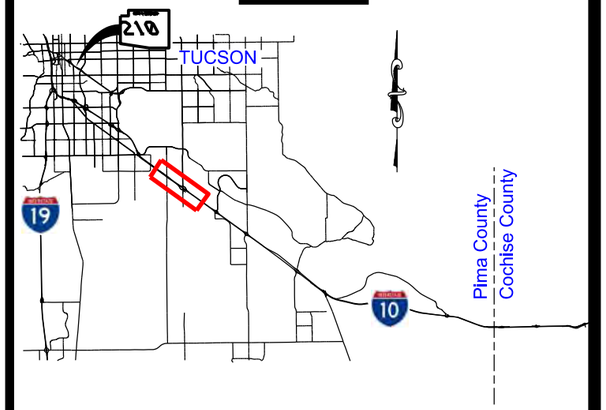

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YEAR 2040
BUILD - SYSTEM ALTERNATIVE I

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

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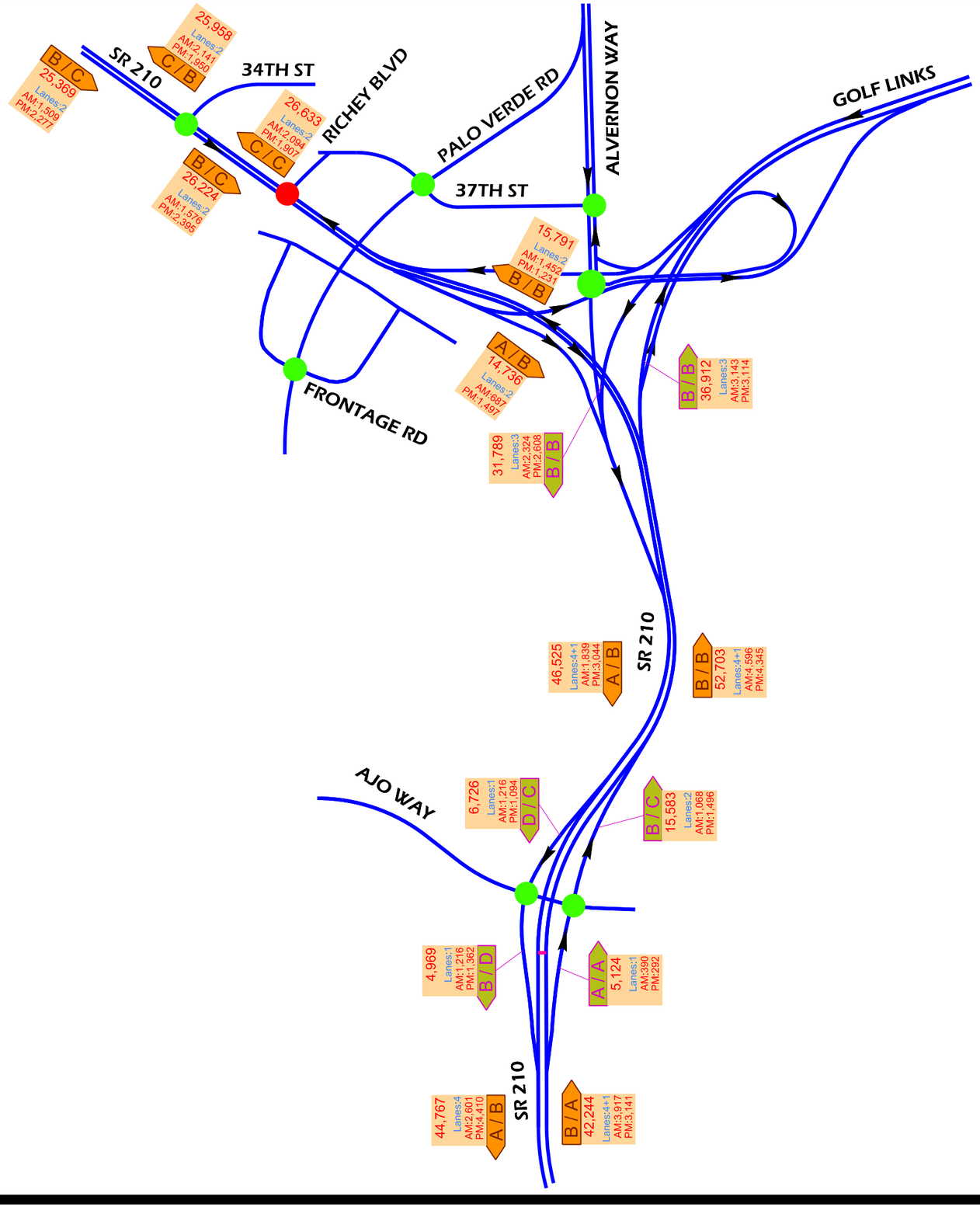

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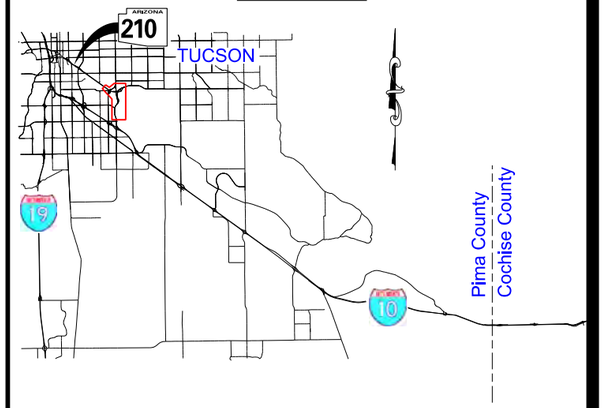

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- Railroad Track
- Signalized Intersection
- Un-signalized Intersection

Freeway/Multilane Highway
Level-of-Service (LOS) Criteria

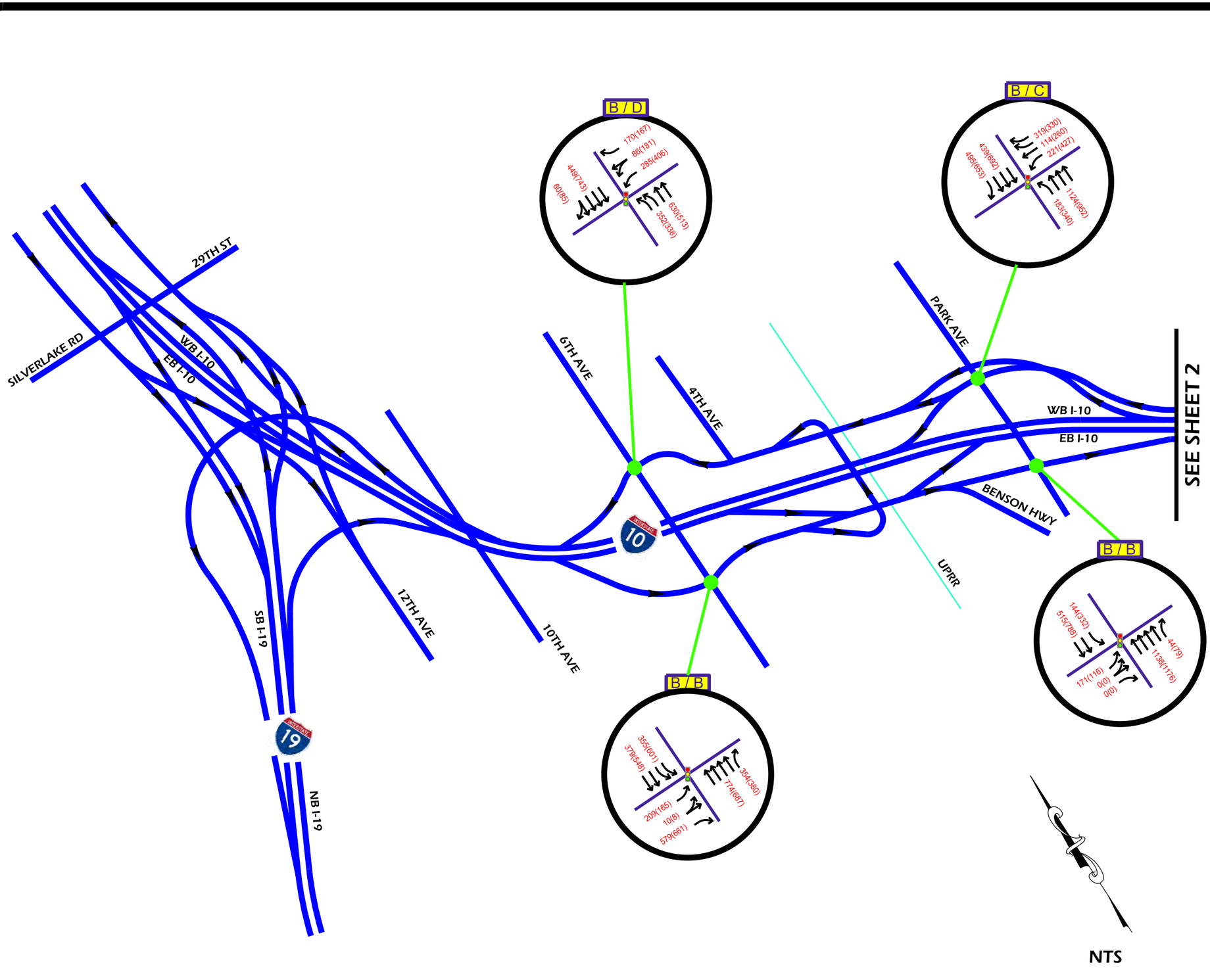
LOS	VEHICLE DENSITY (pc/mi/ln)*
A	0 - 11
B	> 11 - 18
C	> 18 - 26
D	> 26 - 35
E	> 35 - 45
F	> 45

*Passenger cars per mile per lane

YEAR 2040
BUILD - SYSTEM ALTERNATIVE I

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019



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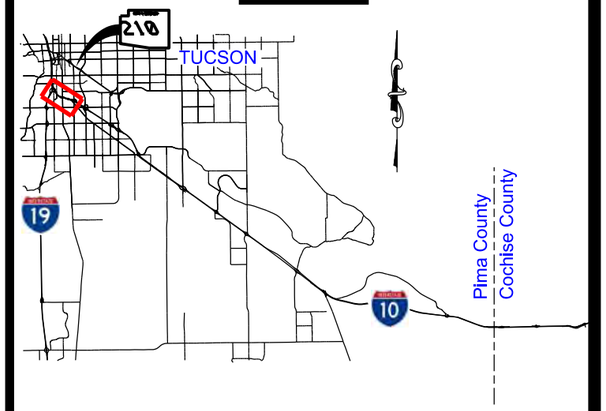


LEGEND

X / X	Intersection Level of Service (LOS) (AM/PM)
YYY(ZZZ)	Peak Hour Turning Movement Volume AM(PM)
	Lane Configuration
	Roadway
	Railroad Track
	Signalized Intersection
	Un-signalized Intersection

Signalized Intersection
Level-of-Service (LOS) Criteria

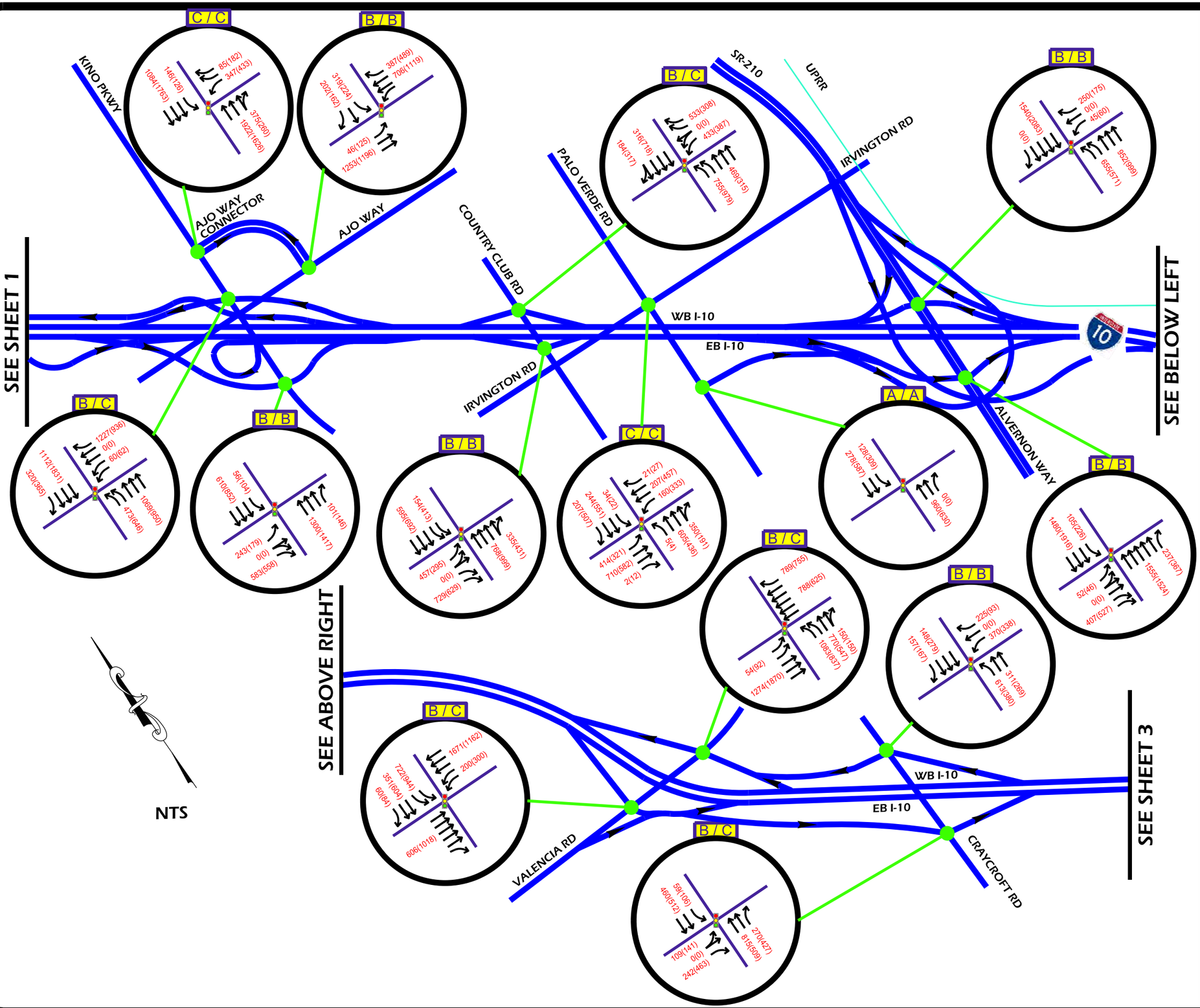
LOS	DELAY (sec/veh)**
A	≤ 10
B	> 10 ≤ 20
C	> 20 ≤ 35
D	> 35 ≤ 55
E	> 55 ≤ 80
F	> 80

**Seconds per vehicle

YEAR 2040
BUILD - SYSTEM ALTERNATIVE I

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019



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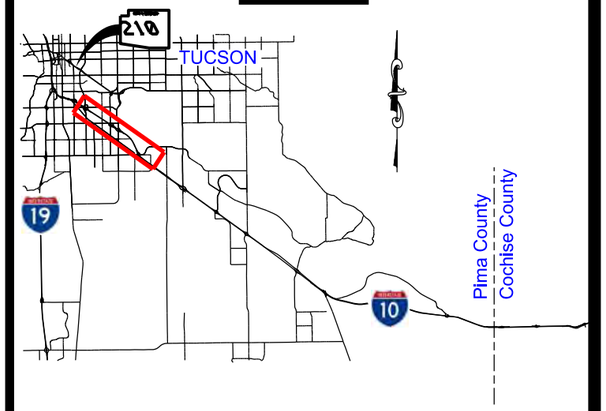


LEGEND

X / X	Intersection Level of Service (LOS) (AM/PM)
YYY(ZZZ)	Peak Hour Turning Movement Volume AM(PM)
	Lane Configuration
	Roadway
	Railroad Track
	Signalized Intersection
STOP	Un-signalized Intersection

Signalized Intersection
Level-of-Service (LOS) Criteria

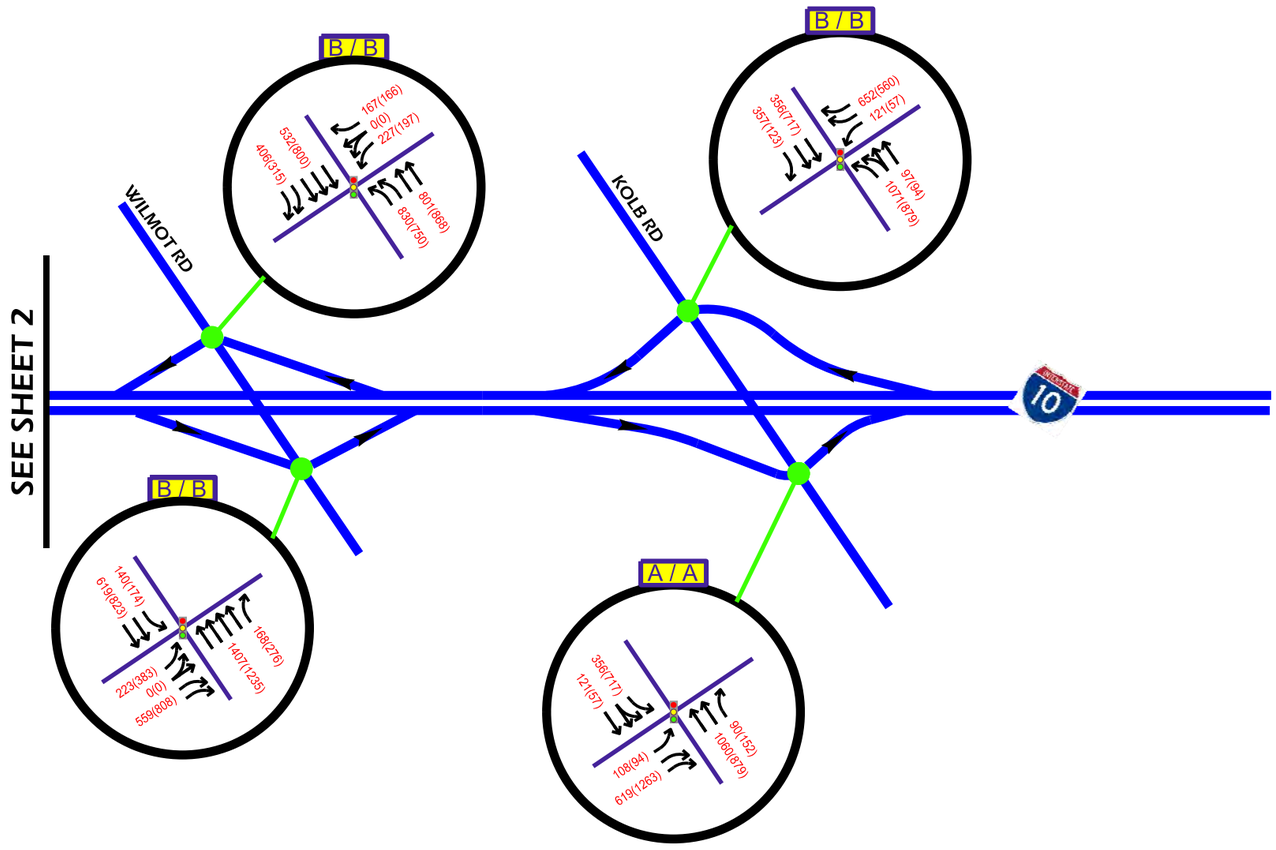
LOS	DELAY (sec/veh)**
A	≤ 10
B	> 10 ≤ 20
C	> 20 ≤ 35
D	> 35 ≤ 55
E	> 55 ≤ 80
F	> 80

**Seconds per vehicle

YEAR 2040
BUILD - SYSTEM ALTERNATIVE I

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019



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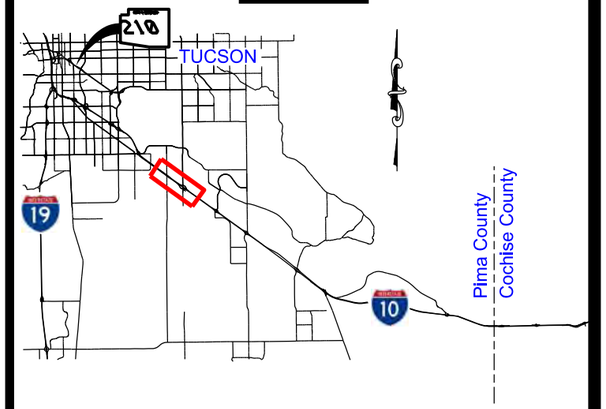

LEGEND

X / X	Intersection Level of Service (LOS) (AM/PM)
YYY(ZZZ)	Peak Hour Turning Movement Volume AM(PM)
	Lane Configuration
	Roadway
	Railroad Track
	Signalized Intersection
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Signalized Intersection
Level-of-Service (LOS) Criteria

LOS	DELAY (sec/veh)**
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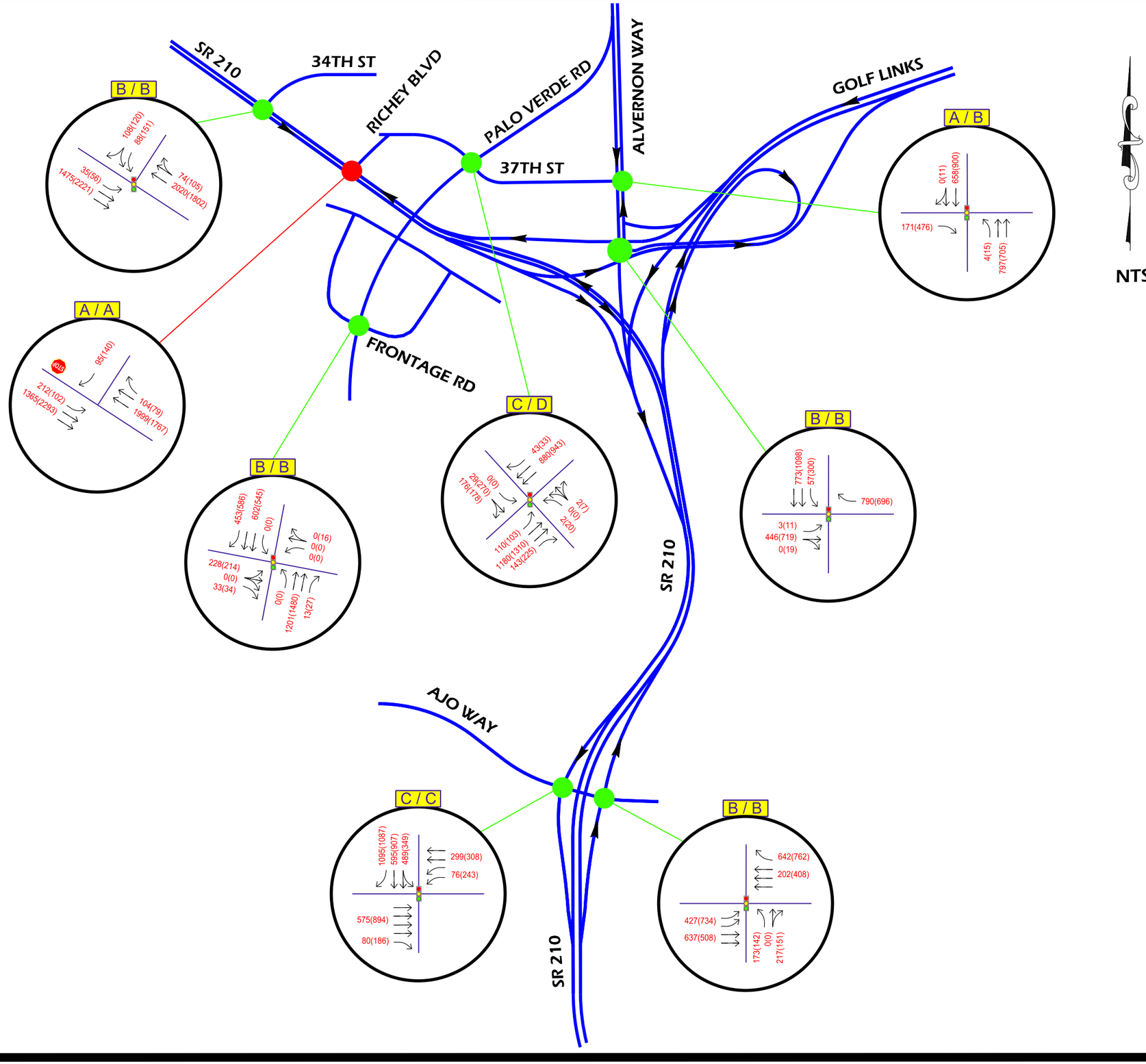
F	> 80

**Seconds per vehicle

YEAR 2040
BUILD - SYSTEM ALTERNATIVE I

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019



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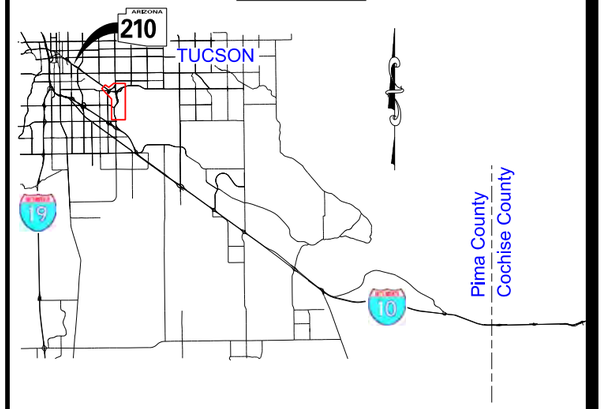

LEGEND

X / X	Intersection Level of Service (LOS) (AM/PM)
YYY(ZZZ)	Peak Hour Turning Movement Volume AM(PM)
	Lane Configuration
	Roadway
	Railroad Track
	Signalized Intersection
STOP	Un-signalized Intersection

Signalized Intersection
Level-of-Service (LOS) Criteria

LOS	DELAY (sec/veh)**
A	≤ 10
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D	> 35 ≤ 55
E	> 55 ≤ 80
F	> 80

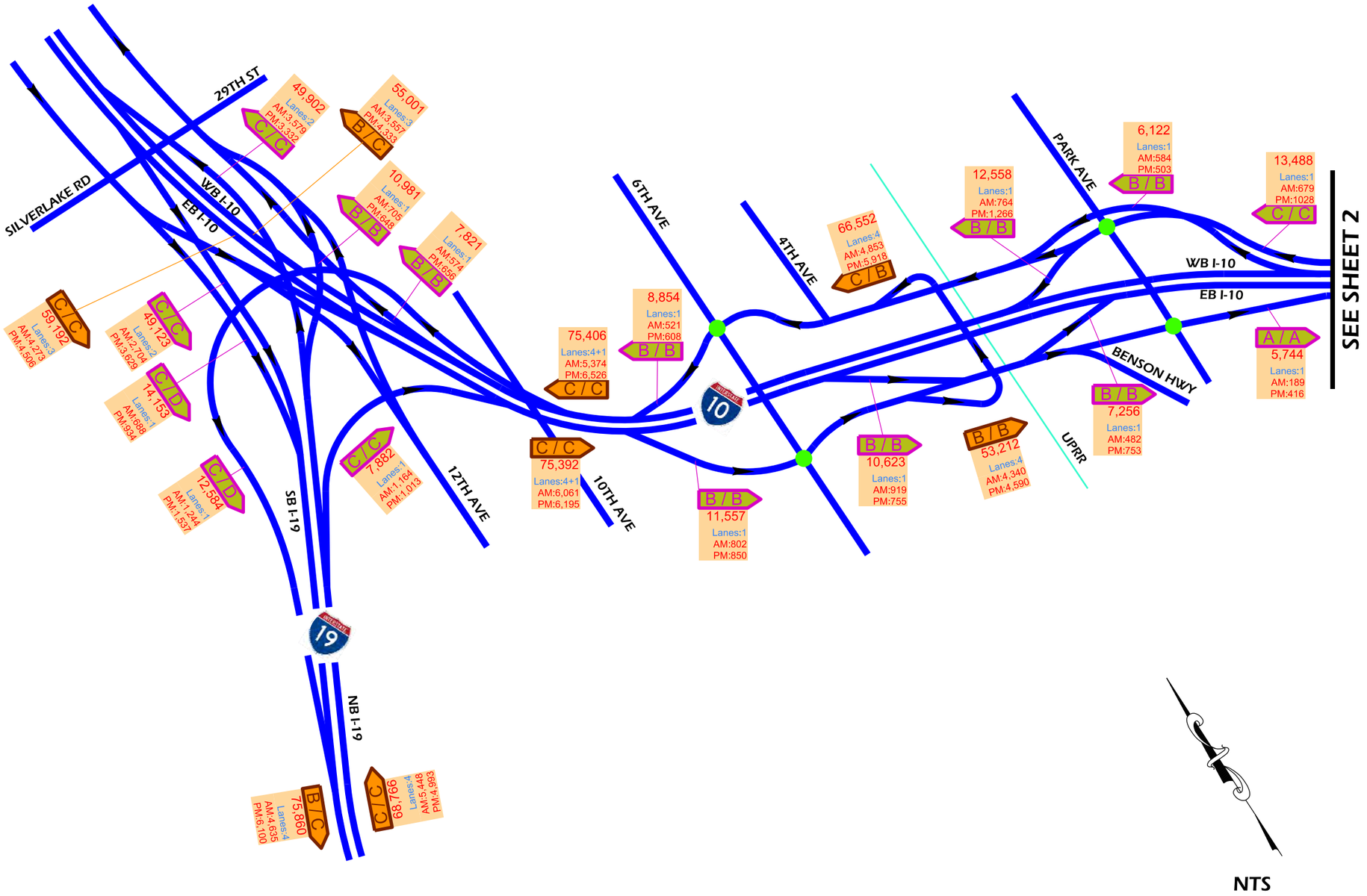
**Seconds per vehicle

YEAR 2040
BUILD - SYSTEM ALTERNATIVE I

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019

Sheet: 4 of 4



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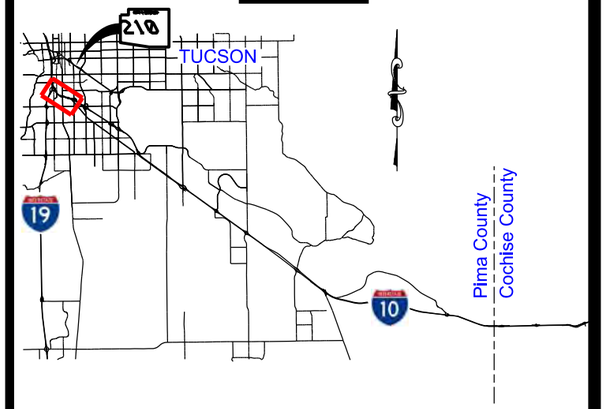


LEGEND

- X / X — Freeway/Multilane Highway Level of Service (LOS), Directional (AM/PM)
- X / X — Ramp Level of Service (LOS), Directional (AM/PM)
- X / X — Collector Distributor (CD) Level of Service (LOS), Directional (AM/PM)
- XX,XXX / Lanes:Y+Z — Directional Average Annual Daily Traffic (AADT); Number of Freeway/Highway Mainline Lanes, or Ramp Lanes, + Number of Aux. Lanes
- AM:YYY / PM:ZZZ — AM Peak Hour Volume; PM Peak Hour Volume
- Roadway
- Railroad Track
- Signalized Intersection
- Un-signalized Intersection

Freeway/Multilane Highway
Level-of-Service (LOS) Criteria

LOS	VEHICLE DENSITY (pc/mi/ln)*
A	0 - 11
B	> 11 - 18
C	> 18 - 26
D	> 26 - 35
E	> 35 - 45
F	> 45

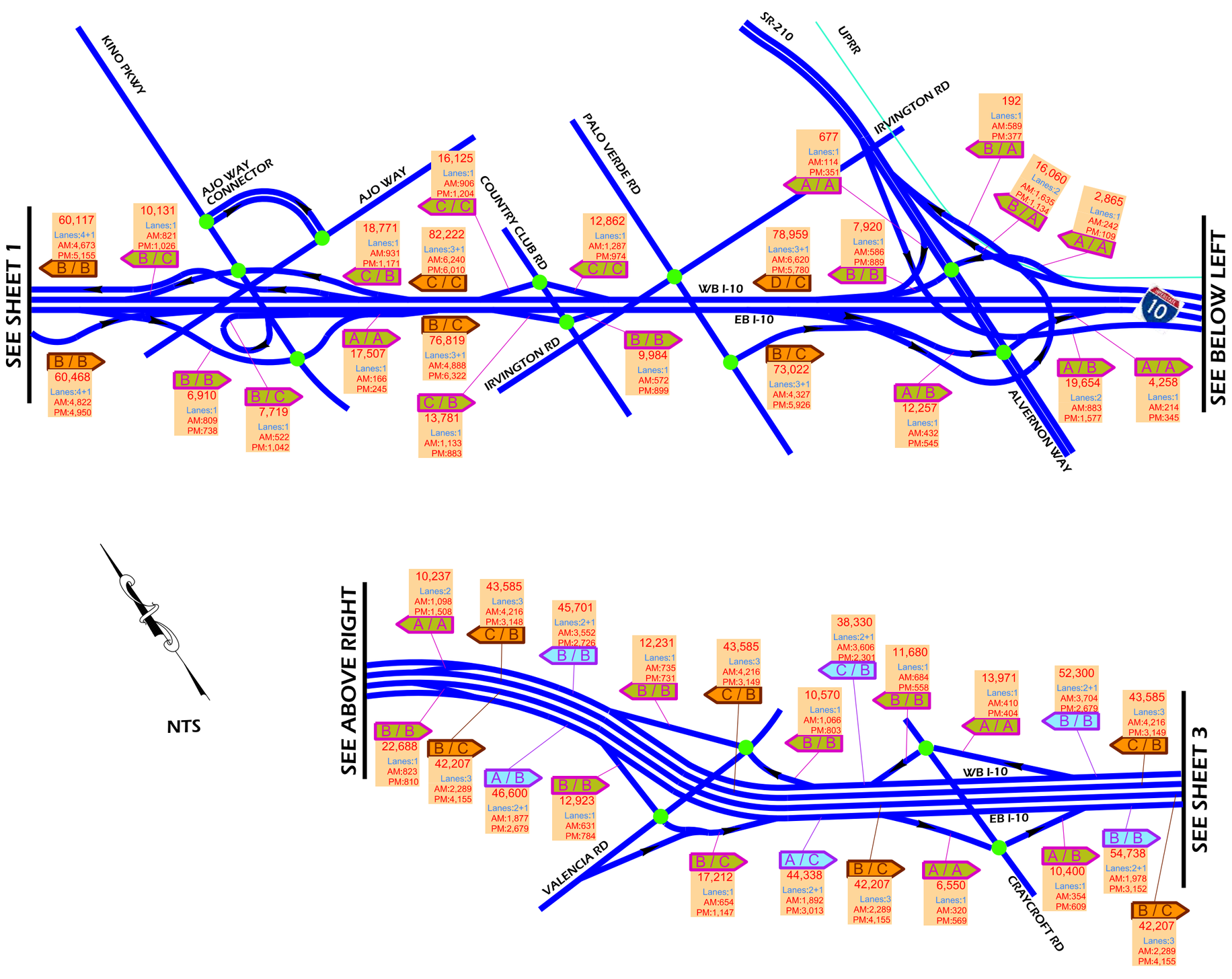
*Passenger cars per mile per lane

YEAR 2040
BUILD - SYSTEM ALTERNATIVE IV

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019

Sheet: 1 of 4



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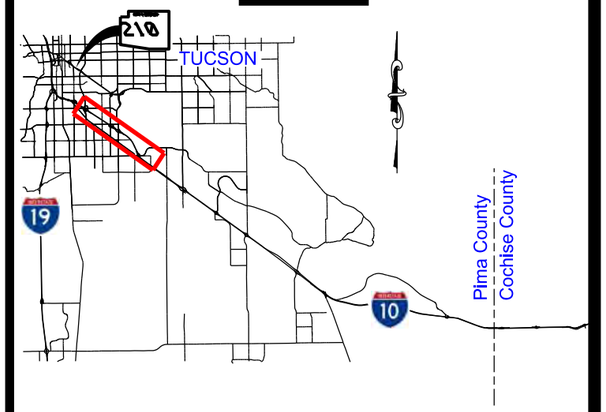

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- Roadway
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Freeway/Multilane Highway
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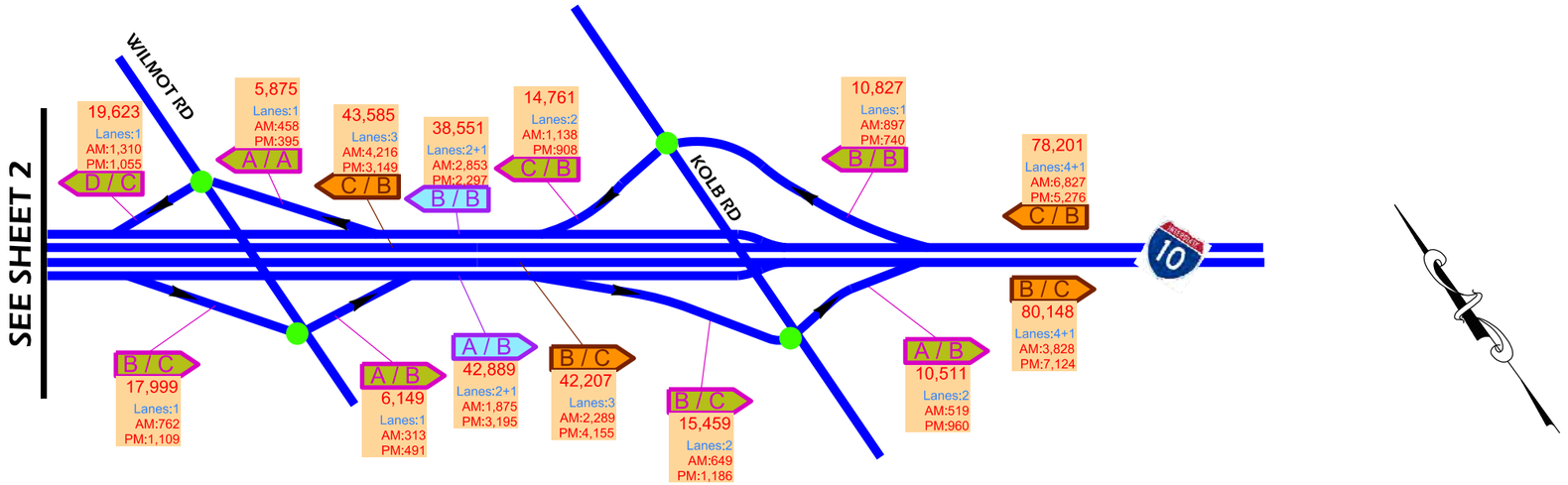
YEAR 2040
BUILD - SYSTEM ALTERNATIVE IV

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019

Sheet: 2 of 4



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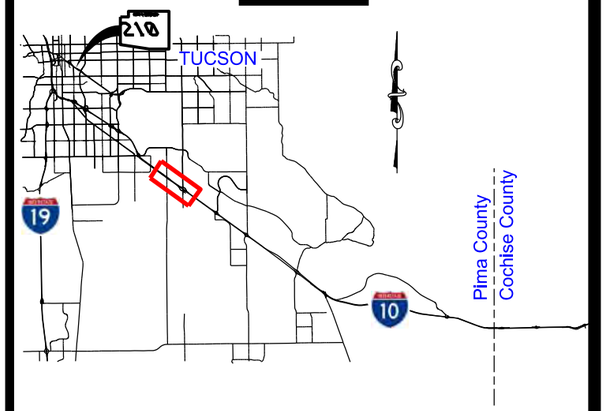

LEGEND

- X / X — Freeway/Multilane Highway Level of Service (LOS), Directional (AM/PM)
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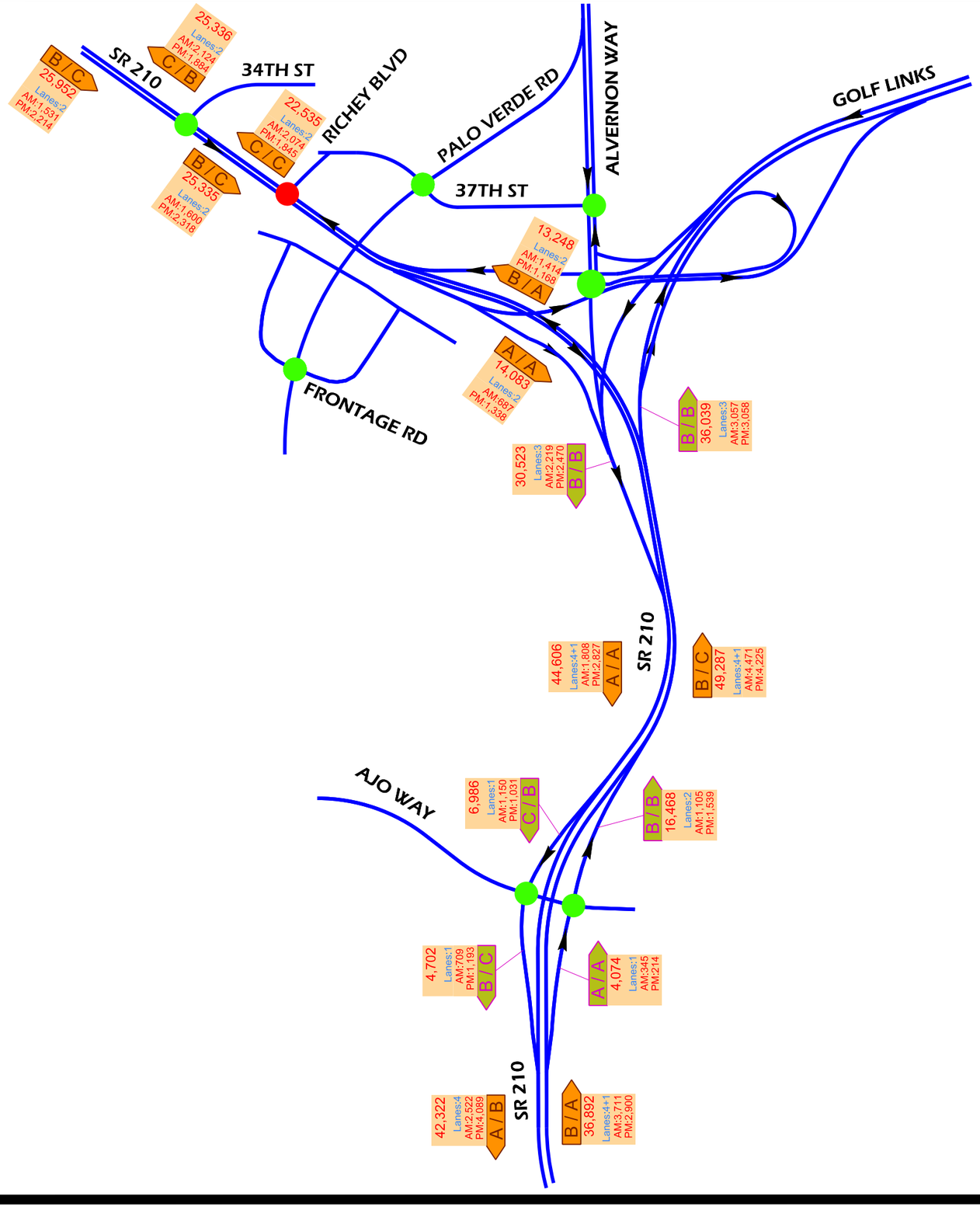
YEAR 2040
BUILD - SYSTEM ALTERNATIVE IV

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019



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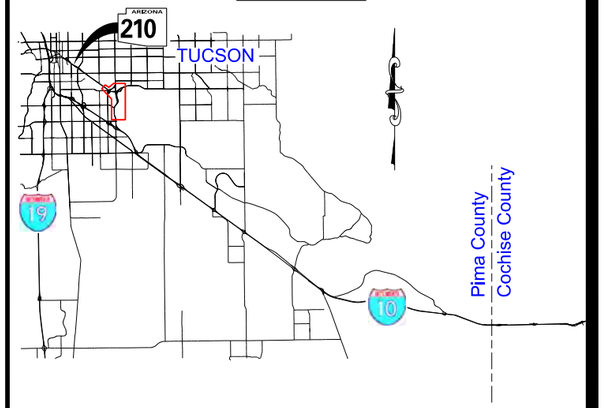

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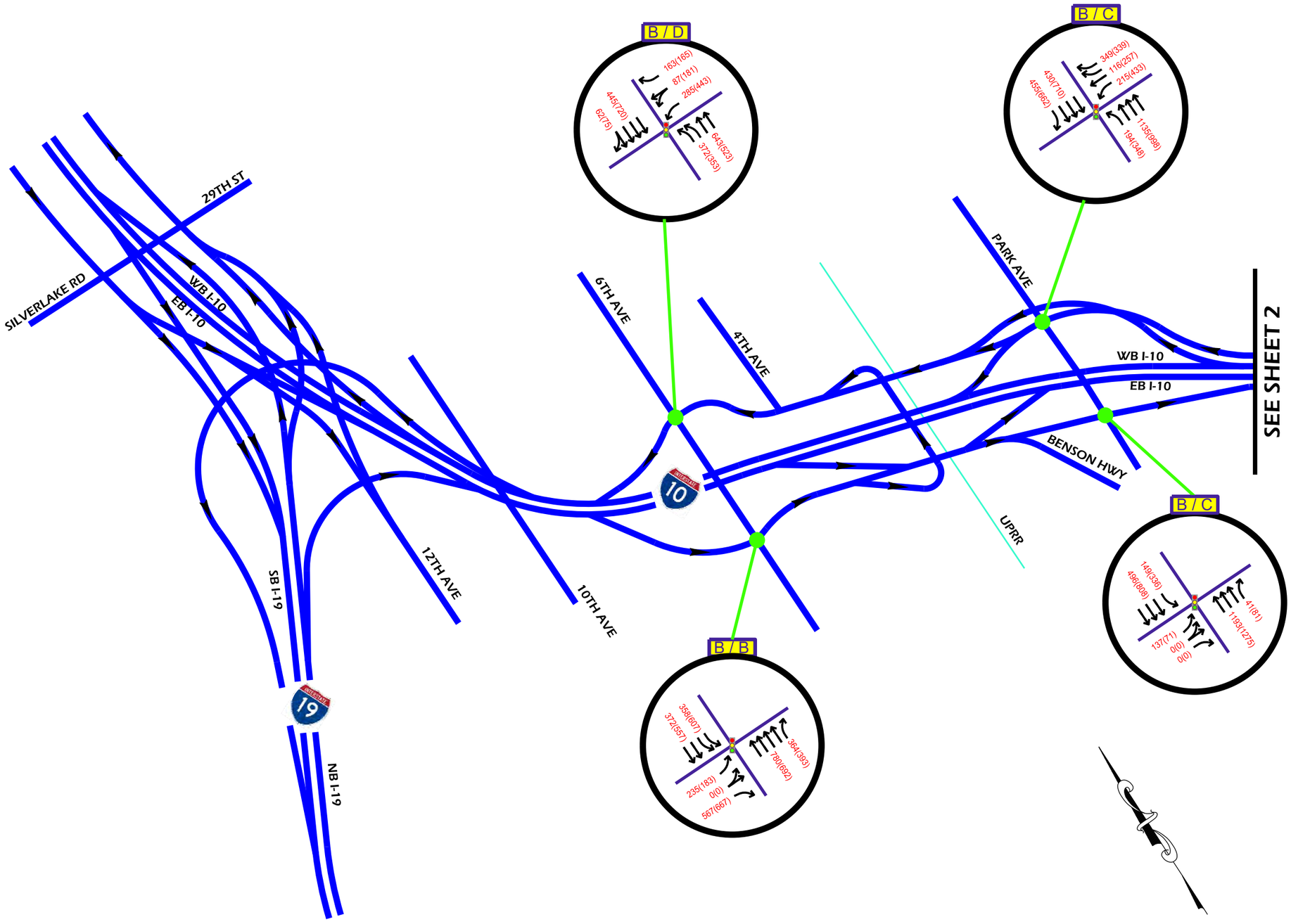
YEAR 2040
BUILD - SYSTEM ALTERNATIVE IV

TRAFFIC VOLUMES, LANES, & LEVEL-OF-SERVICE (LOS)

Date: 01/2019



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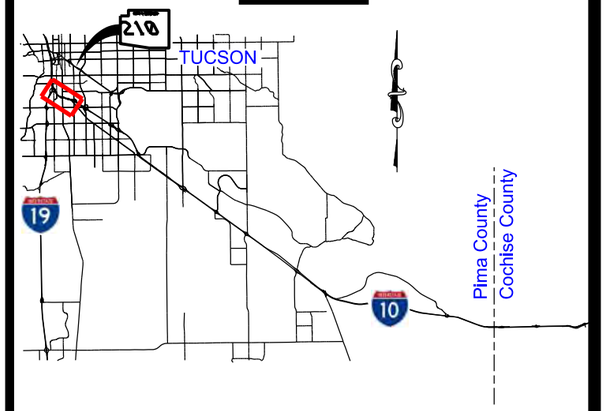


LEGEND

X / X	Intersection Level of Service (LOS) (AM/PM)
YYY(ZZZ)	Peak Hour Turning Movement Volume AM(PM)
	Lane Configuration
	Roadway
	Railroad Track
	Signalized Intersection
	Un-signalized Intersection

Signalized Intersection
Level-of-Service (LOS) Criteria

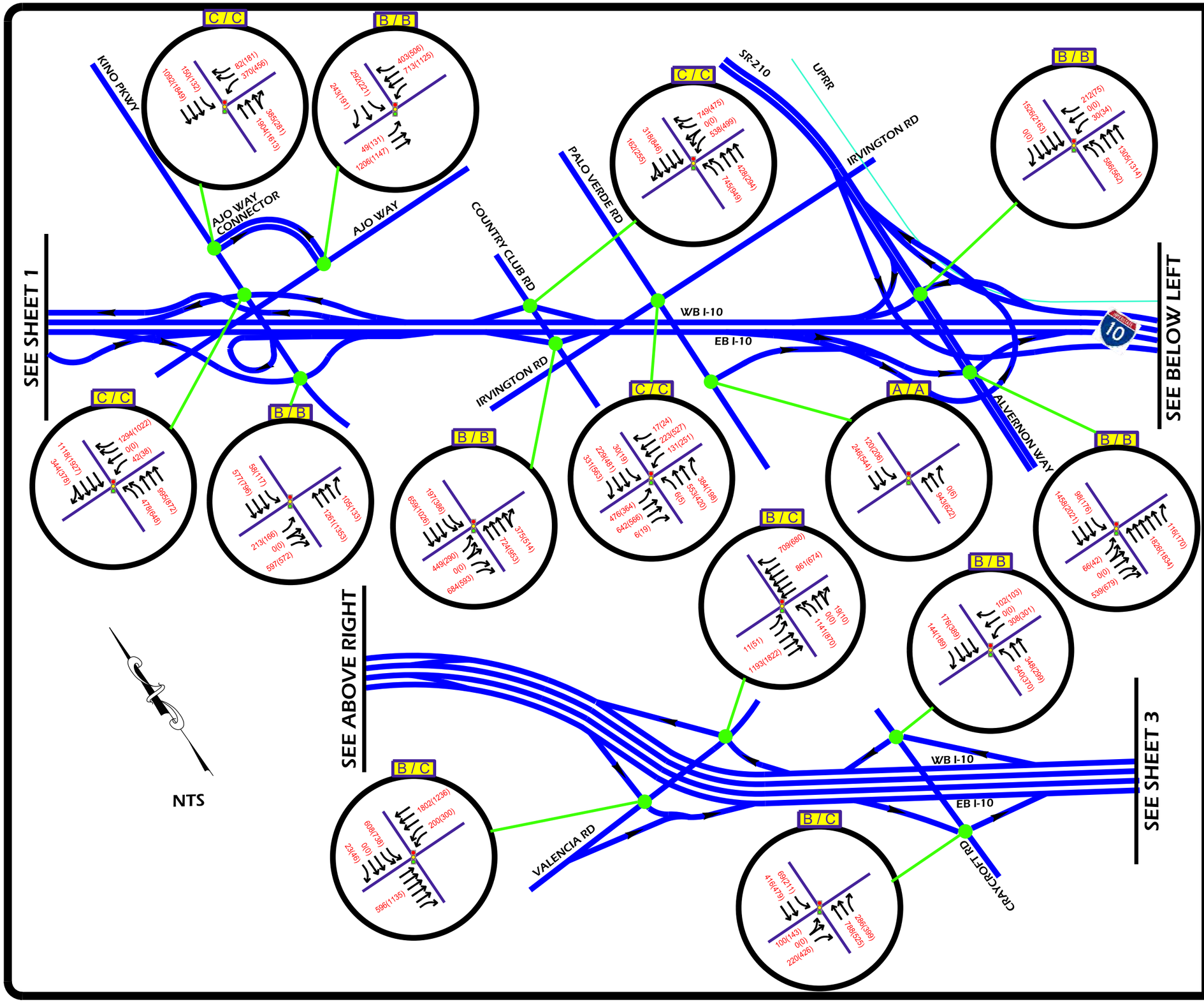
LOS	DELAY (sec/veh)**
A	≤ 10
B	> 10 ≤ 20
C	> 20 ≤ 35
D	> 35 ≤ 55
E	> 55 ≤ 80
F	> 80

**Seconds per vehicle

YEAR 2040
BUILD - SYSTEM ALTERNATIVE IV

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019



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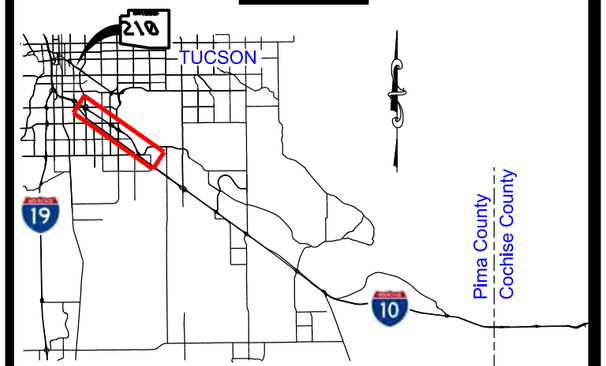

LEGEND

X / X	Intersection Level of Service (LOS) (AM/PM)
YYY(ZZZ)	Peak Hour Turning Movement Volume AM(PM)
	Lane Configuration
	Roadway
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	Signalized Intersection
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Signalized Intersection
Level-of-Service (LOS) Criteria

LOS	DELAY (sec/veh)**
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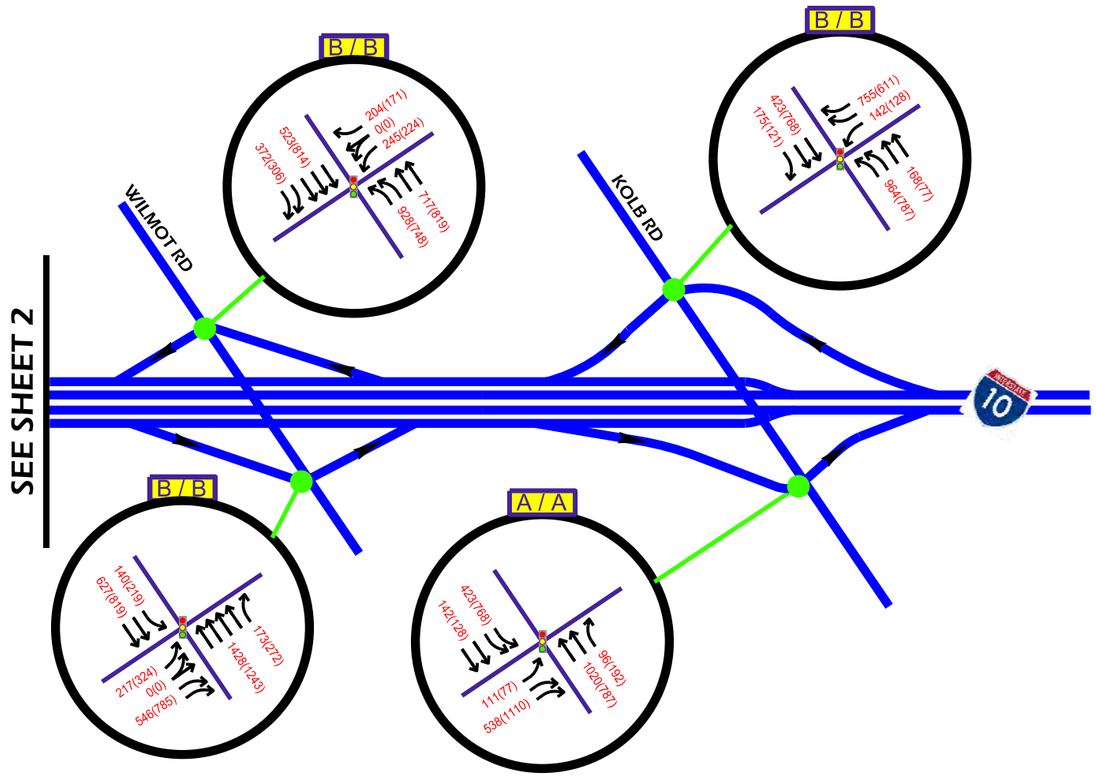
**Seconds per vehicle

YEAR 2040
BUILD - SYSTEM ALTERNATIVE IV

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019



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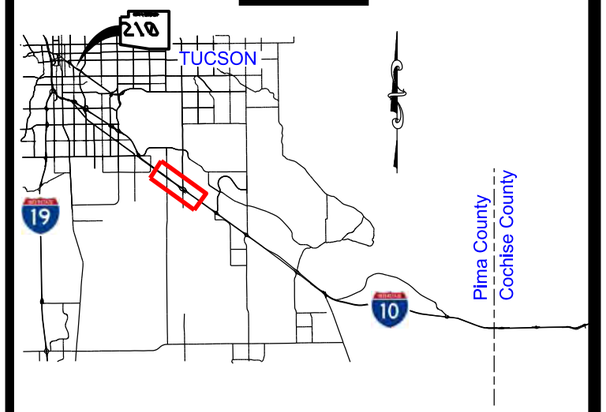

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	Railroad Track
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Signalized Intersection
Level-of-Service (LOS) Criteria

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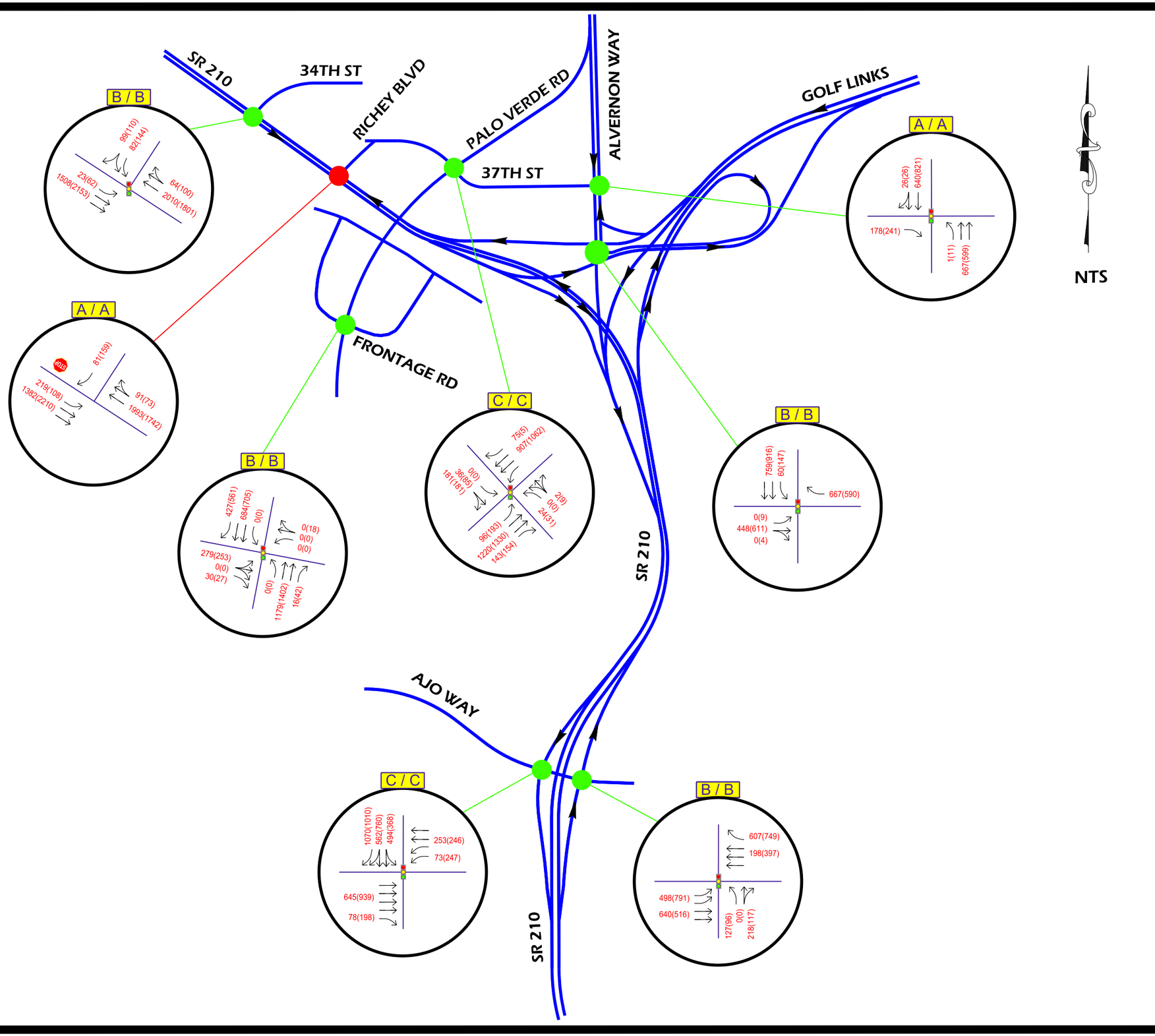
F	> 80

**Seconds per vehicle

YEAR 2040
BUILD - SYSTEM ALTERNATIVE IV

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019



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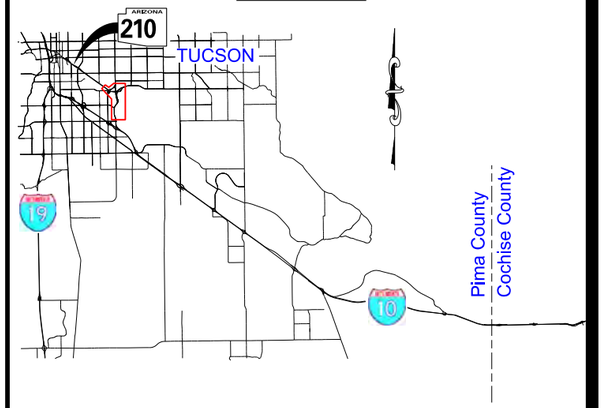

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Signalized Intersection
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E	> 55 ≤ 80
F	> 80

**Seconds per vehicle

YEAR 2040
BUILD - SYSTEM ALTERNATIVE IV

PEAK HOUR VOLUMES, LANE CONFIGURATIONS, & LOS

Date: 01/2019

APPENDIX C
SYSTEM ALTERNATIVE I PLAN SHEETS

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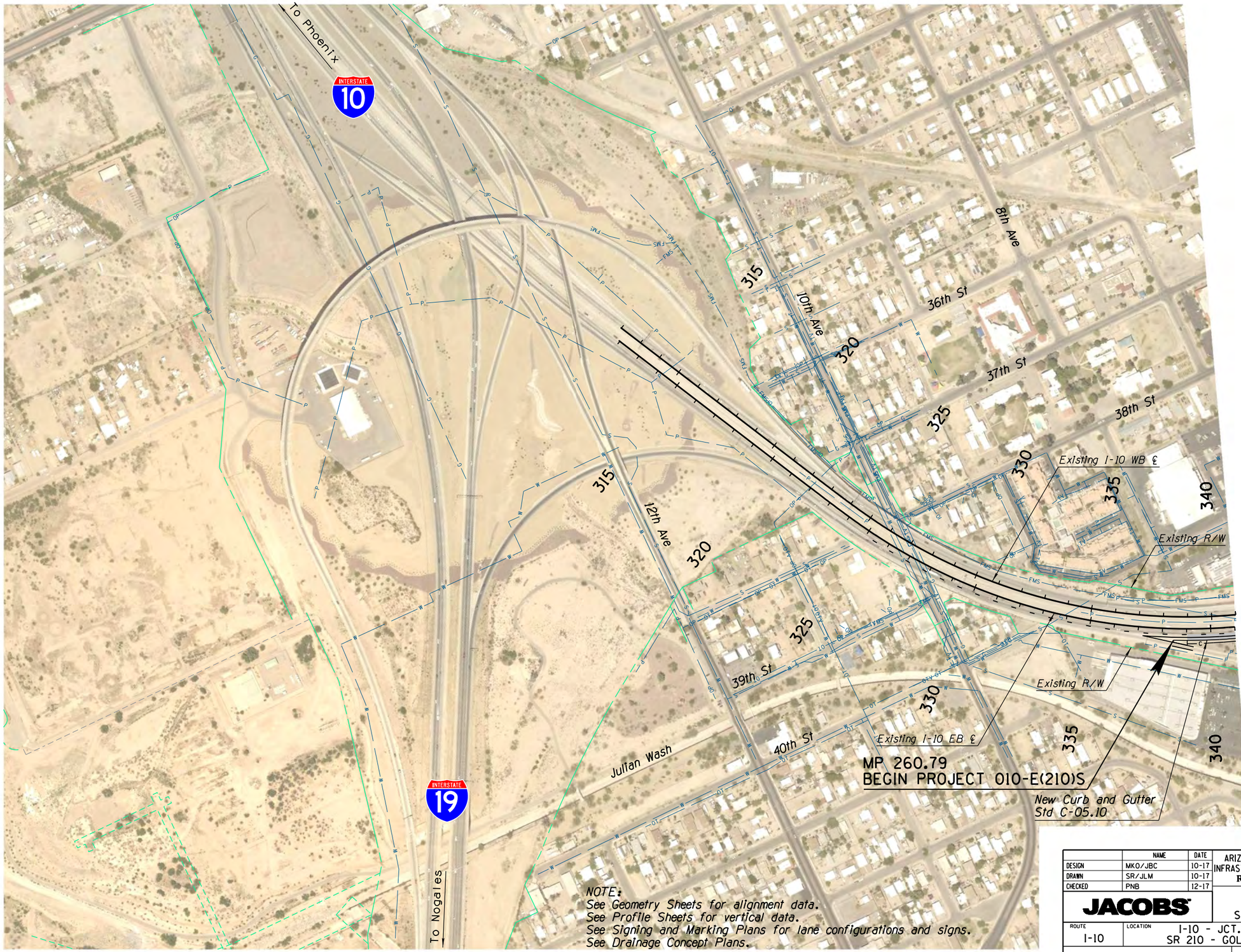
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	16	
		010 PM 260			



SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT I
STA 314+00 TO STA 341+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

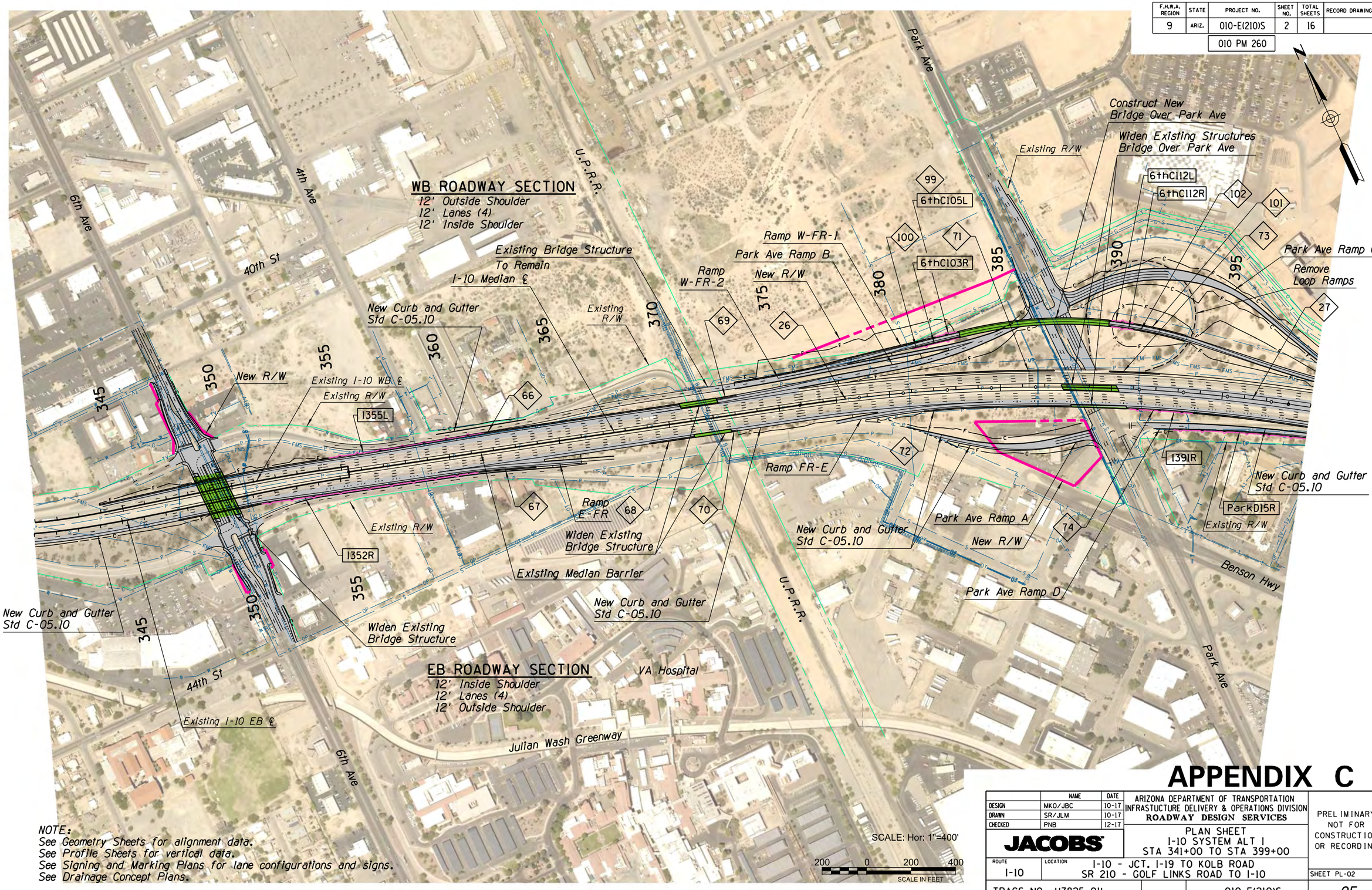
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PL-01

___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	16	
		010 PM 260			



NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT I
STA 341+00 TO STA 399+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

SHEET PL-02

___ OF ___

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

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p002.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	16	
		010 PM 260			

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

WB ROADWAY SECTION
12' Outside Shoulder
12' Lanes (4)
12' Inside Shoulder

EB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (4)
12' Outside Shoulder

Kino Pkwy
Ajo Way
Benson Hwy
Julian Wash Greenway

Construct New Equipment Pass Under Kino Pkwy Pamp B
Construct New Bridge Over Ajo Way
Construct New Bridge Over I-10
Construct New Bridge Over Ajo Way
Construct New Bridge Over Ajo Way

New Curb and Gutter Std C-05.10
New Curb and Gutter Std C-05.10

I-10 Median ℄

Park Ave Ramp C
Kino Pkwy Ramp B
Kino Pkwy Ramp C
Kino Pkwy Ramp A
Park Ave Ramp D
Kino Pkwy Ramp D1
Kino Pkwy Ramp D2

New R/W
Existing R/W
Remove Ramps
Remove Ramp
Remove Ramp
Widen Existing Bridge Structure

KinoC11R
KinoC12L
ParkC56L
KinoC14R
KinoC15L
KinoB22R
ParkC53R
ParkC53L
KinoB16L
KinoA21R
ParkD15R
KinoA34L
KinoA37R
KinoA37L
ParkC56R

75 76 77 79 80 81 82 103 104 107 108 109 110 111 112 113 114 115 116 117 118 119 120 6 7 8

400 405 410 415 420 425 430 435 440 445 450 455

N

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT I
STA 399+00 TO STA 457+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

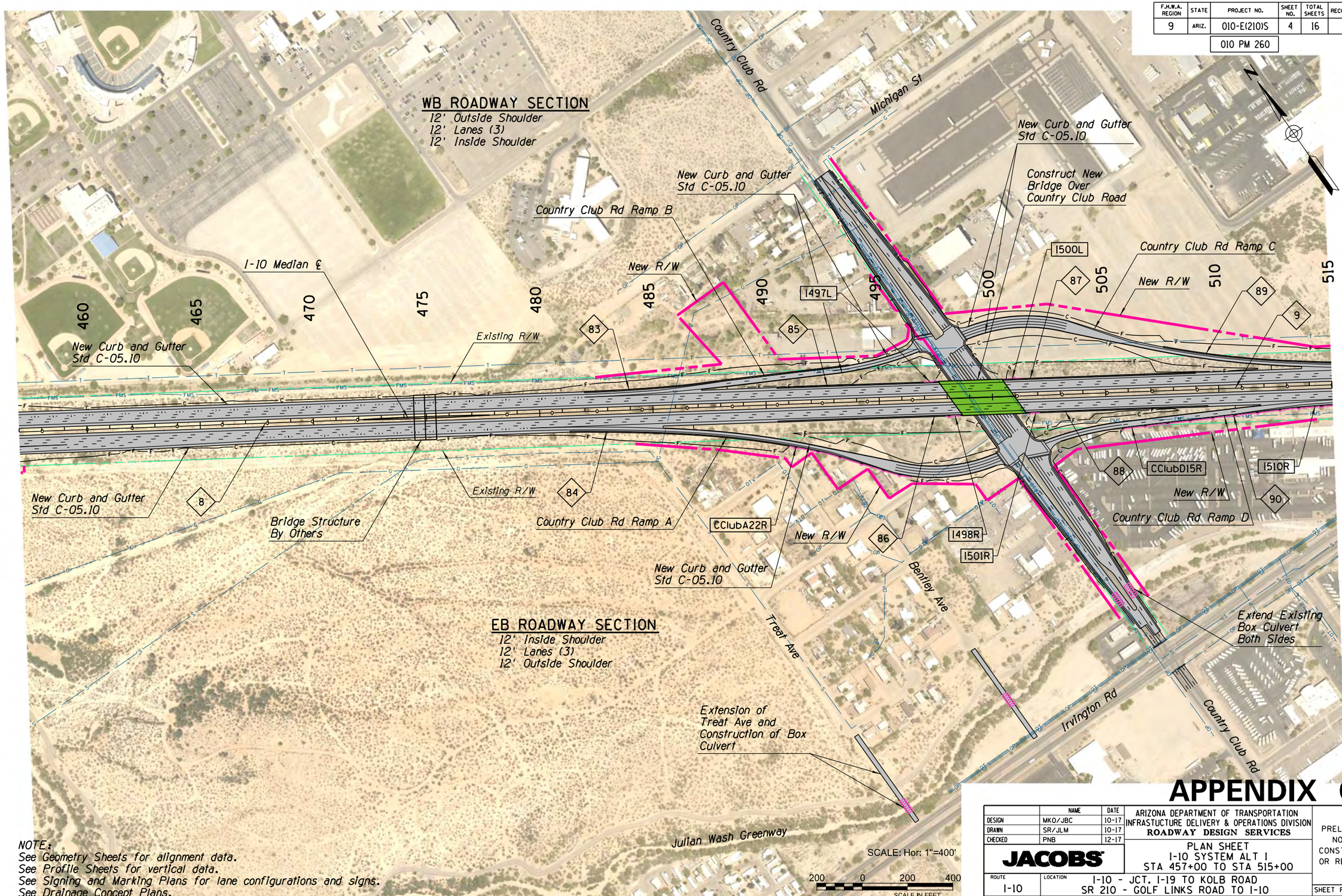
SHEET PL-03

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	16	
		010 PM 260			

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



NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT I
STA 457+00 TO STA 515+00

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-04

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p004.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	16	

010 PM 260

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

WB ROADWAY SECTION
12' Outside Shoulder
12' Lanes (3)
12' Inside Shoulder

EB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (3)
12' Outside Shoulder

Palo Verde Rd
Irvington Rd
Alvernon Way
U.P.R.R.
Tucson Electric Power
Julian Wash Greenway

Existing R/W
New R/W
Remove Ramps
New Curb and Gutter Std C-05.10
Ramp SW
Alvernon Way Ramp B
I-10 Median ℄
Ramp EN
Alvernon Way Ramp A
Widen Existing Bridge Over Alvernon Way
Construct New Bridge Over Irvington Rd
Construct New Bridge Over Palo Verde Rd
Construct New Connection to Palo Verde Rd
Extend Existing Box Culvert
Ramp WN
Alvernon Way Ramp C
Ramp SE
Alvernon Way Ramp D
New Box Culvert

EN76R EN76L WN28L WN38R WN41R WN42L AlcC15L SE30L SE30R SE41L SE41R EN50R EN55L 1572L 1528L 1532L 1510R 1525R 1534R 1531R

515 520 525 530 535 540 545 550 555 560 565 570 495 500 505 510

9 10 11 12 63 62 97 89 92 93 94 95 96 98 90 91 123 129 128 126 127

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT I
STA 515+00 TO STA 573+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

SHEET PL-05

___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p005.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	6	16	
		010 PM 260			

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

Tucson Electric Power

WB ROADWAY SECTION
12' Outside Shoulder
12' Auxiliary Lanes (3)
12' Lanes (3)
12' Inside Shoulder

New Curb and Gutter Std C-05.10

Ramp WN

Extend Existing Box Culvert

575 580 585 590 595 600 605 610 615 620 625 630

129

1572L

New R/W

U.P.R.R.

1614L

1616L

Julian Wash Greenway

New R/W

29

Existing R/W

131

28

I-10 Median ℄

130

12

Alvernon Way Ramp D

New R/W

Ramp SE

1581R

New Curb and Gutter Std C-05.10

Construct New Bridge Over Drexel Road

Existing R/W

1615R

132

EB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lanes (2)
12' Outside Shoulder

Drexel Rd

525

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT I
STA 573+00 TO STA 631+00

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-06

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p006.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	7	16	
		010 PM 260			

U.P.R.R.

Julian Wash Greenway

Valencia Rd

Littletown Rd

WB ROADWAY SECTION
12' Outside Shoulder
12' Auxiliary Lane
12' Lanes (5)
12' Inside Shoulder

635 640 645 650 655 660 665 670 675 680 685 689

New R/W

Existing R/W

I-10 Median ℄

New Curb and Gutter Std C-05.10

New R/W

Valencia Rd Ramp B

1672L

Valencia Rd Ramp C

New Curb and Gutter Std C-05.10

New R/W

Existing R/W

Craycroft Rd Ramp B

Craycroft Rd Ramp A

1671R

1676L

1679L

1685R

1674R

ValD16R

Valencia Rd Ramp D

New Curb and Gutter Std C-05.10

Valencia Rd Ramp A

Construct New Bridge Over Valencia Road

New Curb and Gutter Std C-05.10

New R/W

Existing R/W

1615R

EB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder

Benson Hwy

Valencia Rd

Swan Rd

29 30 131 132 13 133 134 135 31 136 137

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT I
STA 631+00 TO STA 689+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L		010-E(210)S

SHEET PL-07

___ OF ___

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

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p007.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	8	16	
		010 PM 260			

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

Craycroft Rd
Dream St
New Residential Frontage Road
Elvira Rd
Travel Plaza Way
Craycroft Rd Ramp C
New Curb and Gutter Std C-05.10
I-10 Median ℄
New R/W
New Curb and Gutter Std C-05.10
New 3-Lane Two-Way Connector Road

WB ROADWAY SECTION
12' Outside Shoulder
12' Lanes (5)
12' Inside Shoulder

690 695 700 705 710 715 720 725 730 735 740 745

31 138 143 1710L 144 1726L 146 New R/W 148 15 Existing R/W

Craycroft Rd Ramp B

Existing R/W
139
New Curb and Gutter Std C-05.10
Extend Existing Box Culvert
140
New Curb and Gutter Std C-05.10
New R/W
1712R
145
Craycroft Rd Ramp A
Construct New Bridge Over Craycroft Road
1727R
147
Existing R/W
New R/W
New Curb and Gutter Std C-05.10
Craycroft Rd Ramp D

EB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (5)
12' Outside Shoulder

Los Reales Rd

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT I
STA 689+00 TO STA 747+00

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-08

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p008.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	9	16	
		010 PM 260			

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

WB ROADWAY SECTION

12' Outside Shoulder
12' Auxiliary Lane
12' Lanes (5)
12' Inside Shoulder

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder

Wilmot Rd
Los Reales Rd
New Curb and Gutter Std C-05.10
New R/W
Existing R/W
Wilmot Rd Ramp B
I-10 Median ℄
Wilmot Rd Ramp C
Wilmot Rd Ramp A
Wilmot Rd Ramp D
Construct New Bridge Over Wilmont Rd
Garden Stone Dr
Sentinal Stone Dr
Wilmot Rd
1791L
1783L
Wilmot B15L
1790R
1793R
149
150
151
152
153
15
16
750
755
760
765
770
775
780
785
790
795
800
805

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT 1
STA 747+00 TO STA 805+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PL-09

___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p009.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	10	16	
		010 PM 260			

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

WB ROADWAY SECTION
12' Outside Shoulder
12' Auxiliary Lane
12' Lanes (5)
12' Inside Shoulder

EB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lanes (1)
12' Outside Shoulder

Kolb Rd
Science Park Dr
Kolb Rd Ramp C2
159
NBKolb18R
Construct New Bridge Over Ramp C2
158
New R/W
155
NBKolb18L
154
Kolb Rd Ramp C1
SBKolb19L
Kolb Rd Ramp C
SBKolb19R
New Curb and Gutter Std C-05.10
Kolb Rd Ramp B1
805
810
815
820
825
830
835
840
845
850
855
860
New R/W
16
Existing R/W
New Curb and Gutter Std C-05.10
Kolb Rd Ramp B
Kolb Road NB Mainline
Construct New Bridge Over I-10 at Kolb Road
Existing R/W
New Curb and Gutter Std C-05.10
Kolb Rd Ramp D
Kolb Rd Ramp A1
Kolb Rd Ramp D1
Extend Existing Box Culvert
I-10 Median ℄
New Curb and Gutter Std C-05.10
New Curb and Gutter Std C-05.10
Kolb Rd Ramp A
Remove Ramp
Kolb Road SB Mainline
156
SBKolb41R
STATE LANDS
New R/W
SBKolb41L
157

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT 1
STA 805+00 TO STA 863+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-10

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p010.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	11	16	

010 PM 260

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

Kolb Rd Ramp C

Science Park Dr

865 870 875 880 885 890 895 900 905 910 915 920

New Curb and Gutter
Std C-05.10

16

Lane Add

Existing R/W

Lane Add

Lane Drop

I-10 Median ℄

Lane Drop

Existing R/W

Lane Drop

Kolb Rd Ramp D

New Curb and Gutter
Std C-05.10

Frontage Rd

NBKolb42L

NBKolb42R

160

161

New R/W

New R/W

Kolb Rd

SCALE: Hor: 1"=400'

200 0 200 400

SCALE IN FEET

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT I
STA 863+00 TO STA 920+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

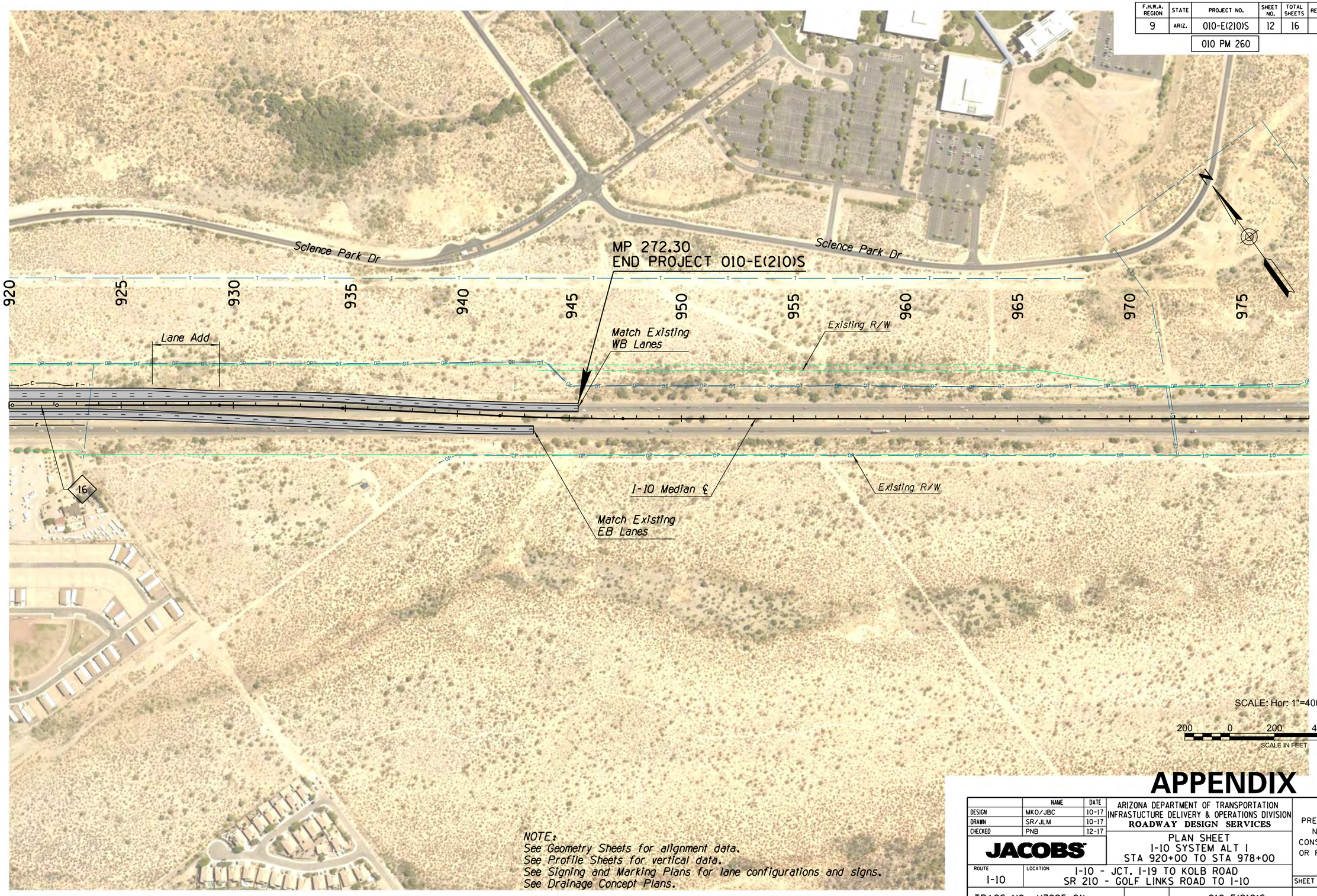
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-11

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p011.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	12	16	
		010 PM 260			



NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT 1
STA 920+00 TO STA 978+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-12

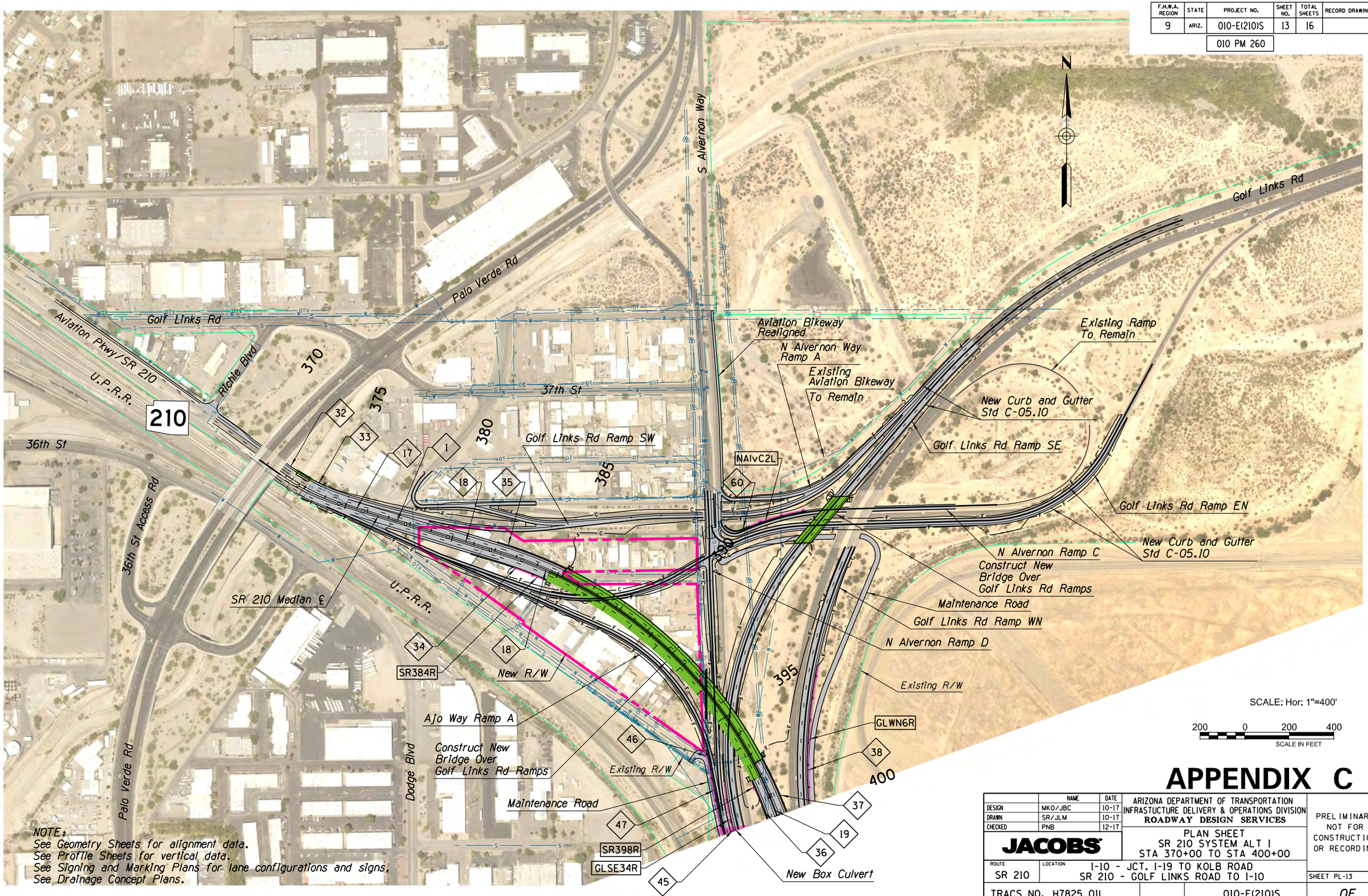
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p012.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	13	16	
		010 PM 260			

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



SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
SR 210 SYSTEM ALT I
STA 370+00 TO STA 400+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PL-13

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	14	16	

010 PM 260

EB ROADWAY SECTION
12' Outside Shoulder
12' Lanes (4)
12' Inside Shoulder

WB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (4)
12' Outside Shoulder

Maintenance Road
New Curb and Gutter Std C-05.10
Existing R/W
SR404L
GLWN6R
New Box Culvert
GL SE to Ajo Way Ramp A
U.P.R.R.
Maintenance Road
New Curb and Gutter Std C-05.10
Golf Links Rd Ramp SE
Ajo Way Ramp A
SR 210 Median ℄
Existing R/W
New Curb and Gutter Std C-05.10
Dodge Blvd
Construct New Bridge Over U.P.R.R. Tracks
SR423L
Ajo Way Ramp B
Contractors Way
U.P.R.R.
SR442L
New R/W
Ajo Way Ramp C
Existing R/W
SR454L
SR434R
New R/W
Ajo Way Ramp A
Extend Existing Box Culvert
SR445R
AjoD11R
SR456R
Ajo Way Ramp D
New R/W
Construct New Bridge Over Ajo Way
Ajo Way

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
SR 210 SYSTEM ALT I
STA 400+00 TO STA 458+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

SHEET PL-14

___ OF ___

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

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p014.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	15	16	
		010 PM 260			

N

EB ROADWAY SECTION
12' Outside Shoulder
12' Lanes (4)
12' Inside Shoulder

WB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (4)
12' Outside Shoulder

Irvington Rd
Contractors Way
U.P.R.R.
New R/W
Existing R/W
Extend Existing Box Culvert
SR 210 Median ℄
Construct New Bridge Over Irvington Rd
Construct New Bridge Over Michigan St
Michigan St
Alvernon Way Ramp C
Construct New Bridge For Ramp Over Alvernon Way Ramp C
Ramp EN
Ramp WN
Ramp SE
Ramp SW
Alvernon Way Ramp B
Alvernon Way Ramp A
Alvernon Way Ramp D
New Box Culvert
Construct New Bridges For Ramps Over Alvernon Way
Julian Wash Greenway

SR454L
SR456R
SR463L
SR463R
SR490L
SR490R
AlvC15L
WN41R
WN42L
WN38R
WN28L
EN76R
EN76L
SE41L
SE41R
SE30L
SE30R
EN55L
EN50R

460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
SR 210 SYSTEM ALT I
STA 458+00 TO STA 520+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L
010-E(210)S

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

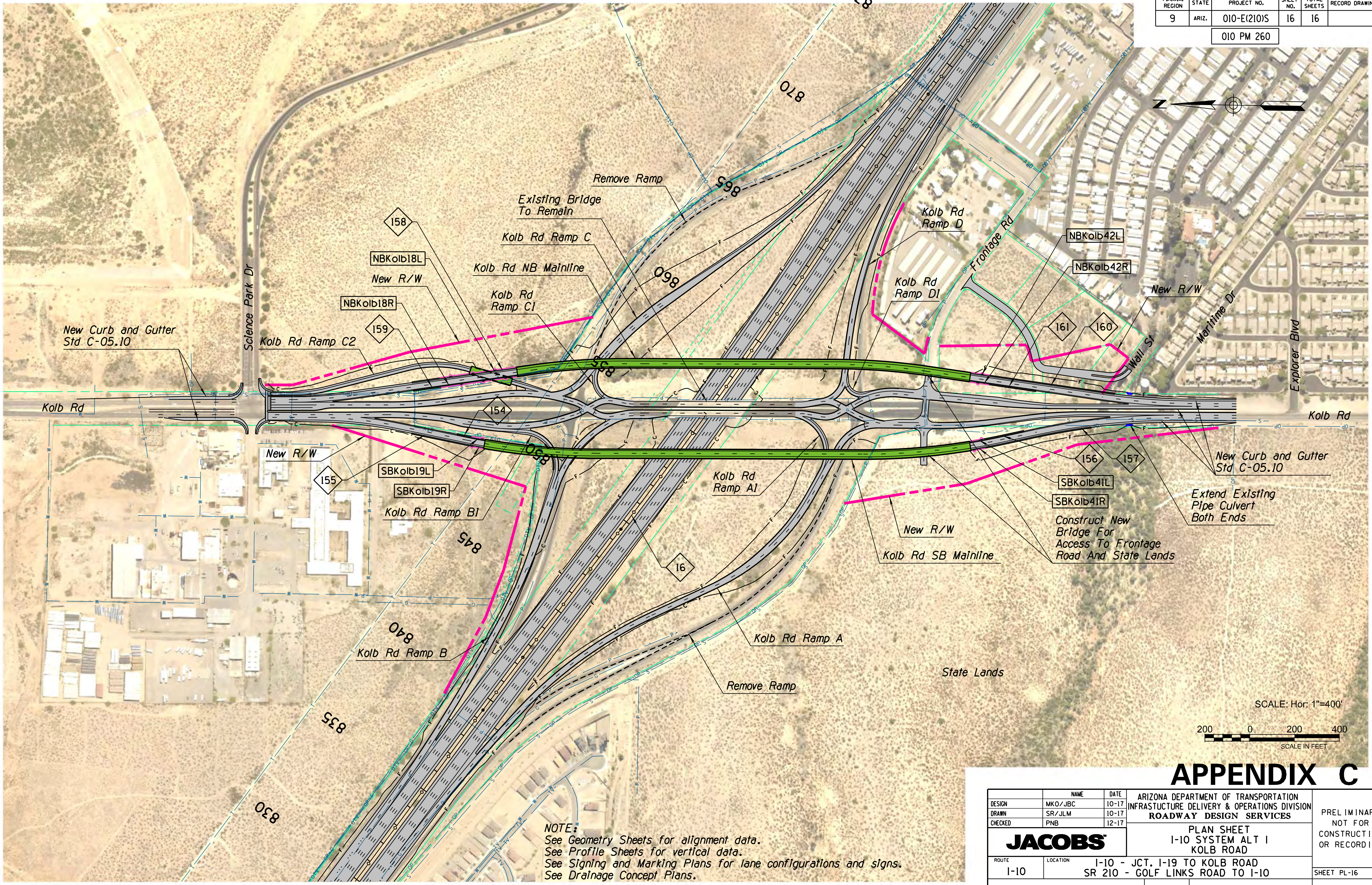
SHEET PL-15
___ OF ___

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

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p015.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	16	16	

010 PM 260



NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX C

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT 1
KOLB ROAD

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE I-10

LOCATION I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-16

TRACS NO. H7825 01L | 010-E(210)S | ____ OF ____

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p016.dgn

APPENDIX D
SYSTEM ALTERNATIVE I TYPICAL SECTIONS

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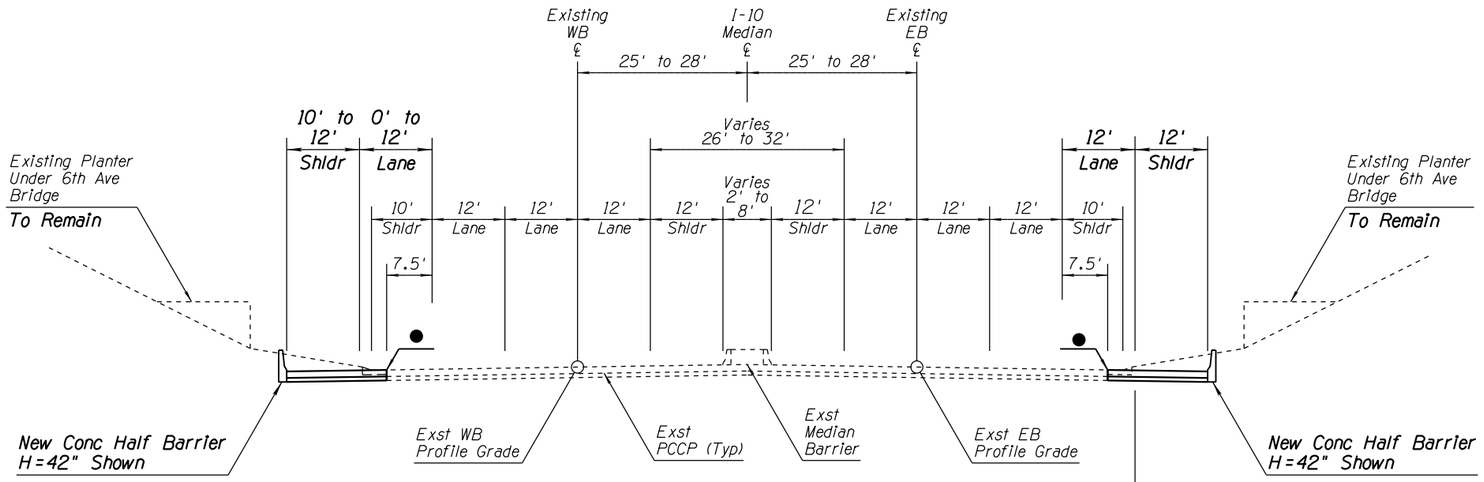
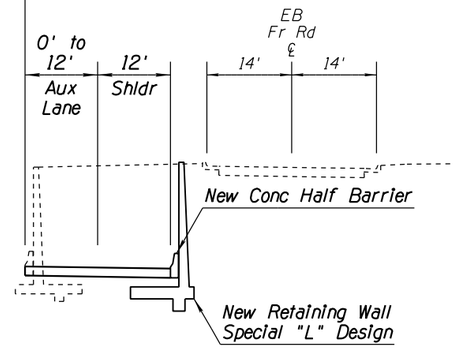
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	44	
		010 PM 260			



6th Ave Ramp 'A' Gore
to EB Sta 351+18.31

● Lip of Existing Gutter



EB Sta 351+18.31 to
Med Sta 355+41.71

TYPICAL SECTION

I-10
Depressed Mainline
Outside Widening
Between 6th Ave Ramp 'A' Gore and Median Sta 355+41.71

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET TYP-01
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
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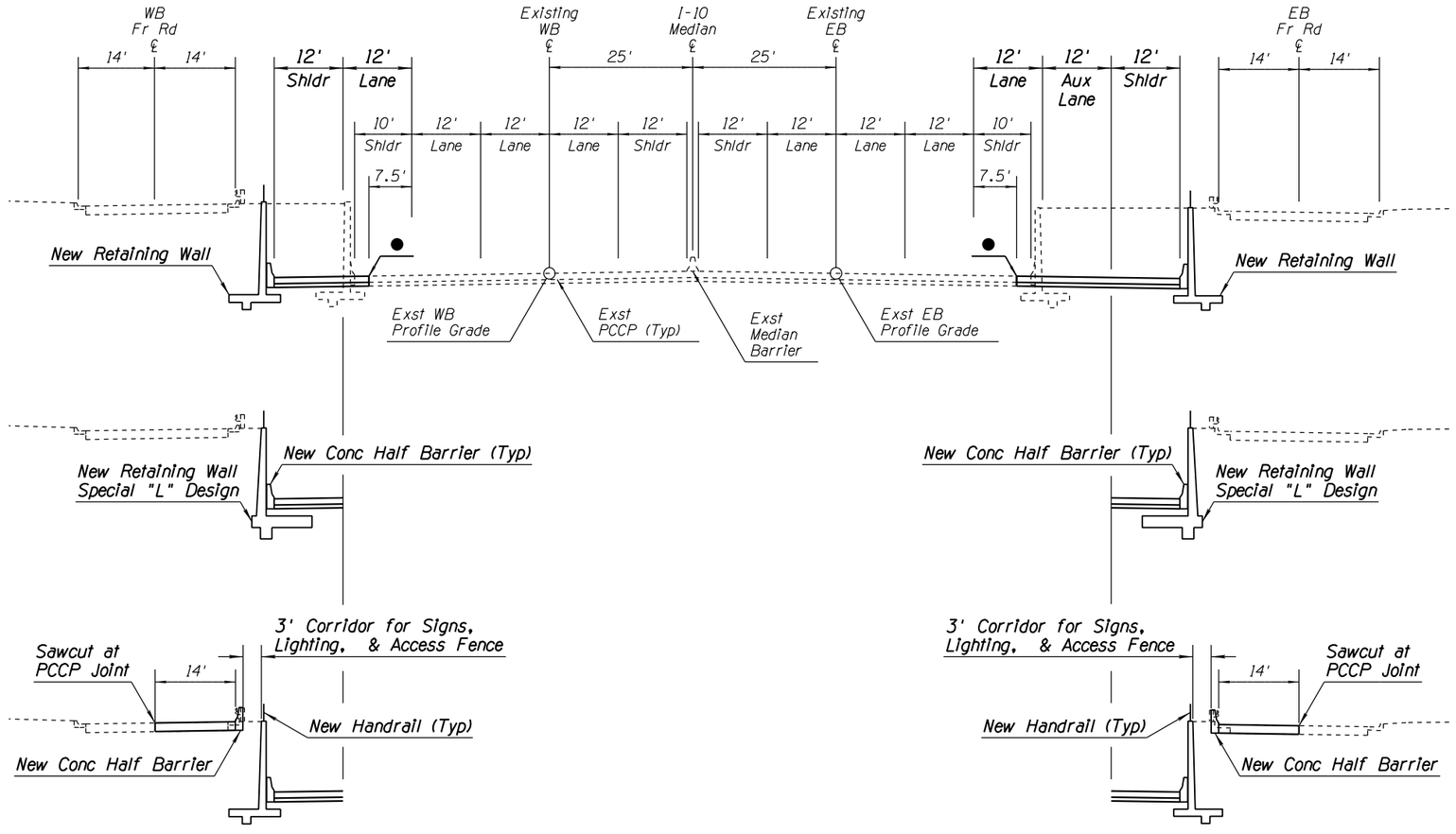
		010 PM 260			



Frontage Road Treatment

Frontage Road Treatment

● Lip of Existing Gutter

TYPICAL SECTION

I-10
Depressed Mainline
Outside Widening
Sta 355+41.71 to 4th Avenue

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

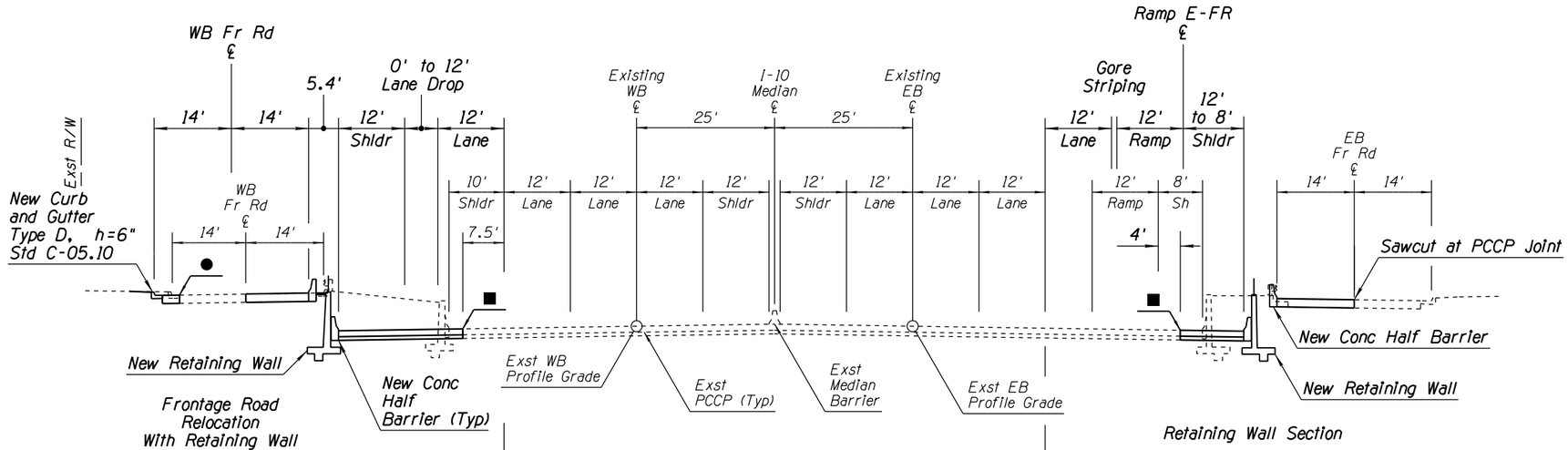
ROUTE	LOCATION	SHEET TYP-02
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty002.dgn

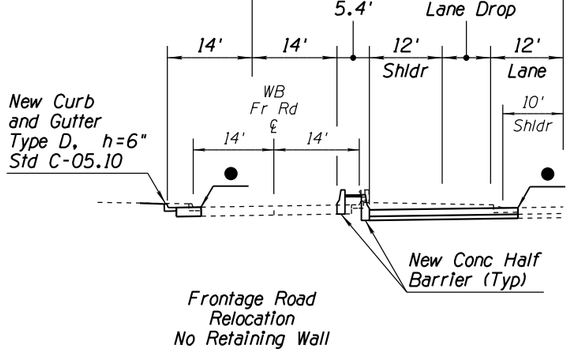
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

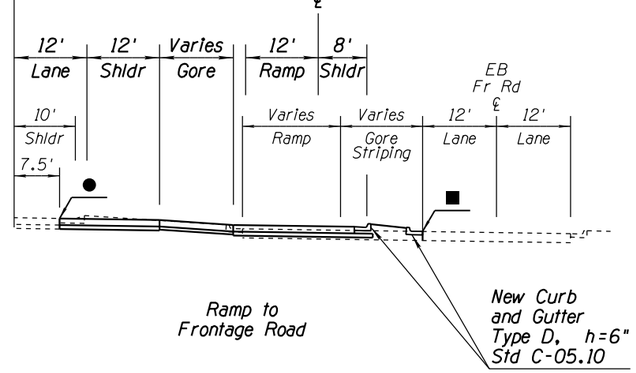
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	44	
		010 PM 260			



● Lip of Existing Gutter

■ Sawcut





TYPICAL SECTION

I-10
Depressed Mainline
4th Avenue to Crossover Ramps
Outside Widening
WB Frontage Road Relocation

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

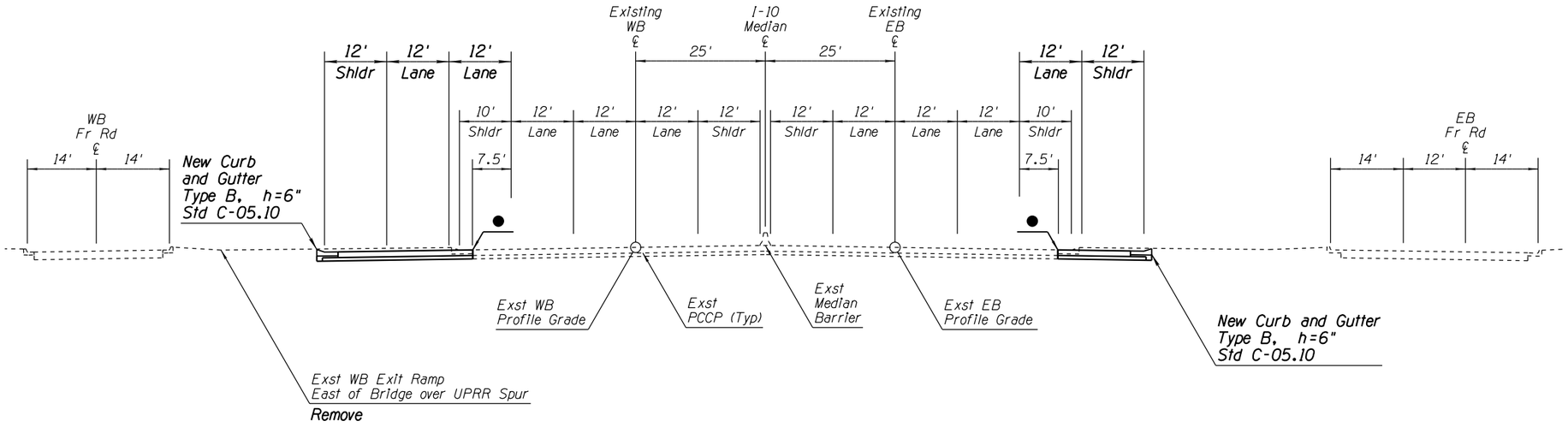
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-03

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty003.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	44	
		010 PM 260			



● Lip of Existing Gutter

TYPICAL SECTION

I-10
Elevated Mainline
In the Vicinity of UPRR Spur
Outside Widening
Between EB Exit and Sta PC 375+93.29

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-04
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L		010-E(210)S	___ OF ___

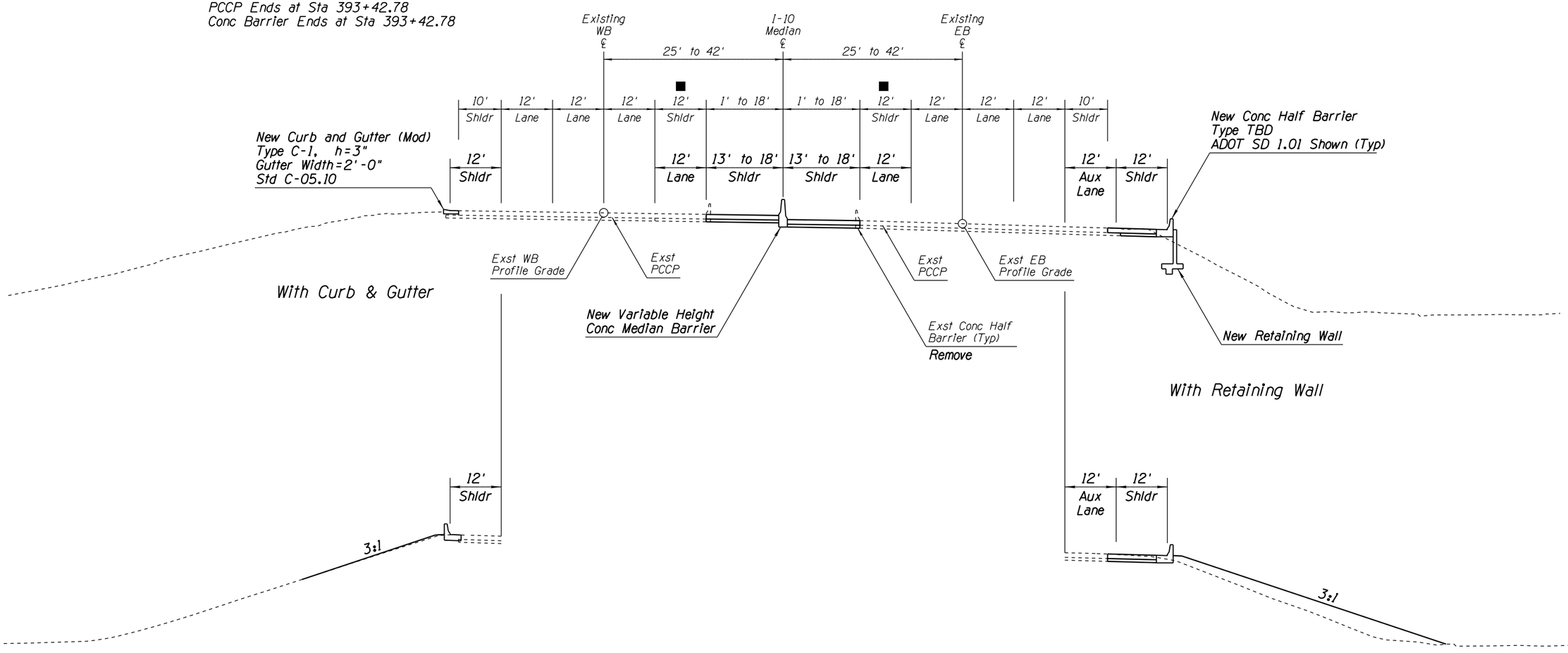
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty004.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	44	
		010 PM 260			

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

■ *EB Shldr-*
PCCP Ends at Sta 391+31.46
Conc Barrier Ends at Sta 391+47.39
WB Shldr-
PCCP Ends at Sta 393+42.78
Conc Barrier Ends at Sta 393+42.78



TYPICAL SECTION

I-10
Elevated Mainline
Curve at Park Ave
Change from Outside Widening to Inside Widening
Med Sta PC 375+93.29 to Med Sta PT 397+99.24

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

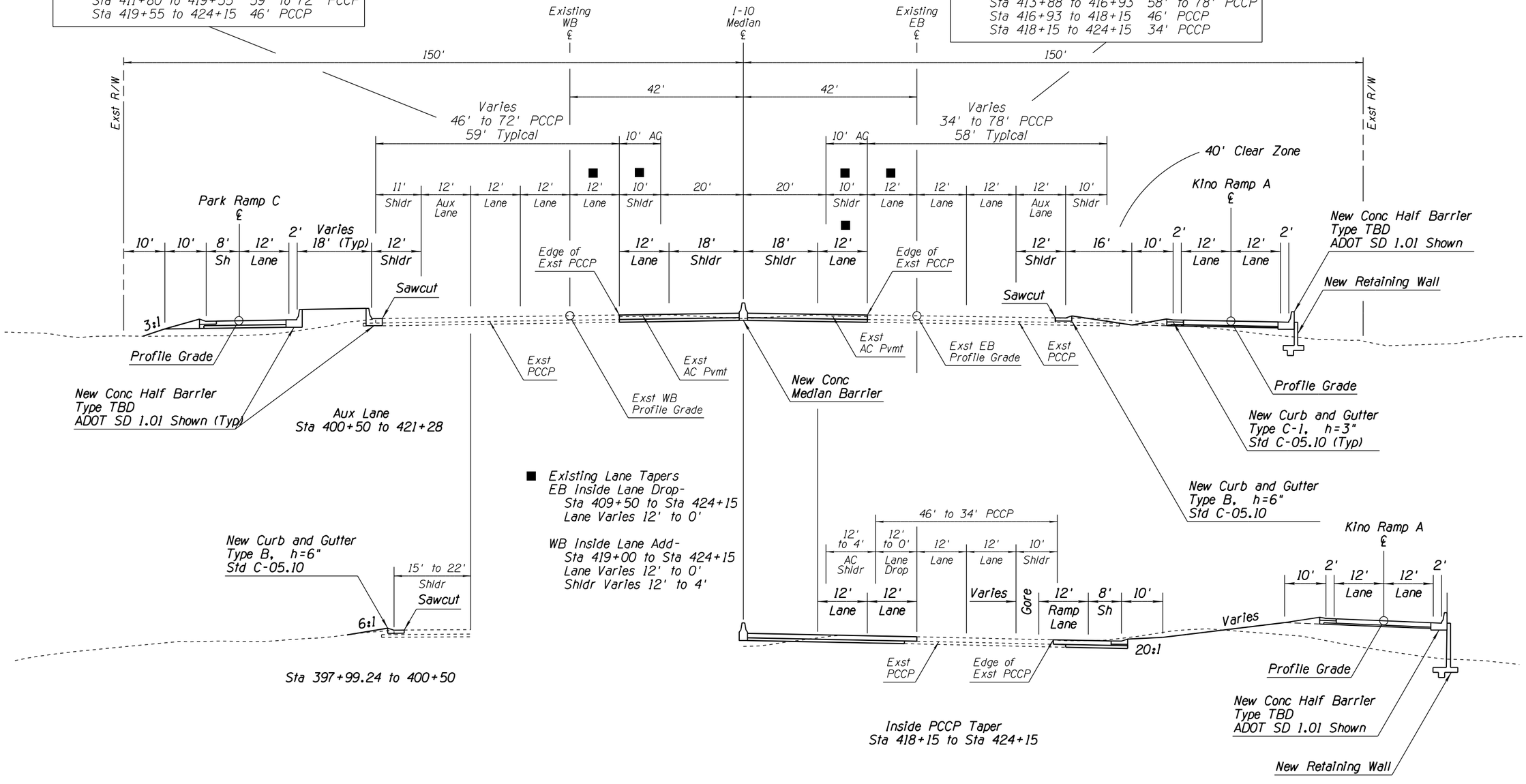
ROUTE	LOCATION	SHEET TYP-05
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L		010-E(210)S	___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	6	44	
		010 PM 260			

Sta 397+99.24 to 400+80 46' to 58' PCCP
Sta 400+80 to 411+80 59' PCCP
Sta 411+80 to 419+55 59' to 72' PCCP
Sta 419+55 to 424+15 46' PCCP

Sta 397+99.24 to 400+50 46' to 58' PCCP
Sta 400+50 to 413+88 58' PCCP
Sta 413+88 to 416+93 58' to 78' PCCP
Sta 416+93 to 418+15 46' PCCP
Sta 418+15 to 424+15 34' PCCP



■ Existing Lane Tapers
EB Inside Lane Drop-
Sta 409+50 to Sta 424+15
Lane Varies 12' to 0'

WB Inside Lane Add-
Sta 419+00 to Sta 424+15
Lane Varies 12' to 0'
Shldr Varies 12' to 4'

Sta 397+99.24 to 400+50

Inside PCCP Taper
Sta 418+15 to Sta 424+15

TYPICAL SECTION

I-10
Elevated Mainline
Park Ave to Kino West Gores
Inside Widening
Med Sta PT 397+99.24 to Med Sta 421+28

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

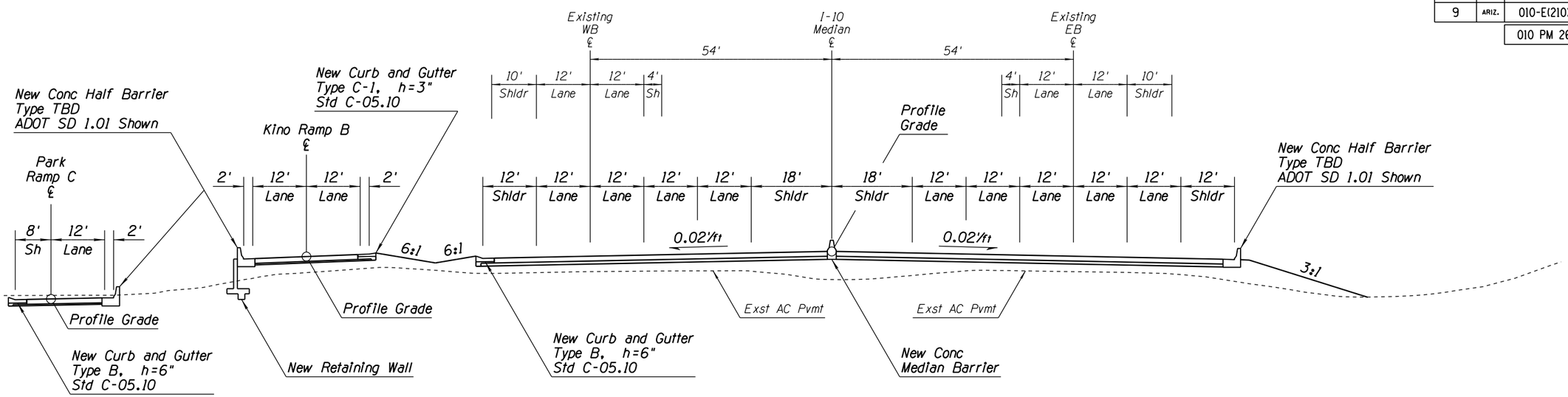
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-06

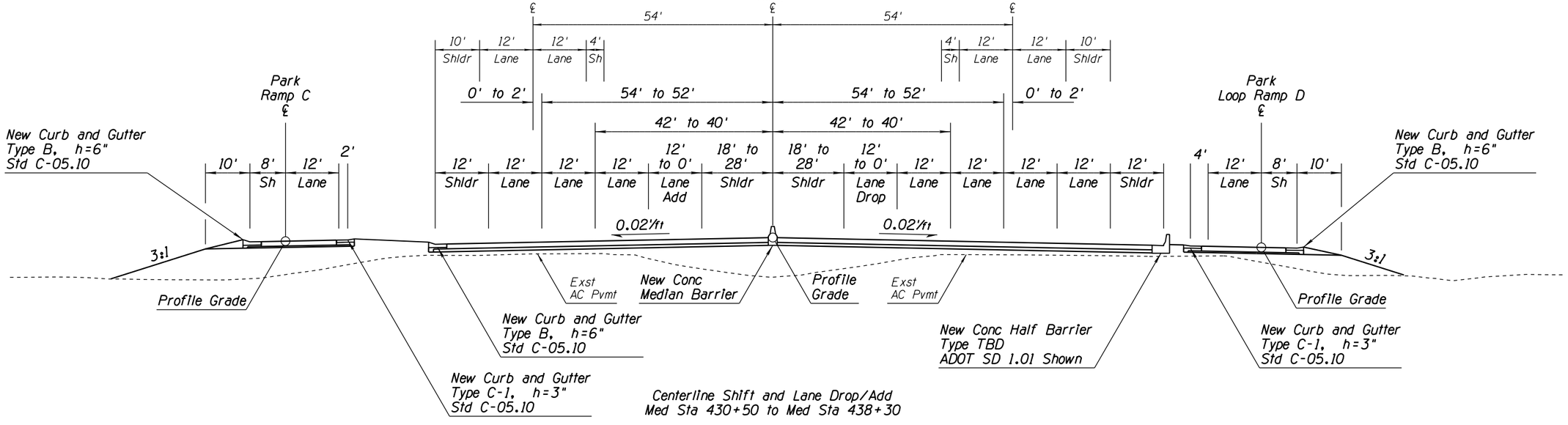
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	7	44	
		010 PM 260			



Med Sta 421+28 to Med Sta 430+50



Centerline Shift and Lane Drop/Add
Med Sta 430+50 to Med Sta 438+30

TYPICAL SECTION

I-10
Elevated Mainline
West Kino Gores to Sta 438+30
Inside Widening
Med Sta PT 421+28 to Med Sta 438+30

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET TYP-07
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L		010-E(210)S ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
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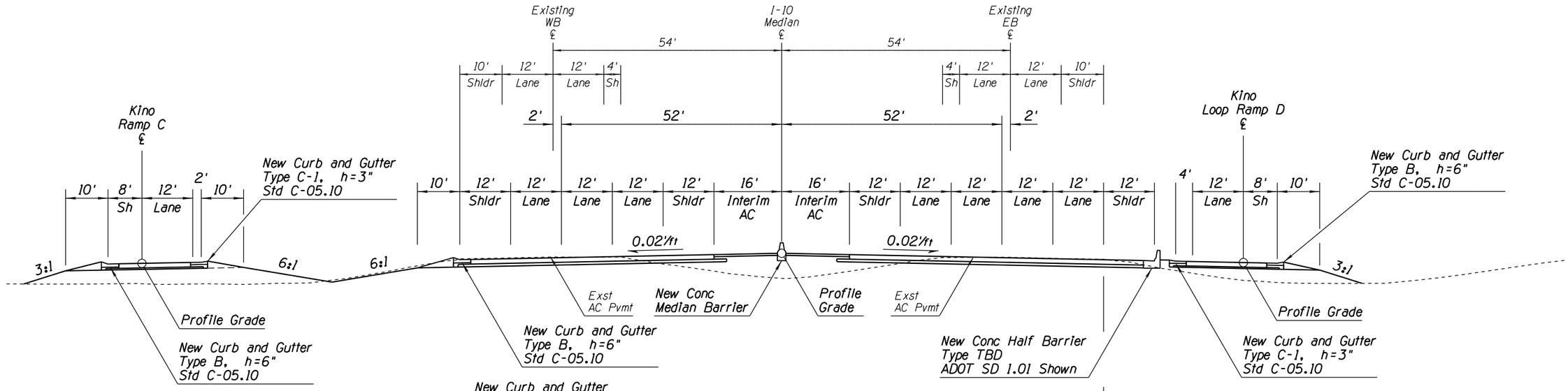
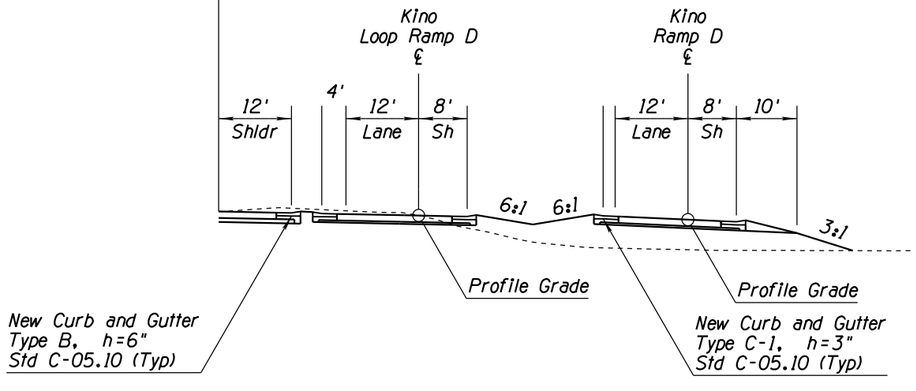
		010 PM 260			





TYPICAL SECTION

I-10
Elevated Mainline
Sta 438+30 to East Kino Gores
Inside Widening
Med Sta 438+30 to Med Sta 445+00

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

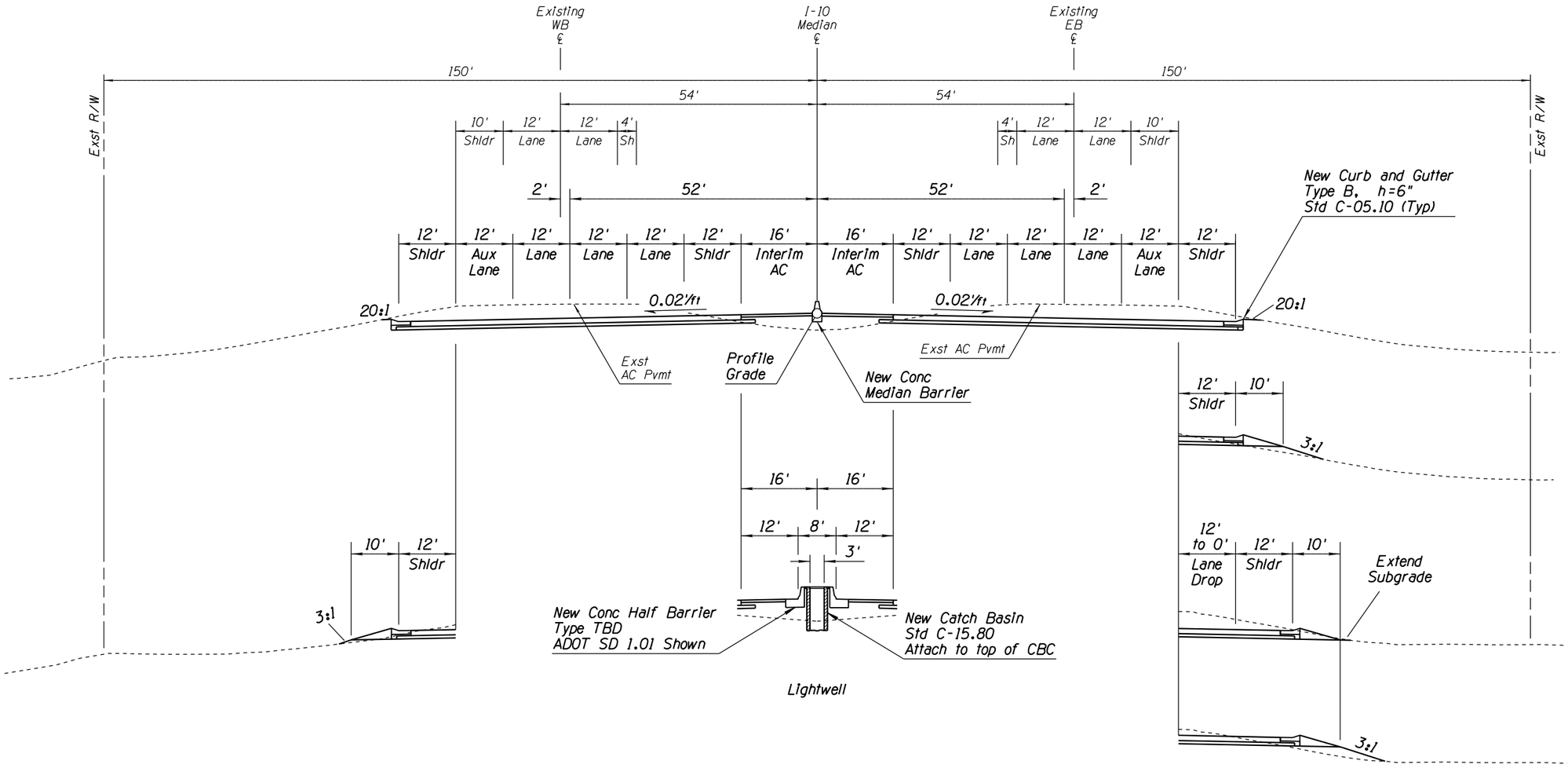
PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET TYP-08
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	9	44	
		010 PM 260			



TYPICAL SECTION

I-10
Elevated Mainline
East Kino Gores to Country Club Gores
Inside Widening
Med Sta 445+00 to Med Sta 487+00

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

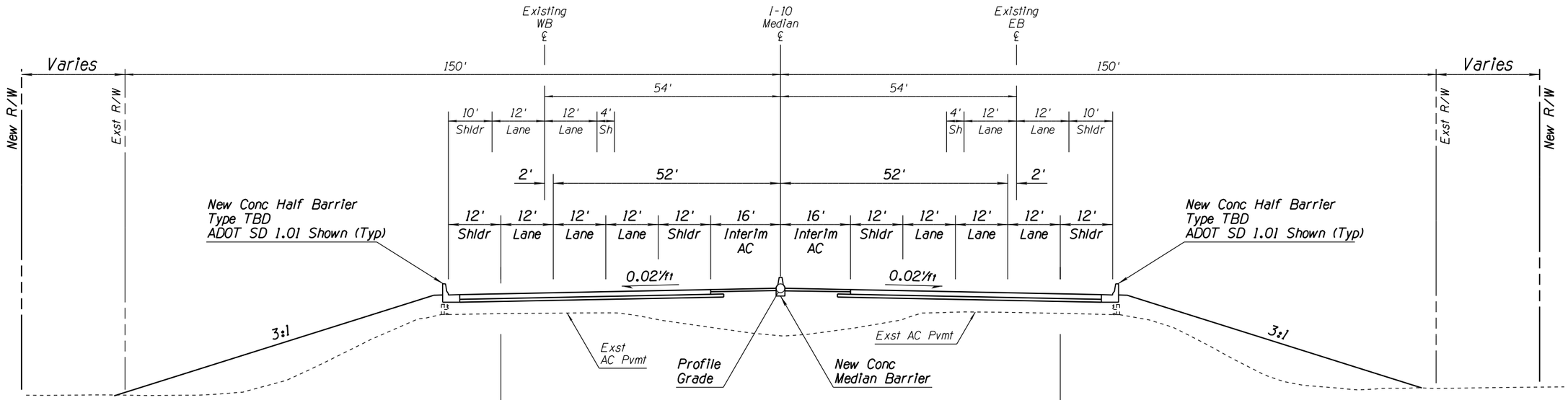
SHEET TYP-09

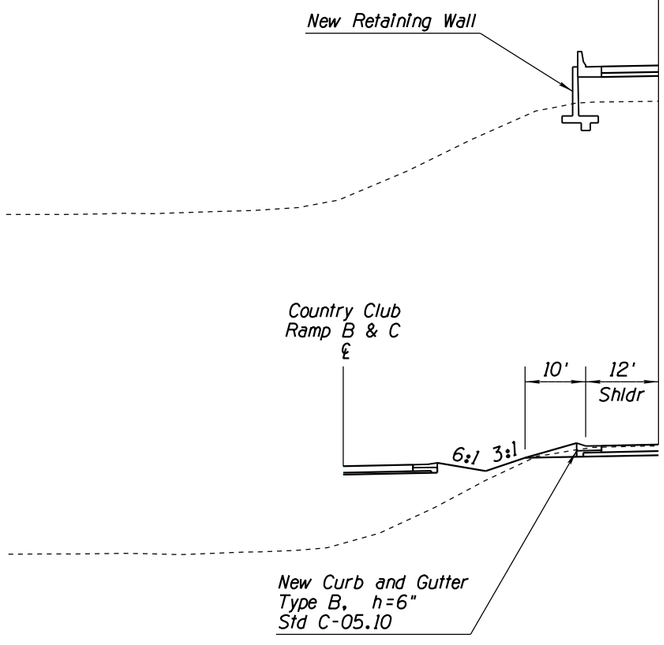
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

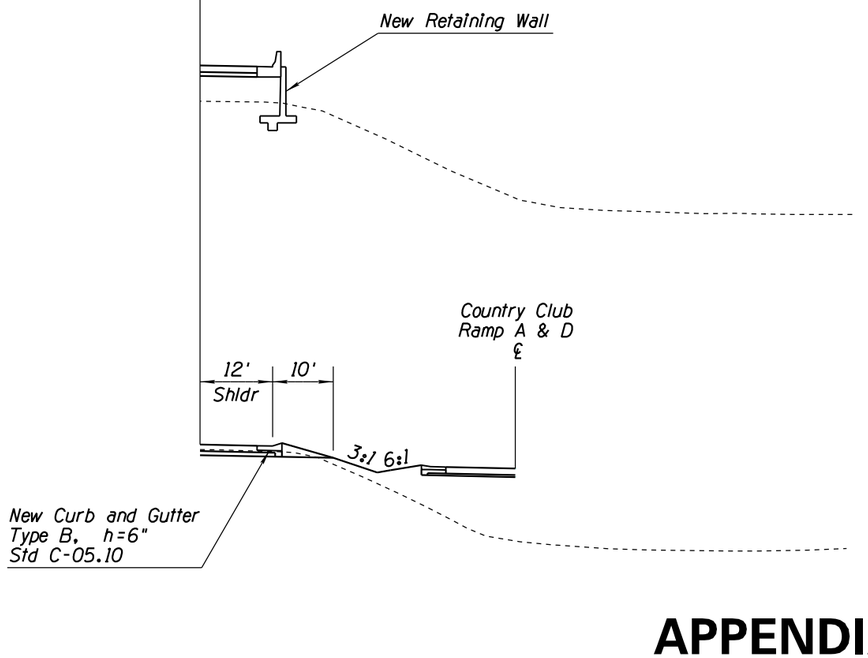
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	10	44	

010 PM 260







TYPICAL SECTION

I-10
Elevated Mainline
Between Country Club Gores
Inside Widening
Med Sta 487+00 to Med Sta 513+00

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

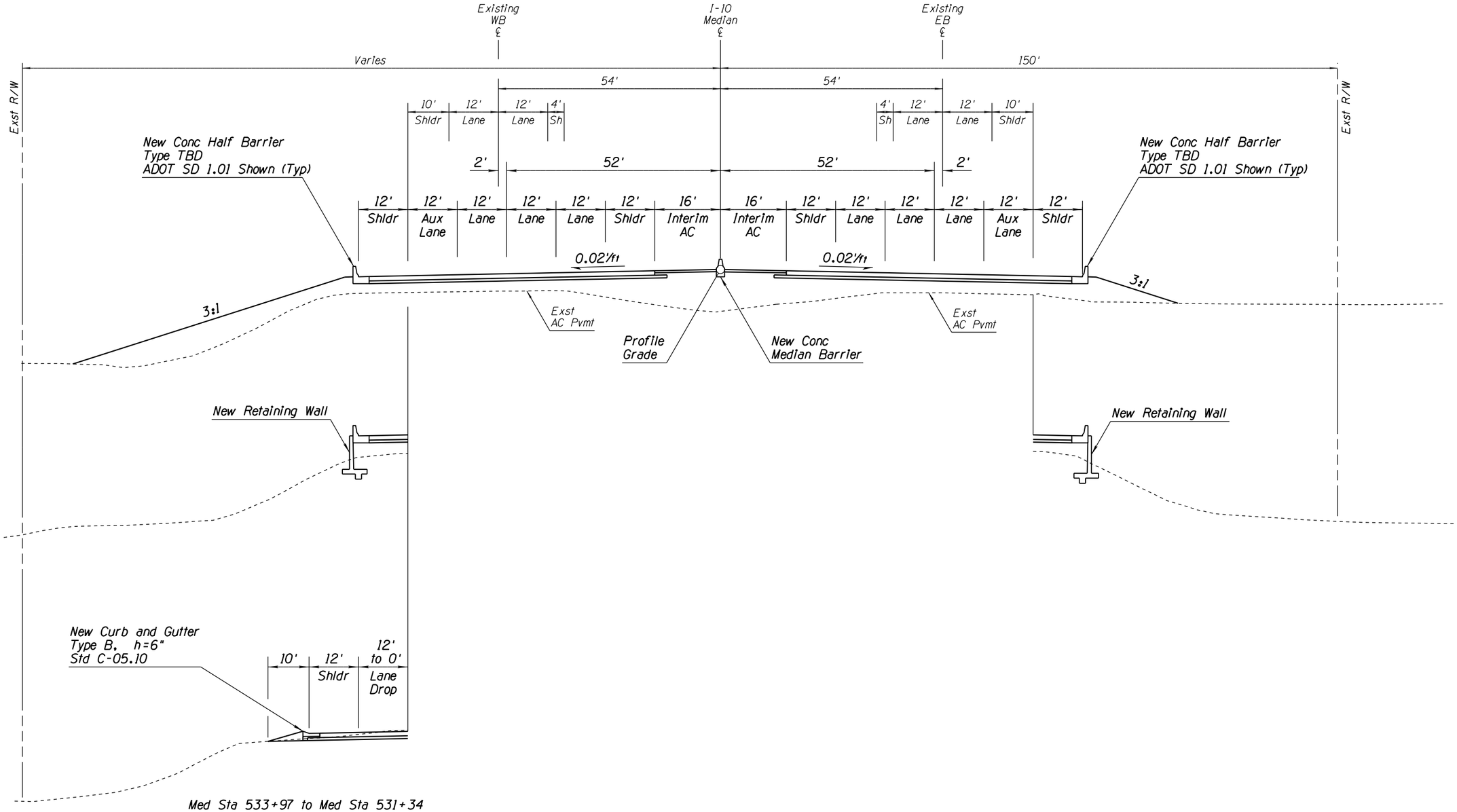
SHEET TYP-10

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	11	44	

010 PM 260



Med Sta 533+97 to Med Sta 531+34

TYPICAL SECTION

I-10
Elevated Mainline
Country Club Gores to Alvernon Gores
Inside Widening
Med Sta 513+00 to Med Sta 548+00

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-11

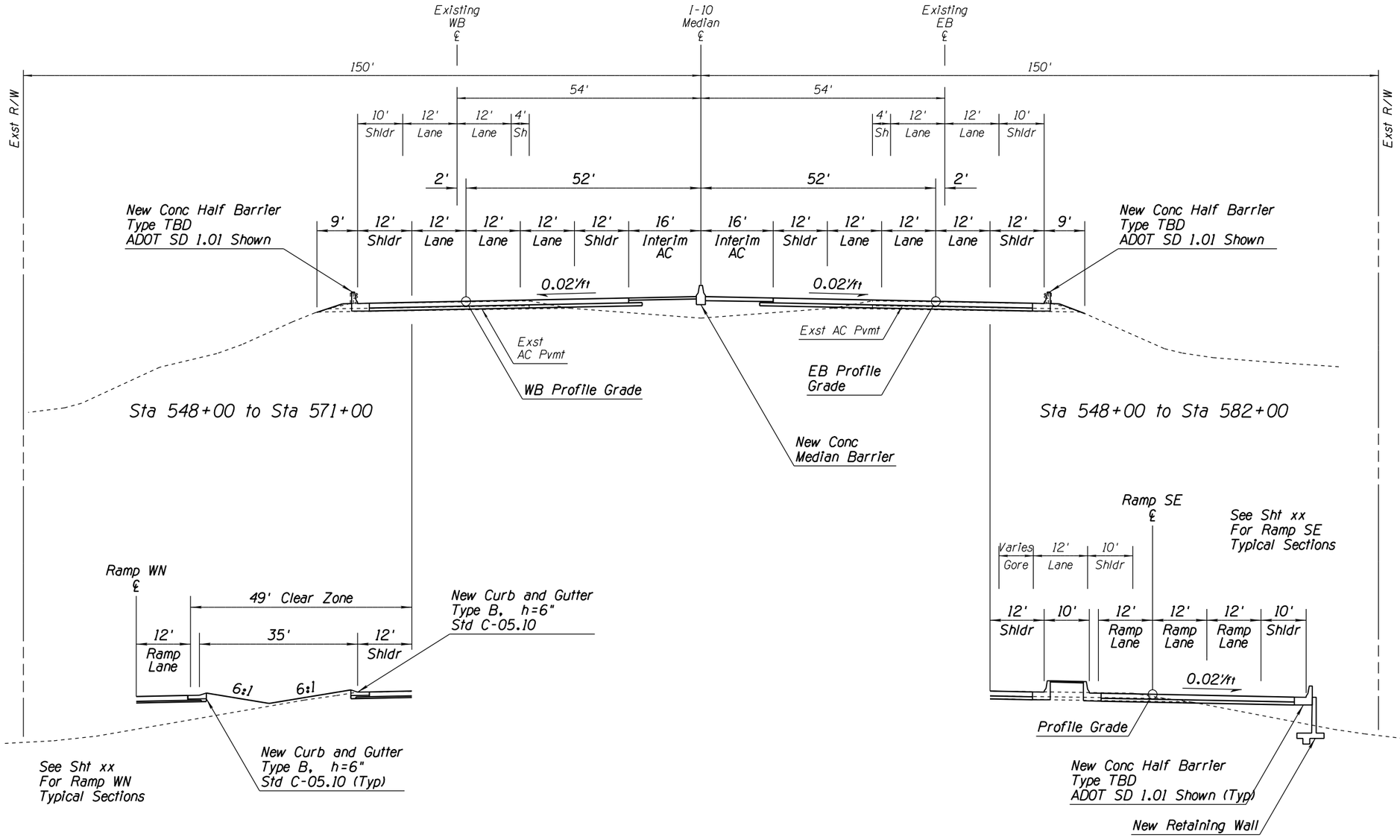
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty011.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	12	44	
		010 PM 260			

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



TYPICAL SECTION

I-10 System Alternative I
Elevated Mainline
At SR 210 System Interchange
Inside Widening
Med Sta 548+00 to Med PC 591+04.78

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

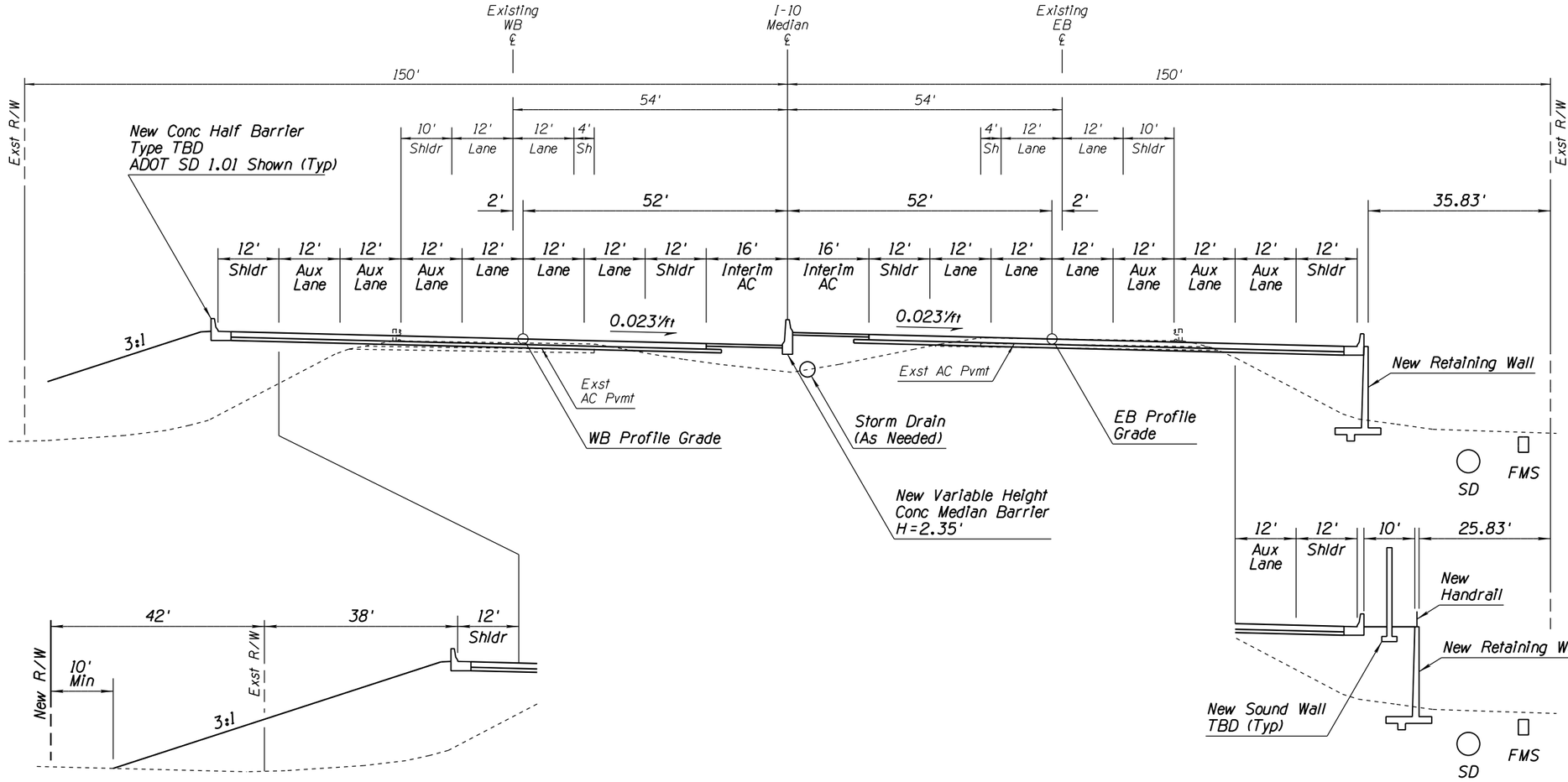
PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-12

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	13	44	
		010 PM 260			



With Sound Wall
Near Drexel

TYPICAL SECTION

I-10 System Alternative I
Elevated Mainline
Curve East of Alvernon
Inside Widening
Med PC 591+04.78 to Med PT 634+85.33

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

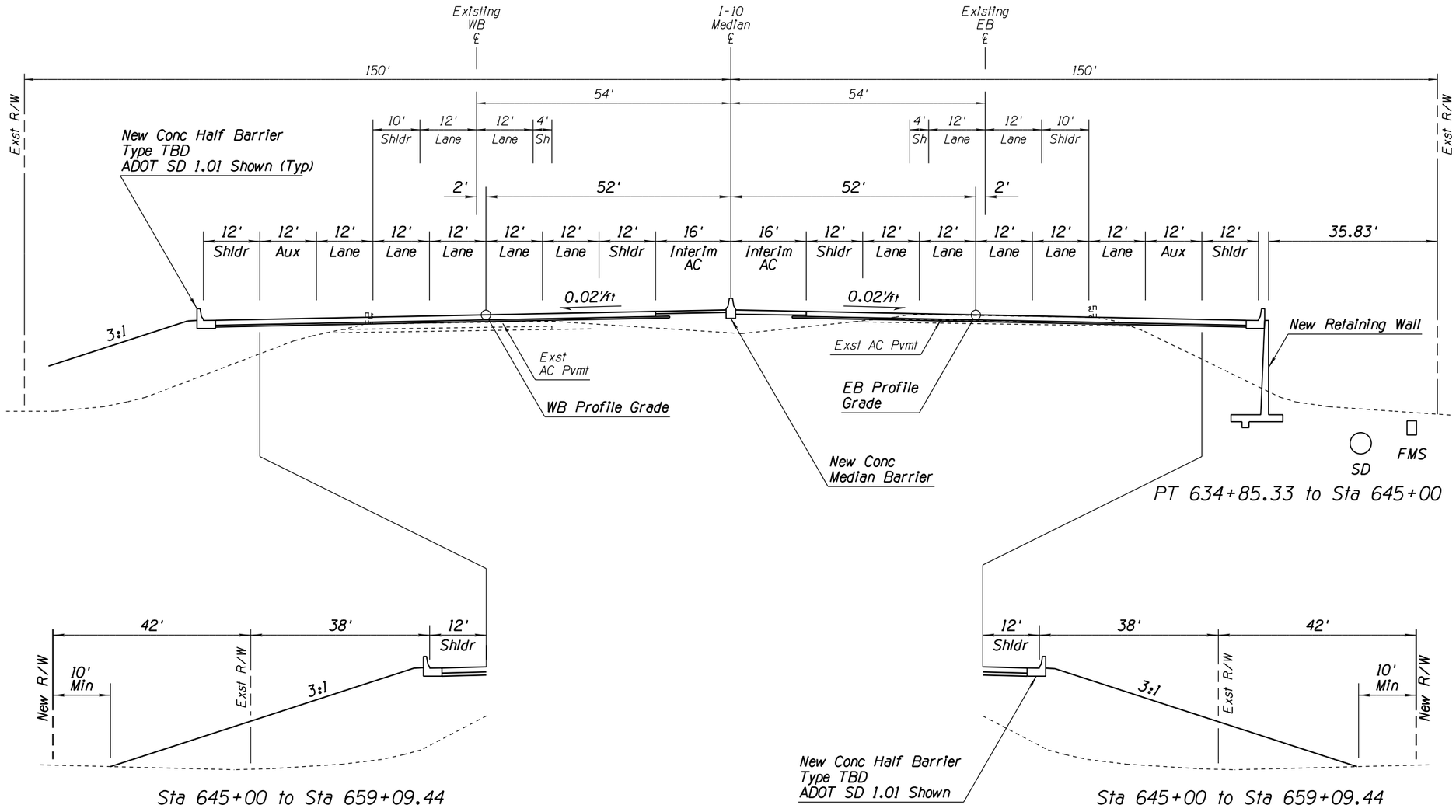
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-13

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	14	44	
		010 PM 260			



Sta 645+00 to Sta 659+09.44

Sta 645+00 to Sta 659+09.44

TYPICAL SECTION

I-10 System Alternative I
Elevated Mainline
Drexel to Valencia Ramp Gores
Inside Widening
Med PT 634+85.33 to Med PC 659+09.44

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

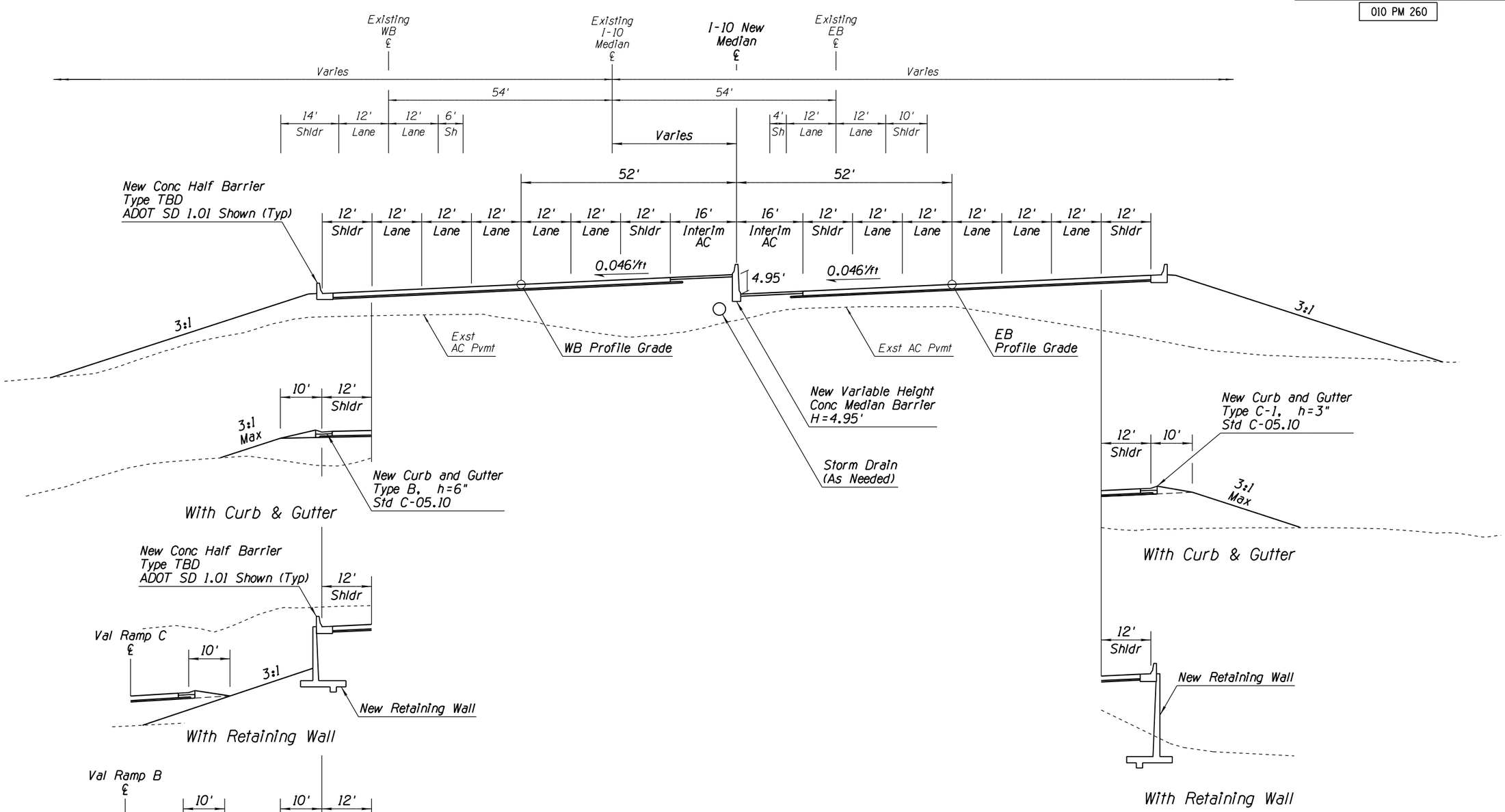
SHEET TYP-14

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty014.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	15	44	
		010 PM 260			



TYPICAL SECTION

I-10 System Alternative I
Elevated Mainline
Curve at Valencia
Alignment Shift to West
Inside Widening
Med PC 659+09.44 to Med PT 688+55.65

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

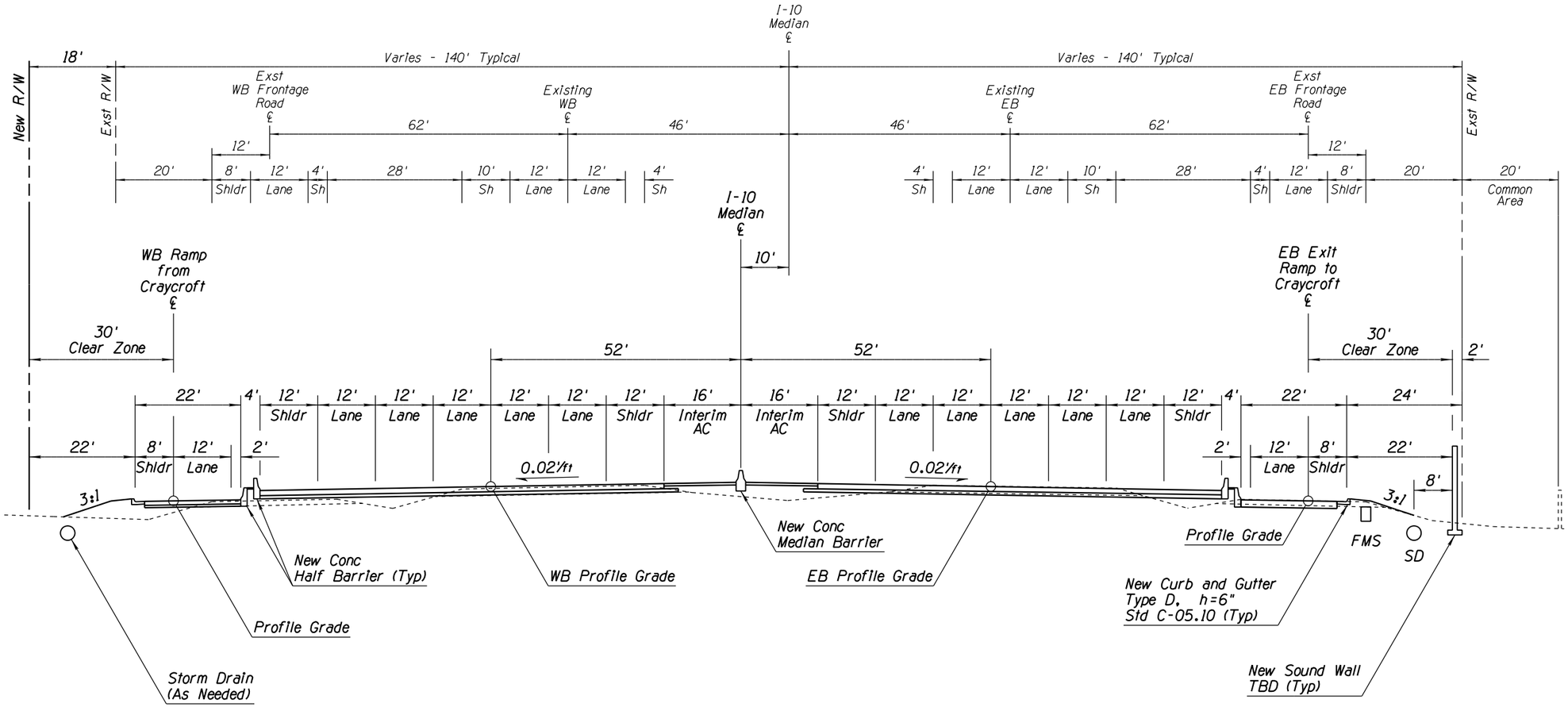
ROUTE	LOCATION	SHEET TYP-15
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	___ OF ___

TRACS NO. H7825 01L | 010-E(210)S

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty015.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	16	44	
		010 PM 260			



TYPICAL SECTION

I-10 System Alternative I
Elevated Mainline
East of Valencia Rd to West of Craycroft Rd
Shift I-10 10' to Left
Med PT 688+55.65 to Med Sta 713+00

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

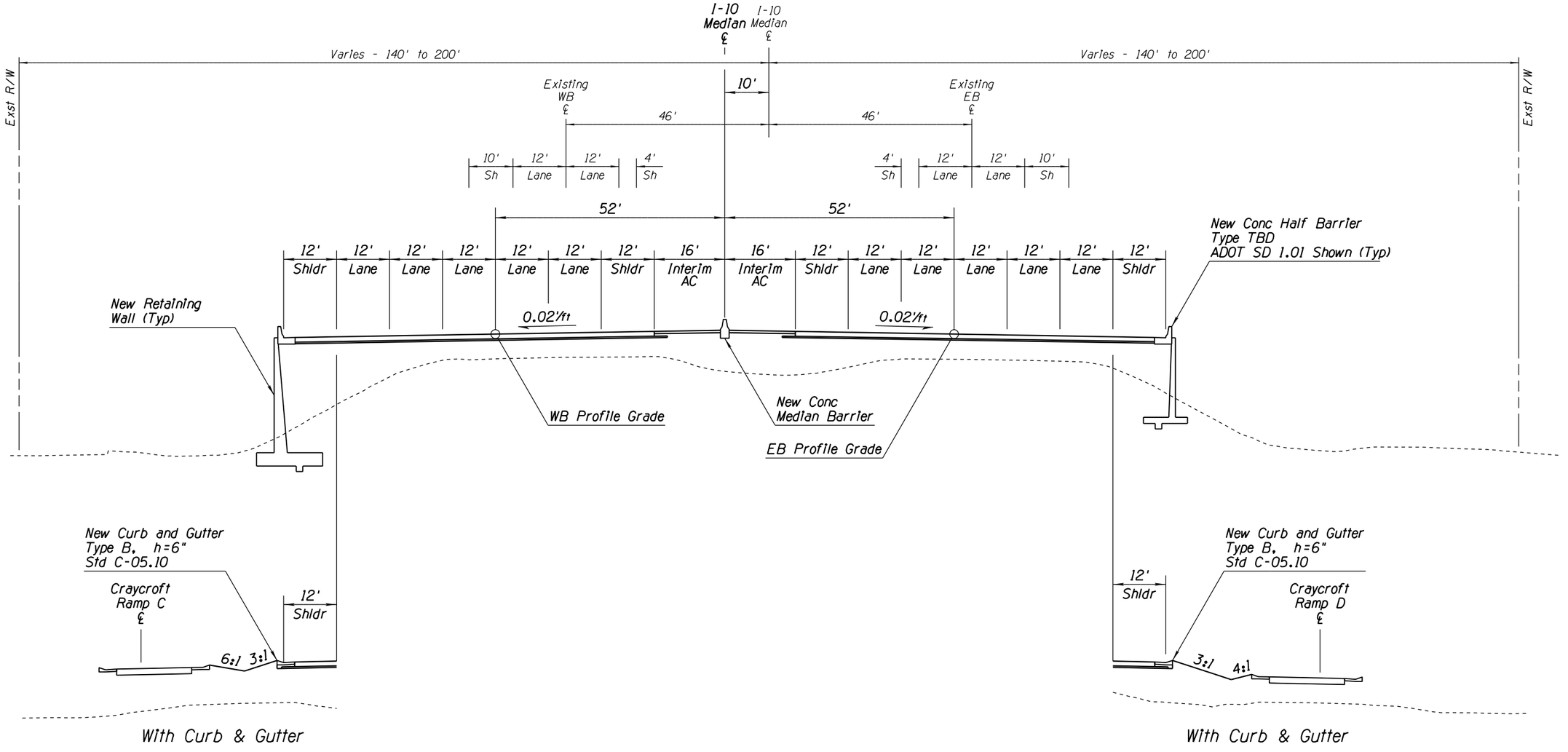
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-16

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty016.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	17	44	
		010 PM 260			



With Curb & Gutter

With Curb & Gutter

TYPICAL SECTION

I-10 System Alternative I
Elevated Mainline
West of Craycroft to Craycroft East Gores
Shift I-10 10' to Left
Med Sta 713+00 to Med Sta 735+00

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

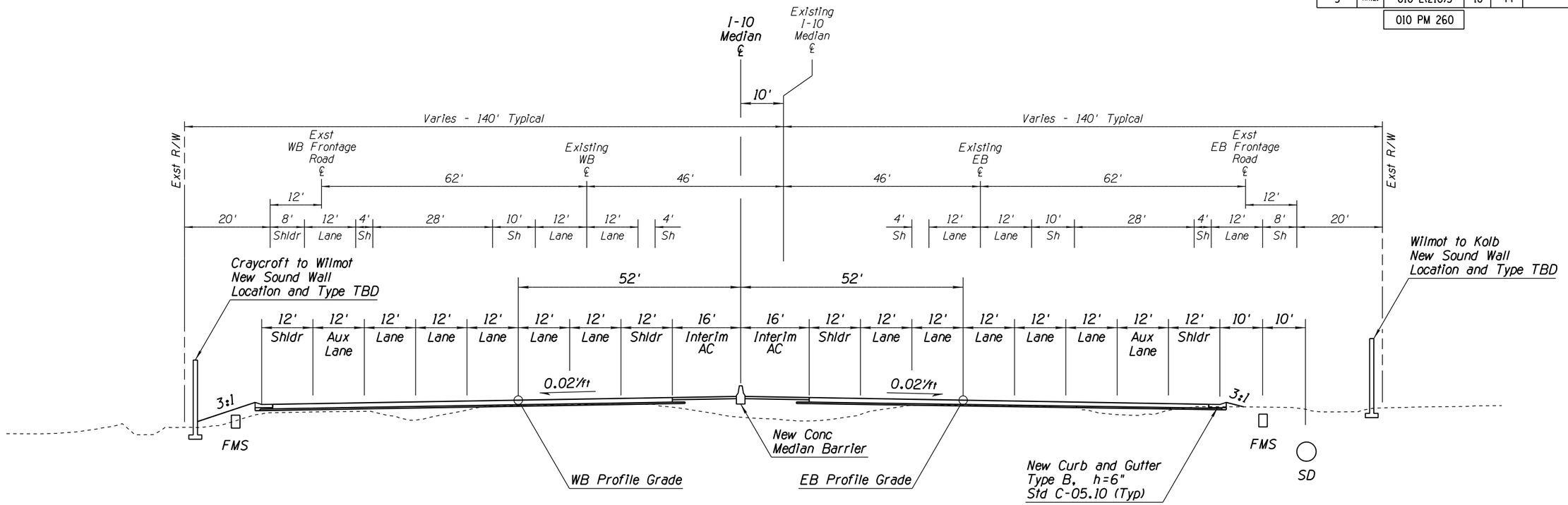
ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET TYP-17
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L	010-E(210)S	___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	18	44	
		010 PM 260			



TYPICAL SECTION

I-10 System Alternative I
Elevated Mainline
Shift I-10 10' to Left
Craycroft East Gores to Wilmot West Gores
Med Sta 735+00 to Med Sta 778+00
Wilmot East Gores to Kolb West Gores
Med Sta 803+00 to Med Sta PC 839+43.64

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

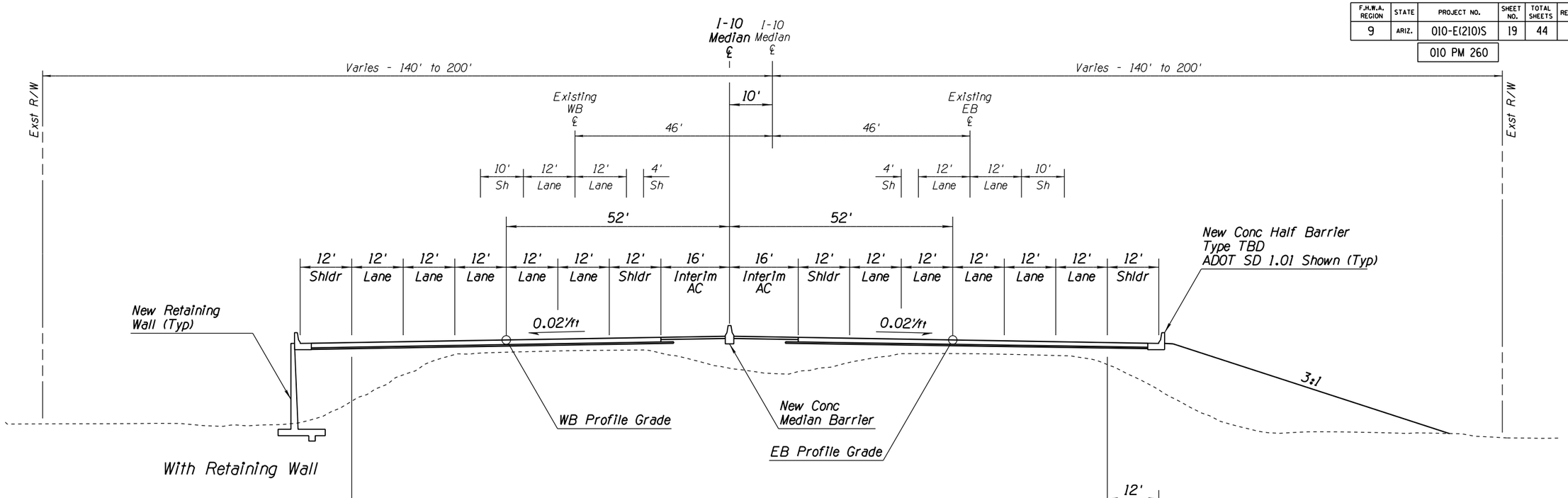
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-18
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L		010-E(210)S	___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	19	44	
		010 PM 260			



TYPICAL SECTION

I-10 System Alternative I
Elevated Mainline
Wilmot West Gores to Wilmot East Gores
Shift I-10 10' to Left
Med Sta 778+00 to Med Sta 803+00

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-19

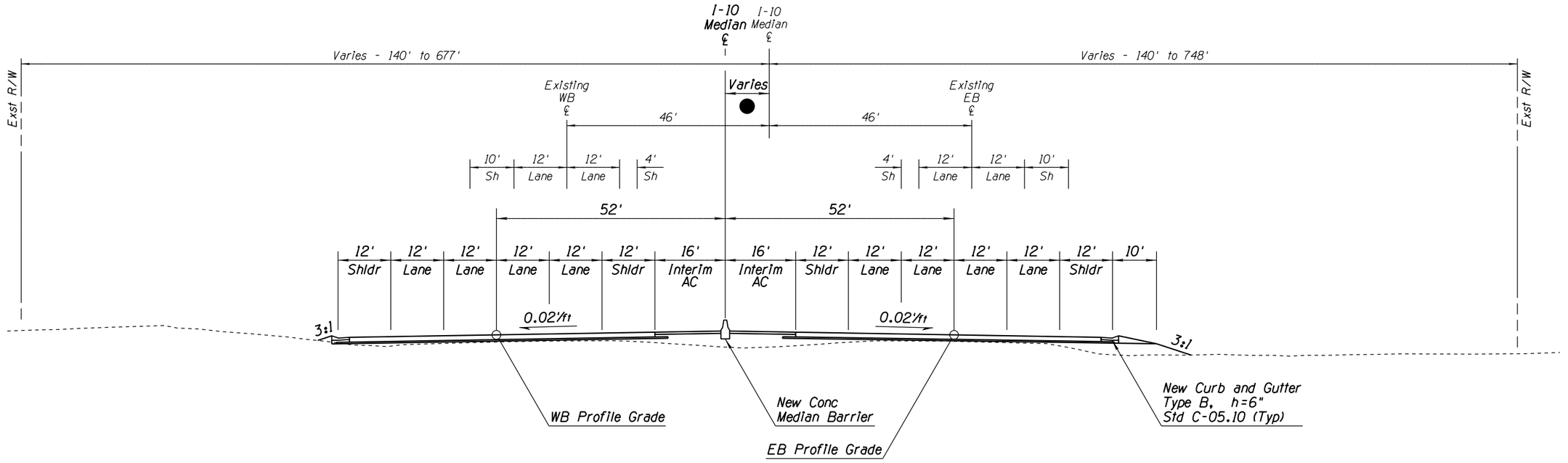
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty019.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	20	44	
		010 PM 260			

● Varies- 10' Left at PC 839+43.64
3.16' Rt at POC 852+55.50
60' Left at PT 873+38.61



TYPICAL SECTION

I-10 System Alternative 1
Elevated Mainline
Kolb West Gores to Kolb East Gores
Shift I-10 (10' Left to 3.16' Rt to 60' Left)
Med Sta PC 839+43.64 to Med Sta PT 873+38.61

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

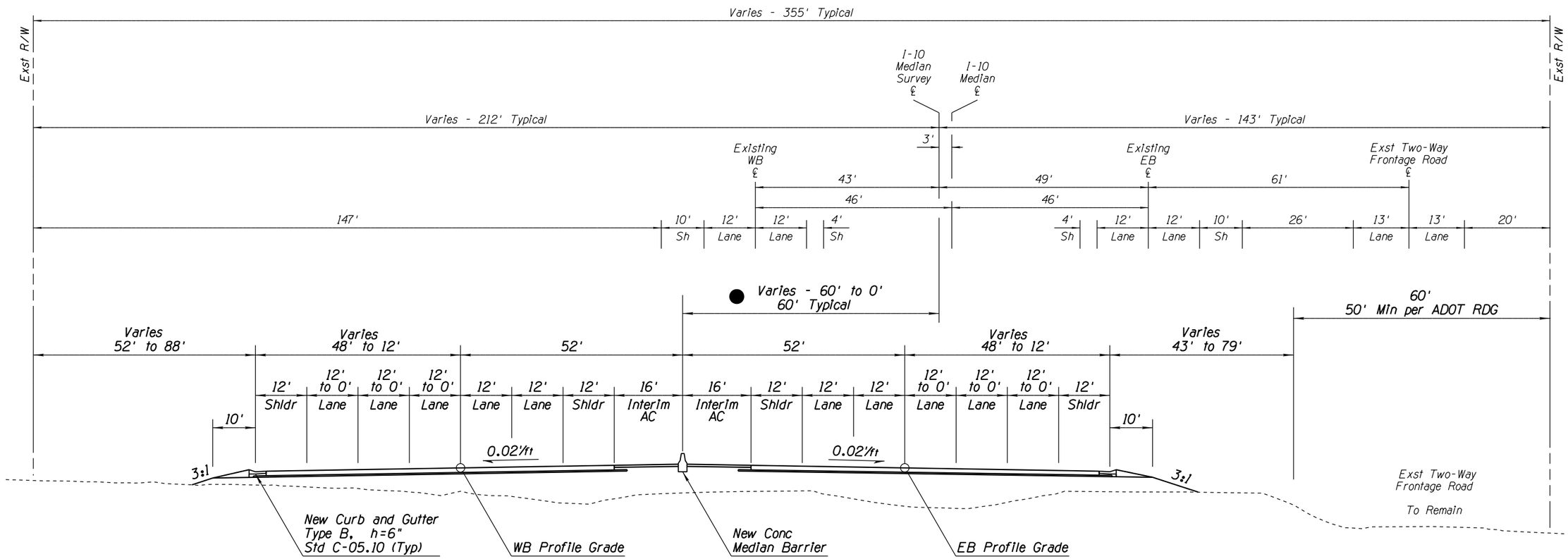
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-20

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	21	44	

010 PM 260



● Varies- 60' Left PT 873+38.61 to PC 929+38.61
60' Left to 0' PC 929+38.61 to PT 947+39.83 (Connect Back to Existing)

TYPICAL SECTION

I-10 System Alternative 1
Elevated Mainline
Kolb East Gores to End
Shift I-10 60' Left to 0')
Med Sta PT 873+38.61 to Med Sta 945+39

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

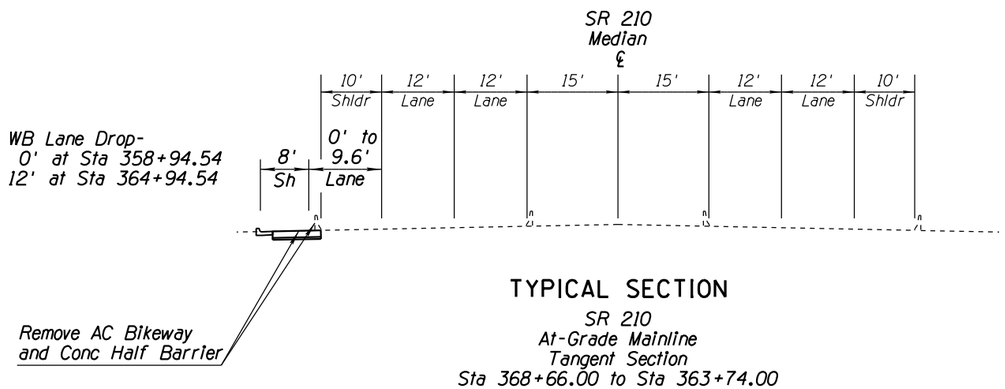
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-21

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

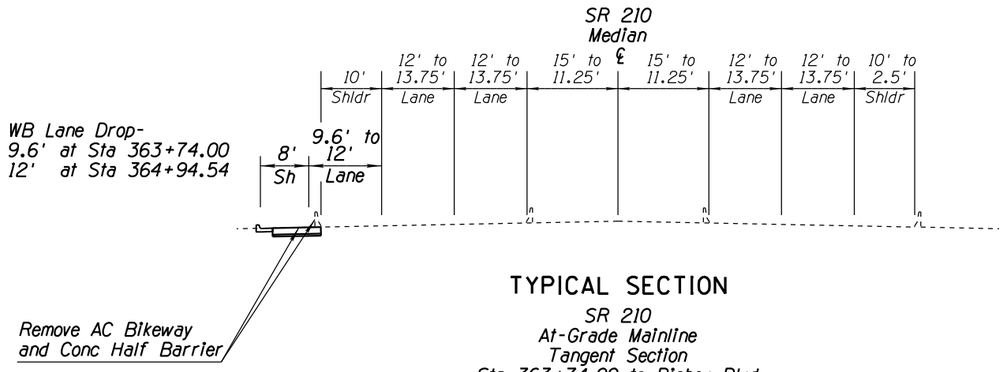
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty021.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	22	44	
		010 PM 260			



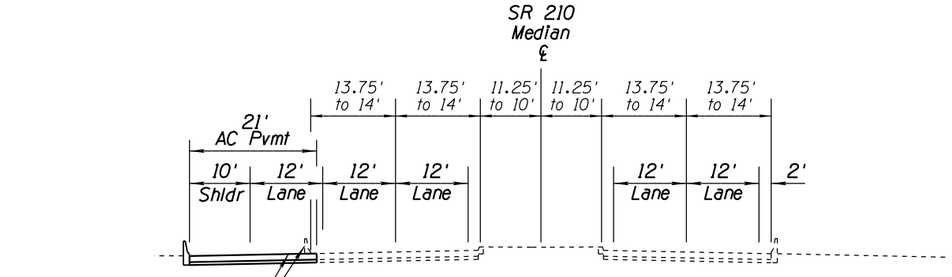
TYPICAL SECTION

SR 210
At-Grade Mainline
Tangent Section
Sta 368+66.00 to Sta 363+74.00



TYPICAL SECTION

SR 210
At-Grade Mainline
Tangent Section
Sta 363+74.00 to Richey Blvd



TYPICAL SECTION

SR 210
At-Grade Mainline
Tangent Section
Richey Blvd to Sta 368+66.00

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

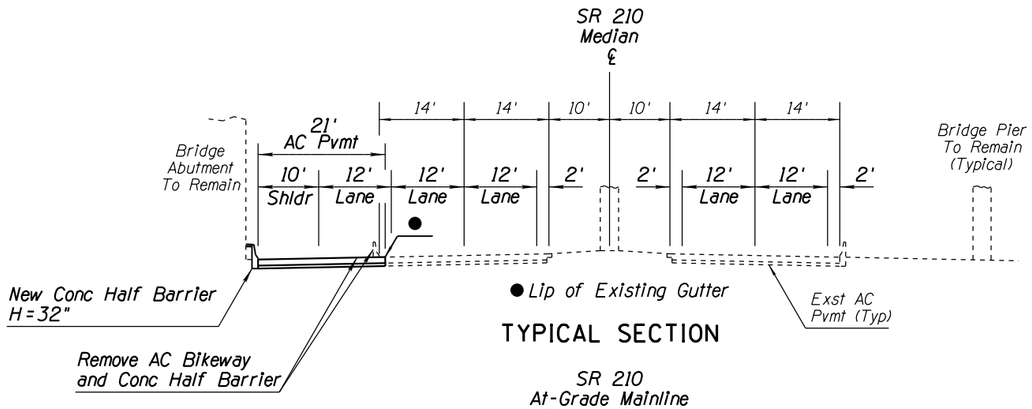
ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-22

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

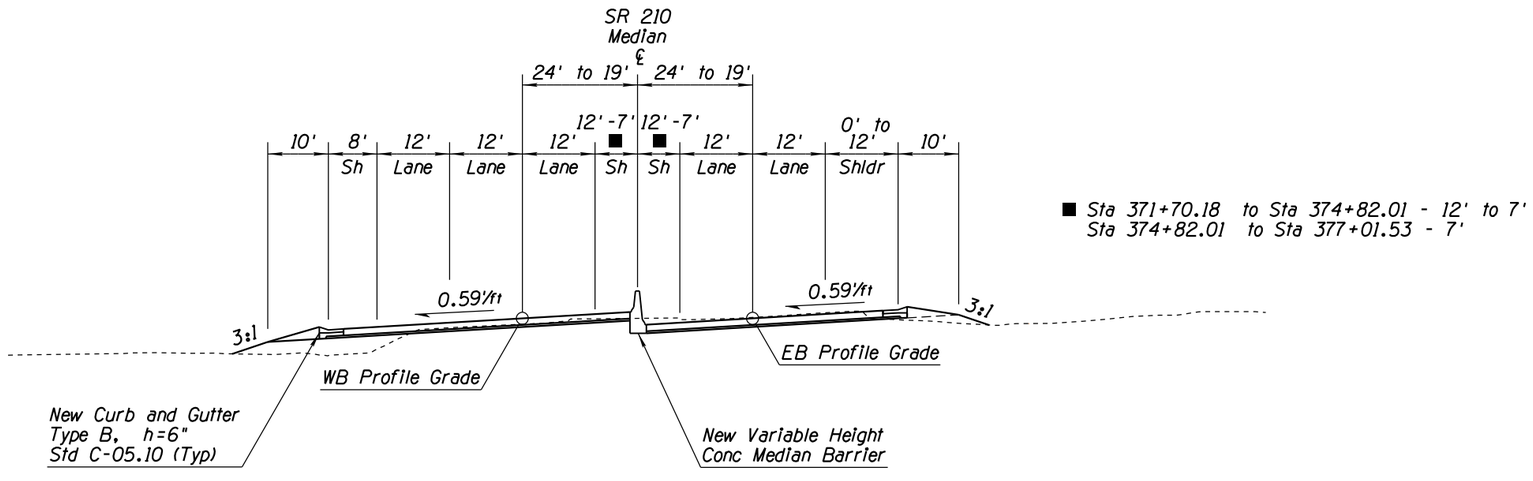
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	23	44	
		010 PM 260			



TYPICAL SECTION

SR 210
At-Grade Mainline
Tangent Section
Under Palo Verde Bridge
Looking South
Sta 368+66.00 to Sta PC 371+70.18



■ Sta 371+70.18 to Sta 374+82.01 - 12' to 7'
Sta 374+82.01 to Sta 377+01.53 - 7'

TYPICAL SECTION

SR 210
Elevated Mainline
Superelevated Section
Palo Verde Bridge to GL Ramp EN Gore
Sta PC 371+70.18 to Sta 377+01.53

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT 1
TYPICAL SECTIONS

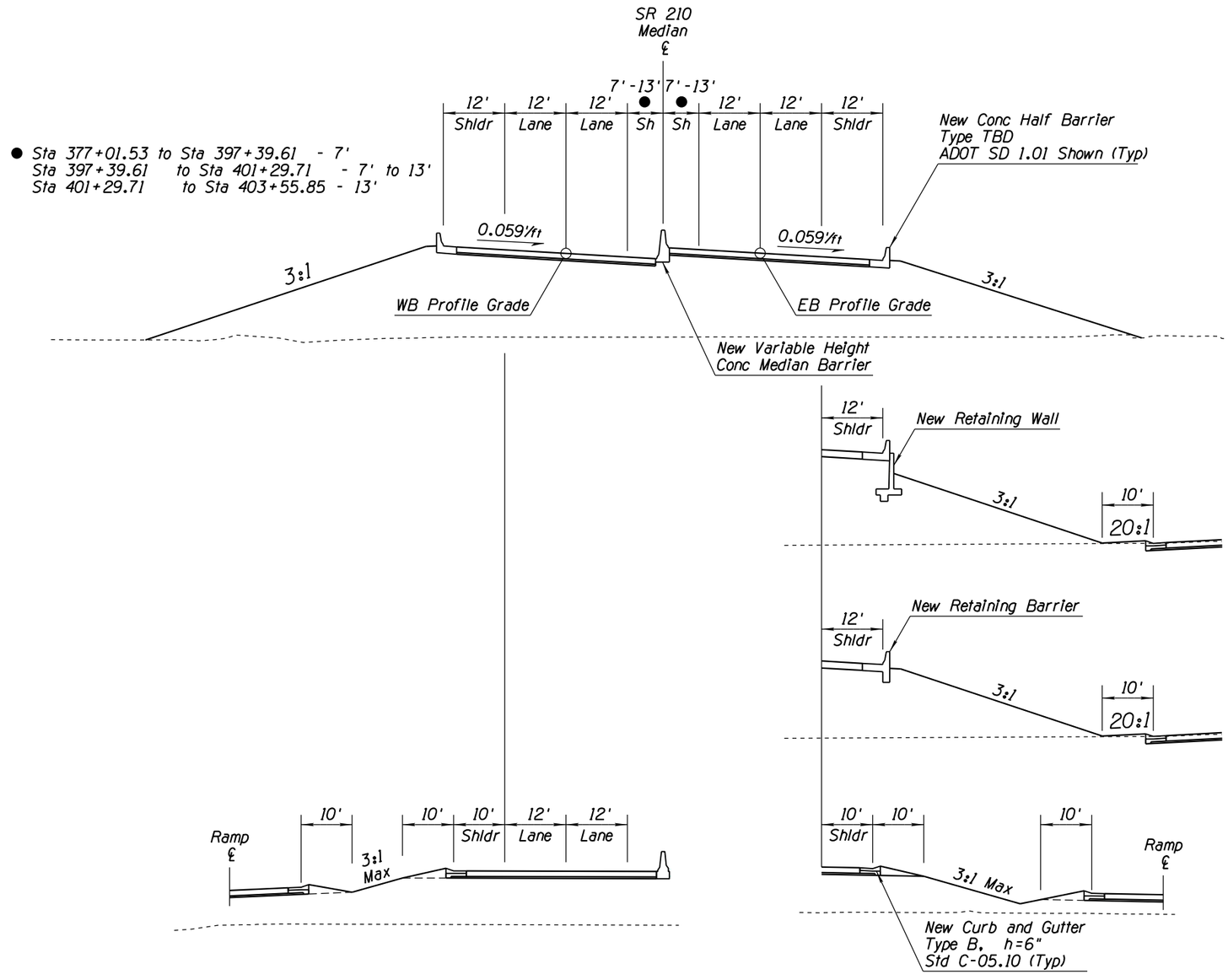
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-23
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	24	44	
		010 PM 260			



TYPICAL SECTION

SR 210
Elevated Mainline
Superelevated Section
GL Ramp EN Gore to GL Ramp WN Gore
Sta 377+01.53 to Sta 403+55.85

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT 1
TYPICAL SECTIONS

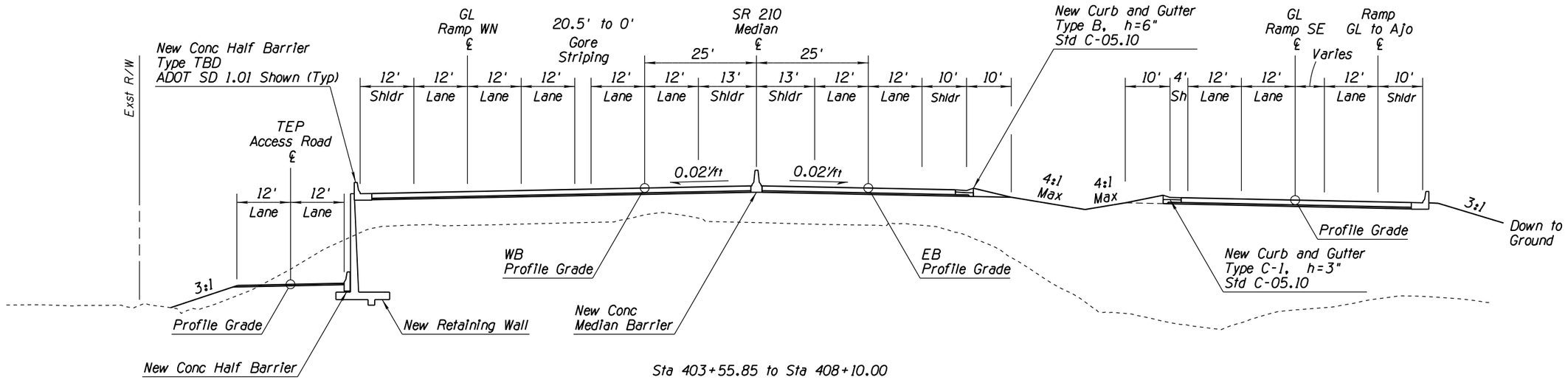
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-24
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

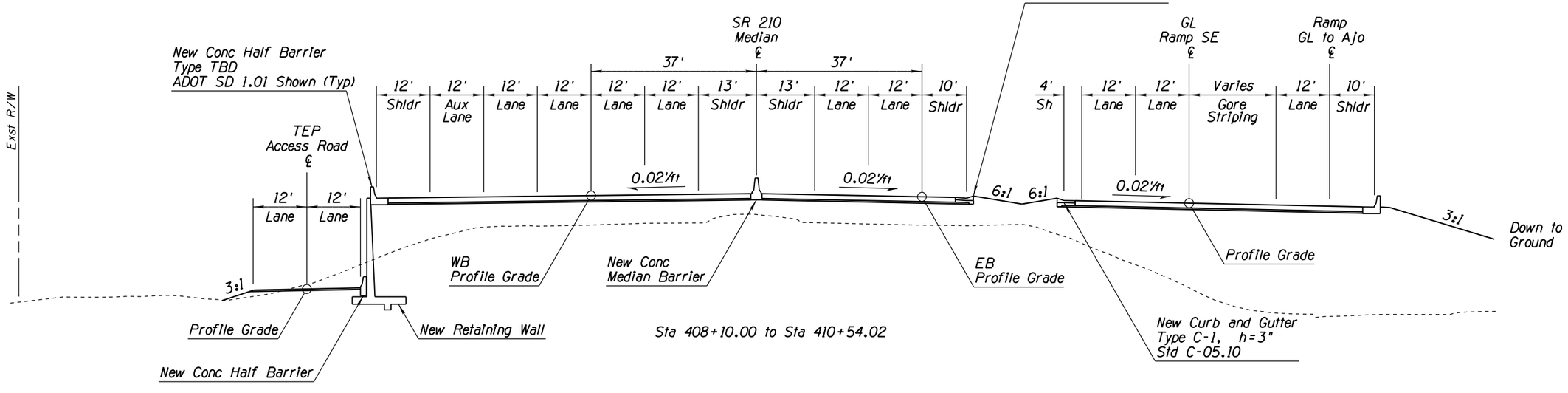
TRACS NO. H7825 01L		010-E(210)S	___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	25	44	
		010 PM 260			



Sta 403+55.85 to Sta 408+10.00



Sta 408+10.00 to Sta 410+54.02

TYPICAL SECTION

SR 210
Elevated Mainline
Tangent Section
GL Ramp WN Gore to GL Ramp SE Gore
Sta 403+55.85 to Sta 410+54.02

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

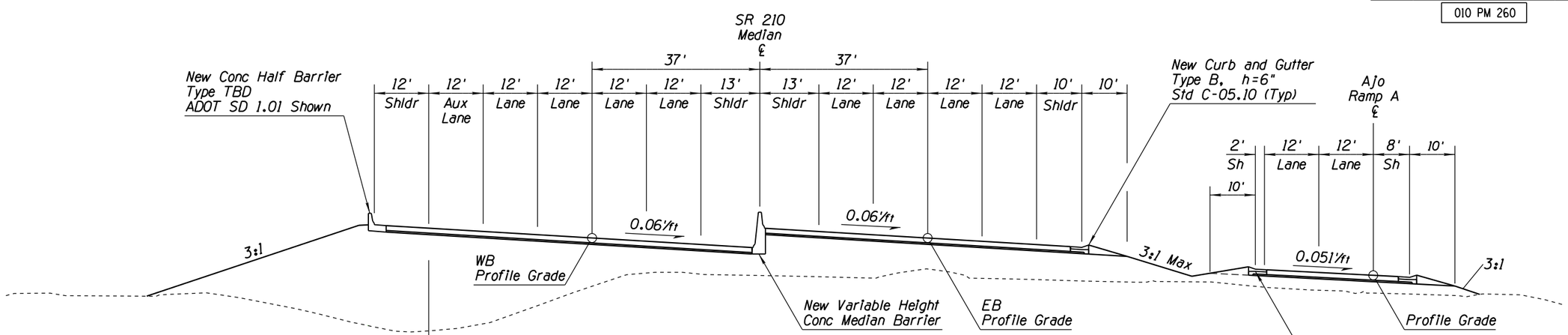
DESIGN SHEET
SR 210 SYSTEM ALT I
TYPICAL SECTIONS

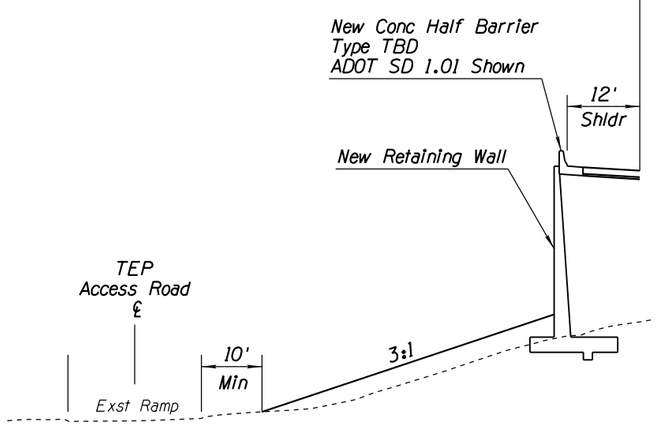
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

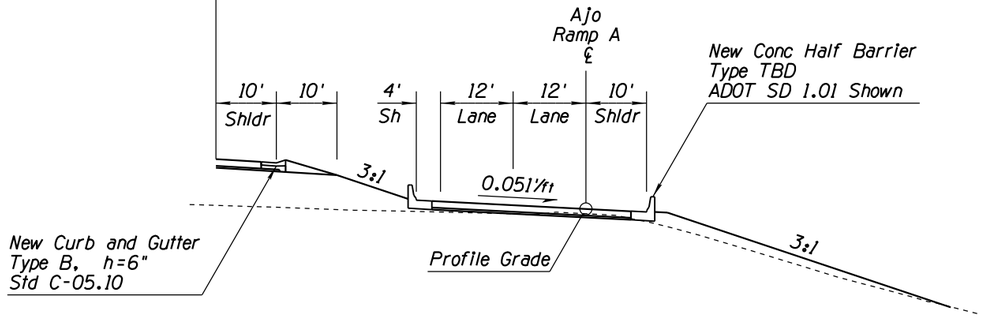
ROUTE	LOCATION	SHEET TYP-25
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L	010-E(210)S	___ OF ___

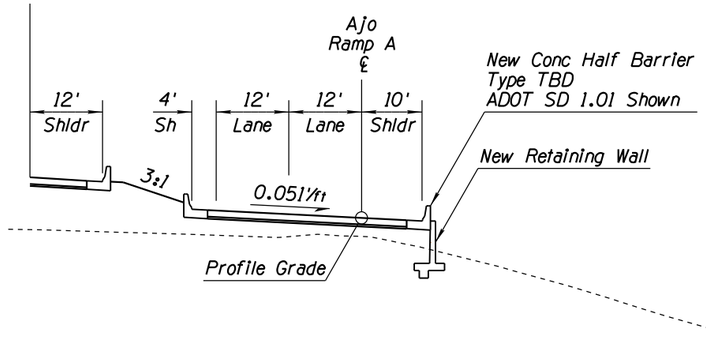
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	26	44	
		010 PM 260			









TYPICAL SECTION

SR 210
Elevated Mainline
Superelevated Section
GL Ramp SE Gore to UPRR
Sta 410+54.02 to Sta 432+50

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

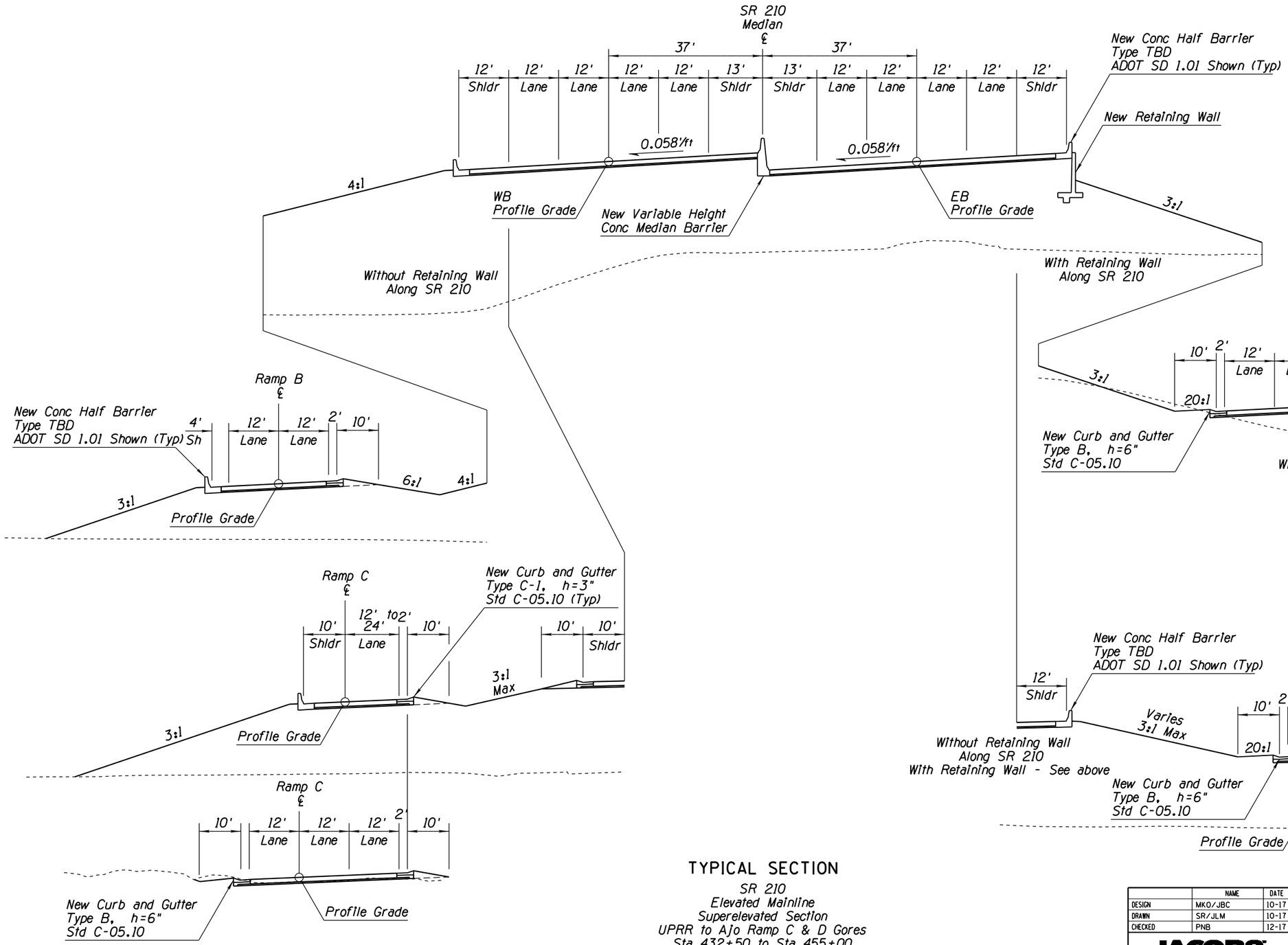
DESIGN SHEET
SR 210 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-26
TRACS NO. H7825 01L	010-E(210)S	___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	27	44	
		010 PM 260			



TYPICAL SECTION

SR 210
Elevated Mainline
Superelevated Section
UPRR to Ajo Ramp C & D Gores
Sta 432+50 to Sta 455+00

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT 1
TYPICAL SECTIONS

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

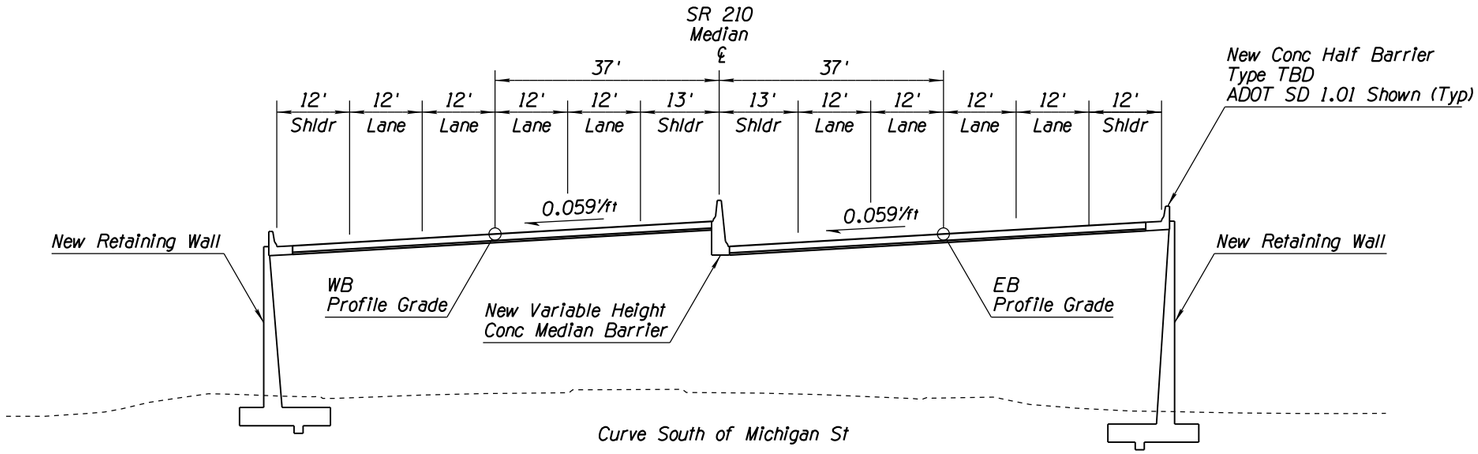
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

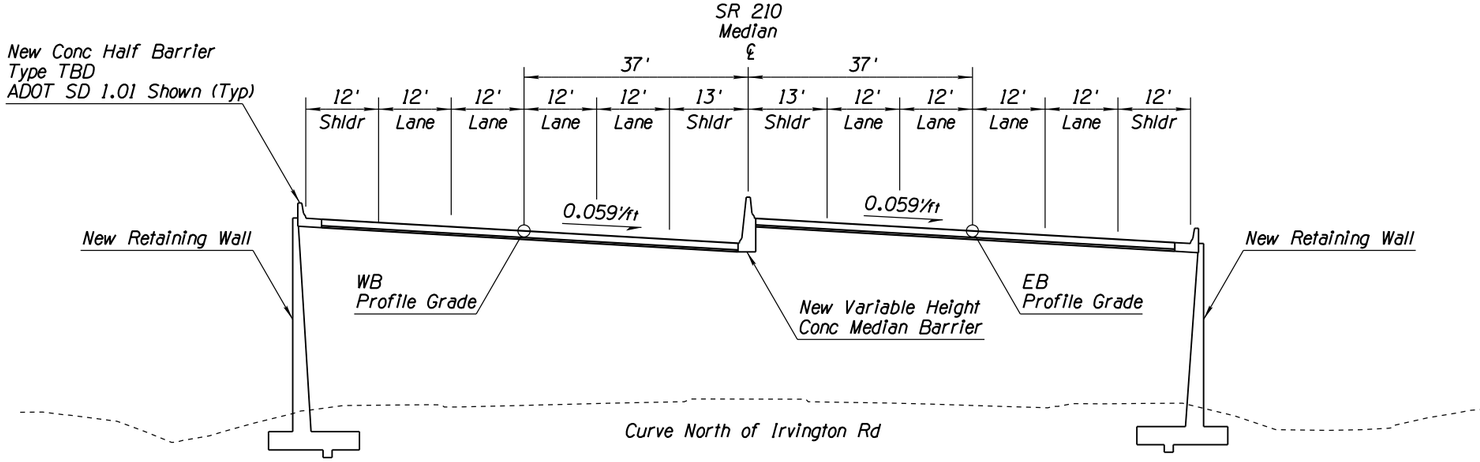
SHEET TYP-27

___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	28	44	
		010 PM 260			





TYPICAL SECTION

SR 210
Elevated Mainline
Superelevated Sections
Ajo Ramp C & D Gores to Irvington Rd

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

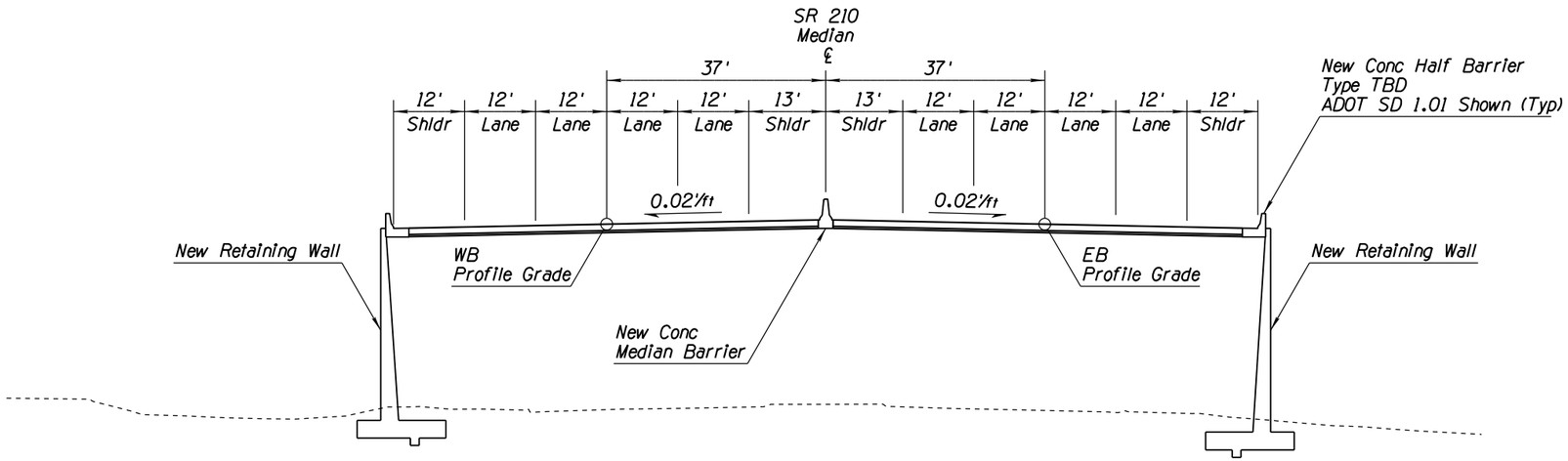
ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

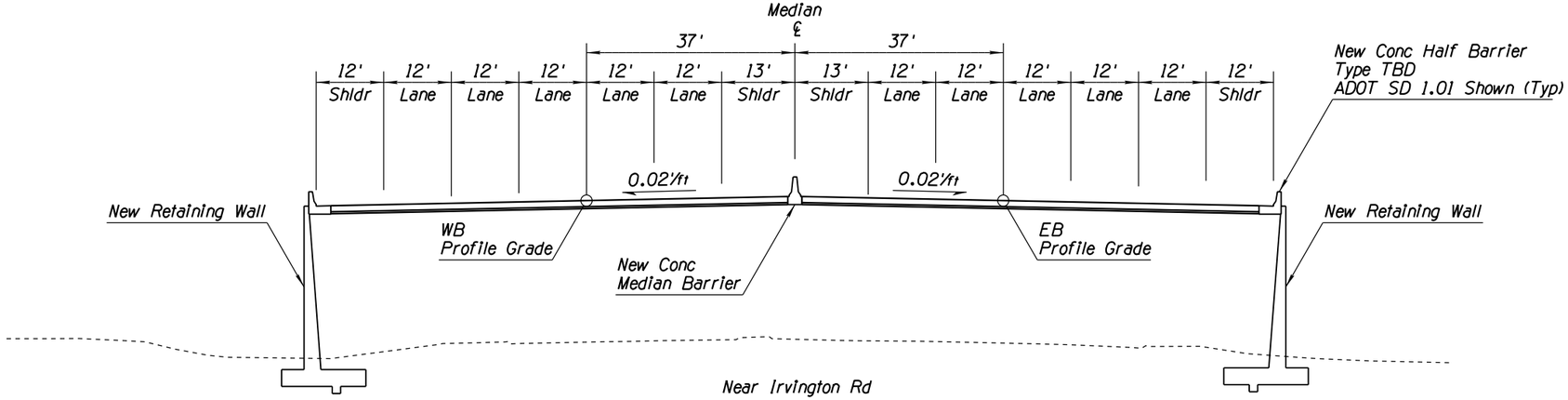
SHEET TYP-28

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	29	44	
		010 PM 260			





TYPICAL SECTION

SR 210
Elevated Mainline
Tangent Sections
Ajo Ramp C & D Gores to Irvington Rd
Sta 455+00 to Sta 490+00

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

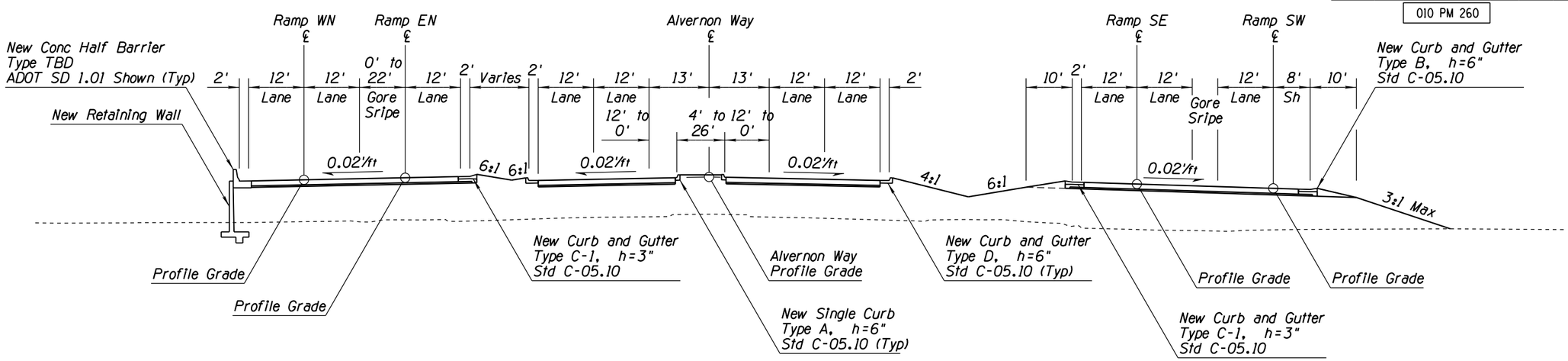
ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	SHEET TYP-29

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

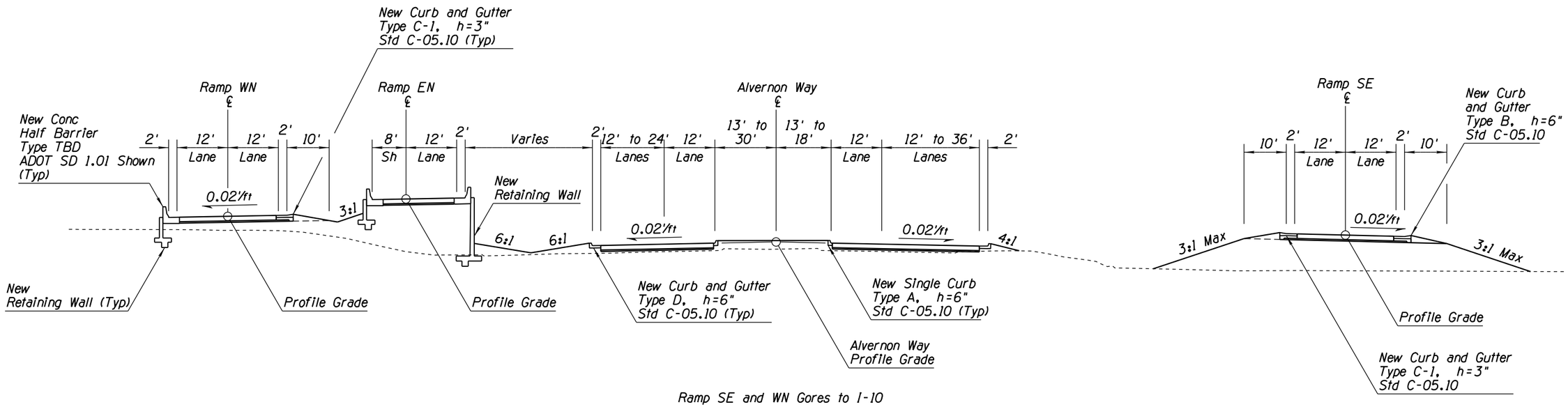
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty029.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	30	44	
		010 PM 260			



Irvington to Ramp SE and WN Gores



Ramp SE and WN Gores to I-10

TYPICAL SECTION

SR 210
Elevated Mainline
Tangent Sections
Irvington Rd to I-10
Sta 490+00 to Sta 505+00

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

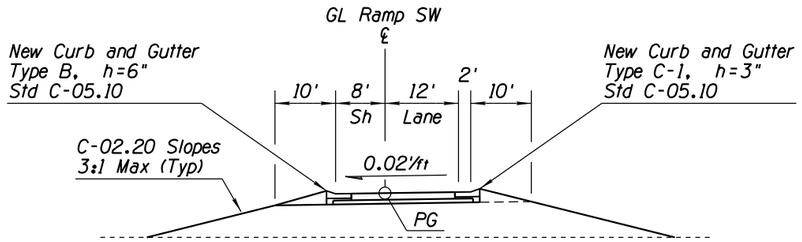
DESIGN SHEET
SR 210 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

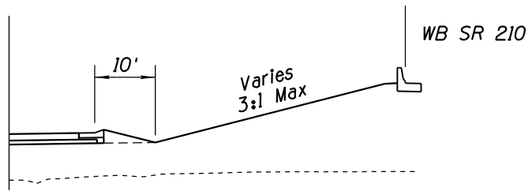
ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	SHEET TYP-30
TRACS NO. H7825 01L	010-E(210)S	___ OF ___

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

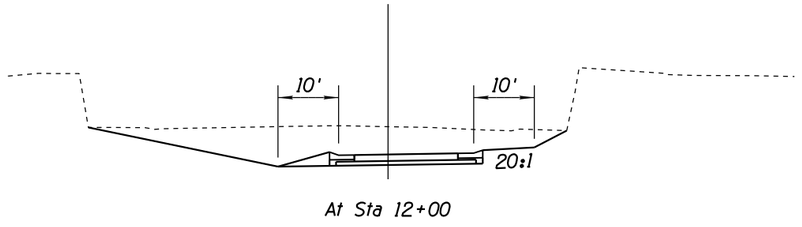
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	31	44	
		010 PM 260			



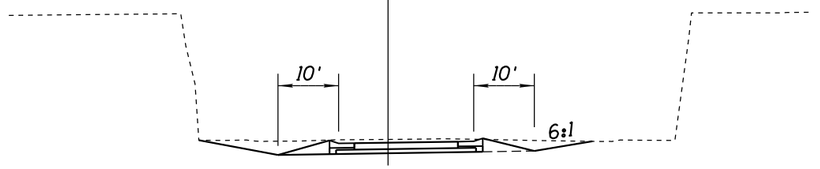
Sta 3+76.48 to Sta 26+52.13



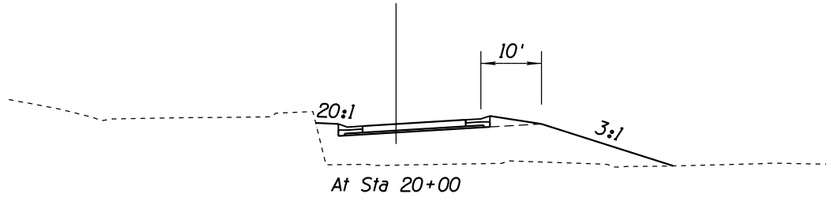
At Sta 7+00



At Sta 12+00

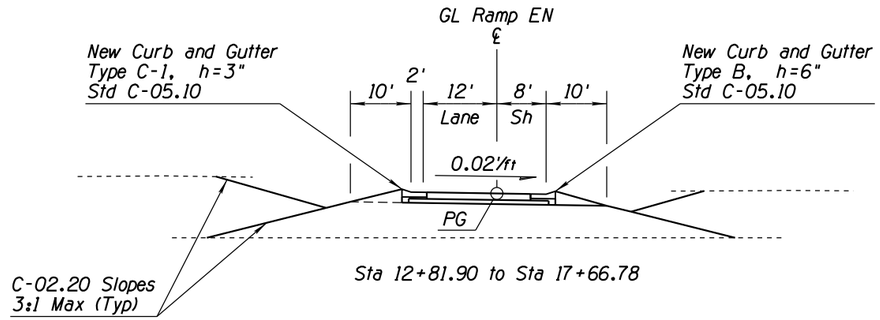


At Sta 16+50

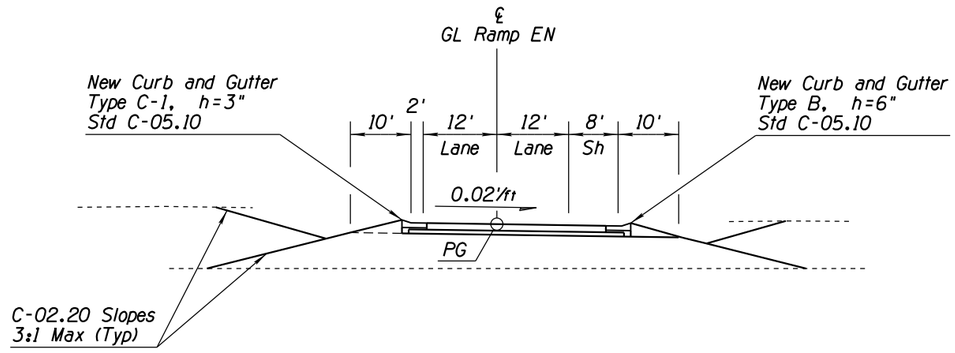


At Sta 20+00

SR 210 RAMP
TYPICAL SECTIONS
GL Ramp SW



Sta 12+81.90 to Sta 17+66.78



Sta 17+66.78 to Sta 43+69.00

SR 210 RAMP
TYPICAL SECTIONS
GL Ramp EN

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DESIGN SHEET
SR 210 SYSTEM ALT 1
TYPICAL SECTIONS

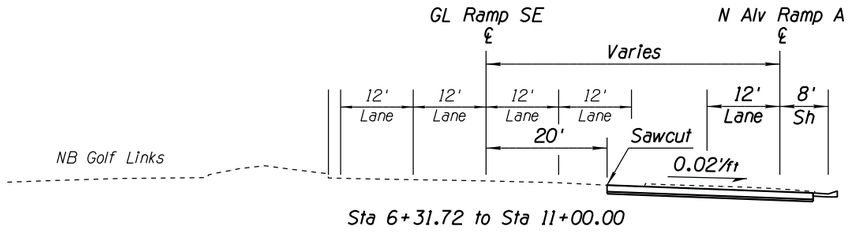
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-31
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

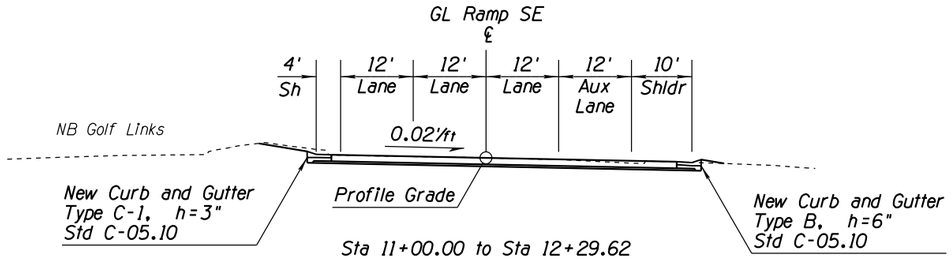
TRACS NO. H7825 01L		010-E(210)S	___ OF ___

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

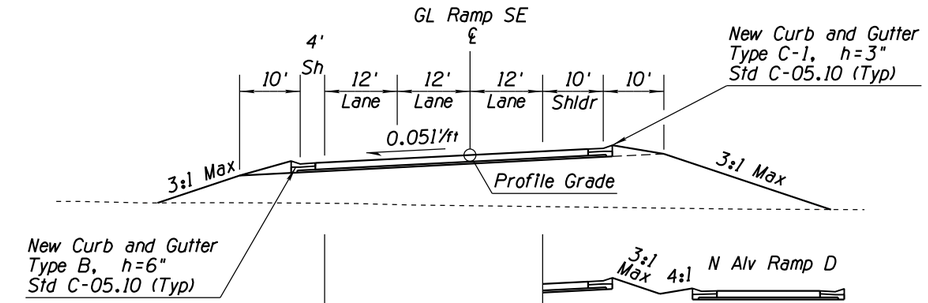
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	32	44	
		010 PM 260			

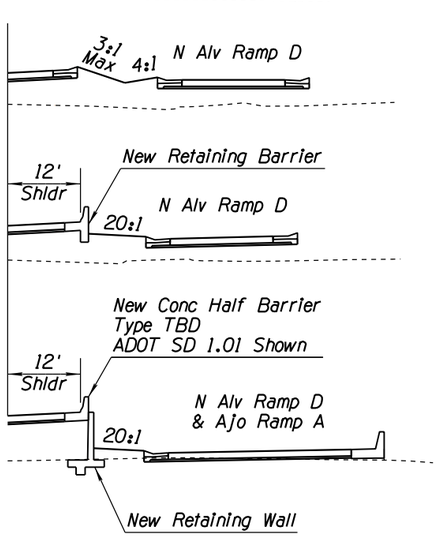


Sta 6+31.72 to Sta 11+00.00

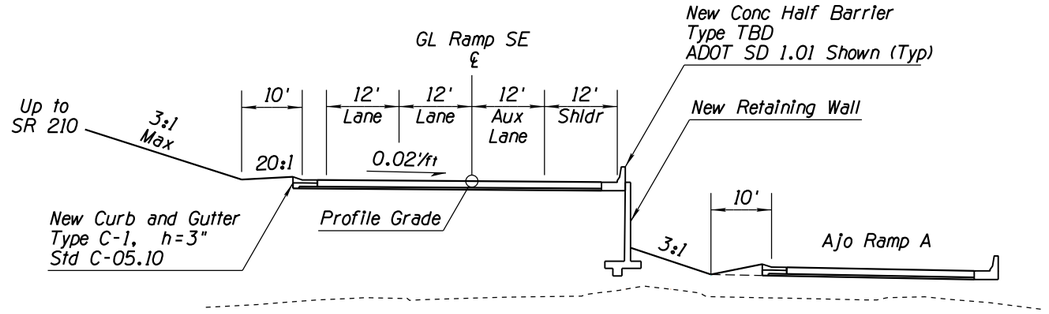


Sta 11+00.00 to Sta 12+29.62

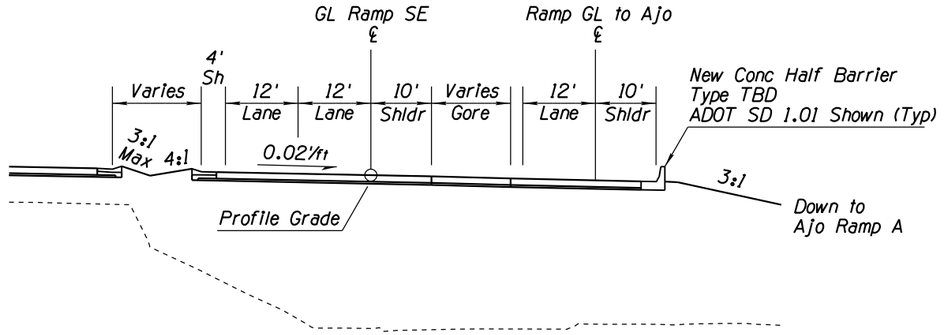




Sta 12+29.62 to Sta 38+45.59



Sta 38+45.59 to Sta 40+64.95



Sta 40+64.95 to Sta 46+93.74

SR 210 RAMP
TYPICAL SECTIONS
GL Ramp SE

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

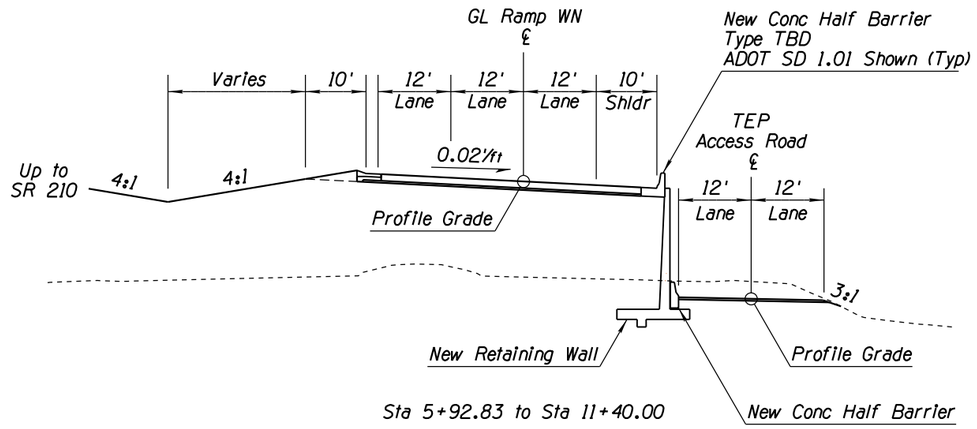
ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-32

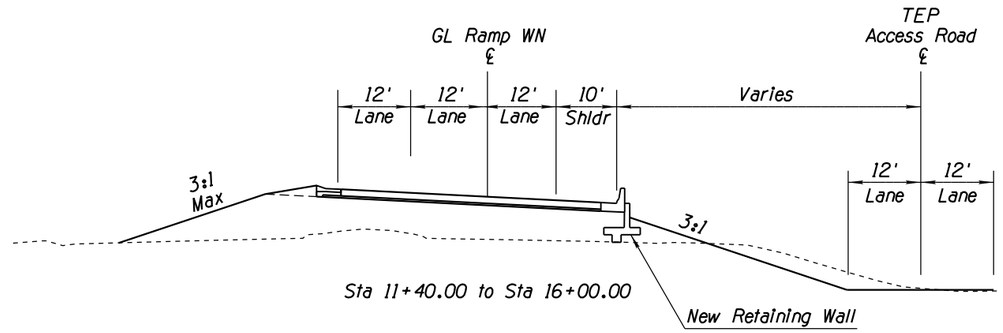
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

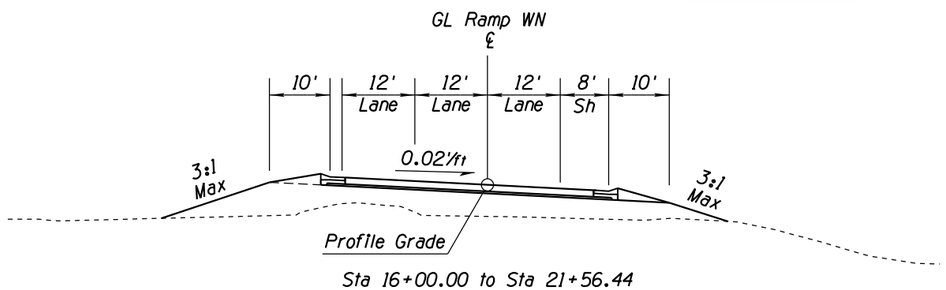
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	33	44	
		010 PM 260			



Sta 5+92.83 to Sta 11+40.00

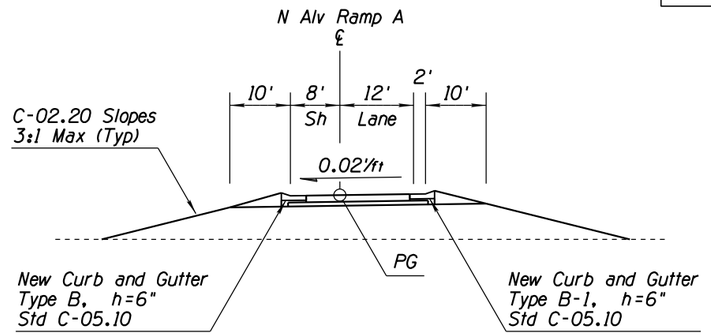


Sta 11+40.00 to Sta 16+00.00



Sta 16+00.00 to Sta 21+56.44

SR 210 RAMP
TYPICAL SECTIONS
GL Ramp WN
Sta 5+92.83 to Sta 21+56.44



Sta 1+28.65 to Sta 2+32.57

SR 210 RAMP
TYPICAL SECTIONS
N Alv Ramp A

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT I
TYPICAL SECTIONS

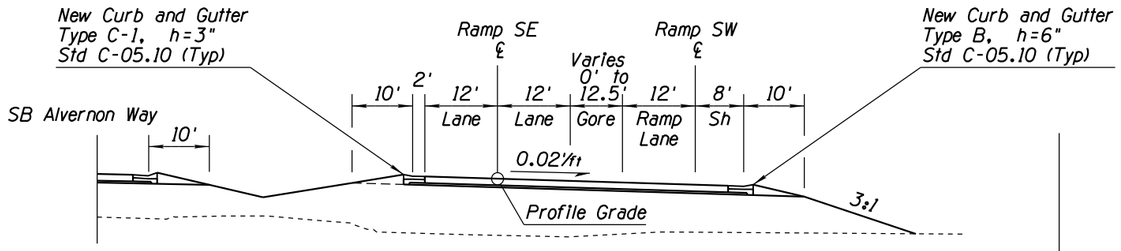
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-33

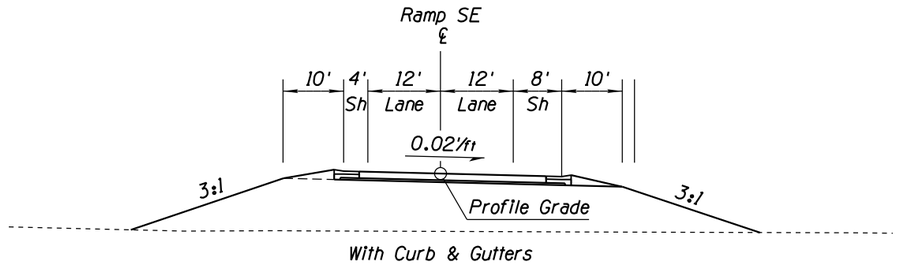
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

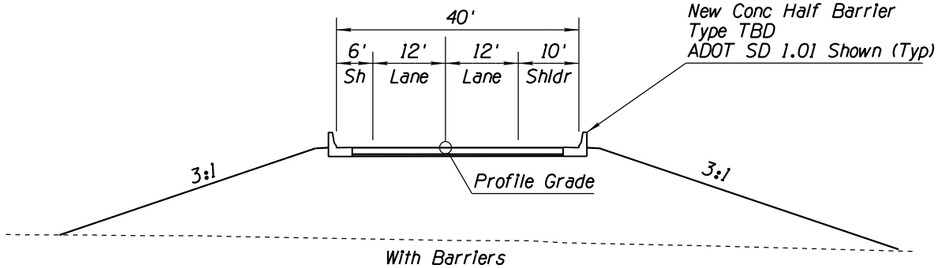
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	34	44	
		010 PM 260			



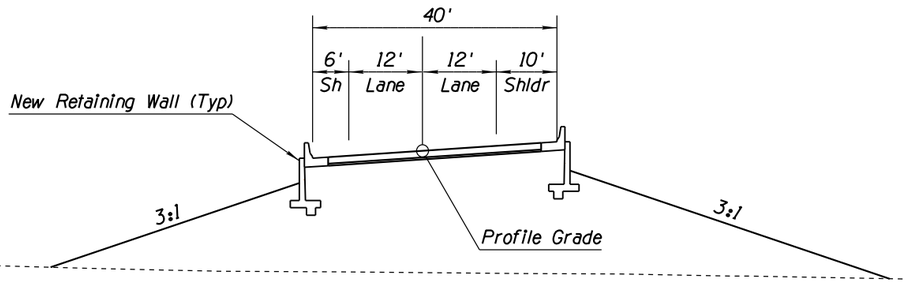
Sta 20+00 to Sta 23+93
Alvernon NOG to Ramp SW NOG



With Curb & Gutters

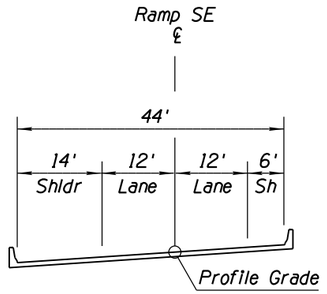


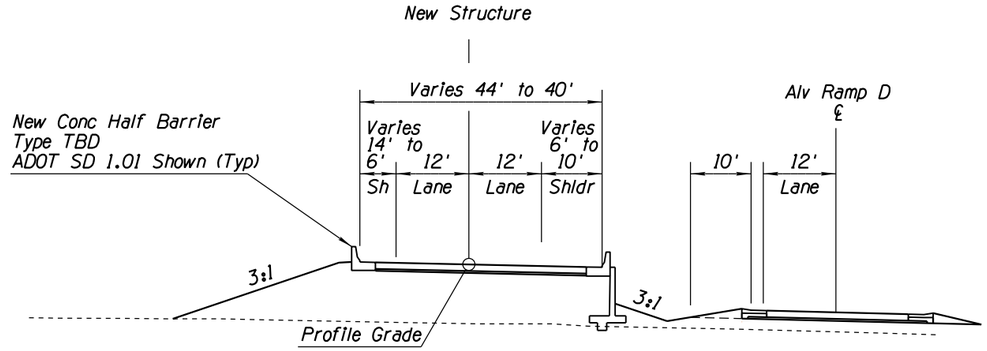
With Barriers



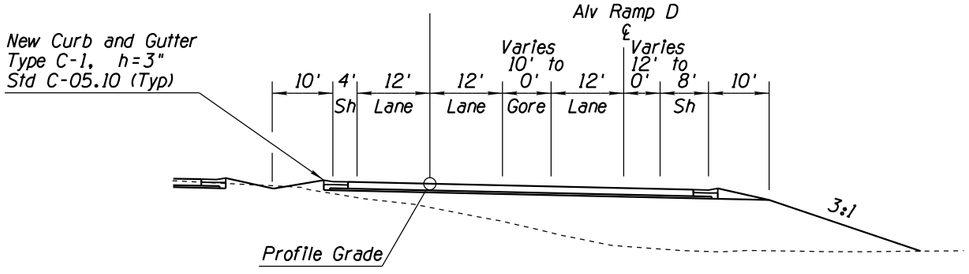
With Retaining Walls at Bridge Abutments

Sta 23+93 to Sta 31+09.40
Ramp SW NOG to North Bridge Abutment





Along Alv Ramp D



Along EB I-10

Sta 41+32.14 to PT Sta 57+20.66
East of South Bridge Abutment

APPENDIX D

SR 210/I-10 SYSTEM RAMP TYPICAL SECTIONS

Ramp SE
Sta 20+00 to Sta PT 57+20.66

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DESIGN SHEET
SR 210 SYSTEM ALT 1
TYPICAL SECTIONS

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

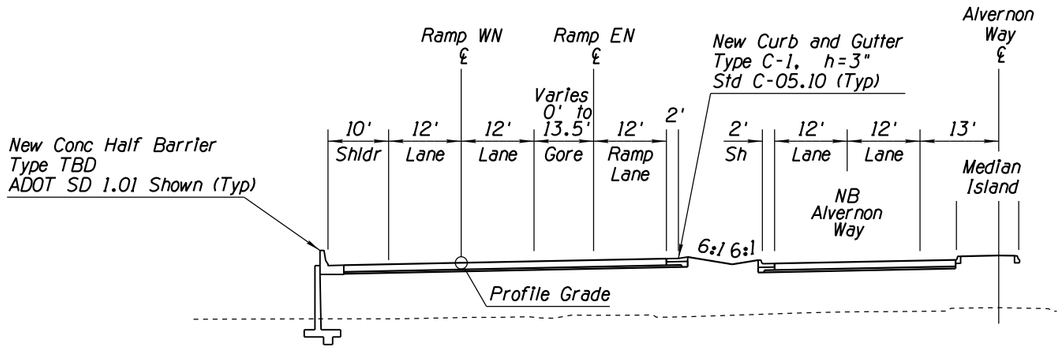
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET TYP-34

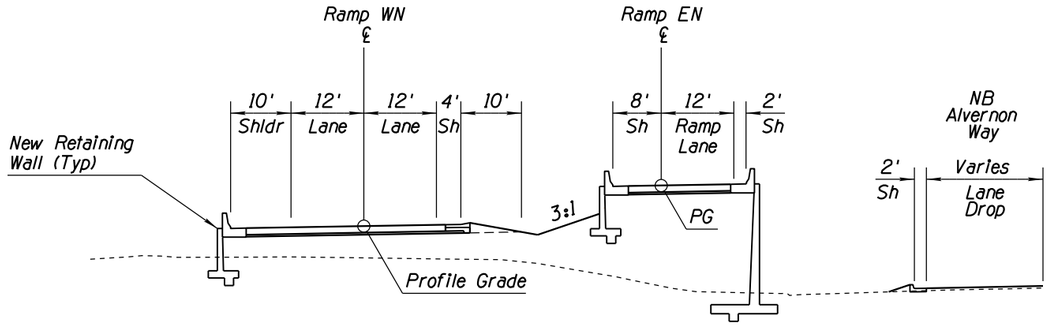
___ OF ___

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

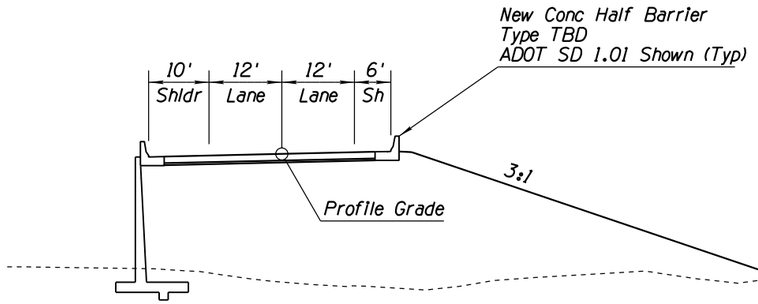
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	35	44	
		010 PM 260			



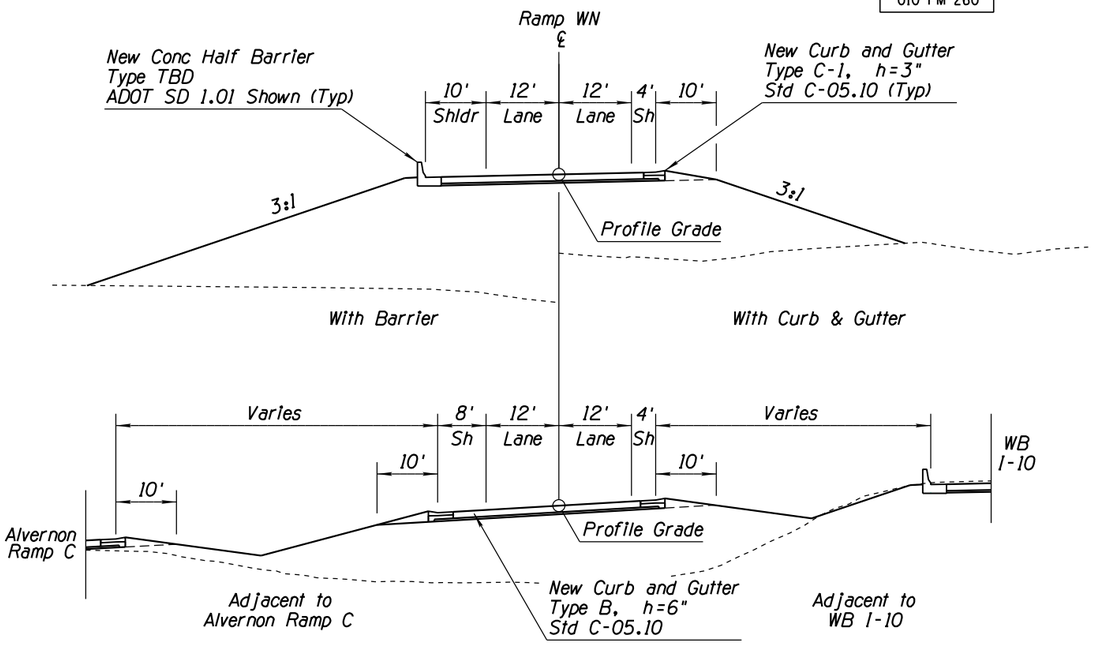
Sta 27+87.76 to Sta 30+00.00
Alvernon NOG to Ramp EN NOG



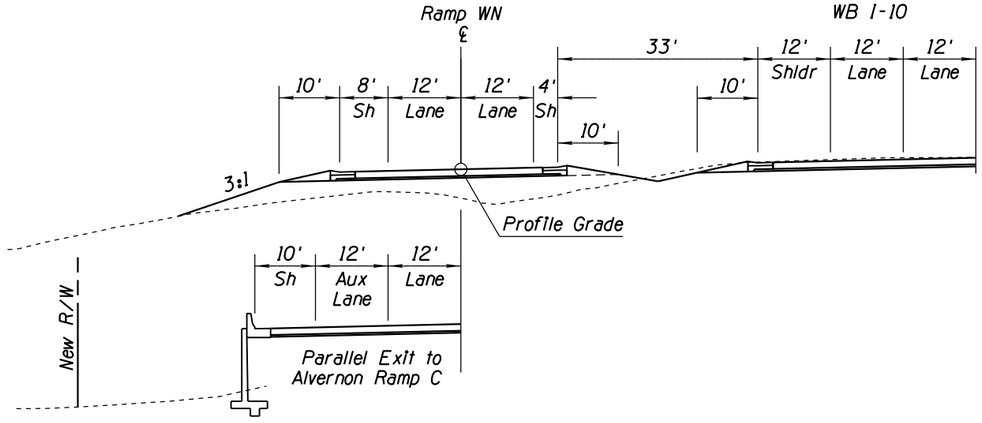
Sta 30+00.00 to Sta 34+95.80
Ramp EN NOG to Ramp EN Bridge



Sta 34+95.80 to Sta 43+28.16



Sta 43+28.16 to Sta PT 48+35.44



Sta PT 48+35.44 to Sta 65+04.62

APPENDIX D

SR 210/I-10 SYSTEM RAMP TYPICAL SECTIONS

Ramp WN
Sta 27+87.76 to Sta 65+04.62

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT I
TYPICAL SECTIONS

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L
010-E(210)S

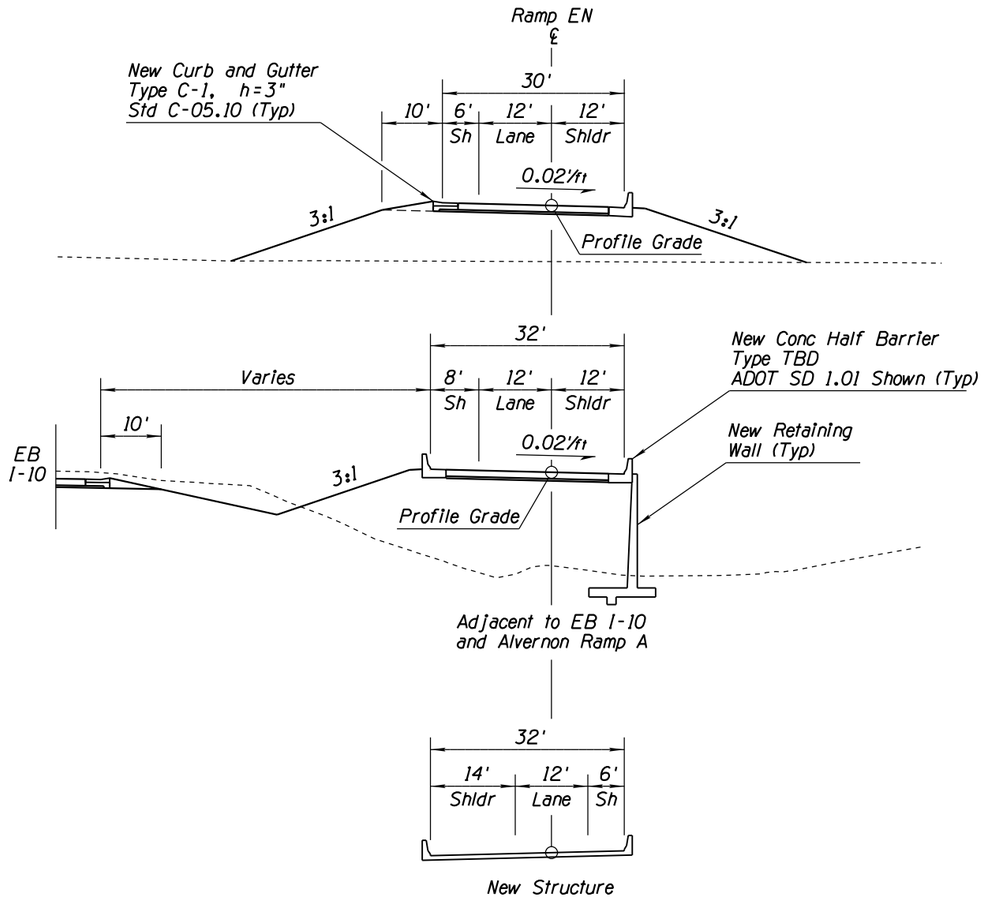
PRELIMINARY
NOT FOR CONSTRUCTION
OR RECORDING

SHEET TYP-35

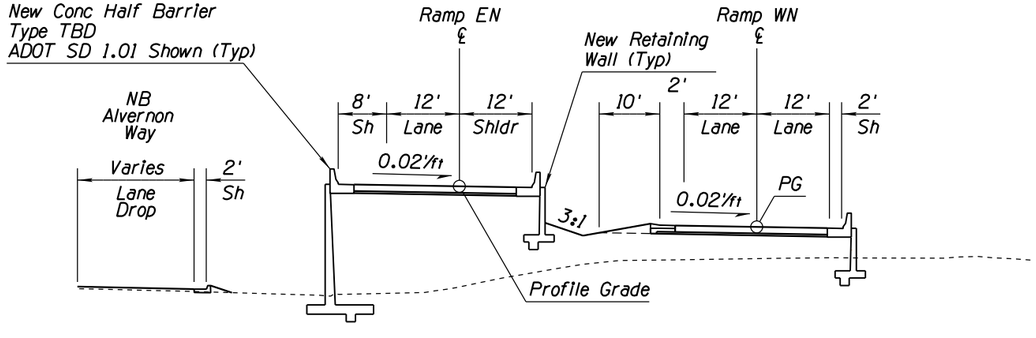
___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	36	44	
		010 PM 260			



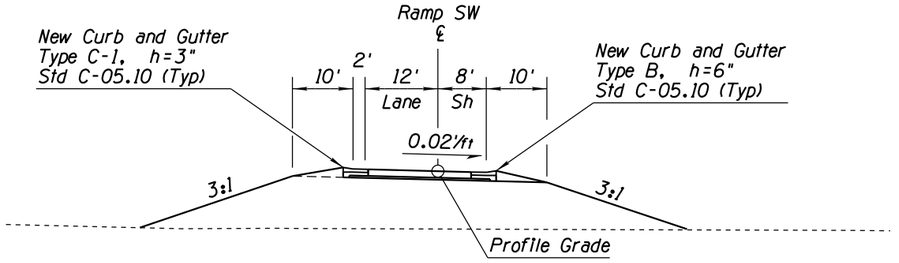
New Structure



Adjacent to NB Alvernon Way

SR 210/I-10 SYSTEM RAMP TYPICAL SECTIONS

Ramp EN
Sta PT 47+25.63 to Sta 79+55.02



SR 210/I-10 SYSTEM RAMP TYPICAL SECTIONS

Ramp SW
Sta PCC 10+00.00 to Sta PT 23+72.76

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

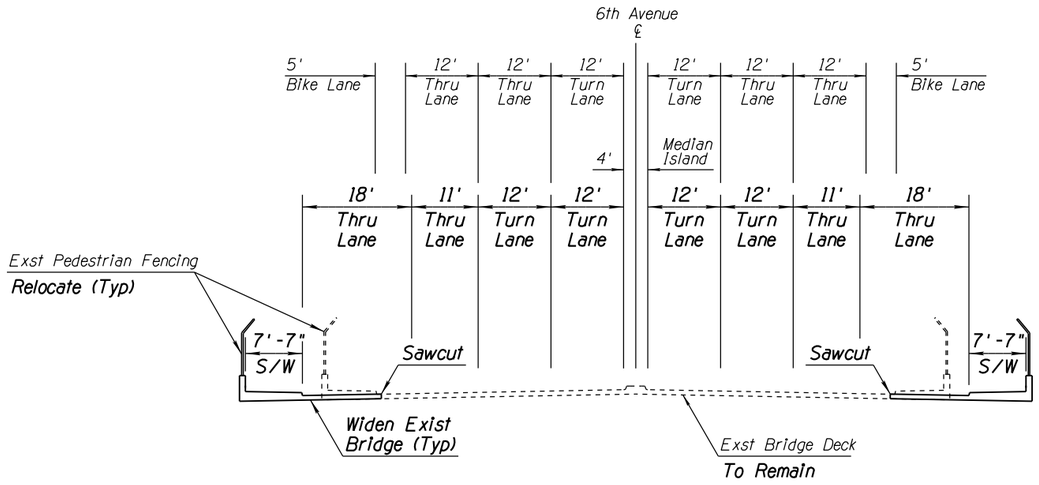
DESIGN SHEET
SR 210 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

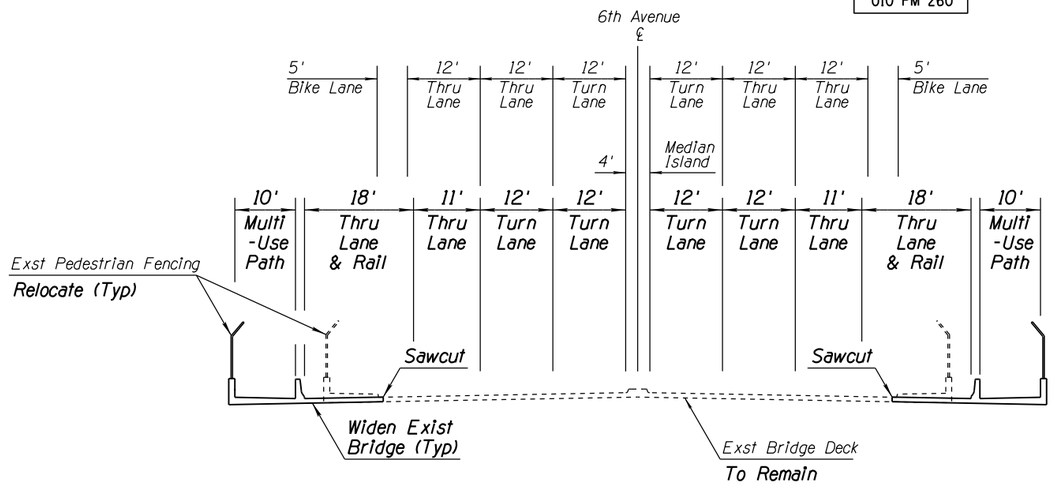
ROUTE	LOCATION	SHEET TYP-36
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L	010-E(210)S	___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	37	44	
		010 PM 260			



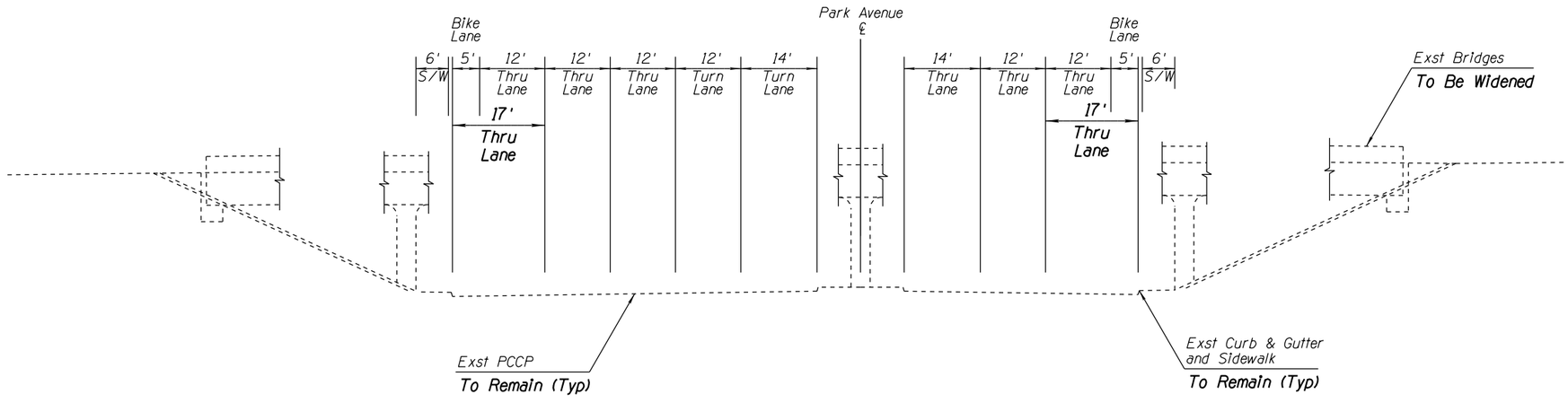
OPTION A



OPTION B
STREET CAR

TYPICAL SECTION

6th Avenue
Ground Level Crossroad
Outside Widening
Looking North
Between 6th Ave Ramps - Over I-10



TYPICAL SECTION

Park Avenue
Ground Level Crossroad
Restriping
Looking North
Between Park Ave Ramps - Under I-10

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

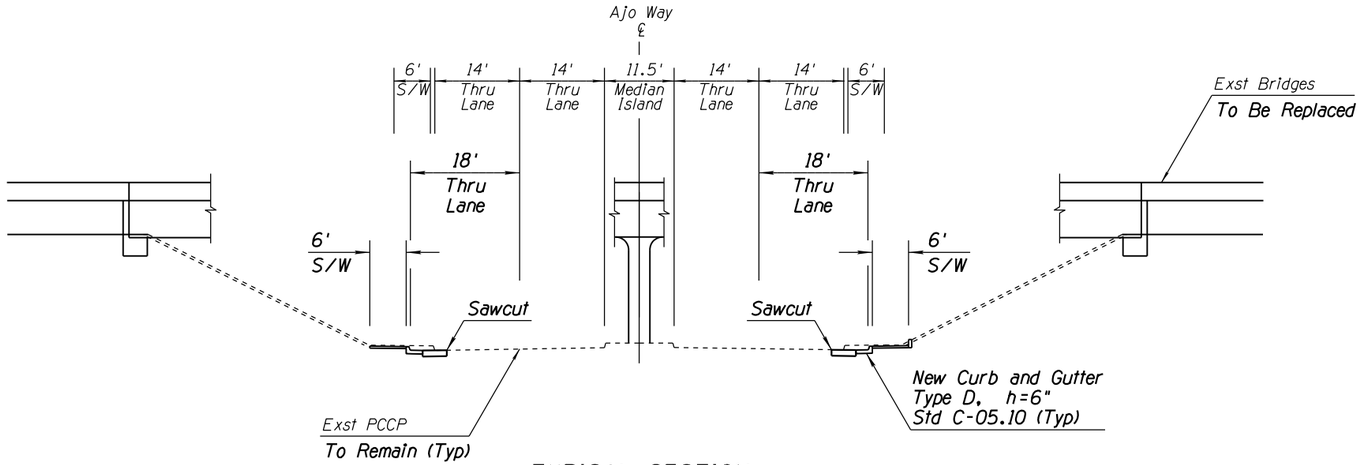
PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-37

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

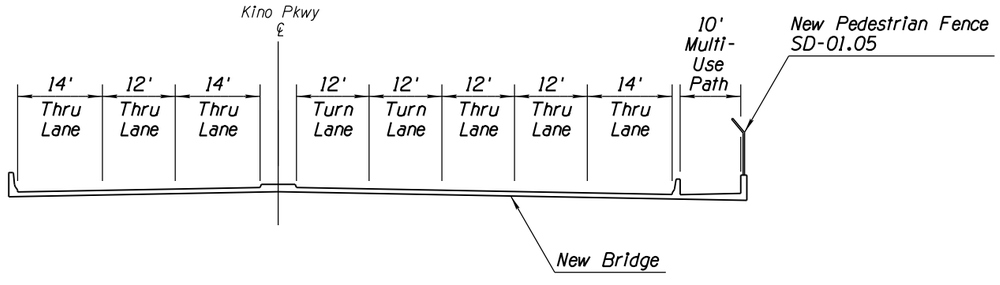
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	38	44	
		010 PM 260			



TYPICAL SECTION

Ajo Way
Depressed Crossroad
Outside Widening
New I-10 Bridge
Looking East
Under I-10



TYPICAL SECTION

Kino Parkway
Elevated Crossroad
New Bridge Over I-10
Looking North
Between Kino Pkwy Ramps - Over I-10

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

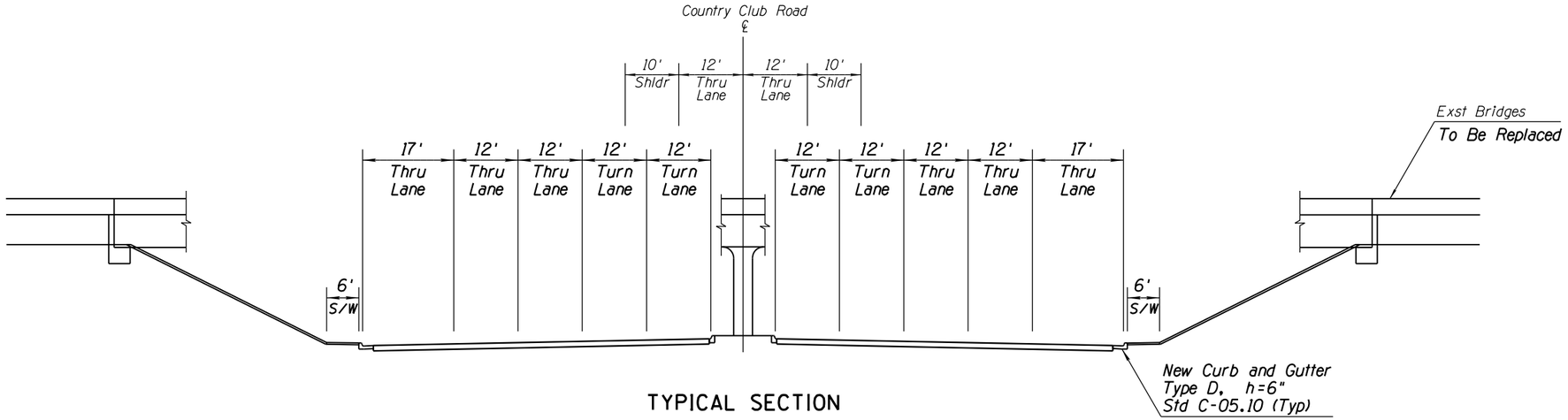
DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-38
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L	010-E(210)S	___ OF ___

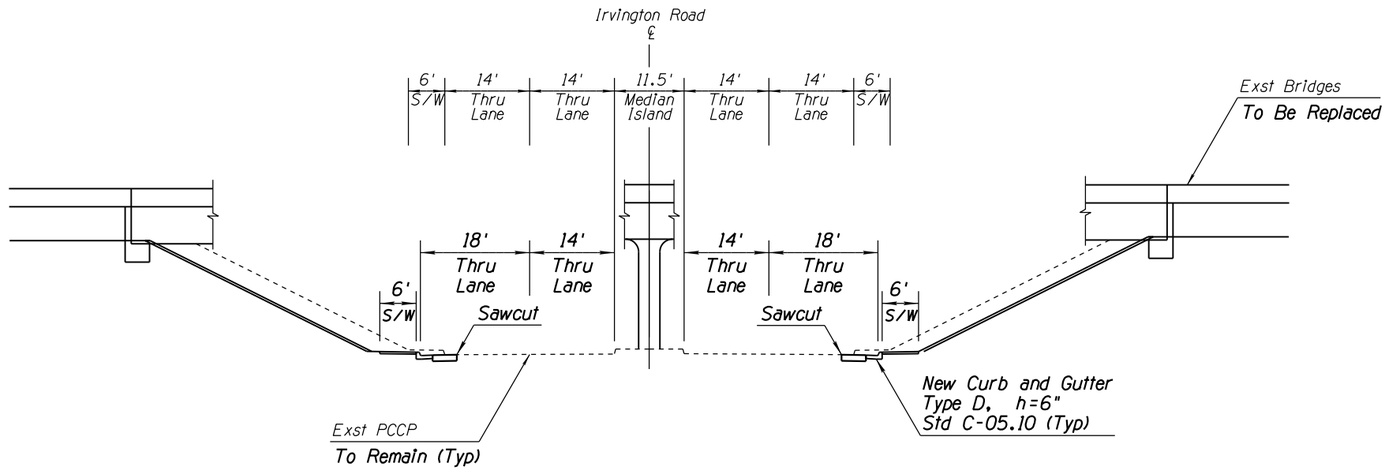
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	39	44	
		010 PM 260			



TYPICAL SECTION

Country Club Road
Ground Level Crossroad
New Crossroad
New I-10 Bridge
Looking North
Between Country Club Ramps - Under I-10



TYPICAL SECTION

Irvington Road
Depressed Crossroad
Outside Widening
New I-10 Bridge
Looking East
Under I-10

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

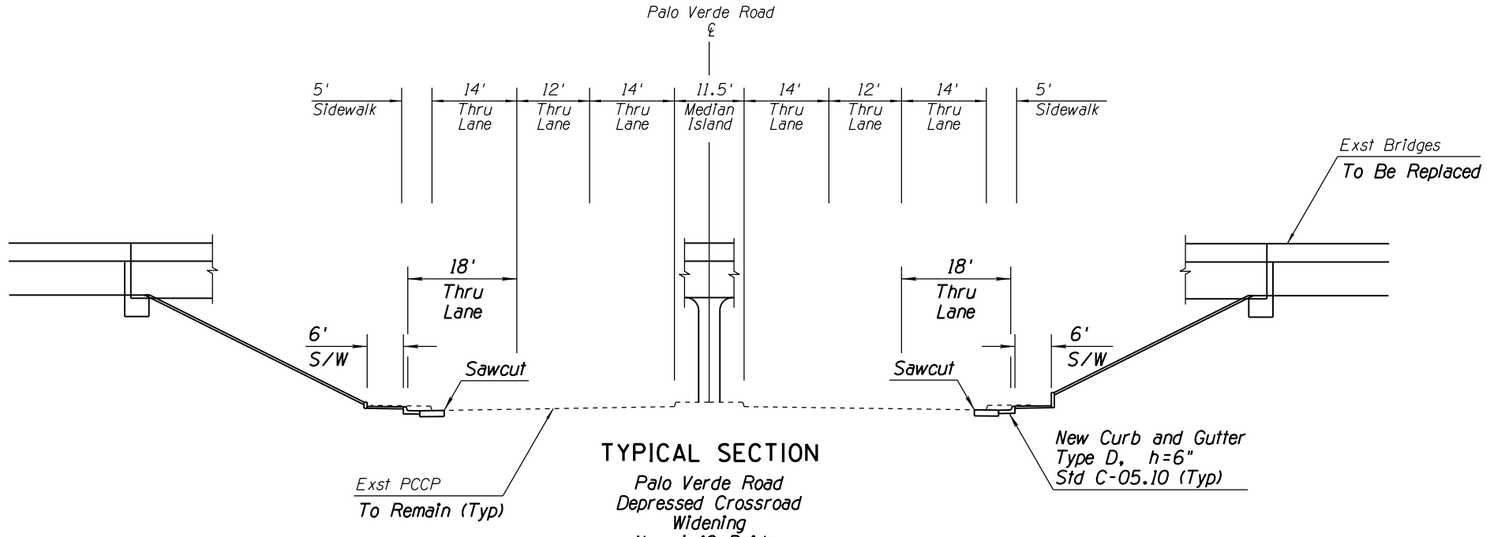
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-39
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

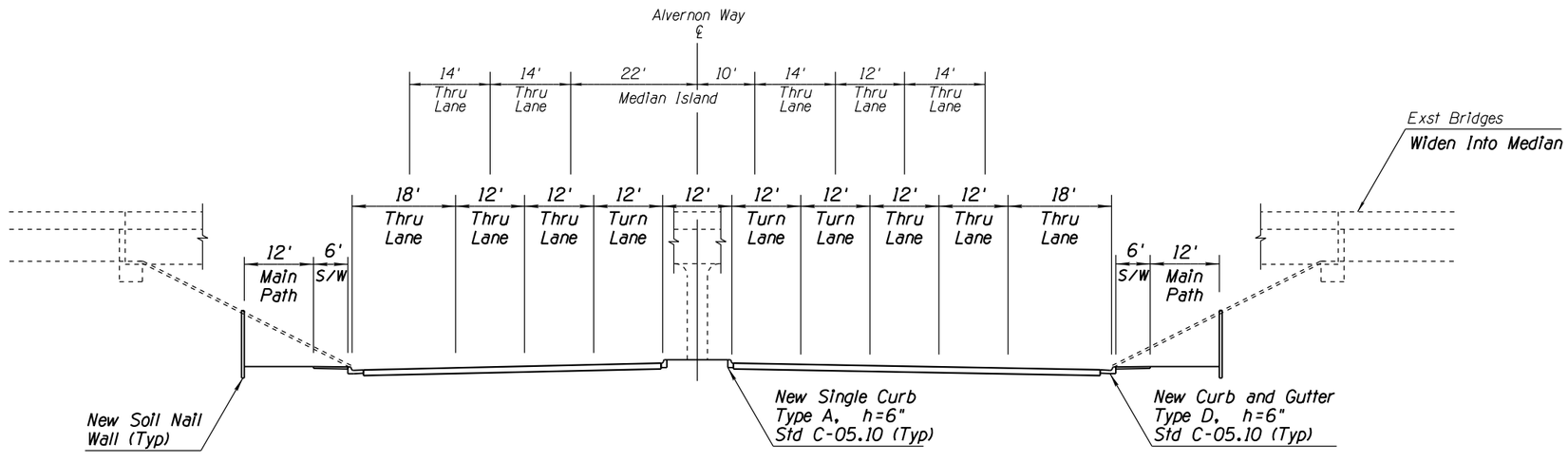
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	40	44	
		010 PM 260			



TYPICAL SECTION

Palo Verde Road
Depressed Crossroad
Widening
New I-10 Bridge
Looking North
Under I-10



TYPICAL SECTION

Alvernon Way
Ground Level Crossroad
New Crossroad
Widen I-10 Bridge Into Median
Looking North
Under I-10

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

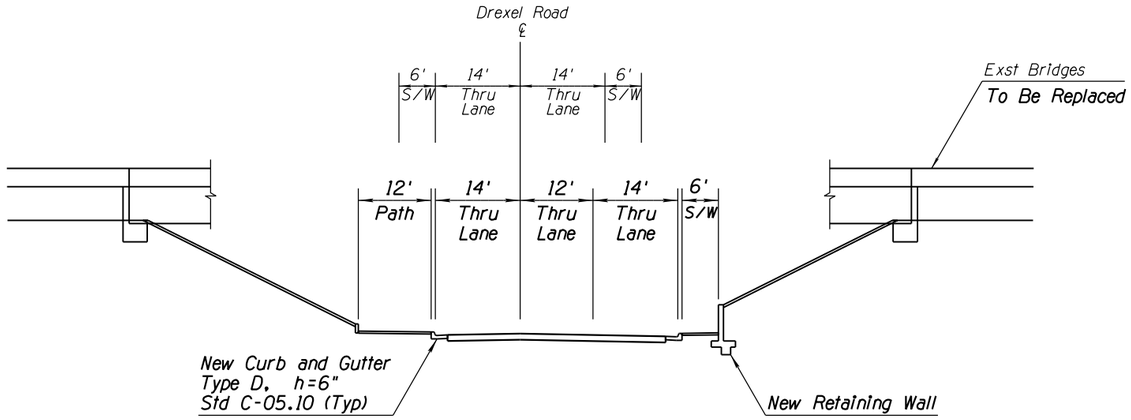
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	SHEET TYP-40

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

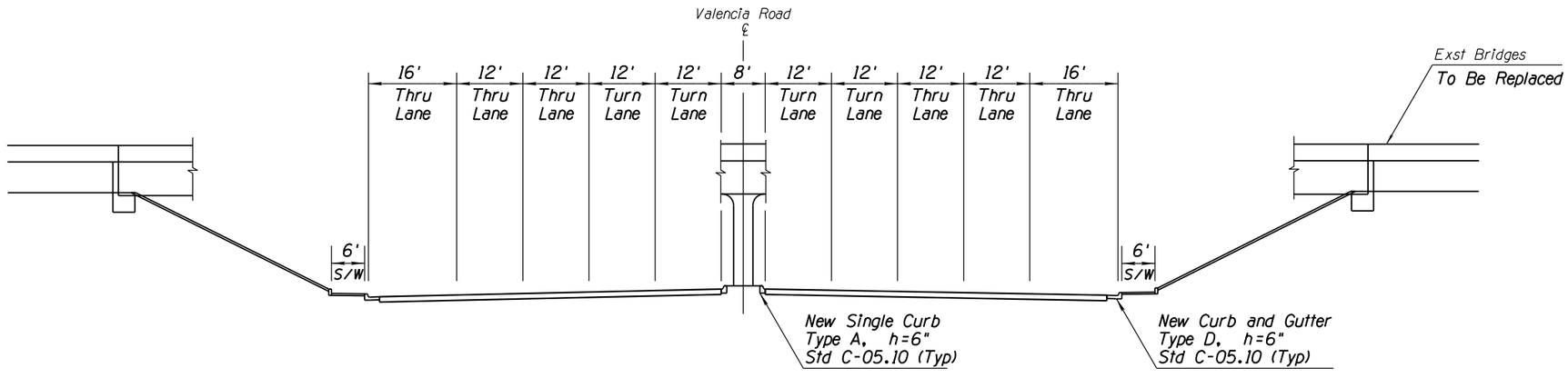
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	41	44	
		010 PM 260			



TYPICAL SECTION

Drexel Road
Ground Level Crossroad
New Crossroad
New I-10 Bridges
Looking East
Under I-10



TYPICAL SECTION

Valencia Road
Ground Level Crossroad
New Crossroad
New I-10 Bridges
Looking East
Under I-10

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-41

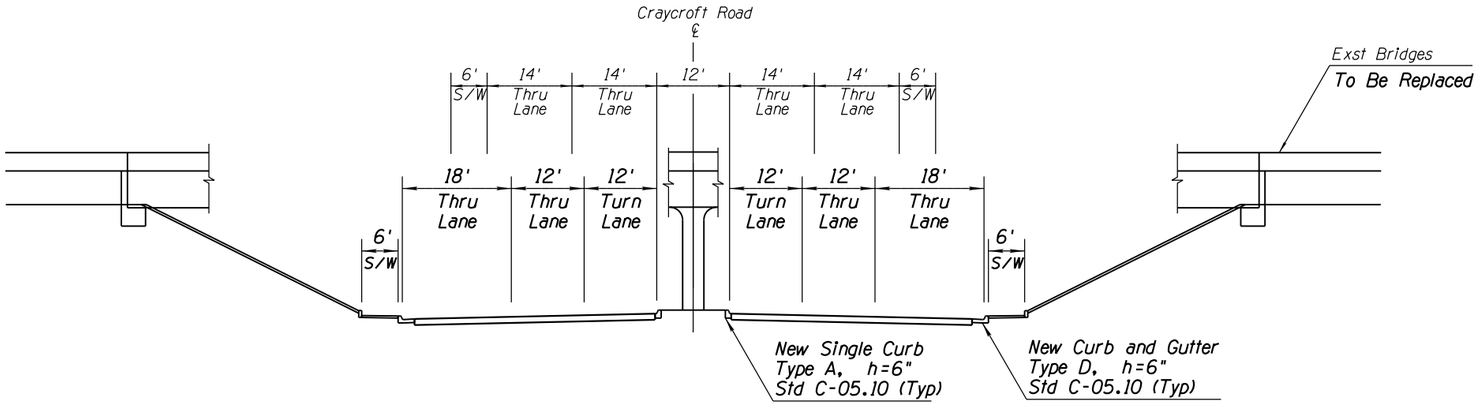
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty041.dgn

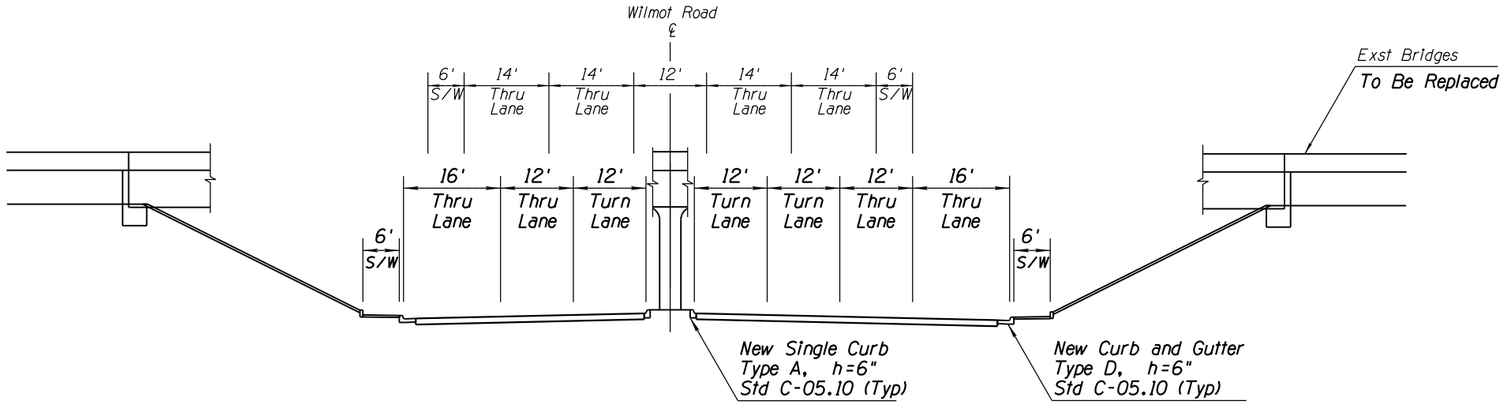
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	42	44	
		010 PM 260			

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



TYPICAL SECTION

Craycroft Road
Ground Level Crossroad
New Crossroad
New I-10 Bridges
Looking North
Under I-10



TYPICAL SECTION

Wilmot Road
Ground Level Crossroad
New Crossroad
New I-10 Bridges
Looking North
Under I-10

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

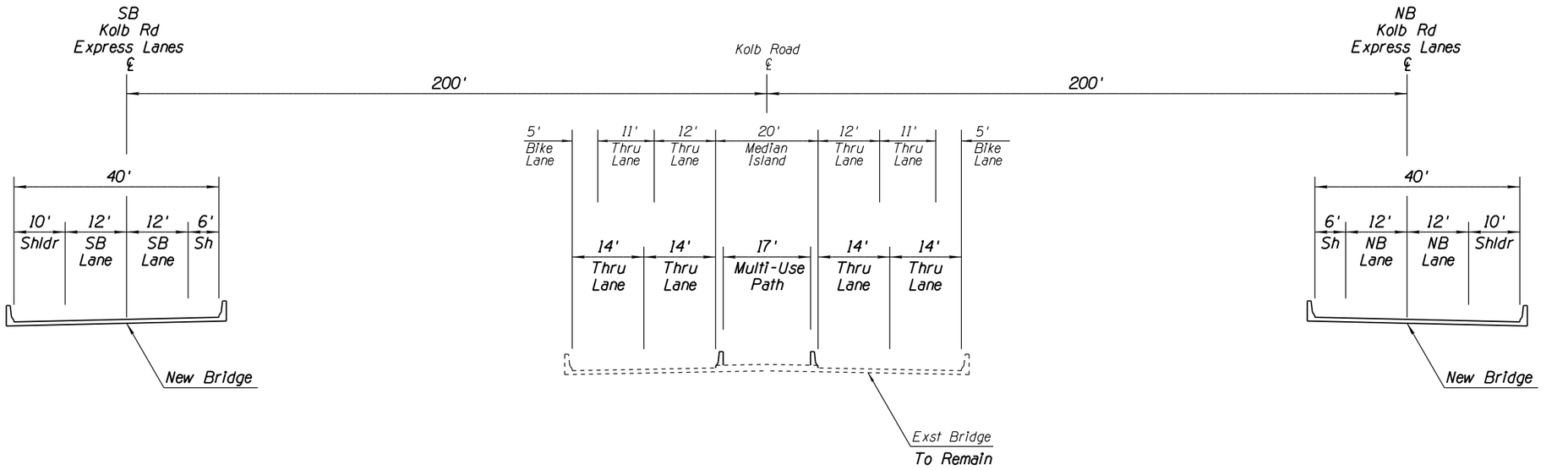
DESIGN SHEET
I-10 SYSTEM ALT I
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-42

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	43	44	
		010 PM 260			



TYPICAL SECTION

Kolb Road
Elevated Crossroad
New DDI Interchange
Existing & New Bridges
Looking North
Over I-10

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

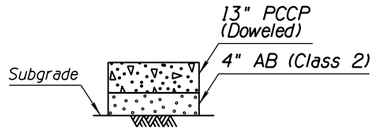
DESIGN SHEET
I-10 SYSTEM ALT 1
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-43
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L		010-E(210)S ___ OF ___

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

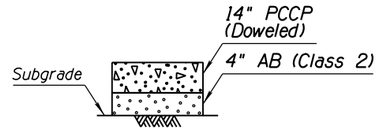
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	44	44	
		010 PM 260			



Total Thickness = 17"

SECTION NO. 1

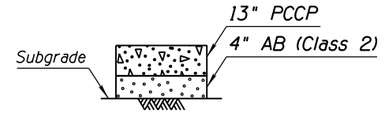
I-10 Mainline
(I-19 TI to SR 210)



Total Thickness = 18"

SECTION NO. 2

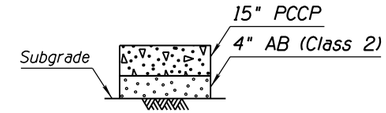
I-10 Mainline
(SR 210 to Kolb TI)



Total Thickness = 17"

SECTION NO. 3

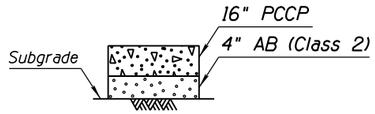
SR 210 Mainline & Ramps



Total Thickness = 19"

SECTION NO. 4

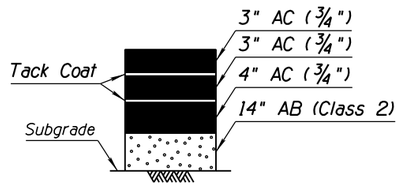
I-10 Ramps
(I-19 TI to Kino TI)



Total Thickness = 20"

SECTION NO. 5

I-10 Ramps
(Kino TI to Kolb TI)



Total Thickness = 24"

SECTION NO. 6

Total Thickness = 6"

SECTION NO. 7

I-10 Interim AC

ALTERNATIVE I – PAVEMENT STRUCTURAL SECTIONS

APPENDIX D

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT I
PAVEMENT STRUCTURAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-44
	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L	010-E(210)S	___ OF ___

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

APPENDIX E
SYSTEM ALTERNATIVE I DRAINAGE PLANS

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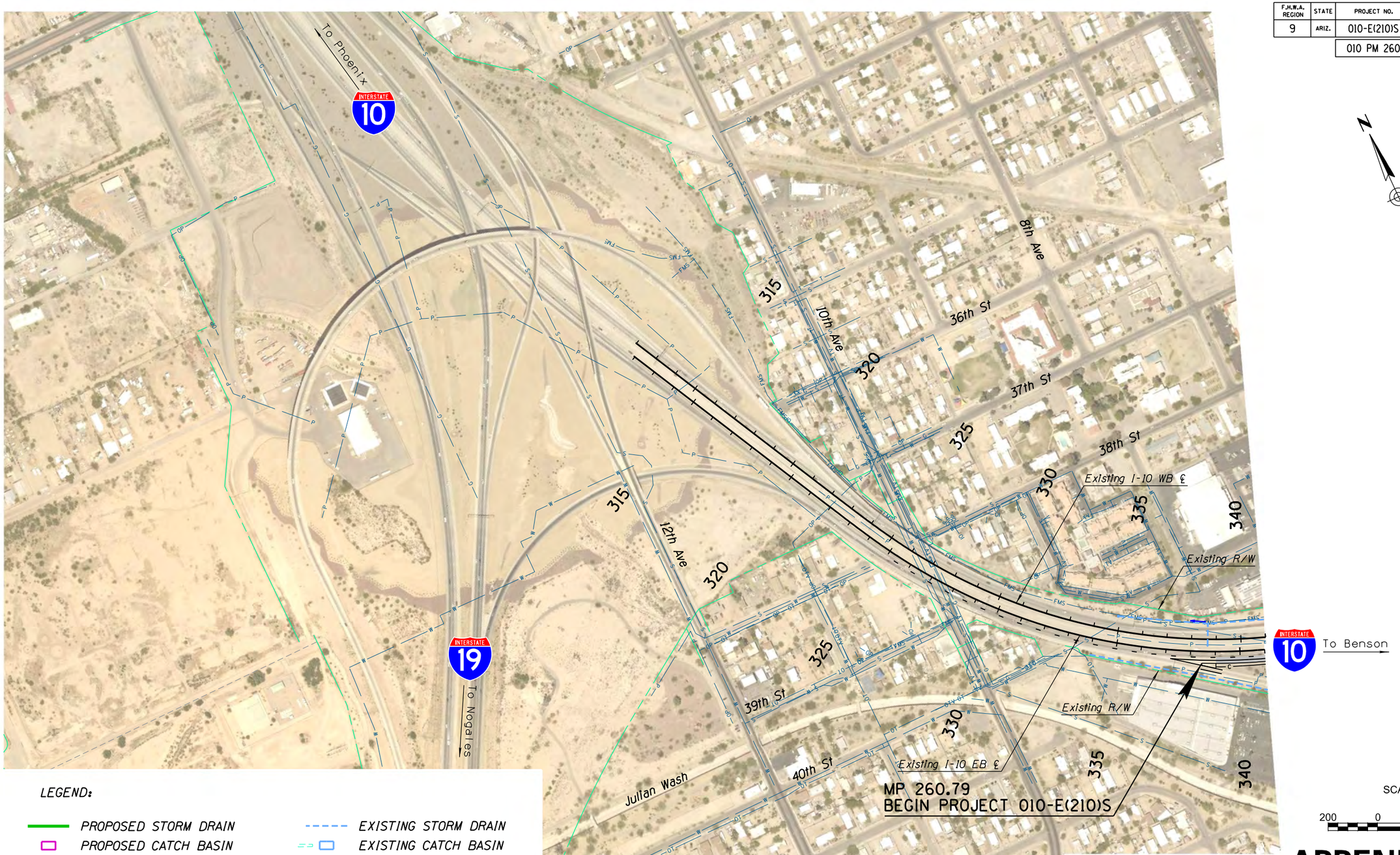
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	16	
		010 PM 260			

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



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT I
STA 314+00 TO STA 341+00

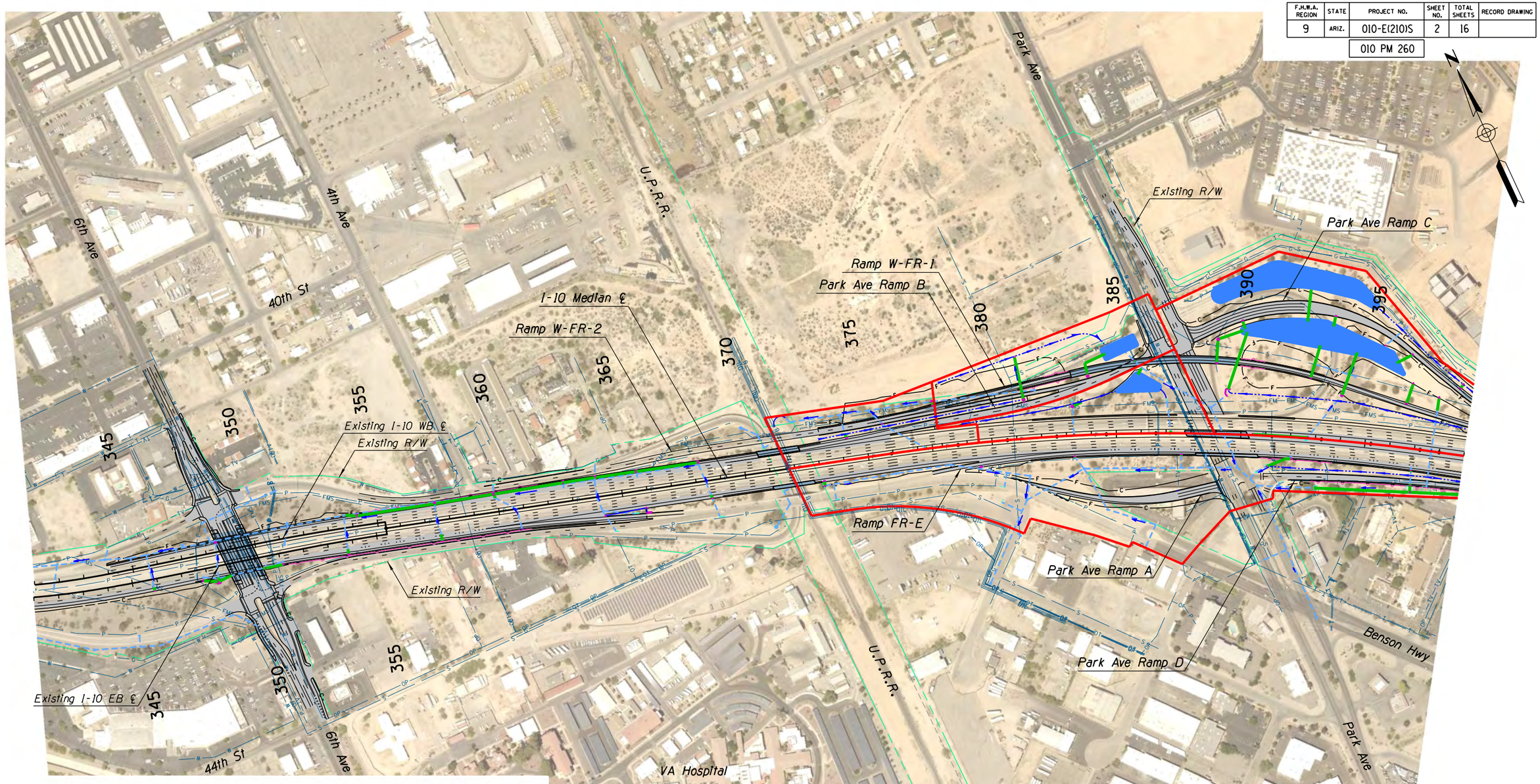
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	DR-01

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d001.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	16	
		010 PM 260			



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400

SCALE IN FEET

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT 1
STA 341+00 TO STA 399+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10

LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

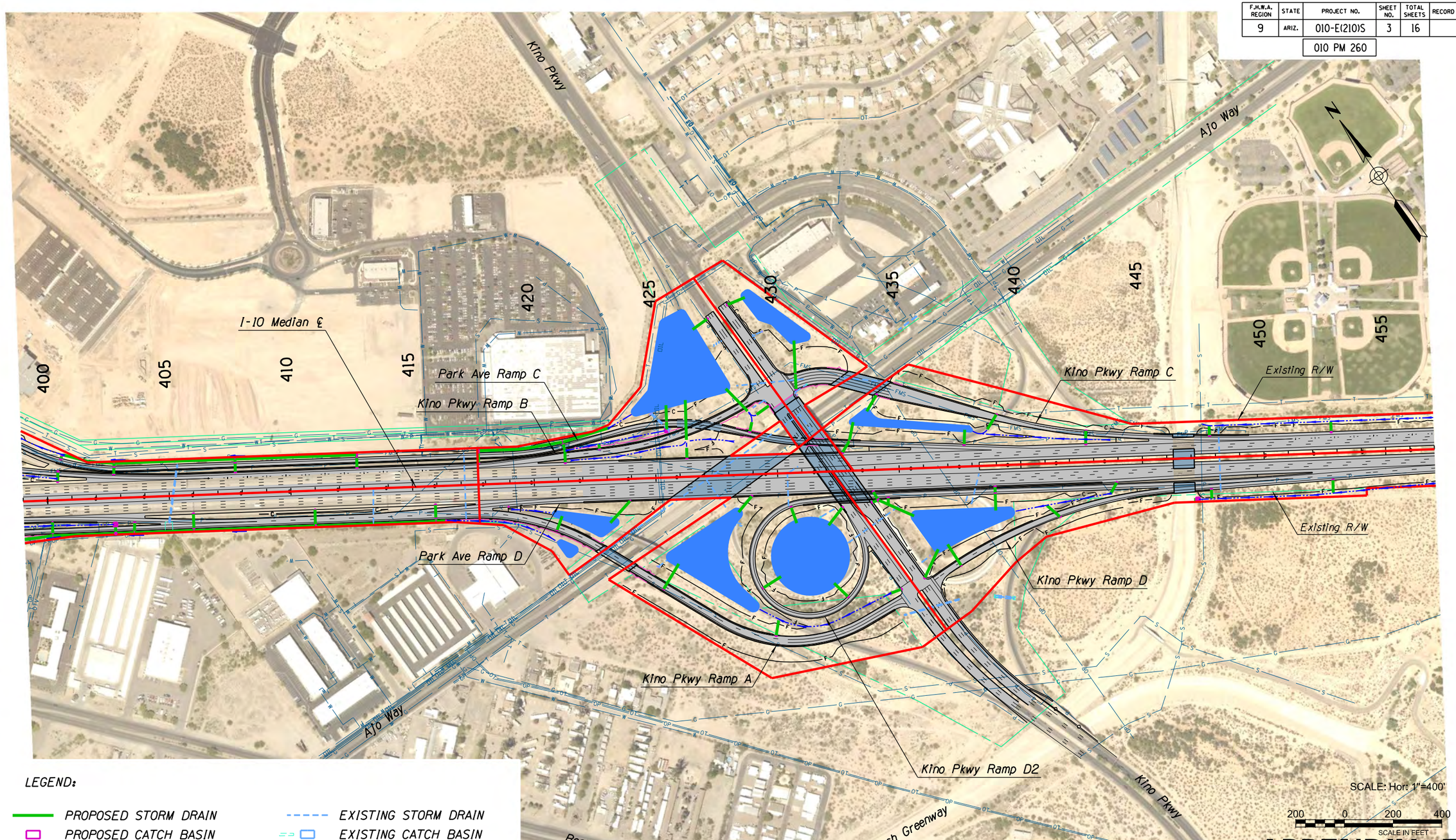
SHEET DR-02

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d002.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	16	
		010 PM 260			



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DRAINAGE SHEET
I-10 SYSTEM ALT I
STA 399+00 TO STA 457+00

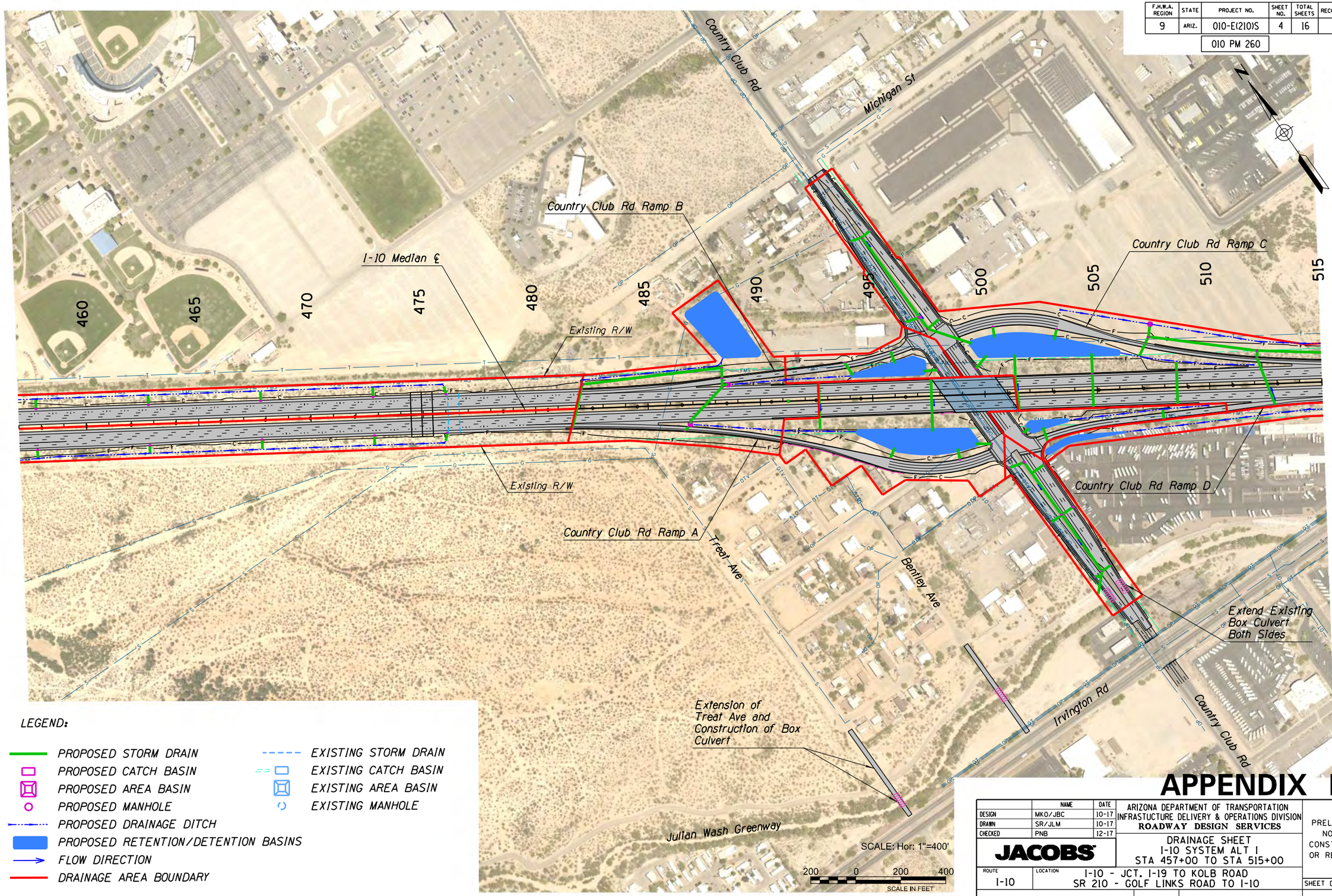
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	DR-03
TRACS NO. H7825 01L		010-E(210)S ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d003.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	16	
		010 PM 260			

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



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT I
STA 457+00 TO STA 515+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET DR-04

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d004.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	16	
		010 PM 260			

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

Palo Verde Rd
Irvington Rd
U.P.R.R.
Alvernon Way
Tucson Electric Power
Existing R/W
I-10 Median ℄
Ramp SW
Alvernon Way Ramp B
Extend Existing Box Culvert
Ramp WN
Alvernon Way Ramp C
Ramp SE
Alvernon Way Ramp D
New Box Culvert
Ramp EN
Alvernon Way Ramp A
Julian Wash Greenway
Palo Verde Rd
Alvernon Way
515
520
525
530
535
540
545
550
555
560
565
570
505
500
495
510

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT I
STA 515+00 TO STA 573+00

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET DR-05

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d005.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	6	16	
		010 PM 260			

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

Tucson Electric Power

Extend Existing Box Culvert

U.P.R.R.

Julian Wash Greenway

Existing R/W

I-10 Median ℄

Existing R/W

Drexel Rd

525 575 580 585 590 595 600 605 610 615 620 625 630

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400

SCALE IN FEET

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DRAINAGE SHEET
I-10 SYSTEM ALT I
STA 573+00 TO STA 631+00

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	DR-06

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d006.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	7	16	
		010 PM 260			

U.P.R.R.

Julian Wash Greenway

Littletown Rd

Valencia Rd

635 640 645 650 655 660 665 670 675 680 685

Existing R/W

I-10 Median ℄

Existing R/W

Valencia Rd Ramp B

Valencia Rd Ramp C

Existing R/W

Existing R/W

Valencia Rd Ramp A

Valencia Rd Ramp D

Benson Hwy

Valencia Rd

Swan Rd

SCALE: Hor: 1"=200'

200 0 200 400

SCALE IN FEET

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT I
STA 631+00 TO STA 689+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET DR-07

___ OF ___

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

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d007.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	8	16	
		010 PM 260			

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

Craycroft Rd
Dream St
Elvira Rd
I-10 Median ℄
WB Frontage Rd
Travel Plaza Way
Craycroft Rd Ramp C
690
695
700
705
710
715
720
725
730
735
740
745
Existing R/W
Existing R/W
Craycroft Rd Ramp A
Craycroft Rd Ramp D
Extend Existing Box Culvert
Los Reales Rd

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400

SCALE IN FEET

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT I
STA 689+00 TO STA 747+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

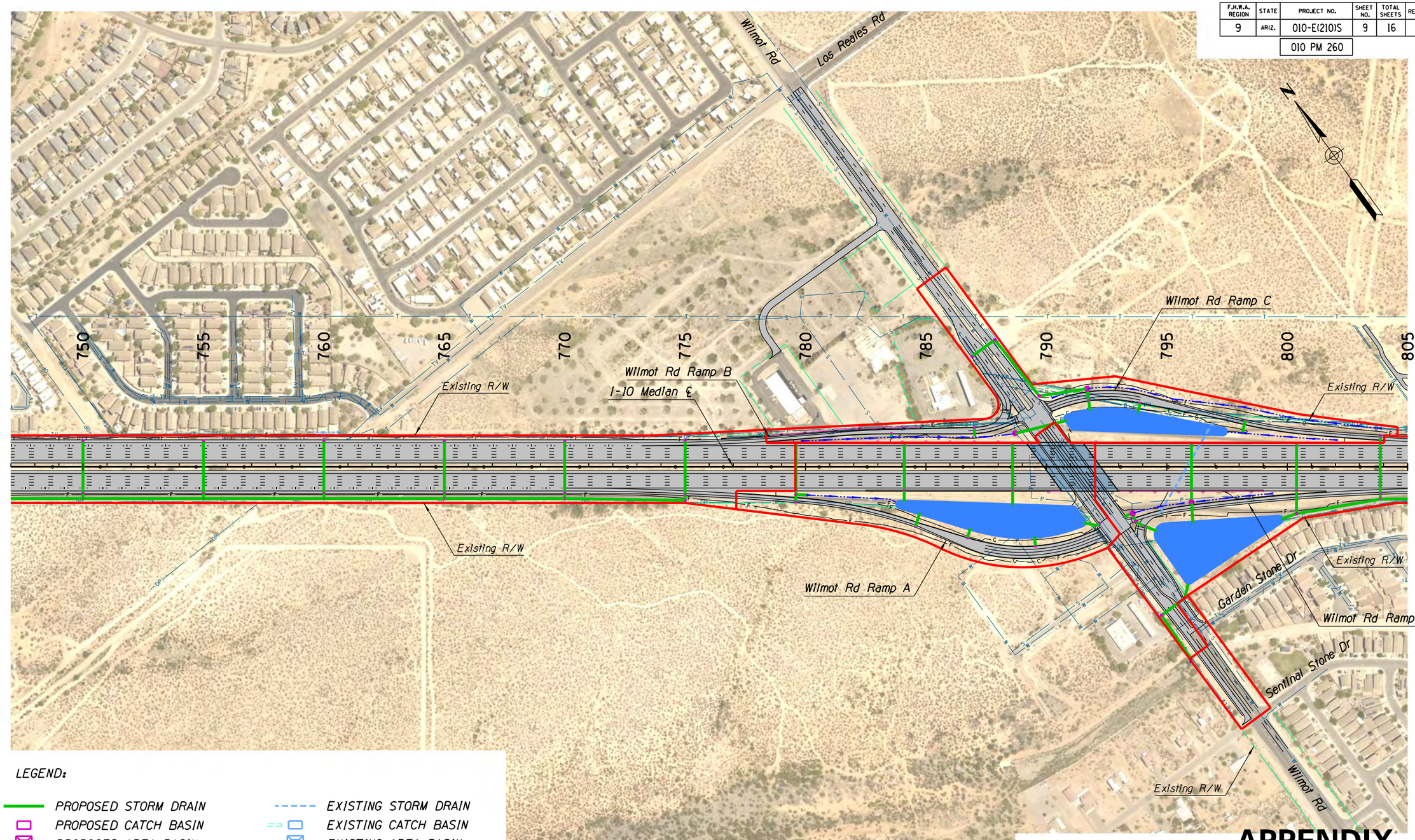
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	DR-08
TRACS NO. H7825 01L		010-E(210)S

___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d008.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	9	16	
		010 PM 260			

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



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT I
STA 747+00 TO STA 805+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

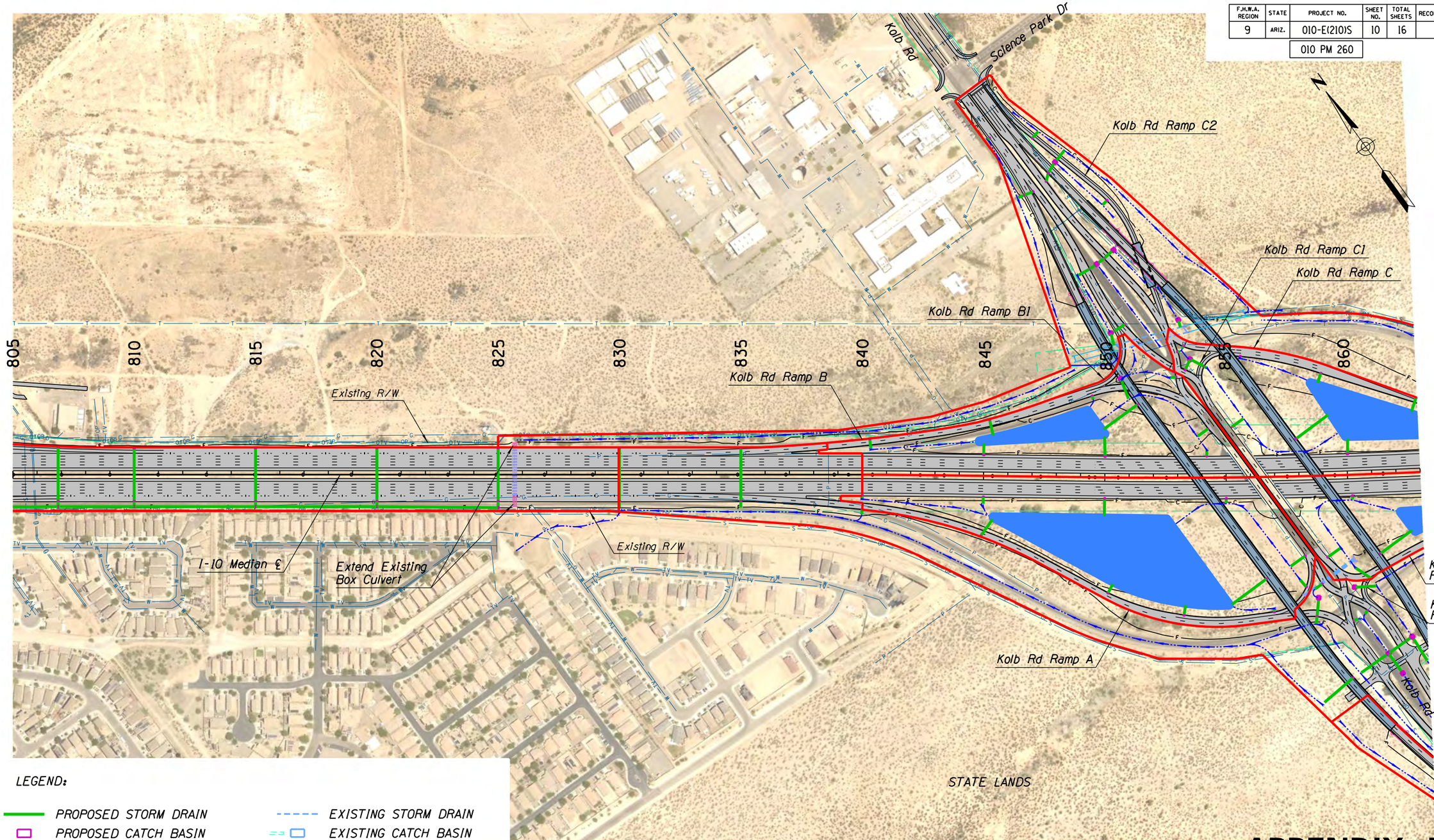
SHEET DR-09

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d009.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	10	16	
		010 PM 260			

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



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT 1
STA 805+00 TO STA 863+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

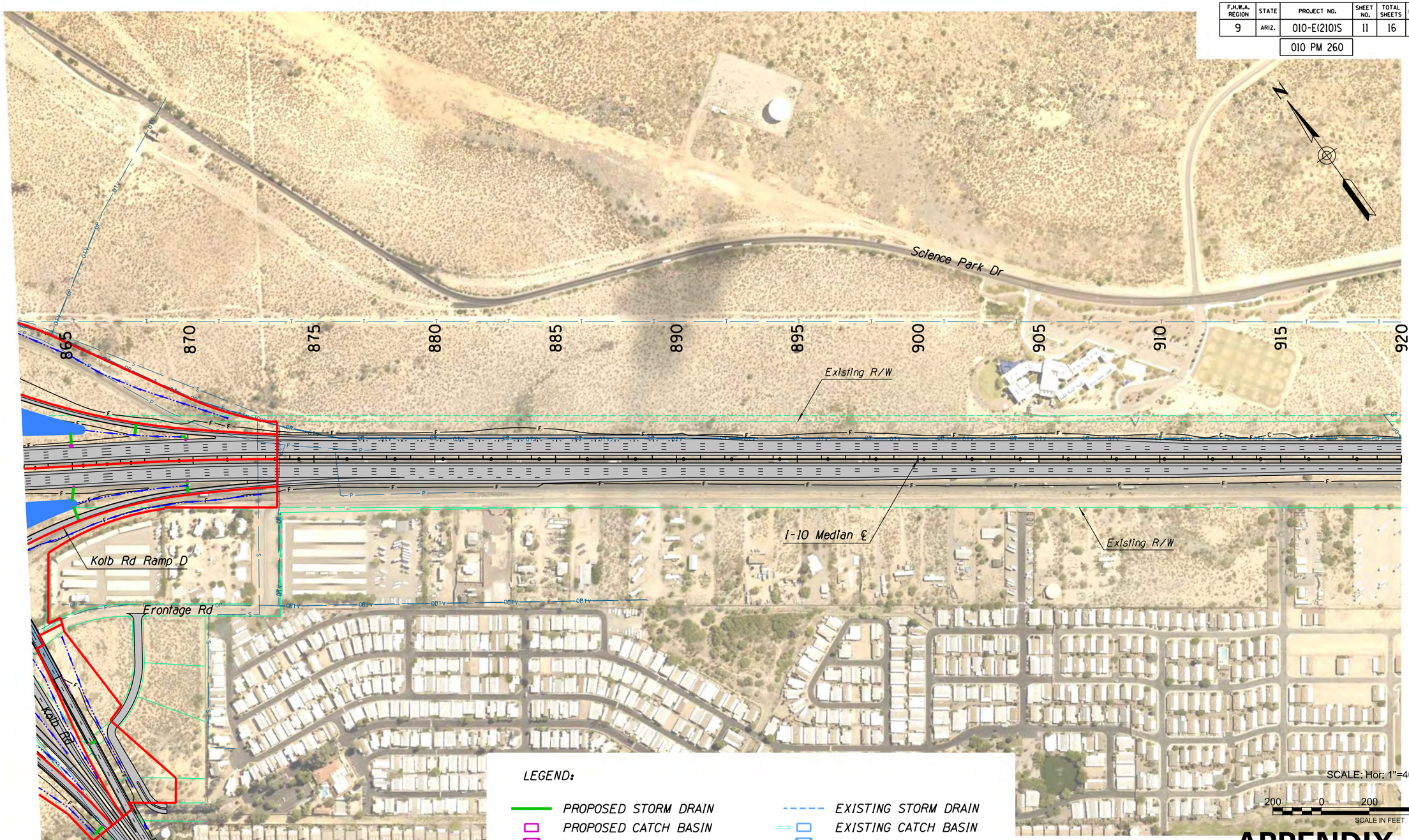
SHEET DR-10

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d010.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	11	16	

010 PM 260



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT I
STA 863+00 TO STA 920+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

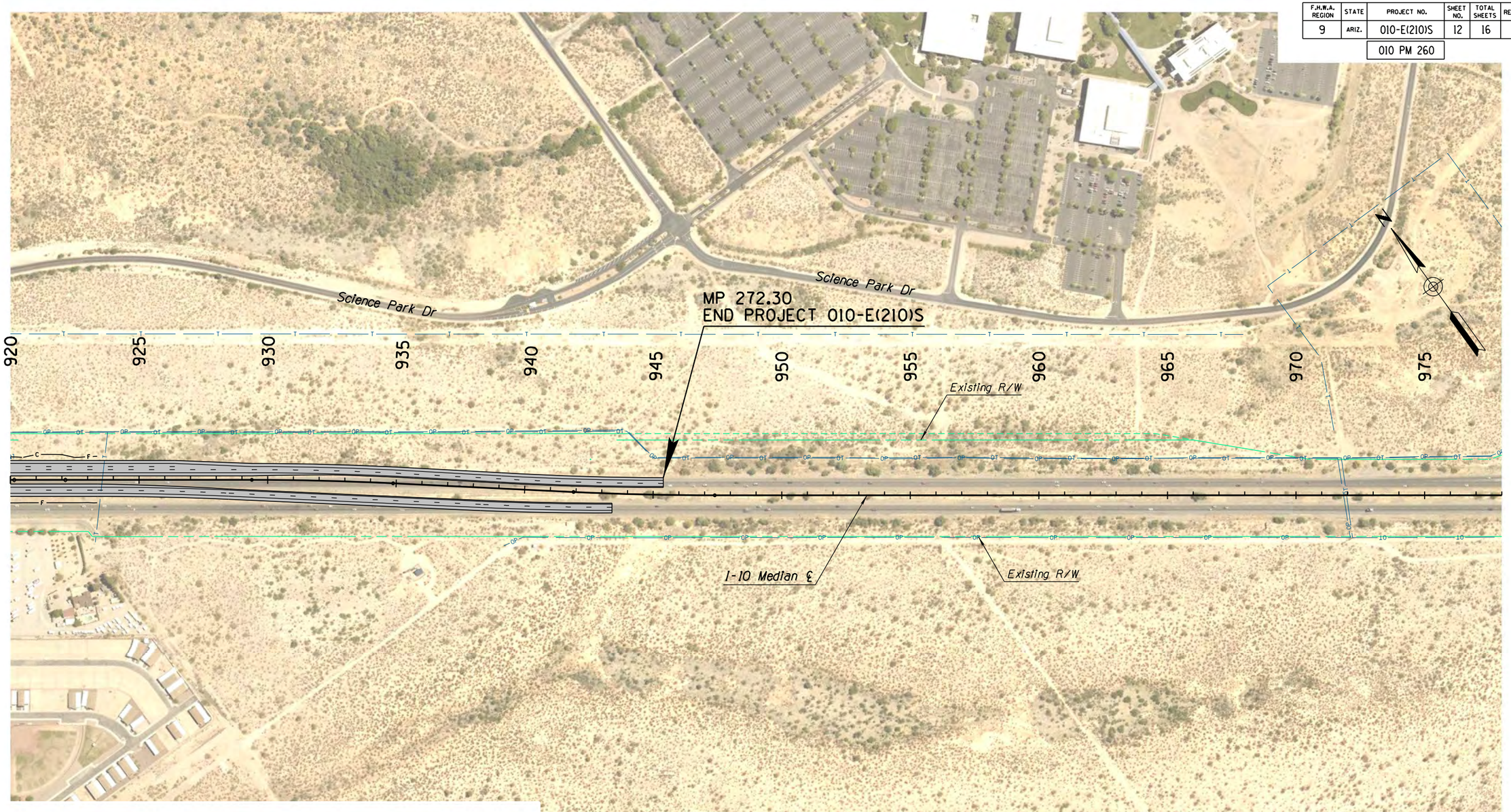
SHEET DR-11

___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d011.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	12	16	
		010 PM 260			



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT I
STA 920+00 TO STA 978+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET DR-12

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d012.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	13	16	
		010 PM 260			

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

N

Golf Links Rd
Aviation Pkwy/SR 210
U.P.R.R.
Richie Blvd
Palo Verde Rd
S Alvernon Way
37th St
375
380
385
395
400
Golf Links Rd Ramp SW
36th St
36th St Access Rd
Palo Verde Rd
SR 210 Median ℄
U.P.R.R.
Dodge Blvd
Golf Links Rd Ramp EN
Golf Links Rd Ramp SW
Golf Links Rd Ramp WN
N Alvernon Ramp D
Existing R/W
Ajo Way Ramp A
Existing R/W
New Box Culvert

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
SR 210 SYSTEM ALT 1
STA 370+00 TO STA 400+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

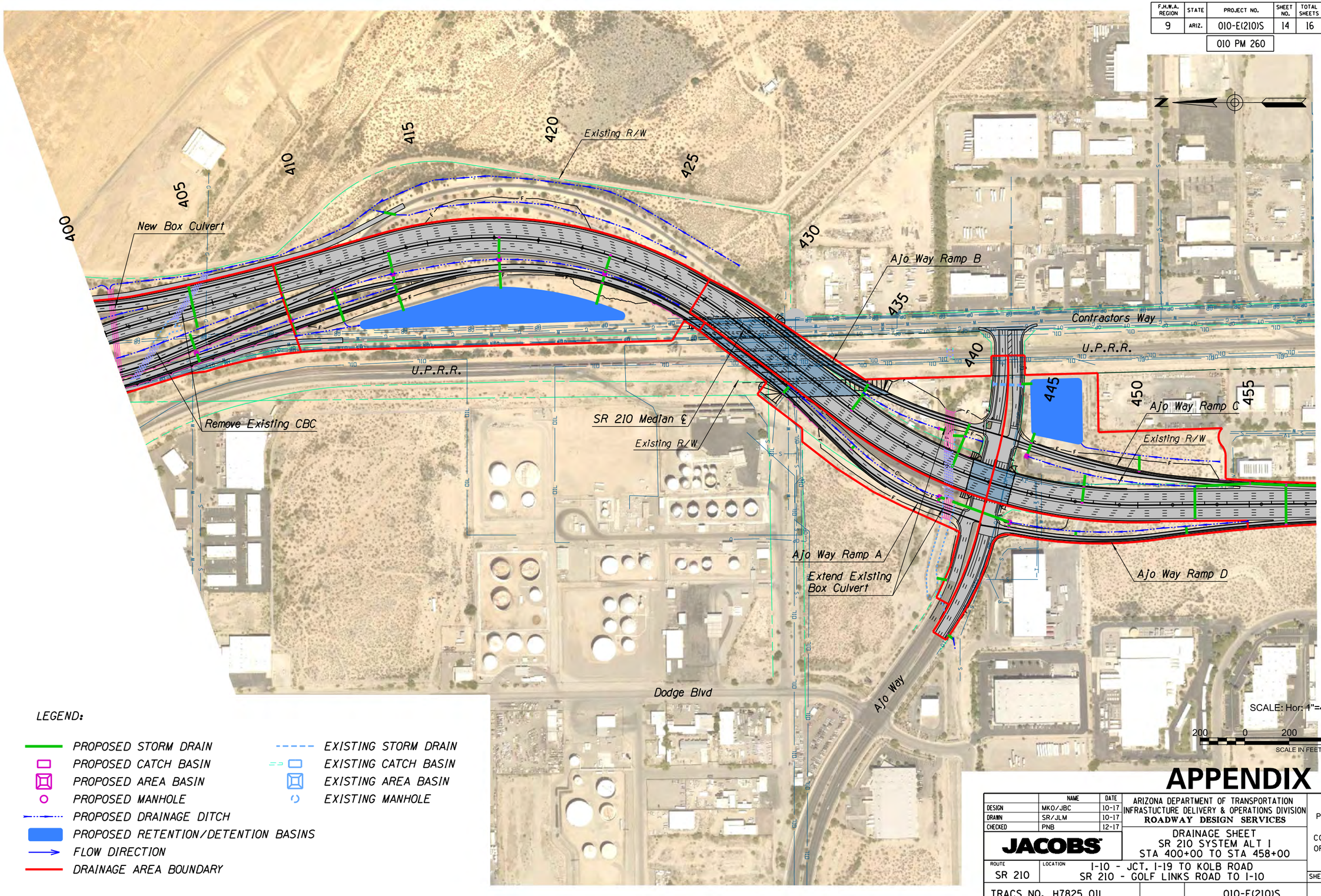
SHEET DR-13

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d013.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	14	16	

010 PM 260



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
SR 210 SYSTEM ALT I
STA 400+00 TO STA 458+00

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET DR-14

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d014.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	15	16	
		010 PM 260			

N

Irvington Rd
Extend Existing Box Culvert
Alvernon Way Ramp C
Ramp WN
Ramp EN
Contractors Way
U.P.R.R.
Alvernon Way Ramp D
New Box Culvert
Existing R/W
Extend Existing Box Culvert
SR 210 Median ℄
Ramp SE
Ramp SW
Alvernon Way Ramp A
Julian Wash Greenway
Existing R/W
Irvington Rd
Alvernon Way Ramp B
Michigan St
460
465
470
475
480
485
490
495
500
505
510
515
520
525
530
535
540
545
550
555
560
565
570

SCALE: Hor: 1"=400'

200 0 200 400

SCALE IN FEET

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
SR 210 SYSTEM ALT I
STA 460+00 TO STA 520+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

SHEET DR-15

___ OF ___

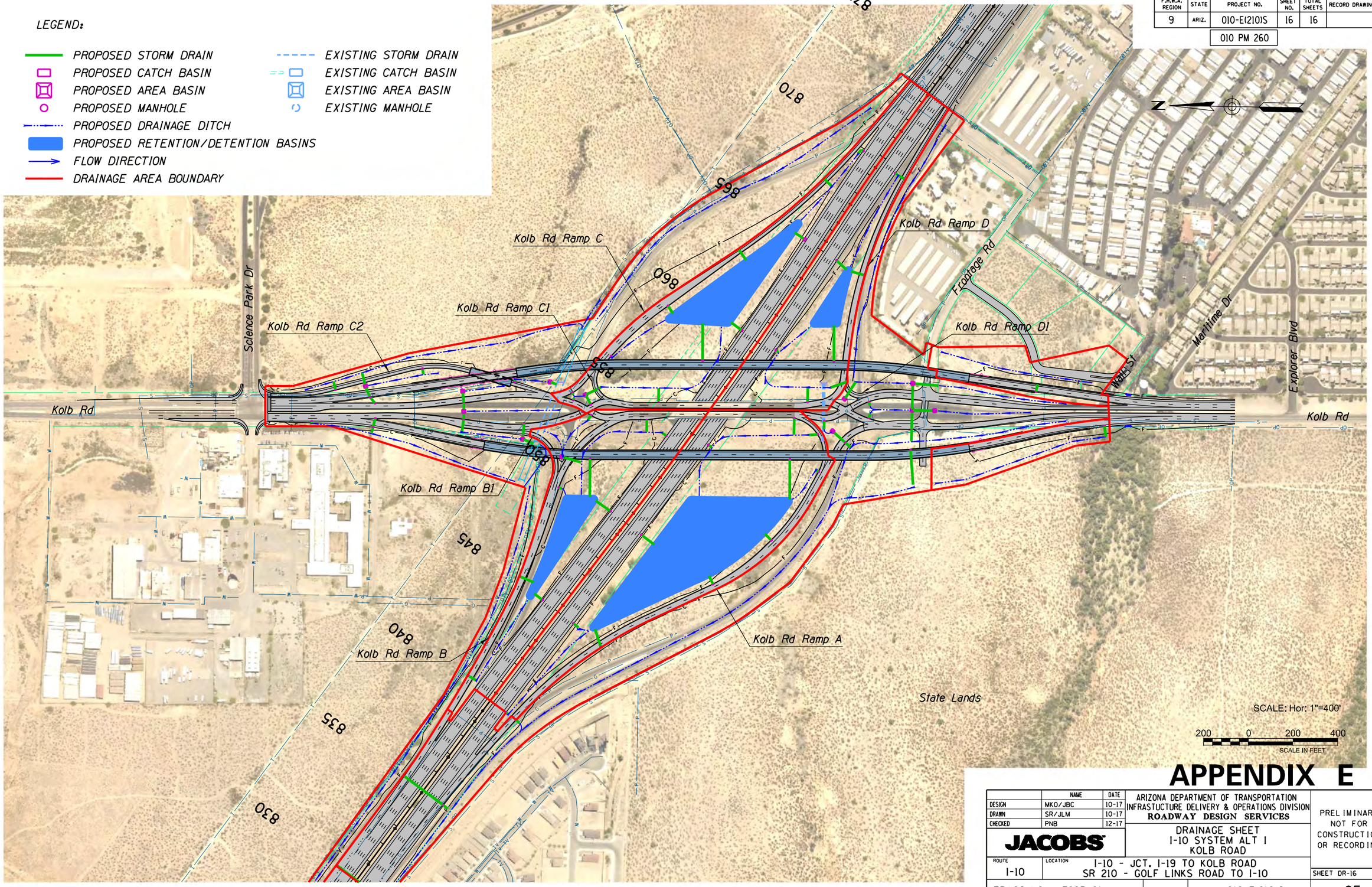
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d015.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	16	16	
		010 PM 260			

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE



APPENDIX E

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT I
KOLB ROAD

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET DR-16

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d016.dgn

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

APPENDIX F
SYSTEM ALTERNATIVE I PROFILES SHEETS

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	46	
		010 PM 260			

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT 1
STA 312+00 TO 341+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET PR-01
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

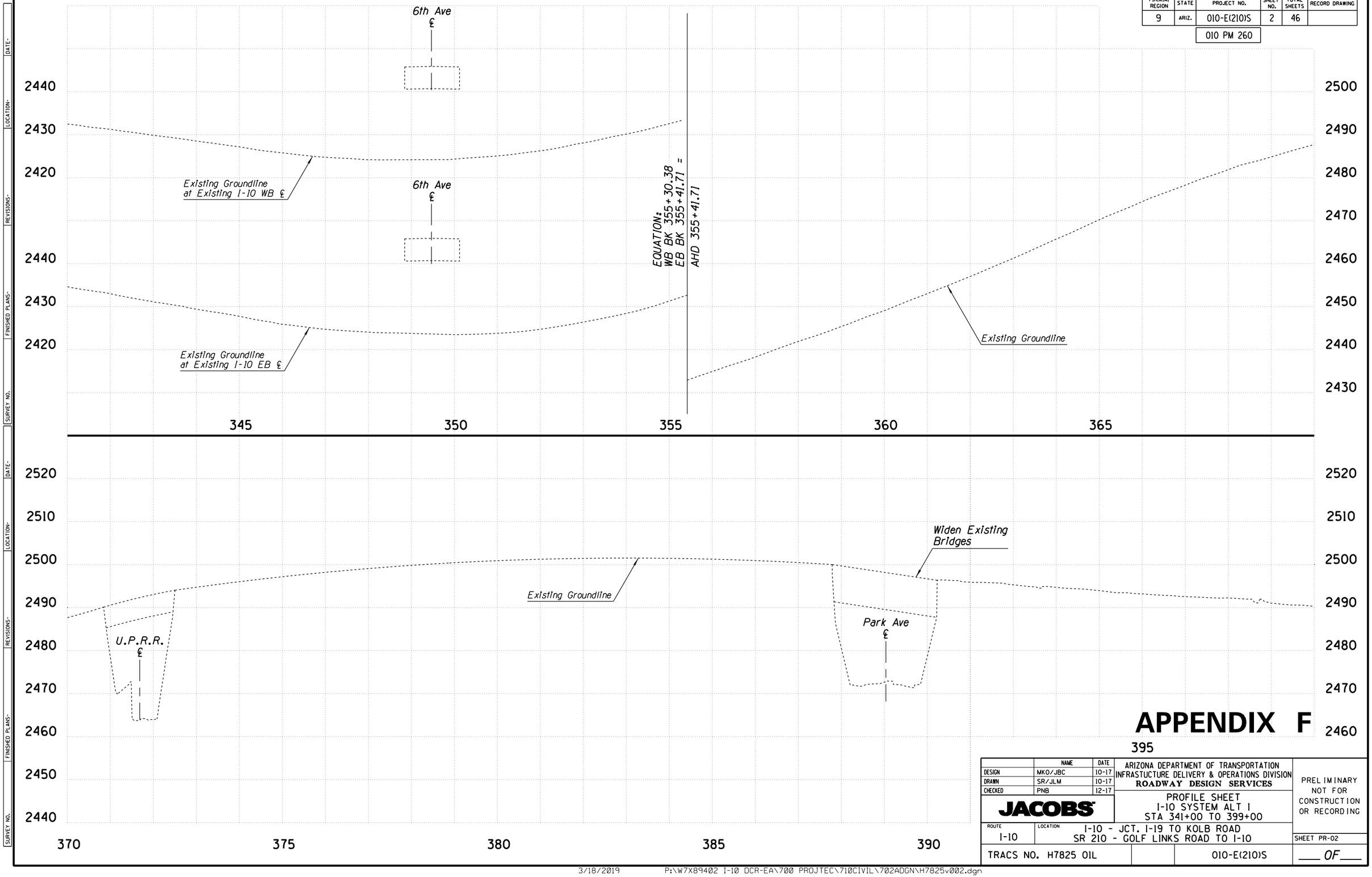
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v001.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	46	
		010 PM 260			

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



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT 1
STA 341+00 TO 399+00

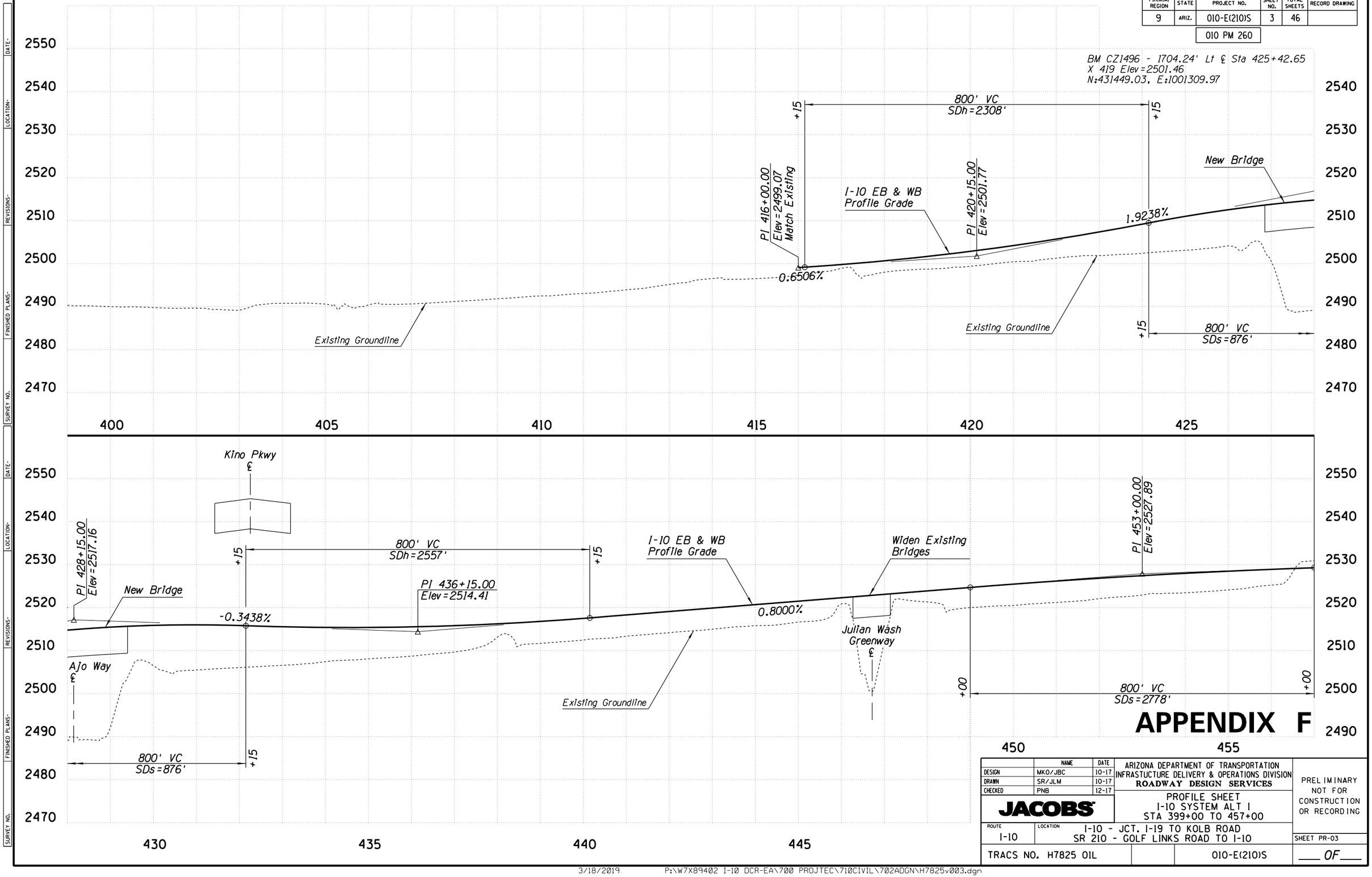
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET PR-02
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v002.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT 1
STA 399+00 TO 457+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

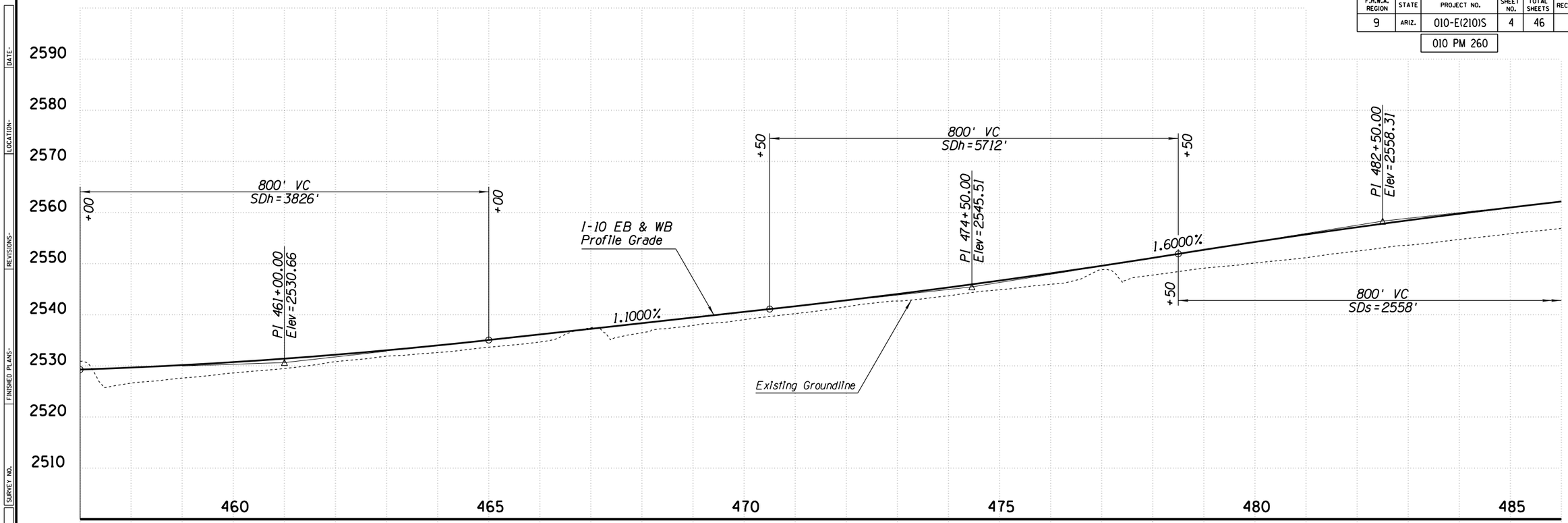
SHEET PR-03

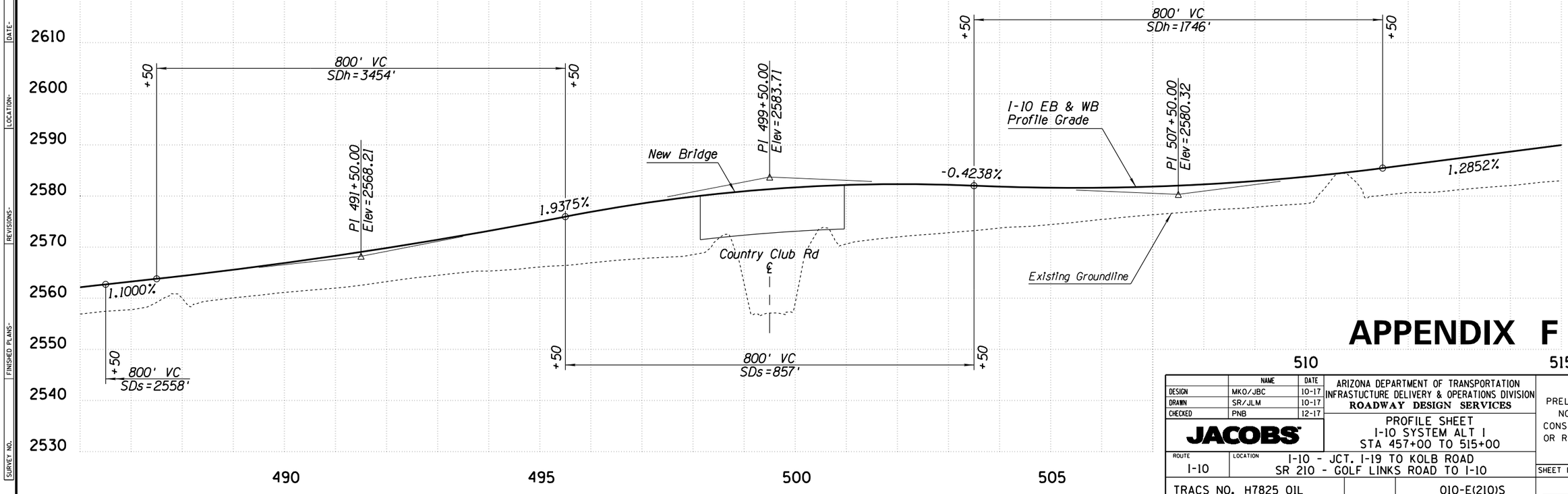
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v003.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	46	
		010 PM 260			





APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT I
STA 457+00 TO 515+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

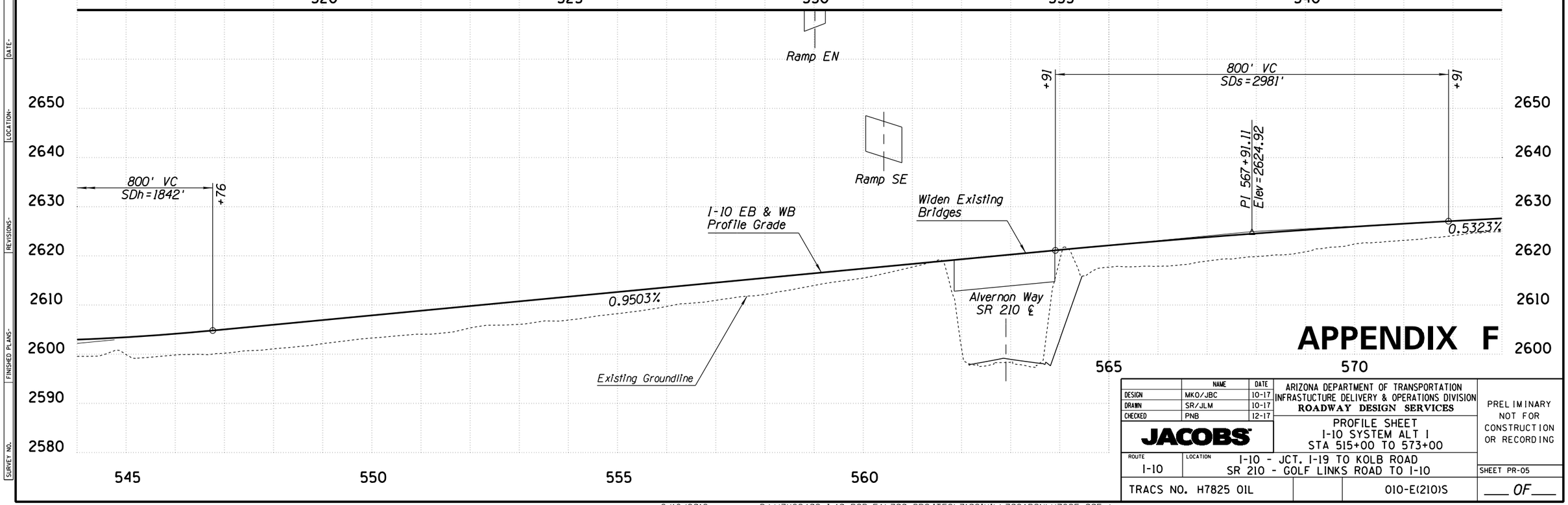
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PR-04

___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT 1
STA 515+00 TO 573+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

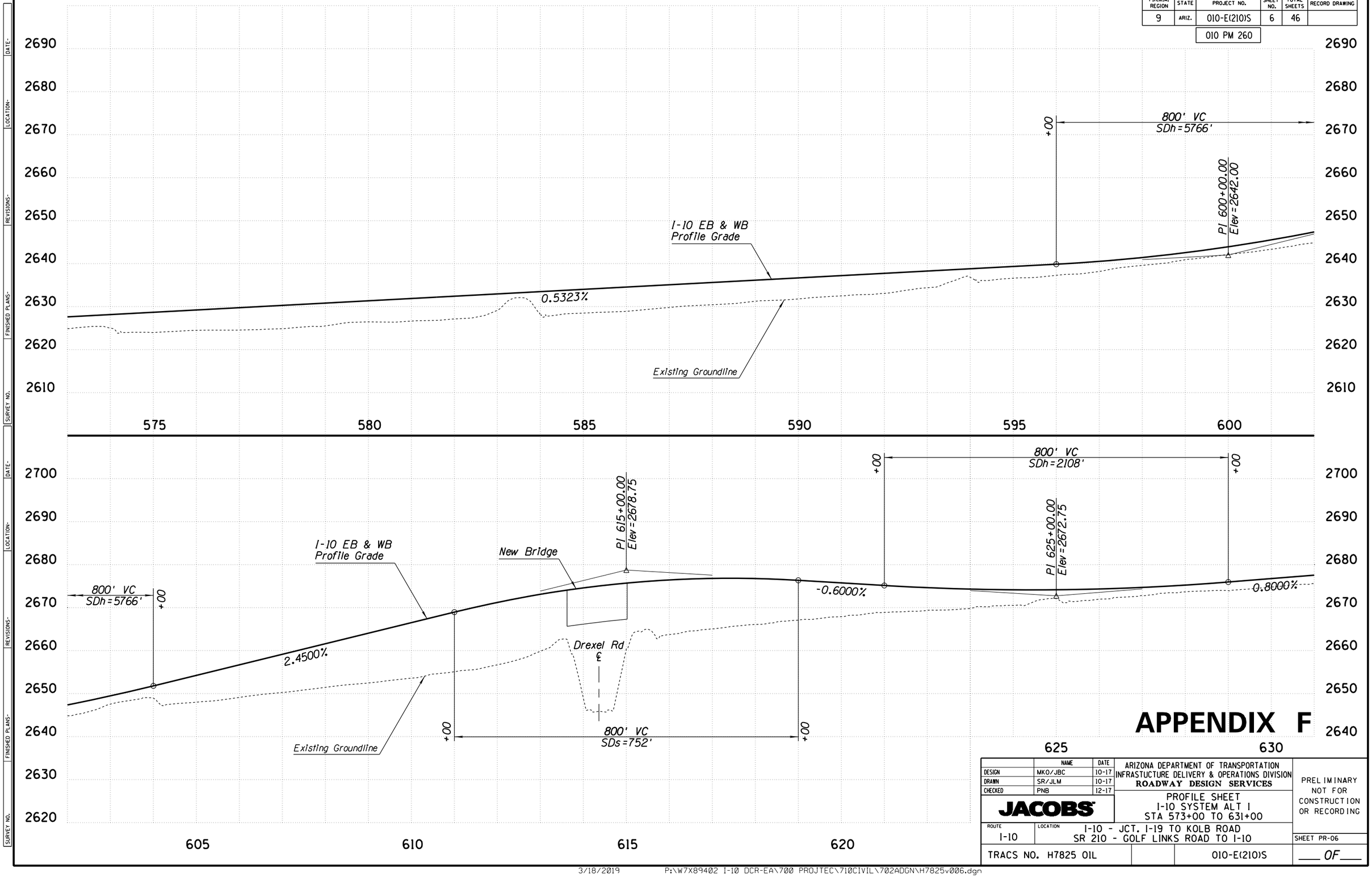
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PR-05

___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	6	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT 1
STA 573+00 TO 631+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-06

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v006.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	7	46	
		010 PM 260			

BM CZ0058 - 2096.22' Lt ℄ Sta 637+51.90
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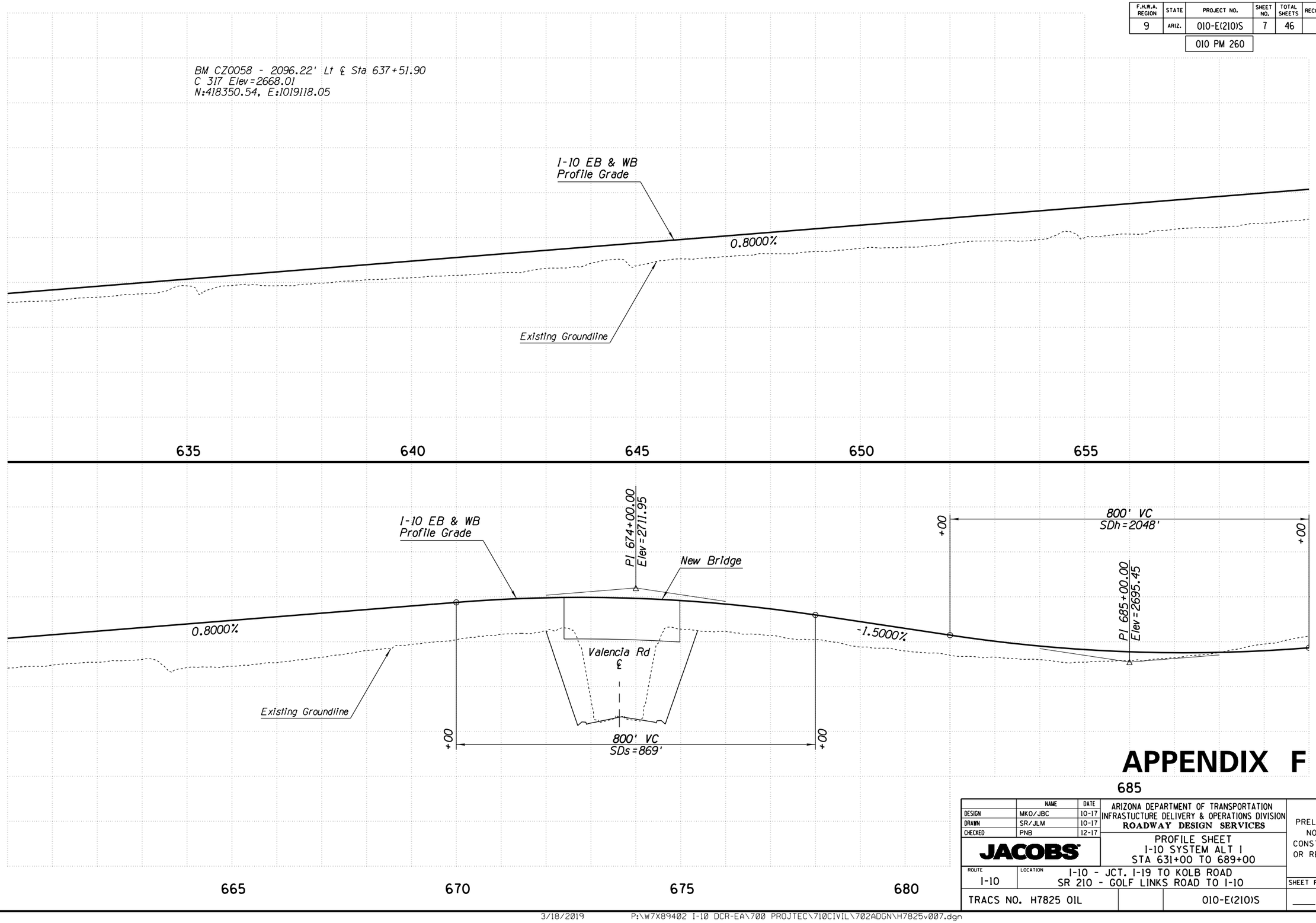
N:418350.54, E:1019118.05



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
I-10 SYSTEM ALT 1
STA 631+00 TO 689+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

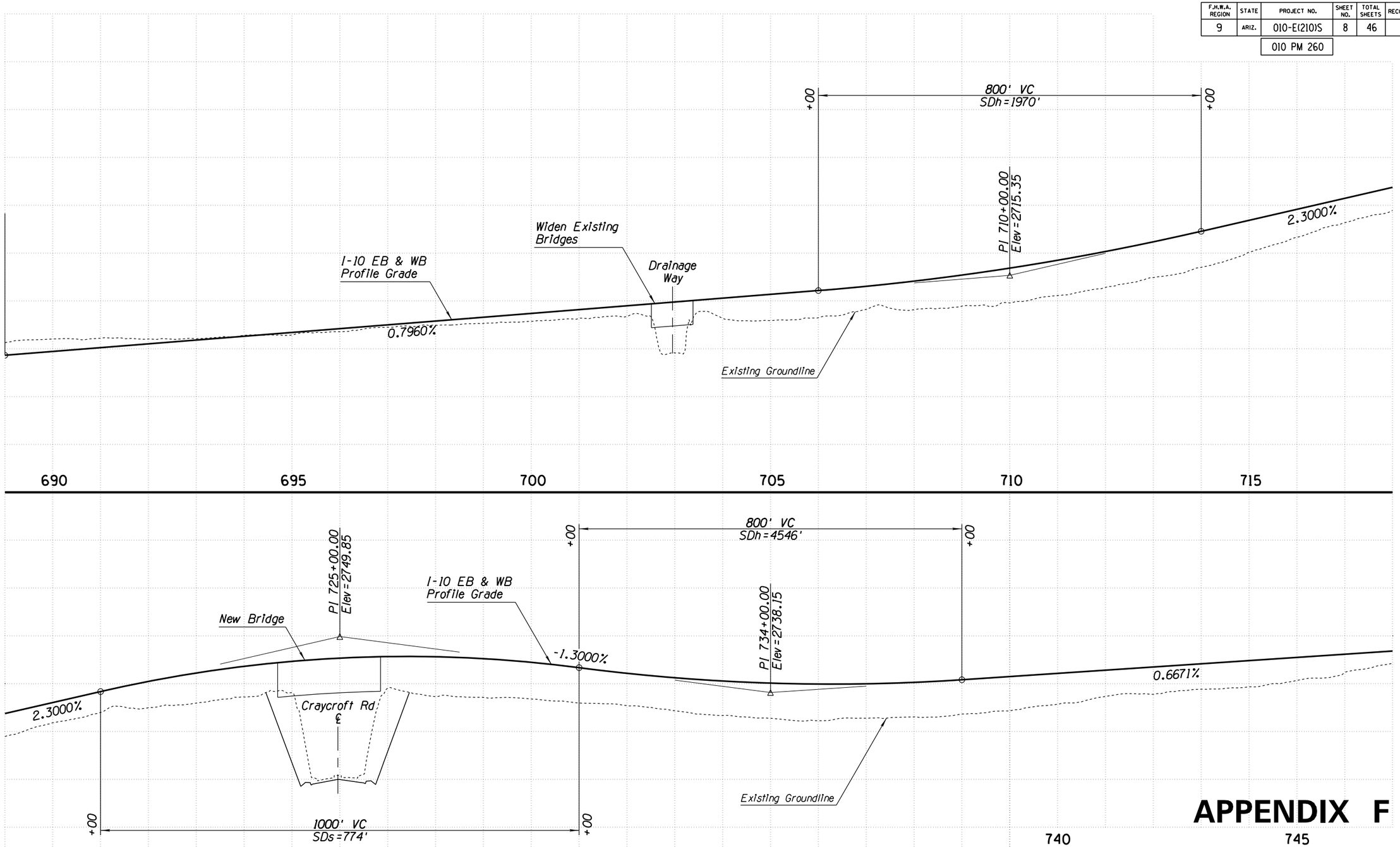
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-07

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	8	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
I-10 SYSTEM ALT 1
STA 689+00 TO 747+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

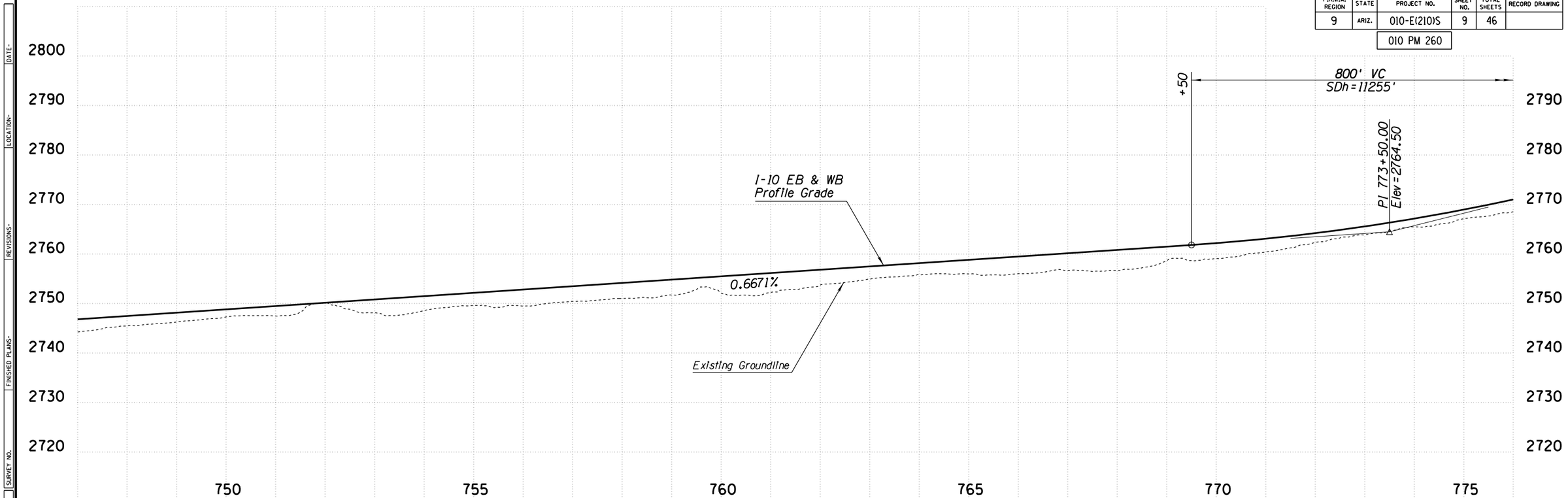
SHEET PR-08

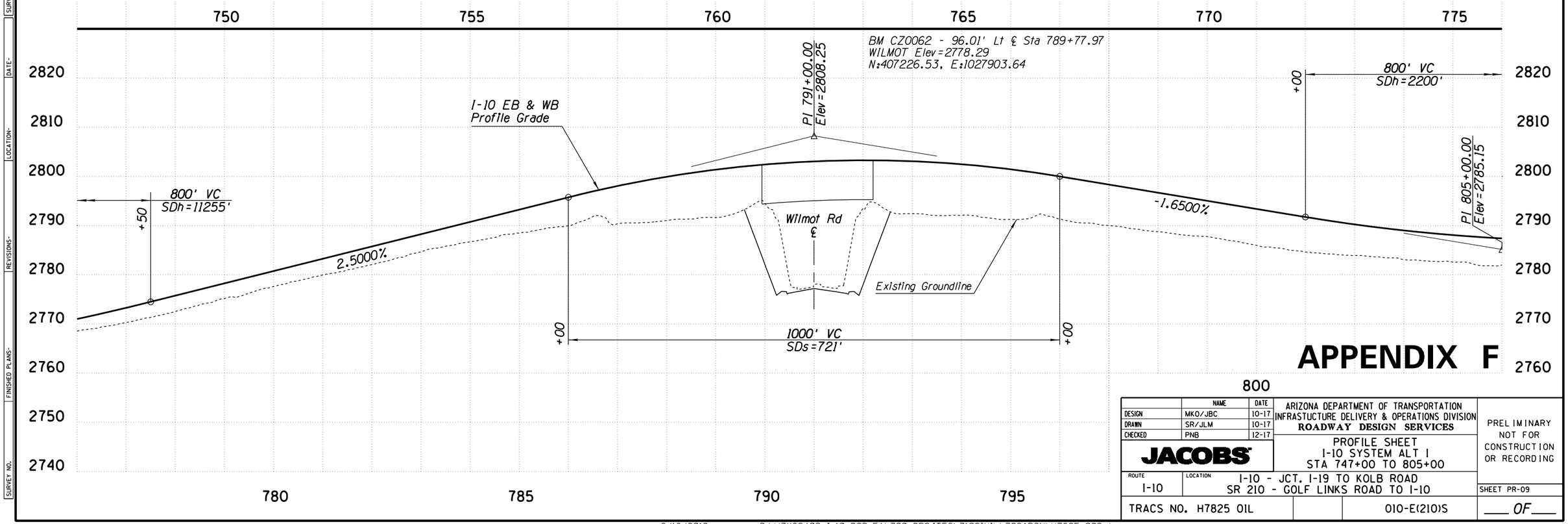
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	9	46	
		010 PM 260			

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





APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT 1
STA 747+00 TO 805+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

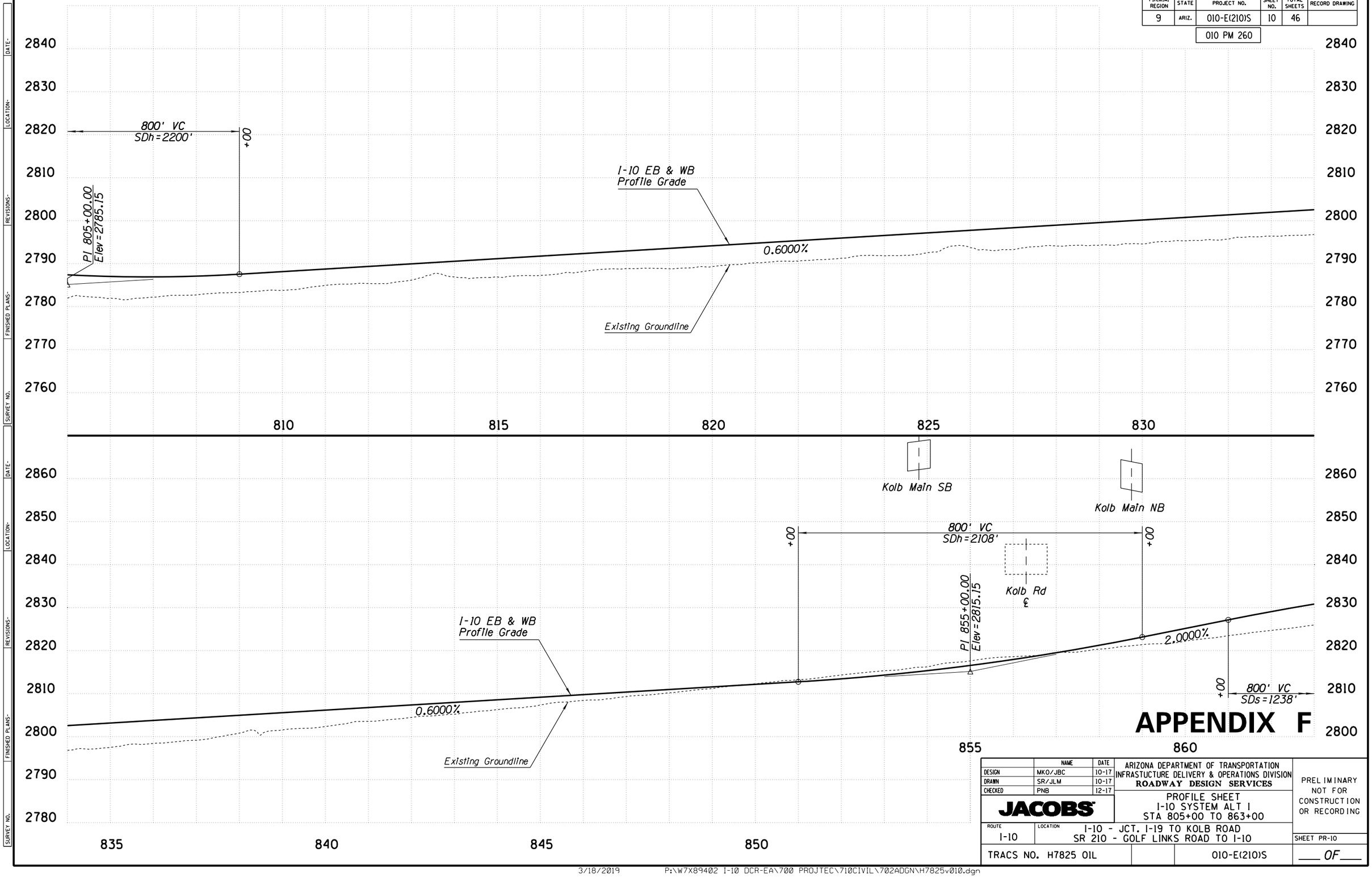
SHEET PR-09

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v009.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	10	46	
		010 PM 260			

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



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

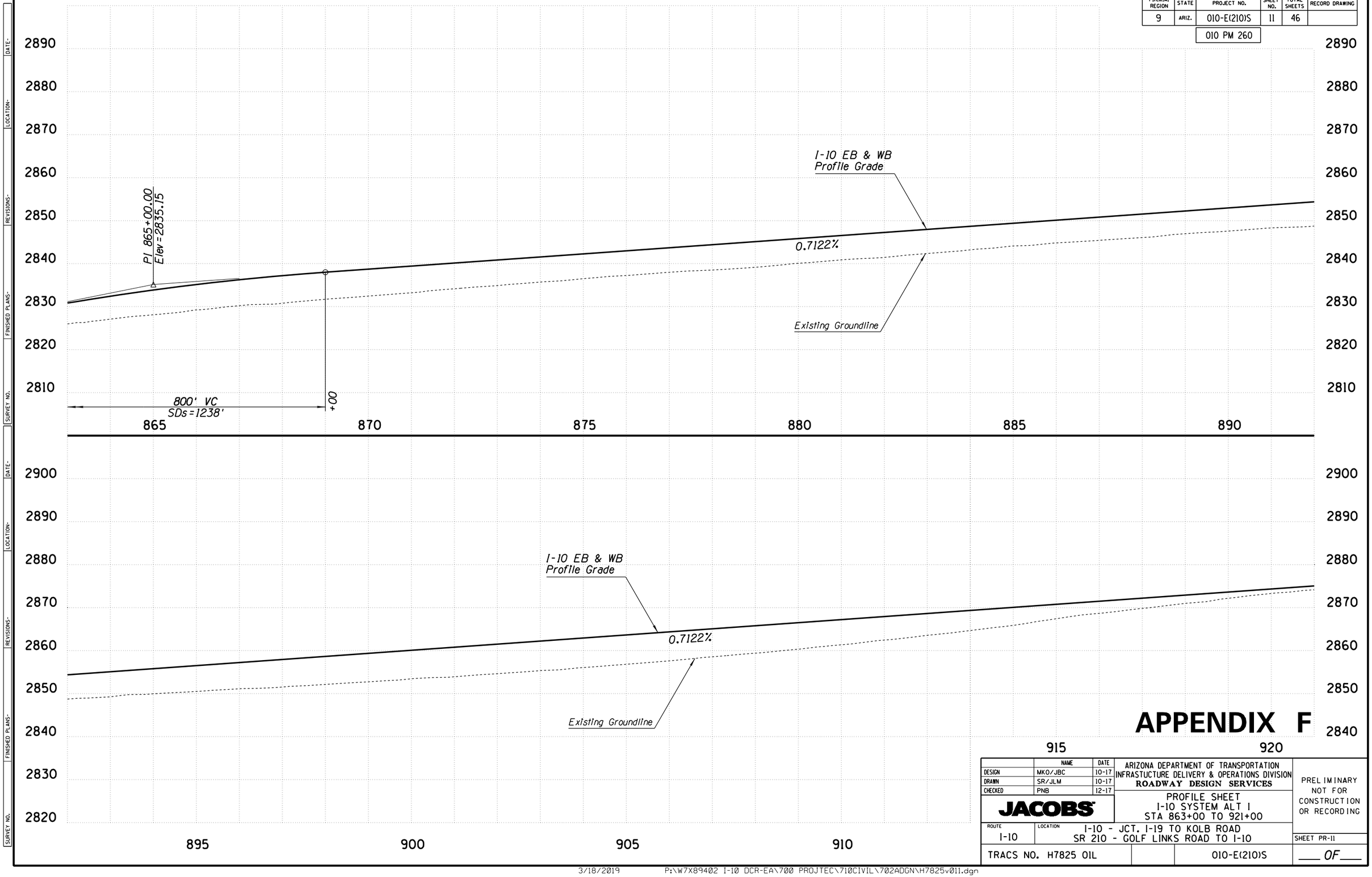
ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT 1
STA 805+00 TO 863+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET PR-10
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L	010-E(210)S	___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	11	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT I
STA 863+00 TO 921+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

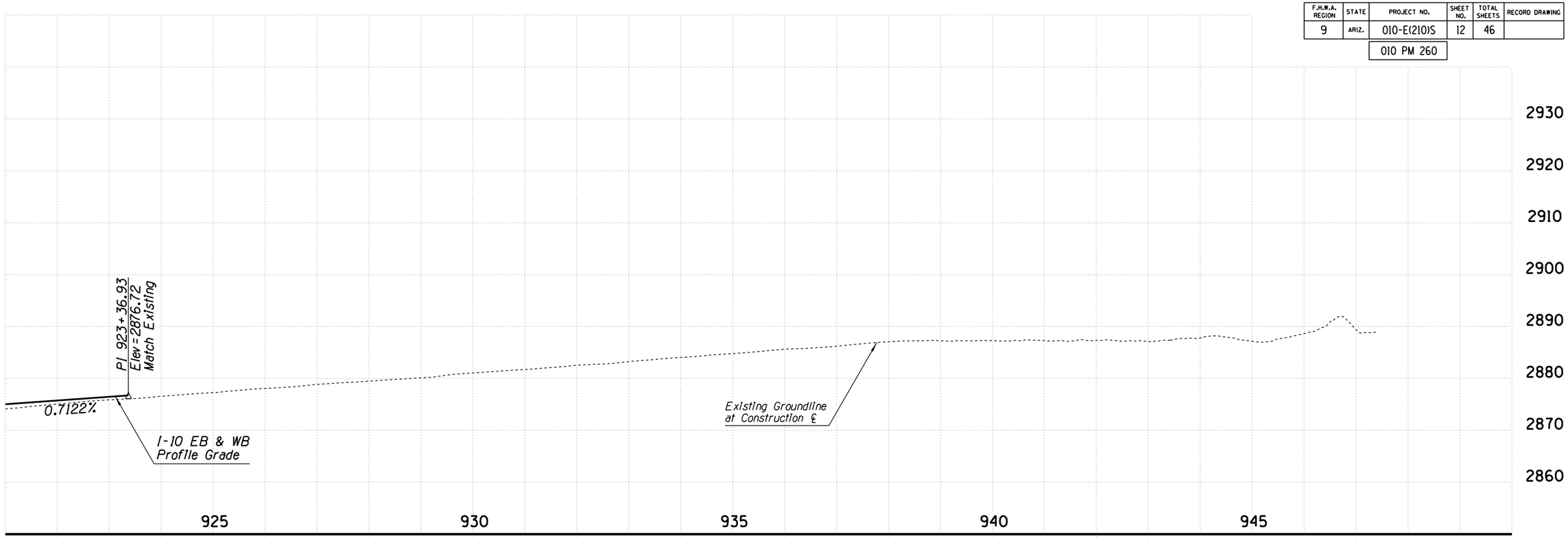
SHEET PR-11

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v011.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	12	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT 1
STA 921+00 TO 979+00

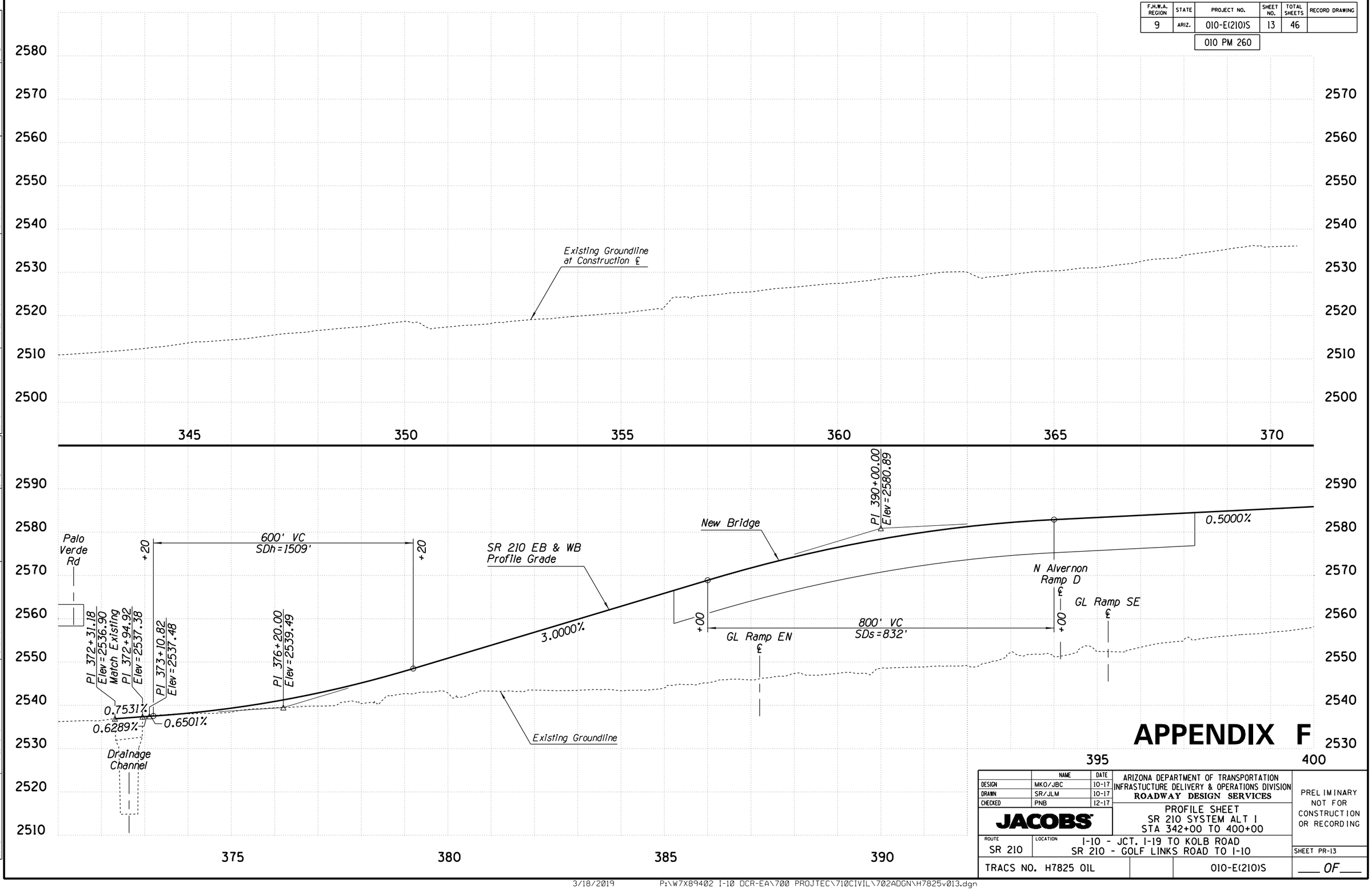
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET PR-12
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L		010-E(210)S ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	13	46	
		010 PM 260			

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



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
SR 210 SYSTEM ALT 1
STA 342+00 TO 400+00

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

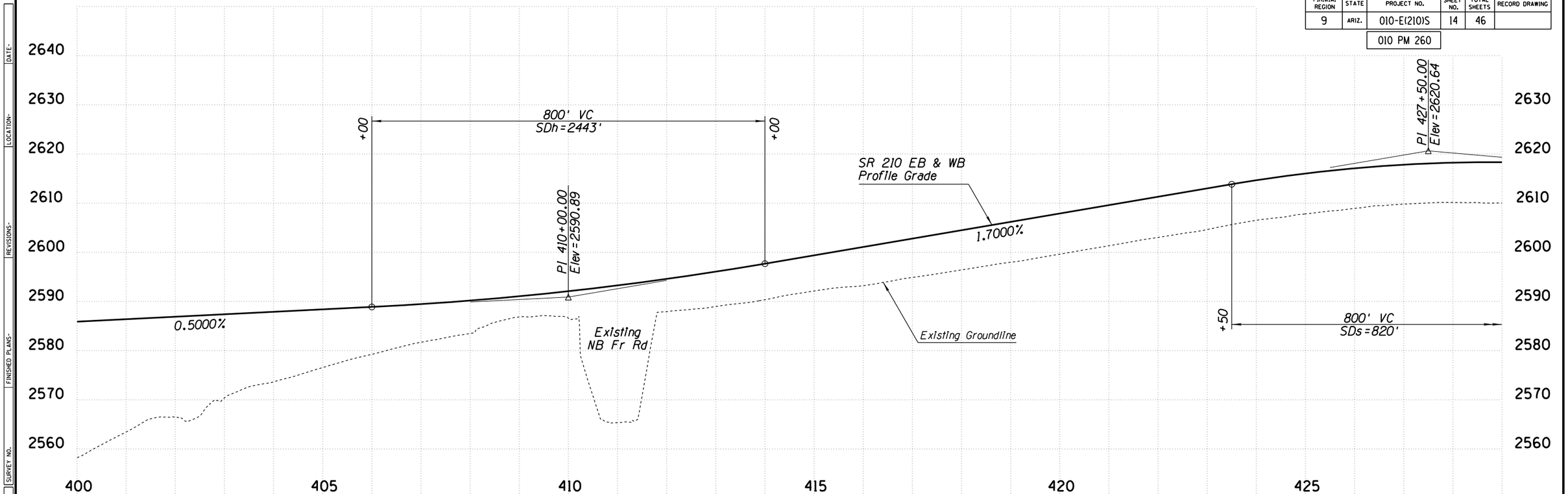
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

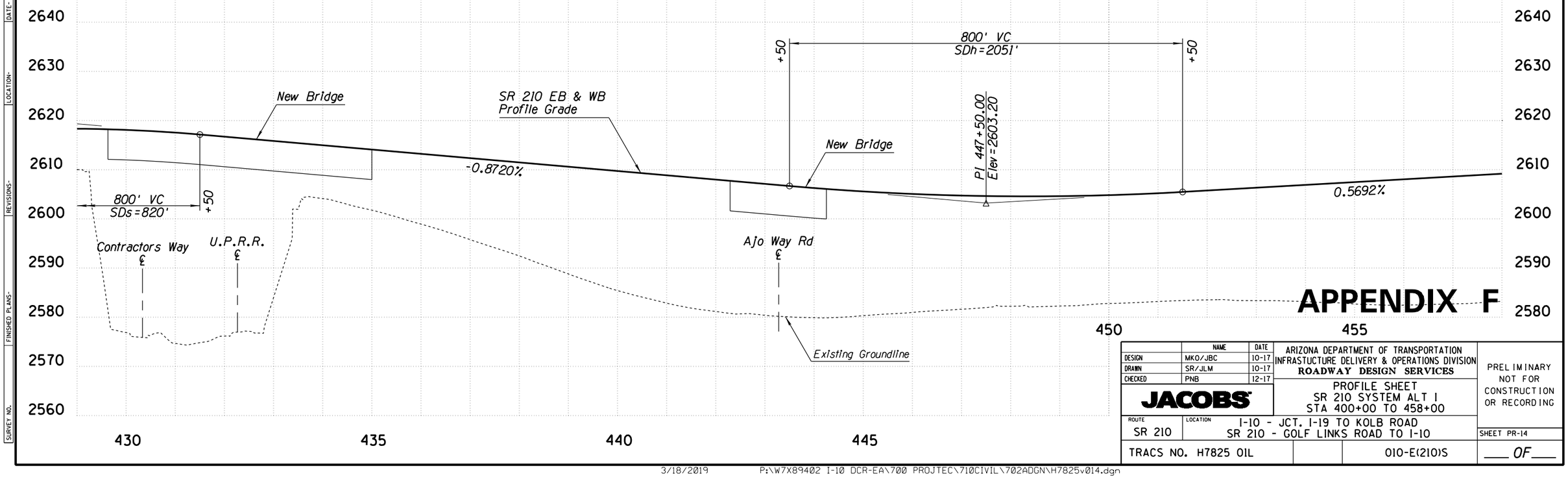
SHEET PR-13

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v013.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	14	46	
		010 PM 260			





APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
SR 210 SYSTEM ALT 1
STA 400+00 TO 458+00

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

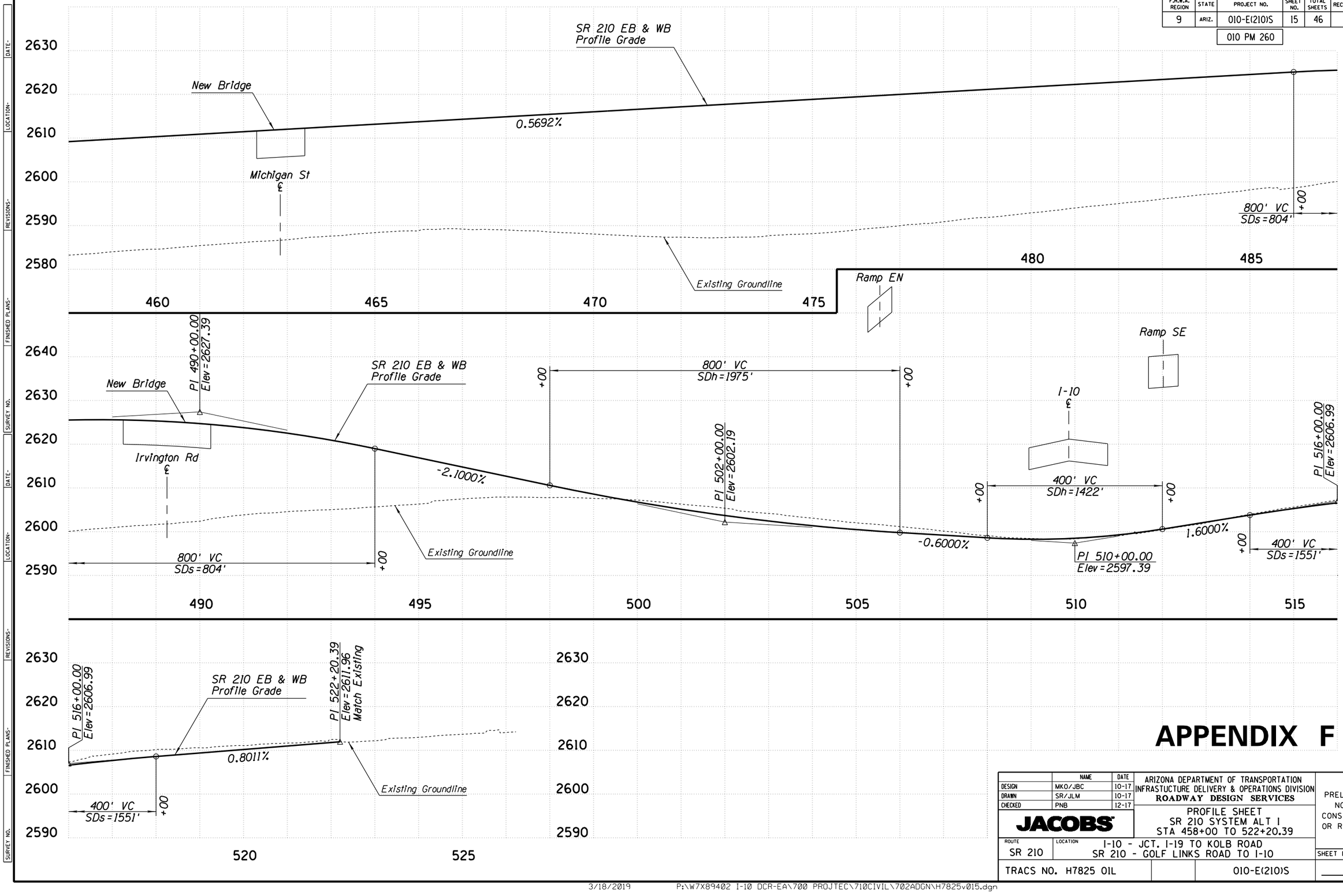
SHEET PR-14

___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v014.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	15	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
SR 210 SYSTEM ALT I
STA 458+00 TO 522+20.39

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

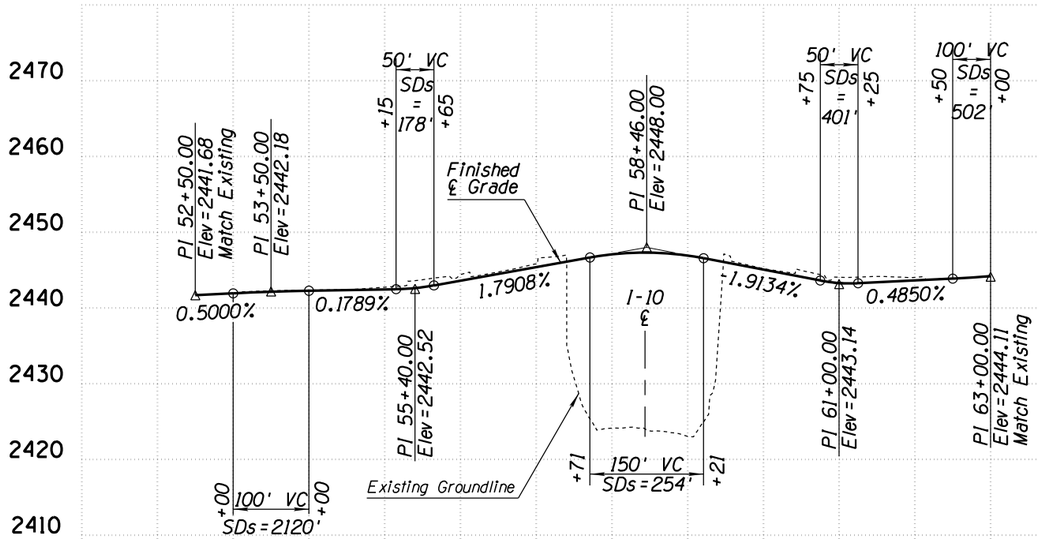
ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

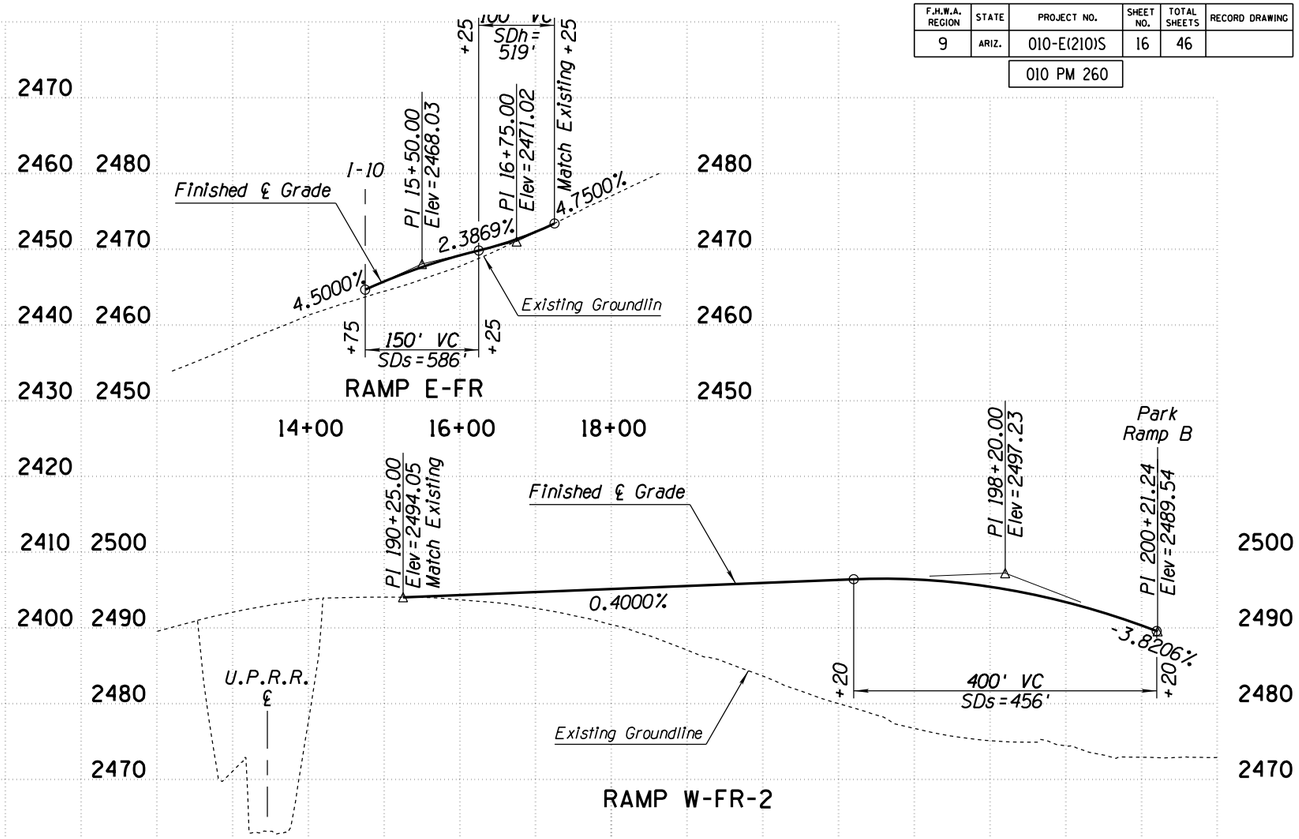
SHEET PR-15

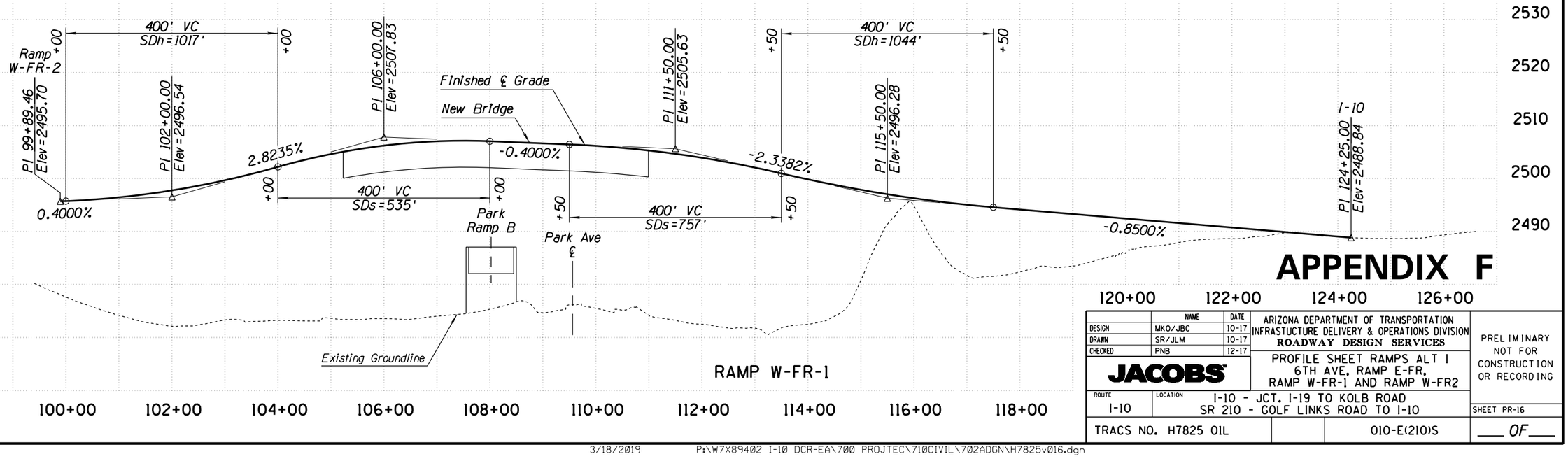
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	16	46	
		010 PM 260			







APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET RAMPS ALT I
6TH AVE, RAMP E-FR,
RAMP W-FR-1 AND RAMP W-FR2

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

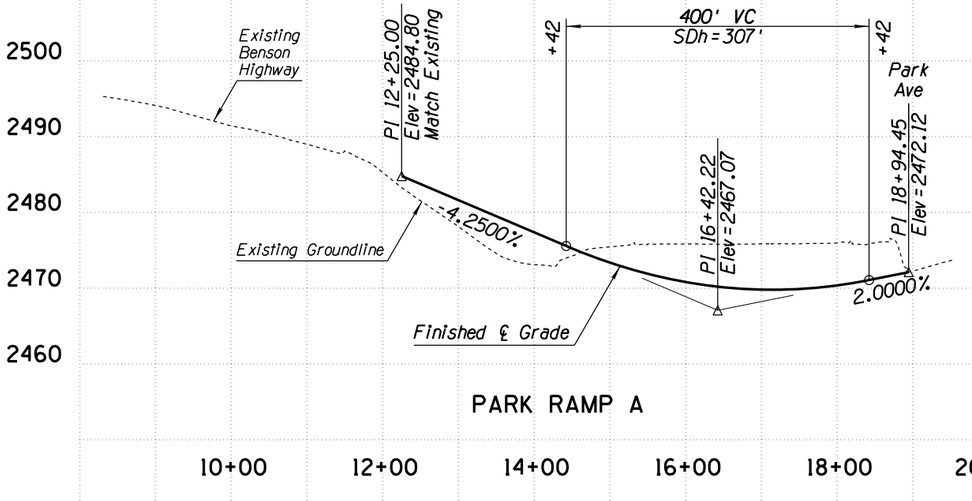
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-16

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

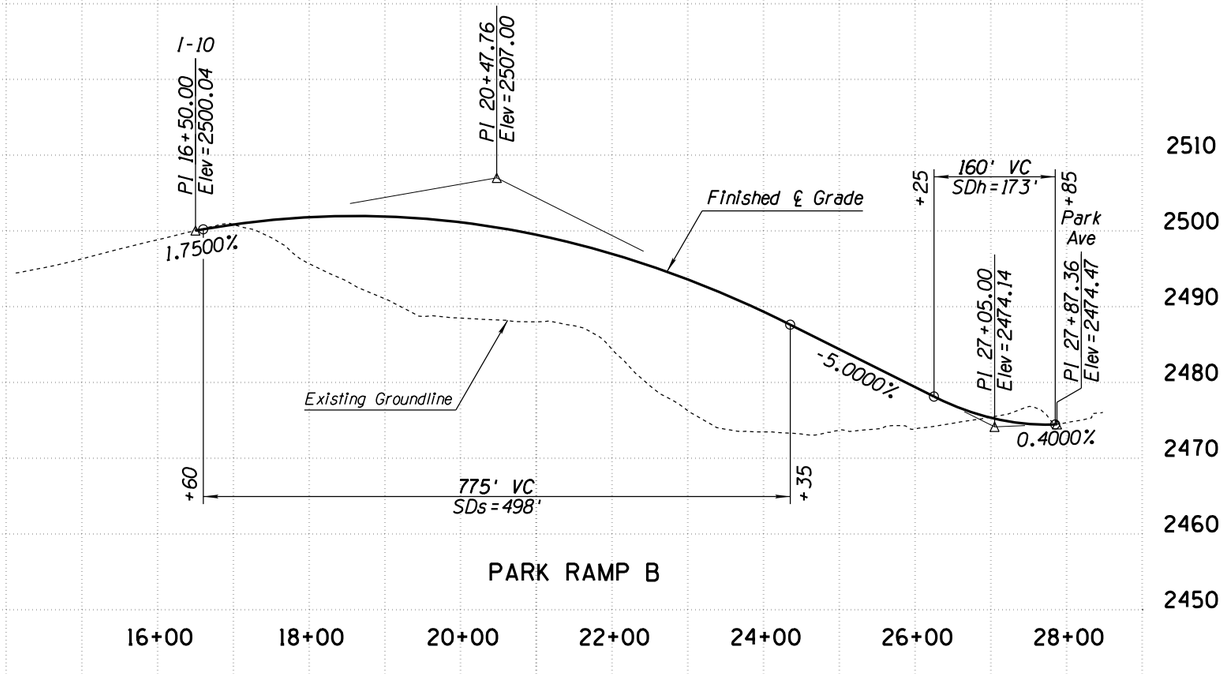
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v016.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	17	46	
		010 PM 260			



PARK RAMP A



PARK RAMP B

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
RAMPS ALT I
PARK RAMP A AND B

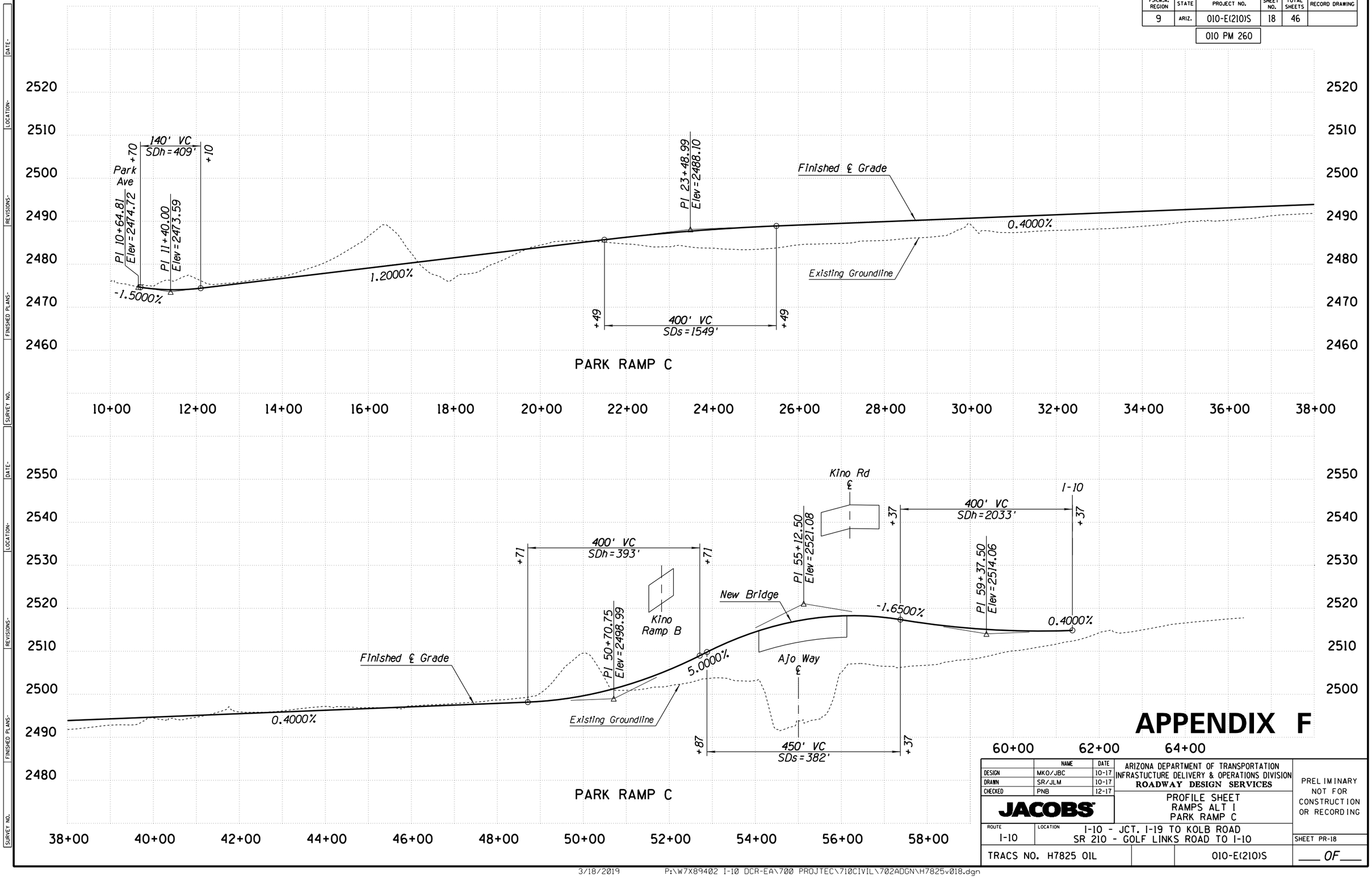
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-17

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	18	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
PARK RAMP C

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-18

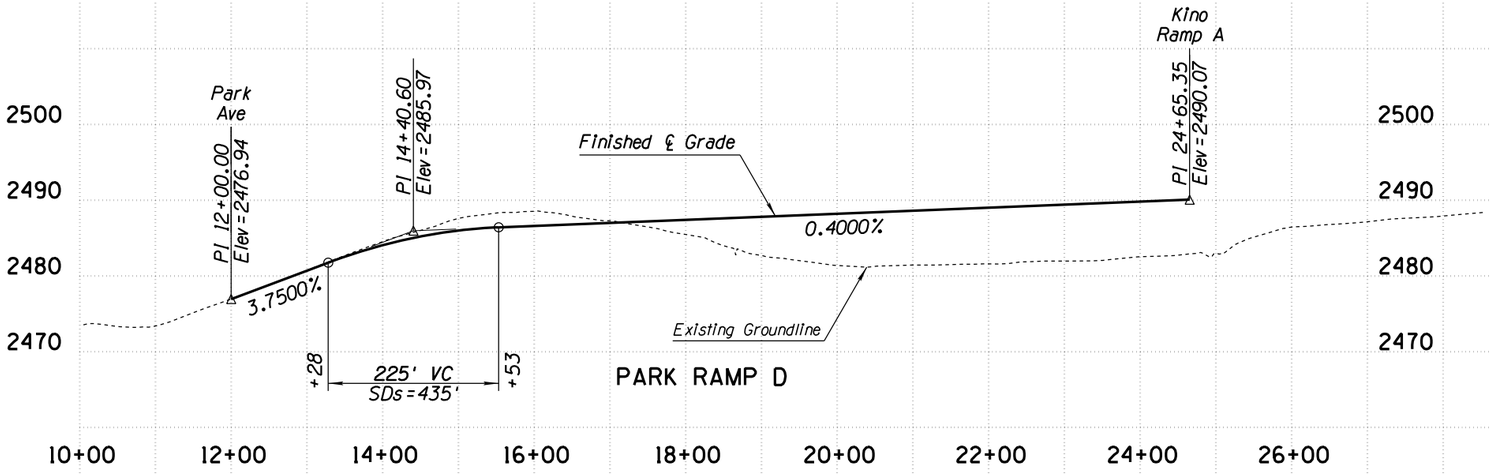
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

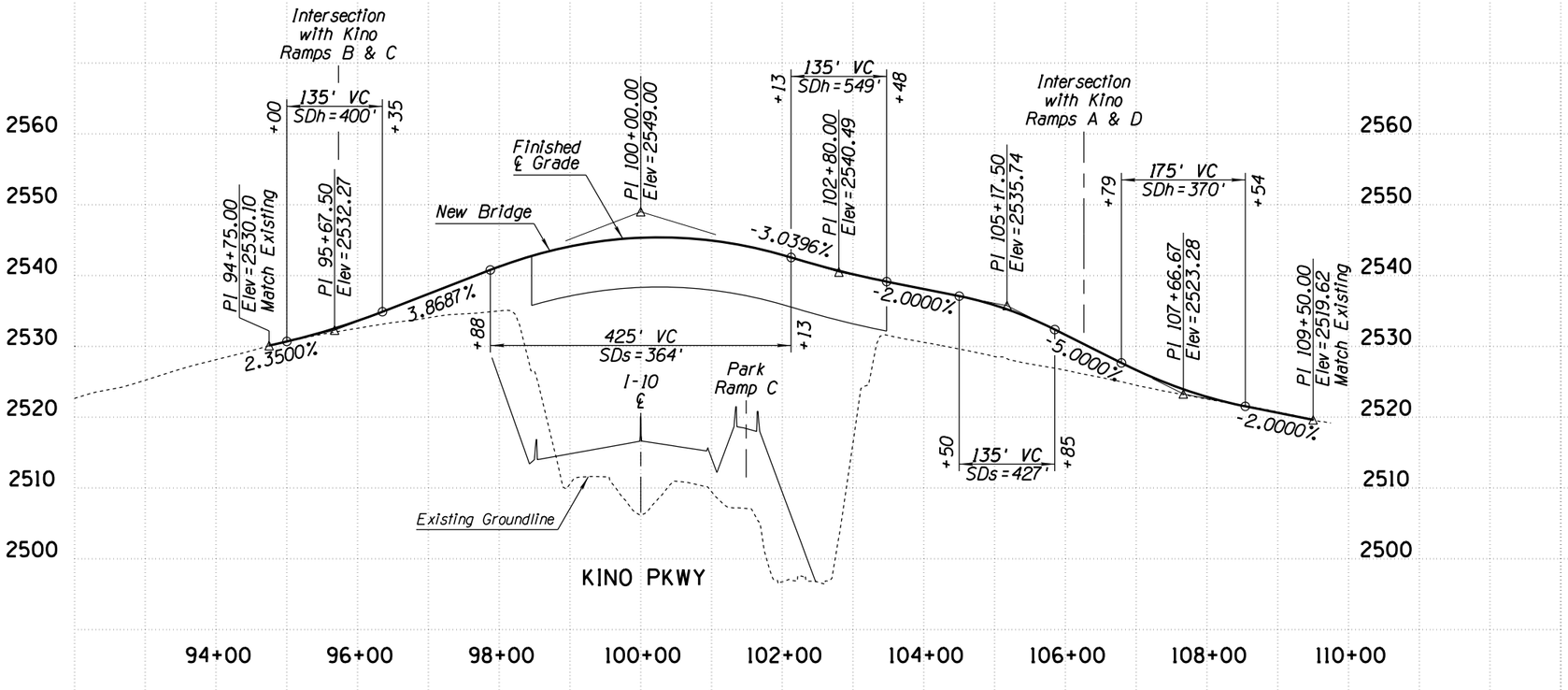
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v018.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	19	46	
		010 PM 260			

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



PARK RAMP D



KINO PKWY

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
PARK RAMP D AND KINO PKWY

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

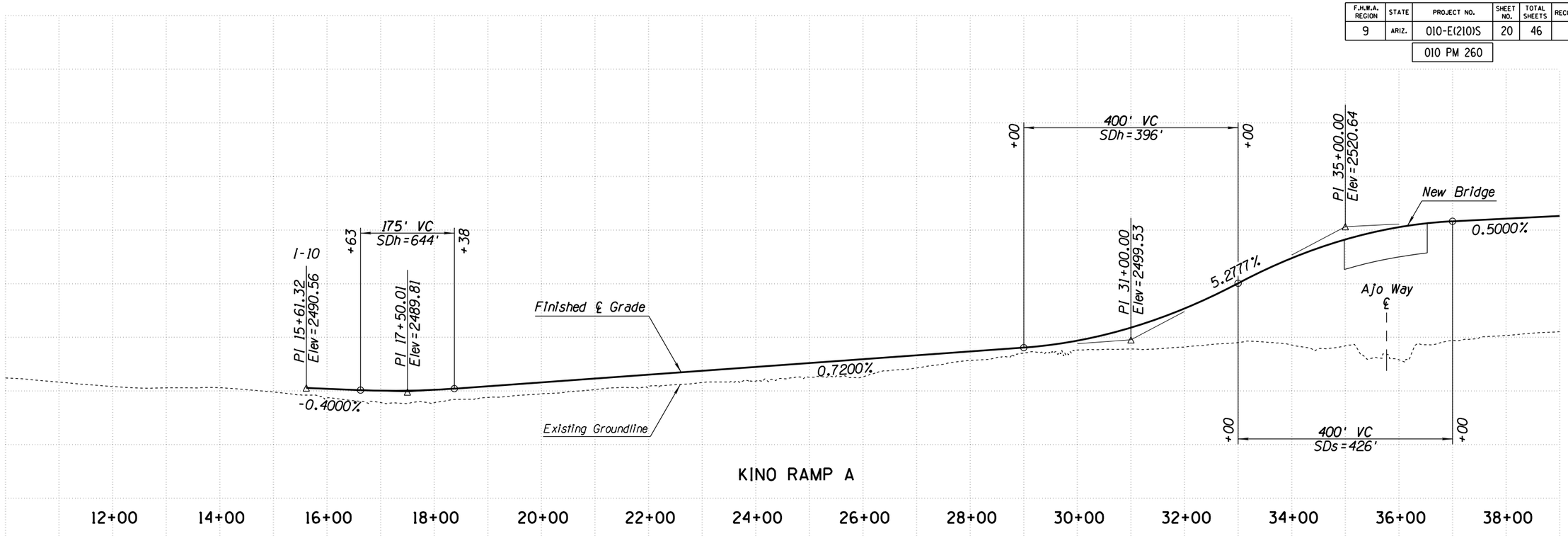
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

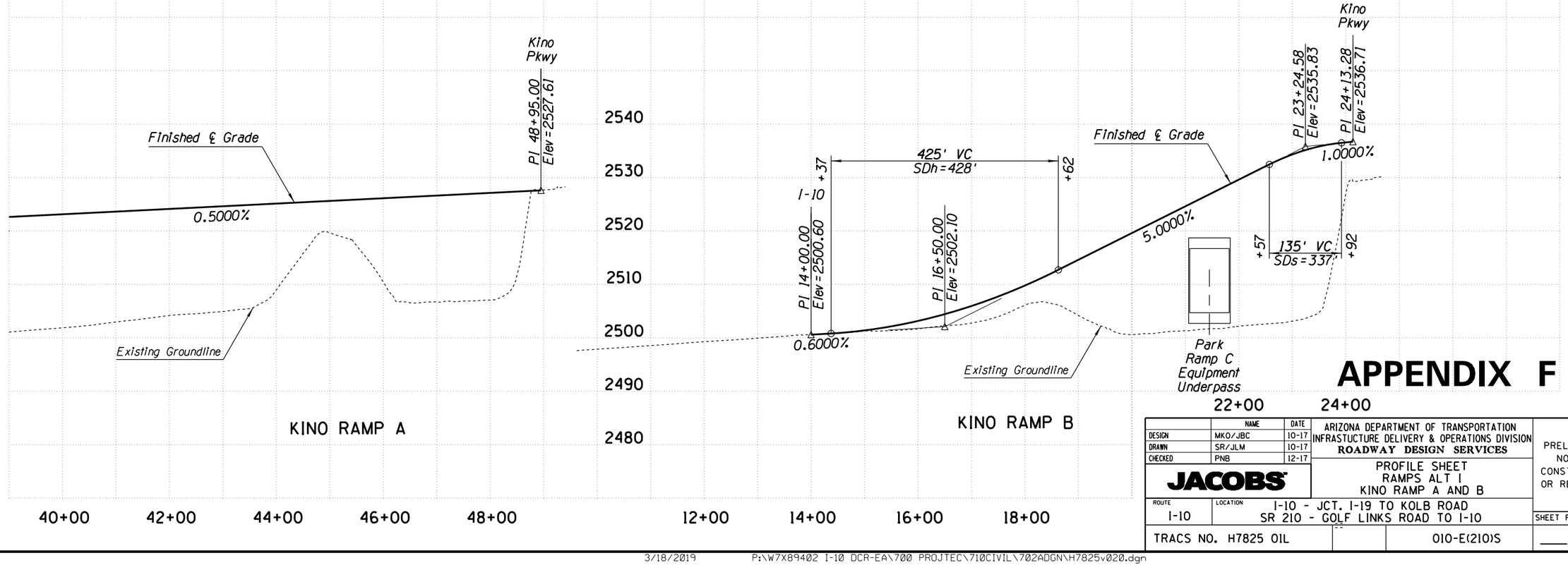
SHEET PR-19

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v019.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	20	46	
		010 PM 260			





APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
KINO RAMP A AND B

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

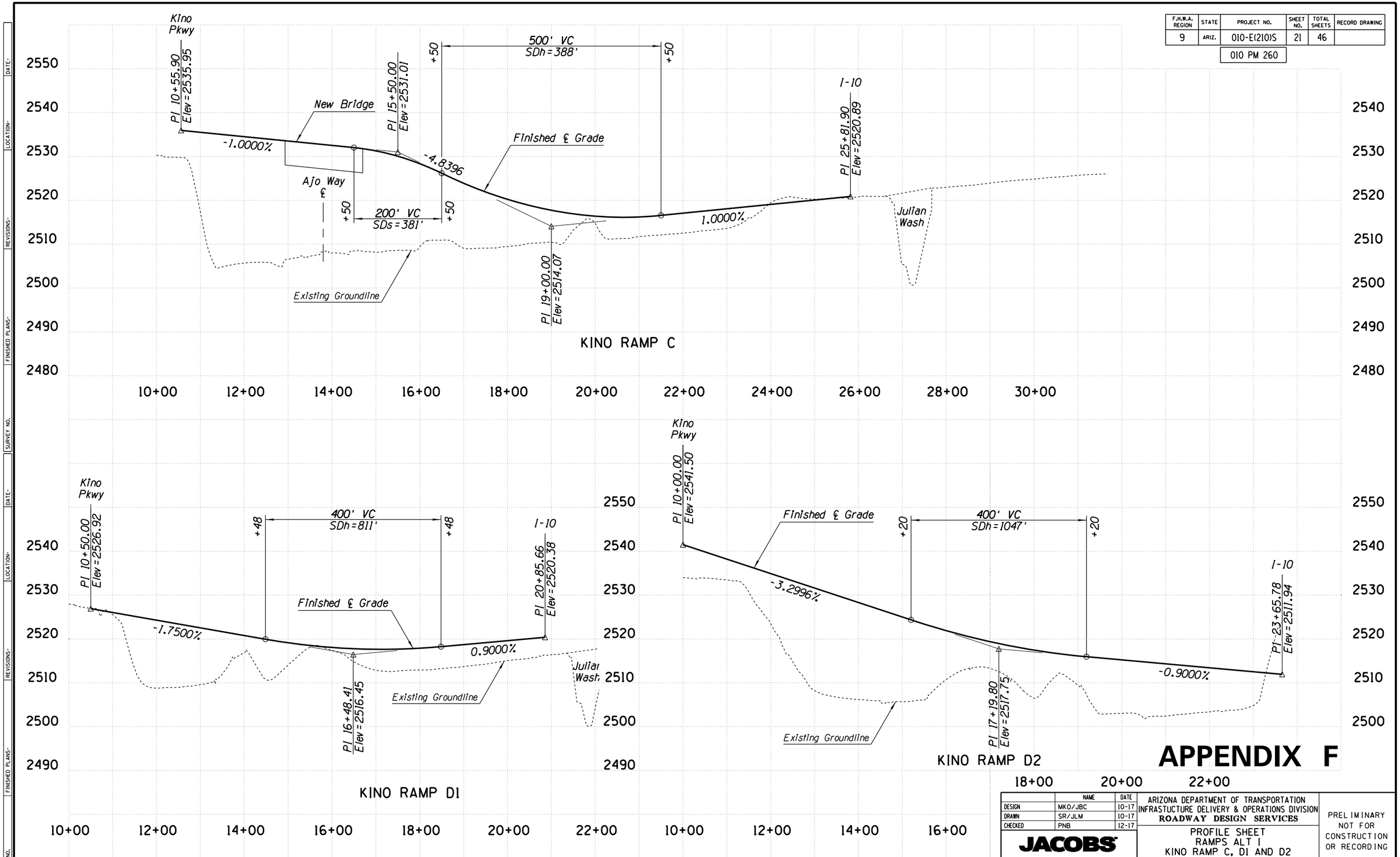
SHEET PR-20

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v020.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	21	46	
		010 PM 260			



KINO RAMP C

KINO RAMP D1

KINO RAMP D2

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
RAMPS ALT I
KINO RAMP C, D1 AND D2

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

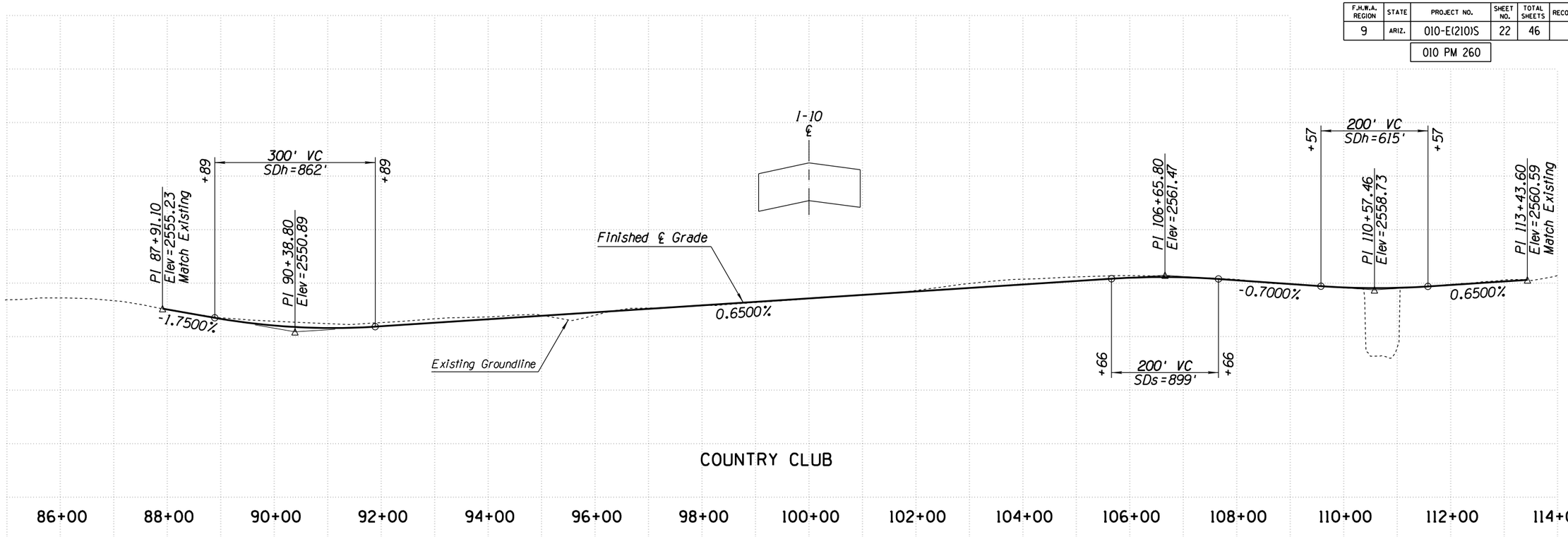
SHEET PR-21

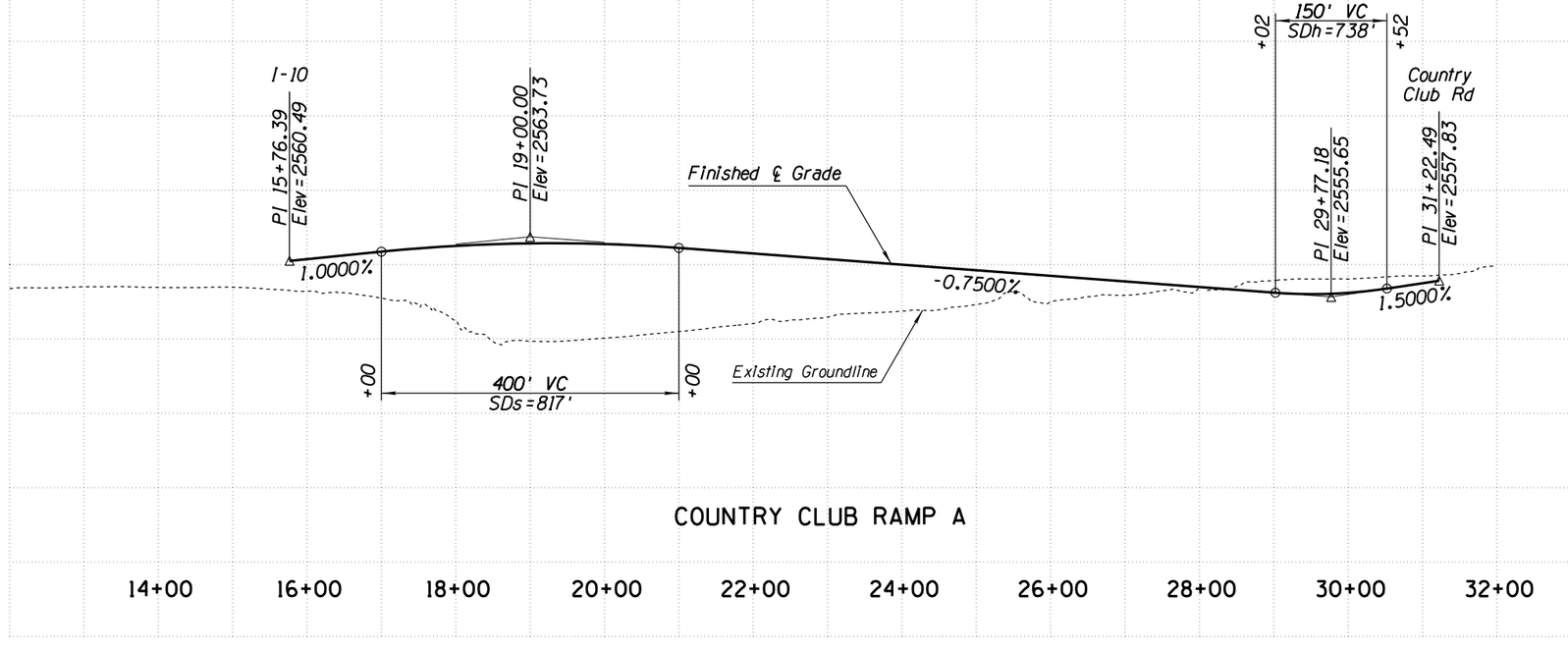
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v021.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	22	46	
		010 PM 260			





APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET RAMPS ALT I
COUNTRY CLUB AND
COUNTRY CLUB RAMP A

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

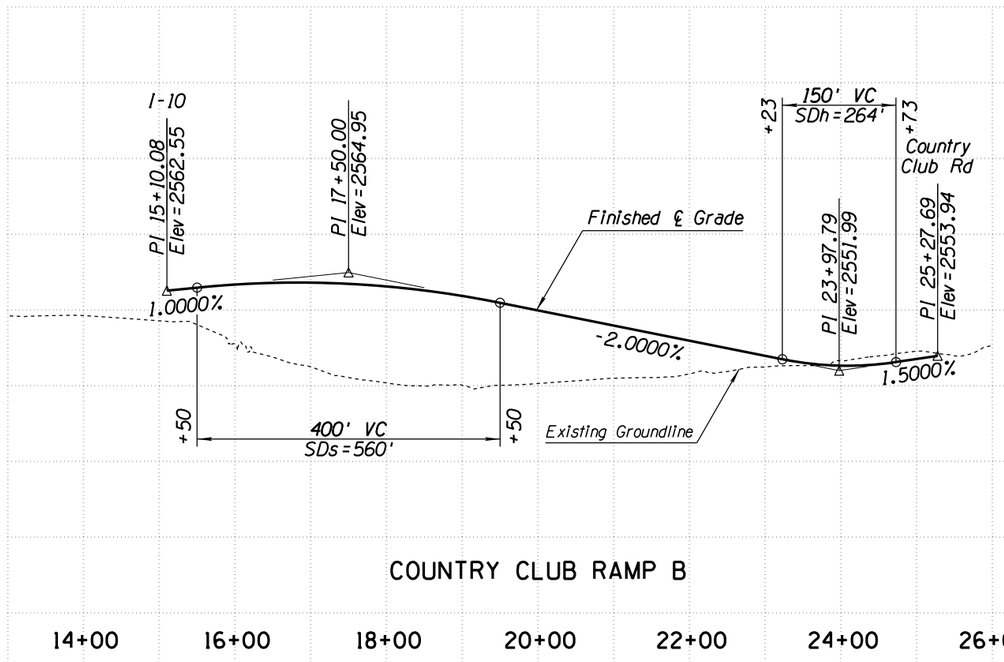
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-22

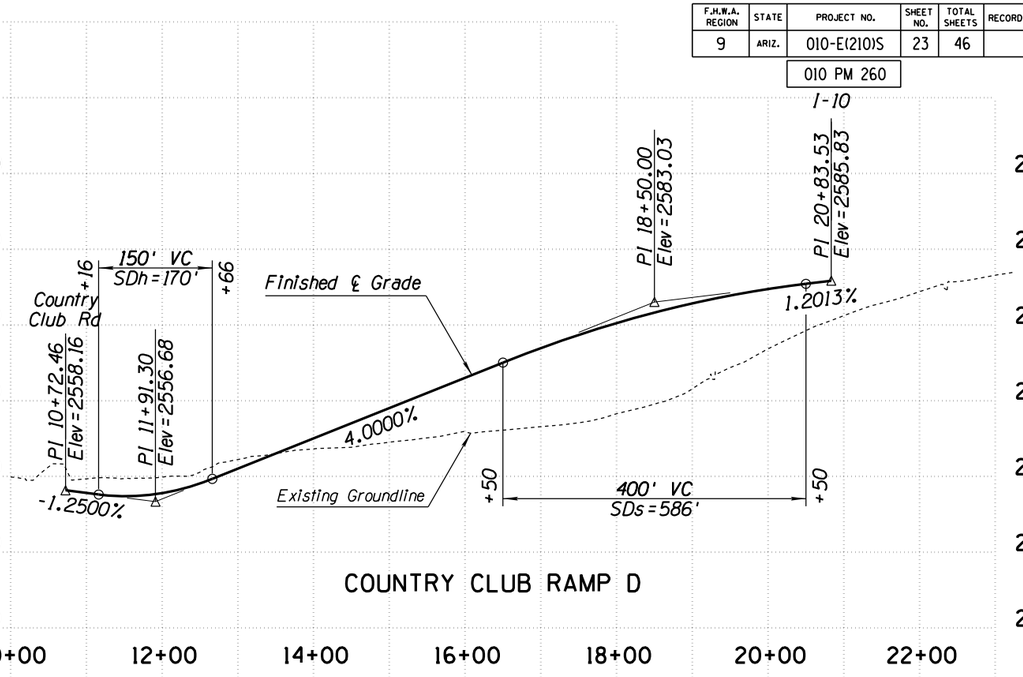
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

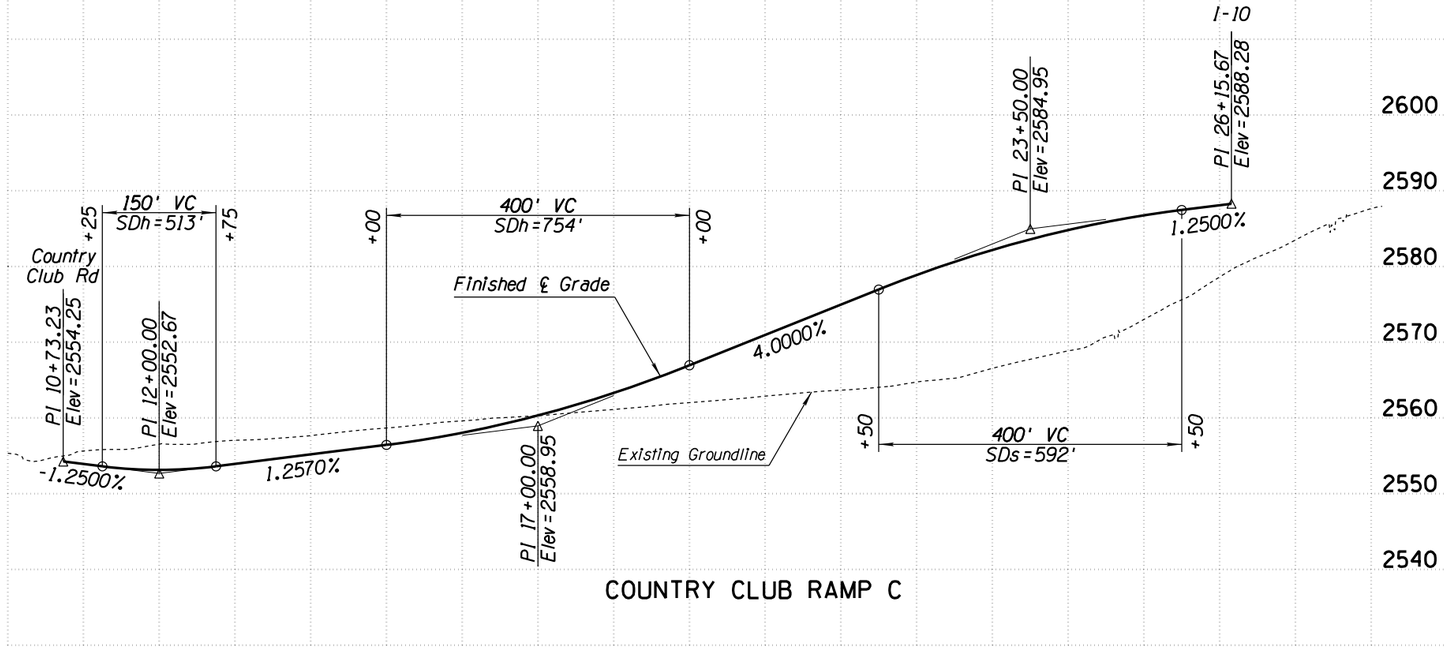
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	23	46	
		010 PM 260			



COUNTRY CLUB RAMP B



COUNTRY CLUB RAMP D



COUNTRY CLUB RAMP C

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
COUNTRY CLUB RAMP B, C AND D

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

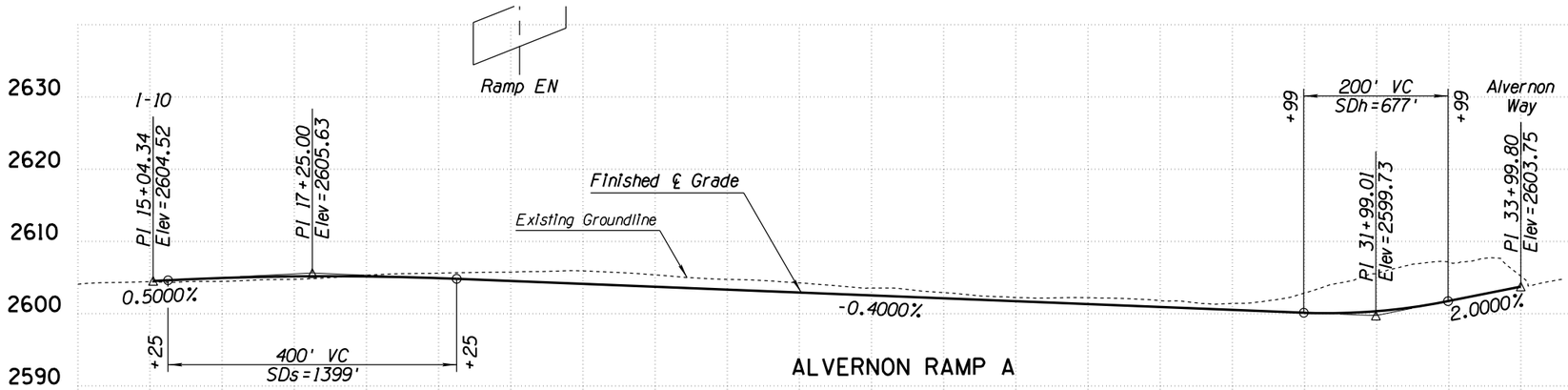
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-23

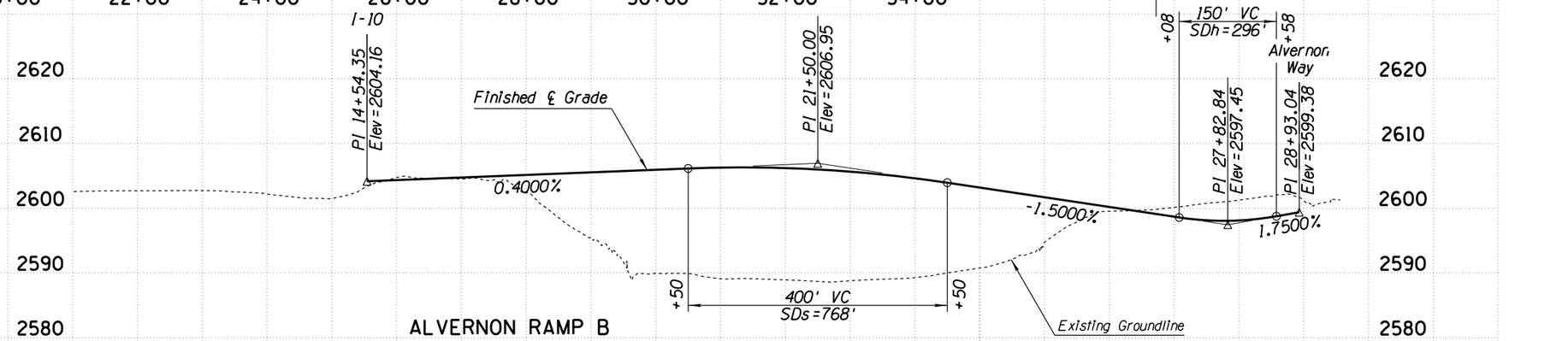
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

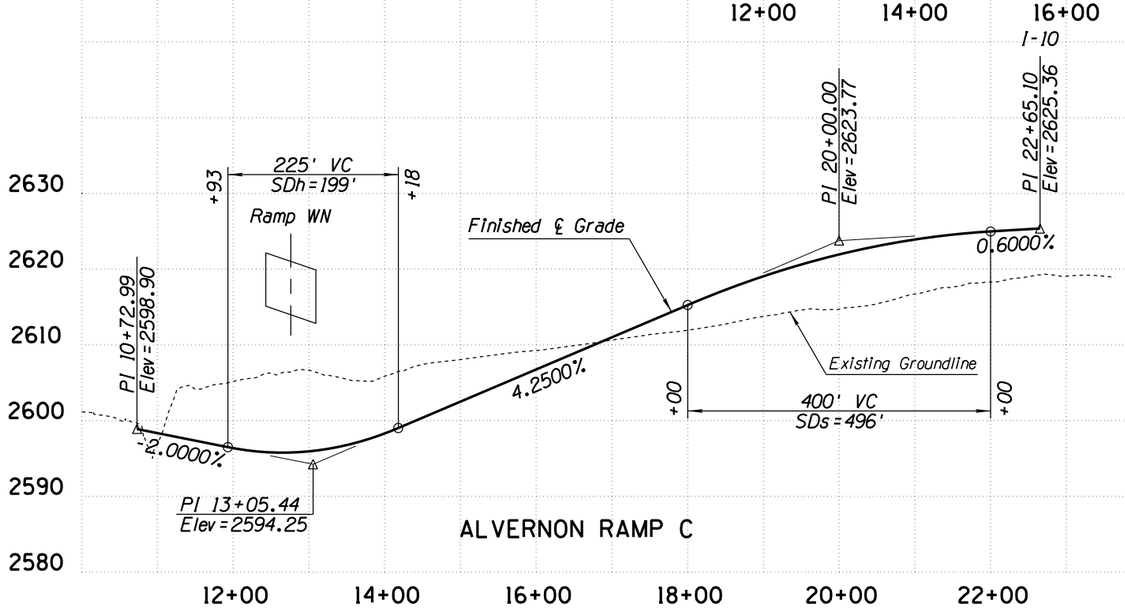
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

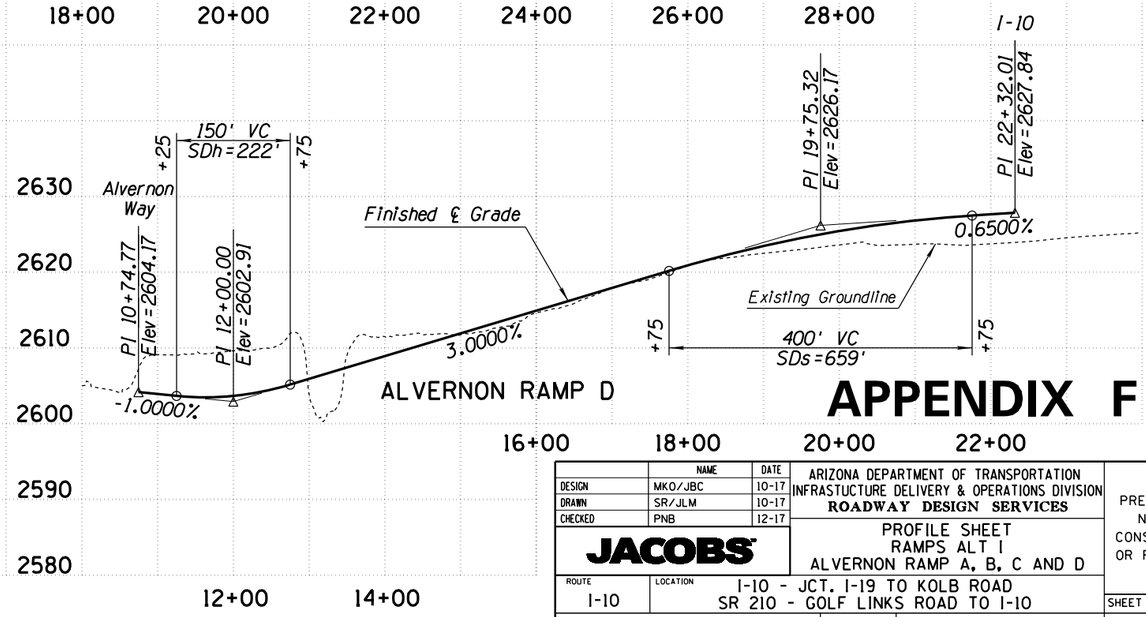
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v023.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	24	46	
		010 PM 260			









APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
ALVERNON RAMP A, B, C AND D

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

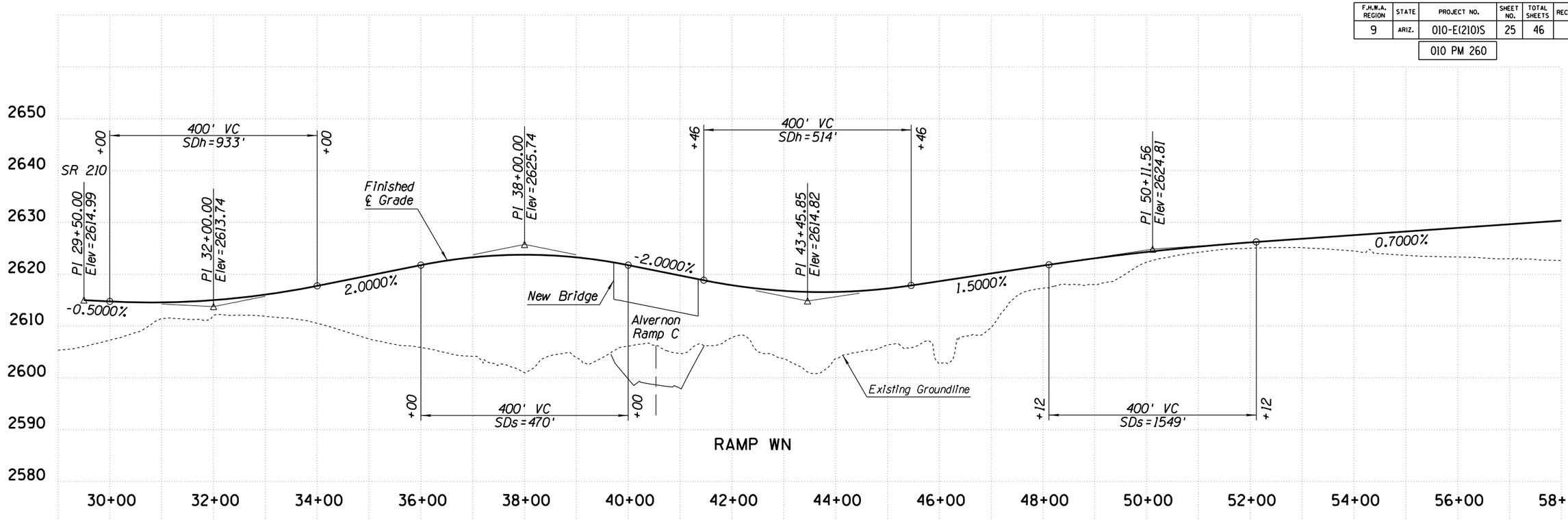
SHEET PR-24

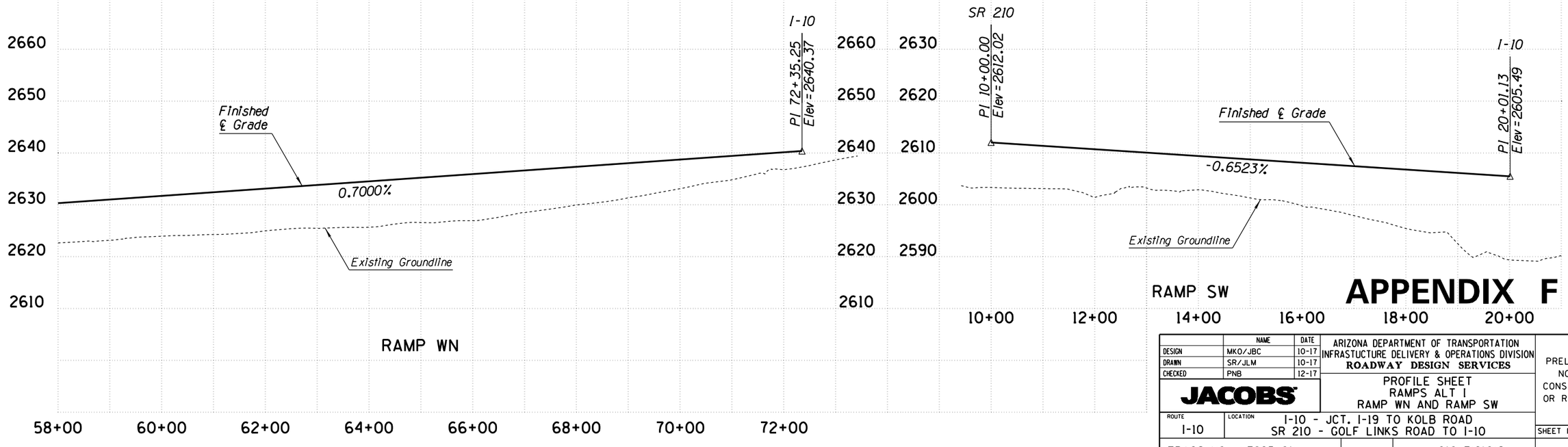
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v024.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	25	46	
		010 PM 260			





APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
RAMP WN AND RAMP SW

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

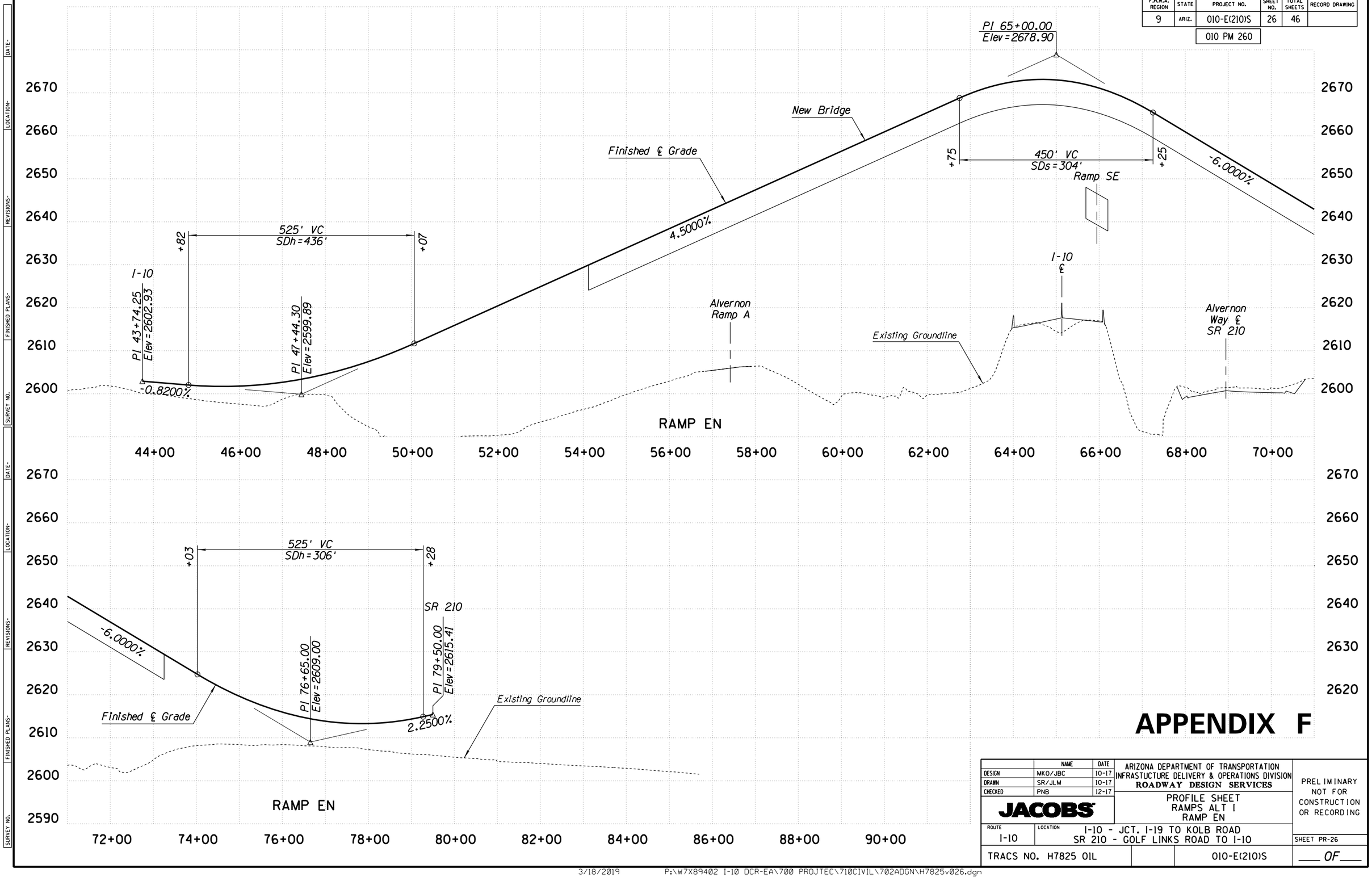
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-25

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v025.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	26	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
RAMP EN

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

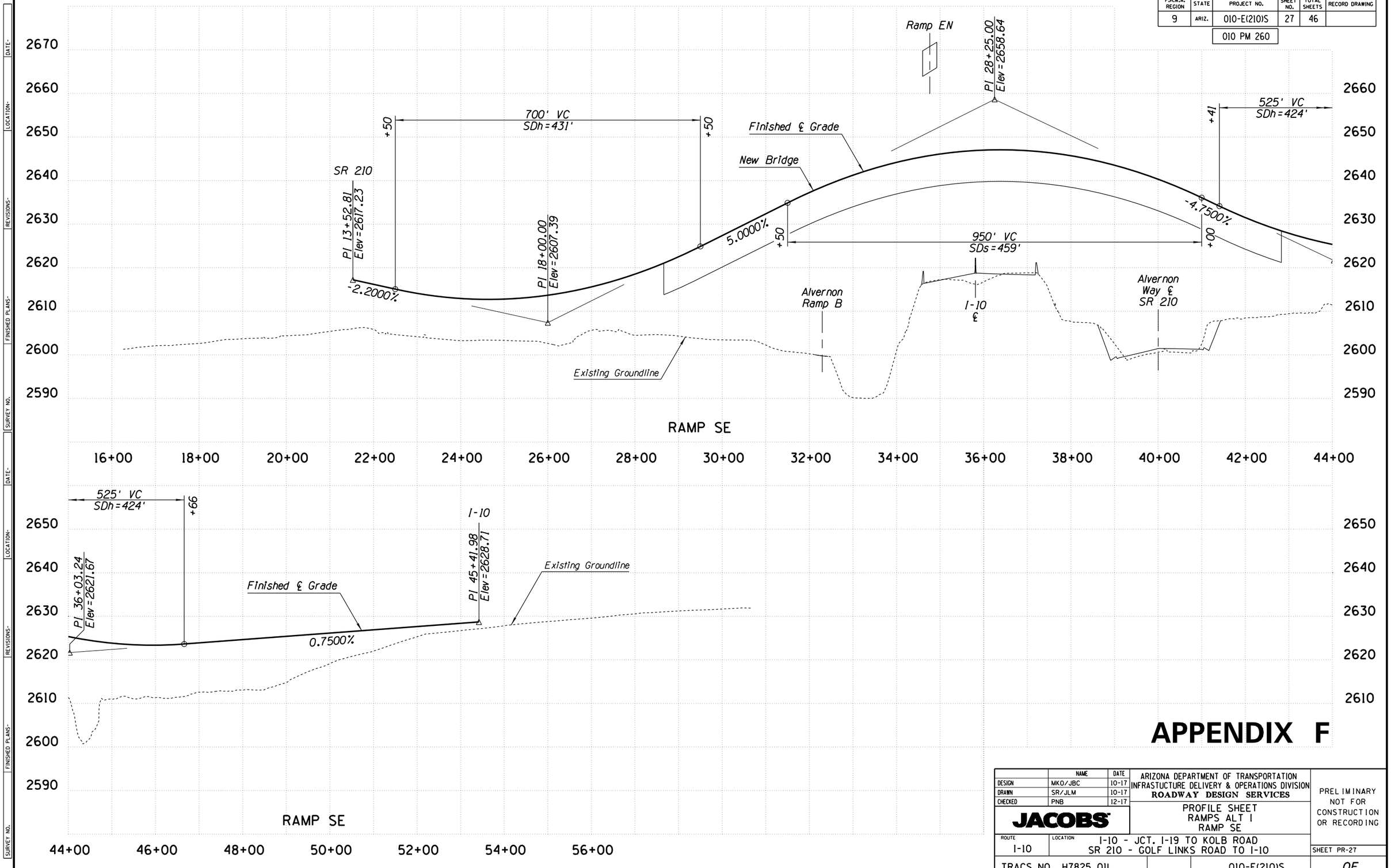
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-26

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v026.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	27	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT 1
RAMP SE

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

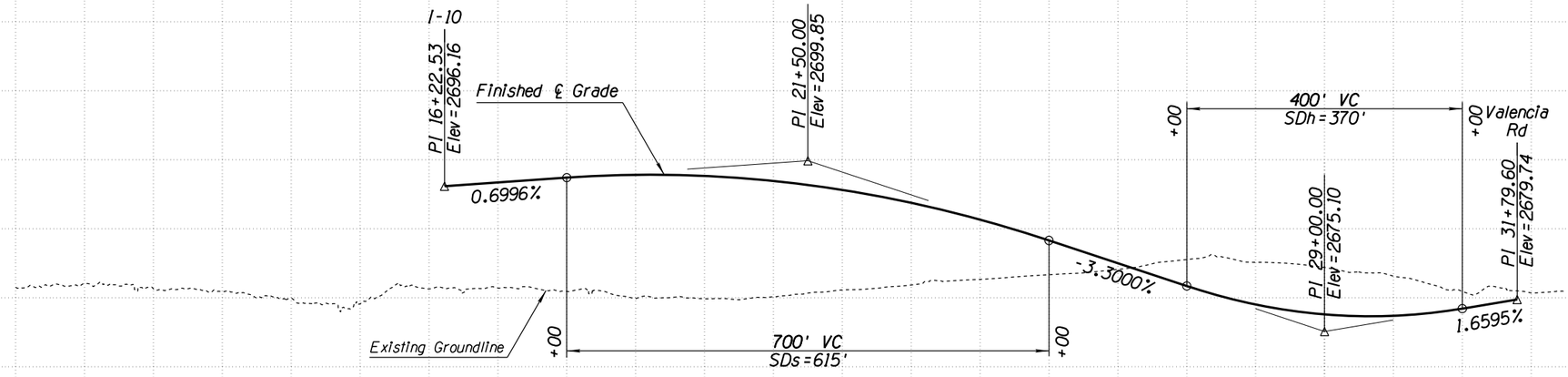
SHEET PR-27

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	28	46	
		010 PM 260			

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



VALENCIA RAMP A

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

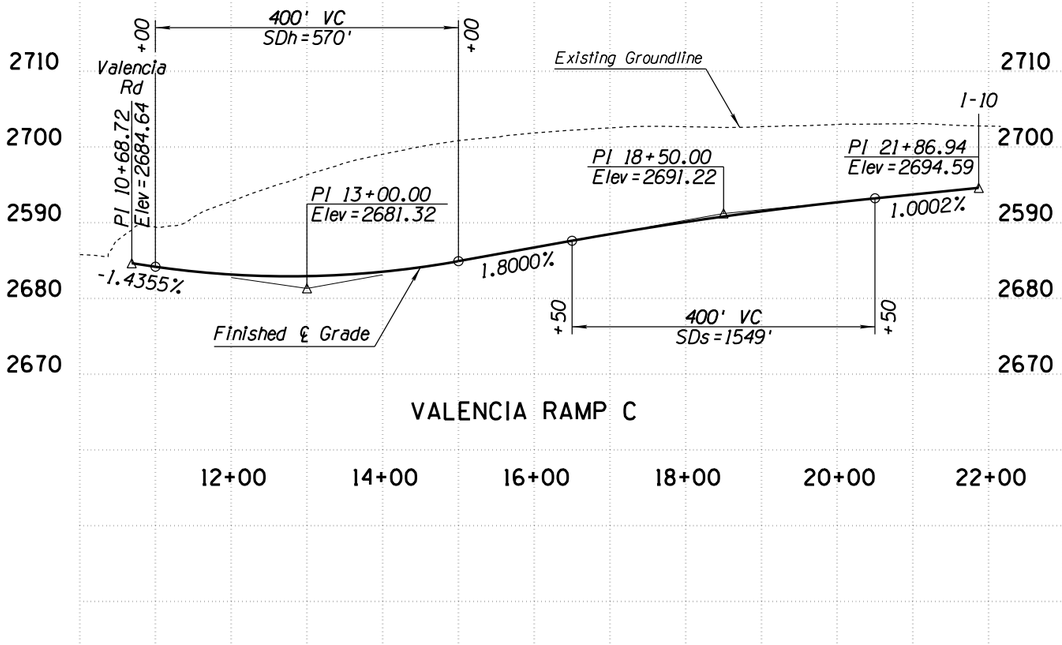
PROFILE SHEET
RAMPS ALT I
VALENCIA RAMP A

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET PR-28
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

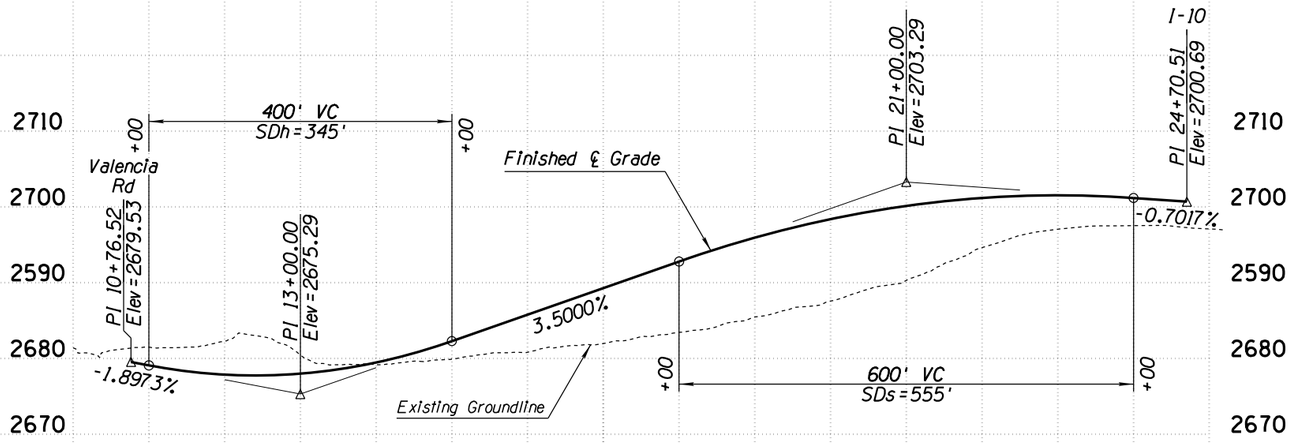
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	29	46	
		010 PM 260			



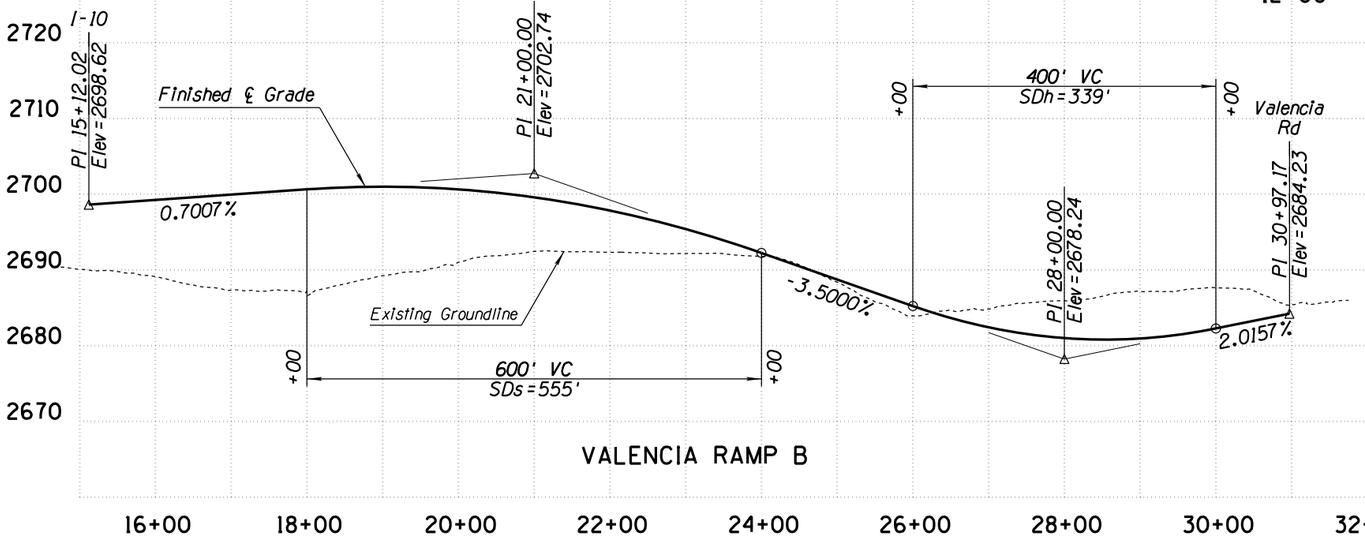
VALENCIA RAMP C

12+00 14+00 16+00 18+00 20+00 22+00



VALENCIA RAMP D

12+00 14+00 16+00 18+00 20+00 22+00 24+00



VALENCIA RAMP B

16+00 18+00 20+00 22+00 24+00 26+00 28+00 30+00 32+00

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
VALENCIA RAMP B, C, AND D

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PR-29

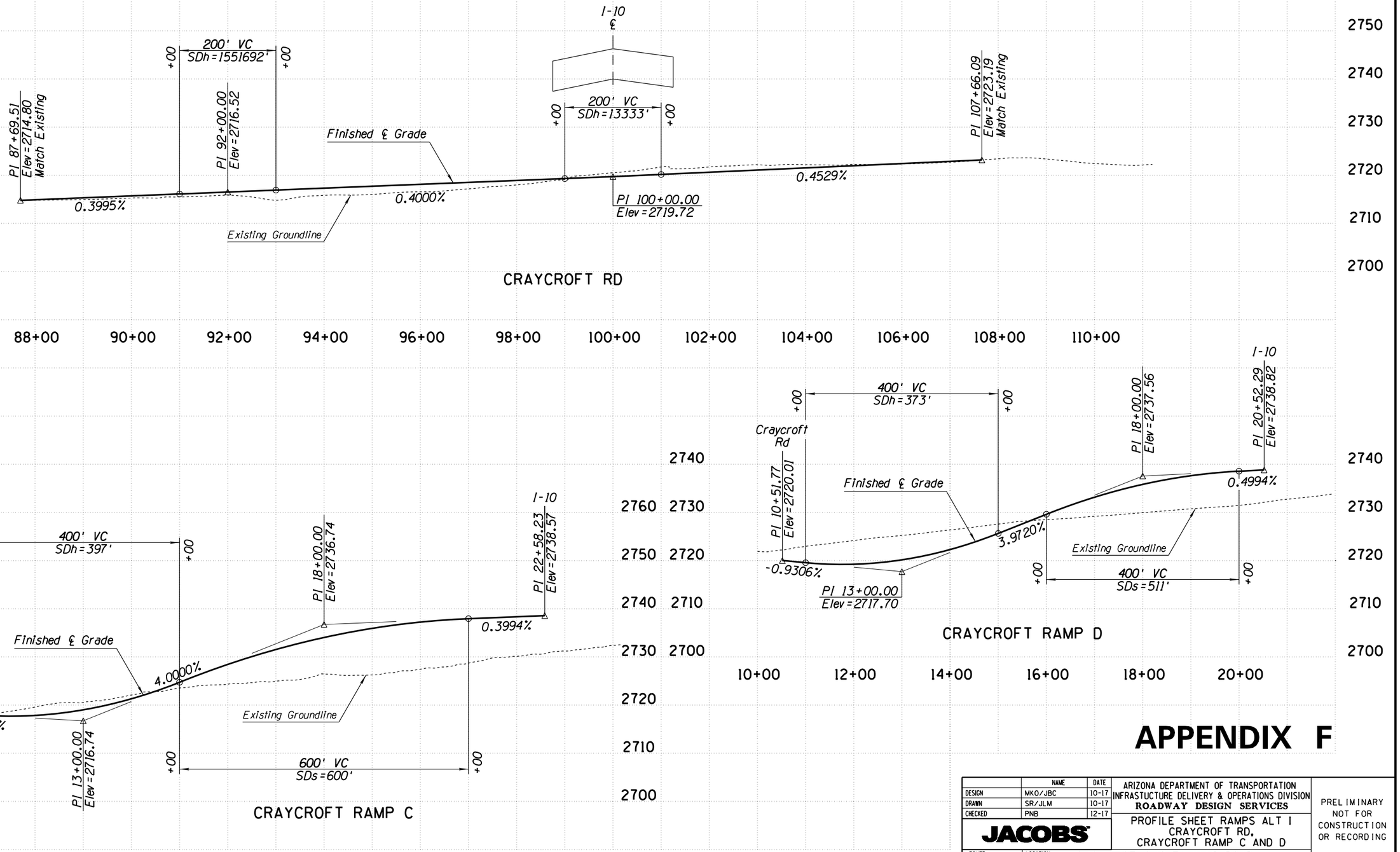
___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v029.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	30	46	

010 PM 260



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET RAMPS ALT I
CRAYCROFT RD,
CRAYCROFT RAMP C AND D

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

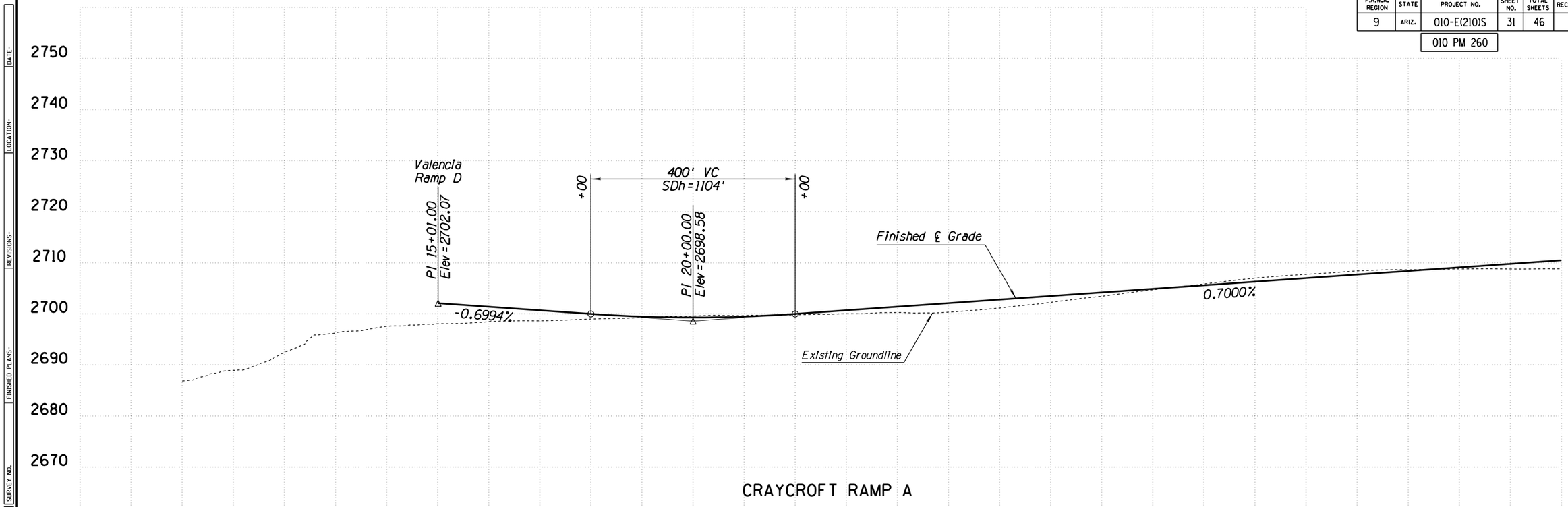
SHEET PR-30

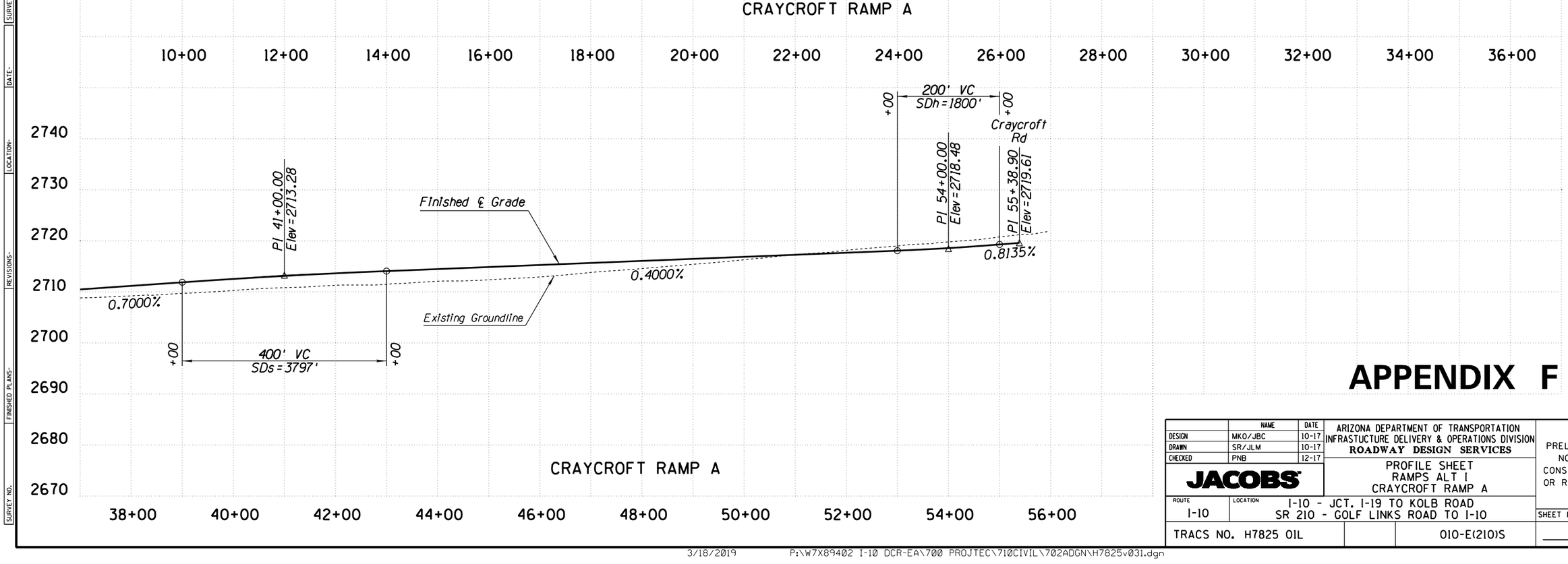
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v030.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	31	46	
		010 PM 260			





APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
CRAYCROFT RAMP A

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-31

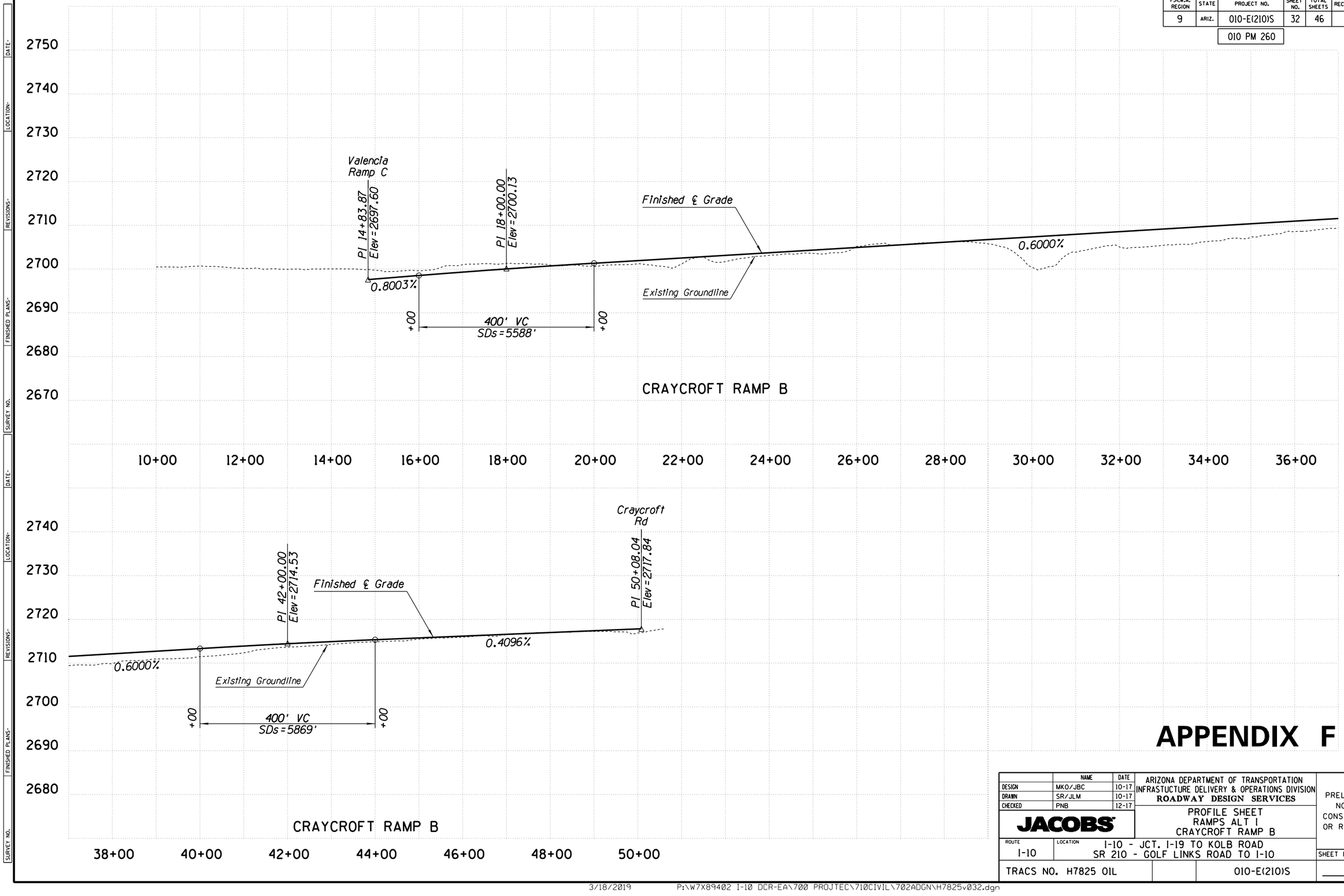
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v031.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	32	46	
		010 PM 260			

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



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
CRAYCROFT RAMP B

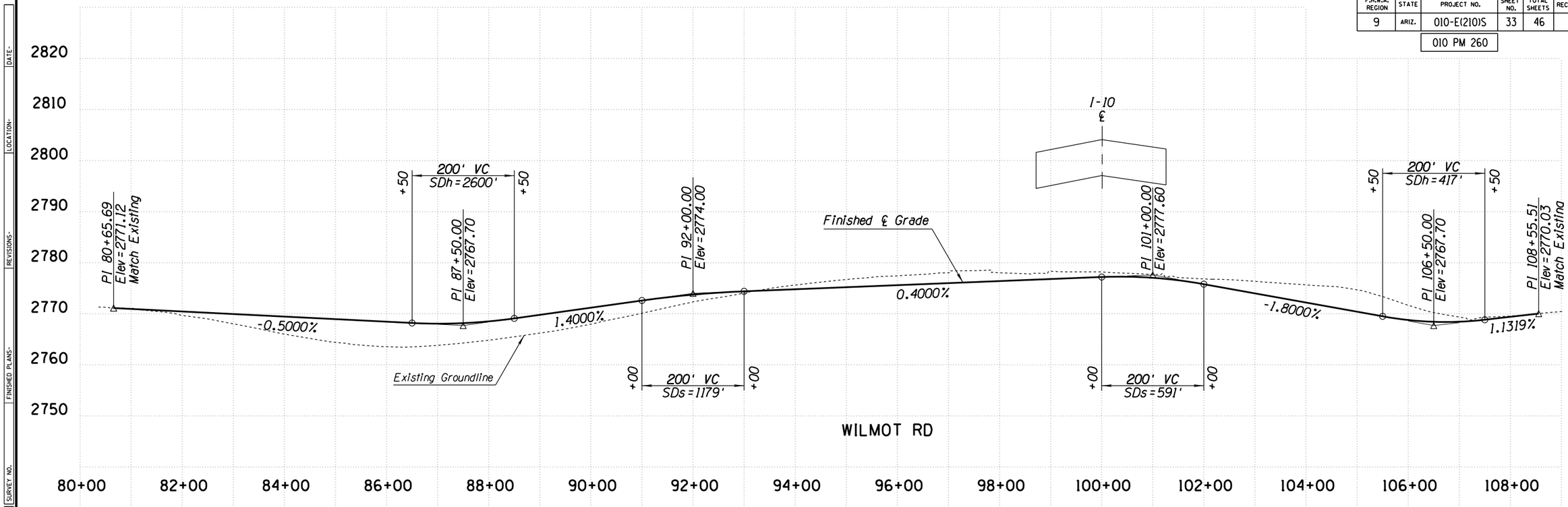
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

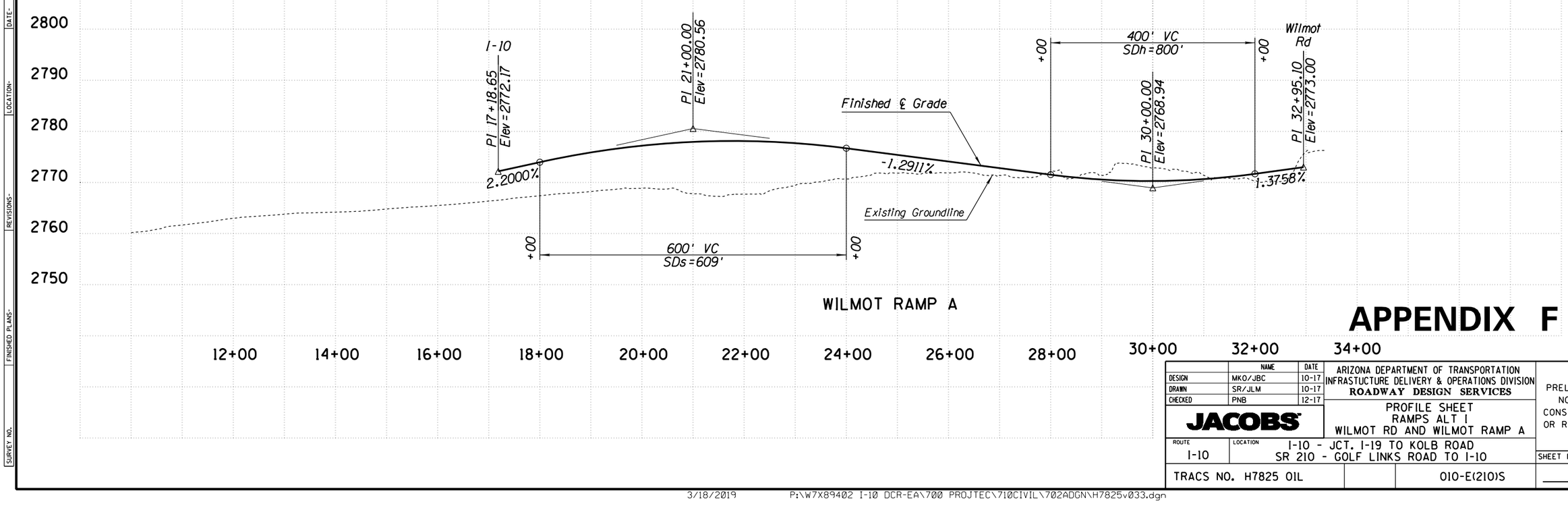
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-32

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v032.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	33	46	
		010 PM 260			





APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
WILMOT RD AND WILMOT RAMP A

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

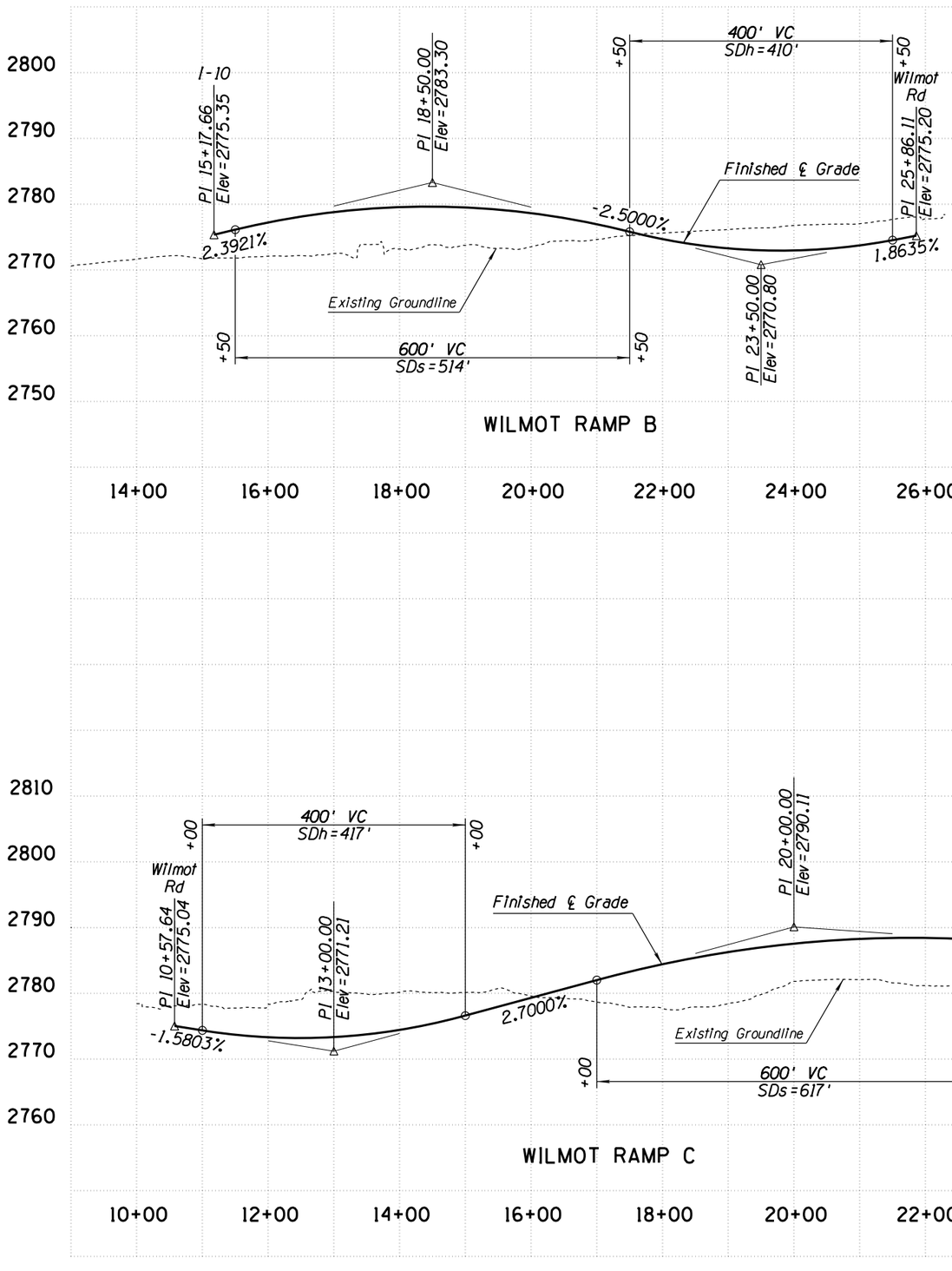
SHEET PR-33

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

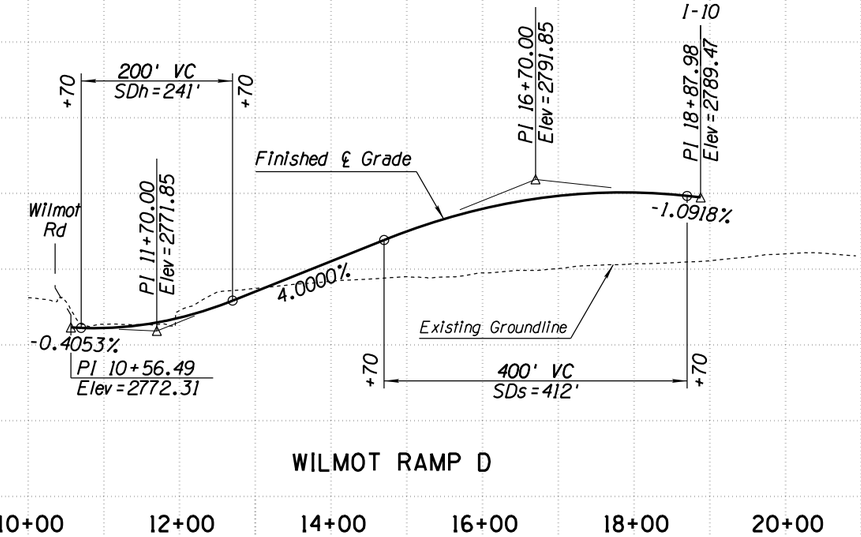
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v033.dgn

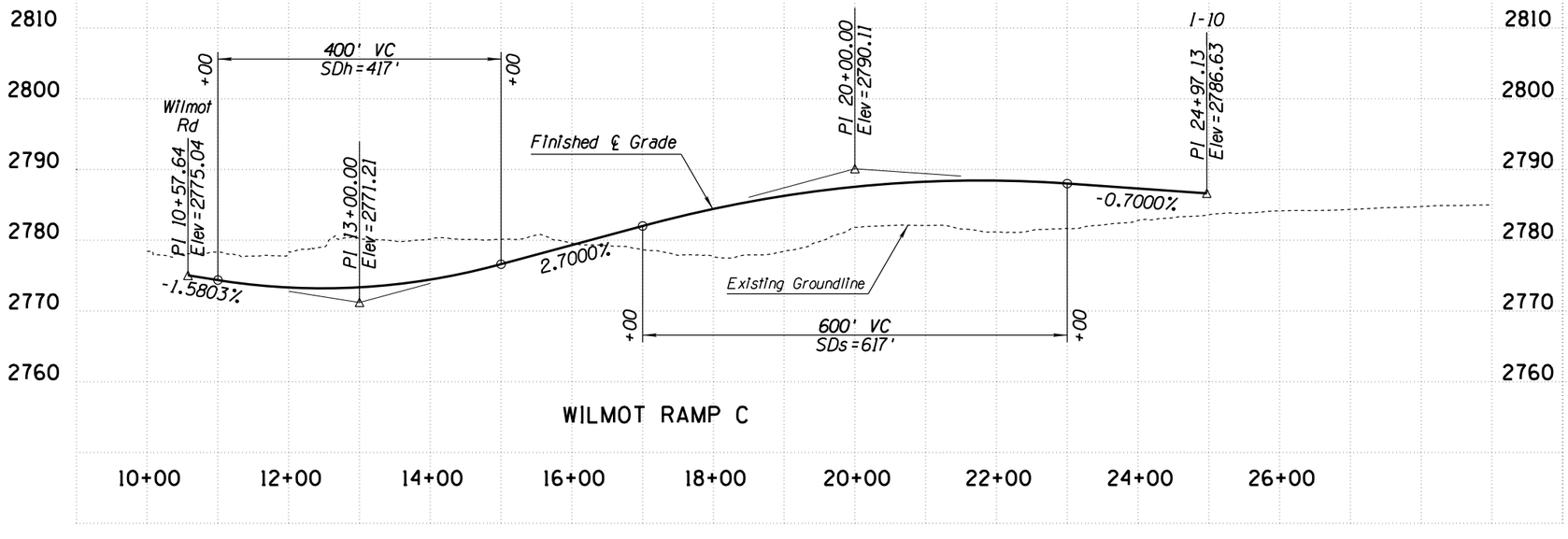
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	34	46	
		010 PM 260			



WILMOT RAMP B



WILMOT RAMP D



WILMOT RAMP C

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
WILMOT RAMP B, C AND D

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

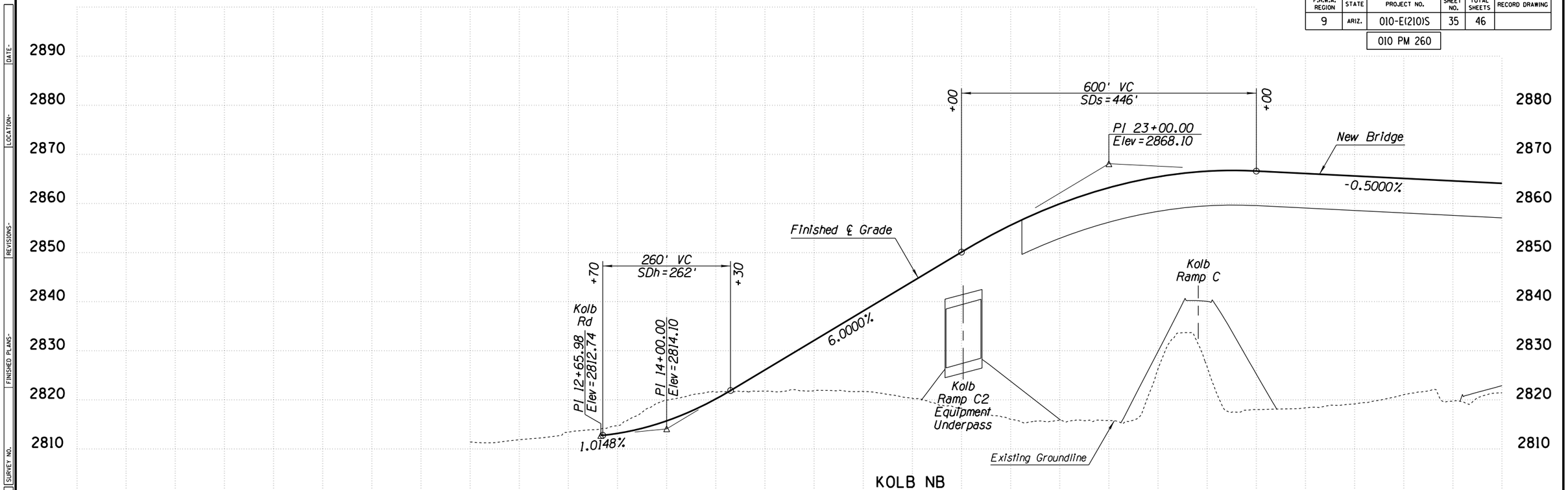
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-34

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	35	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
RAMPS ALT 1
KOLB NB

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

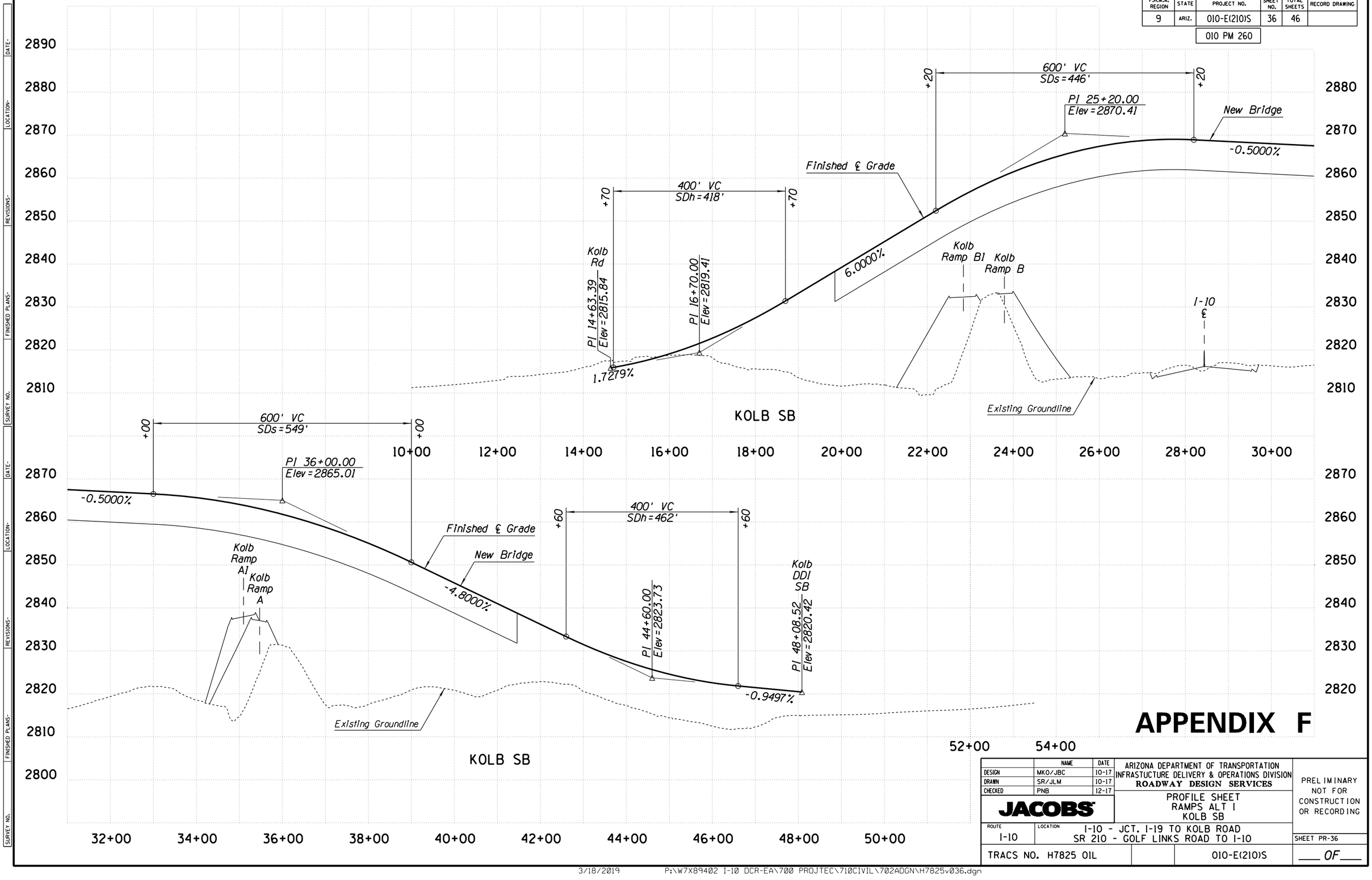
SHEET PR-35

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v035.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	36	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
KOLB SB

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

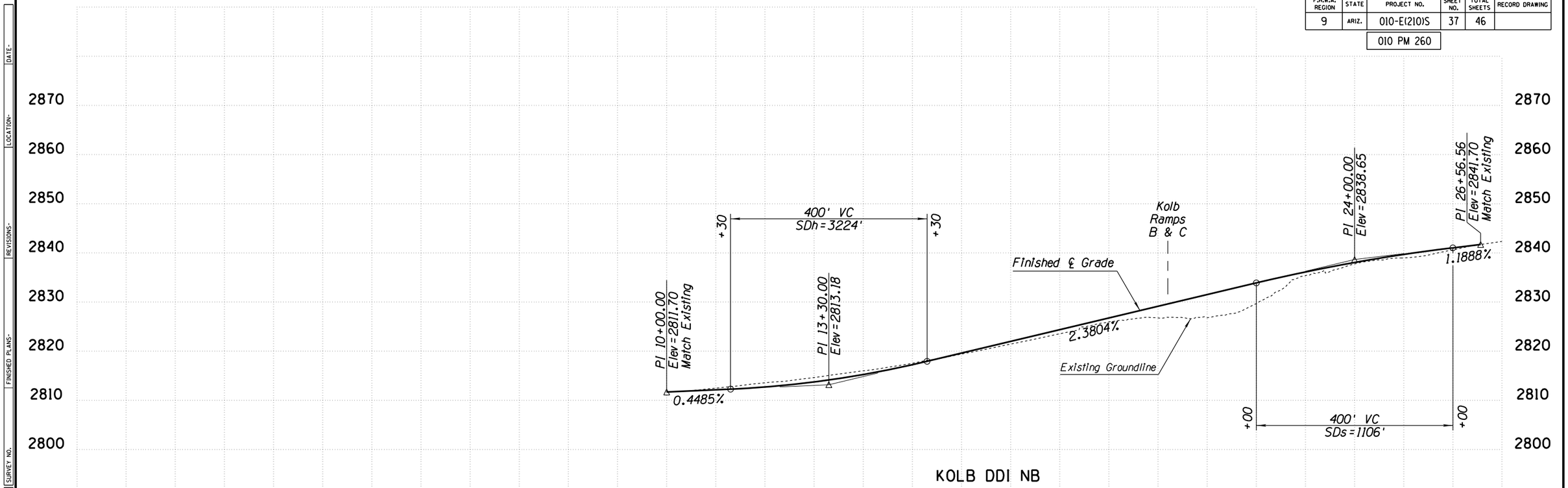
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-36

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

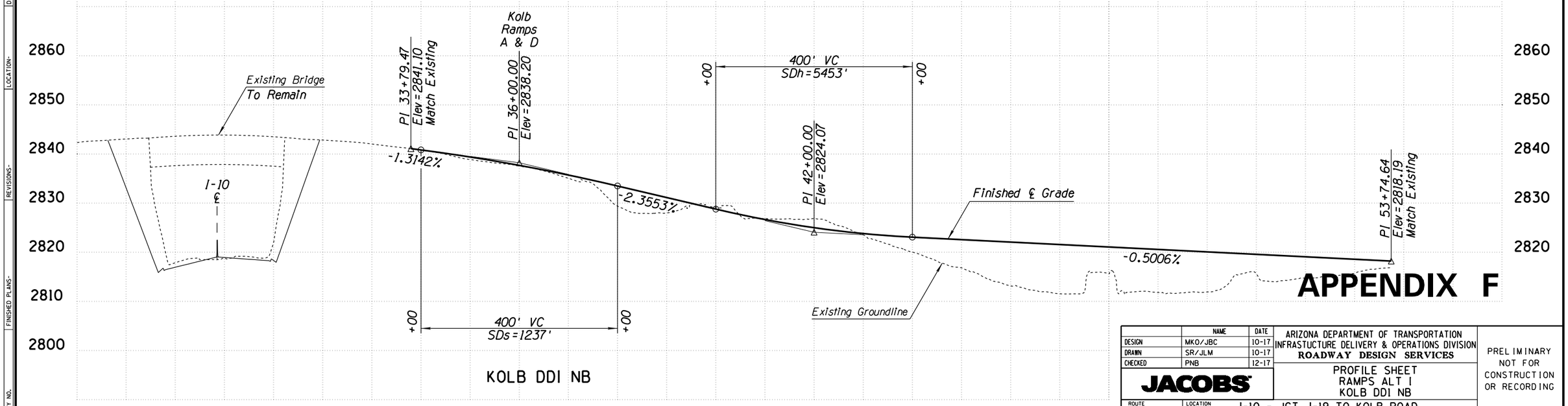
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v036.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	37	46	
		010 PM 260			



KOLB DDI NB



KOLB DDI NB

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
KOLB DDI NB

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

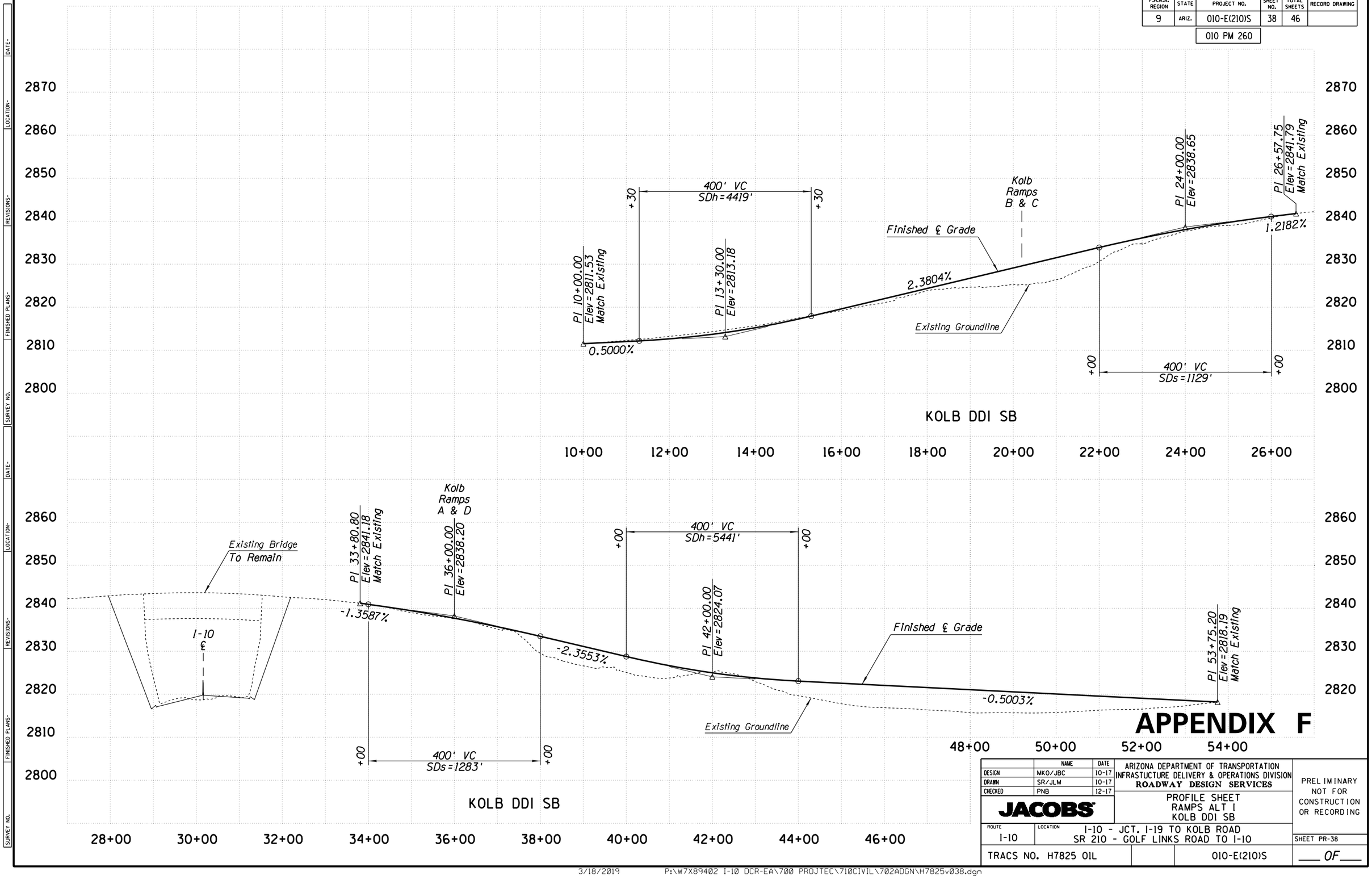
SHEET PR-37

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v037.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	38	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
KOLB DDI SB

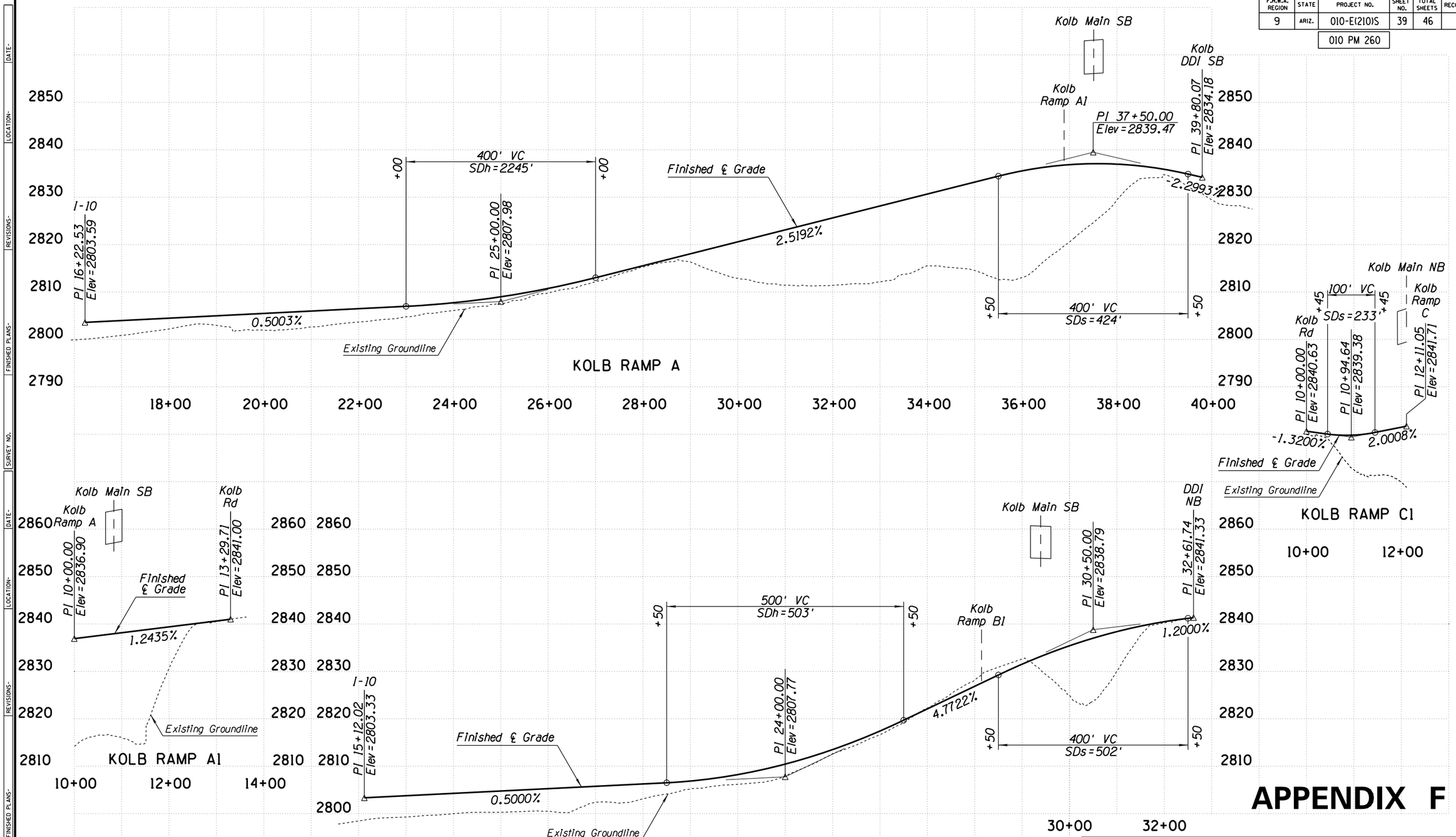
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET PR-38
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L		010-E(210)S ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v038.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	39	46	
		010 PM 260			



APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
KOLB RAMP A, A1, B AND C1

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

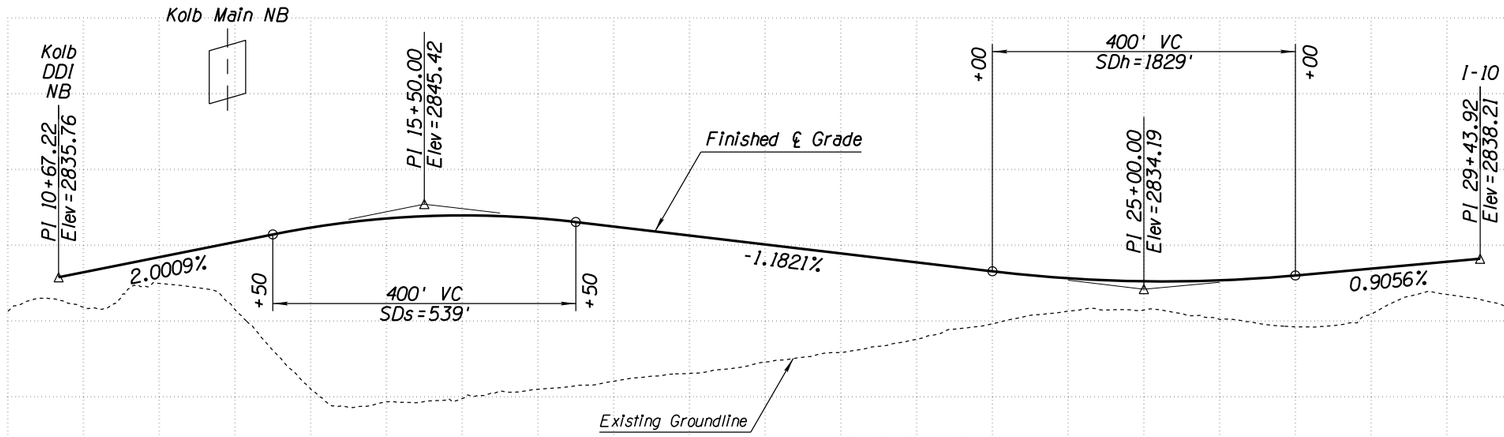
SHEET PR-39

___ OF ___

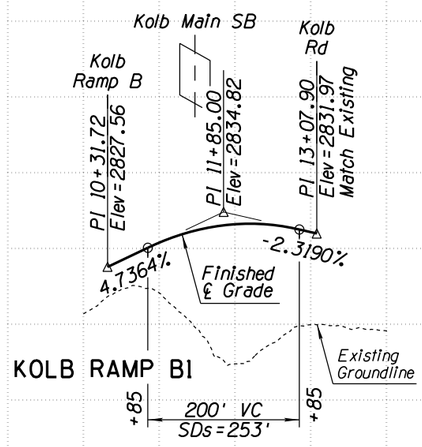
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v039.dgn

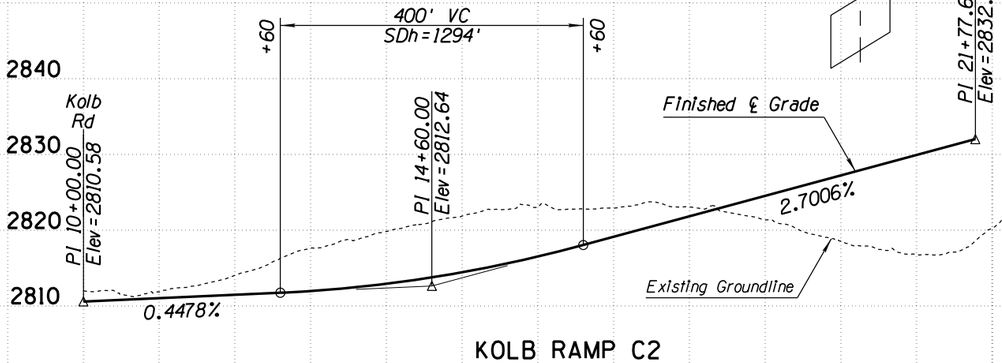
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	40	46	
		010 PM 260			



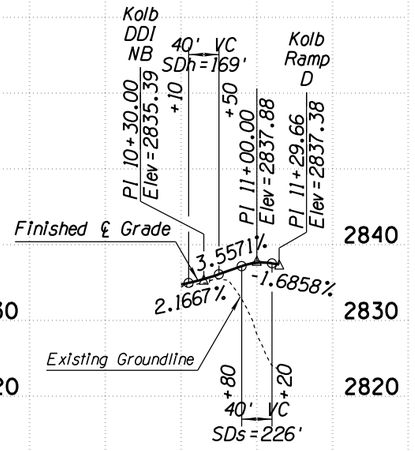
KOLB RAMP C



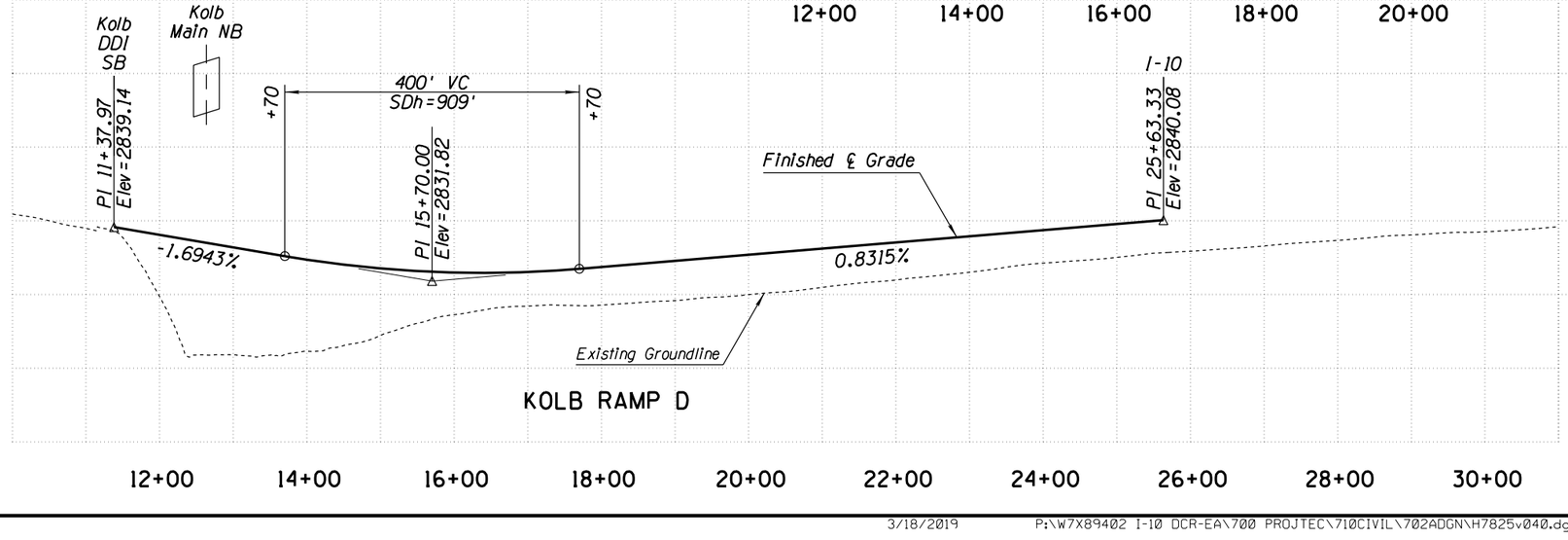
KOLB RAMP B1



KOLB RAMP C2



KOLB RAMP D1



KOLB RAMP D

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
KOLB RAMP B1, C, C2, D AND D1

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

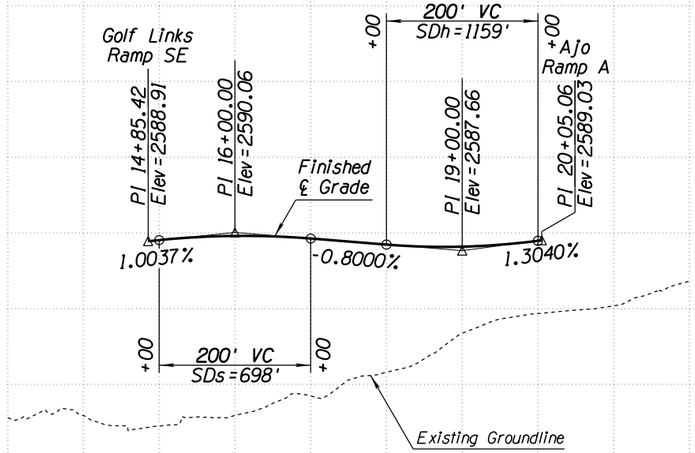
SHEET PR-40

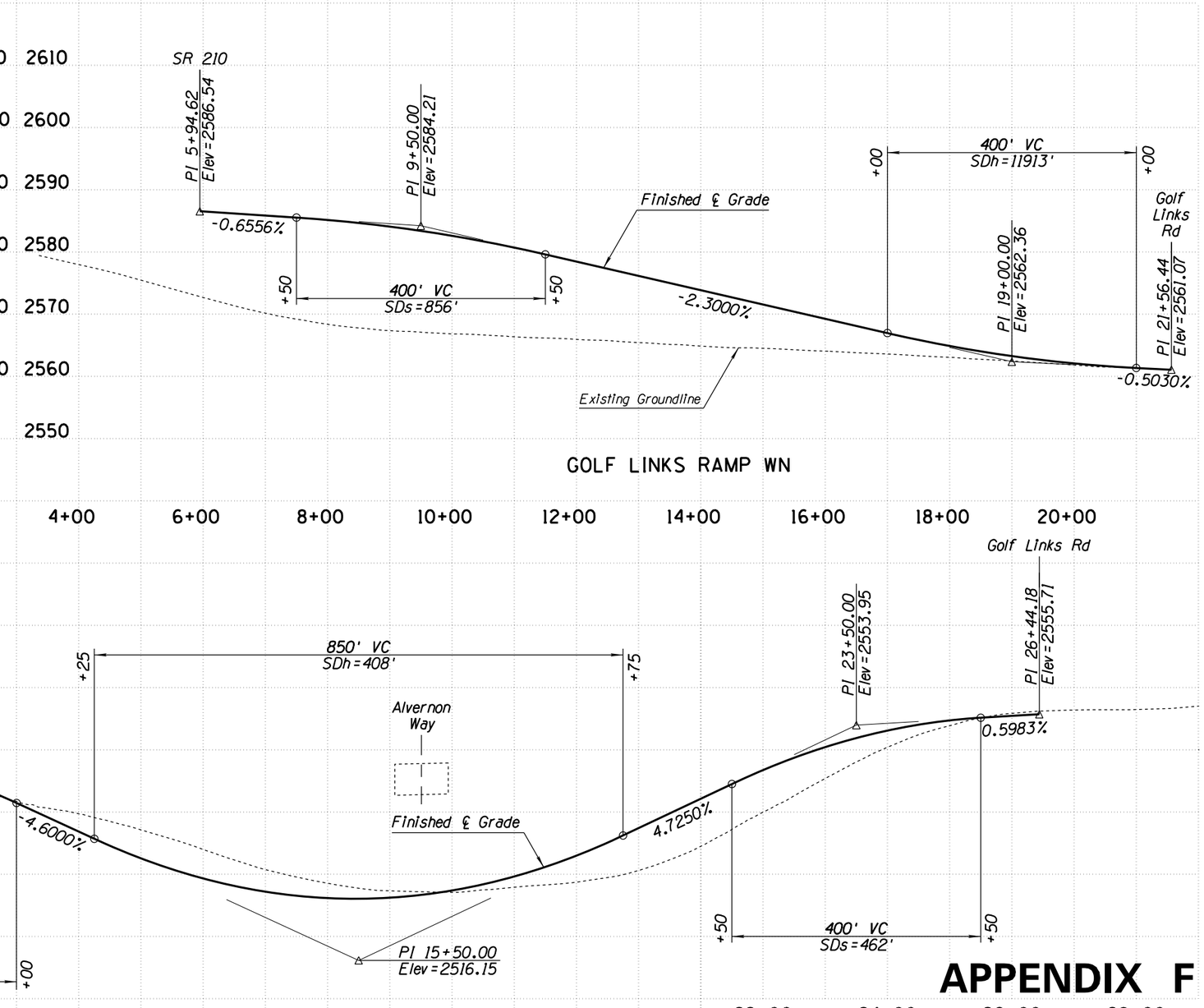
___ OF ___

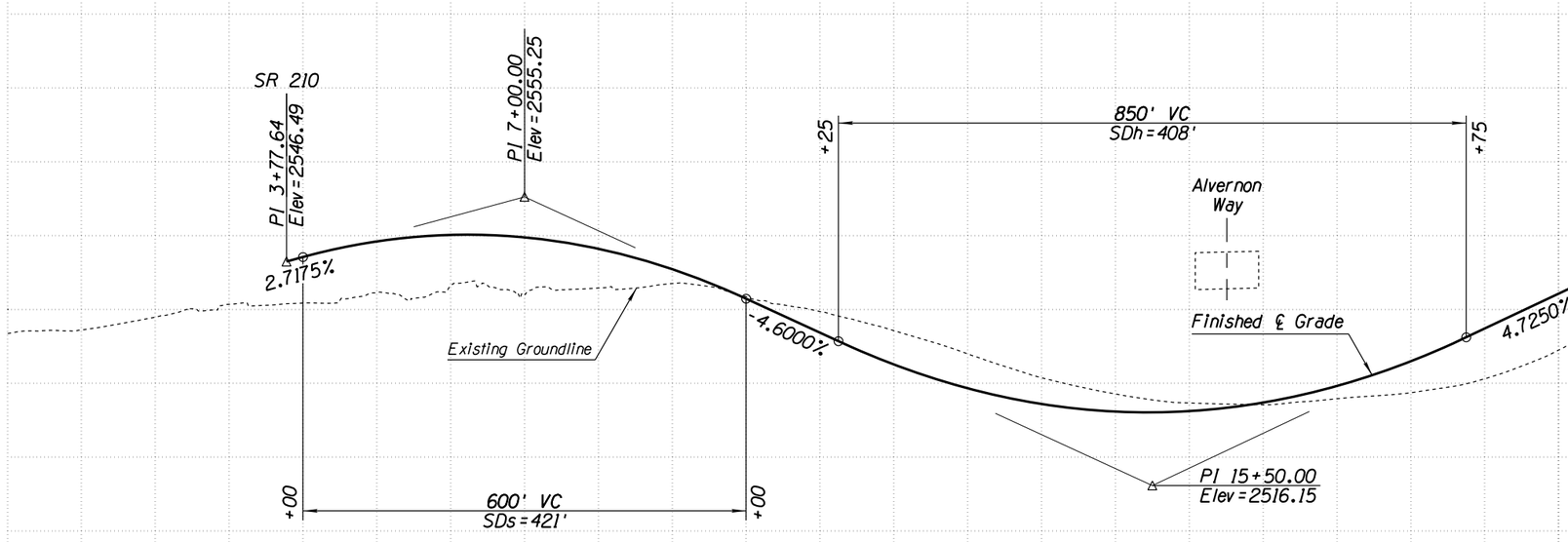
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE | SURVEY NO.

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v040.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	41	46	
		010 PM 260			







APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET RAMPS ALT I
GOLF LINKS RAMP WN, SW
AND GL SE TO AJO RAMP A

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

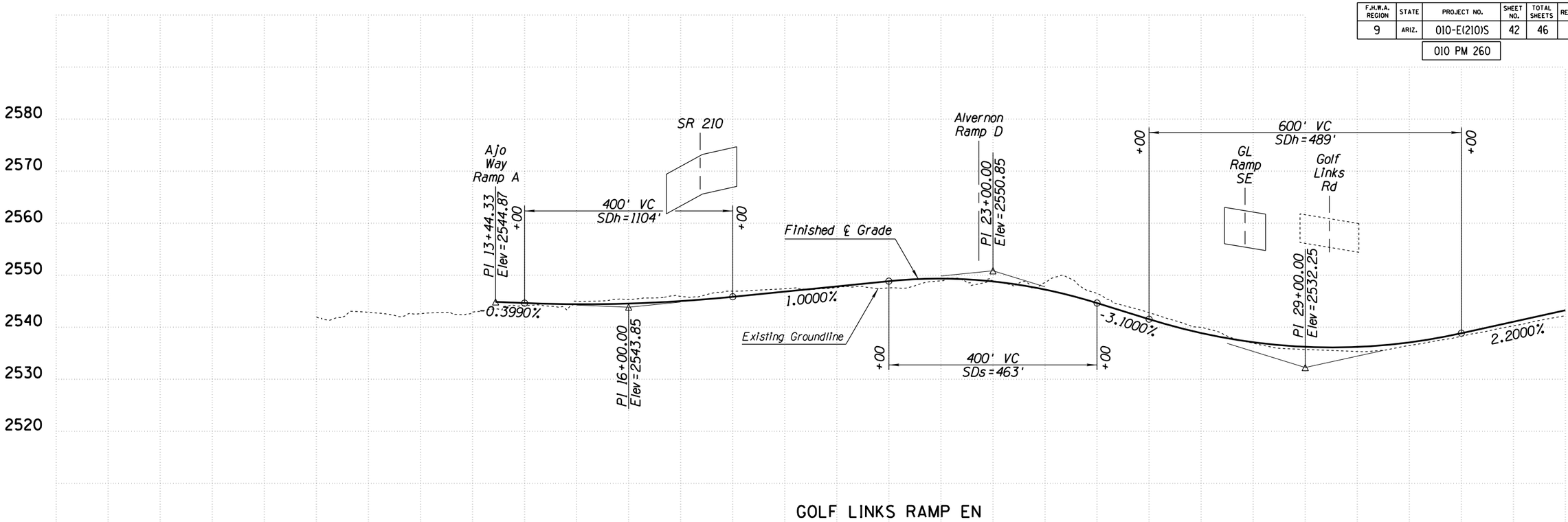
SHEET PR-41

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

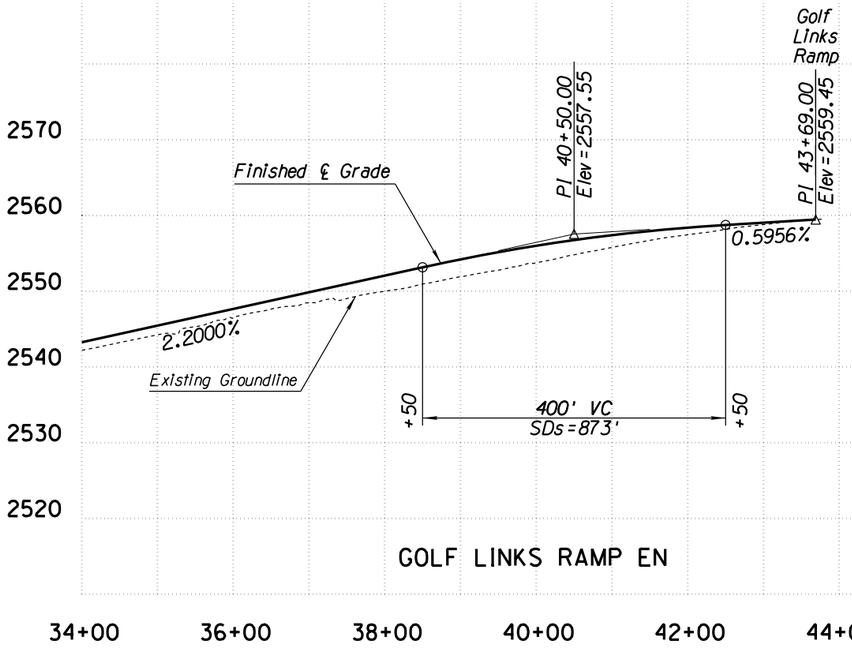
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v041.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	42	46	
		010 PM 260			



GOLF LINKS RAMP EN



GOLF LINKS RAMP EN

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
GOLF LINKS RAMP EN

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-42

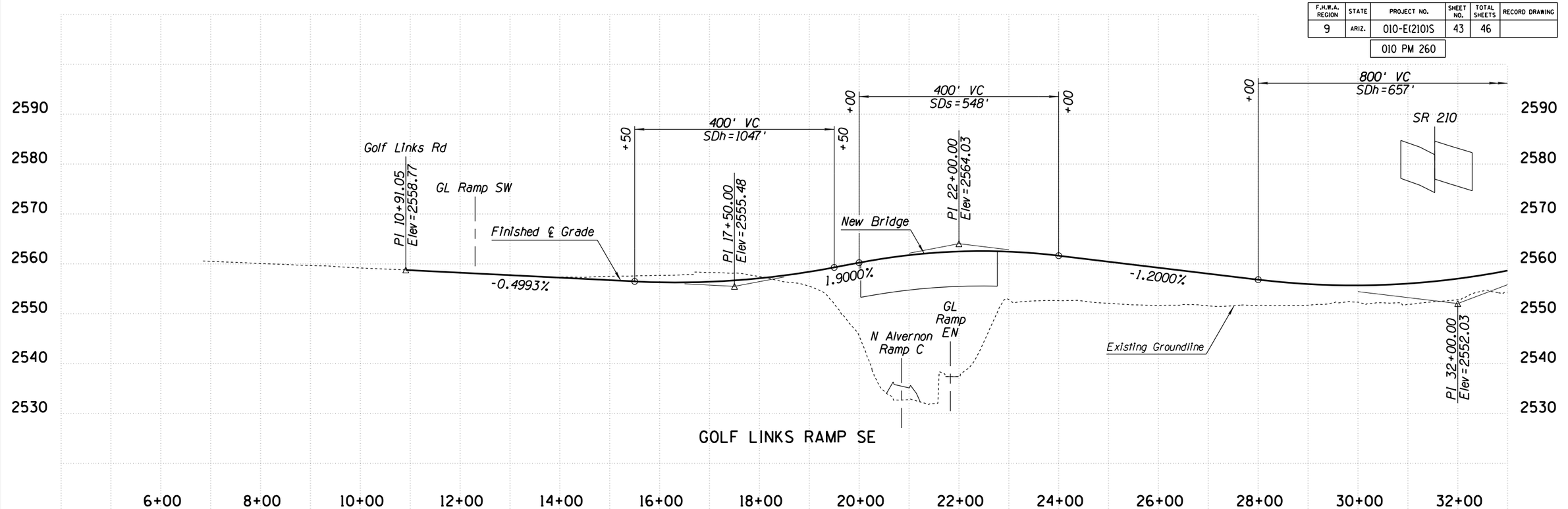
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

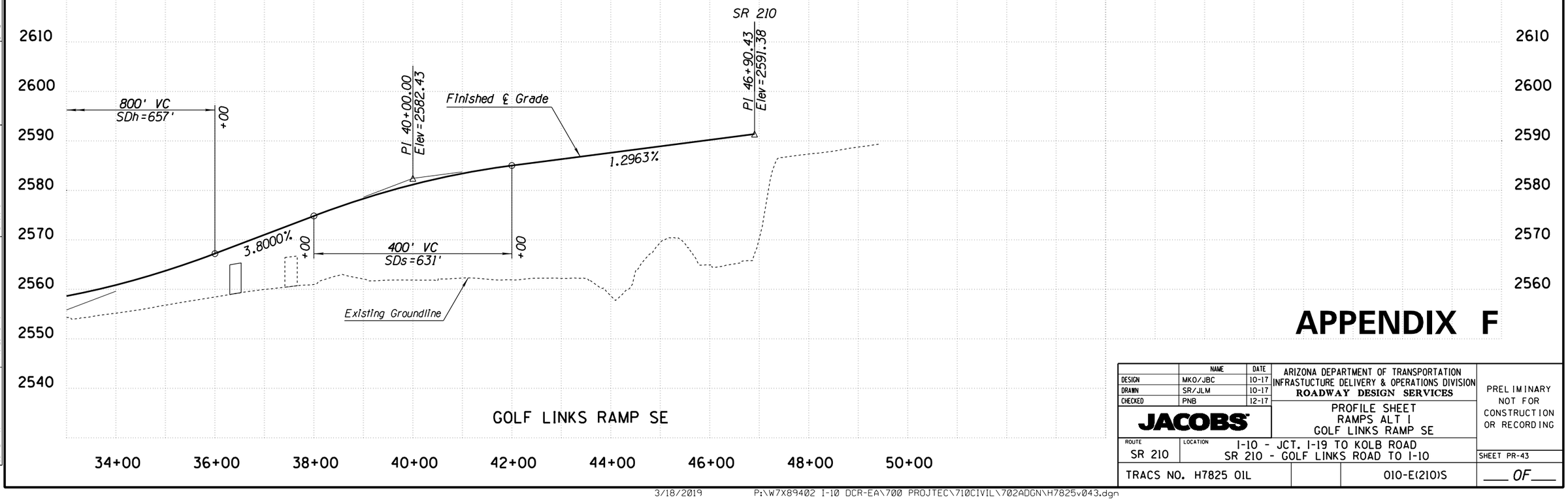
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v042.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	43	46	

010 PM 260





APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
RAMPS ALT I
GOLF LINKS RAMP SE

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

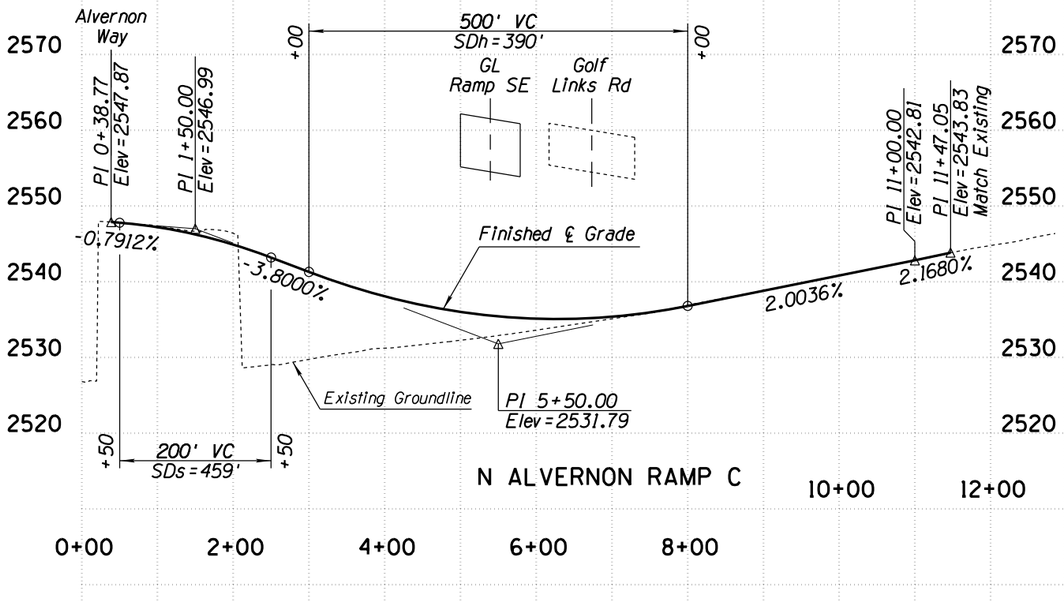
ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-43

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

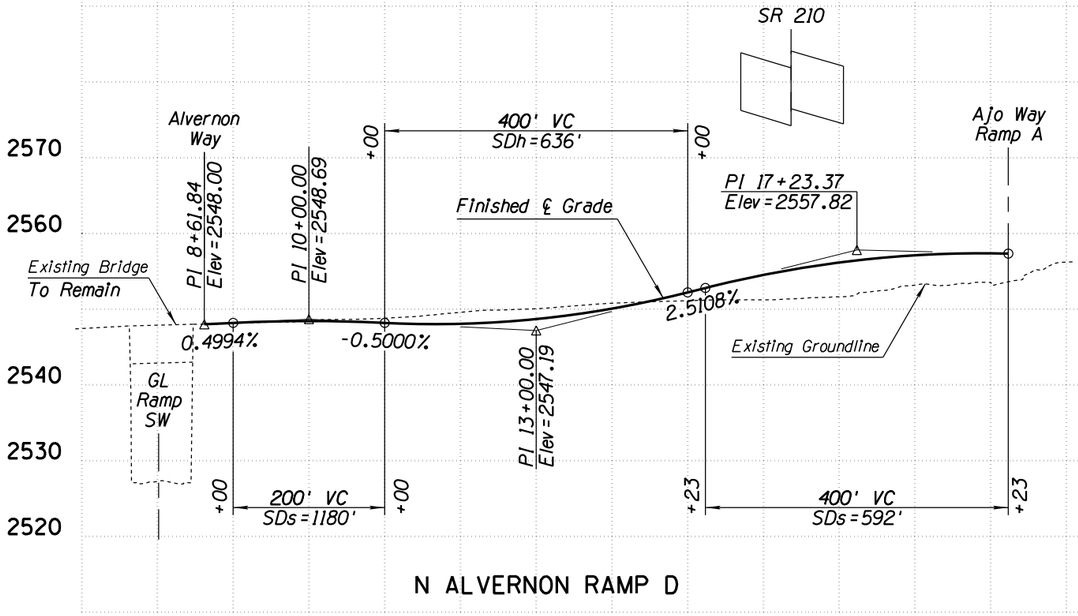
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v043.dgn

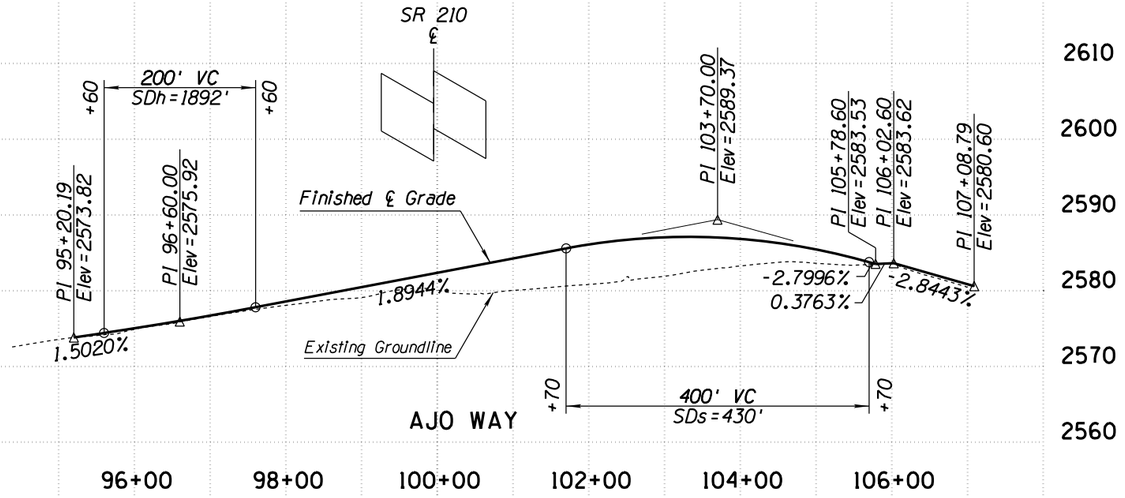
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	44	46	
		010 PM 260			



N ALVERNON RAMP C



N ALVERNON RAMP D



AJO WAY

APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET RAMPS ALT I
N ALVERNON RAMP A, C, D
AND AJO WAY

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

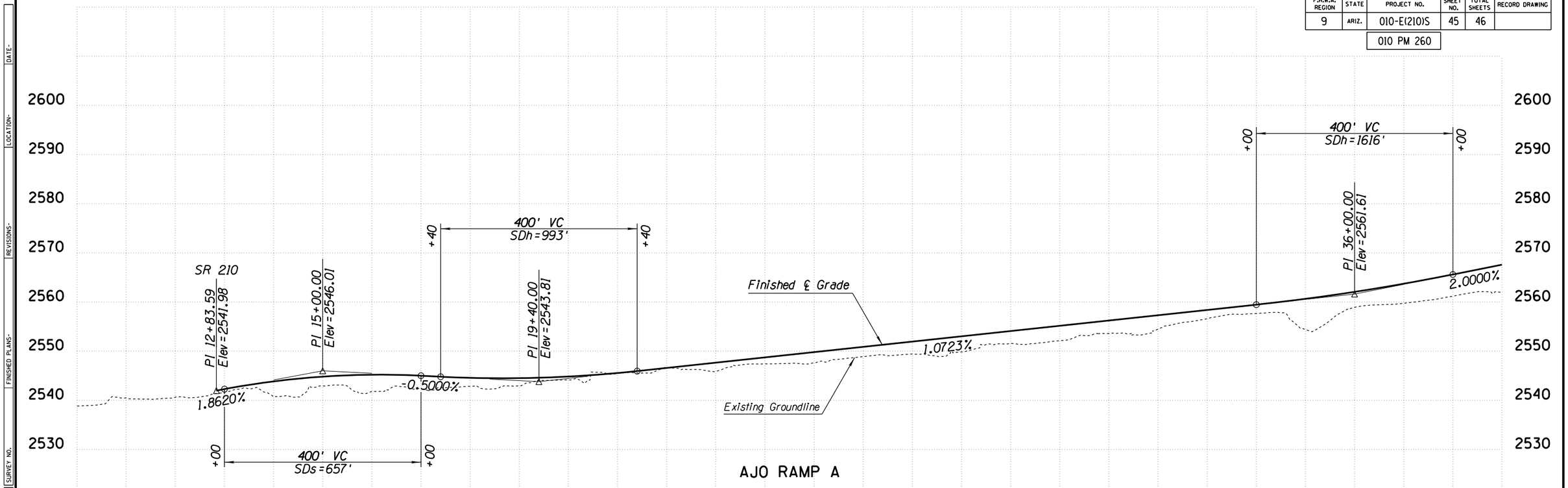
ROUTE	LOCATION	
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	SHEET PR-44
TRACS NO. H7825 01L		010-E(210)S ___ OF ___

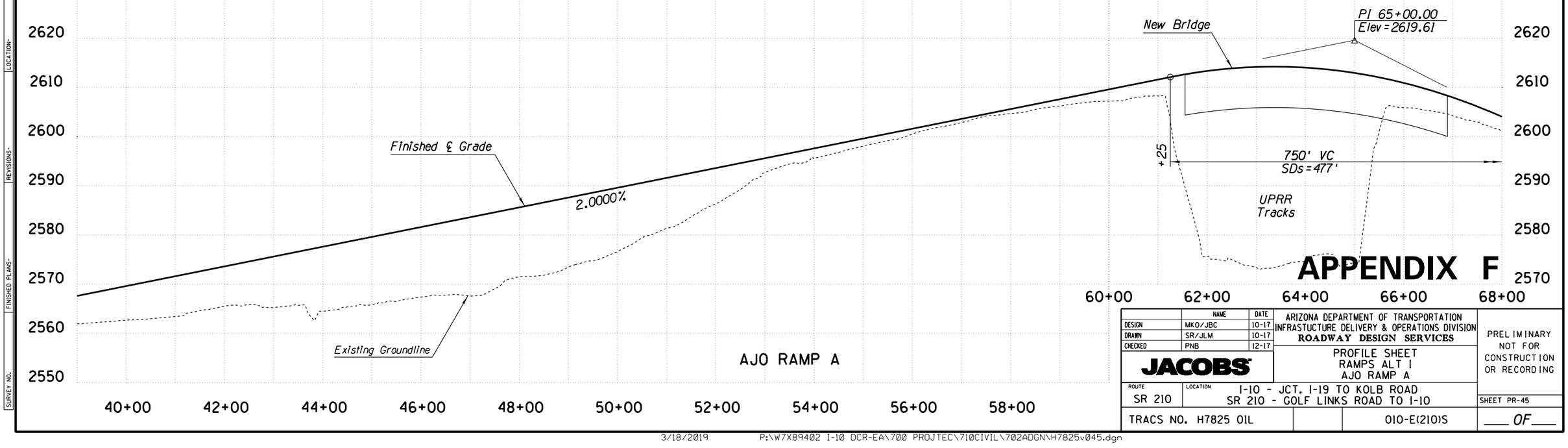
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v044.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	45	46	

010 PM 260





APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
AJO RAMP A

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

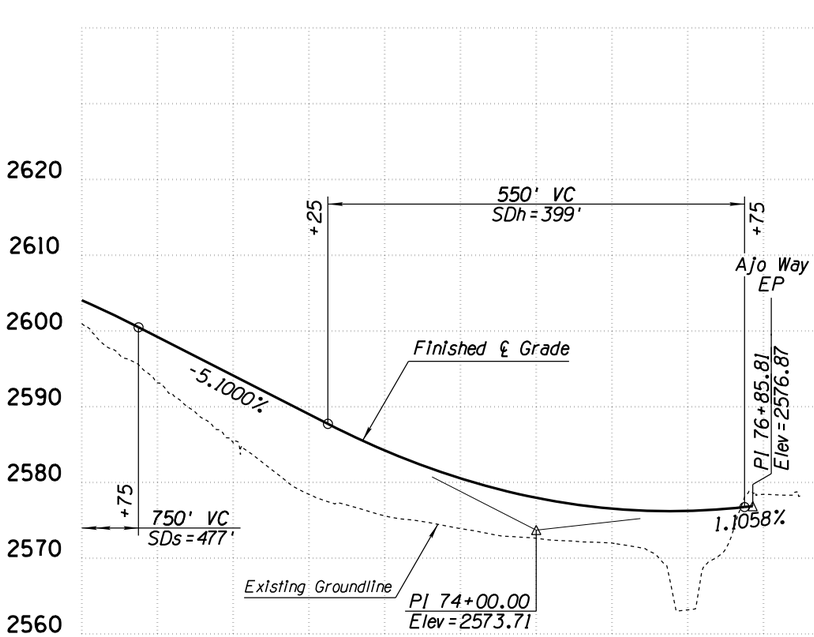
SHEET PR-45

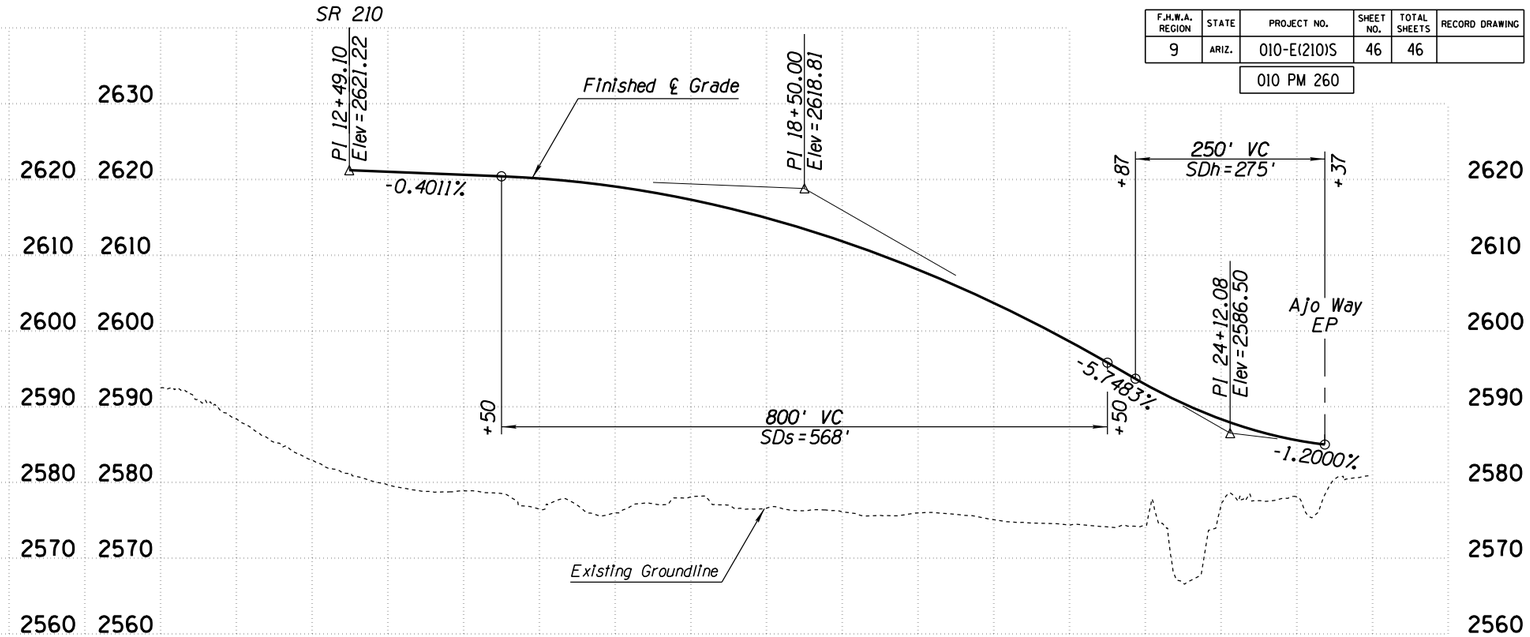
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

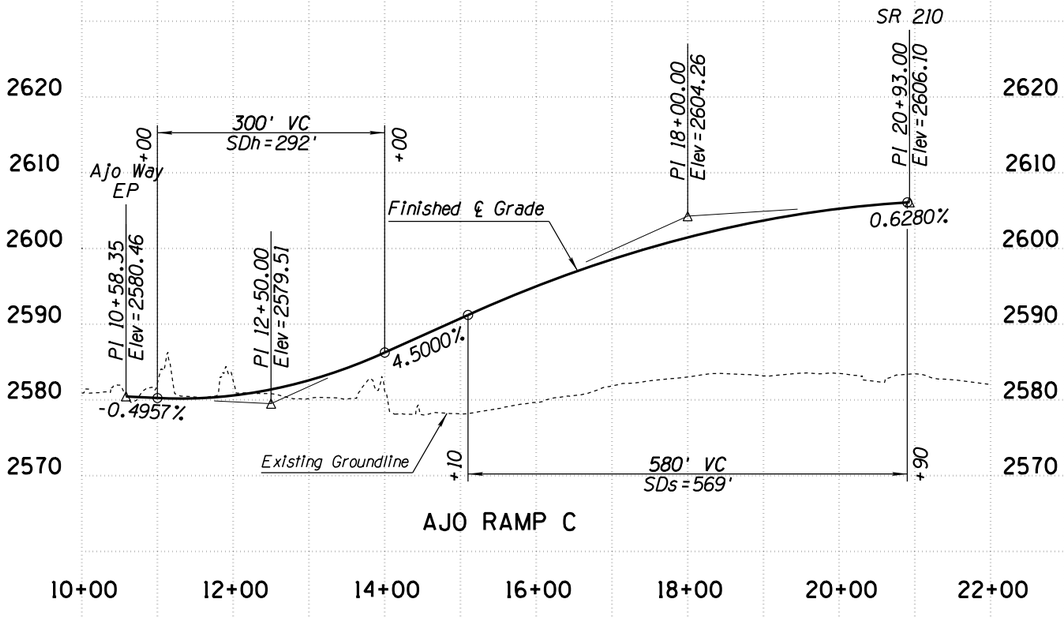
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

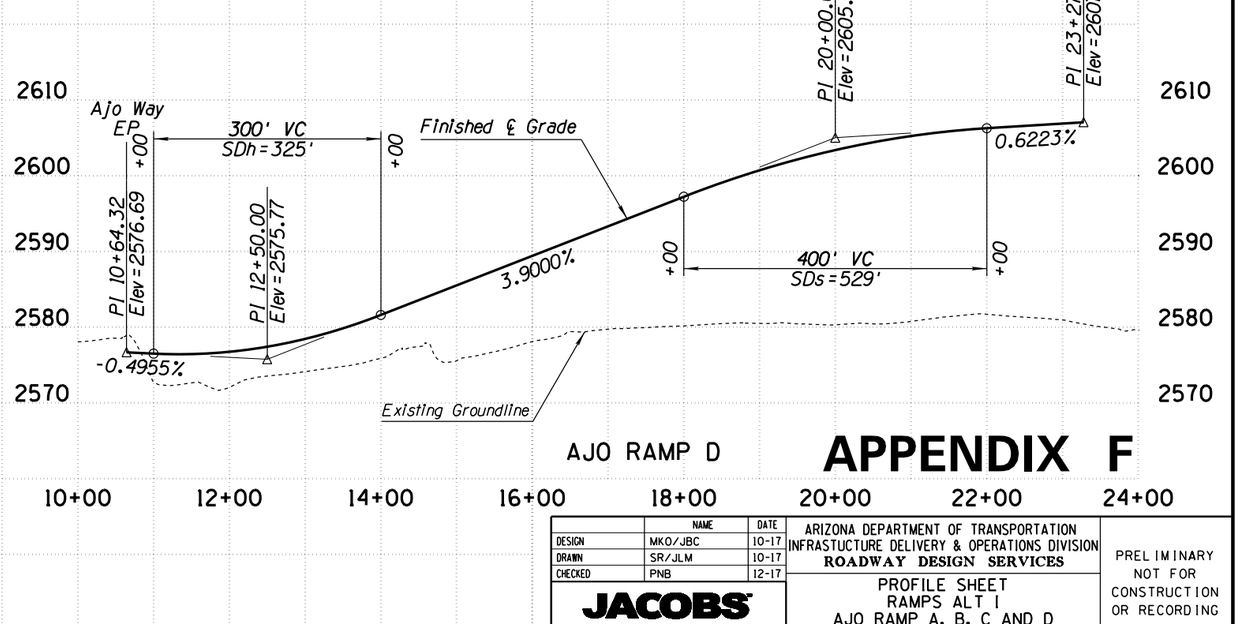
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v045.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	46	46	
		010 PM 260			









APPENDIX F

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT I
AJO RAMP A, B, C AND D

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-46

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v046.dgn

APPENDIX G
SYSTEM ALTERNATIVE I GEOMETRICS

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	32	
		010 PM 260			

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

POB 311+98.66 (200)
POB 311+96.86 (100)
TS 321+93.50 (201)
TS 321+89.54 (101)
SC 325+83.50 (202)
SC 325+34.54 (102)
I-10 WB Existing ℄
I-10 EB Existing ℄
CS 341+78.04 (204)
CS 340+34.51 (104)
ST 345+53.04 (205)
ST 341+29.51 (105)
PC 349+91.21 (206)
PI 353+30.07 (101)
PT 354+20.68 (208)
PC 171+52.93 (500)
PI 173+09.63 (501)
PT 174+62.58 (502)
Ramp W-FR-2 Construction ℄
S 73°36'20" E
2051.58'
I-10 Median ℄
PC 351+18.31 (106)
PI 352+09.03 (207)
POE 355+41.71 (209)
PT 355+41.71 (108)
POB 355+41.71 = EQUATION: AHD 355+30.38 WB BK 355+41.71 EB BK
PI 333+10.90 (103)
PI 334+48.16 (203)
Ramp W-FR-1 Construction ℄
Ramp W-FR-2 Construction ℄
Park Ave Ramp B Construction ℄
PC 180+54.23 (503)
PI 181+56.79 (504)
PT 182+59.29 (505)
PC 183+33.66 (506)
PI 184+74.44 (507)
PT 186+15.10 (508)
PC 10+00.00 (1000)
PI 11+75.08 (1001)
PC 189+82.91 (509)
PT 13+50.11 (1002)
PI 191+13.35 (510)
PT 192+43.74 (511)
PC 375+93.29 (301)
POB 99+40.32 (400)
PC 20+92.53 (1003)
PC 199+63.50 (512)
PI 23+41.68 (1004)
PC 105+55.04 (401)
PT 202+27.76 (514)
PT 25+88.04 (1005)
POE 28+47.96 (1006)
POB 10+00.00 (1100)
PC 12+02.34 (1101)
PI 16+54.31 (1102)
PI 110+92.62 (402)
PI 200+95.84 (513)
PT 116+03.09 (403)
PC 119+42.77 (404)
PT 387+03.99 (302)
PT 397+99.24 (303)
PC 10+00.00 (600)
PI 11+60.20 (601)
PT 13+20.26 (602)
POE 18+83.99 (603)
Ramp E-FR Construction ℄
POB 10+00.00 (700)
POB 5+06.02 (800)
PC 12+19.40 (701)
PC 7+40.95 (801)
PI 8+71.85 (802)
PT 10+00.00 (803)
PI 15+63.67 (702)
Ramp FR-E Construction ℄
PC 12+92.44 (804)
PT 19+06.08 (703)
PI 15+05.63 (805)
Park Ave Ramp A Construction ℄
PT 17+11.94 (806)
POE 19+55.96 (807)
POB 10+00.00 (1200)
PC 11+66.24 (1201)
PI 15+75.38 (1202)
Park Ave Ramp D Construction ℄
Park Ave Ramp C Construction ℄
PT 20+08.70 (1103)
PC 23+07.89 (1104)
PI 25+52.34 (1105)
PI 124+38.82 (5555)
PT 27+84.80 (1106)
POE 131+88.72 (407)
Kino Pkwy Ramp A Construction ℄
PT 129+32.40 (406)
S 57°03'39" E
19305.54'
PT 20+57.35 (1405)
POE 28+56.58 (1204)
PC 10+00.00 (1400)
PT 19+83.12 (1203)
PI 12+34.72 (1401)
PT 14+69.29 (1402)
PC 17+01.85 (1403)
PI 18+79.66 (1404)

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT I

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

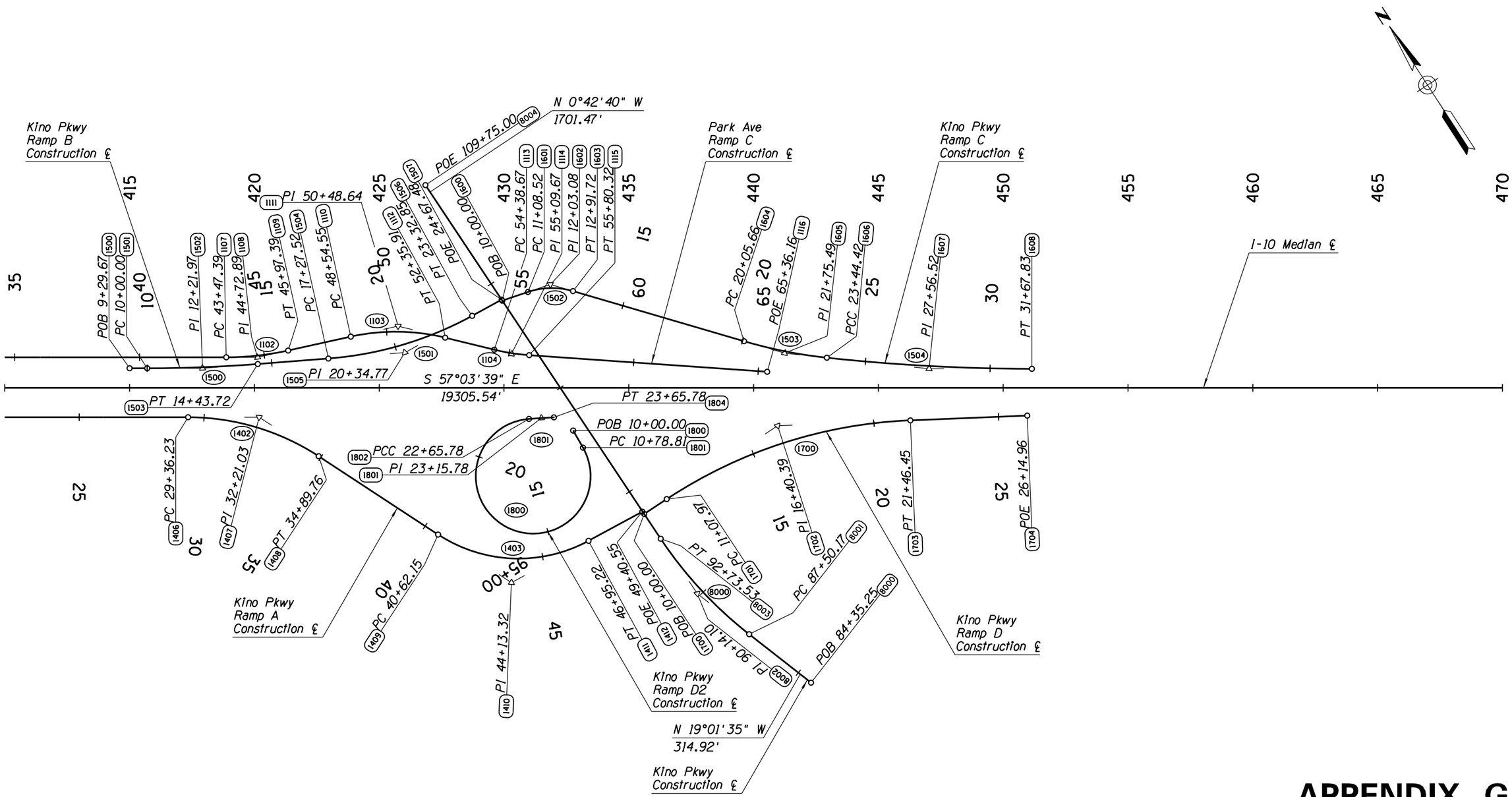
SHEET C-01.01

___ OF ___

3/19/2019 P:\w7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_Alt1_g01.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	32	
		010 PM 260			

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



APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-01.02

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	32	
		010 PM 260			

POB 74+40.12 (6400)

S 0°51'19" E
4250.00'

Country Club Rd
Construction ℄

Country Club Rd
Ramp B
Construction ℄

Country Club Rd
Ramp C
Construction ℄

PC 10+00.00 (2000)
PI 13+14.88 (2001)
PT 16+29.40 (2002)
PC 21+01.34 (2003)
PI 22+78.15 (2004)
PT 24+53.19 (2005)
POE 26+00.22 (2006)
POB 10+00.00 (2100)
PC 11+26.22 (2101)
PI 13+50.98 (2102)
PT 15+61.81 (2103)
PC 17+72.74 (2104)
PI 21+28.77 (2105)
PCC 24+82.74 (2106)
PI 28+43.19 (2107)
PT 32+03.10 (2108)

I-10 Median ℄

S 57°03'39" E
19305.54'

POE 31+95.65 (1908)

PC 10+00.00 (1900)
PI 13+60.45 (1901)
PCC 17+20.36 (1902)
PI 20+62.40 (1903)
PT 24+02.63 (1904)
PC 26+27.67 (1905)
PI 28+49.59 (1906)
PT 30+58.06 (1907)
POB 10+00.00 (2200)
PC 11+05.72 (2201)
PI 12+82.38 (2202)
PT 14+57.26 (2203)
PC 19+62.83 (2204)
PI 22+78.53 (2205)
PT 25+93.87 (2206)

Country Club Rd
Ramp A
Construction ℄

Country Club Rd
Ramp D
Construction ℄

POE 116+90.12 (6401)

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT I

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.03

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltI_g03.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	32	
		010 PM 260			

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

I-10 Median ℄

Alvernon Way Ramp B Construction ℄

Ramp SW Construction ℄

Ramp WN Construction ℄

Alvernon Way Ramp C Construction ℄

PC 10+00.00 (2400)

PI 13+60.14 (2401)

PT 17+19.33 (2402)

PC 24+61.15 (2403)

PI 26+44.67 (2404)

PC 25+50.22 (2700)

PI 27+75.37 (2701)

PT 30+00.00 (2702)

S 0°13'57" E 2690.07'

PT 28+27.07 (2405)

POE 29+56.52 (2406)

POB 10+00.00 (2500)

PC 38+56.72 (2703)

PI 13+15.33 (2502)

PT 15+02.74 (2503)

PC 16+90.66 (2504)

PI 19+78.10 (2505)

PC 11+12.03 (2501)

PI 43+78.17 (2704)

PT 48+35.44 (2705)

PCC 22+61.26 (2506)

PI 24+50.36 (2507)

PT 26+39.33 (2508)

POE 37+03.22 (2509)

PC 65+04.62 (2706)

S 57°03'39" E 19305.54'

PC 10+00.00 (2300)

PI 13+74.19 (2301)

PCC 17+47.32 (2302)

PI 20+19.89 (2303)

PT 22+88.80 (2304)

PC 26+11.41 (2305)

PI 29+76.92 (2306)

PT 33+09.57 (2307)

POE 34+59.82 (2308)

POB 10+00.00 (2800)

PI 5+16.59 (6320)

PC 11+76.59 (2600)

PI 13+64.17 (2602)

PT 15+51.22 (2603)

PC 17+43.09 (2604)

PI 522+86.58 (6321)

PI 22+19.08 (2605)

PT 26+92.32 (2606)

POE 526+22.42 (6322)

Ramp EN Construction ℄

Alvernon Way Ramp A Construction ℄

Alvernon Way Ramp D Construction ℄

Ramp SE Construction ℄

S 0°07'21" W 670.67'

S 0°20'51" E 335.83'

SR 210 Median ℄

NOTE:
See following sheet for additional alignment data.

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT 1

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

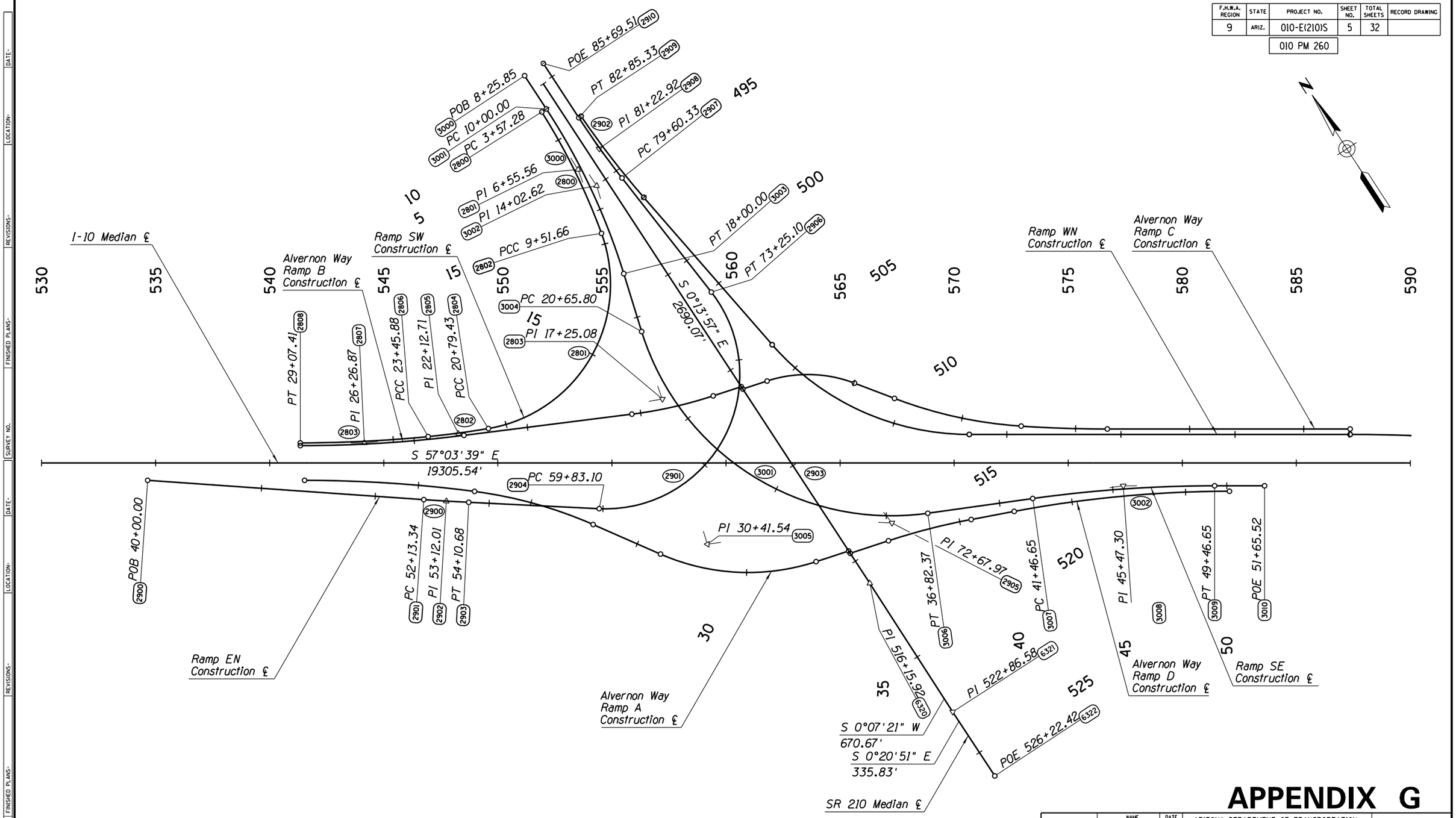
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.04

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltI_g04.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	32	
		010 PM 260			



APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT I

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

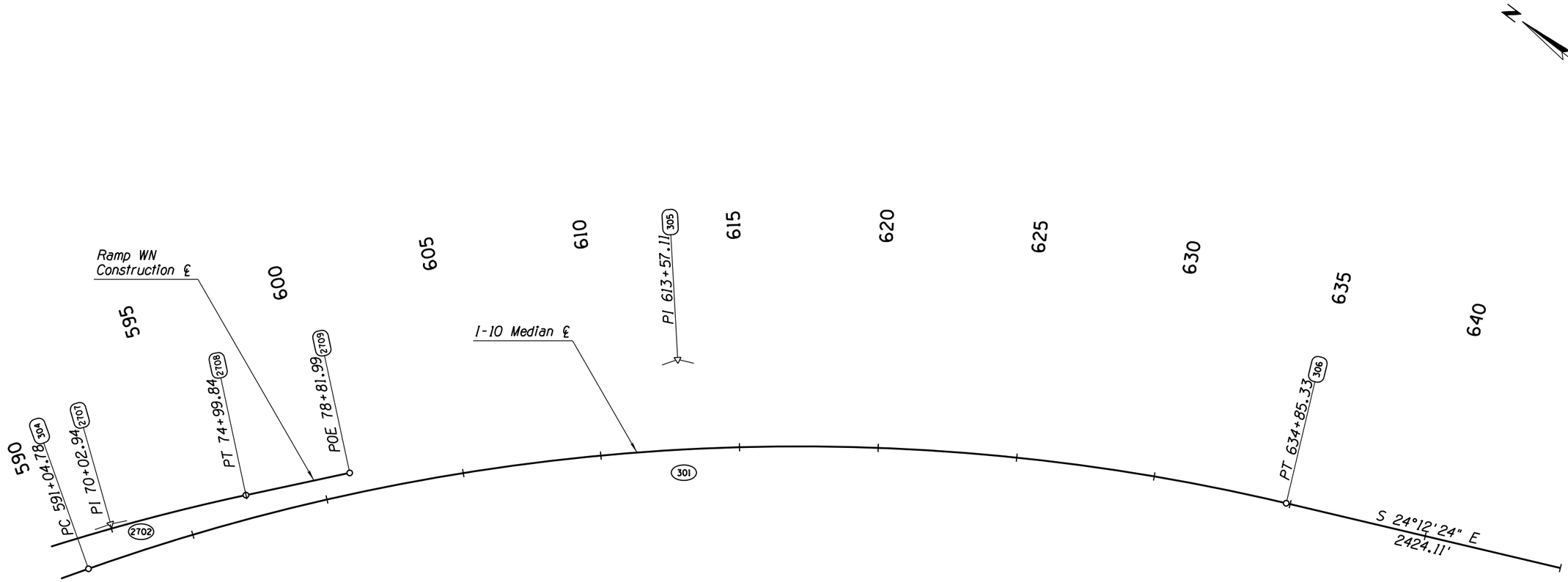
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-01.05

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltI_g05.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	6	32	
		010 PM 260			



APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.06

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltI_g06.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	7	32	
		010 PM 260			

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

PC 72+63.47 6500
PI 83+74.28 6501
PT 91+84.48 6502
PC 10+00.00 3200
PI 14+53.59 3201
PC 659+09.44 307
PCC 19+06.07 3202
PI 20+61.23 3203
PT 22+14.52 3204
PC 24+02.71 3205
PI 27+23.19 3206
PT 30+21.11 3207
POB 10+00.00 3300
PC 12+28.87 3301
PT 15+31.55 3303
PC 10+00.00 3600
PC 20+54.70 3304
PI 15+01.80 3601
PT 688+55.65 312
PI 23+05.60 3305
PT 25+55.22 3306
PT 20+01.04 3602
PI 663+21.28 308
POE 31+75.44 3208
PT 667+33.04 309
PC 670+26.04 310
PI 13+85.01 3302
PI 679+65.42 311
POE 32+49.38 3103
PC 10+00.00 3100
PI 17+31.90 3101
PT 24+60.27 3102
POB 10+00.00 3400
PC 11+85.45 3401
PI 13+29.83 3402
PT 14+62.56 3403
POB 10+00.00 3500
PI 14+30.07 3501
POE 28+15.32 3404
PI 23+55.98 3502
PI 29+22.10 3503
POE 116+64.86 6503
S 24°12'24" E 2424.11'
S 22°08'52" E 293.00'
N 89°28'18" W 2480.38'
S 54°09'57" E 15088.00'
Valencia Rd Ramp B Construction ℄
Valencia Rd Ramp C Construction ℄
Craycroft Rd Ramp B Construction ℄
I-10 Median ℄
Valencia Rd Ramp A Construction ℄
Valencia Rd Ramp D Construction ℄
Craycroft Rd Ramp A Construction ℄
Valencia Rd Construction ℄

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT I

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

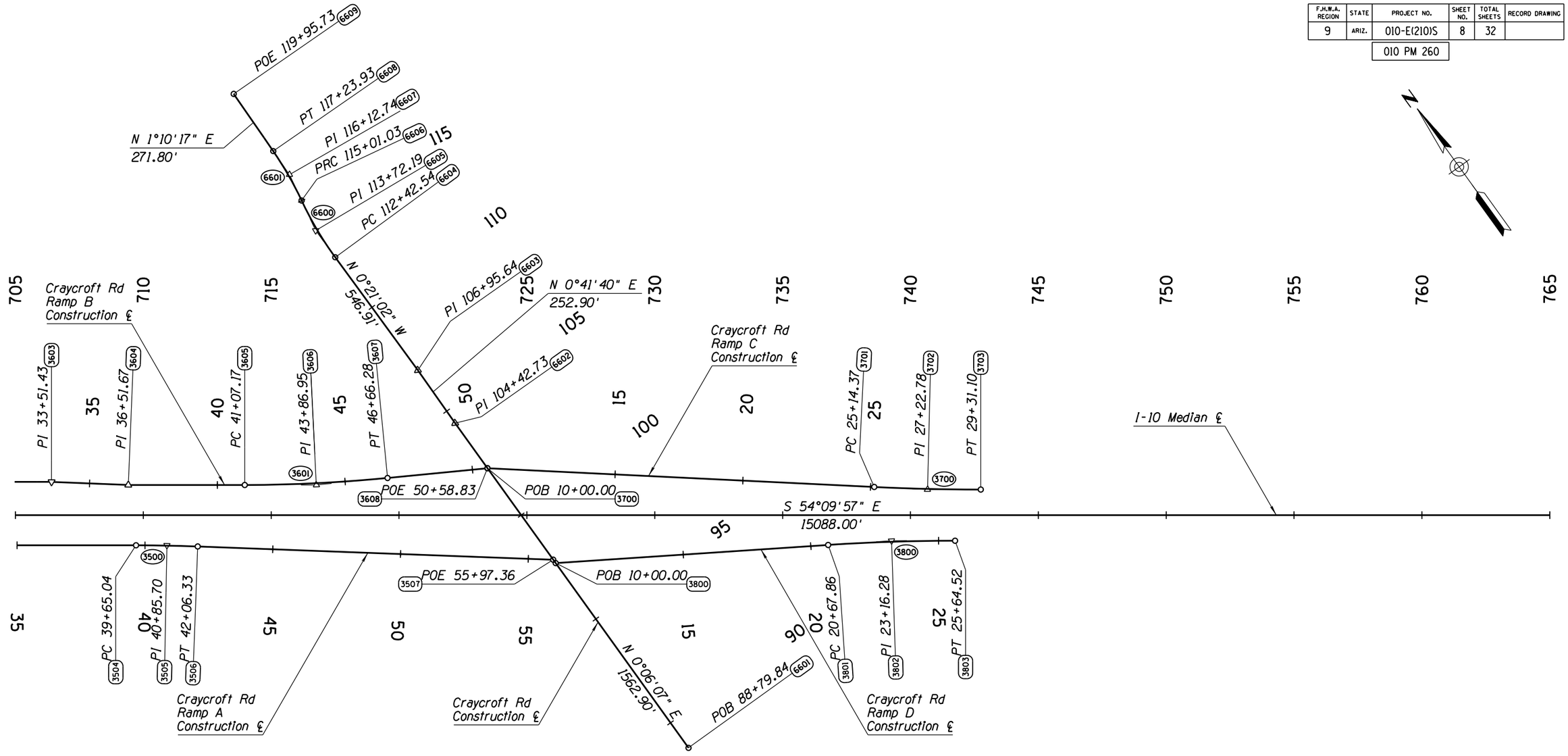
SHEET C-01.07

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltI_g07.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	8	32	
		010 PM 260			

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



APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

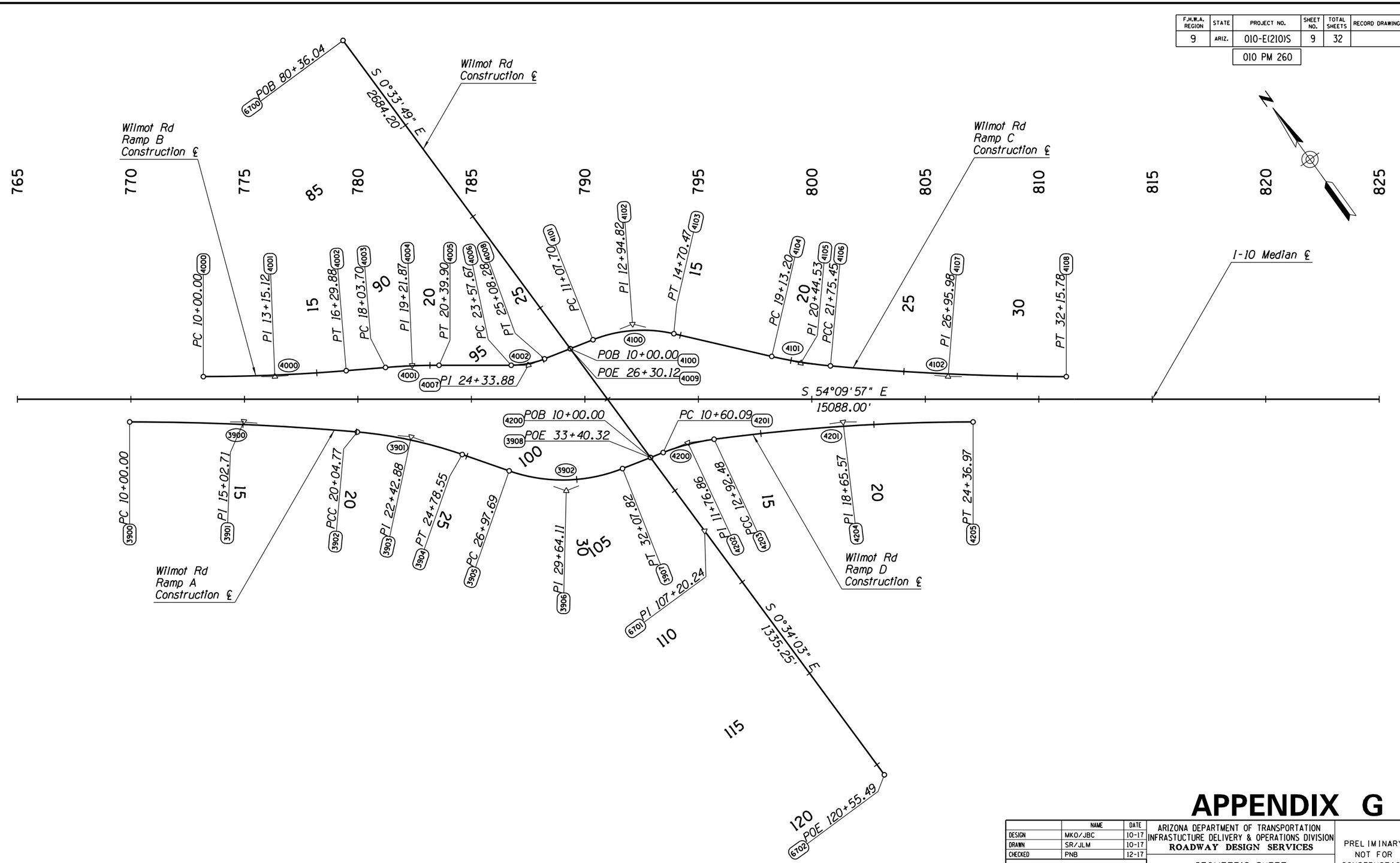
ROUTE: I-10

LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.08

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	9	32	
		010 PM 260			



APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-01.09

TRACS NO.			SHEET
H7825 01L		010-E(210)S	___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	10	32	
		010 PM 260			

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

PC 10+00.00 (4575)
PC 11+14.00 (4575)
PI 11+87.40 (4516)
PT 12+60.05 (4577)
PC 16+39.41 (4578)
PI 17+78.53 (4579)
PT 19+11.04 (4580)
PC 10+00.00 (4500)
POE 23+75.72 (4581)
PC 13+48.73 (4503)
PI 15+32.70 (4504)
PT 17+14.66 (4505)
PI 858+02.48 (317)
PC 21+14.44 (4506)
PRC 866+44.20 (318)
PI 24+69.80 (4507)
PCC 28+21.54 (4508)
PI 869+91.51 (319)
PI 31+75.62 (4509)
PT 873+38.61 (320)
PT 35+29.30 (4510)
Kolb Rd SB Mainline Construction ℄
Kolb Rd NB Mainline Construction ℄
Kolb Rd Ramp C2 Construction ℄
Kolb Rd Ramp C1 Construction ℄
Kolb Rd Ramp C Construction ℄
Kolb Rd Ramp B1 Construction ℄
Kolb Rd Ramp B Construction ℄
I-10 Median ℄
PC 10+00.00 (4400)
PI 15+60.36 (4401)
PC 839+43.64 (313)
PI 840+91.35 (314)
PCC 21+18.64 (4402)
PI 23+52.95 (4403)
PT 25+86.22 (4404)
PC 27+74.04 (4405)
PT 11+98.27 (4502)
PI 11+08.14 (4501)
PI 29+89.58 (4406)
PCC 31+81.06 (4407)
PC 849+60.00 (316)
S 53°25'39" E
720.96'
PT 842+39.04 (315)
PI 32+22.03 (4408)
PT 32+61.74 (4409)
S 54°09'57" E
5600.00'
PC 10+98.71 (4603)
PI 11+87.32 (4604)
PI 18+00.06 (4607)
PCC 21+69.02 (4608)
PI 26+22.75 (4609)
PT 30+75.36 (4610)
POE 36+59.52 (4611)
S 54°09'57" E
15088.00'
PC 10+00.00 (4600)
PI 10+16.45 (4601)
PT 10+32.81 (4602)
PT 35+35.94 (4307)
PC 14+21.40 (4606)
PT 12+51.31 (4605)
PC 10+00.00 (4300)
PI 14+38.90 (4301)
PCC 18+77.05 (4302)
PI 22+56.06 (4303)
PT 26+25.36 (4504)
PC 29+38.53 (4305)
PI 32+47.38 (4306)
PC 37+82.12 (4308)
PI 39+00.64 (4309)
PT 39+96.11 (4310)
POE 40+85.93 (4311)
Kolb Rd Ramp A Construction ℄
Kolb Rd Ramp A1 Construction ℄
Kolb Rd Ramp D Construction ℄
Kolb Rd Ramp D1 Construction ℄
Kolb Rd DDI NB Construction ℄
Kolb Rd DDI SB Construction ℄

NOTE:
See following sheet for additional alignment data.

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT 1

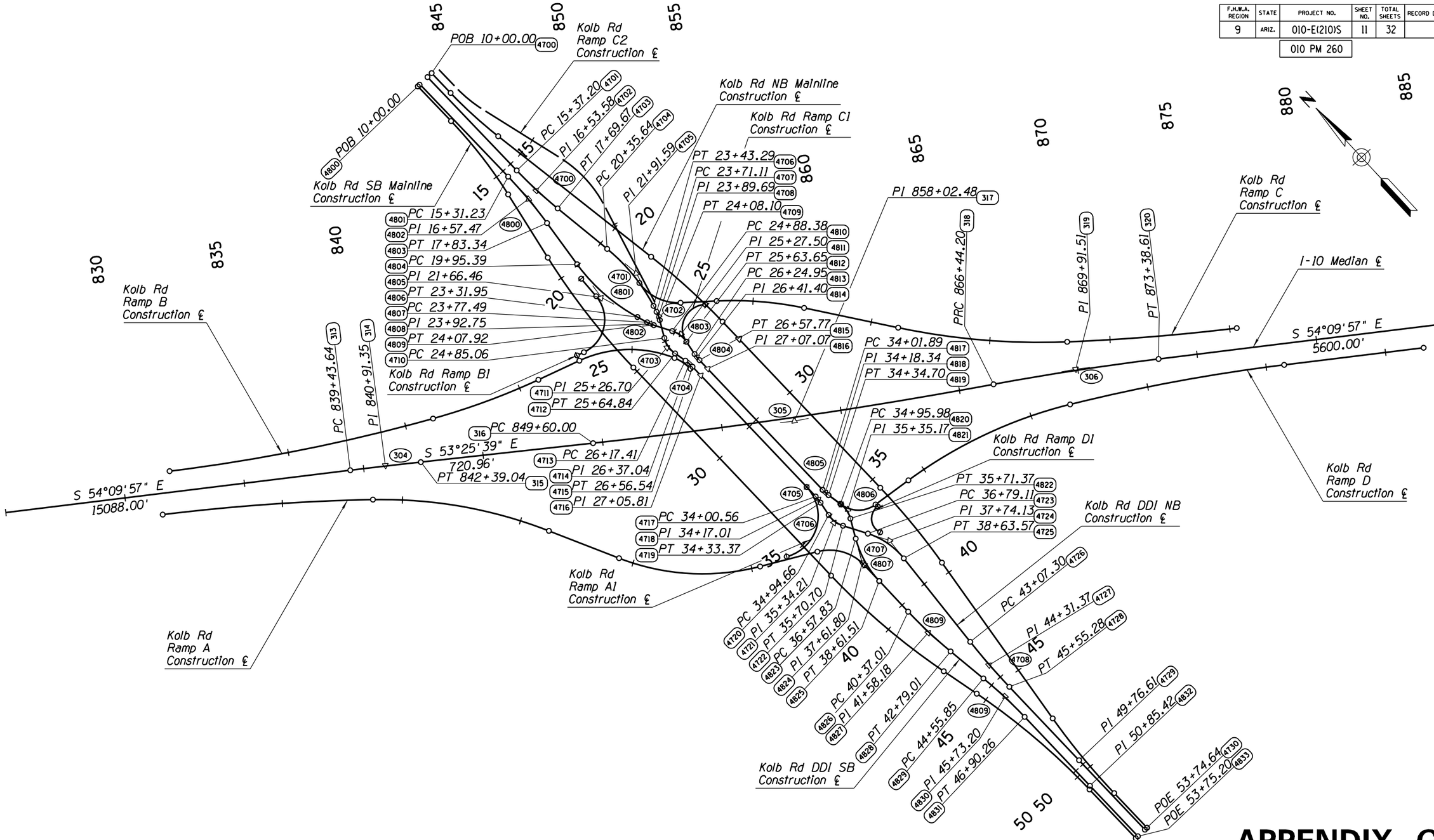
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.10

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	11	32	
		010 PM 260			



NOTE:
See following sheet for additional alignment data.

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT I

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-01.11

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_Alt1_gl1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	12	32	
		010 PM 260			

Kolb Rd SB Mainline Construction ℄
PC 10+00.00 (5000)
PC 12+00.00 (5001)
PI 13+94.29 (5002)
PT 15+87.24 (5003)
PC 10+00.00 (4900)
PC 11+14.00 (4901)
PI 12+48.18 (4902)
PT 13+81.93 (4903)
Kolb Rd NB Mainline Construction ℄
Kolb Rd Ramp C2 Construction ℄
PC 21+92.02 (4904)
PI 11+76.47 (4551)
PI 23+93.37 (4905)
Kolb Rd Ramp C1 Construction ℄
PT 12+11.05 (4552)
PC 10+00.00 (4550)
PT 25+94.07 (4906)
PI 26+93.07 (4907)
PC 18+97.63 (5004)
POE 14+03.60 (4454)
PT 13+07.90 (4453)
PI 21+88.98 (5005)
PC 10+31.72 (4451)
POB 10+00.00 (4450)
Kolb Rd Ramp B Construction ℄
Kolb Rd Ramp B1 Construction ℄
PC 839+43.64 (313)
PI 840+91.35 (314)
PI 12+28.96 (4452)
PT 24+78.34 (5006)
PC 849+60.00 (316)
S 53°25'39" E
720.96'
PT 842+39.04 (315)
PI 26+95.13 (5007)
S 54°09'57" E
15088.00'
PT 13+63.27 (4352)
PI 11+04.68 (4651)
PI 12+96.72 (4351)
Kolb Rd Ramp A1 Construction ℄
PC 10+00.00 (4350)
Kolb Rd Ramp A Construction ℄
PC 36+72.37 (5008)
PI 39+81.62 (5009)
PT 42+88.49 (5010)
PC 44+54.71 (5011)
PI 47+64.29 (5012)
PT 50+71.47 (5013)
Kolb Rd DDI SB Construction ℄
Kolb Rd DDI NB Construction ℄
PI 858+02.48 (317)
PRC 866+44.20 (318)
PI 869+91.51 (319)
PT 873+38.61 (320)
Kolb Rd Ramp C Construction ℄
Kolb Rd Ramp D1 Construction ℄
PC 35+46.93 (4908)
PT 11+29.66 (4652)
PI 37+49.20 (4909)
PC 10+00.00 (4650)
PT 39+50.77 (4910)
PC 47+45.99 (4911)
PI 49+47.91 (4912)
PT 51+49.17 (4913)
PT 53+47.20 (4914)
POE 53+51.25 (5014)
Kolb Rd Ramp D Construction ℄
I-10 Median ℄
S 54°09'57" E
5600.00'

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

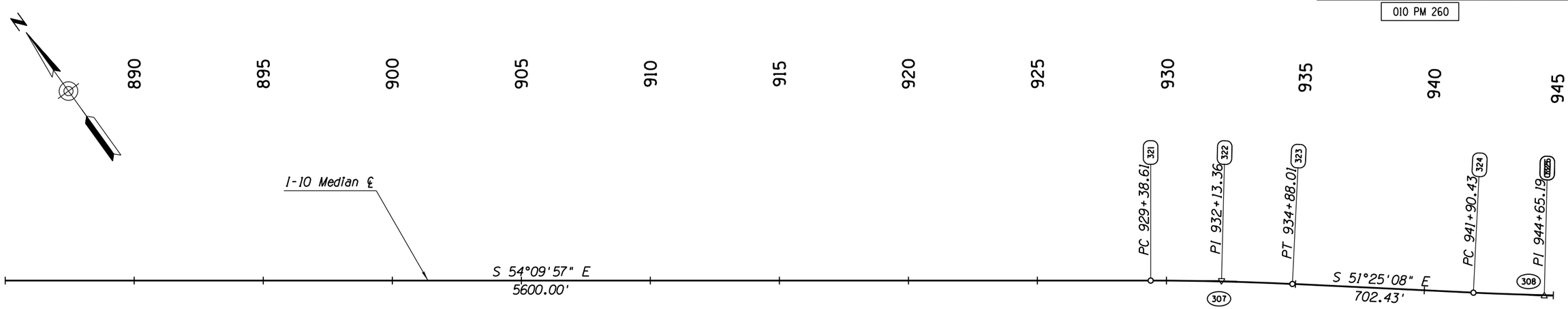
SHEET C-01.12

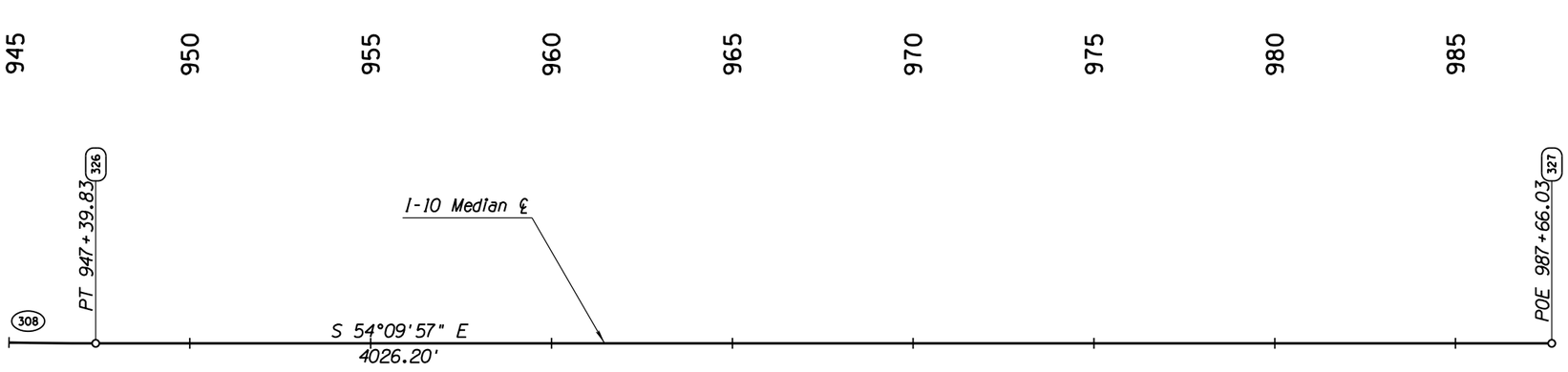
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_Alt1_gl2.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	13	32	
		010 PM 260			





APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT I

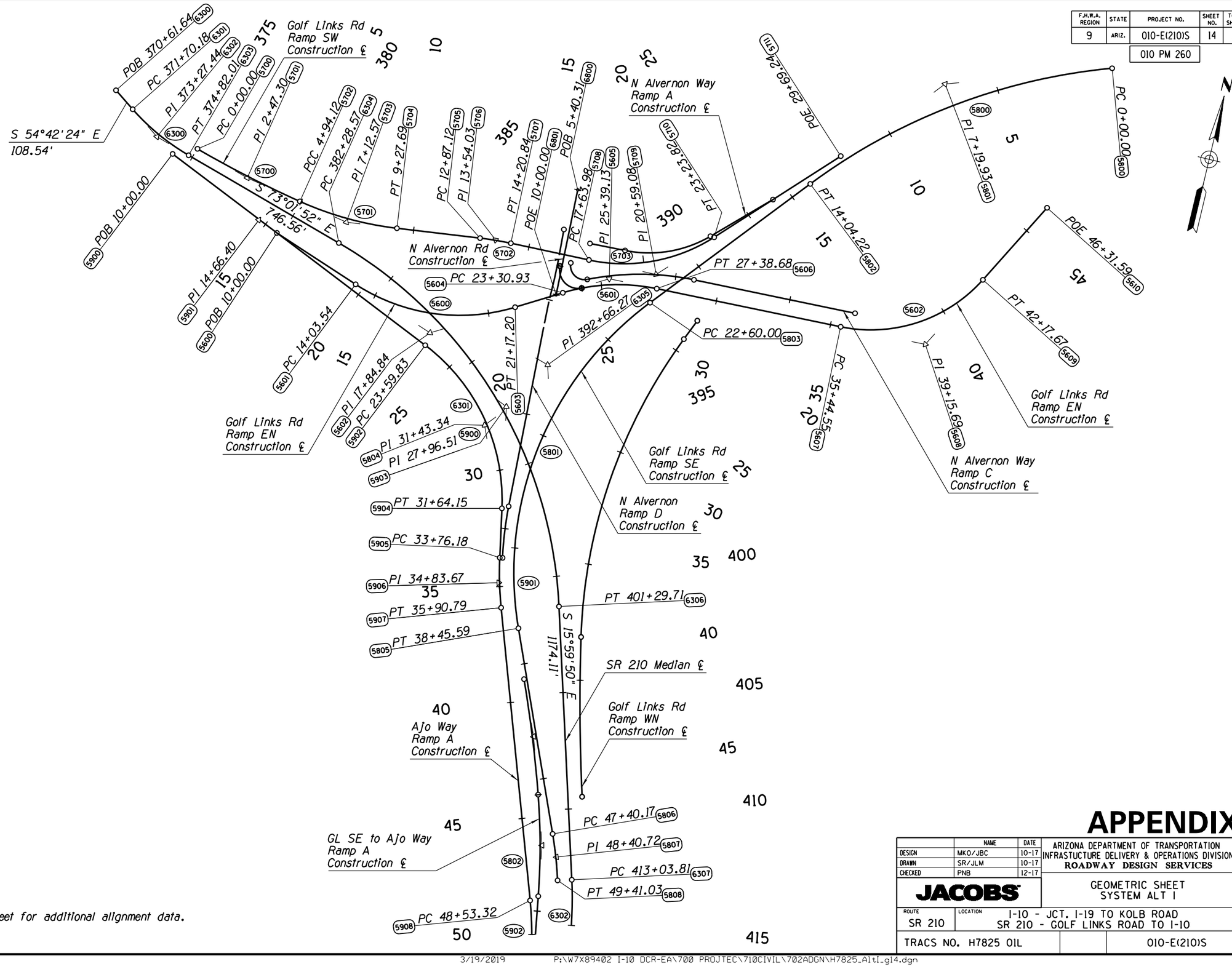
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-01.13

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	14	32	
		010 PM 260			



NOTE:
See following sheet for additional alignment data.

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

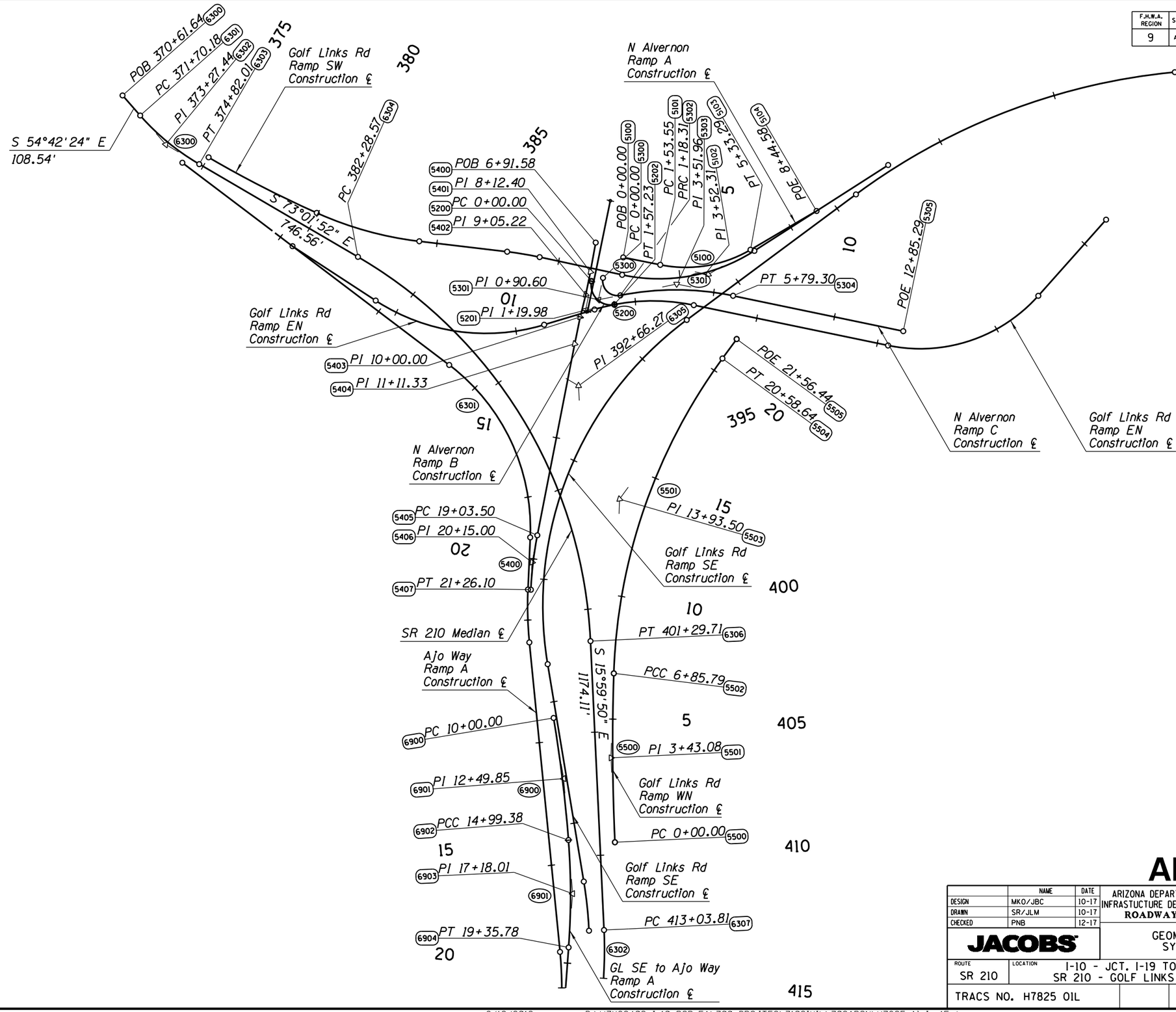
SHEET C-01.14

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltI_gl4.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	15	32	
		010 PM 260			



APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

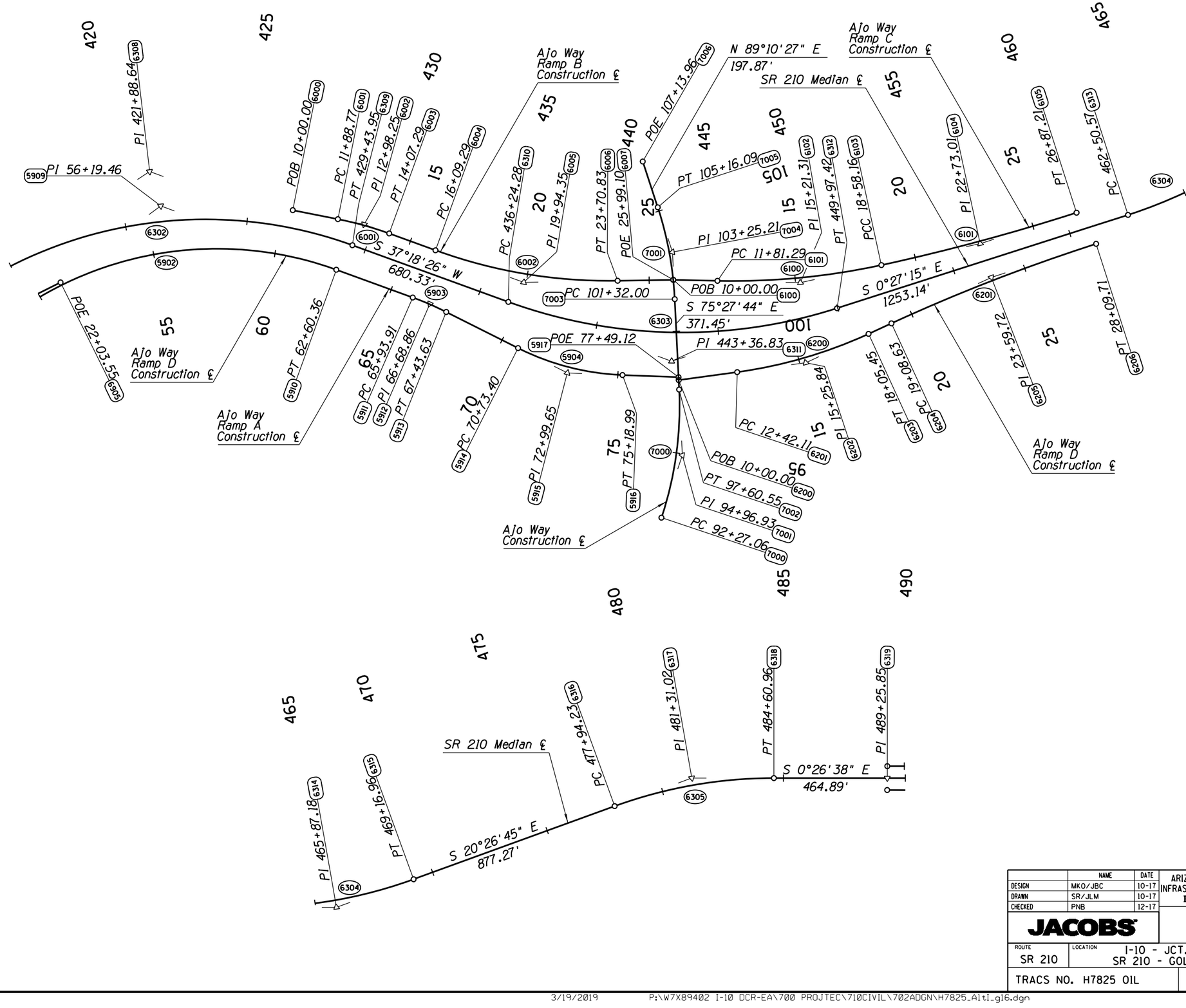
GEOMETRIC SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-01.15

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	16	32	
		010 PM 260			



APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-01.16

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_Alt1_gl6.dgn

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	17	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
100	EXISTING EB I-10	POB	311+96.86	S 27°41'05" E	435498.196	990892.490									
101	EXISTING EB I-10	TS	321+89.54		434619.159	991353.696									
102	EXISTING EB I-10	SC	325+34.54	S 31°52'39" E	434317.727	991521.348		TOTAL	49°05'47" Lt		R+o=2359.41	2489.97		240.10	
103	EXISTING EB I-10	PI	333+10.90		433658.462	991931.345	100	MAIN	36°27'27" Lt	2°25'50"	2357.31	1499.97	776.36	124.55	
104	EXISTING EB I-10	CS	340+34.51	S68°20'06"E	433371.847	992652.857		SPIRAL	8°26'46" Lt		o=2.10	645.00			
105	EXISTING EB I-10	ST	347+29.51		433180.070	993320.176									
106	EXISTING EB I-10	PC	351+18.31	N76°46'52"W	433091.162	993698.675									
107	EXISTING EB I-10	PI	353+30.07		433042.739	993904.821	101	SIMPLE	3°10'32" Rt	0°45'00"	7639.44	423.41	211.76	2.93	
108	EXISTING EB I-10	PT	355+41.71	S73°36'20"E	432982.971	994107.969									
200	EXISTING WB I-10	POB	311+98.66	S 27°41'05" E	435543.459	990922.473									
201	EXISTING WB I-10	TS	321+93.50		434662.508	991384.683									
202	EXISTING WB I-10	SC	325+83.50	S32°31'38"E	434322.505	991575.475		TOTAL	49°05'47" Lt		R+o=2359.41	2359.54		232.17	
203	EXISTING WB I-10	PI	334+14.10		433622.201	992022.085	200	MAIN	39°35'51" Lt	2°29'00"	2307.21	1594.54	830.59	144.95	
204	EXISTING WB I-10	CS	341+78.04	N72°7'29"W	433367.256	992812.584		SPIRAL	4°39'22" Lt		o=2.75	375.00			
205	EXISTING WB I-10	ST	345+53.04		433271.676	993175.085									
206	EXISTING WB I-10	PC	349+97.27	N76°46'52"W	433170.092	993607.549									
207	EXISTING WB I-10	PI	352+09.03		433121.669	993813.696	201	SIMPLE	3°10'32" Rt	0°45'00"	7639.44	423.41	211.76	2.93	
208	EXISTING WB I-10	PT	354+20.68	S73°36'20"E	433061.900	994016.844									
209	EXISTING WB I-10	POE	355+30.38		433030.938	994122.082									
300	I-10 MEDIAN	POB	355+41.71		433006.955	994115.025									
301	I-10 MEDIAN	PC	375+93.29	S 73°36'20" E	432427.900	996083.190									
302	I-10 MEDIAN	PI	387+03.99		432114.405	997148.735	300	SIMPLE	16°32'41" Rt	0°45'00"	7639.44	2205.95	1110.70	80.32	e=0.023¼ft, Ls=160
303	I-10 MEDIAN	PT	397+99.24		431510.463	998080.892									
304	I-10 MEDIAN	PC	591+04.78	S 57°03'39" E	421013.133	1014283.051									
305	I-10 MEDIAN	PI	613+57.11		419788.435	1016173.318	301	SIMPLE	32°51'15" Rt	0°45'00"	7639.44	4380.55	2252.33	325.11	e=0.023¼ft,
306	I-10 MEDIAN	PT	634+85.33		417734.149	1017096.843									Entrance Ls=96
307	I-10 MEDIAN	PC	659+09.44	S 24°12'24" E	415523.190	1018090.803									Exit Ls=160
308	I-10 MEDIAN	PI	663+21.28		415147.559	1018259.672	302	SIMPLE	2°03'32" Rt	0°15'00"	22918.31	823.60	411.84	3.70	NC
309	I-10 MEDIAN	PT	667+33.04		414766.103	1018414.936									
310	I-10 MEDIAN	PC	670+26.04	S 22°08'52" E	414494.719	1018525.397									
311	I-10 MEDIAN	PI	679+65.42		413624.654	1018879.539	303	SIMPLE	32°01'05" Lt	1°45'00"	3274.04	1829.61	939.38	132.10	e=0.046½ft,
312	I-10 MEDIAN	PT	688+55.65		413074.705	1019641.107									Entrance Ls=258
313	I-10 MEDIAN	PC	839+43.64	S 54°09'57" E	404241.584	1031873.179									Exit Ls=320
314	I-10 MEDIAN	PI	840+91.35		404155.113	1031992.923	304	SIMPLE	0°44'19" Rt	0°15'00"	22918.31	295.40	147.70	0.48	NC
315	I-10 MEDIAN	PT	842+39.04		404067.106	1032111.543									
316	I-10 MEDIAN	PC	849+60.00	S 53°25'39" E	403637.532	1032690.544									
317	I-10 MEDIAN	PI	858+02.48		403135.546	1033367.144	305	SIMPLE	4°12'38" Lt	0°15'00"	22918.31	1684.21	842.48	15.48	NC
318	I-10 MEDIAN	PRC	866+44.20	S 57°38'16" E	402684.593	1034078.773									
319	I-10 MEDIAN	PI	869+91.51		402498.690	1034372.137	306	SIMPLE	3°28'19" Rt	0°30'00"	11459.16	694.40	347.31	5.26	NC
320	I-10 MEDIAN	PT	873+38.61		402295.362	1034653.705									
321	I-10 MEDIAN	PC	929+38.61	S 54°09'57" E	399016.897	1039193.712									
322	I-10 MEDIAN	PI	932+13.36		398856.045	1039416.458	307	SIMPLE	2°44'49" Rt	0°30'00"	11459.16	549.40	274.75	3.29	NC
323	I-10 MEDIAN	PT	934+88.01		398684.703	1039631.240									
324	I-10 MEDIAN	PC	941+90.43	S 51°25'08" E	398246.655	1040180.345									
325	I-10 MEDIAN	PI	944+65.19		398075.313	1040395.127	308	SIMPLE	2°44'49" Lt	0°30'00"	11459.16	549.40	274.75	3.29	NC
326	I-10 MEDIAN	PT	947+39.83	S 54°09'57" E	397914.461	1040617.873									
327	I-10 MEDIAN	POE	987+66.03		395557.363	1043881.973									

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All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC DATA SHEET
SYSTEM ALT I

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-01.17

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	18	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
400	RAMP W-FR-1	POB	99+40.32		432533.346	996301.399									
401	RAMP W-FR-1	PC	105+55.04	S 78°36'22" E	432411.907	996904.003									
402	RAMP W-FR-1	PI	110+92.62		432305.706	997430.993	400	SIMPLE	31°26'30" Rt	3°00'00"	1909.86	1048.05	537.58	74.22	e=0.050'/ft, Ls=129
403	RAMP W-FR-1	PT	116+03.09		431940.205	997825.209									
404	RAMP W-FR-1	PC	119+42.77	S 47°09'52" E	431709.260	998074.297									
405	RAMP W-FR-1	PI	124+38.82		431371.998	998438.056	401	SIMPLE	9°53'47" Lt	1°00'00"	5729.58	989.63	496.05	21.43	NC
406	RAMP W-FR-1	PT	129+32.40	S 57°03'39" E	431102.272	998854.367									
407	RAMP W-FR-1	POE	131+88.72		430962.899	999069.483									
500	RAMP W-FR-2	PC	171+52.93	S 53°04'33" E	433170.273	994068.303									
501	RAMP W-FR-2	PI	173+09.63		433076.136	994193.572	500	SIMPLE	21°40'32" Lt	7°00'00"	818.51	309.65	156.70	14.86	
502	RAMP W-FR-2	PT	174+62.58		433034.923	994344.753									
503	RAMP W-FR-2	PC	180+54.23	S 74°45'05" E	432879.312	994915.576									
504	RAMP W-FR-2	PI	181+56.79		432852.340	995014.520	501	SIMPLE	3°04'33" Lt	1°30'00"	3819.72	205.06	102.55	1.38	
505	RAMP W-FR-2	PT	182+59.29		432830.715	995114.769									
506	RAMP W-FR-2	PC	183+33.66	S 77°49'38" E	432815.034	995187.464									
507	RAMP W-FR-2	PI	184+74.44		432785.348	995325.084	502	SIMPLE	4°13'18" Rt	1°30'00"	3819.72	281.44	140.79	2.59	
508	RAMP W-FR-2	PT	186+15.10		432745.611	995460.145									
509	RAMP W-FR-2	PC	189+82.91	S 73°36'20" E	432641.797	995813.002									
510	RAMP W-FR-2	PI	191+13.35		432604.981	995938.136	503	SIMPLE	2°36'30" Lt	1°00'00"	5729.58	260.83	130.44	1.48	e=0.020'/ft, Ls=50
511	RAMP W-FR-2	PT	192+43.74		432573.898	996064.815									
512	RAMP W-FR-2	PC	199+63.50	S 76°12'50" E	432402.381	996763.839									
513	RAMP W-FR-2	PI	200+95.84		432370.845	996892.366	504	SIMPLE	7°55'40" Lt	3°00'00"	1909.86	264.26	132.34	4.58	e=0.030'/ft, Ls=60
514	RAMP W-FR-2	PT	202+27.76	S 84°08'29" E	432357.337	997024.013									
600	RAMP E-FR	PC	10+00.00	S 73°36'20" E	432825.111	994474.462									
601	RAMP E-FR	PI	11+60.20		432779.895	994628.146	600	SIMPLE	4°00'12" Rt	1°15'00"	4583.66	320.26	160.20	2.80	NC
602	RAMP E-FR	PT	13+20.26	S 69°36'08" E	432724.061	994778.298									
603	RAMP E-FR	POE	18+83.99		432527.584	995306.674									
700	RAMP FR-E	POB	10+00.00		432330.164	995978.893									
701	RAMP FR-E	PC	12+19.40	S 73°36'20" E	432283.015	996193.164									
702	RAMP FR-E	PI	15+63.67		432209.031	996529.390	700	SIMPLE	10°18'01" Rt	1°30'00"	3819.72	686.68	344.27	15.48	NC
703	RAMP FR-E	PT	19+06.08	S 69°36'08" E	432076.120	996846.968									
800	PARK AVE RAMP A1	POE	5+06.02		432327.422	995990.079									
801	PARK AVE RAMP A1	PC	7+40.95	S 73°30'01" E	432260.698	996215.336									
802	PARK AVE RAMP A1	PI	8+71.85		432223.521	996340.847	800	SIMPLE	20°19'56" Rt	7°50'55"	730.00	259.05	130.90	11.64	e=0.038'/ft
803	PARK AVE RAMP A1	PT	10+00.00		432145.050	996445.620									Exit Ls=74
804	PARK AVE RAMP A1	PC	12+92.44	S 53°10'05" E	431969.741	996679.688									
805	PARK AVE RAMP A1	PI	15+05.63		431841.941	996850.324	801	SIMPLE	25°10'12" Lt	6°00'00"	954.93	419.50	213.19	23.51	e=0.042'/ft
806	PARK AVE RAMP A1	PT	17+11.94	S 78°20'17" E	431798.848	997059.111									Entrance Ls=81
807	PARK AVE RAMP A1	POE	19+55.96		431749.522	997298.094									
900	PARK AVE RAMP A2	POB	4+76.81		432327.422	995990.079									
901	PARK AVE RAMP A2	PC	7+12.39	S 73°30'01" E	432260.513	996215.962									
902	PARK AVE RAMP A2	PI	9+24.04		432200.403	996418.895	900	SIMPLE	32°20'13" Rt	7°50'55"	730.00	412.00	211.65	30.06	
903	PARK AVE RAMP A2	PT	11+24.39	S 41°09'48" E	432041.066	996558.204									

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APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT 1

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	SHEET C-01.18

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	19	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
					Northing	Easting									
904	PARK AVE RAMP A2	POE	12+28.23	S 41°09'48" E	431962.895	996626.549									
1000	PARK AVE RAMP B	PC	10+00.00	S 73°36'20" E	432680.363	995483.724									
1001	PARK AVE RAMP B	PI	11+75.08		432630.948	995651.682	1000	SIMPLE	2°06'02" Lt	0°36'00"	9549.30	350.11	175.08	1.60	NC
1002	PARK AVE RAMP B	PT	13+50.11		432587.723	995821.338									
1003	PARK AVE RAMP B	PC	20+92.53	S 75°42'22" E	432404.425	996540.772									
1004	PARK AVE RAMP B	PI	23+41.68		432342.911	996782.211	1001	SIMPLE	14°51'55" Lt	3°00'00"	1909.86	495.51	249.15	16.18	e=0.030'/ft, Ls=60
1005	PARK AVE RAMP B	PT	25+88.04	N 89°25'43" E	432345.395	997031.351									
1006	PARK AVE RAMP B	POE	28+47.95		432347.987	997291.249									
1100	PARK AVE RAMP C	POB	10+00.00		432347.987	997291.249									
1101	PARK AVE RAMP C	PC	12+02.34	N 89°25'43" E	432350.005	997493.574									
1102	PARK AVE RAMP C	PI	16+54.31		432354.513	997945.522	1100	SIMPLE	64°30'34" Rt	8°00'00"	716.20	806.37	451.97	130.69	e=0.030'/ft
1103	PARK AVE RAMP C	PT	20+08.70		431948.499	998144.091									Entrance Ls=60
1104	PARK AVE RAMP C	PC	23+07.89	S 26°03'43" E	431679.730	998275.538									Exit Ls=72
1105	PARK AVE RAMP C	PI	25+52.34		431460.140	998382.933	1101	SIMPLE	30°59'56" Lt	6°30'00"	881.47	476.91	244.45	33.27	e=0.060'/ft, Ls=150
1106	PARK AVE RAMP C	PT	27+84.80		431327.223	998588.085									
1107	PARK AVE RAMP C	PC	43+47.39	S 57°03'39" E	430477.569	999899.486									
1108	PARK AVE RAMP C	PI	44+72.89		430409.330	1000004.811	1102	SIMPLE	12°30'00" Lt	5°00'00"	1145.92	250.00	125.50	6.85	e=0.051'/ft, Ls=148
1109	PARK AVE RAMP C	PT	45+97.39		430365.505	1000122.408									
1110	PARK AVE RAMP C	PC	48+54.55	S 69°33'39" E	430275.701	1000363.379									
1111	PARK AVE RAMP C	PI	50+48.64		430207.924	1000545.245	1103	SIMPLE	26°15'00" Rt	6°53'00"	832.38	381.36	194.08	22.33	e=0.060'/ft, Ls=145
1112	PARK AVE RAMP C	PT	52+35.91		430066.700	1000678.378									
1113	PARK AVE RAMP C	PC	54+38.67	S 43°18'39" E	429919.160	1000817.465									
1114	PARK AVE RAMP C	PI	55+09.67		429867.500	1000866.165	1104	SIMPLE	9°45'01" Lt	6°53'00"	832.38	141.65	71.00	3.02	e=0.060'/ft
1115	PARK AVE RAMP C	PT	55+80.32	S 53°03'39" E	429824.834	1000922.910									Entrance Ls=145
1116	PARK AVE RAMP C	POE	65+36.16		429250.409	1001686.886									Exit Ls=150
1200	PARK AVE RAMP D	POB	10+00.00		431765.439	997297.912									
1201	PARK AVE RAMP D	PC	11+66.24	S 65°13'47" E	431695.786	997448.860									
1202	PARK AVE RAMP D	PI	15+75.38		431524.366	997820.351	1200	SIMPLE	8°10'08" Rt	1°00'00"	5729.58	816.88	409.13	14.59	NC
1203	PARK AVE RAMP D	PT	19+83.12	S 57°03'39" E	431301.901	998163.716									
1204	PARK AVE RAMP D	POE	28+56.58		430826.960	998896.767									
1400	KINO PKWY RAMP A	PC	10+00.00	S 57°03'39" E	431445.002	998038.480									
1401	KINO PKWY RAMP A	PI	12+34.72		431317.374	998235.467	1400	SIMPLE	3°33'18" Rt	0°45'27"	7563.44	469.29	234.72	3.64	NC
1402	KINO PKWY RAMP A	PT	14+69.29		431177.778	998424.161									
1403	KINO PKWY RAMP A	PC	17+01.85	S 53°30'21" E	431039.463	998611.124									
1404	KINO PKWY RAMP A	PI	18+79.66		430933.714	998754.067	1401	SIMPLE	3°33'18" Lt	1°00'00"	5729.58	355.50	177.81	2.76	e=0.020'/ft, Ls=50
1405	KINO PKWY RAMP A	PT	20+57.35		430837.031	998903.292									
1406	KINO PKWY RAMP A	PC	29+36.23	S 57°03'39" E	430359.145	999640.887									
1407	KINO PKWY RAMP A	PI	32+21.03		430204.283	999879.910	1402	SIMPLE	33°14'49" Rt	6°00'23"	953.93	553.54	284.81	41.61	e=0.055'/ft, Ls=126
1408	KINO PKWY RAMP A	PT	34+89.76		429943.725	999994.905									
1409	KINO PKWY RAMP A	PC	40+62.15	S 23°48'50" E	429420.075	1000226.013									
1410	KINO PKWY RAMP A	PI	44+13.32		429098.795	1000367.808	1403	SIMPLE	61°43'30" Lt	9°45'00"	587.65	633.08	351.18	96.94	e=0.052'/ft, Ls=101
1411	KINO PKWY RAMP A	PT	46+95.22	S 85°32'20" E	429071.480	1000717.922									
1412	KINO PKWY RAMP A	POE	49+40.55		429052.398	1000962.505									
1500	KINO PKWY RAMP B	POB	9+29.67		430651.143	999550.663									

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APPENDIX G

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DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT 1

PRELIMINARY
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CONSTRUCTION
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ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-01.19

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltI_gl9.dgn

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	20	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
1501	KINO PKWY RAMP B	PC	10+00.00	S 57°03'39" E	430612.899	999609.691									
1502	KINO PKWY RAMP B	PI	12+21.97		430492.205	999795.978	1500	SIMPLE	4°26'14" Lt	1°00'00"	5729.58	443.71	221.97	4.30	NC
1503	KINO PKWY RAMP B	PT	14+43.72		430386.284	999991.044									
1504	KINO PKWY RAMP B	PC	17+27.52	S 61°29'53" E	430250.857	1000240.449									
1505	KINO PKWY RAMP B	PI	20+34.77		430104.241	1000510.460	1501	SIMPLE	24°12'47" Lt	4°00'00"	1432.40	605.33	307.25	32.58	e=0.050'/ft
1506	KINO PKWY RAMP B	PT	23+32.85	S 85°42'40" E	430081.263	1000816.849									Entrance Ls=125
1507	KINO PKWY RAMP B	POE	24+67.48		430071.194	1000951.106									Exit Ls=100
1600	KINO PKWY RAMP C	POB	10+00.00		430066.519	1000951.164									
1601	KINO PKWY RAMP C	PC	11+08.52	S 75°42'40" E	430039.736	1001056.325									
1602	KINO PKWY RAMP C	PI	12+03.08		430016.398	1001147.957	1600	SIMPLE	34°59'19" Rt	19°05'55"	300.00	183.20	94.56	14.55	e=0.050'/ft, Ls=86
1603	KINO PKWY RAMP C	PT	12+91.72		429944.735	1001209.646									
1604	KINO PKWY RAMP C	PC	20+05.66	S 40°43'21" E	429403.655	1001675.417									
1605	KINO PKWY RAMP C	PI	21+75.49		429274.947	1001786.212									
1606	KINO PKWY RAMP C	PCC	23+44.42	S 50°53'07" E	429167.807	1001917.978									
1607	KINO PKWY RAMP C	PI	27+56.52		428907.823	1002237.722	1601	SIMPLE	6°10'32" Lt	0°45'00"	7639.44	823.41	412.10	11.11	e=0.044'/ft, Ls=110
1608	KINO PKWY RAMP C	PT	31+67.83	S 57°03'39" E	428683.743	1002583.579									
1700	KINO PKWY RAMP D1	POB	10+00.00		429040.364	1000963.900									
1701	KINO PKWY RAMP D1	PC	11+07.97	N 89°27'40" E	429041.380	1001071.868									
1702	KINO PKWY RAMP D1	PI	16+40.39		429046.387	1001604.267	1700	SIMPLE	31°09'16" Rt	3°00'00"	1909.86	1038.48	532.42	72.82	e=0.044'/ft, Ls=110
1703	KINO PKWY RAMP D1	PT	21+46.45	S 59°23'04" E	428775.239	1002062.472									
1704	KINO PKWY RAMP D1	POE	26+14.96		428536.642	1002465.669									
1800	KINO PKWY RAMP D2	POB	10+00.00		429475.485	1000906.496									Entrance Ls=95
1801	KINO PKWY RAMP D2	PC	10+78.81	S 3°06'11" W	429396.788	1000902.230									Exit Ls=111
1802	KINO PKWY RAMP D2	PCC	22+65.78		429610.807	1000783.337	1800	SIMPLE	295°41'15" Rt	24°54'40"	230.00	1186.97	-1.00	-1.00	e=0.054'/ft
1803	KINO PKWY RAMP D2	PI	23+15.78	S 61°12'34" E	429586.726	1000827.157	1801	SIMPLE	1°00'00" Rt	1°00'00"	5729.58	100.00	50.00	0.22	NC
1804	KINO PKWY RAMP D2	PT	23+65.78		429561.884	1000870.551									
1900	COUNTRY CLUB RD RAMP A	PC	10+00.00	S 57°03'39" E	427011.687	1004884.781									
1901	COUNTRY CLUB RD RAMP A	PI	13+60.45		426815.696	1005187.285	1900	SIMPLE	5°24'10" Rt	0°45'00"	7639.44	720.36	360.45	8.50	NC
1902	COUNTRY CLUB RD RAMP A	PCC	17+20.36	S 51°39'30" E	426592.093	1005469.991									
1903	COUNTRY CLUB RD RAMP A	PI	20+62.40		426379.905	1005738.265	1901	SIMPLE	10°14'02" Rt	1°30'00"	3819.72	682.27	342.04	15.28	e=0.044'/ft
1904	COUNTRY CLUB RD RAMP A	PT	24+02.63		426123.430	1005964.571									Entrance Ls=202
1905	COUNTRY CLUB RD RAMP A	PC	26+27.67	S 41°25'27" E	425954.682	1006113.469									Exit Ls=137
1906	COUNTRY CLUB RD RAMP A	PI	28+49.59		425788.284	1006260.293	1902	SIMPLE	34°25'52" Lt	8°00'00"	716.20	430.39	221.91	33.59	e=0.041'/ft
1907	COUNTRY CLUB RD RAMP A	PT	30+58.06	S 75°51'19" E	425734.055	1006475.479									Entrance Ls=128
1908	COUNTRY CLUB RD RAMP A	POE	31+95.65		425700.433	1006608.895									Exit Ls=119
2000	COUNTRY CLUB RD RAMP B	PC	10+00.00	S 57°03'39" E	427006.358	1005172.547									
2001	COUNTRY CLUB RD RAMP B	PI	13+14.88		426835.145	1005436.808	2000	SIMPLE	4°43'14" Lt	0°45'00"	7639.44	629.40	314.88	6.49	NC
2002	COUNTRY CLUB RD RAMP B	PT	16+29.40		426686.259	1005714.263									
2003	COUNTRY CLUB RD RAMP B	PC	21+01.34	S 61°46'53" E	426463.108	1006130.113									
2004	COUNTRY CLUB RD RAMP B	PI	22+78.15		426379.504	1006285.912	2001	SIMPLE	14°04'26" Lt	4°00'00"	1432.40	351.85	176.81	10.87	e=0.028'/ft
2005	COUNTRY CLUB RD RAMP B	PT	24+53.19	S 75°51'19" E	426336.296	1006457.365									Entrance Ls=245
2006	COUNTRY CLUB RD RAMP B	POE	26+00.22		426300.366	1006599.939									Exit Ls=52
2100	COUNTRY CLUB RD RAMP C	POB	10+00.00		426287.944	1006600.124									

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.20

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	21	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
					Northing	Easting									
2101	COUNTRY CLUB RD RAMP C	PC	11+26.22	S 75°51'19" E	426257.100	1006722.515									
2102	COUNTRY CLUB RD RAMP C	PI	13+50.98		426202.173	1006940.468	2100	SIMPLE	34°50'50" Rt	8°00'00"	716.20	435.59	224.77	34.44	e=0.041⅟ft
2103	COUNTRY CLUB RD RAMP C	PT	15+61.81		426032.560	1007087.952									Entrance Ls=112
2104	COUNTRY CLUB RD RAMP C	PC	17+72.74	S 41°00'29" E	425873.388	1007226.358									Exit Ls=108
2105	COUNTRY CLUB RD RAMP C	PI	21+28.77		425604.724	1007459.972	2101	SIMPLE	10°39'00" Lt	1°30'00"	3819.72	710.00	356.03	16.56	e=0.028⅟ft, Ls=70
2106	COUNTRY CLUB RD RAMP C	PCC	24+82.74	S 51°39'30" E	425383.862	1007739.213									
2107	COUNTRY CLUB RD RAMP C	PI	28+43.19		425160.259	1008021.920	2102	SIMPLE	5°24'10" Lt	0°45'00"	7639.44	720.36	360.45	8.50	NC
2108	COUNTRY CLUB RD RAMP C	PT	32+03.10	S 57°03'39" E	424964.267	1008324.424									
2200	COUNTRY CLUB RD RAMP D	POB	10+00.00		425688.011	1006609.080									
2201	COUNTRY CLUB RD RAMP D	PC	11+05.72	S 75°51'19" E	425662.176	1006711.595									
2202	COUNTRY CLUB RD RAMP D	PI	12+82.38		425619.005	1006882.897	2200	SIMPLE	14°03'42" Rt	4°00'00"	1432.40	351.54	176.66	10.85	e=0.028⅟ft
2203	COUNTRY CLUB RD RAMP D	PT	14+57.26		425535.509	1007038.576									Entrance Ls=53
2204	COUNTRY CLUB RD RAMP D	PC	19+62.83	S 61°47'37" E	425296.551	1007484.112									Exit Ls=70
2205	COUNTRY CLUB RD RAMP D	PI	22+78.53		425147.338	1007762.321	2201	SIMPLE	4°43'58" Rt	0°45'00"	7639.44	631.04	315.70	6.52	NC
2206	COUNTRY CLUB RD RAMP D	PT	25+93.87	S 57°03'39" E	424975.678	1008027.270									
2300	ALVERNON WAY RAMP A	PC	10+00.00	S 57°03'39" E	423642.075	1010085.626									
2301	ALVERNON WAY RAMP A	PI	13+74.19		423438.611	1010399.664	2300	SIMPLE	7°28'23" Rt	1°00'00"	5729.58	747.32	374.19	12.21	NC
2302	ALVERNON WAY RAMP A	PCC	17+47.32	S 49°35'16" E	423196.031	1010684.571									
2303	ALVERNON WAY RAMP A	PI	20+19.89		423019.329	1010892.105	2301	SIMPLE	16°14'40" Rt	3°00'00"	1909.86	541.48	272.57	19.35	e=0.044⅟ft, Ls=110
2304	ALVERNON WAY RAMP A	PT	22+88.80		422791.628	1011041.924									
2305	ALVERNON WAY RAMP A	PC	26+11.41	S 33°20'36" E	422522.116	1011219.252									
2306	ALVERNON WAY RAMP A	PI	29+76.92		422216.776	1011420.153	2302	SIMPLE	41°53'21" Lt	6°00'00"	954.93	698.15	365.50	67.56	e=0.042⅟ft
2307	ALVERNON WAY RAMP A	PT	33+09.57	S 75°13'57" E	422123.610	1011773.584									Entrance Ls=102
2308	ALVERNON WAY RAMP A	POE	34+59.82		422085.313	1011918.868									Exit Ls=125
2400	ALVERNON WAY RAMP B	PC	10+00.00	S 57°03'39" E	423779.778	1010152.629									
2401	ALVERNON WAY RAMP B	PI	13+60.14		423583.953	1010454.876	2400	SIMPLE	7°11'36" Lt	1°00'00"	5729.58	719.33	360.14	11.31	NC
2402	ALVERNON WAY RAMP B	PT	17+19.33	S 64°15'15" E	423427.516	1010779.266									
2403	ALVERNON WAY RAMP B	PC	24+61.15		423105.289	1011447.439									
2404	ALVERNON WAY RAMP B	PI	26+44.67		423025.570	1011612.744	2401	SIMPLE	10°58'42" Lt	3°00'01"	1909.76	365.92	183.52	8.80	e=0.028⅟ft
2405	ALVERNON WAY RAMP B	PT	28+27.07	S 75°13'57" E	422978.791	1011790.205									Entrance Ls=70
2406	ALVERNON WAY RAMP B	POE	29+56.52		422945.795	1011915.376									Exit Ls=105
2500	ALVERNON WAY RAMP C	POB	10+00.00		422933.372	1011915.427									
2501	ALVERNON WAY RAMP C	PC	11+12.03	S 75°13'57" E	422904.815	1012023.761									
2502	ALVERNON WAY RAMP C	PI	13+15.33		422852.997	1012220.336	2500	SIMPLE	39°04'13" Rt	10°00'00"	572.96	390.70	203.29	35.00	e=0.036⅟ft
2503	ALVERNON WAY RAMP C	PT	15+02.74		422688.870	1012340.293									Entrance Ls=105
2504	ALVERNON WAY RAMP C	PC	16+90.66	S 36°09'44" E	422537.152	1012451.181									Exit Ls=131
2505	ALVERNON WAY RAMP C	PI	19+78.10		422305.088	1012620.791	2501	SIMPLE	17°07'04" Lt	3°00'00"	1909.86	570.60	287.44	21.51	e=0.044⅟ft, Ent Ls=160
2506	ALVERNON WAY RAMP C	PCC	22+61.26	S 53°16'49" E	422133.227	1012851.193									Exit Ls=110
2507	ALVERNON WAY RAMP C	PI	24+50.36		422020.160	1013002.776	2502	SIMPLE	3°46'51" Lt	1°00'00"	5729.58	378.08	189.11	3.12	NC
2508	ALVERNON WAY RAMP C	PT	26+39.33	S 57°03'39" E	421917.333	1013161.484									
2509	ALVERNON WAY RAMP C	POE	37+03.22		421338.847	1014054.350									
2600	ALVERNON WAY RAMP D	POB	10+00.00		422072.890	1011918.919									Entrance Ls=70
2601	ALVERNON WAY RAMP D	PC	11+76.59	S 75°13'57" E	422027.879	1012089.672									Exit Ls=93
2602	ALVERNON WAY RAMP D	PI	13+64.17		421980.064	1012271.060	2600	SIMPLE	7°29'34" Rt	2°00'00"	2864.79	374.64	187.59	6.13	e=0.035⅟ft

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APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC DATA SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.21

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	22	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
					Northing	Easting									
2603	ALVERNON WAY RAMP D	PT	15+51.22	S 67°44'23" E	421909.004	1012444.665									
2604	ALVERNON WAY RAMP D	PC	17+43.09		421836.323	1012622.231									
2605	ALVERNON WAY RAMP D	PI	22+19.08		421656.009	1013062.753	2601	SIMPLE	10°40'44" Rt	1°07'30"	5092.96	949.24	476.00	22.20	NC
2606	ALVERNON WAY RAMP D	PT	26+92.32	S 57°03'39" E	421397.188	1013462.233									
2700	RAMP WN	PC	25+50.22	S 1°22'42" E	424322.166	1011970.792									
2701	RAMP WN	PI	27+75.37		424097.080	1011976.208	2700	SIMPLE	6°44'48" Lt	1°30'00"	3819.72	449.78	225.15	6.63	NC
2702	RAMP WN	PT	30+00.00		423874.188	1012008.029									
2703	RAMP WN	PC	38+56.72	S 8°07'30" E	423026.073	1012129.113									
2704	RAMP WN	PI	43+78.17		422509.856	1012202.812	2701	SIMPLE	48°56'09" Lt	5°00'00"	1145.92	978.72	521.45	113.07	e=0.056'/ft
2705	RAMP WN	PT	48+35.44		422226.319	1012640.440									Entrance Ls=140
2706	RAMP WN	PC	65+04.62	S 57°03'39" E	421318.705	1014041.301									Exit Ls=280
2707	RAMP WN	PI	70+02.94		421047.749	1014459.510	2702	SIMPLE	7°27'51" Rt	0°45'00"	7639.44	995.22	498.31	16.24	e=0.023'/ft, Ls=54
2708	RAMP WN	PT	74+99.84	S 49°35'48" E	420724.760	1014838.977									
2709	RAMP WN	POE	78+81.99		420477.062	1015129.989									
2800	RAMP SW	PC	3+57.28	S 0°46'03" W	424431.621	1011836.345									
2801	RAMP SW	PI	6+55.56		424133.371	1011832.350	2800	SIMPLE	11°59'17" Rt	2°01'01"	2840.79	594.38	298.28	15.62	e=0.028'/ft
2802	RAMP SW	PCC	9+51.66	S 12°45'20" W	423842.455	1011766.494									
2803	RAMP SW	PI	17+25.08		423088.114	1011595.729	2801	SIMPLE	100°33'35" Rt	8°55'00"	642.57	1127.77	773.43	362.96	e=0.060'/ft, Ent Ls=141
2804	RAMP SW	PCC	20+79.43	N 66°41'05" W	423394.229	1010885.458									Exit Ls=135
2805	RAMP SW	PI	22+12.71		423446.979	1010763.064	2802	SIMPLE	3°59'48" Rt	1°30'00"	3819.72	266.45	133.28	2.32	NC
2806	RAMP SW	PCC	23+45.88	N 62°41'17" W	423508.132	1010644.644									
2807	RAMP SW	PI	26+27.87		423637.061	1010394.976	2804	SIMPLE	5°37'38" Rt	1°00'08"	5717.58	561.53	280.99	6.90	NC
2808	RAMP SW	PT	29+07.41	N 57°03'39" W	423789.849	1010159.154									
2900	RAMP EN	POB	40+00.00		424015.964	1009508.545									
2901	RAMP EN	PC	52+13.34	S 53°03'39" E	423286.790	1010478.335									
2902	RAMP EN	PI	53+12.01		423227.489	1010557.205	2900	SIMPLE	1°12'06" Lt	0°36'32"	9410.00	197.35	98.68	0.52	NC
2903	RAMP EN	PT	54+10.68		423169.854	1010637.301									
2904	RAMP EN	PC	59+83.10	S 54°15'45" E	422835.522	1011101.932									
2905	RAMP EN	PI	72+67.97		422085.066	1012144.863	2901	SIMPLE	130°50'42" Lt	9°45'00"	587.65	1342.00	1284.87	825.23	e=0.058'/ft, Ls=119
2906	RAMP EN	PT	73+25.10		423364.834	1012030.477									
2907	RAMP EN	PC	79+60.33	N 5°06'27" W	423997.537	1011973.926									
2908	RAMP EN	PI	81+22.92		424159.489	1011959.451	2902	SIMPLE	4°52'30" Rt	1°30'00"	3819.72	325.00	162.60	3.46	NC
2909	RAMP EN	PT	82+85.33	N 0°13'57" W	424322.086	1011958.791									
2910	RAMP EN	POE	85+69.51		424606.265	1011957.638									
3000	RAMP SE	POB	8+25.85		424605.867	1011859.638									
3001	RAMP SE	PC	10+00.00	S 0°13'57" E	424431.719	1011860.345									
3002	RAMP SE	PI	14+02.62		424029.102	1011861.979	3000	SIMPLE	16°00'00" Rt	2°00'00"	2864.80	800.00	402.62	28.15	e=0.035'/ft, Ls=93
3003	RAMP SE	PT	18+00.00		423641.631	1011752.574									
3004	RAMP SE	PC	20+65.80	S 15°46'03" W	423385.833	1011680.347									
3005	RAMP SE	PI	30+41.54		422446.808	1011415.205	3001	SIMPLE	80°49'42" Lt	5°00'00"	1145.92	1616.57	975.74	359.14	e=0.056'/ft, Ls=147
3006	RAMP SE	PT	36+82.37		422035.382	1012299.964									
3007	RAMP SE	PC	41+46.65	S 65°03'39" E	421839.615	1012720.957									
3008	RAMP SE	PI	45+47.30		421670.679	1013084.250	3002	SIMPLE	8°00'00" Rt	1°00'00"	5729.58	800.00	400.65	13.99	NC
3009	RAMP SE	PT	49+46.65	S 57°03'39" E	421452.826	1013420.496									
3010	RAMP SE	POE	51+65.52		421333.818	1013604.180									

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APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT 1

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L 010-E(210)S

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

SHEET C-01.22

___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	23	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
					Northing	Easting									
3100	VALENCIA RD RAMP A	PC	10+00.00	S 24°12'24" E	416329.656	1017618.607									
3101	VALENCIA RD RAMP A	PI	17+31.90		415662.114	1017918.708	3100	SIMPLE	9°44'06" Rt	0°40'00"	8594.37	1460.27	731.90	31.11	NC
3102	VALENCIA RD RAMP A	PT	24+60.27	S 14°28'18" E	414953.440	1018101.609									
3103	VALENCIA RD RAMP A	POE	32+49.38		414189.364	1018298.810									
3200	VALENCIA RD RAMP B	PC	10+00.00	S 24°12'24" E	416041.959	1017967.225									
3201	VALENCIA RD RAMP B	PI	14+53.59		415628.253	1018153.211	3200	SIMPLE	6°56'47" Lt	0°46'00"	7473.36	906.07	453.59	13.75	NC
3202	VALENCIA RD RAMP B	PCC	19+06.07	S 31°09'12" E	415240.078	1018387.866									
3203	VALENCIA RD RAMP B	PI	20+61.23		415107.292	1018468.136	3201	SIMPLE	15°25'21" Lt	5°00'00"	1145.92	308.45	155.16	10.46	e=0.056⅓ft, Ls=147
3204	VALENCIA RD RAMP B	PT	22+14.52		415000.634	1018580.828									
3205	VALENCIA RD RAMP B	PC	24+02.71	S 46°34'33" E	414871.270	1018717.511									
3206	VALENCIA RD RAMP B	PI	27+23.19		414650.974	1018950.271	3202	SIMPLE	37°06'15" Rt	6°00'00"	954.93	618.40	320.48	52.34	e=0.043⅓ft, Ls=83
3207	VALENCIA RD RAMP B	PT	30+21.11	S 9°28'18" E	414334.863	1019003.009									
3208	VALENCIA RD RAMP B	POE	31+75.44		414182.637	1019028.406									
3300	VALENCIA RD RAMP C	POB	10+00.00		414182.749	1019016.221									
3301	VALENCIA RD RAMP C	PC	12+28.87	S 9°28'18" E	413956.997	1019053.884									
3302	VALENCIA RD RAMP C	PI	13+85.01		413802.992	1019079.577	3300	SIMPLE	34°41'02" Lt	11°27'33"	500.00	302.67	156.13	23.81	e=0.060⅓ft, Ls=186
3303	VALENCIA RD RAMP C	PT	15+31.55		413690.973	1019188.342									
3304	VALENCIA RD RAMP C	PC	20+54.70	S 44°09'20" E	413315.637	1019552.773									
3305	VALENCIA RD RAMP C	PI	23+05.60		413135.629	1019727.551	3301	SIMPLE	10°00'38" Lt	2°00'00"	2864.79	500.52	250.90	10.97	e=0.046⅓ft, Ls=128
3306	VALENCIA RD RAMP C	PT	25+55.22	S 54°09'57" E	412988.743	1019930.959									
3400	VALENCIA RD RAMP D	POB	10+00.00		414189.479	1018286.387									
3401	VALENCIA RD RAMP D	PC	11+85.45	S 14°28'18" E	414009.917	1018332.730									
3402	VALENCIA RD RAMP D	PI	13+29.83		413870.118	1018368.811	3400	SIMPLE	39°41'39" Lt	14°19'26"	400.00	277.12	144.38	25.26	e=0.052⅓ft, Ls=95
3403	VALENCIA RD RAMP D	PT	14+62.56	S 54°09'57" E	413785.592	1018485.862									
3404	VALENCIA RD RAMP D	POE	28+15.32		412993.633	1019582.563									
3500	CRAYCROFT RD RAMP A	POB	10+00.00	S 50°09'57" E	413489.985	1018895.217									
3501	CRAYCROFT RD RAMP A	PI	14+30.07		413214.498	1019225.467									
3502	CRAYCROFT RD RAMP A	PI	23+55.98	S 54°09'57" E	412672.434	1019976.115									
3503	CRAYCROFT RD RAMP A	PI	29+56.10	S 55°18'42" E	412330.899	1020469.569									
3504	CRAYCROFT RD RAMP A	PC	39+65.04	S 54°09'57" E	411740.219	1021287.540									
3505	CRAYCROFT RD RAMP A	PI	40+85.70		411669.583	1021385.357	3500	SIMPLE	2°07'37" Rt	0°52'53"	6500.00	241.28	120.65	1.12	NC
3506	CRAYCROFT RD RAMP A	PT	42+06.33	S 52°02'21" E	411595.365	1021480.485									
3507	CRAYCROFT RD RAMP A	POE	55+97.36		410739.705	1022577.220									
3600	CRAYCROFT RD RAMP B	PC	10+00.00	S 44°09'20" E	413579.051	1019313.737									
3601	CRAYCROFT RD RAMP B	PI	15+01.80		413219.035	1019663.294	3600	SIMPLE	10°00'38" Lt	1°00'00"	5729.58	1001.04	501.80	21.93	NC
3602	CRAYCROFT RD RAMP B	PT	20+01.04	S 54°09'57" E	412925.262	1020070.110									
3603	CRAYCROFT RD RAMP B	PI	33+51.43		412134.693	1021164.887									
3604	CRAYCROFT RD RAMP B	PI	36+51.67	S 51°52'31" E	411949.332	1021401.077									
3605	CRAYCROFT RD RAMP B	PC	41+07.17	S 54°09'57" E	411682.659	1021770.364									
3606	CRAYCROFT RD RAMP B	PI	43+86.95		411518.869	1021997.180	3601	SIMPLE	5°35'28" Lt	1°00'00"	5729.58	559.10	279.77	6.83	NC
3607	CRAYCROFT RD RAMP B	PT	46+66.28	S 59°45'25" E	411377.956	1022238.875									
3608	CRAYCROFT RD RAMP B	POE	50+58.83		411180.237	1022578.004									

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC DATA SHEET
SYSTEM ALT I

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-01.23

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	24	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
					Northing	Easting									
3700	CRAYCROFT RD RAMP C	POB	10+00.00		411180.237	1022578.004									
3701	CRAYCROFT RD RAMP C	PC	25+14.37	S 51°23'16" E	410235.197	1023761.313									
3702	CRAYCROFT RD RAMP C	PI	27+22.78		410105.141	1023924.159	3700	SIMPLE	2°46'42" Lt	0°40'00"	8594.37	416.73	208.41	2.53	NC
3703	CRAYCROFT RD RAMP C	PT	29+31.10	S 54°09'57" E	409983.131	1024093.118									
3800	CRAYCROFT RD RAMP D	POB	10+00.00		410723.307	1022577.191									
3801	CRAYCROFT RD RAMP D	PC	20+67.86	S 57°58'25" E	410157.013	1023482.524									
3802	CRAYCROFT RD RAMP D	PI	23+16.28		410025.272	1023693.138	3800	SIMPLE	3°48'28" Rt	0°46'00"	7473.36	496.66	248.42	4.13	NC
3803	CRAYCROFT RD RAMP D	PT	25+64.52	S 54°09'57" E	409879.835	1023894.539									
3900	WILMOT RD RAMP A	PC	10+00.00	S 54°09'57" E	408228.960	1026180.664									
3901	WILMOT RD RAMP A	PI	15+02.71		407934.655	1026588.217	3900	SIMPLE	5°01'26" Rt	0°30'00"	11459.16	1004.77	502.71	11.02	NC
3902	WILMOT RD RAMP A	PCC	20+04.77	S 49°08'31" E	407605.790	1026968.432									
3903	WILMOT RD RAMP A	PI	22+42.88		407450.021	1027148.524	3901	SIMPLE	14°12'48" Rt	3°00'00"	1909.86	473.78	238.11	14.79	e=0.044'/ft, Ls=106
3904	WILMOT RD RAMP A	PT	24+78.55		407254.802	1027284.856									
3905	WILMOT RD RAMP A	PC	26+97.69	S 34°55'43" E	407075.140	1027410.324									
3906	WILMOT RD RAMP A	PI	29+64.11		406856.705	1027562.869	3902	SIMPLE	40°48'38" Lt	8°00'00"	716.20	510.13	266.43	47.95	e=0.048'/ft, Ls=144
3907	WILMOT RD RAMP A	PT	32+07.82	S 75°44'21" E	406791.074	1027821.086									
3908	WILMOT RD RAMP A	POE	33+40.32		406758.434	1027949.507									
4000	WILMOT RD RAMP B	PC	10+00.00	S 54°09'57" E	408200.835	1026561.234									
4001	WILMOT RD RAMP B	PI	13+15.12		408016.352	1026816.706	4000	SIMPLE	4°43'27" Lt	0°45'00"	7639.44	629.88	315.12	6.50	NC
4002	WILMOT RD RAMP B	PT	16+29.88	S 58°53'24" E	407853.536	1027086.503									
4003	WILMOT RD RAMP B	PC	18+03.70		407763.726	1027235.323									
4004	WILMOT RD RAMP B	PI	19+21.87		407702.670	1027336.497	4001	SIMPLE	4°43'27" Rt	2°00'00"	2864.79	236.20	118.17	2.44	e=0.035'/ft, Ls=84
4005	WILMOT RD RAMP B	PT	20+39.90	S 54°09'57" E	407633.489	1027432.299									
4006	WILMOT RD RAMP B	PC	23+57.67		407447.456	1027689.917									
4007	WILMOT RD RAMP B	PI	24+33.88		407402.841	1027751.700	4002	SIMPLE	21°34'24" Lt	14°19'26"	400.00	150.61	76.21	7.19	e=0.060'/ft, Ls=109
4008	WILMOT RD RAMP B	PT	25+08.28	S 75°44'21" E	407384.069	1027825.559									
4009	WILMOT RD RAMP B	POE	26+30.12		407354.054	1027943.647									
4100	WILMOT RD RAMP C	POB	10+00.00		407354.054	1027943.647									
4101	WILMOT RD RAMP C	PC	11+07.70	S 75°44'21" E	407327.525	1028048.025									
4102	WILMOT RD RAMP C	PI	12+94.82		407281.430	1028229.383	4100	SIMPLE	34°38'34" Rt	9°32'57"	600.00	362.78	187.12	28.50	e=0.051'/ft, Ls=150
4103	WILMOT RD RAMP C	PT	14+70.47		407140.412	1028352.386									
4104	WILMOT RD RAMP C	PC	19+13.20	S 41°05'47" E	406806.776	1028643.399									
4105	WILMOT RD RAMP C	PI	20+44.53		406707.801	1028729.730	4101	SIMPLE	7°52'04" Lt	3°00'00"	1909.86	262.26	131.34	4.51	e=0.050'/ft, Ls=128
4106	WILMOT RD RAMP C	PCC	21+75.45	S 48°57'51" E	406621.575	1028828.796									
4107	WILMOT RD RAMP C	PI	26+95.98		406279.836	1029221.426	4102	SIMPLE	5°12'06" Lt	0°30'00"	11459.16	1040.33	520.52	11.82	NC
4108	WILMOT RD RAMP C	PT	32+15.78	S 54°09'57" E	405975.102	1029643.422									
4200	WILMOT RD RAMP D	POB	10+00.00		406758.434	1027949.507									
4201	WILMOT RD RAMP D	PC	10+60.09	S 75°44'21" E	406743.632	1028007.743									
4202	WILMOT RD RAMP D	PI	11+76.86		406714.867	1028120.916	4200	SIMPLE	13°56'36" Rt	6°00'00"	954.93	232.39	116.77	7.11	e=0.043'/ft, Ls=83
4203	WILMOT RD RAMP D	PCC	12+92.48	S 61°47'45" E	406659.679	1028223.824									
4204	WILMOT RD RAMP D	PI	18+65.57		406388.827	1028728.874	4201	SIMPLE	7°37'48" Rt	0°40'00"	8594.37	1144.49	573.09	19.09	NC
4205	WILMOT RD RAMP D	PT	24+36.97	S 54°09'57" E	406053.314	1029193.490									
4300	KOLB RD RAMP A	PC	10+00.00	S 54°09'57" E	404636.760	1031175.627									

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APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC DATA SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	SHEET C-01.24

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	25	32	
		010 PM 260			

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

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
4301	KOLB RD RAMP A	PI	14+38.90	S 54°09'57" E	404379.807	1031531.454	4300	SIMPLE	5°50'49" Rt	0°40'00"	8594.37	877.05	438.90	11.20	NC
4302	KOLB RD RAMP A	PCC	18+77.05	S 48°19'08" E	404087.943	1031859.253									
4303	KOLB RD RAMP A	PI	22+56.06		403835.903	1032142.324	4301	SIMPLE	22°26'57" Rt	3°00'00"	1909.86	748.31	379.02	37.25	e=0.050'/ft, Ls=128
4304	KOLB RD RAMP A	PT	26+25.36		403494.868	1032307.698									
4305	KOLB RD RAMP A	PC	29+38.53	S 25°52'11" E	403213.079	1032444.343									
4306	KOLB RD RAMP A	PI	32+47.38		402935.183	1032579.101	4302	SIMPLE	35°50'41" Lt	6°00'00"	954.93	597.41	308.85	48.70	e=0.043'/ft, Ls=125
4307	KOLB RD RAMP A	PT	35+35.94		402788.831	1032851.069									
4308	KOLB RD RAMP A	PC	37+82.12	S 61°42'52" E	402672.175	1033067.852									
4309	KOLB RD RAMP A	PI	39+00.64		402616.012	1033172.222	4303	SIMPLE	61°18'10" Rt	28°38'52"	200.00	213.99	118.52	32.48	NC
4310	KOLB RD RAMP A	PT	39+96.11	S 0°24'41" E	402497.493	1033173.073									
4311	KOLB RD RAMP A	POE	40+85.93		402407.671	1033173.718									
4350	KOLB RD RAMP A1	PC	10+00.00	S 61°42'52" E	402743.769	1032960.132									
4351	KOLB RD RAMP A1	PI	12+96.72		402603.162	1033221.424	4350	SIMPLE	118°56'15" Lt	32°44'26"	175.00	363.27	296.72	169.48	NC
4352	KOLB RD RAMP A1	PT	13+63.27	N 0°39'07" W	402899.864	1033218.048									
4400	KOLB RD RAMP B	PC	10+00.00	S 54°09'57" E	404749.852	1031319.646									
4401	KOLB RD RAMP B	PI	15+60.36		404421.792	1031773.942	4400	SIMPLE	8°34'34" Lt	0°46'00"	7473.36	1118.64	560.36	20.98	NC
4402	KOLB RD RAMP B	PCC	21+18.64	S 62°44'32" E	404165.147	1032272.080									
4403	KOLB RD RAMP B	PI	23+52.95		404057.834	1032480.371	4401	SIMPLE	9°21'06" Lt	2°00'00"	2864.79	467.58	234.31	9.57	e=0.035'/ft, Ls=126
4404	KOLB RD RAMP B	PT	25+86.22		403985.793	1032703.332									
4405	KOLB RD RAMP B	PC	27+74.04	S 72°05'37" E	403928.044	1032882.056									
4406	KOLB RD RAMP B	PI	29+89.58		403861.773	1033087.160	4402	SIMPLE	46°38'27" Rt	11°27'33"	500.00	407.02	215.55	44.48	e=0.020'/ft, Ls=55
4407	KOLB RD RAMP B	PCC	31+81.06	S 25°27'10" E	403667.148	1033179.795									
4408	KOLB RD RAMP B	PI	32+22.03		403630.154	1033197.403	4403	SIMPLE	24°35'19" Rt	30°28'35"	188.00	80.68	40.97	4.41	e=0.020'/ft
4409	KOLB RD RAMP B	PT	32+61.74	S 0°51'51" E	403589.188	1033198.021									
4450	KOLB RD RAMP B1	POB	10+00.00		403950.882	1032889.435									
4451	KOLB RD RAMP B1	PC	10+31.72	S 72°05'37" E	403941.130	1032919.615									
4452	KOLB RD RAMP B1	PI	12+28.96		403880.487	1033107.301	4450	SIMPLE	105°29'40" Lt	38°11'50"	150.00	276.18	197.24	97.80	NC
4453	KOLB RD RAMP B1	PT	13+07.90	N 2°24'43" E	404077.552	1033115.602									
4454	KOLB RD RAMP B1	POE	14+03.60		404173.170	1033119.629									
4500	KOLB RD RAMP C	PC	10+00.00	S 6°51'31" W	403995.734	1033284.848									
4501	KOLB RD RAMP C	PI	11+08.14		403888.365	1033271.933	4500	SIMPLE	56°48'04" Lt	28°38'52"	200.00	198.27	108.14	27.36	NC
4502	KOLB RD RAMP C	PT	11+98.27		403818.770	1033354.705									
4503	KOLB RD RAMP C	PC	13+48.73	S 49°56'33" E	403721.940	1033469.868									
4504	KOLB RD RAMP C	PI	15+32.70		403603.548	1033610.675	4501	SIMPLE	14°38'14" Rt	4°00'00"	1432.40	365.93	183.97	11.77	e=0.046'/ft, Ls=153
4505	KOLB RD RAMP C	PT	17+14.66		403453.417	1033716.995									
4506	KOLB RD RAMP C	PC	21+14.44	S 35°18'20" E	403127.164	1033948.042									
4507	KOLB RD RAMP C	PI	24+69.80		402837.163	1034153.416	4502	SIMPLE	14°08'31" Lt	2°00'00"	2864.79	707.10	355.36	21.96	e=0.040'/ft, Ls=153
4508	KOLB RD RAMP C	PCC	28+21.54	S 49°26'51" E	402606.130	1034423.420									
4509	KOLB RD RAMP C	PI	31+75.62		402375.928	1034692.452	4503	SIMPLE	4°43'06" Lt	0°40'00"	8594.37	707.76	354.08	7.29	NC
4510	KOLB RD RAMP C	PT	35+29.30	S 54°09'57" E	402168.636	1034979.509									
4550	KOLB RD RAMP C1	PC	10+00.00	N 9°08'09" E	403683.161	1033262.108									
4551	KOLB RD RAMP C1	PI	11+76.47		403857.390	1033290.127	4550	SIMPLE	120°55'18" Rt	57°17'45"	100.00	211.05	176.47	102.83	NC
4552	KOLB RD RAMP C1	PT	12+11.05	S 49°56'33" E	403743.823	1033425.195									

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APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT 1

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET C-01.25

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	26	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
4575	KOLB RD RAMP C2	POB	10+00.00	S 0°52'03" E	405223.820	1033277.108									
4576	KOLB RD RAMP C2	PC	11+14.00		405109.833	1033278.834									
4577	KOLB RD RAMP C2	PI	11+87.40		405036.440	1033279.945	4575	SIMPLE	14°13'52" Left	9°44'39"	588.00	146.05	73.40	4.56	e=0.057'/ft, Ls=118
4578	KOLB RD RAMP C2	PT	12+60.05	S 15°05'55" E	404965.573	1033299.065									
4579	KOLB RD RAMP C2	PC	16+39.47		404599.242	1033397.898									
4580	KOLB RD RAMP C2	PI	17+78.53		404464.987	1033434.119	4576	SIMPLE	30°23'21"Right	11°11'26"	512.00	271.56	139.06	18.55	e=0.060'/ft, Ls=124
4581	KOLB RD RAMP C2	PT	19+11.04	S 15°17'27" W	404330.854	1033397.447									
4582	KOLB RD RAMP C2	POE	23+75.72												
4600	KOLB RD RAMP D	PC	10+00.00	S 0°39'07" E	402845.876	1033258.665									
4601	KOLB RD RAMP D	PI	10+16.45		402829.430	1033258.852	4600	SIMPLE	10°00'00" Lt	30°28'35"	188.00	32.81	16.45	0.72	NC
4602	KOLB RD RAMP D	PT	10+32.81	S 10°39'07" E	402813.265	1033261.892									
4603	KOLB RD RAMP D	PC	10+98.71		402748.508	1033274.072									
4604	KOLB RD RAMP D	PI	11+87.32		402661.415	1033290.452	4601	SIMPLE	72°53'29" Lt	47°44'47"	120.00	152.66	88.62	29.18	NC
4605	KOLB RD RAMP D	PT	12+51.37	S 83°32'36" E	402651.450	1033378.510									
4606	KOLB RD RAMP D	PC	14+21.40		402632.330	1033547.459									
4607	KOLB RD RAMP D	PI	18+00.06		402589.748	1033923.719	4602	SIMPLE	22°25'44" Rt	3°00'00"	1909.86	747.63	378.66	37.18	e=0.044'/ft, Ls=106
4608	KOLB RD RAMP D	PCC	21+69.02	S 61°06'52" E	402406.831	1034255.270									
4609	KOLB RD RAMP D	PI	26+22.75		402187.656	1034652.543	4603	SIMPLE	6°56'55" Rt	0°46'00"	7473.36	906.33	453.72	13.76	NC
4610	KOLB RD RAMP D	PT	30+75.36	S 54°09'57" E	401922.028	1035020.383									
4611	KOLB RD RAMP D	POE	36+59.52		401580.035	1035493.973									
4650	KOLB RD RAMP D1	PC	10+00.00	N 21°27'41" W	402553.577	1033314.084									
4651	KOLB RD RAMP D1	PI	11+04.68		402650.999	1033275.785	4650	SIMPLE	117°55'05" Rt	90°56'44"	63.00	129.66	104.68	59.18	NC
4652	KOLB RD RAMP D1	PT	11+29.66	S 83°32'36" E	402639.227	1033379.800									
4700	KOLB RD DDI NB	POB	10+00.00	S 0°52'03" E	405222.972	1033221.114									
4701	KOLB RD DDI NB	PC	15+37.20		404685.837	1033229.247									
4702	KOLB RD DDI NB	PI	16+53.58		404569.469	1033231.009	4700	SIMPLE	6°58'27" Lt	3°00'00"	1909.86	232.47	116.38	3.54	e=0.044'/ft, Ls=106
4703	KOLB RD DDI NB	PT	17+69.67	S 7°50'30" E	404454.177	1033246.887									
4704	KOLB RD DDI NB	PC	20+35.64		404190.695	1033283.175									
4705	KOLB RD DDI NB	PI	21+91.59		404036.206	1033304.452	4701	SIMPLE	23°07'56" Rt	7°31'09"	762.00	307.65	155.95	15.79	NC
4706	KOLB RD DDI NB	PT	23+43.29	S 15°17'27" W	403885.779	1033263.326									
4707	KOLB RD DDI NB	PC	23+71.11		403858.939	1033255.988									
4708	KOLB RD DDI NB	PI	23+89.69		403841.021	1033251.089	4702	SIMPLE	13°04'57" Rt	35°22'04"	162.00	36.99	18.58	1.06	NC
4709	KOLB RD DDI NB	PT	24+08.10	S 28°22'23" W	403824.677	1033242.262									
4710	KOLB RD DDI NB	PC	24+85.06		403756.959	1033205.688									
4711	KOLB RD DDI NB	PI	24+85.06		403720.329	1033185.904	4703	SIMPLE	40°26'58" Lt	50°42'15"	113.00	79.78	41.63	7.42	NC
4712	KOLB RD DDI NB	PT	25+64.84	S 12°04'34" E	403679.619	1033194.614									
4713	KOLB RD DDI NB	PC	26+17.41		403628.208	1033205.613									
4714	KOLB RD DDI NB	PI	26+37.04		403609.017	1033209.719	4704	SIMPLE	11°12'32" Rt	28°38'52"	200.00	39.13	19.63	0.96	NC
4715	KOLB RD DDI NB	PT	26+56.54	S 0°52'03" E	403589.393	1033210.016									
4716	KOLB RD DDI NB	PI	27+05.81		403540.124	1033210.762									
4717	KOLB RD DDI NB	PC	34+00.56	S 0°39'07" E	402845.421	1033218.667									
4718	KOLB RD DDI NB	PI	34+17.01		402828.975	1033218.854	4705	SIMPLE	10°00'00" Rt	30°28'35"	188.00	32.81	16.45	0.72	NC
4719	KOLB RD DDI NB	PT	34+33.37	S 9°20'53" W	402812.745	1033216.183									
4720	KOLB RD DDI NB	PC	34+94.66		402752.278	1033206.229									
4721	KOLB RD DDI NB	PI	35+34.21		402713.250	1033199.804	4706	SIMPLE	38°54'06" Lt	51°09'25"	112.00	76.04	39.55	6.78	NC
4722	KOLB RD DDI NB	PT	35+70.70		402678.843	1033219.313									

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-01.26

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltI_g26.dgn

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	27	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
4723	KOLB RD DDI NB	PC	36+79.11	S 29°33'13" E	402584.534	1033272.787									
4724	KOLB RD DDI NB	PI	37+74.13		402501.883	1033319.652	4707	SIMPLE	33°52'27" Rt	18°21'51"	312.00	184.46	95.01	14.15	NC
4725	KOLB RD DDI NB	PT	38+63.57		402407.139	1033312.494									
4726	KOLB RD DDI NB	PC	43+07.30	S 4°19'14" W	401964.672	1033279.065									
4727	KOLB RD DDI NB	PI	44+31.37		401840.956	1033269.718	4708	SIMPLE	4°57'35" Lt	2°00'00"	2864.79	247.98	124.07	2.69	e=0.035'/ft, Ls=84
4728	KOLB RD DDI NB	PT	45+55.28	S 0°38'21" E	401716.896	1033271.102									
4729	KOLB RD DDI NB	PI	49+76.61		401295.593	1033275.801									
4730	KOLB RD DDI NB	POE	53+74.64	S 0°38'21" E	400897.585	1033280.241									
4800	KOLB RD DDI SB	POB	10+00.00		405222.313	1033177.619									
4801	KOLB RD DDI SB	PC	15+31.23	S 0°52'03" E	404691.139	1033185.662									
4802	KOLB RD DDI SB	PI	16+57.47		404564.919	1033187.573	4800	SIMPLE	7°33'47" Rt	3°00'00"	1909.86	252.10	126.23	4.17	e=0.044'/ft, Ls=106
4803	KOLB RD DDI SB	PT	17+83.34		404439.546	1033172.855									
4804	KOLB RD DDI SB	PC	19+95.39	S 6°41'44" W	404228.937	1033148.130									
4805	KOLB RD DDI SB	PI	21+66.46		404059.035	1033128.184	4801	SIMPLE	25°18'22" Lt	7°31'09"	762.00	336.56	171.07	18.97	NC
4806	KOLB RD DDI SB	PT	23+31.95		403896.912	1033182.778									
4807	KOLB RD DDI SB	PC	23+77.49	S 18°36'38" E	403853.750	1033197.313									
4808	KOLB RD DDI SB	PI	23+92.75		403839.287	1033202.183	4802	SIMPLE	10°45'47" Lt	35°22'04"	162.00	30.43	15.26	0.72	NC
4809	KOLB RD DDI SB	PT	24+07.92		403825.988	1033209.669									
4810	KOLB RD DDI SB	PC	24+88.38	S 29°22'25" E	403755.880	1033249.130									
4811	KOLB RD DDI SB	PI	25+27.50		403721.787	1033268.320	4803	SIMPLE	38°30'34" Rt	51°09'25"	112.00	75.28	39.12	6.64	NC
4812	KOLB RD DDI SB	PT	25+63.65		403683.161	1033262.108									
4813	KOLB RD DDI SB	PC	26+24.95	S 9°08'09" W	403622.642	1033252.376									
4814	KOLB RD DDI SB	PI	26+41.40		403606.397	1033249.764	4804	SIMPLE	10°00'11" Lt	30°28'35"	188.00	32.82	16.45	0.72	NC
4815	KOLB RD DDI SB	PT	26+57.77	S 0°52'03" E	403589.946	1033250.013									
4816	KOLB RD DDI SB	PI	27+07.07		403540.654	1033250.759									
4817	KOLB RD DDI SB	PC	34+01.89	S 0°39'07" E	402845.876	1033258.665									
4818	KOLB RD DDI SB	PI	34+18.34		402829.430	1033258.852	4805	SIMPLE	10°00'00" Lt	30°28'35"	188.00	32.81	16.45	0.72	NC
4819	KOLB RD DDI SB	PT	34+34.70		402813.265	1033261.892									
4820	KOLB RD DDI SB	PC	34+95.98	S 10°39'07" E	402753.041	1033273.219									
4821	KOLB RD DDI SB	PI	35+35.17		402714.532	1033280.462	4806	SIMPLE	38°33'57" Rt	51°09'25"	112.00	75.39	39.18	6.66	NC
4822	KOLB RD DDI SB	PT	35+71.37		402679.906	1033262.118									
4823	KOLB RD DDI SB	PC	36+57.83	S 27°54'50" W	402603.505	1033221.642									
4824	KOLB RD DDI SB	PI	37+61.80		402511.635	1033172.971	4807	SIMPLE	28°19'31" Lt	13°54'24"	412.00	203.68	103.97	12.92	NC
4825	KOLB RD DDI SB	PT	38+61.51		402407.671	1033173.718									
4826	KOLB RD DDI SB	PC	40+37.01	S 0°24'41" E	402232.175	1033174.979									
4827	KOLB RD DDI SB	PI	41+58.18		402111.016	1033175.849	4808	SIMPLE	7°15'36" Lt	3°00'00"	1909.86	242.00	121.16	3.84	NC
4828	KOLB RD DDI SB	PT	42+79.01		401990.939	1033192.023									
4829	KOLB RD DDI SB	PC	44+55.85	S 7°40'17" E	401815.687	1033215.629									
4830	KOLB RD DDI SB	PI	45+73.20		401699.384	1033231.295	4809	SIMPLE	7°01'57" Rt	3°00'00"	1909.86	234.41	117.35	3.60	e=0.044'/ft, Ls=106
4831	KOLB RD DDI SB	PT	46+90.26	S 0°38'21" E	401582.037	1033232.604									
4832	KOLB RD DDI SB	PI	50+85.42		401186.903	1033237.011									
4833	KOLB RD DDI SB	POE	53+75.20	S 0°38'21" E	400897.139	1033240.244									
4900	KOLB RD NB MAINLINE	POB	10+00.00		405223.335	1033245.112									
4901	KOLB RD NB MAINLINE	PC	11+14.00	S 0°52'03" E	405109.348	1033246.838									
4902	KOLB RD NB MAINLINE	PI	12+48.18		404975.180	1033248.869	4900	SIMPLE	8°02'16" Lt	3°00'00"	1909.86	267.93	134.18	4.71	e=0.044'/ft, Ls=106
4903	KOLB RD NB MAINLINE	PT	13+81.93		404842.615	1033269.640									
4904	KOLB RD NB MAINLINE	PC	21+92.02	S 8°54'19" E	404042.285	1033395.043									

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APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT 1

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	SHEET C-01.27

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	28	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.							
					Northing	Easting		Type	Delta	DOC	Radius	L	T	Ext	Super
4905	KOLB RD NB MAINLINE	PI	23+93.37		403843.358	1033426.213	4901	SIMPLE	8°02'27" Rt	2°00'00"	2864.79	402.05	201.35	7.07	e=0.035⁄ft, Ls=84
4906	KOLB RD NB MAINLINE	PT	25+94.07	S 8°54'19" E	403642.026	1033429.250									
4907	KOLB RD NB MAINLINE	PI	26+93.07		402689.202	1033440.459									
4908	KOLB RD NB MAINLINE	PI	26+93.07	S 0°51'51" E	402689.202	1033440.459									
4909	KOLB RD NB MAINLINE	PC	35+46.96	S 0°39'07" E	402689.202	1033440.459	4902	SIMPLE	8°04'35" Rt	2°00'00"	2864.79	403.81	202.24	7.13	e=0.035⁄ft, Ls=84
4910	KOLB RD NB MAINLINE	PI	37+49.20		402486.972	1033442.760									
4911	KOLB RD NB MAINLINE	PT	39+50.77		402286.426	1033416.627									
4912	KOLB RD NB MAINLINE	PC	47+45.99	S 7°25'28" W	401497.873	1033313.871	4903	SIMPLE	8°03'48" Lt	2°00'00"	2864.79	403.17	201.92	7.11	e=0.035⁄ft, Ls=84
4913	KOLB RD NB MAINLINE	PI	49+47.91		401297.647	1033287.779									
4914	KOLB RD NB MAINLINE	PT	51+49.17	S 0°38'21" E	401095.740	1033290.031									
4915	KOLB RD NB MAINLINE	POE	53+47.20		400897.719	1033292.240									
5000	KOLB RD SB MAINLINE	POB	10+00.00		405222.132	1033165.621									
5001	KOLB RD SB MAINLINE	PC	12+00.00	S 0°52'03" E	405022.154	1033168.649									
5002	KOLB RD SB MAINLINE	PI	13+94.29		404827.888	1033171.59	5000	SIMPLE	11°37'02" Rt	3°00'00"	1909.86	387.24	194.29	9.86	e=0.044⁄ft, Ls=106
5003	KOLB RD SB MAINLINE	PT	15+87.24		404637.009	1033135.351									
5004	KOLB RD SB MAINLINE	PC	18+97.63	S 10°45'00" W	404332.071	1033077.457									
5005	KOLB RD SB MAINLINE	PI	21+88.98		404045.832	1033023.113	5001	SIMPLE	11°36'51" Lt	2°00'00"	2864.79	580.71	291.35	14.78	e=0.035⁄ft, Ls=84
5006	KOLB RD SB MAINLINE	PT	24+78.34	S 0°51'51" E	403754.512	1033027.508									
5007	KOLB RD SB MAINLINE	PI	26+95.13		403537.743	1033030.778									
5008	KOLB RD SB MAINLINE	PC	36+72.37	S 0°39'07" E	402560.569	1033041.897									
5009	KOLB RD SB MAINLINE	PI	39+81.62		402251.336	1033045.416	5002	SIMPLE	12°19'21" Lt	2°00'00"	2864.79	616.12	309.25	16.64	e=0.035⁄ft, Ls=84
5010	KOLB RD SB MAINLINE	PT	42+88.49		401949.977	1033114.848									
5011	KOLB RD SB MAINLINE	PC	44+54.71	S 12°58'28" E	401788.004	1033152.166									
5012	KOLB RD SB MAINLINE	PI	47+64.29		401486.329	1033221.671	5003	SIMPLE	12°20'07" Rt	2°00'00"	2864.79	616.76	309.58	16.68	e=0.035⁄ft, Ls=84
5013	KOLB RD SB MAINLINE	PT	50+71.47	S 0°38'21" E	401176.769	1033225.124									
5200	N ALVERNON WAY RAMP A	POB	0+00.00		434500.421	1011926.033									
5201	N ALVERNON WAY RAMP A	PC	1+53.55	N 88°04'24" E	434505.583	1012079.500									
5202	N ALVERNON WAY RAMP A	PI	3+52.31		434512.265	1012278.140	5100	SIMPLE	41°46'17" Lt	11°00'00"	520.87	379.74	198.75	36.63	e=0.060⁄ft, Ls=124
5203	N ALVERNON WAY RAMP A	PT	5+33.29	N 46°18'07" E	434649.574	1012421.837									
5204	N ALVERNON WAY RAMP A	POE	8+44.58		434864.625	1012646.890									
5200	N ALVERNON WAY RAMP B	PC	0+00.00	S 1°39'43" E	434376.385	1011823.048									
5201	N ALVERNON WAY RAMP B	PI	1+19.98		434256.456	1011826.527	5200	SIMPLE	112°36'40" Lt	71°37'11"	80.00	157.23	119.98	64.21	NC
5202	N ALVERNON WAY RAMP B	PT	1+57.23	N 65°43'37" E	434305.777	1011935.901									
5300	N ALVERNON WAY RAMP C	PC	0+00.00	S 1°39'43" E	434400.417	1011865.218									
5301	N ALVERNON WAY RAMP C	PI	0+90.60		434309.850	1011867.846	5300	SIMPLE	112°58'25" Lt	95°29'35"	60.00	118.31	90.60	48.67	NC
5302	N ALVERNON WAY RAMP C	PRC	1+18.31	N 65°21'52" E	434347.618	1011950.204									
5303	N ALVERNON WAY RAMP C	PI	3+51.96		434445.015	1012162.591	5301	SIMPLE	23°02'58" Rt	5°00'00"	1145.92	460.99	233.65	23.58	e=0.040⁄ft, Ls=77
5304	N ALVERNON WAY RAMP C	PT	5+79.30	N 88°24'50" E	434451.483	1012396.156									
5305	N ALVERNON WAY RAMP C	POE	12+85.29		434471.023	1013101.876									
5400	N ALVERNON WAY RAMP D	POB	6+91.58	S 3°05'38" E	434533.057	1011803.476									
5401	N ALVERNON WAY RAMP D	PI	8+12.40		434412.411	1011809.997									
5402	N ALVERNON WAY RAMP D	PI	9+05.22	S 1°39'43" E	434319.632	1011812.689									
5403	N ALVERNON WAY RAMP D	PI	10+00.00	S 0°29'47" W	434224.855	1011811.868									
5404	N ALVERNON WAY RAMP D	PI	11+11.33	S 1°36'41" E	434113.573	1011814.999									

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APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
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ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.28

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	29	32	
		010 PM 260			

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

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
5405	N ALVERNON WAY RAMP D	PC	19+03.50	S 2°16'55" E	433322.026	1011846.540									
5406	N ALVERNON WAY RAMP D	PI	20+15.00	S 2°16'55" E	433210.611	1011850.979	5400	SIMPLE	8°32'04" Lt	3°50'03"	1494.39	222.59	111.50	4.15	e=0.046ft/ft, Ls=102
5407	N ALVERNON WAY RAMP D	PT	21+26.10	S 10°48'58" E	433101.088	1011871.904									
5500	GOLF LINKS RD RAMP WN	PC	0+00.00	N 15°59'50" W	432182.130	1012440.266									
5501	GOLF LINKS RD RAMP WN	PI	3+43.08		432511.922	1012345.718	5500	SIMPLE	4°34'19" Rt	0°40'00"	8594.32	685.79	343.08	6.84	NC
5502	GOLF LINKS RD RAMP WN	PCC	6+85.79	N 11°25'30" W	432848.201	1012277.759									
5503	GOLF LINKS RD RAMP WN	PI	13+93.50		433541.889	1012137.570	5501	SIMPLE	34°19'16" Rt	2°30'00"	2291.83	1372.84	707.71	106.78	e=0.051ft/ft, Ls=204
5504	GOLF LINKS RD RAMP WN	PT	20+58.64	N 22°53'46" E	434193.842	1012412.912									
5505	GOLF LINKS RD RAMP WN	POE	21+56.44		434283.942	1012450.964									
5600	GOLF LINKS RD RAMP EN	POB	10+00.00	S 70°10'33" E	434234.994	1010608.538									
5601	GOLF LINKS RD RAMP EN	PC	14+03.54		434098.140	1010988.161									
5602	GOLF LINKS RD RAMP EN	PI	17+84.84		433968.828	1011346.863	5600	SIMPLE	49°57'23" Lt	7°00'00"	818.51	713.66	381.30	84.46	e=0.058ft/ft, Ls=90
5603	GOLF LINKS RD RAMP EN	PT	21+17.20	N 59°52'05" E	434160.237	1011676.636									
5604	GOLF LINKS RD RAMP EN	PC	23+30.93		434267.531	1011861.489									
5605	GOLF LINKS RD RAMP EN	PI	25+39.13		434372.045	1012041.554	5601	SIMPLE	28°32'33" Rt	7°00'00"	818.51	407.75	208.20	26.06	e=0.058ft/ft, Ls=90
5606	GOLF LINKS RD RAMP EN	PT	27+38.68	N 88°24'37" E	434377.821	1012249.672									
5607	GOLF LINKS RD RAMP EN	PC	35+44.55		434400.176	1013055.224									
5608	GOLF LINKS RD RAMP EN	PI	39+15.69		434410.471	1013426.222	5602	SIMPLE	60°01'14" Lt	8°55'00"	642.57	673.13	371.14	99.48	e=0.060ft/ft, Ls=133
5609	GOLF LINKS RD RAMP EN	PT	42+17.67	N 28°23'23" E	434736.976	1013602.687									
5610	GOLF LINKS RD RAMP EN	POE	46+31.59		435101.115	1013799.491									
5700	GOLF LINKS RD RAMP SW	PC	0+00.00	S 73°01'52" E	434507.672	1010193.787									
5701	GOLF LINKS RD RAMP SW	PI	2+47.30		434435.497	1010430.320	5700	SIMPLE	6°10'35" Lt	1°15'00"	4583.66	494.12	247.30	6.67	NC
5702	GOLF LINKS RD RAMP SW	PCC	4+94.12	S 79°12'28" E	434389.190	1010673.245									
5703	GOLF LINKS RD RAMP SW	PI	7+12.57		434348.285	1010887.835	5701	SIMPLE	17°20'34" Lt	4°00'00"	1432.39	433.57	218.45	16.56	e=0.046ft/ft, Ls=102
5704	GOLF LINKS RD RAMP SW	PT	9+27.69	N 83°26'59" E	434373.205	1011104.862									
5705	GOLF LINKS RD RAMP SW	PC	12+87.12		434414.208	1011461.953									
5706	GOLF LINKS RD RAMP SW	PI	13+54.03		434421.840	1011528.422	5702	SIMPLE	5°20'55" Rt	4°00'00"	1432.39	133.71	66.91	1.56	e=0.046ft/ft, Ls=102
5707	GOLF LINKS RD RAMP SW	PT	14+20.84	N 88°47'54" E	434423.243	1011595.313									
5708	GOLF LINKS RD RAMP SW	PC	17+63.98		434430.440	1011938.380									
5709	GOLF LINKS RD RAMP SW	PI	20+59.08		434436.629	1012233.415	5703	SIMPLE	44°47'13" Lt	8°00'00"	716.20	559.84	295.10	58.41	e=0.060ft/ft, Ls=133
5710	GOLF LINKS RD RAMP SW	PT	23+84.91	N 44°00'41" E	434648.865	1012438.450									
5711	GOLF LINKS RD RAMP SW	POE	29+69.24		435113.055	1012886.892									
5800	GOLF LINKS RD RAMP SE	PC	0+00.00	S 71°17'32" W	435748.108	1013933.166									
5801	GOLF LINKS RD RAMP SE	PI	7+19.93		435517.194	1013251.268	5800	SIMPLE	31°09'16" Lt	2°13'07"	2582.48	1404.22	719.93	98.47	NC
5802	GOLF LINKS RD RAMP SE	PT	14+04.22	S 40°08'16" W	434966.807	1012787.179									
5803	GOLF LINKS RD RAMP SE	PC	22+60.00		434312.562	1012235.517									
5804	GOLF LINKS RD RAMP SE	PI	31+43.34		433637.254	1011666.093	5801	SIMPLE	62°53'48" Lt	3°58'00"	1444.39	1585.59	883.34	248.70	e=0.051ft/ft, Ls=184
5805	GOLF LINKS RD RAMP SE	PT	38+45.59	S 22°45'32" E	432822.693	1012007.817									
5806	GOLF LINKS RD RAMP SE	PC	47+40.17		431997.767	1012353.891									
5807	GOLF LINKS RD RAMP SE	PI	48+40.72		431905.048	1012392.788	5802	SIMPLE	6°45'43" Rt	3°21'59"	1701.95	200.86	100.55	2.97	NC
5808	GOLF LINKS RD RAMP SE	PT	49+41.03	S 15°59'50" E	431808.395	1012420.497									
5900	AJO WAY RAMP A	POB	10+00.00	S 66°10'33" E	434461.758	1010094.983									
5901	AJO WAY RAMP A	PI	14+66.40		434273.364	1010521.641									
5902	AJO WAY RAMP A	PC	23+59.83	S 66°10'33" E	433912.479	1011338.940									

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC DATA SHEET
SYSTEM ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.29

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltI_g29.dgn

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	30	32	

010 PM 260

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.							
					Northing	Easting		Type	Delta	DOC	Radius	L	T	Ext	Super
5903	AJO WAY RAMP A	PI	27+96.51	S 66°10'33" E	433736.090	1011738.411	5900	SIMPLE	55°21'51" Rt	6°53'00"	832.39	804.32	436.68	107.59	e=0.060%ft, Ls=147
5904	AJO WAY RAMP A	PT	31+64.15		433307.160	1011820.324									
5905	AJO WAY RAMP A	PC	33+76.18	S 10°48'42" E	433098.894	1011860.097									e=0.050%ft,
5906	AJO WAY RAMP A	PI	34+83.67		432993.319	1011880.259	5901	SIMPLE	8°09'45" Lt	3°48'13"	1506.39	214.60	107.48	3.83	Entrance Ls=120
5907	AJO WAY RAMP A	PT	35+90.79		432891.675	1011915.206									Exit Ls=180
5908	AJO WAY RAMP A	PC	48+53.32	S 18°58'27" E	431697.739	1012325.709									
5909	AJO WAY RAMP A	PI	56+19.46		430973.231	1012574.811	5902	SIMPLE	56°16'53" Rt	4°00'00"	1432.39	1407.03	766.13	192.02	e=0.051%ft, Ls=184
5910	AJO WAY RAMP A	PT	62+60.36		430363.850	1012110.465									
5911	AJO WAY RAMP A	PC	65+93.91	S 37°18'26" W	430098.545	1011908.304									
5912	AJO WAY RAMP A	PI	66+68.86		430038.931	1011862.879	5903	SIMPLE	6°44'15" Rt	4°30'00"	1273.24	149.72	74.95	2.20	e=0.054%ft, Ls=194
5913	AJO WAY RAMP A	PT	67+43.63		429985.059	1011810.773									
5914	AJO WAY RAMP A	PC	70+73.40	S 44°02'41" W	429748.019	1011581.508									
5915	AJO WAY RAMP A	PI	72+99.65		429585.391	1011424.214	5904	SIMPLE	6°44'15" Rt	4°30'00"	1273.24	149.72	74.95	2.20	e=0.053%ft, Ls=177
5916	AJO WAY RAMP A	PT	75+18.99	S 19°32'16" W	429372.168	1011348.550									
5917	AJO WAY RAMP A	POE	77+49.12		429155.281	1011271.585									
6000	AJO WAY RAMP B	POB	10+00.00		430461.449	1012396.902									
6001	AJO WAY RAMP B	PC	11+88.77	S 28°33'59" W	430295.656	1012306.635									
6002	AJO WAY RAMP B	PI	12+98.25		430199.511	1012254.288	6000	SIMPLE	8°44'27" Rt	4°00'00"	1432.39	218.52	109.47	4.18	e=0.057%ft, Ls=161
6003	AJO WAY RAMP B	PT	14+07.29		430112.437	1012187.938									
6004	AJO WAY RAMP B	PC	16+09.29	S 37°18'26" W	429951.772	1012065.512									
6005	AJO WAY RAMP B	PI	19+94.35		429645.492	1011832.128	6001	SIMPLE	20°56'32" Lt	2°45'00"	2083.48	761.54	385.07	35.28	e=0.042%ft, Ls=101
6006	AJO WAY RAMP B	PT	23+70.83	S 16°21'54" W	429276.026	1011723.634									
6007	AJO WAY RAMP B	POE			429057.002	1011659.317									
6100	AJO WAY RAMP C	POB	10+00.00		429057.002	1011659.317									
6101	AJO WAY RAMP C	PC	11+81.29	S 18°36'36" W	428885.187	1011601.461									e=0.040%ft,
6102	AJO WAY RAMP C	PI	15+21.31		428562.951	1011492.954	6100	SIMPLE	13°32'14" Lt	2°00'00"	2864.79	676.86	340.01	20.11	Entrance Ls=153
6103	AJO WAY RAMP C	PCC	18+58.16	S 5°04'22" W	428224.269	1011462.889									Exit Ls=102
6104	AJO WAY RAMP C	PI	22+73.01		427811.044	1011426.207	6101	SIMPLE	5°31'37" Lt	0°40'00"	8594.32	829.06	414.85	10.01	NC
6105	AJO WAY RAMP C	PT	26+87.21	S 0°27'15" E	427396.208	1011429.495									
6200	AJO WAY RAMP D	POB	10+00.00		429158.293	1011259.969									
6201	AJO WAY RAMP D	PC	12+42.11	S 9°32'16" W	428919.526	1011219.851									
6202	AJO WAY RAMP D	PI	15+25.84		428639.718	1011172.838	6200	SIMPLE	16°54'01" Lt	3°00'00"	1909.86	563.34	283.73	20.96	e=0.044%ft, Ls=106
6203	AJO WAY RAMP D	PT	18+05.45		428358.327	1011209.196									
6204	AJO WAY RAMP D	PC	19+08.63	S 7°21'45" E	428255.998	1011222.418									
6205	AJO WAY RAMP D	PI	23+59.72		427808.634	1011280.221	6201	SIMPLE	6°54'29" Rt	0°46'00"	7473.43	901.07	451.08	13.60	NC
6206	AJO WAY RAMP D	PT	28+09.71	S 0°27'15" E	427357.565	1011283.797									
6300	SR 210 MEDIAN	POB	370+61.64		434671.574	1009795.645									
6301	SR 210 MEDIAN	PC	371+70.18	S 54°42'24" E	434608.861	1009884.239									
6302	SR 210 MEDIAN	PI	373+27.44		434518.004	1010012.592	6300	SIMPLE	18°19'28" Lt	5°52'35"	975.00	311.83	157.26	12.60	e=0.059%ft,
6303	SR 210 MEDIAN	PT	374+82.01		434472.108	1010163.003									EB Ls=147
6304	SR 210 MEDIAN	PC	382+28.57	S 73°01'52" E	434254.224	1010877.059									WB Ls=221
6305	SR 210 MEDIAN	PI	392+66.27		433951.368	1011869.585	6301	SIMPLE	57°02'03" Rt	3°00'00"	1909.86	1901.14	1037.70	263.71	e=0.059%ft, Ls=191
6306	SR 210 MEDIAN	PT	401+29.71		432953.848	1012155.564									
6307	SR 210 MEDIAN	PC	413+03.81	S 15°59'50" E	431825.206	1012479.135									
6308	SR 210 MEDIAN	PI	421+88.64		430974.644	1012722.983	6302	SIMPLE	53°18'16" Rt	3°15'00"	1762.95	1640.13	884.83	209.59	e=0.060%ft, Ls=382

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ALTERNATIVE I
GEOMETRIC DATA SHEET

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.30

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltI_g30.dgn

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	31	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
					Northing	Easting									
6309	SR 210 MEDIAN	PT	429+43.95	S 37°18'26" W	430270.855	1012186.700									
6310	SR 210 MEDIAN	PC	436+24.28		429729.720	1011774.357									
6311	SR 210 MEDIAN	PI	443+36.83		429162.958	1011342.488	6303	SIMPLE	37°45'41" Lt	2°45'00"	2083.48	1373.14	712.55	118.48	e=0.058⅛ft, Ls=287
6312	SR 210 MEDIAN	PT	449+97.42	S 0°27'15" E	428450.428	1011348.136									
6313	SR 210 MEDIAN	PC	462+50.57		427197.325	1011358.070									
6314	SR 210 MEDIAN	PI	465+87.18		426860.719	1011360.738	6304	SIMPLE	19°59'30" Lt	3°00'00"	1909.86	666.39	336.62	29.44	e=0.059⅛ft, Ls=382
6315	SR 210 MEDIAN	PT	469+16.96	S 20°26'45" E	426545.308	1011478.326									
6316	SR 210 MEDIAN	PC	477+94.23		425723.299	1011784.777									
6317	SR 210 MEDIAN	PI	481+31.02		425407.723	1011902.427	6305	SIMPLE	20°00'07" Rt	3°00'00"	1909.86	666.73	336.79	29.47	e=0.059⅛ft,
6318	SR 210 MEDIAN	PT	484+60.96	S 0°26'38" E	425070.940	1011905.036									EB Entrance Ls=287
6319	SR 210 MEDIAN	PI	489+25.85		424606.066	1011908.638									EB Exit Ls=382
6320	SR 210 MEDIAN	PI	516+15.92	S 0°13'57" E	421916.021	1011919.555									WB Entrance Ls=382
6321	SR 210 MEDIAN	PI	522+86.58	S 0°07'21" W	421245.356	1011918.123									WB Exit Ls=287
6322	SR 210 MEDIAN	POE	526+22.42	S 0°20'51" E	420909.528	1011920.161									
6400	COUNTRY CLUB RD	POB	74+40.12	S 0°51'19" E	428547.576	1006566.391									
6401	COUNTRY CLUB RD	POE	116+90.12		424298.050	1006629.830									
6500	VALENCIA RD	PC	72+63.47	S 18°29'53" E	415221.595	1020948.932									
6501	VALENCIA RD	PI	83+74.28		414168.177	1020596.503	6500	SIMPLE	72°01'49" Rt	3°44'59"	1528.05	1921.01	1110.81	361.09	
6502	VALENCIA RD	PT	91+84.48	N 89°28'18" W	414178.419	1019485.741									
6503	VALENCIA RD	POE	116+64.86		414201.291	1017005.466									
6600	CRAYCROFT RD	POB	88+79.84	N 0°06'07" E	409834.017	1022575.609									
6601	CRAYCROFT RD	PI	104+42.73		411396.913	1022578.389									
6602	CRAYCROFT RD	PI	106+95.64	N 0°41'40" E	411649.796	1022581.454									
6603	CRAYCROFT RD	PC	112+42.54	N 0°21'02" W	412196.693	1022578.109									
6604	CRAYCROFT RD	PI	113+72.19		412326.339	1022577.316	6600	SIMPLE	11°03'09" Rt	4°16'33"	1340.00	258.49	129.65	6.26	
6605	CRAYCROFT RD	PRC	115+01.03	N 10°42'08" E	412453.733	1022601.392									
6606	CRAYCROFT RD	PI	116+12.74		412563.497	1022622.137	6601	SIMPLE	9°31'51" Lt	4°16'33"	1340.00	222.90	111.71	4.65	
6607	CRAYCROFT RD	PT	117+23.93	N 1°17'10" E	412675.180	1022624.421									
6608	CRAYCROFT RD	POE	119+95.73		412946.918	1022629.977									
6700	WILMOT RD	POB	80+36.04	S 0°33'49" E	409041.104	1027927.049									
6701	WILMOT RD	PI	107+20.24		406357.037	1027953.456									
6702	WILMOT RD	POE	120+55.49	S 0°34'03" E	405021.855	1027966.680									
6800	N ALVERNON RD	POB	5+40.31	S 1°39'43" E	434712.066	1011822.312									
6801	N ALVERNON RD	POE	10+00.00		434252.566	1011835.644									
6900	GL SE TO AJO WAY RD RAMP A	PC	10+00.00	S 22°45'32" E	432615.770	1012081.613									
6901	GL SE TO AJO WAY RD RAMP A	PI	12+49.85		432385.374	1012178.268	6900	SIMPLE	4°59'38" Rt	1°00'00"	5729.58	499.38	249.85	5.45	
6902	GL SE TO AJO WAY RD RAMP A	PCC	14+99.38	S 17°45'55" E	432147.438	1012254.502									
6903	GL SE TO AJO WAY RD RAMP A	PI	17+18.01		431939.240	1012321.208	6901	SIMPLE	8°43'41" Rt	2°00'00"	2864.79	436.40	218.62	8.33	
6904	GL SE TO AJO WAY RD RAMP A	PT	19+35.78	S 9°02'14" E	431723.330	1012355.548									
6905	GL SE TO AJO WAY RD RAMP A	POE	22+03.55		431458.887	1012397.607									
7000	AJO WAY	PC		S 54°07'21" E	429393.922	1010742.563									
7001	AJO WAY	PI	94+96.93		429235.762	1010961.233	7000	SIMPLE	21°20'23" Lt	4°00'00"	1432.39	533.49	269.87	25.20	

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Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ALTERNATIVE I
GEOMETRIC DATA SHEET

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.31

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltI_g31.dgn

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

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	32	32	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
					Northing	Easting									
7002	AJO WAY	PT	97+60.55	S 75°27'44" E	429168.019	1011222.464									
7003	AJO WAY	PC	101+32.00		429074.778	1011582.022									
7004	AJO WAY	PI	103+25.21		429026.280	1011769.040	7001	SIMPLE	15°21'49" Lt	4°00'00"	1432.39	384.09	193.20	12.97	
7005	AJO WAY	PT	105+16.09	N 89°10'27" E	429029.065	1011962.223									
7006	AJO WAY	POE	107+13.96		429031.916	1012160.068									
8000	KINO PKWY	POB	84+35.25	N 19°01'35" W	428109.895	1001157.362									
8001	KINO PKWY	PC	87+50.17		428407.612	1001054.698									
8002	KINO PKWY	PI	90+14.10		428657.122	1000968.657	8000	SIMPLE	18°18'55" Rt	3°29'58"	1637.22	523.35	263.93	21.14	
8003	KINO PKWY	PT	92+73.53	N 0°42'40" W	428921.030	1000965.381									
8004	KINO PKWY	POE	709+75.00		430622.370	1000944.266									

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APPENDIX G

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

ALTERNATIVE 1
GEOMETRIC DATA SHEET

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-01.32

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_Alt1_g32.dgn

APPENDIX H
SYSTEM ALTERNATIVE I BARRIER SUMMARY

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	5	
		010 PM 260			

ALTERNATIVE 1 - RETAINING WALLS SUMMARY TABLE

I-10 CORRIDOR - I-10 MAINLINE

RETAINING WALL NO.	RETAINING BARRIER (FT)	RETAINING BARRIER LOCATION	BEGINNING STATION	ENDING STATION	LENGTH (FT)	BEGINNING WALL HEIGHT (FT)	ENDING WALL HEIGHT (FT)	AVERAGE WALL HEIGHT (FT)	WALL AREA (SF)	COMMENTS
1352R			351+30	361+20	990	6.4	6.4	N/A	15,225	RET WALL BEHIND 42" HALF BARRIER
1355L			354+50	361+70	720	6.4	6.4	N/A	9,777	
1391R	25	EAST END	390+84	392+75	191	5.0	4.0	4.5	860	
1497L	25	WEST END	497+00	497+54	54	4.0	5.0	4.5	243	
1498R	25	WEST END	497+90	498+56	66	4.0	5.0	4.5	297	
1500L	25	EAST END	500+55	501+35	80	5.0	4.0	4.5	360	
1501R	25	EAST END	501+57	502+08	51	5.0	4.0	4.5	230	
1510R			510+70	522+52	1182	16.0	9.2	N/A	12,404	
1525R	25	EAST END	525+33	525+98	65	5.0	4.0	4.5	293	
1528L			528+02	530+26	224	9.0	9.0	9.0	2,016	
1531R	25	WEST END	530+64	531+44	80	4.0	5.0	4.5	360	
1532L	25	EAST END	532+34	533+04	70	5.0	4.0	4.5	315	
1534R	25	EAST END	533+54	534+29	75	5.0	4.0	4.5	338	
1572L	80	EAST END	572+00	591+50	1950	9.8	4.0	N/A	14,103	
1581R	25	WEST END	581+25	613+54	3229	4.0	27.2	N/A	40,730	
1614L	30	WEST END	613+86	614+46	60	4.0	10.0	7.0	420	
1615R			614+19	655+50	4131	27.2	20.7	N/A	78,062	
1616L	30	SOUTH END	616+04	616+64	60	10.0	4.0	7.0	420	
1671R	25	NORTH END	671+21	671+81	60	4.0	5.0	4.5	270	
1672L	25	NORTH END	672+22	672+82	60	4.0	5.0	4.5	270	
1674R	25	SOUTH END	674+49	675+09	60	5.0	4.0	4.5	270	
1676L	25	SOUTH END	675+70	676+30	60	5.0	4.0	4.5	270	
1679L	50	BOTH ENDS	678+20	681+80	360	4.0	4.0	N/A	3,155	
1685R	120	EAST END	684+56	689+00	444	6.9	4.0	N/A	2,546	
1710L	25	WEST END	709+50	722+87	1337	4.0	10.0	N/A	19,751	
1712R	120	WEST END	712+00	724+34	1234	4.0	10.0	N/A	14,550	
1726L	25	EAST END	725+21	731+00	579	10.0	4.0	N/A	11,525	
1727R	25	EAST END	726+68	733+00	632	10.0	4.0	N/A	8,336	
1783L	25	WEST END	782+50	789+09	659	4.0	10.0	N/A	12,589	
1790R	25	WEST END	789+99	790+59	60	4.0	10.0	7.0	420	
1791L	25	EAST END	791+56	792+16	60	10.0	4.0	7.0	420	
1793R	25	EAST END	793+05	799+00	595	10.0	4.0	N/A	3,885	
TOTALS	955								254,708	

SR 210 CORRIDOR - SR 210 MAINLINE

RETAINING WALL NO.	RETAINING BARRIER (FT)	RETAINING BARRIER LOCATION	BEGINNING STATION	ENDING STATION	LENGTH (FT)	BEGINNING WALL HEIGHT (FT)	ENDING WALL HEIGHT (FT)	AVERAGE WALL HEIGHT (FT)	WALL AREA (SF)	COMMENTS
SR384R	50	WEST END	383+50	384+52	102	4.0	10.0	7.0	714	20' DITCH ALONG RAMP
SR385M			384+62	385+22	60	15.0	15.0	15.0	900	BETWEEN ABUTMENTS ALONG CENTERLINE
SR397M			397+46	398+12	66	15.0	15.0	15.0	990	BETWEEN ABUTMENTS ALONG CENTERLINE
SR398R	20	SOUTH END	398+22	398+80	58	10.0	4.0	7.0	406	
SR404L	40	NORTH END	403+56	414+60	1104	22.0	4.0	N/A	22,168	CONNECTS TO GLWN6R
SR423L	20	NORTH END	422+20	430+90	870	4.0	46.0	N/A	24,880	WALL NEAR UPRR- SPECIAL DESIGN
SR434R			434+10	442+25	815	5.0	12.0	N/A	6,998	
SR442L	50	NORTH END	441+50	442+10	60	4.0	5.0	4.5	270	
SR445R	40	SOUTH END	444+35	446+75	240	8.0	4.0	6.0	1,440	
SR454L			453+70	462+20	850	24.0	29.6	N/A	22,786	
SR456R			456+08	462+20	612	29.0	34.5	N/A	18,902	
SR463L			463+50	488+15	2465	28.6	35.4	N/A	78,358	
SR463R			463+50	488+15	2465	39.2	34.0	N/A	79,463	
SR490L			490+37	494+50	413	5.0	15.6	N/A	7,804	
SR490R	20	SOUTH END	490+37	491+00	63	5.0	4.0	4.5	284	
SR 210 RAMPS										
GLWN6R	100	NORTH END	5+95	15+00	905	22.0	4.0	N/A	15,210	NORTH OF AJO WAY
GLSE34R	160	BOTH ENDS	34+25	42+90	865	4.0	4.0	N/A	9,774	NORTH OF AJO WAY
NAIvC2L	20	EAST END	1+70	4+30	260	19.0	4.0	11.5	2,990	
AJoA31R	40	BOTH ENDS	31+00	43+40	1240	4.0	4.0	N/A	9,110	
AJoD11R	20	NORTH END	11+70	23+28	1158	4.0	29.0	N/A	20,318	CONNECTS TO SR456R
TOTALS	580								323,765	

APPENDIX H

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

SUMMARY SHEET
RETAINING WALLS - ALT 1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10 - JCT. I-19 TO KOLB ROAD
LOCATION: SR 210 - GOLF LINKS ROAD TO I-10

SHEET SU-01

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	5	
		010 PM 260			

ALTERNATIVE I - RETAINING WALLS SUMMARY TABLE

I-10 CORRIDOR - I-10 RAMPS

RETAINING WALL NO.	RETAINING BARRIER (FT)	RETAINING BARRIER LOCATION	BEGINNING STATION	ENDING STATION	LENGTH (FT)	BEGINNING WALL HEIGHT (FT)	ENDING WALL HEIGHT (FT)	AVERAGE WALL HEIGHT (FT)	WALL AREA (SF)	COMMENTS
6THC103R			103+00	105+13	213	4.0	9.2	N/A	1,435	WB EXIT RAMP TO 6TH AVE VIA WB FR
6THC105L			104+13	105+13	100	4.0	5.0	4.5	450	
6THC112L			112+10	113+10	100	5.0	4.0	4.5	450	
6THC112R			112+10	113+10	100	5.0	4.0	4.5	450	
PARKC53R			52+51	53+84	133	4.0	14.0	9.0	1,197	
PARKC53L			52+51	54+07	156	4.0	14.0	9.0	1,404	
PARKC56R			56+02	56+52	50	13.0	4.0	8.5	425	
PARKC56L			56+35	56+85	50	13.0	4.0	8.5	425	
PARKD15R	100	WEST END	14+56	28+56	1400	4.0	6.0	N/A	10,819	
KINOA21R			20+57	34+80	1423	6.0	21.0	N/A	11,502	
KINOA34L			34+44	34+94	50	4.0	5.0	4.5	225	
KINOA37R	25	SOUTH END	36+57	37+32	75	5.0	4.0	4.5	338	
KINOA37L	25	SOUTH END	36+69	37+44	75	5.0	4.0	4.5	338	
KINOB16L			16+00	20+60	460	4.0	24.0	N/A	4,792	
KINOB22R	25	EAST END	22+11	23+33	122	24.0	4.0	14.0	1,708	
KINOC11R			10+87	12+42	155	6.0	10.0	8.0	1,240	
KINOC12L	25	WEST END	12+31	13+07	76	4.0	10.0	7.0	532	
KINOC14R	25	SOUTH END	14+49	15+08	59	10.0	4.0	7.0	413	
KINOC15L	25	SOUTH END	15+04	15+52	48	10.0	4.0	7.0	336	
CCLUBA22R	25	WEST END	21+51	26+93	542	6.0	4.0	N/A	3,810	
CCLUBD15R	25	WEST END	14+57	19+63	506	4.0	16.0	N/A	5,980	
ALVC15L			15+03	21+67	664	6.4	9.8	N/A	5,009	
VALD16R			16+50	24+01	751	4.0	6.9	N/A	7,176	
WILMOTB15L	50	BOTH ENDS	15+31	20+57	526	4.0	4.0	N/A	3,943	
NBKOLB18L	25	NORTH END	17+75	21+13	338	4.0	40.0	N/A	7,692	
NBKOLB18R	25	NORTH END	17+75	21+13	338	4.0	30.0	N/A	7,030	
NBKOLB42L	25	SOUTH END	41+85	42+45	60	6.0	4.0	5.0	300	
NBKOLB42R	25	SOUTH END	41+85	42+45	60	6.0	4.0	5.0	300	
SBKOLB19L	25	NORTH END	19+15	19+75	60	4.0	6.0	5.0	300	
SBKOLB19R	25	NORTH END	19+15	19+75	60	4.0	6.0	5.0	300	
SBKOLB41L	25	SOUTH END	41+56	42+16	60	6.0	4.0	5.0	300	
SBKOLB41R	25	SOUTH END	41+56	42+16	60	6.0	4.0	5.0	300	
SYSTEM RAMP										
SE30R	25	NORTH END	30+16	30+99	83	4.0	5.0	4.5	374	
SE30L	25	NORTH END	30+23	30+99	76	4.0	5.0	4.5	342	
SE41R	25	EAST END	41+42	42+02	60	5.0	4.0	4.5	270	
SE41L	25	EAST END	41+42	42+02	60	5.0	4.0	4.5	270	
EN50R	25	WEST END	49+49	56+60	711	4.0	28.8	N/A	14,852	
EN55L	25	WEST END	54+90	56+60	170	4.0	19.0	N/A	1,832	
EN76R	25	NORTH END	75+91	78+75	284	10.0	4.0	N/A	1,455	
EN76L	25	NORTH END	75+91	81+25	534	10.0	4.0	N/A	7,132	
WN28L			27+90	39+70	1180	15.6	10.0	N/A	14,950	
WN38R	25	NORTH END	38+46	39+55	109	4.0	10.0	7.0	763	
WN41R	25	SOUTH END	41+35	42+10	75	20.0	4.0	12.0	900	
WN42L	25	EAST END	41+56	43+25	169	20.0	4.0	N/A	1,915	
TOTALS	825								125,973	

APPENDIX H

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

SUMMARY SHEET
RETAINING WALLS - ALT I

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET SU-02

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	5	
		010 PM 260			

LOCATION: Begin Station (Approximate) (0)	Plan Reference Number ◇	Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	MEDIAN BARRIER (VARIABLE HEIGHT)	HALF BARRIER	TERMINAL	REMARKS
376+35 CL	1	395	X				
403+29 CL	2	522	X				
453+26 CL	3	470	X				
473+72 CL	4	95	X				
490+27 CL	5	438	X			1	
397+99 CL	6	2886	X				
429+41 CL	7	1687	X				
447+12 CL	8	5102	X				
500+96 CL	9	2301	X				
526+57 CL	10	439	X				
532+84 CL	11	2905	X				
563+91 CL	12	2327	X				
638+72 CL	13	2810	X				
691+73 CL	14	4873	X				
725+85 CL	15	3198	X				
792+09 CL	16	13130	X			1	
371+63 CL	17	472		X		1	
380+30 CL	18	432		X			
398+12 CL	19	517		X			
408+51 CL	20	2112		X			
434+95 CL	21	734		X			
444+25 CL	22	901		X			
457+96 CL	23	435		X			
463+41 CL	24	1032		X			
474+67 CL	25	1358		X			
377+64 CL	26	1016		X			
390+26 CL	27	773		X			
587+18 CL	28	2645		X			
615+04 CL	29	2368		X			
666+82 CL	30	558		X			
674+98 CL	31	1676		X			
373+19 L†	32	50			X		

LOCATION: Begin Station (Approximate) (0)	Plan Reference Number ◇	Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	MEDIAN BARRIER (VARIABLE HEIGHT)	HALF BARRIER	TERMINAL	REMARKS
371+65 L†	33	50			X	1	
381+00 R†	34	305			X	1	50' INCLUDED IN RETAINING BARRIER QUANTITY
382+00 L†	35	330			X		
398+13 R†	36	460			X		20' INCLUDED IN RETAINING BARRIER QUANTITY
397+44 L†	37	364			X	1	
12+45 R†	38	1289			X	1	RAMP GL WN STATION
16+00 R†	39	3664			X		160' INCLUDED IN RETAINING BARRIER QUANTITY, RAMP GL WN STATION
424+00 R†	40	448			X	1	
434+04 R†	41	854			X		
438+00 L†	42	565			X	1	50' INCLUDED IN RETAINING BARRIER QUANTITY
444+26 R†	43	654			X		40' INCLUDED IN RETAINING BARRIER QUANTITY
444+24 L†	44	508			X	1	
33+00 R†	45	1473			X	1	
31+00 R†	46	1949			X	1	
31+64 R†	47	846			X	1	
55+00 R†	48	638			X	1	
57+50 L†	49	455			X	1	
66+78 R†	50	624			X		
67+43 L†	51	854			X		
20+33 L†	52	364			X	1	
20+33 R†	53	50			X	1	
13+50 L†	54	1513			X		
11+50 R†	55	1783			X	1	20' INCLUDED IN RETAINING BARRIER QUANTITY
463+37 R†	56	2489			X		
463+45 L†	57	2482			X		
490+27 L†	58	1609			X		
Sheet Total		87,277				18	

APPENDIX H

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

SUMMARY SHEET
BARRIER - ALT 1

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

SHEET SU-03

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	5	
		010 PM 260			

LOCATION: Begin Station (Approximate) (0)	◇ Plan Reference Number	Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	MEDIAN BARRIER (VARIABLE HEIGHT)	HALF BARRIER	TERMINAL	REMARKS
490+27 R†	59	150			X	1	20' INCLUDED IN RETAINING BARRIER QUANTITY
0+28 L†	60	366			X	1	20' INCLUDED IN RETAINING BARRIER QUANTITY
33+00 R†	61	642			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
41+26 R†	62	354			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
41+46 L†	63	523			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
75+82 L†	64	518			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
75+82 R†	65	268			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
343+99 L†	66	2651			X	1	
347+50 R†	67	1628			X	1	
369+00 R†	68	208			X	1	
372+23 L†	69	94			X	1	
372+72 R†	70	28			X		
381+68 L†	71	581			X		
381+50 R†	72	306			X	1	360' INCLUDED IN RETAINING BARRIER QUANTITY
389+87 L†	73	228			X	1	
390+74 R†	74	1093			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
400+49 L†	75	2946			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
423+50 L†	76	451			X		
422+00 R†	77	351			X		
430+57 L†	78	193			X		
428+07 R†	79	1524			X		
445+50 L†	80	78			X		
447+14 L†	81	186			X	1	
447+12 R†	82	63			X		
482+00 L†	83	1174			X	1	
482+03 R†	84	1429			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
490+50 L†	85	689			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
490+50 R†	86	791			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
500+46 L†	87	830			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
501+47 R†	88	778			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
20+00 L†	89	1777			X		
14+57 R†	90	1673			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY

LOCATION: Begin Station (Approximate) (0)	◇ Plan Reference Number	Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	MEDIAN BARRIER (VARIABLE HEIGHT)	HALF BARRIER	TERMINAL	REMARKS
525+23 R†	91	582			X		50' INCLUDED IN RETAINING BARRIER QUANTITY
527+92 L†	92	244			X		
532+25 L†	93	176			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
533+44 R†	94	1476			X		50' INCLUDED IN RETAINING BARRIER QUANTITY
553+00 L†	95	838			X		
553+00 R†	96	942			X	1	
563+39 L†	97	661			X	1	LENGTH DIFFERENT FROM ALT IV
564+36 R†	98	564			X		
190+25 L†	99	1041			X		
103+00 R†	100	224			X		
112+00 L†	101	352			X	1	
112+00 R†	102	348			X	1	
13+00 R†	103	2882			X	1	100' INCLUDED IN RETAINING BARRIER QUANTITY
33+00 L†	104	207			X	1	
36+59 L†	105	610			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
36+47 R†	106	1174			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
18+50 R†	107	617			X		
10+86 R†	108	151			X		
10+65 L†	109	243			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
14+39 R†	110	412			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
15+00 L†	111	358			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
10+80 L†	112	473			X	1	
19+50 R†	113	192			X	1	
84+35 R†	114	355			X	1	
98+29 L†	115	53			X		
97+50 R†	116	55			X		
Sheet Total		39,801				31	

APPENDIX H

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

SUMMARY SHEET
BARRIER - ALT I

ROUTE: I-10 - JCT. I-19 TO KOLB ROAD
LOCATION: SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

SHEET SU-04

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	5	
		010 PM 260			

LOCATION: Begin Station (Approximate) (0)	◇ Plan Reference Number	Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	MEDIAN BARRIER (VARIABLE HEIGHT)	HALF BARRIER	TERMINAL	REMARKS
25+00 R†	117	2589			X		
50+25 L†	118	61			X		
52+42 L†	119	174			X		
52+42 R†	120	176			X		
56+23 L†	121	202			X	1	
55+94 R†	122	206			X	1	
52+25 L†	123	445			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
27+25 R†	124	361			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
27+25 L†	125	358			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
41+32 L†	126	366			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
41+32 R†	127	370			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
12+00 R†	128	289			X	1	
12+00 L†	129	5155			X		110' INCLUDED IN RETAINING BARRIER QUANTITY
580+00 R†	130	3213			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
615+95 L†	131	4724			X	1	30' INCLUDED IN RETAINING BARRIER QUANTITY
614+10 R†	132	4988			X		
666+00 L†	133	659			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
663+50 R†	134	820			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
675+60 L†	135	640			X	1	75' INCLUDED IN RETAINING BARRIER QUANTITY
674+40 R†	136	656			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
16+50 R†	137	1247			X	1	120' INCLUDED IN RETAINING BARRIER QUANTITY
686+89 L†	138	2191			X		
684+52 R†	139	2763			X	1	
14+29 L†	140	2777			X		
14+07 R†	143	2992			X	1	
709+41 L†	144	1333			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
712+00 R†	145	1123			X		120' INCLUDED IN RETAINING BARRIER QUANTITY
725+13 L†	146	612			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
726+57 R†	147	618			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
18+50 L†	148	606			X	1	

LOCATION: Begin Station (Approximate) (0)	◇ Plan Reference Number	Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	MEDIAN BARRIER (VARIABLE HEIGHT)	HALF BARRIER	TERMINAL	REMARKS
776+50 L†	149	779			X	1	50' INCLUDED IN RETAINING BARRIER QUANTITY
782+50 L†	150	646			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
782+50 R†	151	793			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
791+47 L†	152	678			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
792+94 R†	153	581			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
18+50 L†	154	110			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
16+50 R†	155	310			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
41+47 L†	156	228			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
41+47 R†	157	528			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
16+50 L†	158	450			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
16+50 R†	159	450			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
41+75 L†	160	600			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
41+75 R†	161	250			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
Sheet Total		49,795			24		

APPENDIX H

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

SUMMARY SHEET
BARRIER - ALT I

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10 - JCT. I-19 TO KOLB ROAD
LOCATION: SR 210 - GOLF LINKS ROAD TO I-10

SHEET SU-05

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

10/14/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825sb005.dgn

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APPENDIX I
SYSTEM ALTERNATIVE IV PLAN SHEETS

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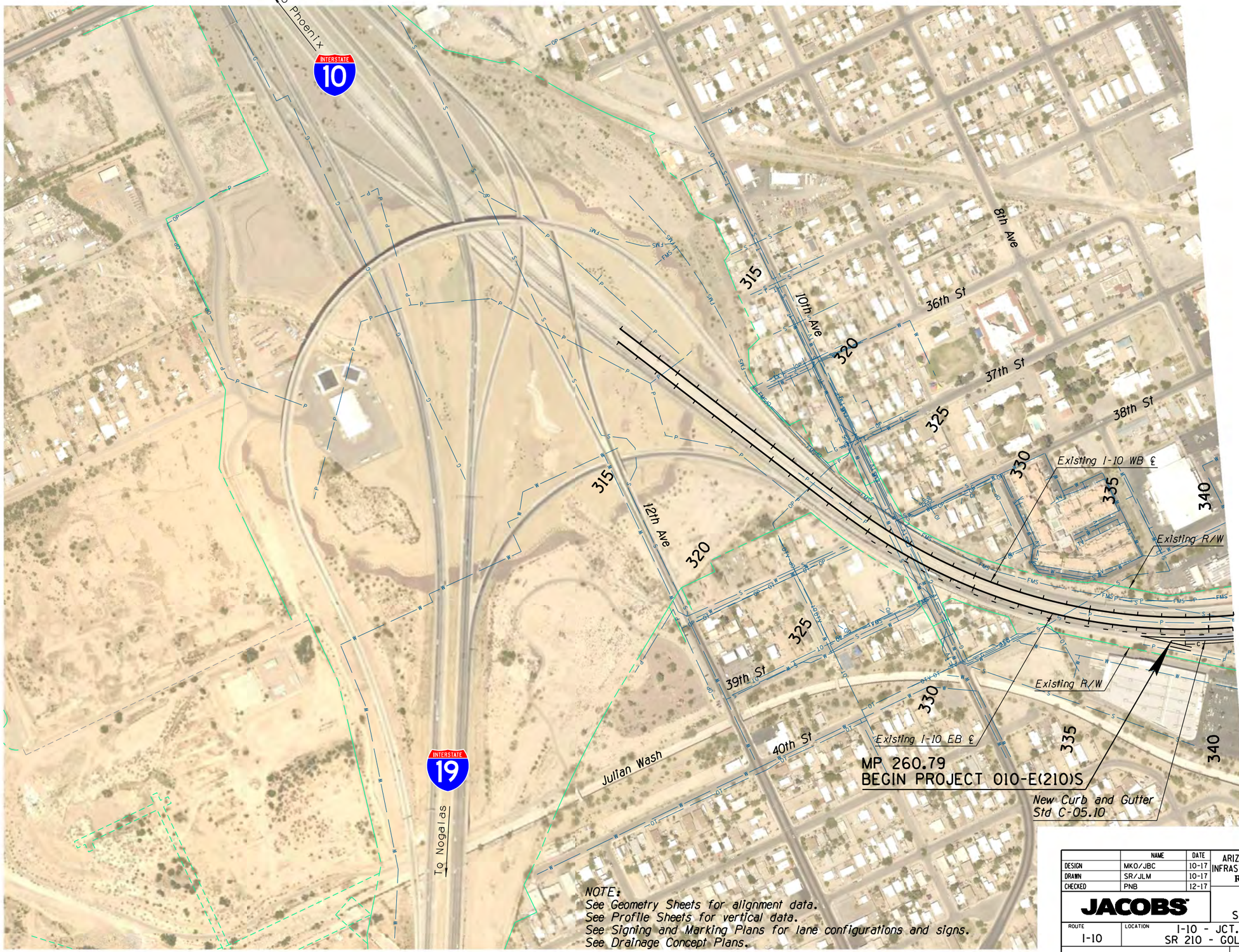
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	16	
		010 PM 260			



N

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 314+00 TO STA 341+00

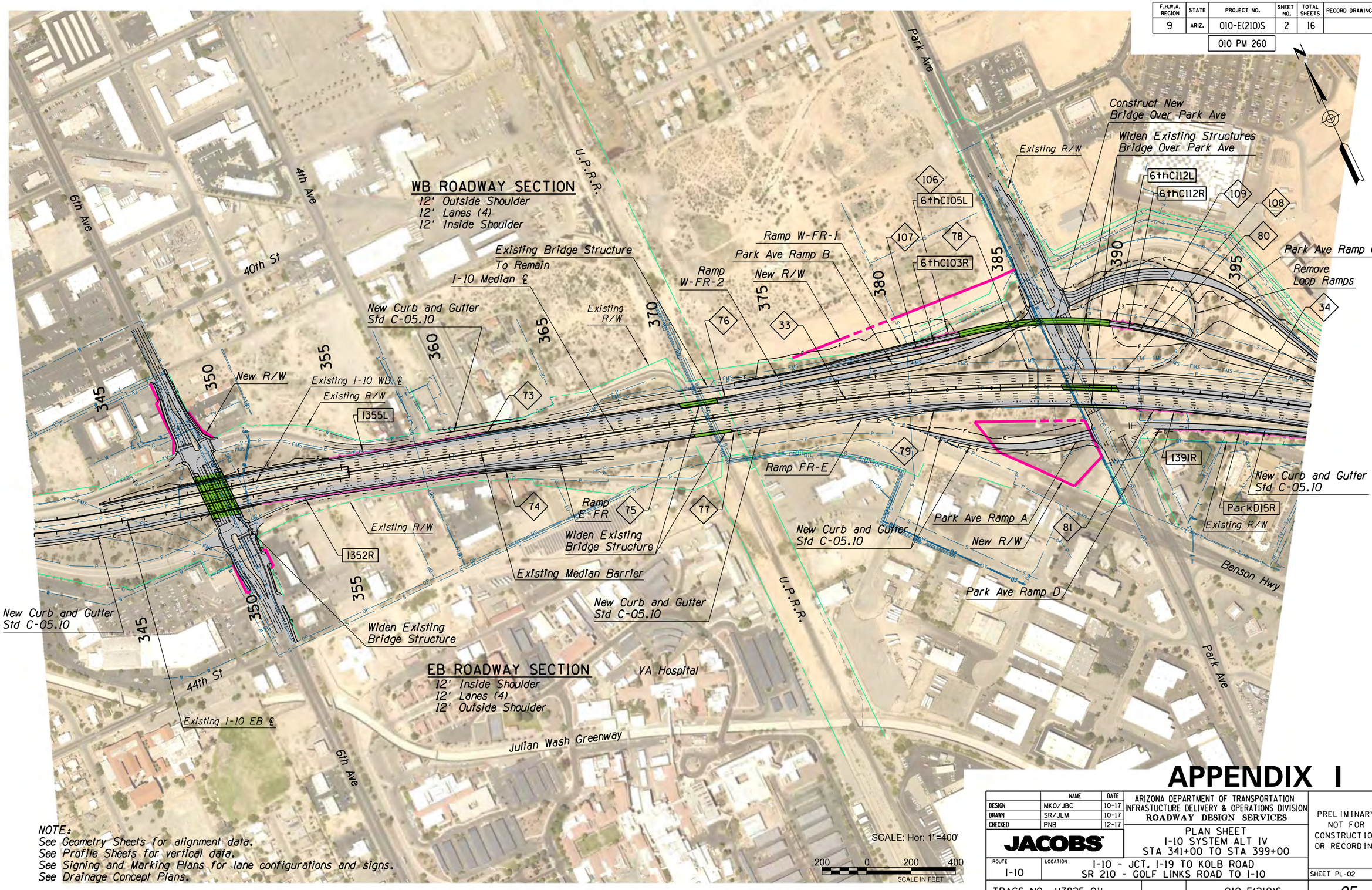
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PL-01

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	16	
		010 PM 260			



NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 341+00 TO STA 399+00

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-02

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825pl02.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	16	
		010 PM 260			

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

WB ROADWAY SECTION
12' Outside Shoulder
12' Lanes (4)
12' Inside Shoulder

EB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (4)
12' Outside Shoulder

Kino Pkwy
Ajo Way
Benson Hwy
Julian Wash Greenway

Construct New Equipment Pass Under Kino Pkwy Pamp B
New Curb and Gutter Std C-05.10
I-10 Median ℄
New R/W
Existing R/W
Park Ave Ramp C
Kino Pkwy Ramp B
Construct New Bridge Over Ajo Way
Construct New Bridge Over I-10
Remove Ramps
Kino Pkwy Ramp C
Widen Existing Bridge Structure
Kino Pkwy Ramp D1
Remove Ramp
Kino Pkwy Ramp D2
Kino Pkwy Ramp A
Park Ave Ramp D

KinoC11R
KinoC12L
ParkC56L
KinoC14R
KinoC15L
ParkC53R
ParkC53L
KinoB22R
KinoB16L
KinoA21R
KinoA34L
KinoA37R
KinoA37L
ParkC56R
ParkD15R

400 405 410 415 420 425 430 435 440 445 450 455

82 83 84 86 87 88 89 110 111 114 115 116 117 118 119 120 122 123 124 125 126 127 6 7 8

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 399+00 TO STA 457+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

SHEET PL-03

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825pl03.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	16	
		010 PM 260			

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

WB ROADWAY SECTION
12' Outside Shoulder
12' Lanes (3)
12' Inside Shoulder

EB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (3)
12' Outside Shoulder

Country Club Rd
Michigan St
New Curb and Gutter Std C-05.10
Construct New Bridge Over Country Club Road
Country Club Rd Ramp B
Country Club Rd Ramp C
I-10 Median ℄
New R/W
Existing R/W
1500L
1497L
1510R
CClubD15R
CClubA22R
1498R
1501R
Bridge Structure By Others
Country Club Rd Ramp A
Country Club Rd Ramp D
Bentley Ave
Treat Ave
Irvington Rd
Extend Existing Box Culvert Both Sides
Extension of Treat Ave and Construction of Box Culvert
Julian Wash Greenway
460 465 470 475 480 485 490 495 500 505 510 515
8 90 91 92 93 94 95 96 97 9

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 457+00 TO STA 515+00

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-04

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825pl04.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	16	
		010 PM 260			

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

WB ROADWAY SECTION
12' Outside Shoulder
12' Lanes (3)
12' Inside Shoulder

EB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (3)
12' Outside Shoulder

Palo Verde Rd
Irvington Rd
Alvernon Way
U.P.R.R.
Tucson Electric Power
Julian Wash Greenway

Remove Ramps
New Curb and Gutter Std C-05.10
Existing R/W
New R/W
I-10 Median ℄
Ramp SW
Alvernon Way Ramp B
Ramp EN
Alvernon Way Ramp A
Widen Existing Bridge Over Alvernon Way
Construct New Bridge Over Irvington Rd
Widen Existing Bridge Over Palo Verde Rd
Construct New Connection to Palo Verde Rd
Ramp WN
Alvernon Way Ramp C
Ramp SE
Alvernon Way Ramp D

EN76R EN76L WN28L WN38R WN41R WN42L AlcC15L 1572L SE30L SE30R SE41L SE41R EN50R EN55L 1528L 1532L 1534R 1525R 1531R 1510R

9 10 11 12 69 70 96 97 98 99 100 101 102 103 104 105 128 130 133 134 136

495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 515+00 TO STA 573+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

SHEET PL-05

___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825pl05.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	6	16	
		010 PM 260			

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

WB ROADWAY SECTION

12' Outside Shoulder
12' Auxiliary Lane
12' CD Lanes (2)
22' Shoulder
12' Shoulder
12' Lanes (3)
16' Inside Shoulder

EB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Shoulder
12' Shoulder
12' CD Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder

Tucson Electric Power
Ramp WN
WB CD
New R/W
U.P.R.R.
Julian Wash Greenway
New R/W
Existing R/W
Alvernon Way
Ramp D
New R/W
Ramp SE
EB CD
I-10 Median ℄
Construct New Bridge Over Drexel Road
Existing R/W
Drexel Rd

1572L, 136, 575, 580, 585, 590, 13, 595, 14, 600, 605, 610, 615, 1614L, 1616L, 620, 36, 625, 138, 630, 137, 15, 1581R, 35, 12, 525, 1614R, 139

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 573+00 TO STA 631+00

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-06

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825pl06.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	7	16	
		010 PM 260			

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

U.P.R.R.

Julian Wash Greenway

Valencia Rd

Littletown Rd

WB ROADWAY SECTION

10' Outside Shoulder
12' Auxiliary Lane
12' CD Lanes (2)
22' Shoulder
12' Shoulder
12' Lanes (3)
16' Inside Shoulder

635 640 645 650 655 660 665 670 675 680 685

New R/W

Existing R/W

WB CD

I-10 Median ℄

New R/W

New Curb and Gutter Std C-05.10

New R/W

New Curb and Gutter Std C-05.10

New R/W

Valencia Rd Ramp C

Existing R/W

Valencia Rd Ramp B

138 144 145 140 1672L 141 1671R 148 149 163 1676L

Craycroft Rd Ramp B

Craycroft Rd Ramp A

36 1614R Existing R/W 139 16 EB CD New R/W 37 146 Valencia Rd Ramp A Construct New Bridges Over Valencia Road 147 1674R 150 151L 38 164 143 ValD15R Existing R/W

EB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Shoulder
22' Shoulder
12' CD Lanes (2)
12' Auxiliary Lane
10' Outside Shoulder

Valencia Rd Ramp D

New Curb and Gutter Std C-05.10

Benson Hwy

Valencia Rd

Swan Rd

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 631+00 TO STA 689+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

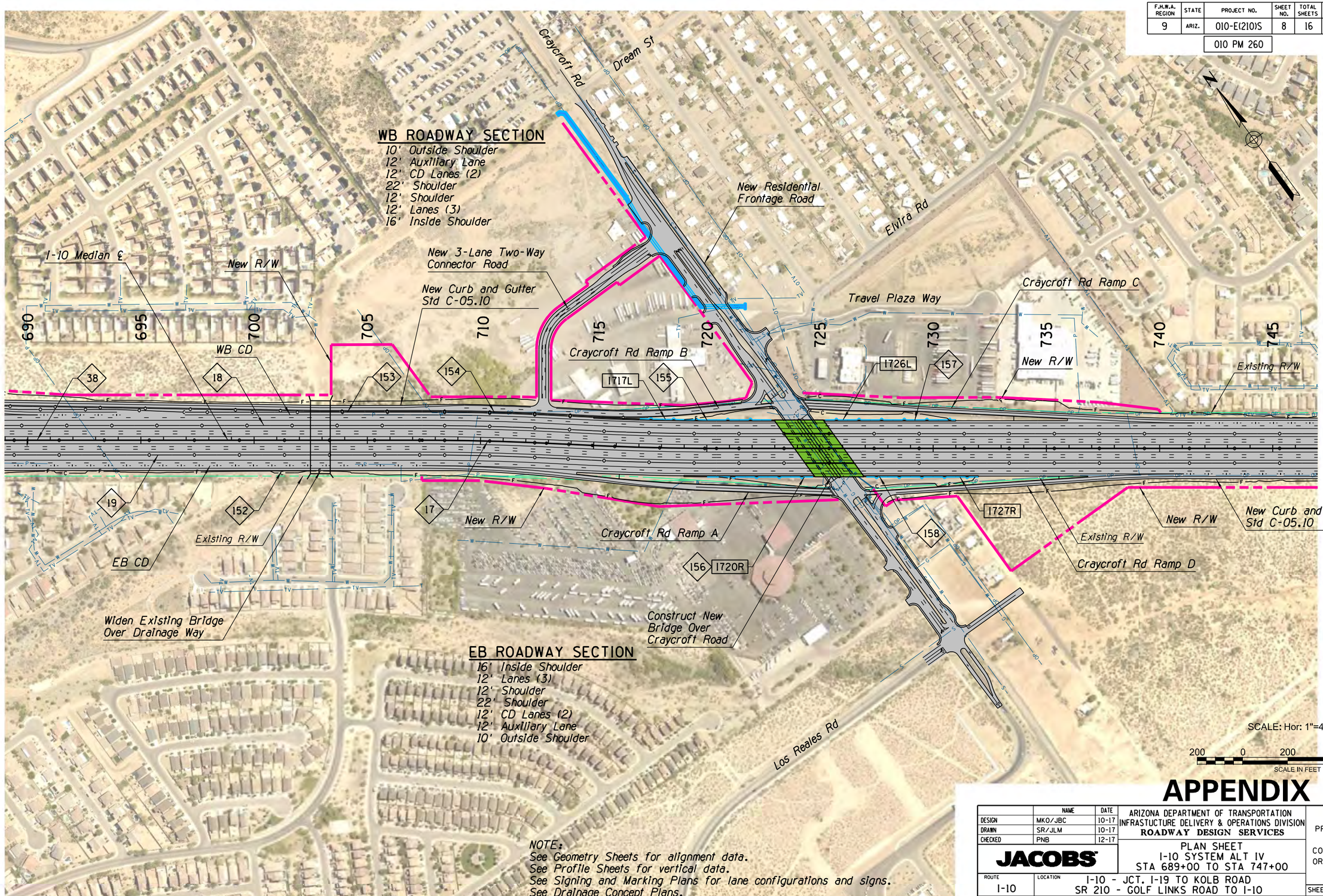
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PL-07

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825pl07.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	8	16	
		010 PM 260			

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



NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 689+00 TO STA 747+00

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-08

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825pl08.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	9	16	
		010 PM 260			

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

WB ROADWAY SECTION

10' Outside Shoulder
12' Auxiliary Lane
12' CD Lanes (2)
22' Shoulder
12' Shoulder
12' Lanes (3)
16' Inside Shoulder

EB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Shoulder
22' Shoulder
12' CD Lanes (2)
12' Auxiliary Lane
10' Outside Shoulder

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 747+00 TO STA 805+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PL-09

___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825pl09.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	10	16	
		010 PM 260			

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

WB ROADWAY SECTION
10' Outside Shoulder
12' CD Lanes (2)
22' Shoulder
12' Shoulder
12' Lanes (3)
16' Inside Shoulder

EB ROADWAY SECTION
16' Inside Shoulder
12' Lanes (3)
12' Shoulder
22' Shoulder
12' CD Lanes (2)
10' Outside Shoulder

Kolb Rd
Science Park Dr
Kolb Rd Ramp C2
170
NBKolb18R
Construct New Bridge Over Ramp C2
169
New R/W
166
NBKolb18L
165
Kolb Rd Ramp C
SBKolb19L
Kolb Rd Ramp C1
SBKolb19R
New Curb and Gutter Std C-05.10
Kolb Rd Ramp B1
Connector WB CD to WB I-10
WB CD
New Curb and Gutter Std C-05.10
805 810 815 820 825 830 835 840 845 850 855 860
New R/W
21
Existing R/W
22
Kolb Rd Ramp B
New R/W
SBDD115R
SBDD115L
NBDD127R
NBDD127L
Kolb Road NB Mainline
SBDD119L
SBDD119R
Existing R/W
23
New Curb and Gutter Std C-05.10
I-10 Median ℄
NBDD131R
NBDD131L
Kolb Rd Ramp D
Kolb Rd Ramp A1
Kolb Rd Ramp D1
New Curb and Gutter Std C-05.10
New Curb and Gutter Std C-05.10
EB CD
Construct New Bridge Over I-10 at Kolb Road
Kolb Rd Ramp A
Remove Ramp
Kolb Rd
Kolb Road SB Mainline
SBKolb41R
STATE LANDS
New R/W
SBKolb41L

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 805+00 TO STA 863+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

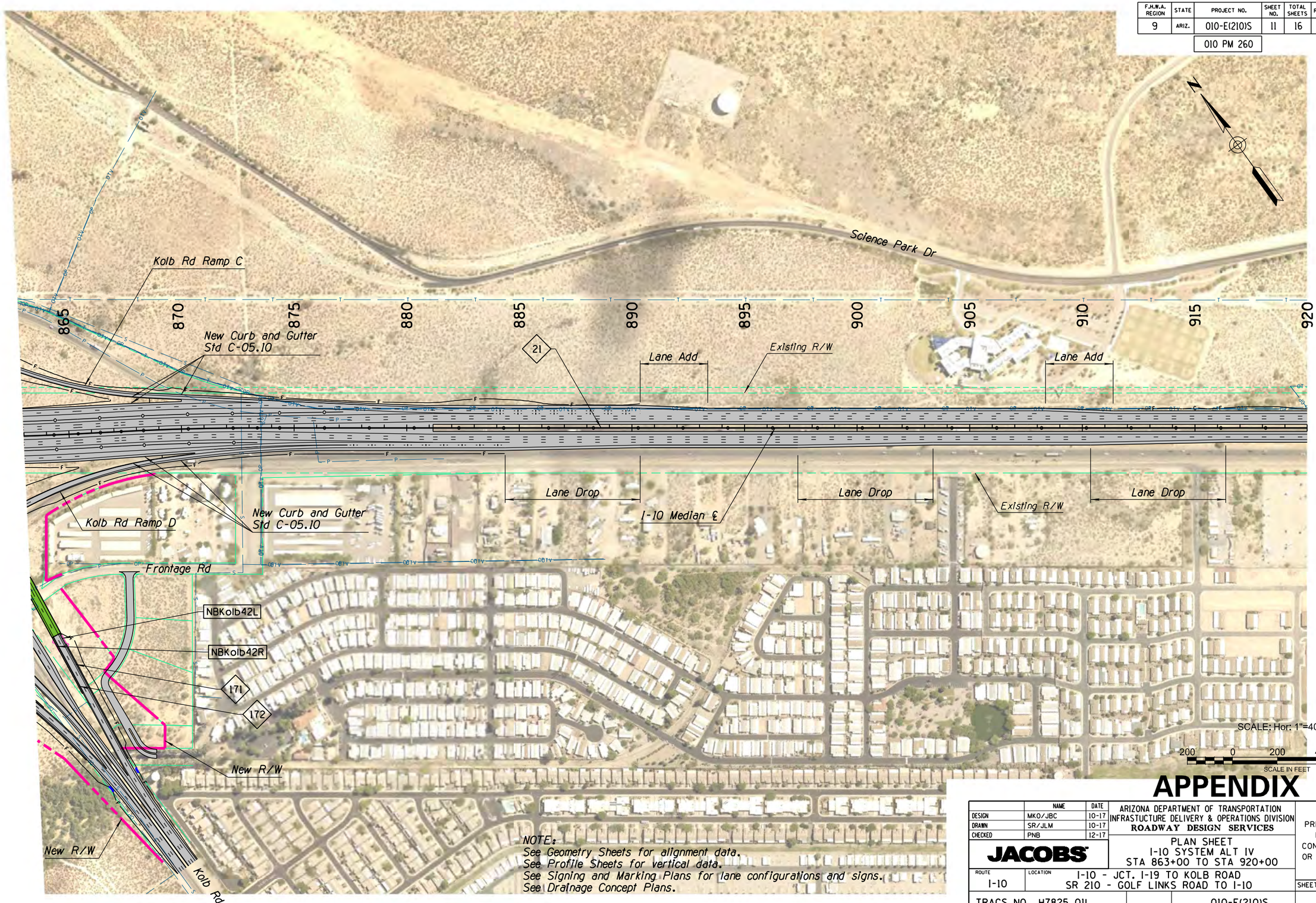
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

SHEET PL-10
___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825pl10.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	11	16	
		010 PM 260			

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



NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 863+00 TO STA 920+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

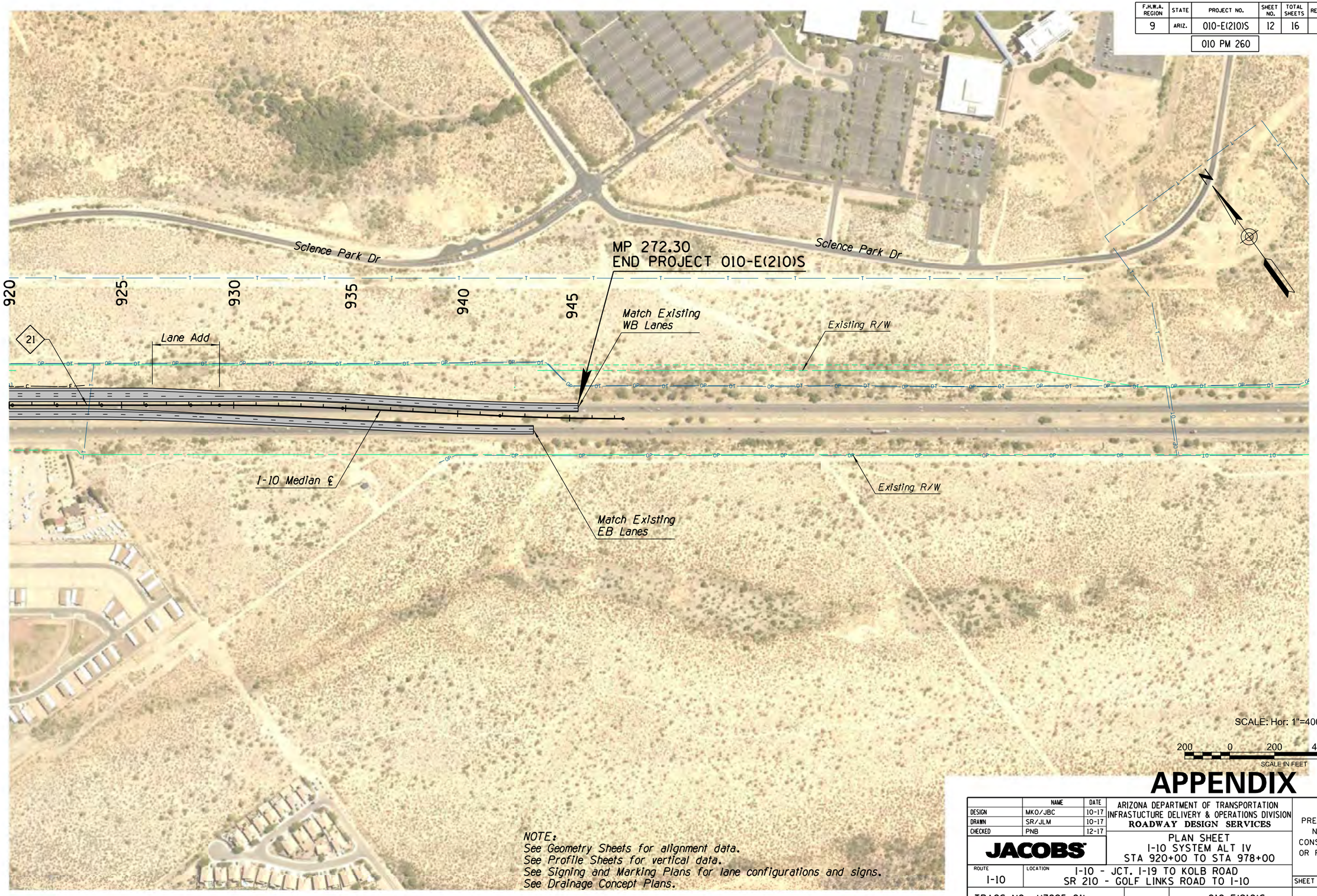
SHEET PL-11

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825pl11.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	12	16	
		010 PM 260			

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



NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor. 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
STA 920+00 TO STA 978+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

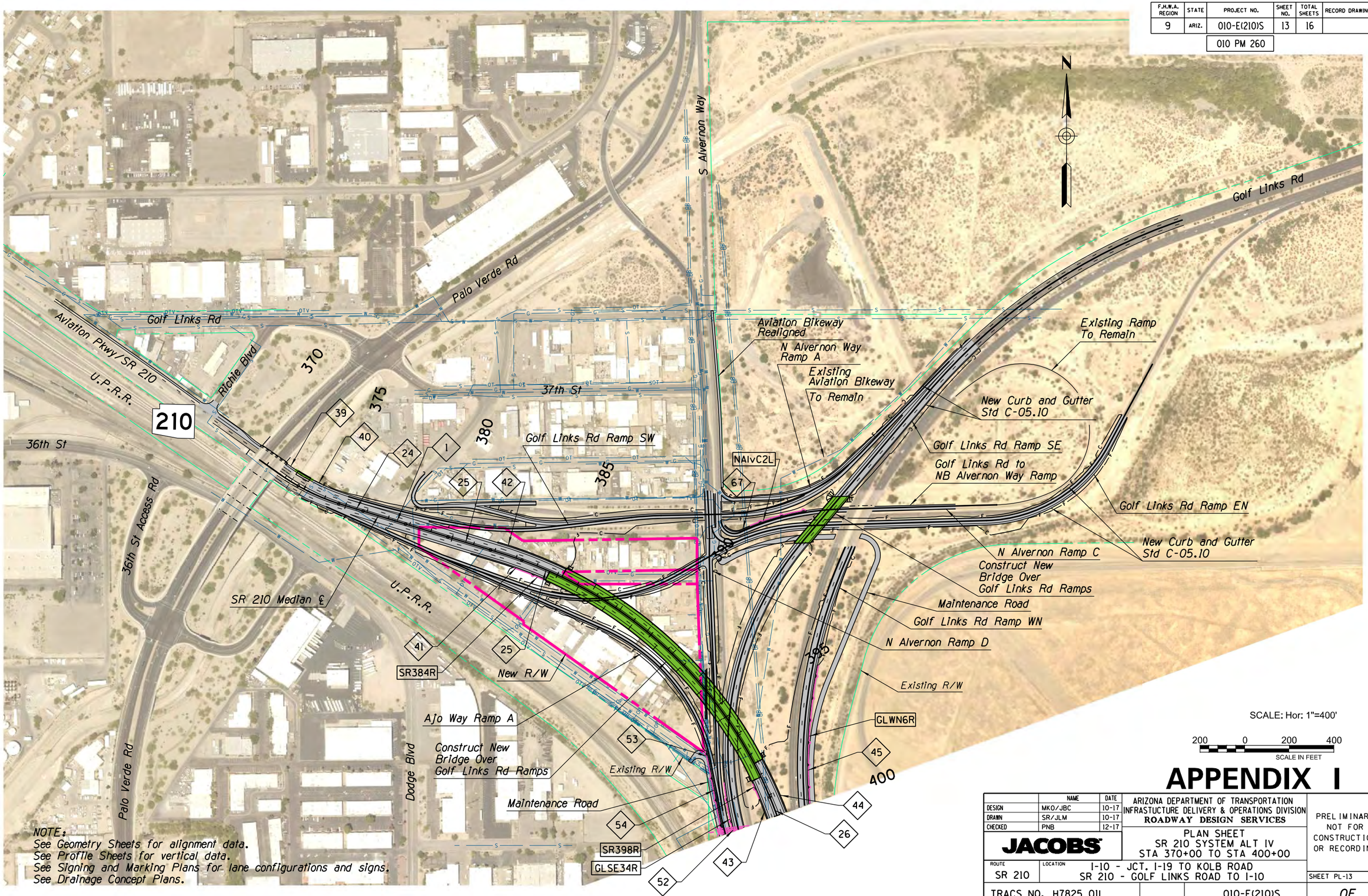
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PL-12

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p112.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	13	16	
		010 PM 260			

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



NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
SR 210 SYSTEM ALT IV
STA 370+00 TO STA 400+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PL-13

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825pl13.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	14	16	

010 PM 260

EB ROADWAY SECTION
12' Outside Shoulder
12' Lanes (4)
12' Inside Shoulder

WB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (4)
12' Outside Shoulder

Maintenance Road
New Curb and Gutter Std C-05.10
Existing R/W
SR404L
GLWN6R
Construct New Bridge Over U.P.R.R. Tracks
SR423L
Ajo Way Ramp B
Contractors Way
U.P.R.R.
SR442L
GL SE to Ajo Way Ramp A
Maintenance Road
New Curb and Gutter Std C-05.10
Golf Links Rd Ramp SE
Ajo Way Ramp A
SR 210 Median ℄
Existing R/W
New Curb and Gutter Std C-05.10
New R/W
Ajo Way Ramp C
Existing R/W
SR454L
SR434R
New R/W
Ajo Way Ramp A
SR445R
AjoD11R
SR456R
Ajo Way Ramp D
New R/W
Construct New Bridge Over Ajo Way
Dodge Blvd
Ajo Way

SCALE: Hor: 1"=400'
200 0 200 400
SCALE IN FEET

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
SR 210 SYSTEM ALT IV
STA 400+00 TO STA 458+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

SHEET PL-14

___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825p114.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	15	16	
		010 PM 260			

N

EB ROADWAY SECTION
12' Outside Shoulder
12' Lanes (4)
12' Inside Shoulder

WB ROADWAY SECTION
12' Inside Shoulder
12' Lanes (4)
12' Outside Shoulder

Irvington Rd
Contractors' Way
U.P.R.R.
New R/W
Existing R/W
SR 210 Median ℄
Construct New Bridge Over Irvington Rd
Construct New Bridge Over Michigan St
Michigan St
Irvington Rd
Julian Wash Greenway
Alvernon Way Ramp A
Alvernon Way Ramp B
Alvernon Way Ramp C
Alvernon Way Ramp D
Construct New Bridge For Ramp Over Alvernon Way Ramp C
Construct New Bridges For Ramps Over Alvernon Way
Ramp EN
Ramp WN
Ramp SE
Ramp SW

460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570

61 64 31 4 32 63 62 30 5 65 72 71 68 66 132 131

SR454L SR463L SR456R SR463R SR490L SR490R EN76R EN76L WN28L WN38R WN41R WN42L AlvC15L SE41L SE41R SE30L SE30R EN55L EN50R

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
SR 210 SYSTEM ALT IV
STA 460+00 TO STA 520+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L
010-E(210)S

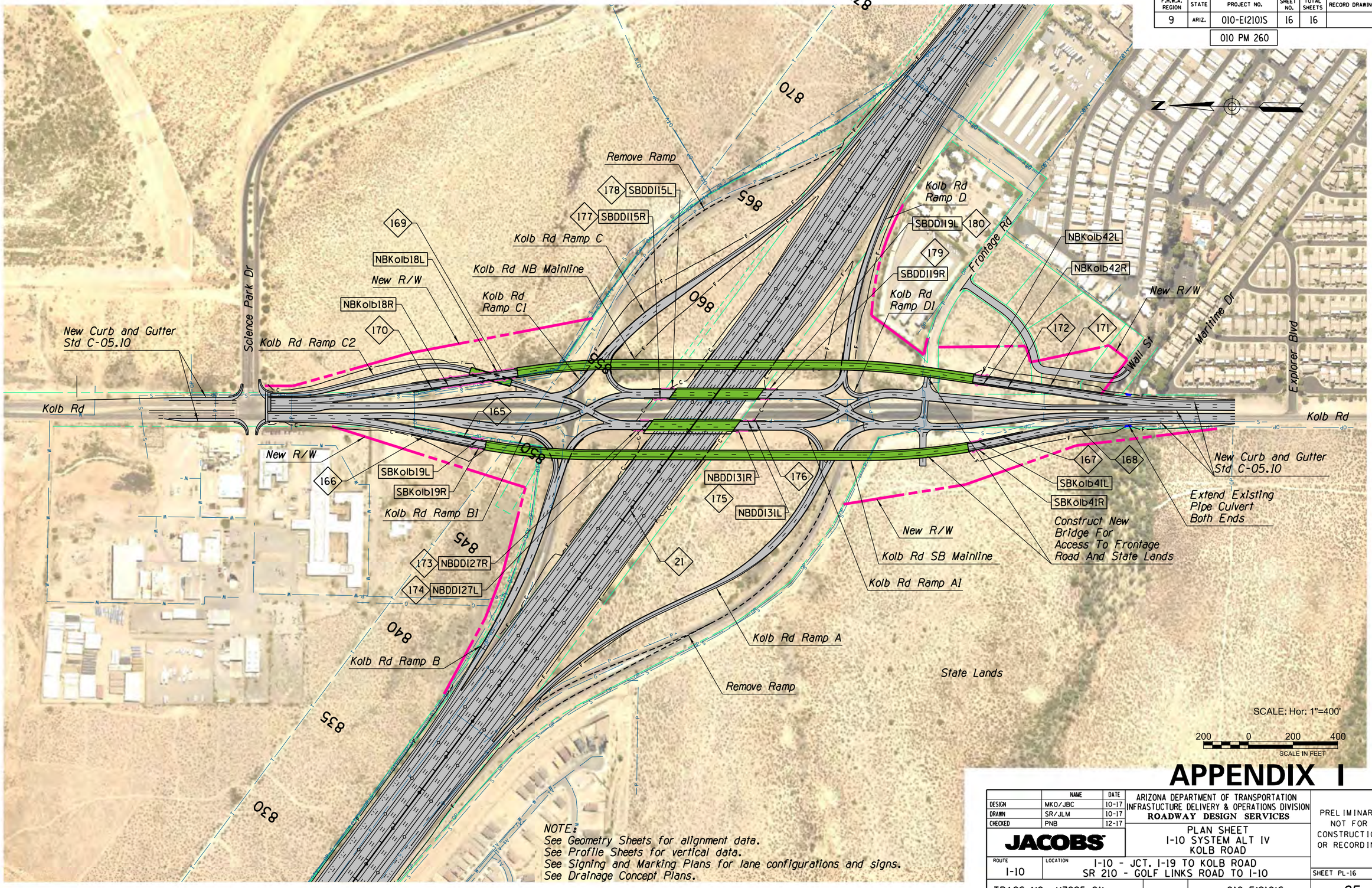
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

SHEET PL-15
___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	16	16	
		010 PM 260			

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



NOTE:
See Geometry Sheets for alignment data.
See Profile Sheets for vertical data.
See Signing and Marking Plans for lane configurations and signs.
See Drainage Concept Plans.

APPENDIX I

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
I-10 SYSTEM ALT IV
KOLB ROAD

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET PL-16

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

APPENDIX J
SYSTEM ALTERNATIVE IV TYPICAL SECTIONS

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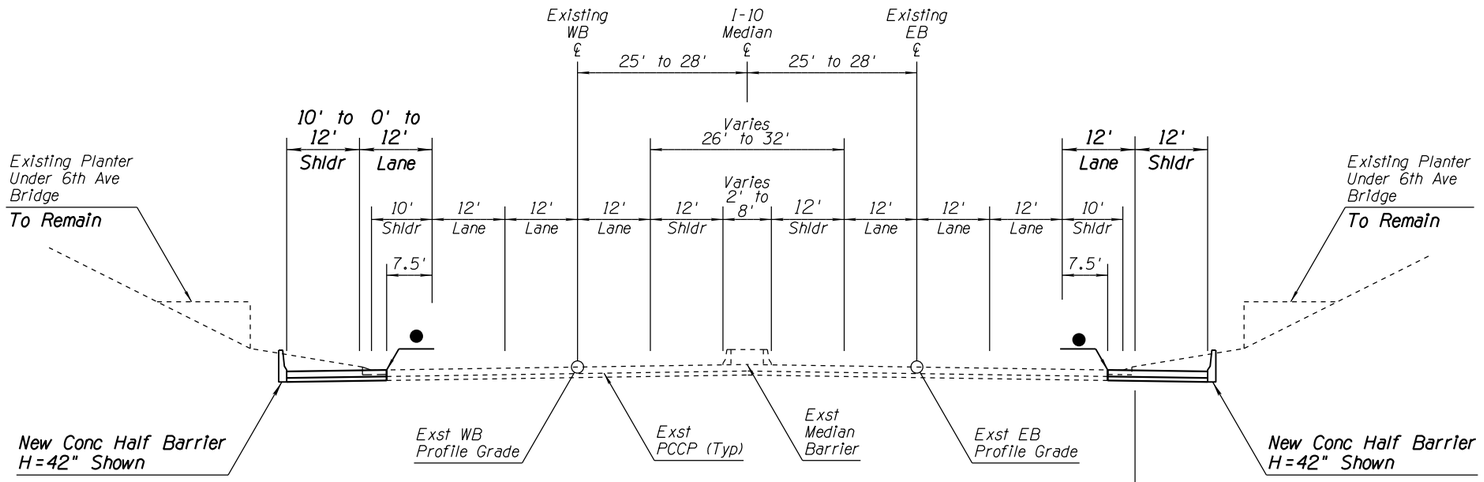
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	46	
		010 PM 260			



TYPICAL SECTION

I-10
Depressed Mainline
Outside Widening
Between 6th Ave Ramp 'A' Gore and Median Sta 355+41.71

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

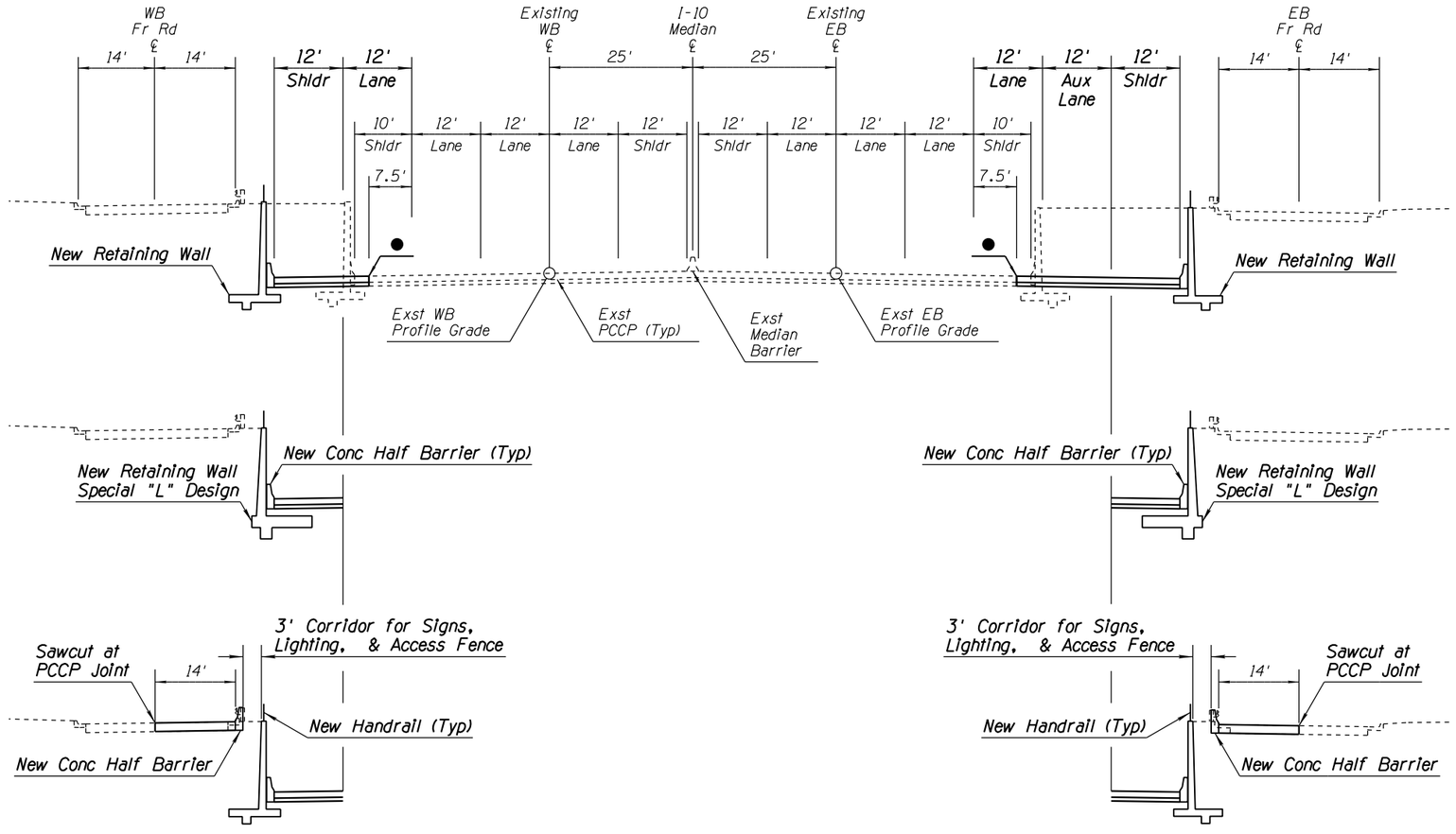
PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET TYP-01
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	46	
		010 PM 260			



Frontage Road Treatment

Frontage Road Treatment

● Lip of Existing Gutter

TYPICAL SECTION

I-10
Depressed Mainline
Outside Widening
Sta 355+41.71 to 4th Avenue

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

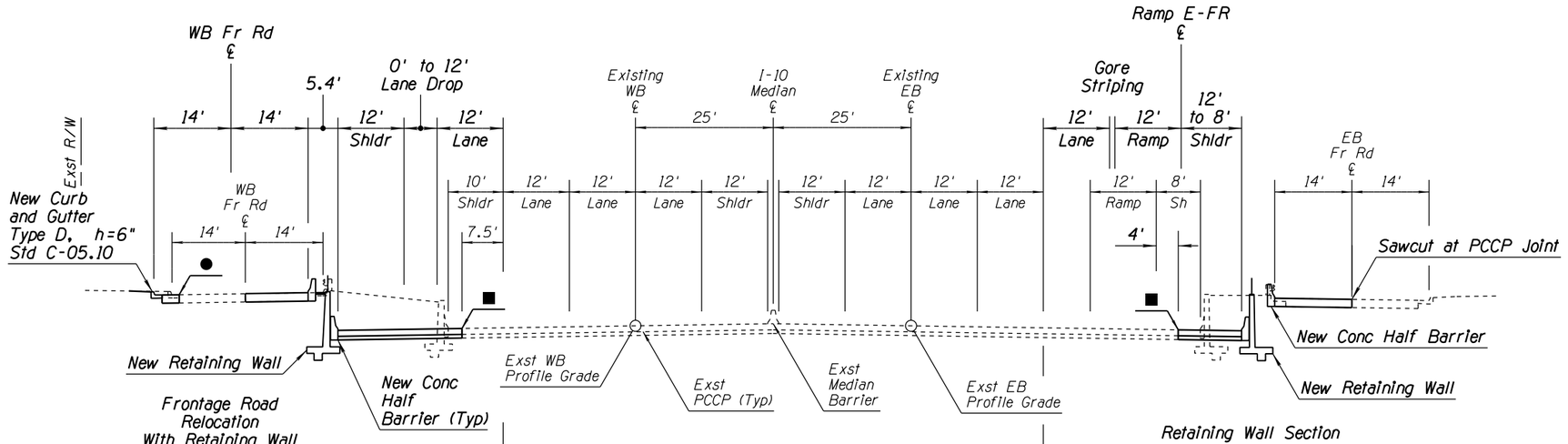
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-02

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ02.dgn

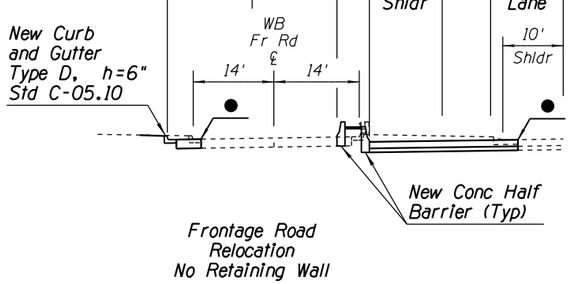
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

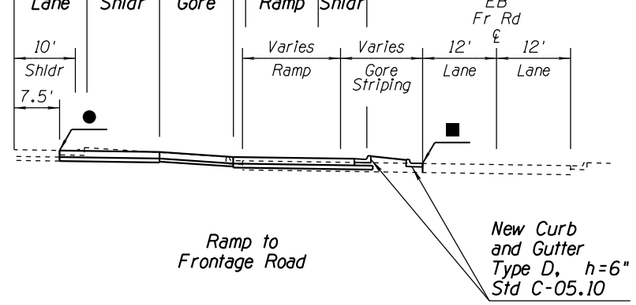
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	46	
		010 PM 260			



● Lip of Existing Gutter

■ Sawcut





TYPICAL SECTION

I-10
Depressed Mainline
4th Avenue to Crossover Ramps
Outside Widening
WB Frontage Road Relocation

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

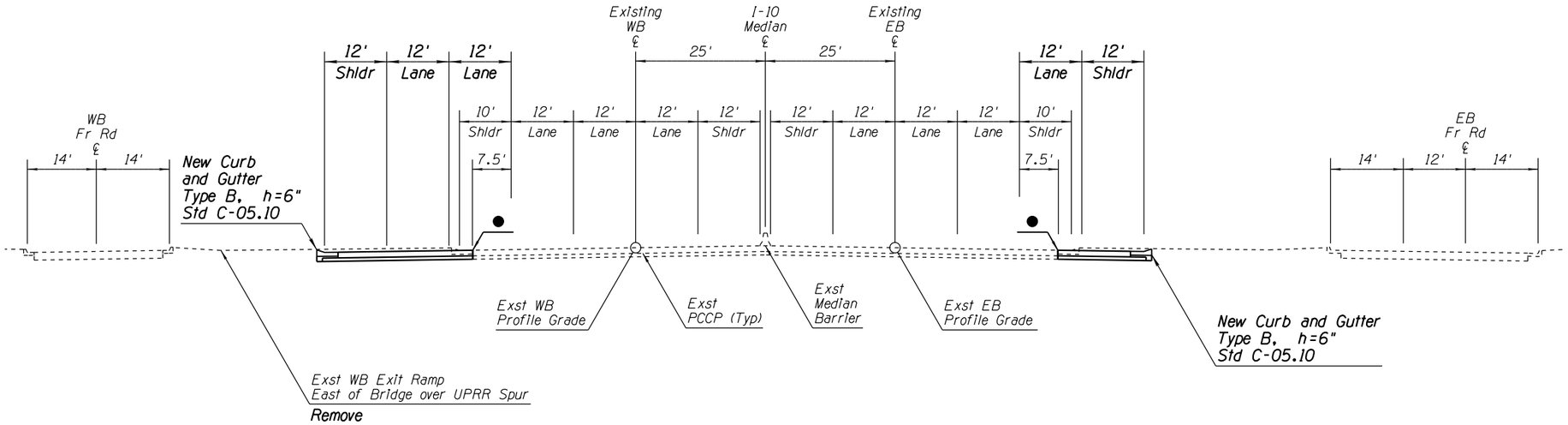
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-03

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty103.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	46	
		010 PM 260			



● Lip of Existing Gutter

TYPICAL SECTION

I-10
Elevated Mainline
In the Vicinity of UPRR Spur
Outside Widening
Between EB Exit and Sta PC 375+93.29

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

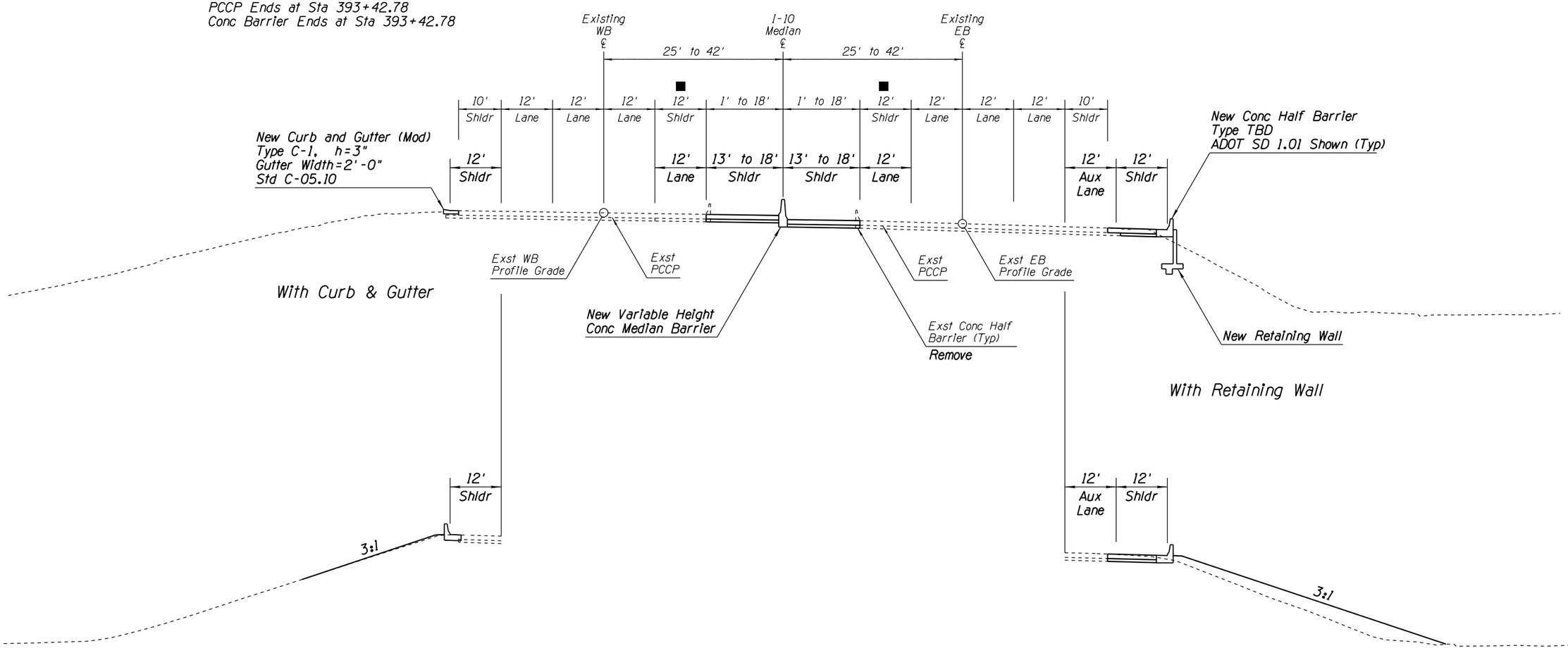
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-04

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	46	
		010 PM 260			

■ *EB Shldr-*
PCCP Ends at Sta 391+31.46
Conc Barrier Ends at Sta 391+47.39
WB Shldr-
PCCP Ends at Sta 393+42.78
Conc Barrier Ends at Sta 393+42.78



TYPICAL SECTION

I-10
Elevated Mainline
Curve at Park Ave
Change from Outside Widening to Inside Widening
Med Sta PC 375+93.29 to Med Sta PT 397+99.24

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-05
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

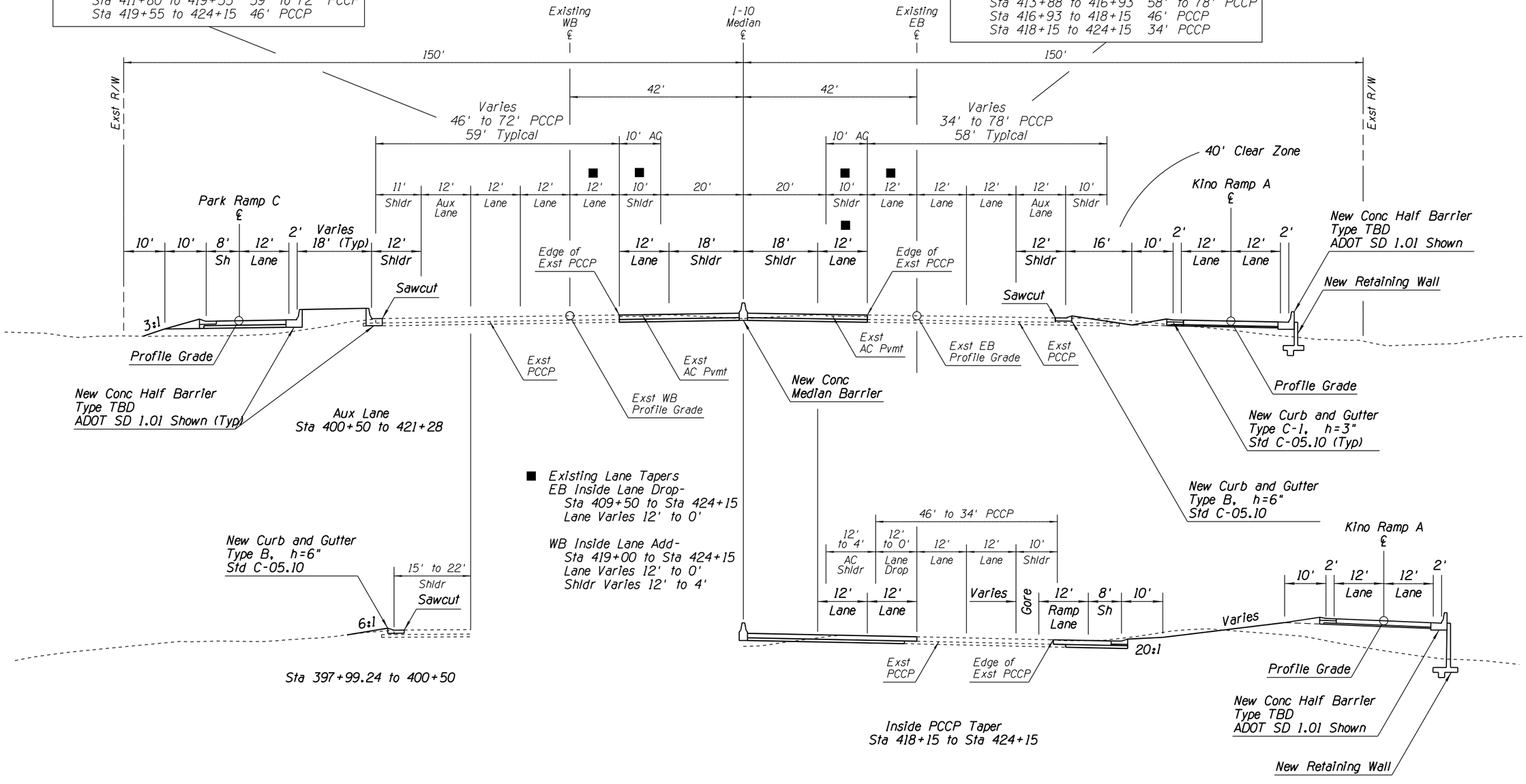
TRACS NO. H7825 01L		010-E(210)S	___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	6	46	
		010 PM 260			

Sta 397+99.24 to 400+80 56' to 58' PCCP
Sta 400+80 to 411+80 59' PCCP
Sta 411+80 to 419+55 59' to 72' PCCP
Sta 419+55 to 424+15 46' PCCP

Sta 397+99.24 to 400+50 56' to 58' PCCP
Sta 400+50 to 413+88 58' PCCP
Sta 413+88 to 416+93 58' to 78' PCCP
Sta 416+93 to 418+15 46' PCCP
Sta 418+15 to 424+15 34' PCCP



■ *Existing Lane Tapers*
EB Inside Lane Drop-
Sta 409+50 to Sta 424+15
Lane Varies 12' to 0'

WB Inside Lane Add-
Sta 419+00 to Sta 424+15
Lane Varies 12' to 0'
Shldr Varies 12' to 4'

Sta 397+99.24 to 400+50

Inside PCCP Taper
Sta 418+15 to Sta 424+15

TYPICAL SECTION

I-10
Elevated Mainline
Park Ave to Kino West Gores
Inside Widening
Med Sta PT 397+99.24 to Med Sta 421+28

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

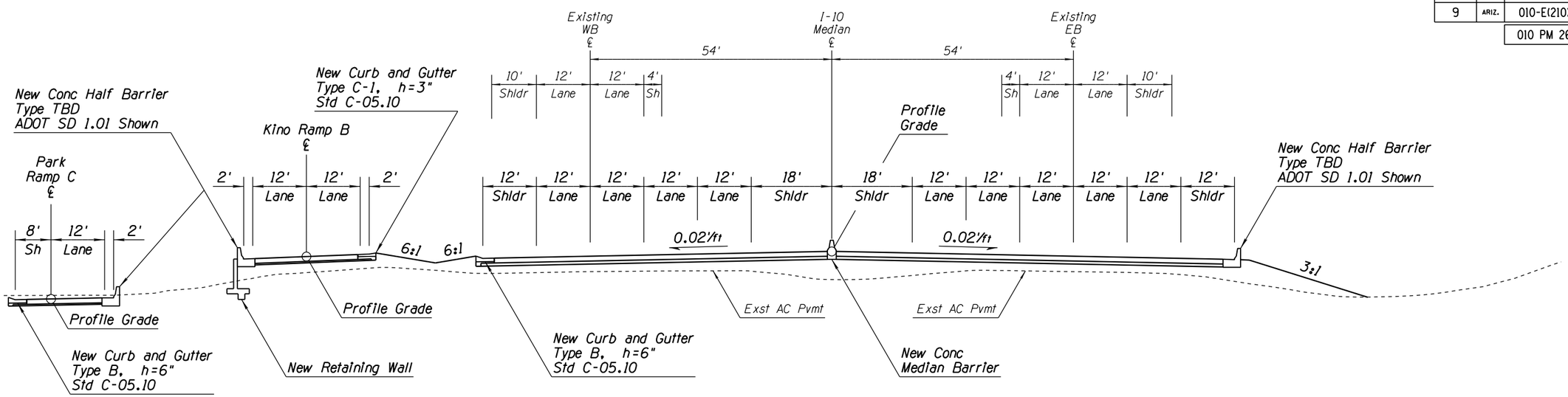
SHEET TYP-06

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

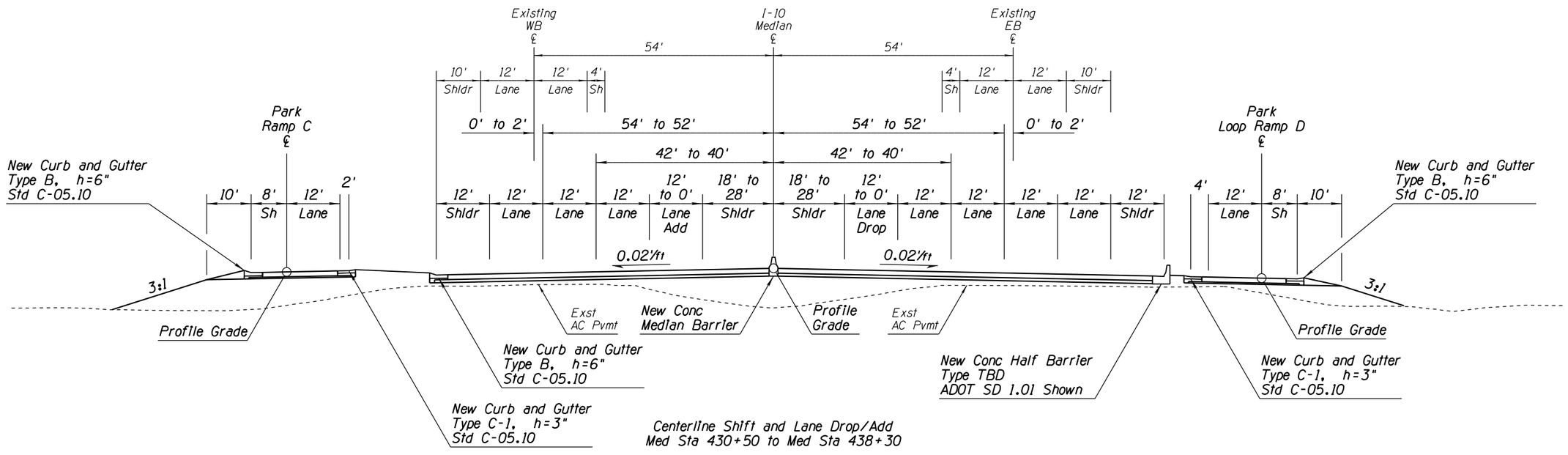
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty106.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	7	46	
		010 PM 260			



Med Sta 421+28 to Med Sta 430+50



Centerline Shift and Lane Drop/Add
Med Sta 430+50 to Med Sta 438+30

TYPICAL SECTION

I-10
Elevated Mainline
West Kino Gores to Sta 438+30
Inside Widening
Med Sta PT 421+28 to Med Sta 438+30

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

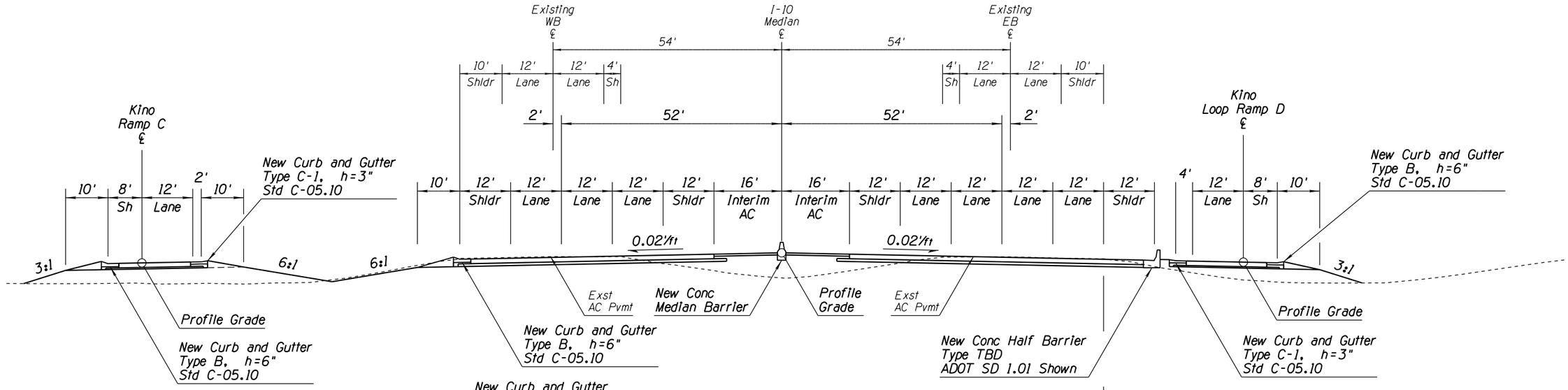
DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

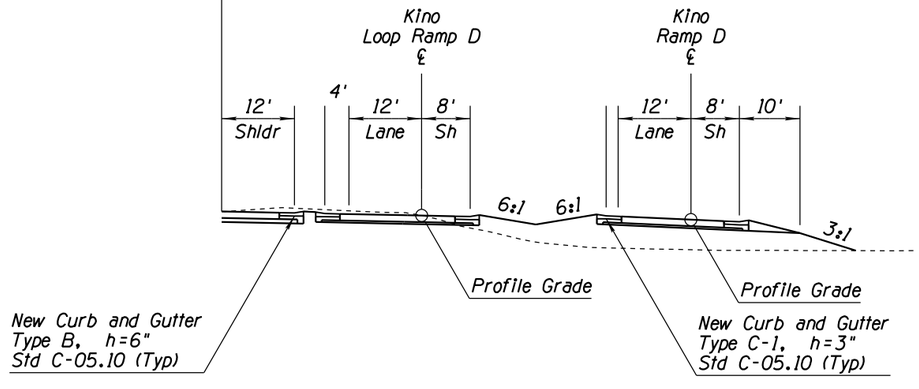
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-07
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L		010-E(210)S ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	8	46	
		010 PM 260			





TYPICAL SECTION

I-10
Elevated Mainline
Sta 438+30 to East Kino Gores
Inside Widening
Med Sta 438+30 to Med Sta 445+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

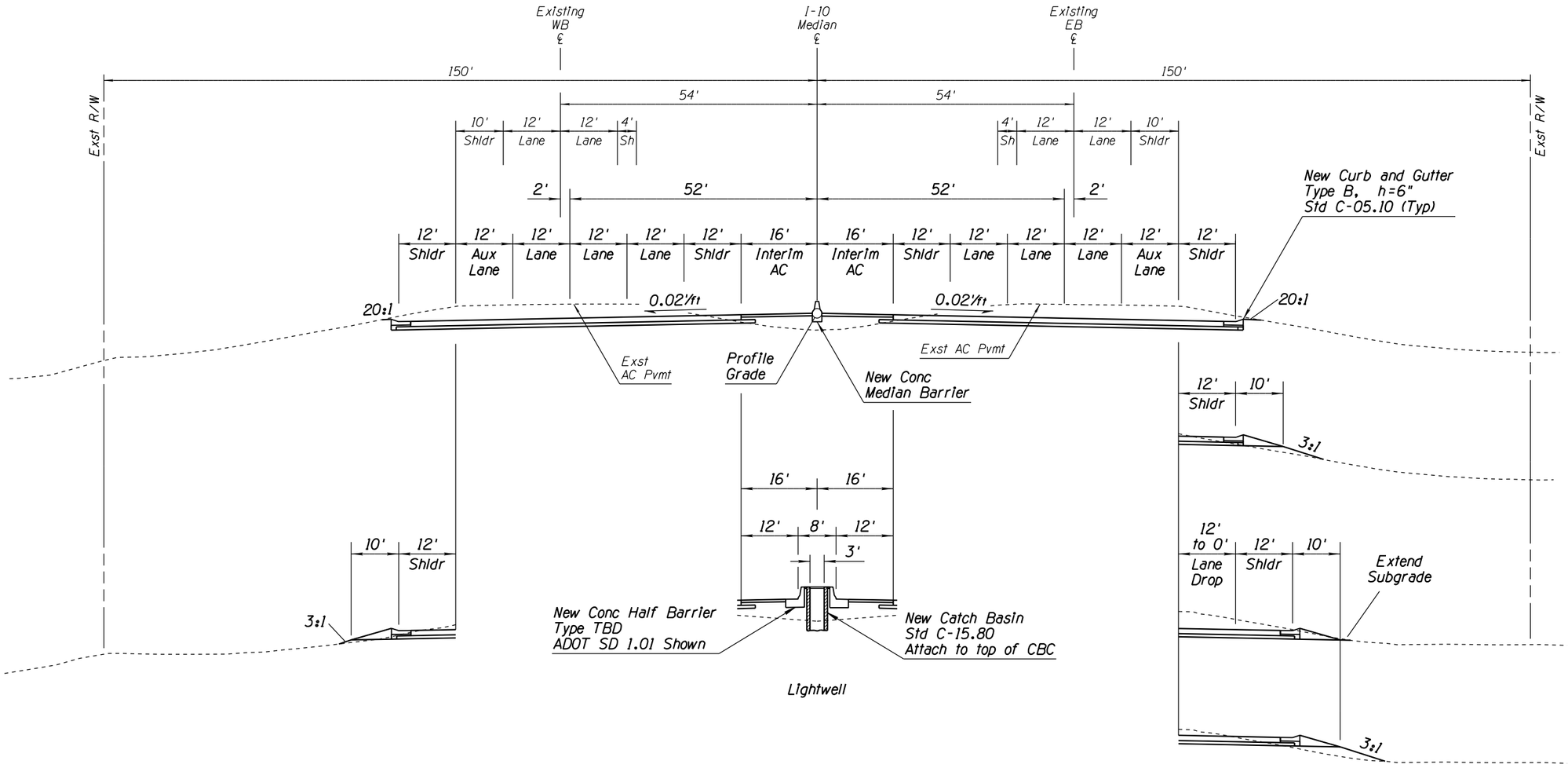
PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET TYP-08
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	9	46	
		010 PM 260			



TYPICAL SECTION

I-10
Elevated Mainline
East Kino Gores to Country Club Gores
Inside Widening
Med Sta 445+00 to Med Sta 487+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

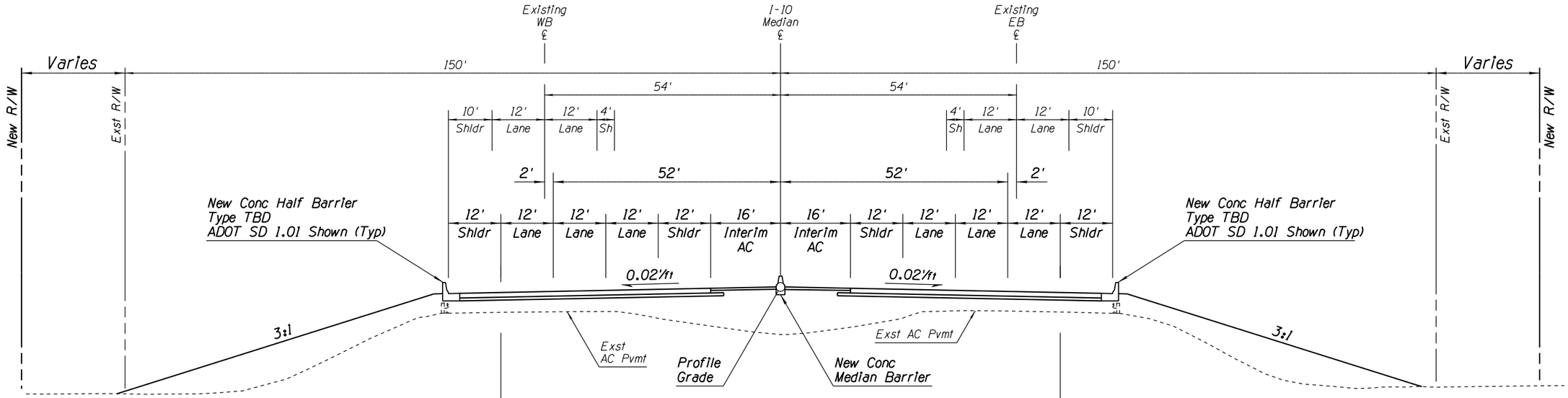
SHEET TYP-09

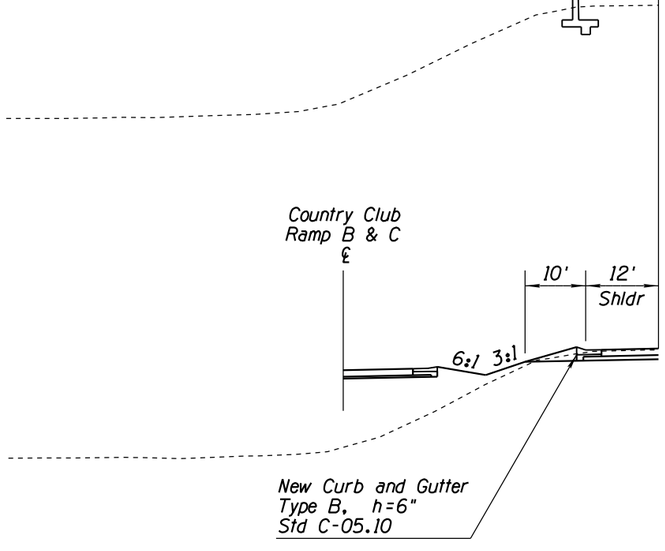
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

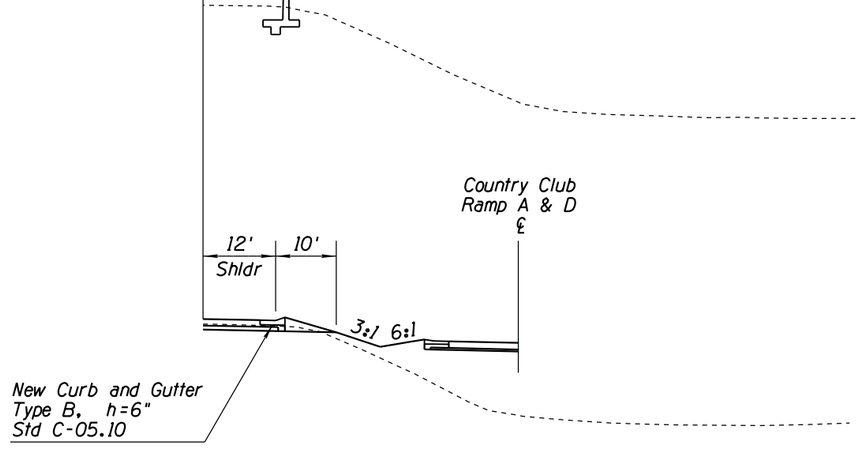
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	10	46	

010 PM 260







TYPICAL SECTION

I-10
Elevated Mainline
Between Country Club Gores
Inside Widening
Med Sta 487+00 to Med Sta 513+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-10

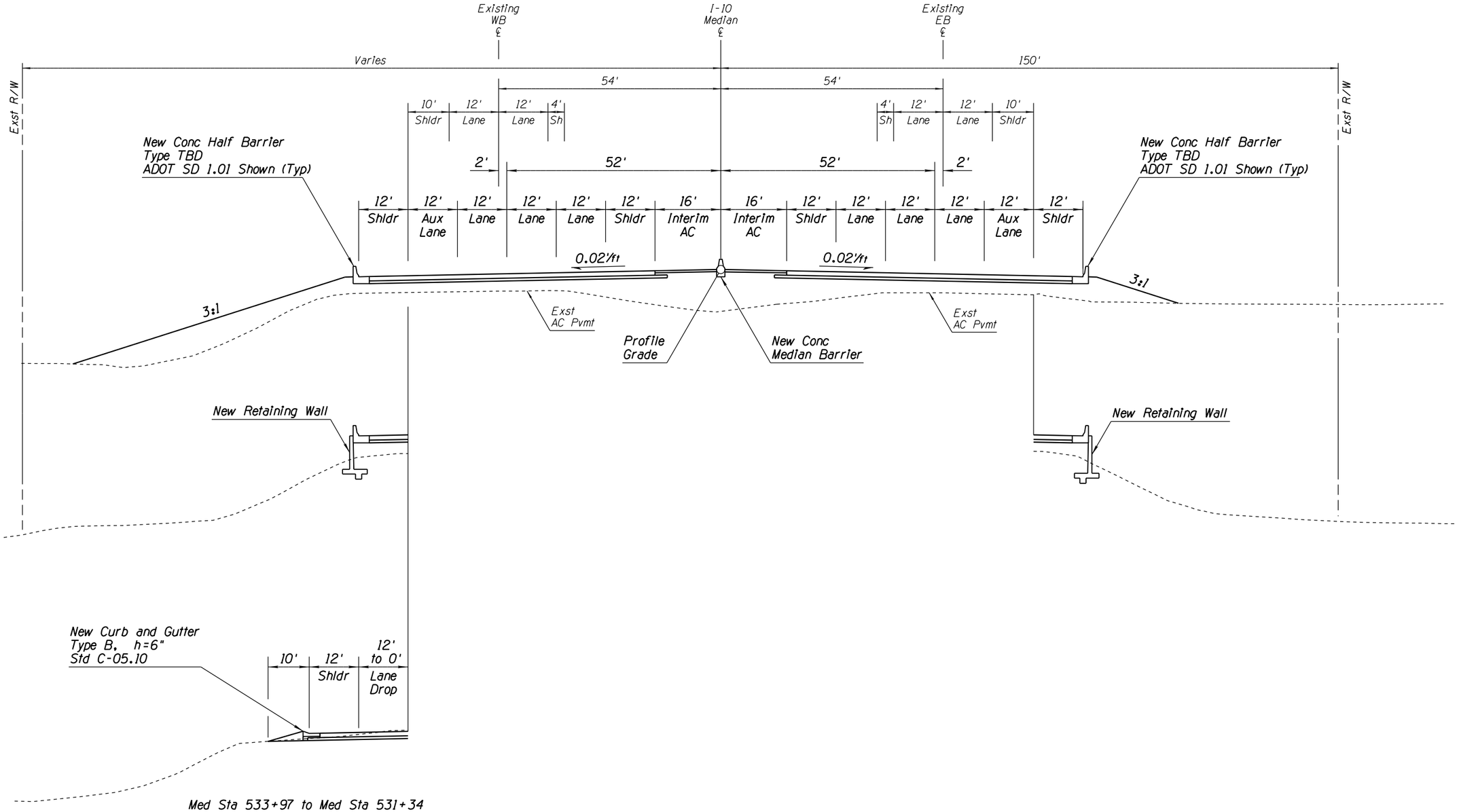
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ110.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	11	46	

010 PM 260



Med Sta 533+97 to Med Sta 531+34

TYPICAL SECTION

I-10
Elevated Mainline
Country Club Gores to Alvernon Gores
Inside Widening
Med Sta 513+00 to Med Sta 548+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

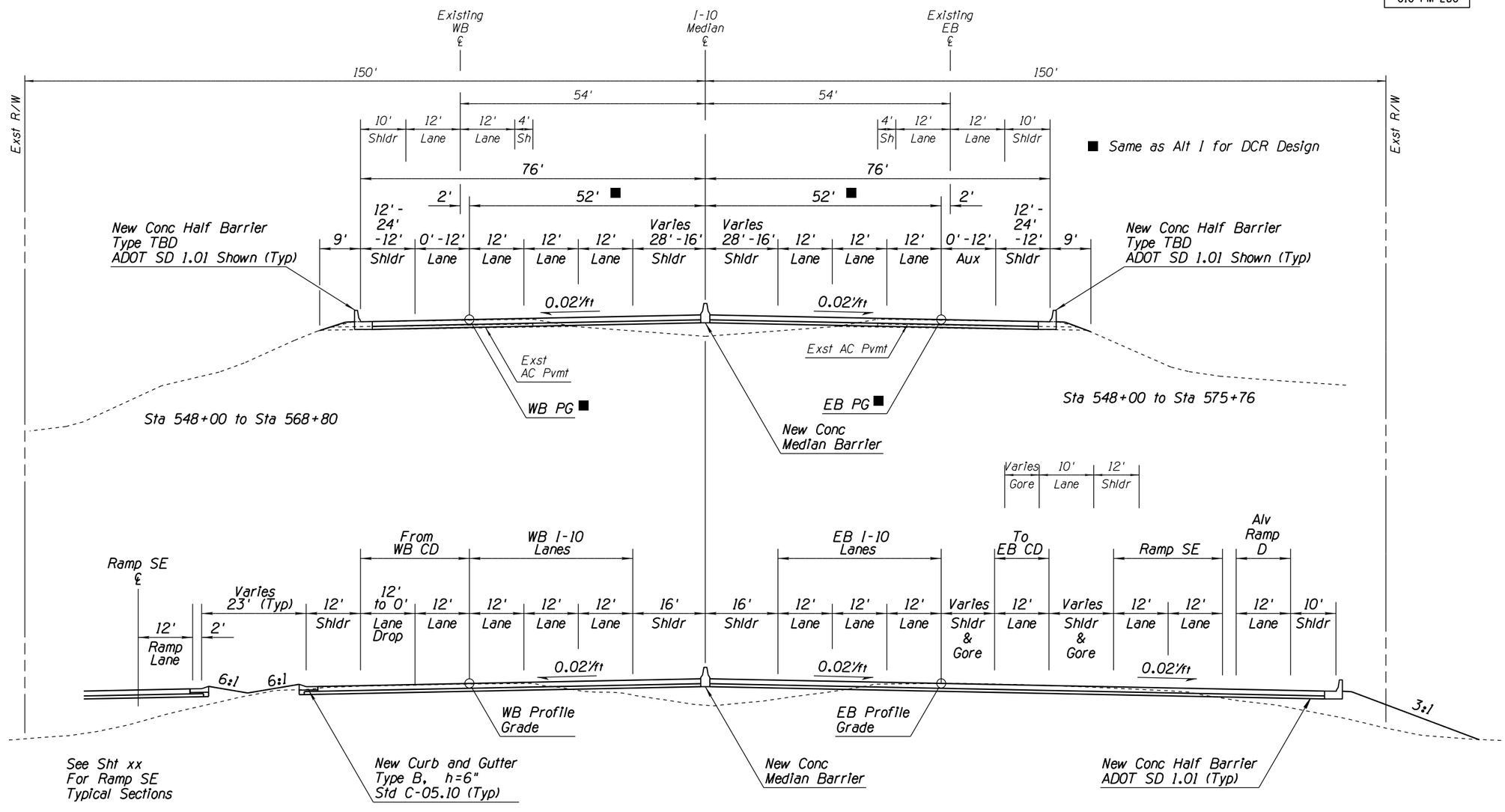
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET TYP-11
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L		010-E(210)S ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty111.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	12	46	
		010 PM 260			



TYPICAL SECTION

I-10 System Alternative IV
Elevated Mainline
At SR 210 System Interchange
Inside Widening
Med Sta 548+00 to Med Sta 581+50

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

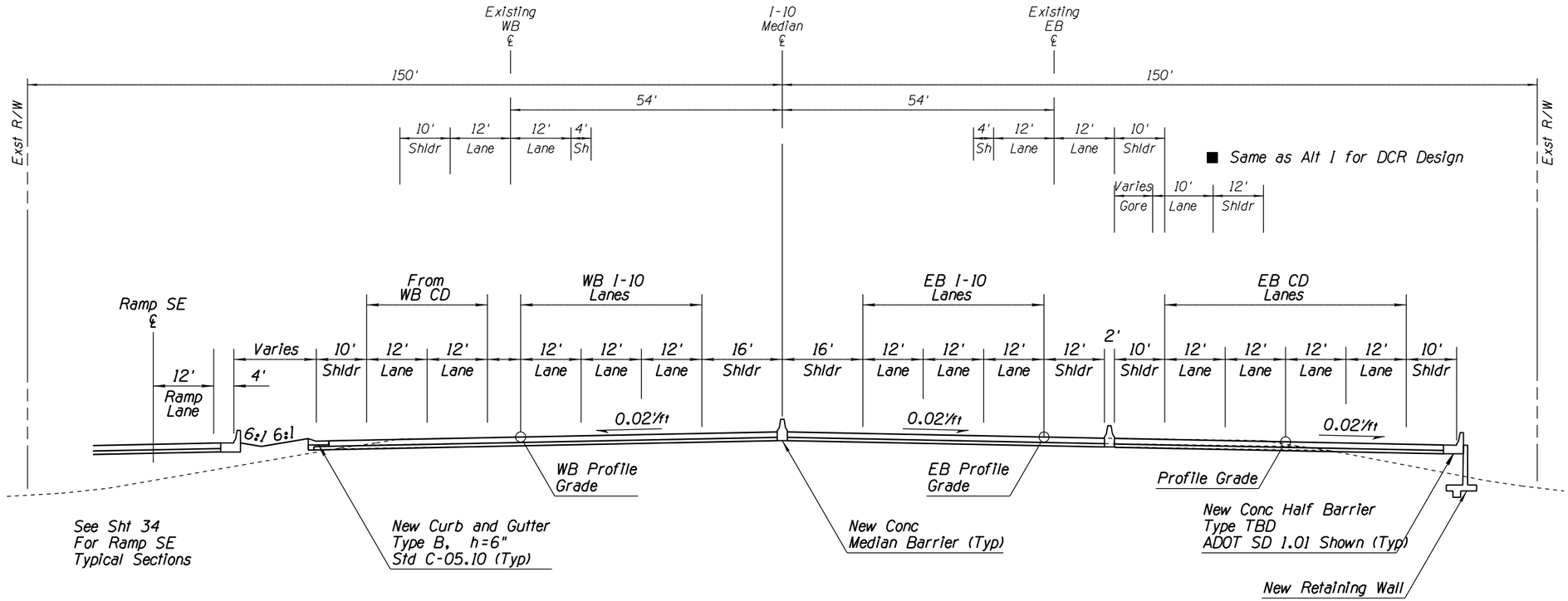
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-12

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	13	46	
		010 PM 260			



TYPICAL SECTION

I-10 System Alternative IV
Elevated Mainline
At SR 210 System Interchange
Inside Widening
Med Sta 581+50 to Med PC 591+04.78

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

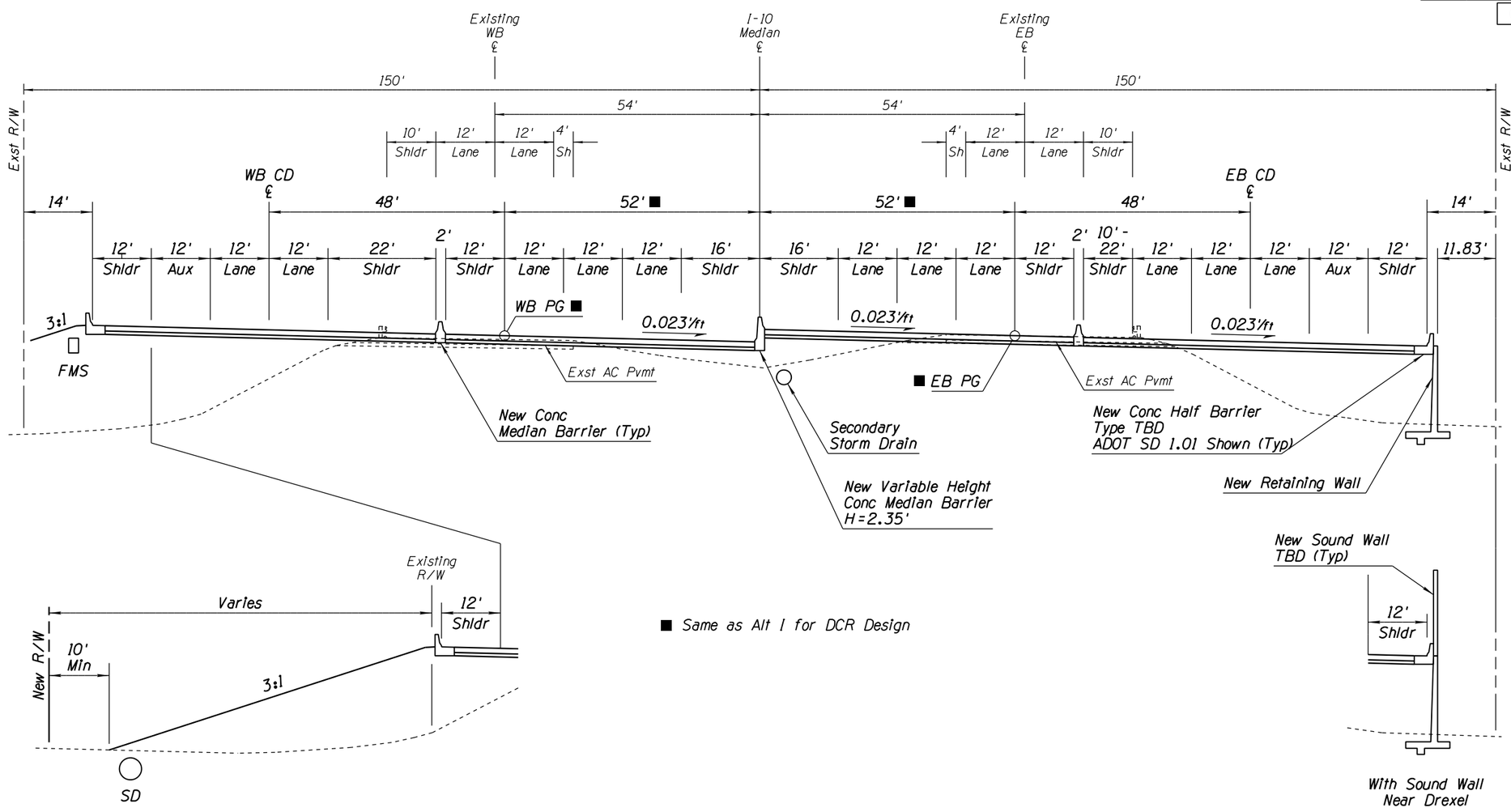
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-13

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty113.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	14	46	
		010 PM 260			



■ Same as Alt I for DCR Design

With Sound Wall Near Drexel

TYPICAL SECTION

I-10 System Alternative IV
Elevated Mainline
Curve East of Alvernon
Inside Widening
Med PC 591+04.78 to Med PT 634+85.33

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

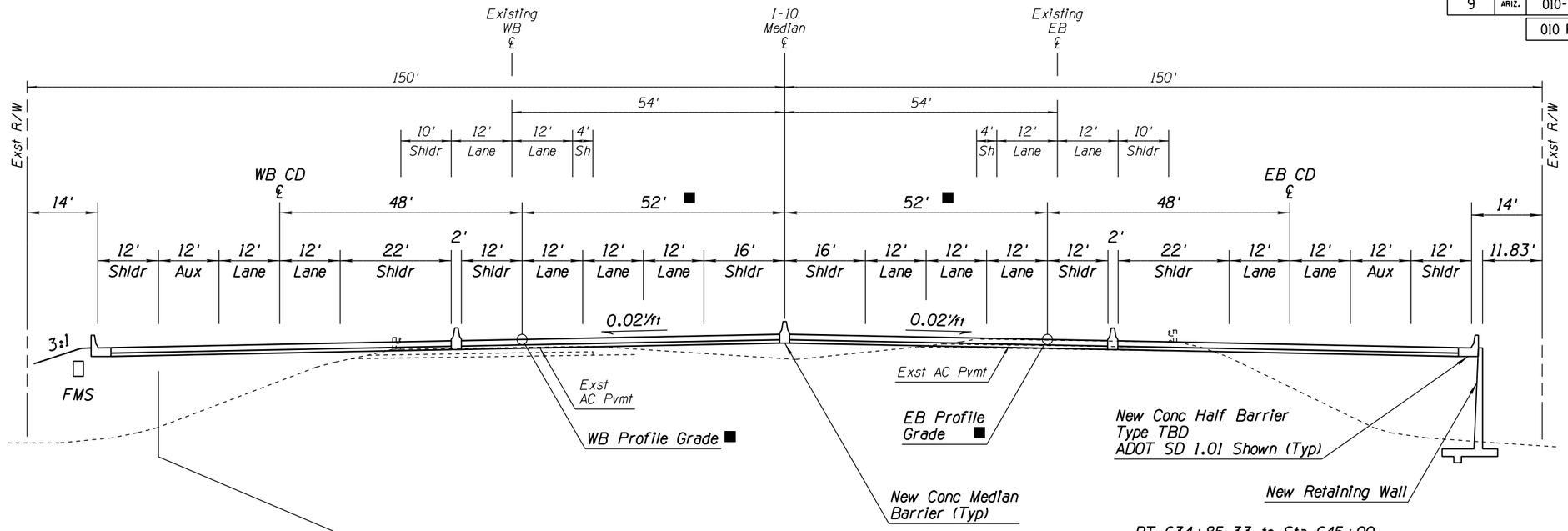
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-14

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

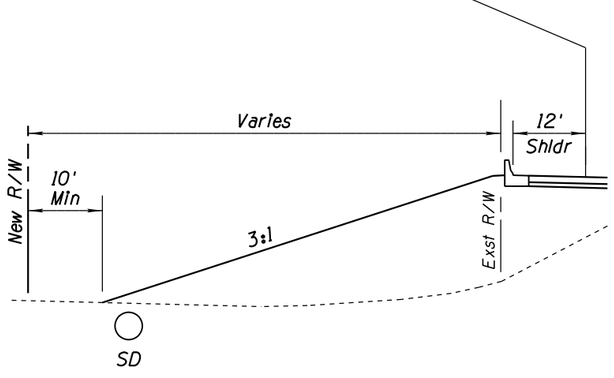
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ14.dgn

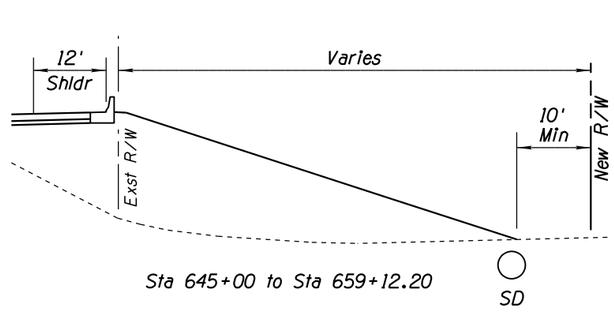
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	15	46	
		010 PM 260			



PT 634+85.33 to Sta 645+00

■ Same as Alt I for DCR Design





Sta 645+00 to Sta 659+12.20

TYPICAL SECTION

I-10 System Alternative IV
Elevated Mainline
Drexel to Valencia
Inside Widening
Med PT 634+85.33 to Med PC 659+12.20

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

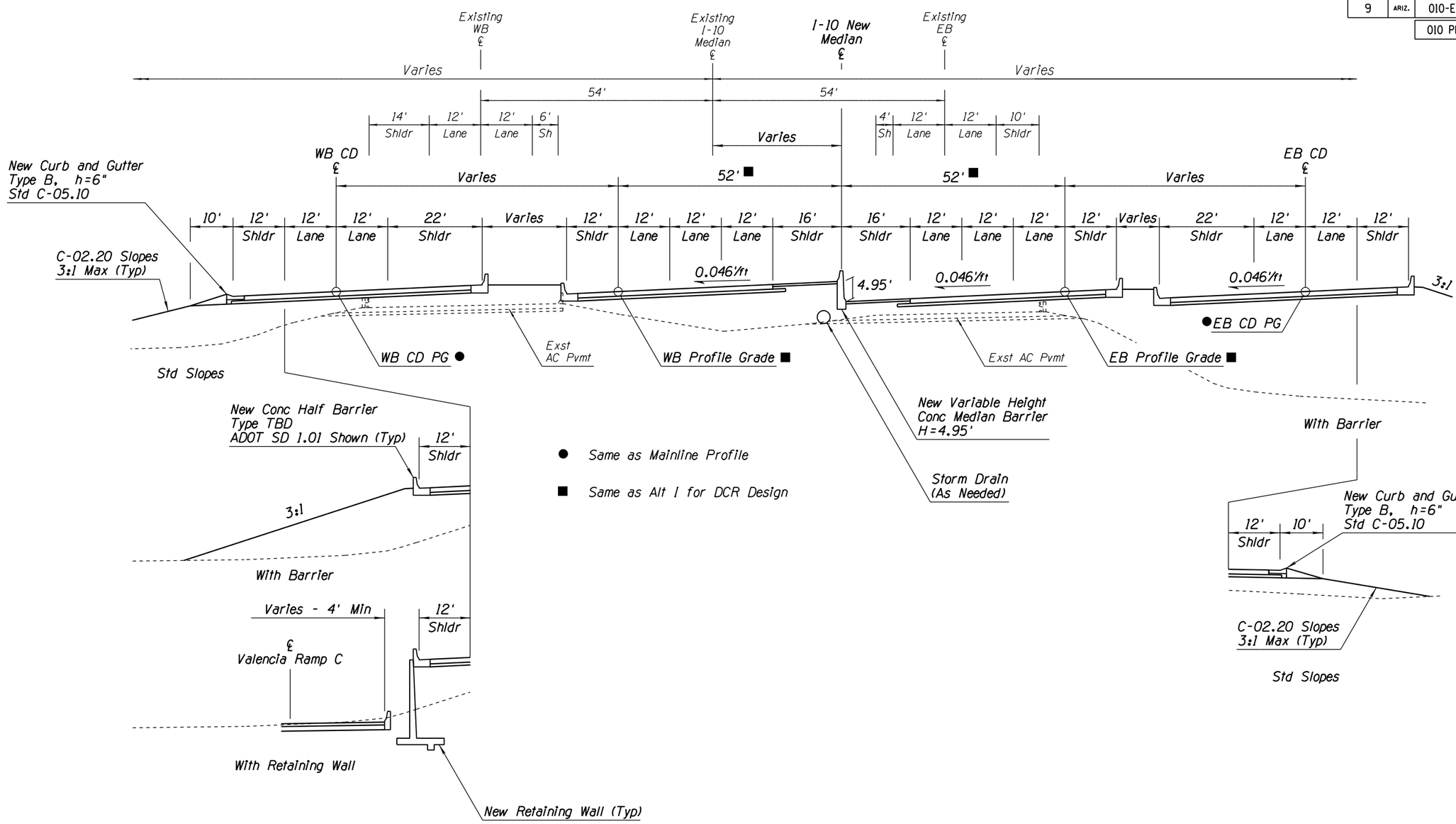
SHEET TYP-15

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ15.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	16	46	
		010 PM 260			



TYPICAL SECTION

I-10 System Alternative I
Elevated Mainline
Curve at Valencia
Alignment Shift to 18' West
Inside Widening
Med PC 659+12.20 to Med PT 688+41.02

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

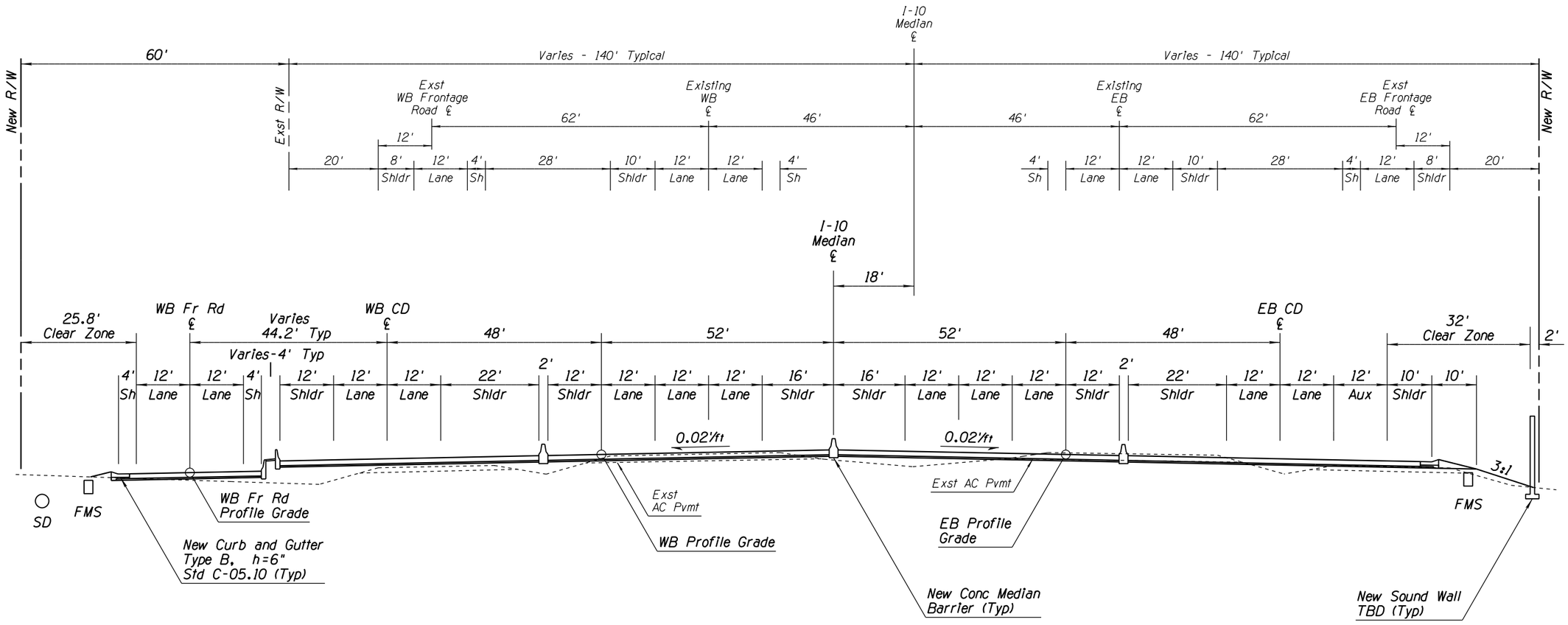
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-16

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ116.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	17	46	
		010 PM 260			



TYPICAL SECTION

I-10 System Alternative IV
Elevated Mainline
Shift I-10 18' Left
WB Frontage Road
Valencia East Gores to Craycroft West Gores
Med Sta PT 688+41.02 to Med Sta 714+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

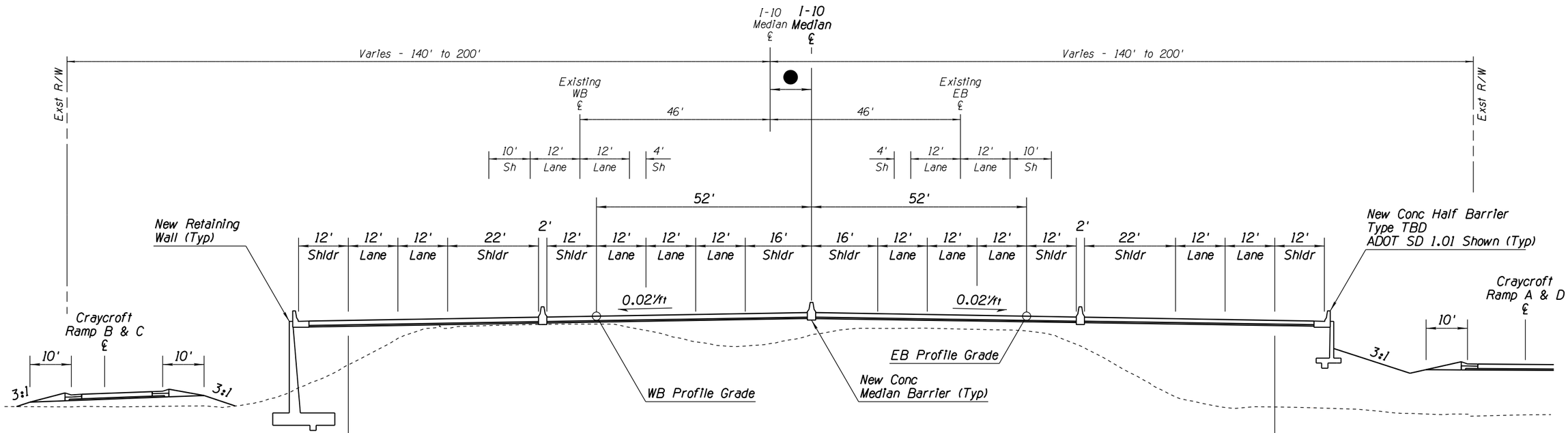
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-17

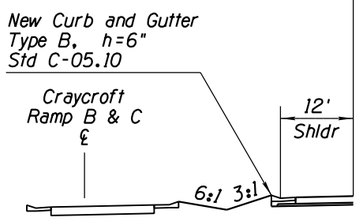
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

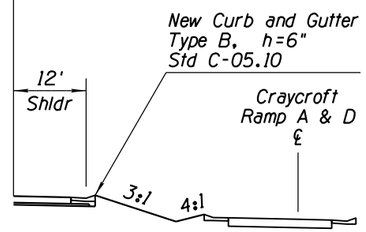
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	18	46	
		010 PM 260			

● Varies-
18' Left at Sta PC 707+42.45 to
18' Right at Sta PT 720+43.10





With Curb & Gutter



With Curb & Gutter

TYPICAL SECTION

I-10 System Alternative IV
Elevated Mainline
Craycroft West Gores to Craycroft East Gores
Shift I-10 From 18' Left to 18' Right
Med Sta 714+00 to Med Sta 736+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

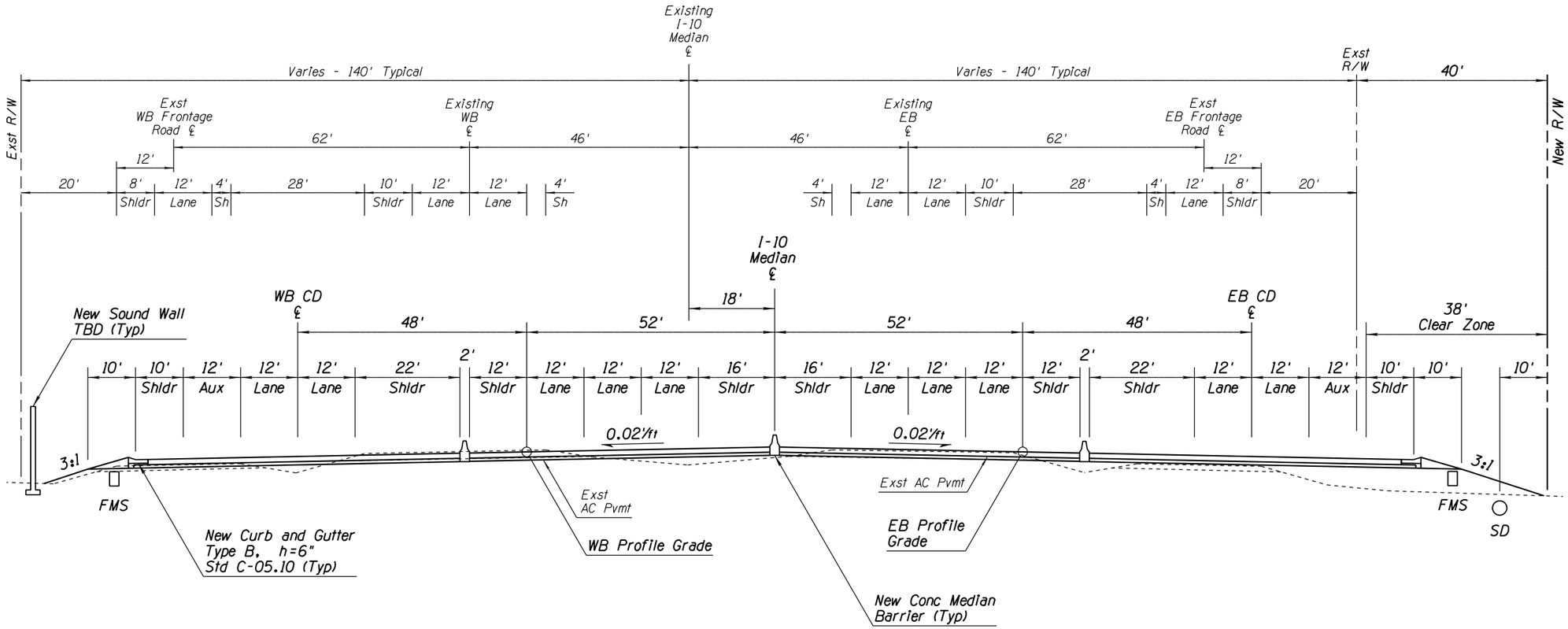
DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-18
TRACS NO. H7825 01L		010-E(210)S ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	19	46	
		010 PM 260			



TYPICAL SECTION

I-10 System Alternative IV
Elevated Mainline
Craycroft East Gores to Wilmot West Gores
Shift I-10 18' to Right
Med Sta 736+00 to Med Sta 779+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

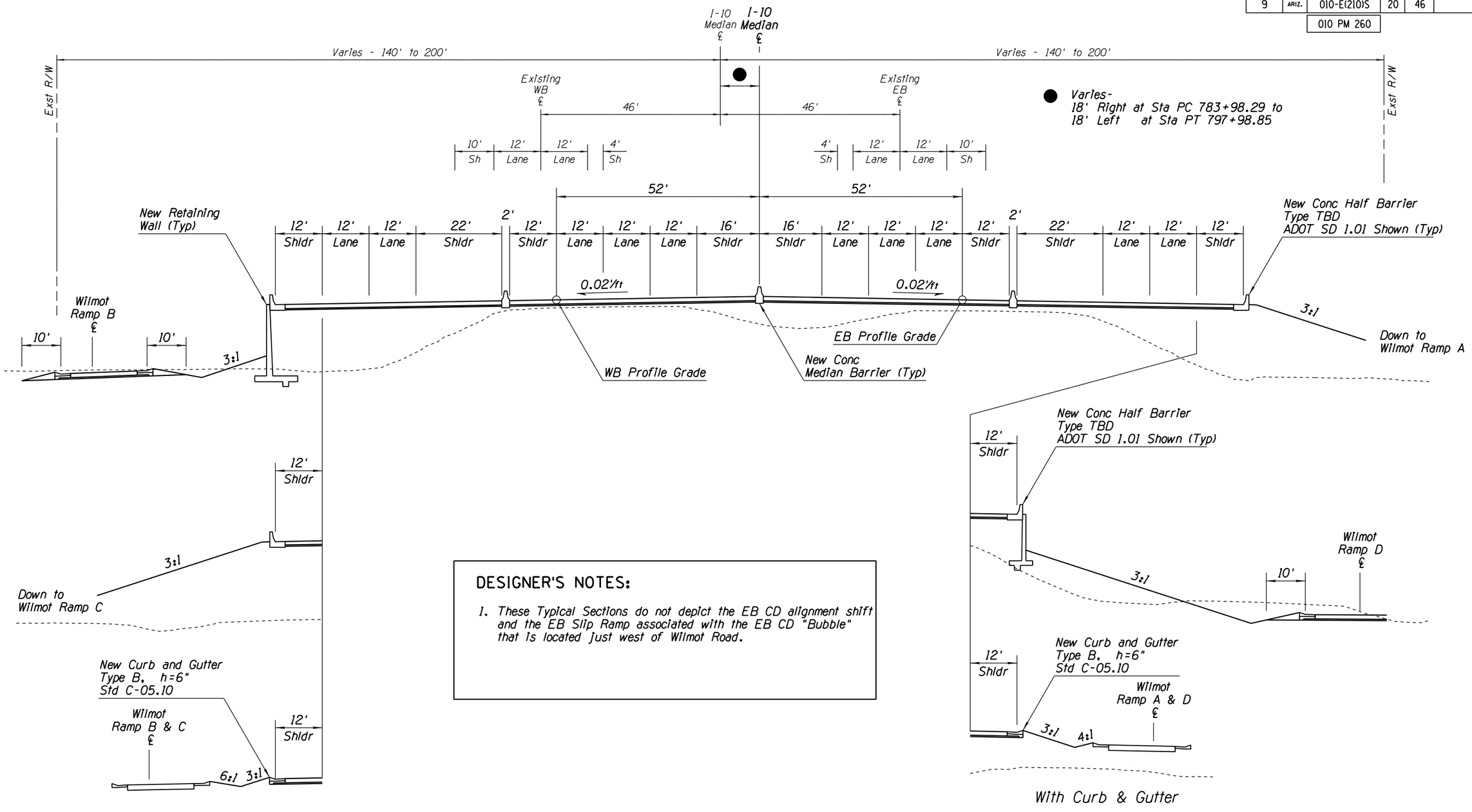
SHEET TYP-19

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ119.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	20	46	
		010 PM 260			



DESIGNER'S NOTES:

1. These Typical Sections do not depict the EB CD alignment shift and the EB Slip Ramp associated with the EB CD "Bubble" that is located just west of Wilmot Road.

TYPICAL SECTION

I-10 System Alternative IV
Elevated Mainline
Wilmot West Gores to Wilmot East Gores
Shift I-10 From 18' Right to 18' Left
Med Sta 779+00 to Med Sta 803+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

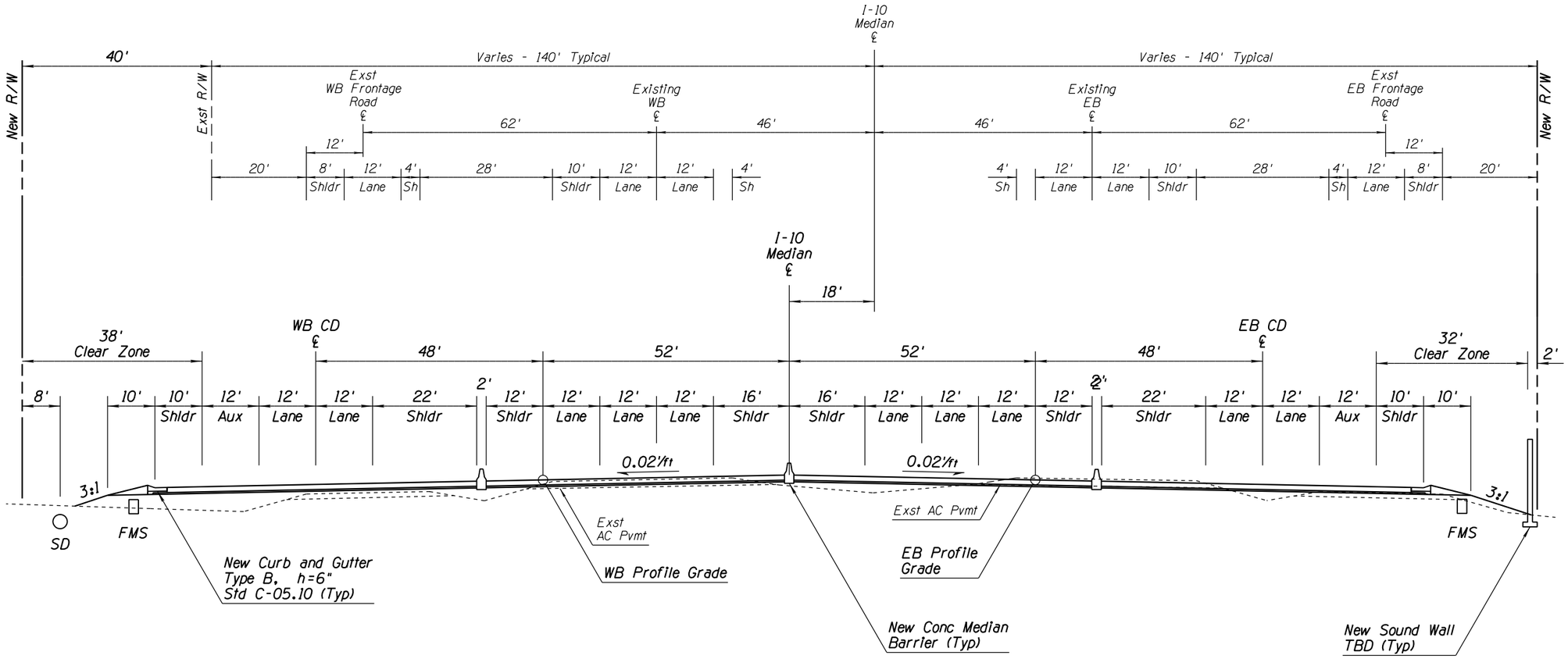
ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-20

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	21	46	
		010 PM 260			



TYPICAL SECTION

I-10 System Alternative IV
Elevated Mainline
Shift I-10 18' Left
Wilmot East Gores to Kolb West Gores
Med Sta 803+00 to Med Sta 839+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

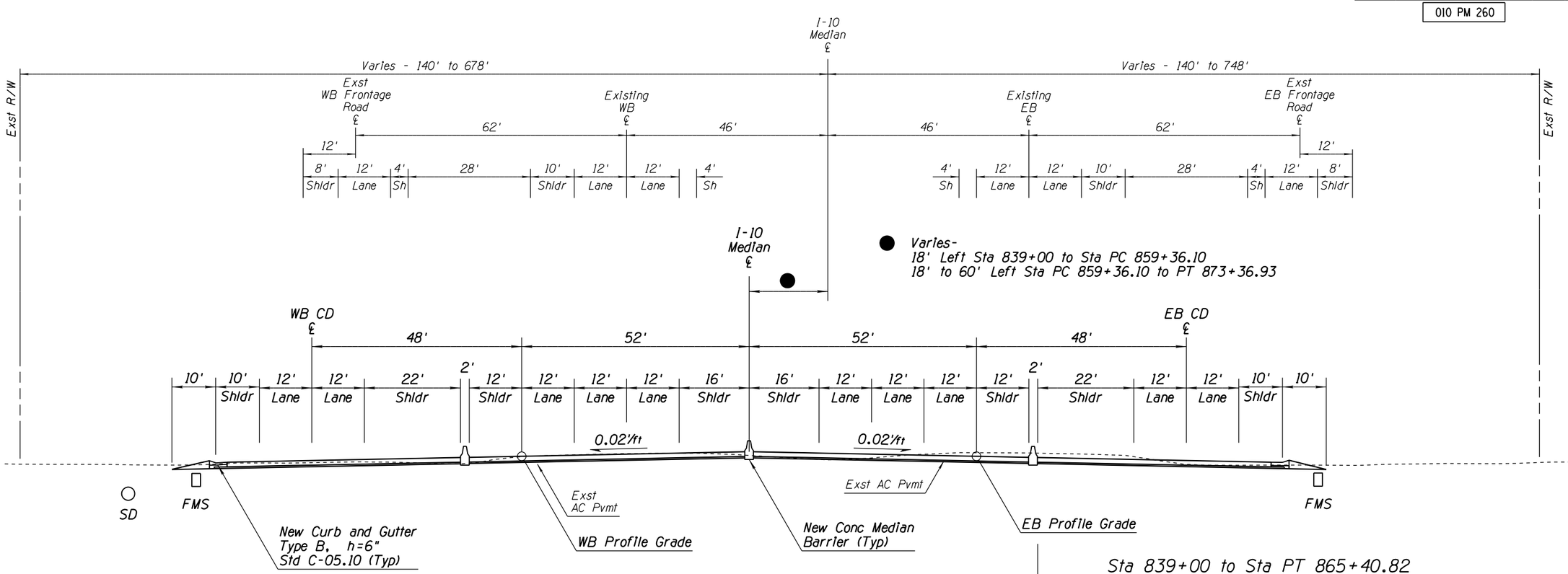
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-21

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

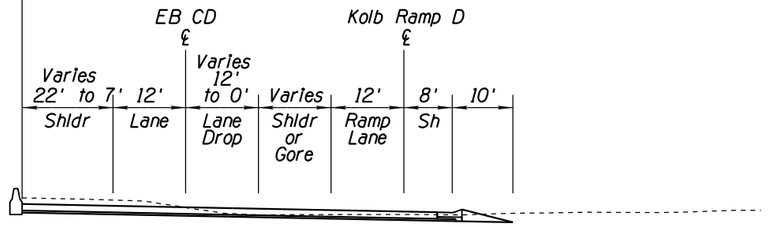
SURVEY NO. | DATE | LOCATION | REVISIONS | FINISHED PLANS | SURVEY NO.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	22	46	

010 PM 260



Sta 839+00 to Sta PT 865+40.82



Sta PT 865+40.82 to Sta PT 873+36.93

TYPICAL SECTION

I-10 System Alternative IV
Elevated Mainline
Kolb West Gores to Kolb East Gores
Shift I-10 From 18' Left to 60' Left
Med Sta 839+00 to Med Sta PT 873+36.93

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

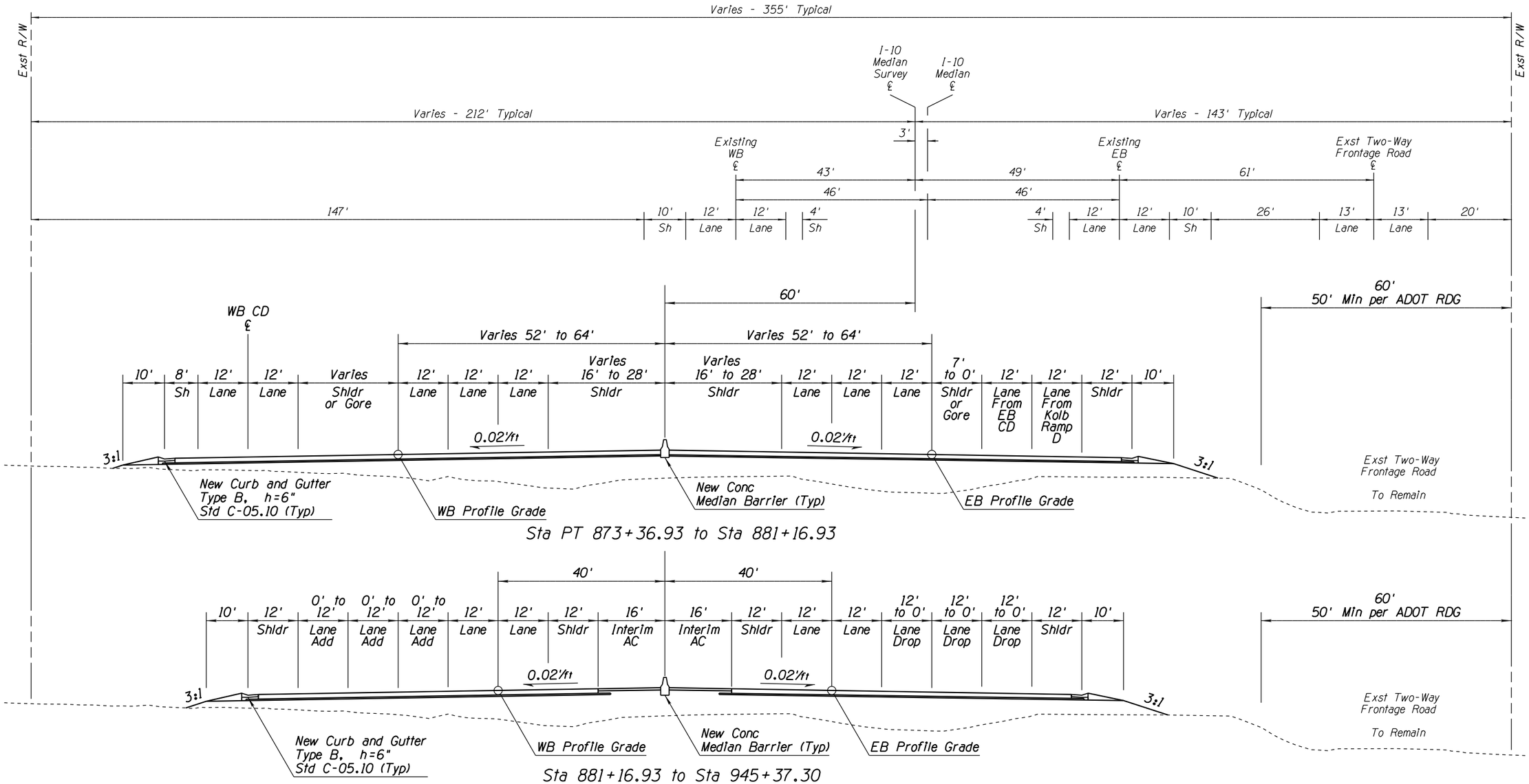
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	SHEET TYP-22

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	23	46	
		010 PM 260			



TYPICAL SECTION

I-10 System Alternative I
Elevated Mainline
Kolb East Gores to End
Shift I-10 60' Left to 0')
Med Sta PT 873+36.93 to Med Sta 945+37.30

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

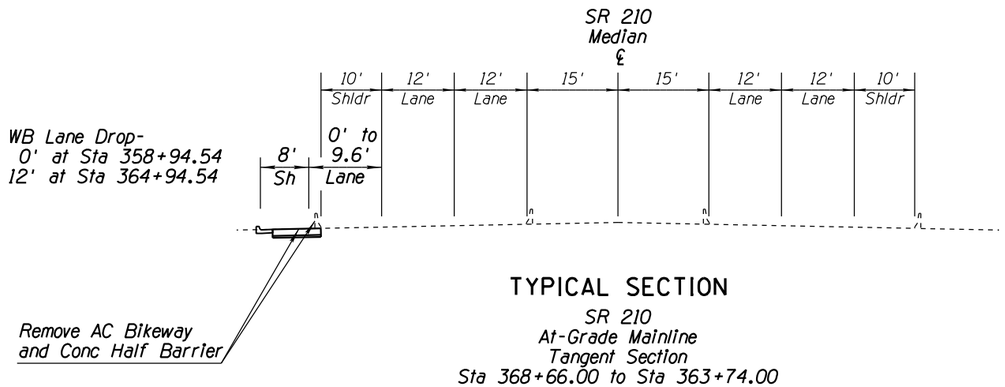
SHEET TYP-23

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ123.dgn

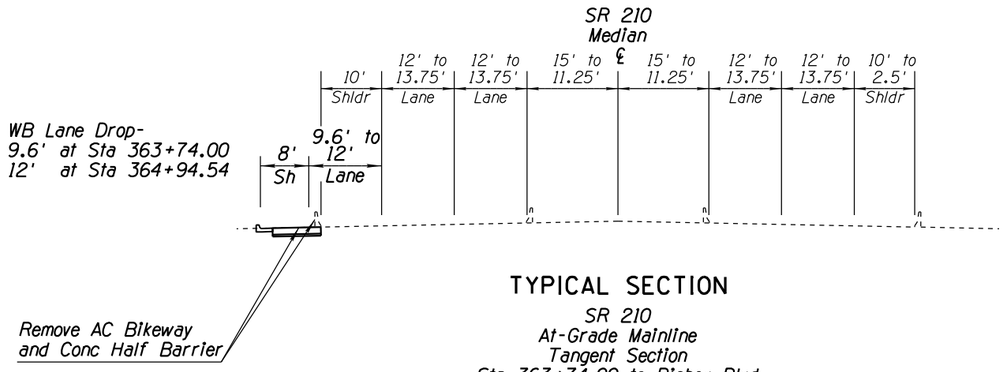
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	24	46	
		010 PM 260			



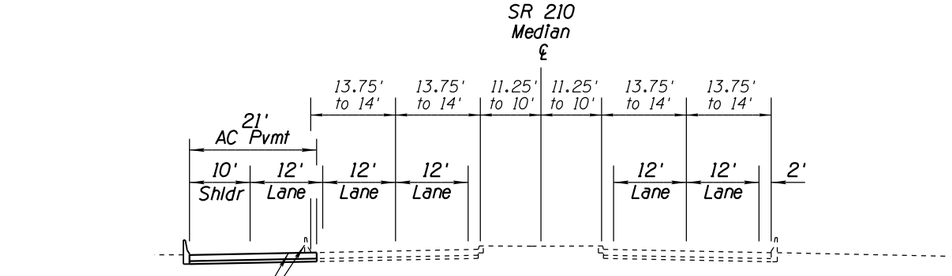
TYPICAL SECTION

SR 210
At-Grade Mainline
Tangent Section
Sta 368+66.00 to Sta 363+74.00



TYPICAL SECTION

SR 210
At-Grade Mainline
Tangent Section
Sta 363+74.00 to Richey Blvd



TYPICAL SECTION

SR 210
At-Grade Mainline
Tangent Section
Richey Blvd to Sta 368+66.00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

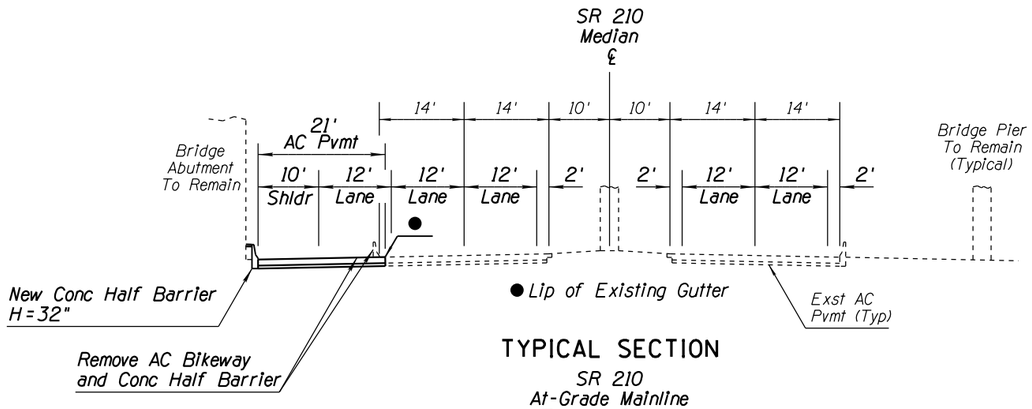
ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-24

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

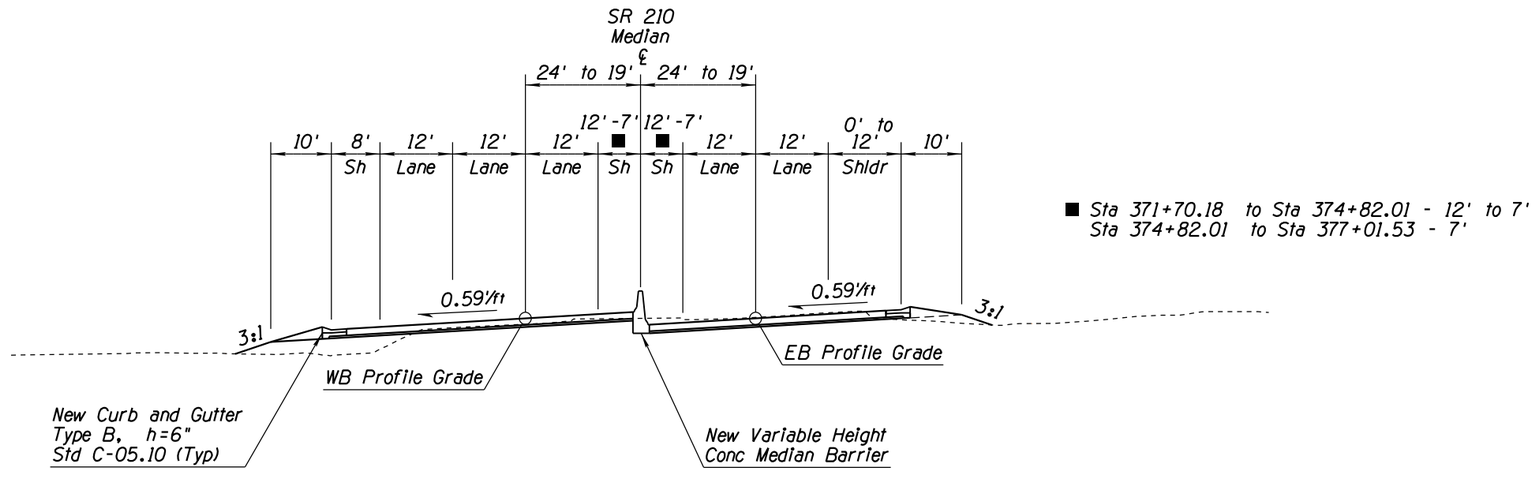
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	25	46	
		010 PM 260			



TYPICAL SECTION

SR 210
At-Grade Mainline
Tangent Section
Under Palo Verde Bridge
Looking South
Sta 368+66.00 to Sta PC 371+70.18



■ *Sta 371+70.18 to Sta 374+82.01 - 12' to 7'*
Sta 374+82.01 to Sta 377+01.53 - 7'

TYPICAL SECTION

SR 210
Elevated Mainline
Superelevated Section
Palo Verde Bridge to GL Ramp EN Gore
Sta PC 371+70.18 to Sta 377+01.53

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

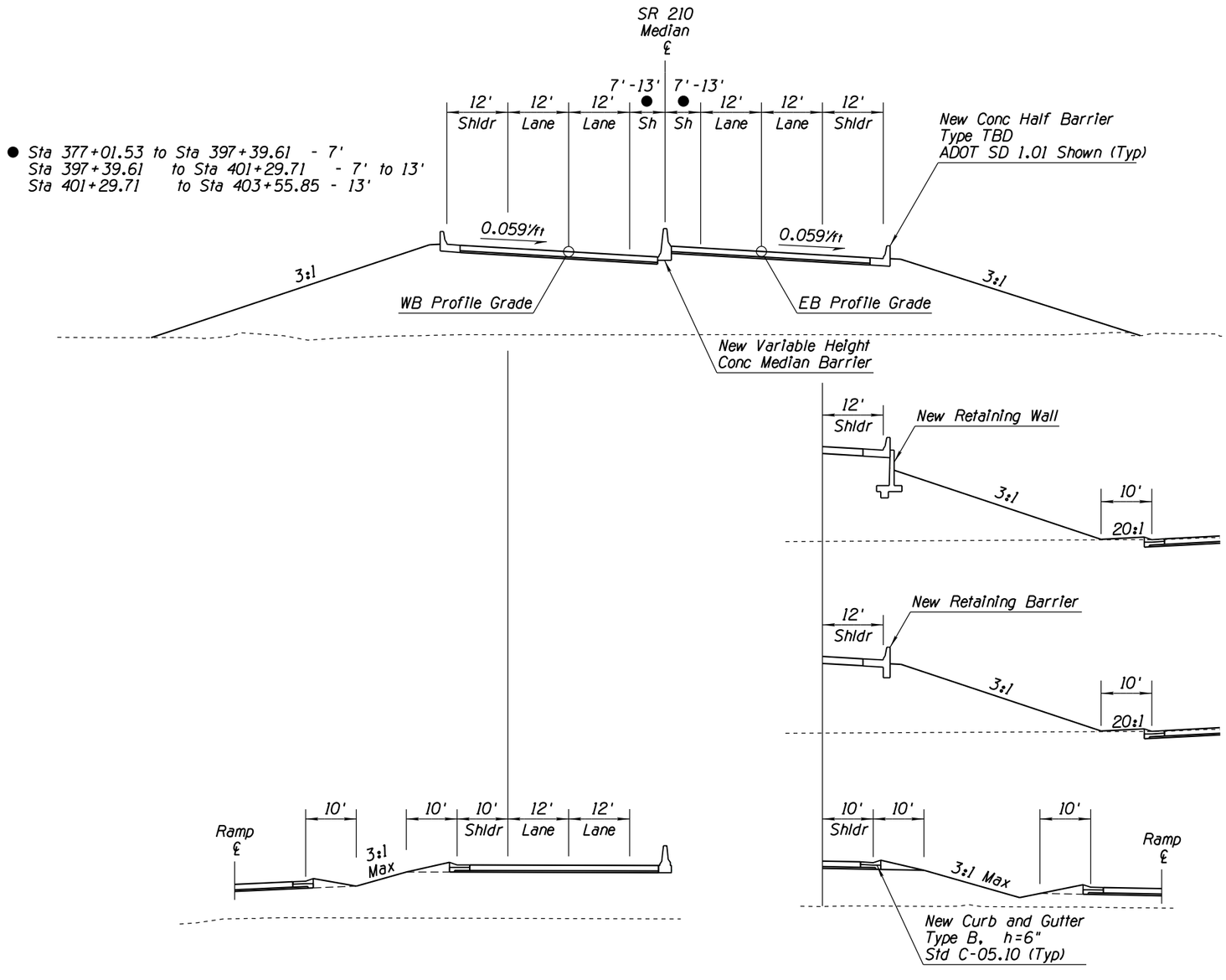
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-25

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	26	46	
		010 PM 260			



TYPICAL SECTION

SR 210
Elevated Mainline
Superelevated Section
GL Ramp EN Gore to GL Ramp WN Gore
Sta 377+01.53 to Sta 403+55.85

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

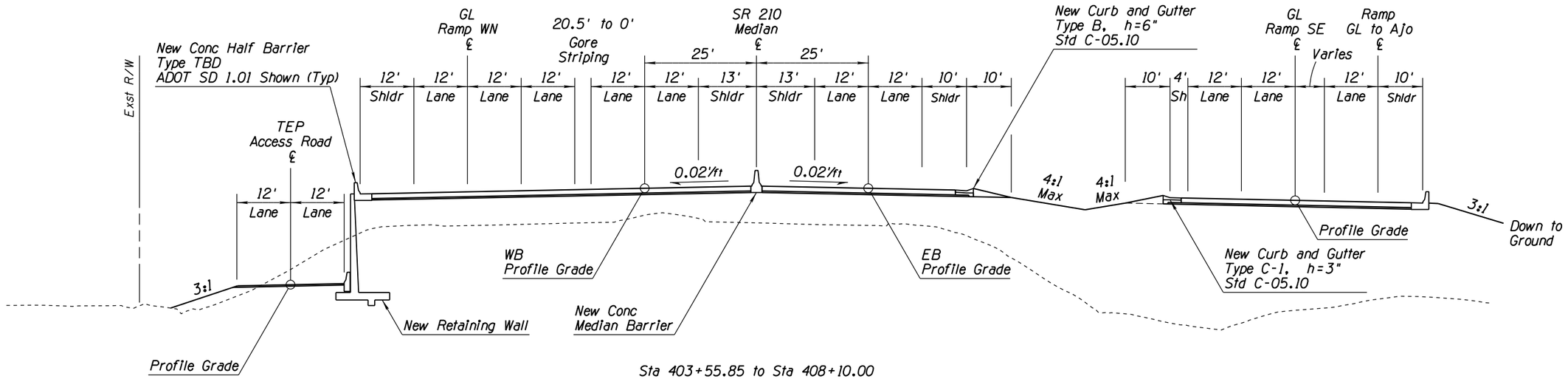
ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-26

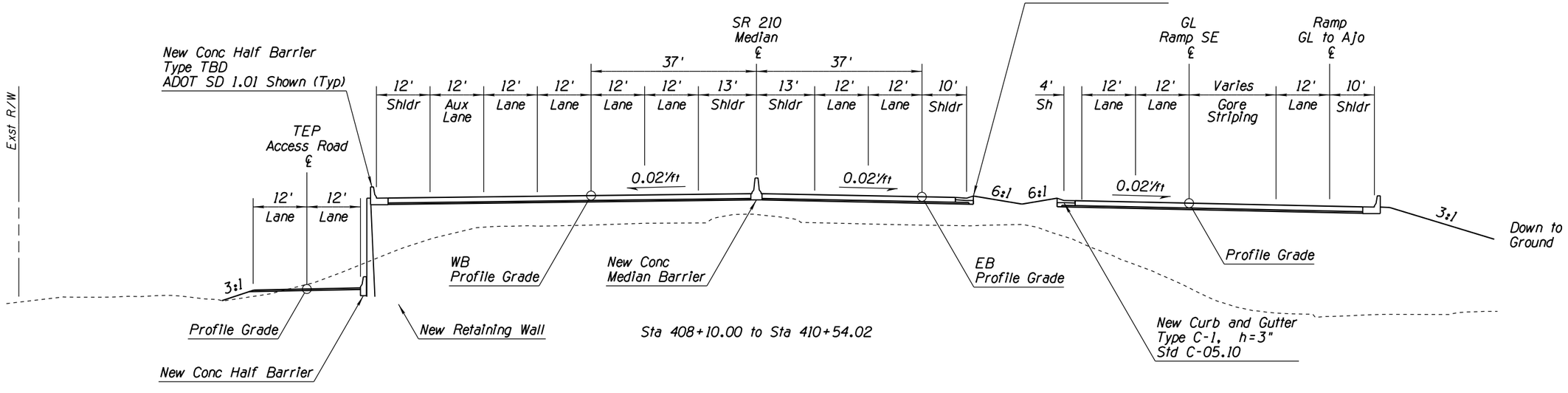
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	27	46	
		010 PM 260			



Sta 403+55.85 to Sta 408+10.00



Sta 408+10.00 to Sta 410+54.02

TYPICAL SECTION

SR 210
Elevated Mainline
Tangent Section
GL Ramp WN Gore to GL Ramp SE Gore
Sta 403+55.85 to Sta 410+54.02

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

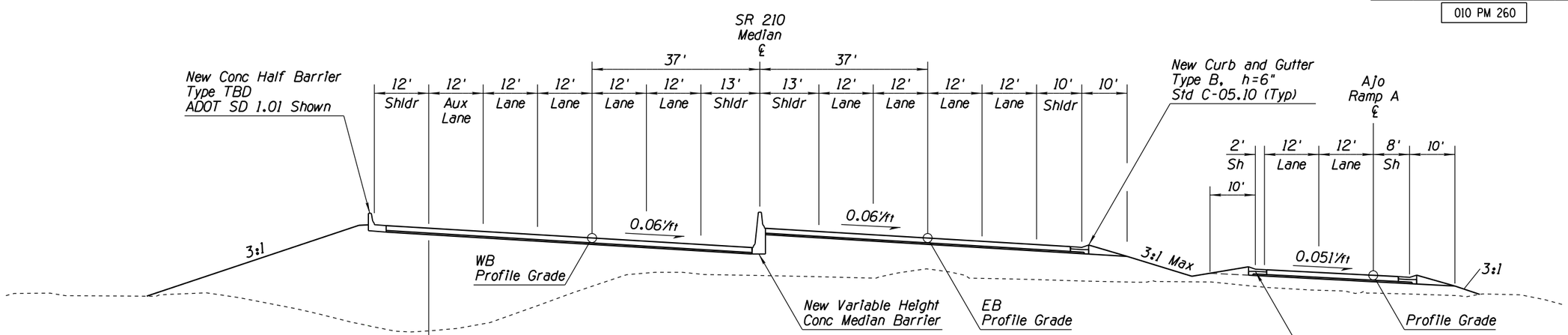
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

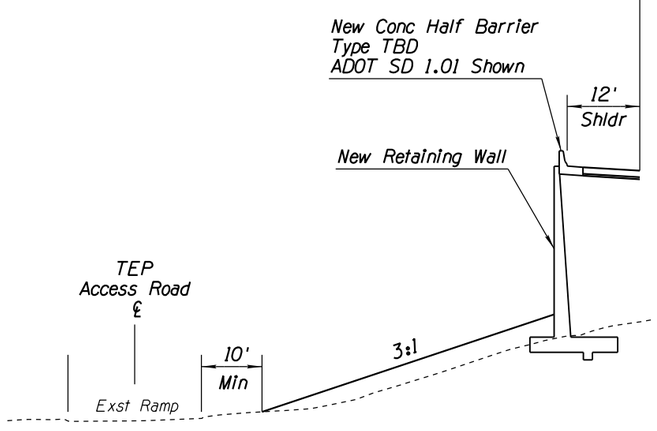
ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-27

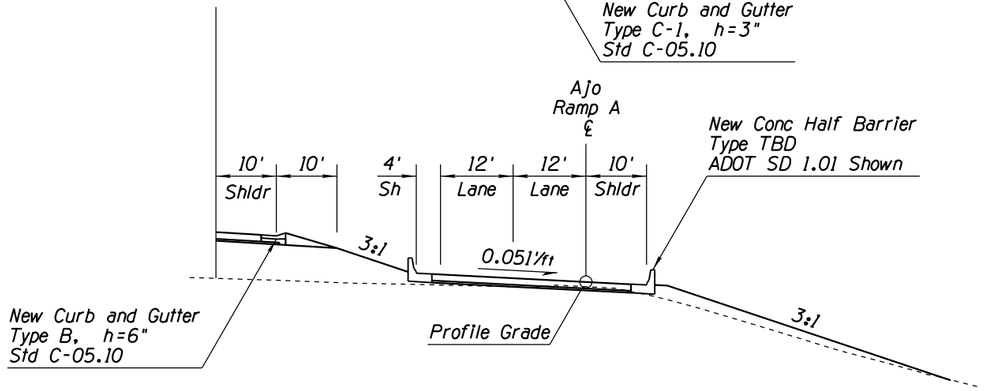
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

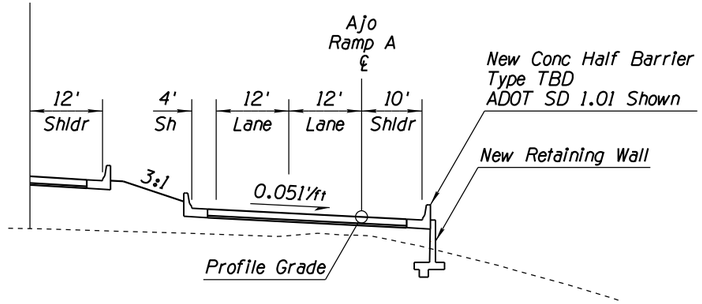
DATE | LOCATION | REVISIONS | FINISHED PLANS | SURVEY NO.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	28	46	
		010 PM 260			









TYPICAL SECTION

SR 210
Elevated Mainline
Superelevated Section
GL Ramp SE Gore to UPRR
Sta 410+54.02 to Sta 432+50

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

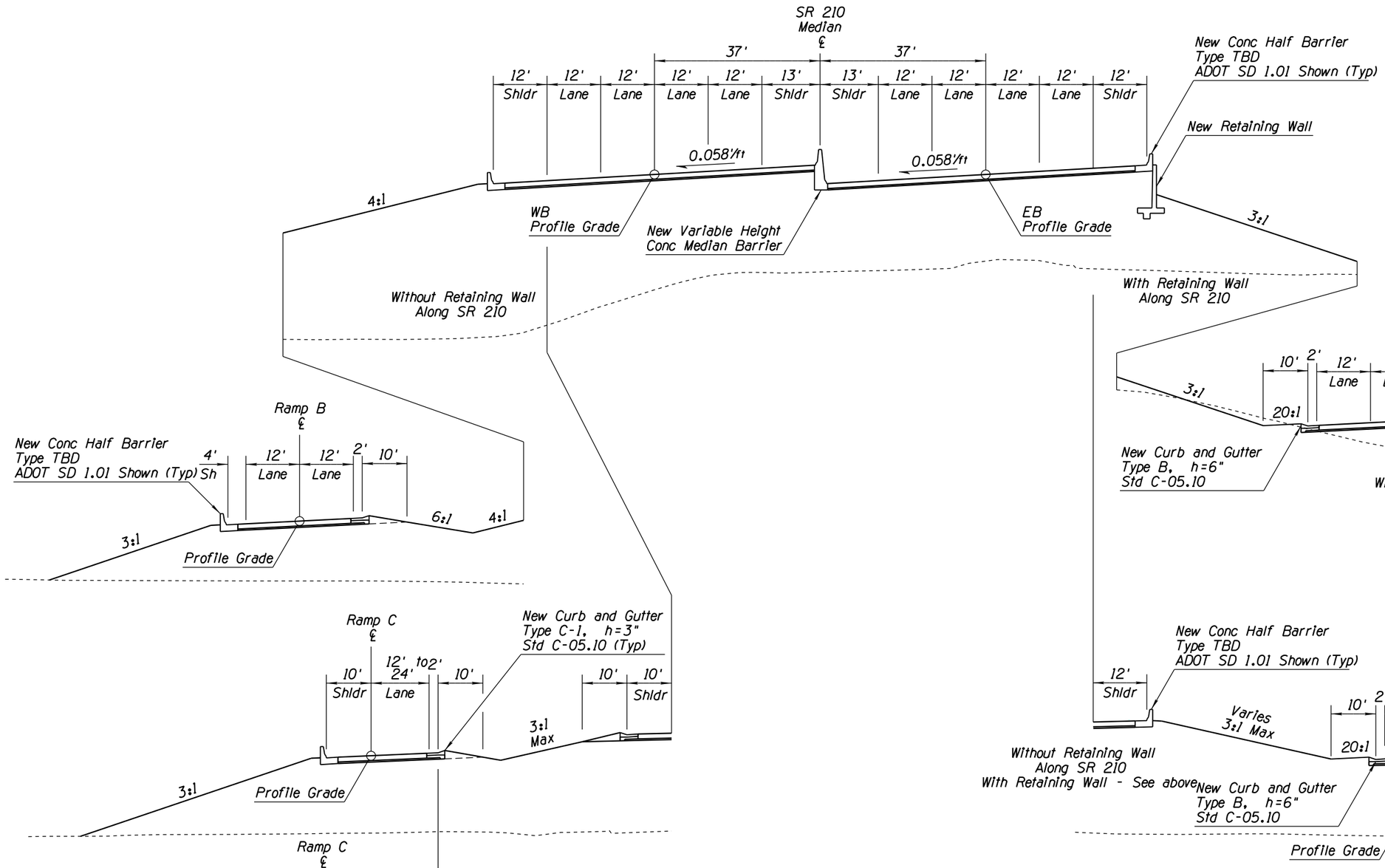
ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-28

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	29	46	
		010 PM 260			

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



TYPICAL SECTION

SR 210
Elevated Mainline
Superelevated Section
UPRR to Ajo Ramp C & D Gores
Sta 432+50 to Sta 455+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

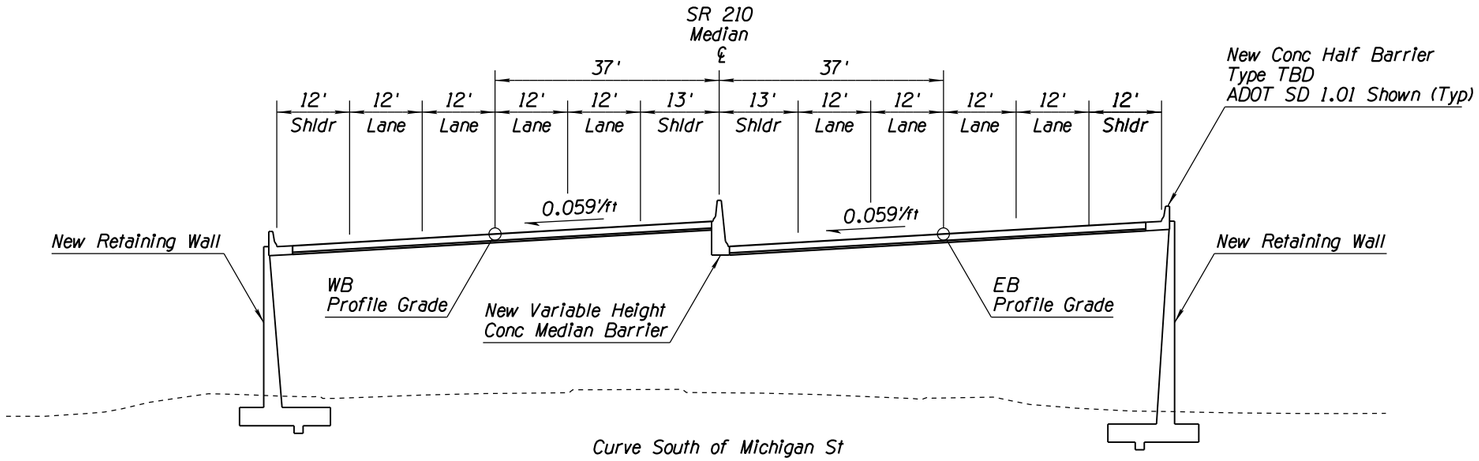
ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-29

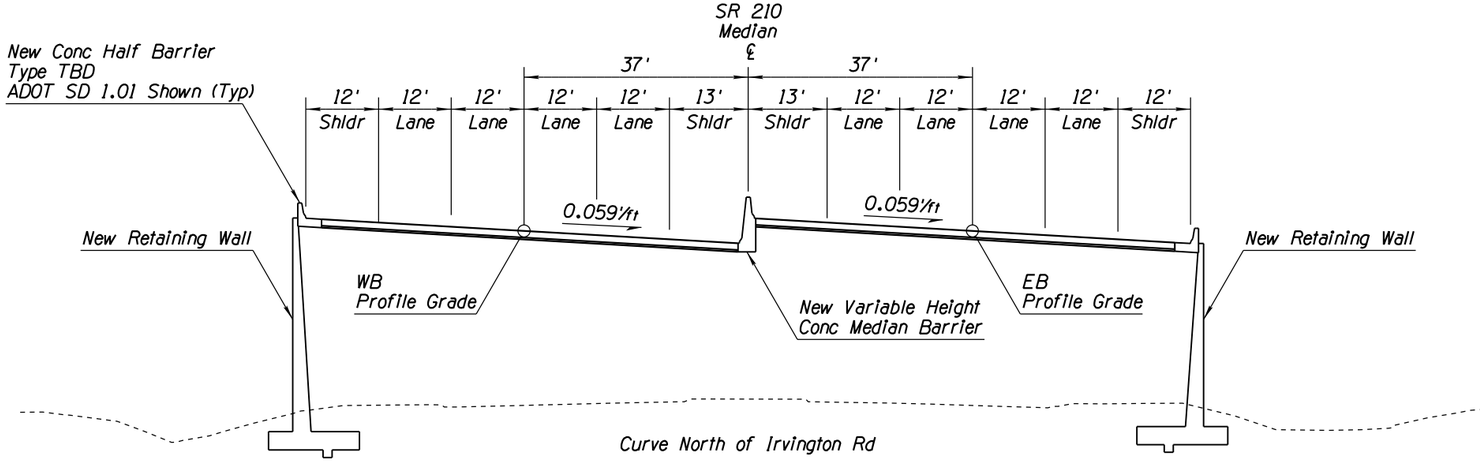
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ129.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	30	46	
		010 PM 260			



Curve South of Michigan St



Curve North of Irvington Rd

TYPICAL SECTION

SR 210
Elevated Mainline
Superelevated Sections
Ajo Ramp C & D Gores to Irvington Rd

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

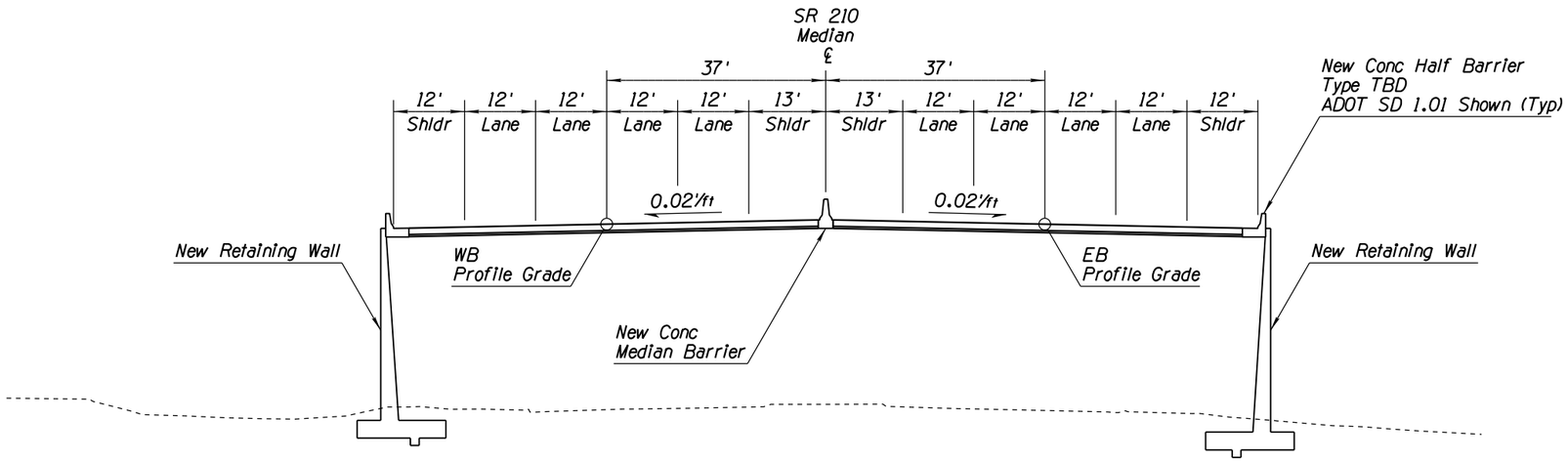
ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

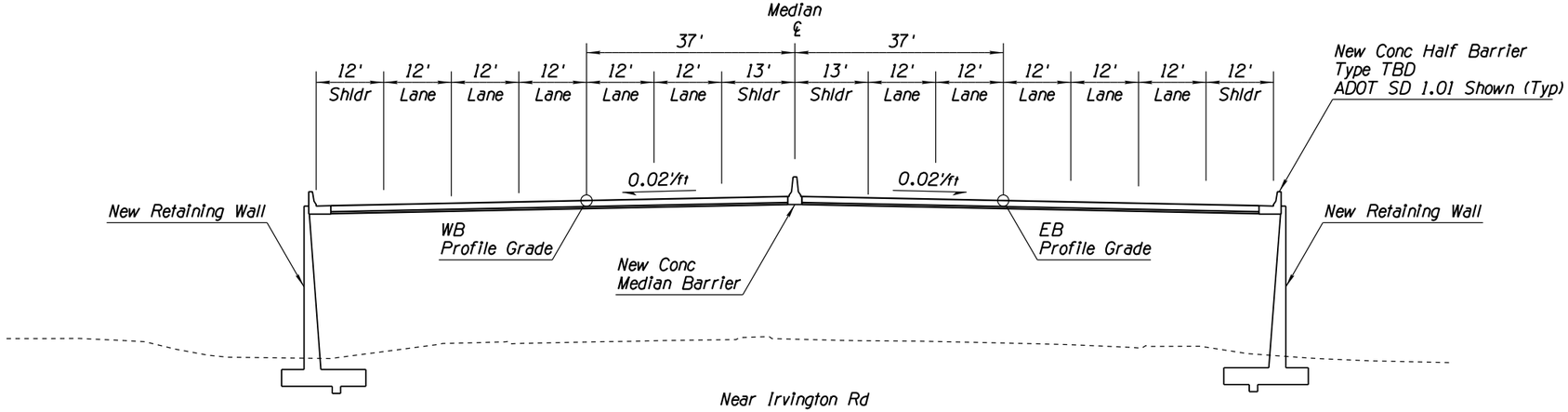
SHEET TYP-30

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	31	46	
		010 PM 260			





TYPICAL SECTION

SR 210
Elevated Mainline
Tangent Sections
Ajo Ramp C & D Gores to Irvington Rd
Sta 455+00 to Sta 490+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-31
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

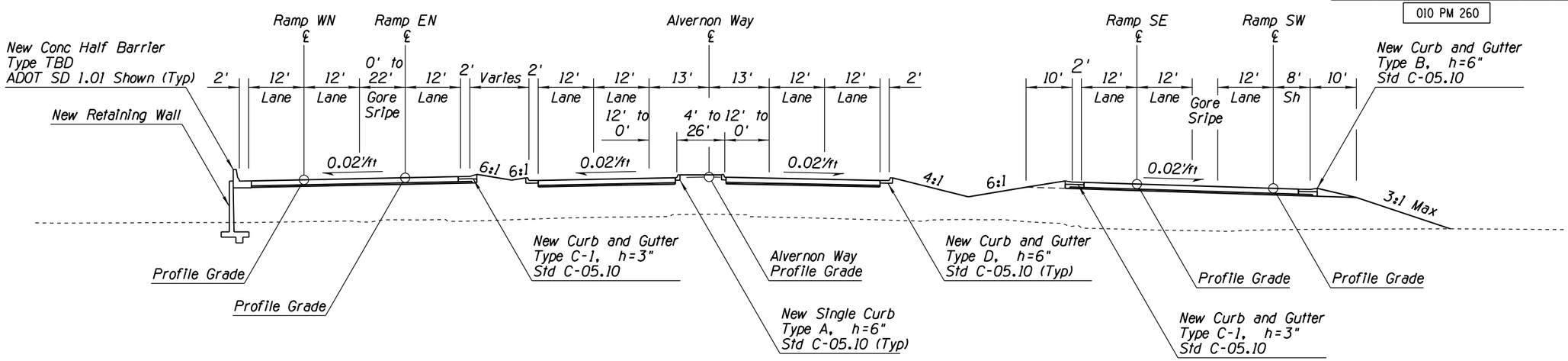
TRACS NO. H7825 01L		010-E(210)S	___ OF ___

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

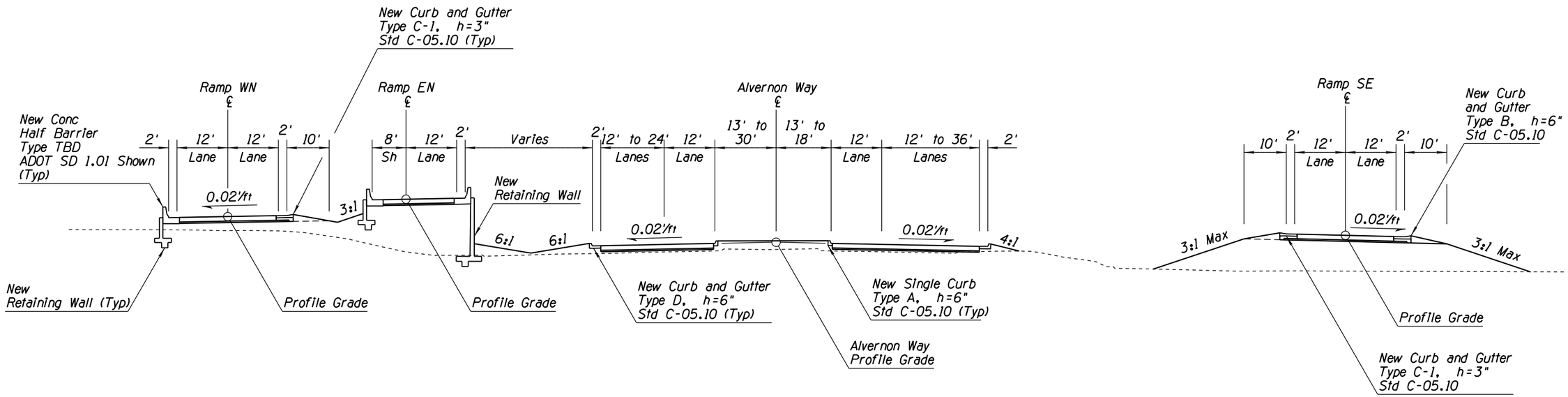
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ131.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	32	46	

010 PM 260



Irvington to Ramp SE and WN Gores



Ramp SE and WN Gores to I-10

TYPICAL SECTION

SR 210
Elevated Mainline
Tangent Sections
Irvington Rd to I-10
Sta 490+00 to Sta 505+00

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

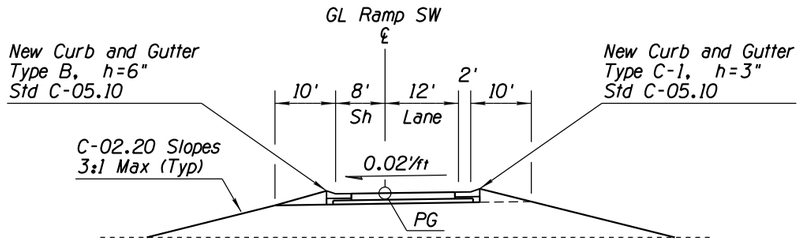
ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-32

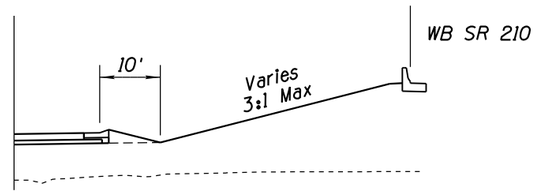
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

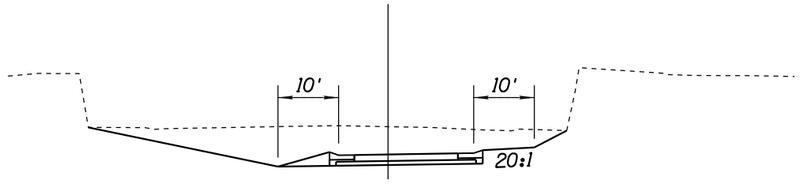
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	33	46	
		010 PM 260			



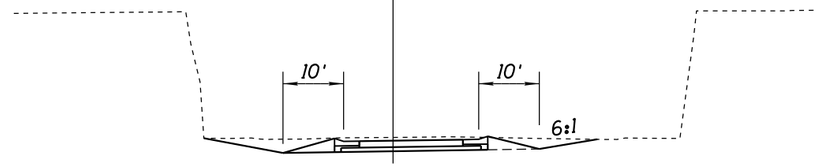
Sta 3+76.48 to Sta 26+52.13



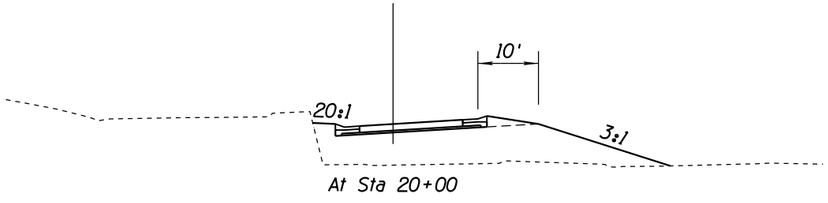
At Sta 7+00



At Sta 12+00



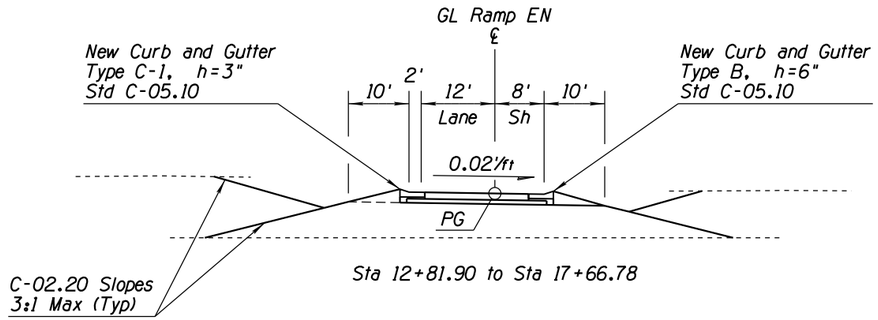
At Sta 16+50



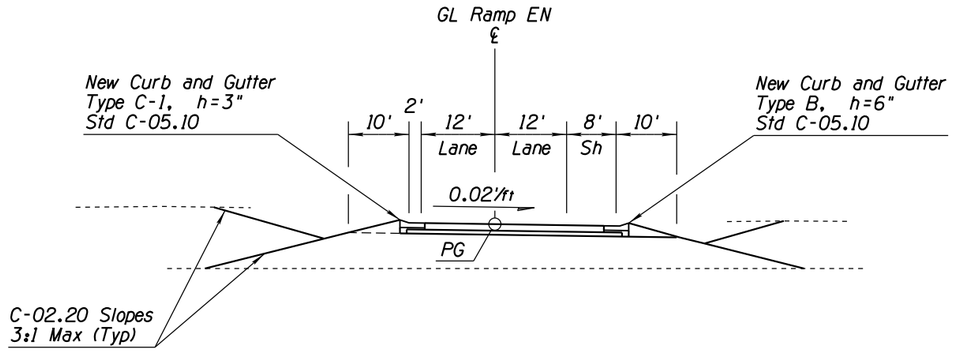
At Sta 20+00

SR 210 RAMP
TYPICAL SECTIONS

GL Ramp SW



Sta 12+81.90 to Sta 17+66.78



Sta 17+66.78 to Sta 43+69.00

SR 210 RAMP
TYPICAL SECTIONS

GL Ramp EN

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

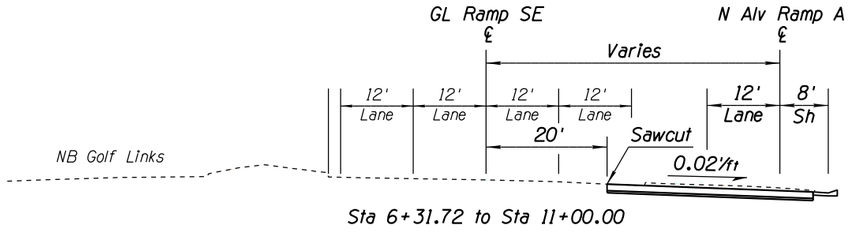
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-33
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

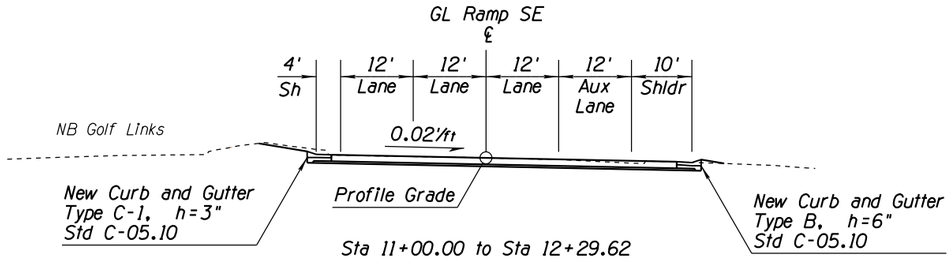
TRACS NO. H7825 01L		010-E(210)S	___ OF ___

DATE
LOCATION
REVISIONS
FINISHED PLANS
SURVEY NO.

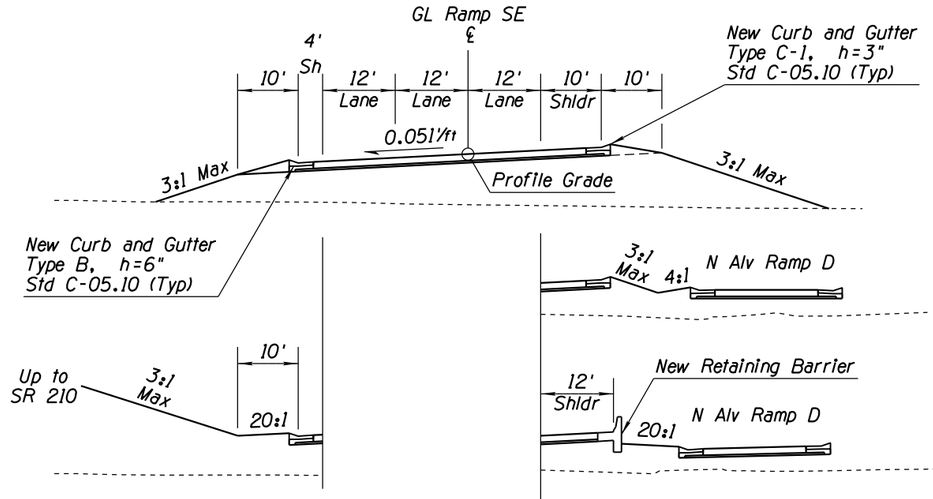
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	34	46	
		010 PM 260			



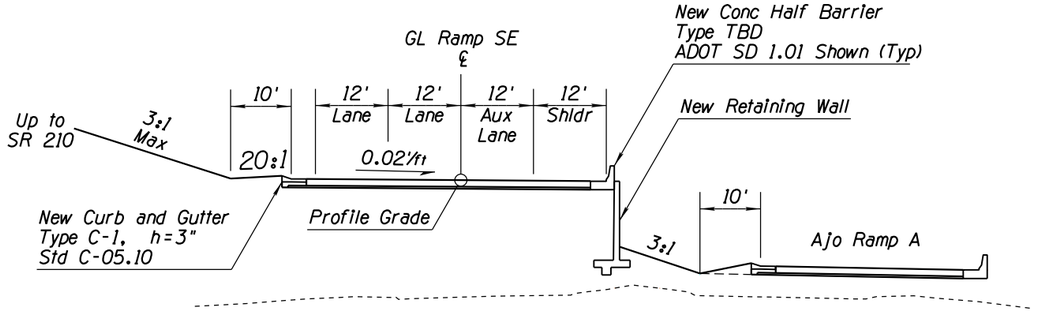
Sta 6+31.72 to Sta 11+00.00



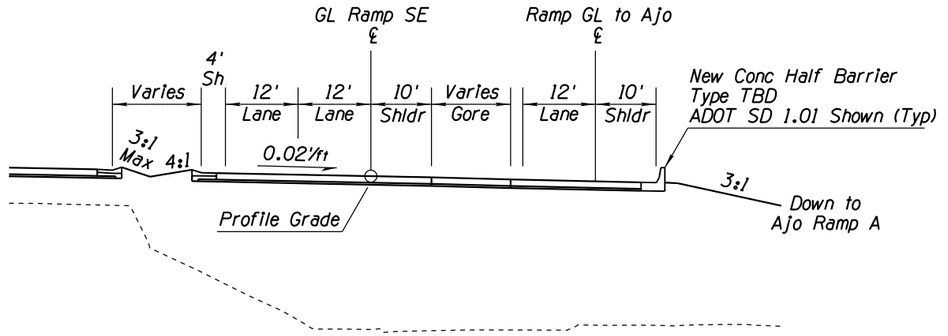
Sta 11+00.00 to Sta 12+29.62



Sta 12+29.62 to Sta 38+45.59



Sta 38+45.59 to Sta 40+64.95



Sta 40+64.95 to Sta 46+93.74

SR 210 RAMP
TYPICAL SECTIONS

GL Ramp SE

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

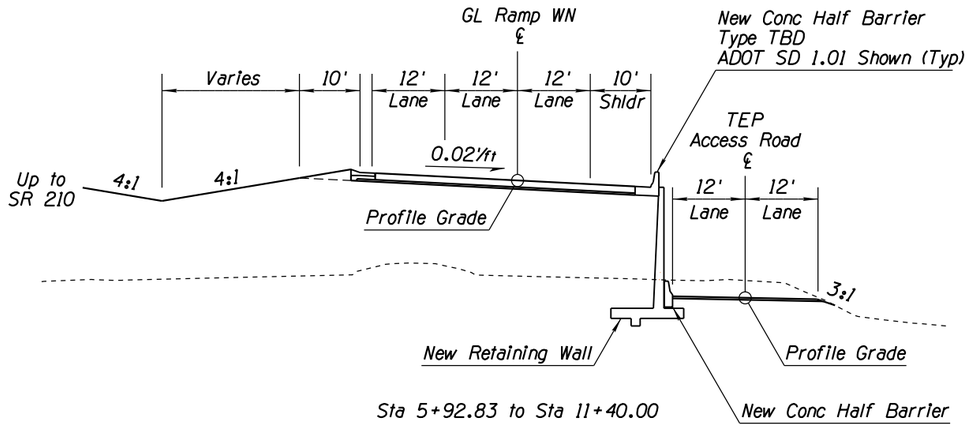
ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	SHEET TYP-34

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

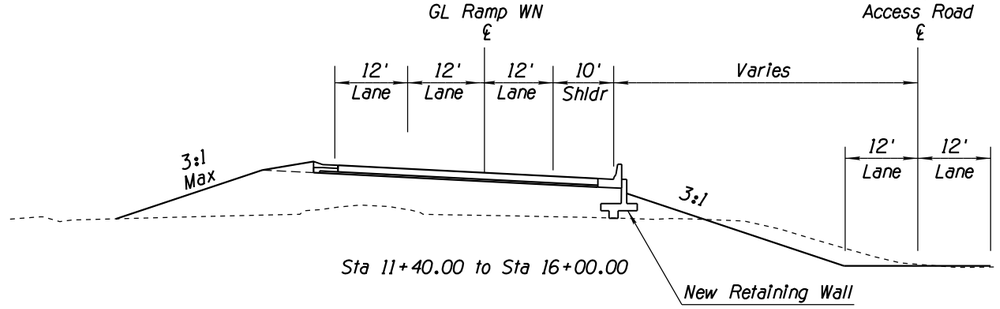
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ134.dgn

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

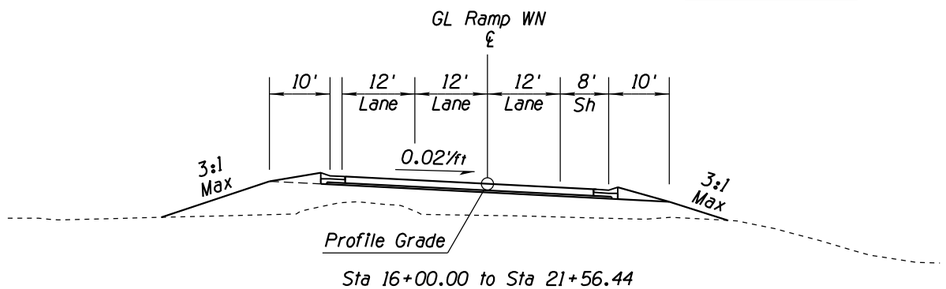
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	35	46	
		010 PM 260			



Sta 5+92.83 to Sta 11+40.00



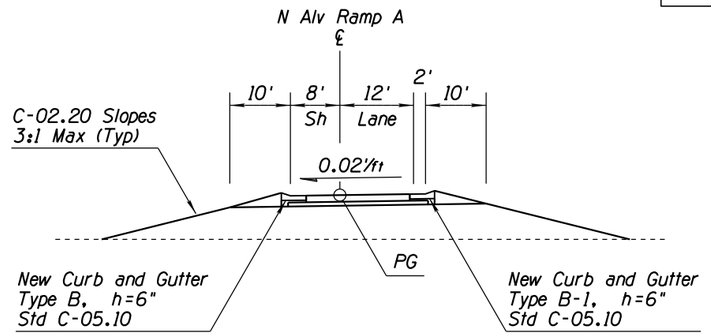
Sta 11+40.00 to Sta 16+00.00



Sta 16+00.00 to Sta 21+56.44

SR 210 RAMP
TYPICAL SECTIONS

GL Ramp WN
Sta 5+92.83 to Sta 21+56.44



Sta 1+28.65 to Sta 2+32.57

SR 210 RAMP
TYPICAL SECTIONS

N Alv Ramp A

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

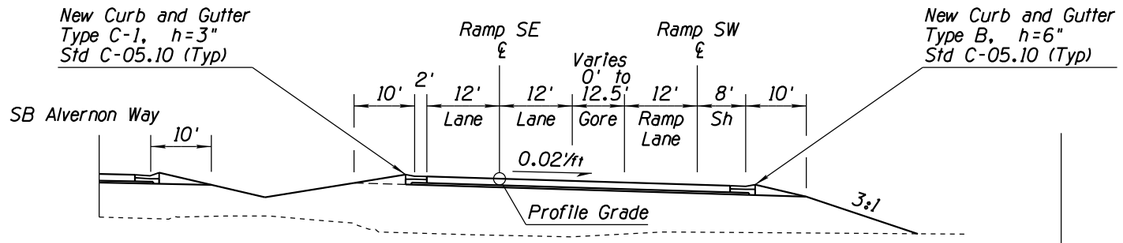
ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET TYP-35

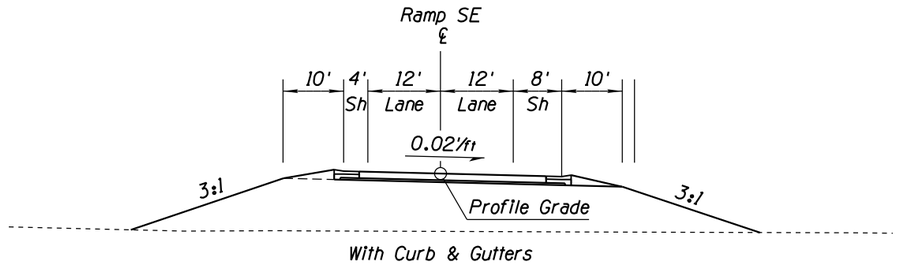
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

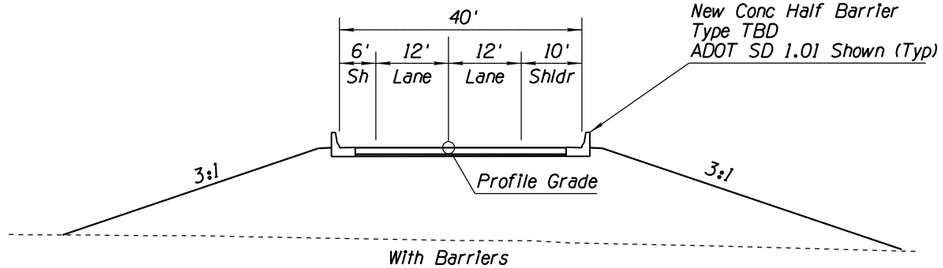
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	36	46	
		010 PM 260			



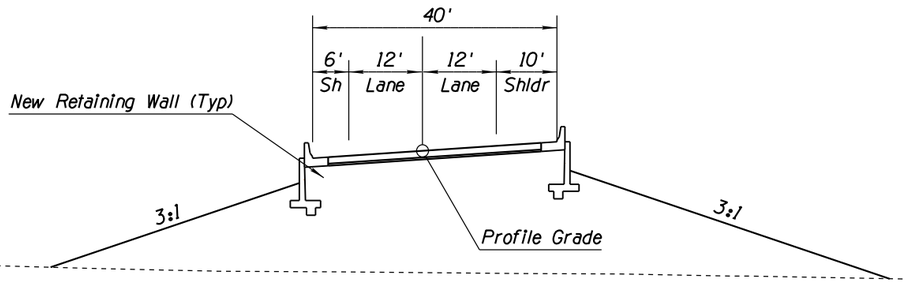
Sta 20+00 to Sta 23+93
Alvernon NOG to Ramp SW NOG



With Curb & Gutters

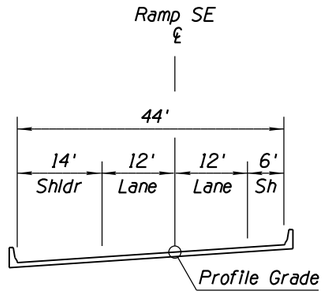


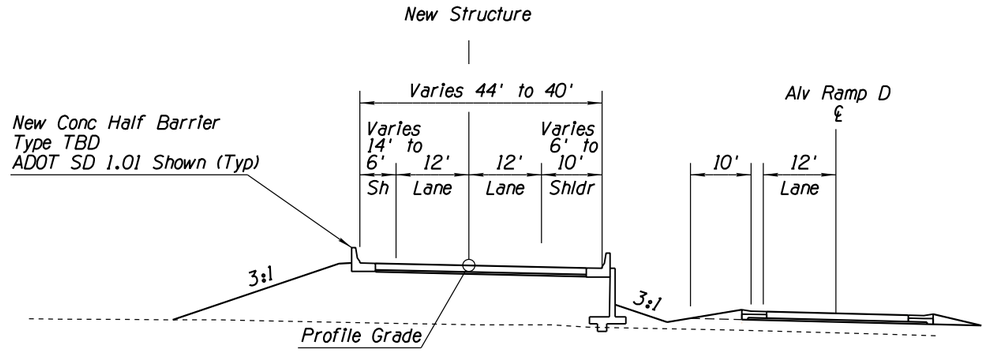
With Barriers



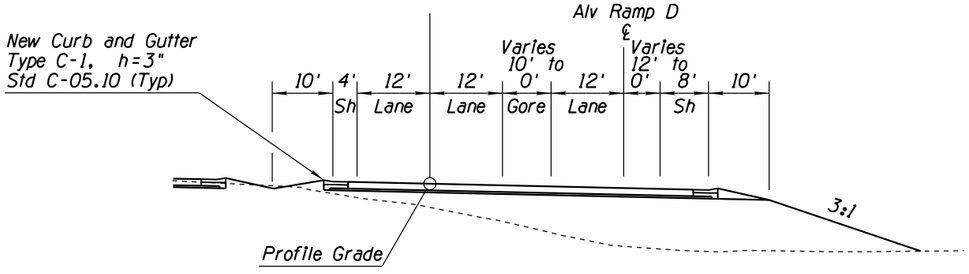
With Retaining Walls at Bridge Abutments

Sta 23+93 to Sta 31+09.40
Ramp SW NOG to North Bridge Abutment





Along Alv Ramp D



Along EB I-10

Sta 41+32.14 to PT Sta 57+20.66
East of South Bridge Abutment

APPENDIX J

SR 210/I-10 SYSTEM RAMP
TYPICAL SECTIONS

Ramp SE
Sta 20+00 to Sta PT 57+20.66

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

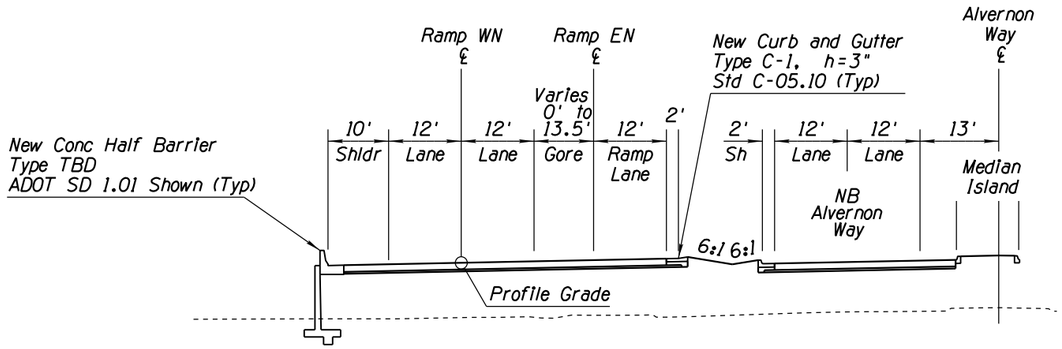
SHEET TYP-36

___ OF ___

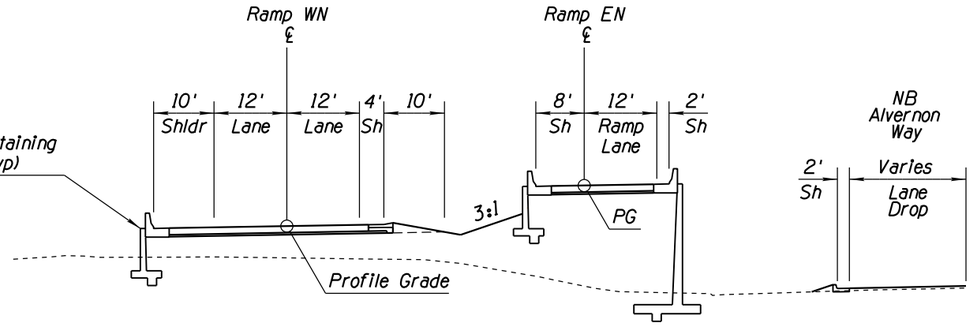
DATE | LOCATION | REVISIONS | FINISHED PLANS | SURVEY NO.

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty136.dgn

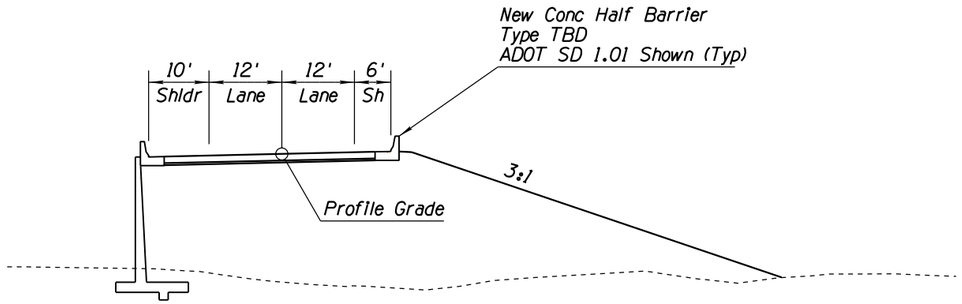
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	37	46	
		010 PM 260			



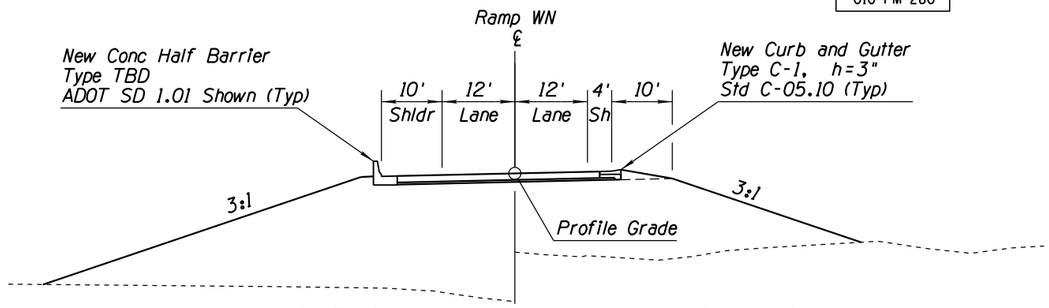
Sta 27+87.76 to Sta 30+00.00
Alvernon NOG to Ramp EN NOG

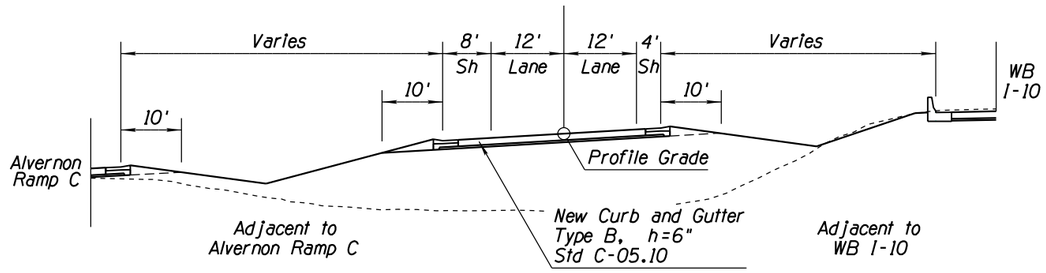


Sta 30+00.00 to Sta 34+95.80
Ramp EN NOG to Ramp EN Bridge

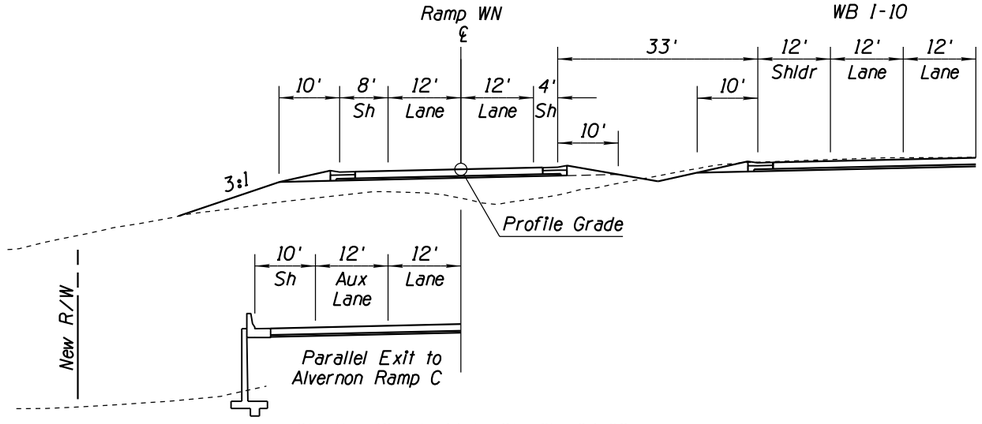


Sta 34+95.80 to Sta 43+28.16





Sta 43+28.16 to Sta PT 48+35.44



Sta PT 48+35.44 to Sta 65+04.62

APPENDIX J

SR 210/I-10 SYSTEM RAMP TYPICAL SECTIONS

Ramp WN
Sta 27+87.76 to Sta 65+04.62

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

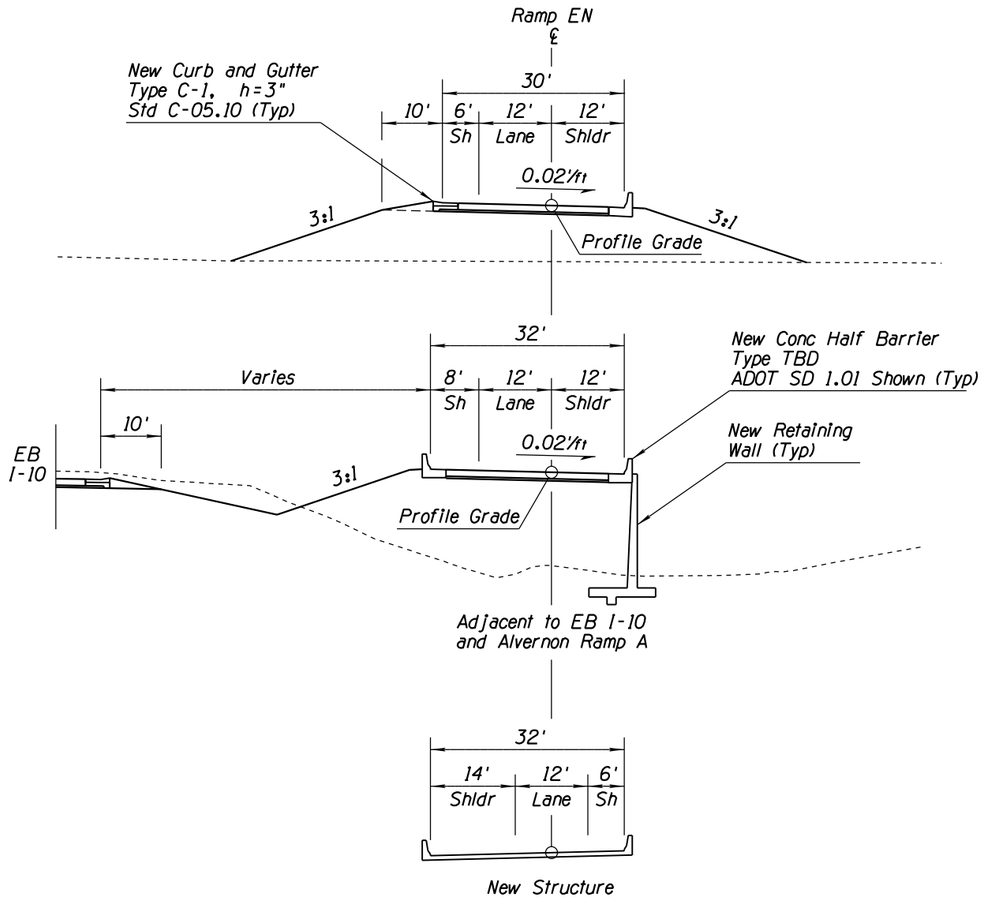
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

SHEET TYP-37

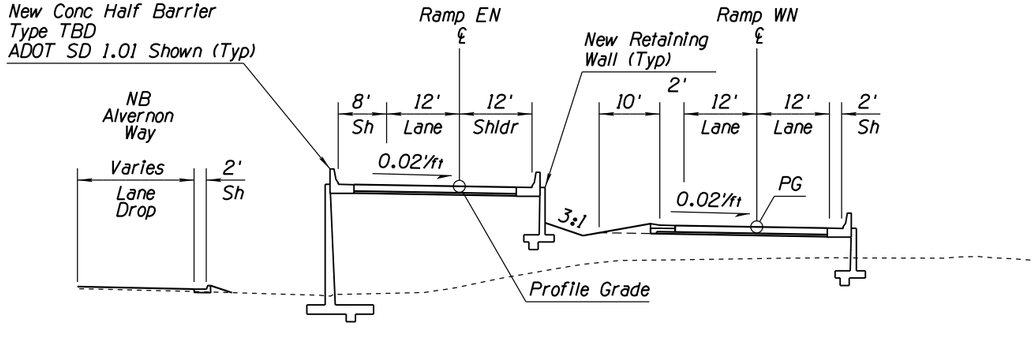
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	38	46	
		010 PM 260			



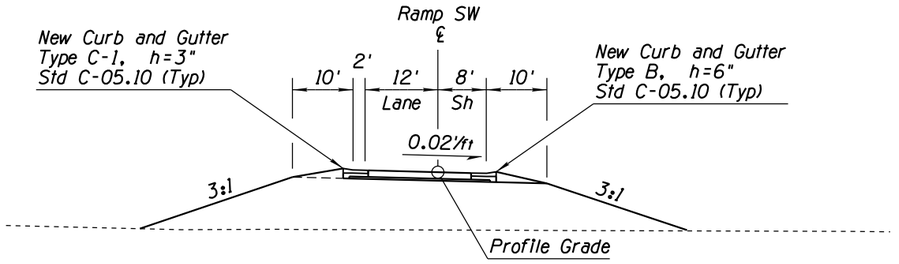
New Structure



Adjacent to NB Alvernon Way

SR 210/I-10 SYSTEM RAMP TYPICAL SECTIONS

Ramp EN
Sta PT 47+25.63 to Sta 79+55.02



SR 210/I-10 SYSTEM RAMP TYPICAL SECTIONS

Ramp SW
Sta PCC 10+00.00 to Sta PT 23+72.76

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
SR 210 SYSTEM ALT IV
TYPICAL SECTIONS

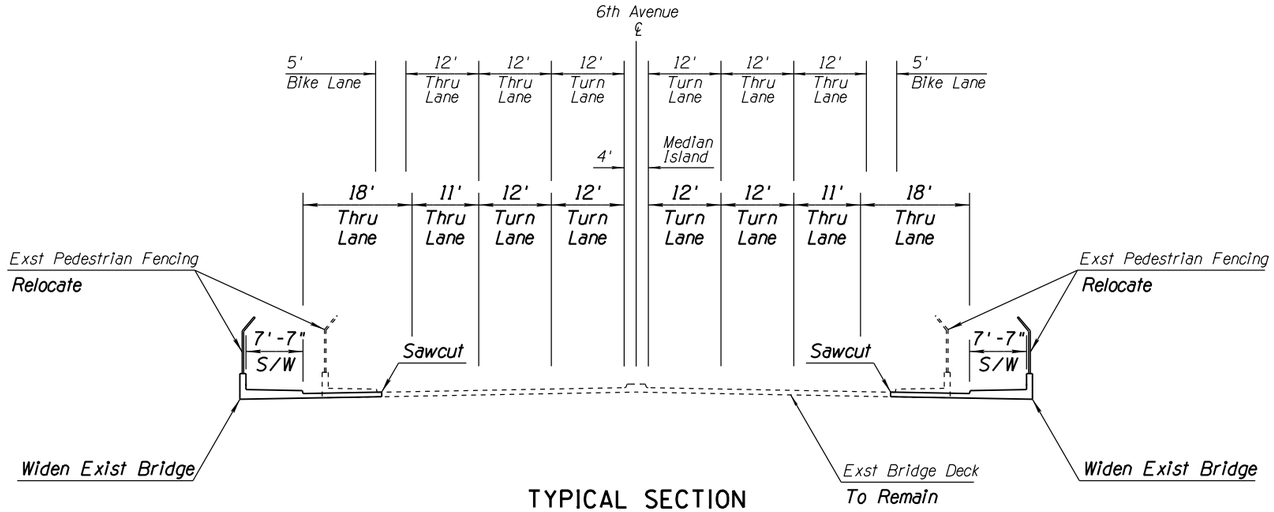
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-38
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L		010-E(210)S	___ OF ___

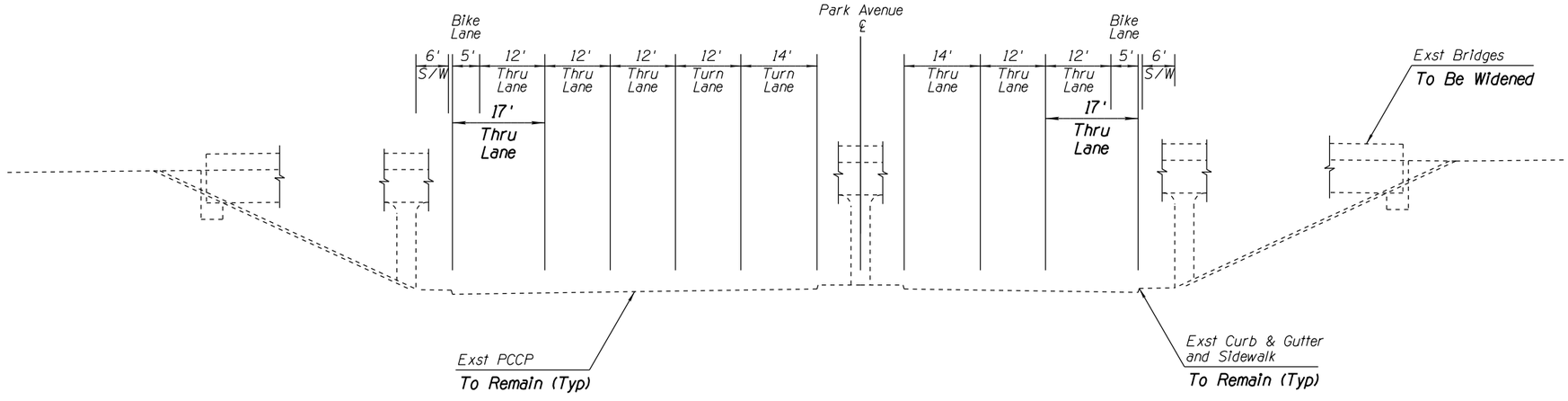
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	39	46	
		010 PM 260			



TYPICAL SECTION

6th Avenue
Ground Level Crossroad
Outside Widening
Looking North
Between 6th Ave Ramps - Over I-10



TYPICAL SECTION

Park Avenue
Ground Level Crossroad
Restriping
Looking North
Between Park Ave Ramps - Under I-10

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

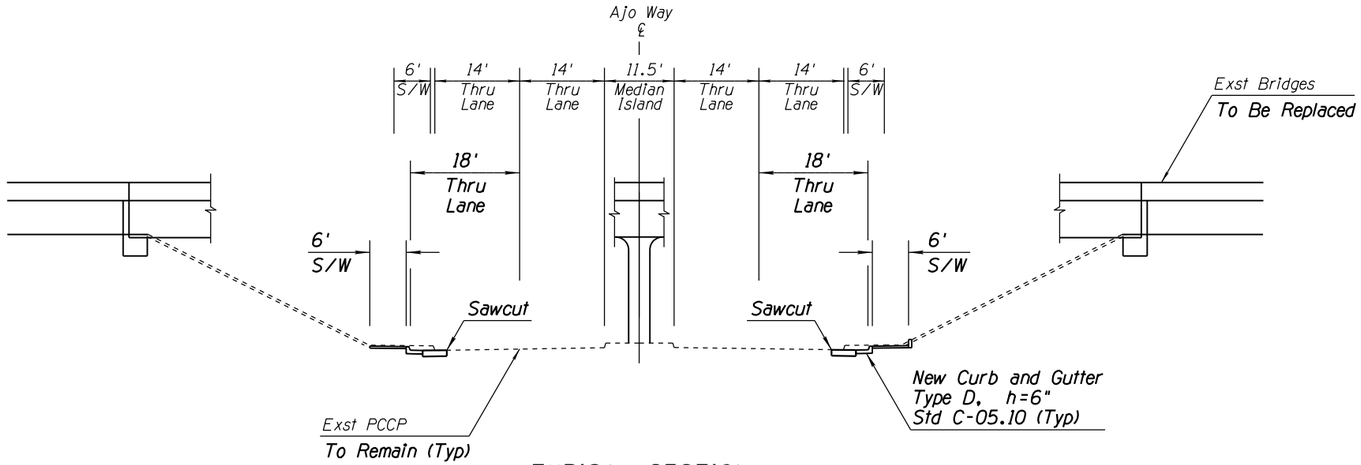
PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-39

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

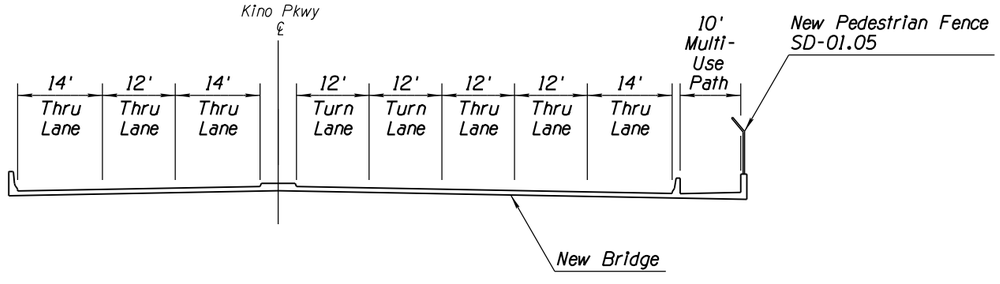
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	40	46	
		010 PM 260			



TYPICAL SECTION

Ajo Way
Depressed Crossroad
Outside Widening
New I-10 Bridge
Looking East
Under I-10



TYPICAL SECTION

Kino Parkway
Elevated Crossroad
New Bridge Over I-10
Looking North
Between Kino Pkwy Ramps - Over I-10

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

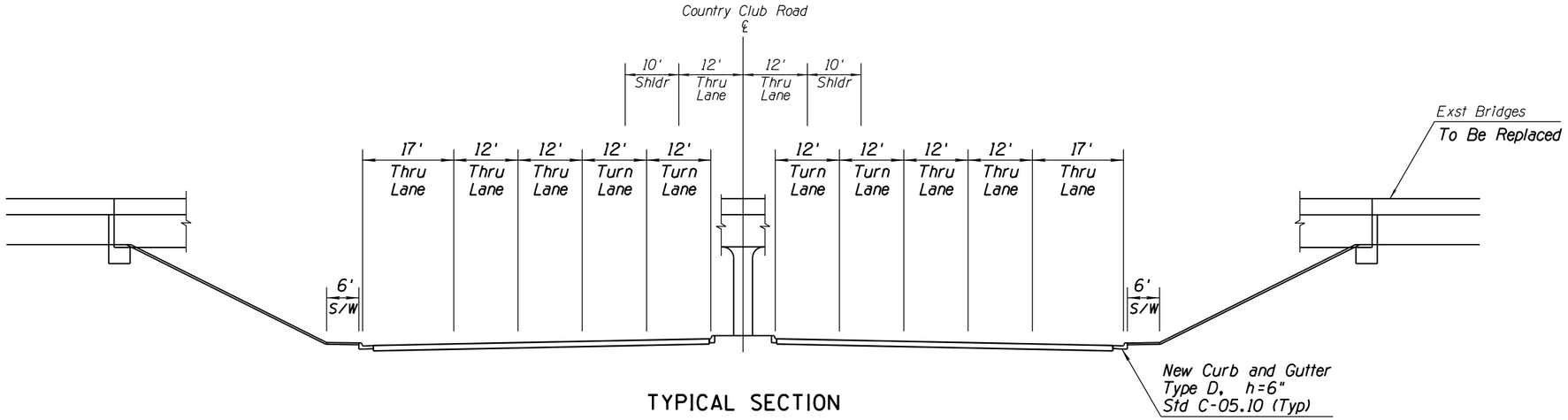
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-40

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

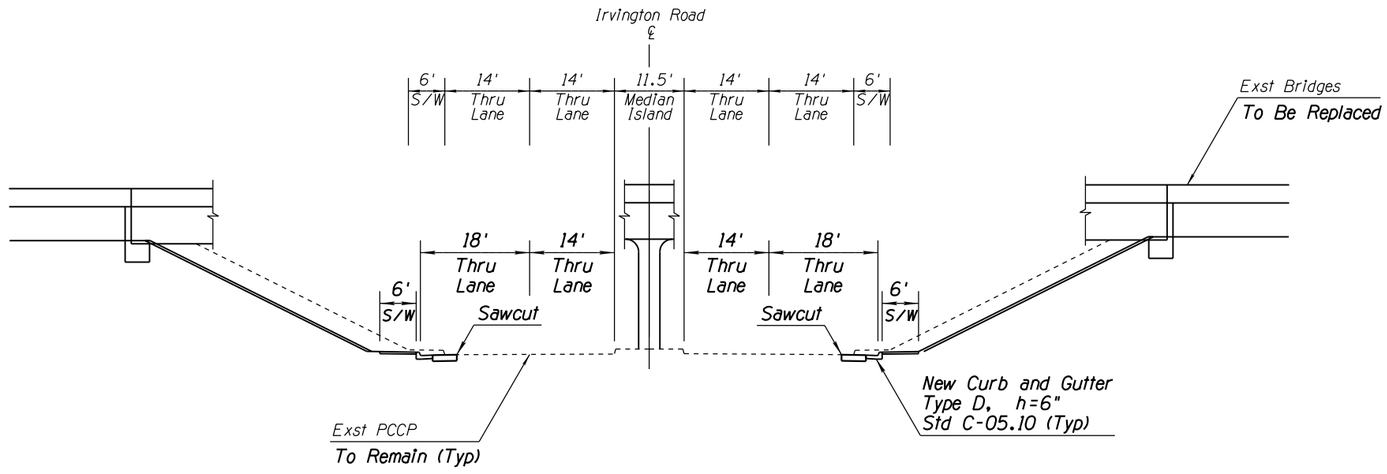
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	41	46	
		010 PM 260			



TYPICAL SECTION

Country Club Road
Ground Level Crossroad
New Crossroad
New I-10 Bridge
Looking North
Between Country Club Ramps - Under I-10



TYPICAL SECTION

Irvington Road
Depressed Crossroad
Outside Widening
New I-10 Bridge
Looking East
Under I-10

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

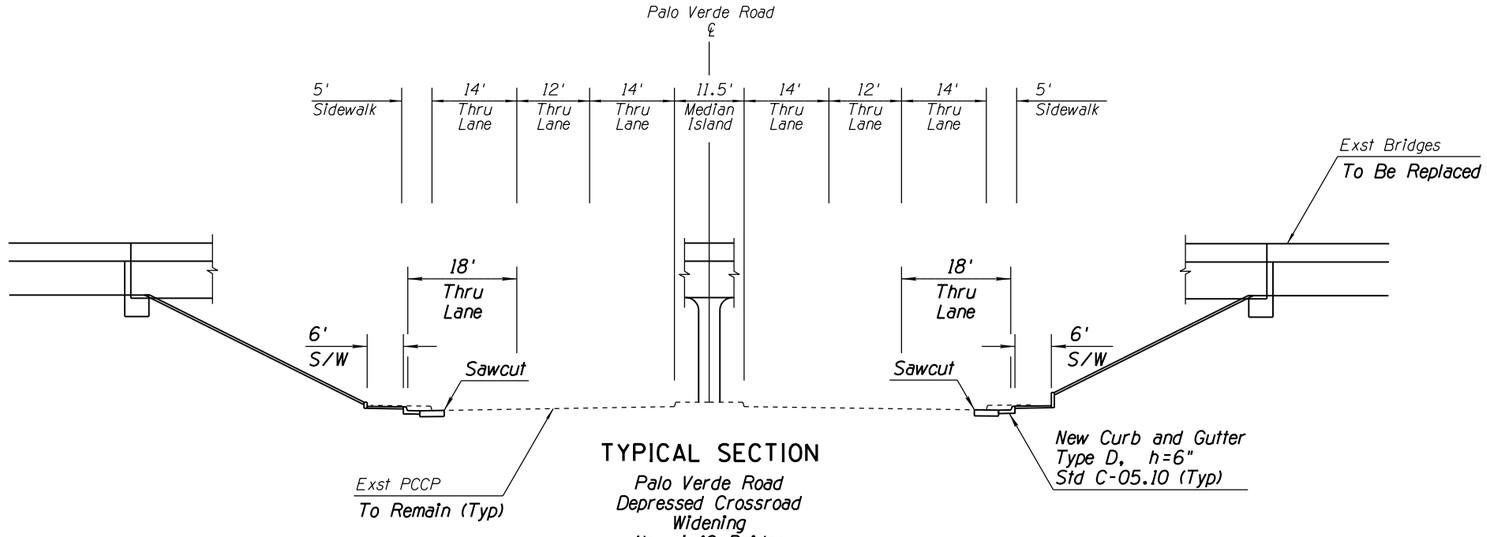
ROUTE	LOCATION	SHEET TYP-41
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

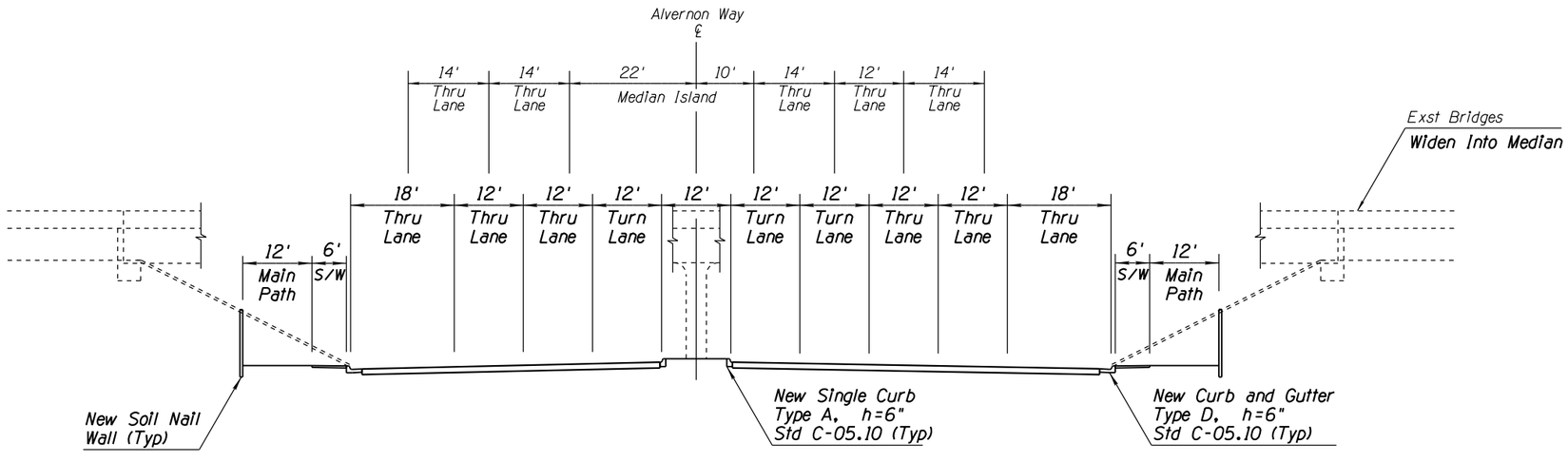
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ141.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	42	46	
		010 PM 260			



TYPICAL SECTION

Palo Verde Road
Depressed Crossroad
Widening
New I-10 Bridge
Looking North
Under I-10



TYPICAL SECTION

Alvernon Way
Ground Level Crossroad
New Crossroad
Widen I-10 Bridge Into Median
Looking North
Under I-10

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

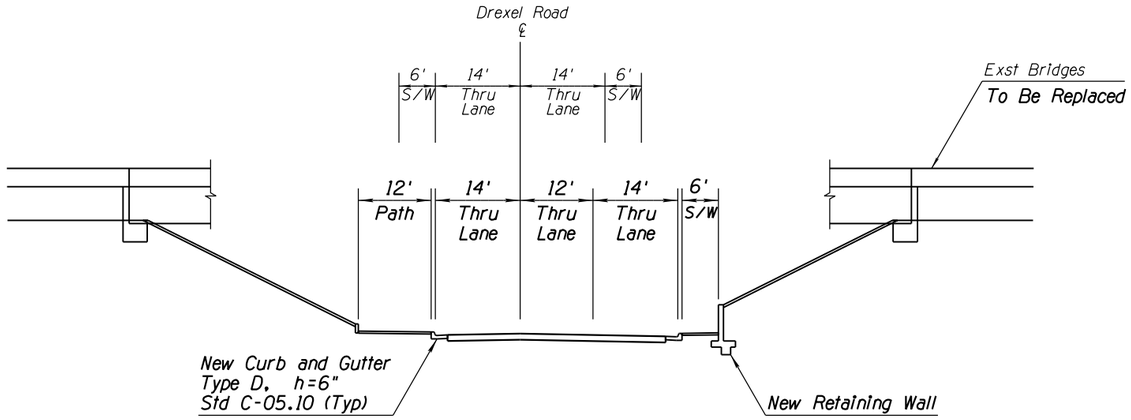
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-42

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

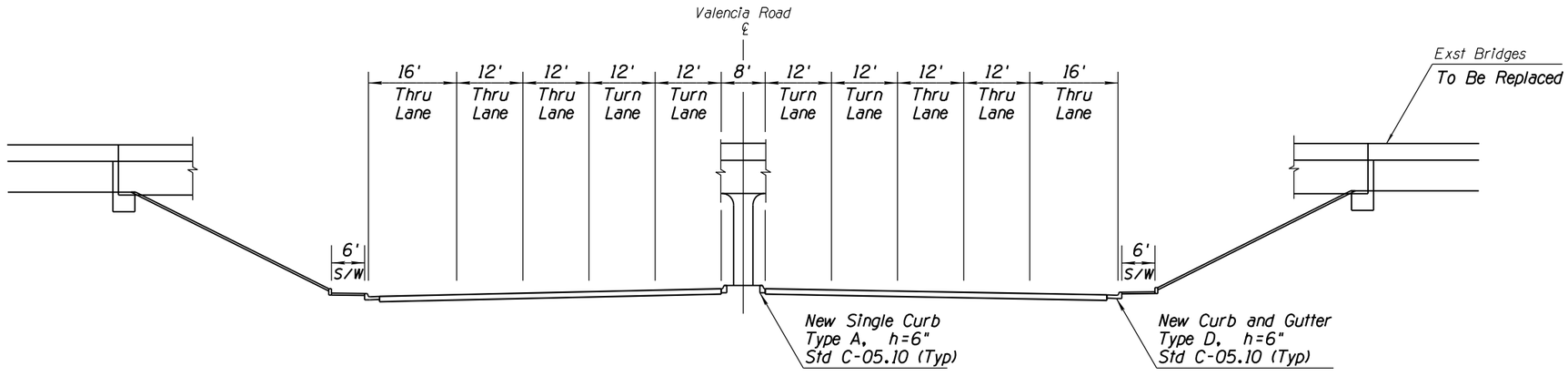
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	43	46	
		010 PM 260			



TYPICAL SECTION

Drexel Road
Ground Level Crossroad
New Crossroad
New I-10 Bridges
Looking East
Under I-10



TYPICAL SECTION

Valencia Road
Ground Level Crossroad
New Crossroad
New I-10 Bridges
Looking East
Under I-10

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

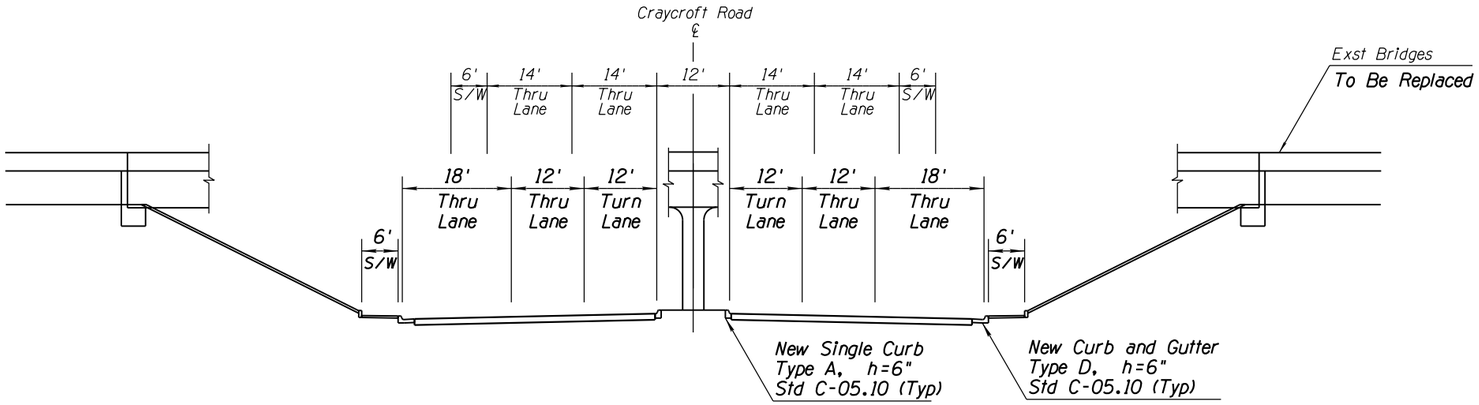
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TYP-43

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

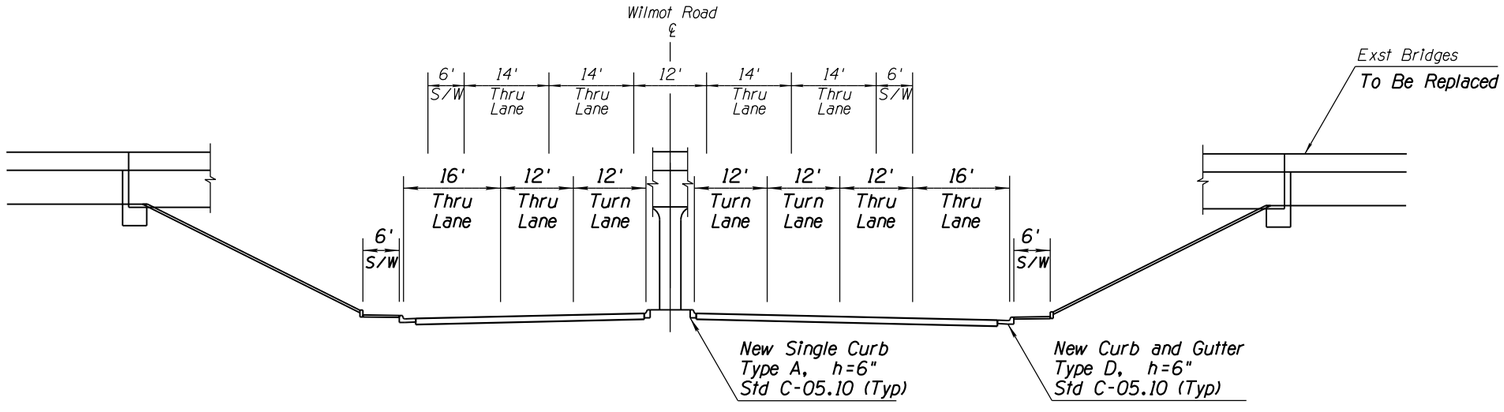
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty143.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	44	46	
		010 PM 260			



TYPICAL SECTION

Craycroft Road
Ground Level Crossroad
New Crossroad
New I-10 Bridges
Looking North
Under I-10



TYPICAL SECTION

Wilmot Road
Ground Level Crossroad
New Crossroad
New I-10 Bridges
Looking North
Under I-10

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

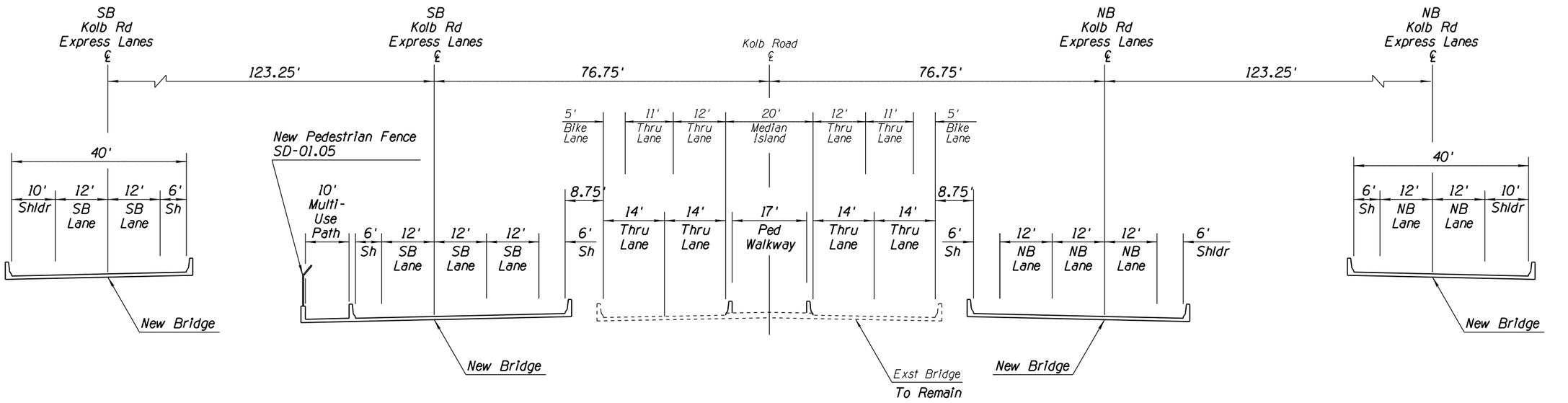
ROUTE	LOCATION	SHEET TYP-44
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825typ144.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	45	46	
		010 PM 260			



TYPICAL SECTION

Kolb Road
Elevated Crossroad
New DDI Interchange
Existing & New Bridges
Looking North
Over I-10

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

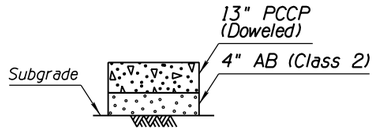
DESIGN SHEET
I-10 SYSTEM ALT IV
TYPICAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-45
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L		010-E(210)S ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825ty145.dgn

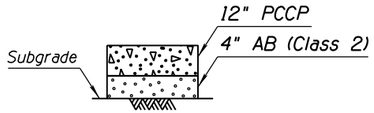
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	46	46	
		010 PM 260			



Total Thickness = 17"

SECTION NO. 1

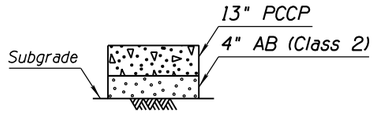
I-10 Mainline
(I-19 TI to Kolb TI)



Total Thickness = 16"

SECTION NO. 2

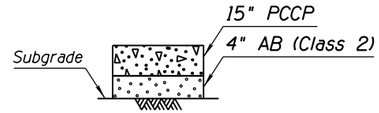
SR 210 Mainline & Ramps



Total Thickness = 17"

SECTION NO. 3

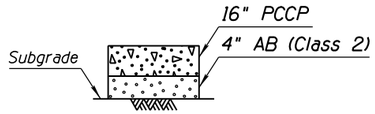
I-10 CD Lanes
I-10 Ramps
(SR 210 to Kolb TI)



Total Thickness = 19"

SECTION NO. 4

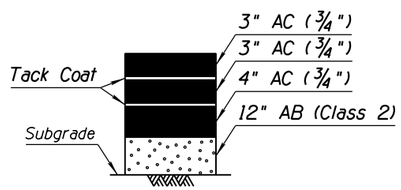
I-10 Ramps
(I-19 TI to Kino TI)



Total Thickness = 20"

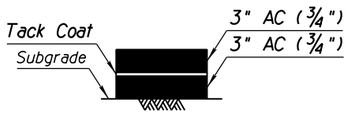
SECTION NO. 5

I-10 Ramps
(Kino TI to SR 210)



Total Thickness = 22"

SECTION NO. 6



Total Thickness = 6"

SECTION NO. 7

I-10 Interim AC

ALTERNATIVE IV – PAVEMENT STRUCTURAL SECTIONS

APPENDIX J

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DESIGN SHEET
I-10 SYSTEM ALT IV
PAVEMENT STRUCTURAL SECTIONS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET TYP-46
	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	
TRACS NO. H7825 01L		010-E(210)S ___ OF ___

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

APPENDIX K
SYSTEM ALTERNATIVE IV DRAINAGE PLANS

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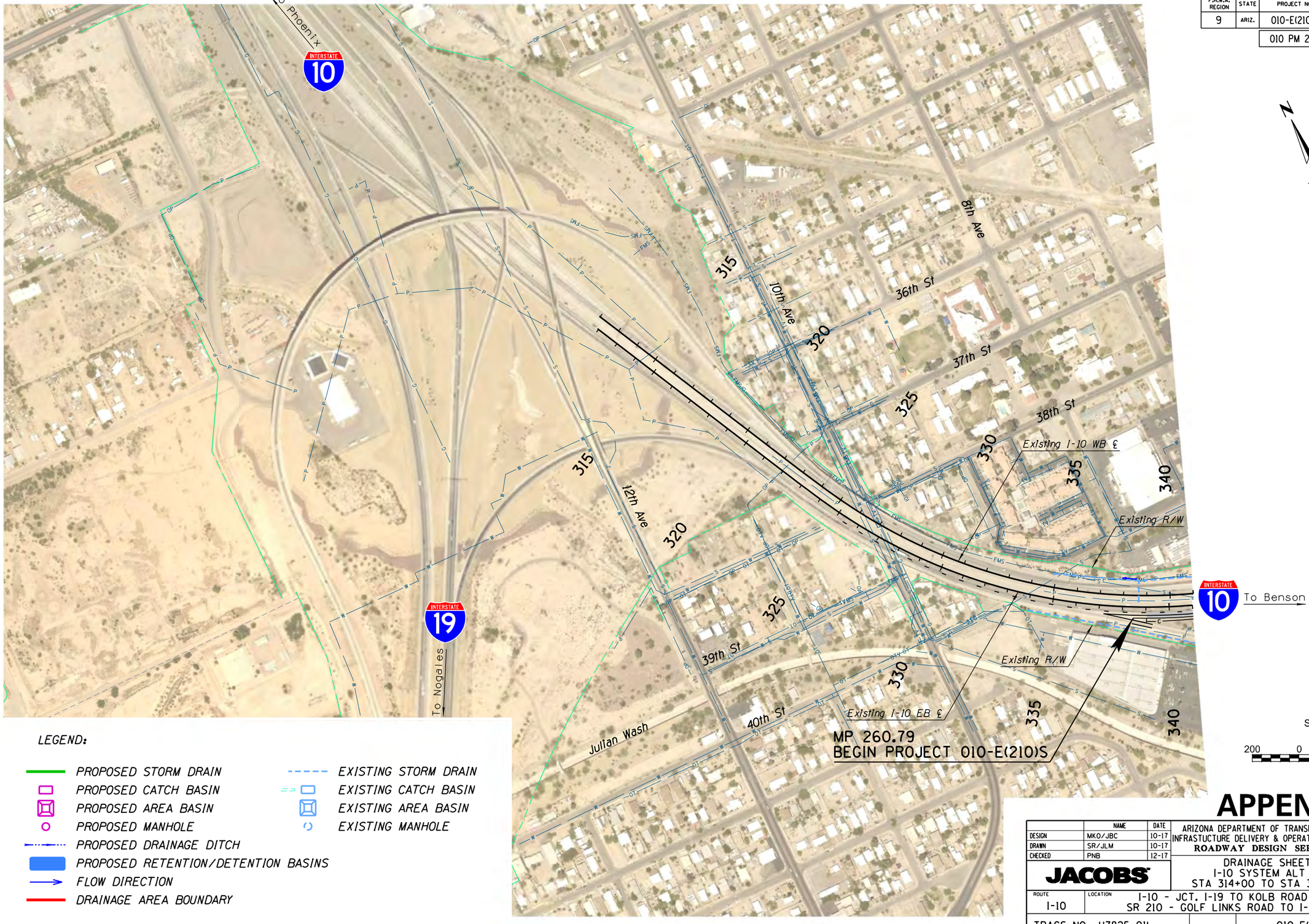
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	16	
		010 PM 260			



SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

LEGEND:

- *PROPOSED STORM DRAIN*
- *PROPOSED CATCH BASIN*
- *PROPOSED AREA BASIN*
- *PROPOSED MANHOLE*
- *PROPOSED DRAINAGE DITCH*
- *PROPOSED RETENTION/DETENTION BASINS*
- *FLOW DIRECTION*
- *DRAINAGE AREA BOUNDARY*
- *EXISTING STORM DRAIN*
- *EXISTING CATCH BASIN*
- *EXISTING AREA BASIN*
- *EXISTING MANHOLE*

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 314+00 TO STA 341+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET DR-01

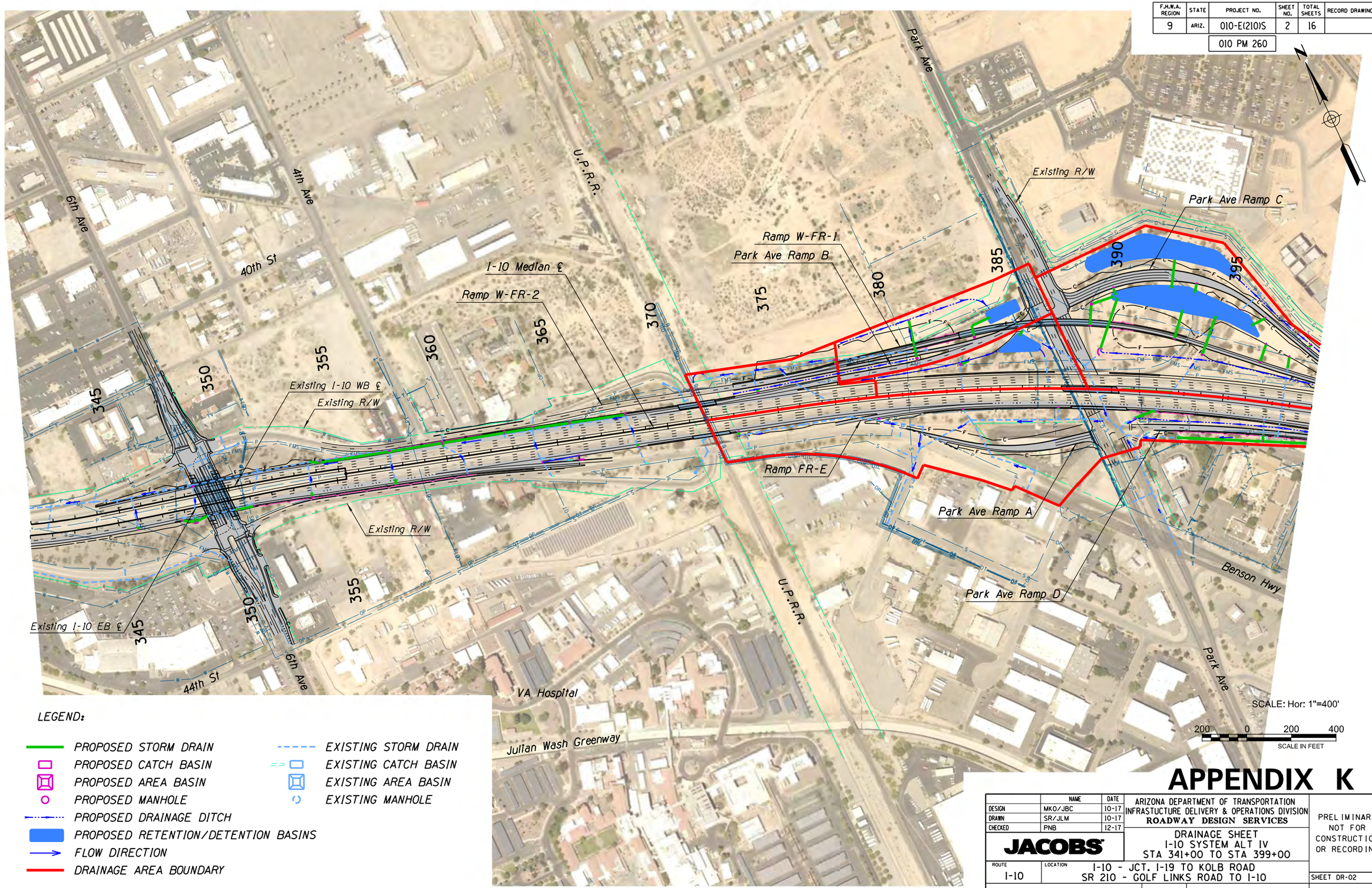
___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d101.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	16	
		010 PM 260			

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



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 341+00 TO STA 399+00

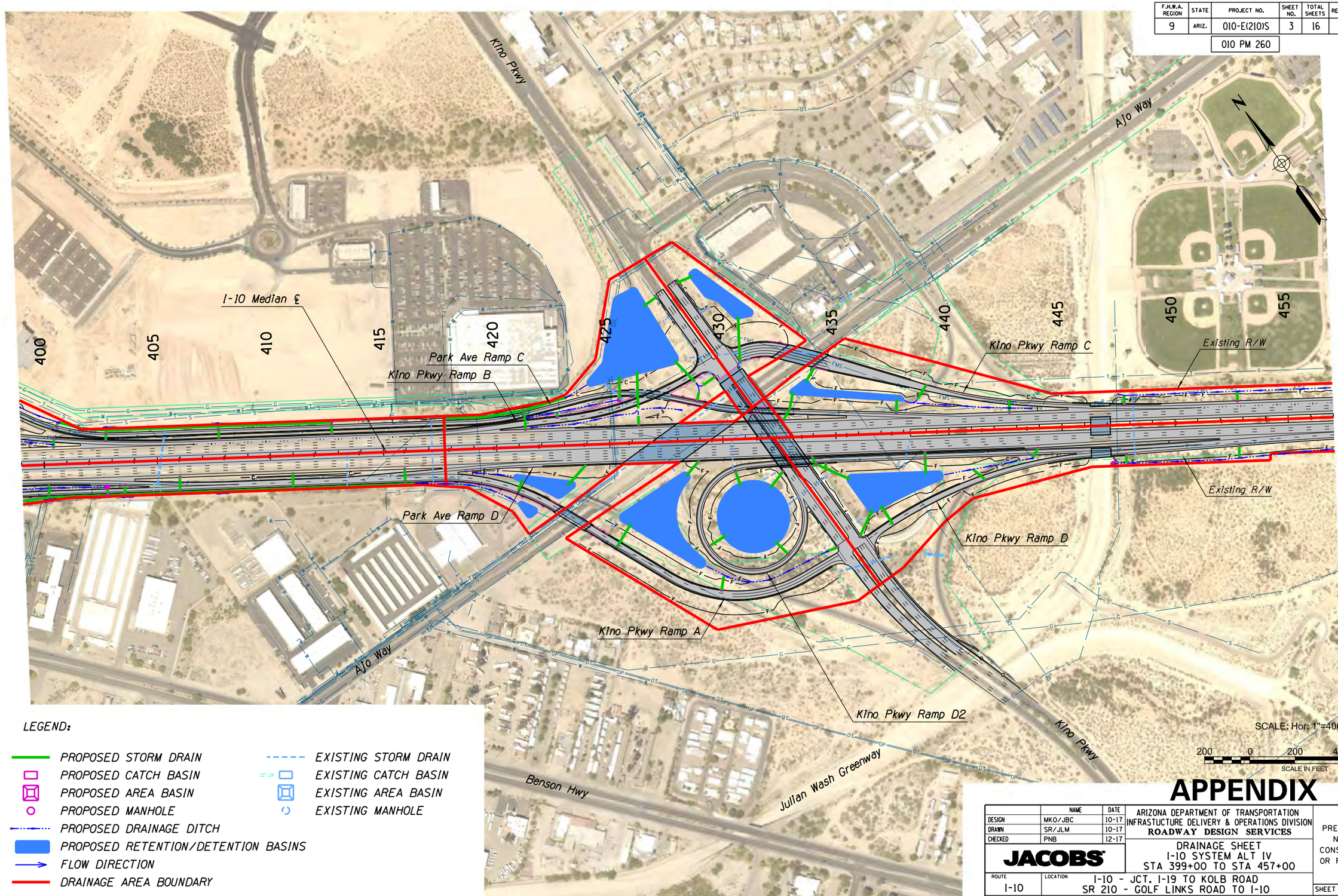
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	DR-02

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d102.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	16	
		010 PM 260			



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 399+00 TO STA 457+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	SHEET DR-03

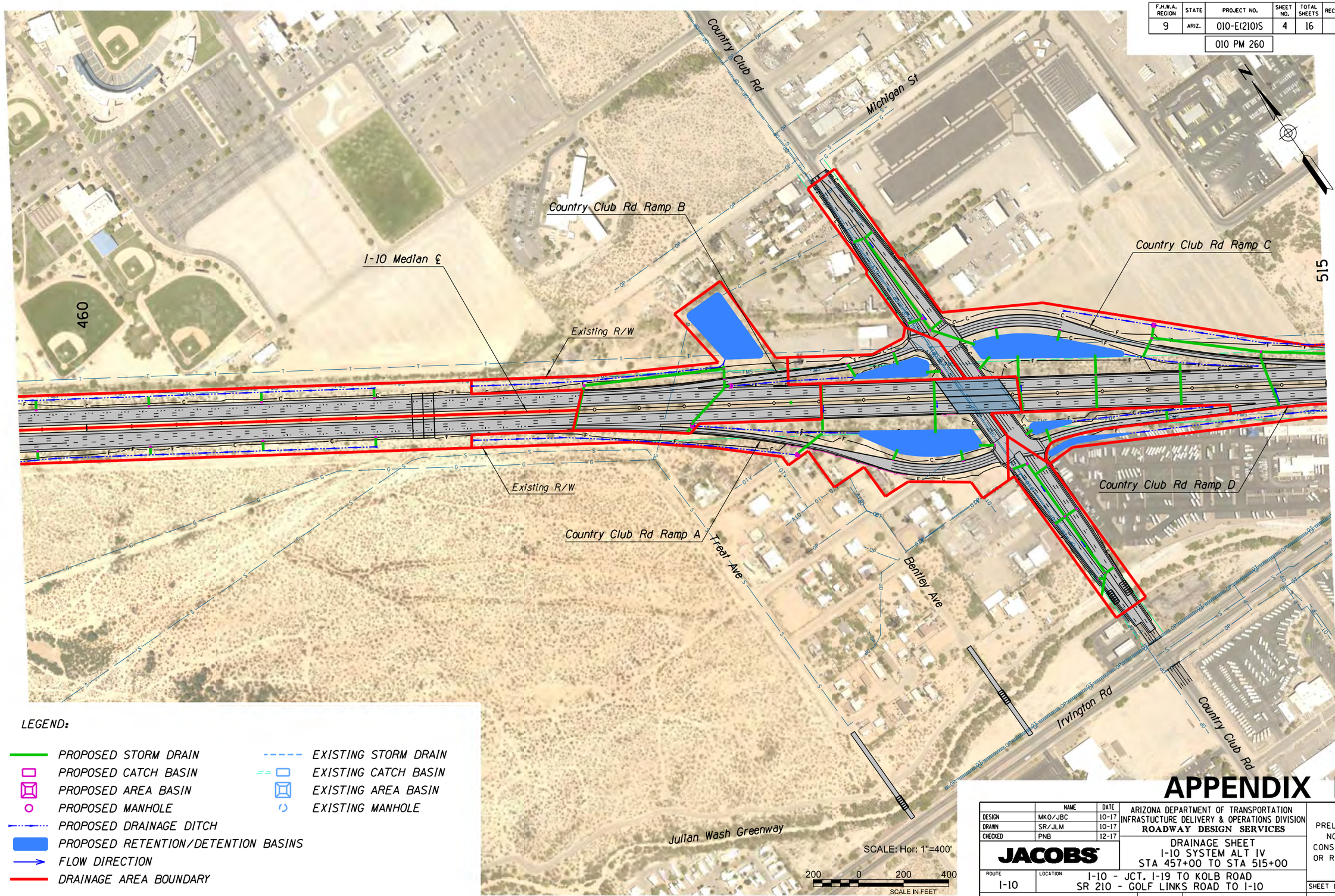
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d103.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	16	
		010 PM 260			

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



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 457+00 TO STA 515+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	DR-04

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d104.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	16	

010 PM 260

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

Palo Verde Rd
Irvington Rd
Alvernon Way
U.P.R.R.
Tucson Electric Power
Ramp SW
Alvernon Way Ramp B
Existing R/W
I-10 Median ℄
Ramp WN
Alvernon Way Ramp C
Ramp SE
Alvernon Way Ramp D
Existing R/W
Ramp EN
Alvernon Way Ramp A
Julian Wash Greenway
Palo Verde Rd
Alvernon Way
515
520
525
530
535
540
545
550
555
560
565
570
495
500
505
510
515
520

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 515+00 TO STA 573+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

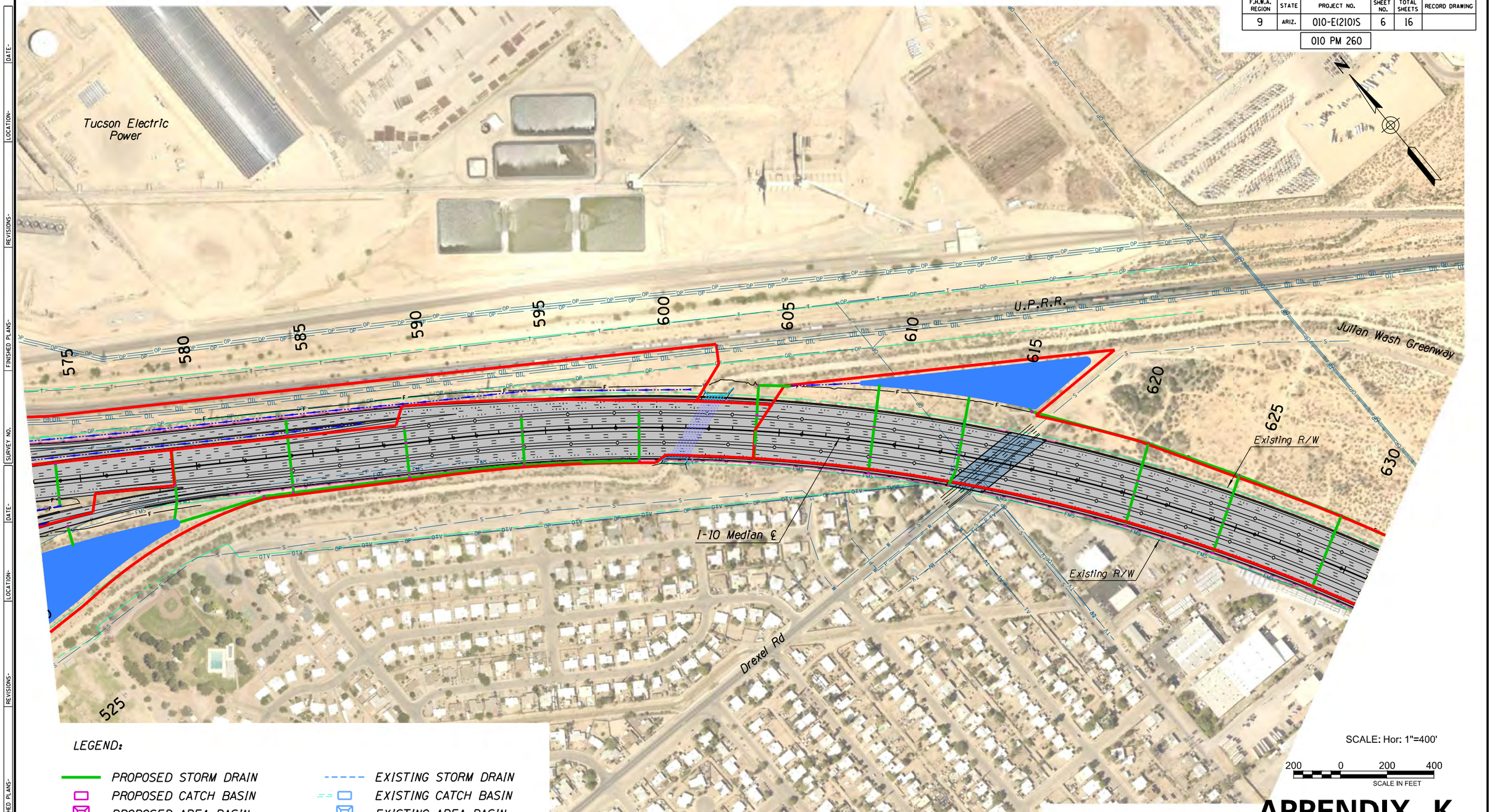
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	DR-05

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d105.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	6	16	
		010 PM 260			

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



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400

SCALE IN FEET

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 573+00 TO STA 631+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	DR-06

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d106.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	7	16	
		010 PM 260			

U.P.R.R.

Julian Wash Greenway

Valencia Rd

Littletown Rd

Existing R/W

Valencia Rd Ramp C

Valencia Rd Ramp B

I-10 Median ℄

Existing R/W

Existing R/W

Valencia Rd Ramp A

Existing R/W

Valencia Rd Ramp D

Benson Hwy

Valencia Rd

Swan Rd

635 640 645 650 655 660 665 670 675 680 685

SCALE: Hor: 1"=400'

200 0 200 400

SCALE IN FEET

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 631+00 TO STA 689+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET DR-07

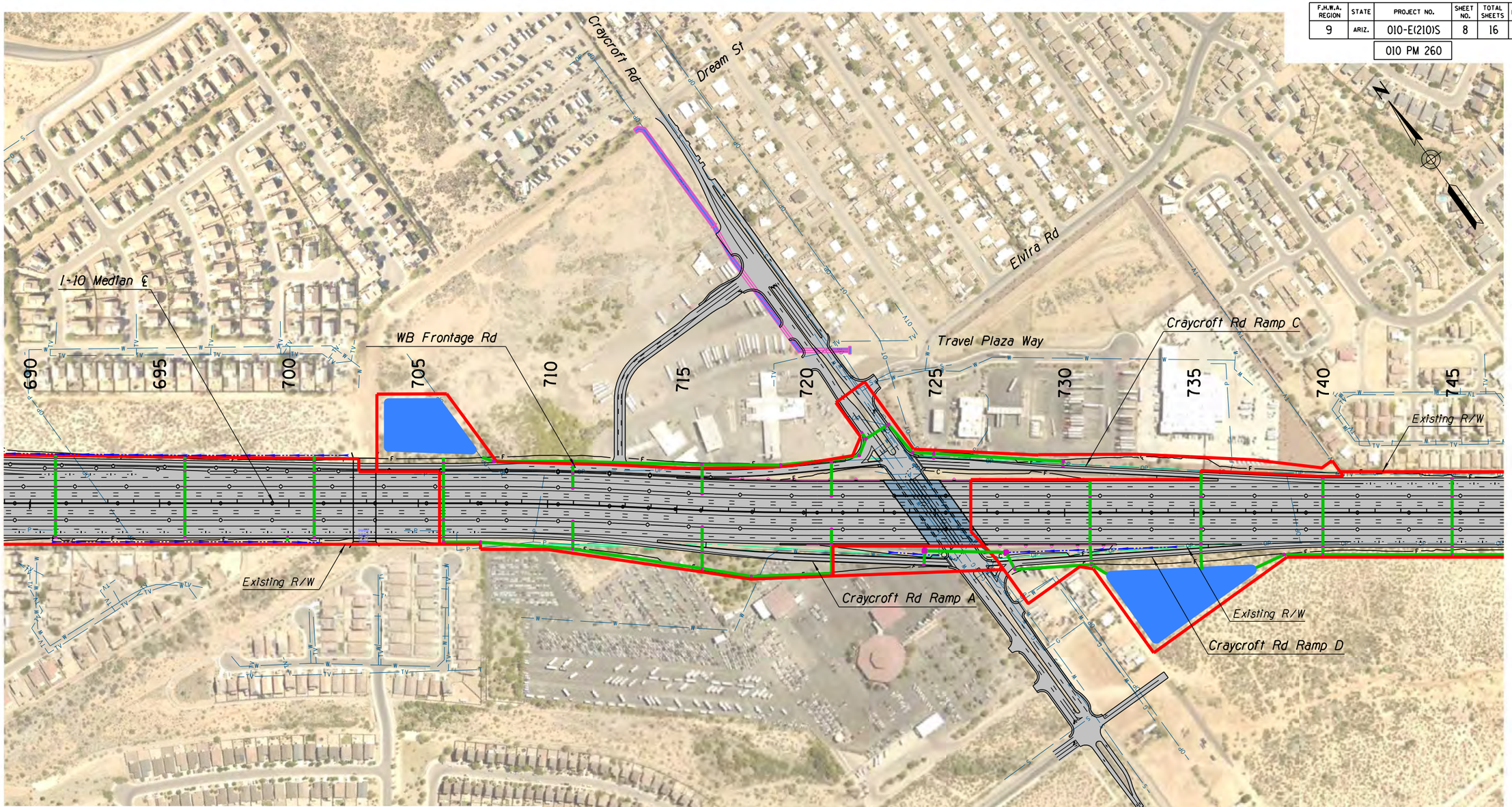
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d107.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	8	16	
		010 PM 260			

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



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400

SCALE IN FEET

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 689+00 TO STA 747+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

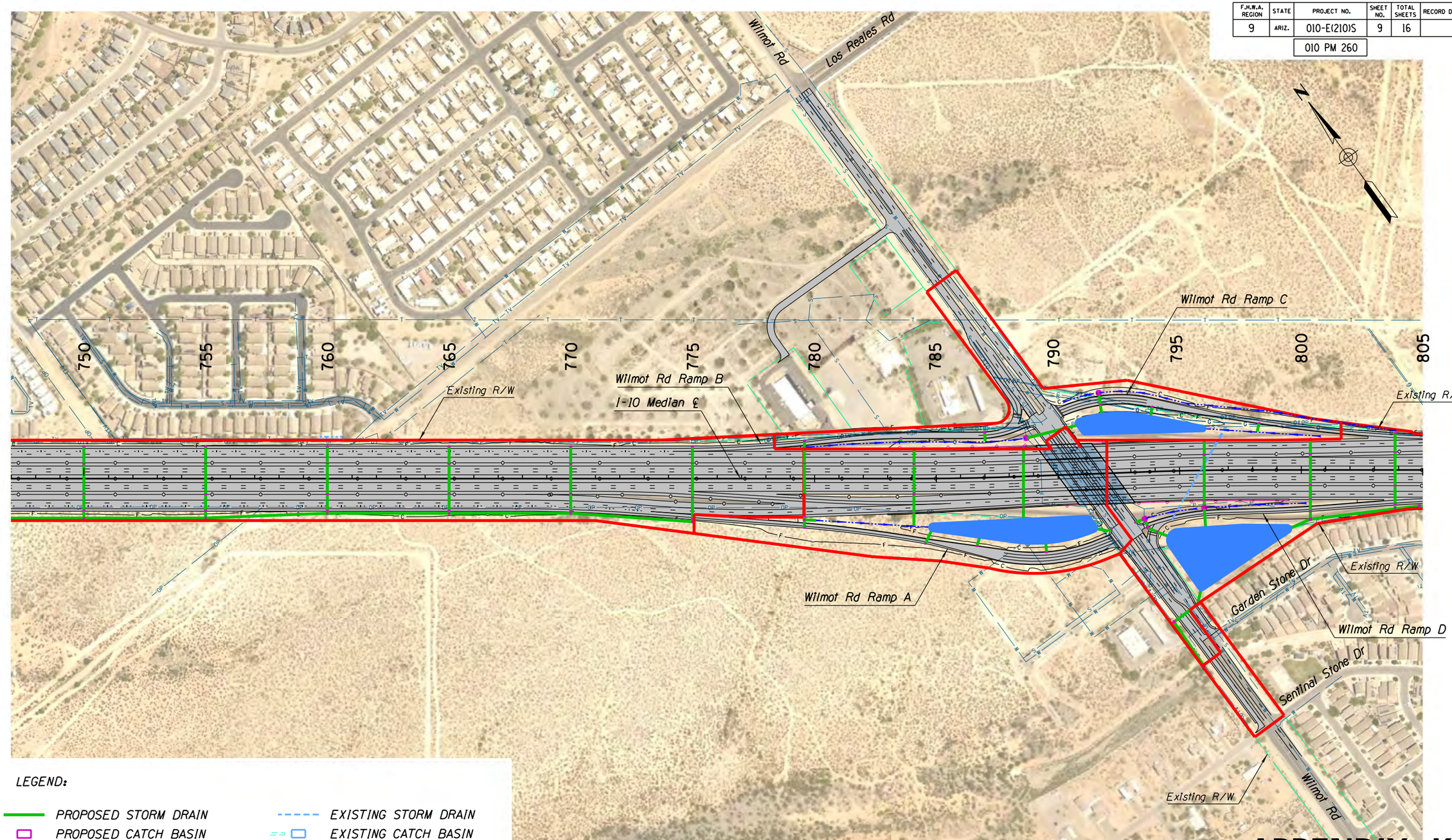
SHEET DR-08

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d108.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	9	16	
		010 PM 260			

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



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 747+00 TO STA 805+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	DR-09

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d109.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	10	16	
		010 PM 260			

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

Kolb Rd

Science Park Dr

Kolb Rd Ramp C2

Kolb Rd Ramp C1

Kolb Rd Ramp C

Kolb Rd Ramp B1

805 810 815 820 825 830 835 840 845 850 855 860

Existing R/W

Kolb Rd Ramp B

I-10 Median ℄

Existing R/W

Kolb Rd Ramp D

Kolb Rd Ramp D1

Kolb Rd Ramp A

Kolb Rd

STATE LANDS

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400

SCALE IN FEET

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 805+00 TO STA 863+00

ROUTE: I-10

LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

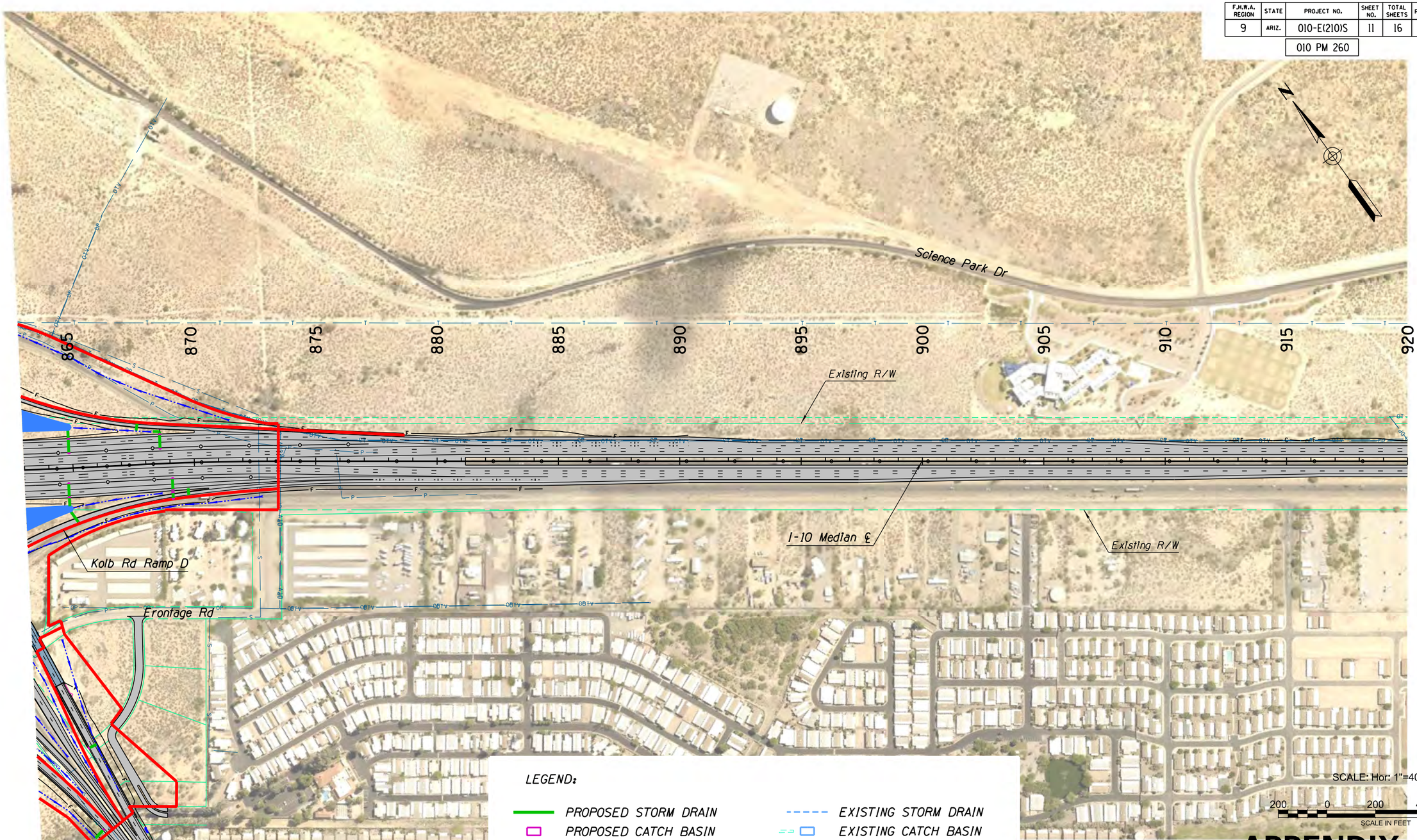
SHEET DR-10

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d110.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	11	16	
		010 PM 260			

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



APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 863+00 TO STA 920+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

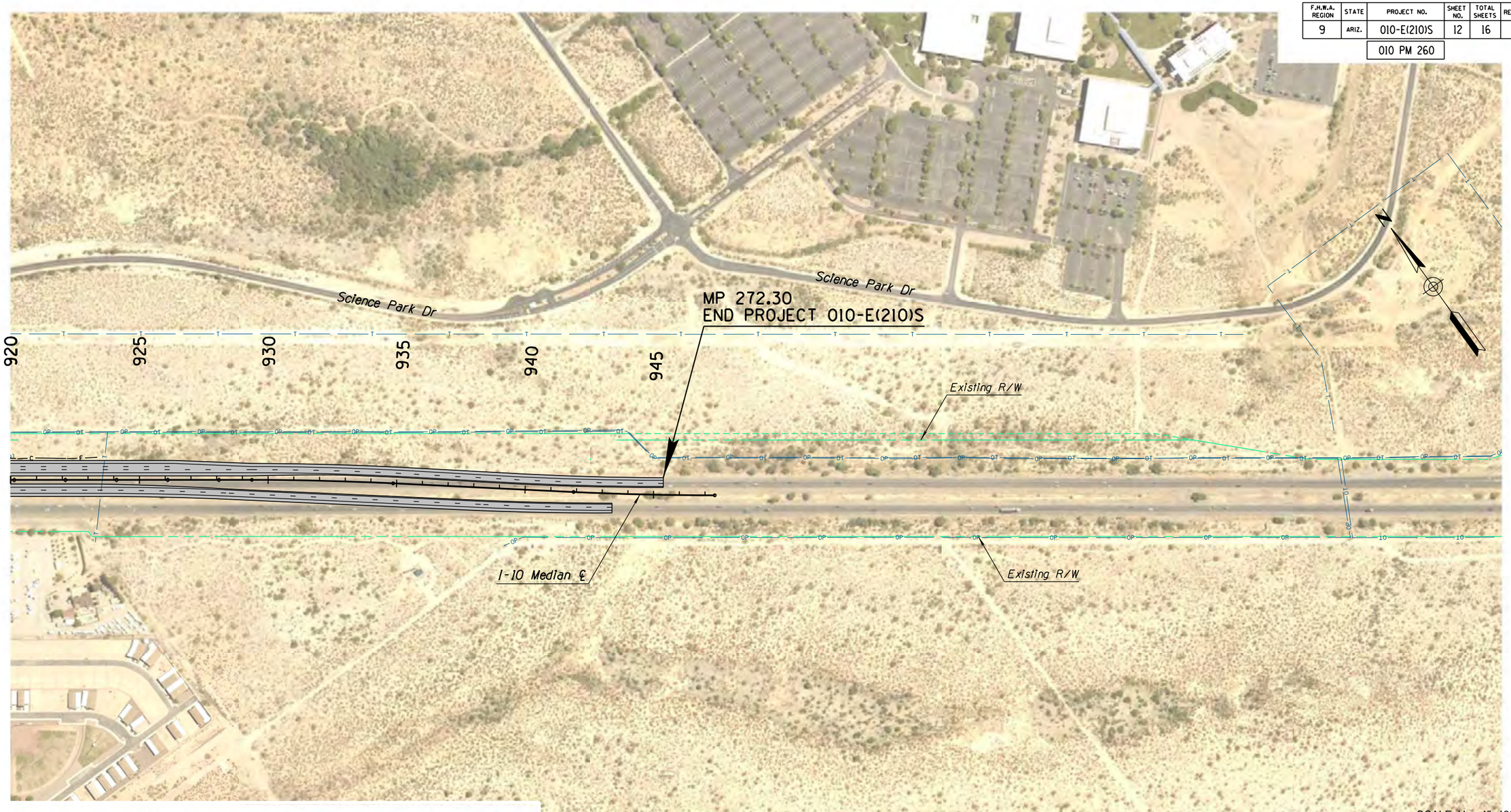
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET DR-11

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d111.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	12	16	
		010 PM 260			



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400

SCALE IN FEET

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DRAINAGE SHEET
I-10 SYSTEM ALT IV
STA 920+00 TO STA 978+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	DR-12

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

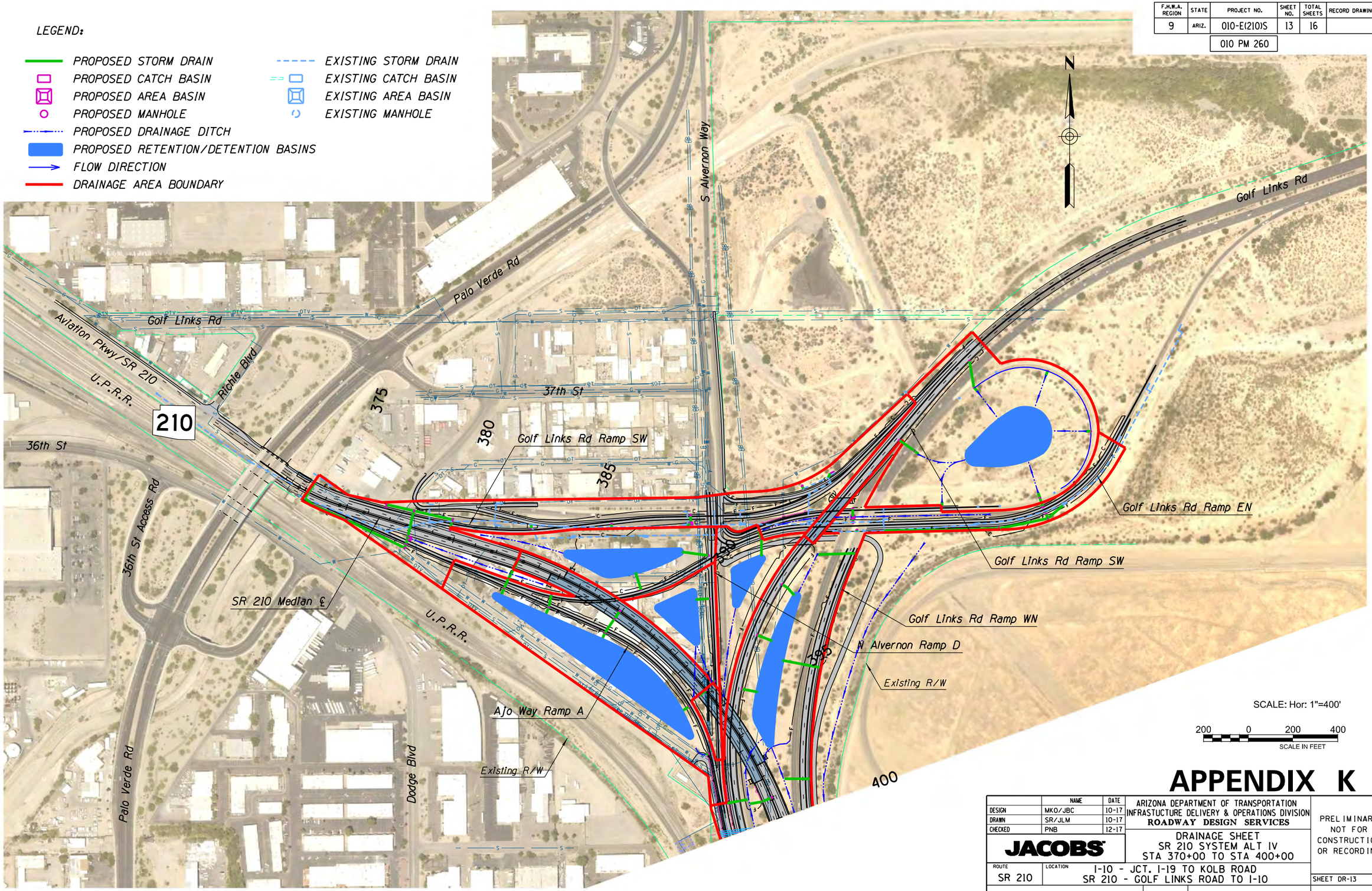
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d112.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	13	16	
		010 PM 260			

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE



SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
SR 210 SYSTEM ALT IV
STA 370+00 TO STA 400+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET DR-13

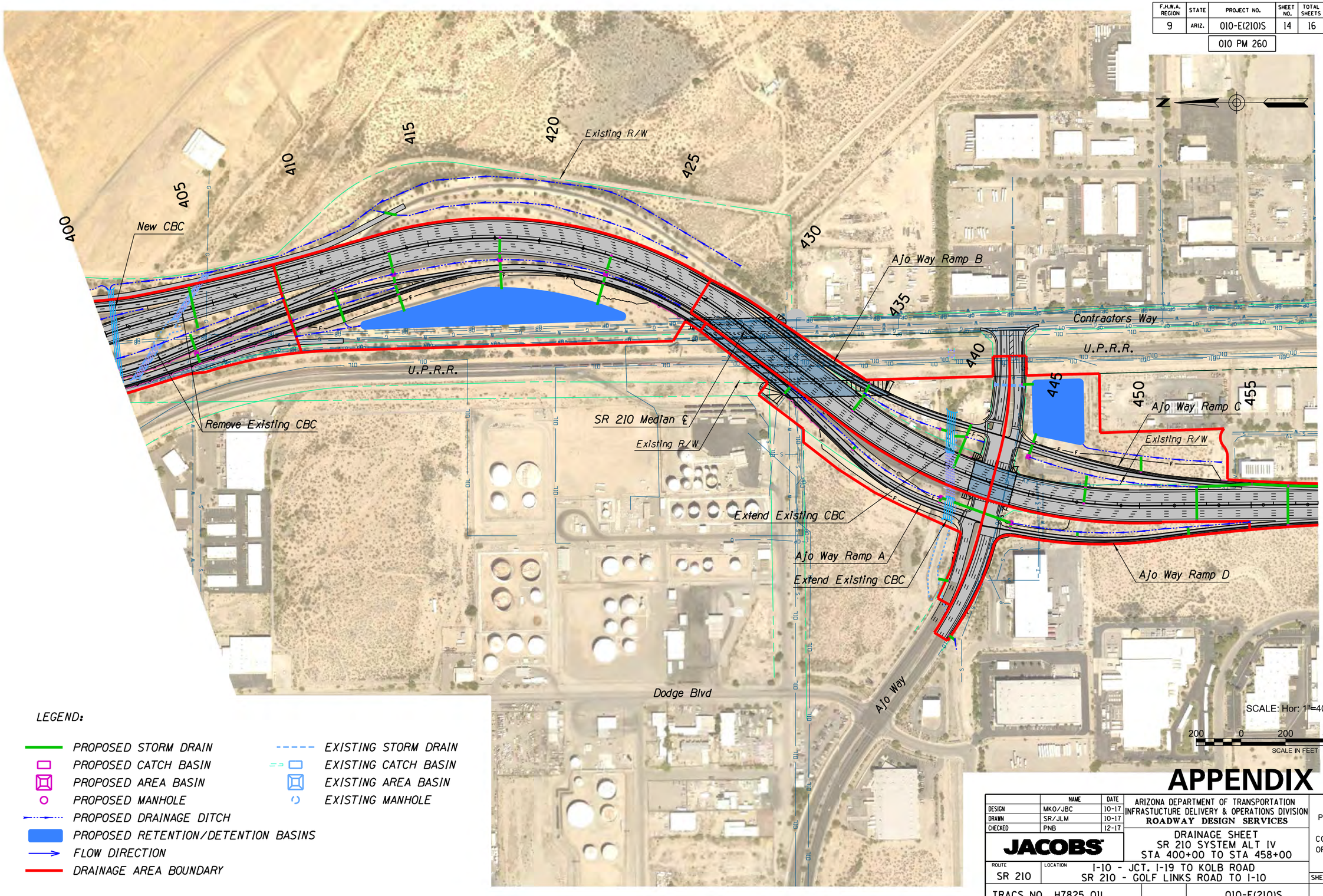
___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d113.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	14	16	

010 PM 260



LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

DRAINAGE SHEET
SR 210 SYSTEM ALT IV
STA 400+00 TO STA 458+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET DR-14

___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d114.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	15	16	
		010 PM 260			

N

Irvington Rd
Alvernon Way Ramp C
Ramp WN
Ramp EN
Contractors' Way
U.P.R.R.
Existing R/W
SR 210 Median ℄
Extend Existing CBC
Ramp SE
Ramp SW
Alvernon Way Ramp D
Alvernon Way Ramp A
Alvernon Way Ramp B
Julian Wash Greenway
Michigan St
460
465
470
475
480
485
490
495
500
505
510
515
520
525
530
535
540
545
550
555
560
565
570

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
SR 210 SYSTEM ALT IV
STA 460+00 TO STA 520+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET DR-15
___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d115.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	16	16	
		010 PM 260			

LEGEND:

- PROPOSED STORM DRAIN
- PROPOSED CATCH BASIN
- PROPOSED AREA BASIN
- PROPOSED MANHOLE
- PROPOSED DRAINAGE DITCH
- PROPOSED RETENTION/DETENTION BASINS
- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- EXISTING STORM DRAIN
- EXISTING CATCH BASIN
- EXISTING AREA BASIN
- EXISTING MANHOLE

Kolb Rd Ramp C
Kolb Rd Ramp C1
Kolb Rd Ramp C2
Kolb Rd Ramp D
Kolb Rd Ramp D1
Kolb Rd Ramp B1
Kolb Rd Ramp B
Kolb Rd Ramp A
Science Park Dr
Frontage Rd
Mall St
Maritime Dr
Explorer Blvd
Kolb Rd
Kolb Rd
State Lands
875
870
865
860
855
850
845
840
835
830

SCALE: Hor: 1"=400'

200 0 200 400
SCALE IN FEET

APPENDIX K

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

DRAINAGE SHEET
I-10 SYSTEM ALT IV
KOLB ROAD

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	DR-16

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825d116.dgn

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

APPENDIX L
SYSTEM ALTERNATIVE IV PROFILES SHEETS

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	46	
		010 PM 260			

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 312+00 TO 341+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET PR-01
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L		010-E(210)S	___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v101.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	46	
		010 PM 260			

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 341+00 TO 399+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

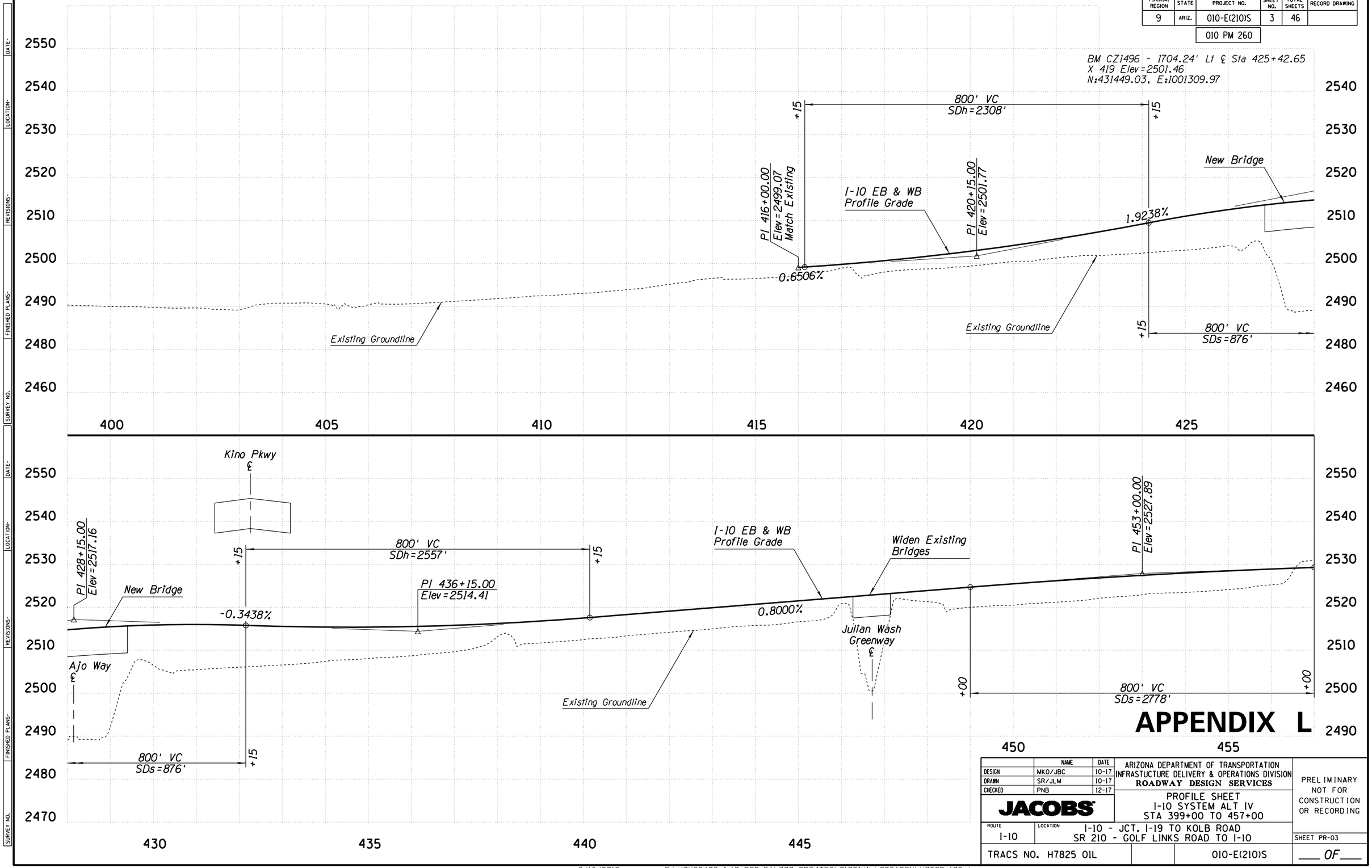
SHEET PR-02

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v102.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 399+00 TO 457+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PR-03

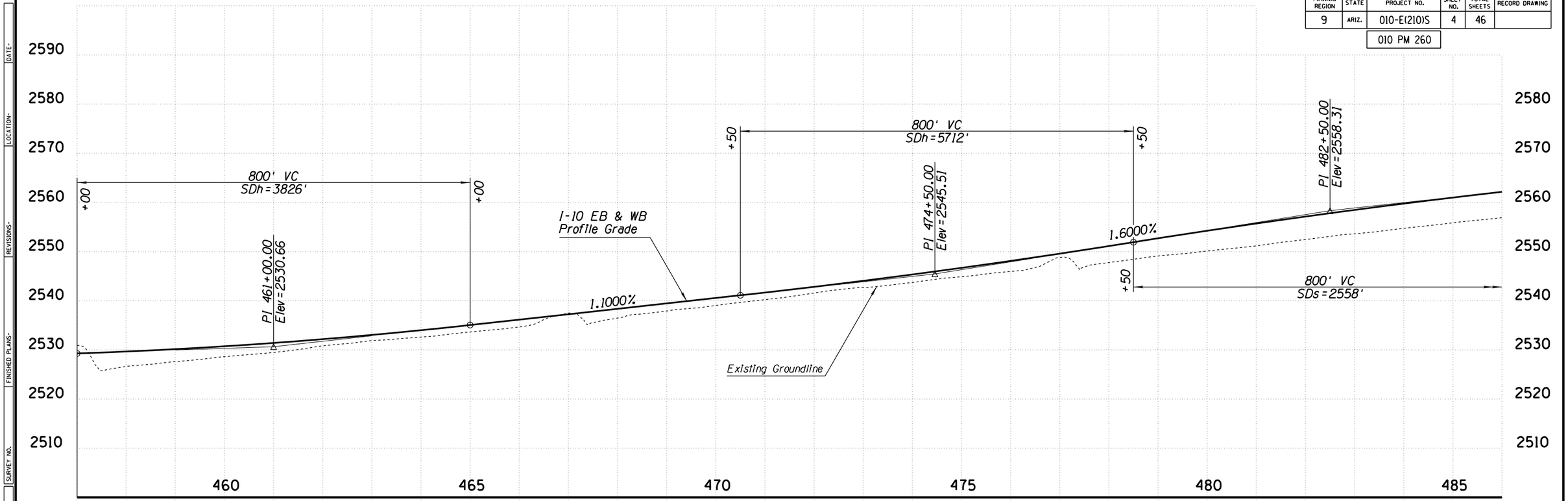
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

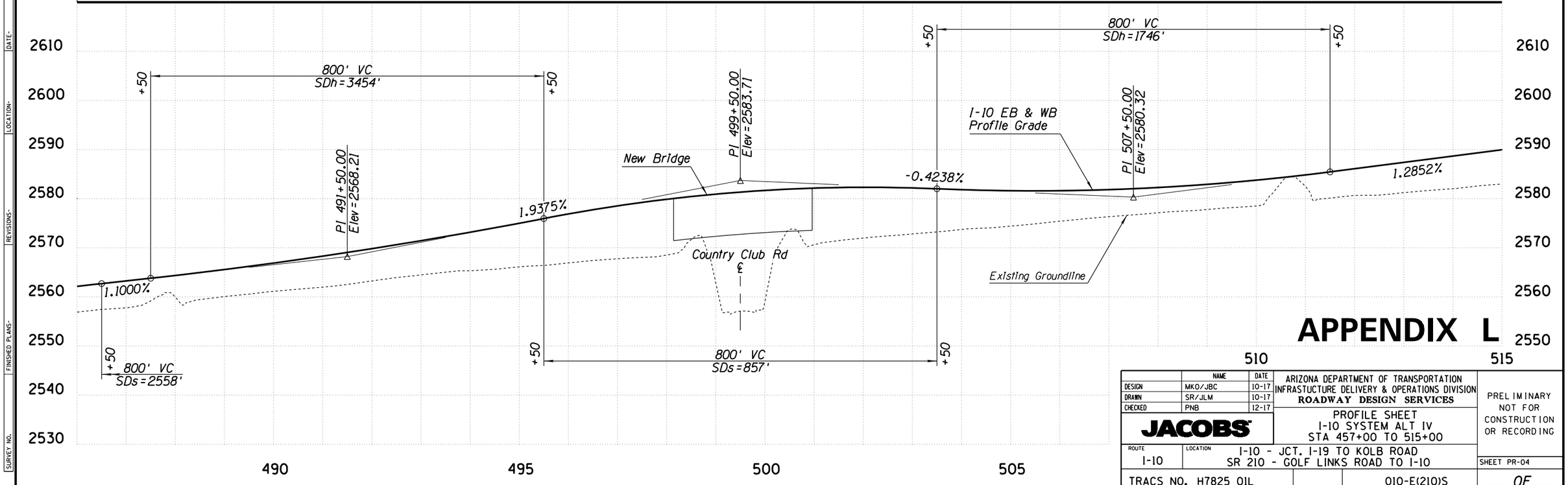
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v103.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	46	
		010 PM 260			

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





APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 457+00 TO 515+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

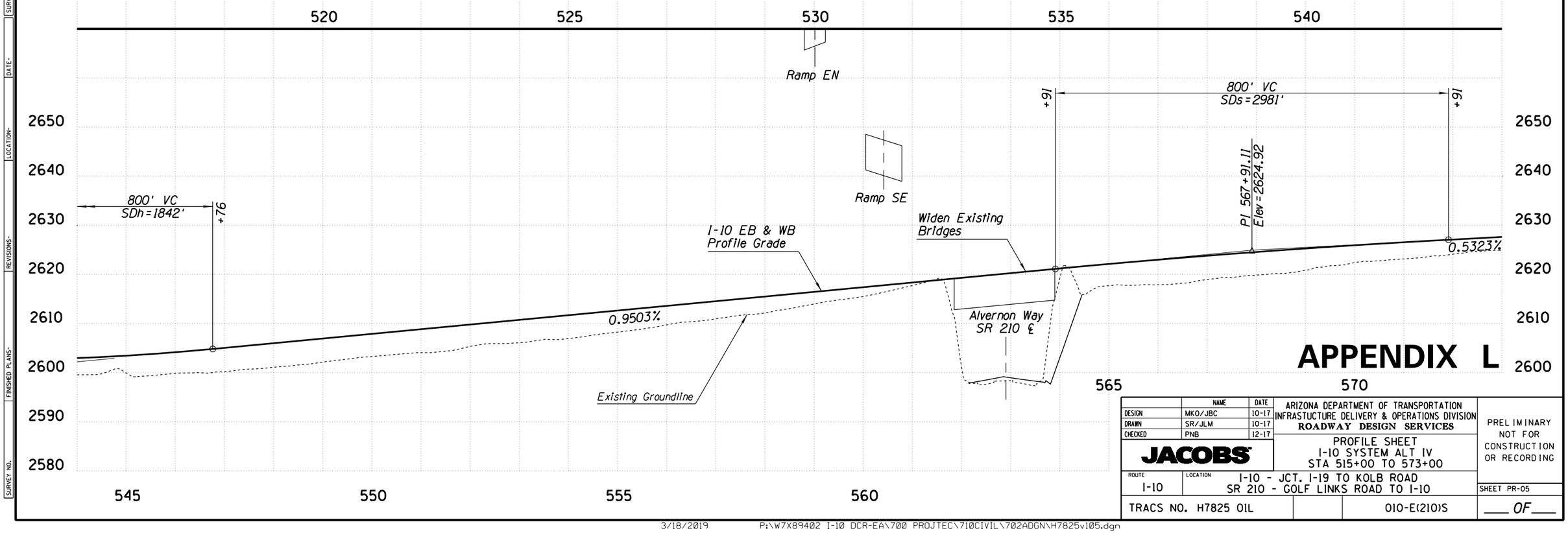
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PR-04

___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v104.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 515+00 TO 573+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PR-05

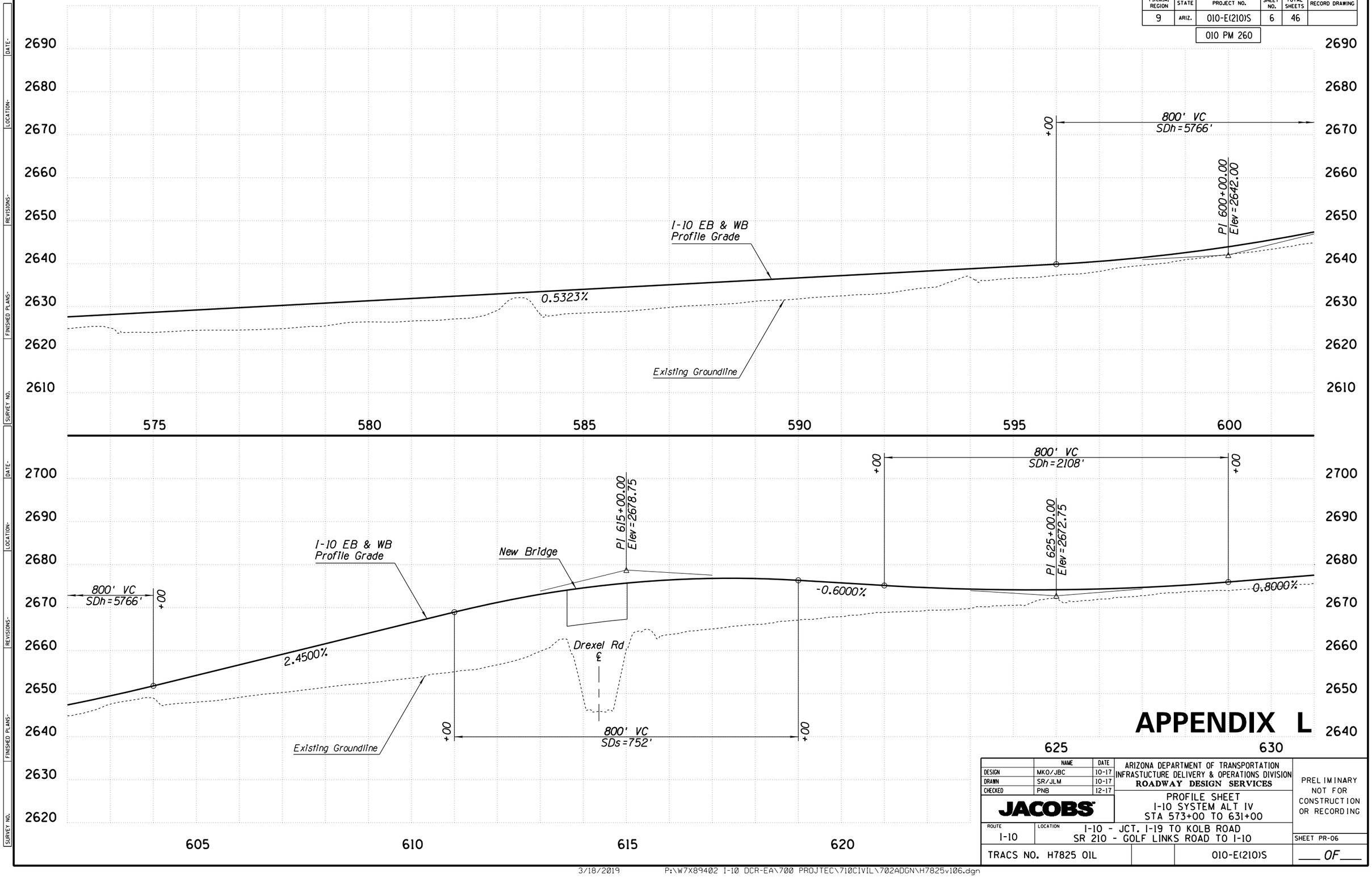
___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v105.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	6	46	
		010 PM 260			

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



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 573+00 TO 631+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PR-06

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v106.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	7	46	
		010 PM 260			

BM CZ0058 - 2096.22' Lt ℄ Sta 637+51.90
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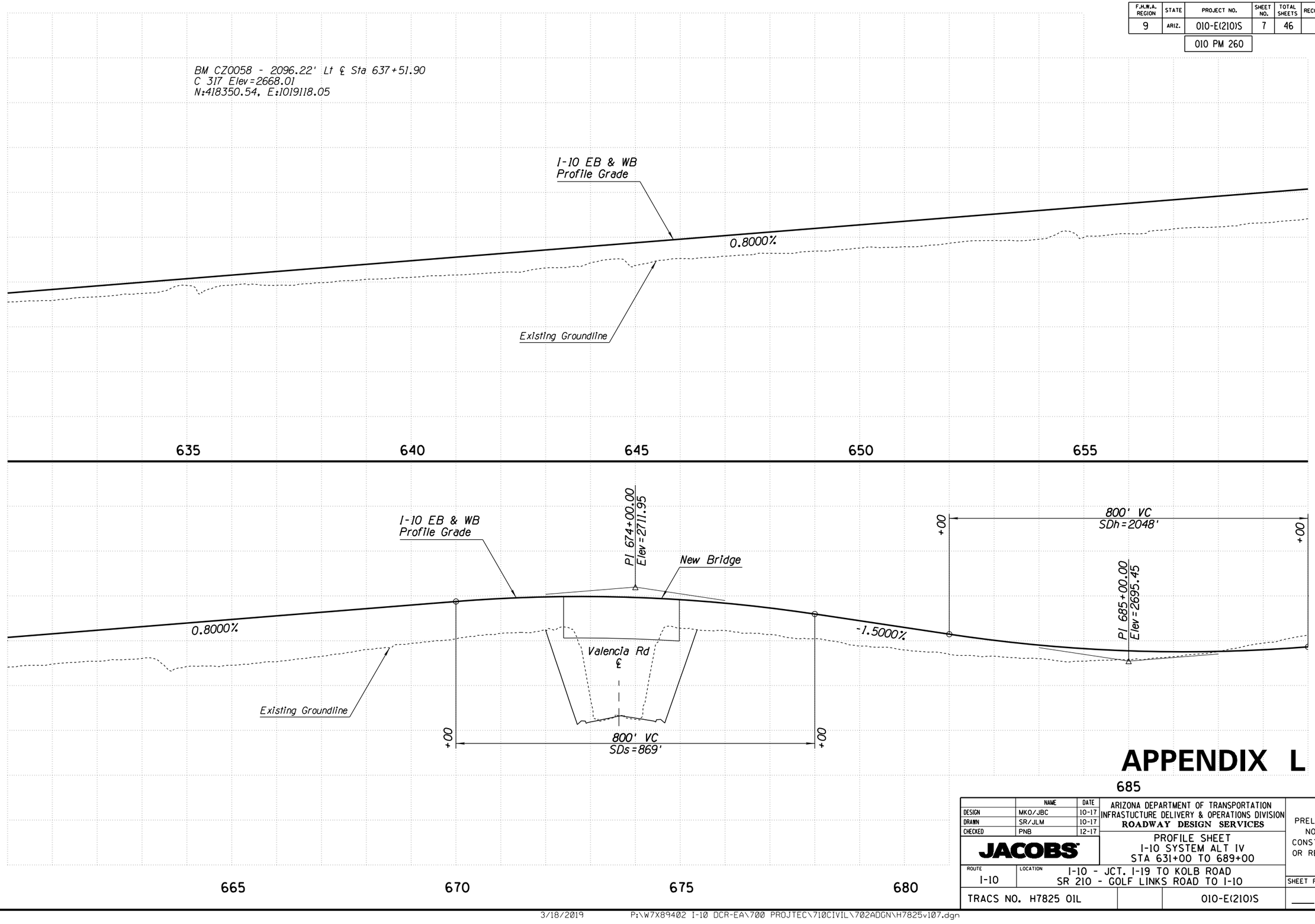


APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 631+00 TO 689+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

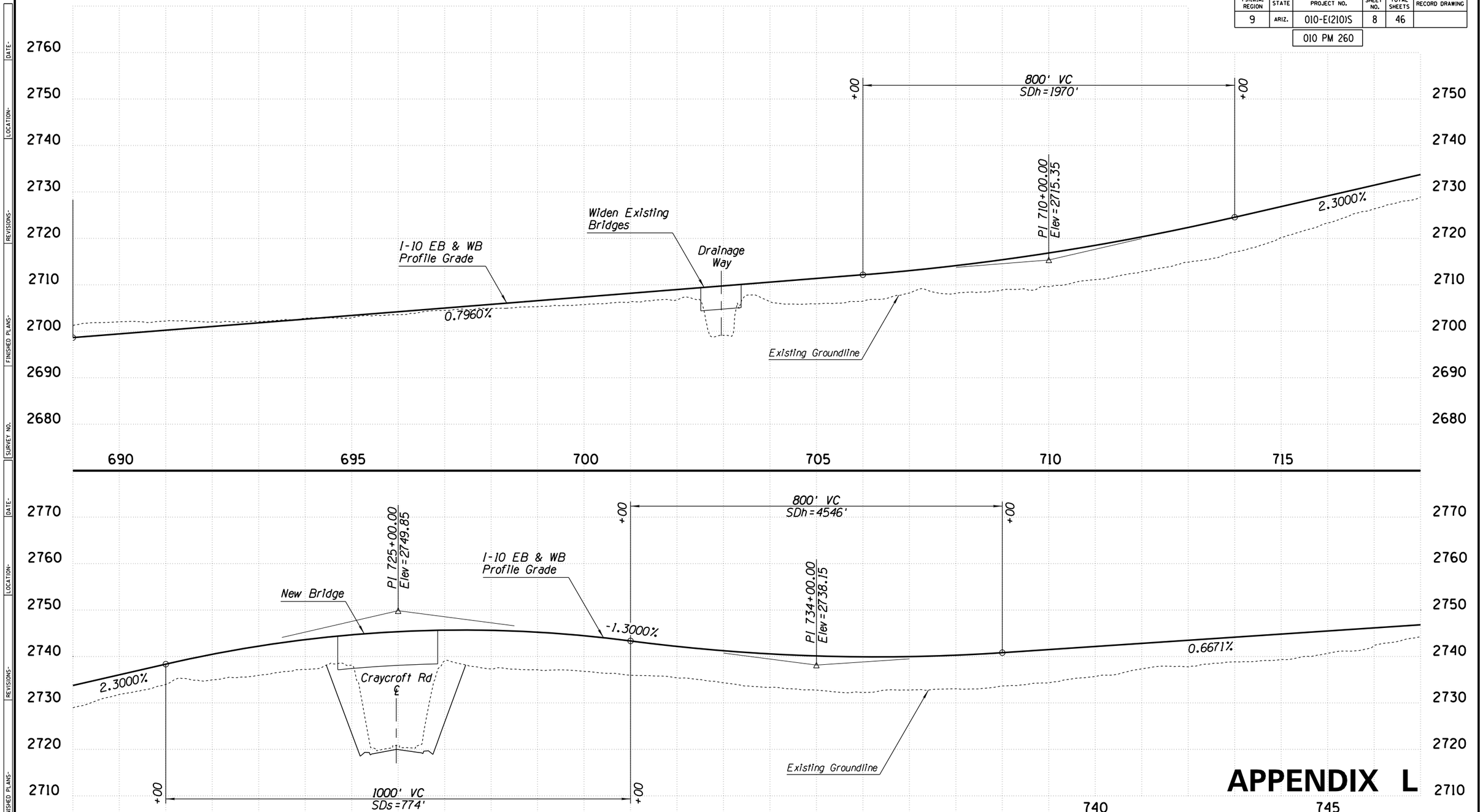
SHEET PR-07

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v107.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	8	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 689+00 TO 747+00

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

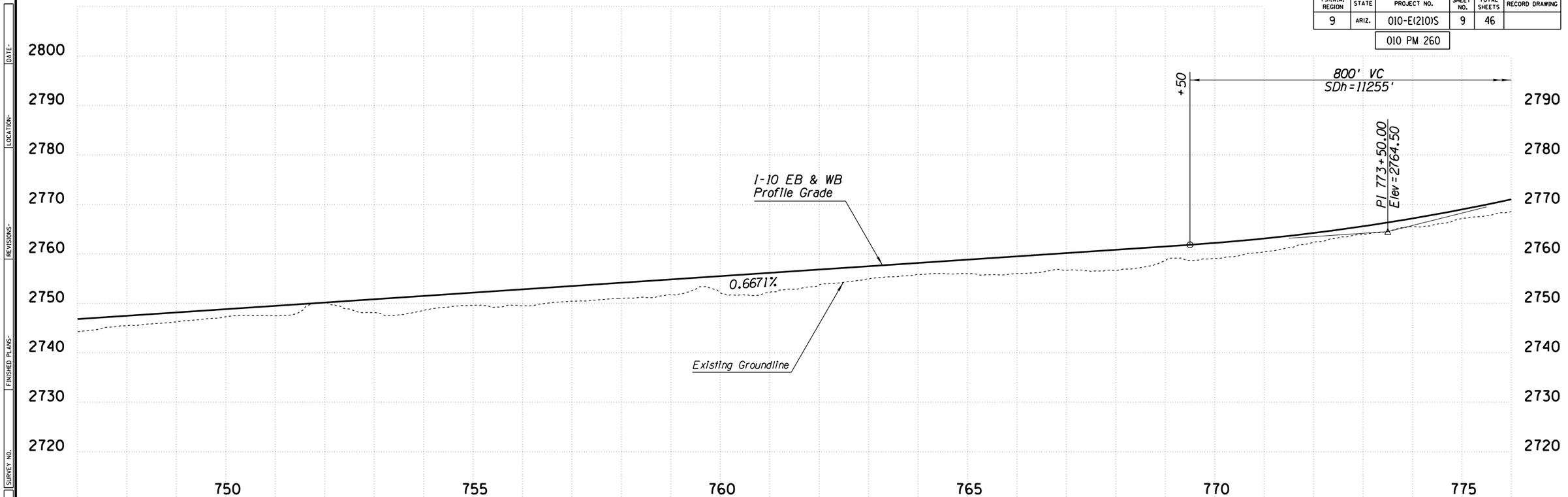
SHEET PR-08

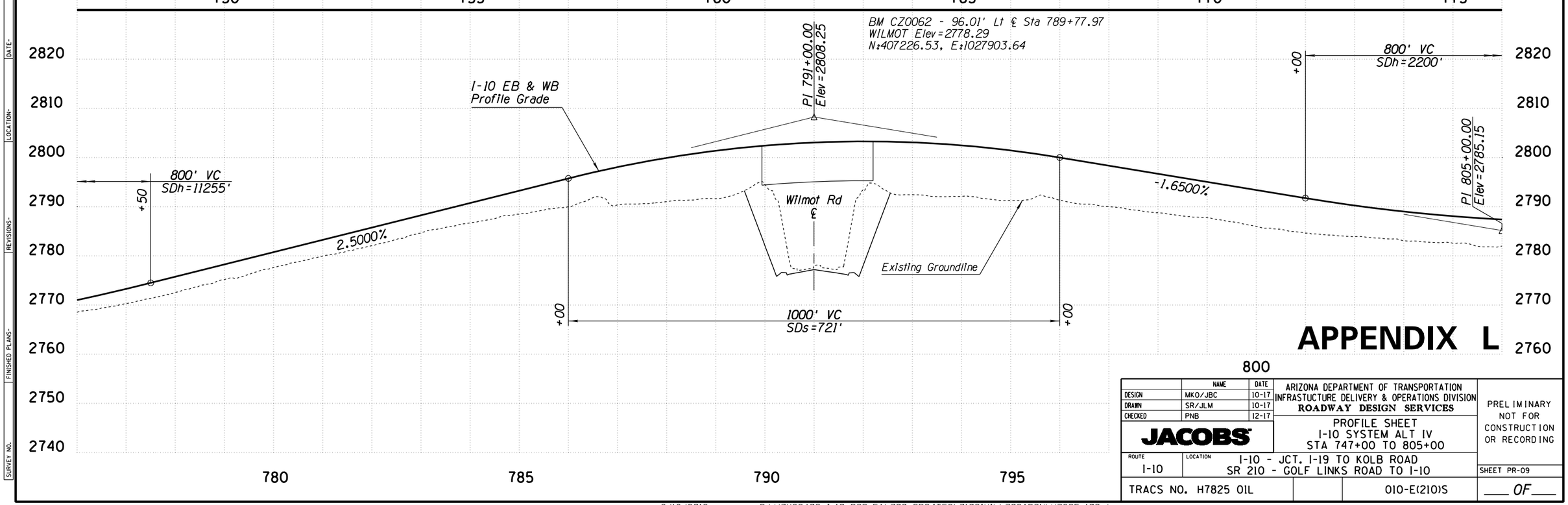
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	9	46	
		010 PM 260			

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





APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 747+00 TO 805+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

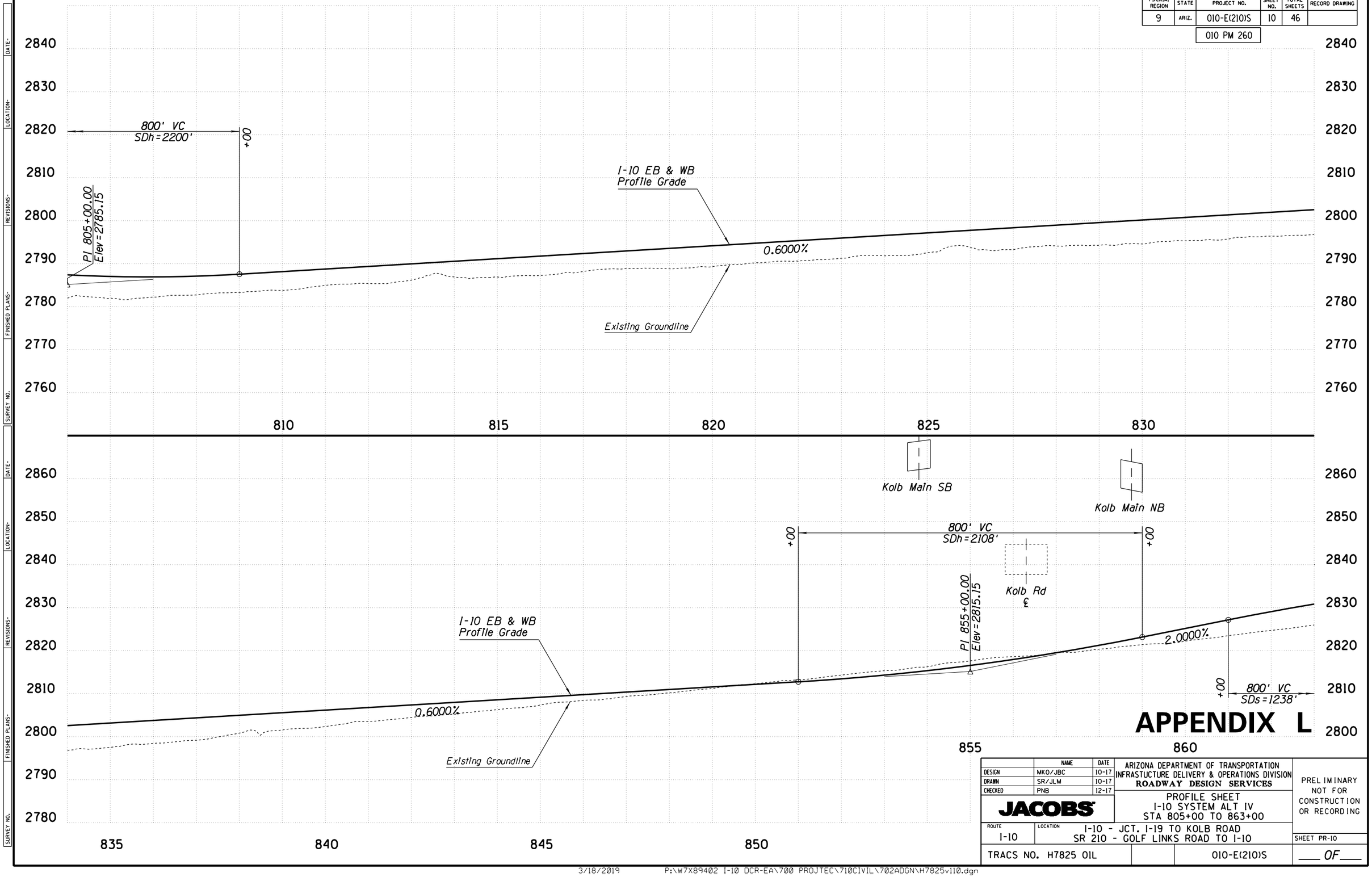
SHEET PR-09

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v109.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	10	46	
		010 PM 260			

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



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 805+00 TO 863+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

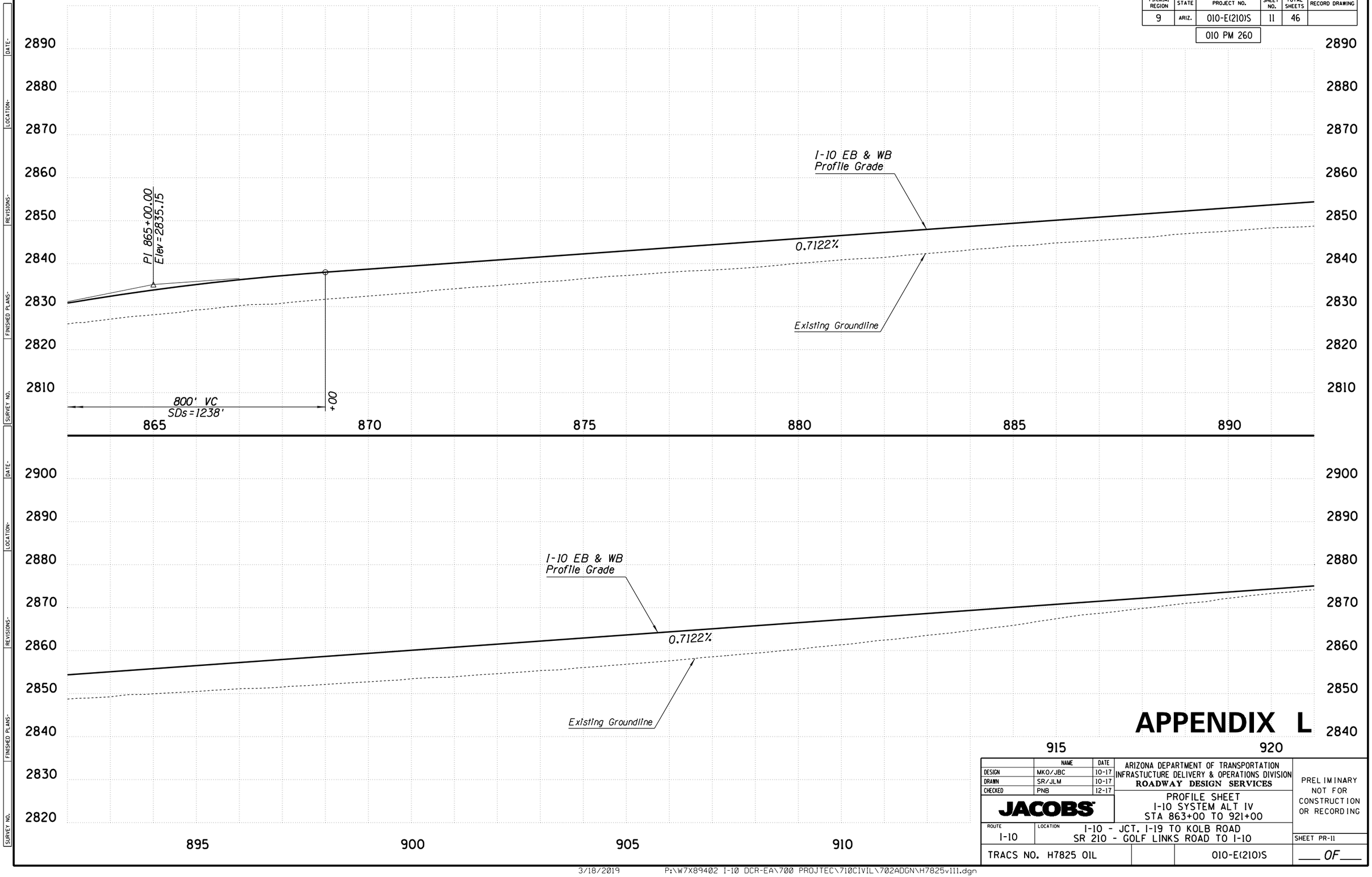
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PR-10

___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v110.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	11	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 863+00 TO 921+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

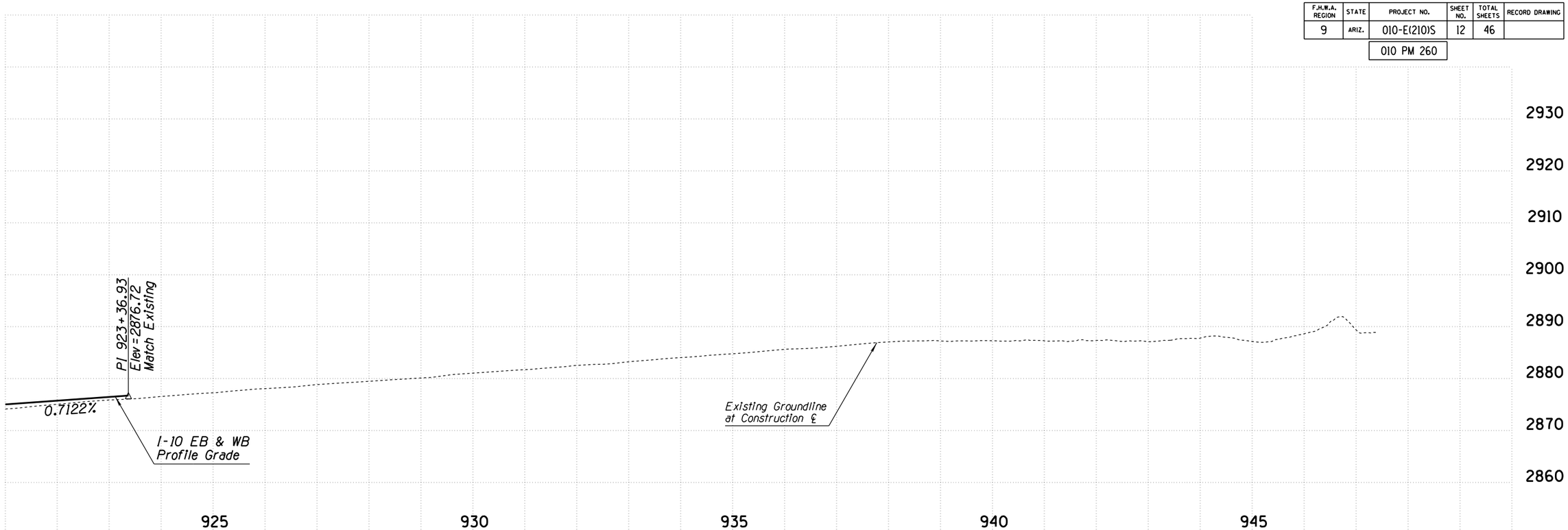
SHEET PR-11

___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v111.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	12	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
I-10 SYSTEM ALT IV
STA 921+00 TO 979+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET PR-12

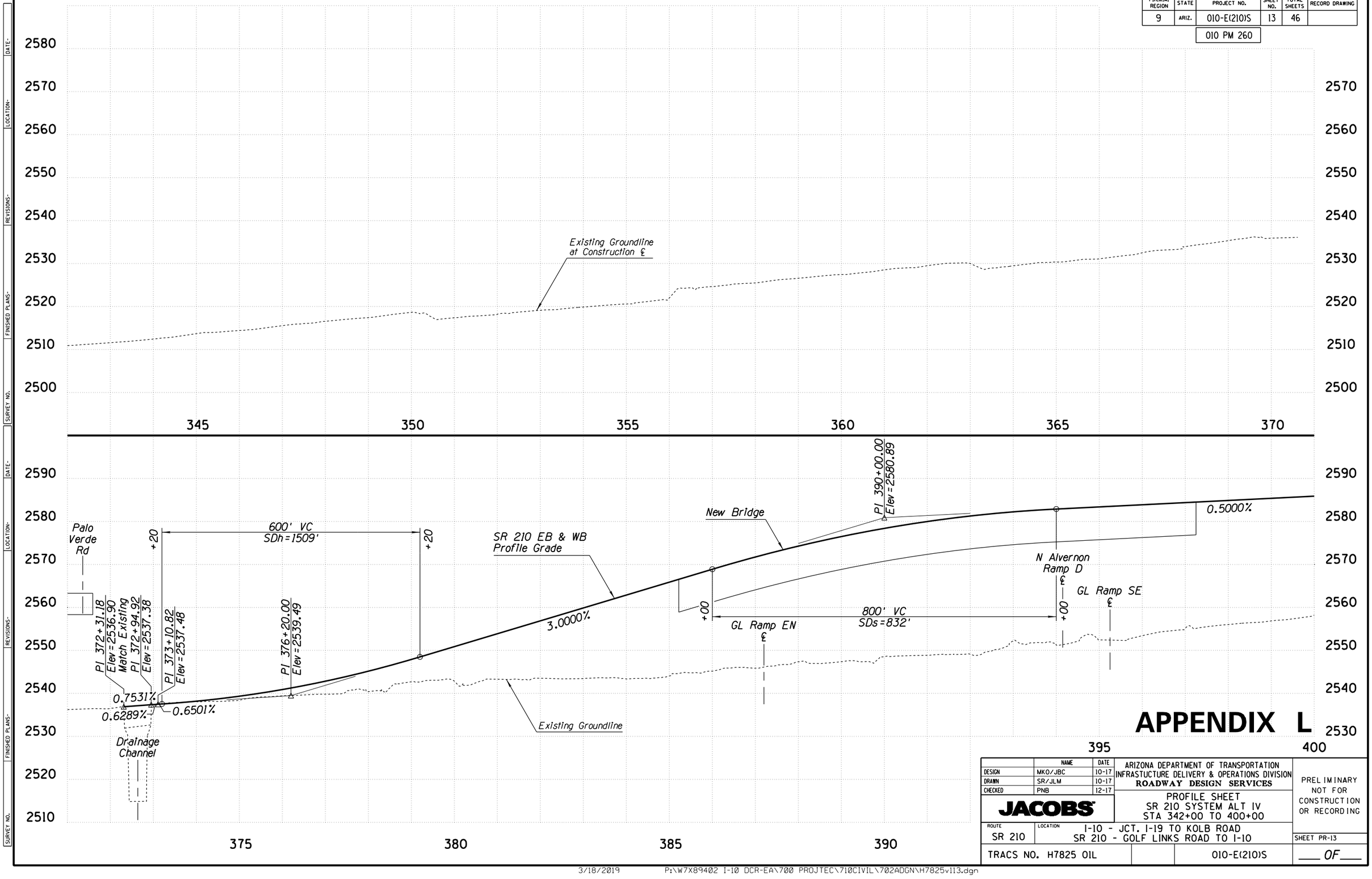
___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v112.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	13	46	
		010 PM 260			

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



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
SR 210 SYSTEM ALT IV
STA 342+00 TO 400+00

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | | 010-E(210)S

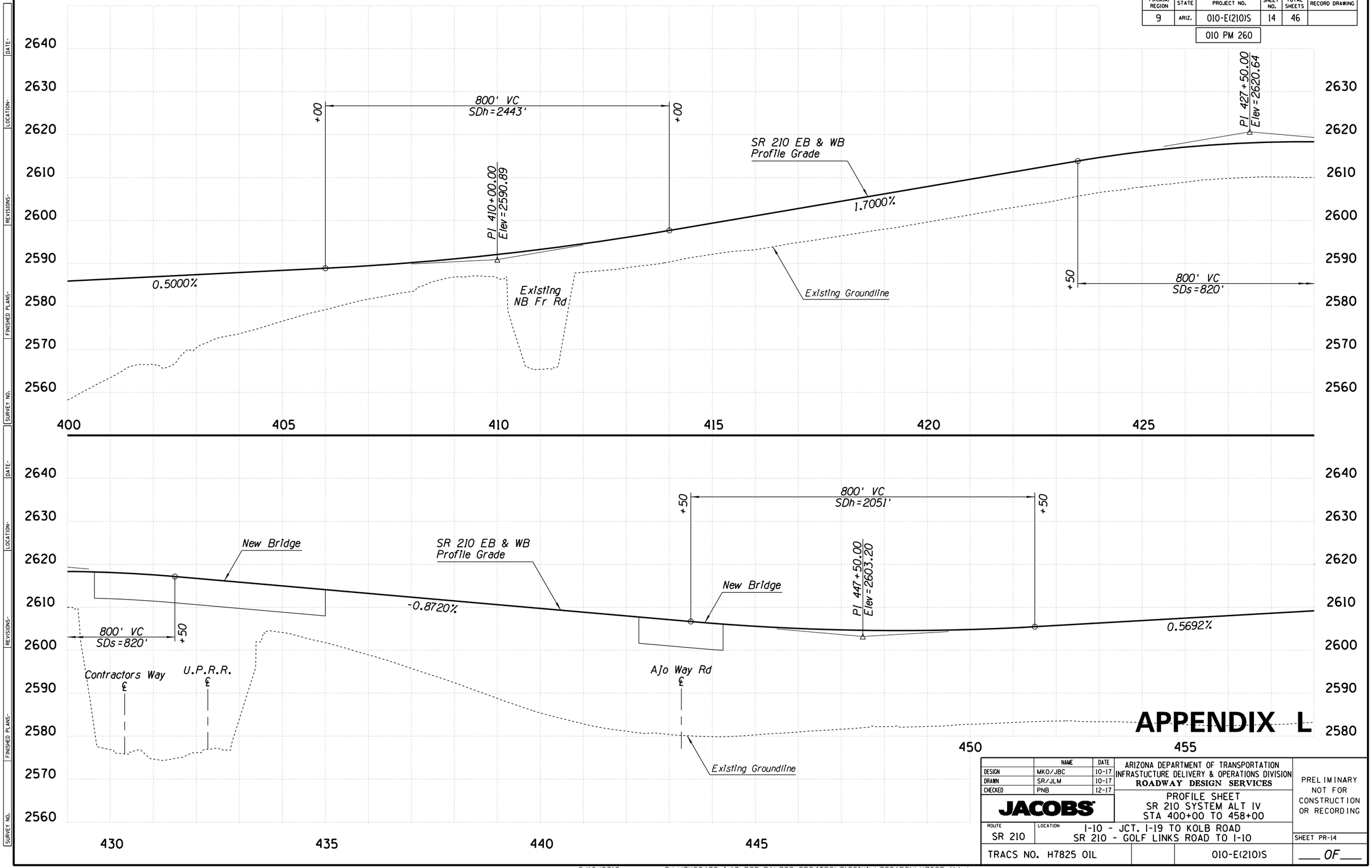
PRELIMINARY
NOT FOR CONSTRUCTION
OR RECORDING

SHEET PR-13

___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v113.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	14	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
SR 210 SYSTEM ALT IV
STA 400+00 TO 458+00

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

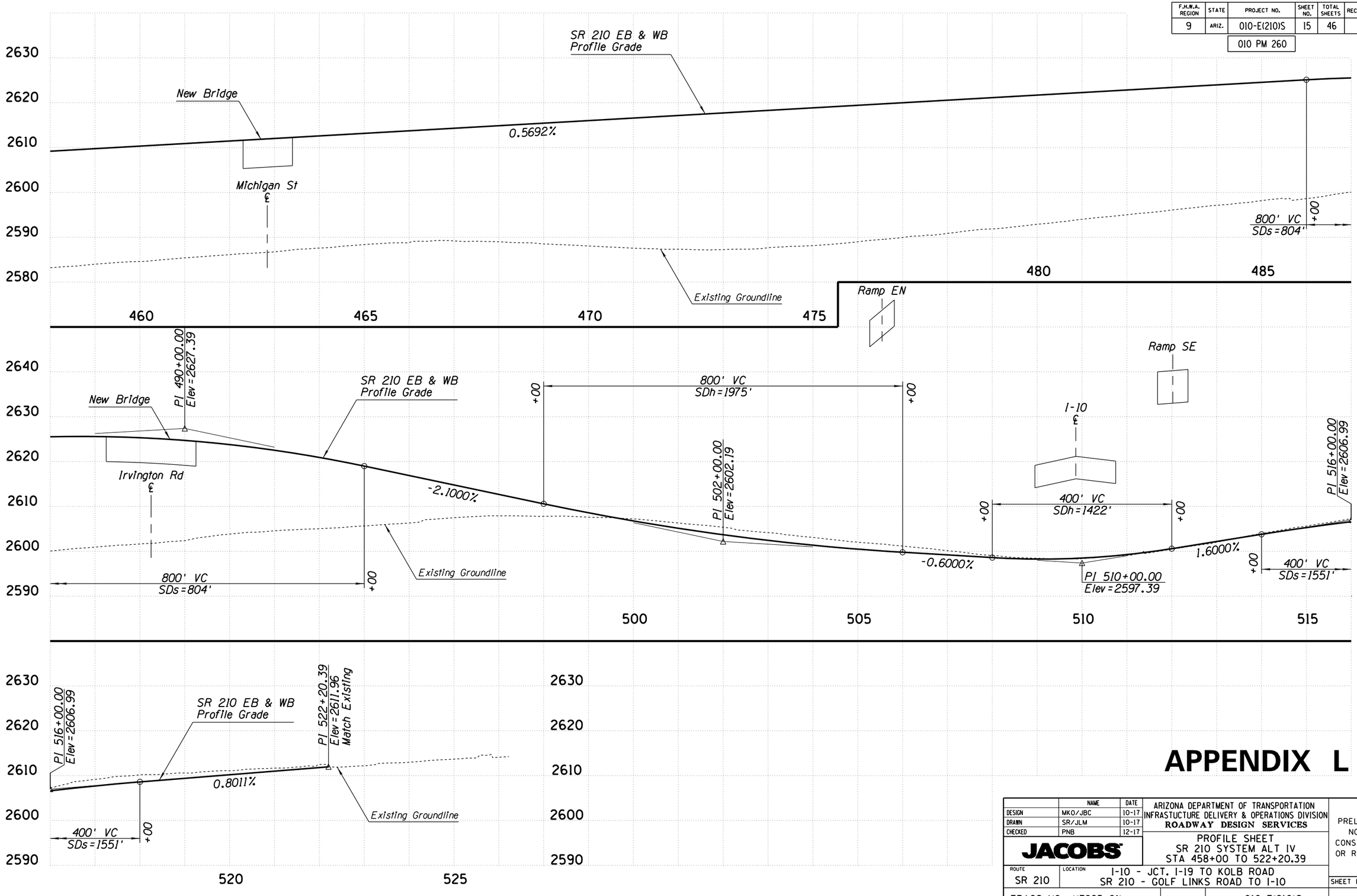
SHEET PR-14

___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v114.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	15	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
SR 210 SYSTEM ALT IV
STA 458+00 TO 522+20.39

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

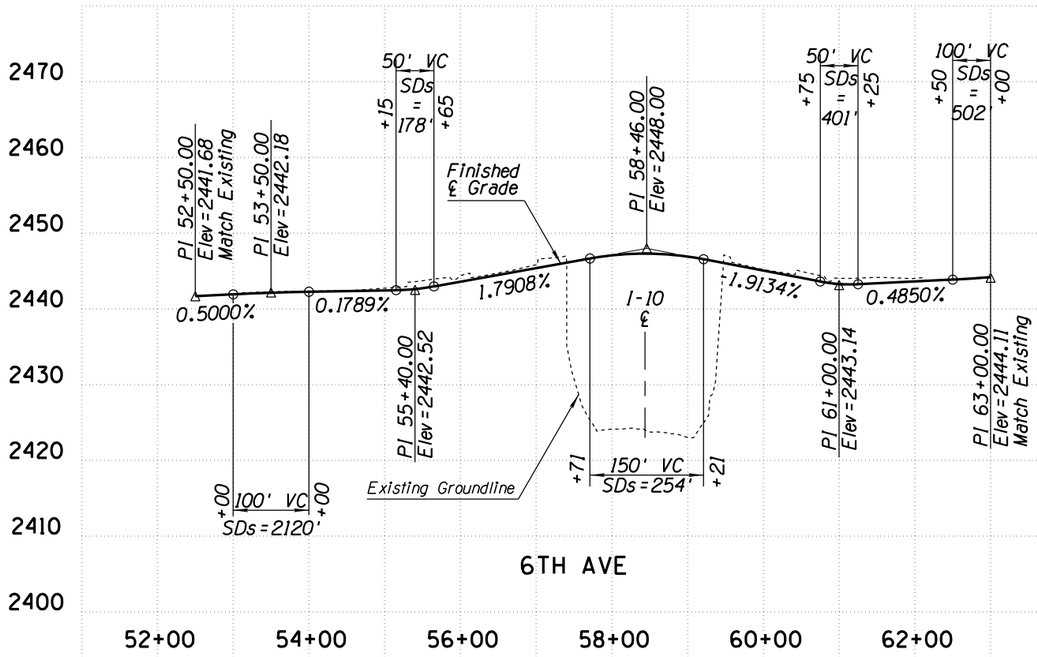
ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

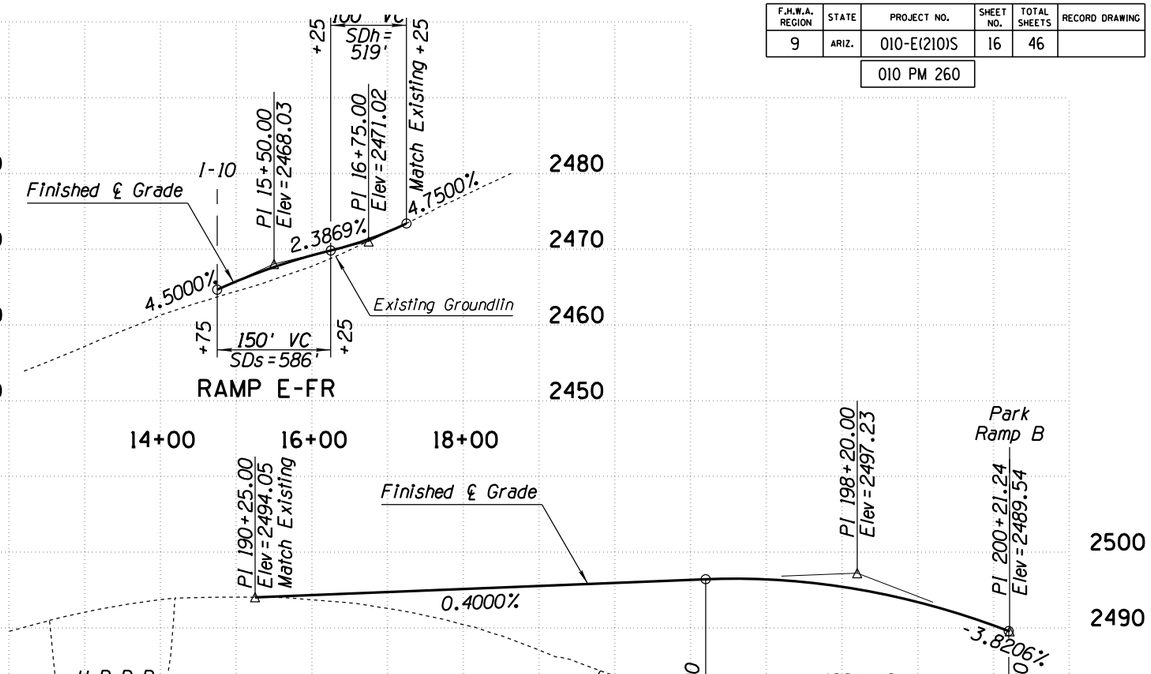
SHEET PR-15

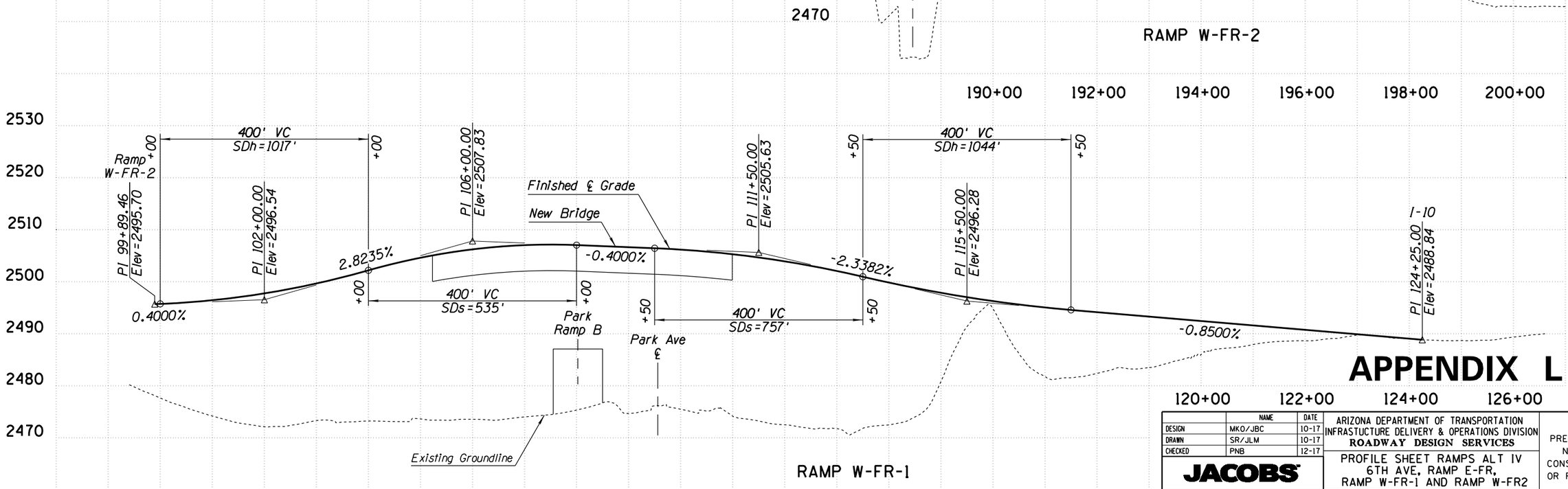
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	16	46	
		010 PM 260			







APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET RAMPS ALT IV
6TH AVE, RAMP E-FR,
RAMP W-FR-1 AND RAMP W-FR2

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

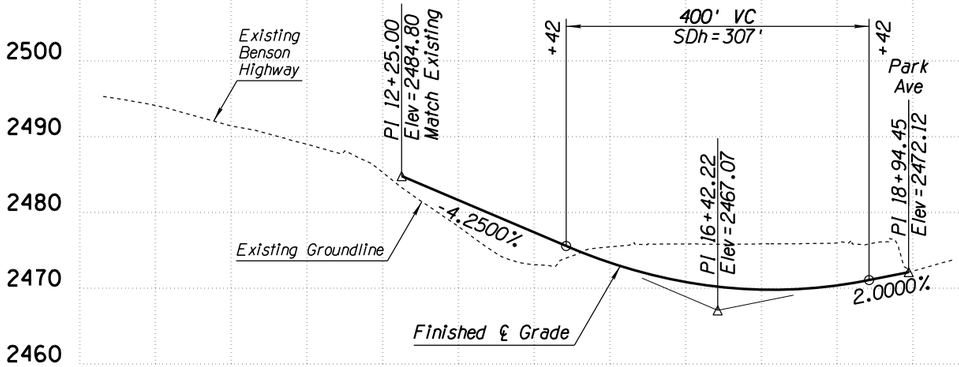
SHEET PR-16

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

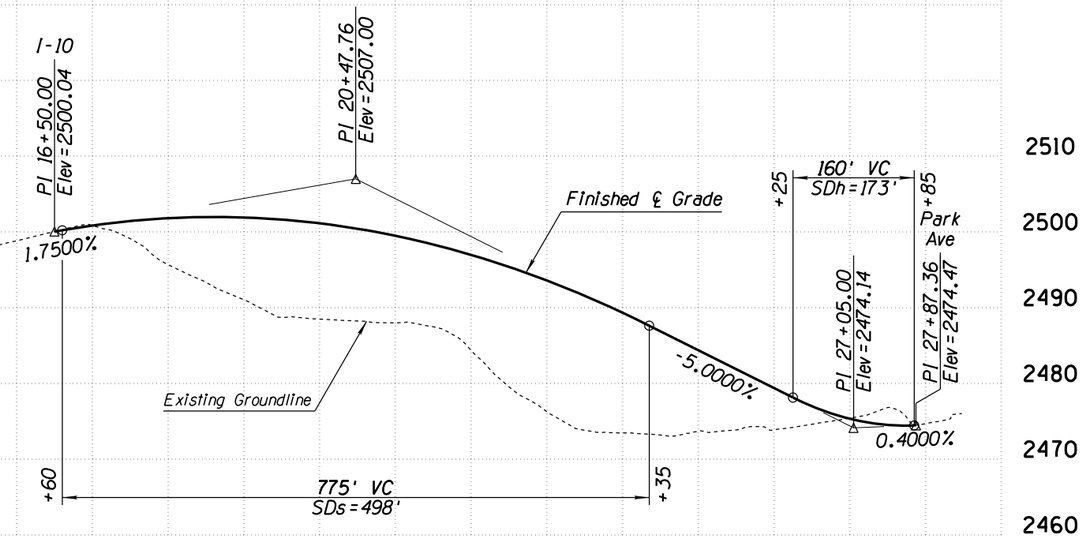
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v116.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	17	46	
		010 PM 260			



PARK RAMP A



PARK RAMP B

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
RAMPS ALT IV
PARK RAMP A AND B

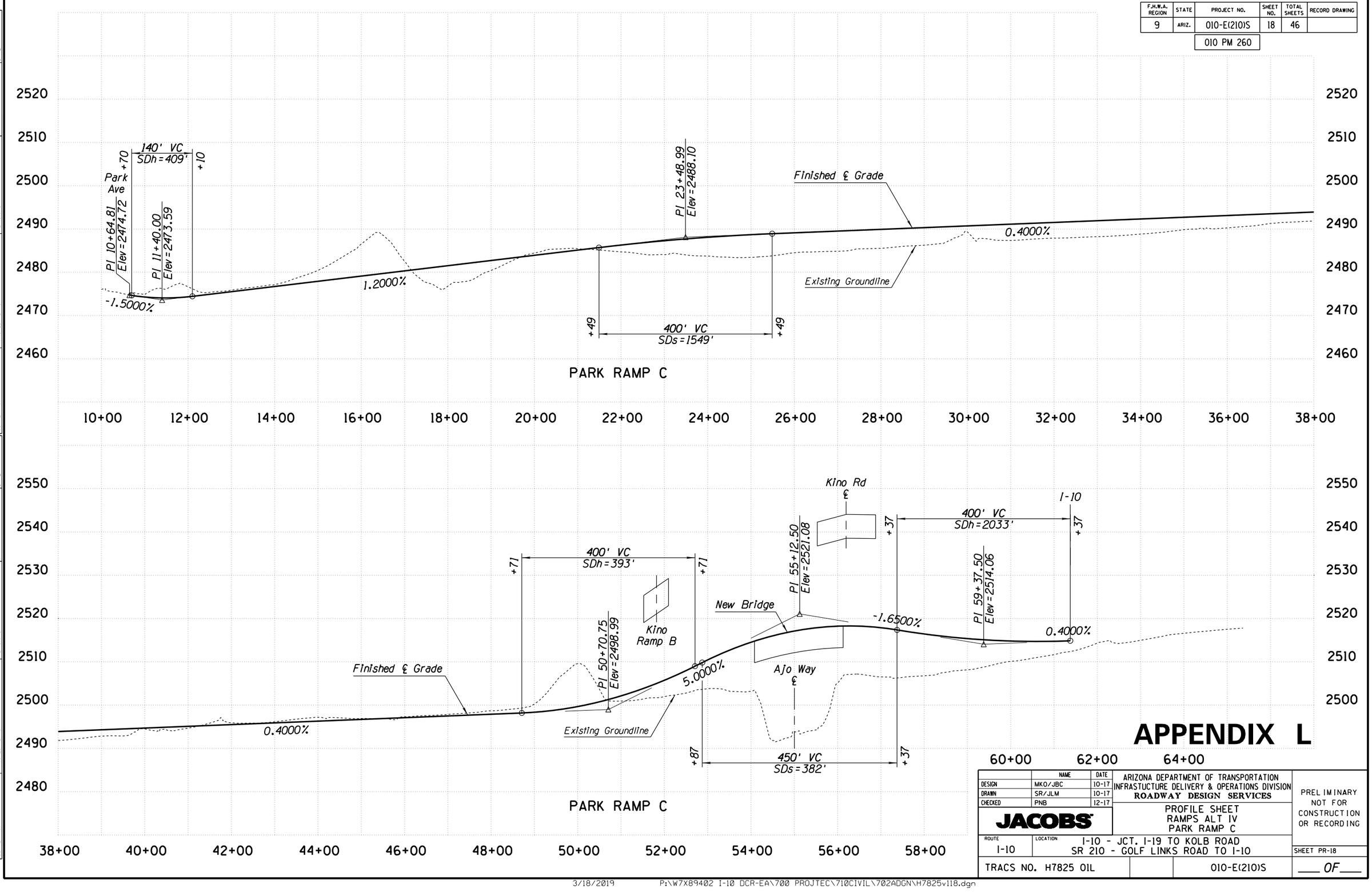
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-17

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	18	46	
		010 PM 260			

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



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
PARK RAMP C

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

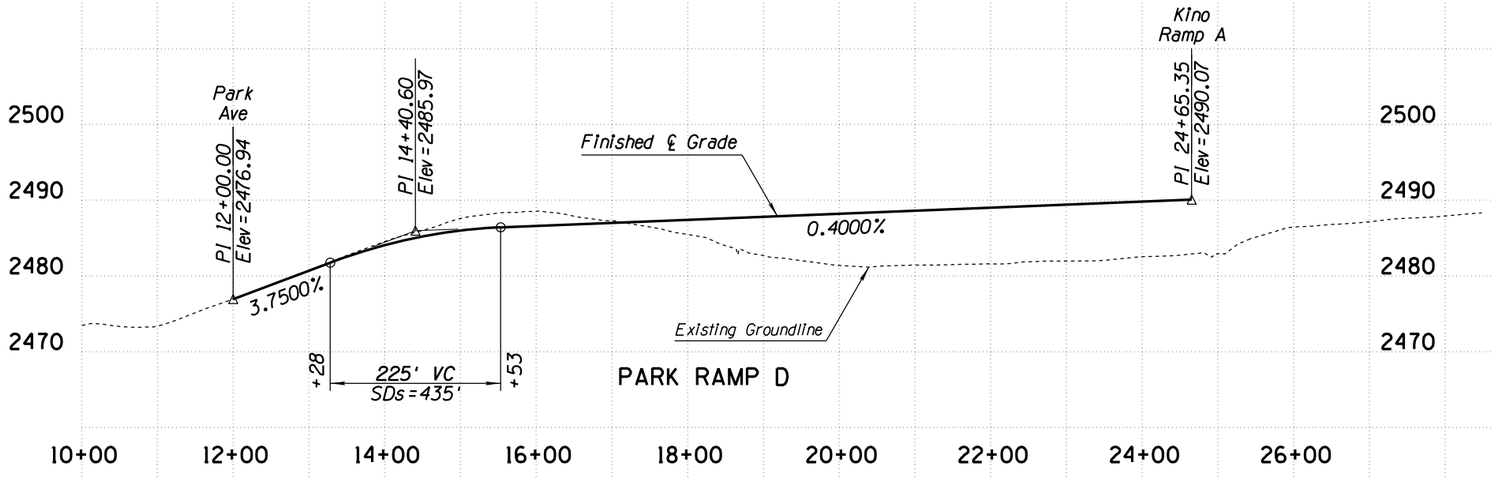
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-18

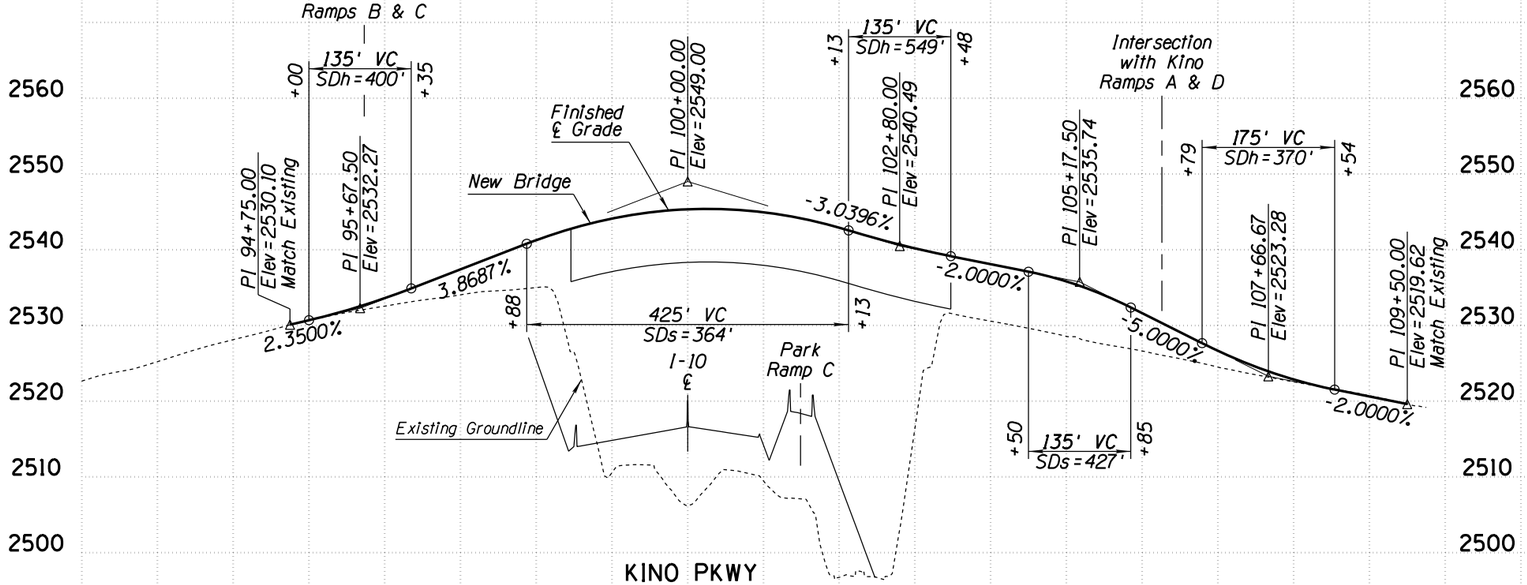
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v118.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	19	46	
		010 PM 260			



PARK RAMP D



KINO PKWY

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
PARK RAMP D AND KINO PKWY

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

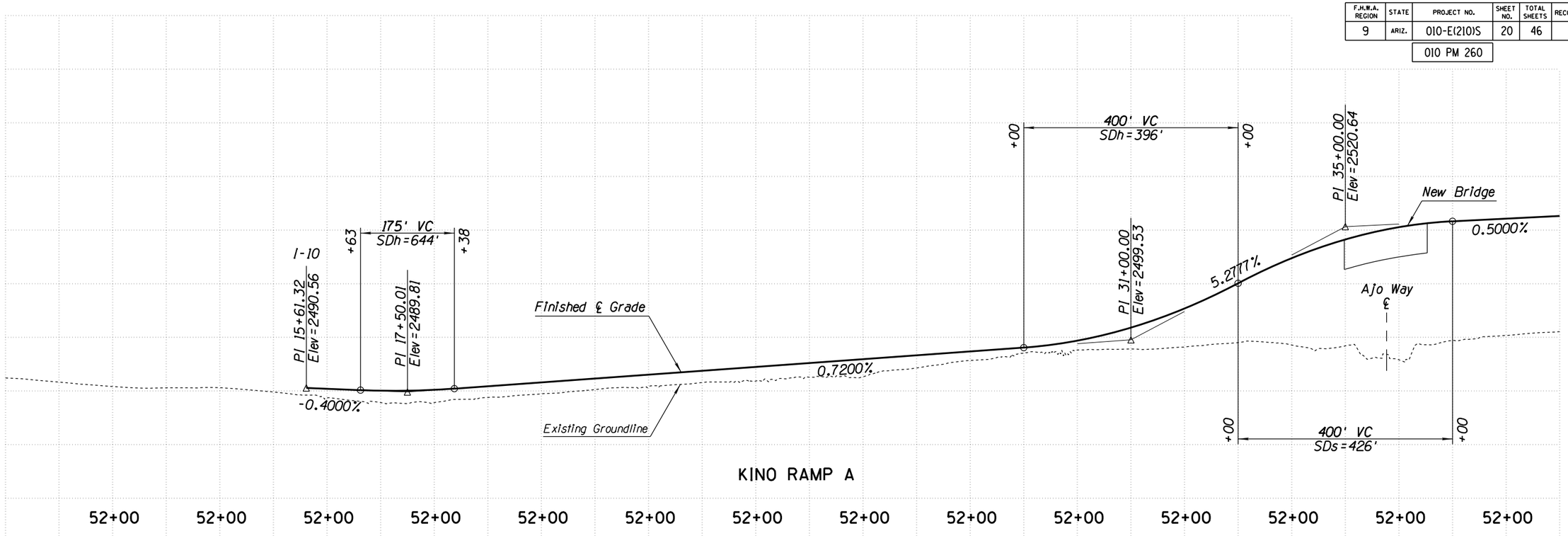
SHEET PR-19

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v119.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	20	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
KINO RAMP A AND B

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

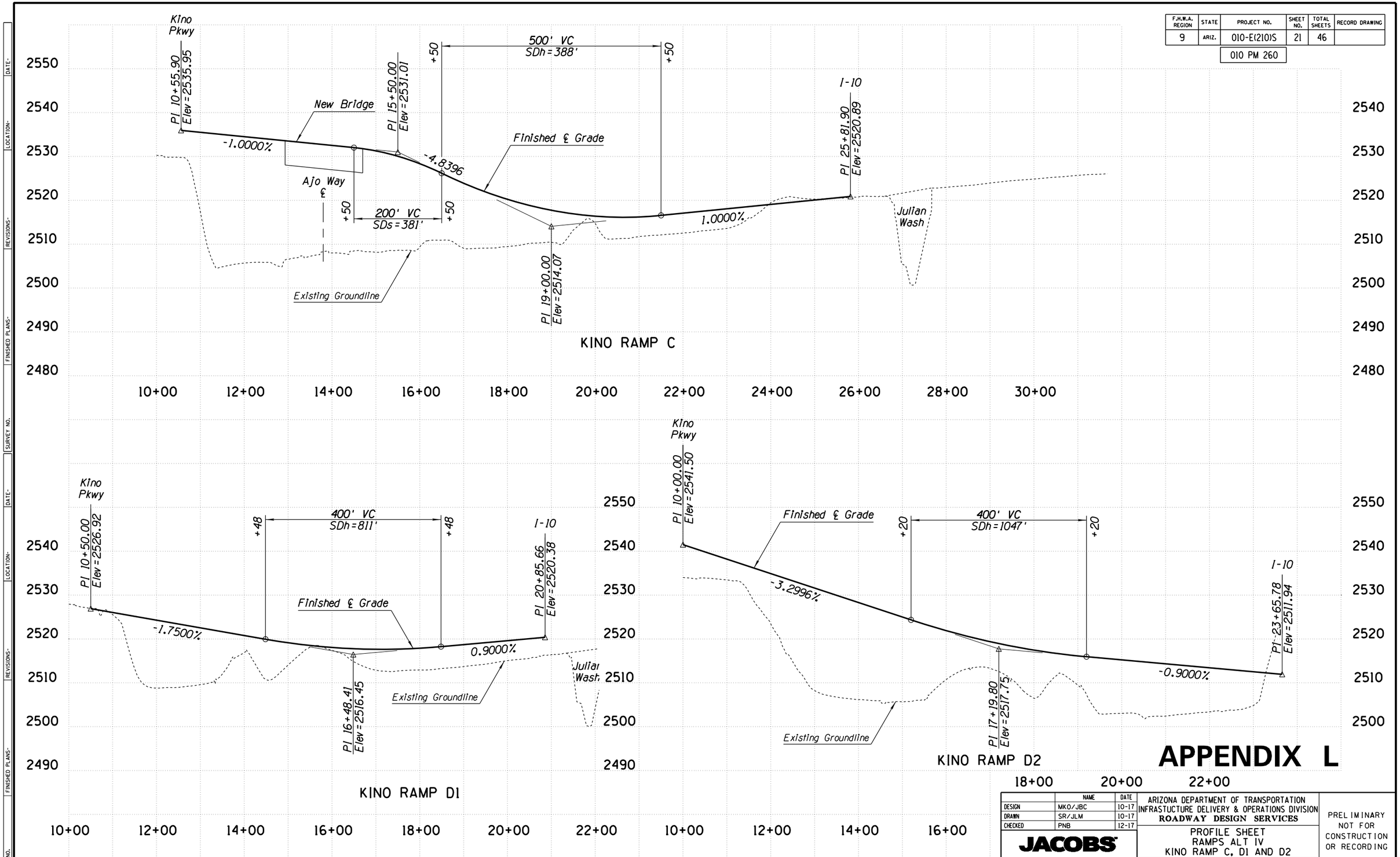
SHEET PR-20

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v120.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	21	46	
		010 PM 260			



KINO RAMP C

KINO RAMP D1

KINO RAMP D2

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
KINO RAMP C, D1 AND D2

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

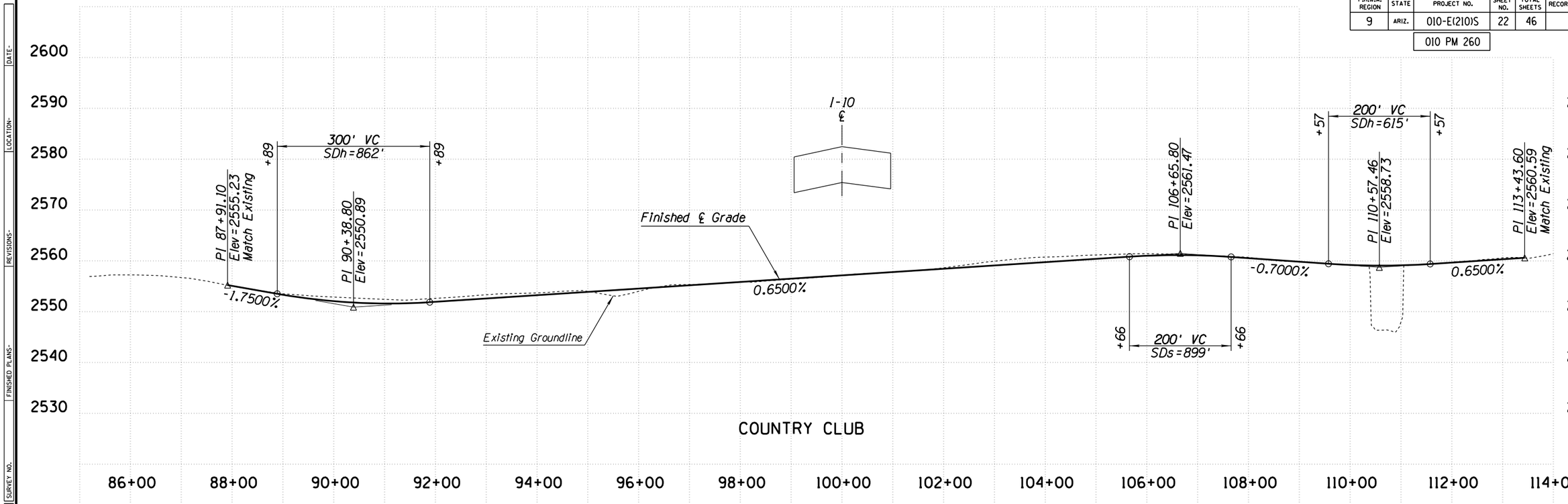
SHEET PR-21

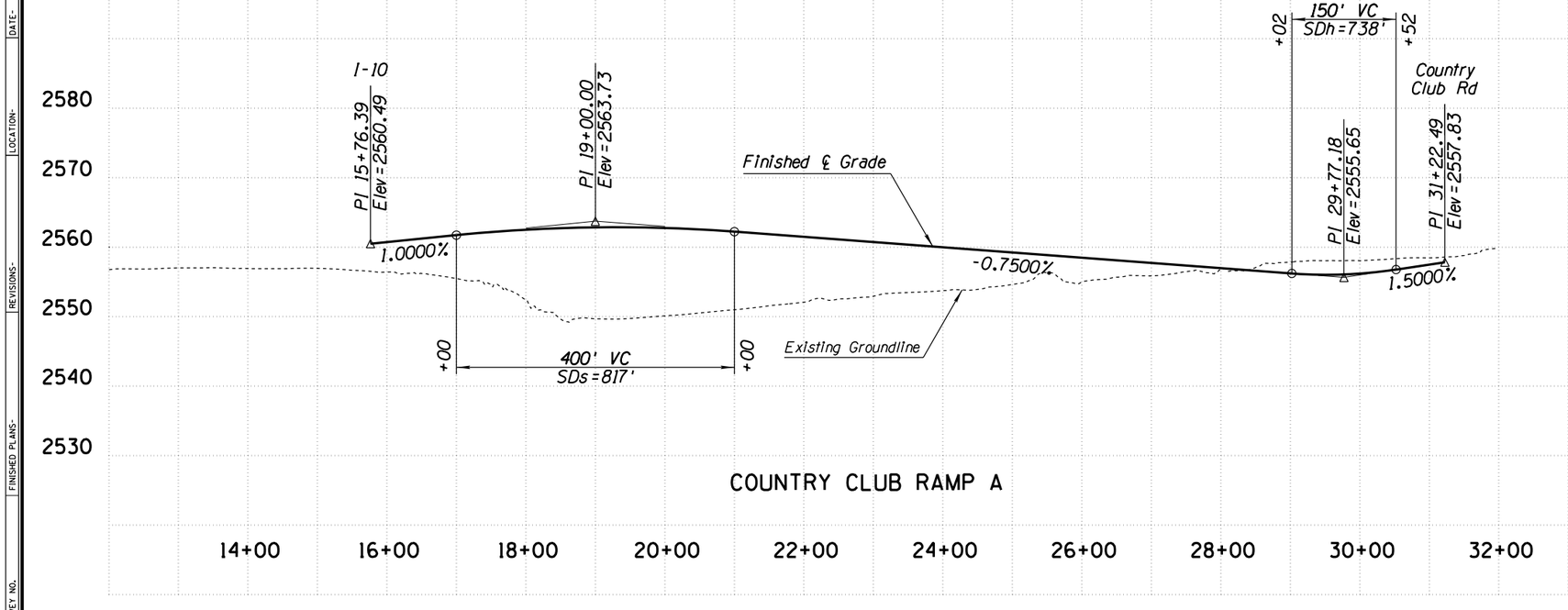
___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v121.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	22	46	
		010 PM 260			





APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET RAMPS ALT IV
COUNTRY CLUB AND
COUNTRY CLUB RAMP A

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-22

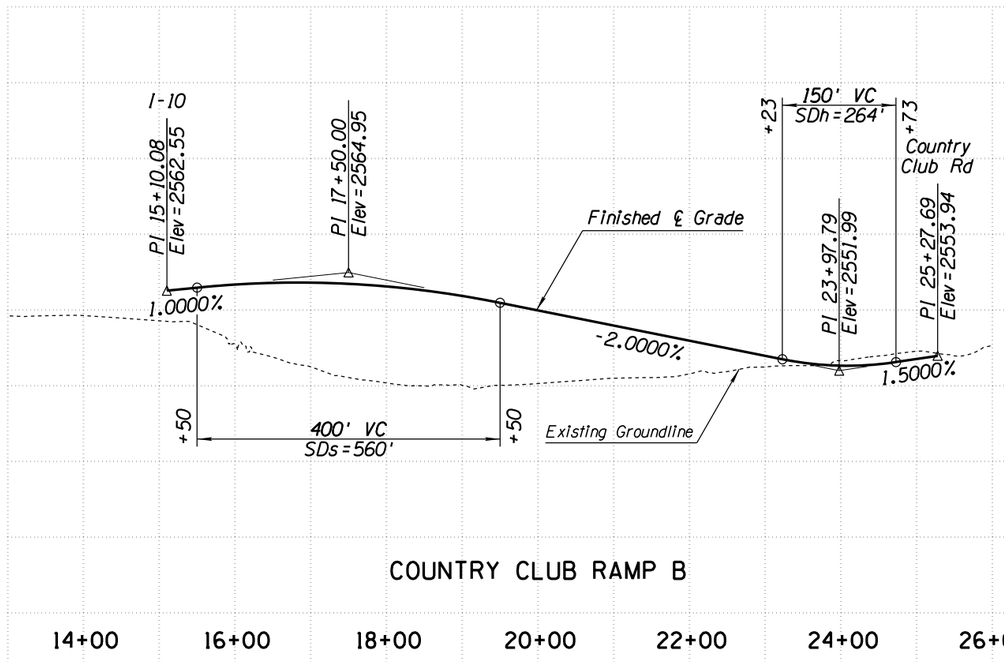
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v122.dgn

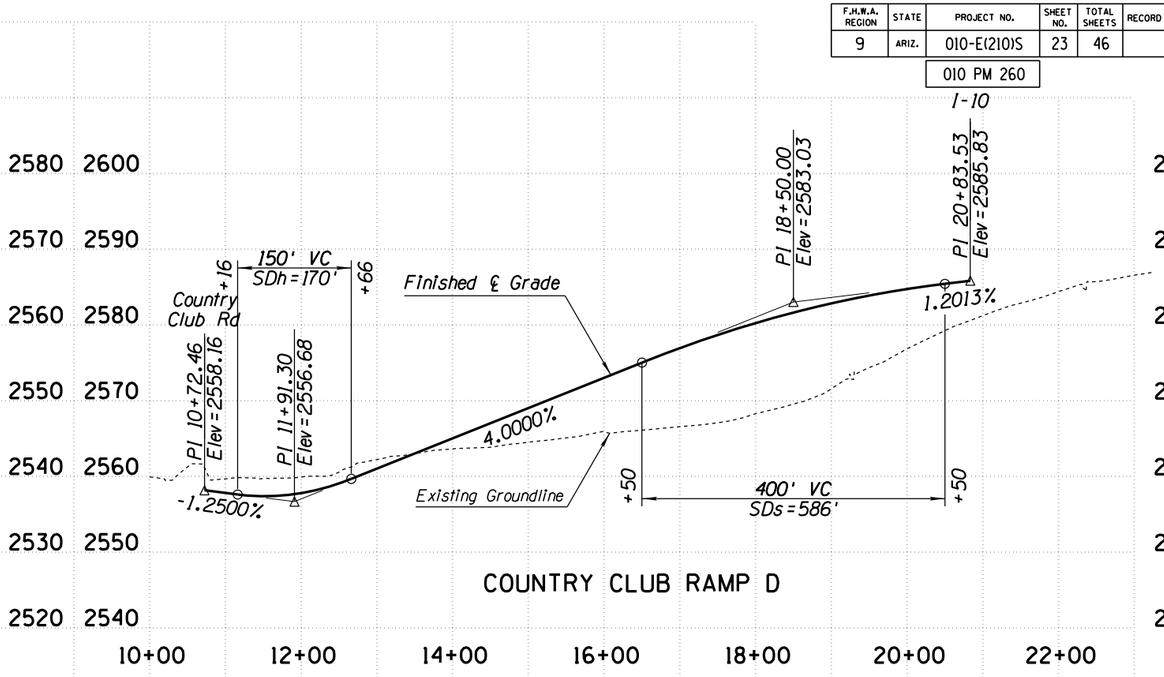
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	23	46	

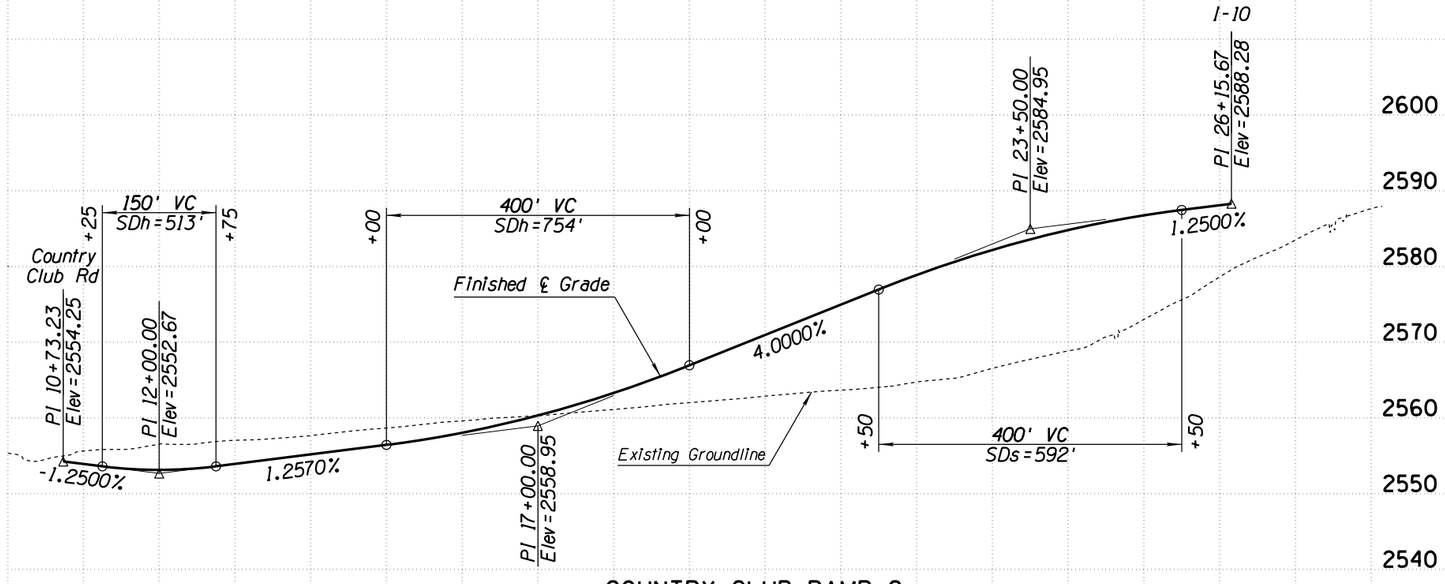
010 PM 260



COUNTRY CLUB RAMP B



COUNTRY CLUB RAMP D



COUNTRY CLUB RAMP C

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
COUNTRY CLUB RAMP B, C AND D

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

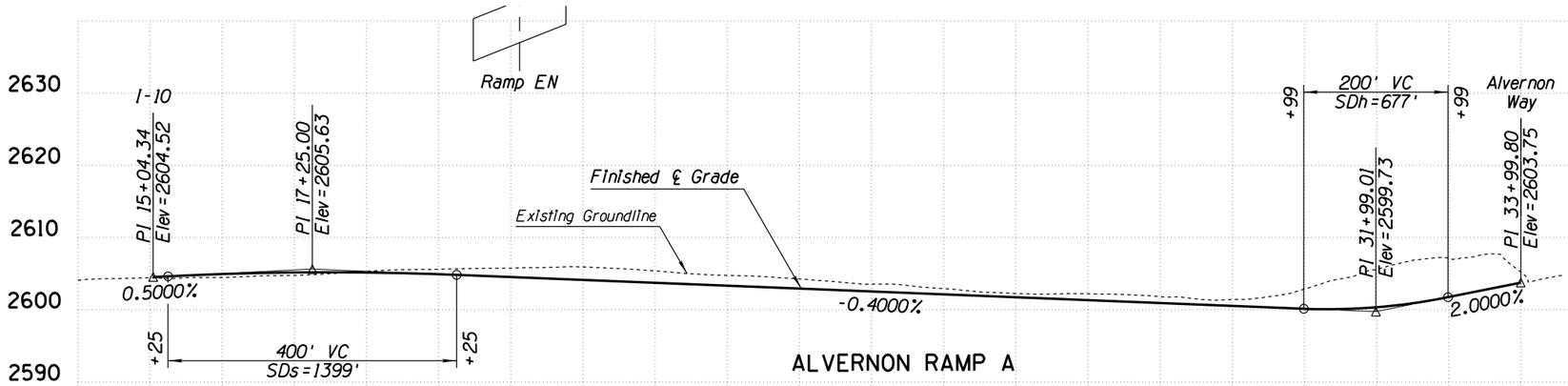
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-23

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

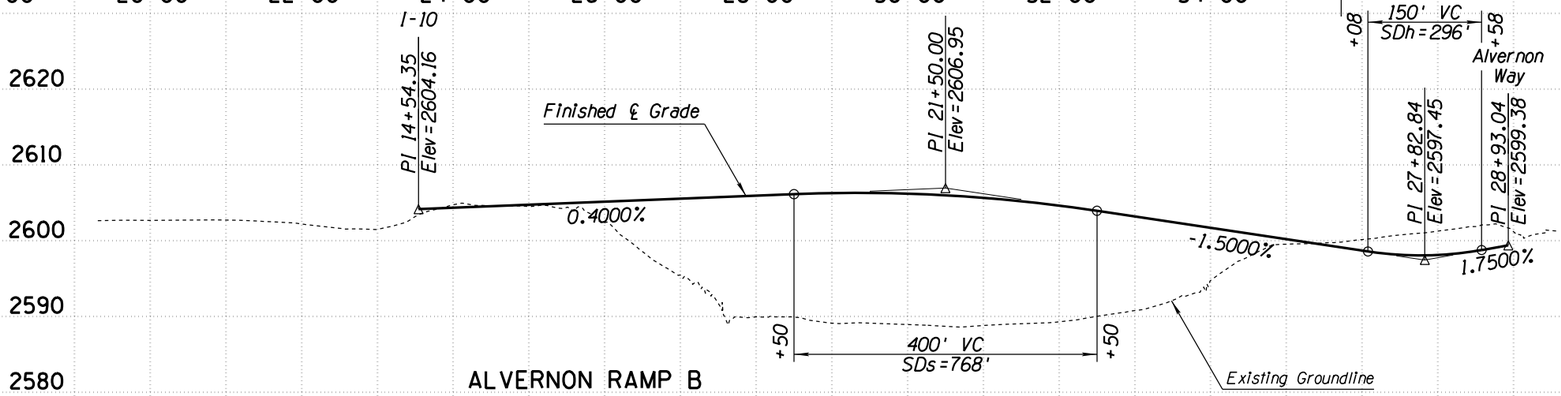
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v123.dgn

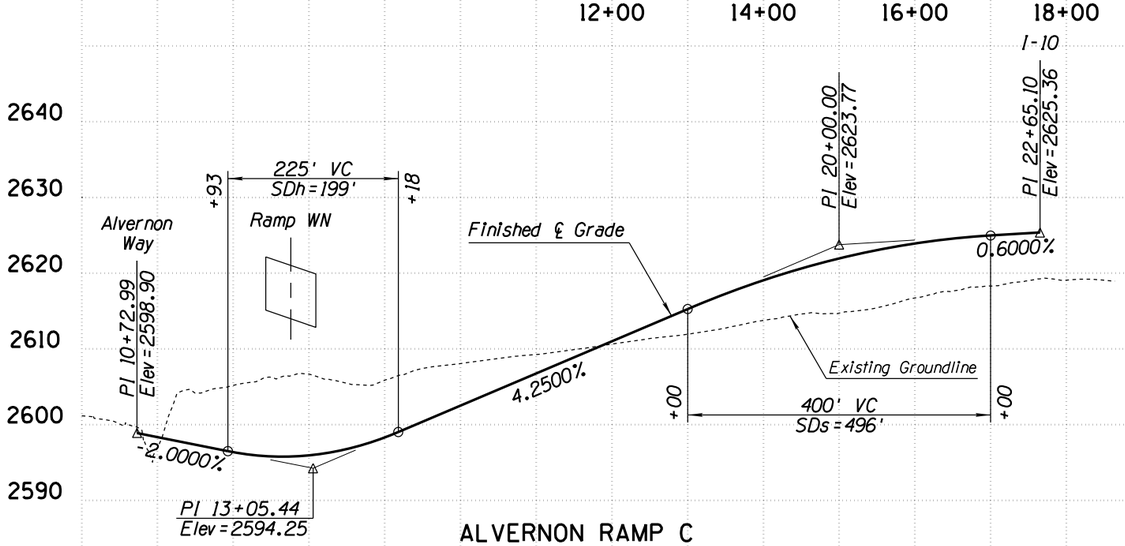
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	24	46	
		010 PM 260			



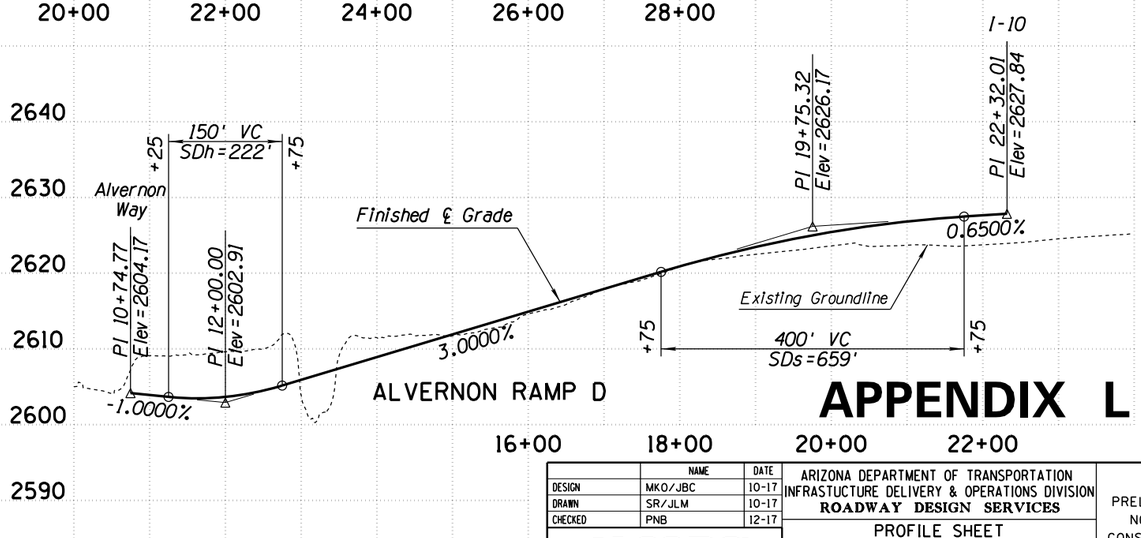
ALVERNON RAMP A



ALVERNON RAMP B



ALVERNON RAMP C



ALVERNON RAMP D

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
ALVERNON RAMP A, B, C AND D

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

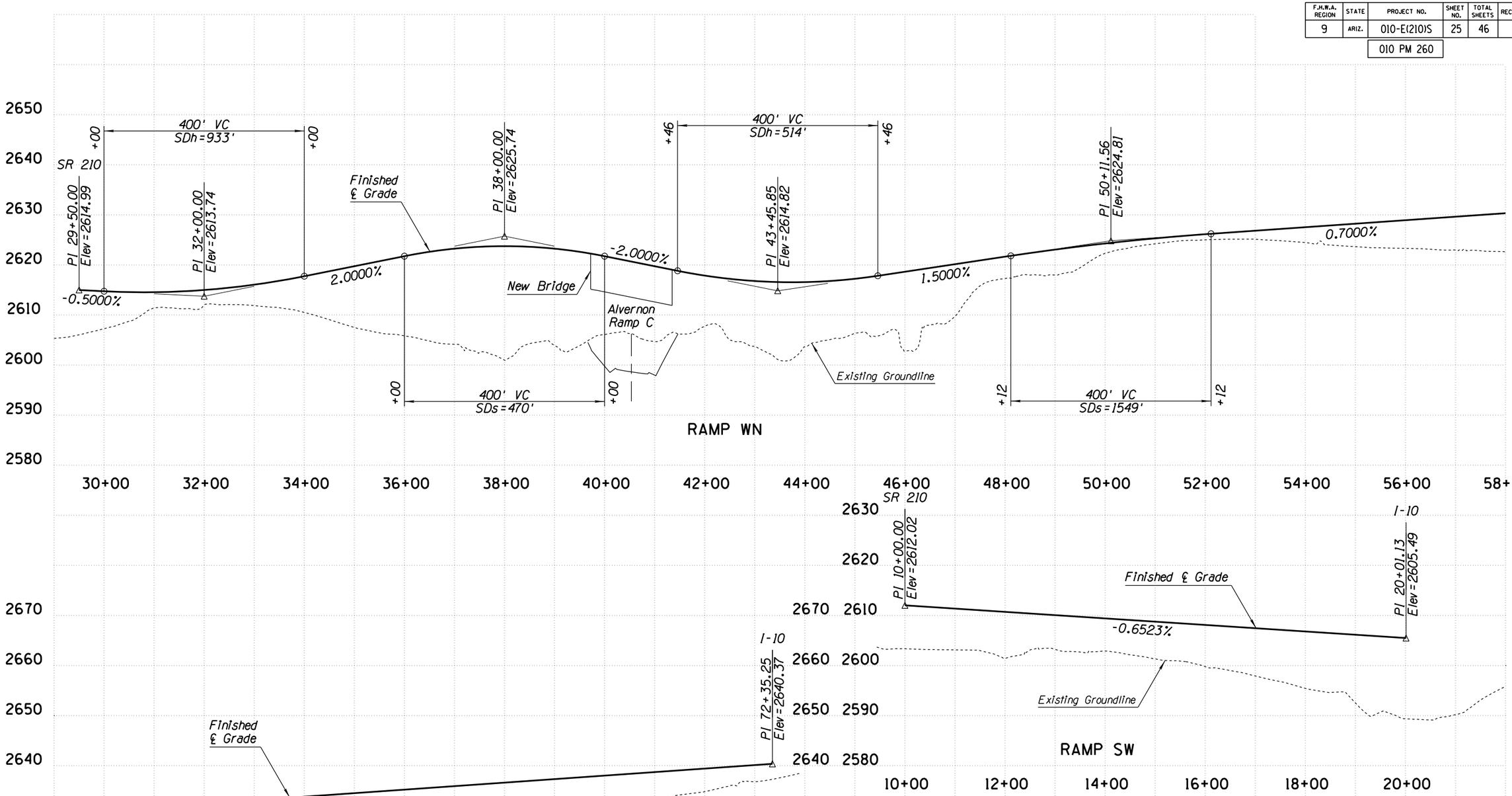
SHEET PR-24

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v124.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	25	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
RAMPS ALT IV
RAMP WN AND RAMP SW

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-25

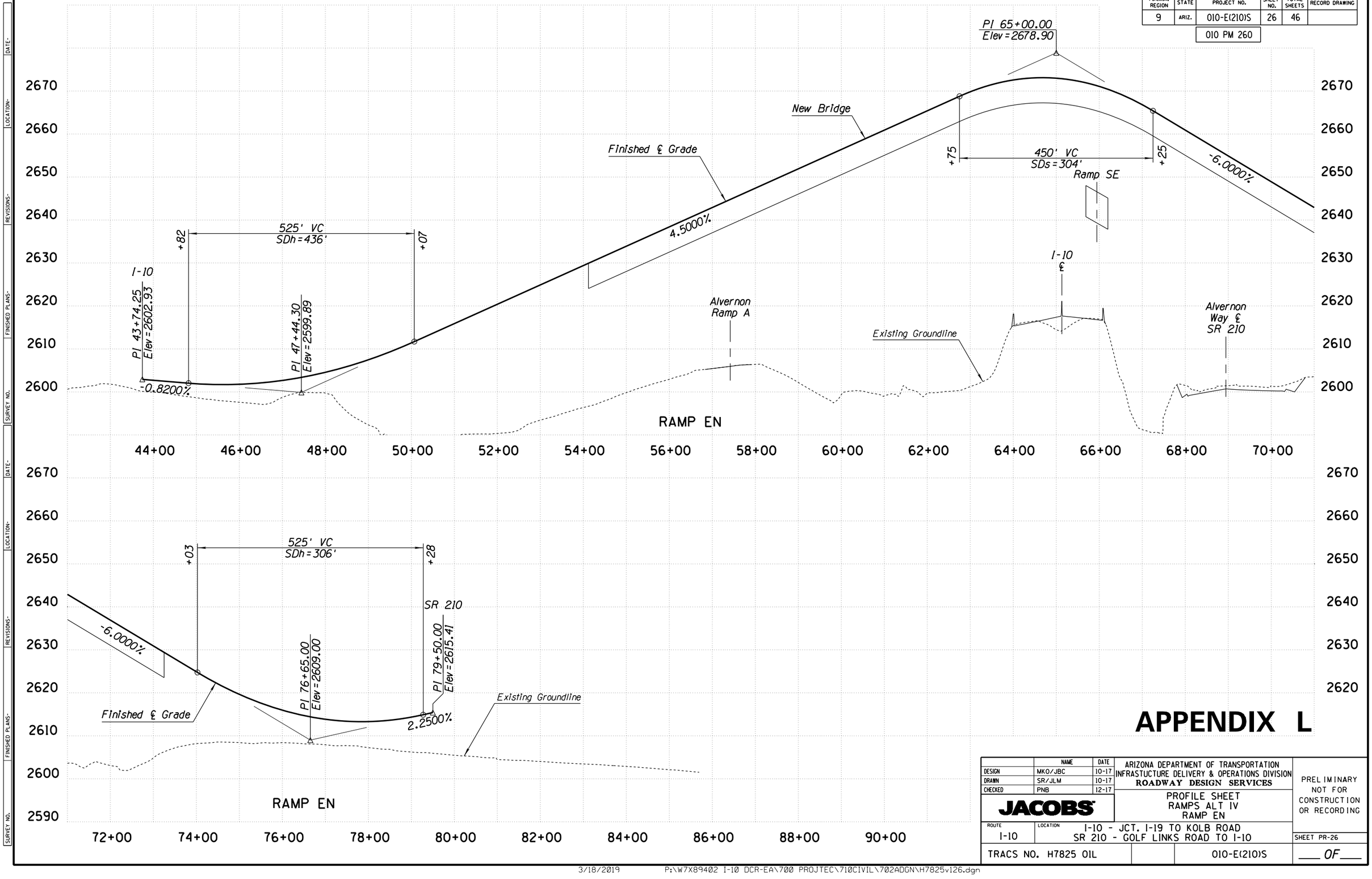
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v125.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	26	46	

010 PM 260



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
RAMP EN

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

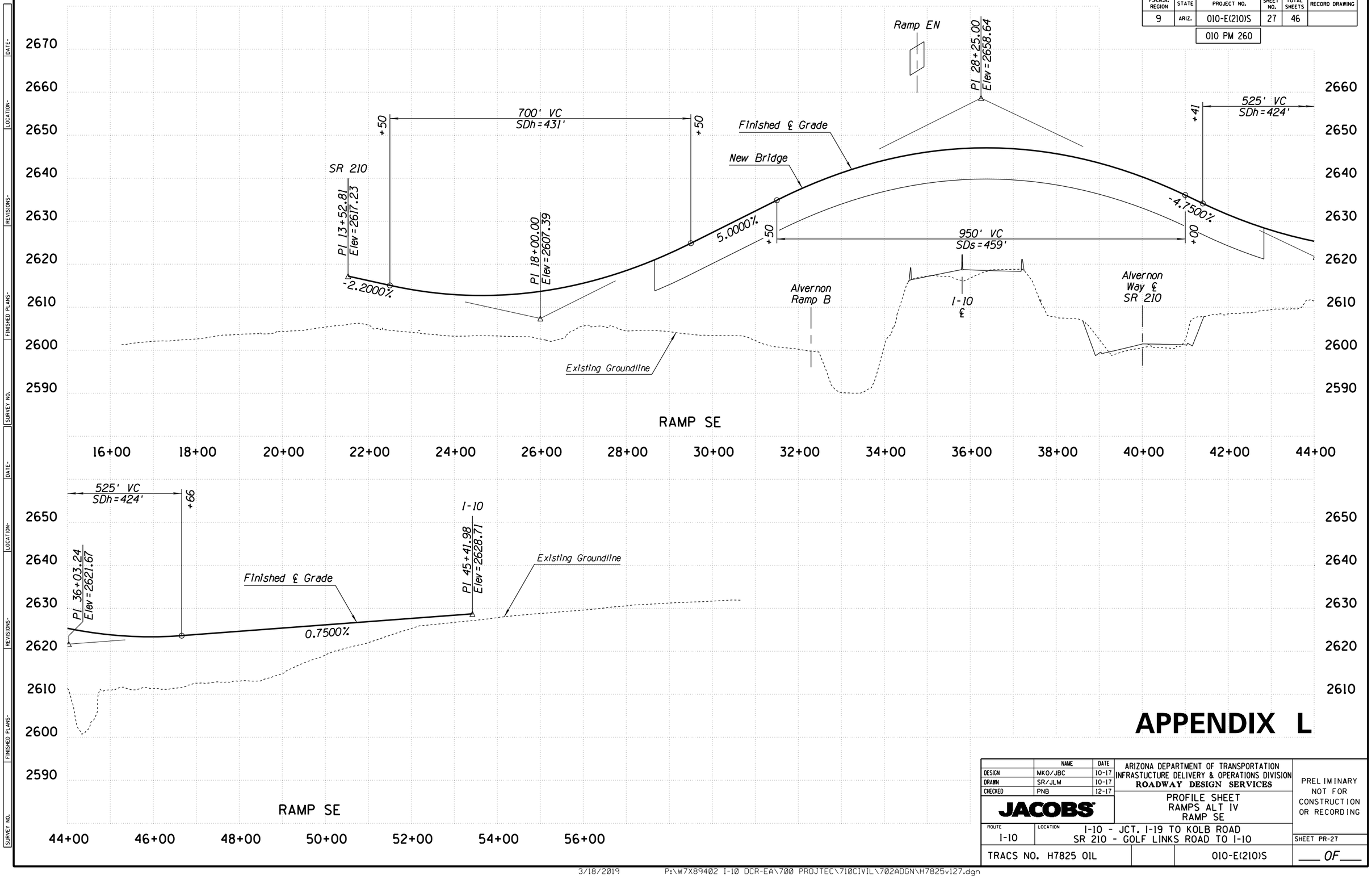
SHEET PR-26

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v126.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	27	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
RAMP SE

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-27

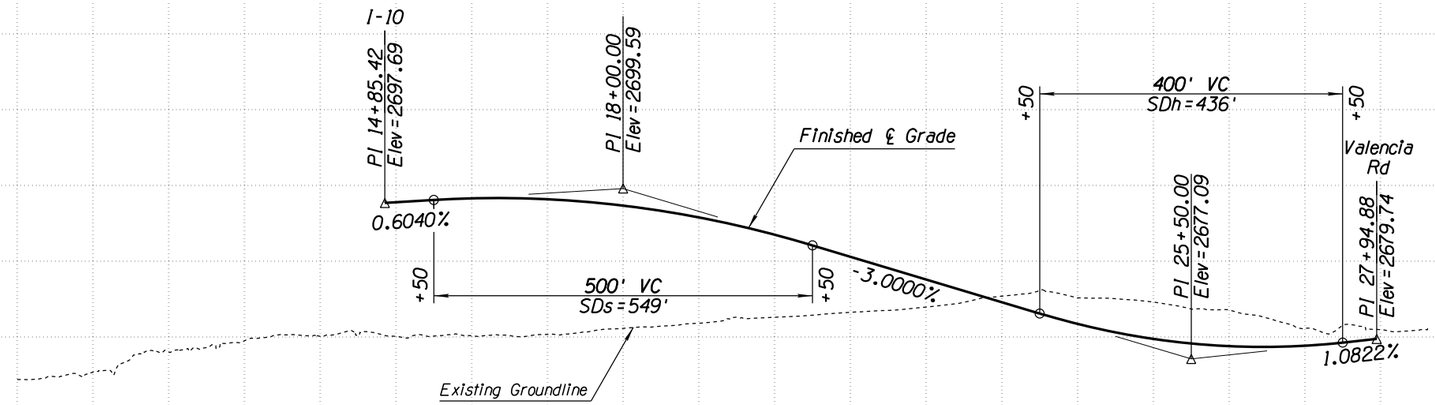
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v127.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	28	46	
		010 PM 260			

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



VALENCIA RAMP A

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
VALENCIA RAMP A

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

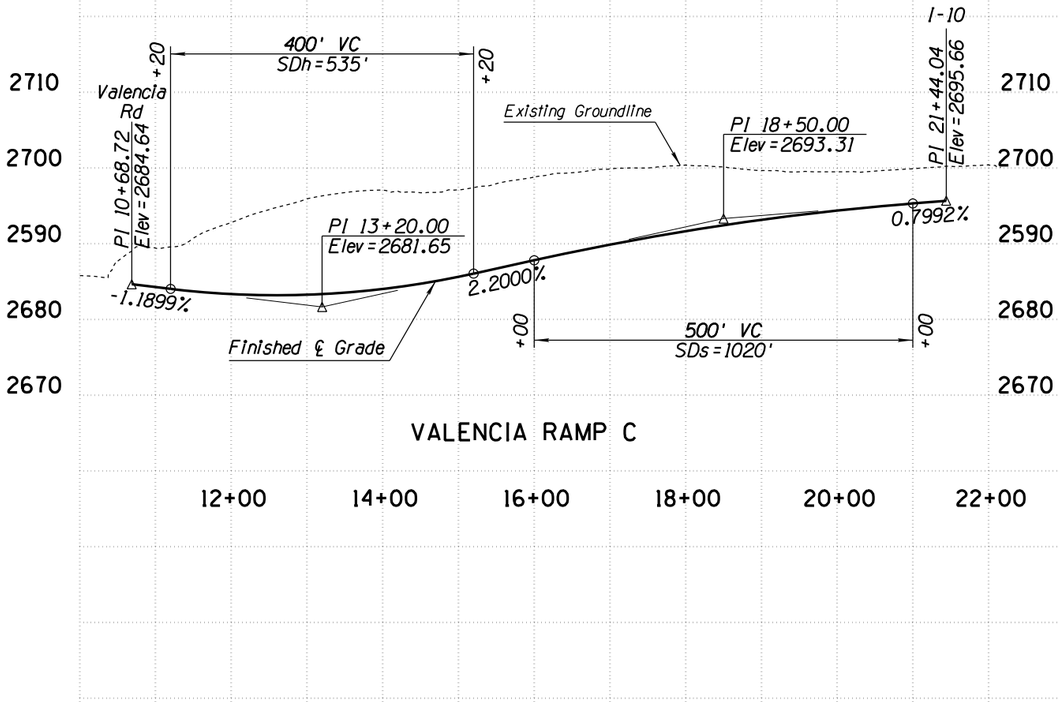
ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-28

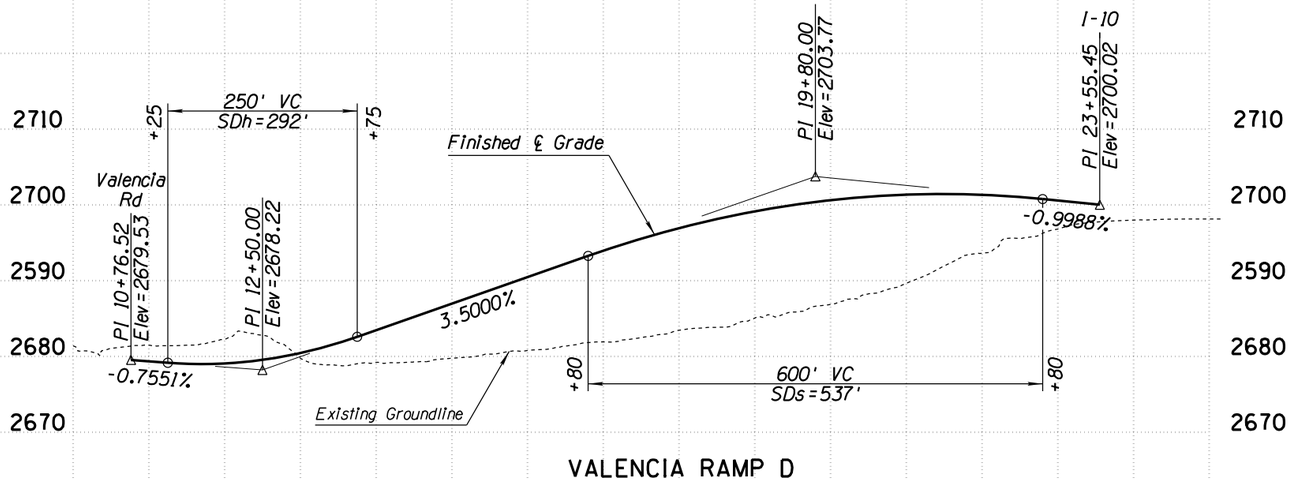
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v128.dgn

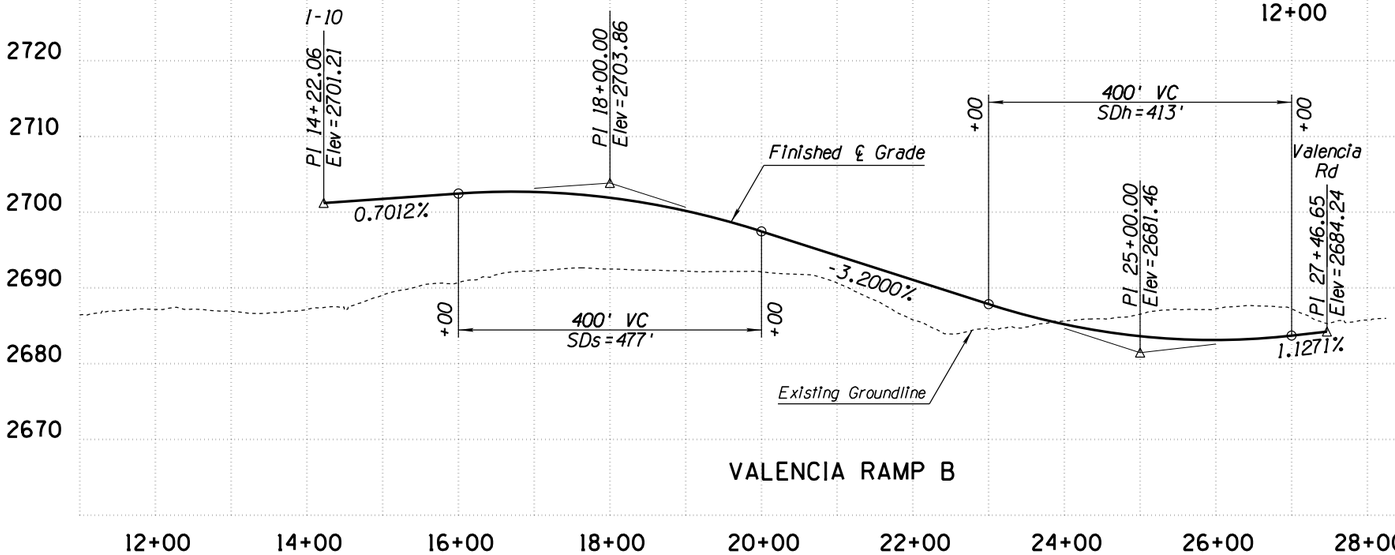
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	29	46	
		010 PM 260			



VALENCIA RAMP C



VALENCIA RAMP D



VALENCIA RAMP B

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
VALENCIA RAMP B, C, AND D

PRELIMINARY
NOT FOR CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

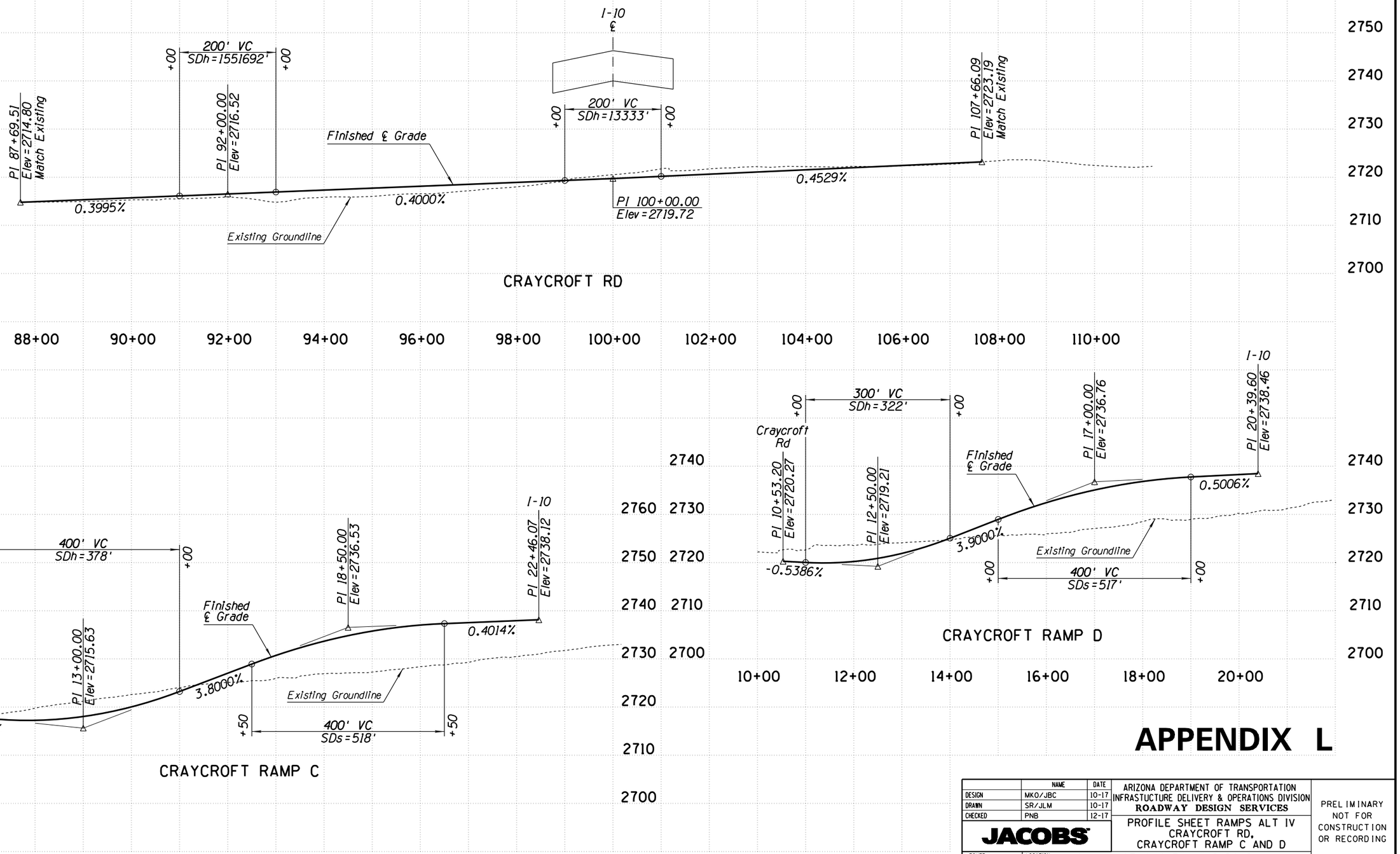
SHEET PR-29

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

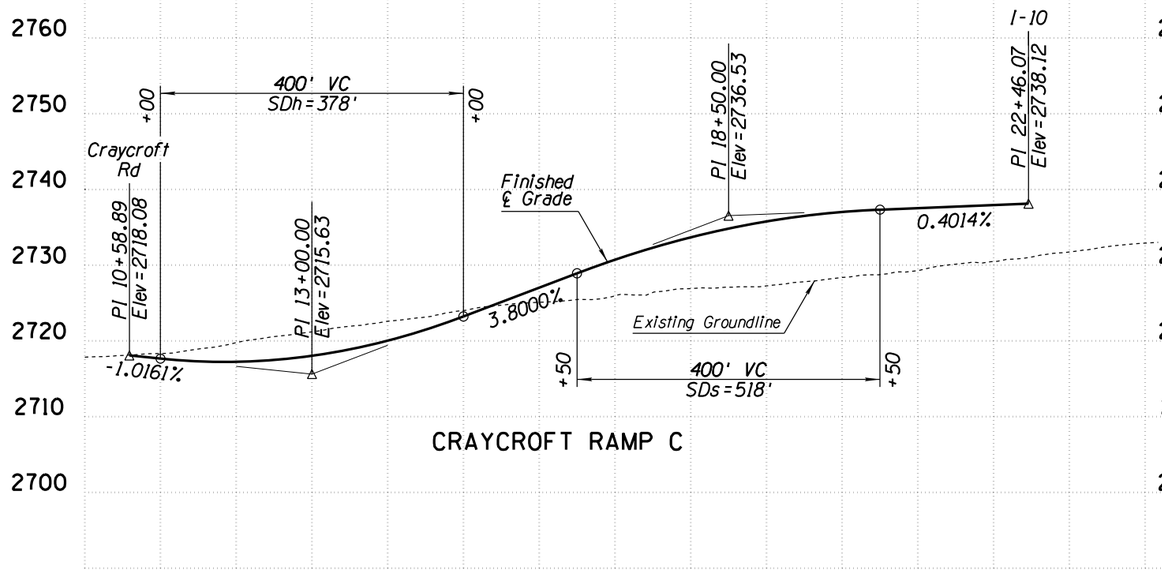
DATE- | LOCATION- | REVISIONS- | FINISHED PLANS- | SURVEY NO.

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v129.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	30	46	
		010 PM 260			



CRAYCROFT RD



CRAYCROFT RAMP C

CRAYCROFT RAMP D

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET RAMPS ALT IV
CRAYCROFT RD,
CRAYCROFT RAMP C AND D

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

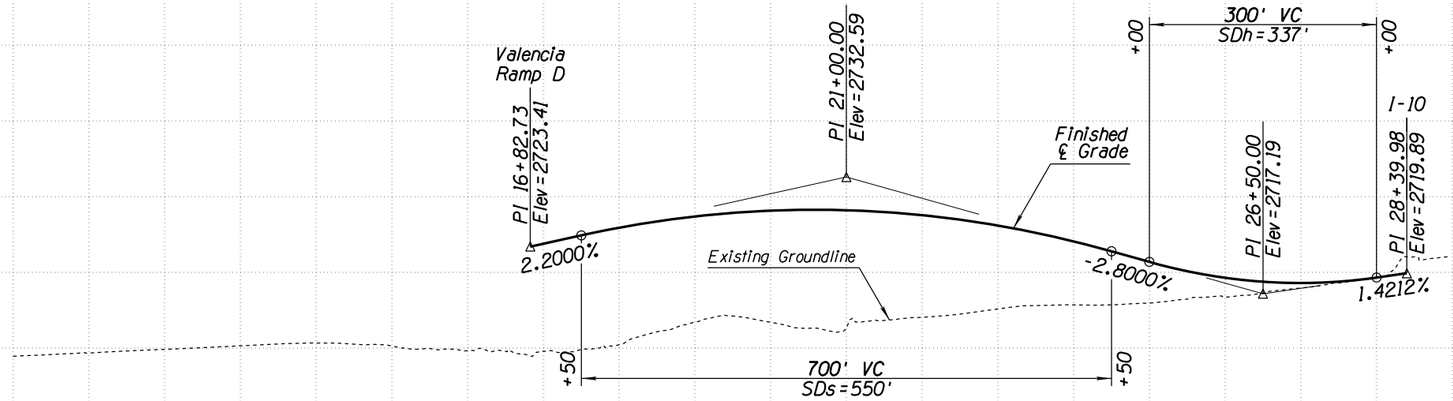
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-30

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v130.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	31	46	
		010 PM 260			



CRAYCROFT RAMP A

2740 2730 2720 2710 2700 2690 2680 2670

10+00 12+00 14+00 16+00 18+00 20+00 22+00 24+00 26+00 28+00 30+00 32+00 34+00 36+00

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
CRAYCROFT RAMP A

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

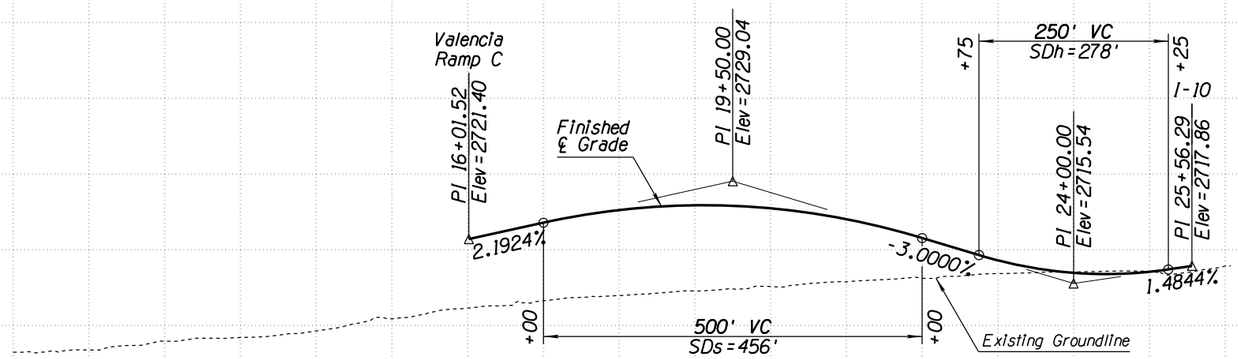
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-31

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	32	46	
		010 PM 260			



CRAYCROFT RAMP B

2740 2730 2720 2710 2700 2690 2680 2670

10+00 12+00 14+00 16+00 18+00 20+00 22+00 24+00 26+00 28+00 30+00 32+00 34+00 36+00

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
CRAYCROFT RAMP B

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

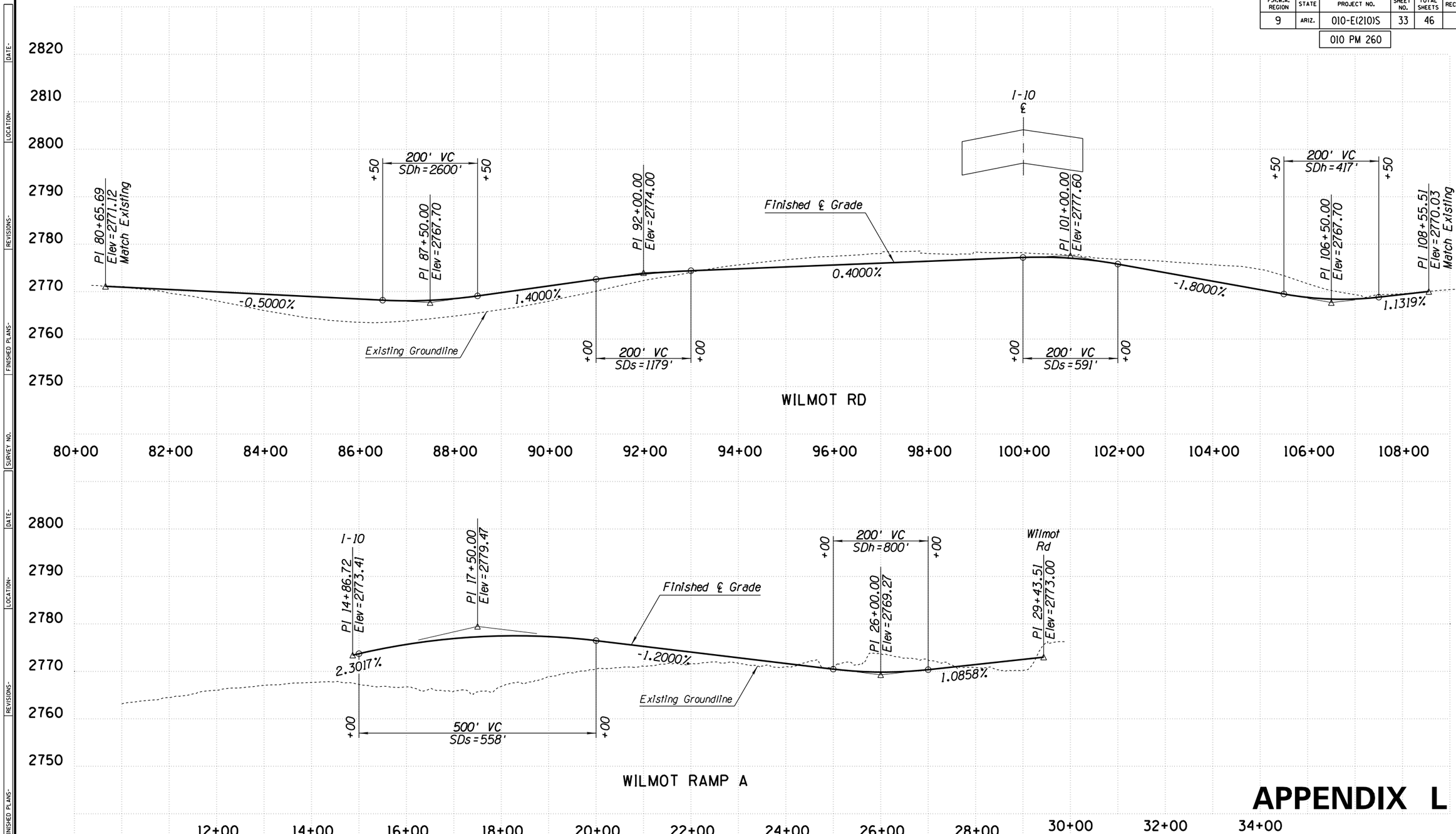
SHEET PR-32

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v132.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	33	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
WILMOT RD AND WILMOT RAMP A

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

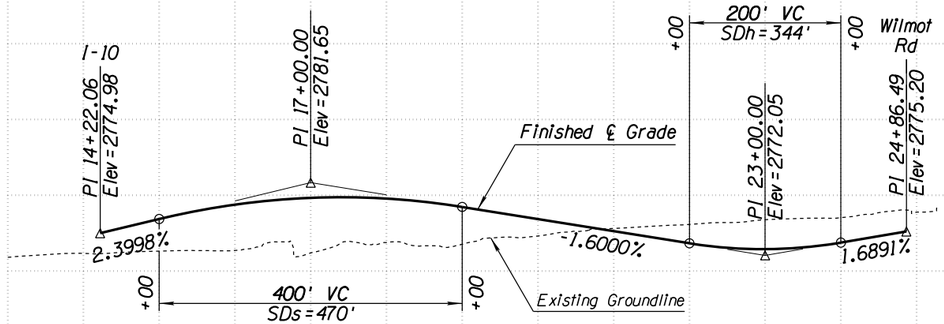
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	SHEET PR-33

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

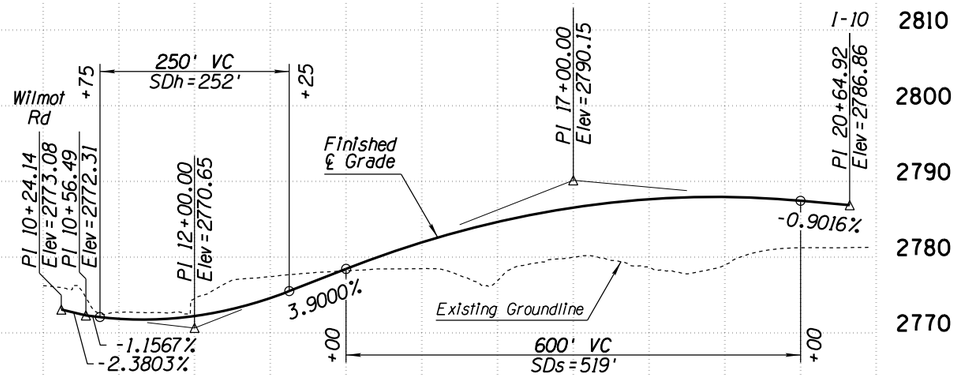
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v133.dgn

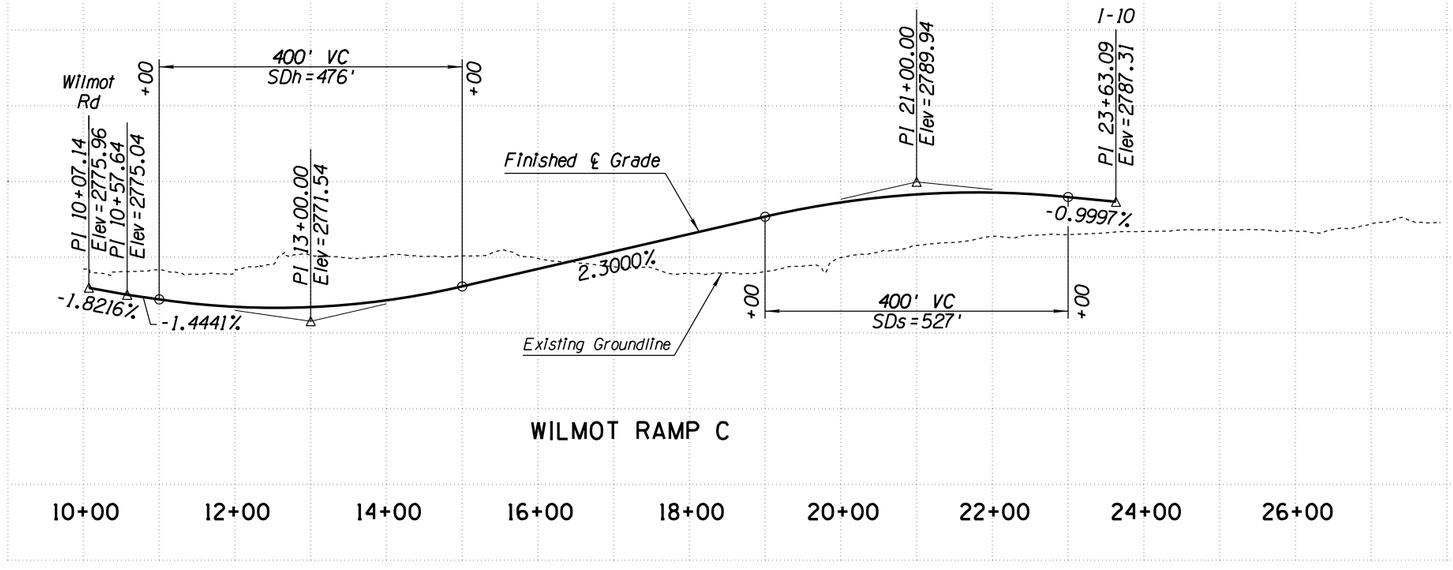
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	34	46	
		010 PM 260			



WILMOT RAMP B



WILMOT RAMP D



WILMOT RAMP C

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
WILMOT RAMP B, C AND D

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

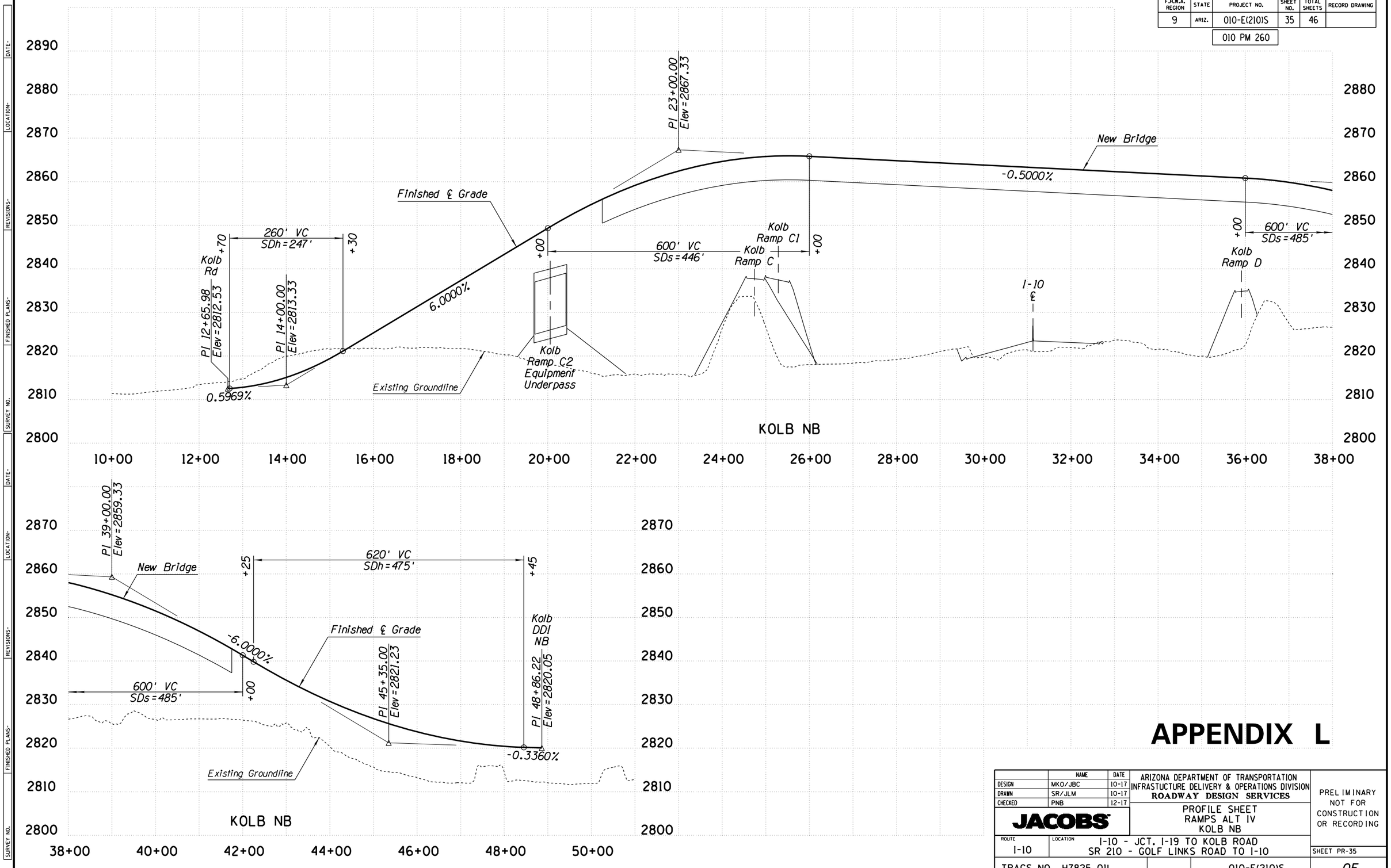
ROUTE	LOCATION	SHEET PR-34
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	35	46	
		010 PM 260			

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



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
RAMPS ALT IV
KOLB NB

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

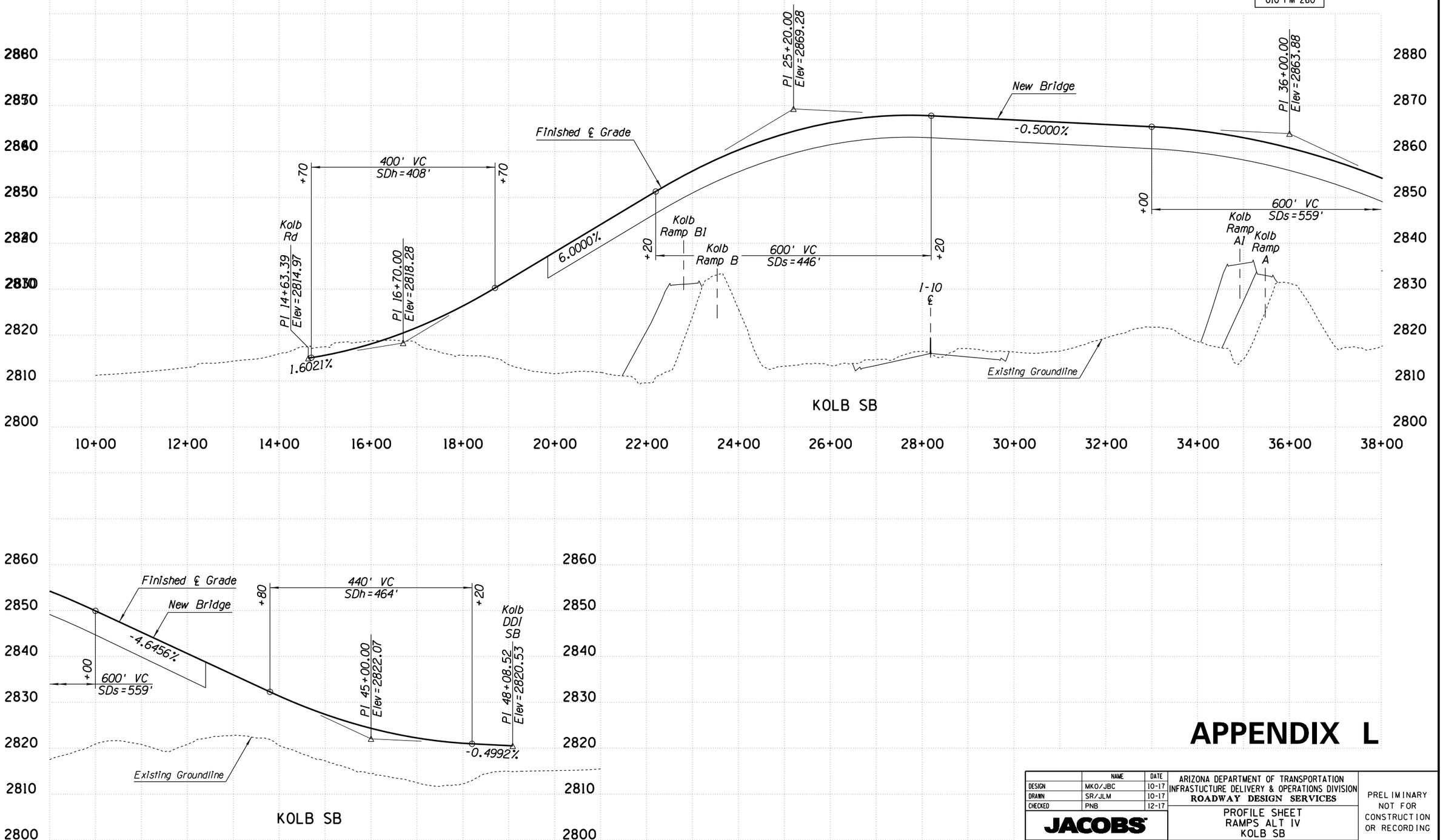
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-35

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v135.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	36	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
KOLB SB

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

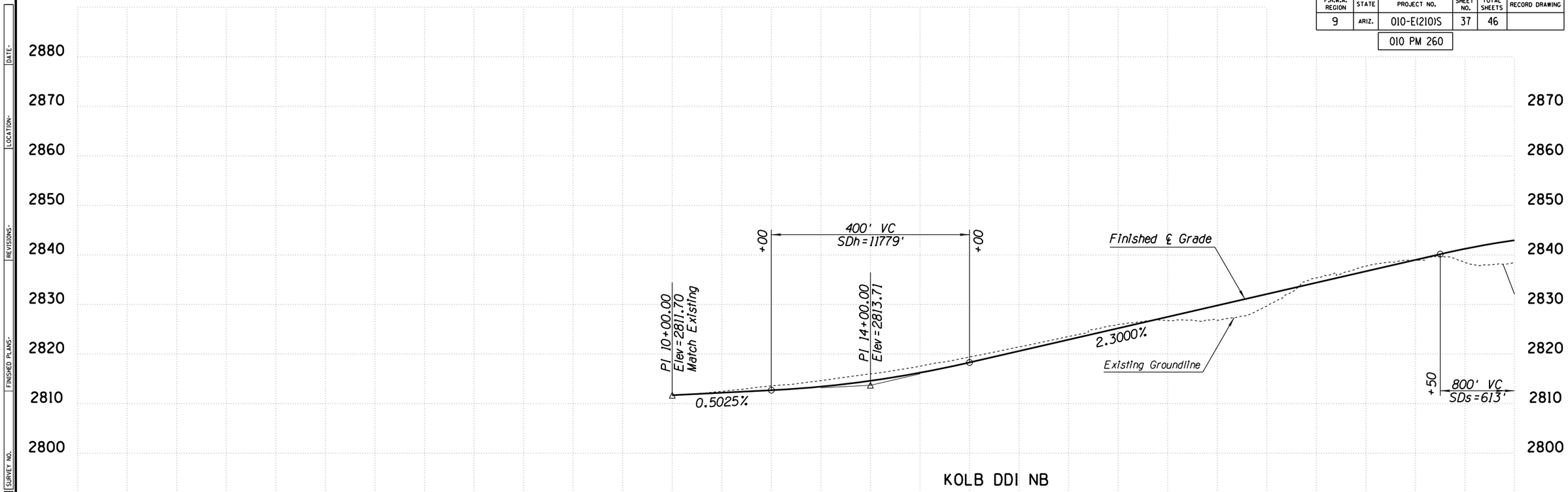
SHEET PR-36

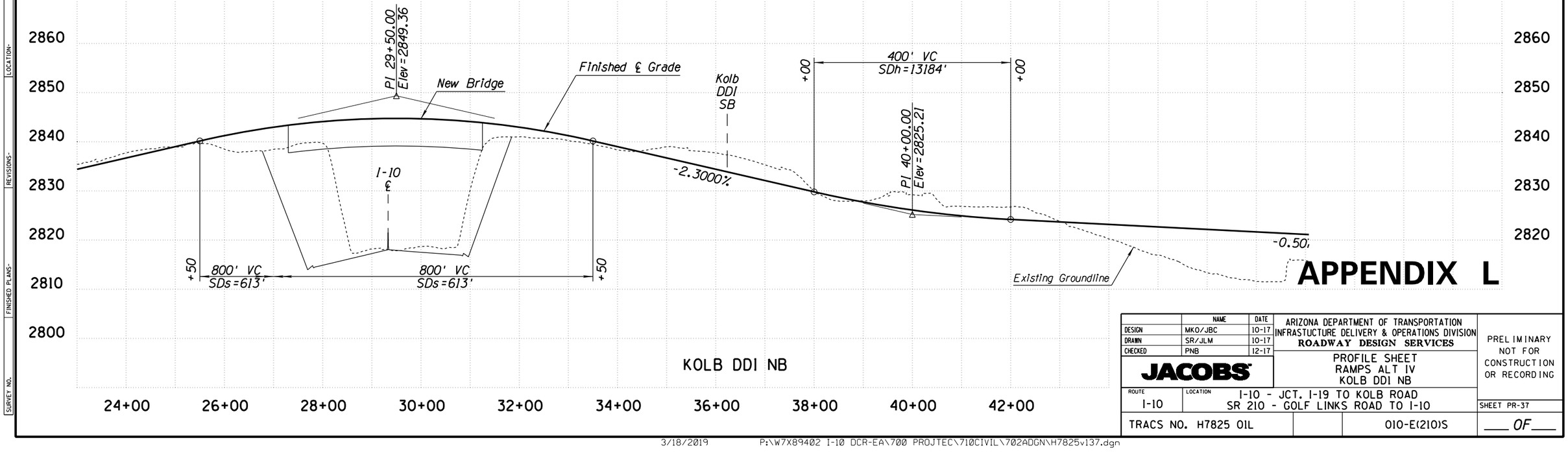
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v136.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	37	46	
		010 PM 260			





APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
KOLB DDI NB

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

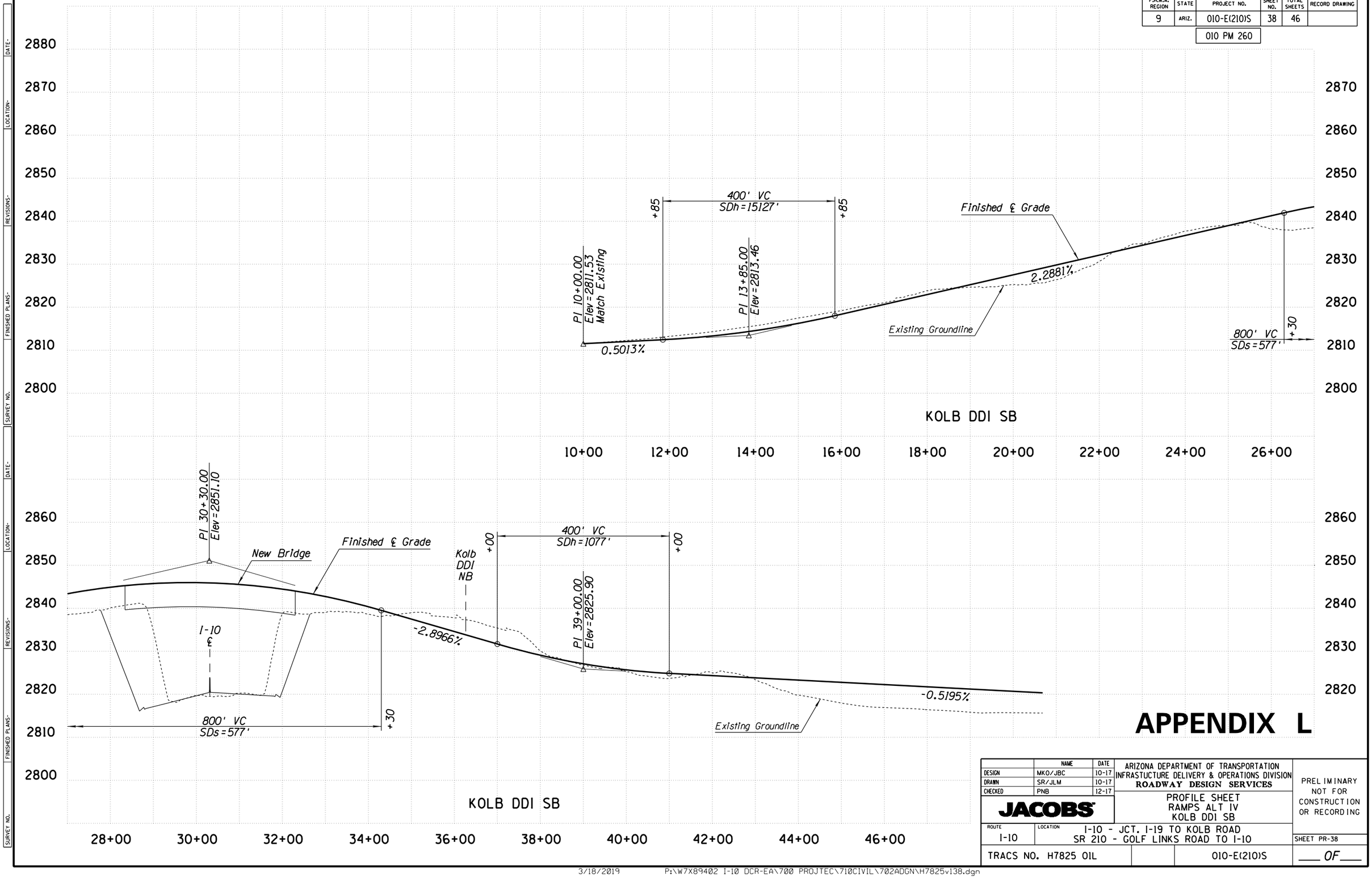
SHEET PR-37

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v137.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	38	46	
		010 PM 260			



APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
KOLB DDI SB

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

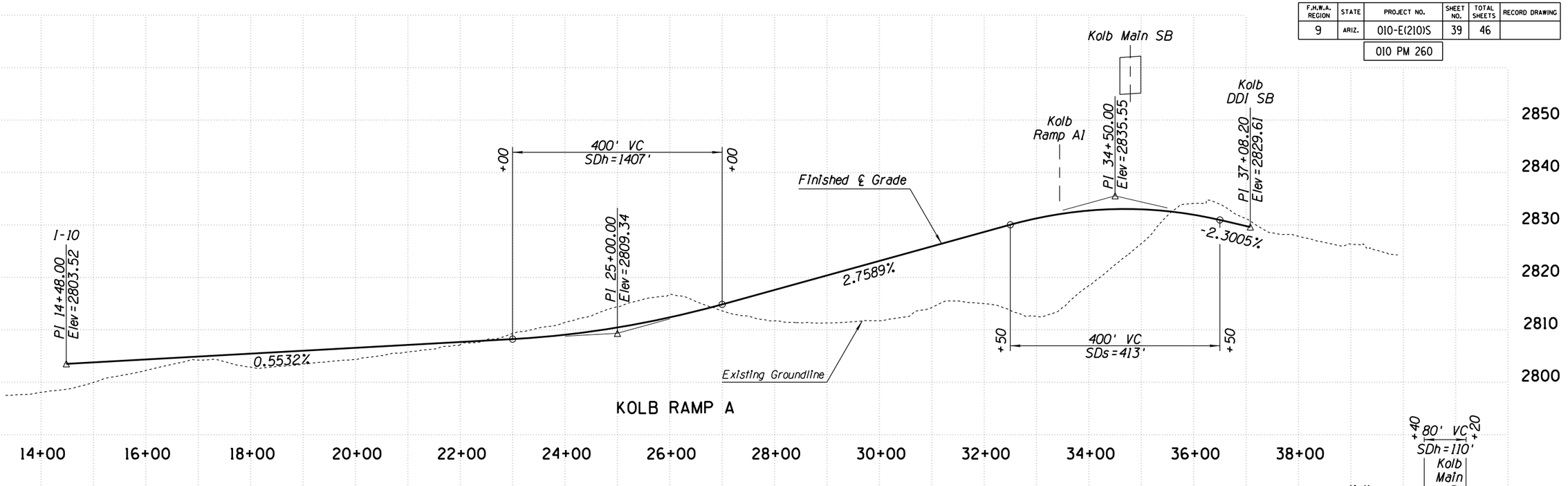
SHEET PR-38

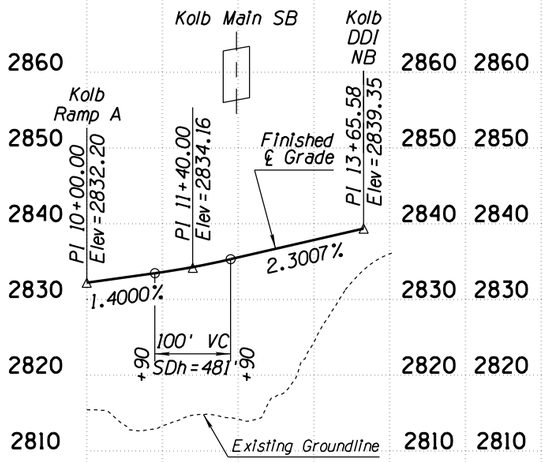
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

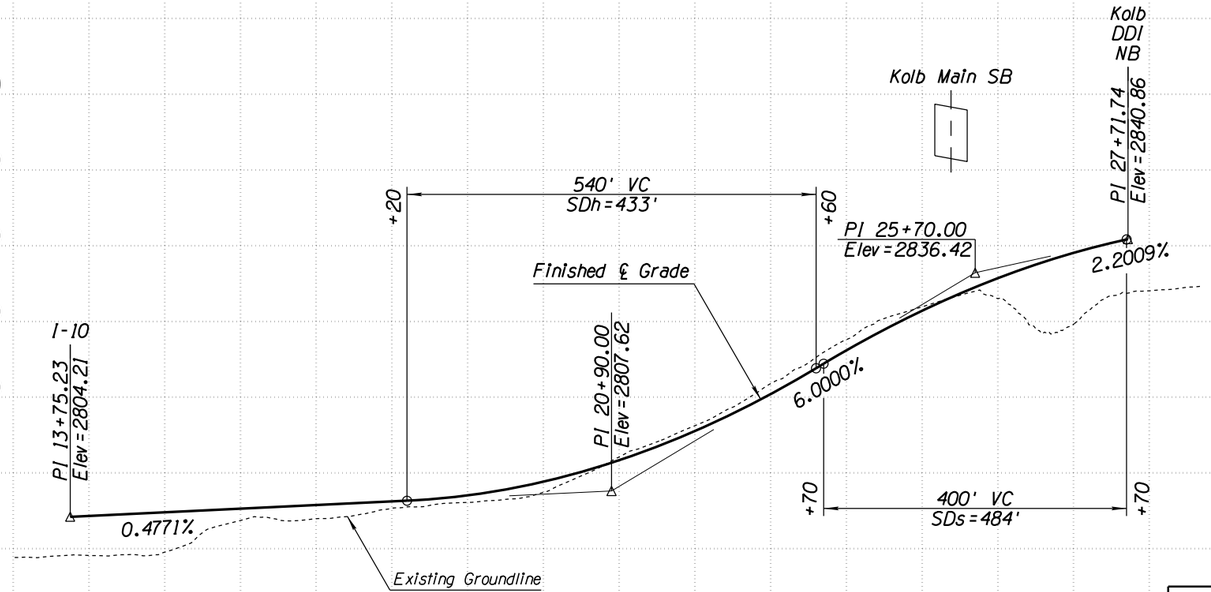
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

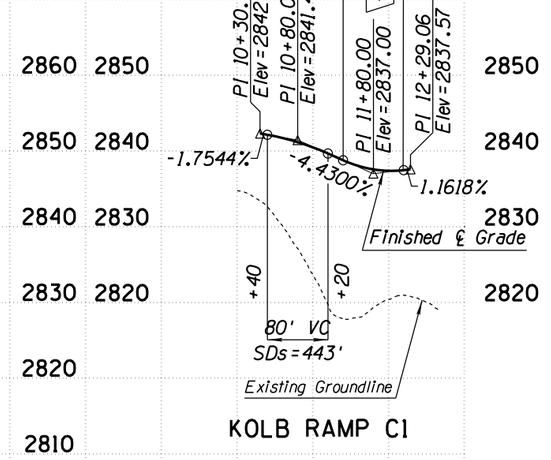
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v138.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	39	46	
		010 PM 260			









APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
RAMPS ALT IV
KOLB RAMP A, A1, B AND C1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

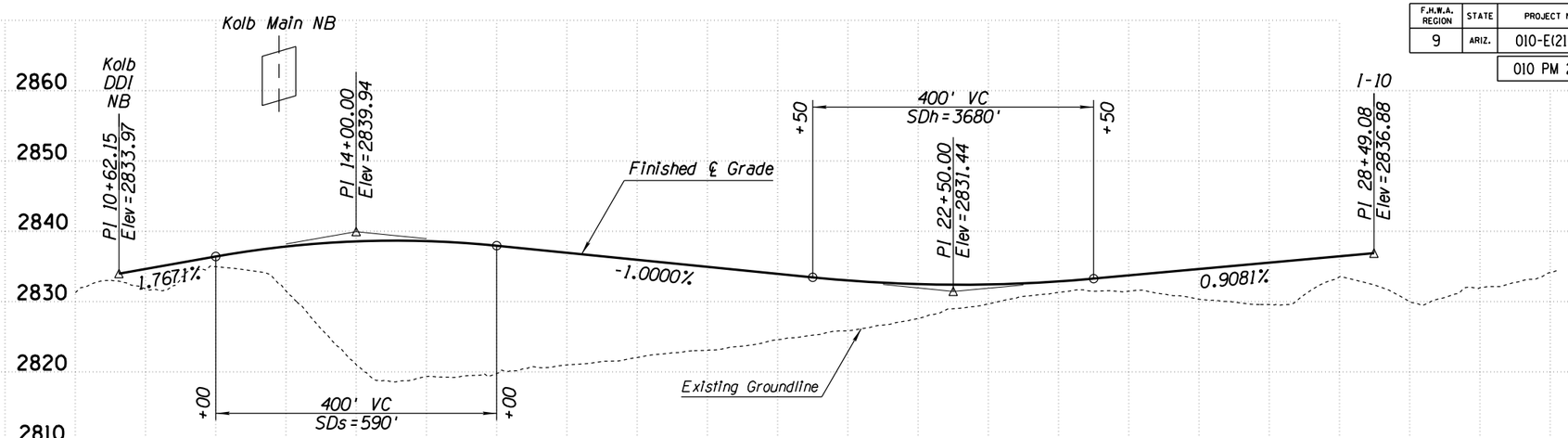
SHEET PR-39

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

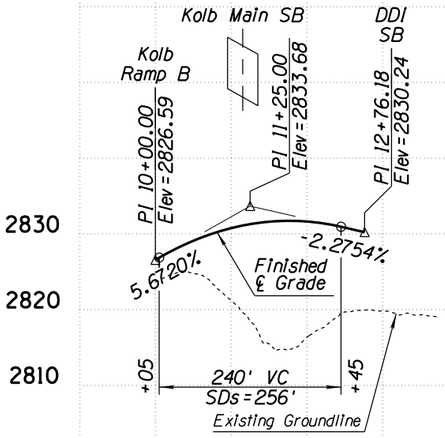
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v139.dgn

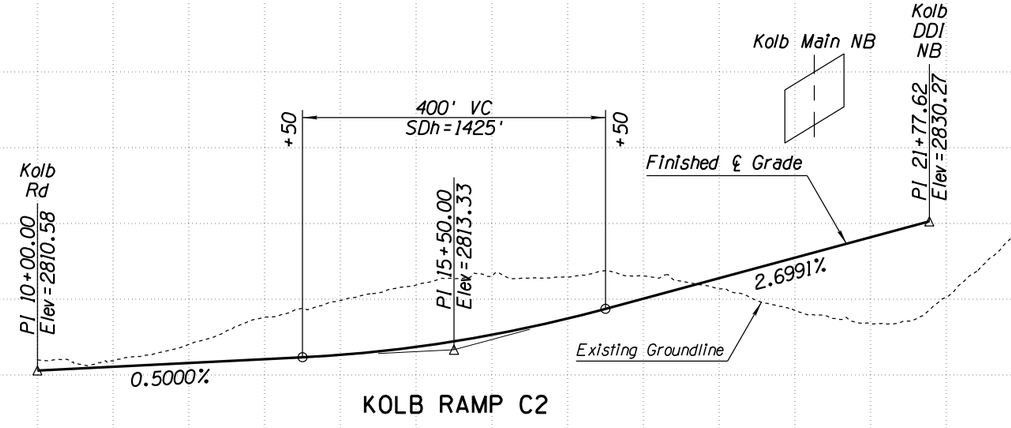
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	40	46	
		010 PM 260			



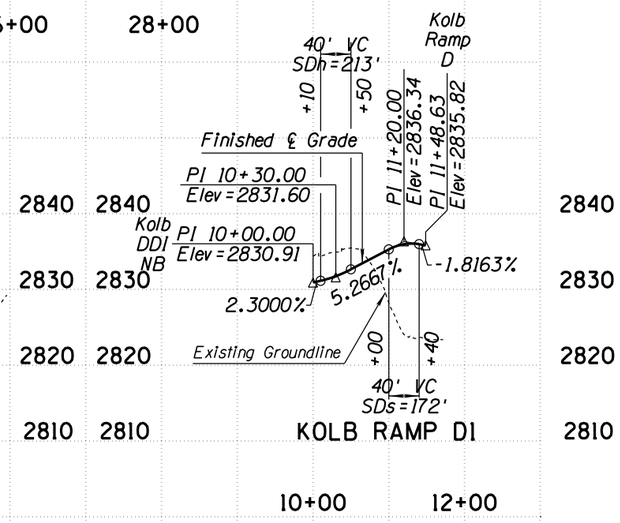
KOLB RAMP C



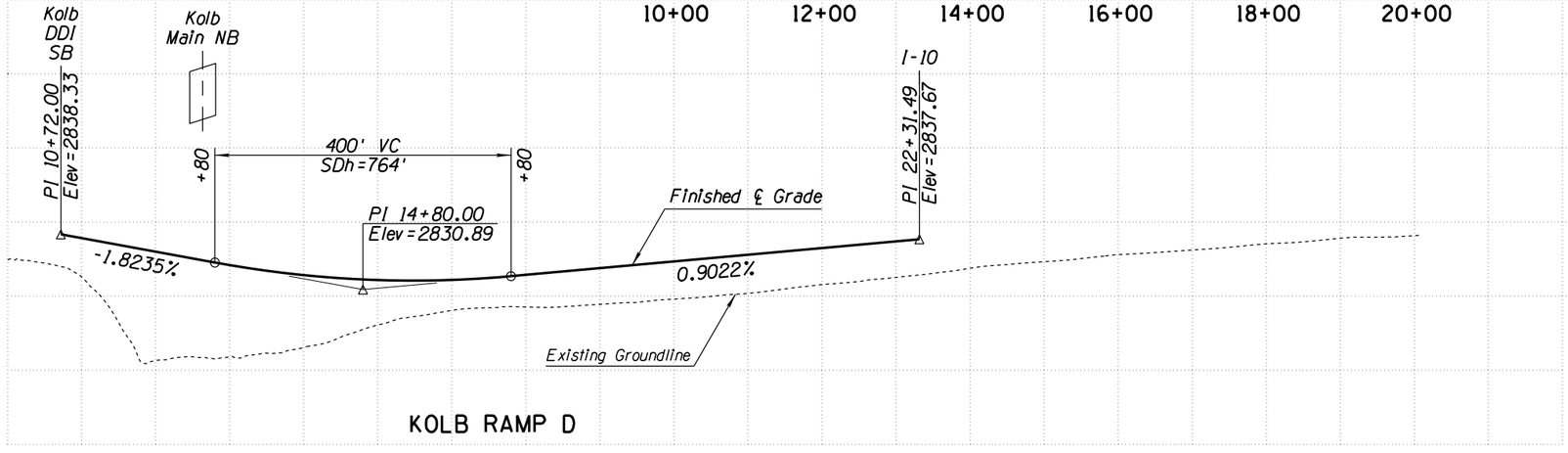
KOLB RAMP B1



KOLB RAMP C2



KOLB RAMP D1



KOLB RAMP D

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
KOLB RAMP B1, C, C2, D AND D1

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

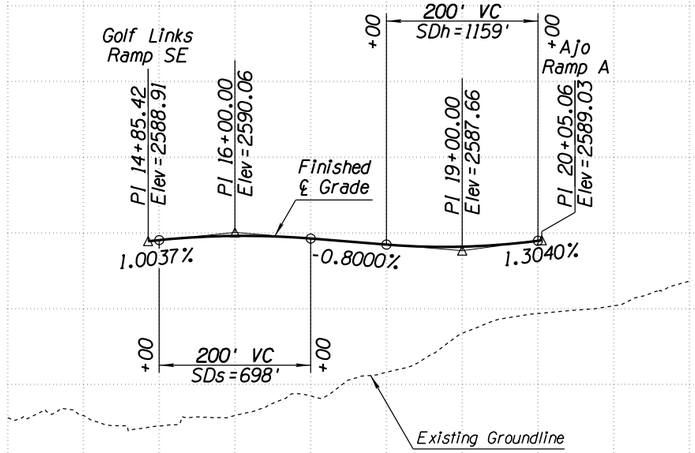
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-40

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

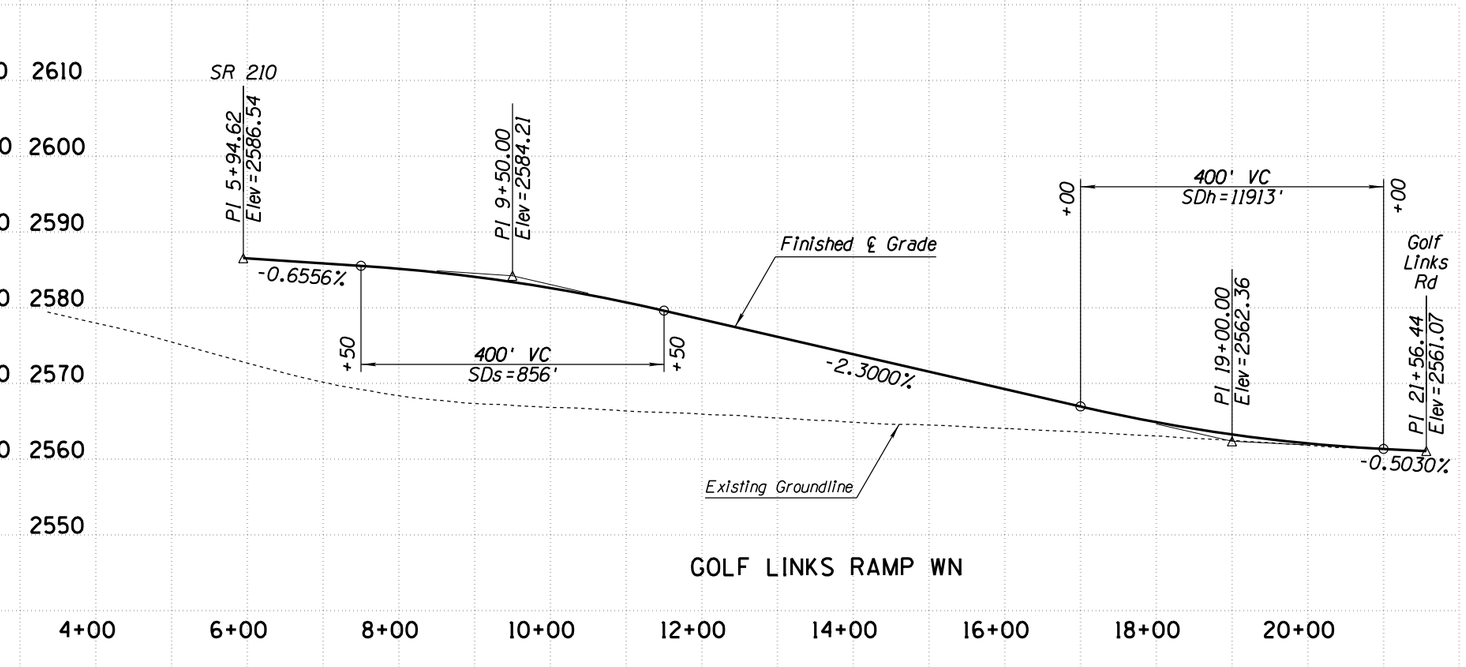
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v140.dgn

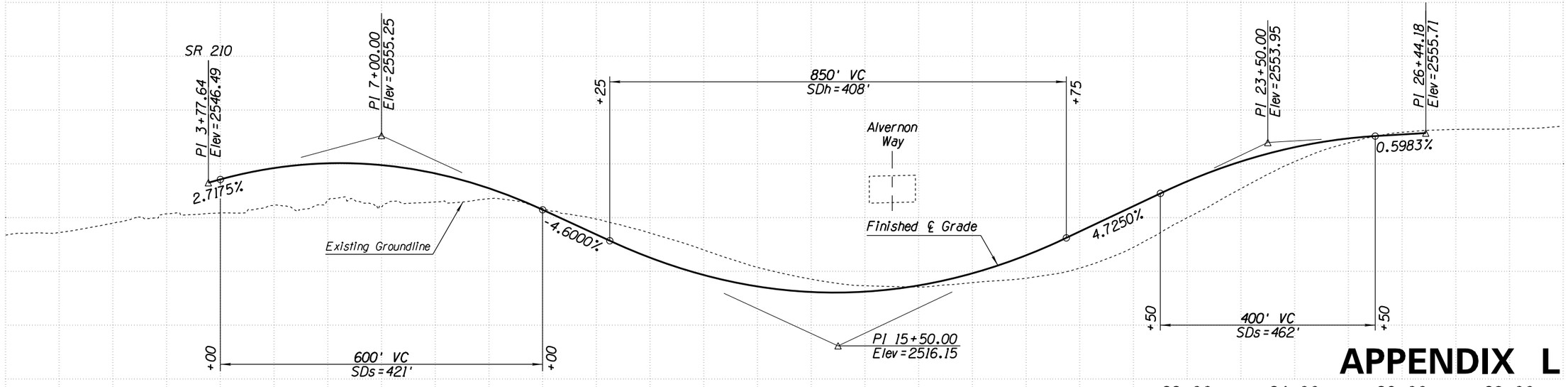
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	41	46	
		010 PM 260			



GL SE TO AJO RAMP A



GOLF LINKS RAMP WN



GOLF LINKS RAMP SW

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET RAMPS ALT IV
GOLF LINKS RAMP WN, SW
AND GL SE TO AJO RAMP A

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

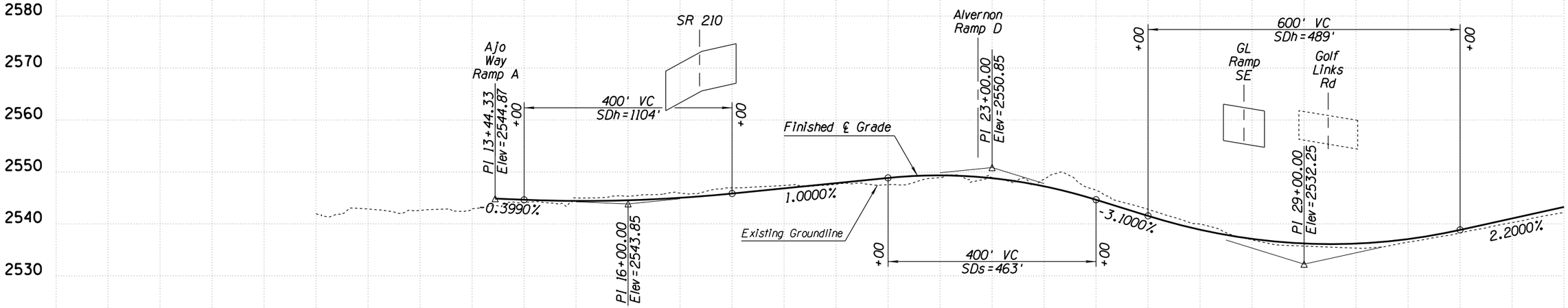
ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-41

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

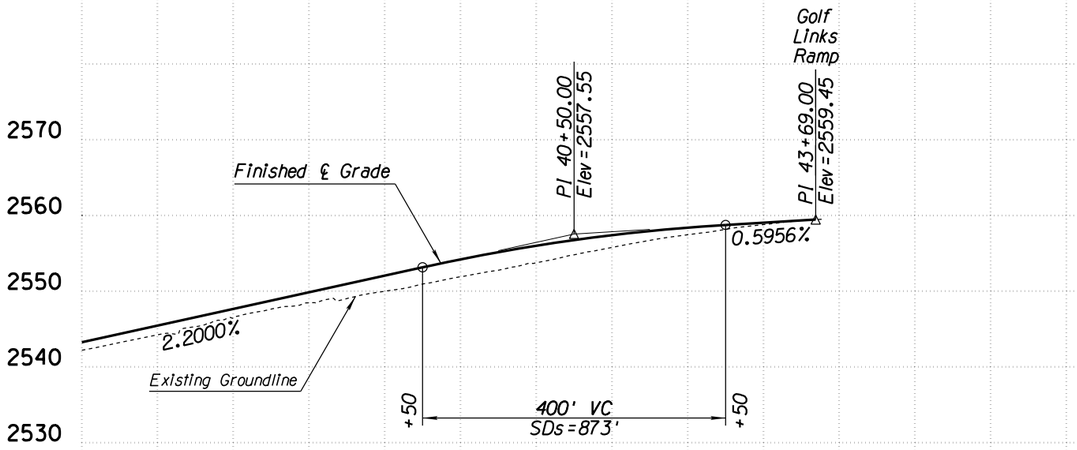
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	42	46	
		010 PM 260			



GOLF LINKS RAMP EN

10+00 12+00 14+00 16+00 18+00 20+00 22+00 24+00 26+00 28+00 30+00 32+00



GOLF LINKS RAMP EN

36+00 38+00 40+00 42+00 44+00 46+00

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
GOLF LINKS RAMP EN

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

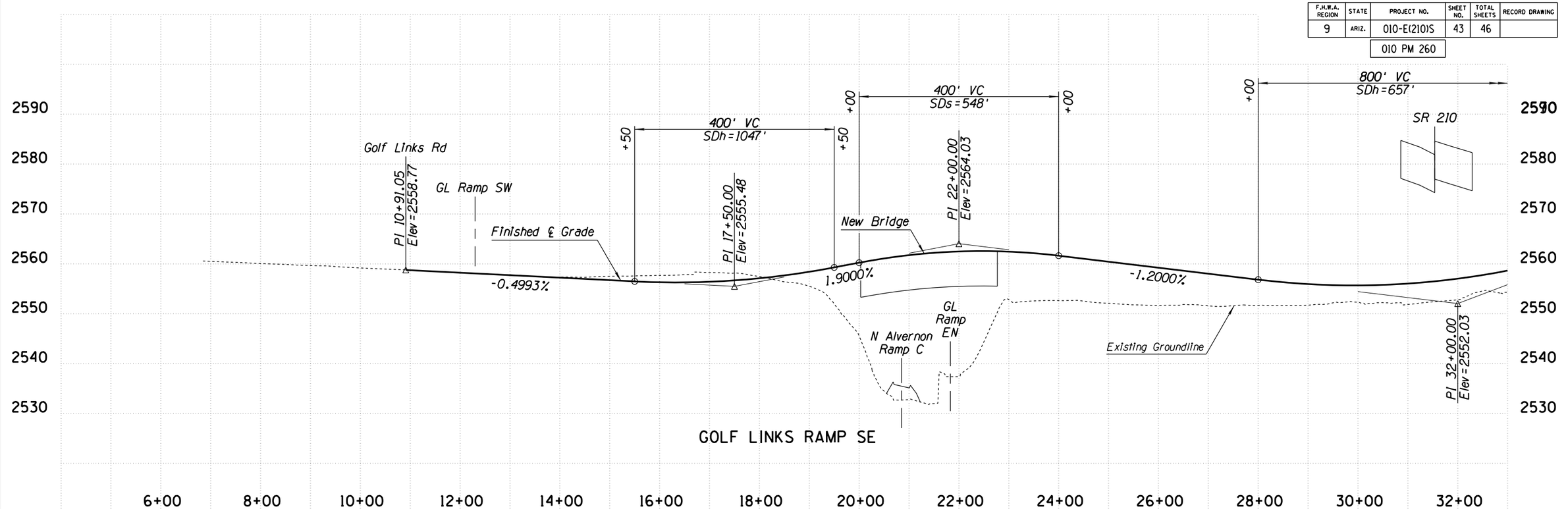
ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET PR-42

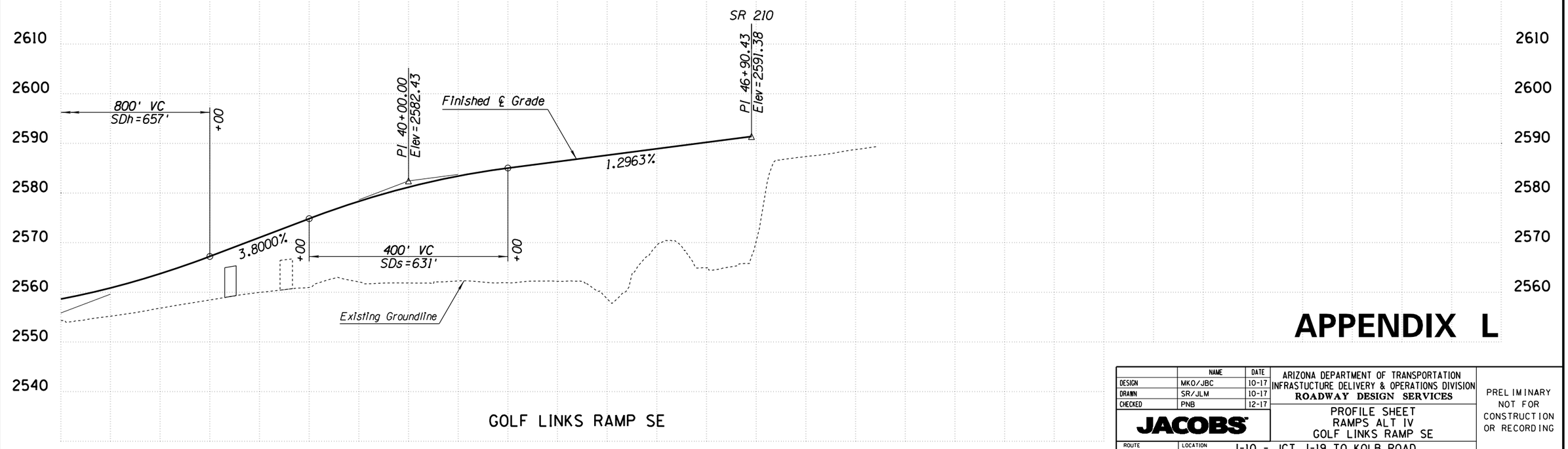
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	43	46	
		010 PM 260			



GOLF LINKS RAMP SE



GOLF LINKS RAMP SE

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
GOLF LINKS RAMP SE

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-43

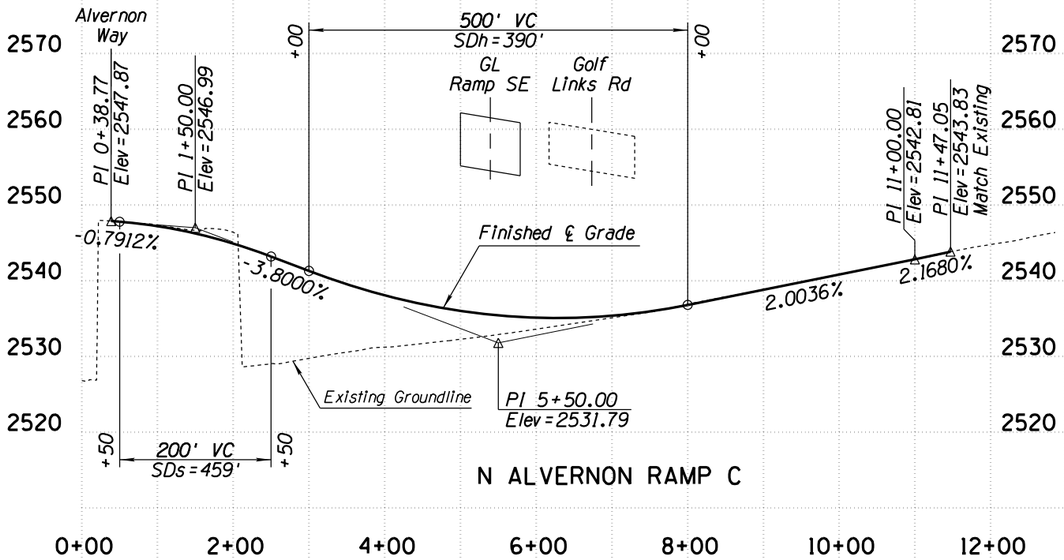
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

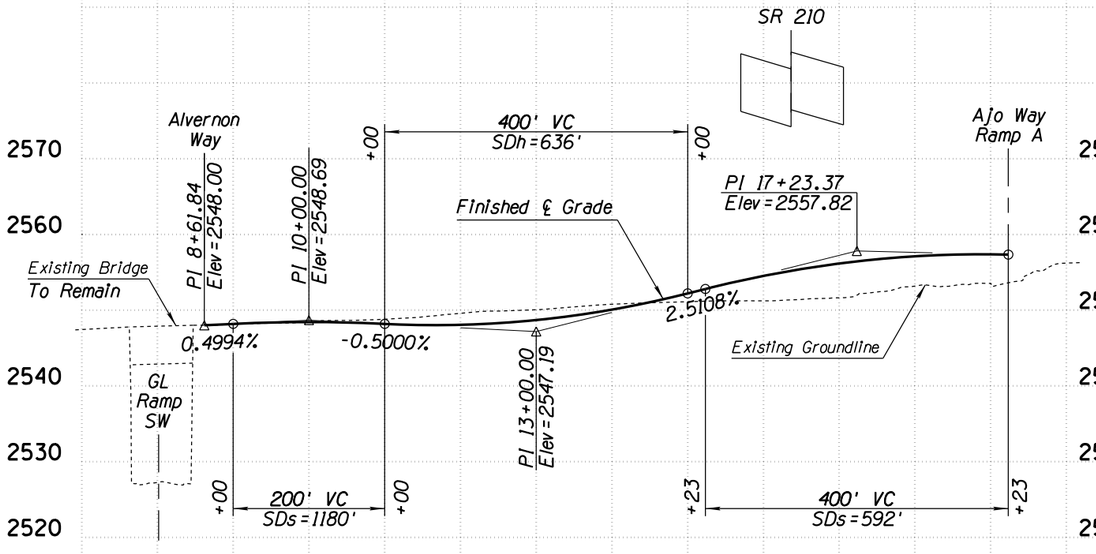
3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v143.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	44	46	
		010 PM 260			

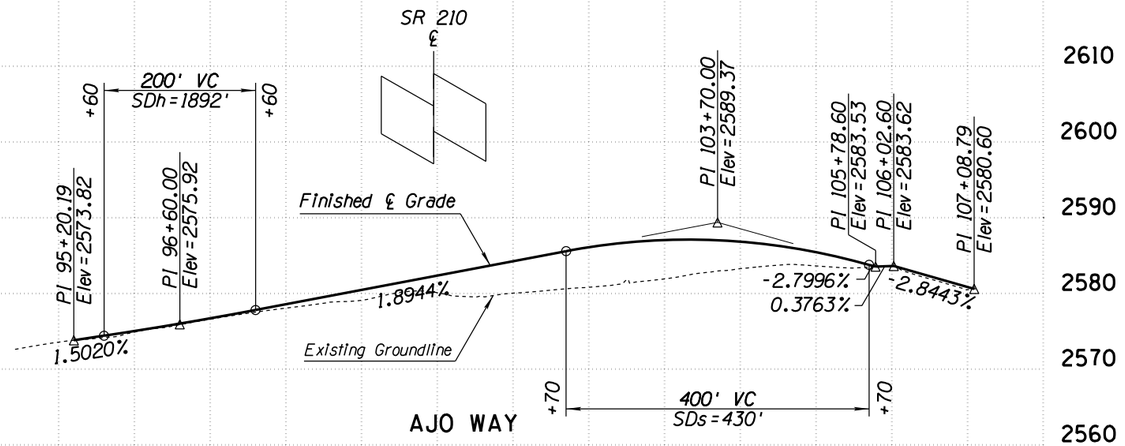
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-



N ALVERNON RAMP C



N ALVERNON RAMP D



AJO WAY

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET RAMPS ALT IV
N ALVERNON RAMP A, C, D
AND AJO WAY

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

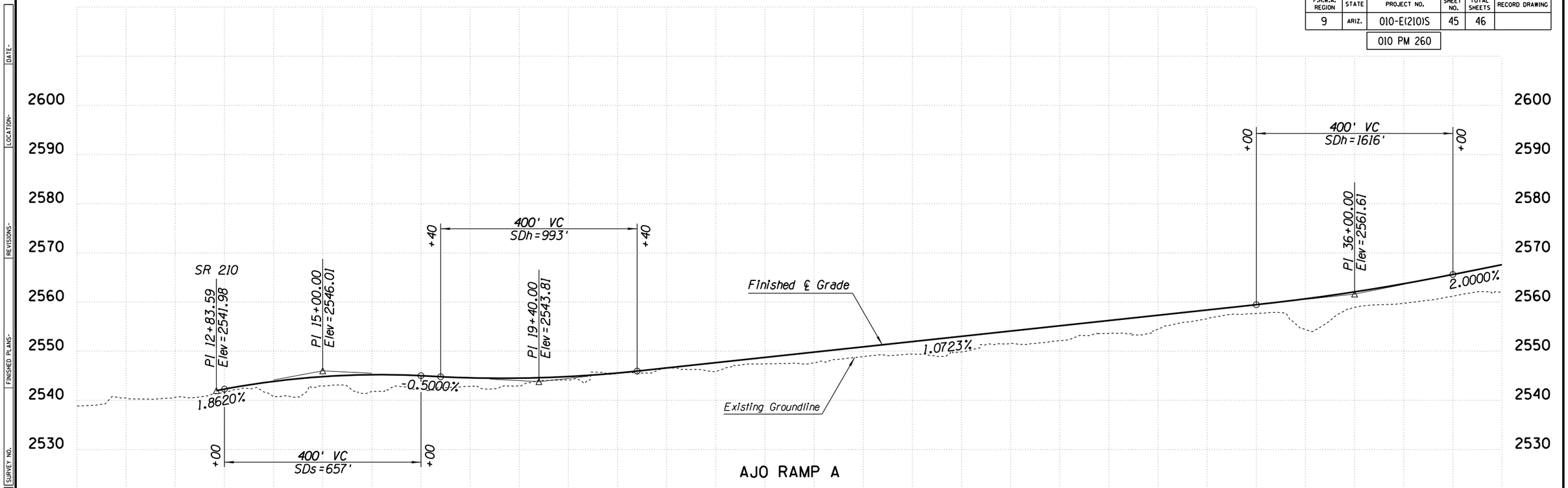
SHEET PR-44

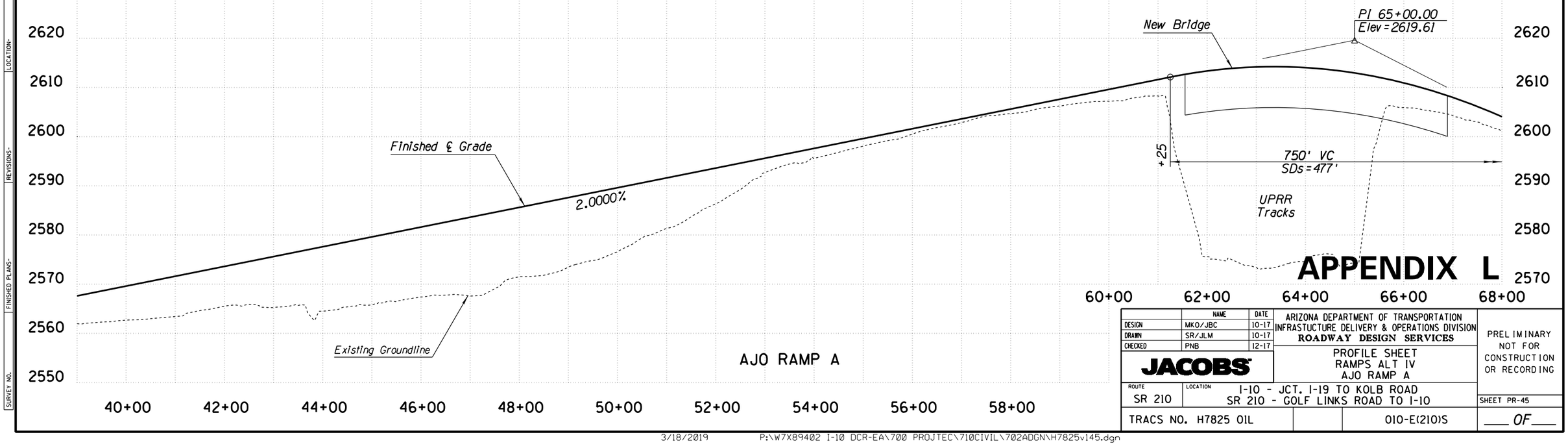
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v144.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	45	46	

010 PM 260





APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
AJO RAMP A

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

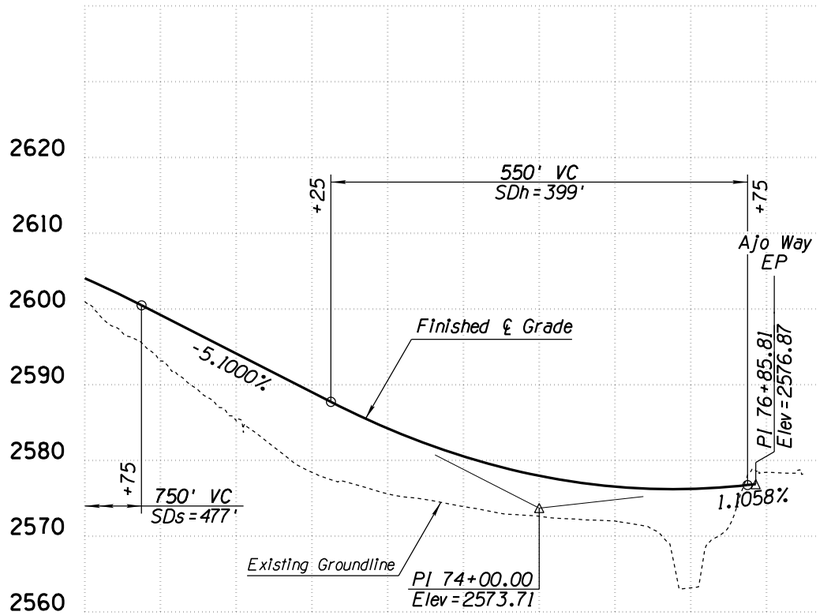
SHEET PR-45

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

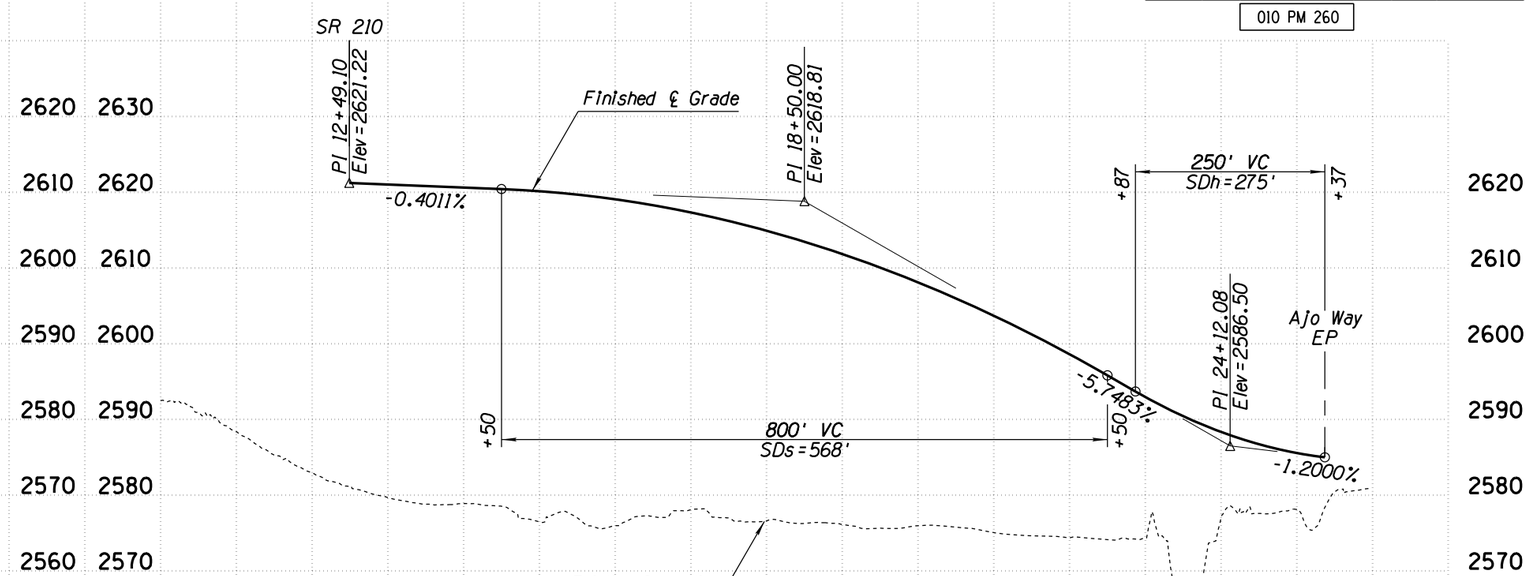
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v145.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	46	46	
		010 PM 260			



AJO RAMP A



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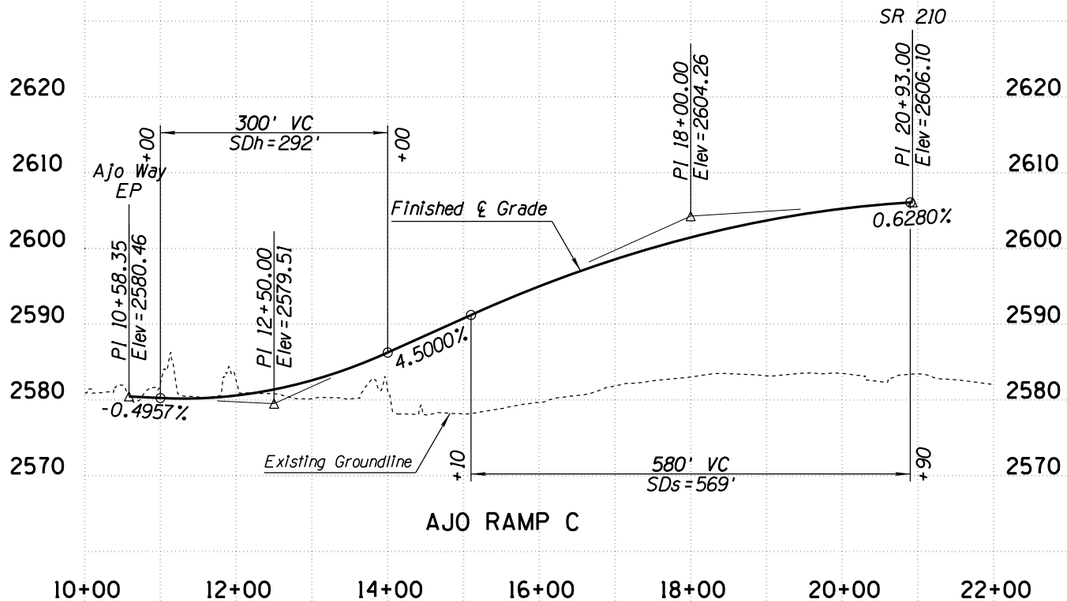
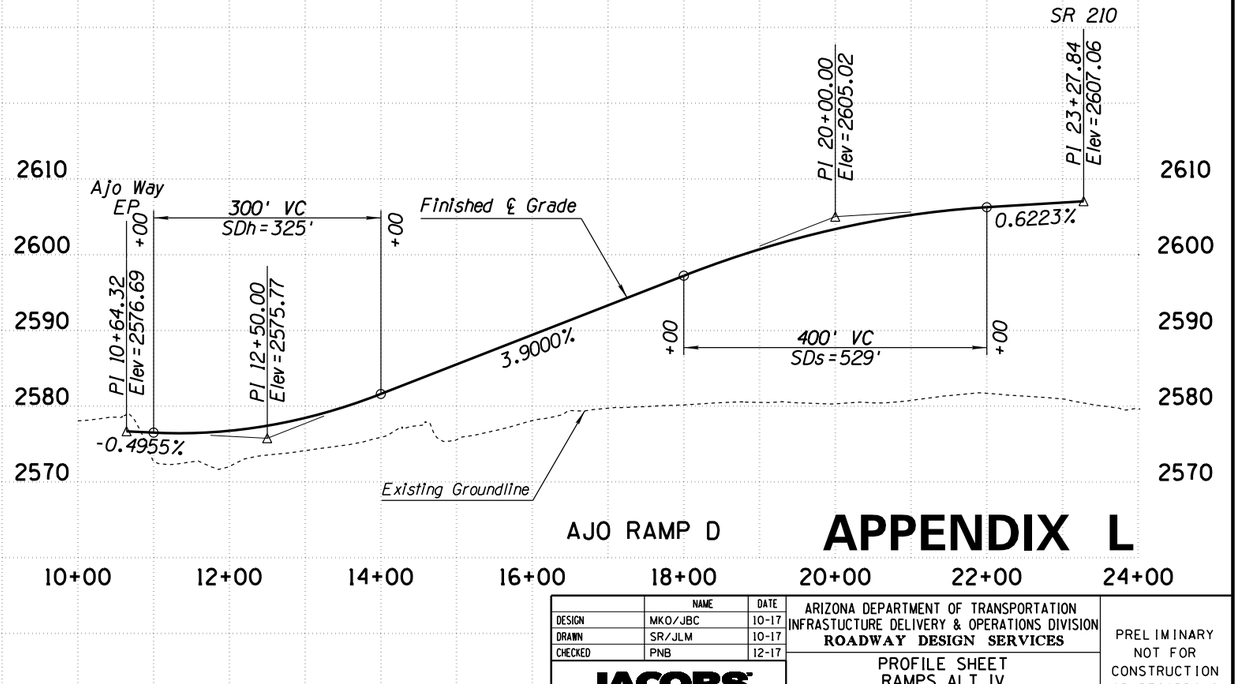


AJO RAMP C



AJO RAMP D

APPENDIX L

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PROFILE SHEET
RAMPS ALT IV
AJO RAMP A, B, C AND D

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	PR-46

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/18/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825v146.dgn

APPENDIX M
SYSTEM ALTERNATIVE IV GEOMETRICS

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	32	
		010 PM 260			

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

POB 311+98.66 (200)
POB 311+96.86 (100)
TS 321+93.50 (201)
TS 321+89.54 (101)
SC 325+83.50 (202)
SC 325+34.54 (102)
I-10 WB Existing ℄
I-10 EB Existing ℄
CS 341+78.04 (204)
CS 340+34.51 (104)
ST 345+53.04 (205)
ST 341+29.51 (105)
PC 349+91.21 (206)
PI 353+30.01 (101)
PT 354+20.68 (208)
PC 171+52.93 (500)
PI 173+09.63 (501)
PT 174+62.58 (502)
PI 333+10.90 (103)
PI 334+48.16 (203)
PC 351+18.31 (106)
PI 352+09.03 (206)
POE 355+30.38 (107)
PT 355+41.71 (108)
POB 355+41.71 = EQUATION: AHD 355+30.38 WB BK 355+41.71 EB BK 355+41.71 (300)
Ramp W-FR-2 Construction ℄
S 73°36'20" E 2051.58'
I-10 Median ℄
Ramp W-FR-1 Construction ℄
Park Ave Ramp B Construction ℄
Park Ave Ramp C Construction ℄
Kino Pkwy Ramp A Construction ℄
PC 180+54.23 (503)
PI 181+56.79 (504)
PT 182+59.29 (505)
PC 183+33.66 (506)
PI 184+74.44 (507)
PT 186+15.10 (508)
PC 10+00.00 (1000)
PI 11+75.08 (509)
PC 189+82.91 (1002)
PT 13+50.11 (510)
PI 191+13.35 (511)
PT 192+43.74 (301)
PC 375+93.29 (503)
POB 99+40.32 (400)
PC 20+92.53 (1003)
PC 199+63.50 (512)
PI 23+41.68 (1004)
PC 105+55.04 (401)
PT 202+27.76 (514)
PT 25+88.04 (1005)
POE 28+47.96 (1006)
POB 10+00.00 (1100)
PC 12+02.34 (1101)
PI 16+54.31 (1102)
PT 20+08.70 (1103)
PI 110+92.62 (402)
PI 200+95.84 (513)
PT 116+03.09 (403)
PC 119+42.77 (404)
PC 23+07.89 (1104)
PI 25+52.34 (1105)
PI 124+38.82 (5555)
PT 27+84.80 (1106)
PT 129+32.40 (406)
POE 131+88.72 (407)
S 57°03'39" E 19305.54'
PI 387+03.99 (302)
PT 397+99.24 (303)
PT 20+57.35 (1405)
POE 28+56.58 (1204)
PC 10+00.00 (600)
PI 11+60.20 (601)
PT 13+20.26 (602)
POE 18+83.99 (603)
Ramp E-FR Construction ℄
POB 10+00.00 (700)
POB 5+06.02 (800)
PC 12+19.40 (701)
PC 7+40.95 (801)
PI 8+71.85 (802)
PT 10+00.00 (803)
PI 15+63.67 (702)
Ramp FR-E Construction ℄
PC 12+92.44 (804)
PT 19+06.08 (703)
PI 15+05.63 (805)
Park Ave Ramp A Construction ℄
PT 17+11.94 (806)
POE 19+55.96 (807)
POB 10+00.00 (1200)
PC 11+66.24 (1201)
Park Ave Ramp D Construction ℄
PI 15+75.38 (1202)
PC 10+00.00 (1400)
PT 19+83.12 (1203)
PI 12+34.72 (1401)
PT 14+69.29 (1402)
PC 17+01.85 (1403)
PI 18+79.66 (1404)

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT IV

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET C-02.01

___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_g01.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	32	
		010 PM 260			

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

Kino Pkwy
Ramp B
Construction ℄

POB 9+29.67 (1500)
PC 10+00.00 (1501)
PI 12+21.97 (1502)
PC 43+47.39 (1107)
PI 44+72.89 (1108)
PT 45+97.39 (1109)
PC 17+27.52 (1504)
PC 48+54.55 (1110)
PI 50+48.64 (1111)
PT 52+35.91 (1112)
PT 23+32.85 (1506)
PT 24+67.48 (1507)
POE 109+75.00 (8004)
N 0°42'40" W
1701.47'
POB 10+00.00 (1600)
PC 54+38.67 (1113)
PC 11+08.52 (1601)
PI 55+09.67 (1114)
PI 12+03.08 (1602)
PT 12+91.72 (1603)
PT 55+80.32 (1115)
PC 20+05.66 (1604)
POE 65+36.16 (1116)
PI 21+75.49 (1605)
PCC 23+44.42 (1606)
PI 27+56.52 (1607)
PT 31+67.83 (1608)
Park Ave
Ramp C
Construction ℄
Kino Pkwy
Ramp C
Construction ℄
I-10 Median ℄
PI 20+34.77 (1505)
S 57°03'39" E
19305.54'
PT 14+43.72 (1503)
PT 23+65.78 (1804)
POB 10+00.00 (1800)
PC 10+78.81 (1801)
PCC 22+65.78 (1802)
PI 23+15.78 (1801)
PC 29+36.23 (1406)
PI 32+21.03 (1407)
PT 34+89.76 (1408)
PC 40+62.15 (1409)
PI 44+13.32 (1410)
95+00
PI 16+40.39 (1701)
PC 11+10.92 (1101)
PT 92+73.53 (8003)
PC 87+50.17 (8001)
PT 21+46.45 (1703)
POE 26+14.96 (1704)
PT 46+95.22 (1411)
POE 49+40.55 (1412)
POB 10+00.00 (1100)
PI 90+14.10 (8008)
POB 84+35.25 (8000)
Kino Pkwy
Ramp A
Construction ℄
Kino Pkwy
Ramp D2
Construction ℄
N 19°01'35" W
314.92'
Kino Pkwy
Ramp D
Construction ℄
Kino Pkwy
Construction ℄

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-02.02

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_g02.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	32	
		010 PM 260			

POB 74+40.12 (6400)

S 0°51'19" E
4250.00'

Country Club Rd
Construction ℄

Country Club Rd
Ramp B
Construction ℄

Country Club Rd
Ramp C
Construction ℄

PC 10+00.00 (2000)
PI 13+14.88 (2001)
PT 16+29.40 (2002)
PC 21+01.34 (2003)
PI 22+78.15 (2004)
PT 24+53.19 (2005)
POE 26+00.22 (2006)
POB 10+00.00 (2100)
PC 11+26.22 (2101)
PI 13+50.98 (2102)
PT 15+61.81 (2103)
PC 17+72.74 (2104)
PI 21+28.77 (2105)
PCC 24+82.74 (2106)
PI 28+43.19 (2107)
PT 32+03.10 (2108)

I-10 Median ℄

S 57°03'39" E
19305.54'

POE 31+95.65 (1908)

PC 10+00.00 (1900)
PI 13+60.45 (1901)
PCC 17+20.36 (1902)
PI 20+62.40 (1903)
PT 24+02.63 (1904)
PC 26+27.67 (1905)
PI 28+49.59 (1906)
PT 30+58.06 (1907)
POB 10+00.00 (2200)
PC 11+05.72 (2201)
PI 12+82.38 (2202)
PT 14+57.26 (2203)
PC 19+62.83 (2204)
PI 22+78.53 (2205)
PT 25+93.87 (2206)

Country Club Rd
Ramp A
Construction ℄

Country Club Rd
Ramp D
Construction ℄

POE 116+90.12 (6401)

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.03

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_g03.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	32	
		010 PM 260			

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

I-10 Median ℄

Alvernon Way Ramp B Construction ℄

Ramp SW Construction ℄

Ramp WN Construction ℄

Alvernon Way Ramp C Construction ℄

PC 10+00.00 (2400)

PI 13+60.14 (2401)

PT 17+19.33 (2402)

PC 24+61.15 (2403)

PI 26+44.67 (2404)

PC 25+50.22 (2700)

PI 27+75.37 (2701)

PT 30+00.00 (2702)

S 0°13'57" E 2690.07'

PT 28+27.07 (2500)

POE 29+56.52 (2406)

POB 10+00.00 (2500)

PC 38+56.72 (2703)

PI 13+15.33 (2502)

PT 15+02.74 (2503)

PC 16+90.66 (2504)

PI 19+78.10 (2505)

PC 11+12.03 (2501)

PI 43+78.17 (2704)

PT 48+35.44 (2705)

PCC 22+61.26 (2506)

PI 24+50.36 (2507)

PT 26+39.33 (2508)

POE 37+03.22 (2509)

PC 65+04.62 (2706)

S 57°03'39" E 19305.54'

PC 10+00.00 (2300)

PI 13+74.19 (2301)

PCC 17+47.32 (2302)

PI 20+19.89 (2303)

PT 22+88.80 (2304)

PC 26+11.41 (2305)

PI 29+76.92 (2306)

PT 33+09.57 (2307)

POE 34+59.82 (2308)

POB 10+00.00 (2800)

PI 516+15.92 (6320)

PC 11+76.59 (2601)

PI 13+64.17 (2602)

PT 15+51.22 (2603)

PC 17+43.09 (2604)

PI 522+86.58 (6321)

PI 22+19.08 (2605)

PT 26+92.32 (2606)

S 0°07'21" W 670.67'

S 0°20'51" E 335.83'

POE 526+22.42 (6322)

SR 210 Median ℄

Ramp EN Construction ℄

Alvernon Way Ramp A Construction ℄

Alvernon Way Ramp D Construction ℄

Ramp SE Construction ℄

NOTE:
See following sheet for additional alignment data.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.04

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_g04.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	32	
		010 PM 260			

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

I-10 Median ℄

Alvernon Way Ramp B Construction ℄

Ramp SW Construction ℄

Ramp WN Construction ℄

Alvernon Way Ramp C Construction ℄

POB 8+25.85 (3000)
PC 10+00.00 (3001)
PC 3+57.28 (2800)
POE 85+69.51 (2910)
PT 82+85.33 (2909)
PI 81+22.92 (2908)
PC 79+60.33 (2907)
PI 6+55.56 (2801)
PI 14+02.62 (3002)
PCC 9+51.66 (2802)
PT 18+00.00 (3003)
PT 73+25.10 (2906)
PC 20+65.80 (3004)
PI 17+25.08 (2803)
PT 29+07.41 (2808)
PI 26+26.87 (2807)
PCC 23+45.88 (2806)
PI 22+12.71 (2805)
PCC 20+79.43 (2804)
S 0°13'57" E 2690.07'
S 57°03'39" E 19305.54'
PC 59+83.10 (2904)
POB 40+00.00 (2900)
PC 52+13.34 (2901)
PI 53+12.01 (2902)
PT 54+10.68 (2903)
PI 30+41.54 (3005)
PT 36+82.37 (3006)
PI 72+67.97 (2905)
PC 41+46.65 (3007)
PI 45+47.30 (3008)
PT 49+46.65 (3009)
POE 51+65.52 (3010)
PI 516+15.92 (6320)
PI 522+86.58 (6321)
POE 526+22.42 (6322)
S 0°07'21" W 670.67'
S 0°20'51" E 335.83'

Ramp EN Construction ℄

Alvernon Way Ramp A Construction ℄

Alvernon Way Ramp D Construction ℄

Ramp SE Construction ℄

SR 210 Median ℄

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

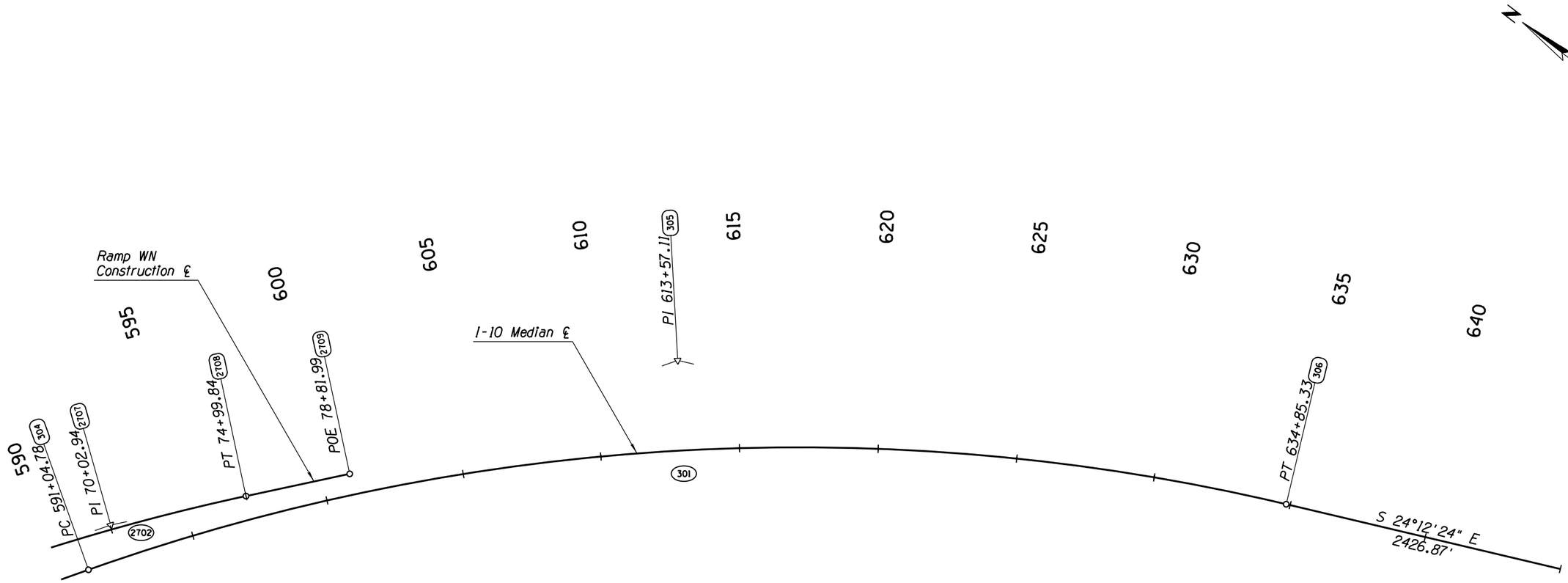
ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.05

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_g05.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	6	32	
		010 PM 260			



APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-02.06

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	7	32	
		010 PM 260			

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

PC 72+63.47 6500

PI 83+74.28 6501

Valencia Rd
Ramp B
Construction ℄

Valencia Rd
Ramp C
Construction ℄

I-10 Median ℄

PC 10+00.00 3200

PC 659+12.20 307

PI 12+52.98 3201

PCC 15+05.62 3202

PI 16+80.08 3203

PT 18+51.88 3204

PC 20+52.19 3205

PI 23+72.67 3206

PT 26+70.59 3207

POE 28+24.92 3208

PT 91+84.48 6502

PC 21+99.82 3306

PI 23+24.61 3307

PT 24+49.05 3308

PT 18+79.80 3305

POB 10+00.00 3300

PC 12+05.38 3301

PI 13+93.70 3302

PCC 14+02.48 3303

PI 13+93.70 3304

S 24°12'24" E
2426.87'

PI 663+16.44 307

S 22°11'09" E
292.99'

S 54°09'57" E
1901.43'

PC 10+00.00 3100

PI 14+87.93 3101

PT 19+73.51 3102

PT 667+20.59 309

PC 670+13.59 310

POB 10+00.00 3400

PC 11+92.45 3401

PI 13+54.88 3402

PT 15+04.21 3403

PI 679+51.79 311

POE 29+55.84 3404

PT 688+41.02 312

POE 28+64.66 3103

Valencia Rd
Ramp A
Construction ℄

Valencia Rd
Ramp D
Construction ℄

POE 116+64.86 6503

S 24°12'24" E
2426.87'

Valencia Rd
Construction ℄

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-02.07

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_g07.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	8	32	
		010 PM 260			

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

N

POE 119+95.73 (6609)
PT 117+23.93 (6608)
PI 116+12.74 (6607)
PRC 115+01.03 (6606)
PI 113+72.19 (6605)
PC 112+42.54 (6604)
N 1°10'17" E
271.80'
(6601)
(6600)
115
110
Craycroft Rd
Ramp B
Construction ℄
Craycroft Rd
Ramp C
Construction ℄
PI 106+95.64 (6603)
PI 104+42.73 (6602)
N 0°41'40" E
252.90'
705
710
715
725
730
735
740
745
750
755
760
765
S 51°25'18" E
202.92'
15
25
20
15
100
PC 707+42.45 (313)
POB 10+00.00 (3600)
PI 710+16.94 (314)
PT 712+91.32 (315)
PC 714+94.24 (316)
PI 717+68.72 (317)
PC 20+06.96 (3601)
PI 21+46.84 (3602)
PT 22+86.51 (3603)
PC 25+30.42 (3701)
PI 26+69.35 (3702)
PT 28+08.24 (3703)
(3700)
I-10 Median ℄
POE 26+07.62 (3604)
POB 10+00.00 (3700)
(305)
(304)
S 54°09'57" E
6355.18'
S 54°09'57" E
1901.43'
PT 720+43.10 (318)
POE 28+98.14 (3506)
(3500)
95
POB 10+00.00 (3800)
PC 10+00.00 (3500)
PI 13+05.85 (3501)
PT 16+11.13 (3502)
PC 18+14.16 (3503)
PI 20+13.47 (3504)
PT 22+12.61 (3505)
15
20
25
90
15
20
N 0°06'07" E
1562.90'
POB 88+79.84 (6601)
PC 20+83.01 (3801)
PI 22+73.47 (3802)
PT 24+63.78 (3803)
(3800)
Craycroft Rd
Ramp A
Construction ℄
Craycroft Rd
Construction ℄
Craycroft Rd
Ramp D
Construction ℄

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

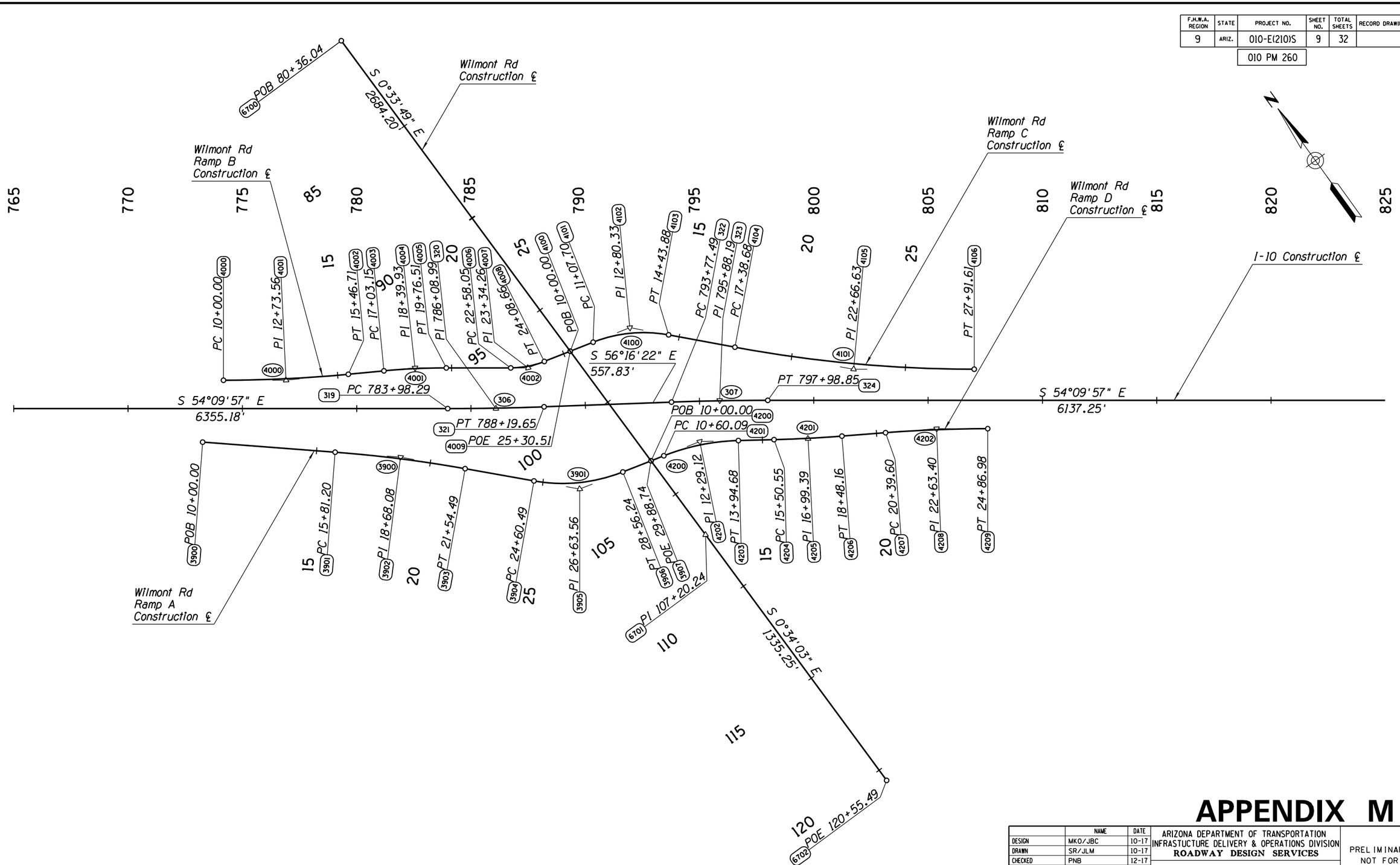
GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-02.08

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	9	32	
		010 PM 260			



APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.09

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_g09.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	10	32	
		010 PM 260			

PC 10+00.00 (4900) POB 10+00.00 (4700)
POB 10+00.00 (4800) POB 10+00.00 (5000) PC 12+00.00 (5001)
Kolb Rd SB Construction ℄
PI 13+94.29 (5002) PC 15+31.23 (4801) PT 15+87.24 (5003)
PC 11+14.00 (4901) PI 12+48.18 (4902) PT 13+81.93 (4903)
Kolb Rd Ramp C2 Construction ℄
PC 15+37.20 (4701) PI 16+53.58 (4702) PT 17+69.67 (4703) PC 20+35.64 (4704)
Kolb Rd NB Construction ℄
Kolb Rd Ramp C1 Construction ℄
PI 21+91.59 (4705) PC 21+92.02 (4904) PT 23+43.29 (4706)
PC 23+71.11 (4707) PI 23+89.69 (4708) PI 23+93.37 (4905)
PT 24+08.10 (4709) PC 25+03.53 (4810) PI 25+80.37 (4811)
PI 16+57.47 (4802) PT 17+83.34 (4803) PC 18+97.63 (4804) PC 19+95.39 (5004) PI 21+66.46 (4805) PI 19+88.98 (5005) PT 23+31.95 (4806)
Kolb Rd Ramp B1 Construction ℄
PC 23+77.49 (4807) PI 23+92.75 (4808)
PT 24+78.34 (5006) PT 24+12.73 (4809) PC 24+94.75 (4710) PI 25+72.37 (4711)
PT 25+94.07 (4906) PI 26+93.07 (4907) PT 26+53.98 (4812) PT 26+46.66 (4712)
PC 859+36.10 (325) (308)
PI 862+38.53 (326) PT 865+40.82 (327) PC 867+32.20 (328) PI 870+34.63 (329) PT 873+36.93 (330)
S 57°11'22" E 191.38'
Kolb Rd Ramp C Construction ℄
I-10 Median ℄
S 54°09'57" E 5600.00'
(309)
PT 35+66.22 (4815) PC 35+46.93 (4908)
Kolb Rd Ramp D1 Construction ℄
S 54°09'57" E 6137.25'
PC 34+16.72 (4813) PC 34+13.99 (4713) PI 34+93.05 (4814) PI 34+91.33 (4714)
PI 26+95.13 (5007)
PC 36+87.34 (4716) PI 37+49.20 (4909) PI 37+82.35 (4717) PT 38+71.80 (4718)
Kolb Rd Ramp D Construction ℄
Kolb Rd DDI NB Construction ℄
PT 39+50.77 (4910) PC 43+15.52 (4719) PI 44+39.59 (4720) PT 45+63.51 (4721) PC 47+45.99 (4911) PI 49+47.91 (4912) PT 51+49.17 (4913)
Kolb Rd Ramp B1 Construction ℄
PT 35+65.38 (4715) PC 36+72.37 (5008) PC 36+66.81 (4816) PI 37+70.78 (4817) PT 38+70.49 (4818) PI 39+81.62 (5009)
Kolb Rd Ramp A Construction ℄
PC 40+45.99 (4819) PI 41+67.16 (4820) PT 42+88.49 (5010) PT 42+87.99 (4821) PC 44+64.83 (4822)
Kolb Rd DDI SB Construction ℄
PC 44+54.71 (5011) PI 45+82.18 (4823) PT 46+99.24 (4824) PI 47+64.29 (5012) PT 50+71.47 (5013)
POE 53+82.87 (4722) PT 53+47.20 (4914) POE 53+84.18 (4825) POE 53+51.25 (5014)

NOTE:
See following sheet for additional alignment data.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.10

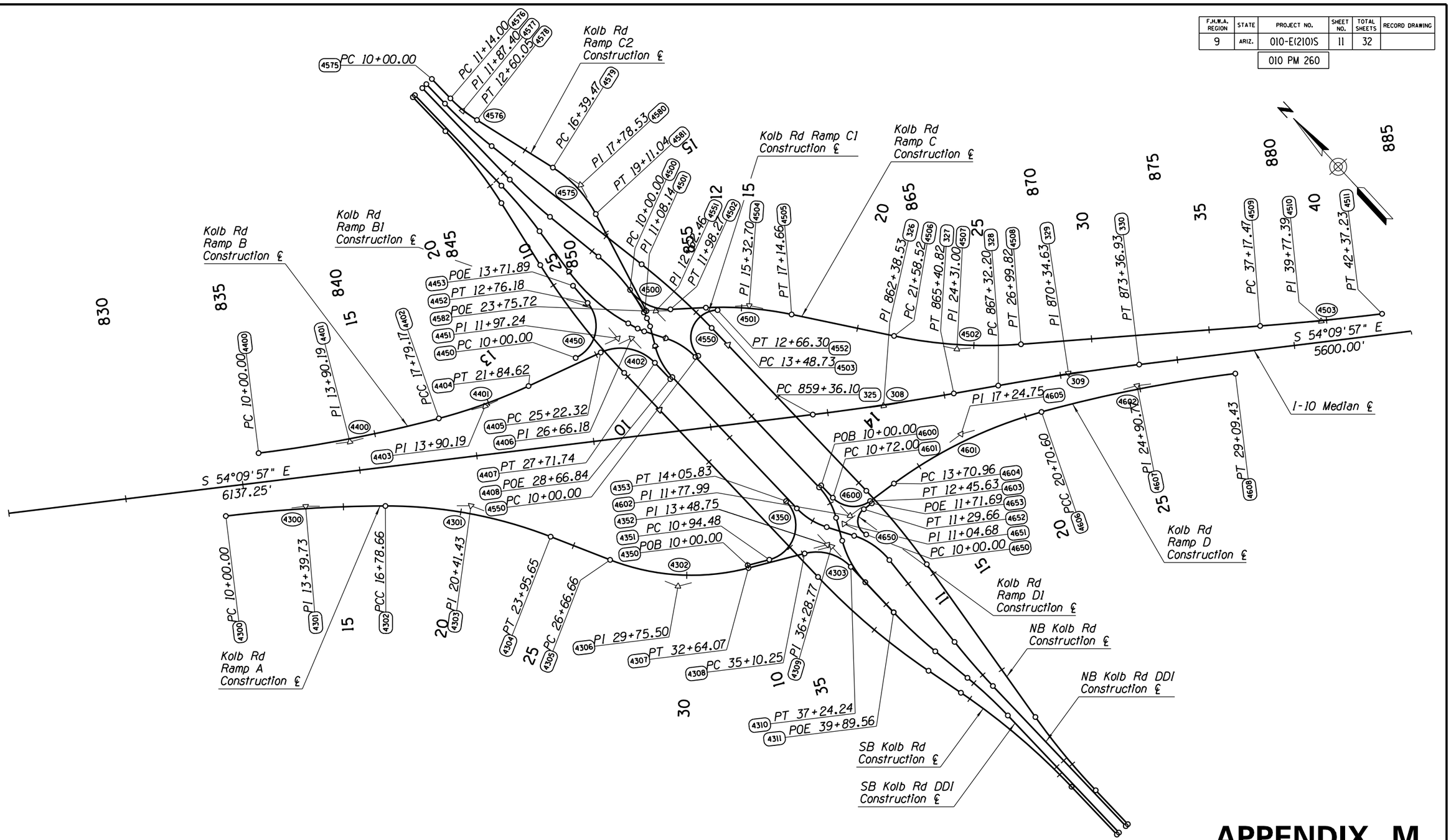
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_gl0.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	11	32	
		010 PM 260			

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



NOTE:
See following sheet for additional alignment data.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT IV

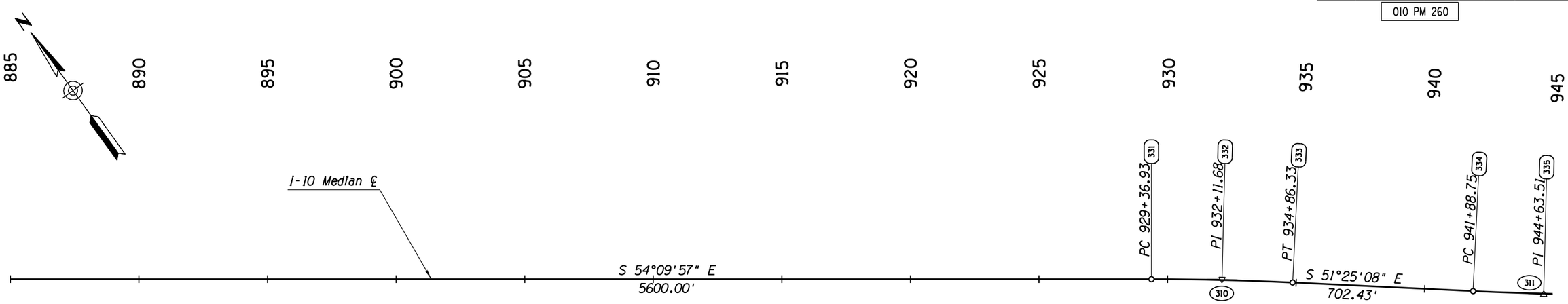
PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

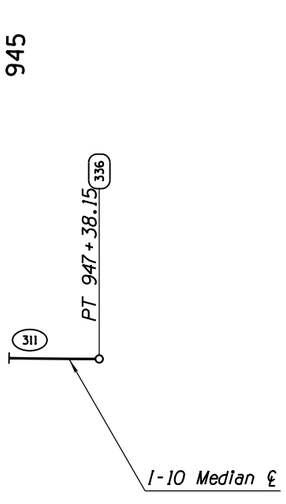
ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

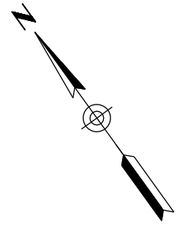
SHEET C-02.11

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	12	32	
		010 PM 260			







APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

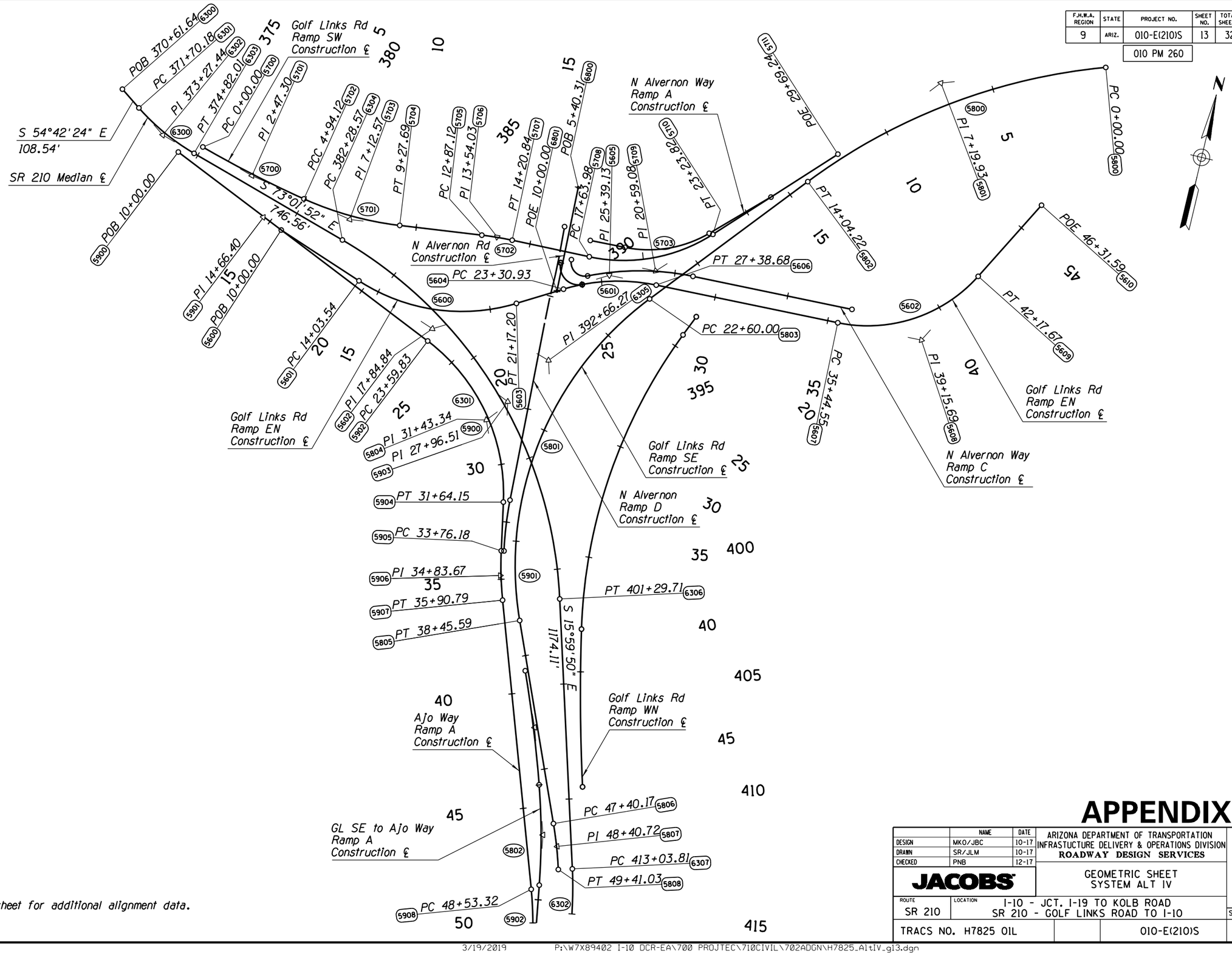
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.12

TRACS NO. H7825 01L		010-E(210)S	___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	13	32	
		010 PM 260			



NOTE:
See following sheet for additional alignment data.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

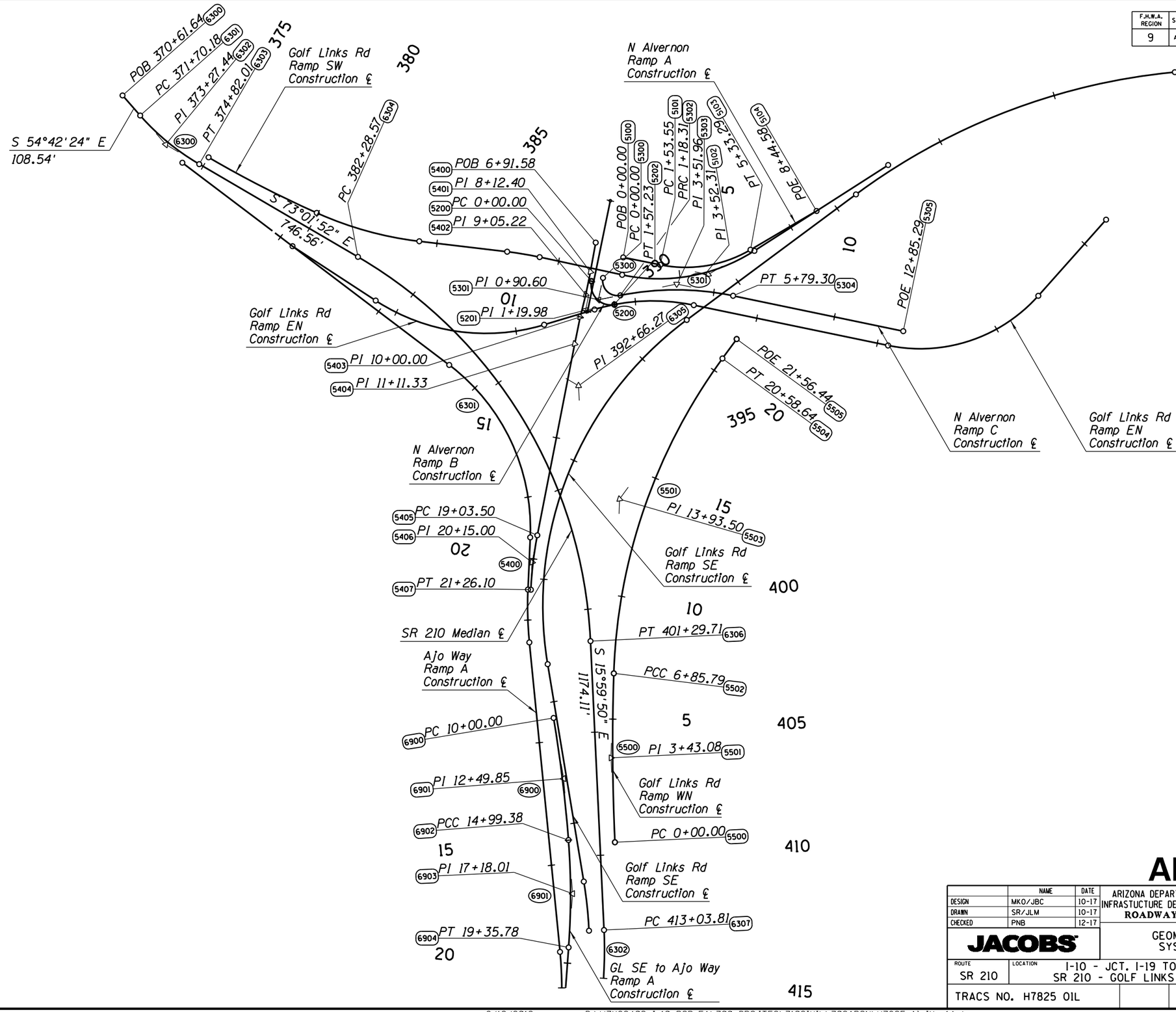
SHEET C-02.13

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_gl3.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	14	32	
		010 PM 260			



APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

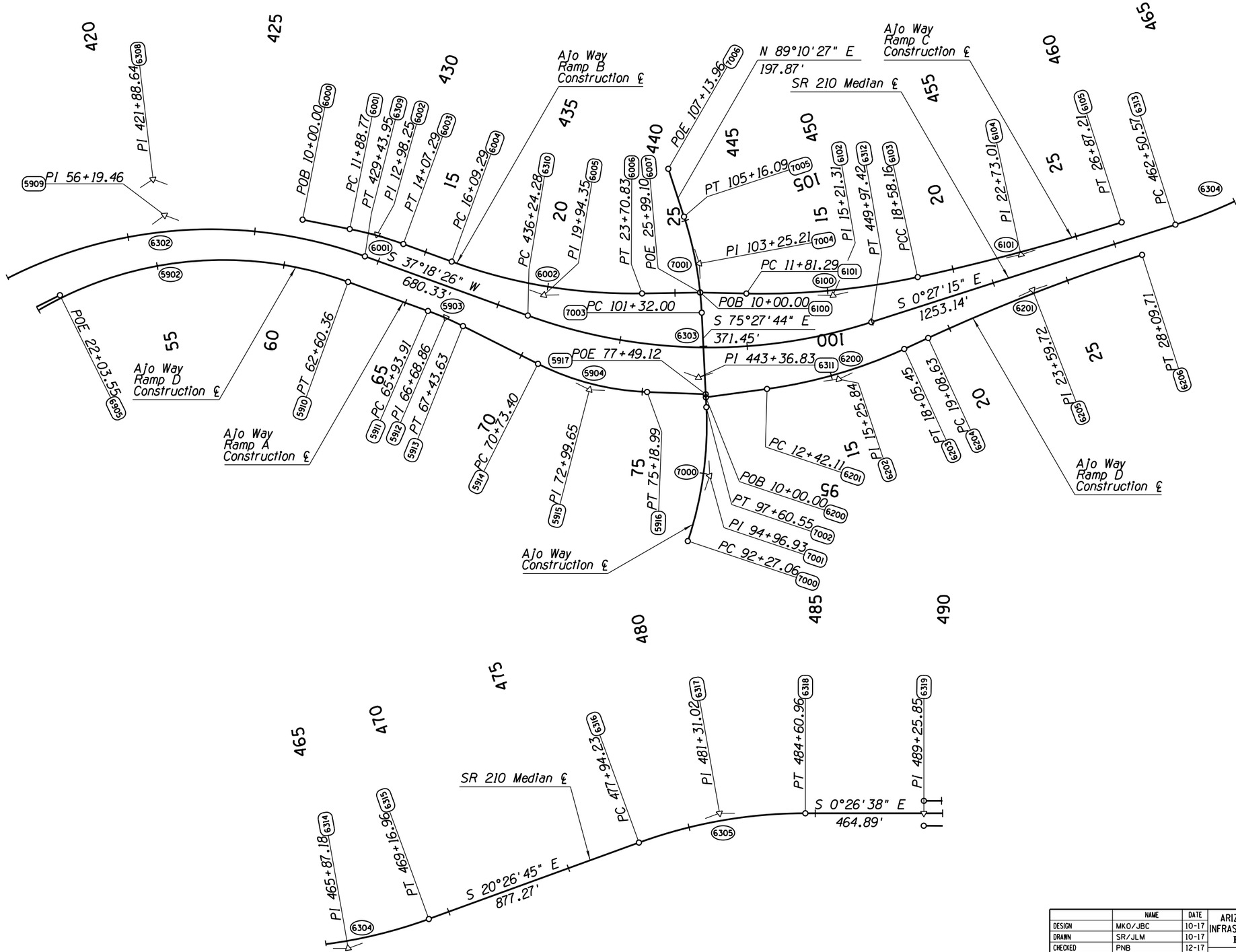
SHEET C-02.14

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_gl4.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	15	32	
		010 PM 260			



APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	C-02.15
TRACS NO. H7825 01L	010-E(210)S	___ OF ___

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

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_gl5.dgn

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	16	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
100	EXISTING EB I-10	POB	311+96.86	S 27°41'05" E	435498.196	990892.490									
101	EXISTING EB I-10	TS	321+89.54		434619.159	991353.696									
102	EXISTING EB I-10	SC	325+34.54	S 31°52'39" E	434317.727	991521.348		TOTAL	49°05'47" Lt		R+o=2359.41	2489.97		240.10	
103	EXISTING EB I-10	PI	333+10.90		433658.462	991931.345	100	MAIN	36°27'27" Lt	2°25'50"	2357.31	1499.97	776.36	124.55	
104	EXISTING EB I-10	CS	340+34.51	S68°20'06"E	433371.847	992652.857		SPIRAL	8°26'46" Lt		o=2.10	645.00			
105	EXISTING EB I-10	ST	347+29.51		433180.070	993320.176									
106	EXISTING EB I-10	PC	351+18.31	N76°46'52"W	433091.162	993698.675									
107	EXISTING EB I-10	PI	353+30.07		433042.739	993904.821	101	SIMPLE	3°10'32" Rt	0°45'00"	7639.44	423.41	211.76	2.93	
108	EXISTING EB I-10	PT	355+41.71	S73°36'20"E	432982.971	994107.969									
200	EXISTING WB I-10	POB	311+98.66	S 27°41'05" E	435543.459	990922.473									
201	EXISTING WB I-10	TS	321+93.50		434662.508	991384.683									
202	EXISTING WB I-10	SC	325+83.50	S32°31'38"E	434322.505	991575.475		TOTAL	49°05'47" Lt		R+o=2359.41	2359.54		232.17	
203	EXISTING WB I-10	PI	334+14.10		433622.201	992022.085	200	MAIN	39°35'51" Lt	2°29'00"	2307.21	1594.54	830.59	144.95	
204	EXISTING WB I-10	CS	341+78.04	N72°7'29"W	433367.256	992812.584		SPIRAL	4°39'22" Lt		o=2.75	375.00			
205	EXISTING WB I-10	ST	345+53.04		433271.676	993175.085									
206	EXISTING WB I-10	PC	349+97.27	N76°46'52"W	433170.092	993607.549									
207	EXISTING WB I-10	PI	352+09.03		433121.669	993813.696	201	SIMPLE	3°10'32" Rt	0°45'00"	7639.44	423.41	211.76	2.93	
208	EXISTING WB I-10	PT	354+20.68	S73°36'20"E	433061.900	994016.844									
209	EXISTING WB I-10	POE	355+30.38		433030.938	994122.082									
300	I-10 MEDIAN	POB	355+41.71		433006.955	994115.025									
301	I-10 MEDIAN	PC	375+93.29	S 73°36'20" E	432427.900	996083.190									
302	I-10 MEDIAN	PI	387+03.99		432114.405	997148.735	300	SIMPLE	16°32'41" Rt	0°45'00"	7639.44	2205.95	1110.70	80.32	e=0.023¼ft, Ls=160
303	I-10 MEDIAN	PT	397+99.24		431510.463	998080.892									
304	I-10 MEDIAN	PC	591+04.78	S 57°03'39" E	421013.133	1014283.051									
305	I-10 MEDIAN	PI	613+57.11		419788.435	1016173.318	301	SIMPLE	32°51'15" Rt	0°45'00"	7639.44	4380.55	2252.33	325.11	e=0.023¼ft, Ls=225
306	I-10 MEDIAN	PT	634+85.33		417734.149	1017096.843									
307	I-10 MEDIAN	PC	659+12.20	S 24°12'24" E	415520.672	1018091.935									
308	I-10 MEDIAN	PI	663+16.44		415151.977	1018257.685	302	SIMPLE	2°01'16" Rt	0°15'00"	22918.31	808.39	404.24	3.56	NC
309	I-10 MEDIAN	PT	667+20.59		414777.667	1018410.330									
310	I-10 MEDIAN	PC	670+13.59	S 22°11'09" E	414506.365	1018520.968									
311	I-10 MEDIAN	PI	679+51.79		413637.624	1018875.244	303	SIMPLE	31°58'48" Lt	1°45'00"	3274.04	1827.43	938.20	131.77	e=0.046½ft, Ls=258
312	I-10 MEDIAN	PT	688+41.02		413088.363	1019635.859									
313	I-10 MEDIAN	PC	707+42.45	S 54°09'57" E	411975.190	1021177.377									
314	I-10 MEDIAN	PI	710+16.94		411814.495	1021399.906	304	SIMPLE	2°44'40" Rt	0°30'00"	11459.16	548.86	274.48	3.29	NC
315	I-10 MEDIAN	PT	712+91.32		411643.330	1021614.486									
316	I-10 MEDIAN	PC	714+94.24	S 51°25'18" E	411516.791	1021773.122									
317	I-10 MEDIAN	PI	717+68.72		411345.626	1021987.702	305	SIMPLE	2°44'40" Lt	0°30'00"	11459.16	548.86	274.48	3.29	NC
318	I-10 MEDIAN	PT	720+43.10		411184.931	1022210.231									
319	I-10 MEDIAN	PC	783+98.29	S 54°09'57" E	407464.350	1027362.477									
320	I-10 MEDIAN	PI	786+08.99		407340.994	1027533.301	306	SIMPLE	2°06'25" Lt	0°30'00"	11459.16	421.37	210.71	1.94	NC
321	I-10 MEDIAN	PT	788+19.65		407224.001	1027708.544									
322	I-10 MEDIAN	PC	793+77.49	S 56°16'22" E	406914.269	1028172.488									
323	I-10 MEDIAN	PI	795+88.19		406797.276	1028347.731	307	SIMPLE	2°06'25" Rt	0°30'00"	11459.16	421.37	210.71	1.94	NC
324	I-10 MEDIAN	PT	797+98.85		406673.920	1028518.555									
325	I-10 MEDIAN	PC	859+36.10	S 54°09'57" E	403080.929	1033494.115									
326	I-10 MEDIAN	PI	862+38.53		402903.873	1033739.301	308	SIMPLE	3°01'25" Lt	0°30'00"	11459.16	604.72	302.43	3.99	NC
327	I-10 MEDIAN	PT	865+40.82		402739.996	1033993.486									

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.16

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	17	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
328	I-10 MEDIAN	PC	867+32.20	S 57°11'22" E	402636.295	1034154.334									
329	I-10 MEDIAN	PI	870+34.63		402472.419	1034408.518	309	SIMPLE	3°01'25" Rt	0°30'00"	11459.16	604.72	302.43	3.99	NC
330	I-10 MEDIAN	PT	873+36.93		402295.362	1034653.705									
331	I-10 MEDIAN	PC	929+36.93	S 54°09'57" E	399016.897	1039193.712									
332	I-10 MEDIAN	PI	932+11.68		398856.045	1039416.458	310	SIMPLE	2°44'49" Rt	0°30'00"	11459.16	549.40	274.75	3.29	NC
333	I-10 MEDIAN	PT	934+86.33		398684.703	1039631.240									
334	I-10 MEDIAN	PC	941+88.75	S 51°25'08" E	398246.655	1040180.345									
335	I-10 MEDIAN	PI	944+63.51		398075.313	1040395.127	311	SIMPLE	2°44'49" Lt	0°30'00"	11459.16	549.40	274.75	3.29	NC
336	I-10 MEDIAN	PT	947+38.15	S 54°09'57" E	397914.461	1040617.873									
400	RAMP W-FR-1	POB	99+40.32		432533.346	996301.399									
401	RAMP W-FR-1	PC	105+55.04	S 78°36'22" E	432411.907	996904.003									
402	RAMP W-FR-1	PI	110+92.62		432305.706	997430.993	401	SIMPLE	31°26'30" Rt	3°00'00"	1909.86	1048.05	537.58	74.22	e=0.050'/ft, Ls=129
403	RAMP W-FR-1	PT	116+03.09		431940.205	997825.209									
404	RAMP W-FR-1	PC	119+42.77	S 47°09'52" E	431709.260	998074.297									
405	RAMP W-FR-1	PI	124+38.82		431371.998	998438.056	402	SIMPLE	9°53'47" Lt	1°00'00"	5729.58	989.63	496.05	21.43	NC
406	RAMP W-FR-1	PT	129+32.40	S 57°03'39" E	431102.272	998854.367									
407	RAMP W-FR-1	POE	131+88.72		430962.899	999069.483									
500	RAMP W-FR-2	PC	171+52.93	S 53°04'33" E	433170.273	994068.303									
501	RAMP W-FR-2	PI	173+09.63		433076.136	994193.572	500	SIMPLE	21°40'32" Lt	7°00'00"	818.51	309.65	156.70	14.86	
502	RAMP W-FR-2	PT	174+62.58		433034.923	994344.753									
503	RAMP W-FR-2	PC	180+54.23	S 74°45'05" E	432879.312	994915.576									
504	RAMP W-FR-2	PI	181+56.79		432852.340	995014.520	501	SIMPLE	3°04'33" Lt	1°30'00"	3819.72	205.06	102.55	1.38	
505	RAMP W-FR-2	PT	182+59.29		432830.715	995114.769									
506	RAMP W-FR-2	PC	183+33.66	S 77°49'38" E	432815.034	995187.464									
507	RAMP W-FR-2	PI	184+74.44		432785.348	995325.084	502	SIMPLE	4°13'18" Rt	1°30'00"	3819.72	281.44	140.79	2.59	
508	RAMP W-FR-2	PT	186+15.10		432745.611	995460.145									
509	RAMP W-FR-2	PC	189+82.91	S 73°36'20" E	432641.797	995813.002									
510	RAMP W-FR-2	PI	191+13.35		432604.981	995938.136	503	SIMPLE	2°36'30" Lt	1°00'00"	5729.58	260.83	130.44	1.48	e=0.020'/ft, Ls=50
511	RAMP W-FR-2	PT	192+43.74		432573.898	996064.815									
512	RAMP W-FR-2	PC	199+63.50	S 76°12'50" E	432402.381	996763.839									
513	RAMP W-FR-2	PI	200+95.84		432370.845	996892.366	504	SIMPLE	7°55'40" Lt	3°00'00"	1909.86	264.26	132.34	4.58	e=0.030'/ft, Ls=60
514	RAMP W-FR-2	PT	202+27.76	S 84°08'29" E	432357.337	997024.013									
600	RAMP E-FR	PC	10+00.00	S 73°36'20" E	432825.111	994474.462									
601	RAMP E-FR	PI	11+60.20		432779.895	994628.146	600	SIMPLE	4°00'12" Rt	1°15'00"	4583.66	320.26	160.20	2.80	NC
602	RAMP E-FR	PT	13+20.26	S 69°36'08" E	432724.061	994778.298									
603	RAMP E-FR	POE	18+83.99		432527.584	995306.674									
700	RAMP FR-E	POB	10+00.00		432330.164	995978.893									
701	RAMP FR-E	PC	12+19.40	S 73°36'20" E	432283.015	996193.164									
702	RAMP FR-E	PI	15+63.67		432209.031	996529.390	700	SIMPLE	10°18'01" Rt	1°30'00"	3819.72	686.68	344.27	15.48	NC
703	RAMP FR-E	PT	19+06.08	S 69°36'08" E	432076.120	996846.968									
800	PARK AVE RAMP A1	POE	5+06.02		432327.422	995990.079									
801	PARK AVE RAMP A1	PC	7+40.95	S 73°30'01" E	432260.698	996215.336									
802	PARK AVE RAMP A1	PI	8+71.85		432223.521	996340.847	800	SIMPLE	20°19'56" Rt	7°50'55"	730.00	259.05	130.90	11.64	e=0.038'/ft
803	PARK AVE RAMP A1	PT	10+00.00		432145.050	996445.620									Exit Ls=74

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.17

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_g17.dgn

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

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	18	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
					Northing	Easting									
804	PARK AVE RAMP A1	PC	12+92.44	S 53°10'05" E	431969.741	996679.688									
805	PARK AVE RAMP A1	PI	15+05.63		431841.941	996850.324	801	SIMPLE	25°10'12" Lt	6°00'00"	954.93	419.50	213.19	23.51	e=0.042'/ft
806	PARK AVE RAMP A1	PT	17+11.94	S 78°20'17" E	431798.848	997059.111									Entrance Ls=81
807	PARK AVE RAMP A1	POE	19+55.96		431749.522	997298.094									
901	PARK AVE RAMP A2	POB	4+76.81		432327.422	995990.079									
902	PARK AVE RAMP A2	PC	7+12.39	S 73°30'01" E	432260.513	996215.962									
903	PARK AVE RAMP A2	PI	9+24.04		432200.403	996418.895	900	SIMPLE	32°20'13" Rt	7°50'55"	730.00	412.00	211.65	30.06	
904	PARK AVE RAMP A2	PT	11+24.39	S 41°09'48" E	432041.066	996558.204									
905	PARK AVE RAMP A2	POE	12+28.23		431962.895	996626.549									
1000	PARK AVE RAMP B	PC	10+00.00	S 73°36'20" E	432680.363	995483.724									
1001	PARK AVE RAMP B	PI	11+75.08		432630.948	995651.682	1000	SIMPLE	2°06'02" Lt	0°36'00"	9549.30	350.11	175.08	1.60	NC
1002	PARK AVE RAMP B	PT	13+50.11		432587.723	995821.338									
1003	PARK AVE RAMP B	PC	20+92.53	S 75°42'22" E	432404.425	996540.772									
1004	PARK AVE RAMP B	PI	23+41.68		432342.911	996782.211	1001	SIMPLE	14°51'55" Lt	3°00'00"	1909.86	495.51	249.15	16.18	e=0.030'/ft, Ls=60
1005	PARK AVE RAMP B	PT	25+88.04	N 89°25'43" E	432345.395	997031.351									
1006	PARK AVE RAMP B	POE	28+47.95		432347.987	997291.249									
1100	PARK AVE RAMP C	POB	10+00.00		432347.987	997291.249									
1101	PARK AVE RAMP C	PC	12+02.34	N 89°25'43" E	432350.005	997493.574									
1102	PARK AVE RAMP C	PI	16+54.31		432354.513	997945.522	1100	SIMPLE	64°30'34" Rt	8°00'00"	716.20	806.37	451.97	130.69	e=0.030'/ft
1103	PARK AVE RAMP C	PT	20+08.70		431948.499	998144.091									Entrance Ls=60
1104	PARK AVE RAMP C	PC	23+07.89	S 26°03'43" E	431679.730	998275.538									Exit Ls=72
1105	PARK AVE RAMP C	PI	25+52.34		431460.140	998382.933	1101	SIMPLE	30°59'56" Lt	6°30'00"	881.47	476.91	244.45	33.27	e=0.060'/ft, Ls=150
1106	PARK AVE RAMP C	PT	27+84.80		431327.223	998588.085									
1107	PARK AVE RAMP C	PC	43+47.39	S 57°03'39" E	430477.569	999899.486									
1108	PARK AVE RAMP C	PI	44+72.89		430409.330	1000004.811	1102	SIMPLE	12°30'00" Lt	5°00'00"	1145.92	250.00	125.50	6.85	e=0.051'/ft, Ls=148
1109	PARK AVE RAMP C	PT	45+97.39		430365.505	1000122.408									
1110	PARK AVE RAMP C	PC	48+54.55	S 69°33'39" E	430275.701	1000363.379									
1111	PARK AVE RAMP C	PI	50+48.64		430207.924	1000545.245	1103	SIMPLE	26°15'00" Rt	6°53'00"	832.38	381.36	194.08	22.33	e=0.060'/ft, Ls=145
1112	PARK AVE RAMP C	PT	52+35.91		430066.700	1000678.378									
1113	PARK AVE RAMP C	PC	54+38.67	S 43°18'39" E	429919.160	1000817.465									
1114	PARK AVE RAMP C	PI	55+09.67		429867.500	1000866.165	1104	SIMPLE	9°45'01" Lt	6°53'00"	832.38	141.65	71.00	3.02	e=0.060'/ft
1115	PARK AVE RAMP C	PT	55+80.32	S 53°03'39" E	429824.834	1000922.910									Entrance Ls=145
1116	PARK AVE RAMP C	POE	65+36.16		429250.409	1001686.886									Exit Ls=150
1200	PARK AVE RAMP D	POB	10+00.00		431765.439	997297.912									
1201	PARK AVE RAMP D	PC	11+66.24	S 65°13'47" E	431695.786	997448.860									
1202	PARK AVE RAMP D	PI	15+75.38		431524.366	997820.351	1200	SIMPLE	8°10'08" Rt	1°00'00"	5729.58	816.88	409.13	14.59	NC
1203	PARK AVE RAMP D	PT	19+83.12	S 57°03'39" E	431301.901	998163.716									
1204	PARK AVE RAMP D	POE	28+56.58		430826.960	998896.767									
1400	KINO PKWY RAMP A	PC	10+00.00	S 57°03'39" E	431445.002	998038.480									
1401	KINO PKWY RAMP A	PI	12+34.72		431317.374	998235.467	1400	SIMPLE	3°33'18" Rt	0°45'27"	7563.44	469.29	234.72	3.64	NC
1402	KINO PKWY RAMP A	PT	14+69.29		431177.778	998424.161									
1403	KINO PKWY RAMP A	PC	17+01.85	S 53°30'21" E	431039.463	998611.124									
1404	KINO PKWY RAMP A	PI	18+79.66		430933.714	998754.067	1401	SIMPLE	3°33'18" Lt	1°00'00"	5729.58	355.50	177.81	2.76	e=0.020'/ft, Ls=50
1405	KINO PKWY RAMP A	PT	20+57.35		430837.031	998903.292									

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APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.18

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_gl8.dgn

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	19	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
1406	KINO PKWY RAMP A	PC	29+36.23	S 57°03'39" E	430359.145	999640.887									
1407	KINO PKWY RAMP A	PI	32+21.03		430204.283	999879.910	1402	SIMPLE	33°14'49" Rt	6°00'23"	953.93	553.54	284.81	41.61	e=0.055‰ft, Ls=126
1408	KINO PKWY RAMP A	PT	34+89.76		429943.725	999994.905									
1409	KINO PKWY RAMP A	PC	40+62.15	S 23°48'50" E	429420.075	1000226.013									
1410	KINO PKWY RAMP A	PI	44+13.32		429098.795	1000367.808	1403	SIMPLE	61°43'30" Lt	9°45'00"	587.65	633.08	351.18	96.94	e=0.052‰ft, Ls=101
1411	KINO PKWY RAMP A	PT	46+95.22	S 85°32'20" E	429071.480	1000717.922									
1412	KINO PKWY RAMP A	POE	49+40.55		429052.398	1000962.505									
1500	KINO PKWY RAMP B	POB	9+29.67		430651.143	999550.663									
1501	KINO PKWY RAMP B	PC	10+00.00	S 57°03'39" E	430612.899	999609.691									
1502	KINO PKWY RAMP B	PI	12+21.97		430492.205	999795.978	1500	SIMPLE	4°26'14" Lt	1°00'00"	5729.58	443.71	221.97	4.30	NC
1503	KINO PKWY RAMP B	PT	14+43.72		430386.284	999991.044									
1504	KINO PKWY RAMP B	PC	17+27.52	S 61°29'53" E	430250.857	1000240.449									
1505	KINO PKWY RAMP B	PI	20+34.77		430104.241	1000510.460	1501	SIMPLE	24°12'47" Lt	4°00'00"	1432.40	605.33	307.25	32.58	e=0.050‰ft
1506	KINO PKWY RAMP B	PT	23+32.85	S 85°42'40" E	430081.263	1000816.849									Entrance Ls=125
1507	KINO PKWY RAMP B	POE	24+67.48		430071.194	1000951.106									Exit Ls=100
1600	KINO PKWY RAMP C	POB	10+00.00		430066.519	1000951.164									
1601	KINO PKWY RAMP C	PC	11+08.52	S 75°42'40" E	430039.736	1001056.325									
1602	KINO PKWY RAMP C	PI	12+03.08		430016.398	1001147.957	1600	SIMPLE	34°59'19" Rt	19°05'55"	300.00	183.20	94.56	14.55	e=0.050‰ft, Ls=86
1603	KINO PKWY RAMP C	PT	12+91.72		429944.735	1001209.646									
1604	KINO PKWY RAMP C	PC	20+05.66	S 40°43'21" E	429403.655	1001675.417									
1605	KINO PKWY RAMP C	PI	21+75.49		429274.947	1001786.212									
1606	KINO PKWY RAMP C	PCC	23+44.42	S 50°53'07" E	429167.807	1001917.978									
1607	KINO PKWY RAMP C	PI	27+56.52		428907.823	1002237.722	1601	SIMPLE	6°10'32" Lt	0°45'00"	7639.44	823.41	412.10	11.11	e=0.044‰ft, Ls=110
1608	KINO PKWY RAMP C	PT	31+67.83	S 57°03'39" E	428683.743	1002583.579									
1700	KINO PKWY RAMP D1	POB	10+00.00		429040.364	1000963.900									
1701	KINO PKWY RAMP D1	PC	11+07.97	N 89°27'40" E	429041.380	1001071.868									
1702	KINO PKWY RAMP D1	PI	16+40.39		429046.387	1001604.267	1700	SIMPLE	31°09'16" Rt	3°00'00"	1909.86	1038.48	532.42	72.82	e=0.044‰ft, Ls=110
1703	KINO PKWY RAMP D1	PT	21+46.45	S 59°23'04" E	428775.239	1002062.472									
1704	KINO PKWY RAMP D1	POE	26+14.96		428536.642	1002465.669									
1800	KINO PKWY RAMP D2	POB	10+00.00		429475.485	1000906.496									Entrance Ls=95
1801	KINO PKWY RAMP D2	PC	10+78.81	S 3°06'11" W	429396.788	1000902.230									Exit Ls=111
1802	KINO PKWY RAMP D2	PCC	22+65.78		429610.807	1000783.337	1800	SIMPLE	295°41'15" Rt	24°54'40"	230.00	1186.97	-1.00	-1.00	e=0.054‰ft
1803	KINO PKWY RAMP D2	PI	23+15.78	S 61°12'34" E	429586.726	1000827.157	1801	SIMPLE	1°00'00" Rt	1°00'00"	5729.58	100.00	50.00	0.22	NC
1804	KINO PKWY RAMP D2	PT	23+65.78		429561.884	1000870.551									
1900	COUNTRY CLUB RD RAMP A	PC	10+00.00	S 57°03'39" E	427011.687	1004884.781									
1901	COUNTRY CLUB RD RAMP A	PI	13+60.45		426815.696	1005187.285	1900	SIMPLE	5°24'10" Rt	0°45'00"	7639.44	720.36	360.45	8.50	NC
1902	COUNTRY CLUB RD RAMP A	PCC	17+20.36	S 51°39'30" E	426592.093	1005469.991									
1903	COUNTRY CLUB RD RAMP A	PI	20+62.40		426379.905	1005738.265	1901	SIMPLE	10°14'02" Rt	1°30'00"	3819.72	682.27	342.04	15.28	e=0.044‰ft
1904	COUNTRY CLUB RD RAMP A	PT	24+02.63		426123.430	1005964.571									Entrance Ls=202
1905	COUNTRY CLUB RD RAMP A	PC	26+27.67	S 41°25'27" E	425954.682	1006113.469									Exit Ls=137
1906	COUNTRY CLUB RD RAMP A	PI	28+49.59		425788.284	1006260.293	1902	SIMPLE	34°25'52" Lt	8°00'00"	716.20	430.39	221.91	33.59	e=0.041‰ft
1907	COUNTRY CLUB RD RAMP A	PT	30+58.06	S 75°51'19" E	425734.055	1006475.479									Entrance Ls=128
1908	COUNTRY CLUB RD RAMP A	POE	31+95.65		425700.433	1006608.895									Exit Ls=119

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All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.19

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	20	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
2000	COUNTRY CLUB RD RAMP B	PC	10+00.00	S 57°03'39" E	427006.358	1005172.547									
2001	COUNTRY CLUB RD RAMP B	PI	13+14.88	S 57°03'39" E	426835.145	1005436.808	2000	SIMPLE	4°43'14" Lt	0°45'00"	7639.44	629.40	314.88	6.49	NC
2002	COUNTRY CLUB RD RAMP B	PT	16+29.40		426686.259	1005714.263									
2003	COUNTRY CLUB RD RAMP B	PC	21+01.34	S 61°46'53" E	426463.108	1006130.113									
2004	COUNTRY CLUB RD RAMP B	PI	22+78.15		426379.504	1006285.912	2001	SIMPLE	14°04'26" Lt	4°00'00"	1432.40	351.85	176.81	10.87	e=0.028‴/ft
2005	COUNTRY CLUB RD RAMP B	PT	24+53.19	S 75°51'19" E	426336.296	1006457.365									Entrance Ls=245
2006	COUNTRY CLUB RD RAMP B	POE	26+00.22		426300.366	1006599.939									Exit Ls=52
2100	COUNTRY CLUB RD RAMP C	POB	10+00.00		426287.944	1006600.124									
2101	COUNTRY CLUB RD RAMP C	PC	11+26.22	S 75°51'19" E	426257.100	1006722.515									
2102	COUNTRY CLUB RD RAMP C	PI	13+50.98		426202.173	1006940.468	2100	SIMPLE	34°50'50" Rt	8°00'00"	716.20	435.59	224.77	34.44	e=0.041‴/ft
2103	COUNTRY CLUB RD RAMP C	PT	15+61.81		426032.560	1007087.952									Entrance Ls=112
2104	COUNTRY CLUB RD RAMP C	PC	17+72.74	S 41°00'29" E	425873.388	1007226.358									Exit Ls=108
2105	COUNTRY CLUB RD RAMP C	PI	21+28.77		425604.724	1007459.972	2101	SIMPLE	10°39'00" Lt	1°30'00"	3819.72	710.00	356.03	16.56	e=0.028‴/ft, Ls=70
2106	COUNTRY CLUB RD RAMP C	PCC	24+82.74	S 51°39'30" E	425383.862	1007739.213									
2107	COUNTRY CLUB RD RAMP C	PI	28+43.19		425160.259	1008021.920	2102	SIMPLE	5°24'10" Lt	0°45'00"	7639.44	720.36	360.45	8.50	NC
2108	COUNTRY CLUB RD RAMP C	PT	32+03.10	S 57°03'39" E	424964.267	1008324.424									
2200	COUNTRY CLUB RD RAMP D	POB	10+00.00		425688.011	1006609.080									
2201	COUNTRY CLUB RD RAMP D	PC	11+05.72	S 75°51'19" E	425662.176	1006711.595									
2202	COUNTRY CLUB RD RAMP D	PI	12+82.38		425619.005	1006882.897	2200	SIMPLE	14°03'42" Rt	4°00'00"	1432.40	351.54	176.66	10.85	e=0.028‴/ft
2203	COUNTRY CLUB RD RAMP D	PT	14+57.26		425535.509	1007038.576									Entrance Ls=53
2204	COUNTRY CLUB RD RAMP D	PC	19+62.83	S 61°47'37" E	425296.551	1007484.112									Exit Ls=70
2205	COUNTRY CLUB RD RAMP D	PI	22+78.53		425147.338	1007762.321	2201	SIMPLE	4°43'58" Rt	0°45'00"	7639.44	631.04	315.70	6.52	NC
2206	COUNTRY CLUB RD RAMP D	PT	25+93.87	S 57°03'39" E	424975.678	1008027.270									
2300	ALVERNON WAY RAMP A	PC	10+00.00	S 57°03'39" E	423642.075	1010085.626									
2301	ALVERNON WAY RAMP A	PI	13+74.19		423438.611	1010399.664	2300	SIMPLE	7°28'23" Rt	1°00'00"	5729.58	747.32	374.19	12.21	NC
2302	ALVERNON WAY RAMP A	PCC	17+47.32	S 49°35'16" E	423196.031	1010684.571									
2303	ALVERNON WAY RAMP A	PI	20+19.89		423019.329	1010892.105	2301	SIMPLE	16°14'40" Rt	3°00'00"	1909.86	541.48	272.57	19.35	e=0.044‴/ft, Ls=110
2304	ALVERNON WAY RAMP A	PT	22+88.80		422791.628	1011041.924									
2305	ALVERNON WAY RAMP A	PC	26+11.41	S 33°20'36" E	422522.116	1011219.252									
2306	ALVERNON WAY RAMP A	PI	29+76.92		422216.776	1011420.153	2302	SIMPLE	41°53'21" Lt	6°00'00"	954.93	698.15	365.50	67.56	e=0.042‴/ft
2307	ALVERNON WAY RAMP A	PT	33+09.57	S 75°13'57" E	422123.610	1011773.584									Entrance Ls=102
2308	ALVERNON WAY RAMP A	POE	34+59.82		422085.313	1011918.868									Exit Ls=125
2400	ALVERNON WAY RAMP B	PC	10+00.00	S 57°03'39" E	423779.778	1010152.629									
2401	ALVERNON WAY RAMP B	PI	13+60.14		423583.953	1010454.876	2400	SIMPLE	7°11'36" Lt	1°00'00"	5729.58	719.33	360.14	11.31	NC
2402	ALVERNON WAY RAMP B	PT	17+19.33		423427.516	1010779.266									
2403	ALVERNON WAY RAMP B	PC	24+61.15	S 64°15'15" E	423105.289	1011447.439									
2404	ALVERNON WAY RAMP B	PI	26+44.67		423025.570	1011612.744	2401	SIMPLE	10°58'42" Lt	3°00'01"	1909.76	365.92	183.52	8.80	e=0.028‴/ft
2405	ALVERNON WAY RAMP B	PT	28+27.07	S 75°13'57" E	422978.791	1011790.205									Entrance Ls=70
2406	ALVERNON WAY RAMP B	POE	29+56.52		422945.795	1011915.376									Exit Ls=105
2500	ALVERNON WAY RAMP C	POB	10+00.00		422933.372	1011915.427									
2501	ALVERNON WAY RAMP C	PC	11+12.03	S 75°13'57" E	422904.815	1012023.761									
2502	ALVERNON WAY RAMP C	PI	13+15.33		422852.997	1012220.336	2500	SIMPLE	39°04'13" Rt	10°00'00"	572.96	390.70	203.29	35.00	e=0.036‴/ft
2503	ALVERNON WAY RAMP C	PT	15+02.74		422688.870	1012340.293									Entrance Ls=105
2504	ALVERNON WAY RAMP C	PC	16+90.66	S 36°09'44" E	422537.152	1012451.181									Exit Ls=131

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.20

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

3/19/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825_AltIV_g20.dgn

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	21	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
2505	ALVERNON WAY RAMP C	PI	19+78.10		422305.088	1012620.791	2501	SIMPLE	17°07'04" Lt	3°00'00"	1909.86	570.60	287.44	21.51	e=0.044‰ft, Ent Ls=160
2506	ALVERNON WAY RAMP C	PCC	22+61.26	S 53°16'49" E	422133.227	1012851.193									Exit Ls=110
2507	ALVERNON WAY RAMP C	PI	24+50.36		422020.160	1013002.776	2502	SIMPLE	3°46'51" Lt	1°00'00"	5729.58	378.08	189.11	3.12	NC
2508	ALVERNON WAY RAMP C	PT	26+39.33	S 57°03'39" E	421917.333	1013161.484									
2509	ALVERNON WAY RAMP C	POE	37+03.22		421338.847	1014054.350									
2600	ALVERNON WAY RAMP D	POB	10+00.00		422072.890	1011918.919									
2601	ALVERNON WAY RAMP D	PC	11+76.59	S 75°13'57" E	422027.879	1012089.672									Entrance Ls=70
2602	ALVERNON WAY RAMP D	PI	13+64.17		421980.064	1012271.060	2600	SIMPLE	7°29'34" Rt	2°00'00"	2864.79	374.64	187.59	6.13	Exit Ls=93
2603	ALVERNON WAY RAMP D	PT	15+51.22		421909.004	1012444.665									e=0.035‰ft
2604	ALVERNON WAY RAMP D	PC	17+43.09	S 67°44'23" E	421836.323	1012622.231									
2605	ALVERNON WAY RAMP D	PI	22+19.08		421656.009	1013062.753	2601	SIMPLE	10°40'44" Rt	1°07'30"	5092.96	949.24	476.00	22.20	NC
2606	ALVERNON WAY RAMP D	PT	26+92.32	S 57°03'39" E	421397.188	1013462.233									
2700	RAMP WN	PC	25+50.22	S 1°22'42" E	424322.166	1011970.792									
2701	RAMP WN	PI	27+75.37		424097.080	1011976.208	2700	SIMPLE	6°44'48" Lt	1°30'00"	3819.72	449.78	225.15	6.63	NC
2702	RAMP WN	PT	30+00.00		423874.188	1012008.029									
2703	RAMP WN	PC	38+56.72	S 8°07'30" E	423026.073	1012129.113									
2704	RAMP WN	PI	43+78.17		422509.856	1012202.812	2701	SIMPLE	48°56'09" Lt	5°00'00"	1145.92	978.72	521.45	113.07	e=0.056‰ft
2705	RAMP WN	PT	48+35.44		422226.319	1012640.440									Entrance Ls=140
2706	RAMP WN	PC	65+04.62	S 57°03'39" E	421318.705	1014041.301									Exit Ls=280
2707	RAMP WN	PI	70+02.94		421047.749	1014459.510	2702	SIMPLE	7°27'51" Rt	0°45'00"	7639.44	995.22	498.31	16.24	e=0.023‰ft, Ls=54
2708	RAMP WN	PT	74+99.84	S 49°35'48" E	420724.760	1014838.977									
2709	RAMP WN	POE	78+81.99		420477.062	1015129.989									
2800	RAMP SW	PC	3+57.28	S 0°46'03" W	424431.621	1011836.345									
2801	RAMP SW	PI	6+55.56		424133.371	1011832.350	2800	SIMPLE	11°59'17" Rt	2°01'01"	2840.79	594.38	298.28	15.62	e=0.028‰ft
2802	RAMP SW	PCC	9+51.66	S 12°45'20" W	423842.455	1011766.494									
2803	RAMP SW	PI	17+25.08		423088.114	1011595.729	2801	SIMPLE	100°33'35" Rt	8°55'00"	642.57	1127.77	773.43	362.96	e=0.060‰ft, Ent Ls=141
2804	RAMP SW	PCC	20+79.43	N 66°41'05" W	423394.229	1010885.458									Exit Ls=135
2805	RAMP SW	PI	22+12.71		423446.979	1010763.064	2802	SIMPLE	3°59'48" Rt	1°30'00"	3819.72	266.45	133.28	2.32	NC
2806	RAMP SW	PCC	23+45.88	N 62°41'17" W	423508.132	1010644.644									
2807	RAMP SW	PI	26+27.87		423637.061	1010394.976	2804	SIMPLE	5°37'38" Rt	1°00'08"	5717.58	561.53	280.99	6.90	NC
2808	RAMP SW	PT	29+07.41	N 57°03'39" W	423789.849	1010159.154									
2900	RAMP EN	POB	40+00.00		424015.964	1009508.545									
2901	RAMP EN	PC	52+13.34	S 53°03'39" E	423286.790	1010478.335									
2902	RAMP EN	PI	53+12.01		423227.489	1010557.205	2900	SIMPLE	1°12'06" Lt	0°36'32"	9410.00	197.35	98.68	0.52	NC
2903	RAMP EN	PT	54+10.68		423169.854	1010637.301									
2904	RAMP EN	PC	59+83.10	S 54°15'45" E	422835.522	1011101.932									
2905	RAMP EN	PI	72+67.97		422085.066	1012144.863	2901	SIMPLE	130°50'42" Lt	9°45'00"	587.65	1342.00	1284.87	825.23	e=0.058‰ft, Ls=119
2906	RAMP EN	PT	73+25.10		423364.834	1012030.477									
2907	RAMP EN	PC	79+60.33	N 5°06'27" W	423997.537	1011973.926									
2908	RAMP EN	PI	81+22.92		424159.489	1011959.451	2902	SIMPLE	4°52'30" Rt	1°30'00"	3819.72	325.00	162.60	3.46	NC
2909	RAMP EN	PT	82+85.33	N 0°13'57" W	424322.086	1011958.791									
2910	RAMP EN	POE	85+69.51		424606.265	1011957.638									
3000	RAMP SE	POB	8+25.85		424605.867	1011859.638									
3001	RAMP SE	PC	10+00.00	S 0°13'57" E	424431.719	1011860.345									

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All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.21

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	22	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
3002	RAMP SE	PI	14+02.62		424029.102	1011861.979	3000	SIMPLE	16°00'00" Rt	2°00'00"	2864.80	800.00	402.62	28.15	e=0.035½ft, Ls=93
3003	RAMP SE	PT	18+00.00	S 15°46'03" W	423641.631	1011752.574									
3004	RAMP SE	PC	20+65.80		423385.833	1011680.347									
3005	RAMP SE	PI	30+41.54		422446.808	1011415.205	3001	SIMPLE	80°49'42" Lt	5°00'00"	1145.92	1616.57	975.74	359.14	e=0.056½ft, Ls=147
3006	RAMP SE	PT	36+82.37	S 65°03'39" E	422035.382	1012299.964									
3007	RAMP SE	PC	41+46.65		421839.615	1012720.957									
3008	RAMP SE	PI	45+47.30		421670.679	1013084.250	3002	SIMPLE	8°00'00" Rt	1°00'00"	5729.58	800.00	400.65	13.99	NC
3009	RAMP SE	PT	49+46.65	S 57°03'39" E	421452.826	1013420.496									
3010	RAMP SE	POE	51+65.52		421333.818	1013604.180									
3100	VALENCIA RD RAMP A	PC	10+00.00	S 24°12'24" E	415969.712	1017754.110									
3101	VALENCIA RD RAMP A	PI	14+87.93		415524.684	1017954.177	3100	SIMPLE	9°44'06" Rt	1°00'00"	5729.58	973.51	487.93	20.74	e=0.023½ft, Ls=59
3102	VALENCIA RD RAMP A	PT	19+73.51	S 14°28'18" E	415052.235	1018076.111									
3103	VALENCIA RD RAMP A	POE	28+64.66		414189.364	1018298.810									
3200	VALENCIA RD RAMP B	PC	10+00.00	S 24°12'24" E	415732.500	1018132.659									
3201	VALENCIA RD RAMP B	PI	12+52.98		415501.768	1018236.388	3200	SIMPLE	5°03'22" Lt	1°00'00"	5729.58	505.62	252.98	5.58	NC
3202	VALENCIA RD RAMP B	PCC	15+05.62	S 29°15'47" E	415281.075	1018360.047									
3203	VALENCIA RD RAMP B	PI	16+80.08		415128.882	1018445.325	3201	SIMPLE	17°18'46" Lt	5°00'00"	1145.92	346.25	174.46	13.20	e=0.051½ft, Ls=113
3204	VALENCIA RD RAMP B	PT	18+51.88	S 46°34'33" E	415008.961	1018572.030									
3205	VALENCIA RD RAMP B	PC	20+52.19		414871.270	1018717.511									
3206	VALENCIA RD RAMP B	PI	23+72.67		414650.974	1018950.271	3202	SIMPLE	37°06'15" Rt	6°00'00"	954.93	618.40	320.48	52.34	e=0.043½ft, Ls=83
3207	VALENCIA RD RAMP B	PT	26+70.59	S 9°28'18" E	414334.863	1019003.009									
3208	VALENCIA RD RAMP B	POE	28+24.92		414182.637	1019028.406									
3300	VALENCIA RD RAMP C	POB	10+00.00	S 9°28'18" E	414182.749	1019016.221									
3301	VALENCIA RD RAMP C	PC	12+05.38		413980.167	1019050.018									
3302	VALENCIA RD RAMP C	PI	13+05.98		413880.943	1019066.572	3300	SIMPLE	28°13'59" Lt	14°19'26"	400.00	197.10	100.60	12.46	e=0.055½ft, Ls=201
3303	VALENCIA RD RAMP C	PCC	14+02.48	S 37°42'17" E	413801.355	1019128.096									
3304	VALENCIA RD RAMP C	PI	16+41.63		413612.146	1019274.357	3304	SIMPLE	8°59'04" Lt	1°52'56"	3044.00	477.32	239.15	9.38	e=0.046½ft, Ls=128
3305	VALENCIA RD RAMP C	PT	18+79.80	S 46°41'20" E	413448.100	1019448.372									
3306	VALENCIA RD RAMP C	PC	21+99.82		413228.580	1019681.231									
3307	VALENCIA RD RAMP C	PI	23+24.61		413142.977	1019772.035	3305	SIMPLE	7°28'37" Lt	3°00'00"	1909.86	249.23	124.79	4.07	e=0.040½ft, Ls=102
3308	VALENCIA RD RAMP C	PT	24+49.05	S 54°09'57" E	413069.918	1019873.207									
3400	VALENCIA RD RAMP D	POB	10+00.00	S 14°28'18" E	414189.479	1018286.387									
3401	VALENCIA RD RAMP D	PC	11+92.45		414003.136	1018334.480									
3402	VALENCIA RD RAMP D	PI	13+54.88		413845.861	1018375.071	3400	SIMPLE	39°41'39" Lt	12°43'57"	450.00	311.76	162.43	28.42	e=0.051½ft, Ls=93
3403	VALENCIA RD RAMP D	PT	15+04.21	S 54°09'57" E	413750.769	1018506.754									
3404	VALENCIA RD RAMP D	POE	26+55.84		413076.558	1019440.399									
3500	CRAYCROFT RD RAMP A	PC	10+00.00	S 54°09'57" E	411874.661	1021104.782									
3501	CRAYCROFT RD RAMP A	PI	13+05.85		411695.602	1021352.743	3500	SIMPLE	6°06'41" Rt	1°00'00"	5729.58	611.13	305.85	8.16	e=0.023½ft, Ls=59
3502	CRAYCROFT RD RAMP A	PT	16+11.13	S 48°03'17" E	411491.162	1021580.232									
3503	CRAYCROFT RD RAMP A	PC	18+14.16		411355.448	1021731.246									
3504	CRAYCROFT RD RAMP A	PI	20+13.47		411222.230	1021879.484	3501	SIMPLE	3°59'04" Lt	1°00'00"	5729.58	398.45	199.30	3.47	e=0.020½ft, Ls=48
3505	CRAYCROFT RD RAMP A	PT	22+12.61	S 52°02'21" E	411099.634	1022036.621									
3506	CRAYCROFT RD RAMP A	POE	28+98.14		410677.950	1022577.110									

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
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APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.22

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	23	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
					Northing	Easting									
3600	CRAYCOFT RAMP B	POB	10+00.00	S 54°09'57" E	412075.718	1021249.971									
3601	CRAYCOFT RAMP B	PC	20+06.96		411486.205	1022066.327									
3602	CRAYCOFT RAMP B	PI	21+46.84	S 59°45'25" E	411404.310	1022179.735	3600	SIMPLE	5°35'28" Lt	2°00'00"	2864.79	279.55	139.89	3.41	e=0.035⅛ft, Ls=84
3603	CRAYCOFT RAMP B	PT	22+86.51		411333.853	1022300.582									
3604	CRAYCOFT RAMP B	POE	26+07.62		411172.119	1022577.989									
3700	CRAYCROFT RD RAMP C	POB	10+00.00	S 51°23'16" E	411172.119	1022577.989									
3701	CRAYCROFT RD RAMP C	PC	25+30.42		410217.067	1023773.836									
3702	CRAYCROFT RD RAMP C	PI	26+69.35	S 54°09'57" E	410130.363	1023882.400	3700	SIMPLE	2°46'42" Lt	1°00'00"	5729.58	277.82	138.94	1.68	e=0.023⅛ft, Ls=59
3703	CRAYCROFT RD RAMP C	PT	28+08.24		410049.023	1023995.039									
3800	CRAYCROFT RD RAMP D	POB	10+00.00		410662.751	1022577.083									
3801	CRAYCROFT RD RAMP D	PC	20+83.01	S 57°58'25" E	410088.422	1023495.263									
3802	CRAYCROFT RD RAMP D	PI	22+73.47		409987.420	1023656.733	3800	SIMPLE	3°48'28" Rt	1°00'00"	5729.58	380.78	190.46	3.16	NC
3803	CRAYCROFT RD RAMP D	PT	24+63.78	S 54°09'57" E	409875.919	1023811.140									
3900	WILMOT RD RAMP A	POB	10+00.00		407973.051	1026407.403									
3901	WILMOT RD RAMP A	PC	15+81.20	S 49°48'46" E	407598.012	1026851.401									
3902	WILMOT RD RAMP A	PI	18+68.08		407412.889	1027070.564	3900	SIMPLE	5°43'58" Rt	1°00'00"	5729.58	573.29	286.88	7.18	NC
3903	WILMOT RD RAMP A	PT	21+54.49		407206.799	1027270.138									
3904	WILMOT RD RAMP A	PC	24+60.49	S 44°04'47" E	406986.973	1027483.013									
3905	WILMOT RD RAMP A	PI	26+63.56		406841.097	1027624.278	3901	SIMPLE	31°39'34" Lt	8°00'00"	716.20	395.74	203.07	28.23	e=0.048⅛ft, Ls=144
3906	WILMOT RD RAMP A	PT	28+56.24	S 75°44'21" E	406791.074	1027821.086									
3907	WILMOT RD RAMP A	POE	29+88.74		406758.434	1027949.507									
4000	WILMOT RD RAMP B	PC	10+00.00	S 54°09'57" E	408139.049	1026639.964									
4001	WILMOT RD RAMP B	PI	12+73.56		407978.893	1026861.747	4000	SIMPLE	5°28'02" Lt	1°00'00"	5729.58	546.71	273.56	6.53	NC
4002	WILMOT RD RAMP B	PT	15+46.71		407840.596	1027097.780									
4003	WILMOT RD RAMP B	PC	17+03.15	S 59°37'59" E	407761.513	1027232.753									
4004	WILMOT RD RAMP B	PI	18+39.93		407692.364	1027350.769	4001	SIMPLE	5°28'02" Rt	2°00'00"	2864.79	273.36	136.78	3.26	e=0.030⅛ft, Ls=67
4005	WILMOT RD RAMP B	PT	19+76.51		407612.286	1027461.661									
4006	WILMOT RD RAMP B	PC	22+58.05	S 54°09'57" E	407447.456	1027689.917									
4007	WILMOT RD RAMP B	PI	23+34.26		407402.841	1027751.700	4002	SIMPLE	21°34'24" Lt	14°19'26"	400.00	150.61	76.21	7.19	e=0.060⅛ft, Ls=109
4008	WILMOT RD RAMP B	PT	24+08.66	S 75°44'21" E	407384.069	1027825.559									
4009	WILMOT RD RAMP B	POE	25+30.51		407354.054	1027943.647									
4100	WILMOT RD RAMP C	POB	10+00.00		407354.054	1027943.647									
4101	WILMOT RD RAMP C	PC	11+07.70	S 75°44'21" E	407327.525	1028048.025									
4102	WILMOT RD RAMP C	PI	12+80.33		407285.000	1028215.334	4100	SIMPLE	32°06'10" Rt	9°32'57"	600.00	336.18	172.63	24.34	e=0.051⅛ft, Ls=150
4103	WILMOT RD RAMP C	PT	14+43.88		407160.063	1028334.463									
4104	WILMOT RD RAMP C	PC	17+38.68	S 43°38'12" E	406946.706	1028537.900									
4105	WILMOT RD RAMP C	PI	22+66.63		406564.610	1028902.230	4101	SIMPLE	10°31'46" Lt	1°00'00"	5729.58	1052.93	527.95	24.27	e=0.023⅛ft, Ls=59
4106	WILMOT RD RAMP C	PT	27+91.61	S 54°09'57" E	406255.525	1029330.250									
4200	WILMOT RD RAMP D	POB	10+00.00		406758.434	1027949.507									
4201	WILMOT RD RAMP D	PC	10+60.09	S 75°44'21" E	406743.632	1028007.743									
4202	WILMOT RD RAMP D	PI	12+29.12		406701.994	1028171.564	4200	SIMPLE	20°04'32" Rt	6°00'00"	954.93	334.60	169.03	14.84	e=0.043⅛ft, Ls=83
4203	WILMOT RD RAMP D	PT	13+94.68		406606.653	1028311.139									
4204	WILMOT RD RAMP D	PC	15+50.55	S 55°39'49" E	406518.737	1028439.843									

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.23

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	24	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
4205	WILMOT RD RAMP D	PI	16+99.39		406434.784	1028562.745	4201	SIMPLE	2°58'34" Lt	1°00'00"	5729.58	297.61	148.84	1.93	e=0.020‰ft, Ls=48
4206	WILMOT RD RAMP D	PT	18+48.16	S 58°38'23" E	406357.325	1028689.841									
4207	WILMOT RD RAMP D	PC	20+39.60		406257.698	1028853.312									
4208	WILMOT RD RAMP D	PI	22+63.40		406141.226	1029044.420	4202	SIMPLE	4°28'26" Rt	1°00'00"	5729.58	447.38	223.80	4.37	e=0.023‰ft, Ls=59
4209	WILMOT RD RAMP D	PT	24+86.98	S 54°09'57" E	406010.203	1029225.861									
4300	KOLB RD RAMP A	PC	10+00.00	S 54°09'57" E	404457.918	1031375.458									
4301	KOLB RD RAMP A	PI	13+39.73		404259.027	1031650.882	4203	SIMPLE	6°47'12" Rt	1°00'00"	5729.58	678.66	339.73	10.06	e=0.023‰ft, Ls=59
4302	KOLB RD RAMP A	PCC	16+78.66	S 47°22'45" E	404028.982	1031900.873									
4303	KOLB RD RAMP A	PI	20+41.43		403783.339	1032167.814	4204	SIMPLE	21°30'35" Rt	3°00'00"	1909.86	716.99	362.76	34.15	e=0.044‰ft, Ls=106
4304	KOLB RD RAMP A	PT	23+95.65	S 25°52'11" E	403456.927	1032326.097									
4305	KOLB RD RAMP A	PC	26+66.66		403213.079	1032444.343									
4306	KOLB RD RAMP A	PI	29+75.50		402935.183	1032579.101	4205	SIMPLE	35°50'41" Lt	6°00'00"	954.93	597.41	308.85	48.70	e=0.043‰ft, Ls=125
4307	KOLB RD RAMP A	PT	32+64.07	S 61°42'52" E	402788.831	1032851.069									
4308	KOLB RD RAMP A	PC	35+10.25		402672.175	1033067.852									
4309	KOLB RD RAMP A	PI	36+28.77		402616.012	1033172.222	4206	SIMPLE	61°18'10" Rt	28°38'52"	200.00	213.99	118.52	32.48	NC
4310	KOLB RD RAMP A	PT	37+24.24	S 0°24'41" E	402497.493	1033173.073									
4311	KOLB RD RAMP A	POE	39+89.56		402232.175	1033174.979									
4350	KOLB RD RAMPS A1	POB	10+00.00	S 61°42'52" E	402799.398	1032856.755									
4351	KOLB RD RAMPS A1	PC	10+94.48		402754.625	1032939.958									
4352	KOLB RD RAMPS A1	PI	13+48.75		402634.136	1033163.865	4300	SIMPLE	118°55'29" Lt	38°11'50"	150.00	311.34	254.27	145.21	NC
4354	KOLB RD RAMPS A1	PT	14+05.83	N 0°38'21" W	402888.387	1033161.029									
4400	KOLB RD RAMP B	PC	10+00.00	S 54°09'57" E	404559.315	1031658.658									
4401	KOLB RD RAMP B	PI	13+90.19		404330.883	1031974.990	4400	SIMPLE	7°47'30" Lt	1°00'00"	5729.58	779.17	390.19	13.27	NC
4402	KOLB RD RAMP B	PCC	17+79.17	S 61°57'27" E	404147.446	1032319.370									
4403	KOLB RD RAMP B	PI	19+82.43		404051.892	1032498.760	4401	SIMPLE	10°08'10" Lt	2°30'00"	2291.83	405.44	203.25	9.00	e=0.040‰ft, Ls=96
4404	KOLB RD RAMP B	PT	21+84.62	S 72°05'37" E	403989.400	1032692.166									
4405	KOLB RD RAMP B	PC	25+22.32		403885.571	1033013.508									
4406	KOLB RD RAMP B	PI	26+66.18		403841.339	1033150.399	4402	SIMPLE	71°27'17" Rt	28°38'52"	200.00	249.42	143.86	46.36	e=0.020‰ft, Ls=36
4407	KOLB RD RAMP B	PT	27+71.74	S 0°38'21" E	403697.489	1033152.004									
4408	KOLB RD RAMP B	POE	28+66.84		403602.390	1033153.064									
4450	KOLB RD RAMP B1	PC	10+00.00	S 72°05'37" E	403941.130	1032919.615									
4451	KOLB RD RAMP B1	PI	11+97.24		403880.487	1033107.301	4450	SIMPLE	105°29'40" Lt	38°11'50"	150.00	276.18	197.24	97.80	NC
4452	KOLB RD RAMP B1	PT	12+76.18	N 2°24'43" E	404077.552	1033115.602									
4453	KOLB RD RAMP B1	POE	13+71.89		404173.170	1033119.629									
4500	KOLB RD RAMP C	PC	10+00.00	S 6°51'31" W	403995.734	1033284.848									
4501	KOLB RD RAMP C	PI	11+08.14		403888.365	1033271.933	4500	SIMPLE	56°48'04" Lt	28°38'52"	200.00	198.27	108.14	27.36	NC
4502	KOLB RD RAMP C	PT	11+98.27	S 49°56'33" E	403818.770	1033354.705									
4503	KOLB RD RAMP C	PC	13+48.73		403721.940	1033469.868									
4504	KOLB RD RAMP C	PI	15+32.70		403603.548	1033610.675	4501	SIMPLE	14°38'14" Rt	4°00'00"	1432.40	365.93	183.97	11.77	e=0.046‰ft, Ls=153
4505	KOLB RD RAMP C	PT	17+14.66	S 35°18'20" E	403453.417	1033716.995									
4506	KOLB RD RAMP C	PC	21+58.52		403091.189	1033973.519									
4507	KOLB RD RAMP C	PI	24+31.00		402868.829	1034130.990	4502	SIMPLE	16°14'20" Lt	3°00'00"	1909.86	541.29	272.47	19.34	e=0.050‰ft, Ls=128
4508	KOLB RD RAMP C	PT	26+99.82	S 51°32'39" E	402699.376	1034344.360									
4509	KOLB RD RAMP C	PC	37+17.47		402066.487	1035141.273									

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Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.24

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	25	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES		CURVE REF NO.							
					Northing	Easting		Type	Delta	DOC	Radius	L	T	Ext	Super
4510	KOLB RD RAMP C	PI	39+77.39		401904.838	1035344.816	4503	SIMPLE	2°37'18" Lt	0°30'16"	11359.16	519.76	259.92	2.97	NC
4511	KOLB RD RAMP C	PT	42+37.23	S 54°09'57" E	401752.668	1035555.540									
4550	KOLB RD RAMP C1	PC	10+00.00	N 0°38'21" W	403593.824	1033307.169									
4551	KOLB RD RAMP C1	PI	12+62.46		403856.263	1033304.242	4550	SIMPLE	132°40'37" Rt	49°49'21"	115.00	266.30	262.46	171.54	NC
4552	KOLB RD RAMP C1	PT	12+66.30	S 47°57'44" E	403680.517	1033499.169									
4575	KOLB RD RAMP C2	POB	10+00.00		405223.820	1033277.108									
4576	KOLB RD RAMP C2	PC	11+14.00	S 0°52'03" E	405109.833	1033278.834									
4577	KOLB RD RAMP C2	PI	11+87.40		405036.440	1033279.945	4575	SIMPLE	14°13'52" Lt	9°44'39"	588.00	146.05	73.40	4.56	e=0.057%ft, Ls=118
4578	KOLB RD RAMP C2	PT	12+60.05		404965.573	1033299.065									
4579	KOLB RD RAMP C2	PC	16+39.47	S 15°05'55" E	404599.242	1033397.898									
4580	KOLB RD RAMP C2	PI	17+78.53		404464.987	1033434.119	4576	SIMPLE	30°23'21" Rt	11°11'26"	512.00	271.56	139.06	18.55	e=0.060%ft, Ls=124
4581	KOLB RD RAMP C2	PT	19+11.04	S 15°17'27" W	404330.854	1033397.447									
4582	KOLB RD RAMP C2	POE	23+75.72		403882.615	1033274.901									
4600	KOLB RD RAMP D	POB	10+00.00		402836.317	1033315.619									
4601	KOLB RD RAMP D	PC	10+72.00	S 0°38'21" E	402764.324	1033316.422									
4602	KOLB RD RAMP D	PI	11+77.99		402658.343	1033317.604	4600	SIMPLE	82°54'15" Lt	47°44'47"	120.00	173.63	105.99	40.10	e=0.020%ft, Ls=48
4603	KOLB RD RAMP D	PT	12+45.63		402646.424	1033422.920									
4604	KOLB RD RAMP D	PC	13+70.96	S 83°32'36" E	402632.330	1033547.459									
4605	KOLB RD RAMP D	PI	17+24.75		402592.546	1033898.998	4601	SIMPLE	20°59'21" Rt	3°00'00"	1909.86	699.64	353.78	32.49	e=0.044%ft, Ls=106
4606	KOLB RD RAMP D	PCC	20+70.60	S 62°33'15" E	402429.484	1034212.962									
4607	KOLB RD RAMP D	PI	24+90.77		402235.826	1034585.837	4602	SIMPLE	8°23'18" Rt	1°00'00"	5729.58	838.83	420.17	15.39	e=0.023%ft, Ls=59
4608	KOLB RD RAMP D	PT	29+09.43	S 54°09'57" E	401989.843	1034926.472									
4650	KOLB RD RAMP D1	PC	10+00.00	N 21°27'41" W	402553.577	1033314.084									
4651	KOLB RD RAMP D1	PI	11+04.68		402650.999	1033275.785	4650	SIMPLE	117°55'05" Rt	90°56'44"	63.00	129.66	104.68	59.18	NC
4652	KOLB RD RAMP D1	PT	11+29.66	S 83°32'36" E	402639.227	1033379.800									
4653	KOLB RD RAMP D1	POE	11+71.69		402634.500	1033421.571									
4700	KOLB RD DDI NB	POB	10+00.00		405222.972	1033221.114									
4701	KOLB RD DDI NB	PC	15+37.20	S 0°52'03" E	404685.837	1033229.247									
4702	KOLB RD DDI NB	PI	16+53.58		404569.469	1033231.009	4700	SIMPLE	6°58'27.1971"Lt	3°00'00"	1909.85	232.47	116.38	3.54	e=0.044%ft, Ls=106
4703	KOLB RD DDI NB	PT	17+69.67		404454.177	1033246.887									
4704	KOLB RD DDI NB	PC	20+35.64	S 7°50'30" E	404190.695	1033283.175									
4705	KOLB RD DDI NB	PI	21+91.59		404036.206	1033304.452	4701	SIMPLE	23°07'56" Rt	7°31'09"	762.00	307.65	155.95	15.79	NC
4706	KOLB RD DDI NB	PT	23+43.29		403885.779	1033263.326									
4707	KOLB RD DDI NB	PC	23+71.11	S 15°17'27" W	403858.939	1033255.988									
4708	KOLB RD DDI NB	PI	23+89.69		403841.021	1033251.089	4702	SIMPLE	13°04'57" Rt	35°22'04"	162.00	36.99	18.58	1.06	NC
4709	KOLB RD DDI NB	PT	24+08.10		403824.677	1033242.262									
4710	KOLB RD DDI NB	PC	24+94.75	S 28°22'23" W	403748.433	1033201.083									
4711	KOLB RD DDI NB	PI	25+72.37		403680.138	1033164.198	4703	SIMPLE	29°00'44" Lt	19°05'55"	300.00	151.91	77.62	9.88	NC
4712	KOLB RD DDI NB	PT	26+46.66	S 0°38'21" E	403602.524	1033165.064									
4713	KOLB RD DDI NB	PC	34+13.99	S 0°38'21" E	402835.246	1033173.622									
4714	KOLB RD DDI NB	PI	34+91.33		402757.904	1033174.485	4704	SIMPLE	28°54'53" Lt	19°05'55"	300.00	151.40	77.35	9.81	NC
4715	KOLB RD DDI NB	PT	35+65.38		402690.621	1033212.635									
4716	KOLB RD DDI NB	PC	36+87.34	S 29°33'13" E	402584.534	1033272.787									
4717	KOLB RD DDI NB	PI	37+82.35		402501.883	1033319.652	4705	SIMPLE	33°52'27" Rt	18°21'51"	312.00	184.46	95.01	14.15	NC

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.25

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	26	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
4718	KOLB RD DDI NB	PT	38+71.80	S 4°19'14" W	402407.139	1033312.494									
4719	KOLB RD DDI NB	PC	43+15.52		401964.672	1033279.065									
4720	KOLB RD DDI NB	PI	44+39.59		401840.956	1033269.718	4706	SIMPLE	4°57'35" Lt	2°00'00"	2864.79	247.98	124.07	2.69	e=0.035‰ft, Ls=84
4721	KOLB RD DDI NB	PT	45+63.51	S 0°38'21" E	401716.896	1033271.102									
4722	KOLB RD DDI NB	POE	53+82.87		400897.585	1033280.241									
4800	KOLB RD DDI SB	POB	10+00.00	S 0°52'03" E	405222.313	1033177.619									
4801	KOLB RD DDI SB	PC	15+31.23		404691.139	1033185.662									
4802	KOLB RD DDI SB	PI	16+57.47		404564.919	1033187.573	4800	SIMPLE	7°33'47" Rt	3°00'00"	1909.86	252.10	126.23	4.17	e=0.044‰ft, Ls=106
4803	KOLB RD DDI SB	PT	17+83.34	S 6°41'44" W	404439.546	1033172.855									
4804	KOLB RD DDI SB	PC	19+95.39		404228.937	1033148.130									
4805	KOLB RD DDI SB	PI	21+66.46		404059.035	1033128.184	4801	SIMPLE	25°18'22" Lt	7°31'09"	762.00	336.56	171.07	18.97	NC
4806	KOLB RD DDI SB	PT	23+31.95	S 18°36'38" E	403896.912	1033182.778									
4807	KOLB RD DDI SB	PC	23+77.49		403853.750	1033197.313									
4808	KOLB RD DDI SB	PI	23+92.75		403839.287	1033202.183	4802	SIMPLE	10°45'47" Lt	35°22'04"	162.00	30.43	15.26	0.72	NC
4809	KOLB RD DDI SB	PT	24+07.92	S 29°22'25" E	403825.988	1033209.669									
4810	KOLB RD DDI SB	PC	25+03.53		403742.674	1033256.563									
4811	KOLB RD DDI SB	PI	25+80.37		403675.709	1033294.255	4803	SIMPLE	28°44'05" Rt	19°05'55"	300.00	150.45	76.84	9.69	NC
4812	KOLB RD DDI SB	PT	26+53.98	S 0°38'21" E	403598.869	1033295.112									
4813	KOLB RD DDI SB	PC	34+16.72		402836.183	1033303.620									
4814	KOLB RD DDI SB	PI	34+93.05		402759.850	1033304.471	4804	SIMPLE	28°33'10" Rt	19°05'55"	300.00	149.50	76.34	9.56	NC
4815	KOLB RD DDI SB	PT	35+66.22	S 27°54'50" W	402692.394	1033268.734									
4816	KOLB RD DDI SB	PC	36+66.81		402603.505	1033221.642									
4817	KOLB RD DDI SB	PI	37+70.78		402511.635	1033172.971	4805	SIMPLE	28°19'31" Lt	13°54'24"	412.00	203.68	103.97	12.92	NC
4818	KOLB RD DDI SB	PT	38+70.49	S 0°24'41" E	402407.671	1033173.718									
4819	KOLB RD DDI SB	PC	40+45.99		402232.175	1033174.979									
4820	KOLB RD DDI SB	PI	41+67.16		402111.016	1033175.849	4806	SIMPLE	7°15'36" Lt	3°00'00"	1909.86	242.00	121.16	3.84	NC
4821	KOLB RD DDI SB	PT	42+87.99	S 7°40'17" E	401990.939	1033192.023									
4822	KOLB RD DDI SB	PC	44+64.83		401815.687	1033215.629									
4823	KOLB RD DDI SB	PI	45+82.18		401699.384	1033231.295	4807	SIMPLE	7°01'57" Rt	3°00'00"	1909.86	234.41	117.35	3.60	e=0.044‰ft, Ls=106
4824	KOLB RD DDI SB	PT	46+99.24	S 0°38'21" E	401582.037	1033232.604									
4825	KOLB RD DDI SB	POE	53+84.18		400897.139	1033240.244									
4900	KOLB RD NB MAINLINE	POB	10+00.00	S 0°52'03" E	405223.335	1033245.112									
4901	KOLB RD NB MAINLINE	PC	11+14.00		405109.348	1033246.838									
4902	KOLB RD NB MAINLINE	PI	12+48.18		404975.180	1033248.869	4900	SIMPLE	8°02'16" Lt	3°00'00"	1909.86	267.93	134.18	4.71	e=0.044‰ft, Ls=106
4903	KOLB RD NB MAINLINE	PT	13+81.93	S 8°54'19" E	404842.615	1033269.640									
4904	KOLB RD NB MAINLINE	PC	21+92.02		404042.285	1033395.043									
4905	KOLB RD NB MAINLINE	PI	23+93.37		403843.358	1033426.213	4901	SIMPLE	8°02'27" Rt	2°00'00"	2864.79	402.05	201.35	7.07	e=0.035‰ft, Ls=84
4906	KOLB RD NB MAINLINE	PT	25+94.07	S 8°54'19" E	403642.026	1033429.250									
4907	KOLB RD NB MAINLINE	PI	26+93.07		402689.202	1033440.459									
4908	KOLB RD NB MAINLINE	PI	26+93.07	S 0°51'51" E	402689.202	1033440.459									
4909	KOLB RD NB MAINLINE	PC	35+46.96	S 0°39'07" E	402689.202	1033440.459	4902	SIMPLE	8°04'35" Rt	2°00'00"	2864.79	403.81	202.24	7.13	e=0.035‰ft, Ls=84
4910	KOLB RD NB MAINLINE	PI	37+49.20		402486.972	1033442.760									
4911	KOLB RD NB MAINLINE	PT	39+50.77	S 7°25'28" W	402286.426	1033416.627									
4912	KOLB RD NB MAINLINE	PC	47+45.99		401497.873	1033313.871	4903	SIMPLE	8°03'48" Lt	2°00'00"	2864.79	403.17	201.92	7.11	e=0.035‰ft, Ls=84
4913	KOLB RD NB MAINLINE	PI	49+47.91		401297.647	1033287.779									
4914	KOLB RD NB MAINLINE	PT	51+49.17	S 0°38'21" E	401095.740	1033290.031									
4915	KOLB RD NB MAINLINE	POE	53+47.20		400897.719	1033292.240									

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.26

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	27	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
5000	KOLB RD SB MAINLINE	POB	10+00.00		405222.132	1033165.621									
5001	KOLB RD SB MAINLINE	PC	12+00.00	S 0°52'03" E	405022.154	1033168.649									
5002	KOLB RD SB MAINLINE	PI	13+94.29		404827.888	1033171.590	5000	SIMPLE	11°37'02" Rt	3°00'00"	1909.86	387.24	194.29	9.86	e=0.044'/ft, Ls=106
5003	KOLB RD SB MAINLINE	PT	15+87.24		404637.009	1033135.351									
5004	KOLB RD SB MAINLINE	PC	18+97.63	S 10°45'00" W	404332.071	1033077.457									
5005	KOLB RD SB MAINLINE	PI	21+88.98		404045.832	1033023.113	5001	SIMPLE	11°36'51" Lt	2°00'00"	2864.79	580.71	291.35	14.78	e=0.035'/ft, Ls=84
5006	KOLB RD SB MAINLINE	PT	24+78.34	S 0°51'51" E	403754.512	1033027.508									
5007	KOLB RD SB MAINLINE	PI	26+95.13		403537.743	1033030.778									
5008	KOLB RD SB MAINLINE	PC	36+72.37	S 0°39'07" E	402560.569	1033041.897	5002	SIMPLE	12°19'21" Lt	2°00'00"	2864.79	616.12	309.25	16.64	e=0.035'/ft, Ls=84
5009	KOLB RD SB MAINLINE	PI	39+81.62		402251.336	1033045.416									
5010	KOLB RD SB MAINLINE	PT	42+88.49	S 12°58'28" E	401949.977	1033114.848									
5011	KOLB RD SB MAINLINE	PC	44+54.71		401788.004	1033152.166									
5012	KOLB RD SB MAINLINE	PI	47+64.29		401486.329	1033221.671	5003	SIMPLE	12°20'07" Rt	2°00'00"	2864.79	616.76	309.58	16.68	e=0.035'/ft, Ls=84
5013	KOLB RD SB MAINLINE	PT	50+71.47	S 0°38'21" E	401176.769	1033225.124									
5014	KOLB RD SB MAINLINE	POE	53+51.25		400897.005	1033228.244									
5200	N ALVERNON WAY RAMP A	POB	0+00.00		434500.421	1011926.033									
5201	N ALVERNON WAY RAMP A	PC	1+53.55	N 88°04'24" E	434505.583	1012079.500									
5202	N ALVERNON WAY RAMP A	PI	3+52.31		434512.265	1012278.140	5100	SIMPLE	41°46'17" Lt	11°00'00"	520.87	379.74	198.75	36.63	e=0.060'/ft, Ls=124
5203	N ALVERNON WAY RAMP A	PT	5+33.29	N 46°18'07" E	434649.574	1012421.837									
5204	N ALVERNON WAY RAMP A	POE	8+44.58		434864.625	1012646.890									
5200	N ALVERNON WAY RAMP B	PC	0+00.00	S 1°39'43" E	434376.385	1011823.048									
5201	N ALVERNON WAY RAMP B	PI	1+19.98		434256.456	1011826.527	5200	SIMPLE	112°36'40" Lt	71°37'11"	80.00	157.23	119.98	64.21	NC
5202	N ALVERNON WAY RAMP B	PT	1+57.23	N 65°43'37" E	434305.777	1011935.901									
5300	N ALVERNON WAY RAMP C	PC	0+00.00	S 1°39'43" E	434400.417	1011865.218									
5301	N ALVERNON WAY RAMP C	PI	0+90.60		434309.850	1011867.846	5300	SIMPLE	112°58'25" Lt	95°29'35"	60.00	118.31	90.60	48.67	NC
5302	N ALVERNON WAY RAMP C	PRC	1+18.31	N 65°21'52" E	434347.618	1011950.204									
5303	N ALVERNON WAY RAMP C	PI	3+51.96		434445.015	1012162.591	5301	SIMPLE	23°02'58" Rt	5°00'00"	1145.92	460.99	233.65	23.58	e=0.040'/ft, Ls=77
5304	N ALVERNON WAY RAMP C	PT	5+79.30	N 88°24'50" E	434451.483	1012396.156									
5305	N ALVERNON WAY RAMP C	POE	12+85.29		434471.023	1013101.876									
5400	N ALVERNON WAY RAMP D	POB	6+91.58	S 3°05'38" E	434533.057	1011803.476									
5401	N ALVERNON WAY RAMP D	PI	8+12.40		434412.411	1011809.997									
5402	N ALVERNON WAY RAMP D	PI	9+05.22	S 1°39'43" E	434319.632	1011812.689									
5403	N ALVERNON WAY RAMP D	PI	10+00.00	S 0°29'47" W	434224.855	1011811.868									
5404	N ALVERNON WAY RAMP D	PI	11+11.33	S 1°36'41" E	434113.573	1011814.999									
5405	N ALVERNON WAY RAMP D	PC	19+03.50	S 2°16'55" E	433322.026	1011846.540									
5406	N ALVERNON WAY RAMP D	PI	20+15.00		433210.611	1011850.979	5400	SIMPLE	8°32'04" Lt	3°50'03"	1494.39	222.59	111.50	4.15	e=0.046'/ft, Ls=102
5407	N ALVERNON WAY RAMP D	PT	21+26.10	S 10°48'58" E	433101.088	1011871.904									
5500	GOLF LINKS RD RAMP WN	PC	0+00.00	N 15°59'50" W	432182.130	1012440.266									
5501	GOLF LINKS RD RAMP WN	PI	3+43.08		432511.922	1012345.718	5500	SIMPLE	4°34'19" Rt	0°40'00"	8594.32	685.79	343.08	6.84	NC
5502	GOLF LINKS RD RAMP WN	PCC	6+85.79	N 11°25'30" W	432848.201	1012277.759									
5503	GOLF LINKS RD RAMP WN	PI	13+93.50		433541.889	1012137.570	5501	SIMPLE	34°19'16" Rt	2°30'00"	2291.83	1372.84	707.71	106.78	e=0.051'/ft, Ls=204
5504	GOLF LINKS RD RAMP WN	PT	20+58.64	N 22°53'46" E	434193.842	1012412.912									
5505	GOLF LINKS RD RAMP WN	POE	21+56.44		434283.942	1012450.964									

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APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.27

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	28	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
5600	GOLF LINKS RD RAMP EN	POB	10+00.00		434234.994	1010608.538									
5601	GOLF LINKS RD RAMP EN	PC	14+03.54	S 70°10'33" E	434098.140	1010988.161									
5602	GOLF LINKS RD RAMP EN	PI	17+84.84		433968.828	1011346.863	5600	SIMPLE	49°57'23" Lt	7°00'00"	818.51	713.66	381.30	84.46	e=0.058⅛ft, Ls=90
5603	GOLF LINKS RD RAMP EN	PT	21+17.20		434160.237	1011676.636									
5604	GOLF LINKS RD RAMP EN	PC	23+30.93	N 59°52'05" E	434267.531	1011861.489									
5605	GOLF LINKS RD RAMP EN	PI	25+39.13		434372.045	1012041.554	5601	SIMPLE	28°32'33" Rt	7°00'00"	818.51	407.75	208.20	26.06	e=0.058⅛ft, Ls=90
5606	GOLF LINKS RD RAMP EN	PT	27+38.68		434377.821	1012249.672									
5607	GOLF LINKS RD RAMP EN	PC	35+44.55	N 88°24'37" E	434400.176	1013055.224									
5608	GOLF LINKS RD RAMP EN	PI	39+15.69		434410.471	1013426.222	5602	SIMPLE	60°01'14" Lt	8°55'00"	642.57	673.13	371.14	99.48	e=0.060⅛ft, Ls=133
5609	GOLF LINKS RD RAMP EN	PT	42+17.67	N 28°23'23" E	434736.976	1013602.687									
5610	GOLF LINKS RD RAMP EN	POE	46+31.59		435101.115	1013799.491									
5700	GOLF LINKS RD RAMP SW	PC	0+00.00	S 73°01'52" E	434507.672	1010193.787									
5701	GOLF LINKS RD RAMP SW	PI	2+47.30		434435.497	1010430.320	5700	SIMPLE	6°10'35" Lt	1°15'00"	4583.66	494.12	247.30	6.67	NC
5702	GOLF LINKS RD RAMP SW	PCC	4+94.12	S 79°12'28" E	434389.190	1010673.245									
5703	GOLF LINKS RD RAMP SW	PI	7+12.57		434348.285	1010887.835	5701	SIMPLE	17°20'34" Lt	4°00'00"	1432.39	433.57	218.45	16.56	e=0.046⅛ft, Ls=102
5704	GOLF LINKS RD RAMP SW	PT	9+27.69		434373.205	1011104.862									
5705	GOLF LINKS RD RAMP SW	PC	12+87.12	N 83°26'59" E	434414.208	1011461.953									
5706	GOLF LINKS RD RAMP SW	PI	13+54.03		434421.840	1011528.422	5702	SIMPLE	5°20'55" Rt	4°00'00"	1432.39	133.71	66.91	1.56	e=0.046⅛ft, Ls=102
5707	GOLF LINKS RD RAMP SW	PT	14+20.84		434423.243	1011595.313									
5708	GOLF LINKS RD RAMP SW	PC	17+63.98	N 88°47'54" E	434430.440	1011938.380									
5709	GOLF LINKS RD RAMP SW	PI	20+59.08		434436.629	1012233.415	5703	SIMPLE	44°47'13" Lt	8°00'00"	716.20	559.84	295.10	58.41	e=0.060⅛ft, Ls=133
5710	GOLF LINKS RD RAMP SW	PT	23+84.91	N 44°00'41" E	434648.865	1012438.450									
5711	GOLF LINKS RD RAMP SW	POE	29+69.24		435113.055	1012886.892									
5800	GOLF LINKS RD RAMP SE	PC	0+00.00	S 71°17'32" W	435748.108	1013933.166									
5801	GOLF LINKS RD RAMP SE	PI	7+19.93		435517.194	1013251.268	5800	SIMPLE	31°09'16" Lt	2°13'07"	2582.48	1404.22	719.93	98.47	NC
5802	GOLF LINKS RD RAMP SE	PT	14+04.22		434966.807	1012787.179									
5803	GOLF LINKS RD RAMP SE	PC	22+60.00	S 40°08'16" W	434312.562	1012235.517									
5804	GOLF LINKS RD RAMP SE	PI	31+43.34		433637.254	1011666.093	5801	SIMPLE	62°53'48" Lt	3°58'00"	1444.39	1585.59	883.34	248.70	e=0.051⅛ft, Ls=184
5805	GOLF LINKS RD RAMP SE	PT	38+45.59		432822.693	1012007.817									
5806	GOLF LINKS RD RAMP SE	PC	47+40.17	S 22°45'32" E	431997.767	1012353.891									
5807	GOLF LINKS RD RAMP SE	PI	48+40.72		431905.048	1012392.788	5802	SIMPLE	6°45'43" Rt	3°21'59"	1701.95	200.86	100.55	2.97	NC
5808	GOLF LINKS RD RAMP SE	PT	49+41.03	S 15°59'50" E	431808.395	1012420.497									
5900	AJO WAY RAMP A	POB	10+00.00	S 66°10'33" E	434461.758	1010094.983									
5901	AJO WAY RAMP A	PI	14+66.40		434273.364	1010521.641									
5902	AJO WAY RAMP A	PC	23+59.83	S 66°10'33" E	433912.479	1011338.940									
5903	AJO WAY RAMP A	PI	27+96.51		433736.090	1011738.411	5900	SIMPLE	55°21'51" Rt	6°53'00"	832.39	804.32	436.68	107.59	e=0.060⅛ft, Ls=147
5904	AJO WAY RAMP A	PT	31+64.15		433307.160	1011820.324									
5905	AJO WAY RAMP A	PC	33+76.18	S 10°48'42" E	433098.894	1011860.097									e=0.050⅛ft,
5906	AJO WAY RAMP A	PI	34+83.67		432993.319	1011880.259	5901	SIMPLE	8°09'45" Lt	3°48'13"	1506.39	214.60	107.48	3.83	Entrance Ls=120
5907	AJO WAY RAMP A	PT	35+90.79		432891.675	1011915.206									Exit Ls=180
5908	AJO WAY RAMP A	PC	48+53.32	S 18°58'27" E	431697.739	1012325.709									
5909	AJO WAY RAMP A	PI	56+19.46		430973.231	1012574.811	5902	SIMPLE	56°16'53" Rt	4°00'00"	1432.39	1407.03	766.13	192.02	e=0.051⅛ft, Ls=184
5910	AJO WAY RAMP A	PT	62+60.36		430363.850	1012110.465									
5911	AJO WAY RAMP A	PC	65+93.91	S 37°18'26" W	430098.545	1011908.304									
5912	AJO WAY RAMP A	PI	66+68.86		430038.931	1011862.879	5903	SIMPLE	6°44'15" Rt	4°30'00"	1273.24	149.72	74.95	2.20	e=0.054⅛ft, Ls=194

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.28

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	29	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
5913	AJO WAY RAMP A	PT	67+43.63		429985.059	1011810.773									
5914	AJO WAY RAMP A	PC	70+73.40	S 44°02'41" W	429748.019	1011581.508									
5915	AJO WAY RAMP A	PI	72+99.65		429585.391	1011424.214	5904	SIMPLE	6°44'15" Rt	4°30'00"	1273.24	149.72	74.95	2.20	e=0.053⅛ft, Ls=177
5916	AJO WAY RAMP A	PT	75+18.99	S 19°32'16" W	429372.168	1011348.550									
5917	AJO WAY RAMP A	POE	77+49.12		429155.281	1011271.585									
6000	AJO WAY RAMP B	POB	10+00.00		430461.449	1012396.902									
6001	AJO WAY RAMP B	PC	11+88.77	S 28°33'59" W	430295.656	1012306.635									
6002	AJO WAY RAMP B	PI	12+98.25		430199.511	1012254.288	6000	SIMPLE	8°44'27" Rt	4°00'00"	1432.39	218.52	109.47	4.18	e=0.057⅛ft, Ls=161
6003	AJO WAY RAMP B	PT	14+07.29		430112.437	1012187.938									
6004	AJO WAY RAMP B	PC	16+09.29	S 37°18'26" W	429951.772	1012065.512									
6005	AJO WAY RAMP B	PI	19+94.35		429645.492	1011832.128	6001	SIMPLE	20°56'32" Lt	2°45'00"	2083.48	761.54	385.07	35.28	e=0.042⅛ft, Ls=101
6006	AJO WAY RAMP B	PT	23+70.83	S 16°21'54" W	429276.026	1011723.634									
6007	AJO WAY RAMP B	POE	25+99.10		429057.002	1011659.317									
6100	AJO WAY RAMP C	POB	10+00.00		429057.002	1011659.317									
6101	AJO WAY RAMP C	PC	11+81.29	S 18°36'36" W	428885.187	1011601.461									e=0.040⅛ft,
6102	AJO WAY RAMP C	PI	15+21.31		428562.951	1011492.954	6100	SIMPLE	13°32'14" Lt	2°00'00"	2864.79	676.86	340.01	20.11	Entrance Ls=153
6103	AJO WAY RAMP C	PCC	18+58.16	S 5°04'22" W	428224.269	1011462.889									Exit Ls=102
6104	AJO WAY RAMP C	PI	22+73.01		427811.044	1011426.207	6101	SIMPLE	5°31'37" Lt	0°40'00"	8594.32	829.06	414.85	10.01	NC
6105	AJO WAY RAMP C	PT	26+87.21	S 0°27'15" E	427396.208	1011429.495									
6200	AJO WAY RAMP D	POB	10+00.00		429158.293	1011259.969									
6201	AJO WAY RAMP D	PC	12+42.11	S 9°32'16" W	428919.526	1011219.851									
6202	AJO WAY RAMP D	PI	15+25.84		428639.718	1011172.838	6200	SIMPLE	16°54'01" Lt	3°00'00"	1909.86	563.34	283.73	20.96	e=0.044⅛ft, Ls=106
6203	AJO WAY RAMP D	PT	18+05.45		428358.327	1011209.196									
6204	AJO WAY RAMP D	PC	19+08.63	S 7°21'45" E	428255.998	1011222.418									
6205	AJO WAY RAMP D	PI	23+59.72		427808.634	1011280.221	6201	SIMPLE	6°54'29" Rt	0°46'00"	7473.43	901.07	451.08	13.60	NC
6206	AJO WAY RAMP D	PT	28+09.71	S 0°27'15" E	427357.565	1011283.797									
6300	SR 210 MEDIAN	POB	370+61.64		434671.574	1009795.645									
6301	SR 210 MEDIAN	PC	371+70.18	S 54°42'24" E	434608.861	1009884.239									
6302	SR 210 MEDIAN	PI	373+27.44		434518.004	1010012.592	6300	SIMPLE	18°19'28" Lt	5°52'35"	975.00	311.83	157.26	12.60	e=0.059⅛ft,
6303	SR 210 MEDIAN	PT	374+82.01		434472.108	1010163.003									EB Ls=147
6304	SR 210 MEDIAN	PC	382+28.57	S 73°01'52" E	434254.224	1010877.059									WB Ls=221
6305	SR 210 MEDIAN	PI	392+66.27		433951.368	1011869.585	6301	SIMPLE	57°02'03" Rt	3°00'00"	1909.86	1901.14	1037.70	263.71	e=0.059⅛ft, Ls=191
6306	SR 210 MEDIAN	PT	401+29.71		432953.848	1012155.564									
6307	SR 210 MEDIAN	PC	413+03.81	S 15°59'50" E	431825.206	1012479.135									
6308	SR 210 MEDIAN	PI	421+88.64		430974.644	1012722.983	6302	SIMPLE	53°18'16" Rt	3°15'00"	1762.95	1640.13	884.83	209.59	e=0.060⅛ft, Ls=382
6309	SR 210 MEDIAN	PT	429+43.95		430270.855	1012186.700									
6310	SR 210 MEDIAN	PC	436+24.28	S 37°18'26" W	429729.720	1011774.357									
6311	SR 210 MEDIAN	PI	443+36.83		429162.958	1011342.488	6303	SIMPLE	37°45'41" Lt	2°45'00"	2083.48	1373.14	712.55	118.48	e=0.058⅛ft, Ls=287
6312	SR 210 MEDIAN	PT	449+97.42		428450.428	1011348.136									
6313	SR 210 MEDIAN	PC	462+50.57	S 0°27'15" E	427197.325	1011358.070									
6314	SR 210 MEDIAN	PI	465+87.18		426860.719	1011360.738	6304	SIMPLE	19°59'30" Lt	3°00'00"	1909.86	666.39	336.62	29.44	e=0.059⅛ft, Ls=382
6315	SR 210 MEDIAN	PT	469+16.96		426545.308	1011478.326									
6316	SR 210 MEDIAN	PC	477+94.23	S 20°26'45" E	425723.299	1011784.777									
6317	SR 210 MEDIAN	PI	481+31.02		425407.723	1011902.427	6305	SIMPLE	20°00'07" Rt	3°00'00"	1909.86	666.73	336.79	29.47	e=0.059⅛ft,
6318	SR 210 MEDIAN	PT	484+60.96	S 0°26'38" E	425070.940	1011905.036									EB Entrance Ls=287

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.29

TRACS NO. H7825 01L 010-E(210)S ___ OF ___

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

Centerline Geometric Data Sheet

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	30	30	
		010 PM 260			

PLAN REF NO.	ALIGNMENT	Point Type	STATION	BEARING	COORDINATES Northing	COORDINATES Easting	CURVE REF NO.	Type	Delta	DOC	Radius	L	T	Ext	Super
6319	SR 210 MEDIAN	PI	489+25.85	S 0°28'58" E	424606.066	1011908.638									EB Exit Ls=382
6320	SR 210 MEDIAN	PI	516+15.92	S 0°13'57" E	421916.021	1011919.555									WB Entrance Ls=382
6321	SR 210 MEDIAN	PI	522+86.58	S 0°07'21" W	421245.356	1011918.123									WB Exit Ls=287
6322	SR 210 MEDIAN	POE	526+22.42	S 0°20'51" E	420909.528	1011920.161									
6400	COUNTRY CLUB RD	POB	74+40.12	S 0°51'19" E	428547.576	1006566.391									
6401	COUNTRY CLUB RD	POE	116+90.12		424298.050	1006629.830									
6500	VALENCIA RD	PC	72+63.47	S 18°29'53" E	415221.595	1020948.932									
6501	VALENCIA RD	PI	83+74.28		414168.177	1020596.503	6500	SIMPLE	72°01'49" Rt	3°44'59"	1528.05	1921.01	1110.81	361.09	
6502	VALENCIA RD	PT	91+84.48	N 89°28'18" W	414178.419	1019485.741									
6503	VALENCIA RD	POE	116+64.86		414201.291	1017005.466									
6600	CRAYCROFT RD	POB	88+79.84	N 0°06'07" E	409834.017	1022575.609									
6601	CRAYCROFT RD	PI	104+42.73		411396.913	1022578.389									
6602	CRAYCROFT RD	PI	106+95.64	N 0°41'40" E	411649.796	1022581.454									
6603	CRAYCROFT RD	PC	112+42.54	N 0°21'02" W	412196.693	1022578.109									
6604	CRAYCROFT RD	PI	113+72.19		412326.339	1022577.316	6600	SIMPLE	11°03'09" Rt	4°16'33"	1340.00	258.49	129.65	6.26	
6605	CRAYCROFT RD	PRC	115+01.03	N 10°42'08" E	412453.733	1022601.392									
6606	CRAYCROFT RD	PI	116+12.74		412563.497	1022622.137	6601	SIMPLE	9°31'51" Lt	4°16'33"	1340.00	222.90	111.71	4.65	
6607	CRAYCROFT RD	PT	117+23.93	N 1°17'10" E	412675.180	1022624.421									
6608	CRAYCROFT RD	POE	119+95.73		412946.918	1022629.977									
6700	WILMOT RD	POB	80+36.04	S 0°33'49" E	409041.104	1027927.049									
6701	WILMOT RD	PI	107+20.24		406357.037	1027953.456									
6702	WILMOT RD	POE	120+55.49	S 0°34'03" E	405021.855	1027966.680									
6800	N ALVERNON RD	POB	5+40.31	S 1°39'43" E	434712.066	1011822.312									
6801	N ALVERNON RD	POE	10+00.00		434252.566	1011835.644									
6900	GL SE TO AJO WAY RD RAMP A	PC	10+00.00	S 22°45'32" E	432615.770	1012081.613									
6901	GL SE TO AJO WAY RD RAMP A	PI	12+49.85		432385.374	1012178.268	6900	SIMPLE	4°59'38" Rt	1°00'00"	5729.58	499.38	249.85	5.45	
6902	GL SE TO AJO WAY RD RAMP A	PCC	14+99.38	S 17°45'55" E	432147.438	1012254.502									
6903	GL SE TO AJO WAY RD RAMP A	PI	17+18.01		431939.240	1012321.208	6901	SIMPLE	8°43'41" Rt	2°00'00"	2864.79	436.40	218.62	8.33	
6904	GL SE TO AJO WAY RD RAMP A	PT	19+35.78	S 9°02'14" E	431723.330	1012355.548									
6905	GL SE TO AJO WAY RD RAMP A	POE	22+03.55		431458.887	1012397.607									
7000	AJO WAY	PC	92+27.06	S 54°07'21" E	429393.922	1010742.563									
7001	AJO WAY	PI	94+96.93		429235.762	1010961.233	7000	SIMPLE	21°20'23" Lt	4°00'00"	1432.39	533.49	269.87	25.20	
7002	AJO WAY	PT	97+60.55	S 75°27'44" E	429168.019	1011222.464									
7003	AJO WAY	PC	101+32.00		429074.778	1011582.022									
7004	AJO WAY	PI	103+25.21		429026.280	1011769.040	7001	SIMPLE	15°21'49" Lt	4°00'00"	1432.39	384.09	193.20	12.97	
7005	AJO WAY	PT	105+16.09	N 89°10'27" E	429029.065	1011962.223									
7006	AJO WAY	POE	107+13.96		429031.916	1012160.068									
8000	KINO PKWY	POB	84+35.25		428109.895	1001157.362									
8001	KINO PKWY	PC	87+50.17	N 19°01'35" W	428407.612	1001054.698									
8002	KINO PKWY	PI	90+14.10		428657.122	1000968.657	8000	SIMPLE	18°18'55" Rt	3°29'58"	1637.22	523.35	263.93	21.14	
8003	KINO PKWY	PT	92+73.53	N 0°42'40" W	428921.030	1000965.381									
8004	KINO PKWY	POE	709+75.00		430622.370	1000944.266									

All Coordinates Are Ground Coordinates And All Bearings Are Grid Bearings G.A.F. = 1.00016
All bearings and angles have been rounded to the nearest second.
Use the control points provided and their respective state plane coordinates to re-establish the centerline of each roadway.

APPENDIX M

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

GEOMETRIC DATA SHEET
SYSTEM ALT IV

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET C-02.30

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

APPENDIX N
SYSTEM ALTERNATIVE IV BARRIER SUMMARY

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	5	
		010 PM 260			

ALTERNATIVE IV - RETAINING WALLS SUMMARY TABLE

I-10 CORRIDOR - I-10 MAINLINE

RETAINING WALL NO.	RETAINING BARRIER (FT)	RETAINING BARRIER LOCATION	BEGINNING STATION	ENDING STATION	LENGTH (FT)	BEGINNING WALL HEIGHT (FT)	ENDING WALL HEIGHT (FT)	AVERAGE WALL HEIGHT (FT)	WALL AREA (SF)	COMMENTS
1352R			351+30	361+20	990	6.4	6.4	N/A	15,225	RET WALL BEHIND 42" HALF BARRIER
1355L			354+50	361+70	720	6.4	6.4	N/A	9,777	
1391R	25	EAST END	390+84	392+75	191	5.0	4.0	4.5	860	
1497L	25	WEST END	497+00	497+54	54	4.0	5.0	4.5	243	
1498R	25	WEST END	497+90	498+56	66	4.0	5.0	4.5	297	
1500L	25	EAST END	500+55	501+35	80	5.0	4.0	4.5	360	
1501R	25	EAST END	501+57	502+08	51	5.0	4.0	4.5	230	
1510R			510+70	522+52	1182	16.0	9.2	N/A	12,404	
1525R	25	EAST END	525+33	525+98	65	5.0	4.0	4.5	293	
1528L			528+02	530+26	224	9.0	9.0	9.0	2,016	
1531R	25	WEST END	530+64	531+44	80	4.0	5.0	4.5	360	
1532L	25	EAST END	532+34	533+04	70	5.0	4.0	4.5	315	
1534R	25	EAST END	533+54	534+29	75	5.0	4.0	4.5	338	
1572L	80	EAST END	572+00	591+50	1950	9.8	4.0	N/A	14,570	SLIGHTLY MORE AREA THAN ALT I
1581R	25	WEST END	581+25	612+34	3109	4.0	26.7	N/A	40,657	SLIGHTLY LESS AREA THAN ALT I
1614L	30	WEST END	614+05	614+65	60	4.0	10.0	7.0	420	
1614R			614+00	655+50	4150	25.8	22.6	N/A	92,420	14,358 SF MORE THAN ALT I
1616L	30	SOUTH END	616+23	616+83	60	10.0	4.0	7.0	420	
1671R	25	NORTH END	671+07	671+67	60	4.0	5.0	4.5	270	
1672L	25	NORTH END	672+49	673+09	60	4.0	5.0	4.5	270	
1674R	25	SOUTH END	674+28	674+88	60	5.0	4.0	4.5	270	
1676L	25	SOUTH END	676+00	684+00	800	5.0	4.0	N/A	13,005	
1717L	25	WEST END	717+00	722+90	590	4.0	10.0	N/A	6,215	13,586 SF LESS THAN ALT I
1720R	100	WEST END	720+00	724+71	471	4.0	10.0	N/A	5,082	9,465 SF LESS THAN ALT I
1726L	25	EAST END	725+24	731+00	576	10.0	4.0	N/A	7,446	4,110 SF LESS THAN ALT I
1727R	25	EAST END	727+06	732+00	494	10.0	4.0	N/A	4,300	4,069 SF LESS THAN ALT I
1783L	25	WEST END	783+00	789+10	610	4.0	10.0	N/A	7,075	5,575 SF LESS THAN ALT I
1790R	25	WEST END	790+30	790+90	60	4.0	10.0	7.0	420	
1791L	25	EAST END	791+40	792+00	60	10.0	4.0	7.0	420	
1793R	25	EAST END	793+20	799+50	630	10.0	4.0	N/A	6,930	
TOTALS	955								242,906	

SR 210 CORRIDOR - SR 210 MAINLINE

RETAINING WALL NO.	RETAINING BARRIER (FT)	RETAINING BARRIER LOCATION	BEGINNING STATION	ENDING STATION	LENGTH (FT)	BEGINNING WALL HEIGHT (FT)	ENDING WALL HEIGHT (FT)	AVERAGE WALL HEIGHT (FT)	WALL AREA (SF)	COMMENTS
SR384R	50	WEST END	383+50	384+52	102	4.0	10.0	7.0	714	20' DITCH ALONG RAMP
SR385M			384+62	385+22	60	15.0	15.0	15.0	900	BETWEEN ABUTMENTS ALONG CENTERLINE
SR397M			397+46	398+12	66	15.0	15.0	15.0	990	BETWEEN ABUTMENTS ALONG CENTERLINE
SR398R	20	SOUTH END	398+22	398+80	58	10.0	4.0	7.0	406	
SR404L	40	NORTH END	403+56	414+60	1104	22.0	4.0	N/A	22,168	CONNECTS TO GLWN6R
SR423L	20	NORTH END	422+20	430+90	870	4.0	46.0	N/A	24,880	WALL NEAR UPRR- SPECIAL DESIGN
SR434R			434+10	442+25	815	5.0	12.0	N/A	6,998	
SR442L	50	NORTH END	441+50	442+10	60	4.0	5.0	4.5	270	
SR445R	40	SOUTH END	444+35	446+75	240	8.0	4.0	6.0	1,440	
SR454L			453+70	462+20	850	24.0	29.6	N/A	22,786	
SR456R			456+08	462+20	612	29.0	34.5	N/A	18,902	
SR463L			463+50	488+15	2465	28.6	35.4	N/A	78,358	
SR463R			463+50	488+15	2465	39.2	34.0	N/A	79,463	
SR490L			490+37	494+50	413	5.0	15.6	N/A	7,804	
SR490R	20	SOUTH END	490+37	491+00	63	5.0	4.0	4.5	284	
SR 210 RAMPS										
GLWN6R	100	NORTH END	5+95	15+00	905	22.0	4.0	N/A	15,210	NORTH OF AJO WAY
GLSE34R	160	BOTH ENDS	34+25	42+90	865	4.0	4.0	N/A	9,774	NORTH OF AJO WAY
NAIvC2L	20	EAST END	1+70	4+30	260	19.0	4.0	11.5	2,990	
AJoA31R	40	BOTH ENDS	31+00	43+40	1240	4.0	4.0	N/A	9,110	
AJoD11R	20	NORTH END	11+70	23+28	1158	4.0	29.0	N/A	20,318	CONNECTS TO SR456R
TOTALS	580								323,765	

APPENDIX N

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

SUMMARY SHEET
RETAINING WALLS - ALT IV

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING

SHEET SU-01

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	5	
		010 PM 260			

ALTERNATIVE IV - RETAINING WALLS SUMMARY TABLE

I-10 CORRIDOR - I-10 RAMPS

RETAINING WALL NO.	RETAINING BARRIER (FT)	RETAINING BARRIER LOCATION	BEGINNING STATION	ENDING STATION	LENGTH (FT)	BEGINNING WALL HEIGHT (FT)	ENDING WALL HEIGHT (FT)	AVERAGE WALL HEIGHT (FT)	WALL AREA (SF)	COMMENTS
6THC103R			103+00	105+13	213	4.0	9.2	N/A	1,435	WB EXIT RAMP TO 6TH AVE VIA WB FR
6THC105L			104+13	105+13	100	4.0	5.0	4.5	450	
6THC112L			112+10	113+10	100	5.0	4.0	4.5	450	
6THC112R			112+10	113+10	100	5.0	4.0	4.5	450	
PARKC53R			52+51	53+84	133	4.0	14.0	9.0	1,197	
PARKC53L			52+51	54+07	156	4.0	14.0	9.0	1,404	
PARKC56R			56+02	56+52	50	13.0	4.0	8.5	425	
PARKC56L			56+35	56+85	50	13.0	4.0	8.5	425	
PARKD15R	100	WEST END	14+56	28+56	1400	4.0	6.0	N/A	10,819	
KINOA21R			20+57	34+80	1423	6.0	21.0	N/A	11,502	
KINOA34L			34+44	34+94	50	4.0	5.0	4.5	225	
KINOA37R	25	SOUTH END	36+57	37+32	75	5.0	4.0	4.5	338	
KINOA37L	25	SOUTH END	36+69	37+44	75	5.0	4.0	4.5	338	
KINOB16L			16+00	20+60	460	4.0	24.0	N/A	4,792	
KINOB22R	25	EAST END	22+11	23+33	122	24.0	4.0	14.0	1,708	
KINOC11R			10+87	12+42	155	6.0	10.0	8.0	1,240	
KINOC12L	25	WEST END	12+31	13+07	76	4.0	10.0	7.0	532	
KINOC14R	25	SOUTH END	14+49	15+08	59	10.0	4.0	7.0	413	
KINOC15L	25	SOUTH END	15+04	15+52	48	10.0	4.0	7.0	336	
CCLUBA22R	25	WEST END	21+51	26+93	542	6.0	4.0	N/A	3,810	
CCLUBD15R	25	WEST END	14+57	19+63	506	4.0	16.0	N/A	5,980	
ALVC15L			15+03	21+67	664	6.4	9.8	N/A	5,009	SAME AS ALT I
VALD15R			15+04	21+50	646	4.0	4.0	N/A	8,488	
NBKOLB18L	25	NORTH END	17+75	21+13	338	4.0	40.0	N/A	7,692	
NBKOLB18R	25	NORTH END	17+75	21+13	338	4.0	30.0	N/A	7,030	
NBKOLB42L	25	SOUTH END	41+85	42+45	60	6.0	4.0	5.0	300	
NBKOLB42R	25	SOUTH END	41+85	42+45	60	6.0	4.0	5.0	300	
SBKOLB19L	25	NORTH END	19+15	19+75	60	4.0	6.0	5.0	300	
SBKOLB19R	25	NORTH END	19+15	19+75	60	4.0	6.0	5.0	300	
SBKOLB41L	25	SOUTH END	41+56	42+16	60	6.0	4.0	5.0	300	
SBKOLB41R	25	SOUTH END	41+56	42+16	60	6.0	4.0	5.0	300	
NBDDI27R	25	NORTH END	26+54	27+04	50	4.0	10.0	7.0	350	
NBDDI27L	25	NORTH END	26+92	27+42	50	4.0	10.0	7.0	350	
NBDDI31R	25	NORTH END	31+16	31+76	60	10.0	4.0	7.0	420	
NBDDI31L	25	NORTH END	31+53	32+13	60	10.0	4.0	7.0	420	
SBDDI15R	25	NORTH END	14+46	15+06	60	4.0	10.0	7.0	420	
SBDDI15L	25	NORTH END	14+84	15+44	60	4.0	10.0	7.0	420	
SBDDI19R	25	NORTH END	19+18	19+68	50	10.0	4.0	7.0	350	
SBDDI19L	25	NORTH END	19+55	20+05	50	10.0	4.0	7.0	350	
SYSTEM RAMPS										
SE30R	25	NORTH END	30+16	30+99	83	4.0	5.0	4.5	374	
SE30L	25	NORTH END	30+23	30+99	76	4.0	5.0	4.5	342	
SE41R	25	EAST END	41+42	42+02	60	5.0	4.0	4.5	270	
SE41L	25	EAST END	41+42	42+02	60	5.0	4.0	4.5	270	
EN50R	25	WEST END	49+49	56+60	711	4.0	28.8	N/A	14,852	
EN55L	25	WEST END	54+90	56+60	170	4.0	19.0	N/A	1,832	
EN76R	25	NORTH END	75+91	78+75	284	10.0	4.0	N/A	1,455	
EN76L	25	NORTH END	75+91	81+25	534	10.0	4.0	N/A	7,132	
WN28L			27+90	39+70	1180	15.6	10.0	N/A	14,950	
WN38R	25	NORTH END	38+46	39+55	109	4.0	10.0	7.0	763	
WN41R	25	SOUTH END	41+35	42+10	75	20.0	4.0	12.0	900	
WN42L	25	EAST END	41+56	43+25	169	20.0	4.0	N/A	1,915	
TOTALS	975								126,422	

APPENDIX N

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

SUMMARY SHEET
RETAINING WALLS - ALT IV

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET SU-02

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825sb102.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	3	5	
		010 PM 260			

LOCATION: Begin Station (Approximate) (0)	Plan Reference Number ◇	Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	MEDIAN BARRIER (VARIABLE HEIGHT)	HALF BARRIER	TERMINAL	REMARKS
376+35 CL	1	395	X				
403+29 CL	2	522	X				
453+26 CL	3	470	X				
473+72 CL	4	95	X				
490+27 CL	5	438	X			1	
397+99 CL	6	2886	X				
429+41 CL	7	1687	X				
447+12 CL	8	5102	X				
500+96 CL	9	2301	X				
526+57 CL	10	439	X				
532+84 CL	11	2905	X				
563+91 CL	12	2553	X				
583+38 L†	13	400	X				
588+30 L†	14	7120	X				
582+07 R†	15	8583	X			1	
637+62 CL	16	2932	X				
692+68 CL	17	3121	X				
688+75 L†	18	12896	X			1	
688+41 R†	19	9038	X				
726+03 CL	20	6405	X				
792+18 CL	21	13719	X			1	
818+20 L†	22	5900	X			1	
778+44 R†	23	9494	X			1	
371+63 CL	24	472		X		1	
380+30 CL	25	432		X			
398+12 CL	26	517		X			
408+51 CL	27	2112		X			
434+95 CL	28	734		X			
444+25 CL	29	901		X			
457+96 CL	30	435		X			
463+41 CL	31	1032		X			
474+67 CL	32	1358		X			
377+64 CL	33	1016		X			
390+26 CL	34	773		X			

LOCATION: Begin Station (Approximate) (0)	Plan Reference Number ◇	Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	MEDIAN BARRIER (VARIABLE HEIGHT)	HALF BARRIER	TERMINAL	REMARKS
589+44 CL	35	2419		X			
615+04 CL	36	2258		X			
666+94 CL	37	546		X			
674+99 CL	38	1769		X			
373+19 L†	39	50			X		
371+65 L†	40	50			X	1	
381+00 R†	41	305			X	1	50' INCLUDED IN RETAINING BARRIER QUANTITY
382+00 L†	42	330			X		
398+13 R†	43	460			X		20' INCLUDED IN RETAINING BARRIER QUANTITY
397+44 L†	44	364			X	1	
12+45 R†	45	1289			X	1	RAMP GL WN STATION
16+00 R†	46	3664			X		160' INCLUDED IN RETAINING BARRIER QUANTITY, RAMP GL WN STATION
424+00 R†	47	448			X	1	
434+04 R†	48	854			X		
438+00 L†	49	565			X	1	50' INCLUDED IN RETAINING BARRIER QUANTITY
444+26 R†	50	654			X		40' INCLUDED IN RETAINING BARRIER QUANTITY
444+24 L†	51	508			X	1	
33+00 R†	52	1473			X	1	
31+00 R†	53	1949			X	1	
31+64 R†	54	846			X	1	
55+00 R†	55	638			X	1	
57+50 L†	56	455			X	1	
66+78 R†	57	624			X		
67+43 L†	58	854			X		
20+33 L†	59	364			X	1	
20+33 R†	60	50			X	1	
Sheet Total		132,969				21	

APPENDIX N

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

SUMMARY SHEET
BARRIER - ALT IV

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET SU-03

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	4	5	
		010 PM 260			

LOCATION: Begin Station (Approximate) (0)	Plan Reference Number ◇	Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	MEDIAN BARRIER (VARIABLE HEIGHT)	HALF BARRIER	TERMINAL	REMARKS
13+50 Lt	61	1513			X		
11+50 Rt	62	1783			X	1	20' INCLUDED IN RETAINING BARRIER QUANTITY
463+37 Rt	63	2489			X		
463+45 Lt	64	2482			X		
490+27 Lt	65	1609			X		
490+27 Rt	66	150			X	1	20' INCLUDED IN RETAINING BARRIER QUANTITY
0+28 Lt	67	366			X	1	20' INCLUDED IN RETAINING BARRIER QUANTITY
33+00 Rt	68	642			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
41+26 Rt	69	354			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
41+46 Lt	70	523			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
75+82 Lt	71	518			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
75+82 Rt	72	268			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
343+99 Lt	73	2651			X	1	
347+50 Rt	74	1628			X	1	
369+00 Rt	75	208			X	1	
372+23 Lt	76	94			X	1	
372+72 Rt	77	28			X		
381+68 Lt	78	581			X		
381+50 Rt	79	306			X	1	360' INCLUDED IN RETAINING BARRIER QUANTITY
389+87 Lt	80	228			X	1	
390+74 Rt	81	1093			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
400+49 Lt	82	2946			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
423+50 Lt	83	451			X		
422+00 Rt	84	351			X		
430+57 Lt	85	193			X		
428+07 Rt	86	1524			X		
445+50 Lt	87	78			X		
447+14 Lt	88	186			X	1	
447+12 Rt	89	63			X		
482+00 Lt	90	1174			X	1	
482+03 Rt	91	1429			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
490+50 Lt	92	689			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
490+50 Rt	93	791			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
500+46 Lt	94	830			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY

LOCATION: Begin Station (Approximate) (0)	Plan Reference Number ◇	Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	MEDIAN BARRIER (VARIABLE HEIGHT)	HALF BARRIER	TERMINAL	REMARKS
501+47 Rt	95	778			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
20+00 Lt	96	1777			X		
14+57 Rt	97	1673			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
525+23 Rt	98	582			X		50' INCLUDED IN RETAINING BARRIER QUANTITY
527+92 Lt	99	244			X		
532+25 Lt	100	176			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
533+44 Rt	101	1476			X		50' INCLUDED IN RETAINING BARRIER QUANTITY
553+00 Lt	102	838			X		
553+00 Rt	103	942			X	1	
563+39 Lt	104	542			X	1	LENGTH DIFFERENT FROM ALT I
564+36 Rt	105	564			X		
190+25 Lt	106	1041			X		
103+00 Rt	107	224			X		
112+00 Lt	108	352			X	1	
112+00 Rt	109	348			X	1	
13+00 Rt	110	2882			X	1	100' INCLUDED IN RETAINING BARRIER QUANTITY
33+00 Lt	111	207			X	1	
36+59 Lt	112	610			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
36+47 Rt	113	1174			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
18+50 Rt	114	617			X		
10+86 Rt	115	151			X		
10+65 Lt	116	243			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
14+39 Rt	117	412			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
15+00 Lt	118	358			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
10+80 Lt	119	473			X	1	
19+50 Rt	120	192			X	1	
Sheet Total		49,095				31	

APPENDIX N

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

SUMMARY SHEET
BARRIER - ALT IV

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET SU-04

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

1/30/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\H7825sb104.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	5	5	
		010 PM 260			

LOCATION: Begin Station (Approximate) (0)	LOCATION: Plan Reference Number ◇	LOCATION: Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	BARRIER: MEDIAN BARRIER (VARIABLE HEIGHT)	BARRIER: HALF BARRIER	BARRIER: TERMINAL	REMARKS
84+35 R†	121	355			X	1	
98+29 L†	122	53			X		
97+50 R†	123	55			X		
25+00 R†	124	2589			X		
50+25 L†	125	61			X		
52+42 L†	126	174			X		
52+42 R†	127	176			X		
56+23 L†	128	202			X	1	
55+94 R†	129	206			X	1	
52+25 L†	130	445			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
27+25 R†	131	361			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
27+25 L†	132	358			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
41+32 L†	133	366			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
41+32 R†	134	370			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
12+00 R†	135	289			X	1	
12+00 L†	136	5182			X		110' INCLUDED IN RETAINING BARRIER QUANTITY
577+60 R†	137	3435			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
616+33 L†	138	4342			X	1	30' INCLUDED IN RETAINING BARRIER QUANTITY
613+98 R†	139	5028			X		
666+50 L†	140	630			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
663+00 R†	141	857			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
675+90 L†	142	752			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
674+18 R†	143	530			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
659+12 L†	144	1369			X		
659+12 L†	145	1358			X		
668+30 R†	146	383			X		
668+30 R†	147	379			X		
675+51 L†	148	1295			X		
675+38 L†	149	1277			X		
674+61 R†	150	1407			X		
674+51 R†	151	1273			X		
699+98 R†	152	339			X	1	
702+49 L†	153	2731			X	1	
709+40 L†	154	3039			X	1	

LOCATION: Begin Station (Approximate) (0)	LOCATION: Plan Reference Number ◇	LOCATION: Length (Linear Feet) (0.0)	BARRIER: MEDIAN BARRIER	BARRIER: MEDIAN BARRIER (VARIABLE HEIGHT)	BARRIER: HALF BARRIER	BARRIER: TERMINAL	REMARKS
717+00 L†	155	775			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
719+00 R†	156	480			X	1	100' INCLUDED IN RETAINING BARRIER QUANTITY
725+14 L†	157	561			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
726+93 R†	158	483			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
783+00 L†	159	595			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
783+00 R†	160	774			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
791+34 L†	161	595			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
793+02 R†	162	618			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
13+04 R†	163	607			X	1	
15+04 R†	164	646			X	1	
18+50 L†	165	110			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
16+50 R†	166	310			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
41+47 L†	167	228			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
41+47 R†	168	528			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
16+50 L†	169	450			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
16+50 R†	170	450			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
41+75 L†	171	600			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
41+75 R†	172	250			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
26+55 R†	173	35			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
26+91 L†	174	35			X		25' INCLUDED IN RETAINING BARRIER QUANTITY
31+08 R†	175	85			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
31+41 L†	176	85			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
27+12 R†	177	85			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
27+48 L†	178	85			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
32+15 R†	179	35			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
32+48 L†	180	35			X	1	25' INCLUDED IN RETAINING BARRIER QUANTITY
Sheet Total		51,206				28	

APPENDIX N

	NAME	DATE
DESIGN	MKO/JBC	10-17
DRAWN	SR/JLM	10-17
CHECKED	PNB	12-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

SUMMARY SHEET
BARRIER - ALT IV

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET SU-05

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

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APPENDIX O
CRAYCROFT ROAD ACCESS

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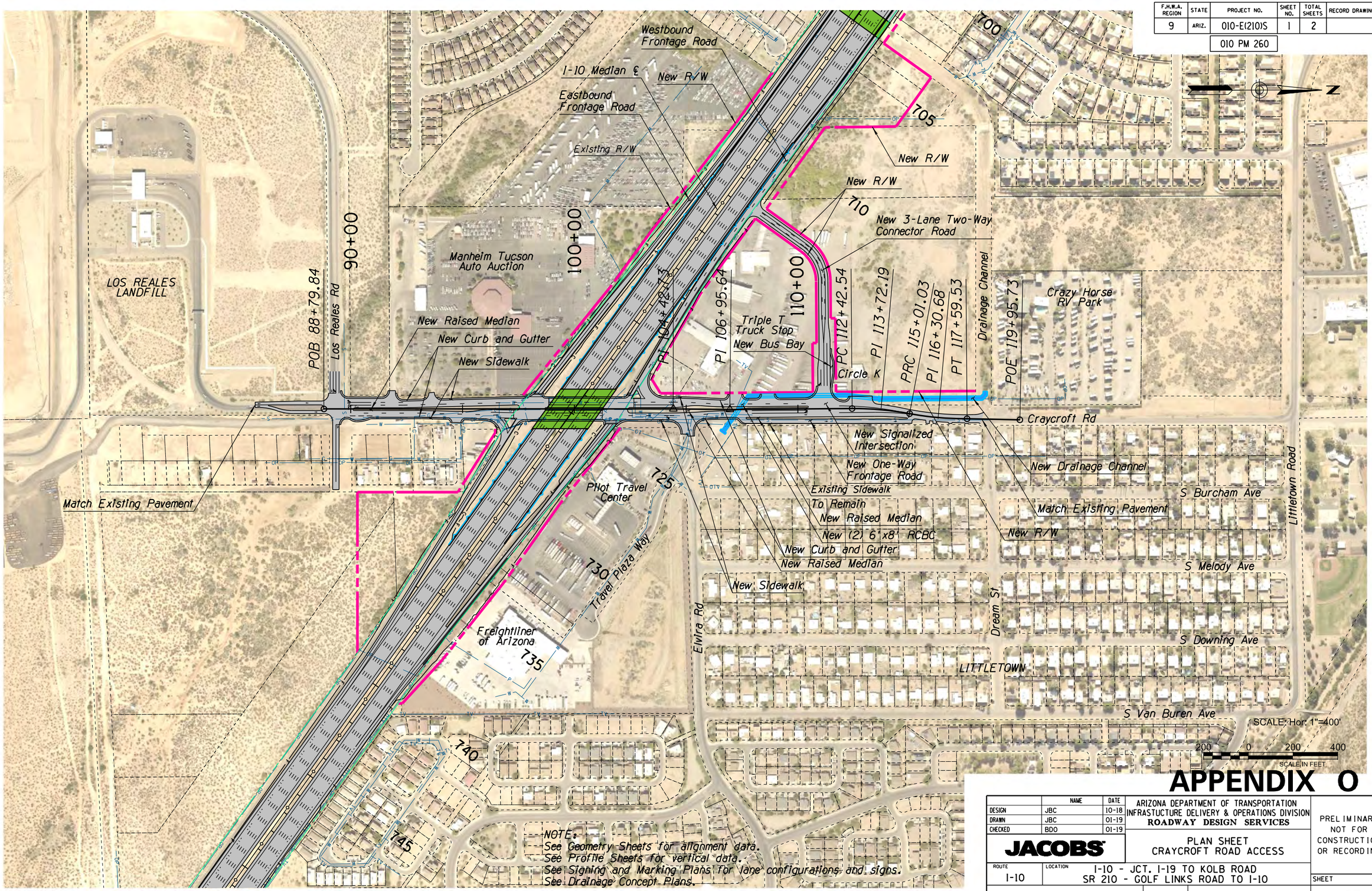
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	1	2	
		010 PM 260			



APPENDIX O

	NAME	DATE
DESIGN	JBC	10-18
DRAWN	JBC	01-19
CHECKED	BDO	01-19

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

PLAN SHEET
CRAYCROFT ROAD ACCESS

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

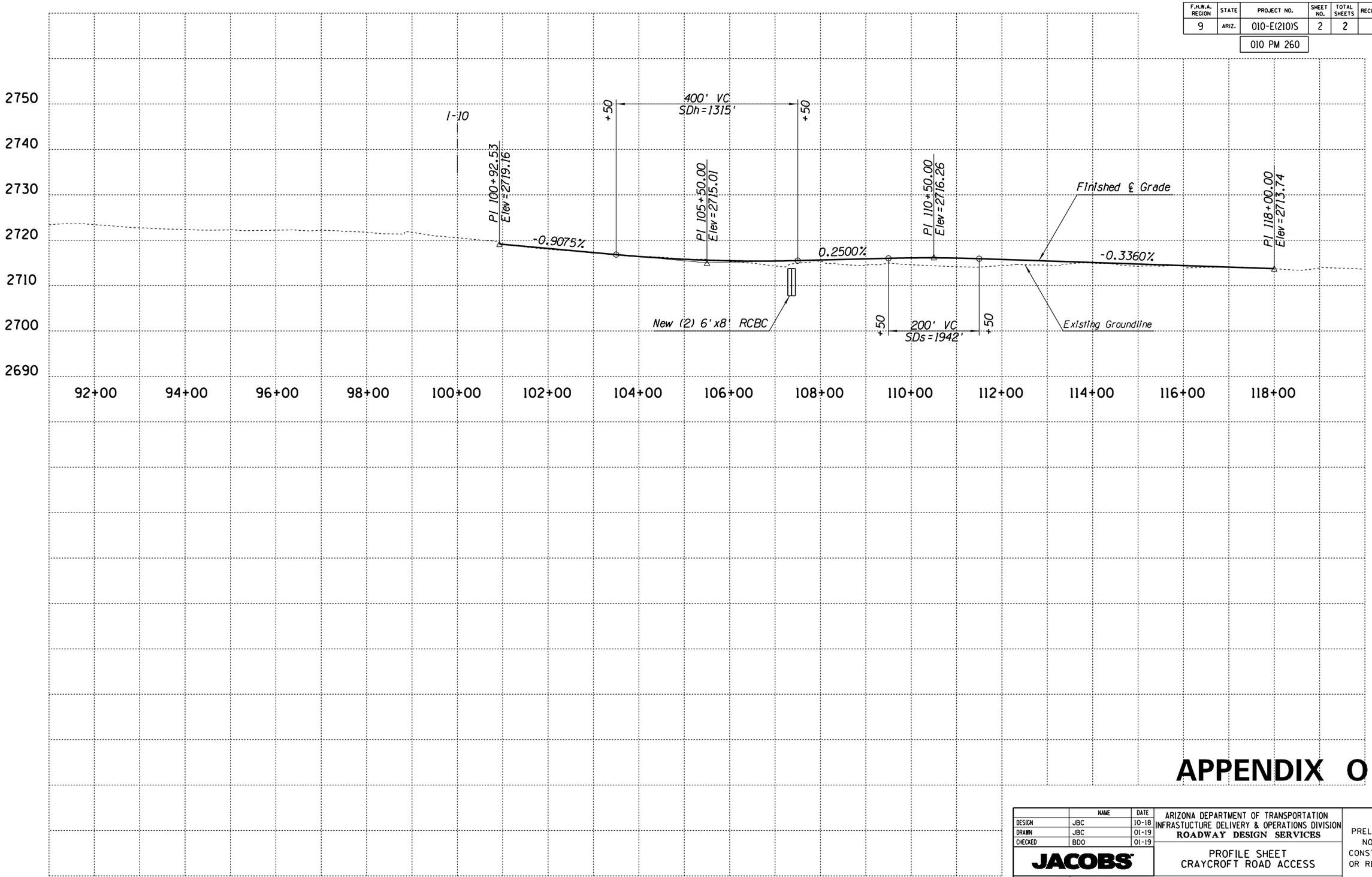
SHEET ___ OF ___

TRACS NO. H7825 01L | 010-E(210)S

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

2/15/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Appendix O Craycroft Road Access\H7825p017.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S	2	2	
		010 PM 260			



APPENDIX O

	NAME	DATE
DESIGN	JBC	10-18
DRAWN	JBC	01-19
CHECKED	BDO	01-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

JACOBS

PROFILE SHEET
CRAYCROFT ROAD ACCESS

PRELIMINARY
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET ___ OF ___

TRACS NO. H7825 01L | 010-E(210)S

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

2/13/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Appendix O Craycroft Road Access\H7825v047.dgn

I-10 DCR (I-19 to Kolb Rd and SR 210)
Access Control concepts for the north side of the Craycroft Road TI
August 16, 2018

Background Information

At the I-10, I-19 to Kolb and SR 210 progress meeting (held on July 19, 2017) an access issue involving the commercial and residential properties north of the Craycroft Road TI was identified. Traffic operations north of the interchange have deteriorated with recent developments and it was clear that additional improvements will be needed to make sure the north side of the TI will function well in the future. If no improvements are made the LOS will continue to deteriorate as traffic volumes increase. Pima County nearly completed designing a small project to correct a turning radius issue (for truck traffic) and add sidewalk from I-10 north to Travel Plaza Way. The project was stopped when the City of Tucson annexed the area. Travel Plaza Way (located approximately 320' north of the I-10 westbound ramps) provides access to a Pilot Travel Center (truck stop), a (truck service center) and approximately 1500 residences mostly located to the east of Craycroft Road. This includes an existing subdivision called Littletown. On the west side of Craycroft Road the Tucson Truck Terminal (known as the Triple T Truck Stop) is located on the west side of Craycroft Road just to the north of I-10 (see figure below). Circle K (owned by TTT) and an RV Park with approximately 150 parking spots are also present on the west side of Craycroft Road. One-half mile north of Travel Plaza Way is Littletown Road which runs east-west. The west end of Littletown Road connects to Valencia Road. North of Littletown Road there is an elementary school, a middle school and the Thomas Jay Regional Park.

Craycroft Road currently stops at Littletown Road. The vacant area to the north is isolated by the Julian Wash and the UPRR which greatly reduces the potential area served by the Craycroft Road TI. Littletown Road provides access to Valencia Road to the west and Avocet Drive provides access to Wilmot Road to the east. The vacant parcels located north of the Julian Wash and south of the UPRR could be developed. Pima County owns the parcel north of Littletown Road up to the UPRR and could be used to expand the Thomas Jay Regional Park. Wilmot Arizona LLC owns two parcels that have access to Littletown Road and to Wilmot Road.

Preliminary Traffic Analysis

A traffic impact analysis was prepared for the Pilot Travel Center (Feb. 2013) when it was going through the development process. The analysis concluded that when the Pilot facility is constructed the increase in vehicular traffic will warrant signalization of the Craycroft Road TI. The Pilot Travel Center was constructed and the signals were installed. Recent traffic counts (3/29/18) and subsequent operational analysis for existing conditions indicated the signals are functioning well, LOS B/C during the AM peak hours and B/C during the PM peak hours. Travel Plaza Way intersects with Craycroft Road and has stop control. During the AM peak hour westbound traffic on Travel Plaza Way has 274 vehicles turning left onto Craycroft Road. Most of that traffic and southbound Craycroft Road traffic (148) turn right onto the westbound I-10 on-ramp (267). Even though there are large turning movements, the intersection of Travel Plaza Way and Craycroft Road functions well, LOS A during the AM peak hour and LOS A during the PM peak hour. A recent meeting with the owners of the Triple T Truck Stop, however, reported that southbound queues at the TI will occasionally cause a truck to stop short of making a full left turn onto Craycroft Road thereby blocking northbound travel lanes until the signal phase changes at the TI.

The major geometric issue is the intersection of Craycroft Road and Travel Plaza Way is too close to the westbound ramps (approximately 200'). In the future a lack of adequate southbound storage at the I-10 westbound signal and left-turn turning capacity from Travel Plaza Way to southbound Craycroft Road will cause operational issues. Operational analysis of current conditions with 2040 projected volumes indicates the interchange will reach capacity, LOS D/D during the AM peak hour and LOS C/D during the PM peak hour. The operational analysis of current conditions with 2040 projected volumes at the intersection of Craycroft Road and Travel Plaza Way results in an LOS F during the AM peak hour and LOS F during the PM peak hour.

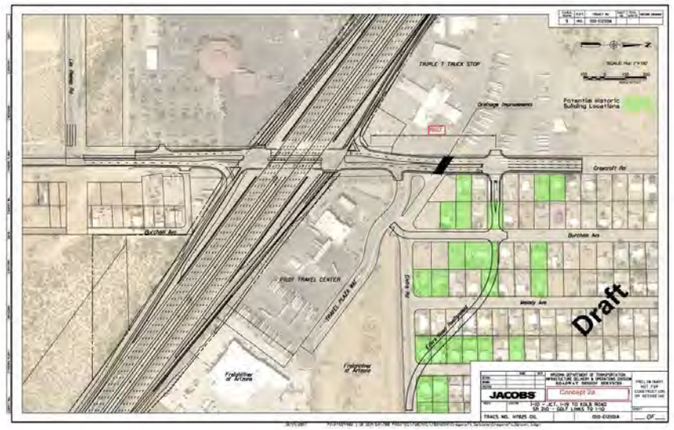
The proposed 2040 improvements for I-10 include widening the interchange. Access control requirements for Craycroft Road included placing a raised median along the center of Craycroft Road north of I-10 for 660 feet to control left-turn access from side streets and residential lots. This improvement will limit Travel Plaza Way to right in and right out. Blocking the left-turn from Travel Plaza Way will affect residents and commercial operators who want to use Craycroft Road to get onto I-10. A portion of the traffic (residents and truckers) will be diverted to Valencia Road for access to I-10 or make a U-turn at the end of the raised median on Craycroft Road north of Travel Plaza Way. Commuter traffic can access Craycroft Road from Dream Street or Littletown Road. However, truck traffic which currently stays close to I-10 will most likely travel north along Craycroft Road onto Littletown Road passing a regional park, an elementary school and a middle school to gain access to I-10 via the Valencia Road TI which is not desirable.

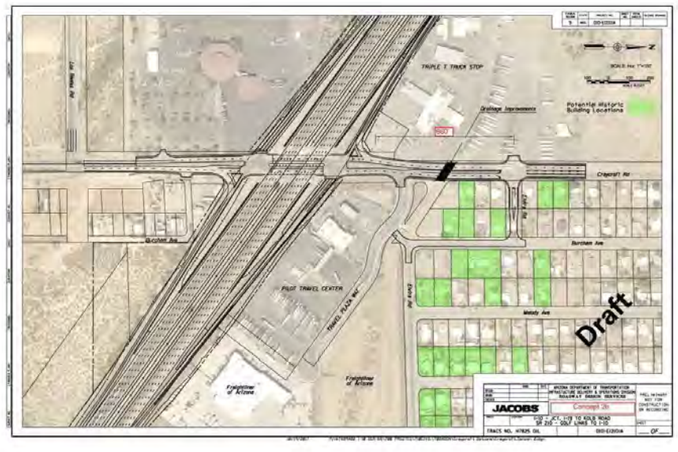
Concepts considered for Access Control Craycroft Road

Concept 1) Purchase the truck businesses on the east side of Craycroft Road to eliminate a large portion of the freight traffic. The raised median would be installed for access control. Note: The Triple T Truck Stop would have a left-turn into the property located 660' north of the westbound

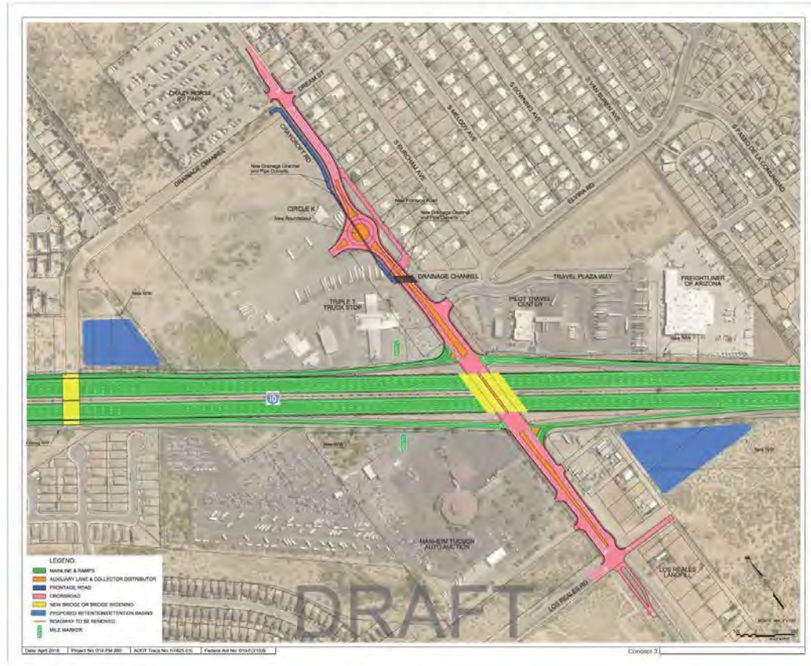
ramps plus a left-turn onto the westbound frontage road that provides right-turn access into the parcel.

Concept 2) Elvira Road is realigned connecting 660' north of the westbound ramps with a signalized intersection. Potentially a dozen residences would be acquired to relocate Elvira Road. A tee connection from Travel Plaza Way would route vehicles to Elvira Road. The raised median would be installed for access control. Travel Plaza Way would have stop control with right-in and right-out movements. See Concepts 2a and 2b below illustrating two possible alignments for Elvira Road.





Concept 3) Construct a roundabout on Craycroft Road 660' north of the westbound ramps. The raised median would be installed for access control. Travel Plaza Way would operate with stop control and have right-in and right-out movements. Residents and truckers would turn right (north) on Craycroft Road and make a U-turn at the roundabout. The roundabout would be large enough to allow oversized vehicles to make the U-turn. The concept would include a short frontage road to serve nine residences located to the east of the roundabout. A drainage culvert/channel will be needed to convey storm flows under Craycroft Road and to an existing drainage channel to the north. See Concept 3 below.



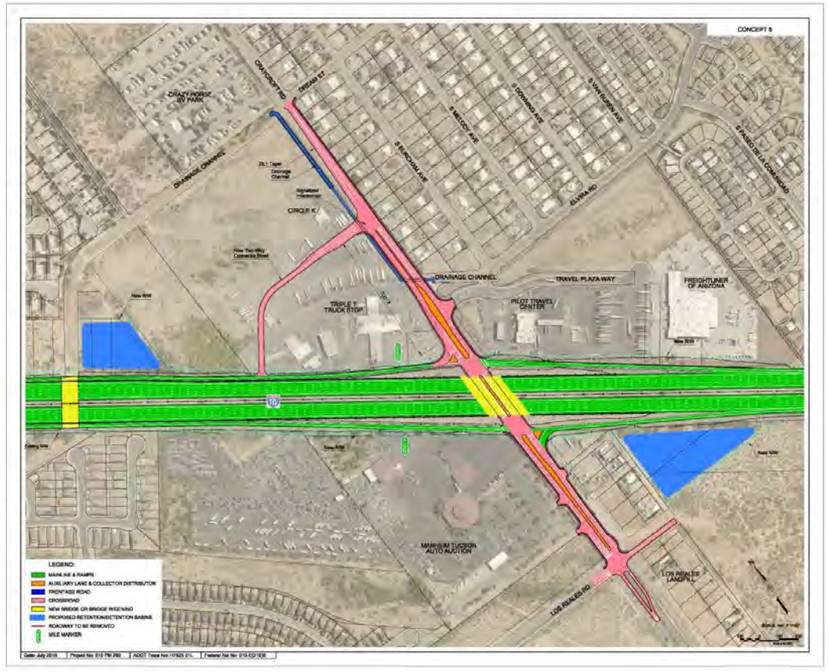
Concept 4) In addition to the roundabout in Concept 3 a one-way connector road from Travel Plaza Way to the I-10 westbound off-ramp is added. The connector road would route traffic from the Pilot Travel Center around the perimeter of the Freightliner of Arizona property. This concept would remove a portion of the vehicular traffic from needing to use the roundabout. See Concept 4 below.

Concept 5) In addition to the roundabout in Concept 3 a two-way connector road from the roundabout to the I-10 westbound frontage road is added. The connector road would bisect the Triple T parcel. This concept would remove a portion of the vehicular traffic from needing to make a full U-turn at the roundabout and avoid making the right-turn at the I-10 westbound signal at the TI. If desired, Concept 5 could include the one-way connector road shown in Concept 4 as a means to improve access to the westbound frontage road. See Concept 5 below.

Concept 6) Eliminate the westbound off-ramp at Craycroft Road and retain the westbound frontage road between Wilmot Road and Craycroft Road. Right-in and right-out would be allowed to the Pilot Travel Center and to Freightliner parcels from the westbound frontage road. Maintain existing conditions north of the TI. The I-10 mainline will need to be shifted to the south. The frontage road access would reduce many of the turning movements to and from Craycroft Road. No figure prepared.

Concept 7) Construct a signal at Craycroft Road and Travel Plaza Way that is synchronized with the TI signals and install a raised median up to Travel Plaza Way. Request an access control waiver for Travel Plaza Way as an existing condition. See Concept 7 below.

Concept 8) This concept has a tee intersection with a signal located north of Travel Plaza Way and south of the Circle K. A two-way connector road from the intersection to the I-10 westbound frontage road is added. The connector road would bisect the Triple T parcel. Traffic wanting to enter I-10 westbound from Travel Plaza Way would travel north on Craycroft Road to the two-way connector road. Turn left onto the connector road and make a right-turn on the westbound frontage road to the Valencia Road TI. Passenger cars wanting to enter I-10 eastbound could make a U-turn at the tee intersection and enter I-10 at the Craycroft Road TI. Otherwise, trucks can travel to the Valencia Road TI to enter I-10 eastbound. See figure below.



Other considerations - There is a drainage dip crossing located just north of Travel Plaza Way. The 100-year flow rate is approximately 400 cfs. After crossing over Craycroft Road, the runoff sheet flows to an existing drainage channel located to the west of the Triple T Truck Stop. For Concepts 2 through 6 and 8 the raised median would act as a barrier to runoff crossing over Craycroft Road. The runoff will need to be conveyed under Craycroft Road to allow improvements to the roadway. The drainage improvement will add significantly to the cost for improving the roadway as the runoff will need to be conveyed northerly in a culvert or open channel to the existing drainage channel located near Dream Street. Runoff from residences also flows westward toward Craycroft Road will need to be collected and conveyed under Craycroft Road.

Evaluation of Concepts for Craycroft Road

Concept 1) Purchase the Pilot Travel Center – Purchasing the Pilot Travel Center was estimated at $6.5 M by ADOT R/W Group. This cost is high relative to improvements for Concept 7 (signalizing Craycroft/Travel Plaza Way). Discussions with City of Tucson management indicated that the Craycroft Road area was recently annexed by the City because the Pilot Travel Center and the Triple T Truck Stop generate a lot of tax revenue. A portion of this revenue would be lost if the Pilot Travel Center was purchased. Other uses of this commercial area would be problematic as access issues would remain as Travel Plaza Way will be right-in/right-out. This concept was not acceptable due to high cost, lost tax revenue and repurposing the commercial area.

Concept 2) Realign Elvira Road – Several alignments were looked at to realign Elvira Road to connect with Craycroft Road 660' north of the I-10 westbound ramp. This would route residential traffic further to the north and truck traffic would exit the Pilot Travel Center travel north along Burcham Avenue to the realigned Elvira Way and make a left-turn onto Craycroft Road. This concept would require the purchase of a number of residential parcels. The Littletown subdivision was developed over 50 years ago. Many of the residential homes potentially could be historic or the neighborhood could be designated as a historic neighborhood. The area is also a low income housing area with a high proportion of minorities. Due to environmental justice rules, removal of residences would come under high scrutiny. Since there are other viable concepts, all concepts realigning Elvira Road were discontinued.

Concept 3) Construct a Roundabout – A roundabout would be constructed on Craycroft Road 660' north of the westbound ramps. The roundabout would be shifted to the west to allow a 20' wide frontage road to be developed to the east of the roundabout to provide access to nine residences. This concept avoids any residential takes. However, traffic on the roundabout would be present 24/7. Vehicle noise and light from headlights would be an issue for adjacent residences. Improvements along Craycroft Road would extend up to Dream Street. The intersection of Dream Street will need to be analyzed to incorporate access to the RV Park. Drainage improvements will parallel Craycroft Road up to Dream Street. Impacts to adjacent residences is high but may be mitigated by using noise walls. The roundabout will require a significant amount of property to be acquired from the Triple T Truck Stop. Concerns were expressed by Craycroft Road stakeholders that truck drivers will not make the U-turn to return to I-10 via the Craycroft Road TI but continue north to Littletown Road to enter I-10 at the Valencia Road TI. This concept meets the access control criteria.

Concept 4) Construct a Roundabout with a one-way connector road to the I-10 westbound off-ramp – Similar to Concept 3 with the added one-way connector road to the I-10 westbound off-ramp. The connector road would shift a number of trucks from the roundabout to the connector road and provide an easier route to I-10. The connector road would impact the Freightliner development potentially removing most of the employee parking. Truck traffic from the Pilot Center would have access to the connector road 24/7. Truck noise and light from headlights would be an issue for adjacent residences located immediately east of Freightliner. Noise and light impacts would be high but should be mitigated by using noise walls. While this concept will make access to I-10 easier for trucks, the impacted area increases. Residents located east of Freightliner and Freightliner itself would be impacted. If Freightliner is acquired, the ADOT R/W Group estimated the cost at $6.5 M. The vacant area north of Freightliner is an area that the Pilot Travel Center was planning to use for an RV and Bus service center. This use may be affected by the connector roadway. This concept meets the access control criteria but at a higher cost and with greater impacts than Concepts 3 and 7.

Concept 5) Construct a Roundabout with a two-way connector road to the I-10 westbound off-ramp – Similar to Concept 3 with the addition of a two-way connector road to the I-10 westbound off-ramp through the Triple T parcel. This connector road would provide an easier route to I-10 by passing the westbound frontage road signal. The connector road would bisect the Triple T parcel relocating the current truck parking area. This concept would not reduce the number of vehicles using the roundabout. While this concept will make access to I-10 easier for trucks, the impacted area increases. This concept meets the access control criteria but at a higher cost and with greater impacts than Concepts 3 and 7, but less than Concept 4.

If desired, Concept 5 could include the one-way connector road shown in Concept 4 as a means to improve access to the westbound frontage road. This concept would have the highest impact.

Concept 6) Eliminate the westbound off-ramp at Craycroft Road and retain the westbound frontage road between Wilmot Road and Craycroft Road. This concept allows the right-in and right-out for the Pilot Travel Center and the Freightliner parcels. Access control on Craycroft Road will no longer be an issue north of the TI since the frontage road would remove most of the turning movements from Craycroft Road. This concept would require I-10 to be shifted to the south to provide enough space along the north side of I-10 to construct the frontage roads. The I-10 shift would be greater for System Alternative IV than for System Alternative I. The concept was presented to the Craycroft Road stakeholders. The Pilot Travel Center representative was not in favor of this concept because westbound drivers would have to make a decision to get off of I-10 at the Wilmot Road off-ramp which is 1.5 miles to the east. Then travel along the frontage road to get to their business. This would have an impact on their business. This concept meets the access control criteria but at a cost greater than Concept 7. For System Alternative IV the I-10 shift to the south is greater than for Alternative I. More R/W will be needed. The cost to Pilot and Triple T due to loss in business is unknown. The benefit of providing frontage road access to Pilot and Triple T will be at least partially offset by the loss of business. How much is not known.

Concept 7) Construct a signal at the intersection of Craycroft Road and Travel Plaza Way – Preliminary Synchro analysis using 2040 projections and widening the Craycroft Road TI indicates the roadway will function with an LOS B in both the AM and PM peak hours. Other than taking right-of-way to widen Craycroft Road from I-10 to Travel Plaza Way there is minimal impact to the neighborhood. This concept would avoid making drainage improvements north of Travel Plaza Way.

Concept 8) Construct a tee intersection with a signal located north of Travel Plaza Way and south of the Circle K with a two-way connector road to the I-10 westbound off-ramp. The two-way connector road to the I-10 westbound off-ramp would pass through the Triple T parcel. This connector road would provide a route to I-10. The connector road would bisect the Triple T parcel relocating the current truck parking area. While this concept will make access to I-10 easier for trucks, the impacted area increases. This concept meets the access control criteria but at a higher cost and with greater impacts than Concepts 3 and 7, but less than Concepts 4 and 5. Preliminary traffic analysis shows the LOS of the northbound to westbound left-turn movement to be A at the 2040 AM peak hour and B at the 2040 PM peak hour. Access into and out of residential lots adjacent to Craycroft Road needs to be analyzed to determine how much to shift Craycroft Road to the west to provide better access and to collect runoff.

Conclusion

Concept 7 has the least impact to the neighborhood and businesses. Concept 7 provides an acceptable level of service for the 2040 design year. Because Travel Plaza Way is an existing condition a variance would be needed. This concept does set precedence by installing a signal in lieu of providing desired access control measures. All other concepts have significant impacts to residences or businesses.

Concept 8 has greater impacts to the neighborhood and businesses than Concept 7. Concept 8 provides an acceptable level of service for the 2040 design year and meets access control guidelines. Triple T's main entrance will shift to the north along the two-way connector road and a right-in/right-out location needs to be identified along Craycroft Road. Access to the Pilot Travel Center will be similar but the return to westbound I-10 will be longer than for existing conditions. The cost to Pilot and Triple T due to loss in business is unknown.

Note: Follow up discussions with the City of Tucson and project stakeholders (see progress meeting notes dated 9/12/2018) further refined Concept 8 to include a frontage road along the east side of Craycroft Road to provide better access to the residences along Craycroft Road, provide more separation between the residences and the new signalized intersection, and to provide a positive means to collect drainage runoff coming from the residential subdivision. The consensus by the stakeholders was to select Concept 8 and move forward with presenting this concept in the next Public Information meetings for the I-10/SR 210 project. See the attached figure that illustrates the revised plan for Craycroft Road and the proposed roadway profile.

Interstate 10/State Route 210 - Craycroft Road Roundabout

April 2018

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Phoenix, AZ 85003
In cooperation with:
Arizona Department of Transportation
Federal Highway Administration

Overview

Study Background

The Arizona Department of Transportation (ADOT), in conjunction with the Federal Highway Administration (FHWA), is conducting Phase II of a study to determine how best to improve mobility along Interstate 10, between the intersection with Interstate 19 to Kolb Road, southeast of downtown Tucson (Figure 1). Another major component of this study is to identify a new alignment of State Route (SR) 210 (Barraza Aviation Highway) that would connect with I-10 east of downtown.

Figure 1: I-10/SR 210 Study Area

The recommendation to add a roundabout at Craycroft Road north of Interstate 10 is part of the Interstate 10/State Route 210 (I-10/SR 210) Phase II study. Two system alternatives are being studied that will add or improve interchanges, widen or replace the existing bridge, and remove some existing interchange ramps along I-10. The Phase II study has identified several issues along Craycroft Road at I-10, including vehicle storage inadequacies on southbound Craycroft Road, traffic restricting left turns from Travel Plaza Way onto southbound Craycroft Road, and storm flows from the east currently flowing across Craycroft Road at two locations (at Dream Street and just north of Travel Plaza Way). Future traffic conditions show traffic doubling at the Craycroft Road TI by the year 2040, taking

the TI to its capacity with LOS (D/D) during the AM peak hour and LOS (C/D) during the PM peak hour. The intersection of Craycroft Road and Travel Plaza Way will fail with a LOS of F in the AM and PM peak hours.

As part of the traffic interchange improvements at Craycroft Road, two traffic signals are being recommended north and south of I-10 on Craycroft Road. According to ADOT Roadway Design Guidelines access control criteria, a raised median would have to be constructed north and south of I-10 on Craycroft Road for 660' to preclude left turns from Travel Plaza Way. There are three facilities serving long-haul truck drivers at Craycroft Road and I-10 that would be impacted by the left turn restriction: Triple T Truck Stop, Pilot Travel Center, and Freightliner of Arizona. Truck traffic traveling north on Craycroft Road would not be allowed north of Dream Street due to schools, a regional park, and residential area.

Three roundabout options were developed to help truck traffic turn around on Craycroft Road and avoid going north of Dream Street. The options are outlined on the following pages.

Option 1 (Figure 2)

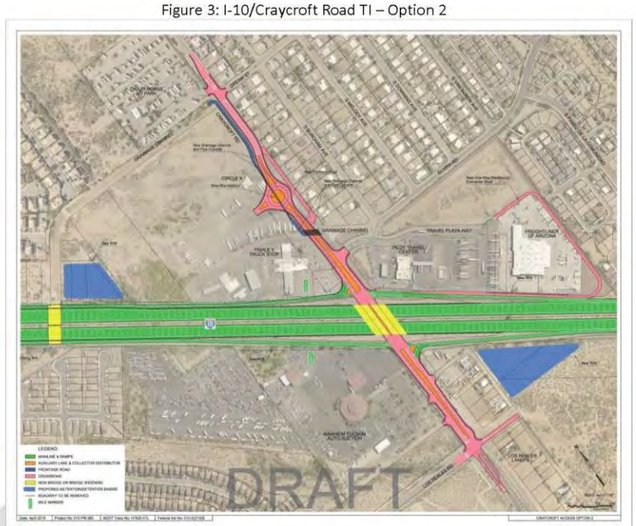
- Craycroft Road under I-10 would be widened. An additional through lane in each direction (north and south) would be added.
- A new raised median would be constructed north and south of I-10 for 660' to preclude left-turns as per ADOT Roadway Design Guidelines access control criteria.
- North of I-10, a new roundabout would be constructed to allow a U-turn movement back to I-10 and access to the Triple T Truck Stop. This would provide adequate traffic storage at I-10. Truck traffic would be discouraged from traveling north on Craycroft Road north of Dream Street.
- A new frontage road would be developed to provide access to residential lots on the east side of Craycroft Road.
- Storm flows from the east would be collected and conveyed in a new drainage channel with pipe culverts on under and along the west side of Craycroft Road.

Figure 2: I-10/Craycroft Road TI – Option 1

Option 2 (Figure 3)
In addition to the features of Option 1, Option 2 also includes:

- A new one-way westbound connector road would be built to allow vehicles from the Pilot Travel Center and Freightliner of Arizona to have direct access to I-10 off-ramp.
- The connector road would provide alternative access to the westbound frontage road and I-10.

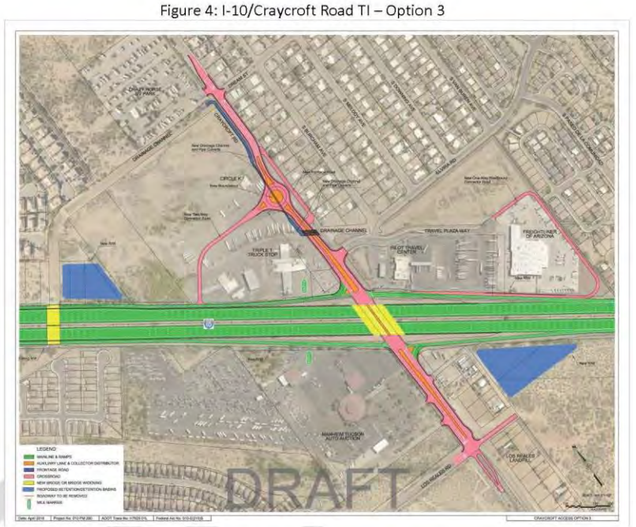
Figure 3: I-10/Craycroft Road TI – Option 2



Option 3 (See: Figure 4)
In addition to the features of Option 1, Option 3 also includes:

- A new two-way loop road would be constructed from the roundabout through the Triple T Truck Stop parking area to the westbound frontage road.
- The new loop road would provide alternative access to the westbound frontage road and I-10.
- The one-way westbound connector road to the I-10 off-ramp from Option 2 would be optional.

Figure 4: I-10/Craycroft Road TI – Option 3



Public Involvement Purpose and Process
Consistent with the ADOT's Public Involvement Plan and FHWA's public involvement guiding principles, the project team planned a series of meetings with individual business property owners and agency stakeholders in the Craycroft Road/I-10 area and a neighborhood meeting with the Littletown community. The goals of this outreach plan were to solicit input on various design options and enable the project team to understand community issues and concerns.

The first step in the public involvement process was to meet with the business and agency stakeholders in the Littletown community who are likely to be impacted by the proposed roadway improvements on Craycroft Road. Working closely with the study team, several stakeholders were identified and one-on-one meetings were scheduled with each during the month of April. During the meetings, several stakeholders expressed general opposition for the proposed roundabout and related improvements, which resulted in the study team revisiting the proposed roadway improvements to formulate new alternatives. A summary of these meetings is provided in the following Agency and Business Stakeholder Outreach section.

As a result of the initial stakeholder meetings and the decision to examine new alternatives, a planned community meeting to engage Littletown residents and other community stakeholders was placed on hold. After new alternatives are developed, the public outreach plan will be revisited to determine when additional meetings are needed with stakeholders and the community.

Agency & Business Stakeholder Outreach

The purpose of the individual stakeholder meetings was to introduce and provide an overview of the project to impacted business owners near the I-10/Craycroft Road traffic interchange. A review of findings from preliminary data collection processes, key project issues and challenges, schedule, and communication/outreach issues were presented. In addition to providing background and other pertinent information to the stakeholder agencies and project partners, the Agency Scoping Meeting was also designed to assist the study team in having the stakeholders identify any issues, concerns and opportunities that may need to be addressed during the course of the study.

Stakeholder
The study team identified and contacted area business/property owners, the school district serving the community and Pima County to schedule and participate in one-on-one stakeholder/study team meetings. Six stakeholder representatives were contacted and confirmed having an interest in the study. Phone calls were made on March 12-13, 2018 and followed up with emails March 14-16. Appendix B includes the email and list of stakeholders contacted.

Individual Stakeholder Meetings
The series of six one-on-one stakeholder meetings was held during the month of April, both in person and via conference call. The conference call meetings were conducted through ADOT's WebEx system, an online platform allowing participants real-time, simultaneous viewing of project information, i.e., maps. The purpose of these meetings was to provide stakeholders with preliminary study information and to seek input. Participants included representatives from:

- Study Team
  - Jacobs Engineering Group
  - HDR Engineering, Inc.
  - Arizona Department of Transportation
- Stakeholders
  - Arizona Trucking Association
  - Pima County Natural Resources, Parks and Recreation
  - Sunnyside School District
  - Triple T Truck Stop (also representing Circle K)
  - Pilot Travel Centers
  - Freightliner of Arizona

Stakeholder meetings were scheduled as represented in Table 1 below.

Table 1: Individual Stakeholder Meetings

Stakeholder	Representative	Study Team Attendees	Date & Time	Location
Arizona Trucking Association (ATA)	Tony Bradley, President & CEO	Brad Olbert, Jacobs Judah Cane, Jacobs Haley Estelle, HDR Jerimiah Moerke, ADOT Tazeen Dewan, ADOT	April 11 10:15 AM	ATA Offices Tolleson, AZ 85353
Pima County Natural Resources, Parks and Recreation	Steve Anderson, Planning Division Manager Joe Barr, Recreation Superintendent	Brad Olbert, Jacobs Judah Cane, Jacobs Joe D'Onofrio, Jacobs Haley Estelle, HDR Jerimiah Moerke, ADOT Tazeen Dewan, ADOT Sarah Karasz. ADOT James Gomes, ADOT	April 12 9:30 AM	ADOT Training Center Tucson, AZ 85713
Freightliner of Arizona *Teleconference & WebEx*	Steve Zeppenfeldt, Senior Vice President of Operations	Brad Olbert, Jacobs Judah Cane, Jacobs Haley Estelle, HDR Jerimiah Moerke, ADOT Tazeen Dewan, ADOT	April 12 11:30 AM	ADOT Training Center Tucson, AZ 85713
Triple T/Circle K	Tracey Galliger, Real Estate Manager Gail Foreman, Owner Jim Jutry, Owner Jack Dowell, Owner	Brad Olbert, Jacobs Judah Cane, Jacobs Haley Estelle, HDR Jerimiah Moerke, ADOT Tazeen Dewan, ADOT James Gomes, ADOT	April 12 1:30 PM	ADOT Training Center Tucson, AZ 85713
Pilot Travel Center *Teleconference & WebEx*	Stacy Stanley, Real Estate Manager	Brad Olbert, Jacobs Judah Cane, Jacobs Haley Estelle, HDR Jerimiah Moerke, ADOT Tazeen Dewan, ADOT James Gomes, ADOT	April 19 1:00 PM	HDR, Inc. Phoenix, AZ 85003
Sunnyside School District *Teleconference & WebEx*	Carlos Valdez, Transportation & Maintenance Director	Brad Olbert, Jacobs Judah Cane, Jacobs Haley Estelle, HDR Jerimiah Moerke, ADOT Tazeen Dewan, ADOT James Gomes, ADOT Sarah Karasz, ADOT	April 19 2:00 PM	HDR, Inc. Phoenix, AZ 85003

The meetings included an overview of the project followed by a discussion session. The overview included study purpose and objectives, engineering and environmental elements, study schedule and process, as well as an overview of the existing study area.

During the discussion session, stakeholders were able to comment on the study and the information presented. In addition, contact information was provided for stakeholders to continue providing input. Stakeholder comments are summarized below.

Arizona Trucking Association
Roundabouts are difficult for most truck-trailers to navigate, especially those that are over-dimensional in either weight, length, or both. Mr. Bradley suggested contacting Jennifer Cannon with ADOT to discuss more about routes that can accommodate over-dimensional vehicles.

If a roundabout is selected as a build option for Craycroft Road, ATA supports either Option 3 or Option 2. Rolled curbs are abusive on equipment but necessary for truck-trailers to navigate roundabouts. They would like to see an option that eliminates the roundabout all together.

Pima County Natural Resources, Parks and Recreation
Constructing the roundabout at its current proposed location is preferred as it redirects truck traffic away from the regional park and elementary schools on Littletown Road. The proposed roadway improvements need to provide for safe pedestrian movement and discourage jaywalking from the Littletown neighborhood to the nearby Circle K.

If a roundabout is selected as a build option for Craycroft Road, Pima County Natural Resources, Parks and Recreation supports Option 2 or Option 3 and specifically the roadway behind the Freightliner establishment.

Freightliner of Arizona
Freightliner did not support encroachment onto their property as presented in Option 2 and Option 3. The connector road in those options would inhibit Freightliner's development plans, could disrupt nearby residential areas, and would eliminate existing employee parking. Future discussions are important, and roadway improvements should not make it difficult for customers or impede revenues. It is important to keep "doing business" easily. In all three options, some property would be required from Freightliner for frontage road construction.

Freightliner agreed to send property boundaries to study team to prepare for future discussions.

Triple T/Circle K
Triple T/Circle K expressed concern for the lack of left-turn access to Triple T and Circle K with the proposed roadway improvements. Roundabouts can be very busy and very noisy, which would be disruptive to the neighborhood. Additionally, truck-trailer operators may not use the roundabout to make a U-turn to get back onto Interstate 10. The potential exists for them to drive through the roundabout and on to Littletown Road near the schools and Regional Park.

In Option 3, an access road that splits the Triple T/Circle K property would have to be mutually beneficial and provide an opportunity to develop the adjacent vacant land (owned by Triple T). Triple T supported the proposed access road behind Freightliner in Option 2 and Option 3. Triple T was most supportive of Option 2. Options that elliminate the roundabout need to be explored.

Pilot
This stakeholder is interested in impacts the proposed roadway improvements would have on the Pilot property and if any Pilot property would need to be acquired for any of the proposed improvements. Pilot wants to ensure the roundabout radii support the truck-trailer turning maneuvers and is supportive of Option 3.

Sunnyside School District
The District wants to ensure that the proposed roundabout will accommodate school bus turning radii as they serve the Littletown neighborhood and use Craycroft Road on a daily basis. Sunnyside supports the proposed location for the roundabout as it avoids the regional park and schools. The district representative did not indicate a preference for any one option over another. Sunnyside will continue to participate in the process and will continue to study the proposed improvements to help determine which would best serve the community and the traveling public. The rest of the discussion focused on traffic congestion on Littletown Road and the status of other I-10/SR210 projects (i.e., Alvernon Way).

Agency & Business Stakeholder Outreach Outcomes
Four of the six stakeholders who participated in the agency and business stakeholder outreach expressed considerable concerns for the construction of a roundabout on Craycroft Road. In their comments, the Arizona Trucking Association expressed concern for large truck-trailer navigation through roundabouts and supported researching other alternatives that eliminate the roundabout all together. Pilot Travel Centers expressed similar concern for truck-trailer turning maneuvers in the roundabout and also the property impacts if right-of-way acquisition on their property would be necessary for any of the options presented. Freightliner also expressed concern for right of way acquisition and general opposition for the access road adjacent to their property, citing impacts to their business operation and the residential neighborhood that abuts their property on the east. Triple T Truck Stop was opposed to roadway improvements cutting off left turn access into their business, but supported Option 2. These participants requested development and evaluation of alternatives that eliminate the roundabout. Pima County and the Sunnyside School District were neutral to all three options presented, but expressed support of eliminating opportunities for truck-trailer traffic to use roadways that students and the community use to access their facilities on and north of Craycroft Road.

Based on these discussions, they study team has decided to revisit design options for roadway improvements that alleviate some of these concerns, including options that eliminate the roundabout. Further outreach will be required as the study team continues to evaluate alternatives and the outreach plan will be updated to determine the level and type of outreach that will be required.

APPENDIX P
FREEWAY MANAGEMENT SYSTEM & SIGNAGE

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
3. Install CCTV Camera, Pole, Lowering Device, and Cabinet
4. Install 6 6'x6' Detector Loops, and Detection Cabinet
5. Install 2-3" Conduits
6. Install 8 6'x6' Detector Loops, and Detection Cabinet
7. Install DMS Structure, DMS, and Cabinet
8. Install 4-3" Conduits
9. Existing Structure, DMS to Remain
10. Install 12 6'x6' Detector Loops, and Detection Cabinet
11. Install 10 6'x6' Detector Loops, and Detection Cabinet
12. Remove Existing DMS Structure, DMS
13. Install 4 6'x6' Detector Loops, and Detection Cabinet
14. Install 2 6'x6' Detector Loops, and Detection Cabinet
15. Install New SONET Node Building
16. Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet
17. Install Wrong Way Driving Detection System
18. Existing No. 9 Pull Box to Remain
19. Existing ITS Conduit to Remain
20. Install 6 6'x6' Detector Loops
21. Install 8 6'x6' Detector Loops
22. Install 10 6'x6' Detector Loops
23. Install 4 6'x6' Detector Loops

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

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10/SR210 Constructioin Notes
I-10 SYSTEM ALT 1

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS01.01

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/2/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\Construction Notes Master Sheet..dgn

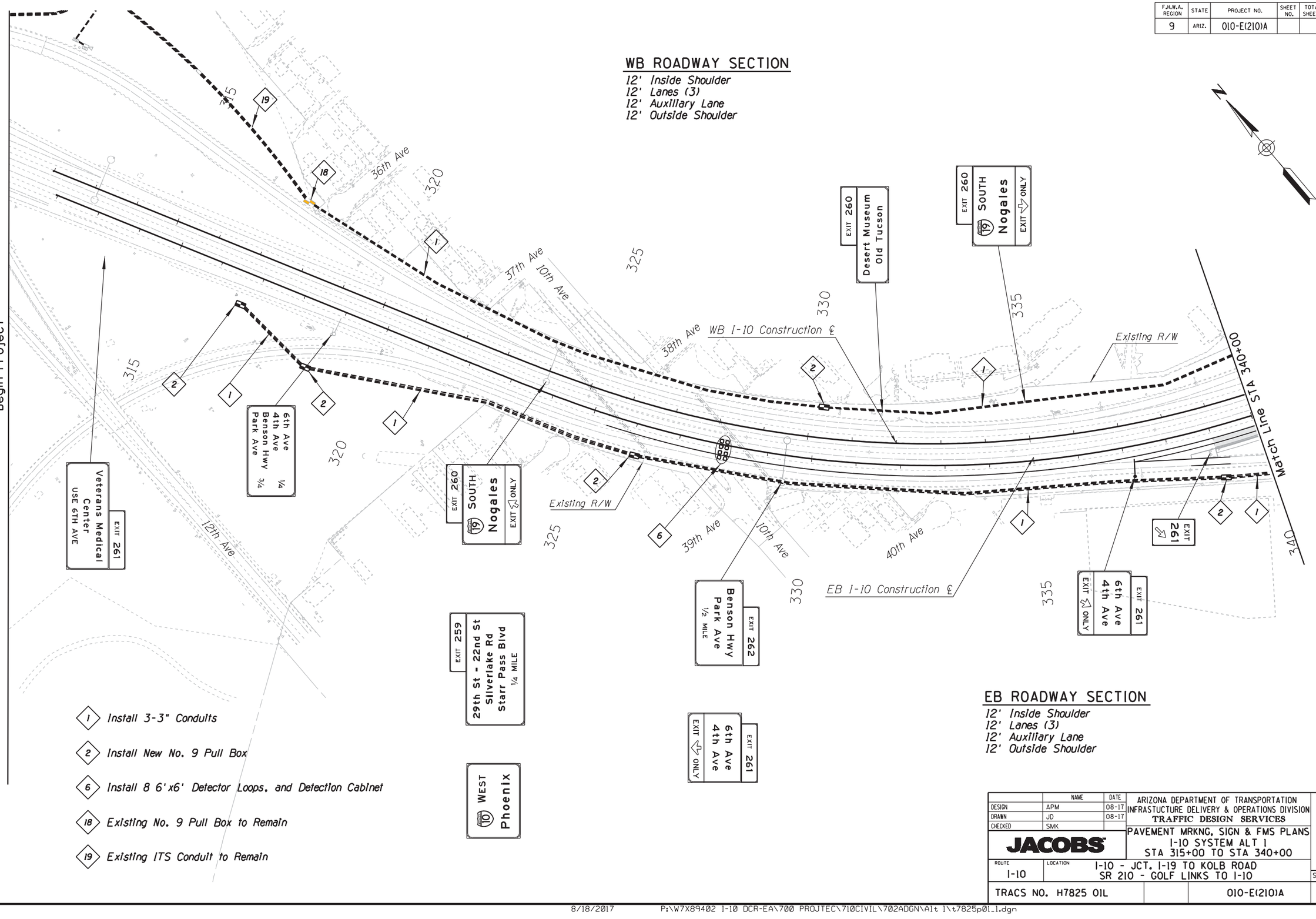
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

Begin Project

WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder



EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder

1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

6 Install 8 6'x6' Detector Loops, and Detection Cabinet

18 Existing No. 9 Pull Box to Remain

19 Existing ITS Conduit to Remain

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

JACOBS

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 315+00 TO STA 340+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

SHEET TS01.02

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

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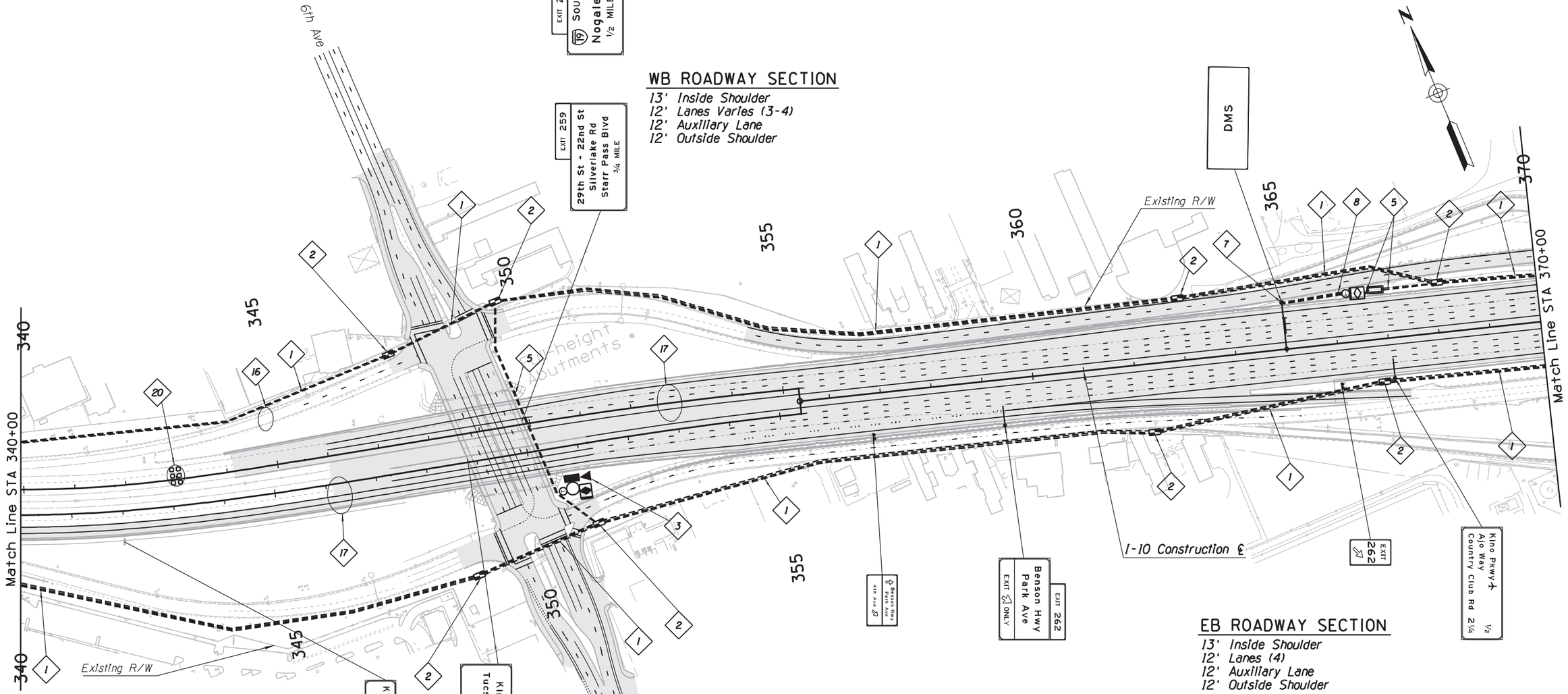
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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



WB ROADWAY SECTION

13' Inside Shoulder
12' Lanes Varies (3-4)
12' Auxiliary Lane
12' Outside Shoulder

EB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
12' Outside Shoulder

1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
3. Install CCTV Camera, Pole, Lowering Device, and Cabinet
5. Install 2-3" Conduits
7. Install DMS Structure, DMS, and Cabinet
8. Instal 4-3" Conduits
16. Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet
17. Install Wrong Way Driving Detection
20. Install 6 6'x6' Detector Loops

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

JACOBS

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 340+00 TO STA 370+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

TRACS NO. H7825 01L | 010-E(210)A

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS01. 03
___ OF ___

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

Inside Shoulder Varies 13'-16.75'
12' Lanes (4)
12' Outside Shoulder

EB ROADWAY SECTION

Inside Shoulder Varies 13'-16.75'
12' Lanes (4)
12' Auxiliary Lane
12' Outside Shoulder

Match Line STA 370+00

Match Line STA 400+00

U.P.R.R.

Park Ave

Benson Hwy

I-10 Construction ℄

New R/W

Existing R/W

DMS

EXIT 260 (19) SOUTH Nogales 1 MILE

(10) WEST Phoenix

4th Ave 6th Ave

(10) WEST Phoenix

(10) WEST Phoenix

EXIT 264 Country Club Rd 1½ MILE

EXIT 263 Kino Pkwy Tucson Intl ¼ MILE EXIT ONLY

LEFT (10) EAST El Paso

Benson Hwy Park Ave

EXIT 263 Kino Pkwy Tucson Intl ¼ MILE EXIT ONLY

(10) WEST Phoenix KEEP LEFT

(10) EAST El Paso

Benson Hwy

1. *Install 3-3" Conduits*
2. *Install New No. 9 Pull Box*
3. *Install CCTV Camera, Pole, Losering Device, and Cabinet*
5. *Install 2-3" Conduits*
7. *Install DMS Structure, DMS, and Cabinet*
8. *Install 4-3" Conduits*
12. *Remove Existing DMS Structure, DMS*
16. *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet*
17. *Install Wrong Way Driving Detection System*
21. *Install 8 6'x6' Detector Loops*

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 370+00 TO STA 400+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS01.04

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

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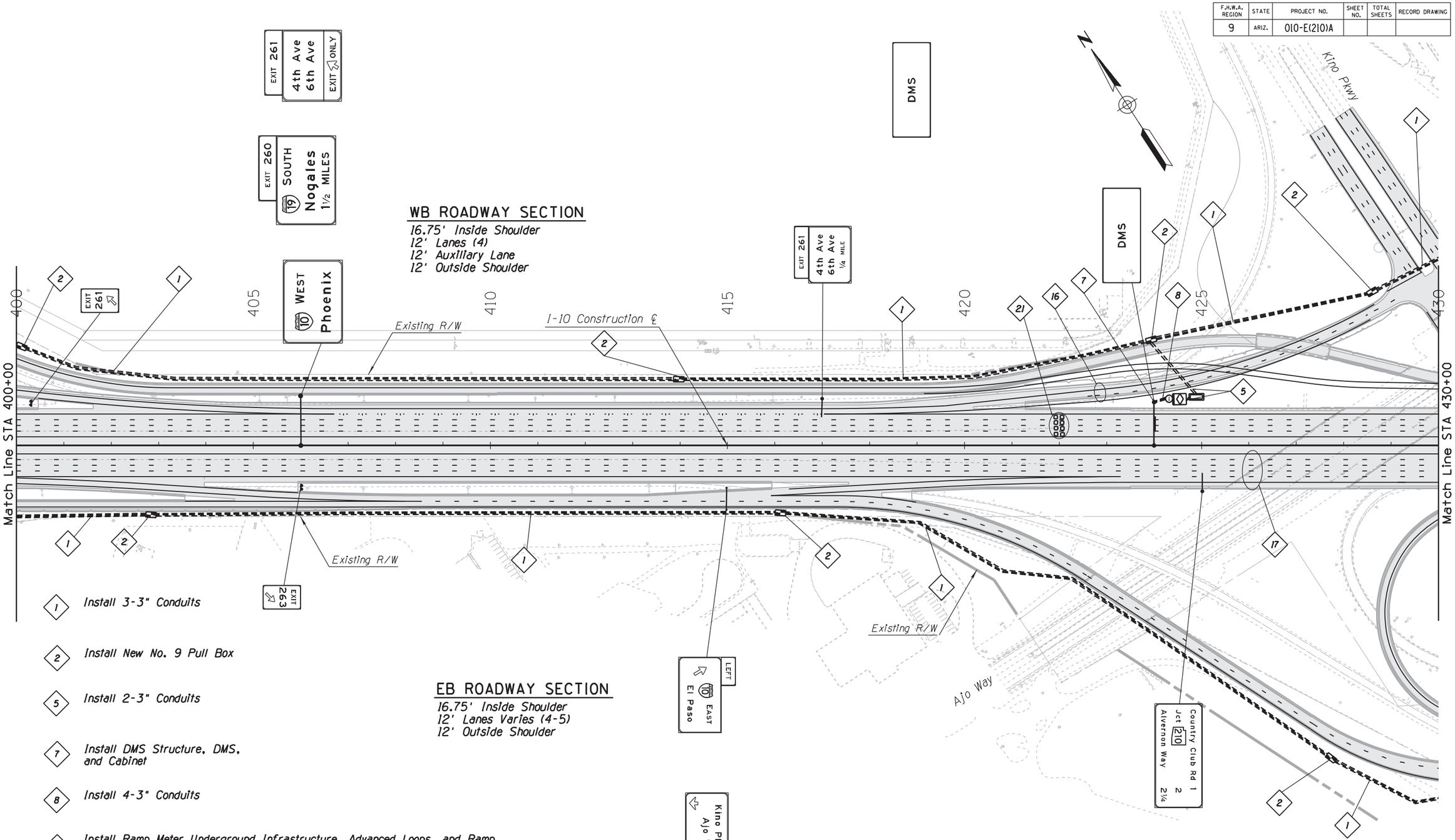
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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



	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 400+00 TO STA 430+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10

SHEET TS01.05

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

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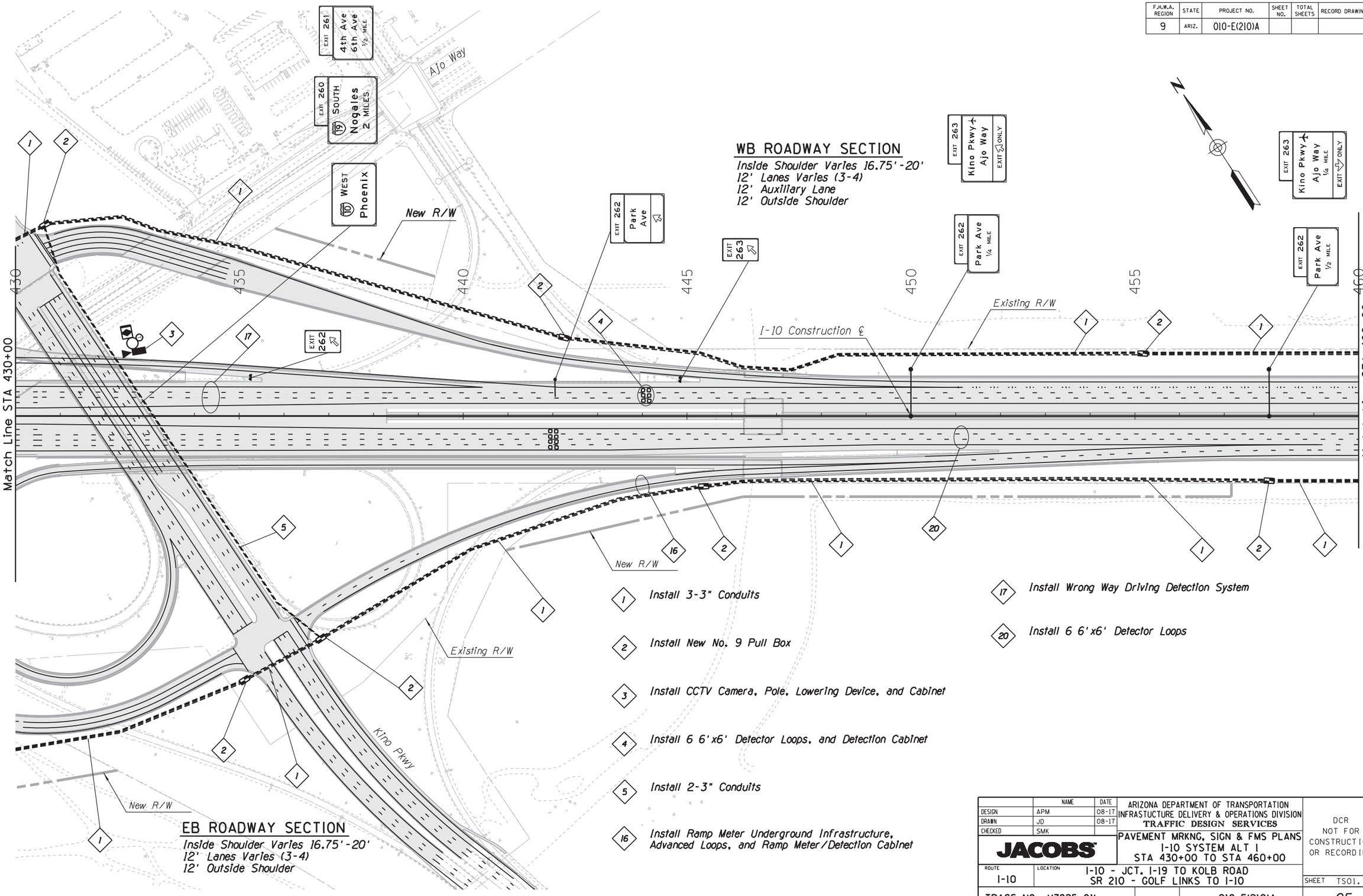
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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



WB ROADWAY SECTION

Inside Shoulder Varies 16.75'-20'
12' Lanes Varies (3-4)
12' Auxiliary Lane
12' Outside Shoulder

EB ROADWAY SECTION

Inside Shoulder Varies 16.75'-20'
12' Lanes Varies (3-4)
12' Outside Shoulder

1. *Install 3-3" Conduits*
2. *Install New No. 9 Pull Box*
3. *Install CCTV Camera, Pole, Lowering Device, and Cabinet*
4. *Install 6 6'x6' Detector Loops, and Detection Cabinet*
5. *Install 2-3" Conduits*
16. *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet*
17. *Install Wrong Way Driving Detection System*
20. *Install 6 6'x6' Detector Loops*

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 430+00 TO STA 460+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

TRACS NO. H7825 01L | 010-E(210)A

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS01.06
___ OF ___

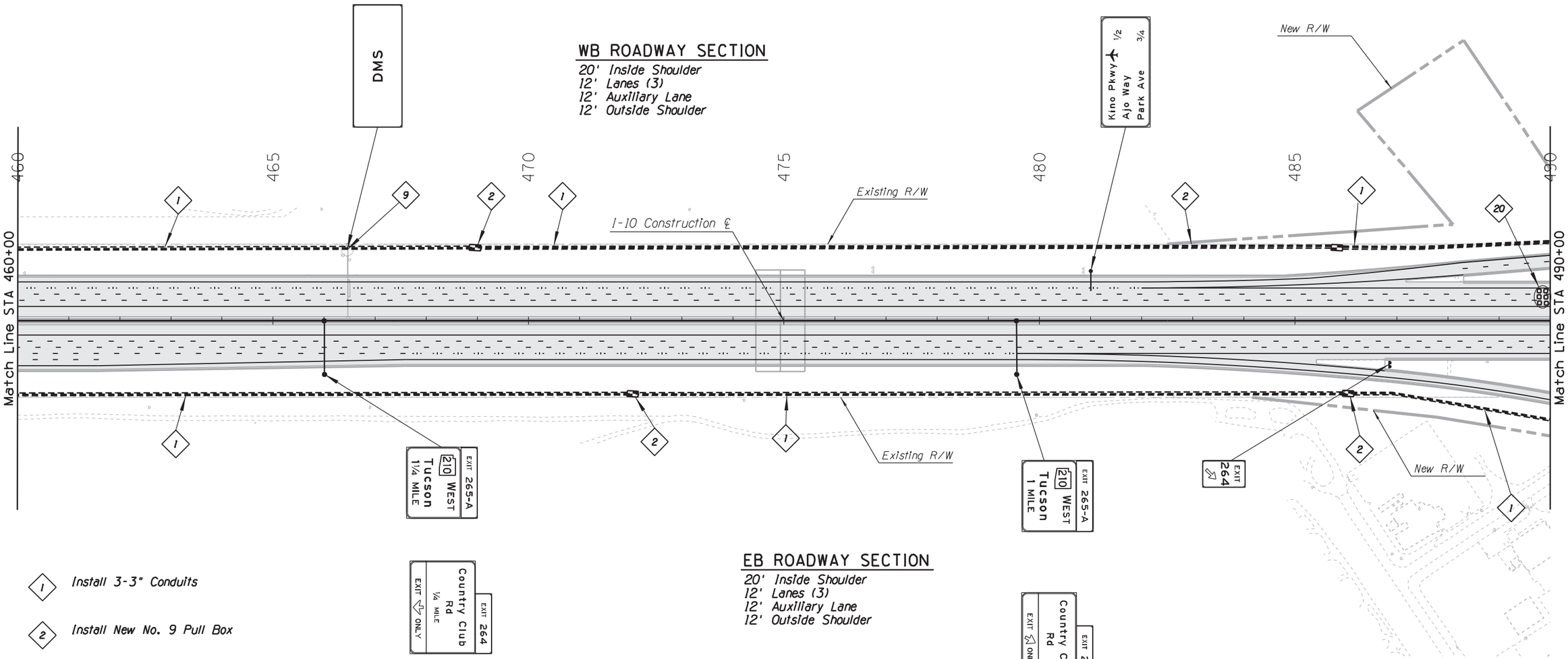
8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p05_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

20' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder



EB ROADWAY SECTION

20' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder

1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

9 Existing Structure, DMS to Remain

20 Install 6 6'x6' Detector Loops

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 460+00 TO STA 490+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

SHEET TS01.07

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

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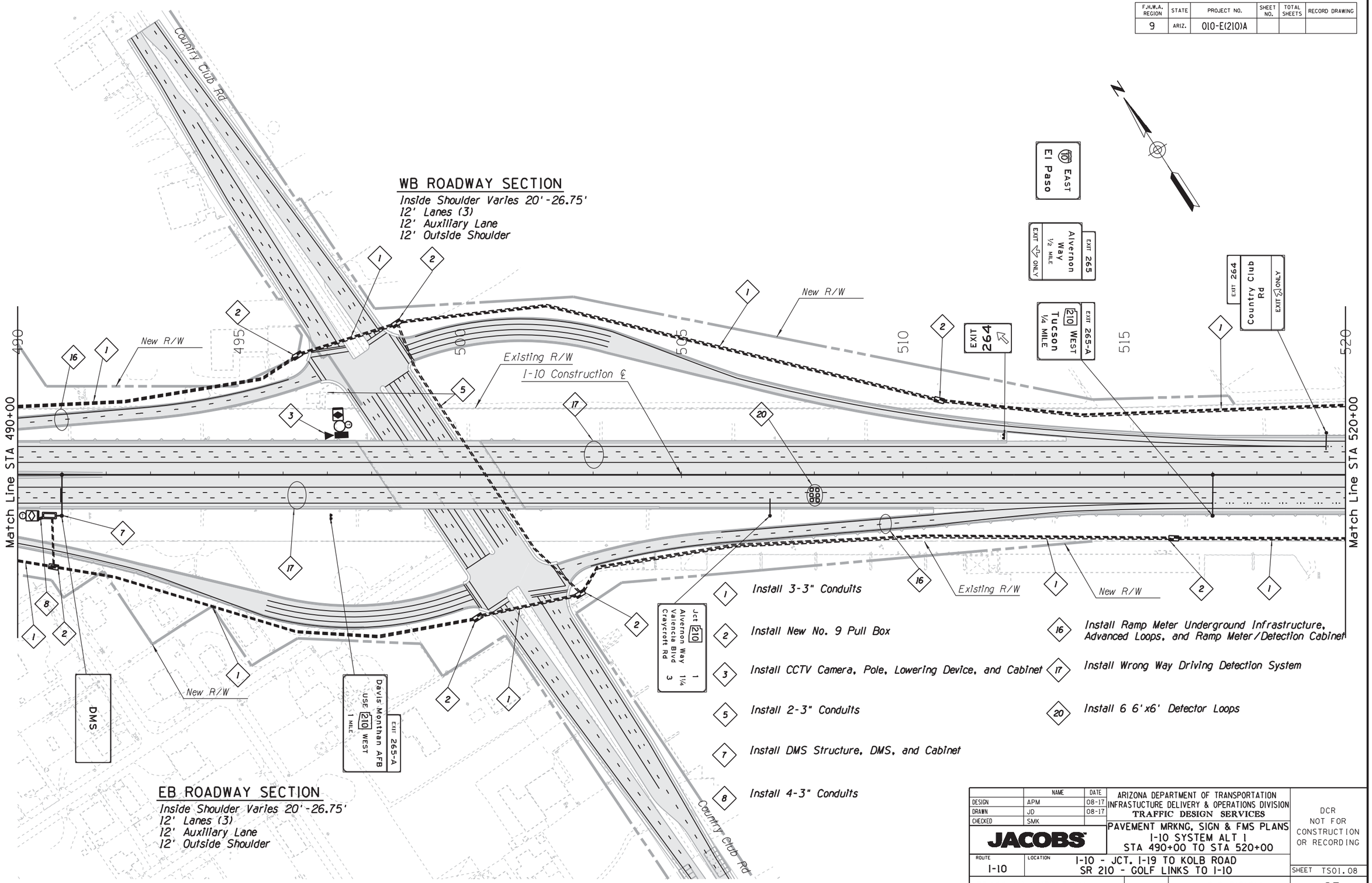
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			



	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 490+00 TO STA 520+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10

SHEET TS01.08

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p07_1.dgn

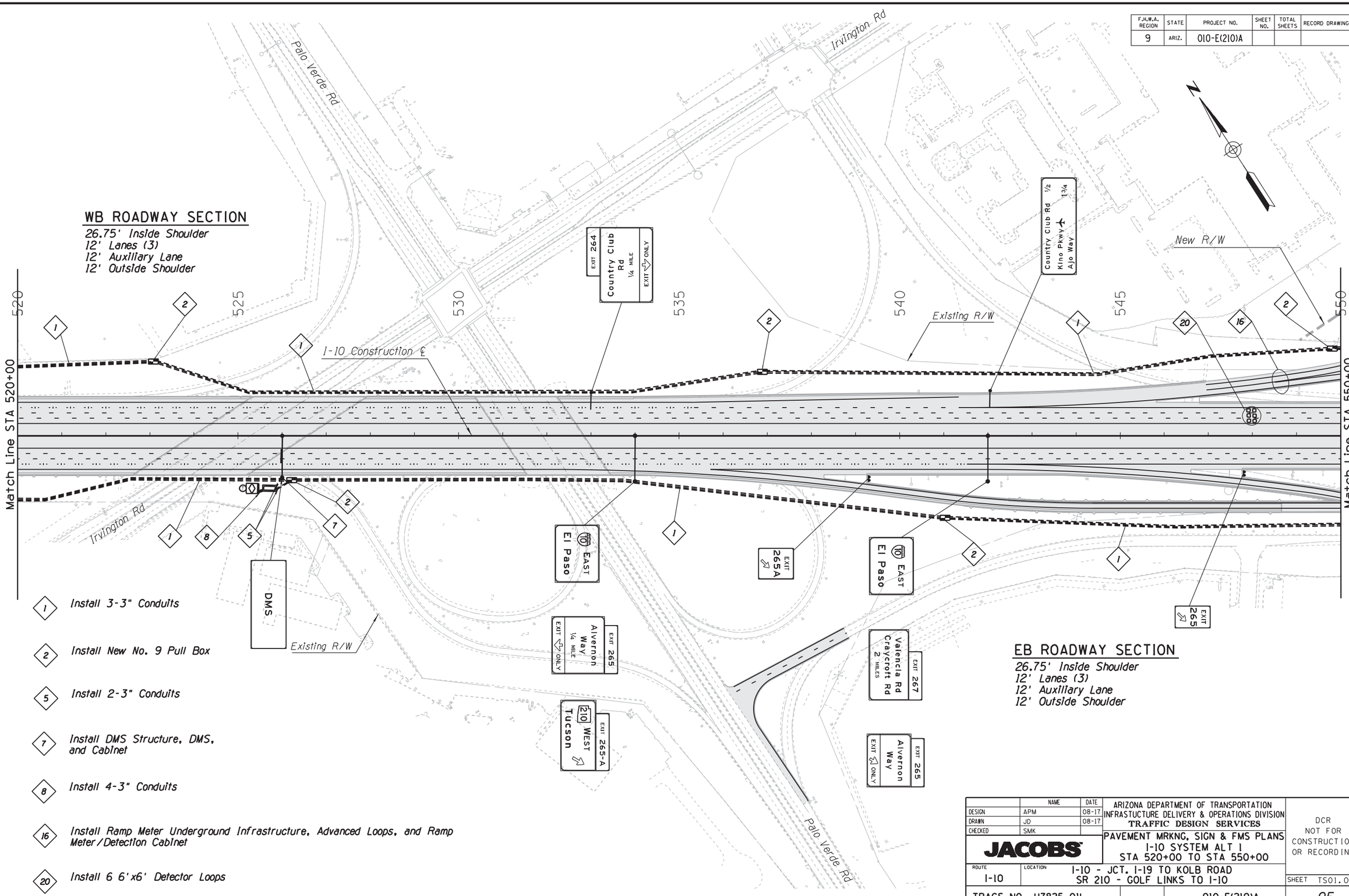
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

26.75' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder



- 1 *Install 3-3" Conduits*
- 2 *Install New No. 9 Pull Box*
- 5 *Install 2-3" Conduits*
- 7 *Install DMS Structure, DMS, and Cabinet*
- 8 *Install 4-3" Conduits*
- 16 *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet*
- 20 *Install 6 6'x6' Detector Loops*

EB ROADWAY SECTION

26.75' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 520+00 TO STA 550+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

TRACS NO. H7825 01L | 010-E(210)A

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS01.09
___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p08_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

Match Line STA 502+00

Match Line STA 550+00

Match Line STA 580+00

New R/W

U.P.R.R.

Existing R/W U.P.R.R.

I-10 Construction ℄

Existing R/W

New R/W

Alvernon Way

EXIT 265 Alvernon Way EXIT ONLY

EXIT

210 WEST Tucson

Irvington Rd Palo Verde Rd

10 WEST Phoenix

10 WEST Phoenix

Alvernon Way North

10 EAST El Paso

505 510 515 520 550 555 560 565 570 575 580

1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

3 Install CCTV Camera, Pole, Lowering Device, and Cabinet

4 Install 6 6'x6' Detector Loops, and Detection Cabinet

16 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Cabinet

17 Install Wrong Way Driving Detection, System

WB ROADWAY SECTION

Inside Shoulder Varies 12'-26.75'
12' Lanes (3)
12' Outside Shoulder

EB ROADWAY SECTION

Inside Shoulder Varies 12'-26.75'
12' Lanes (3)
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS

DCR NOT FOR CONSTRUCTION OR RECORDING

ROUTE | LOCATION: I-10 - JCT. I-19 TO KOLB ROAD; SR 210 - GOLF LINKS TO I-10

SHEET TS01.10

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p09_1.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

EXIT 265 Alvernon Way EXIT ONLY

EXIT 265-B WEST 210 Tucson EXIT ONLY

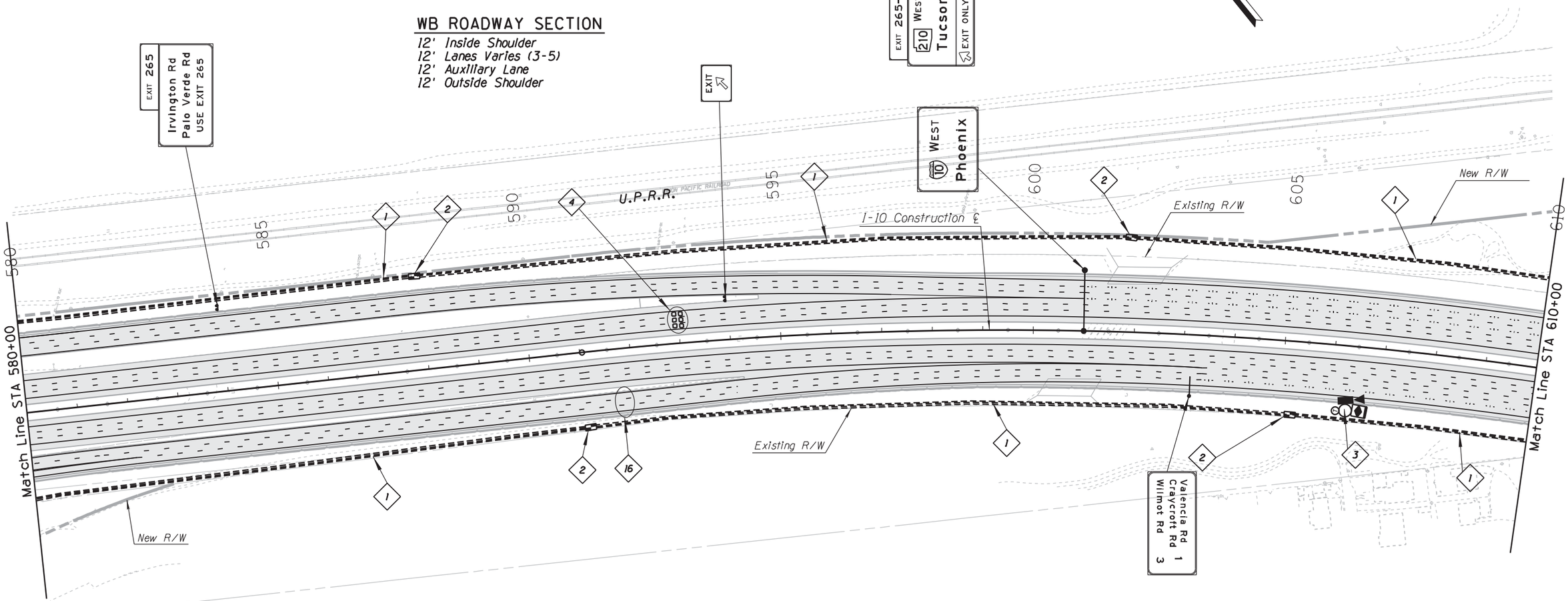
EXIT 265 Irvington Rd Palo Verde Rd USE EXIT 265

EXIT

WEST 10 Phoenix

WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes Varies (3-5)
12' Auxiliary Lane
12' Outside Shoulder



1. *Install 3-3" Conduits*
2. *Install New No. 9 Pull Box*
3. *Install CCTV Camera, Pole, Lowering Device, and Cabinet*
4. *Install 6 6'x6' Detector Loops, and Detection Cabinet*
5. *Install 2-3" Conduits*
16. *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet*

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes Varies (3-5)
12' Auxiliary Lane
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 580+00 TO STA 610+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

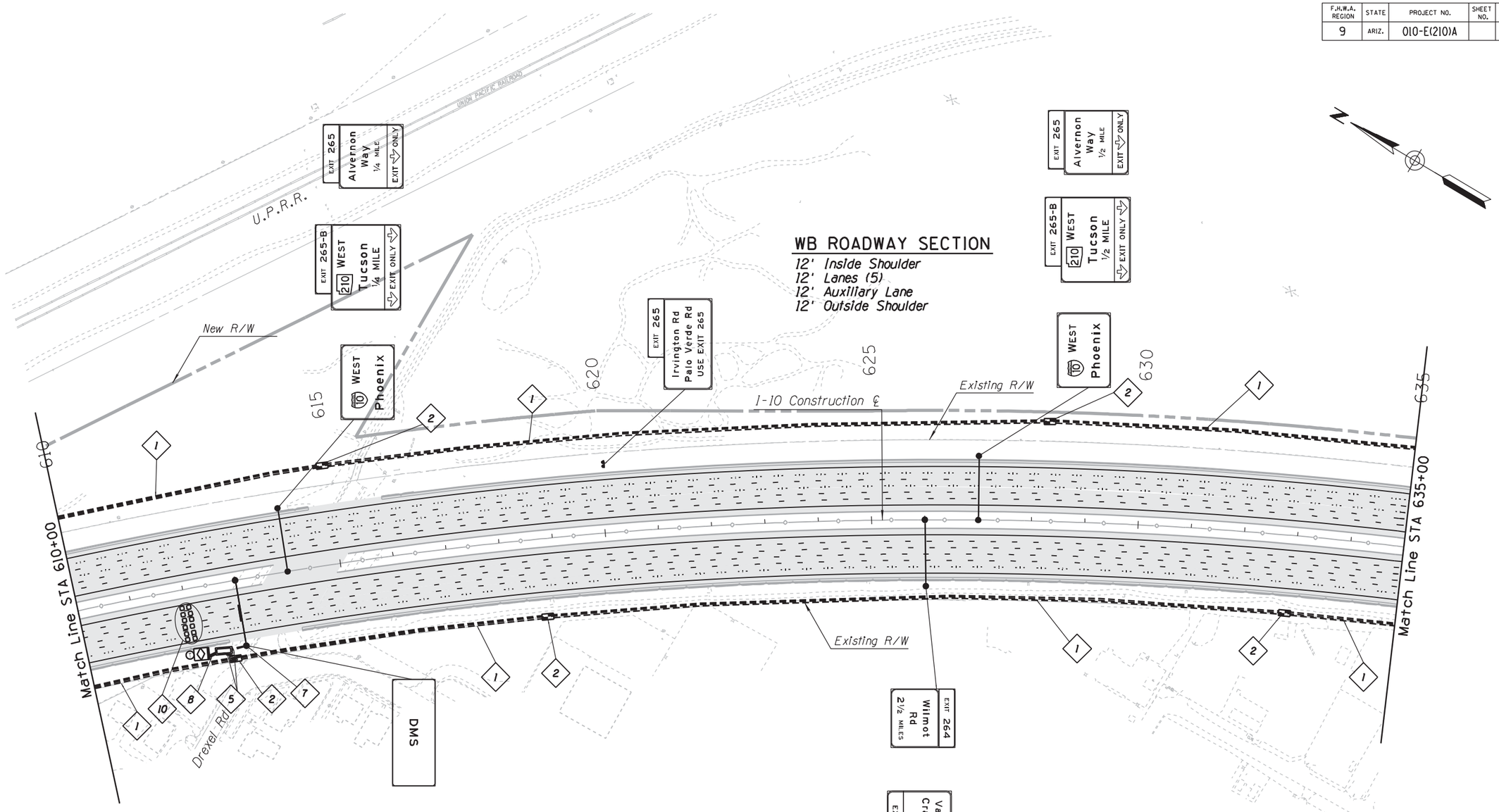
SHEET TS01.11

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p10_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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



WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder

1. *Install 3-3" Conduits*
2. *Install New No. 9 Pull Box*
5. *Install 2-3" Conduits*
7. *Install DMS Structure, DMS, and Cabinet*
8. *Install 4-3" Conduits*
10. *Install 10 6'x6' Detector Loops, and Detection Cabinet*

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 610+00 TO STA 635+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS01.12

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

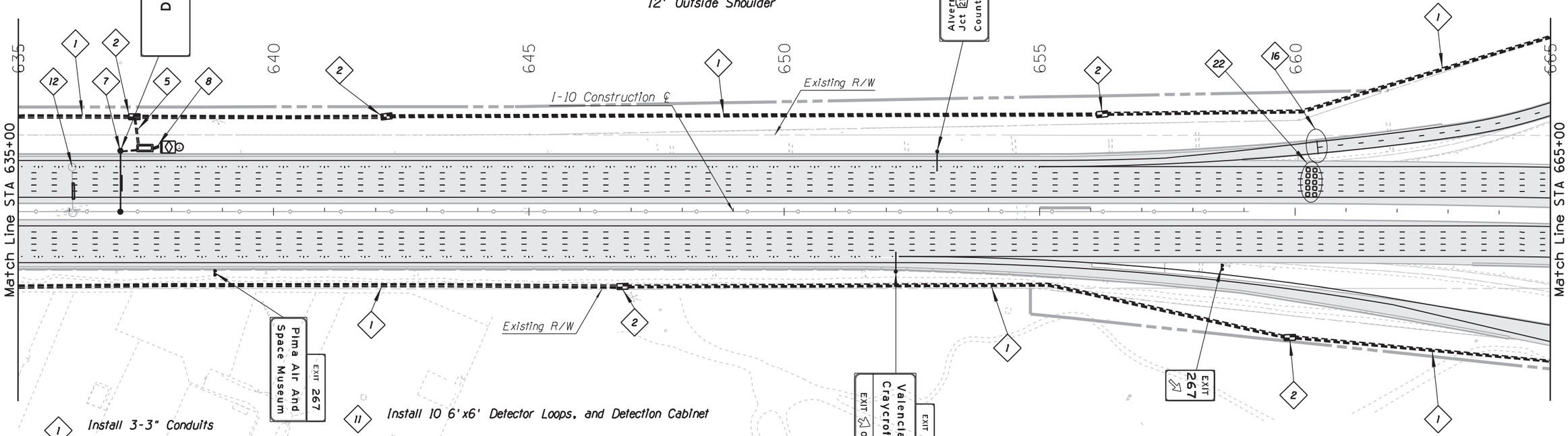
8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p11_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder



1 Install 3-3" Conduits
2 Install New No. 9 Pull Box
5 Install 2-3" Conduits
7 Install DMS Structure, DMS, and Cabinet
8 Install 4-3" Conduits
11 Install 10 6'x6' Detector Loops, and Detection Cabinet
12 Remove DMS Structure, DMS
16 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Cabinet
22 Install 10 6'x6' Detector Loops

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 635+00 TO STA 665+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS01.13

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p12_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

3 Install CCTV Camera, Pole, Lowering Device, and Cabinet

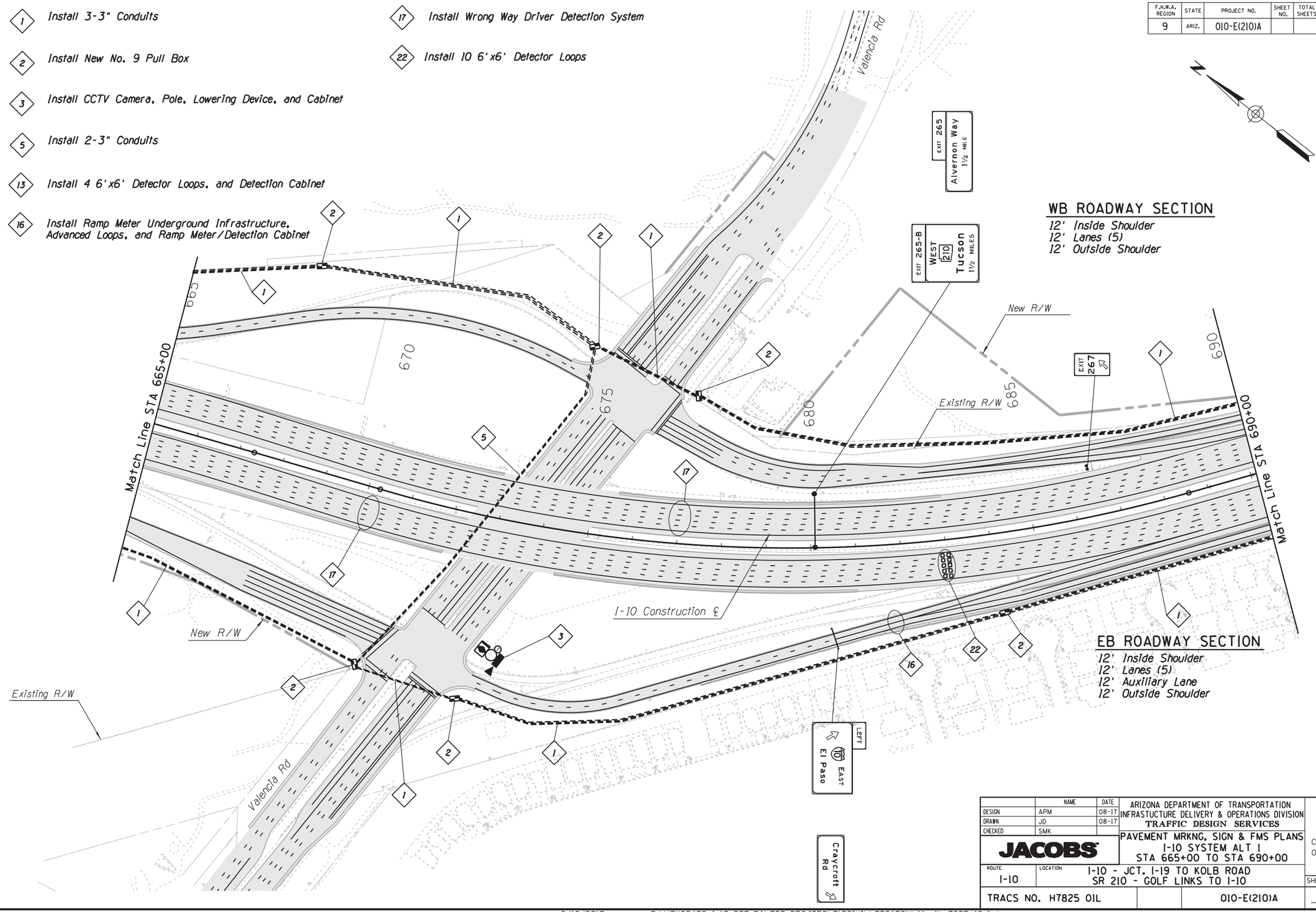
5 Install 2-3" Conduits

13 Install 4 6'x6' Detector Loops, and Detection Cabinet

16 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet

17 Install Wrong Way Driver Detection System

22 Install 10 6'x6' Detector Loops



WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Outside Shoulder

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 665+00 TO STA 690+00

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10

TRACS NO. H7825 01L | 010-E(210)A

DCR
NOT FOR CONSTRUCTION OR RECORDING

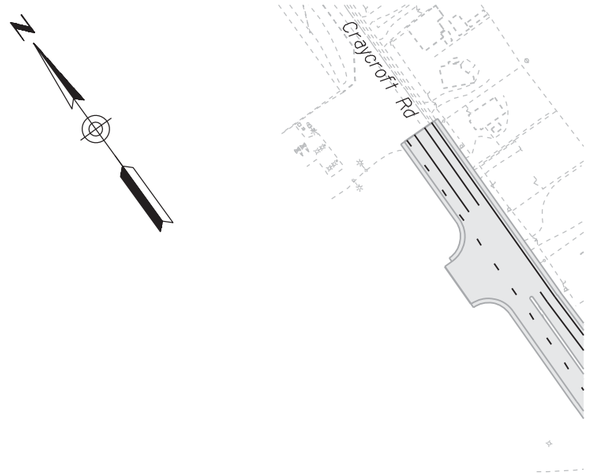
SHEET TS01.14

___ OF ___

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

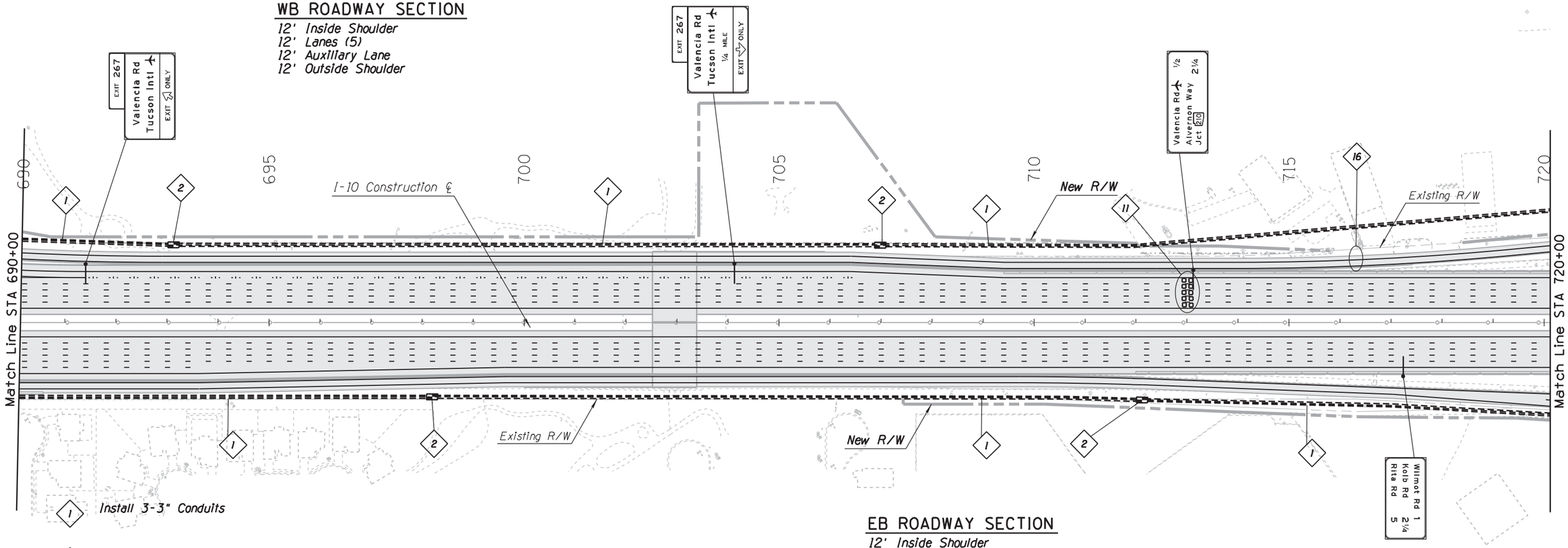
8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p13.1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			



WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder



1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

11 Install 10 6'x6' Detector Loops, and Detection Cabinet

16 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Cabinet

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 690+00 TO STA 720+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS01.15

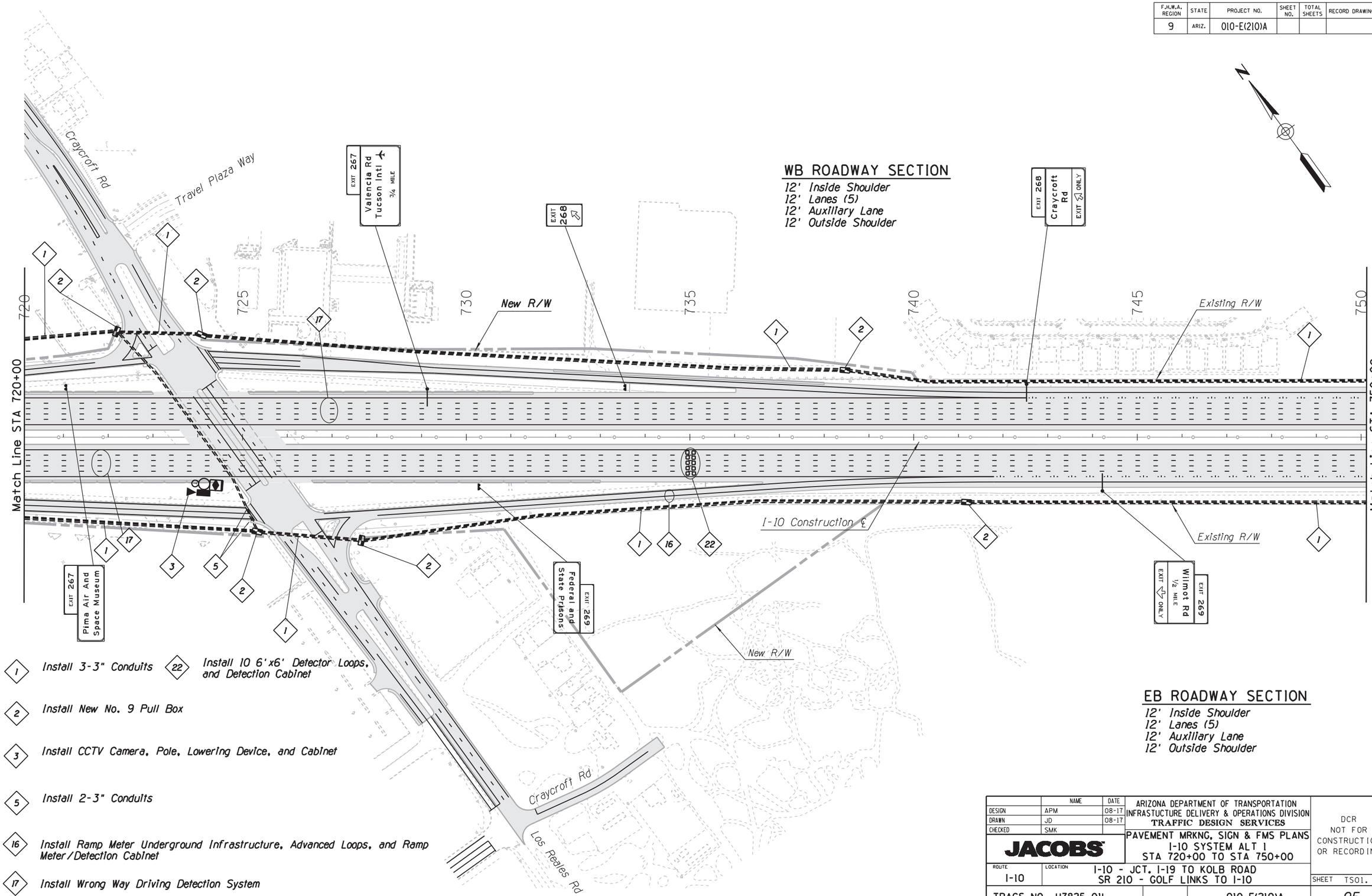
TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p14_1.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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



WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder

1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

3 Install CCTV Camera, Pole, Lowering Device, and Cabinet

5 Install 2-3" Conduits

16 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet

17 Install Wrong Way Driving Detection System

22 Install 10 6'x6' Detector Loops, and Detection Cabinet

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 720+00 TO STA 750+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS01.16

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

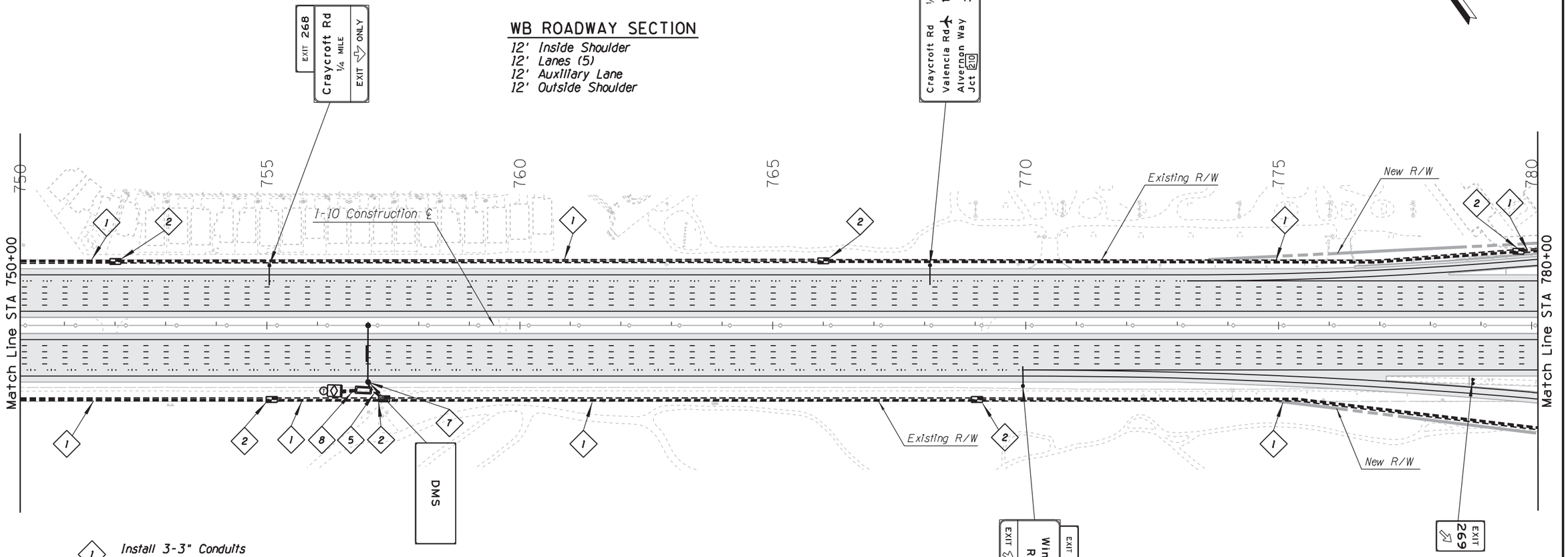
8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p15_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder



1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

5 Install 2-3" Conduits

7 Install DMS Structure, DMS, and Cabinet

8 Install 4-3" Conduits

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 750+00 TO STA 780+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

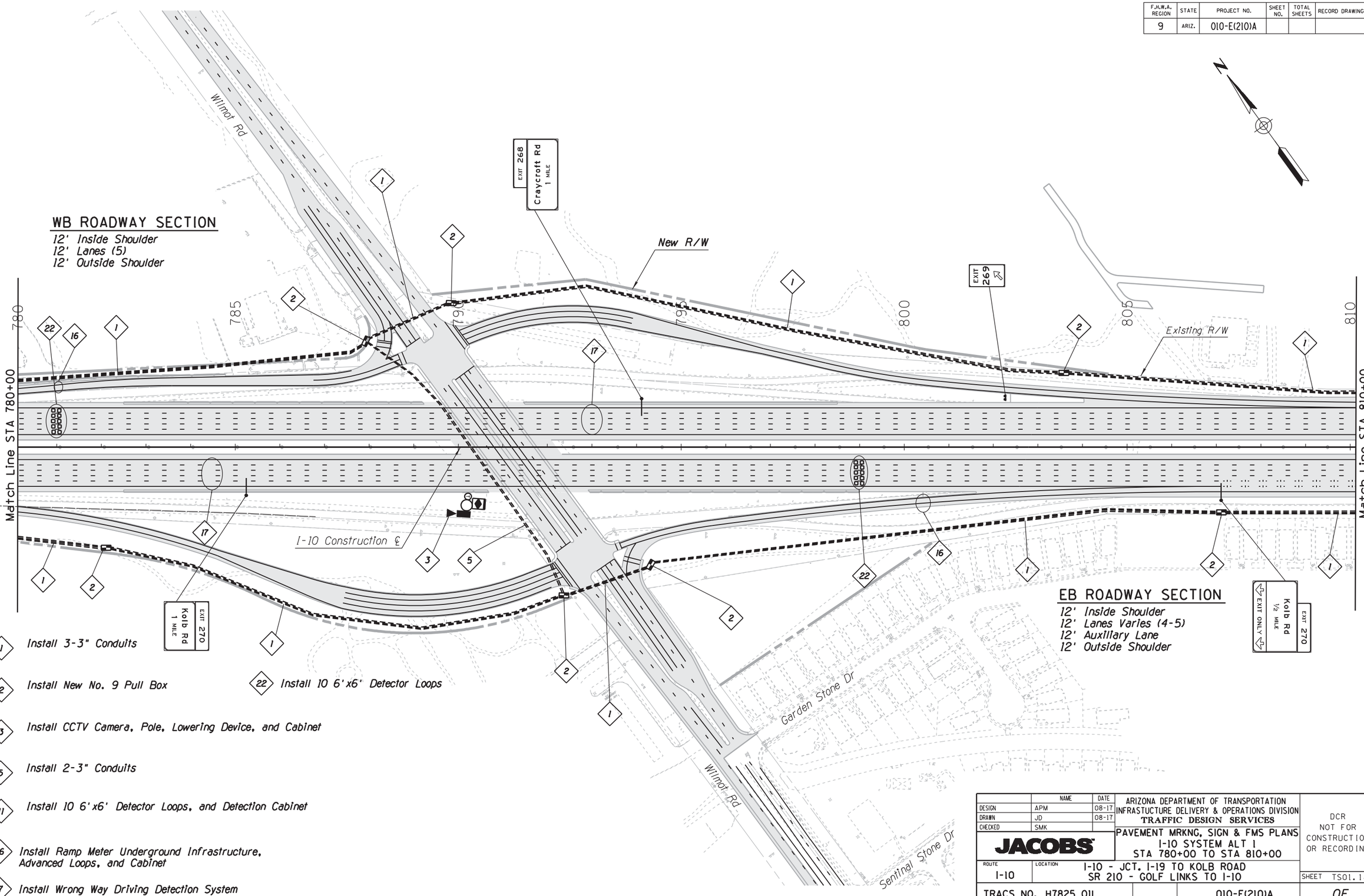
SHEET TS01.17

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p16_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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



WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Outside Shoulder

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes Varies (4-5)
12' Auxiliary Lane
12' Outside Shoulder

1. *Install 3-3" Conduits*
2. *Install New No. 9 Pull Box*
3. *Install CCTV Camera, Pole, Lowering Device, and Cabinet*
5. *Install 2-3" Conduits*
11. *Install 10 6'x6' Detector Loops, and Detection Cabinet*
16. *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Cabinet*
17. *Install Wrong Way Driving Detection System*
22. *Install 10 6'x6' Detector Loops*

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 780+00 TO STA 810+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS01.18

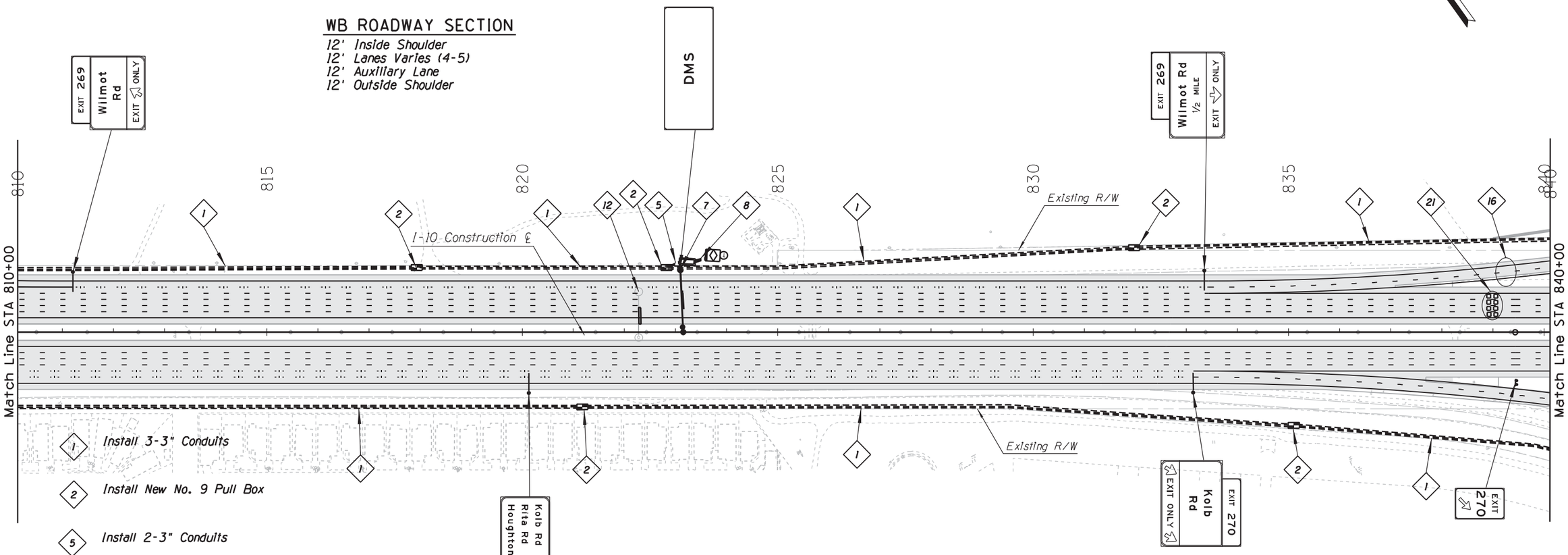
TRACS NO. H7825 01L | 010-E(210)A | ____ OF ____

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p17_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes Varies (4-5)
12' Auxiliary Lane
12' Outside Shoulder



1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

5 Install 2-3" Conduits

7 Install DMS Structure, DMS, and Cabinet

8 Install 4-3" Conduits

12 Remove DMS Structure, DMS

16 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet

21 Install 8 6'x6' Loop Detectors

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes Varies (4)
12' Auxiliary Lane (2)
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 810+00 TO STA 840+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10

SHEET TSO1.19

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

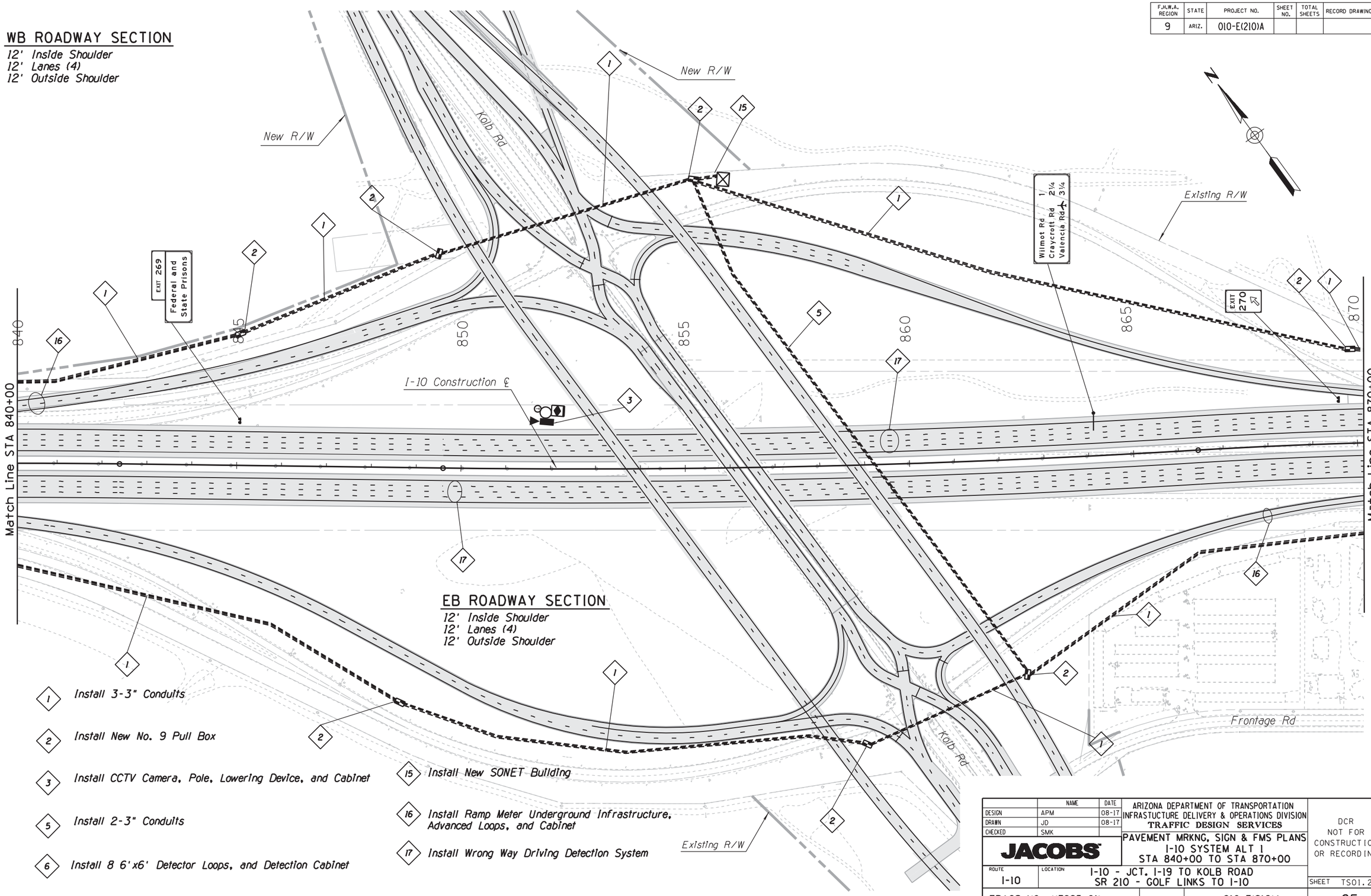
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p18_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (4)
12' Outside Shoulder



1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
3. Install CCTV Camera, Pole, Lowering Device, and Cabinet
5. Install 2-3" Conduits
6. Install 8 6'x6' Detector Loops, and Detection Cabinet
15. Install New SONET Building
16. Install Ramp Meter Underground Infrastructure, Advanced Loops, and Cabinet
17. Install Wrong Way Driving Detection System

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 840+00 TO STA 870+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

SHEET TS01.20

TRACS NO. H7825 01L

010-E(210)A

____ OF ____

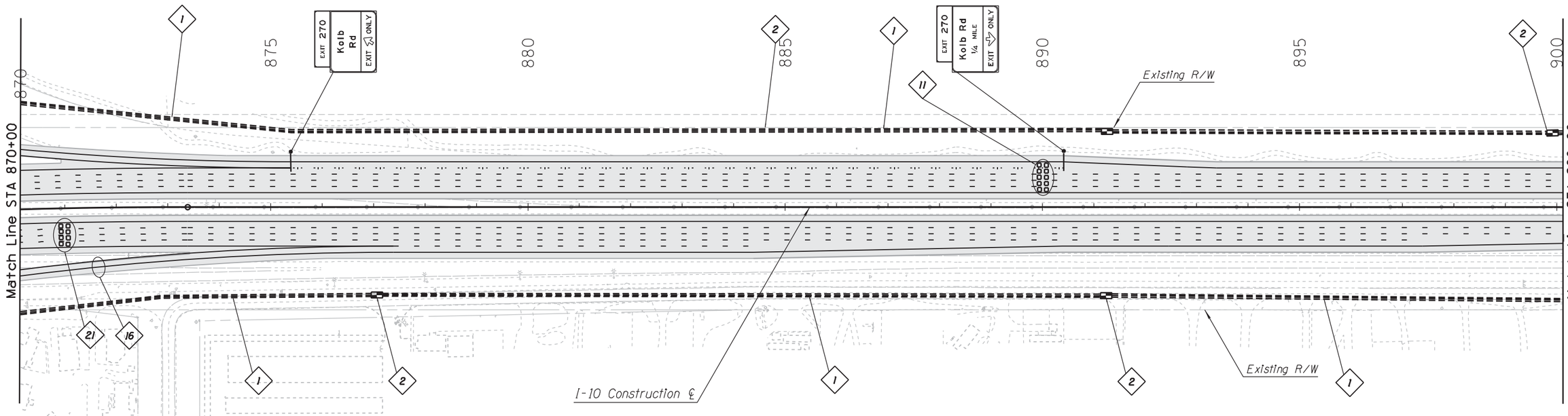
DATE- | LOCATION- | REVISIONS- | FINISHED PLANS- | SURVEY NO. | DATE-

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p19_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
12' Outside Shoulder



EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
12' Outside Shoulder

1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

11 *Install 10 6'x6' Detector Loops, and Detection Cabinet*

16 *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet*

21 *Install 8 6'x6' Detector Loops*

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 870+00 TO STA 900+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS01.21

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

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

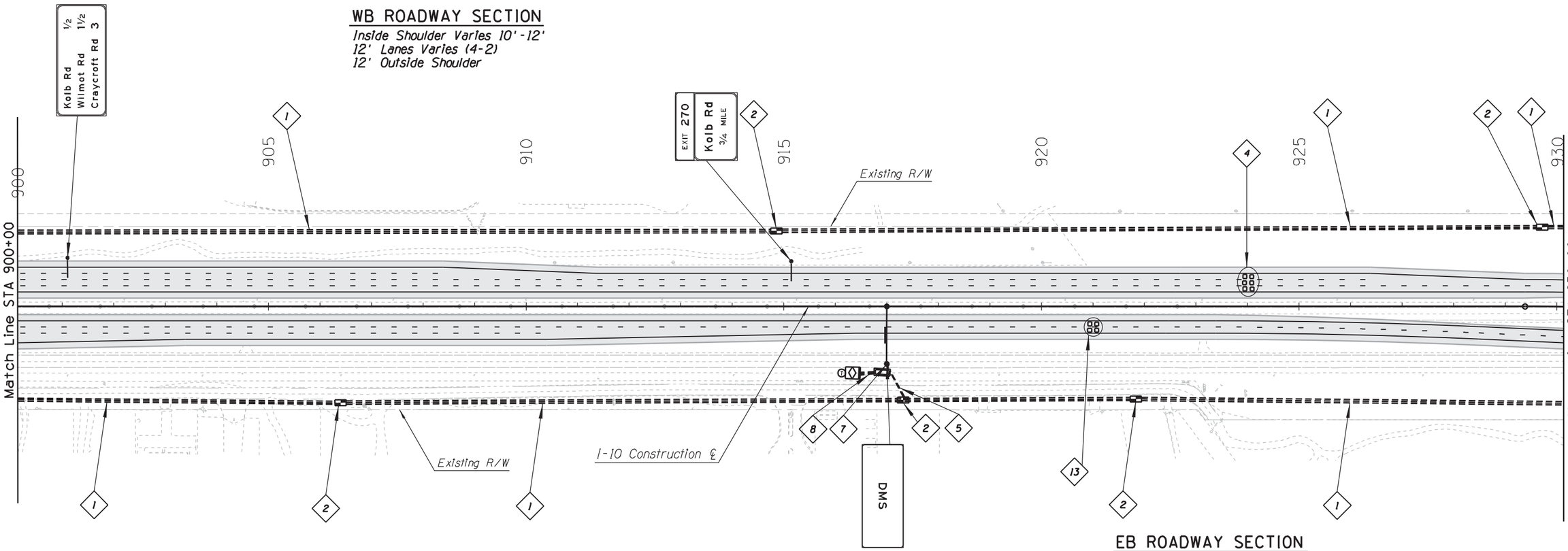
8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p20_1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

Inside Shoulder Varies 10'-12'
12' Lanes Varies (4-2)
12' Outside Shoulder



EB ROADWAY SECTION

Inside Shoulder Varies 4'-12'
12' Lanes Varies (2-4)
12' Outside Shoulder

1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
4. Install 6 6'x6' Detector Loops, and Detection Cabinet
5. Install 2-3" Conduits
7. Install DMS Structure, DMS, and Cabinet
8. Install 4-3" Conduits
13. Install 4 6'x6' Detector Loops, and Detection Cabinet

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 900+00 TO STA 930+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS01.22

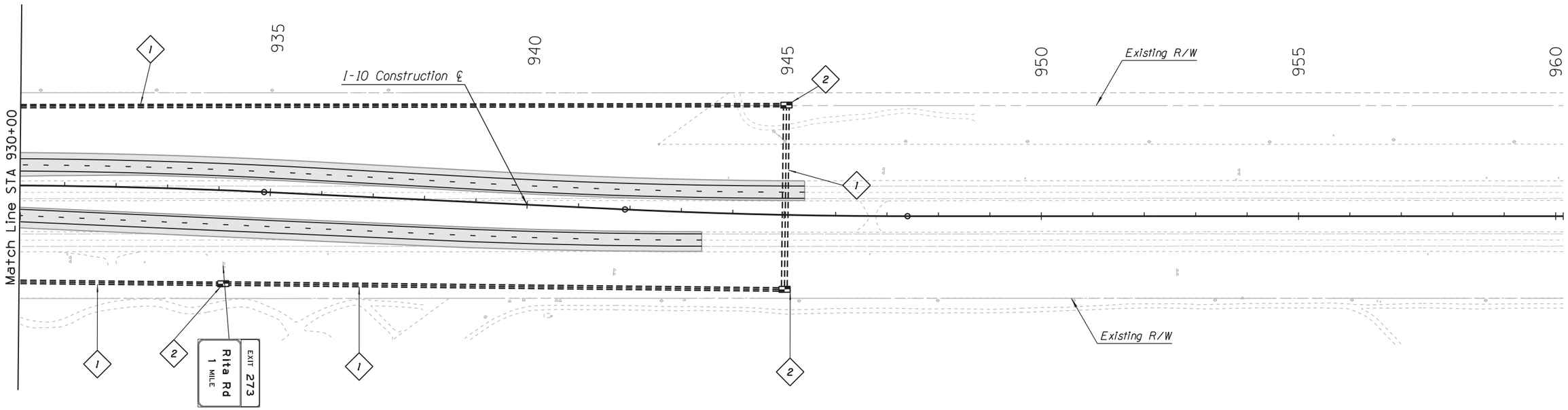
TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p21.1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

WB ROADWAY SECTION

Inside Shoulder Varies 4'-10'
12' Lanes (2)
12' Auxiliary Lane
12' Outside Shoulder



EB ROADWAY SECTION

4' Inside Shoulder
12' Lanes (2)
12' Auxiliary Lane
12' Outside Shoulder

1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 930+00 TO STA 960+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS01.23

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

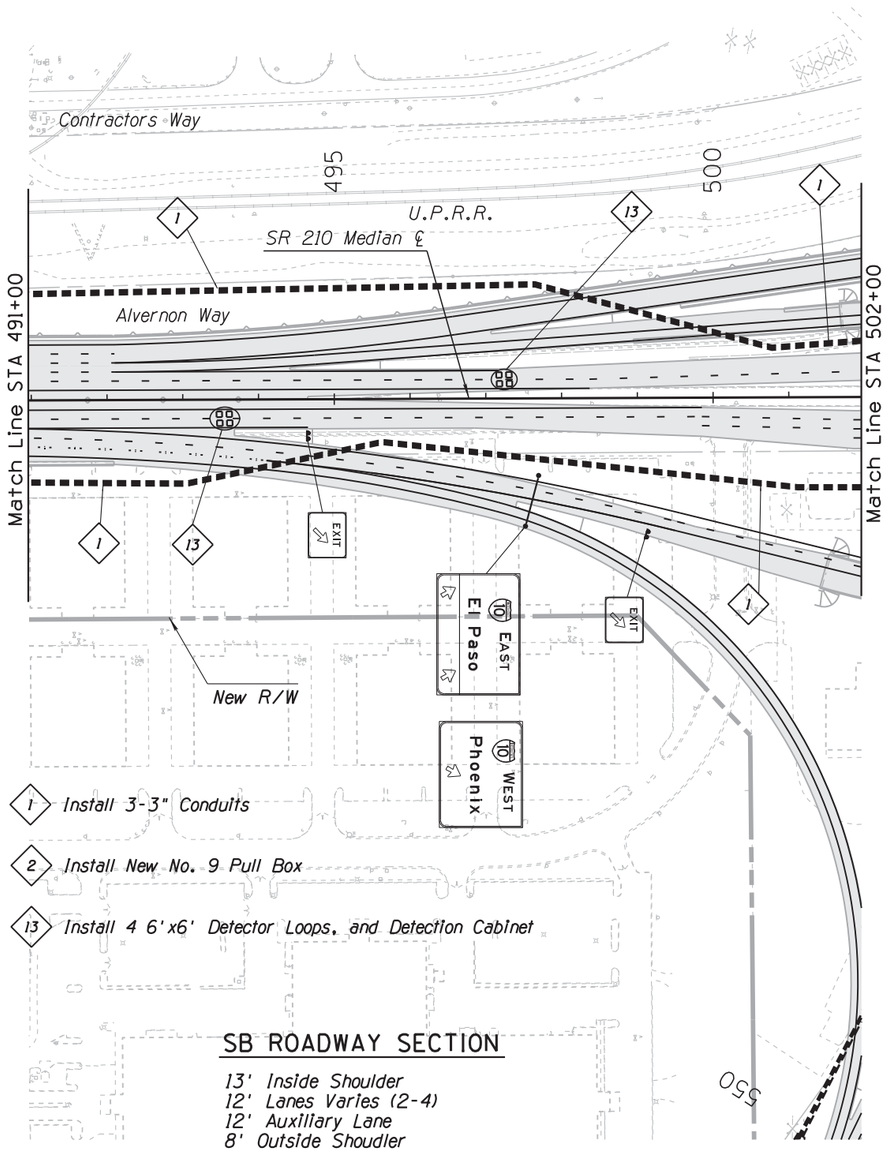
8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1\t7825p22_1.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			

NB ROADWAY SECTION

13' Inside Shoulder
12' Lanes Varies (2-5)
8' Outside Shoulder



SB ROADWAY SECTION

13' Inside Shoulder
12' Lanes Varies (2-4)
12' Auxiliary Lane
8' Outside Shoulder

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 491+00 TO STA 502+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET TS01.28

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

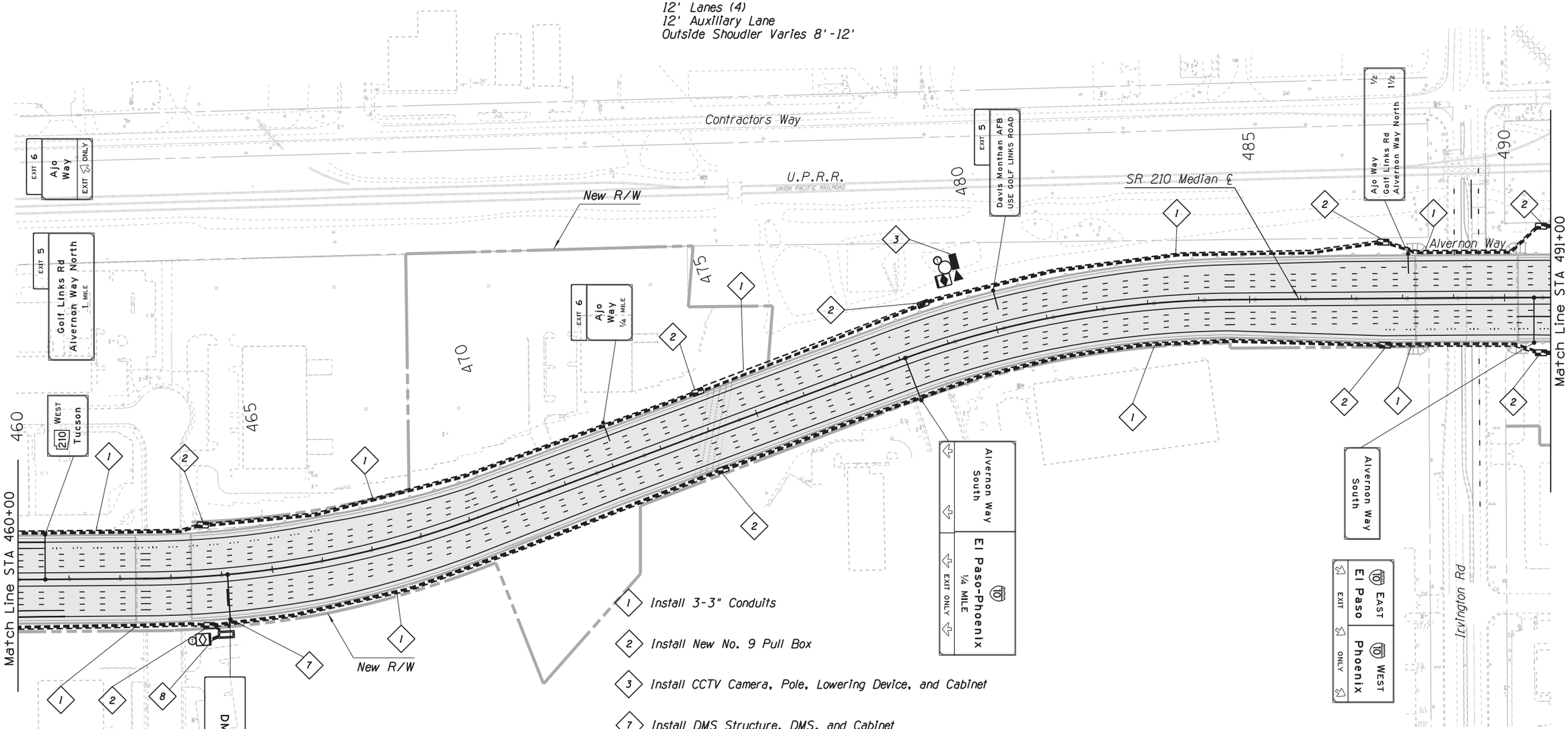
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-1V\t7825p35.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			

NB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
Outside Shoulder Varies 8'-12'



1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

3 *Install CCTV Camera, Pole, Lowering Device, and Cabinet*

7 *Install DMS Structure, DMS, and Cabinet*

8 *Install 4-3" Conduits*

SB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
Outside Shoulder Varies 8'-12'

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 460+00 TO STA 491+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

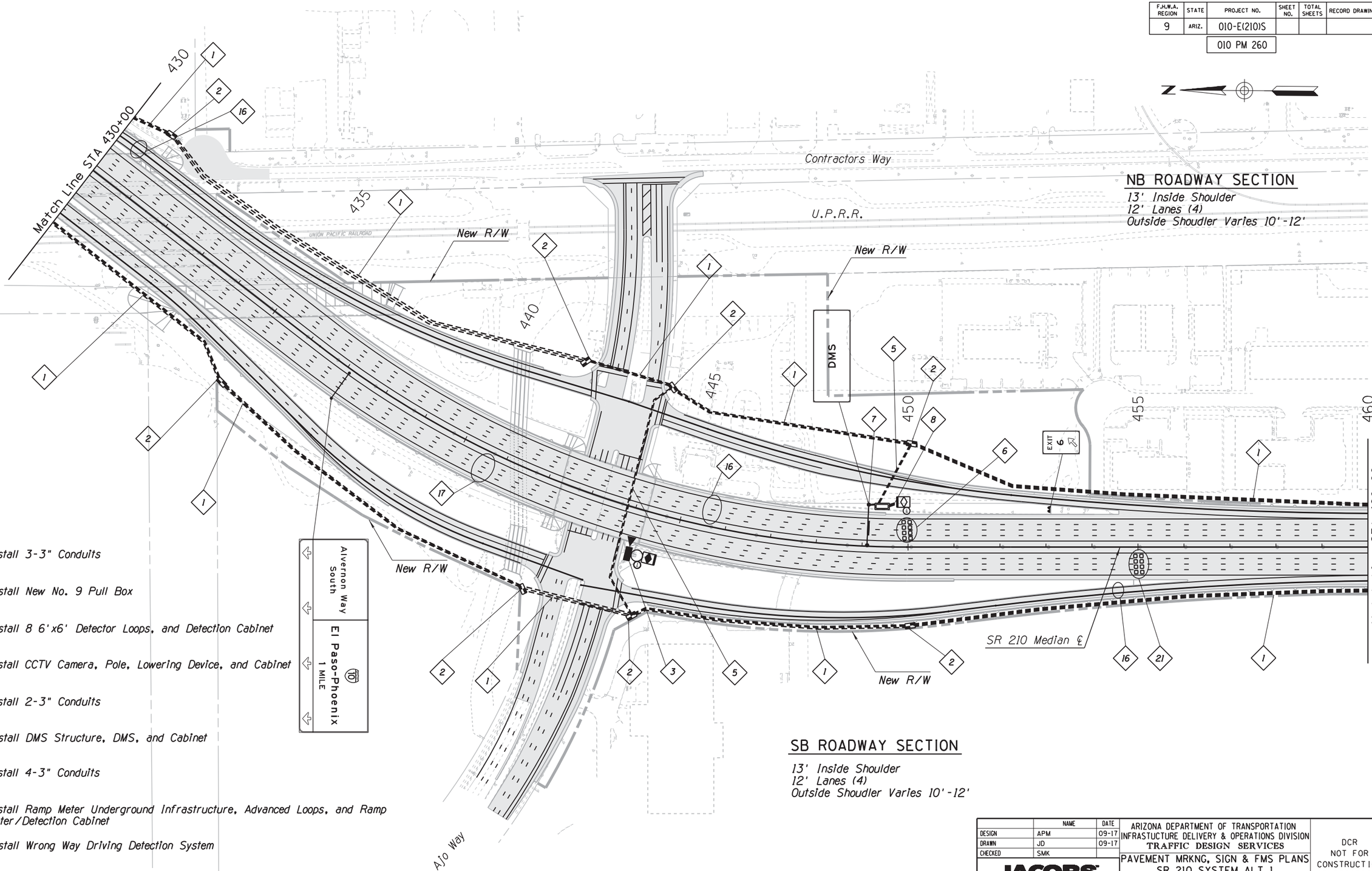
DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TSO1.27
___ OF ___

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

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-1V\t7825p34.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			



NB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
Outside Shoudler Varies 10'-12'

SB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
Outside Shoudler Varies 10'-12'

1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

6 *Install 8 6'x6' Detector Loops, and Detection Cabinet*

3 *Install CCTV Camera, Pole, Lowering Device, and Cabinet*

5 *Install 2-3" Conduits*

7 *Install DMS Structure, DMS, and Cabinet*

8 *Install 4-3" Conduits*

16 *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet*

17 *Install Wrong Way Driving Detection System*

21 *Install 8 6'x6' Loop Detectors*

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 430+00 TO STA 460+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS01.26
___ OF ___

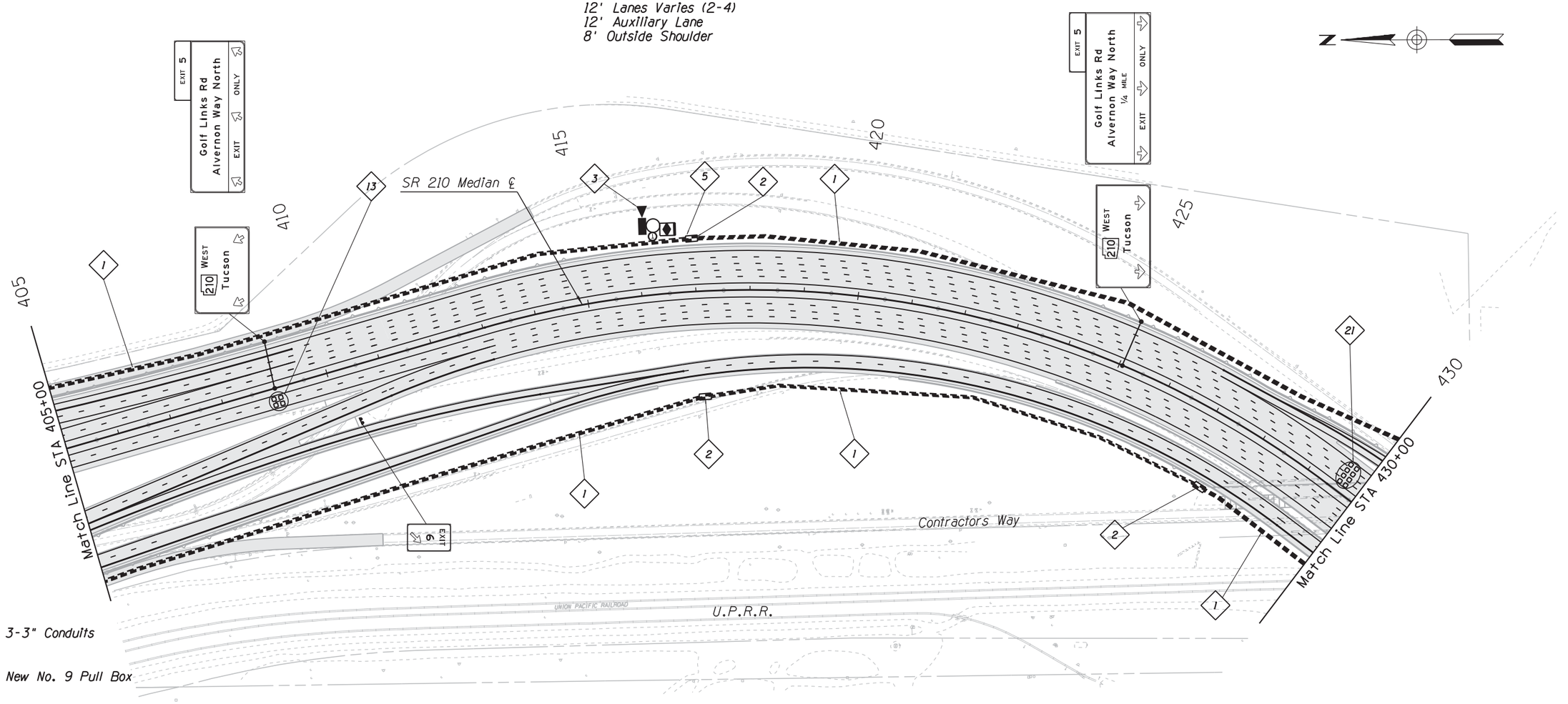
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-lV\t7825p33.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			

NB ROADWAY SECTION

13' Inside Shoulder
12' Lanes Varies (2-4)
12' Auxiliary Lane
8' Outside Shoulder



1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

3 *Install CCTV Camera, Pole, Lowering Device, and Cabinet*

5 *Install 2-3" Conduits*

13 *Install 4 6'x6' Detector Loops, and Detection Cabinet*

21 *Install 8 6'x6' Detector Loops*

SB ROADWAY SECTION

Inside Shoulder Varies 7'-13'
12' Lanes Varies (2-4)
Outside Shoulder Varies 8'-10'

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 405+00 TO STA 430+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET TS01.25

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-lV\t7825p32.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			

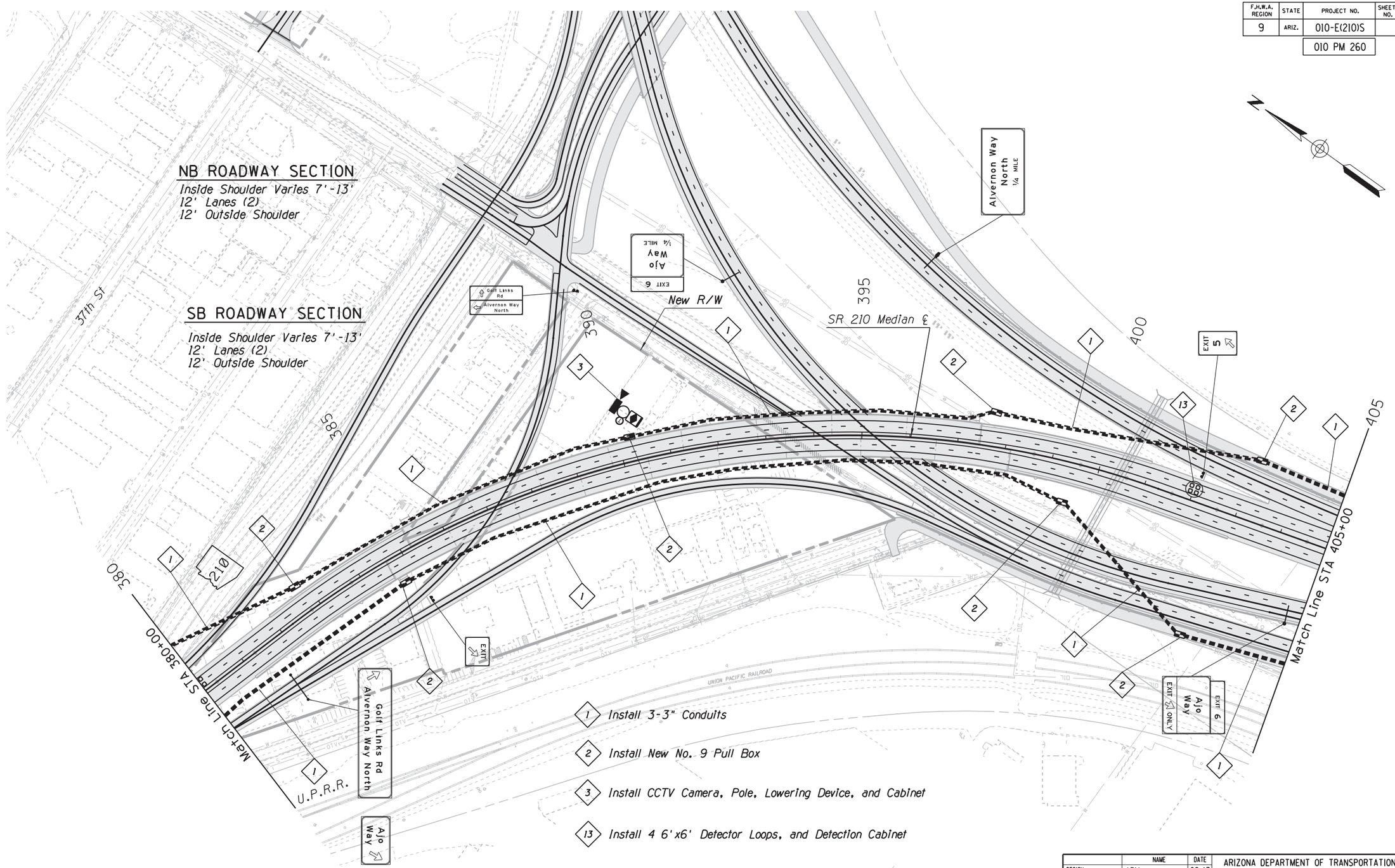
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

NB ROADWAY SECTION

Inside Shoulder Varies 7'-13'
12' Lanes (2)
12' Outside Shoulder

SB ROADWAY SECTION

Inside Shoulder Varies 7'-13'
12' Lanes (2)
12' Outside Shoulder



1. *Install 3-3" Conduits*
2. *Install New No. 9 Pull Box*
3. *Install CCTV Camera, Pole, Lowering Device, and Cabinet*
13. *Install 4 6'x6' Detector Loops, and Detection Cabinet*

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 380+00 TO STA 405+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TS01.24

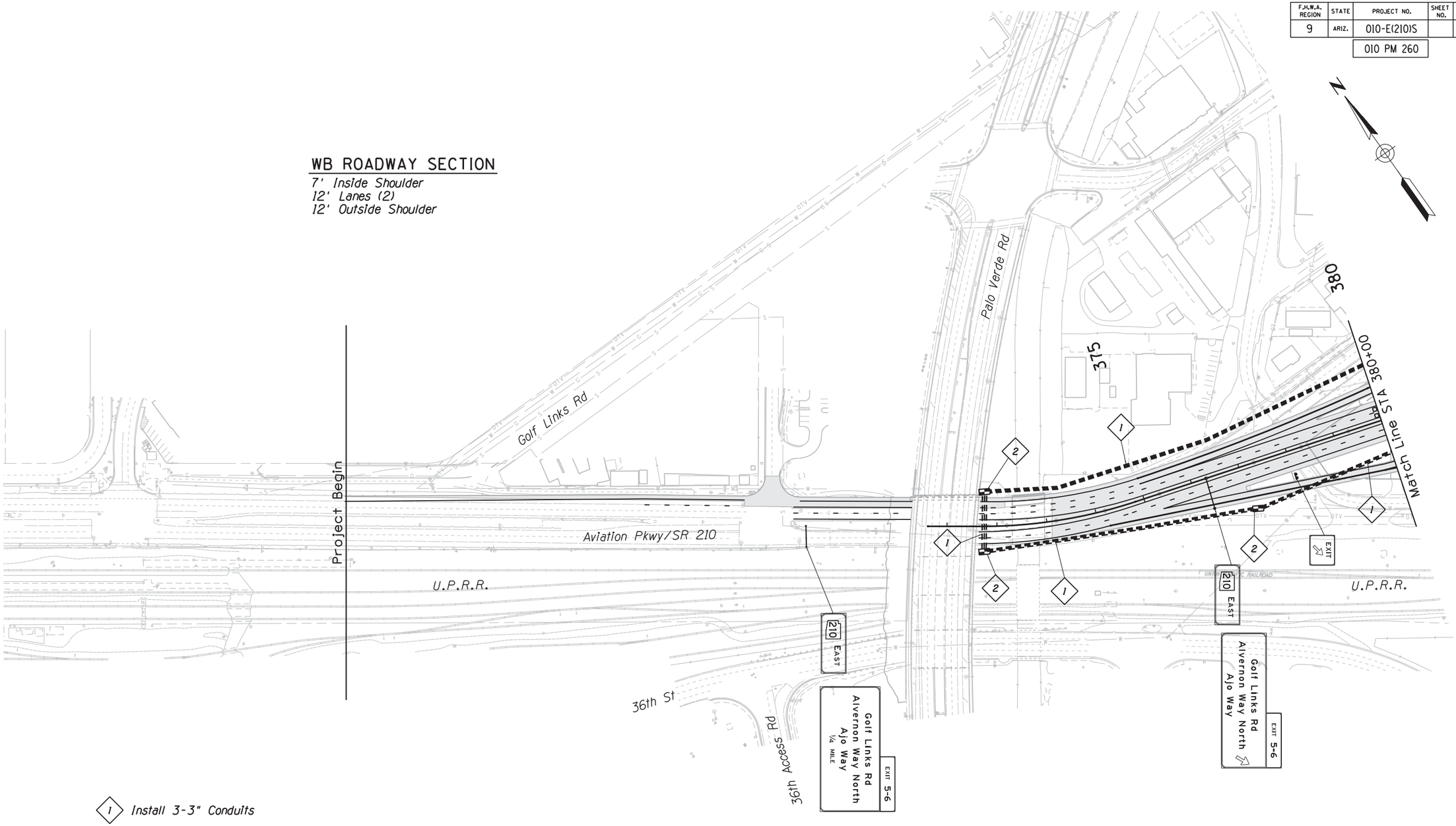
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-1V\t7825p31.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			

WB ROADWAY SECTION

7' Inside Shoulder
12' Lanes (2)
12' Outside Shoulder



1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

EB ROADWAY SECTION

7' Inside Shoulder
12' Lanes (2)
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

JACOBS

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 370+0 TO STA 380+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET TS01.23

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-1V\t7825p30.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
3. Install CCTV Camera, Pole, Lowering Device, and Cabinet
4. Install 6 6'x6' Detector Loops, and Detection Cabinet
5. Install 2-3" Conduits
6. Install 8 6'x6' Detector Loops, and Detection Cabinet
7. Install DMS Structure, DMS, and Cabinet
8. Install 4-3" Conduits
9. Existing Structure, DMS to Remain
10. Install 12 6'x6' Detector Loops, and Detection Cabinet
11. Install 10 6'x6' Detector Loops, and Detection Cabinet
12. Remove Existing DMS Structure, DMS
13. Install 4 6'x6' Detector Loops, and Detection Cabinet
14. Install 2 6'x6' Detector Loops, and Detection Cabinet
15. Install New SONET Node Building
16. Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet
17. Install Wrong Way Driving Detection System
18. Existing No. 9 Pull Box to Remain
19. Existing ITS Conduit to Remain
20. Install 6 6'x6' Detector Loops
21. Install 8 6'x6' Detector Loops
22. Install 10 6'x6' Detector Loops
23. Install 4 6'x6' Detector Loops

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

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10/SR210 Constructioin Notes
I-10 SYSTEM ALT 4

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS02.01

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/2/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\Construction Notes Master Sheet..dgn

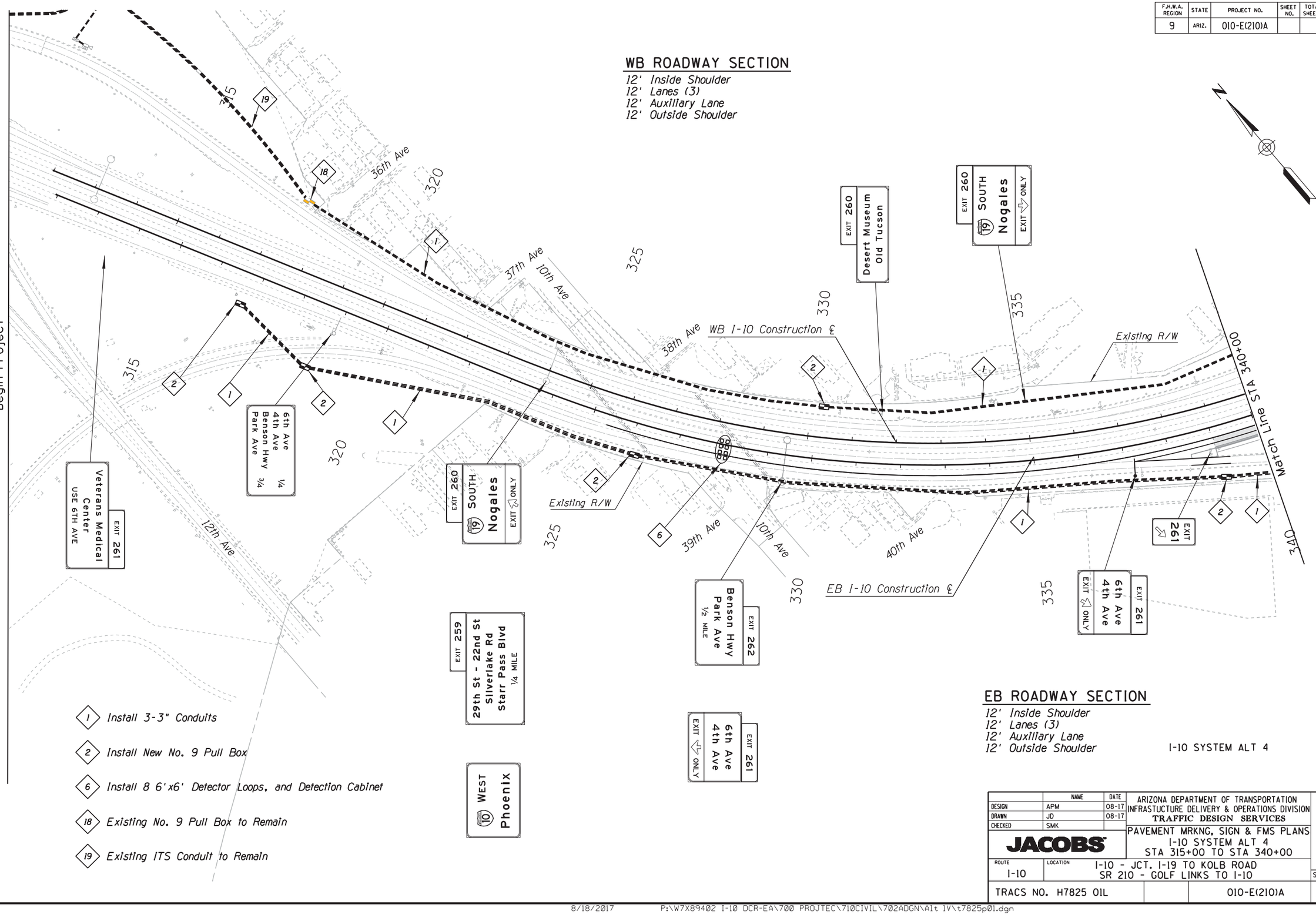
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

Begin Project

WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder



1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

6 Install 8 6'x6' Detector Loops, and Detection Cabinet

18 Existing No. 9 Pull Box to Remain

19 Existing ITS Conduit to Remain

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder

I-10 SYSTEM ALT 4

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

JACOBS

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 315+00 TO STA 340+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE I-10 | LOCATION I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

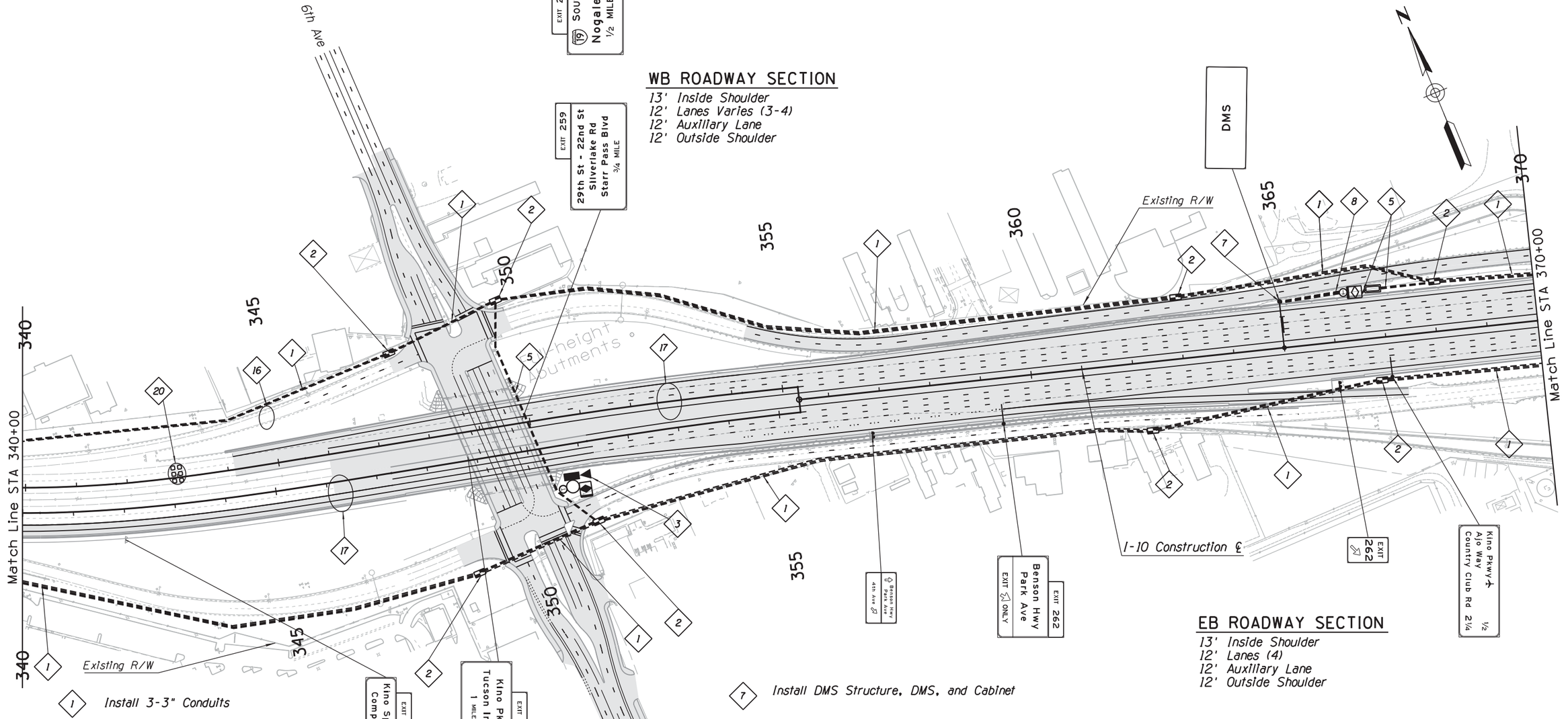
SHEET TS02.02

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p01.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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



WB ROADWAY SECTION

13' Inside Shoulder
12' Lanes Varies (3-4)
12' Auxiliary Lane
12' Outside Shoulder

EB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
12' Outside Shoulder

1. *Install 3-3" Conduits*
2. *Install New No. 9 Pull Box*
3. *Install CCTV Camera, Pole, Lowering Device, and Cabinet*
5. *Install 2-3" Conduits*
7. *Install DMS Structure, DMS, and Cabinet*
8. *Instal 4-3" Conduits*
16. *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet*
17. *Install Wrong Way Driving Detection*
20. *Install 6 6'x6' Detector Loops*

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 340+00 TO STA 370+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

TRACS NO. H7825 01L | 010-E(210)A

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS02.03
____ OF ____

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p02.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

Inside Shoulder Varies 13'-16.75'
12' Lanes (4)
12' Outside Shoulder

EB ROADWAY SECTION

Inside Shoulder Varies 13'-16.75'
12' Lanes (4)
12' Auxiliary Lane
12' Outside Shoulder

Match Line STA 370+00

Match Line STA 400+00

U.P.R.R. (SOUTHERN PACIFIC RAILROAD)

New R/W

Existing R/W

I-10 Construction ℄

Park Ave

Benson Hwy

EXIT 260 (19) SOUTH Nogales 1 MILE

(10) WEST Phoenix

4th Ave 6th Ave

(10) WEST Phoenix

(10) WEST Phoenix

EXIT 264 Country Club Rd 1½ MILE

EXIT 263 Kino Pkwy Tucson Intl ¼ MILE EXIT ONLY

(10) EAST El Paso LEFT

Benson Hwy Park Ave

DMS

(10) WEST Phoenix KEEP LEFT

(10) EAST El Paso

Benson Hwy

1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

3 *Install CCTV Camera, Pole, Losering Device, and Cabinet*

5 *Install 2-3" Conduits*

7 *Install DMS Structure, DMS, and Cabinet*

8 *Install 4-3" Conduits*

12 *Remove Existing DMS Structure, DMS*

16 *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet*

17 *Install Wrong Way Driving Detection System*

21 *Install 8 6'x6' Detector Loops*

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 370+00 TO STA 400+00

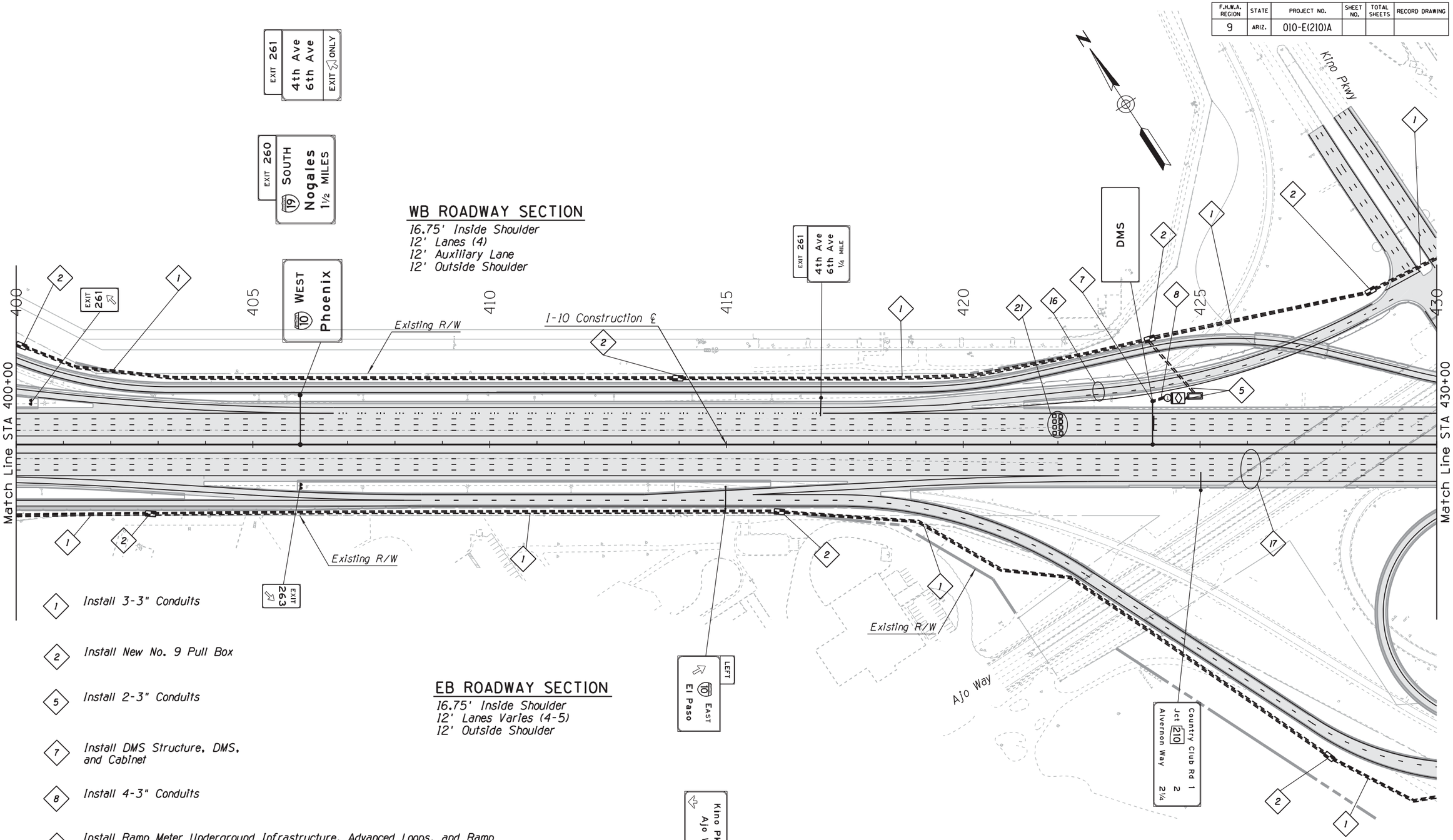
DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS02.04

TRACS NO. H7825 01L | 010-E(210)A | ____ OF ____

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p03.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			



1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
5. Install 2-3" Conduits
7. Install DMS Structure, DMS, and Cabinet
8. Install 4-3" Conduits
16. Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet
17. Install Wrong Way Driving Detection System
21. Install 8 6'x6' Detector Loops

EB ROADWAY SECTION

16.75' Inside Shoulder
12' Lanes Varies (4-5)
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 400+00 TO STA 430+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS02.05

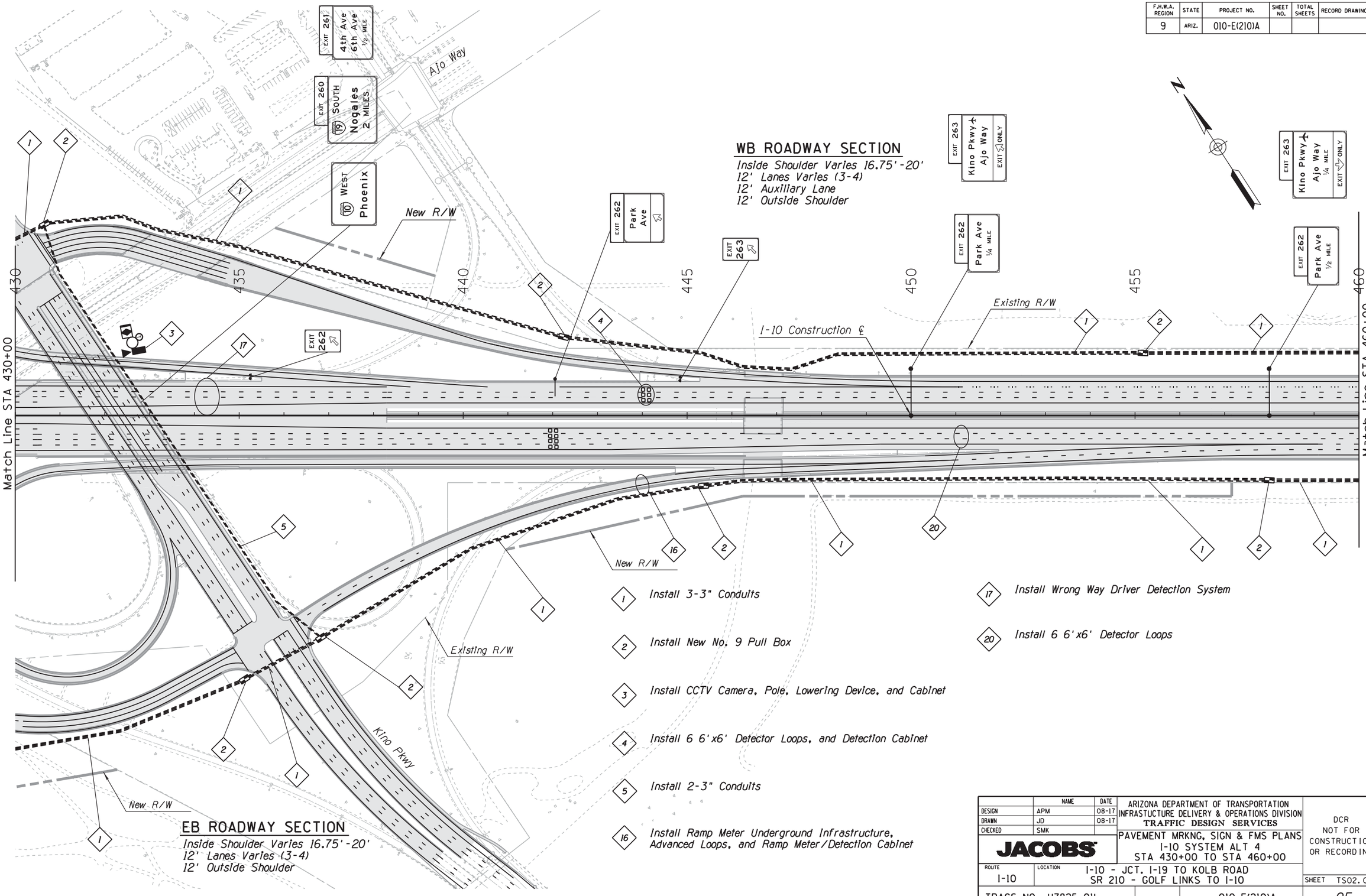
TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

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

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p04.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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



1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
3. Install CCTV Camera, Pole, Lowering Device, and Cabinet
4. Install 6 6'x6' Detector Loops, and Detection Cabinet
5. Install 2-3" Conduits
16. Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet
17. Install Wrong Way Driver Detection System
20. Install 6 6'x6' Detector Loops

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 430+00 TO STA 460+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

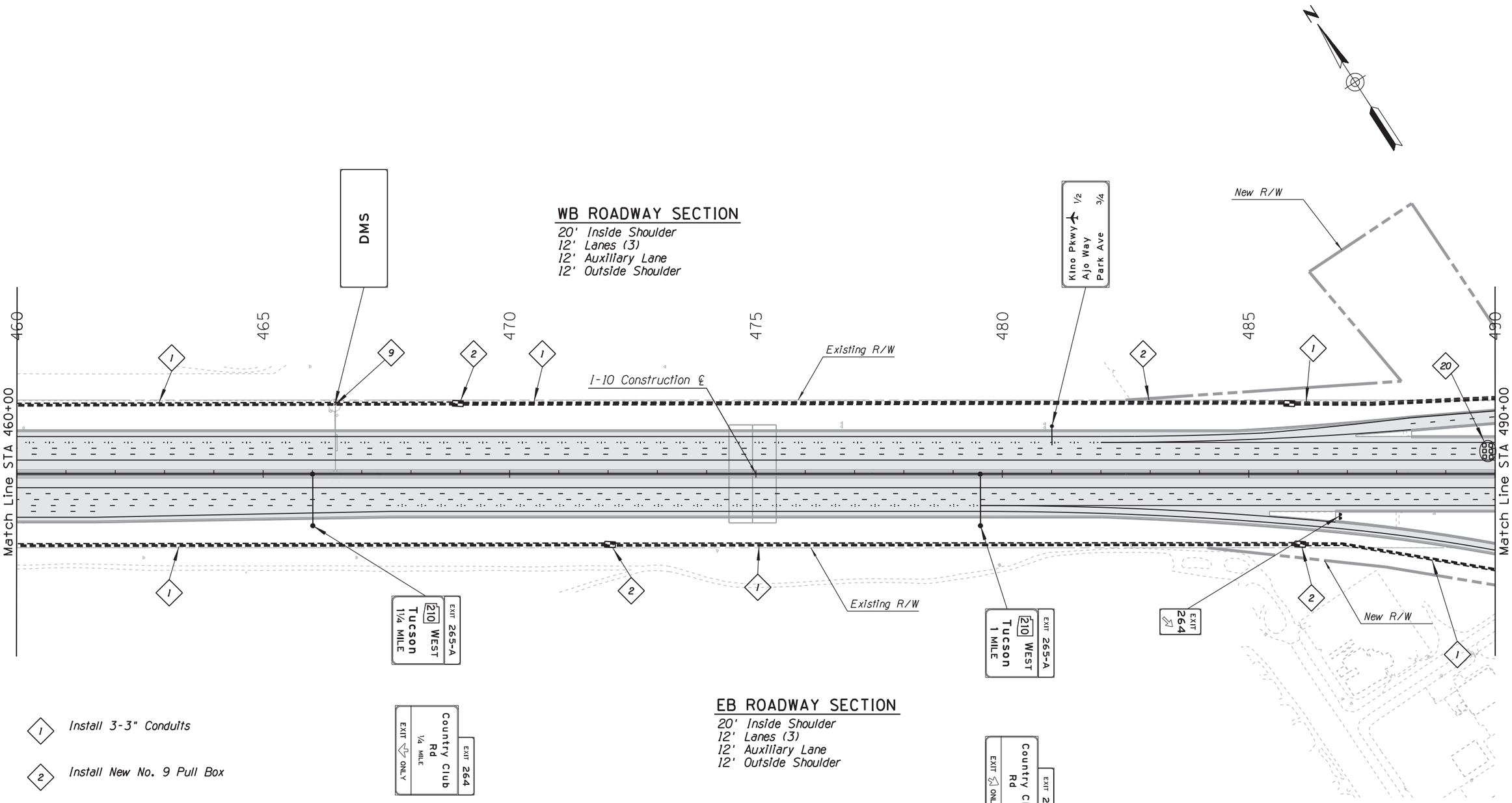
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS02.06

TRACS NO. H7825 01L | 010-E(210)A | ____ OF ____

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p05.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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



1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

9 Existing Structure, DMS to Remain

20 Install 6 6'x6' Detector Loops

EB ROADWAY SECTION

20' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 460+00 TO STA 490+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE I-10 | LOCATION I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

SHEET TS02.07

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p06.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

Country Club Rd

WB ROADWAY SECTION

Inside Shoulder Varies 20'-26.75'
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder

LEFT EXPRESS LANES 1¼ MILE

10 EAST El Paso

EXIT 265 Alvernon Way ½ MILE EXIT ONLY

EXIT 264

210 WEST Tucson ¼ MILE

EXIT 265-A

EXIT 264 Country Club Rd EXIT ONLY

New R/W

Existing R/W

I-10 Construction ℄

490 495 500 505 510 515 520

Match Line STA 490+00

Match Line STA 520+00

Jct 210 Alvernon Way 1 Valencia Blvd 1¼ Craycroft Rd 3

DMS

Davis Monthan AFB USE 210 WEST 1 MILE EXIT 265-A

Country Club Rd

EB ROADWAY SECTION

Inside Shoulder Varies 20'-26.75'
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder

1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
3. Install CCTV Camera, Pole, Lowering Device, and Cabinet
5. Install 2-3" Conduits
7. Install DMS Structure, DMS, and Cabinet
8. Install 4-3" Conduits
16. Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet
17. Install Wrong Way Driving Detection System
20. Install 6 6'x6' Detector Loops

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 490+00 TO STA 520+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

SHEET TS02.08

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

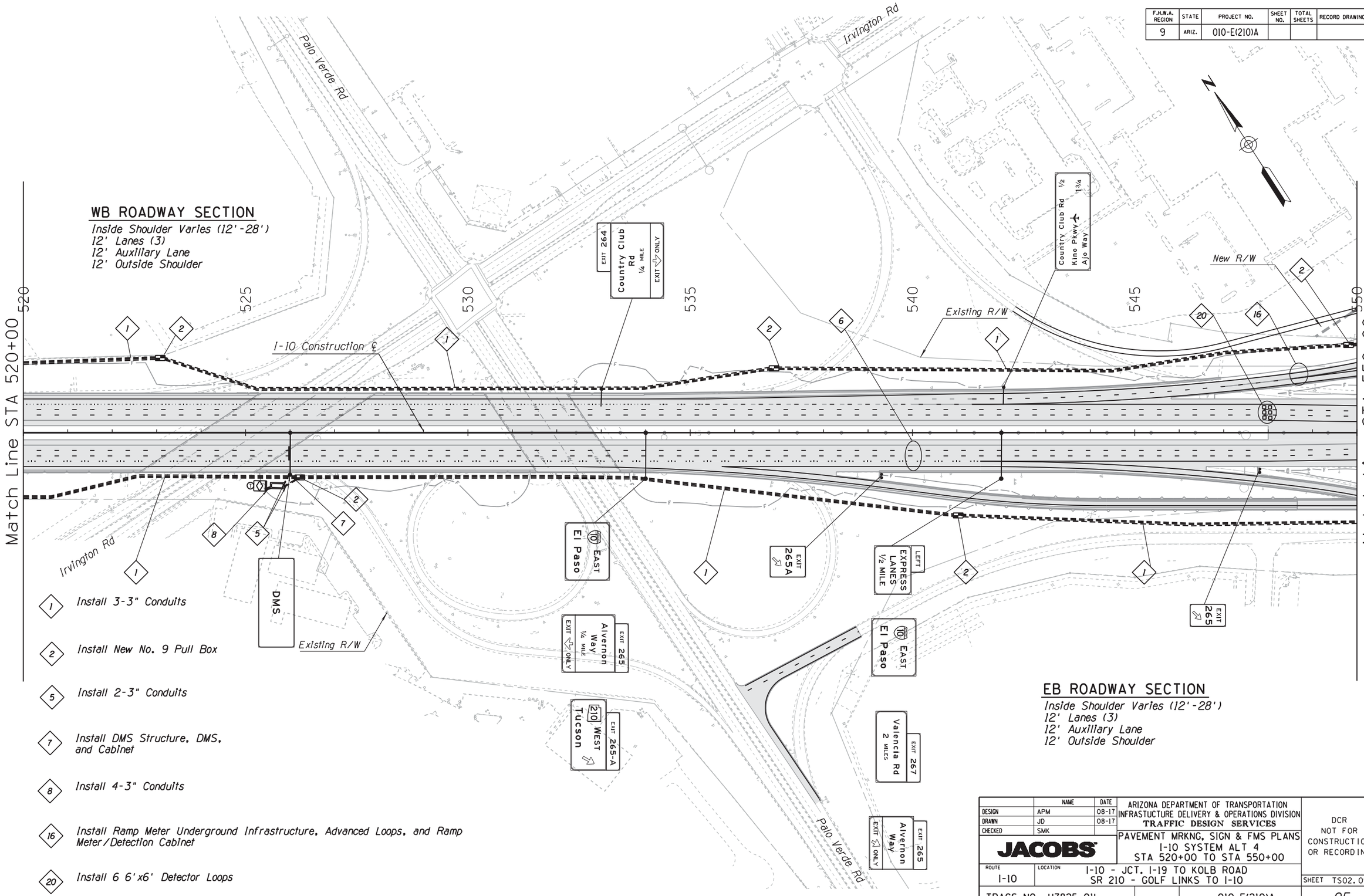
8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p07.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

Inside Shoulder Varies (12'-28')
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder



1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

5 *Install 2-3" Conduits*

7 *Install DMS Structure, DMS, and Cabinet*

8 *Install 4-3" Conduits*

16 *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet*

20 *Install 6 6'x6' Detector Loops*

EB ROADWAY SECTION

Inside Shoulder Varies (12'-28')
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 520+00 TO STA 550+00

ROUTE I-10 | LOCATION I-10 - JCT. I-19 TO KOLB ROAD, SR 210 - GOLF LINKS TO I-10

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS02.09

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p08.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

Match Line STA 502+00

Match Line STA 550+00

Match Line STA 580+00

WB ROADWAY SECTION

Inside Shoulder Varies (16'-28')
12' Lanes Varies (5-3)
12' Auxiliary Lane
12' Outside Shoulder

EB ROADWAY SECTION

Inside Shoulder Varies (16'-28')
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder

New R/W
Existing R/W
U.P.R.R.
I-10 Construction ℄
Alvernon Way

EXIT 265 Alvernon Way EXIT ONLY

EXPRESS LANES NEXT EXIT Kolb Rd 3¾ MILES

EXPRESS LANES NEXT EXIT Kolb Rd 4 MILES

Irvington Rd Palo Verde Rd

EXPRESS LANES 10 EAST ¼ MILE ONLY

10 WEST Phoenix

LOCAL EXITS Valencia Rd 2 Craycroft Rd 3 Wilmot Rd 4

LOCAL EXITS ¼ MILE ONLY

10 WEST Phoenix

Alvernon Way North

10 EAST El Paso

EXPRESS LANES 10 EAST ONLY

LOCAL EXITS ONLY

210 WEST Tucson

EXIT

1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

3 *Install CCTV Camera, Pole, Lowering Device, and Cabinet*

5 *Install 2-3" Conduits*

16 *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Cabinet*

17 *Install Wrong Way Driving Detection System*

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 550+00 TO STA 580+00

ROUTE I-10

LOCATION I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

TRACS NO. H7825 01L

010-E(210)A

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS02.10

___ OF ___

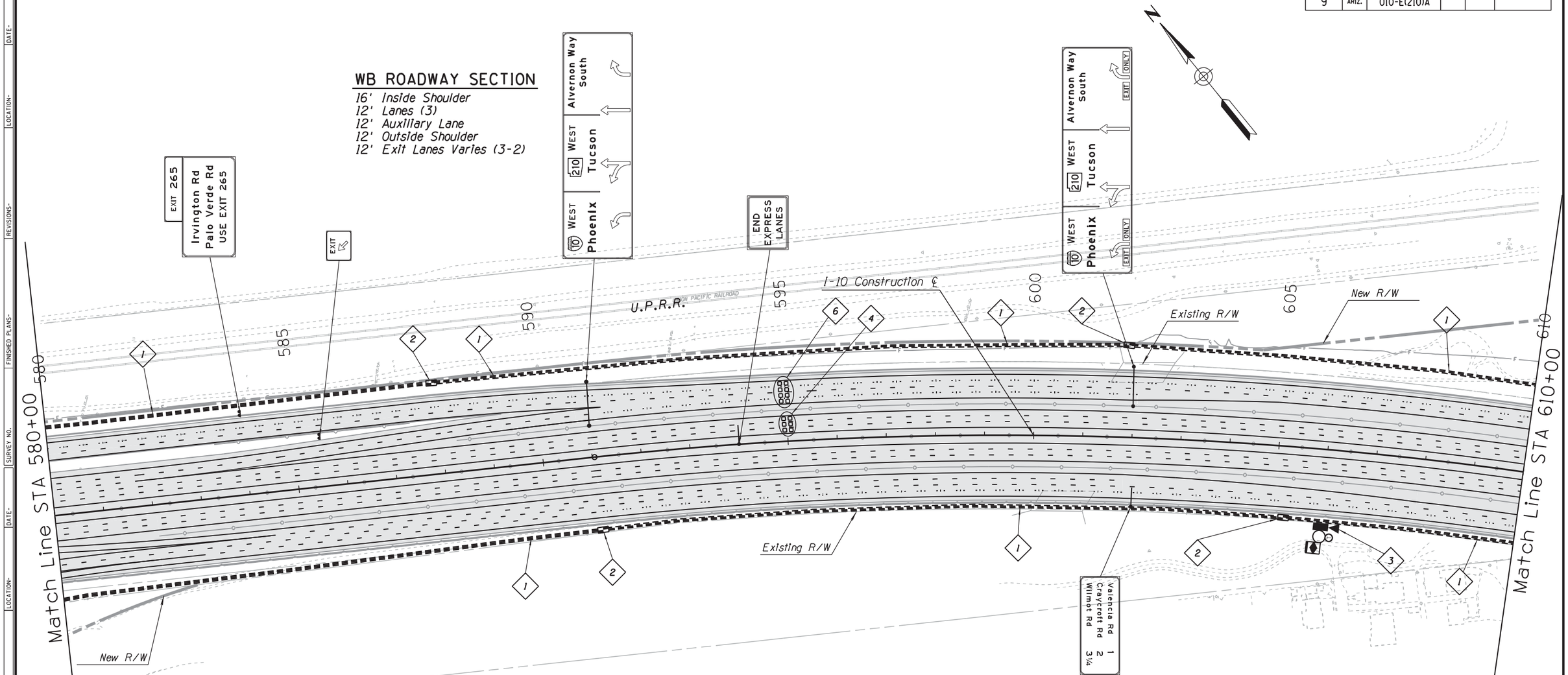
DATE- | LOCATION- | REVISIONS- | FINISHED PLANS- | SURVEY NO.

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p09.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

WB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes Varies (3-2)



1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
3. Install CCTV Camera, Pole, Lowering Device, and Cabinet
4. Install 6 6'x6' Detector Loops, and Detection Cabinet
5. Install 2-3" Conduits

EB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes Varies (3-2)

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 580+00 TO STA 610+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10

SHEET TS02.11

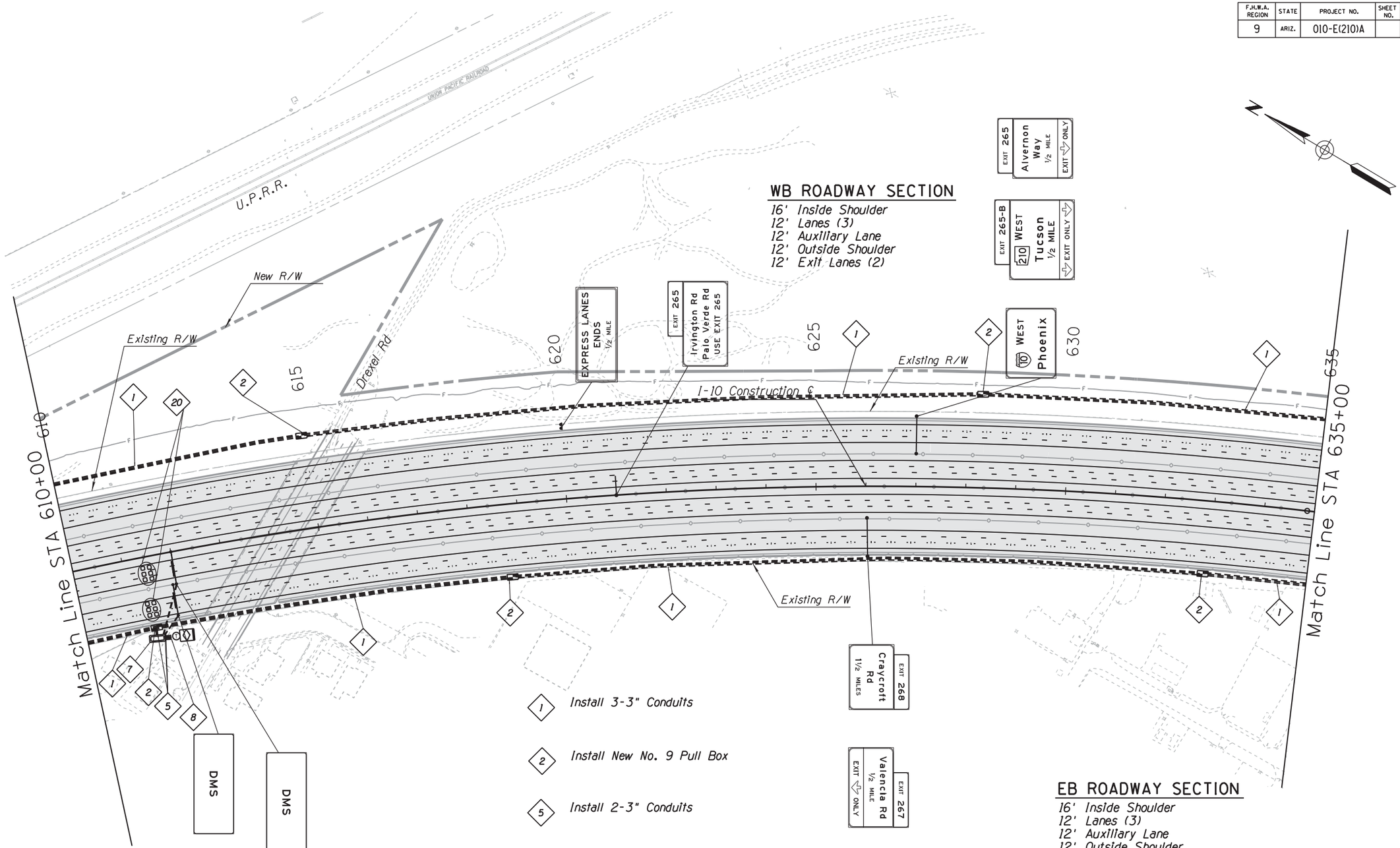
TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p10.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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



WB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

EB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
5. Install 2-3" Conduits
7. Install DMS Structure, DMS, and Cabinet
8. Install 4-3" Conduits
20. Install 6 6'x6' Detector Loops

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 610+00 TO STA 635+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

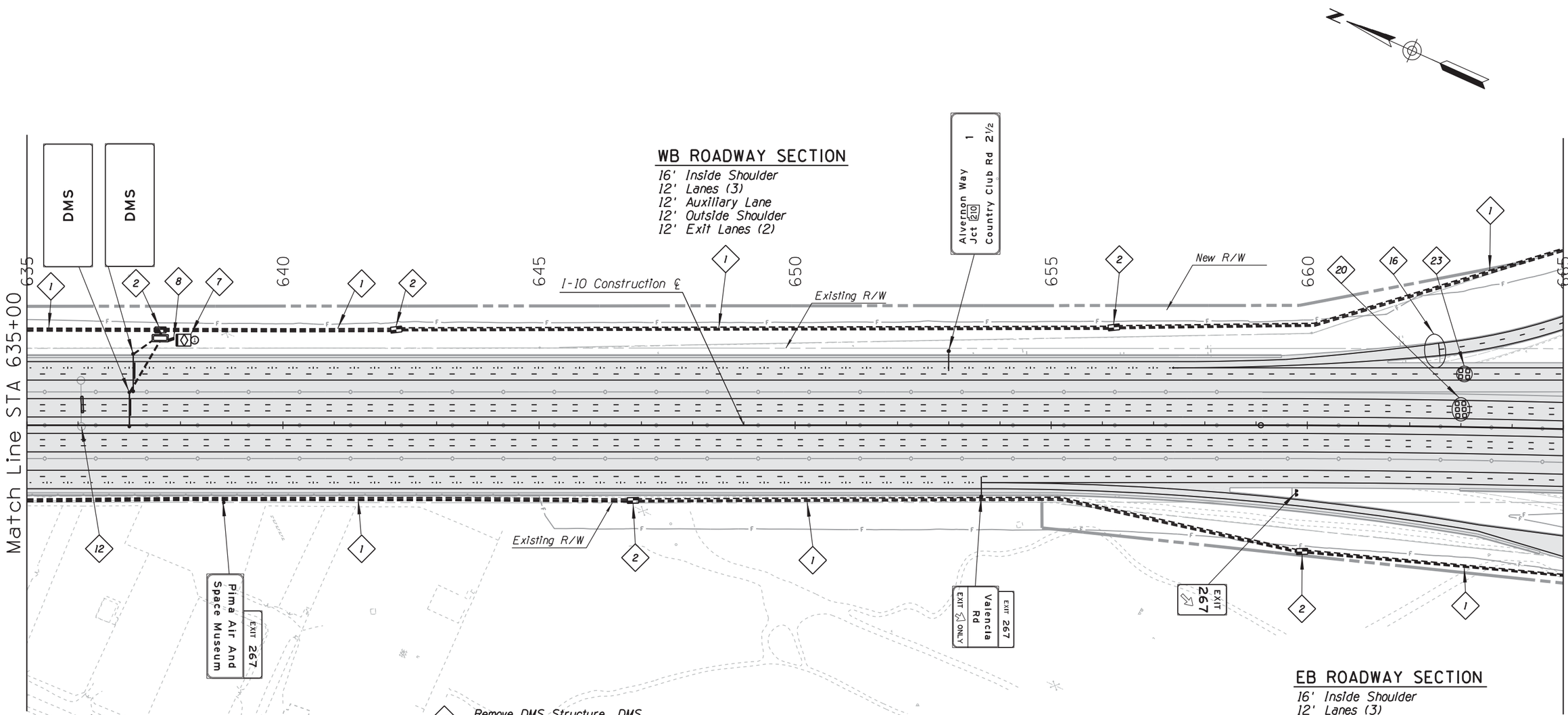
ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10

SHEET TS02.12

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\w7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p11.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			



EB ROADWAY SECTION
16' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

7 Install DMS Structure, DMS, and Cabinet

8 Install 4-3" Conduits

12 Remove DMS Structure, DMS

16 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Cabinet

20 Install 6 6'x6' Detector Loops

23 Install 4 6'x6' Detector Loops

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 635+00 TO STA 665+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS02.13

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825pl2.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

3 Install CCTV Camera, Pole, Lowering Device, and Cabinet

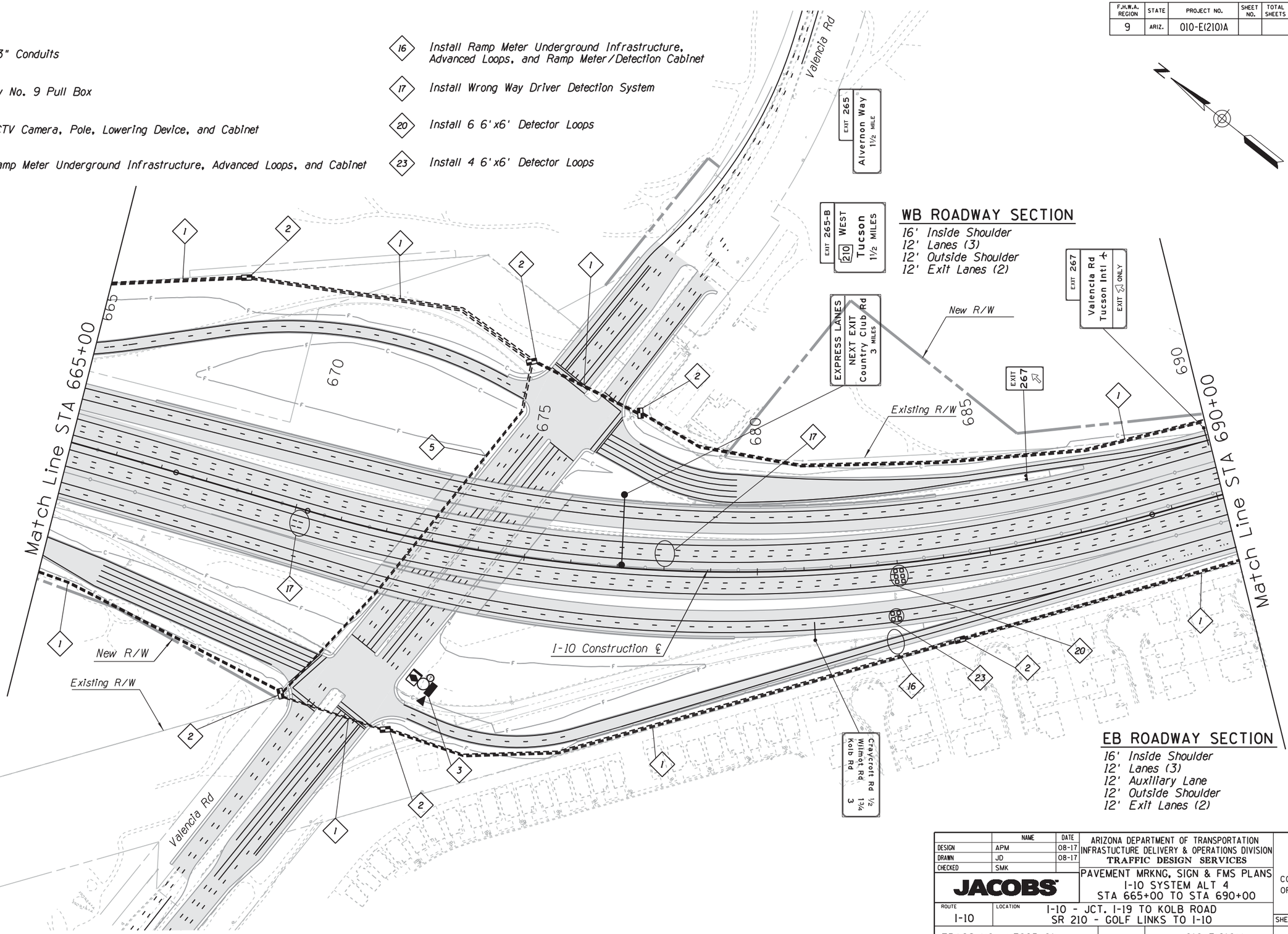
13 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Cabinet

16 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet

17 Install Wrong Way Driver Detection System

20 Install 6 6'x6' Detector Loops

23 Install 4 6'x6' Detector Loops



WB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Outside Shoulder
12' Exit Lanes (2)

EB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 665+00 TO STA 690+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

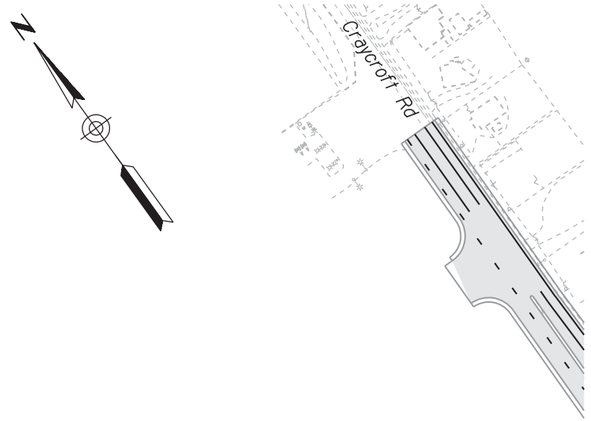
ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS02.14

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p13.dgn

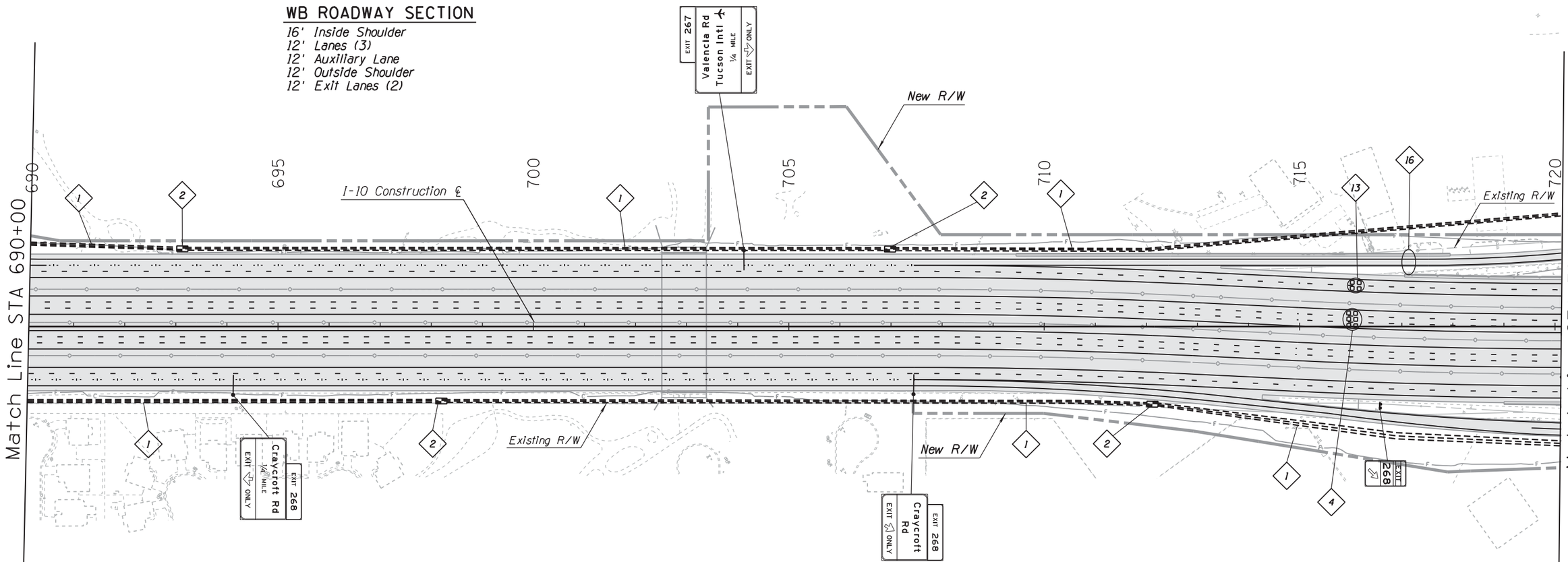
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			



WB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)



1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

4 Install 6 6'x6' Detector Loops, and Detection Cabinet

13 Install 4 6'x6' Detector Loops, and Detection Cabinet

16 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Cabinet

EB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 690+00 TO STA 720+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

TRACS NO. H7825 01L | 010-E(210)A

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS02.15
___ OF ___

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

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p14.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

Match Line STA 720+00

Match Line STA 750+00

720 725 730 735 740 745 750

Craycroft Rd

Travel Plaza Way

Valencia Rd ↔ Alvernon Way 1/2 2 1/4 Jct 210

EXIT 267 Pima Air And Space Museum

EXIT 268

EXIT 268 Craycroft Rd EXIT ONLY

New R/W

Existing R/W

I-10 Construction ℄

New R/W

Existing R/W

EXIT 269 Federal and State Prisons

LOCAL EXITS
Kolb Rd 1 MILE

LOCAL EXITS
Kolb Rd 1/2 MILE

EXIT 269 Wilmot Rd 1/2 MILE EXIT ONLY

Wilmot Rd 1
Kolb Rd 2 1/4
Rita Rd 5

Craycroft Rd

Los Reales Rd

WB ROADWAY SECTION

24' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

EB ROADWAY SECTION

24' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

3 Install CCTV Camera, Pole, Lowering Device, and Cabinet

5 Install 2-3" Conduits

16 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet

17 Install Wrong Way Driving Detection System

20 Install 6 6'x6' Detector Loops

23 Install 4 6'x6' Detector Loops

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 720+00 TO STA 750+00

ROUTE I-10 | LOCATION I-10 - JCT. I-19 TO KOLB ROAD, SR 210 - GOLF LINKS TO I-10

TRACS NO. H7825 01L | 010-E(210)A

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS02.16

___ OF ___

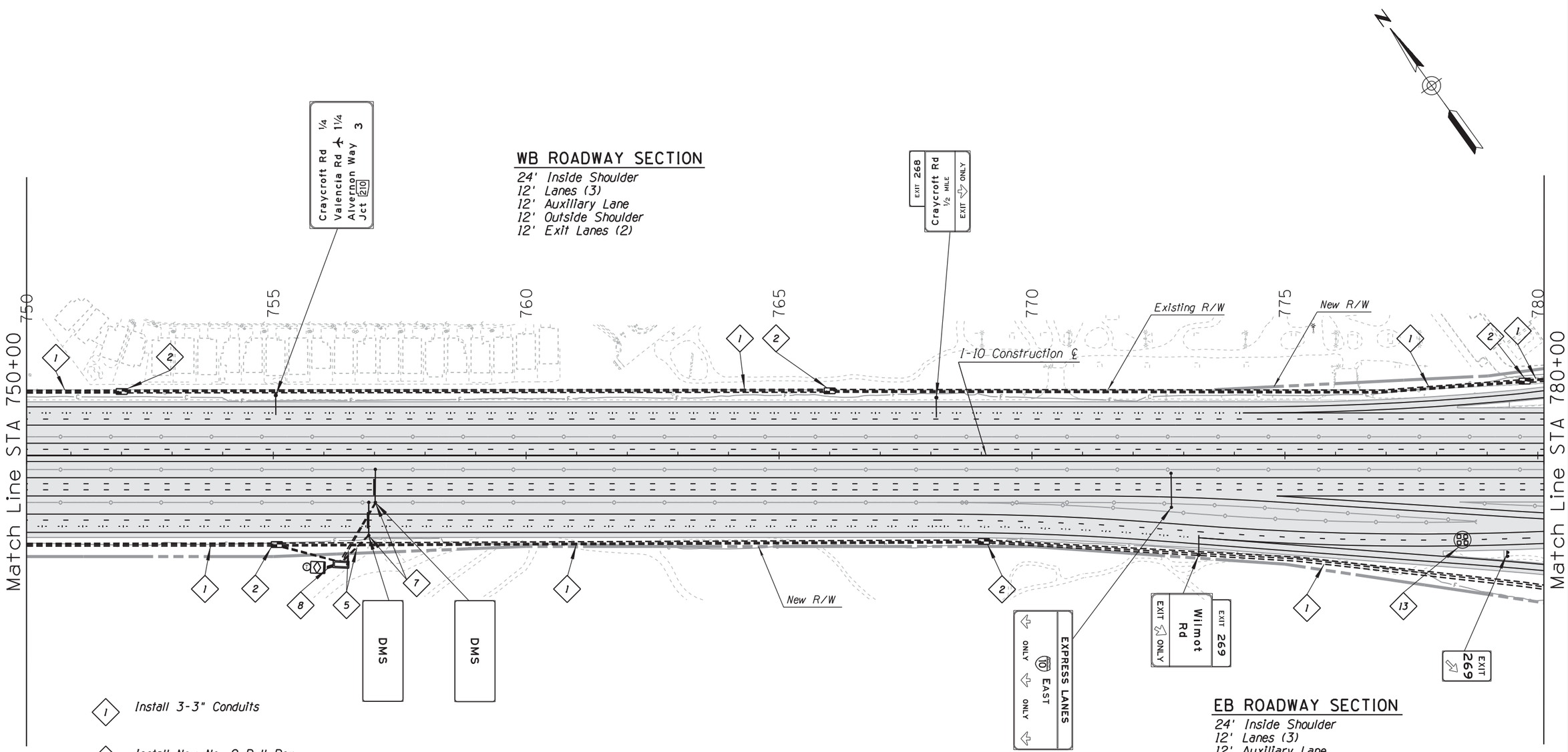
8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p15.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

24' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)



1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
5. Install 2-3" Conduits
7. Install DMS Structure, DMS, and Cabinet
8. Install 4-3" Conduits

EB ROADWAY SECTION

24' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 750+00 TO STA 780+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS02.17

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

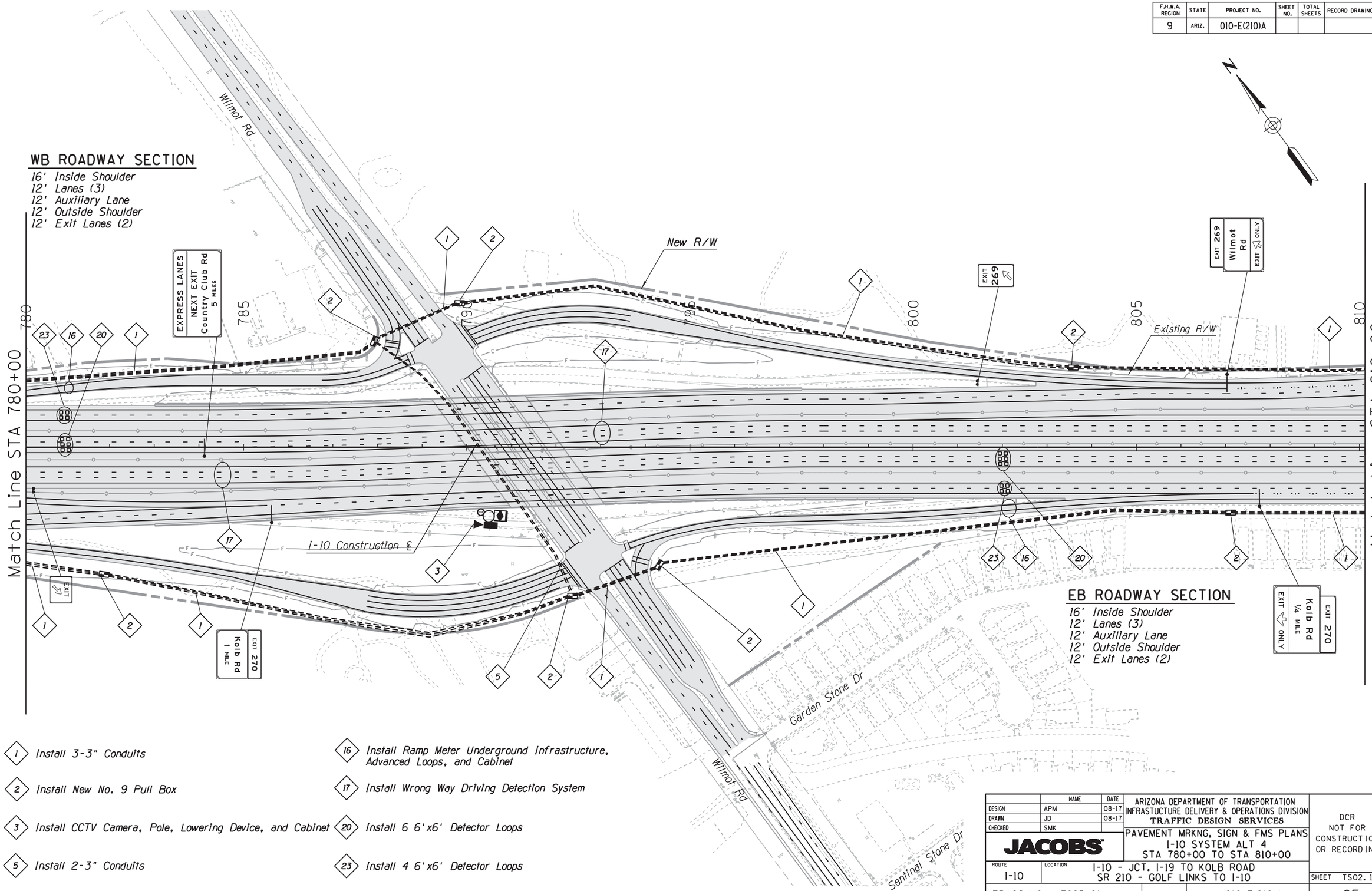
8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p16.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)



EB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

1 Install 3-3" Conduits

2 Install New No. 9 Pull Box

3 Install CCTV Camera, Pole, Lowering Device, and Cabinet

5 Install 2-3" Conduits

16 Install Ramp Meter Underground Infrastructure, Advanced Loops, and Cabinet

17 Install Wrong Way Driving Detection System

20 Install 6 6'x6' Detector Loops

23 Install 4 6'x6' Detector Loops

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 780+00 TO STA 810+00

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

TRACS NO. H7825 01L | 010-E(210)A

DCR
NOT FOR CONSTRUCTION OR RECORDING

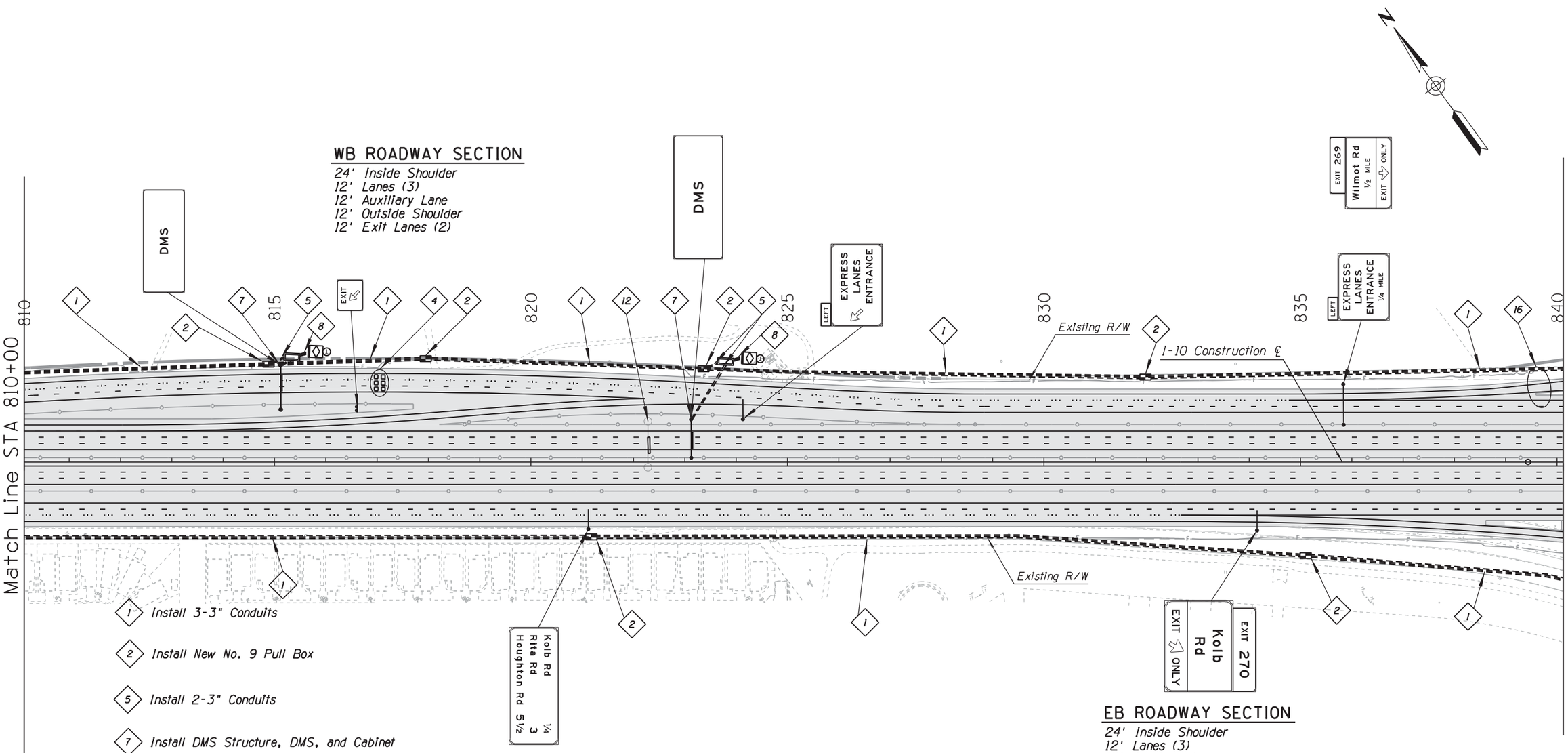
SHEET TS02.18
___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p17.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

WB ROADWAY SECTION

24' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)



1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
5. Install 2-3" Conduits
7. Install DMS Structure, DMS, and Cabinet
8. Install 4-3" Conduits
12. Remoce Existing DMS Structure, DMS
16. Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet

EB ROADWAY SECTION

24' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 810+00 TO STA 840+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	TS02.19

TRACS NO. H7825 01L | 010-E(210)A | ____ OF ____

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

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p18.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (5)
12' Outside Shoulder
12' Exit Lanes (2)

EB ROADWAY SECTION

16' Inside Shoulder
12' Lanes (5)
12' Outside Shoulder
12' Exit Lanes Varies (2-1)

Match Line STA 840+00

Match Line STA 870+00

840 845 850 855 860 865 870

New R/W

Kolb Rd

EXIT 269 Federal and State Prisons

Wilmot Rd 1
Craycroft Rd 2¼
Valencia Rd 3¼

Existing R/W

EXIT 270

I-10 Construction ℄

New R/W

Frontage Rd

Kolb Rd

Existing R/W

New R/W

1. Install 3-3" Conduits
2. Install New No. 9 Pull Box
3. Install CCTV Camera, Pole, Lowering Device, and Cabinet
4. Install 6 6'x6' Detector Loops, and Detection Cabinet
5. Install 2-3" Conduits
13. Install 4 6'x6' Detector Loops, and Detection Cabinet
14. Install 2 6'x6' Detector Loops, and Detection Cabinet
15. Install New SONET Node Building
16. Install Ramp Meter Underground Infrastructure, Advanced Loops, and Cabinet
17. Install Wrong Way Driving Detection System
20. Install 6 6'x6' Detector Loops

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 4
STA 840+00 TO STA 870+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE I-10 | LOCATION I-10 - JCT. I-19 TO KOLB ROAD, SR 210 - GOLF LINKS TO I-10

SHEET TS02.20

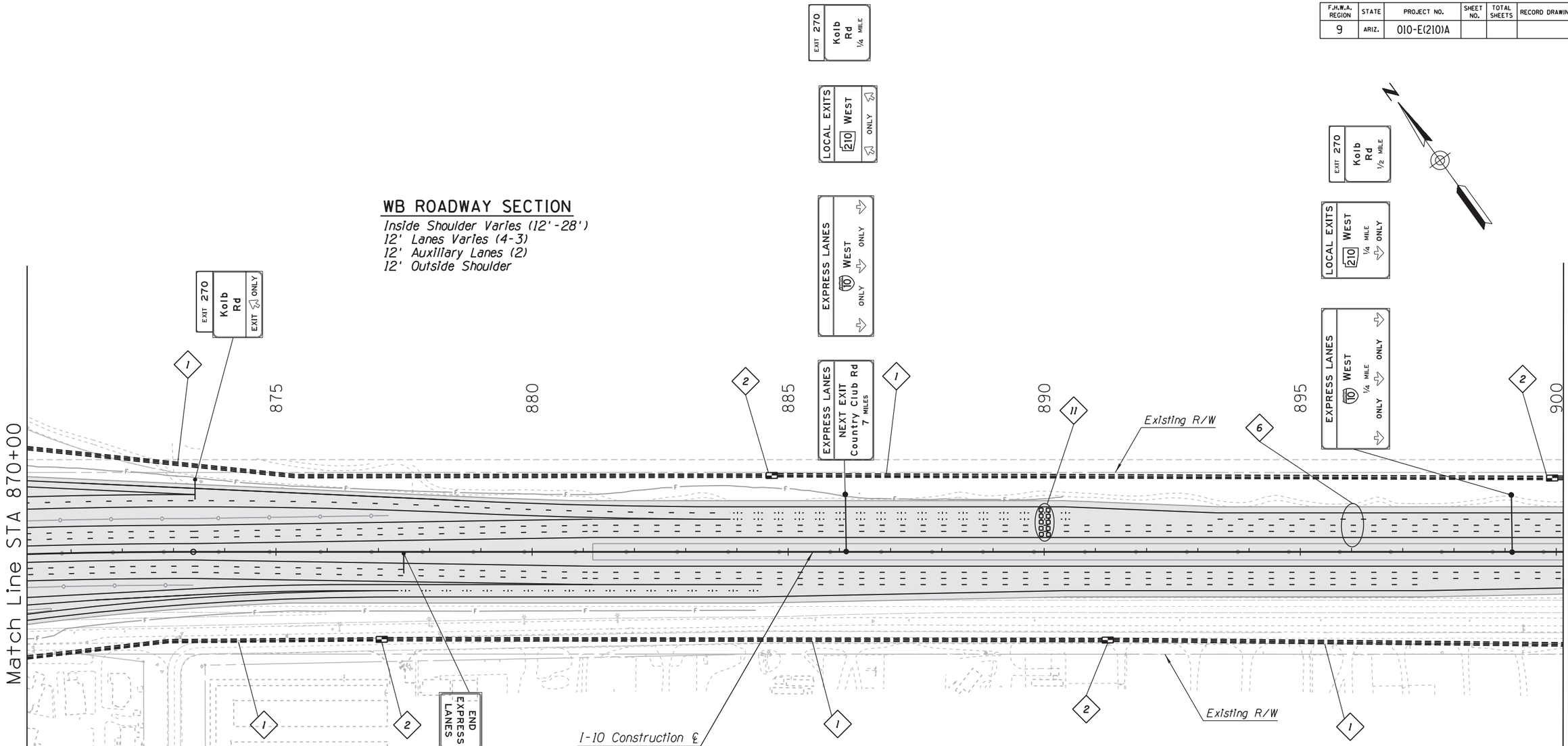
TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825pl9.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

WB ROADWAY SECTION

Inside Shoulder Varies (12'-28')
12' Lanes Varies (4-3)
12' Auxiliary Lanes (2)
12' Outside Shoulder



1. *Install 3-3" Conduits*
2. *Install New No. 9 Pull Box*
6. *Install 8 6'x6' Detector Loops, and Detection Cabinet*
11. *Install 10 6'x6' Detector Loops*

EB ROADWAY SECTION

Inside Shoulder Varies (12'-28')
12' Lanes Varies (3)
12' Auxiliary Lane
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 870+00 TO STA 900+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

SHEET TS02.21

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

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

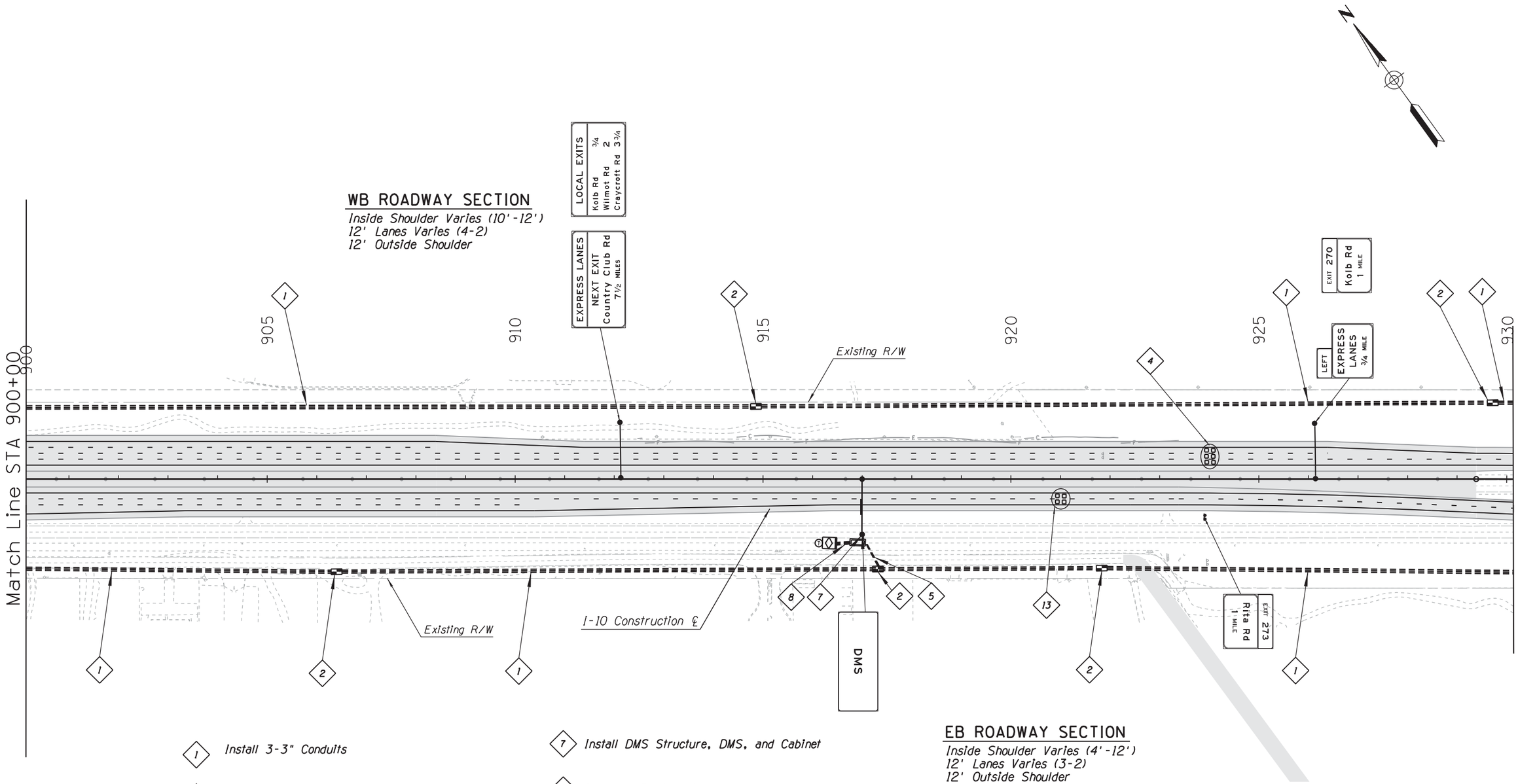
8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p20.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

Inside Shoulder Varies (10'-12')
12' Lanes Varies (4-2)
12' Outside Shoulder



1. *Install 3-3" Conduits*
2. *Install New No. 9 Pull Box*
4. *Install 6 6'x6' Detector Loops, and Detection Cabinet*
5. *Install 2-3" Conduits*
7. *Install DMS Structure, DMS, and Cabinet*
8. *Install 4-3" Conduits*
13. *Install 4 6'x6' Detector Loops, and Detection Cabinet*

EB ROADWAY SECTION

Inside Shoulder Varies (4'-12')
12' Lanes Varies (3-2)
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 900+00 TO STA 930+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: I-10
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

SHEET TS02.22

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

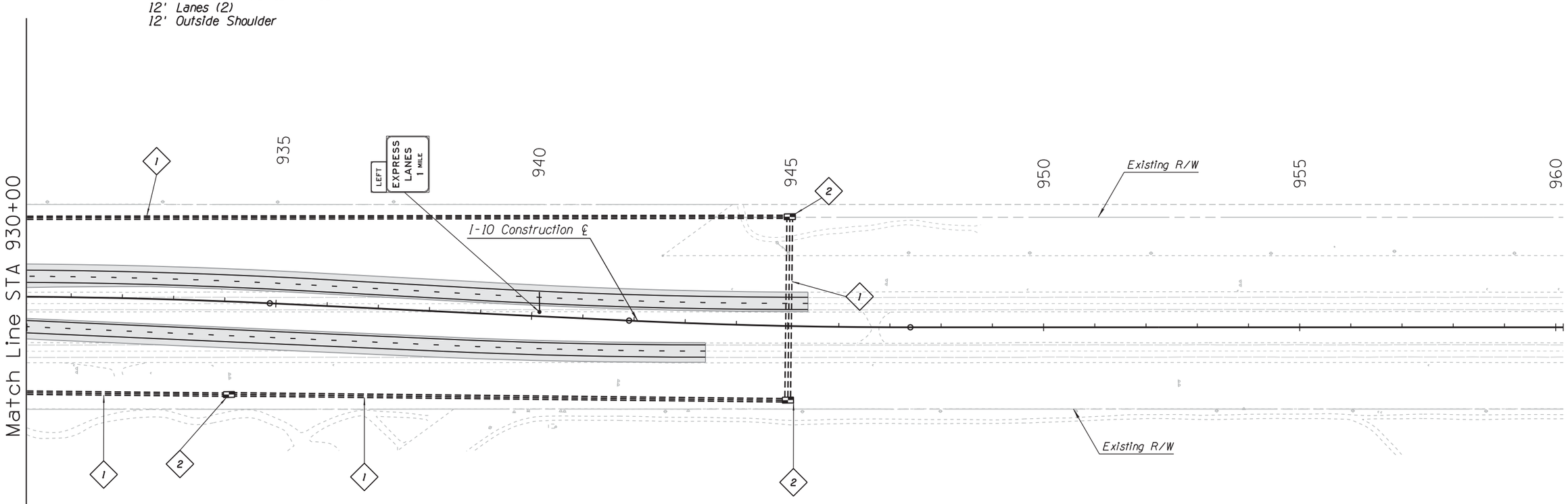
8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p21.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

Inside Shoulder Varies (4'-10')
12' Lanes (2)
12' Outside Shoulder



EB ROADWAY SECTION

4' Inside Shoulder
12' Lanes (2)
12' Outside Shoulder

1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 SYSTEM ALT 1
STA 930+00 TO STA 960+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10

SHEET TS02.23

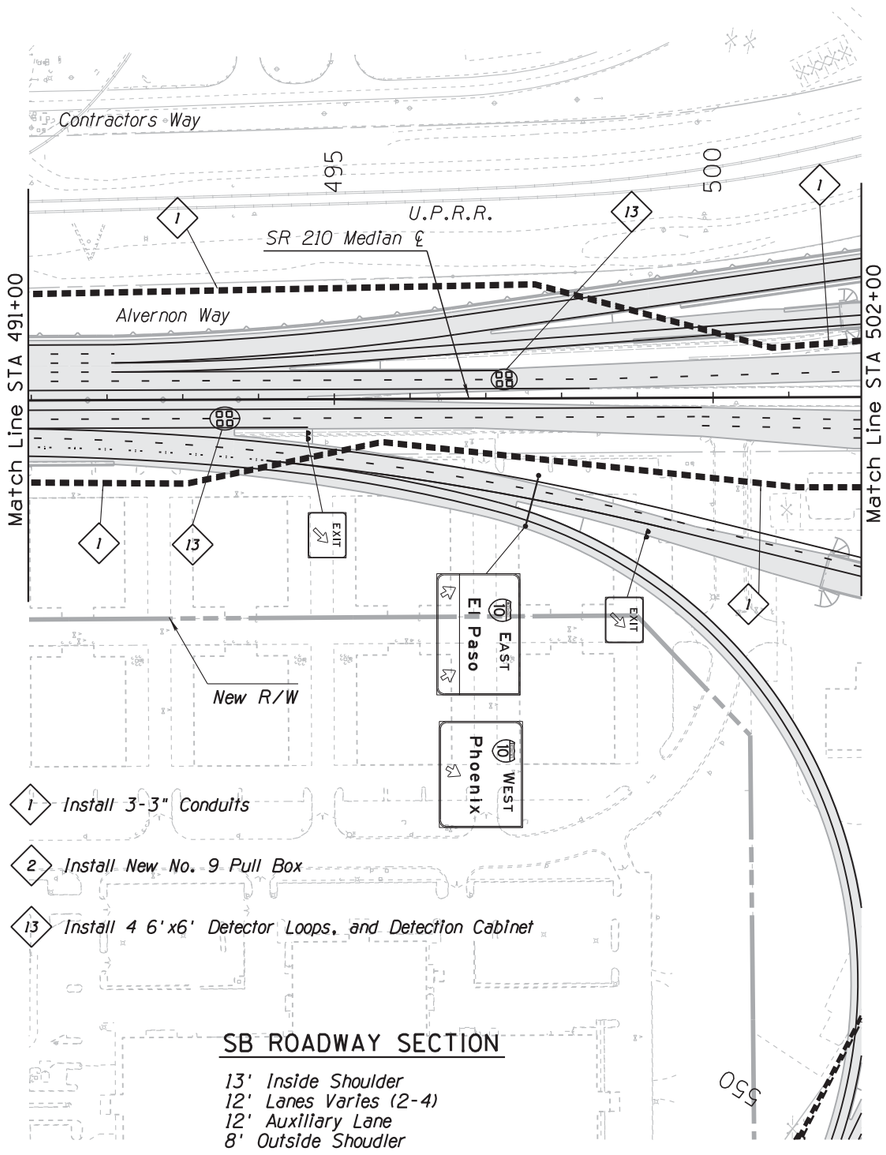
TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

8/18/2017 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1V\t7825p22.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			

NB ROADWAY SECTION

13' Inside Shoulder
12' Lanes Varies (2-5)
8' Outside Shoulder



SB ROADWAY SECTION

13' Inside Shoulder
12' Lanes Varies (2-4)
12' Auxiliary Lane
8' Outside Shoulder

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 491+00 TO STA 502+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

SHEET TS01.28

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

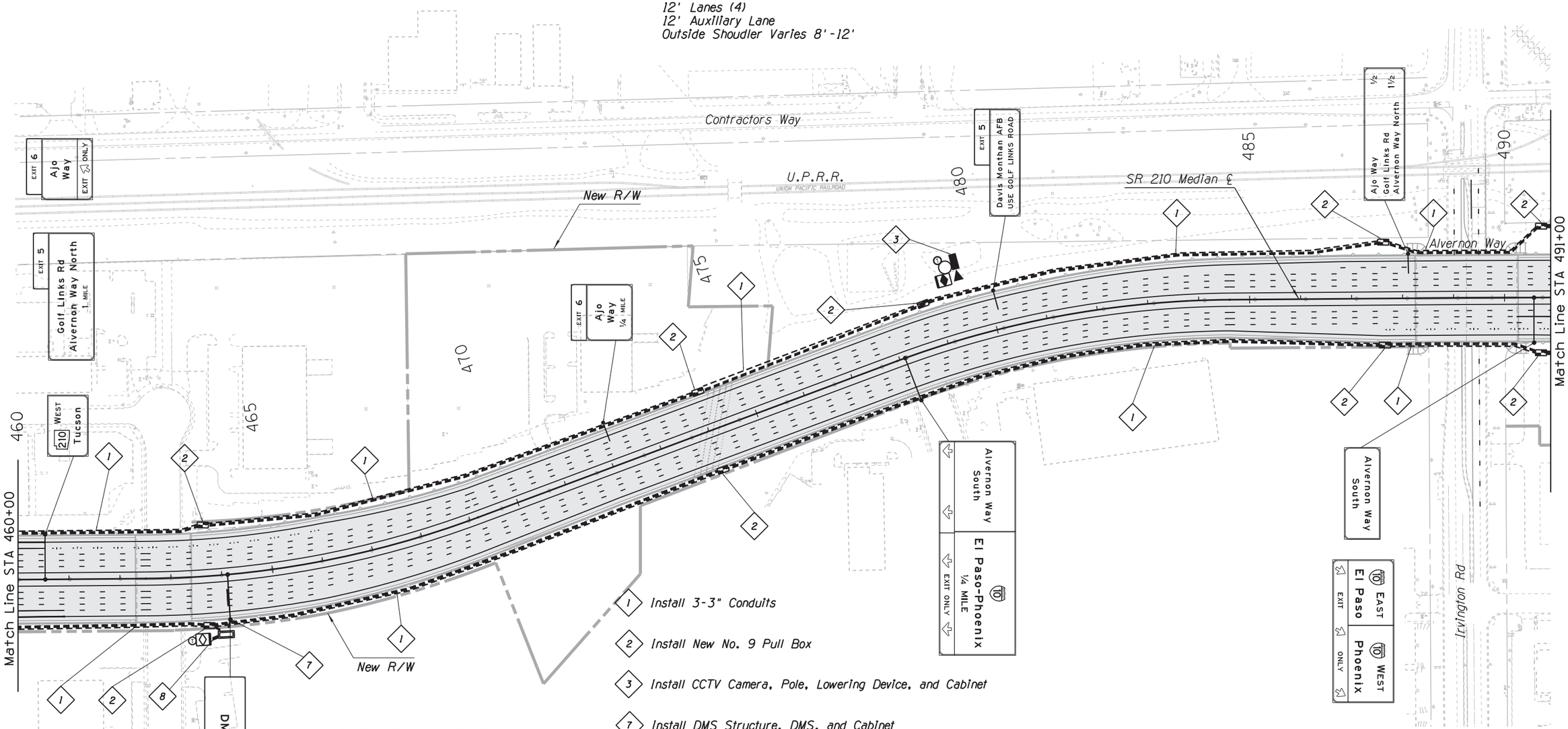
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-1V\t7825p35.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			

NB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
Outside Shoulder Varies 8'-12'



1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

3 *Install CCTV Camera, Pole, Lowering Device, and Cabinet*

7 *Install DMS Structure, DMS, and Cabinet*

8 *Install 4-3" Conduits*

SB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
Outside Shoulder Varies 8'-12'

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 460+00 TO STA 491+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

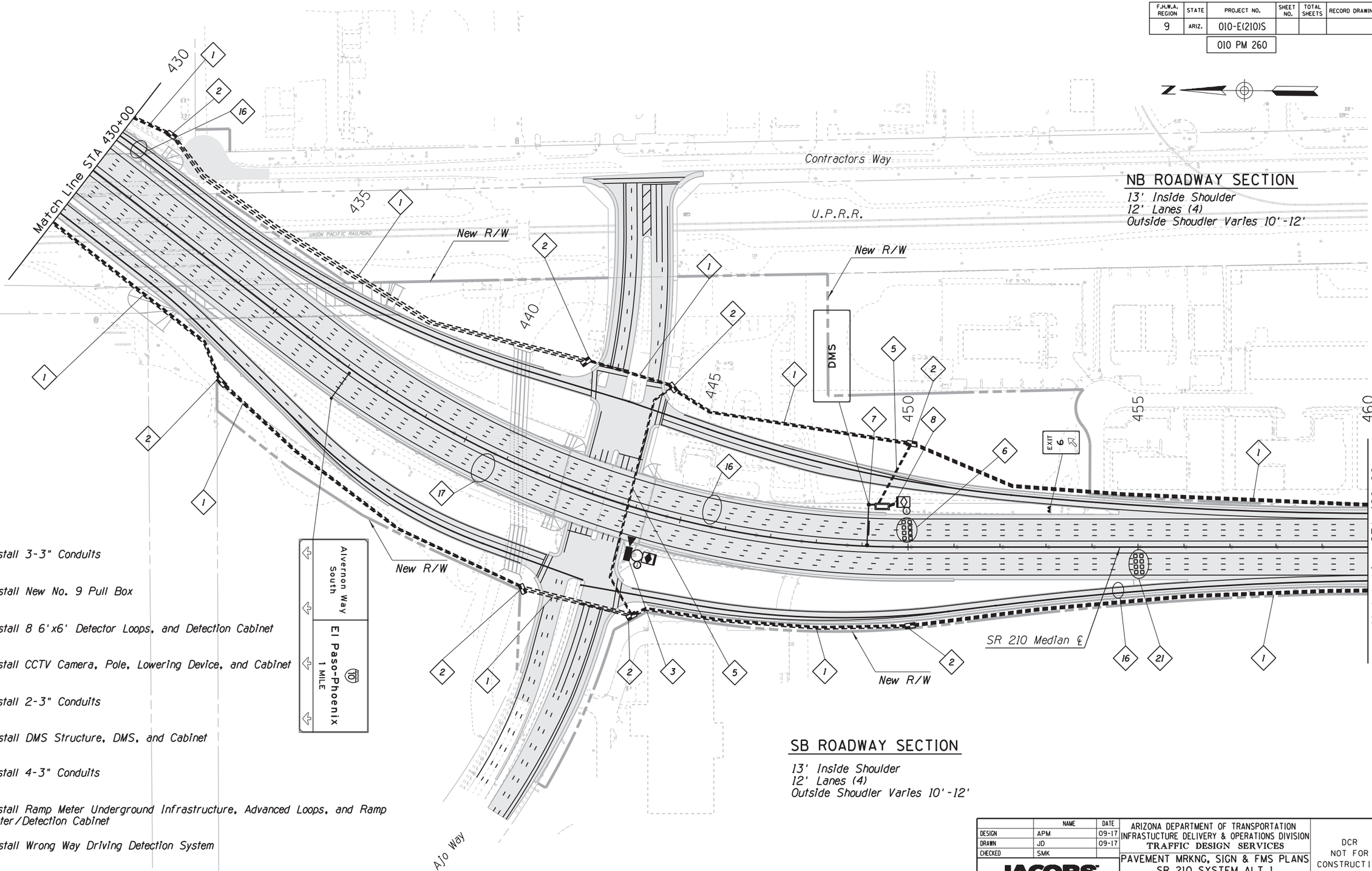
DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TSO1.27
___ OF ___

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

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-1V\t7825p34.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			



NB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
Outside Shoudler Varies 10'-12'

SB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
Outside Shoudler Varies 10'-12'

1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

6 *Install 8 6'x6' Detector Loops, and Detection Cabinet*

3 *Install CCTV Camera, Pole, Lowering Device, and Cabinet*

5 *Install 2-3" Conduits*

7 *Install DMS Structure, DMS, and Cabinet*

8 *Install 4-3" Conduits*

16 *Install Ramp Meter Underground Infrastructure, Advanced Loops, and Ramp Meter/Detection Cabinet*

17 *Install Wrong Way Driving Detection System*

21 *Install 8 6'x6' Loop Detectors*

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 430+00 TO STA 460+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS ROAD TO I-10

TRACS NO. H7825 01L | 010-E(210)S

DCR
NOT FOR CONSTRUCTION OR RECORDING

SHEET TS01.26
___ OF ___

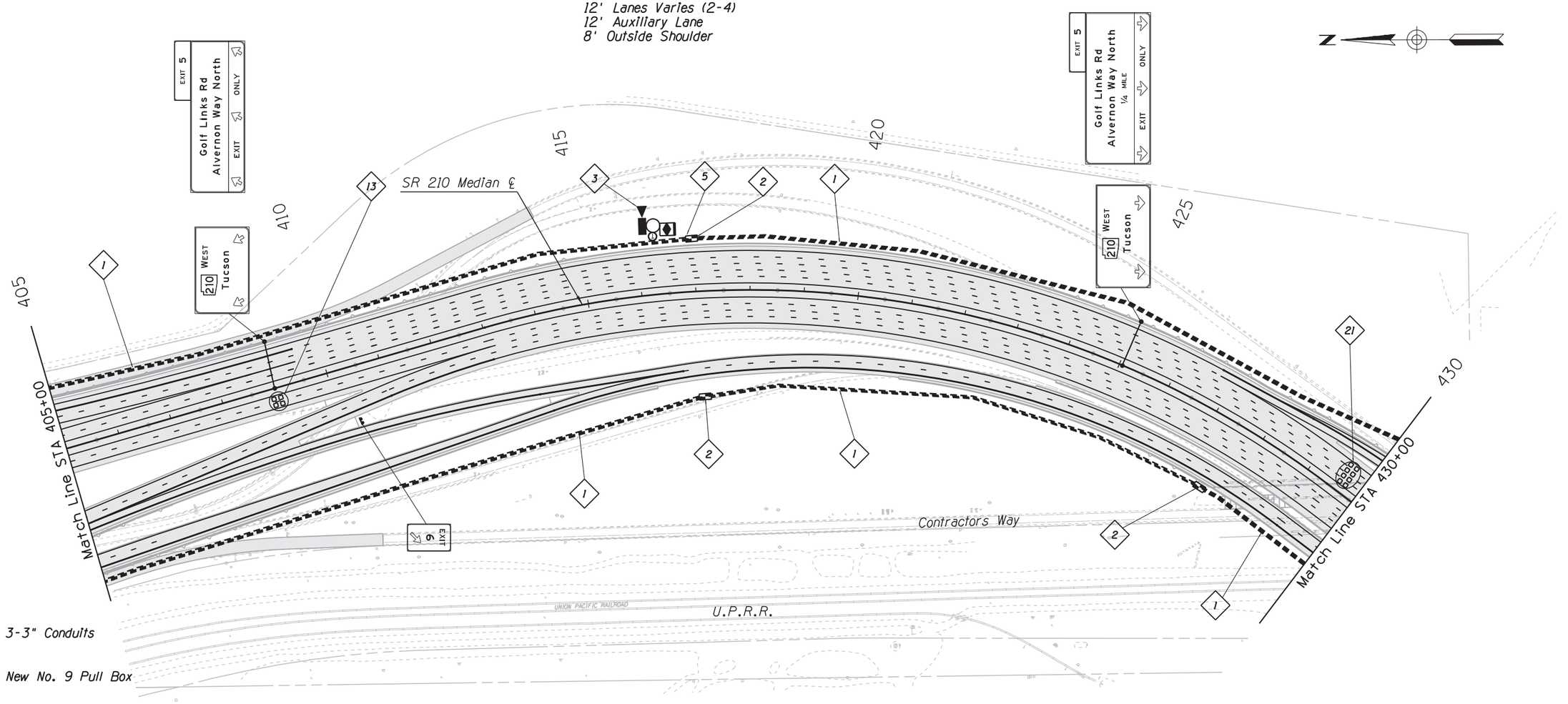
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-lV\t7825p33.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			

NB ROADWAY SECTION

13' Inside Shoulder
12' Lanes Varies (2-4)
12' Auxiliary Lane
8' Outside Shoulder



1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

3 *Install CCTV Camera, Pole, Lowering Device, and Cabinet*

5 *Install 2-3" Conduits*

13 *Install 4 6'x6' Detector Loops, and Detection Cabinet*

21 *Install 8 6'x6' Detector Loops*

SB ROADWAY SECTION

Inside Shoulder Varies 7'-13'
12' Lanes Varies (2-4)
Outside Shoulder Varies 8'-10'

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 405+00 TO STA 430+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET TS01.25

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

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

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-lV\t7825p32.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			

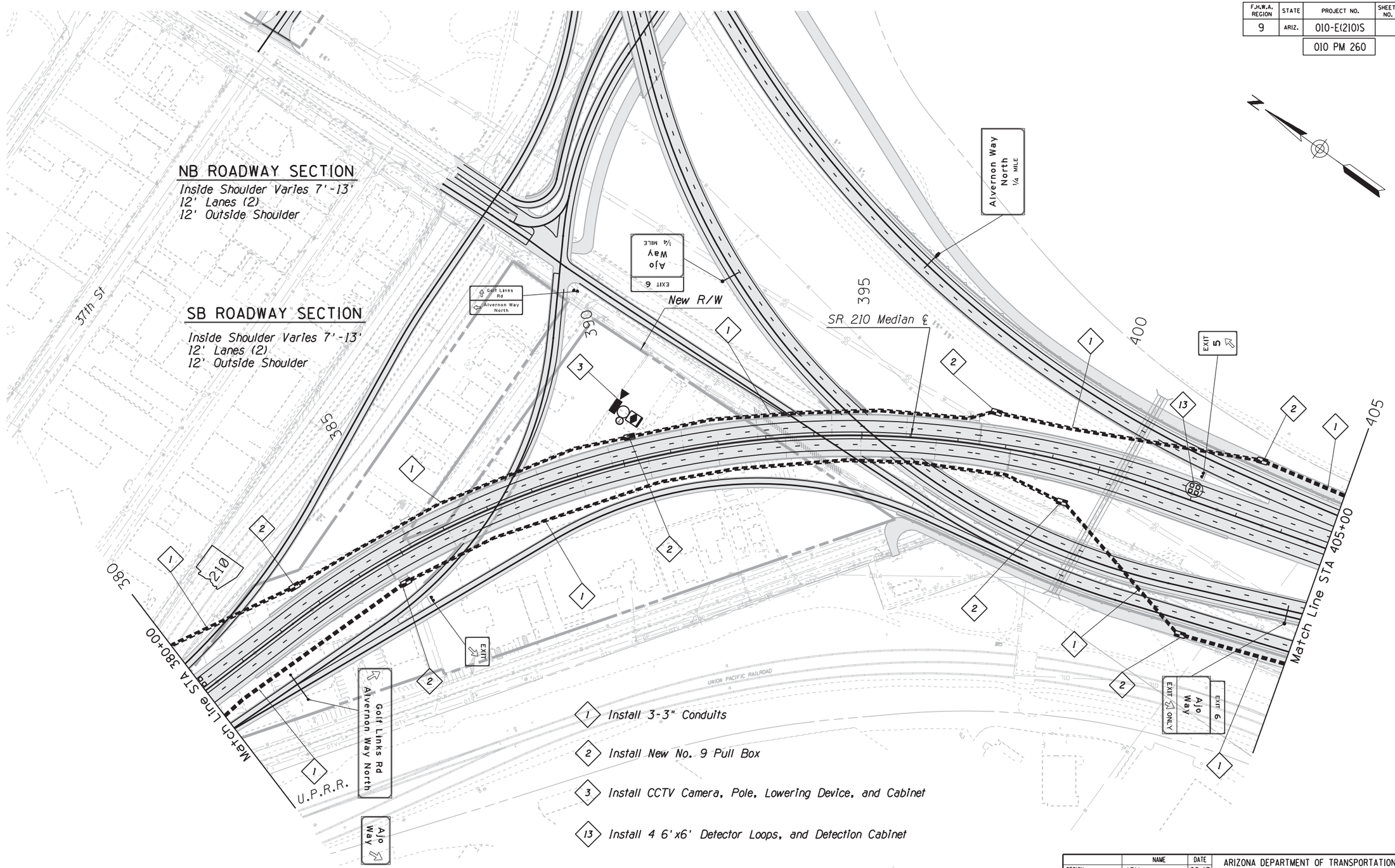
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

NB ROADWAY SECTION

Inside Shoulder Varies 7'-13'
12' Lanes (2)
12' Outside Shoulder

SB ROADWAY SECTION

Inside Shoulder Varies 7'-13'
12' Lanes (2)
12' Outside Shoulder



1. *Install 3-3" Conduits*
2. *Install New No. 9 Pull Box*
3. *Install CCTV Camera, Pole, Lowering Device, and Cabinet*
13. *Install 4 6'x6' Detector Loops, and Detection Cabinet*

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 380+00 TO STA 405+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION	SHEET
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10	TS01.24

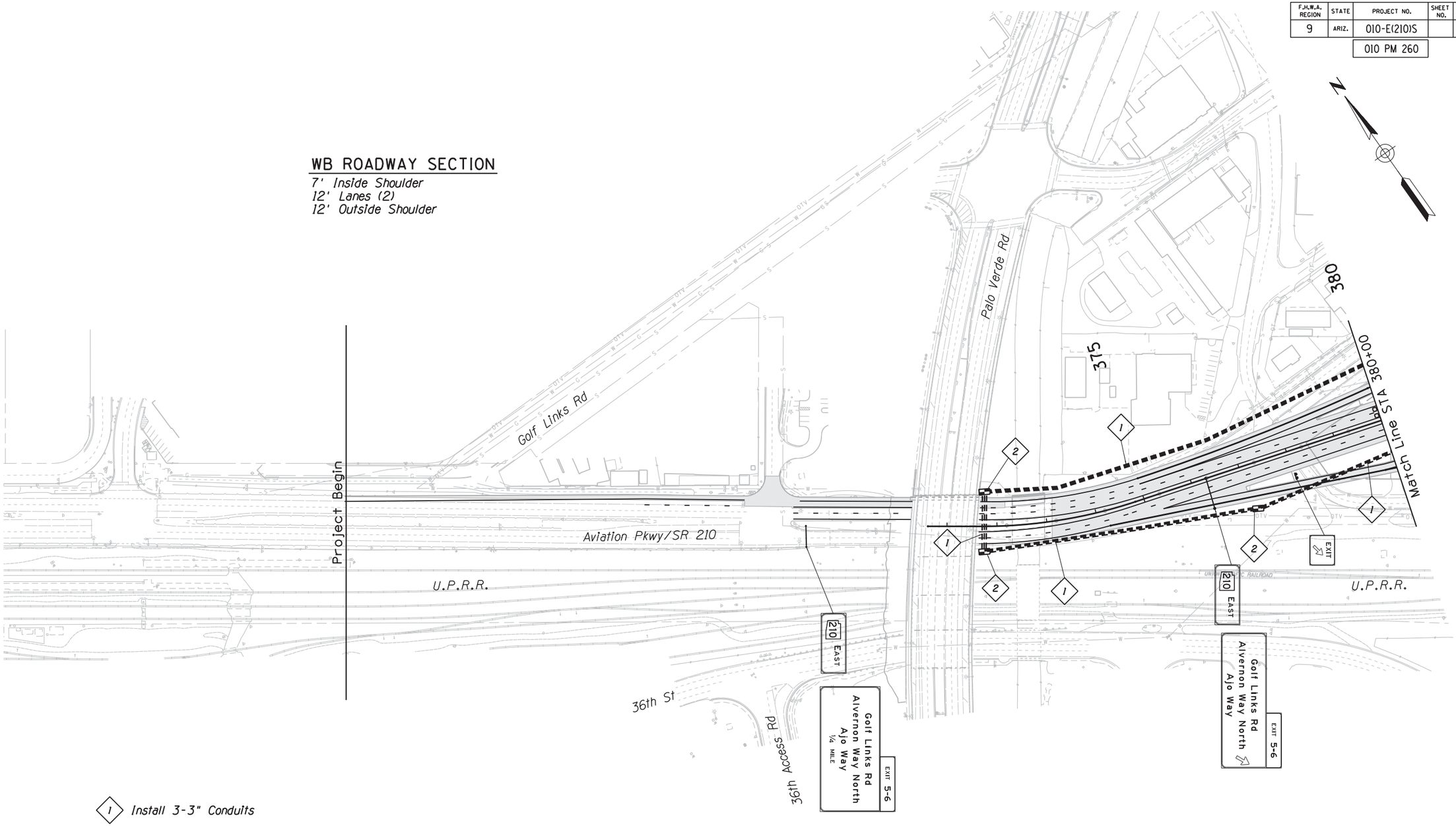
TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-1V\t7825p31.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)S			
		010 PM 260			

WB ROADWAY SECTION

7' Inside Shoulder
12' Lanes (2)
12' Outside Shoulder



1 *Install 3-3" Conduits*

2 *Install New No. 9 Pull Box*

EB ROADWAY SECTION

7' Inside Shoulder
12' Lanes (2)
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	09-17
DRAWN	JD	09-17
CHECKED	SMK	

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

JACOBS

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT 1
STA 370+0 TO STA 380+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
SR 210	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS ROAD TO I-10

SHEET TS01.23

TRACS NO. H7825 01L | 010-E(210)S | ___ OF ___

1/8/2019 P:\W7X89402 I-10 DCR-EA\700 PROJTEC\710CIVIL\702ADGN\Alt 1-1V\t7825p30.dgn

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

LIGHTING CRITERIA MEMORANDUM
FOR
INTERSTATE 10 FROM I-19 TO KOLB ROAD /
STATE ROUTE 210 FROM GOLF LINKS ROAD TO I-10
DESIGN CONCEPT REPORT

ADOT TRACS NO: H7825 01L
FEDERAL AID NO: 010-E(210)A

January 2019

Prepared for:

Arizona Department of Transportation

Prepared by:

101 North First Avenue, Suite 2600
Phoenix, AZ 85003
602.253.1200 (P)
602.253.1202 (F)

Lighting Analysis Basis of Design

Introduction

The Arizona Department of Transportation (ADOT) in cooperation with the Federal Highway Administration (FHWA) prepared a Feasibility Study to identify and evaluate alternatives for the improvement of Interstate 10 (I-10) from the Junction of I-19 to State Route 83 (SR 83) and the extension of the Barraza-Aviation Parkway (State Route 210) from Golf Links Road to I-10 in 2012. Two System Alternatives were identified as viable. Due to dramatic changes in the economic and growth outlook for the region, the 2012 Feasibility Study had to be updated to reflect these changes and to identify the effects these changes had on System Alternatives I and II. The Updated Feasibility Study presented the new analysis results for the new System IV concept, developed after the 2012 Feasibility Report was completed.

The Study area is located in the ADOT Southcentral District within the City of Tucson, the City of South Tucson and Pima County. A brief description of the proposed system alternatives is shown below:

Alternative I

In System Alternative I, SR 210 is extended southerly along Alvernon Way alignment to connect to I-10 at a system interchange. The extension is classified as an urban freeway and is elevated from north of the Union Pacific Railroad (UPRR) overpass to south of Irvington Road. Access to Ajo Way is provided via a diamond TI. SR 210 is grade-separated over Irvington Road.

Alternative IV

In System Alternative IV, SR 210 is extended southerly along the Alvernon Way alignment to connect to I-10 at a system interchange. The extension is classified as an urban freeway and is elevated from north of the UPRR overpass to south of Irvington Road. Access to Ajo Way is provided via a diamond TI. SR 210 is grade-separated over Irvington Road. Additionally, System Alternative IV involves the addition of collector distributor (CD) roadways adjacent to both the eastbound and westbound I-10 mainline roadway from Alvernon Way easterly through the Kolb Road TI.

Lighting Assumptions

1. LED luminaires will be used throughout the project limits.
2. Pole foundations, poles, mast arms, and junction boxes will comply with ADOT standard details.
3. The Light Loss Factor (LLF) for all LED lighting is 0.8.
4. RP-8-00 Illuminance standard for freeway class B
   - Average Illuminance of 0.6 (cd/m^2)
   - Avg/Min Illum Ratio of 4:1
   - Minumum Illuminance of 0.2

Lighting Options

Upon review of the two roadway system alternatives, two separate lighting options were created for each alternative. It is to be noted that all lighting options described below use American Electric Luminaire with 10ft mast arms atop 30ft type G poles, for all ramps.

System Alternative I Lighting Option 1

In this option, American Electric Luminaires are mounted with 20-foot mast arms atop 40-foot type H poles on opposite sides of roadway in a staggered formation along the shoulders.

System Alternative I Lighting Option 2
In this option, Holophane high mast luminaires are mounted with twin luminaires atop 50-foot type U poles along the median.

System Alternative IV Lighting Option 1
In System Alternative IV Option 1, American Electric Luminaires are mounted with 20-foot mast arms atop 40-foot type H poles on opposite sides of roadway in a staggered formation along the shoulders, except for the roadway section with the collector distributor. For the roadway section with the collector distributor, American Electric Luminaires are mounted with 20 ft mast arms atop 40 ft H poles on opposite sides of roadway along the shoulders and Holophane high mast luminaires mounted with twin luminaires atop 50-foot type U poles along the median, in a staggered formation.

System Alternative IV Lighting Option 2
In System Alternative IV Option 2, on I-10, Holophane High Mast luminaires are mounted on the outer medians (between the mainline and the collector-distributor road for each direction) with twin luminaire brackets atop 50-foot type U poles. On SR210, Holophane high mast luminaires are mounted with twin luminaire brackets atop 69 ft type U poles along the Median.

A depiction of the scenarios described above is included in **Appendix A** of this memorandum.

Lighting Analysis

Analysis to determine the layout of the luminaires was conducted by determining cross sectional lengths of the roadways lane configurations. ***AGi32-17.5*** software was utilized to determine spacing of the luminaires along the project limits for each system alternative. Table 1 and Table 2 show the roadway cross section widths for each roadway section and the typical pole spacing and the number of poles for the options 1 and 2 of system alternative I. Table 3 and Table 4 show the roadway cross section widths for each roadway section and the typical pole spacing and the number of poles for the options 1 and 2 of system alternative IV. Table 5 shows the pole spacing and the total number of poles for each type of ramp configuration.

Table 1: Alt I Option 1 roadway configuration and pole spacing on the I-10 and SR210.

I-10 lighting Alt I Option 1							
Station Numbers		Length of Section (ft)	WB Width (ft)	Median (ft)	EB Width (ft)	Typical Pole Spacing (ft)	Number of H Poles
325+35	355+42	3008	72	8	72	215	28
355+42	359+00	359	100	2	112	205	4
359+00	370+00	1100	117.4	2	112	205	12
370+00	375+93	594	112	2	100	205	6
375+93	397+99	2206	75	6	87	195	24
397+99	430+50	3251	76	4	76	215	32
430+50	438+30	780	86	4	86	185	10
438+30	591+05	15274	60	32	60	220	140
591+05	692+00	10095	96	32	96	205	100
692+00	715+00	2300	110	32	106	205	24
715+00	877+50	16250	84	32	84	205	160
877+50	892+10	1460	84	32	84	205	16
892+10	902+10	1000	72	32	72	195	12
902+10	911+40	930	72	32	60	195	10
911+40	925+00	1360	60	32	48	220	14
SR 210 lighting Alt I Option 1							
413+04	426+70	1366	83	4	69	200	14
426+70	460+50	3380	69	4	71	235	30
460+50	470+00	950	72	4	83	200	10
470+00	484+60	1460	71	4	71	235	14
484+60	490+15	555	83	4	72	200	6
490+15	494+60	445	79	4	39	210	6
494+60	496+95	235	37	4	37	425	2
496+95	499+90	295	58	4	54	270	4
499+90	502+00	210	66	4	54	300	2
502+00	506+90	490	66	4	64	300	4
506+90	513+85	695	66	4	54	300	6
Total Number of H Poles							690

Table 2: Alt I Option 2 roadway configuration and pole spacing on the I-10 and SR210.

I-10 lighting Alt I Option 2							
Station Numbers		Length of Section (ft)	WB Width (ft)	Median (ft)	EB Width (ft)	Typical Pole Spacing (ft)	Number of U Poles
325+35	355+42	3008	72	8	72	325	10
355+42	359+00	359	100	2	112	275	2
359+00	370+00	1100	117.4	2	112	240	5
370+00	375+93	594	112	2	100	270	3
375+93	397+99	2206	75	6	87	260	9
397+99	430+50	3251	76	4	76	315	11
430+50	438+30	780	86	4	86	300	3
438+30	591+05	15274	60	32	60	320	48
591+05	692+00	10095	96	32	96	275	37
692+00	715+00	2300	110	32	106	260	9
715+00	877+50	16250	84	32	84	300	55
877+50	892+10	1460	84	32	84	300	5
892+10	902+10	1000	72	32	72	300	4
902+10	911+40	930	72	32	60	300	4
911+40	925+00	1360	60	32	48	320	5
SR 210 lighting Alt I Option 2							
413+04	426+70	1366	83	4	69	315	5
426+70	460+50	3380	69	4	71	325	11
460+50	470+00	950	72	4	83	315	4
470+00	484+60	1460	71	4	71	325	5
484+60	490+15	555	83	4	72	315	2
490+15	494+60	445	79	4	39	315	2
494+60	496+95	235	37	4	37	345	1
496+95	499+90	295	58	4	54	330	1
499+90	502+00	210	66	4	54	330	1
502+00	506+90	490	66	4	64	330	2
506+90	513+85	695	66	4	54	330	3
Total Number of U Poles							247

Table 3: Alt IV Option 1 roadway configuration and pole spacing on the I-10 and SR210.

I-10 lighting Alt IV Option 1								
Station Numbers		Length of Section (ft)	WB Width (ft)	Median (ft)	EB Width (ft)	Typical Pole Spacing (ft)	Number of H Poles	Number of U Poles
325+35	355+42	3008	72	8	72	215	28	0
355+42	359+00	359	100	2	112	205	4	0
359+00	370+00	1100	117.4	2	112	205	12	0
370+00	375+93	594	112	2	100	205	6	0
375+93	397+99	2206	75	6	87	195	24	0
397+99	430+50	3251	76	4	76	215	32	0
430+50	438+30	780	86	4	86	185	10	0
438+30	548+00	10970	60	32	60	220	100	0
548+00	568+80	2080	98	4	98	495	10	5
568+80	591+05	2225	86	4	132	445	10	5
591+05	634+85	4381	134	4	146	400	22	11
634+85	669+90	3505	134	4	134	440	16	8
669+90	692+00	2210	147	4	147	400	12	6
692+00	715+00	2300	134	4	132	440	12	6
715+00	877+50	16250	132	4	132	445	74	37
877+50	892+10	1460	84	32	84	205	16	0
892+10	902+10	1000	72	32	72	195	12	0
902+10	911+40	930	72	32	60	195	10	0
911+40	925+00	1360	60	32	48	220	14	0
SR 210 lighting Alt IV Option 1								
413+04	426+70	1366	83	4	69	200	14	0
426+70	460+50	3380	69	4	71	235	30	0
460+50	470+00	950	72	4	83	200	10	0
470+00	484+60	1460	71	4	71	235	14	0
484+60	490+15	555	83	4	72	200	6	0
490+15	494+60	445	79	4	39	210	6	0
494+60	496+95	235	37	4	37	425	2	0
496+95	499+90	295	58	4	54	270	4	0
499+90	502+00	210	66	4	54	300	2	0
502+00	506+90	490	66	4	64	300	4	0
506+90	513+85	695	66	4	54	300	6	0
Total Number of H Poles							522	N/A
Total Number of U Poles							N/A	78
Total Number of Poles							600	

Table 4:Alt IV Option 2 roadway configuration and pole spacing on the I-10 and SR210.

I-10 lighting Alt IV Option 2									
Station Numbers		Length of Section (ft)	WB Width (ft)	Median (ft)	EB Width (ft)		Typical Pole Spacing (ft)		Number of U Poles
325+35	355+42	3008	72	8	72		325		10
355+42	359+00	359	100	2	112		275		2
359+00	370+00	1100	117.4	2	112		240		5
370+00	375+93	594	112	2	100		270		3
375+93	397+99	2206	75	6	87		260		9
397+99	430+50	3251	76	4	76		315		11
430+50	438+30	780	86	4	86		300		3
438+30	548+00	10970	60	32	60		320		35
548+00	568+80	2080	98	4	98		300		7
568+80	591+05	2225	86	4	132		330		7
Station Numbers		Length of Section (ft)	WB Width		EB Width		Typical Pole Spacing WB (ft)	Typical Pole Spacing EB (ft)	Number of U Poles
			Outer Lanes	Inner Lanes	Inner Lanes	Outer Lanes			
591+05	634+85	4381	64	82	70	64	325	310	28
634+85	669+90	3505	64	70	70	64	325	325	22
669+90	692+00	2210	64	58	58	64	275	320	15
692+00	715+00	2300	64	68	70	64	325	330	15
715+00	877+50	16250	64	68	68	64	330	330	99
877+50	892+10	1460	84	32	84		300		5
892+10	902+10	1000	72	32	72		300		4
902+10	911+40	930	72	32	60		300		4
911+40	925+00	1360	60	32	48		320		5
SR 210 lighting Alt IV Option 2									
413+04	426+70	1366	83	4	69		315		5
426+70	460+50	3380	69	4	71		325		11
460+50	470+00	950	72	4	83		315		4
470+00	484+60	1460	71	4	71		325		5
484+60	490+15	555	83	4	72		315		2
490+15	494+60	445	79	4	39		315		2
494+60	496+95	235	37	4	37		345		1
496+95	499+90	295	58	4	54		330		1
499+90	502+00	210	66	4	54		330		1
502+00	506+90	490	66	4	64		330		2
506+90	513+85	695	66	4	54		330		3
Total Number of U Poles									326

Table 5: Ramp classifications and Spacing.

Ramp Classification	Inside Shoulder (ft)	# Lanes (12')	Outside Shoulder (ft)	Ramp Width (ft)	Spacing ATBL_G (ft)	Total Length of Ramps (ft)	Number of G Poles
1 Lane	2	1	8	22	190	44085	246
2 Lanes	2	2	2	28	190	30872	188
3 Lanes	2	3	2	40	170	1410	9
Total Number of G Poles							443

Preliminary Cost Analysis

Using the Arizona Department of Transportation standards, the cost of each component within the system alternatives and each option for the lighting design of the I-10 DCR and SR210 were chosen. The quantity for each Item within the lighting alternatives, were then determined, these items consist of but are not limited to: Poles, Foundations, Twin Luminaire Brackets, Mast arms, Conduits, and Conductors. Table 6, shows the construction sub-total cost for Alternative I option 1. Table 7, shows the construction sub-total cost for Alternative I option 2. Table 8 shows the construction sub-total cost for Alternative IV option 1. Lastly, Table 9, shows the construction sub-total cost for Alternative IV option 2.

Table 6: Alternative I Option 1 Cost Estimate.

Alternative I Option 1 Cost Estimate					
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	AMOUNT
7310170	POLE (TYPE U)	EACH	0	$ 2,800.00	$ -
7310090	POLE (TYPE H) (STANDARD BASE)	EACH	690	$ 1,470.00	$ 1,014,300.00
7310071	POLE (TYPE G) (SLIP AWAY BASE)	EACH	443	$ 2,600.00	$ 1,151,800.00
7310350	POLE FOUNDATION (TYPE U)	EACH	0	$ 4,000.00	$ -
7310270	POLE FOUNDATION (TYPE H) (STANDARD BASE)	EACH	690	$ 1,200.00	$ 828,000.00
7310261	POLE FOUNDATION (TYPE G) (SLIP AWAY BASE)	EACH	443	$ 2,040.00	$ 903,720.00
7360104	LUMINAIRE (High) (LED Holophane High Mast)	EACH	0	$ 1,400.00	$ -
7360105	LUMINAIRE (LED American Electric Luminaire)	EACH	1,133	$ 1,000.00	$ 1,133,000.00
7310511	MAST ARM (10 FT.) (TAPERED)	EACH	443	$ 370.00	$ 163,910.00
7310551	MAST ARM (20 FT.) (TAPERED)	EACH	690	$ 660.00	$ 455,400.00
7310710	TWIN LUMINAIRE BRACKET	EACH	0	$ 170.00	$ -
7360243	LOAD CENTER CABINET TYPE IV (240/480 VOLT)	EACH	16	$ 7,878.00	$ 126,048.00
7360290	LOAD CENTER CABINET FOUNDATION	EACH	16	$ 675.00	$ 10,800.00
7320410	PULL BOX (NO. 5)	EACH	1,133	$ 480.00	$ 543,840.00
7320070	ELECTRICAL CONDUIT (3") (PVC)	L.FT.	165,585	$ 11.00	$ 1,821,435.00
7320520	CONDUCTOR (NO. 8)	L.FT.	489,790	$ 0.60	$ 293,874.00
7320585	CONDUCTOR (INSULATED BOND) (NO. 8 GREEN BOND)	L.FT.	244,895	$ 0.60	$ 146,937.00
CONSTRUCTION SUB-TOTAL					$ 8,593,064.00

Table 7: Alternative I Option 2 Cost Estimate.

Alternative I Option 2 Cost Estimate					
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	AMOUNT
7310170	POLE (TYPE U)	EACH	247	$ 2,800.00	$ 691,600.00
7310090	POLE (TYPE H) (STANDARD BASE)	EACH	0	$ 1,470.00	$ -
7310071	POLE (TYPE G) (SLIP AWAY BASE)	EACH	443	$ 2,600.00	$ 1,151,800.00
7310350	POLE FOUNDATION (TYPE U)	EACH	247	$ 4,000.00	$ 988,000.00
7310270	POLE FOUNDATION (TYPE H) (STANDARD BASE)	EACH	0	$ 1,200.00	$ -
7310261	POLE FOUNDATION (TYPE G) (SLIP AWAY BASE)	EACH	443	$ 2,040.00	$ 903,720.00
7360104	LUMINAIRE (High) (LED Holophane High Mast)	EACH	494	$ 1,400.00	$ 691,600.00
7360105	LUMINAIRE (LED American Electric Luminaire)	EACH	443	$ 1,000.00	$ 443,000.00
7310511	MAST ARM (10 FT.) (TAPERED)	EACH	443	$ 370.00	$ 163,910.00
7310551	MAST ARM (20 FT.) (TAPERED)	EACH	0	$ 660.00	$ -
7310710	TWIN LUMINAIRE BRACKET	EACH	247	$ 170.00	$ 41,990.00
7360243	LOAD CENTER CABINET TYPE IV (240/480 VOLT)	EACH	16	$ 7,878.00	$ 126,048.00
7360290	LOAD CENTER CABINET FOUNDATION	EACH	16	$ 675.00	$ 10,800.00
7320410	PULL BOX (NO. 5)	EACH	690	$ 480.00	$ 331,200.00
7320070	ELECTRICAL CONDUIT (3") (PVC)	L.FT.	82,793	$ 11.00	$ 910,723.00
7320520	CONDUCTOR (NO. 8)	L.FT.	262,186	$ 0.60	$ 157,311.60
7320585	CONDUCTOR (INSULATED BOND) (NO. 8 GREEN BOND)	L.FT.	131,093	$ 0.60	$ 78,655.80
CONSTRUCTION SUB-TOTAL					$ 6,690,358.40

Table 8: Alternative IV Option 1 Cost Estimate.

Alternative IV Option 1 Cost Estimate					
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	AMOUNT
7310170	POLE (TYPE U)	EACH	78	$ 2,800.00	$ 218,400.00
7310090	POLE (TYPE H) (STANDARD BASE)	EACH	522	$ 1,470.00	$ 767,340.00
7310071	POLE (TYPE G) (SLIP AWAY BASE)	EACH	443	$ 2,600.00	$ 1,151,800.00
7310350	POLE FOUNDATION (TYPE U)	EACH	78	$ 4,000.00	$ 312,000.00
7310270	POLE FOUNDATION (TYPE H) (STANDARD BASE)	EACH	522	$ 1,200.00	$ 626,400.00
7310261	POLE FOUNDATION (TYPE G) (SLIP AWAY BASE)	EACH	443	$ 2,040.00	$ 903,720.00
7360104	LUMINAIRE (High) (LED Holophane High Mast)	EACH	156	$ 1,400.00	$ 218,400.00
7360105	LUMINAIRE (LED American Electric Luminaire)	EACH	965	$ 1,000.00	$ 965,000.00
7310511	MAST ARM (10 FT.) (TAPERED)	EACH	443	$ 370.00	$ 163,910.00
7310551	MAST ARM (20 FT.) (TAPERED)	EACH	522	$ 660.00	$ 344,520.00
7310710	TWIN LUMINAIRE BRACKET	EACH	78	$ 170.00	$ 13,260.00
7360243	LOAD CENTER CABINET TYPE IV (240/480 VOLT)	EACH	16	$ 7,878.00	$ 126,048.00
7360290	LOAD CENTER CABINET FOUNDATION	EACH	16	$ 675.00	$ 10,800.00
7320410	PULL BOX (NO. 5)	EACH	1,043	$ 480.00	$ 500,640.00
7320070	ELECTRICAL CONDUIT (3") (PVC)	L.FT.	165,585	$ 11.00	$ 1,821,435.00
7320520	CONDUCTOR (NO. 8)	L.FT.	463,890	$ 0.60	$ 278,334.00
7320585	CONDUCTOR (INSULATED BOND) (NO. 8 GREEN BOND)	L.FT.	231,945	$ 0.60	$ 139,167.00
CONSTRUCTION SUB-TOTAL					$ 8,561,174.00

Table 9: Alternative IV Option 2 Cost Estimate.

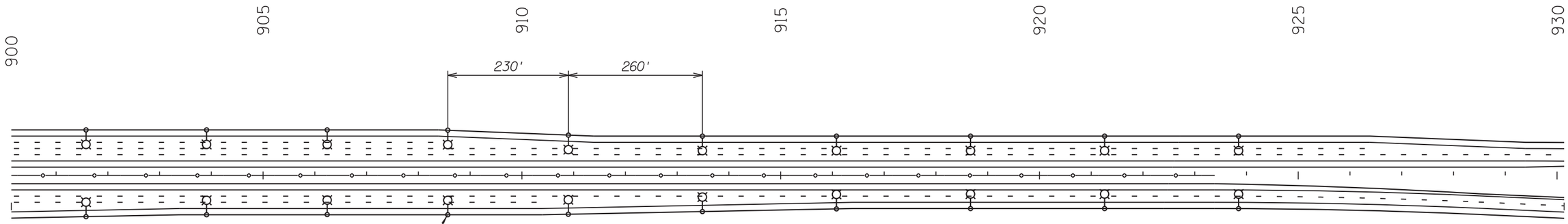
Alternative IV Option 2 Cost Estimate					
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	AMOUNT
7310170	POLE (TYPE U)	EACH	326	$ 2,800.00	$ 912,800.00
7310090	POLE (TYPE H) (STANDARD BASE)	EACH	0	$ 1,470.00	$ -
7310071	POLE (TYPE G) (SLIP AWAY BASE)	EACH	443	$ 2,600.00	$ 1,151,800.00
7310350	POLE FOUNDATION (TYPE U)	EACH	326	$ 4,000.00	$ 1,304,000.00
7310270	POLE FOUNDATION (TYPE H) (STANDARD BASE)	EACH	0	$ 1,200.00	$ -
7310261	POLE FOUNDATION (TYPE G) (SLIP AWAY BASE)	EACH	443	$ 2,040.00	$ 903,720.00
7360104	LUMINAIRE (High) (LED Holophane High Mast)	EACH	652	$ 1,400.00	$ 912,800.00
7360105	LUMINAIRE (LED American Electric Luminaire)	EACH	443	$ 1,000.00	$ 443,000.00
7310511	MAST ARM (10 FT.) (TAPERED)	EACH	443	$ 370.00	$ 163,910.00
7310551	MAST ARM (20 FT.) (TAPERED)	EACH	0	$ 660.00	$ -
7310710	TWIN LUMINAIRE BRACKET	EACH	326	$ 170.00	$ 55,420.00
7360243	LOAD CENTER CABINET TYPE IV (240/480 VOLT)	EACH	16	$ 7,878.00	$ 126,048.00
7360290	LOAD CENTER CABINET FOUNDATION	EACH	16	$ 675.00	$ 10,800.00
7320410	PULL BOX (NO. 5)	EACH	769	$ 480.00	$ 369,120.00
7320070	ELECTRICAL CONDUIT (3") (PVC)	L.FT.	82,793	$ 11.00	$ 910,723.00
7320520	CONDUCTOR (NO. 8)	L.FT.	273,246	$ 0.60	$ 163,947.60
7320585	CONDUCTOR (INSULATED BOND) (NO. 8 GREEN BOND)	L.FT.	136,623	$ 0.60	$ 81,973.80
CONSTRUCTION SUB-TOTAL					$ 7,510,062.40

Appendix A

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder



American Electric Luminance (45' MH) Typ.

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes (5)
12' Auxiliary Lane
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	06-17
DRAWN	JD	06-17
CHECKED	SMK	06-17

JACOBS

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 Alt 1 Option 1
STA 900+00 TO STA 930+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10

SHEET ___ OF ___

TRACS NO. H7825 01L | 010-E(210)A

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

8/1/2017 P:\W7X89402 I-10 DCR-EA\600 DISC\620 Traffic\Lighting\Lighting diagrams\I-10\Typical Lighting I-10 Alt 1 Option 1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

12' Inside Shoulder
12' Lanes Varies (3-4)
12' Outside Shoulder

900

930

285'

Holophane High Mast (69' MH) Typ.

EB ROADWAY SECTION

12' Inside Shoulder
12' Lanes Varies (3-4)
12' Outside Shoulder

	NAME	DATE
DESIGN	APM	06-17
DRAWN	JD	06-17
CHECKED	SMK	06-17

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 Alt 1 Option 2
STA 900+00 TO STA 930+00

DCR
NOT FOR CONSTRUCTION OR RECORDING

ROUTE	LOCATION
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10

SHEET

TRACS NO. H7825 01L | 010-E(210)A | ___ OF ___

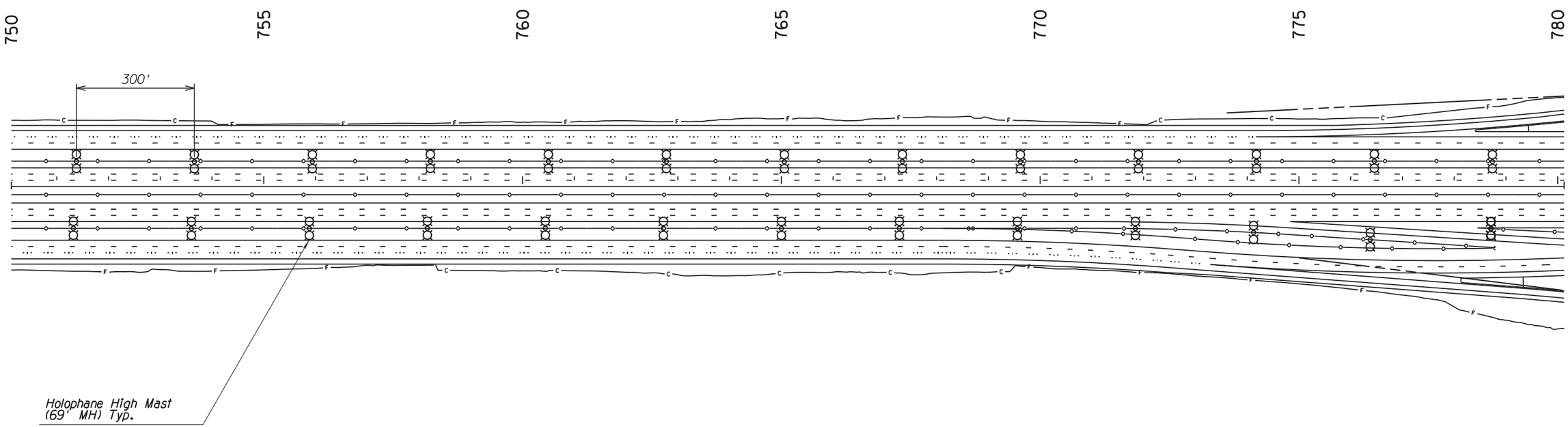
8/1/2017 P:\W7X89402 I-10 DCR-EA\600 DISC\620 Traffic\Lighting\Lighting diagrams\I-10\Typical Lighting I-10 Alt 1 Option 2.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

24' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)



EB ROADWAY SECTION

24' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

	NAME	DATE
DESIGN	APM	06-17
DRAWN	JD	06-17
CHECKED	SMK	06-17

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 Alt IV Option 2
STA 750+00 TO STA 780+00

DCR
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	___ OF ___

TRACS NO. H7825 01L | 010-E(210)A

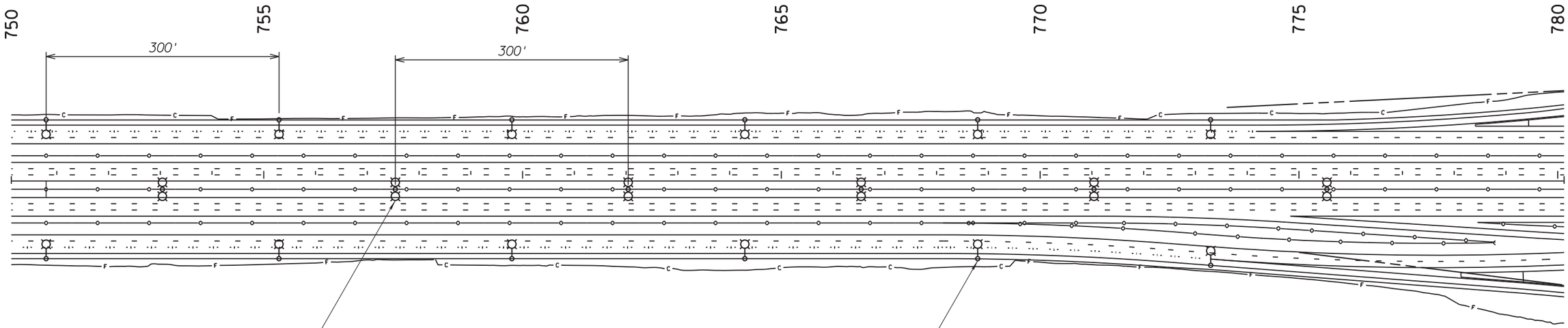
8/1/2017 P:\W7X89402 I-10 DCR-EA\600 DISC\620 Traffic\Lighting\Lighting diagrams\I-10\Typical Lighting I-10 Alt IV Option 2.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

WB ROADWAY SECTION

24' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)



EB ROADWAY SECTION

24' Inside Shoulder
12' Lanes (3)
12' Auxiliary Lane
12' Outside Shoulder
12' Exit Lanes (2)

	NAME	DATE
DESIGN	APM	08-17
DRAWN	JD	08-17
CHECKED	SMK	

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
I-10 Alt IV Option 1
STA 750+00 TO STA 780+00

DCR
NOT FOR
CONSTRUCTION
OR RECORDING

ROUTE	LOCATION	SHEET
I-10	I-10 - JCT. I-19 TO KOLB ROAD SR 210 - GOLF LINKS TO I-10	___ OF ___

TRACS NO. H7825 01L | 010-E(210)A

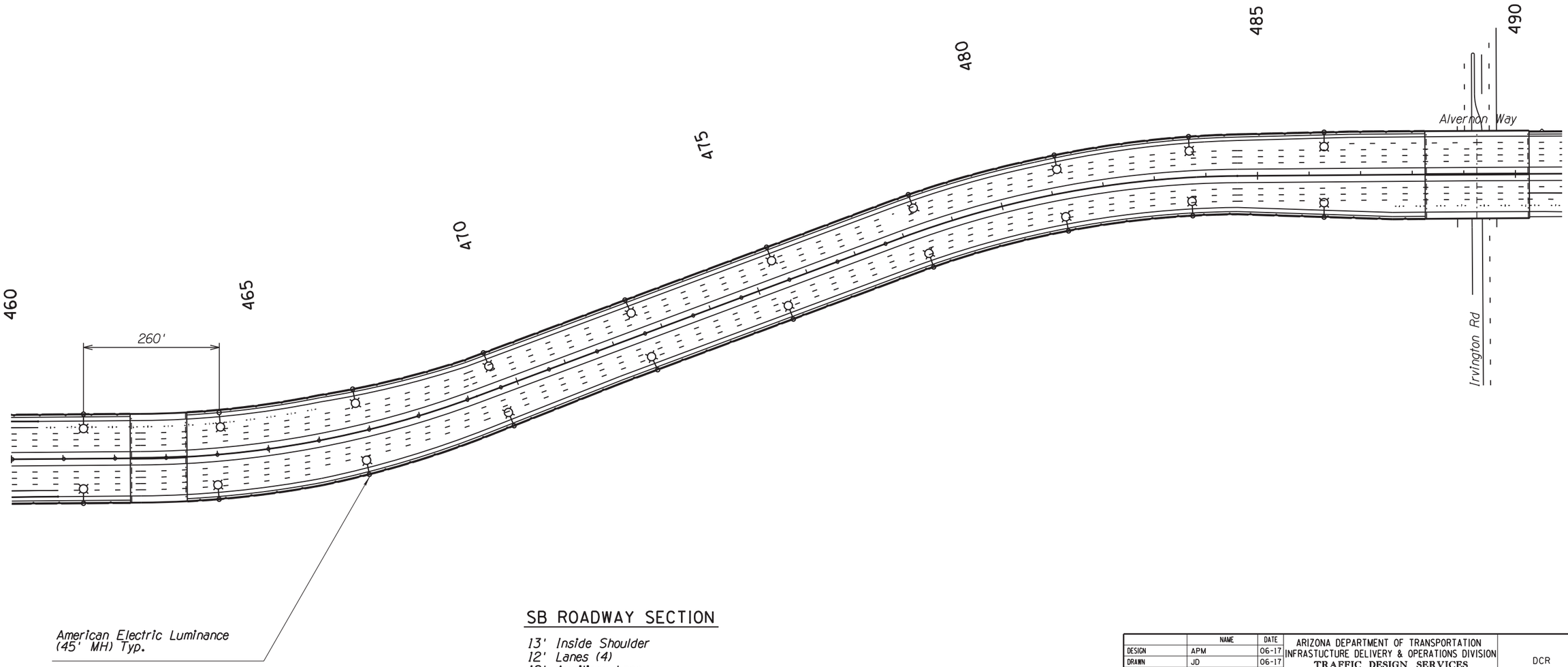
8/4/2017 P:\W7X89402 I-10 DCR-EA\600 DISC\620 Traffic\Lighting\Lighting diagrams\I-10\Typical Lighting I-10 Alt IV Option 1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

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

NB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
Outside Shoulder Varies 8'-12'



SB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
Outside Shoulder Varies 8'-12'

	NAME	DATE
DESIGN	APM	06-17
DRAWN	JD	06-17
CHECKED	SMK	06-17

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT I-4 Option 1
STA 460+00 TO STA 491+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

TRACS NO. H7825 01L | 010-E(210)A

DCR
NOT FOR
CONSTRUCTION
OR RECORDING

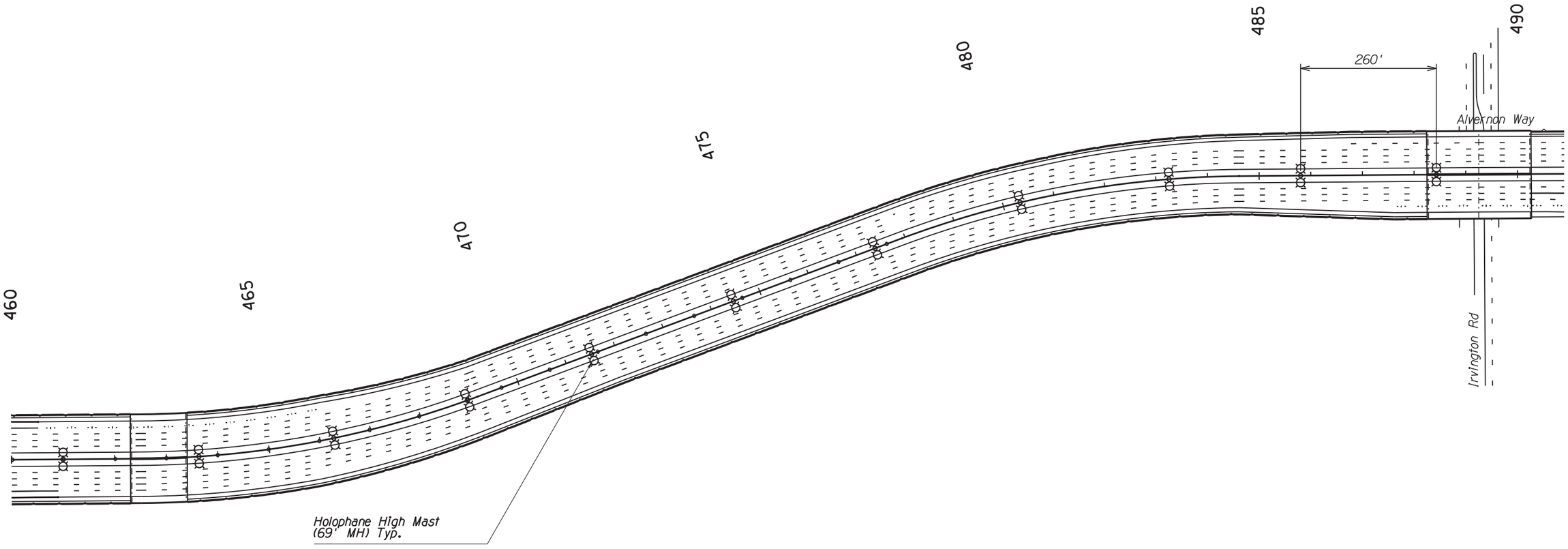
SHEET ___ OF ___

8/1/2017 P:\W7X89402 I-10 DCR-EA\600 DISC\620 Traffic\Lighting\Lighting diagrams\SR210\Typical Lighting SR210 Alt 1_IV Option 1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-E(210)A			

NB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
Outside Shoulder Varies 8'-12'



SB ROADWAY SECTION

13' Inside Shoulder
12' Lanes (4)
12' Auxiliary Lane
Outside Shoulder Varies 8'-12'

	NAME	DATE
DESIGN	APM	06-17
DRAWN	JD	06-17
CHECKED	SMK	06-17

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTUCTURE DELIVERY & OPERATIONS DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MRKNG, SIGN & FMS PLANS
SR 210 SYSTEM ALT I-4 Option 2
STA 460+00 TO STA 491+00

ROUTE: SR 210
LOCATION: I-10 - JCT. I-19 TO KOLB ROAD
SR 210 - GOLF LINKS TO I-10

TRACS NO. H7825 01L | 010-E(210)A

DCR
NOT FOR
CONSTRUCTION
OR RECORDING

SHEET ___ OF ___

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

8/1/2017 P:\W7X89402 I-10 DCR-EA\600 DISC\620 Traffic\Lighting\Lighting diagrams\SR210\Typical Lighting SR210 Alt 1_IV Option 2.dgn

APPENDIX Q
MEETING NOTES

Appendix Q Table of Contents

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ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

ADOT/FHWA KICKOFF MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

October 25, 2016

TO: Kickoff Meeting Attendees
Virgil Coxon, ADOT Chief Surveyor**
Sarah Karasz, ADOT Environmental Planning Group, Senior Environmental Planner
Tom Kilargis, ADOT Roadway Engineering Group, Design Support**
Tammy Mivshek, ADOT Traffic Design**
Kimberly Noetzel, ADOT Community Relations, Assistant Communications Dir.**
Rudy Perez, ADOT Major Projects Group
C.T. Revere, ADOT Communications
Lynn (Ungyo) Sugiyama, ADOT - Trans. Programming**
James Gomes, ADOT Southcentral District Regional Traffic Engineer
Rod Lane, ADOT Southcentral District Engineer
Priscilla Thompson, ADOT Southcentral District Utility Engr. Coordinator
Tremaine Wilson, FHWA Environmental Coordinator**
Sharon Gordon, FHWA Area Engineer**
Mike Dawson, EcoPlan Associates Senior Environmental Planner
Marek Kasztalski, Ninyo & Moore Senior Geotechnical Engr
Jeff Holzmeister, J2 Engineering Drainage, Project Manager**
Paul Black, Jacobs Roadway, Project Engineer**
Rob Brantley, Jacobs Structural, Project Engineer**
Shanthi Krishnan, Jacobs Traffic Modeling, Project Manager
Brad Olbert, Jacobs Project Manager
Shantala Ramaiah, Jacobs Structural, Engineer**
Anthony Scolaro, Jacobs Environmental, Project Manager
Sandra Thoms, Jacobs Traffic, Project Engineer**
Abel Federico, ADOT ESS
Anna Arce, ADOT Permits

** Attended from Phoenix location

Not in Attendance
Bret Anderson, ADOT Priority Programming Section, Program Manager
Scott Beck, ADOT Highway Safety
David Benton, ADOT Bridge Group
Leroy Brady, ADOT Roadside Development Section
Paul Burch, ADOT Manager, Pavement Design
Barry Crockett, ADOT Contracts and Specifications
John Eckhardt, ADOT Right-of-Way Group

Shajed Haque, ADOT Drainage Section
Mark Hoffman, ADOT Multimodal Planning, Planning Program Manager
Mohamad Jawhar, ADOT Engineering Survey Section
Clem Ligocki, ADOT Planning and Programming, Planning and Programming Manager
Joan Lovell, ADOT ITS
Merrisa Marin, ADOT R/W Project Management Section Coordinator
Paul O'Brien, ADOT Environmental Planning Group
Scott Orrahood, ADOT State Traffic Design Manager
Ashek Rana, ADOT Pavement Design Section
Karim Rashid, ADOT Manager Traffic Design Team 2
Annette Riley, ADOT Roadway Engineering Group, Assistant State Engineer
Karen Williams, ADOT Attorney General Office Transportation Section
Pe-Shen Yang, ADOT Bridge Design Service
William Downes, ADOT Bridge Group Senior Bridge Designer
Ayman Ghadban, ADOT Safford District Utility Engr. Coordinator
Delores Crumbacher, ADOT Southcentral District Transportation Engr. Specialist
Emily Dawson, ADOT Southcentral District Project Development
Jerry James, ADOT Southcentral District Asst. District Engineer, Operations
Paul Langdale, ADOT Southcentral District Environmental
Richard La Pierre, ADOT Southcentral District Permits Supervisor
Tom Martinez, ADOT Southcentral District Transportation Engr. Specialist
Jeremy Moore, ADOT Southcentral District Assistant District Engineer, Construction

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
ADOT/FHWA KICKOFF MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The Kickoff Meeting for this project was held at 2:00 PM October 25, 2016 at the ADOT Southcentral District Office Training Room. Videoconferencing was provided in the ADOT Admin Building Green Room for attendees in Phoenix. The meeting was scheduled to end at 4:00 PM but it adjourned at 3:00 PM.

The meeting was well represented by agencies interested in improving the I-10 corridor from junction I-19 to Kolb Road and providing a connection for SR 210 to I-10. Agencies included the Federal Highway Administration (FHWA) and ADOT. Stakeholders provided critical input for the success of the project.

SUMMARY

Rudy Perez, ADOT Project Manager opened the meeting at 2:00 PM. Introductions were held for all attendees.

Brad Olbert, Jacobs Project Manager gave a safety minute and discussed Halloween safety. He then gave an overview of the meeting agenda which was dispersed to all attendees prior to the meeting and copies were available for those who did not print their own.

Brad briefed attendees on the study team organization and emphasized that the consulting staff that worked on Phase I of this project will be working on Phase II. Our subconsultant Ninyo and Moore is new to the team and will be providing geotechnical services. Our other subconsultant, J2, will be preparing the drainage report for the project.

Brad informed attendees of the project website. All documents related to this project from the very beginning are posted on the website including meeting minutes, exhibits, and project deliverables. This site is intended for use by the study team only. The login information is available in the meeting presentation slides. There is a separate website for public use with information related to the project. C.T. Revere (ADOT Communications) indicated that the content on the public website is out of date and they will be updating it soon.

- Study Team Website: www.jacobsaz.com
  - Login: I-10 Corridor
  - Password: Empirita
- Public Project Website: http://www.azdot.gov/projects/south-central/i-10-and-sr-210-feasibility-study

Brad gave an overview of the project to date. Phase I was completed February 2015. Phase I included an update to the Feasibility Report, Environmental Overview, and the Traffic Report. The project is now in Phase II which includes the Design Concept Report (DCR), Environmental Assessment (EA), and other supporting documents.

The goals of the feasibility study were to decide how best to improve mobility along the I-10 corridor from the downtown Tucson area towards Vail, as well as identify the best alternatives for I-10 and the Barraza-Aviation (SR 210) corridors to carry forward for further evaluation in the Design Concept Study. The goals were reached and several alternatives were identified for further evaluation. However, the list of alternatives was further refined.

Brad gave a brief overview of each of the proposed system alternatives.

System Alternative I:

- SR 210 follows the Alvernon Way alignment and ties into I-10 with a system-to-system interchange at the current Alvernon Way interchange
- The interchange at Alvernon Way includes a service TI and a system TI
- I-10 will be widened from I-19 to SR 83 to accommodate future traffic plus improve all of the TIs

System Alternative II:

- SR 210 runs along the south side of Davis-Monthan AFB and then turns south to connect into I-10 with a system-to-system interchange at near the Valencia Road interchange
- SR 210 will be a depressed freeway along the air base to provide increased security for DMAFB, SR 210 will be elevated to cross over the UPRR and tie into I-10
- New ROW will need to be acquired along most of the SR 210 alignment. This alternative would require a significant amount of property from DMAFB and pass by US Customs and Border Protection facilities.
- I-10 will be widened from I-19 to SR 83 to accommodate future traffic plus improve all of the TIs

System Alternative IIIc:

- SR 210 runs close to DMAFB and ties into I-10 with a system-to-system interchange near the current Wilmot Road interchange
- New ROW will need to be acquired along most of the SR 210 alignment. This alternative would require a significant amount of property from DMAFB.
- SR 210 will be a depressed freeway until Valencia Road to provide increased security for DMAFB, SR 210 will be elevated to cross over the UPRR and tie into I-10
- SR 210 will cross two floodplains
- I-10 will be widened from I-19 to SR 83 to accommodate future traffic plus improve all of the TIs
- This alternative was discontinued because there were many business and residential impacts, approximately 70 residential takes, potential hazmat issues through the industrial area south of DMAFB and issues with flight zones, blast zones, and unexploded ordinances

System Alternative IV:

- SR 210 follows the Alvernon Way alignment and ties into I-10 with a system-to-system interchange at the current Alvernon Way interchange
- I-10 will be widened from I-19 to SR 83 to accommodate future traffic plus improve all of the TIs
- A collector-distributor roadway (C-D) follows I-10 from the SR 210 connection to the Kolb Road TI
- The C-D is intended to separate regional and local traffic to minimize traffic weaving
- Mainline through traffic will stay on I-10 and local traffic will have access to interchanges via the C-D (drivers will be notified of this through signage)
- Mainline I-10 and the C-D will be at the same elevation but separated by a concrete Jersey barrier

Brad discussed the project progress to date. The Feasibility Report Update included System Alternatives I, II, and IV and was completed in February 2015. Jacobs met with agency stakeholders including FHWA, ADOT Southcentral District, Pima County, and the City of Tucson to discuss changing the east termini to Kolb Road and to discontinue System Alternative II. They collectively decided to eliminate System Alternative II from the list as it had the most challenges in terms of hazardous materials, unexploded ordinances, and strong opposition from the US Customs and Border Protection. The DCR will move forward with System Alternatives I and IV as well as a No Build scenario.

Brad brought up some of the project issues to be worked out. One of the key items is developing the I-10 vertical profiles. There are a handful of items that need to be looked into for this including:

- bridge structure configurations
- cross street widths and future widening
- possibility of accommodating future rail transit access under bridges

Additional project issues include developing drainage concepts to handle surface runoff, identifying the project footprint for the environmental work, utility conflicts with the system interchanges, as well as need to comply with the NEPA process regarding public involvement.

Brad briefly went over a list of project deliverables as well as the agency disciplines that will need to provide input as the project progresses.

Brad opened the floor for input from the attending departments and any questions.

Sarah Karasz (ADOT Environmental) asked if the project is fiscally constrained. Lynn Sugiyama (ADOT Programming) said the project is not yet programmed but they will plan for it in the next phase.

Brad indicated there are a couple of projects currently programmed through the PAG TIP:

- Construction of a new TI at Country Club Road with I-10 improvements
- Reconstruction of the Kino Road TI with I-10 improvements, and
- Reconstruction of the Park Avenue TI with I-10 improvements

Paul Black (Jacobs Roadway) emphasized that this is a long corridor in which the projects will likely be programmed in many smaller projects based on funding.

Sharon Gordon (FHWA) asked how this project fits in with the Sonoran Corridor. She asked that teams for both projects maintain communication so they are on the same page with alternatives and tying into one another. Rudy agreed and assured there will be communication on this matter.

Shantala Ramaiah (Jacobs Structures) brought up the need to establish the roadway profile and that many decisions on the bridges need to be made prior to that. She did a preliminary analysis of the existing bridges along the corridor and determined those that need to be replaced or simply widened/modified. She noticed that all of the bridges needing to be replaced are already approximately 50 years old today and those needing modifications range from 25-50 years old. Shantala would like some direction from ADOT on whether the bridges needing modifications should be replaced if they are over a certain age, or if we should continue to try and retain them if possible.

Virgil Coxon (ADOT Survey) suggested doing a cost analysis of replacing them with new bridges versus modifying the existing. James Gomes (ADOT Southcentral District Traffic) indicated that all of these structures were recently analyzed as part of a corridor profile study through MPD. Jacobs should obtain the report recommendations. Mike Dawson (EcoPlan) asked that we continue to keep the project purpose and need in mind and not simply replace the bridges that are old or obsolete.

Shantala brought up a question regarding the abutment styles. There are many different abutments that can be used and they all affect the bridge width and the roadway profile. She can make recommendations on what to use, but would like to know if ADOT has a preference on style before she gets too far ahead in the design. Virgil suggested she contact Leroy Brady with ADOT Roadside Development with this question.

Shantala pointed out that some bridges along this corridor are in good condition but do not meet the minimum allowable vertical clearance. She would like some direction on how ADOT would like to proceed with these scenarios or who to contact about it.

Brad brought up that this project was originally planned to be two separate DCRs – one for the urban segment (I-19 to SR 83) and one for the rural segment (SR 83 to SR 90). The Feasibility Report analyzed the limits of the urban segment only. Due to funding limitations, it was decided that only the urban segment would be studied and that the urban limits along I-10 was reduced to I-19 to Kolb Road. ADOT felt the shorter limits could realistically be constructed by 2040.

Brad brought up the PAG population projections used for the traffic modeling. When the Feasibility Report Update was completed (February 2015), PAG was projecting a population of 1.4 million people for the Tucson Metropolitan area by the design year 2040. Since that time, PAG is now projecting a population of 1.4 million be reached in the year 2045. The growth allocation also shifted which caused more traffic to use Valencia Road

to access I-10. He indicated that Jacobs is comfortable with the overall concept design since traffic volumes for 2040 are slightly less. However at the Valencia Road TI some modifications to the westbound on ramp and the eastbound off ramp will be made to accommodate the increased traffic volumes at this TI.

Sarah Karasz said that if we intend to have any public art features on the bridges that we need to begin the public input meetings early. Agencies in the area have experience with the public being very vocal about these kinds of art features. Brad indicated that this is something that would happen later on during final design phases and not during the DCR phase. In the DCR we may just state that art features are recommended. Anything more detailed than that would happen during the final design phase. Our focus will be more structural – ensuring the bridges are large enough to accommodate future growth to avoid revisiting them later on.

Rod Lane said that ADOT will fund bridge lengths that are sized to accommodate the number of cross street lanes needed to meet the 2040 traffic volumes. Additional lanes desired beyond the 2040 traffic volumes will need to be funded by local agencies like PAG or the City of Tucson.

ACTION ITEM LIST

- The Jacobs team will continue to pursue bridge-related questions to help establish the roadway profiles as early as possible.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

Meeting Notes I-10 / Barraza-Aviation Pkwy (SR 210)
Design Concept Report & Environmental Assessment

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

AGENCY SCOPING MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

December 1, 2016

TO: Meeting Attendees
Sarah Karasz, ADOT Environmental Planning Group, Senior Environmental Planner
Kimberly Noetzel, ADOT Community Relations, Assistant Communications Director
Rudy Perez, ADOT Major Projects Group
C.T. Revere, ADOT Communications
Emily Dawson, ADOT Southcentral District Project Development
James Gomes, ADOT Southcentral District Regional Traffic Engineer
Rod Lane, ADOT Southcentral District Engineer
Sharon Gordon, FHWA Area Engineer
Capt. Benjamin Buller, Arizona Department of Public Safety Tucson District 8 Region
Kristin Terpening, Arizona Game & Fish Department Wildlife Habitat Specialist
Mick Jensen, City of South Tucson Planning
Robin Raine, City of Tucson Assistant Transportation Director
Mike Garcia, City of Tucson Fire Department, Assistant Chief
Scott Robidoux, Tucson Airport Authority Airport Planner
Beth Abramovitz, Pima County Department of Transportation
Robert Young, Pima County Trans. System Division Manager.
Bob Roggenthen, Pima County
John Moffatt, Pima County
Steve Wilson, Pima County Department of Transportation
Manuel Guzman, Sun Tran
James Tokishi, Pima Association of Governments
Jamison Brown, Pima Assoc. of Governments Transportation Planning Manager
Mike Dawson, EcoPlan Associates Senior Environmental Planner
Maria Altemus, EcoPlan
Jeff Holzmeister, J2 Engineering Drainage**
Paul Black, Jacobs Roadway**
Shanthi Krishnan, Jacobs Traffic Modeling, Project Manager**
Brad Olbert, Jacobs Project Manager
Shantala Ramaiah, Jacobs Structural
Jessica Rietz, Jacobs Environmental
Sandra Thoms, Jacobs Traffic**

** Attended via teleconference

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Tel. (602) 253-1200
Fax. (602) 253-1202

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
ADOT/FHWA AGENCY STAKEHOLDER MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The Agency Stakeholder Meeting for this project was held at 10:00 AM December 1, 2016 at the ADOT Southcentral District Office Training Room. The meeting was scheduled to end at 12:00 PM but it adjourned at 11:40 AM.

The meeting was well represented by agencies interested in improving the I-10 corridor from Junction I-19 to Kolb Road and providing a connection for SR 210 to I-10. Agencies included ADOT, FHWA, Arizona Department of Public Safety (DPS), Arizona Game and Fish Department, City of South Tucson, City of Tucson, Pima County, and Pima Association of Governments (PAG). Stakeholders provided critical input for the success of the project.

SUMMARY

Rudy Perez, ADOT Project Manager opened the meeting at 10:05 AM. Introductions were held for all attendees.

Brad Olbert, Jacobs Project Manager gave a safety minute and discussed winter visitors and the extra driving precautions associated with having unfamiliar drivers on the road. He also reminded everyone to stay calm and drive slowly in icy or cold conditions. Brad then gave an overview of the meeting agenda which was dispersed to all attendees prior to the meeting and copies were available for those who did not print their own.

Brad briefed attendees on the study team organization including the project manager, subconsultants, and key players on the team. Rudy Perez is the ADOT project manager. Brad will manage the consulting team in which J2 is handling drainage, Ninyo and Moore is handling geotechnical, and EcoPlan will work on portions of the environmental scope.

Related to project communications, Brad informed attendees of the project website. All documents related to this project from the very beginning are posted on the website including meeting minutes, exhibits, and project deliverables. This site is intended for use by the study team only. The login information is available in the meeting presentation slides. There is a separate website for public use with information related to the project. The content on the public website is out of date, however, ADOT will be updating it soon.

- Study Team Website: www.jacobsaz.com
  - Login: I-10 Corridor
  - Password: Empirita
- Public Project Website: http://www.azdot.gov/projects/south-central/i-10-and-sr-210-feasibility-study

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Brad continued with the project communications discussion by announcing the quarterly progress meeting. This will take place in mid-January and will cover the public scoping meeting, ADOT/Agency scoping input, as well as discussion on I-10 profile and bridge structures.

Brad gave an overview of the project to date. Phase I was completed February 2015. Phase I included an update to the Feasibility Report, Environmental Overview, and the Traffic Report. The Feasibility Report was initially completed in 2012 and included very aggressive growth rates for population and traffic projections. The Feasibility Report Update utilized more realistic projections and can be found on the project website. The project is now in Phase II which includes the Design Concept Report (DCR), Environmental Assessment (EA), and other supporting documents.

Rod Lane asked if the modeling included the impact of the Sonoran Corridor (SR 410). Brad responded that the microsimulation modeling efforts did not specifically look at Sonoran Corridor. The Sonoran Corridor route was included in the regional PAG modeling and was labeled as a parkway instead of an interstate. This difference in designation equates to a minor speed difference in the modeled traffic which is expected to have minimal impact on the I-10 corridor. Any impacts this has on I-10 traffic volumes would not equate to adding or removing a whole lane on I-10.

Sharon Gordon from FHWA asked where the connection for the Sonoran Corridor will be. Rudy Perez indicated that the Sonoran Corridor Study has just begun and they do not want to start talking about connection points in this project that could preclude any other connection point.

John Moffatt asked if the traffic modeling differentiates between cars and trucks. One of the major changes seen is that more trucks would be taking the Sonoran Corridor and wants to know if the split was more heavily towards trucks on I-10 or on the Sonoran Corridor. Mike Dawson from EcoPlan emphasized that this input in the traffic model is key to performing the air quality and noise analyses. Brad indicated that the regional PAG model was used and the team drilled it down to get a handle on the traffic demands and number of lanes needed for the corridor and each interchange. Rudy assured everyone that this study team plans on coordinating closely with the Sonoran Corridor project team.

Brad continued discussing the project overview and indicated that Phase II of this project is currently under way and includes the Design Concept Report (DCR), Environmental Assessment (EA), and other supporting documents. Mike Dawson indicated that two environmental documents will be developed over the next few weeks including a Chapter Outline and a Purpose and Need Statement.

Brad discussed the project limits and indicated that originally this project was going to extend from I-19 to SR 90. It was broken into an urban segment (I-19 to SR 83) which would require a DCR and EA, and a rural segment (SR 83 to SR 90) which would require a DCR and PEL. However, recently it was decided that the DCR and EA will only extend from I-19 to Kolb Road. These limits were identified based on what ADOT believes can realistically be constructed by the design year 2040. The I-10 corridor extending east from Kolb Road to SR 90 has been eliminated from the DCR and EA studies for this project.

Brad reviewed the timeline for previous I-10 and SR 210 corridor studies. The first public meeting was held in October 2011. The Feasibility Report and EO were first submitted in October 2012 and updated in February 2015. The DCR and EA are starting now and should wrap up in March 2019.

The goals of the feasibility study were to decide how best to improve mobility along the I-10 corridor from the downtown Tucson area towards Vail, as well as identify the best alternatives for I-10 and the Barraza-Aviation (SR 210) corridors to carry forward for further evaluation in the Design Concept Study. The goals were reached and several alternatives were identified for further evaluation. However, the list of alternatives was further refined.

Brad gave a brief overview of each of the proposed system alternatives.

System Alternative I:

- SR 210 follows the Alvernon Way alignment and ties into I-10 with a system-to-system interchange at the current Alvernon Way interchange
- The interchange at Alvernon Way includes a service TI and a system TI
- I-10 will be widened from I-19 to Kolb Road to accommodate future traffic plus improve all of the TIs

System Alternative II:

- SR 210 runs along the south side of Davis-Monthan AFB and then turns south to connect into I-10 with a system-to-system interchange at near the Valencia Road interchange
- I-10 will be widened from I-19 to Kolb Road to accommodate future traffic plus improve all of the TIs

System Alternative IIIc:

- SR 210 runs close to DMAFB and ties into I-10 with a system-to-system interchange near the current Wilmot Road interchange
- I-10 will be widened from I-19 to Kolb Road to accommodate future traffic plus improve all of the TIs
- This alternative was discontinued because there were many business and residential impacts, approximately 70 residential takes, potential hazmat issues through the industrial area south of DMAFB and issues with flight zones, blast zones, unexploded ordinances, and required steep grades to avoid existing infrastructure.

System Alternative IV:

- SR 210 follows the Alvernon Way alignment and ties into I-10 with a system-to-system interchange at the current Alvernon Way interchange
- I-10 will be widened from I-19 to Kolb Road to accommodate future traffic plus improve all of the TIs
- A collector-distributor roadway (C-D) follows I-10 from the SR 210 connection to the Kolb Road TI
- The C-D is intended to separate regional and local traffic to minimize traffic weaving
- Mainline through traffic will stay on I-10 and local traffic will have access to interchanges via the C-D (drivers will be notified of this through signage)
- Mainline I-10 and the C-D will be at the same elevation but separated by a concrete Jersey barrier

Brad discussed the project progress to date. The Feasibility Report Update included System Alternatives I, II, and IV and was completed in February 2015. Jacobs met with agency stakeholders including FHWA, ADOT Southcentral District, Pima County, and the City of Tucson to discuss changing the east termini to Kolb Road and to discontinue System Alternative II. They collectively decided to eliminate System Alternative II from the list as it had the most challenges in terms of hazardous materials, unexploded ordinances, and strong opposition from the US Customs and Border Protection. The DCR will move forward with System Alternatives I and IV as well as a No Build scenario. In addition, the east termini was agreed to end at Kolb Road.

Brad discussed changes that occurred from submittal of the Feasibility Report to today. Previously, population projections showed 1.4 million residents by the year 2040. Now projections are showing a population of 1.4 million residents by the year 2045. This means the traffic modeling conducted is a little conservative, but the evaluation and results are still valid. Additionally, there was a shift in the future growth allocation which pushed approximately 45,000 residents closer to the east end of Valencia Road. This change means more traffic using Valencia Road; this will be analyzed during the study. It will likely require dual-lane ramps instead of the currently proposed single lane ramps at the Valencia Road TI. Overall, the traffic model is sound and should not require many changes during the study.

Brad brought up some of the project issues to be worked out. One of the key items is developing the I-10 vertical profiles. There are a handful of items that need to be looked into for this including:

- bridge structure configurations (approximately 70 structures on this project)
- cross street widths and future widening
- possibility of accommodating future rail transit access under or over bridges

Additional project elements include developing drainage concepts to handle surface runoff, identifying the project footprint for the environmental work, utility conflicts with the system interchanges, as well as the need to comply with the NEPA process regarding public involvement.

Shantala Ramaiah (Jacobs Structures) indicated that structural decisions made now will trickle down and affect many other disciplines. Therefore, early feedback on structural decisions would be greatly appreciated. She referenced a handout with structural considerations. There are 70 structures throughout the corridor and about half of those bridges are pretty new and do not require evaluation. Looking at the existing bridges, about half of those have to be replaced regardless because of proposed capacity increases on the cross roads, and the other half can be retained and simply widened. Shantala emphasized that the wider the bridge, the deeper the deck becomes which means it needs to be higher to allow the proper clearance and also have steeper slope paving. There will be an in-depth evaluation of each structure, beyond just the sufficiency rating, to determine which need to be replaced and which can be fixed. We are looking for input on information and preference on cross road capacity, vertical clearance, wall placement, etc.

Brad briefly went over a list of project deliverables which included design and environmental submittals (see slide 16 of the PowerPoint presentation).

Brad emphasized that close coordination will take place with the Sonoran Corridor team, of which Carlos Lopez is the project manager. Everything completed on this I-10 project to date will be available to the Sonoran Corridor team. The Sonoran Corridor will tie into I-10 somewhere between Kolb Road and SR 83 which is outside of this project's (Phase II) study limits.

Sharon Gordon asked about the configuration at the east end of Alternative IV where the C-D system would start and if that would be a system interchange. Brad indicated that Kolb Road would be a service traffic interchange and the system interchanges would be at SR 210 (Alvernon Way and I-10). There will also be a system interchange where Golf Links meets SR 210 since the ramps feed directly onto Golf Links. Sharon then stressed that this information would be useful to the Sonoran Corridor team.

Sharon asked if there would be an interchange at Valencia Road and what the distance would be from that to Alvernon Way. Brad assured that there would be a service TI at Valencia Road which is approximately two miles from the system TI at Alvernon Way.

Brad discussed the service TI at Kolb Road and indicated that this will be a diverging diamond interchange (DDI) due to the large number of turning movements. This configuration is being proposed for both Alternatives I and IV.

Rod Lane asked where the C-D system would be located within Kolb Road in Alternative IV. Brad clarified that the C-D road ends just past the Kolb Road bridge. He indicated that if someone gets on the C-D road by mistake, they will be on that road for approximately 4.5 miles. It is unlikely that drivers will make this mistake more than once.

James Gomes (ADOT Southcentral District Regional Traffic Engineer) asked if there would be an amendment to the traffic report in response to the changed designation for the Sonoran Corridor. Rudy indicated that although the project limits do not overlap with the Sonoran Corridor study limits, the Sonoran Corridor is an influence. Attendees from ADOT were in agreement that they will need to evaluate how much of an influence the Sonoran Corridor is and how they want to address this.

Brad indicated that the original traffic study assumed a 2040 Tucson region population of 2 million. That projection was later reduced to 1.4 million which prompted an update to the traffic modeling and allowed for a lane reduction on I-10. The LOS on I-10 improved slightly with this change, but we were able to reduce the number of lanes which had significant benefits. We do not anticipate the Sonoran Corridor will impact the currently proposed number of lanes on I-10 in 2040. However, the Sonoran Corridor will have a great benefit after 2040 as the area approaches saturation to the south of I-10 which can be seen in the earlier PAG model.

Rudy stated that coordination with the Sonoran Corridor team will be complicated as the I-10 DCR will be completed in about two years from now and the Sonoran Corridor team is not yet under contract and their study is on an 18-month schedule.

Brad emphasized that at the completion of the DCR there will be a number of projects going out for final design. There are a number of spots with major operational issues between I-19 and Alvernon Way, not necessarily on the mainline, but at the interchanges. This is supported by a crash analysis which shows a number of fatal crashes around Palo Verde Avenue, injury crashes at Kino Parkway, as well as numerous crashes on SR 210 at Ajo Way. As population and traffic volumes grow, these issues are just going to get worse. The No Build scenario is showing LOS F in most locations. This project is absolutely needed and needs to get under construction as soon as possible.

Capt. Benjamin Buller (Arizona DPS Tucson District 8 Region) confirmed Brad's statement indicating that he just completed a 3-year, 5-year, and 10-year crash analysis within the district and the Park Avenue interchange has the highest number of collisions in the district. The entire area has a lot of collisions and especially a lot of secondary collisions. He indicated that his team is very aggressive in responding to crashes and clearing crashes as soon as possible to try and minimize potential for secondary crashes. Capt. Buller also expressed concern for the rest of I-10 out towards Kolb Road which experiences heavy congestion and crashes westbound in the morning and eastbound at night. Brad pointed out this section of I-10 was one of the first built when they first started to build the interstate system, and the TI designs worked well back then, but they do not meet current standards – particularly the loop ramps. At the last public meeting, Brad heard feedback from members of the public that did not feel safe using the interchange at Park Avenue and they would detour one to two miles out of their way to avoid using that interchange.

Brad indicated that the interchanges at Palo Verde Road and Alvernon Way are too close to one another. One of the first projects will be to upgrade the Alvernon Way TI to a full service interchange. The Palo Verde Road interchange will be removed and a TI will be added at Country Club Road which is approximately one mile from Alvernon Way. This will solve a lot of operational problems experienced around these interchanges.

Brad pointed to the provided figures showing the System Alternatives to see the currently proposed interchange designs. He reminded attendees that these will be available as PDFs on the project website.

Paul Black (Jacobs Roadway) added that unless the Sonoran Corridor team foresees a lot of traffic being dumped onto I-10, he does not see the need to add more lanes to I-10 in response to that. Sharon Gordon added that with the two project schedules, this will be difficult as the Sonoran Corridor study will not be complete until after this DCR. Rudy expressed that we will need to ask the Sonoran Corridor team whether their traffic data would be available sooner than the 18-24 month timeline and that this is one of the items this team will need to coordinate with the Sonoran Corridor team. He indicated that the Jacobs team is comfortable with their traffic projections because they did the evaluation so conservatively. The main point needing coordination with the Sonoran Corridor team is where the system interchange will tie in.

John Moffatt stated that development at Rita Road will bring more traffic into that area. He believes the model that moves the 45,000 residences near Valencia Road is a good one as they are trying to create an industrial area to the south. That is why he asked about the trucks and anticipates some of the traffic patterns to change in that area. They are starting to coordinate with City and County because they are seeing a new energy behind growth in that area. The Sonoran Corridor will help take some of the eastbound and westbound traffic off I-10. He shared that one of the reasons Sonoran Corridor was initially called a parkway was to carry traffic from the airport to the UofA Tech Park.

Sharon Gordon asked how much funding has been allocated for this project. Brad indicated that when the project limits extended out to SR 83, the estimated cost was about $800 million. The estimate now that the project limits have reduced has yet to be determined.

Robin Raine asked what the programmed amount was for SR 210. Brad responded that the estimate is $200 million dollars for construction only and does not include utility relocation or ROW acquisition.

Jamie Brown asked if the NEPA process has officially begun. Brad reassured that it has and that this meeting meets a requirement as a scoping session. The next meeting will be the public scoping meeting scheduled for late January. Rudy added that there will be quarterly progress meetings in which everyone in this meeting will be invited to attend.

Brad opened the floor for each agency to provide their comments thus far:

- **Arizona Game and Fish Department** is here to understand how all the planning works to make sure they are involved in an early stage. Mike Dawson pointed out a biological evaluation will be prepared for this project. There are no major drainages crossing I-10 so there will not be a lot of wildlife crossing in this segment, but there will be once you get east of Kolb Road. Brad noted the crash analysis identified three total crashes with animals, two of which were with pets.
- **Pima County** did not have any comments.
- **City of Tucson** did not have any comments.
- **Tucson Airport Authority** indicated that they are considering having the I-10 interchange at Country Club Road as a new entrance to the airport. They are also looking at doing a third parallel runway,

although not anytime soon, and they would potentially abandon parts of Alvernon Way and Swan Road to accommodate this. They would be extending Country Club Road to go around the existing runway to connect in. This is shown in their master plan. They also recommended that we reach out to Davis Monthan Air Force Base (DMAFB) because this project would likely affect them. Brad pointed out that DMAFB was fully involved in the feasibility study and were invited to this meeting but chose not to attend. They have seen Alternative I but not Alternative IV. They had reservations about Alternative II as did Border Patrol. Tucson Airport Authority also expressed concern about the effect the I-10/SR 210 will have on future development of the airport. Also, the project team should be aware of the need to file FAA Form 7460 about 45 days prior to the start of construction.

- **City of South Tucson** did not have any comments.
- **Pima Association of Governments** appreciates being invited and they are ready to assist if they need to look at the Sonoran Corridor as a freeway. They are also currently working on a regional freight plan and the study team should let them know if we would like to reach out to some of the freight stakeholders. C.T. Revere (ADOT Communications) mentioned they have attempted to reach out to contacts at Raytheon to attend these meetings without much luck.
- **Federal Highway Administration** highlighted the importance of having both project teams (this team and the Sonoran Corridor team) in close coordination. Sharon has no further comments as of yet.
- **Department of Public Safety** indicated that under the proposed Alternative IV, they would need to increase forces in that area because getting emergency services to the express lanes would be really difficult. It would be a four-mile section that if something happened, you would get stuck on it. Capt. Benjamin Buller pointed out that traffic interchanges give them the option to nose debilitated vehicles off the freeway, but without a TI on the express lanes that would not be an option. They will have a harder time clearing incidents off the freeway corridor. Additionally, if there is an incident but no interchange for four miles, any vehicles in a backup behind an incident would have nowhere to go to relieve the congestion.
- **Tucson Fire Department** agreed with the comments by DPS as they would have a difficult time with customer service to any emergencies or breakdowns in that four-mile section. Brad clarified that there will be 12-foot inside and outside shoulders along the express lanes as well as the C-D roads. Robin Raine inquired whether there would be any allowance for emergency vehicle access in this section. Brad noted they can put breaks in the median so smaller emergency service vehicles can get around the median. Capt. Benjamin Buller (DPS) indicated that the 12-foot shoulders would alleviate a lot of potential problems.
- **ADOT Southcentral District** asked if the results of this project will include an implementation plan. Brad confirmed that it would. Rod Lane indicated that there is a good chance they cannot build this in one shot and that it would need to be broken out and built in smaller projects over time. James Gomes asked if there was a chance I-10 would be depressed rather than raised, and Brad reassured there was not as there are a number of drainage crossings.

Rudy asked if DMAFB or FAA need to approve the preferred alternative or anything about the project. Brad noted there are some property acquisitions and abandonments that involve DMAFB. Mike Dawson indicated this is something that will need to be discussed with FHWA to determine whether we want to invite these agencies to be a cooperating agency or just a coordinating agency.

Mike Dawson indicated that he has no huge concerns as there are no big cultural or biological issues or even neighborhood issues. However, emergency services should be aware we propose getting rid of the medians. Twenty to thirty businesses would be gone, and they have freight access. Making those people whole would be

a big part of this project. Robin Raine pointed out that the multimodal component of the Sonoran corridor study would make business relocation not as tricky.

Paul Black stated we will have to coordinate closely with stakeholders to make sure we take care of first flush, and to make sure that roadway drainage does not overwhelm the existing system of drainage structures or channels. This is the type of input we need from our stakeholders, because that would affect the project's footprint. Robin Raine recommended we contact Pima County Flood Control District – Bill Zimmerman will not be in that position for much longer and the new contact is Eric Shepp.

Mr. Moffatt asked if the team needed their written comments on what was discussed today and comments on the alternatives. Rudy indicated it would be documented in the meeting minutes which can be found on the project website. He asked that everyone review them closely for accuracy.

Mike Dawson highlighted that they will be sending out formal agency scoping letters to go out at the same time as the public scoping effort in early 2017. Everyone invited and in attendance at the agency scoping meeting will get a letter, and that is an opportunity to review more detailed project information and submit written comments that would be appended to the environmental document.

ACTION ITEM LIST

- The Jacobs team will continue to pursue the key issues discussed in this meeting to define the critical elements of this study as early as possible.
- Stakeholders are encouraged to review and comment on the meeting minutes to ensure accuracy.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

PROGRESS MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

January 31, 2017

TO: Meeting Attendees
Shajed Haque, ADOT Drainage Section**
Mark Hoffman, ADOT Multimodal Planning, Planning Program Manager**
Sarah Karasz, ADOT Environmental Planning Group, Senior Environmental Planner
Joan Lovell, ADOT ITS Technical Reviewer**
Tammy Mivshek, ADOT Traffic Design**
Rudy Perez, ADOT Major Projects Group
C.T. Revere, ADOT Communications
Emily Dawson, ADOT Southcentral District Project Development
Jeremy Moore, ADOT Southcentral District Assistant District Engineer, Construction
Micah Horowitz, ASLD Planning and Engineering, Project Manager**
Andy McGovern, City of Tucson Dept. Of Transportation Engr. Manager
Mike Garcia, City of Tucson Fire Department, Assistant Chief
Rodney Mackey, U of A - Planning Design & Construction Associate Director
Bruce Vaughan, U of A - Planning Design & Construction UA Strat Planning & Budget Adv Council
Scott Robidoux, Tucson Airport Authority Airport Planner
Nicholas Germanos, Davis-Monthan AFB 355th Civil Engineer Squadron
Kacey Carter, Davis-Monthan AFB 355th Civil Engineer Squadron
Kevin Wakefield, Davis-Monthan AFB
Maria Altemus, EcoPlan Associates Environmental Planner
Mike Dawson, EcoPlan Associates Senior Environmental Planner
Paul Black, Jacobs Roadway, Project Engineer
Joe D'onofrio, Jacobs Environmental, Air and Noise
Brad Olbert, Jacobs Project Manager
Shantala Ramaiah, Jacobs Structural, Engineer**
Sandra Thoms, Jacobs Traffic, Project Engineer**
Judah Cain, Jacobs Roadway, Project Engineer**
Karen Apple, HDR Senior Public Involvement Coordinator
Jamison Brown, Pima Assoc. of Governments Transportation Planning Manager
John Liosatos, Pima Assoc. of Governments Transportation Planning Director
James Tokishi, Pima Assoc. of Governments
Beth Abramovitz, Pima County Department of Transportation
Priscilla Cornelio, Pima County Director, Dept. of Transportation**
John Moffatt, Pima County Economic Development**
Ammon Heier, FHWA Area Engineer
Tremaine Wilson, FHWA Environmental Coordinator
Ralph Ellis, ADOT Environmental Planning

Shimin Zou, J2 Design Senior Project Manager**
Edika Zarbroud, ADOT EIT**
Taiping Tang, ADOT Bridge Engineer**

** Attended from Phoenix location

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
PROGRESS MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The Progress Meeting for this project was held at 1:00 PM January 31, 2017 at the ADOT Southcentral District Office Training Room. Videoconferencing was provided in the ADOT Admin Building Green Room for attendees in Phoenix. The meeting was adjourned around 3:00 PM.

The meeting was well represented by agencies interested in improving the I-10 corridor from Junction I-19 to Kolb Road and providing a connection for SR 210 to I-10. Representatives included ADOT, FHWA, City of Tucson, Pima County, and Pima Association of Governments (PAG), Davis-Monthan Air Force Base (DMAFB), and the University of Arizona. Stakeholders provided input for the success of the project.

SUMMARY

Rudy Perez, ADOT Project Manager opened the meeting at 1:05 PM. Introductions were held for all attendees.

Brad Olbert, Jacobs Project Manager, gave an overview of the project to date. Phase I was completed February 2015 and evaluated I-10 from I-19 to SR 83. Traffic projections from the Travel Demand Model (TDM) from Pima Association of Governments (PAG) were used to develop a VISSIM model which analyzed traffic operations along the corridor and the surrounding interchanges. This PAG model assumed that the population of the region would be 1.4 Million in the year 2040. More recent model projections are anticipating that population to be reached in 2045. This just means the traffic operational analysis is a bit more conservative and the proposed design will accommodate traffic demand a bit longer than anticipated.

The majority of the population growth will be to the east around Houghton Road and south of I-10 between the Tucson International Airport and Houghton Road. These residents will want to use I-10 from I-19 to Houghton Road and SR 210 to travel to employment areas located downtown. The SR 210 corridor is included in the study to provide better access into downtown Tucson.

Brad emphasized that this stretch of I-10 dates back to the 1960s. The interchange designs may have worked with the traffic demands back then, but they are underperforming now. They also do not meet today's design standards. With this project, the team wants to build interchanges that will last another 50 years.

Brad briefly went over the crash analysis and referenced the handout material which provided a summary and heat map of the crash data. This corridor experienced approximately 1,800 crashes in the last five years, 19 of which resulted in fatalities. The heat map of crashes indicates that the majority of crashes are congregated around the closely spaced interchanges. The first table in the handout shows that the number of crashes has increased each year over the last five years as the traffic volumes have increased.

In the following table, if you add the EB and WB crash rates together, the crash rate for the I-10 study area is approximately 1.5 crashes per million vehicle miles, slightly above the statewide average crash rate of 1.3. The crash rate for SR 210 is similar to the statewide average. Brad encouraged everyone to look at the crash data and summaries in detail on their own.

Paul Black of Jacobs discussed the different system alternative concept plans for Alternatives I and IV. He started by stating that the project can be broken into three distinct segments:

- Segment 1: I-10 from I-19 to Alvernon Way
- Segment 2: I-10 from Alvernon Way to Kolb Road
- Segment 3: SR 210

Segments 1 and 3 are the same for both of the alternatives while the differences between the two alternatives are in Segment 2.

Segment 1: I-10 from I-19 to Alvernon Way

Paul briefly discussed the segment between I-19 and Kino Parkway. In order to meet future traffic demand, this stretch of I-10 needs four lanes in each direction. The issue arises between I-19 and 6th Avenue, where right-of-way is tight and the bridges would require sliver widening. The City of South Tucson has already expressed their opposition to giving up more right-of way in this vicinity. Additionally, sliver widening to bridges can be extremely costly. Therefore, the team is currently evaluating whether this short segment can still operate at an acceptable level of service (LOS) with only three lanes in each direction, matching existing conditions. If the VISSIM model results in poor operations, then other solutions will be evaluated as widening in that segment should be avoided if possible.

The traffic interchange (TI) at 6th Avenue is currently adequate as it is and does not require major re-work.

The Park Avenue interchange is currently an incomplete interchange. The plan is to provide full access at this interchange and replace the loop ramps.

Kino Parkway is currently a partial cloverleaf interchange. The plan here is to keep only one of the loop ramps and convert the rest to a standard diamond interchange. The one remaining loop ramp will be modified to increase the radius to meet current design standards. The bridge will also be widened and ramps will be realigned to avoid impacting new businesses.

The interchange at Palo Verde Road is too close to the interchange at Alvernon Way. The plan is to remove the interchange at Palo Verde Road and replace it with a new interchange at Country Club Road. This will provide better spacing between interchanges which will help with traffic weaving maneuvers. Removing the interchange at Palo Verde Road will also allow the Alvernon Way interchange to be built out to be a full access interchange. Palo Verde Road is currently too close to Alvernon Way to allow a westbound on-ramp from Alvernon Way.

Segment 3: SR 210

Paul discussed the improvements along SR 210 and indicated that the plan is to have it elevated but as low as possible to avoid conflict with DMAFB flight paths.

The intersection at Golf Links Road will be rebuilt, but all ramp connections and service locations will remain in place.

Irvington Road is located too close to I-10 to provide an interchange, so it will not have a service connection to SR 210. There will be an interchange at Ajo Way which will connect to Contractors Way.

John Moffatt of Pima County asked if there would be access to SR 210 from Irvington Road. Paul clarified that there would not be due to the proximity to the system interchange at I-10. Traffic will have to use alternative routes to access SR 210 or I-10. The new Ajo Way TI would provide access to both SR 210 and I-10. The new Country Club Road TI will provide access to I-10.

Segment 2: I-10 from Alvernon Way to Kolb Road

Paul reiterated out that the segment from Alvernon Way to Kolb Road differs between Alternatives I and IV.

Alternative I

The interchange at I-10 and SR 210 will be a diamond interchange within a system interchange. Some ramps of the system interchange duplicate movements of the diamond interchange, but both are needed to serve future traffic demand.

Valencia Road and Craycroft Road will each be diamond interchanges. If needed, frontage road right-in and out access can be provided to the TTT trucking businesses along the west side of Craycroft Road.

Wilmot Road will be a diamond interchange. There will be no business access allowed onto the ramps as they will no longer be frontage roads, but service ramps. Business access will be on Wilmot Road only.

As Kolb Road is the first north-south street east of DMAFB, it carries a substantial amount of traffic – particularly in the year 2040. Therefore, this interchange is proposed to be a diverging diamond interchange (DDI). Traffic in a DDI can make free-left and free-right movements which eliminates much of the signal delay experienced at other interchange types. DDIs operate at high efficiency and work well if they are signed properly. As there is heavy traffic anticipated on Kolb Road, there will be two overpass bridges for northbound and southbound traffic on Kolb Road for bypassing the I-10 interchange entirely. This will significantly reduce the amount of traffic circulating through the interchange.

Beth Abramovitz, with Pima County, mentioned that a lot of growth is expected to happen in the vicinity of Houghton Road and asked why that is not included in this project. Brad indicated that Houghton Road is currently in ADOT's five-year plan for construction and is currently in final design. The Houghton Road interchange will be a DDI and Houghton Road to the south of I-10 will be a future parkway.

To better elaborate on his answer to the last question, Brad gave a brief history of the project limits. The Feasibility Study looked at I-10 from I-19 to SR 83. However, for the DCR/EA, FHWA asked ADOT to match

the project limits with the funding availability. The available funding limited the project along I-10 from I-19 to Kolb Road. Further study of the remainder of the I-10 corridor can commence once funding is available to implement the improvements.

John Moffatt mentioned that eastbound I-10 to northbound Kolb Road experiences heavy truck traffic. He expressed concern that northbound trucks at the northern signal of the DDI may block the free-left movement onto westbound I-10. Paul responded that since through traffic on Kolb Road will be on separate bypass ramps, the queue should not be too bad in this area. However, he will look into providing some sort of turn lane to allow for the free-left movement in the event of a backup at the signal. Paul was unaware of the substantial truck presence on this interchange, and appreciated the input. John shared that he likes the idea of the bypass bridges and thinks the concept could work well.

Alternative IV

Alternative IV utilizes Express Lanes and Collector-Distributor (C-D) lanes to separate regional through traffic from the weaving movements of local traffic on I-10. The interchanges within the C-D road segment are generally the same as in Alternative I with slight modifications to account for the C-D road.

Paul and the design team searched for examples of C-D systems nationwide. Their research showed that typical access spacing between the express lanes and the C-D road is five miles. They found stretches of C-D systems that extended 20 miles or more, and even those systems had access connections approximately every five miles. Since this project's proposed C-D system is approximately 5 miles long, the study team does not feel that an access connection is needed at any midpoints in the system. Eastbound traffic wanting to exit at Valencia Road, Craycroft Road, Wilmot Road, or Kolb Road will have to take a ramp to the C-D just east of Alvernon Way. Westbound traffic will have a similar scenario where they will access the C-D on a ramp as they pass under Kolb Road, and that will provide them access to Wilmot Road, Craycroft Road, Valencia Road, and Alvernon Way/SR 210.

A question was raised asking if southbound traffic on SR 210 wanting to head eastbound on I-10 had to get on the C-D. Paul clarified that yes, they will be routed directly onto the C-D as most of that traffic will be local commuter traffic.

Rudy Perez asked if FHWA's previous comment during the Agency Scoping Meeting concerning emergency vehicle usage of express lanes had been considered yet. Paul responded that the design team understands the importance of this and will provide methods for emergency access points soon.

Ammon Heier from FHWA asked if the C-D roads will be built to interstate standards and if they will have sufficient shy distance to the concrete barrier. Paul indicated that yes, they will be built to freeway standards and will have a 10 foot shoulder with a 2 foot shy distance to the barrier.

Sarah Karasz from ADOT Environmental Planning asked if there had been any coordination with truck stops, especially at Craycroft Road regarding use of C-D roads for getting on and off I-10. Paul indicated that to date there has not been any direct coordination but added this is best accomplished through signage. Brad noted that preparing a signage plan will one of our next steps. The plan will be reviewed and approved by ADOT and FHWA. How trucks get on and off I-10 will be addressed by the plan.

A question was asked how many lanes the C-D will have. Paul responded that there will be two lanes plus an auxiliary lane, which will operate around LOS B and C in the year 2040.

The question was raised about whether there will be overhead dynamic message signs (DMSs) to divert traffic to I-10 express lanes in case there is a major collision on the C-D roads. Paul indicated that this can be investigated but DMS placement would likely be included in the signage plan.

John Moffatt asked if traffic traveling eastbound on I-10 wanted to access Valencia Road, Craycroft Road, or Wilmot Road would have to exit at Alvernon Way to get there. Paul clarified that they would not. They could access the C-D via a slip ramp connection just east of Alvernon Way which will allow them access to those interchanges.

Paul continued discussing the design features of this segment of Alternative IV. He indicated that Kolb Road will have a two-lane exit ramp due to traffic volume demand. The interchange will be the same as it was in Alternative L

The C-D lanes and express lanes end under Kolb Road. From here, I-10 will continue east as normal.

The question was raised if more traffic is expected on Kolb Road than on Houghton Road. Paul responded that he did not have the projected volumes immediately with him right now, but this project ends at Kolb Road.

Ralph Ellis from ADOT Environmental Planning asked if there are plans for a visual simulation of DDI operation at the public meeting. He expressed that since the concept is still so new and may be hard for people to grasp, visual aids may help them understand it better. Brad indicated that a visual simulation is not currently planned, but they could look into seeing if a generic DDI operational video is available that can be shown. Creating a site-specific simulation video was not included in the scope of work for the project.

A representative from DMAFB asked if the project team is aware of the location of the Port of Tucson. Brad responded that yes, they are.

Paul then discussed the bike routes planned for the vicinity, which would apply to both proposed alternatives. Meeting attendees were provided a handout showing the current bike routes with the proposed changes.

There are currently bike lanes on Palo Verde Road that do not extend south due to the I-10 loop ramps. With the removal of the interchange, the bike lanes can continue south to the Benson Highway. To provide another north-south bike route, existing Contractors Way can be utilized from Golf Links Road to Ajo Way. A new bike facility from Ajo Way to Irvington Road can complete the bike route connectivity.

Sarah Karasz asked if the bike paths will be added to existing roads or will they be independent standalone paths. Paul indicated that paths will be evaluated individually, with local stakeholder input, to determine how best to accomplish bike path connectivity within the corridor. Mike Dawson of EcoPlan noted that the bike paths are an added value of the project and are not mitigation for bike path removal, which will not occur due to this project.

Micah Horowitz from ASLD asked if the study team could provide GIS shape files or CADD files for the project so they could look at it with their system. Brad indicated that those could be provided. Roadway GIS shape files were forwarded to Micah Horowitz (ASLD) and to James Tokishi (PAG).

Karen Apple from HDR gave a brief overview of the public involvement activities including details on the public scoping meeting. She reported that banners have been developed for the public meeting presentation. There will be roll plots available at information stations after the general presentation. The PI team will look into obtaining a DDI simulation video and setting up a viewing station. Bilingual fact sheets and comment forms are available for team review prior to production.

Karen discussed the methods used for getting the word out for the public meeting. It was advertised on Tucson.com, the Daily Star newspaper, and the Sell Tucson website. Door hangers were distributed to 7,000 homes and businesses within a half-mile of the project limits. People will be able to comment via mail, email, or telephone hotline. Notices to YMCAs and community centers have been distributed. Distribution to churches has not been accomplished due to issues with access to those properties. An email blast will also be sent to the distribution list from the 2011 Feasibility Study.

Ralph Ellis asked why the area to the southeast of the project limits (where most of the traveling public comes from) were not included in the door hanger distribution. C.T. Revere from ADOT Communications indicated that these areas have been targeted via news releases, websites, etc.

Brad went over the project schedule, reiterating the public scoping meeting on February 15th, 2017. The public gets 30 days to comment, after which the traffic model can be finalized based on public/agency feedback on the proposed design.

Brad mentioned the drainage study is underway and will have an impact on the final project footprint including potential new ROW impacts. The preliminary drainage concept will be presented at the next progress meeting.

Brad also brought up the signage concept, which will be developed after input is received from the public meeting. This will need FHWA approval.

Rudy Perez announced that the progress meetings for this project will be held quarterly. The next meeting is scheduled for April. He would like to set a tentative day and time for every quarterly progress meeting so that it can be on everyone's calendar. After input from meeting attendees, a consensus was reached to hold the quarterly progress meetings on the third Wednesday of the month from 1:00 – 3:00 PM. The next meeting is tentatively scheduled for April 19th.

Related to project communications, Brad reminded attendees of the project website. All documents related to this project from the very beginning are posted on the website including meeting minutes, exhibits, and project deliverables. This site is intended for use by the study team only. The login information is available in the meeting presentation slides. There is a separate website for public use with information related to the project. The content on the public website is out of date, however, ADOT will be updating it soon.

- Study Team Website: www.jacobsaz.com
  - Login: I-10 Corridor
  - Password: Empirita
- Public Project Website: http://www.azdot.gov/planning/transportation-studies/i-10-and-sr-210-feasibility-study

Mike Dawson provided the environmental update. He noted that this Environmental Assessment will be slightly unique in that the proposed alternatives, Alternative I, Alternative IV, and the No Build Alternative, will not be

distinguished primarily on the variation in potential environmental/social/built environment impacts but rather based on the operational attributes of each.

Brad opened the meeting to comments or questions from attendees.

Joan Lovell from ADOT ITS noted that the signing concept should include consideration for DMS signs. She also asked that ramp meter warrants be considered with this project. She indicated that there is an active FMS that runs from I-19 to Valencia Road and this will need to be maintained or relocated, and a new fiber system will need to extend along the remainder of the project corridor. Rudy Perez also suggested that wrong way driving and dust storm mitigation measures be considered for this project.

DMAFB asked about the DCR/EA completion deadline. Brad indicated a completion date of March 2019, after which the project will be advertised for design and then construction. Construction will be accomplished in approximately $70M phases out of an anticipated $500M budget.

DMAFB asked why the project will be completed at the west end first rather than the east end. Paul said that this approach addresses the worst inefficiencies first. The operational problems at the interchanges directly affect the capacity of the I-10 mainline.

Tremaine Wilson from FHWA asked if the project is located in an air quality nonattainment or maintenance area. Joe D'Onofrio from Jacobs responded indicating, yes, for Maintenance of Carbon Monoxide but the project limits are outside the Pima County PM10 Nonattainment area.

Tremaine Wilson asked if FAA and EPA had been considered as potential cooperating agencies. Mike Dawson responded that they have not, and that generally they are not in support of projects that primarily address highway operational performance with increased capacity and tend to focus on transit-focused solutions. Joe indicated that EPA will be included in the Interagency Consultation Process for the air quality model, along with FHWA/ADEQ and ADOT.

ACTION ITEM LIST

- The Jacobs team will continue to pursue the key issues discussed in this meeting to define the critical elements of this study as early as possible.
- The Jacobs team will provide GIS shape files or CADD files to Micah Horowitz of ASLD and to James Tokishi with PAG.
- PI team will look into obtaining a DDI simulation video and setting up a viewing station at the public meeting.
- Stakeholders are encouraged to review the proposed concept plans and crash data in detail.
- Stakeholders are encouraged to review and comment on the meeting minutes to ensure accuracy.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

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PROGRESS MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

April 19, 2017

TO: Meeting Attendees
Sayeed Hani, ADOT Railroad and Utility Section**
Mark Hoffman, ADOT Multimodal Planning**
Sarah Karasz, ADOT Environmental Planning
Joan Lovell, ADOT ITS**
Rudy Perez, ADOT Project Manager
Paki Rico, ADOT Communications
Sharmina Shireen, ADOT Drainage**
Micah Horowitz, ASLD**
Joel Gastelum, City of South Tucson Planning and Zoning Director
Sixto Molina, City of South Tucson City Manager
Robin Raine, City of Tucson Assistant Transportation Director
Jesse Soto, City of Tucson
Mike Dawson, EcoPlan Environmental Planner
Evan Grace, J2 Engineering Drainage**
Jeff Holzmeister, J2 Engineering Drainage**
Paul Black, Jacobs Roadway**
Judah Cain, Jacobs Roadway**
Joe D'Onofrio, Jacobs Environmental
Brad Olbert, Jacobs Project Manager
Shantala Ramaiah, Jacobs Structures**
Sandy Thoms, Jacobs Traffic**
Karen Apple, HDR Public Involvement**
David Atler, Pima Association of Governments
Beth Abramovitz, Pima County Department of Transportation
Priscilla Cornelio, Pima County Director of Transportation**
Steve Wilson, Pima County Project Manager
Robert Young, Pima County Transportation System Division Manager
Bill Zimmerman, RSCD

** Attended via teleconference

FROM:
Brad Olbert, Jacobs Project Manager

101 North 1st Avenue, Suite 2600
Phoenix, Arizona 85003
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Fax. (602) 253-1202

SUBJECT:

PROGRESS MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The Progress Meeting for this project was held at 1:00 PM April 19, 2017 at the ADOT Southcentral District Conference Room. Teleconferencing was available via WebEx for attendees offsite. The meeting was adjourned at 3:05 PM.

The meeting was well represented by agencies interested in improving the I-10 corridor from Junction I-19 to Kolb Road and providing a connection for SR 210 to I-10. Representatives included ADOT, Arizona State Land Department (ASLD), City of Tucson, City of South Tucson, Pima County, and Pima Association of Governments (PAG). Stakeholders provided input for the success of the project.

SUMMARY

Rudy Perez, ADOT Project Manager opened the meeting at 1:02 PM. Introductions were held for all attendees. Rudy introduced Paki Rico who is replacing C.T. Revere as the ADOT Communications representative.

Brad Olbert, Jacobs Project Manager, started the meeting with a safety minute and pointed out the emergency exits for the meeting room. He also reminded attendees that as temperatures rise, so will the tire pressure in your vehicle tires. He advised everyone to check their tire pressure and adjust it accordingly to reduce the risk of a blowout.

A public meeting for the project was held on February 15, 2017. Karen Apple shared details of the public meeting and referenced a summary handout that was provided to attendees. The scoping period for the project was between February 15th and March 21st, during which they received a total of 111 comments. Many of the comments pertained to alignments and interchanges, environmental impacts, relieving traffic congestion, scheduling and timing, as well as project cost and funding. They are still in the process of sorting through the comments, but the Draft Scoping Summary Report should be ready around the end of April or early May. Brad added that there were many questions about the collector-distributor (CD) system during the public meeting. He recalled that attendees familiar with the concept liked it and those that had not heard of it or driven on one were more skeptical.

Brad shared that he, Mike Dawson and Rudy Perez met with the Director of Transportation for the Sunnyside Unified School District to discuss their concerns with the project in relation to Los Niños Elementary School. Alvernon Way will be a six-lane parkway in the future, and busses already have difficulty exiting the school today. Brad proposed the installation of a traffic signal for vehicles and busses exiting the school. The school district also expressed their concerns with the current noise levels in and around the school due to I-10 and Alvernon Way. Brad indicated that the project team will look into the noise levels and the possibility of noise walls.

Paul Black, Jacobs roadway design lead, discussed the adjustments that have been made to the alternative concept plans since they were last presented:

- The study team was asked to provide an at-grade access between 6th Avenue and Park Avenue. Since an at-grade rail crossing may not be feasible, a compromise is to provide a connecting ramp from the westbound on-ramp from Park Avenue to 6th Avenue. The ramp goes over the railroad but still provides an at-grade roadway between 4th Avenue and 6th Avenue for future development access. This access will be right-in, right-out only, as it is a one-way frontage road.
  - Sixto Molina from the City of South Tucson expressed the City's desire for a two-lane road paralleling I-10, similar to what exists in Green Valley near Continental Road. Paul pointed out that a ramp is being added to connect the eastbound frontage road south of I-10 to Park Avenue, but an eastbound road north of I-10 may not be feasible. Brad added that the proposed system will work like a couplet on the north and south sides of I-10. Sixto stressed that if the road north of I-10 is not provided now, the 60-70 acres of empty parcels north of I-10 will always be empty, and that this is the lifeline that the City of South Tucson needs to continue to be a City. Paul indicated he will look into a possible solution for this.

- The bridge for SR 210 crossing over the railroad tracks is too close to the Ajo Way TI. Due to issues with vertical profiles, the exit ramps had to be separated from the mainline with separate bridges. This results in a very short weave distance for traffic exiting at Ajo Way. Therefore, a separate ramp will be provided for traffic traveling eastbound/southbound on SR 210 wanting to exit at Ajo Way. Southbound traffic from Alvernon Way will also utilize this ramp to access Ajo Way, or continue straight through to get on SR 210. Southbound traffic on Golf Links Road that wishes to exit at Ajo Way will also have access to this ramp. This new ramp will serve traffic wanting to access Ajo Way from all possible approaches, eliminating Ajo Way weaving maneuvers on SR 210.

- Valencia Road was recently reconstructed and included widening under the existing I-10 bridge. Unfortunately, the existing bridge cannot accommodate the future need for dual left-turn lanes for traffic accessing I-10. The study team tried to work around this by utilizing single left-turn lanes, but the necessary vehicle storage length for this cannot be accommodated due to the bridge pier locations. Dual left turn lanes are needed; therefore, the bridge will need to be replaced. To maximize construction efficiency, I-10 was realigned to allow I-10 to remain open during this construction.

- An auxiliary lane could not be provided between Valencia Road and Craycroft Road due to their close proximity. Therefore, a separate ramp will extend between the interchanges to provide access between the two.
  - Micah Horowitz indicated that there is state trust land in this vicinity and asked that it be shown on these figures and all future figures for reference.
  - Sixto Molina indicated that Swan Road will eventually connect into the Town of Sahuarita, and asked if anything will be done at the intersection of Swan Road and Valencia Road. Brad responded it was his understanding that in the future Swan Road will shift to the west and connect to Alvernon Way north of the Tucson International Airport. Alvernon Way/Swan Road will be a future north-south parkway.

- Craycroft Road is a tight interchange due to nearby businesses and homes. Since this project will be removing the existing frontage road which provides access to homes in the southeast quadrant, an access road will be provided from the homes to Craycroft Road.
  - Sixto Molina shared that the intersection at the eastbound frontage road and Craycroft Road operates poorly. He indicated that school busses are sometimes late to school because it takes them so long to turn left (northbound) onto Craycroft Road. Paul reassured that this intersection

will be signalized in the future, so traffic will be provided better opportunity to turn left. Sixto then asked that two eastbound left-turn lanes be provided at this intersection. Paul responded that the traffic volume projections will dictate that decision, and that the traffic analysis will evaluate and recommend the lane configurations.

- The Wilmot Road TI is currently very tight due to existing businesses. Where the space is available, the new ramps will flare out to meet Wilmot Road at a more perpendicular angle. A southbound right-turn lane was added from Wilmot Road to Diablo Sunrise Road to match the existing street width.

- Kolb Road is proposed to be a Diverging Diamond Interchange (DDI) with bypass express lanes. The study team received comments regarding heavy truck traffic utilizing this TI and concern for queuing backing up within the TI and blocking access points. To remedy this, a lane was added northbound and approaching the signals after the bridge to minimize the queue distance. A right-turn lane was also added southbound to westbound so that queue does not block access to I-10. Additionally, the two signals within the DDI will be coordinated with one another as to not allow much traffic to back up.
    - Micah Horowitz pointed out the driveway connector on the south side of I-10 that gives access to the east side of Kolb Road. He would like a similar access to be provided for the west side of Kolb Road, as that is state trust land. Paul indicated he will provide that access.

Jeff Holzmeister, J2 Engineering drainage design lead, gave an overview of the on-site drainage plan for the project corridor. The team looked at previous studies which showed flow patterns and there is not a substantial amount of offsite drainage in the area. I-10 parallels most of the existing drainage in the project area. Right-of-way is tight and a search of remnant parcels for first flush and detention basins is being conducted. The team may need to consider a storm drain system rather than parallel channels due to limited right-of-way. Small washes break out diagonally from the freeway, and current design would prefer to maintain that pattern. On-site facilities will have curb and gutter, piggybacking onto existing systems.

Jeff continued discussing the drainage elements unique to Alternative IV, indicating that right-of-way is even tighter with this alternative due to the CD roads. This makes off-site drainage more of a challenge. Catch basins will discharge into existing channels; more catch basins and pipe may be needed due to retaining walls. There may be some issues with fitting pipes between the CD road edge of pavement and the right-of-way, but this will be looked at more closely as design progresses.

Mike Dawson asked if the drainage design was being driven by the new roadway design or if they are just fixing existing issues. Jeff indicated that the new design is the driving factor. The corridor is being converted from a rural to an urban section so new facilities are needed, and there is also the need to maintain the existing system connections.

Sixto Molina asked what drainage improvements are being proposed at the interchange at 6th Avenue. Jeff responded that the current plan is to maintain the existing drainage pattern that is there now. He asked if there are any issues in that location which would spark the need for improvements. Sixto responded that he has no specific concerns, but just wanted to see if any changes were being made.

Paul Black began to go over the list of comments that the study team received from Pima County, as well as the team's responses to the comments. However, Priscilla Cornelio from Pima County indicated that the County has not adequately reviewed the study team's responses and will need to get back to everyone about it after she

can meet with John Moffatt. It was agreed to skip this agenda item and Priscilla will get back to the study team with the County's responses within a couple of weeks.

Paul Black then discussed the option of providing periodic access between the express lanes and the CD in Alternative 4. He showed four possible locations where access points could be located based on geometry, right-of-way, and interchange locations. These access slip ramps are called "bubbles" since the CD will have to bulge outward like a bubble to provide enough separation such that a vehicle can only access the ramp in one direction. If the ramp is intended to allow traffic from the CD onto the express lanes, we do not want a vehicle to be able to access the CD from the express lanes using that same ramp.

Kolb Road experiences heavy northbound and southbound traffic wanting to go westbound on I-10. The study team looked into the possibility of allowing them onto the westbound express lanes via a slip ramp shortly after Kolb Road. Similarly, access could also be provided from the eastbound express lanes to the CD west of Wilmot Road to allow Kolb Road traffic to exit. Two other possible slip ramp access points are just west of Valencia Road which would allow access for truckstop traffic at Crayeroft Road.

The question was raised if these bubbles will require new right-of-way. The answer is yes, they cannot be accommodated within the existing right-of-way. The question was also asked if these bubbles solve the emergency access concerns with the CD system. They do not, but the study team has come up with a solution utilizing emergency access gates. See more below.

The intent of the CD is to separate local and regional traffic. The more local traffic that is accommodated on the express lanes, the less effective the CD becomes, which defeats its purpose. The study team does not want to negate the intent of the CD by allowing too many access points to the express lanes. The study team and stakeholders will look further into these access bubbles to determine which ones, if any, will be proposed. Mike Dawson asked if the "bubble areas" would require additional ROW. Paul said yes it would and that is why the "bubble area" locations shown are in vacant parcels.

Paul discussed the emergency access gates for the CD system, which will need to be provided at least every mile. He showed some images of concepts in which the concrete median barrier is replaced with a long gate that can be pushed open from either direction, and be hinged on either side. This can allow emergency vehicle access between the CD and the express lanes, and could also be used to divert traffic from one roadway to the other in the case of a more serious incident. Robin Raine suggested that this concept be presented to first responders to get their input. Brad will send this information to Robin so she can pass it on to the appropriate personnel for review.

Brad briefly went over the project schedule which was included in the agenda. The draft highway signage concept, draft drainage concept, and the draft initial drainage report are slated for completion in mid-May. The evaluation of public input as well as the updated traffic operations model should be ready around late May. The next progress meeting is scheduled for July 19th, 2017 from 1:00-3:00pm.

Related to project communications, Brad reminded attendees of the project website. All documents related to this project from the very beginning are posted on the website including meeting minutes, exhibits, and project deliverables. This site is intended for use by the study team only. The login information is available in the meeting presentation slides. There is a separate website for public use with information related to the project. The content on the public website is out of date, however, ADOT will be updating it soon.

- Study Team Website: www.jacobsaz.com
  - Login: I-10 Corridor
  - Password: Empirita
- Public Project Website:
  http://www.azdot.gov/planning/transportation-studies/i-10-and-sr-210-feasibility-study

A question was raised regarding construction detours and it was expressed that options are needed for when Alvernon Way is constructed. Brad responded that these items will need to be discussed with the County and other stakeholders (like Davis-Monthan AFB and TEP) and that options will need to be evaluated. Detour routes will need to meet the needs of local businesses, as well as the public.

Joan Lovell indicated that there are a lot of FMS elements that need to be considered on this project. She cautioned that the CADD drawings she provided of existing FMS features are not as-builts, and in-place equipment may vary from the design files. She indicated that Reza Karimvand wants to install fiber along every freeway in the State, so this project is no exception. Another meeting is needed to discuss and coordinate this.

Steve Wilson asked if a traffic report has been prepared. Brad responded that a detailed traffic report was conducted as part of the Feasibility Study and that report will be updated to reflect the roadway configurations that have changed since then. It was asked if Alvernon Way was modeled in the Feasibility Study the same as it is currently proposed. Brad responded that the basic Alvernon Way concept has not changed since the Feasibility Study.

ACTION ITEM LIST

- The Jacobs team will continue to pursue the key issues discussed in this meeting to define the critical elements of this study as early as possible.
- Priscilla Cornelio will present the study team's comment responses to appropriate personnel at the County and provide concurrence or further comments.
- Stakeholders are encouraged to review and comment on the meeting minutes to ensure accuracy.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

March 16, 2017

TO: Meeting Attendees
Sixto Molina, City Manager, City of South Tucson
Mick Jensen, Planner, City of South Tucson
Joel Gastelum, Planning and Zoning Director, City of South Tucson
Rudy Perez, ADOT Major Projects Group
Brad Olbert, Jacobs Project Manager

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
COORDINATON MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

This coordination meeting was held 10:45 AM March 16, 2017 at the City of South Tucson, City Hall Conference Room. The purpose of the meeting was to review the proposed planning concepts for I-10 through the limits of the City of South Tucson for the new city manager.

SUMMARY

Brad Olbert, Jacobs Project Manager, gave a brief overview of the project.

Our traffic analysis of 2011 traffic volumes showed that the traffic interchange (TI) at 6th Avenue was operating adequately. The TI did not require major re-work to meet the projected 2040 traffic volumes. However, we recently received correspondence from the VA Hospital. The VA Hospital mentioned that 6th Avenue is very congested during rush hour periods and requested capacity improvements for the westbound I-10 on-ramp. We are revisiting traffic operations at the interchange and are looking into possibly adding dual left-turn lanes. The City of South Tucson staff liked the idea of having dual left-turns to help reduce the queue lengths and congestion in the area.

One other item is a PAG transit study on routes for transit (modern street car or Bus rapid transit). PAG is looking for a route over I-10 at either 6th Avenue or Kino Boulevard. Mick said South Tucson prefers having the route along 6th Avenue. The bus route along 6th Avenue has one of the highest riderships in the Tucson area.

Having a transit line route along 6th Avenue will provide development opportunities for the City. The UofA prefers the route over Kino Boulevard.

Mr. Molina was interested in providing improved access to the area north of I-10, south of 36th Street, east of 6th Avenue, and west of Park Avenue. This area has suffered from a lack of good access ever since I-10 was constructed. The area has a lot of empty buildings and vacant lots. The owners of the area are interested in removing the old structures and rebuilding as long as better access can be obtained.

Mr. Olbert said the existing Park Avenue interchange is difficult for visitors to Tucson to navigate. The plan is to provide full access at this interchange and replace the loop ramp. The traffic interchanges of 6th Avenue/Park Avenue/Kino Boulevard are too close together to provide adequate weaving distances. Access to the Park Avenue and 6th Avenue interchanges in the westbound direction will utilize braided ramps to separate cars and reduce the weaving on I-10. The current I-10 concept does not allow westbound traffic originating from Park Avenue to have access to 4th and 6th Avenues. This would restrict access north of I-10 and is not desirable from South Tucson's point of view.

To provide better access to the area north of I-10, Jacobs will add a westbound slip ramp that will allow cars from the Park Avenue on-ramp to merge with the 6th Avenue off-ramp. The slip ramp will allow access to 4th and 6th Avenues. In the eastbound direction getting off and on eastbound I-10 will be very similar except the connection to Park Avenue will be changed providing a perpendicular connection to Park Avenue. Vehicles at 6th Avenue TI will be able to loop around I-10 using either the undercrossing at the UPRR railroad crossing or the Park Avenue TI. The ramp adjustment was acceptable to the City of South Tucson.

The meeting adjourned around 12:00 PM.

ACTION ITEM LIST

- The Jacobs team will look into the possibility of adding dual left-turn lanes at the 6th Avenue TI.
- Jacobs will contact PAG about the location of the future transit crossing of I-10.
- The Jacobs team will add a westbound slip ramp that will allow cars from the Park Avenue on-ramp to merge with the 6th Avenue off-ramp.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

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COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

March 16, 2017

TO: Meeting Attendees
Carlos Valdez, Transportation Manager, Sunnyside Unified School District
Mike Dawson, EcoPlan
Rudy Perez, ADOT Major Projects Group
Brad Olbert, Jacobs Project Manager

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
COORDINATON MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

This coordination meeting was held at 1:30 PM March 16, 2017 at the Sunnyside Unified School District Conference Room located at 2300 E. Ginter Road, Tucson. The purpose of the meeting was to review the impacts of the proposed I-10/SR 210 (Alvernon Way) interchange improvements on the Los Ninos Elementary School and identify solutions if needed.

SUMMARY

Brad Olbert, Jacobs Project Manager, gave a brief overview of the project to widen I-10 from I-19 to Kolb Road and to extend the Barraza-Aviation Parkway (SR 210) south along the Alvernon Way corridor to connect with I-10. Existing Alvernon Way is a 4-lane divided roadway south of I-10 and in front of the Los Ninos Elementary School.

The proposed system improvements located at I-10 and Alvernon Way will widen Alvernon Way to the north side of the Los Ninos Elementary School. Alvernon Way will be widened to a 6-lane divided roadway at the eastbound ramps to I-10. In the future, the Regional Transportation Plan shows Alvernon Way to the south of I-10 being a 6-lane divided parkway.

Carlos Valdez mentioned that twice a day, parents and bus drivers drive to the school to drop off or pick up 700 students (kindergarten through 5th grade). Buses have a location where they unload/load students. In the afternoon, after the buses are loaded with children the buses line up at the north exit from the school where they

wait for an opportunity to make a left on-to Alvernon Way or if Alvernon Way is busy will make a right turn onto Alvernon Way and go north to the nearest traffic signal to make a U-turn to head south on Alvernon Way. Parents have a separate location where they can unload or park and wait for their children. In the afternoon, parents wait in an area that is three lanes across to pick up children. The waiting area frequently queues up onto Alvernon Way blocking one northbound travel lane down to Drexel Road.

The proposed improvements for the I-10 project will widen Alvernon Way south to the northernmost parking lot exit used by the buses to exit the school property. In the future when the rest of Alvernon Way is widened to 6-lanes divided as a parkway, these improvements will match the Alvernon Way section to the north. Heavy traffic conditions will make exiting the school property difficult for buses and cars. To facilitate the left turn out of the school parking lot it was recommended that a signal be installed to stop northbound and southbound traffic to enable buses loaded with students to exit the property. The signal would be activated only after all of the buses have queued up to make the left turn. Mr. Valdez felt the signal would take care of buses leaving the school property. Parents leaving the school make a right turn and queue up in a left-turn pocket located across from the bus exit. Parents then make a U-turn to head south on Alvernon Way. Further analysis will be needed to determine if the parents can utilize the bus exit after the buses have left the property.

The meeting adjourned around 2:30 PM.

ACTION ITEM LIST

- The Jacobs team will propose a new signal to be located at the northernmost bus exit point.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

PROGRESS MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

May 15, 2017

TO: **Meeting Attendees**

Rudy Perez, ADOT Project Manager
Abdulkarim Rashid, ADOT Lighting
Reza Karimvand, ADOT Systems Technology
Joan Lovell, ADOT Systems Technology
Tammy Mivshek, ADOT Traffic Design
Shanthi Krishnan, Jacobs Traffic
Brad Olbert, Jacobs Project Manager
Anil Mudigonda, Jacobs Traffic-ITS
Marie Baginski, Jacobs Lighting-ITS

FROM:
Shanthi Krishnan, Jacobs

SUBJECT:
Signing Concept, Lighting, and ITS Design Discussion
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The Progress Meeting for this project was held at 1:00 PM May 15, 2017 at the ADOT Traffic Design Conference Room. The meeting was adjourned at 2:30 PM.

Brad Olbert presented a brief history of the project and the progress of work achieved so far and the next steps towards the completion of the project.

SUMMARY

- Safety Minute: Brad Olbert, Jacobs Project Manager started the meeting with a safety minute. He mentioned that with the rising temperatures, the tire pressures in your vehicle tires will also rise. He advised that everyone check their tire pressures and adjust accordingly to reduce the risk of a blowout.

- Introductions: All meeting invitees introduced and stated their role on the project.
- Project Overview: Brad Olbert presented the project overview to the group
  - Project limits for feasibility study
  - Project limits for DCR/EA
  - Project constraints:
    - Davis Monthan AFB
    - Kino Sports Complex and regional park
    - Location of UPRR Railroad
    - Other residential/commercial developments
- Lighting Design
  - LED vs. High-pressure Sodium (HPS): Karim Rashid (ADOT Lighting) mentioned LED fixtures to be considered since the project is a few years away from construction.
  - Median lighting preference? → Karim Rashid mentioned that Jacobs need to evaluate the options for lighting. He mentioned that he had to go through FAA evaluation for high-mast lighting on one of his previous projects at the Palo Verde interchange due to the proximity of the project to Davis Monthan AFB, and the Tucson International Airport. He mentioned that Jacobs need to evaluate high-mast lighting and smaller side-mount poles for the highway system.
  - For Texan U-turn underpass at $6^{th}/4^{th}$ St, Karim mentioned to check the lighting requirements for daytime lights (10:1 ratio). Jacobs will evaluate the underpass lighting with the new design elements.
  - Karim also mentioned to consider the dark skies in the region during the lighting evaluation process. He mentioned that the team should consider 3000K LED fixtures in the Tucson limits.
  - Marie Baginski, Jacobs Lighting-ITS mentioned that Jacobs team will perform lighting analysis for typical roadway sections to evaluate the luminaire spacing and provide a typical spacing recommendation for each section of roadway for the project. Jacobs will also provide recommendations for network control lighting at the LED fixtures along with lighting shielding for the residential areas in close proximity of the ADOT right-of-way.
  - No more sign lighting to be considered for the project
- Traffic Signals
  - Jacobs will estimate a lump sum cost estimate for the affected TI traffic signals for the project
- Karim Rashid also mentioned that the DCR discuss provisions for future wrong-way detection systems to be included as part of the design elements for the project.
- ITS Design
  - Jacobs asked about the lifespan of the existing ITS elements for the project. Joan Lovell (ADOT Systems Technology) stated that the lifespan of the ITS elements is generally about 15 years and that the existing DMS structures within the project limits have been installed around 2012.
  - DMS location requirements: One DMS within 1 mile of system TI and max. DMS spacing of 3 miles on the freeway system. Joan mentioned that Jacobs is not restricted to look into just the Type I (walk-in) DMS but also can consider Type II DMS on butterfly structure if there are issues locating a full sign structure span on the freeway.
  - Joan suggested adding one DMS on each approach of SR-210 between I-10 and Golf Links Road. Joan also suggested adding one DMS for the eastbound approach of I-10, around the Country Club Road TI so the system can meet the DMS location requirements.
  - Joan mentioned that Jacobs should consider color display DMS versus the amber display since the cost-differential is very minor.
  - CCTV camera pole requirements: One CCTV at each TI to cover the freeway and the cross street. Maximum spacing for CCTV cameras not to exceed 1 mile, but additional cameras to be

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added for full freeway coverage and/or curvature on the freeways. All new CCTV cameras, poles and cabinets will be considered for the project.

- Mainline and ramp detectors and count stations
  - Standard in-pavement loop detectors at 1-mile spacing along the freeway
  - All ramp meter infrastructure will be estimated for cost purposes
- FMS Load Centers
  - FMS load center at each TI and at each DMS location. Joan suggested only adding Type IV modified load centers for the project.
- Trunkline conduit
  - 3-3" trunkline conduits for both sides of the freeway for I-10 and SR-210 for the length of the project. Consider only No. 9 pull boxes with torsion-assisted lids at ADOT recommended spacing. Do not show No. 7 pull boxes as there is no locking mechanism for the No. 7 pull box.
- Node building
  - Joan suggested adding a new node building at Kolb Road TI towards the end of project. A rough cost estimate for a new node building is approximately $50,000.
  - She mentioned that there is an existing node building at I-19 TI/TOC.
- Pump station connectivity
  - Pump stations existing/proposed along the project will be connected to the ADOT FMS system.
- Any other FMS considerations
  - Joan mentioned adding estimates for future wrong-way detection systems to the project costs.
  - Joan to provide Jacobs with 60% plans and estimate on a current pilot project being implemented on the I-17 corridor in the Phoenix metro area.

- Signing
  - Tammy Mivshek, ADOT Traffic Design said she is ok with a PDF Submittal roll plot but also prefers to have the submittal on 11x17 format so she can mark/provide comments on the submittal.
  - Tammy mentioned to accommodate Grand Canyon logo signs as part of the signing package
  - Tammy asked that the cost estimate to include in-lane pavement markings in the vicinity of a system interchange to augment the messages shown on the guide signs.

ACTION ITEM LIST

- The Jacobs team will update the design per the meeting notes and will submit a signing concept review submittal to the review team and stakeholders
- Joan Lovell to provide a copy of the wrong-way detection progress plans and estimates to Jacobs team so the cost estimates could be included in the overall DCR estimates.

Signed: Shanthi Krishnan
Shanthi Krishnan, PE, PTOE, Jacobs Traffic/ITS

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Meeting Notes I-10 / Barraza-Aviation Pkwy (SR 210)
Design Concept Report & Environmental Assessment

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

May 16, 2017

TO: **Meeting Attendees**
Shannon Breslin, Land Resource Manager, Tucson Electric Power
Cherly Eamick, Land Resource Environmental Planning Supervisor, Tucson Electric Power
Cory Pintor, Land Resources Right-of-Way Supervisor, Tucson Electric Power
Liza Castillo, Land Resources Right-of-Way Agent, Tucson Electric Power
Rick Burrows, Compliance & Special Project Manager, Tucson Electric Power
Jason Saline, Environmental Land Use Planner, Tucson Electric Power
Paki Rico, ADOT Senior Community Relations Officer
Rudy Perez, ADOT Major Projects Group
Brad Olbert, Jacobs Project Manager
Judah Cain, Jacobs
Cassondra Smith, Jacobs

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
COORDINATON MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

This coordination meeting was held at 10:00 am May 16, 2017 at the Tucson Electric Power (TEP) Conference Room located at 88 E. Broadway Blvd. 85701, Tucson. The purpose of the meeting was to review and discuss the impact of the proposed I-10/SR 210 (Alvernon Way) Traffic Interchange and Corridor improvements on the power distribution system and generating station located on Irvington Rd east of Alvernon Way and identify potential solutions if needed.

SUMMARY

Jason Saline, Tucson Electric Power, gave a brief overview of the TEP facilities in the area including the Sundt Generating Station and 138/146 kV overhead power lines that run parallel to the east and west side of Contractors Way. TEP is concerned the improvements to the Alvernon Way corridor and the I-10 and Alvernon Way traffic interchange will impact and limit their accessibility to the Sundt Generating Station as well as other facilities in the area particularly in emergency situations.

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Shannon Breslin led the discussion portion of the meeting. The two entrances to the Sundt Generating Station are located on Irvington Rd east of Contractors Way. Three primary routes provide access to the Generating Station: to/from the west, crossing the Union Pacific Railroad (UPPR) tracks are Irvington Rd and Ajo Way and to/from the north, Contractors Way. Valencia Rd, to/from the southeast, is an unused route that is circuitous, narrow, and not all weather. Currently, eastbound I-10 is accessible from southbound Alvernon Way at Irvington Rd while access to westbound I-10 is provided from Irvington Rd just east of Palo Verde Rd. Northbound Alvernon Way provides the connectivity to Downtown Tucson via Golf Links Rd and Aviation Pkwy.

TEP is presently in a two year process of modernizing the Sundt Generating Station campus which includes a traffic study to establish a baseline estimate of traffic volumes and congestion. Sundt Generating Station was previously a coal fired power plant and now is primarily a natural gas facility with a small mix of solar heated assisted power and methane gas power from a regional landfill located to the south. Maintenance crews from Sundt Generating Station respond to service issues and they need quick access to routes that provide connectivity to the different TEP distribution service areas.

Brad Olbert, Jacobs Project Manager, gave a brief overview of the project schedule and history including constraints and eliminated alternatives, and highlighted improvements of the revised Alternative I in the area. Access to I-10 would be provided at the new interchange at Country Club Rd and connectivity to the north would be provided at Ajo Way traffic interchange on the extended Barraza-Aviation Pkwy (SR 210). Judah Cain, Jacobs, noted that the extended SR 210 in Alternative I and IV were the same.

Ms. Breslin said that Contractor Way in the revised concept of Alternative 1 would restrict access to the north especially if UPPR crossings at Irvington Rd and Ajo Way are blocked by a train derailment. Maintaining power lines during events when power is down is essential to the community. Multiple access points are needed to provide TEP with options to get service crews to outage locations. TEP has internally discussed the possibility of utilizing the access to the east to Valencia Rd but noted the need to have accessible connection to the north especially during the outage/emergency scenarios. TEP needs a signalized intersection on Valencia Road to provide safe access for their large trucks. Potential connections to the extended freeway were discussed, Jacobs team will review design schematics to determine accessibility to the extended SR 210. Jacobs requested information on the size of TEP's large service trucks. Jacobs can run turning movement software to verify the accessibility to interchanges by their trucks. TEP recommended additional coordination meetings and requested flight path information be incorporated into plan sheets for TEP and Jacobs to identify potential conflicts with alternative design schematics.

The meeting adjourned around 11:30 AM.

ACTION ITEM LIST

- Jacobs team will re-examine additional access to the north including potential connection to/from Contractors Way to the extended SR 210.
- Jacobs team will contact Davis Monthan Air Force Base to obtain flight paths information. The information will be included as part of the plan sheets for TEP's review.
- TEP engineers will review roadway concepts and provide comments.
- TEP will provide information on the size of their service trucks to Jacobs.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

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Meeting Notes

I-10 / Barraza-Aviation Pkwy (SR 210)
Design Concept Report & Environmental Assessment

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

May 16, 2017

TO: Meeting Attendees
Nanette Slusser, Assistant County Administrator, Pima County
Nancy Cole, Program Manager, Public Works Project Management Office, Pima County
Robert Young, Transportation System Division Manager, Pima County
Rod Lane, District Engineer, ADOT Southcentral District
Rudy Perez, ADOT Major Projects Group
Brad Olbert, Jacobs Project Manager
Judah Cain, Jacobs
Cassondra Smith, Jacobs

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
COORDINATON MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

This coordination meeting was held at 1:00 PM May 16, 2017 at the Pima County Administration Conference Room located at130 W. Congress, 10th Floor, 85701, Tucson. The purpose of the meeting was to discuss the impact of the proposed I-10 roadway widening improvements and Kino Pkwy traffic interchange reconfiguration on key Pima County economic development initiatives in the area and identify potential solutions if needed.

SUMMARY

Nanette Slusser, Pima County, led the discussion. Pima County owns lands east of Kino Pkwy in the vicinity of the I-10 corridor, Kino Stadium District, Kino Environmental Restoration Project (KERP), and Banner-University Medical Center South Campus are major activity centers located on the north side of the interstate. The County is currently in the process of finalizing initial concept plans for a public private partnership to develop a sports complex on 170 acres south of I-10 between Kino Pkwy and Country Club Rd. The development will also include three hotels, restaurants, and several retail shops.

Pima County was interested in the estimated timing of widening improvements along I-10 and re-construction of the Kino Pkwy traffic interchange. The County has identified two potential crossings that would provide

connectivity between the existing facilities on the north side of I-10 and the future developments on the south side; Tucson Diversion Channel crosses under I-10 roughly 1,400 feet east of Kino Pkwy while the second crossing would be located approximately 4,100 feet east of Kino Pkwy. Similar to the west side of the Tucson Diversion channel, the east side of the channel would be depressed to allow for a pathway for maintenance carts, pedestrians, and bicyclists. The second crossing would consist of a two box cell structure approximately 14 feet high and 20 feet wide, to accommodate cars and small trucks. In addition, if the median on I-10 is closed in would it be possible to add a skylight in the center creating a gap using the median barrier for both crossings?

The County also noted that the eastbound on-ramp at the reconfigured Kino Pkwy traffic interchange in the Alternative I schematics would encroach on the parking lot of one of the proposed hotels (260 rooms, 7 stories).

Brad Olbert, Jacobs Project Manager, gave a brief overview of the project schedule and the project development phases (Design Concept Report, Programming, Design, and Construction). The DCR would establish a preliminary implementation plan for the corridor and interchange improvements; currently it is too early to identify the prioritization of the projects. In future alternative design schematics prepared for the I-10/SR 210 DCR and EA the Jacobs team will show work to be done by others for the two sports complex crossings. Regarding the loss of the acres at the parking lot site of the proposed hotel due to the eastbound on ramp, a potential land swap could be made with some of the excess right-of-way in that quadrant of the interchange.

The meeting adjourned around 2:00 AM.

ACTION ITEM LIST

- Jacobs Team will notify Pima County of Public Information Meetings and Progress Meetings.
- Jacobs will look into adjusting the I-10 typical section to include a median skylight at each of the two crossings
- Nancy Cole, Pima County, is leading the coordinating efforts on the property and is the contact for the sports complex project.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Meeting Summary I-10 / Barraza-Aviation Pkwy (SR 210)
Design Concept Report & Environmental Assessment

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING SUMMARY

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

June 27, 2017

TO: **Meeting Attendees**
Alexander Popovici, Union Pacific Railroad
Sayeed Hani, ADOT Railroad Liaison
Rudy Perez, ADOT Planning Program Manager, Major Projects Group
Jorge Vasquez, ADOT Construction Development Manager
Shantala Ramaiah, Jacobs Bridge Group
Michael Okamoto, Jacobs Roadway Group
Andrea Gao, Jacobs Bridge Group

FROM:
Shantala Ramaiah, Jacobs

SUBJECT:
UPRR Coordination Meeting Summary - Bridge Concept
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

This coordination meeting was held at 9:00AM, June 27, 2017 at the Roadway Conference Room (Room 113) located at 205 South 17th Ave. The purpose of the meeting was to review and discuss potential implications of the proposed structures and identify potential solutions, if needed. Recommendations currently proposed by Jacobs where I-10 and SR-210 will be crossing existing Union Pacific Railroad [UPRR] tracks were introduced. The Design Team sought early input in regards to the current UPRR guidelines including Right-of-Way encroachment, horizontal clearance, and vertical clearance in light of project constraints and the fact new structures would be replacing existing structures along the same alignment.

SUMMARY

Safety Minute – Sayeed Hani informed all attendees of evacuation exits in the event of a fire emergency.

Introductions – All meeting invitees introduced and stated their role on the project.

Project Summary – Shantala Ramaiah gave an overview of the project, identifying Jacobs' role in development of a planning stage Design Concept Report featuring infrastructure widening to accommodate 2040 traffic flows. Shantala Ramaiah discussed there are over 50 bridges in this project and this meeting will focus on the four bridges crossing UPRR tracks.

Individual Bridge Discussions - The bridges discussed include:

- *UPRR Westbound Frontage Road Overpass* (I-10 Milepost 261.41),
- *UPRR Eastbound Frontage Road Overpass* (I-10 Milepost 261.41),
- *Veteran's UPRR Overpass* (I-10 Milepost 261.41), and
- *UPRR Southbound Frontage Road Overpass* (SR-210/Contractor's Way 1,000ft north of E Ajo Way)

Shantala Ramaiah stated that current Union Pacific Railroad [UPRR] guidelines have been reviewed and the exceptions being sought consist primarily of right-of-way and vertical clearance. Shantala discussed that the bridges will only go into final design in many years, and as such official written approval of exceptions is not being sought at this time; Only initial review and input on the needs of the railroad are requested at this time. Each bridge was discussed in the following order, with feedback on the proposed design by Alexander Popovici shown in bullets.

UPRR Westbound Frontage Road (UPRR FR RD OP WB)

Shantala Ramaiah described that for this bridge the only modification being requested is a relocation of the barrier on top of deck, yielding a narrowed clear roadway width.

- Alex Popovici found no issue with this modification.

UPRR Eastbound Frontage Road (UPRR FR RD OP EB)

Shantala Ramaiah described that no modifications will be required at this location. Shantala noted that the minimum vertical track clearance for the three bridges occur at this bridge. Alex stated that the vertical clearances of bridges need to be considered independently of each other, as discussed below in VETERAN's UPRR OP.

Veteran's UPRR Overpass (VETERAN'S UPRR OP)

Shantala Ramaiah described that at this location the expansion of I-10 would require the addition of one (1) lane in each Eastbound and Westbound directions including additional widening for Westbound on-ramp, and that these could be achieved via a bridge widening; The bridge has sufficient load capacity and is of sufficient structural condition to continue its service life beyond 2040. Shantala discussed the structure does not meet horizontal and vertical clearances required of new structures, but that the proposed widening would maintain existing clearances. Existing vertical clearances would be maintained via continuing the deck cross slope but continuing the pier cap level, with the difference absorbed via reduced girder depth and tighter spacing compared to the existing structure. Alex Popovici's comments on this proposed concept included:

- Alex Popovici affirmed maintaining existing vertical and horizontal clearances is acceptable since the proposal is a widening. The deviation from UPRR Guidelines in vertical clearance is acceptable as this line does not service double-deck trains. If the structure is to be replaced, vertical and horizontal clearances would have to meet current guidelines, regardless of the clearances of adjacent structures. Alex stated that as adjacent structures get replaced, the clearance of the section will ultimately be met.
- Alex Popovici suggested that a different type of girder may be considered in order to satisfy the vertical clearance requirement.

- Alex Popovici commented that pier protection ("crash walls") may be required by the UPRR reviewer when this project goes to the final design. Shantala Ramaiah mentioned that the substructure may not be able to support derailment loads, and this would require further evaluation.

UPRR Southbound Frontage Road (UPRR SB FR RD)
Shantala discussed that at this location the expansion of SR 210 would require the addition of one (1) lane in each direction, in addition to two flanking ramp structures accessing Ajo Way. Shantala also discussed that bridge will require replacement due to its low load rating, and that it does not meet current vertical and horizontal clearance requirements.

The proposed structure replaces the existing bridge at the same skew and alignment, with piers spaced further apart to enable one additional future track east of the existing tracks. The two piers, slope paving, and west abutment are within the UPRR right-of-way. A maintenance path is provided for Tucson Electric Power along the east abutment under the last span. The bicycle path is relocated to beyond the UPRR right-of-way.

- Alex Popovici clarified that for new structures design should not be based on number of tracks. For this location, UPRR will request providing minimum vertical clearance throughout the UPRR right-of-way. UPRR has large yards to the northwest and southeast of the proposed bridge and sees the potential for full usage of its right-of-way.
- Alex Popovici affirmed Shantala Ramaiah's statement regarding the difficulty of spanning the entire right-of-way without piers, and that this difficulty is further exaggerated by the large skew. Alex Popovici requested the number of piers be limited to two (2), but prefers one (1) if possible. Alex guided that there is no strong preference in the location of piers; However the piers should be placed in effective locations considering track usage and bridge configuration.
- Alex Popovici also requested that future tracks be removed from plans.
- The only exception to the UPRR guidelines in terms of right-of-way encroachment that would likely be entertained is that of piers. Abutments and slope paving must stay out of the right-of-way.
- The group agreed unanimously that an underpass is the least viable option due to the presence of significant underground utilities (e.g. Kinder Morgan and Century Link) as well as the high cost of a shoofly track.
- Shantala Ramaiah requested confirmation that UPRR would not allow cast-in-place concrete construction on falsework over the railroad, in case this structure type showed promising in the re-evaluation of what will now be long, possibly curved spans. Alex Popovici clarified that cast-in-place reinforced concrete structures type have often been accepted and may be a consideration for this location, but that acceptance occurs at final design during plan approval by UPRR.
- Alex Popovici and Sayeed Hani cautioned that utility relocation can take a significant amount of time and suggested that requests for relocation occur as soon as possible. It was also stated utility companies will only look at relocation when final design plans are at 95%.
- Shantala Ramaiah conveyed that at the east span of the existing bridge, Contractor's Way will be terminated and a gate installed for utility maintenance access. Alex stated that for the new bridge replacement, Tucson Electric Power can use an existing permit to continue access in the railroad right-of-way. A gate with two locks, or similar intrusion protection means, should be put into place.
- Alex Popovici conveyed that all bike paths should be located beyond the UPRR right-of-way.

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The meeting adjourned around 9:40 AM.

ACTION ITEM LIST

- Jacobs team will re-evaluate structure types and span configuration at the SR-210 crossing to keep the abutment and slope paving out of the right-of-way. Roadway vertical profile and alignments as well as environmental assessment limits will be re-evaluated in tandem.

Signed: _____
Shantala Ramaiah

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Meeting Notes I-10 / Barraza-Aviation Pkwy (SR 210)
Design Concept Report & Environmental Assessment

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
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PROGRESS MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

July 19, 2017

TO: **Meeting Attendees**
Patrice Brun, ADOT Geotechnical***
Virgil Coxon, ADOT Chief Surveyor***
Mark Hoffman, ADOT Multimodal Planning
Sarah Karasz, ADOT Environmental Planning
Carlos Lopez, ADOT Major Projects Group***
Joan Lovell, ADOT ITS***
Merrisa Marin, ADOT R/W Project Management Section Coordinator***
Tammy Mivshek, ADOT Traffic Design***
Rudy Perez, ADOT Project Manager
Sebastian Tonazzi, ADOT Community Relations
Jim Walcutt, ADOT R/W Review Appraiser
Emily Dawson, ADOT Southcentral District
James Gomes, ADOT Southcentral District Regional Traffic Engineer
Rod Lane, ADOT Southcentral District Engineer
Priscilla Thompson, ADOT Southcentral District Utility Engineering Coordinator
Ammon Heier, FHWA Area Engineer
Mick Jensen, City of South Tucson Planning
Andy McGovern, City of Tucson Engineering Manager
Scott Robidoux, Tucson Airport Authority Planner
Mike Dawson, EcoPlan Environmental Planner
Paul Black, Jacobs Roadway***
Judah Cain, Jacobs Roadway***
Joe D'Onofrio, Jacobs Environmental
Andrea Gao, Jacobs Structures***
Brad Olbert, Jacobs Project Manager
Sandy Thoms, Jacobs Traffic***
Chris Blue, Pima Association of Governments Transportation Planner
Priscilla Cornelio, Pima County Department of Transportation Director***
Robert Young, Pima County Transportation System Division Manager

*** Attended via teleconference

FROM:
Brad Olbert, Jacobs Project Manager

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SUBJECT:
PROGRESS MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The Progress Meeting for this project was held at 1:00 PM July 19, 2017 at the ADOT Southcentral District Conference Room. Teleconferencing was available via WebEx for attendees offsite. The meeting was adjourned at 2:25 PM.

The meeting was well represented by agencies interested in improving the I-10 corridor from Junction I-19 to Kolb Road and providing a connection for SR 210 to I-10. Representatives included ADOT, Federal Highway Administration (FHWA), City of Tucson, City of South Tucson, Tucson Airport Authority, Pima County, and Pima Association of Governments (PAG).

SUMMARY

Rudy Perez, ADOT Project Manager opened the meeting at 1:00 PM. Introductions were held for all attendees.

Brad Olbert, Jacobs Project Manager, started the meeting with a safety minute and discussed the impacts that recent fires have had on the surrounding environment. These fires exacerbate flash flood situations causing water to rise much quicker than normal and also provide debris to be carried away by the water causing it to be much more dangerous. There was a recent tragedy near Payson in which a storm nearby caused a debris flow to tear through the canyon and take the lives of 10 people.

Brad shared that a lot has been done on the project since the last progress meeting, including coordination with many different agencies. Notes and figures from these meetings are posted on the study team project website. The following coordination took place:

- Davis-Monthan Airforce Base (DMAFB): Email correspondence regarding airspace clearance
- Tucson Electric Power (TEP): Met to discuss their facilities and access as one of their power plants is very close to this project
- Union Pacific Railroad (UPRR): Met to discuss two crossings on this project and their requirements for the crossings
- ADOT Signing, ITS, and Lighting: Met to discuss the signing, ITS, and lighting concept. Jacobs provided a draft concept package and expect their comments back this week. Once those comments are incorporated, the plans will be sent to FHWA for their input as well as be posted on the project team website.
- Pima County: Met to discuss the Kino South Sports Complex to be located south of the existing Kino Sports Complex
- City of Tucson, City of South Tucson, Pima County: Distributed some cross-street information to solicit input on roadway and intersection configuration, as that has an impact on bridge structures.

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Brad provided a status of the project to date:

- Horizontal and vertical alignments have been developed for Alternative I and Alternative IV. Alternative IV now has a connector between the CD road and the express lanes in both the eastbound and westbound directions.
- The signing and ITS concept is currently under review by ADOT.
- J2 Design is working on the offsite drainage concept and that should be finalized and distributed sometime next month.
- Basic concepts for onsite drainage have been developed for converting this rural interstate to an urban interstate. This requires a number of retention and detention basins which can be seen in the roadway layout as blue areas. These basins require additional right-of-way which is a key element in determining the footprint of the project. The first priority was to utilize existing storm drains wherever possible. The second priority was to incorporate retention wherever possible to take water out of the system. The third priority was detention basins when retention was not feasible, which includes first flush. The final option was to discharge directly into a wash, but that solution was very minimally utilized on this project.
- Since the right-of-way footprint has been identified, the environmental team is working on conducting their evaluations and teams are going out in the field next week.
- Plan sheet development is underway for the initial DCR.

Priscilla Thompson with ADOT Utilities and Railroad asked that she be invited to any future meetings with utilities related to this project.

Brad encouraged everyone to pay attention to the proposed right-of-way takes which were about to be discussed and speak up if there are any concerns with what is being proposed. He noted that right-of-way acquisition will be a major topic that the public will pay attention to on this project.

Paul Black, Jacobs roadway design lead, discussed the right-of-way needs on the project. He presented the right-of-way requirements for both alternatives, specifying the acreage of necessary acquisition as well as the number of affected parcels. He reminded attendees that the right-of-way needs on the SR210 corridor as well as I-10 from I-19 to Alvernon Way are identical in both alternatives. The difference in ROW needs occurs on I-10 from Alvernon Way to Kolb Road. In summary, Alternative I requires approximately 140 acres with 172 affected parcels, while Alternative IV requires 154 acres with 186 affected parcels. This equates to a 10% difference in required acreage and an 8% difference in number of affected parcels between the two alternatives. Note that the number of affected parcels does not necessarily equate to the number of property owners that will need to be contacted. He noted that approximately 20% of the new ROW needs are for external drainage basins.

Paul went over the current design layout to discuss where the current ROW needs are and what is triggering those needs:

- SR210:
  - There is a new ramp from westbound Golf Links to Alvernon Way which requires new ROW.
  - All businesses within the triangular section of ramps in this vicinity will be acquired
  - New ROW is needed in all four corners at the interchange with Ajo Way, primarily for slope development for the ramps. One parcel will need to be acquired in the SE quadrant for a new drainage basin.
  - ROW for a drainage basin is needed on the east side of SR210 just south of Michigan Street.

  - Of the property takes along this corridor, three are homes and the rest are businesses or undeveloped/vacant properties.
- I-10 from I-19 to Alvernon Way:
  - There is a new ramp heading from Park Avenue towards 6th Avenue which will require new ROW for the embankment.
  - A new EB off-ramp to Park Avenue will be constructed to reduce the skew of the intersection, which requires a total take of the Western Inn.
  - Additional ramps will be built at Kino Parkway to facilitate all movements while eliminating some of the loop ramps. New ROW will be needed for these new ramps as well as for the ramp slopes.
  - There are some parcels owned by ADOT that could potentially be sold, as that ROW is no longer needed. These properties were not considered in the ROW take calculations.
  - A new diamond interchange will be built at Country Club Road. ROW will be needed in all four quadrants for this interchange. One additional parcel will be taken for a drainage basin.
  - ROW strips along Country Club Road will be needed to widen the road from a 2-lane section to a 5-lane section. It is still unclear whether that will be acquired by ADOT or the City of Tucson, but that can be worked out later.
  - The interchange at Palo Verde Road will be taken out of service, so ADOT will have additional ROW in the vicinity that possibly could be sold.
  - A significant amount of ROW will be needed in the NW quadrant at Alvernon Way to allow for the system-to-system interchange ramps between I-10 and SR210.
  - Mike Dawson mentioned that at the public meeting the owners of the property in the SW quadrant were anxious to build either a hotel or a self-storage facility. He was unsure if they had approached the City with this proposal yet, but pointed out that it is cheaper to purchase a vacant lot than a hotel.
  - A road may need to be constructed across Julian Wash to provide access to a residential neighborhood, as the neighborhood's current access is too close to the interchange intersection. The exact location of this new road is still being investigated, but it would be an all-weather crossing (likely a box culvert) over the wash.
- I-10 from Alvernon Way to Kolb Road:
  - A parcel in the SE quadrant will need to be acquired for a drainage basin since there are so many ramps within this interchange.
  - Another property between I-10 and Julian Wash and north of Drexel will be acquired for a drainage basin. There are slivers of additional ROW that Alternative IV needs in this vicinity that are not needed for Alternative I, primarily for slopes.
  - Additional ROW is needed at Valencia Road for slopes for the EB and WB off-ramps. Alternative IV requires a little more ROW in the NE quadrant for slopes.
  - Two drainage basins will be required between Valencia Road and Craycroft Road, so new ROW will be necessary in both alternatives.
  - There are residences on the west side of I-10 between Valencia Road and Craycroft Road, so that existing ROW line will be maintained. The roadway will shift to the east requiring additional ROW for slopes for both alternatives.
  - The interchange at Craycroft Road requires small slivers of ROW in each quadrant in Alternative I. In Alternative IV however, more ROW is needed in three of the four quadrants.
  - A new drainage basin on the west side of I-10 will require new ROW between Craycroft Road and Wilmot Road.

- There are residences on the east side of I-10 between Craycroft Road and Wilmot Road. That ROW line will be held and the roadway will shift to the west. No new ROW will be needed for this in Alternative I, but Alternative IV will require additional ROW.
- The interchange at Wilmot Road requires a decent amount of ROW to reduce the skew of the intersections. A drainage basin requires the take of a property in the SE quadrant. Alternative IV requires additional ROW in the SW quadrant to accommodate the slip ramp from EB mainline to the EB CD road.
- Additional ROW is needed in Alternative IV between Kolb Road and Wilmot Road for the slip ramp from the WB CD road to WB I-10 mainline. The existing ROW line on the west side of I-10 will be held and all widening will occur to the east to avoid impacting residences.
- ROW is needed in all four quadrants at Kolb Road to accommodate the flyover bridges for northbound and southbound Kolb Road.
- All work east of Kolb Road fits within the existing ROW.

Paul discussed issues related to access within the project that need to be addressed.

- Craycroft Road (north side): A Pilot truck stop was constructed north of I-10 since the Feasibility Study was completed. Their access is very close to the intersection with the WB I-10 ramps. The study team is wondering if the access for the Triple T truck stop across the street should be aligned with the Pilot driveway to form a single larger intersection – and if so, if that would be too close to the interchange intersection.
  - It was noted that Pima County is already looking to improve access in that area, and Jacobs should contact Steve Wilson to see what their current plans are. They may only be looking at the access for Pilot and not the Triple T.
  - ADOT pointed out that the design requirement for right-in-right-out access is 330' from the interchange intersection and 660' for left-turn access. These guidelines should be followed in this scenario. It appears the current access for Pilot may violate this requirement.
  - Merrisa Marin from ADOT ROW pointed out that if the only ingress/egress to a property is removed, then the property must be considered a total take. It is against the law to take property in order to provide access to another property (referring to the homes north of the Pilot). If no other options can be developed, both the Pilot and the Triple T would be total takes. Paul noted that Triple T has a large property and their main access can shift north to avoid the access concern or property take. Merissa suggested she sit down with the design team to go over the options in this area.
  - It was noted that a large freight complex (Freightliner of Arizona) is located behind the Pilot and utilizes the Pilot access. There is a lot of truck traffic in this area. It was asked if they could have access via the frontage road, but Paul pointed out that the frontage road is being taken out of service.
  - The subdivision to the north also has access to Craycroft Road via the same driveway used by Pilot. Eliminating that access would have more severe consequences. The design team will investigate the operations at this access to see if the existing access can remain.
  - It was brought up that there will soon be an increase in the need for truck parking as new regulations will require electronic devices in trucks which limit how much they can drive without taking a break. It may be worth a conversation with Pilot and Triple T to see what their forecasts are, as this regulation takes effect this December.
- Craycroft Road (south side): The EB frontage road is being removed which eliminates some accesses for businesses and homes. The businesses have other access points, so those are not a concern. The

homes have no other access point, so the team is proposing that Craycroft Road be widened and an access onto Craycroft Road be provided for these homes.

- Wilmot Road to Kolb Road: A new development (La Estancia de Tucson) is being proposed on the north side of I-10. This development surrounds three small properties with cell towers and communications buildings which currently have access to the frontage road. Since the frontage road is being taken out of service, access needs to be provided for these properties. There may be an easement through the development to two of the properties which can be used for access, but the cell tower may still not have access. The cell tower property will only be impacted if Alternative IV is selected. If Alternative I is selected, the cell tower property can remain in place and still have access.
  - Someone asked if the cell tower would encroach into the roadway clear zone. Paul indicated that if needed, barrier protection would be provided. The tower itself likely has its own clear zone requirement, and the roadway may need to be outside that clear zone. If that is the case, the tower may need to be relocated.

Brad briefly went over the project schedule. Plan production has begun for the DCR so cost estimates can be prepared. Environmental efforts are underway and will continue for a few months. The next progress meeting is scheduled for October 25th, 2017 in the same conference room as this meeting. A public information meeting is tentatively scheduled for early December to present the two alternatives. This meeting will solicit feedback from the public before the initial DCR is published. The draft DCR and EA is scheduled to be submitted at the end of 2017. Comments from the public meeting will be incorporated into the final DCR and EA.

Sarah Karasz was asked if she has heard back from DMAFB regarding a cooperating agency agreement, but she has not heard from them yet and agreed to reach out to them again.

Brad mentioned that the team has developed a traffic simulation model to analyze the operations of the freeway, ramps, and intersections. He presented the preliminary results of the analysis, which may change as adjustments are made to the network as design progresses. For Alternative I, the freeway mainline is operating at LOS C or better in both the AM and PM peak hour for the year 2040. For Alternative IV, the freeway mainline and CD roads are all operating at LOS C or better in both the AM and PM peak hour for the year 2040, with the exception of the WB mainline between Alvernon Way and Country Club Road which operates barely within the range of LOS D. However, LOS D is still within the required threshold for an urban freeway system. All of the interchange intersections operate at LOS C or better in both the AM and PM peak hour for both Alternative I and Alternative IV, with the exception of 6th Avenue which operates at LOS D in the PM peak hour for both alternatives. Again, LOS D is still acceptable and within the required threshold. These results show that the proposed roadway system will operate extremely well in the design year of 2040, but also beyond that. The LOS results for Alternatives I and IV will be presented along with the No Build LOS in the Design Concept Report.

Related to project communications, Brad reminded attendees of the project website. All documents related to this project from the very beginning are posted on the website including meeting minutes, exhibits, and project deliverables. This site is intended for use by the study team only. The login information is available in the meeting presentation slides. There is a separate website for public use with information related to the project. The content on the public website is out of date, however, ADOT will be updating it soon.

- Study Team Website: www.jacobsaz.com
  - Login: I-10 Corridor
  - Password: Empirita

- Public Project Website:
  http://www.azdot.gov/planning/transportation-studies/i-10-and-sr-210-feasibility-study

ACTION ITEM LIST

- The Jacobs team will continue to pursue the key issues discussed in this meeting to define the critical elements of this study as early as possible.
- Jacobs to contact Steve Wilson from Pima County regarding access at the Pilot truck stop, as they are currently looking into that area.
- The Jacobs traffic team will look into the Pilot access to Craycroft Road to see if traffic operations can be analyzed. They will investigate the feasibility of maintaining the current access and whether it would negatively affect operations, and also whether that access could remain as full-access or if it would need to be right-in-right-out only.
- Sarah Karasz will reach out to DMAFB again regarding the cooperating agency agreement
- Stakeholders are encouraged to review and comment on the meeting minutes to ensure accuracy.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

August 8, 2017

TO: **Meeting Attendees**
Rudy Perez, ADOT Project Manager
Merrisa Marin, ADOT R/W Project Management Section Coordinator
Jim Walcutt, ADOT R/W Review Appraiser
Laura Gilbreath, ADOT R/W Acquisition Manager
Richard Erickson, ADOT R/W Project Management
Charlene Mullis, ADOT R/W
Geoff Holloway, ADOT R/W
Jim Stoleson, ADOT R/W
Michael Mayes, ADOT R/W Manager
Steve Channer, ADOT R/W
John Eckhardt, ADOT R/W
Michael Craig, ADOT R/W
Brad Olbert, Jacobs Project Manager

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
R/W COORDINATION MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The coordination meeting was held at 2:00 PM August 8, 2017 at the ADOT Engineering Building in the R/W Large Conference Room. The meeting ended at 3:40 PM.

SUMMARY

Rudy Perez, ADOT Project Manager opened the meeting at 2:00 PM. Self-introductions were made by all attendees.

Brad Olbert, Jacobs Project Manager, presented an overview of the project covering the project area, the project purpose and need, the two build alternatives and the project schedule. One hard set of the preliminary concepts for the two build alternatives showing the R/W takes was provided to the group. A PDF copy of the

two alternatives was provided to Rudy Perez for distribution to individuals needing the information. In addition, four hard copies of a list of all parcels requiring right of way takes was provided to the group. The list identified the parcel number, owner, address and the amount of take required for each alternative. A PDF copy of the list was provided to Rudy Perez for distribution to those needing the information. The excel file of the list was requested. The file will save the R/W Group the time to recreate the file. They will use the excel file to add their information.

Brad walked the group through Alternative I identifying takes and unique issues. There were several locations where guidance was requested where access was an issue and how best to handle a possible right of way take. Laura Gilbreath requested a list of those locations needing a response. Alternative IV was not covered but the takes and issues are similar to Alternative I.

Mike Mayes requested electronic project files of the two alternatives from Jacobs. This will make their work easier to develop the cost estimate for the takes. Jacobs will forward the information to the group using a file transfer link. Jacobs requested the right of way estimate by November 1st. Mike said this type of request is not uncommon and they will provide us the information by that date.

Brad Olbert (Jacobs) can be reached at 602-530-1670 or brad.olbert@jacobs.com if you have questions or need additional information.

ACTION ITEM LIST

- Jacobs to forward excel file of the right of way takes for the two alternatives. Note: this item was completed 8/8/17.
- Jacobs to forward electronic project files for the two alternatives. Note: this item was completed 8/8/17.
- Jacobs will identify locations where guidance is needed on the best way to handle access issues vs taking the parcel.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

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205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

August 22, 2017

TO: Meeting Attendees
Rudy Perez, ADOT Project Manager**
Sarah Karasz, ADOT Senior Environmental Planner**
Tom Deitering, FHWA Project Delivery Team Leader
Ammon Heier, FHWA Area Engineer
Tremaine Wilson, FHWA Environmental Coordinator**
Mike Dawson, EcoPlan Environmental Manager
Joe D'onofrio, Jacobs Environmental Manager
Brad Olbert, Jacobs Project Manager

** Attended via teleconference

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
FHWA I-10/Craycroft Road Coordination Meeting Notes
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The coordination meeting was held at 1:00 PM August 22, 2017 at the FHWA office conference room. The meeting ended at 2:30 PM.

SUMMARY

Rudy Perez, ADOT Project Manager opened the meeting at 1:00 PM. Self-introductions were made by all attendees.

Brad Olbert, Jacobs Project Manager, presented an overview of the I-10/Craycroft Road TI area. Handouts were provided that included a meeting agenda, vicinity map, city limits map, demographics information, RDG Access Control guidelines, summary of options to consider for changes to access control north of the TI that included photos of the area, and two concept drawings to discuss. The Craycroft Road TI is located within the jurisdiction of Pima County. The area bounded by I-10 on the south, the Julian Wash on the north, Valencia Road on the west and Wilmot Road on the east is known as "Littletown".

Traffic operations north of the interchange have deteriorated with recent developments and it was clear that additional improvements will be needed to make sure the north side of the TI will function well in the future. If no improvements are made the LOS will continue to deteriorate as traffic volumes increase. Travel Plaza Way (located approximately 320' north of the I-10 westbound ramps) provides access to a Pilot Travel Center (truck stop), Freightliner of Arizona (a truck service center) and approximately 1500 residences all located to the east of Craycroft Road. The Tucson Truck Terminal (known as the Triple T Truck Stop) is located on the west side of Craycroft Road just to the north of I-10. Circle K and an RV Park with approximately 150 parking spots rounds are also present on the west side of Craycroft Road. North of Littletown Road there is an elementary school, a middle school and the Thomas Jay Regional Park. Craycroft Road stops at Littletown Road because Julian Wash is located an eighth of a mile to the north of Littletown Road.

The Littletown area to the north of I-10 is isolated by the Julian Wash and the UPRR which greatly reduces the area served by the Craycroft Road TI. The Littletown area has access to I-10 at three locations, the Valencia Road TI to the west, Craycroft Road TI to the south and Avocet Drive provides access to the Wilmot Road TI to the east.

Mike Dawson with EcoPlan went over the demographics of the area. He identified the area as having income below the state average, a higher percentage of minorities, housing values were below the state average, and approximately 80% of the residential homes were being rented.

The group went over ADOT's Roadway Design Guidelines regarding access control. Tom Deitering said FHWA and ADOT worked together on the new guideline. FHWA expected the guidelines to be followed to minimize access conflicts in the future as traffic volumes increase. Littletown is an Environmental Justice concern.

Brad went over a couple of quick sketches that realigned Elvira Road to connect to Craycroft Road about 600 feet north of the I-10 ramps. A number of residents would be affected.

The Littletown area has many homes that were built over fifty years ago and many are potential historic structures. Tom said the historic element will affect the alternative selection process. It appears that meetings with the businesses and residents on the access control along Craycroft Road will be needed. Access control south of the interstate should also be looked at as there are other businesses that could be purchased and developed like the Pilot Center on the north side of I-10.

ACTION ITEM LIST

- Jacobs to provide a draft scope of work for the additional work at the I-10/Craycroft Road TI.
- Jacobs to work on a couple of alternatives to help identify the access control issues.
- Meet with the Southcentral District to discuss the access control issue, potential alternatives and the need for additional public involvement.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

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Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

October 12, 2017

TO: Meeting Attendees
Rudy Perez, ADOT Project Manager
Sarah Karasz, ADOT Senior Environmental Planner
Rod Lane, ADOT Southcentral District Engineer
James Gomes, ADOT Southcentral Regional Traffic Engineer
Maria Altemus, EcoPlan Environmental Planner
Mike Dawson, EcoPlan Environmental Manager
Brad Olbert, Jacobs Project Manager

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
ADOT Coordination Meeting - I-10/Craycroft Road Access Control
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The coordination meeting was held at 1:00 PM October 12, 2017 at the ADOT Southcentral conference room. The meeting ended at 2:10 PM.

SUMMARY

Rudy Perez, ADOT Project Manager opened the meeting at 1:00 PM. Self-introductions were made by all attendees.

Brad Olbert, Jacobs Project Manager, presented an overview of the I-10/Craycroft Road TI area. Handouts were provided that included a meeting agenda, vicinity map, city limits map, Roadway Design Guidelines (RDG) Access Control guidelines, summary of options to consider for changes to access control north of the TI that included photos of the area, and three concept drawings to discuss. The area bounded by I-10 on the south, the Julian Wash on the north, Valencia Road on the west and Wilmot Road on the east is known as "Littletown".

Traffic operations north of the interchange have deteriorated with recent developments and additional improvements may be needed to make sure the north side of the TI will function through the 2040 design year. If no improvements are made the LOS will continue to deteriorate as traffic volumes increase. Travel Plaza Way (located approximately 320' north of the I-10 westbound ramps) provides access to a Pilot Travel Center (truck stop), Freightliner of Arizona (a truck service center) and approximately 1500 residences all located to

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the east of Craycroft Road. Freightliner has additional property to expand into. The Tucson Truck Terminal (known as the Triple T Truck Stop) is located on the west side of Craycroft Road just to the north of I-10. Circle K and an RV Park with approximately 150 parking spots rounds are also present on the west side of Craycroft Road. North of Littletown Road there is an elementary school, a middle school and the Thomas Jay Regional Park. Craycroft Road stops at Littletown Road because Julian Wash is located an eighth of a mile to the north of Littletown Road.

The Littletown area to the north of I-10 is isolated by the Julian Wash and the UPRR which limits the area served by the Craycroft Road TI. The Littletown area has access to I-10 at three locations, the Valencia Road TI to the west, Craycroft Road TI to the south and Avocet Drive provides access to the Wilmot Road TI to the east.

Mike Dawson with EcoPlan went over the demographics of the area. He identified the area as having income below the state average, a high percentage of minorities and housing values were below the state average (approximately $80,000).

Brad presented a map that showed the Craycroft Road TI being located within the jurisdiction of Pima County (see attachments). Mike Dawson said the City of Tucson council recently voted to annex the Craycroft Road area north of I-10. The City wanted the tax revenue brought in by the truck stops. The annexation would be final in 30 days.

The group went over ADOT's Access Control from the Roadway Design Guidelines (see attachments). For existing conditions right-in and right-out access is acceptable within 100' of the TI ramp returns. Brad said three options were developed for discussion purposes and illustrates access control out to 660'.

Option 1 (see attachments) – Access onto Travel Plaza Way will be limited to only a right-in turning movement. Traffic wanting access to Craycroft Road from the east will use the realigned Elvira Road or Burcham Avenue to Elvira Road. Elvira Road would connect to Craycroft Road 660' north of the east side ramp return. Access to Craycroft Road from the Triple T Truck Stop would be at the realigned Elvira Road. Circle K will utilize driveways for access to Craycroft Road. A raised median island along Craycroft Road would preclude left-turn movements from the I-10 ramps north to Elvira Road. North of Elvira Road left-turn movements will be allowed from a two-way center left-turn lane. Light green areas shown on the concept drawing indicate parcels with structures that may be eligible for designation as historic structures. Realigning Elvira Road using reverse curves takes out a significant number of homes. With this option truck traffic from the Pilot Station or Freightliner would be routed north on Burcham Avenue to make a left-turn movement onto Elvira Road and then another left-turn onto Craycroft Road.

For all of the options with Alternative I, the I-10 westbound ramp would act as a frontage road from Craycroft Road to Valencia Road. Thus, the Triple T Truck Stop would have right-in/right-out access along the westbound ramp. For Alternative IV, the westbound ramp would not be a frontage road thus access to the Triple T Truck Stop would be from Craycroft Road.

For all of the options, the drainage flow that approaches Craycroft Road near Travel Plaza Way will be routed under Craycroft Road using the same size culvert structure that conveys flow under Elvira Road. The flow will be routed to the north along the west side of Craycroft Road in a concrete lined channel discharging into an existing earthen channel located immediately west of the intersection of Craycroft Road and Dream Street. A drop inlet will be used to set the new culverts a couple of feet under the current Craycroft Road dip crossing to minimize raising the profile grade along Craycroft Road as much as possible.

Option 2 (see attachments) – Access onto Travel Plaza Way from Craycroft Road will be limited to only a right-in turning movement. Traffic wanting access to Craycroft Road from the east will use Burcham Avenue to a new short segment of Elvira Road. Elvira Road would connect to Craycroft Road 660' north of the east side ramp return. Access to the west side would be at the intersection of Craycroft Road and Elvira Road. Circle K will utilize driveways for access to Craycroft Road. A raised median island would preclude left-turn movements from the I-10 ramps north to Elvira Road. North of Elvira Road a two-way center left-turn lane would be used for access. The short segment of Elvira Road only takes two lots. With this option truck traffic from the Pilot Station or Freightliner would be routed north on Burcham Avenue to make a left turn onto Elvira Road and then another left-turn onto Craycroft Road.

Option 3 (see attachments) – Access onto Travel Plaza Way will be limited to right-in and right-out turning movements. Traffic wanting to access Craycroft Road from the east to go south from Travel Plaza Way will use a roundabout to make a U-turn or just pass through the roundabout if coming from the north. Access from the west side would utilize the roundabout or driveways from businesses like Circle K. A raised median island would preclude left-turn movements from the ramps north to the roundabout. North of the roundabout a two-way left-turn center lane would be used for access. Using the roundabout should not remove any homes. With this option truck traffic from the Pilot Station or Freightliner would make a right turn onto Craycroft Road and then make a U-turn at the roundabout to return to I-10. Residential lots located near the roundabout would share a common driveway with adjacent lots to keep the number of driveways to a minimum. A significant amount of right-of-way will be needed from the Triple T Truck stop.

Rod Lane pointed out that Options 1 and 2 would route truck traffic through the residential area. This may be unacceptable to the neighborhood unless the homes affected by the traffic are purchased and noise walls are constructed to help isolate the noise and visual impact. Rod requested a "Draft" watermark be added to the Options. Note: The watermark has been added to the options.

Brad said we will need to get new traffic and tuning counts at the Craycroft Rd TI. The new Pilot Truck Stop and the Freightliner service center have changed the traffic patterns since the area was modeled with the Feasibility Report. VISSIM modeling will be prepared to look at the impacts to existing conditions and with the proposed changes (Options 1, 2, and 3) to the interchange.

Brad said he would like to delay presenting Alternatives I and IV to the public until the access issue has been worked out with the Littletown community. We would like to have a separate public meeting for the Littletown area to get their input and work out a good solution for them. This will avoid having these issues take up time in the public meetings designed to present Alternatives I and IV. Rod Lane said we need to schedule a meeting with the City of Tucson. The City spent a lot of time with the neighborhood during the annexation process and will know how best to prepare the public involvement plan for the neighborhood.

ACTION ITEM LIST

- Rudy Perez will set up a meeting with the City of Tucson to discuss the additional access control work needed at the I-10/Craycroft Road TI and to discuss the public involvement needs for the area.
  Note: The meeting has been scheduled for Monday October 23rd, 2017 at 10 am at the District office.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

Meeting Notes I-10 / Barraza-Aviation Pkwy (SR 210)
Design Concept Report & Environmental Assessment

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

TEP COORDINATION MEETING NOTES (Revised)

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

October 12, 2017

TO: **Meeting Attendees**
Rudy Perez, ADOT Project Manager
Sarah Karasz, ADOT Senior Environmental Planner
Priscilla Thompson, ADOT District Utility Coordinator
Renee Darling, Tucson Electric Power Company Senior Environmental & Land Use Planner
Brad Olbert, Jacobs Project Manager

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
TEP I-10 Coordination Meeting Notes
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The coordination meeting was held at 2:10 PM October 12, 2017 at the ADOT Southcentral District conference room. The meeting ended at 3:10 PM.

SUMMARY

Rudy Perez, ADOT Project Manager opened the meeting at 2:10 PM. Self-introductions were made by all attendees.

Brad Olbert, Jacobs Project Manager, presented an overview of the I-10, I-19 to Kolb Road and SR 210 project area. Brad handed out packets of information which included seven plan sheets that showed Alternative I along I-10 from the Country Club Road TI to the Valencia Road TI and along SR 210. In addition, roadway profile information was provided to Renee for all of the I-10 mainline, I-19 to Kolb Road and SR 210.

At the last TEP coordination meeting, TEP requested a route for their service vehicles to use if UPRR train cars would cause a blockage of both Irvington Road and Ajo Way. Currently TEP would use Contractors Way to go north up to Alvernon Way. Brad showed Renee a paved maintenance roadway that utilizes parts of the old northbound segment of Contractors Way as a means to go north to Alvernon Way. The maintenance roadway will have locked gates so the roadway is not used by the public, however, the roadway would be available to bicycles. TEP would be given a set of keys for their emergency use of the roadway. A similar maintenance

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roadway is located along the UPRR railroad right-of-way. This paved maintenance roadway also utilizes parts of the old southbound segment of Contractors Way as a means for access to the area near the railroad. TEP and Tucson Water will have access to the roadway by means of a locked gate. Sarah Karasz, ADOT Senior Environmental Planner, said from ADOT's perspective the northbound maintenance roadway should not be labeled a bicycle route. Bicycle routes can become part of the formal bicycle system and can fall into a Section 4(f) category for parks. Sarah will forward information to Jacobs on this issue. Jacobs will be careful to label the route as a maintenance road.

Renee Darling provided handout information for two planning projects. The first planning project involves master planning for the Irvington Campus. The campus will upgrade and relocate its existing 138 kV substation and extend several 138 kV transmission lines within the campus. TEP is planning to construct new reciprocating internal combustion engine (RICE) generators on the Irvington Campus. TEP also plans to construct a new office building on the site and potentially widen Irvington Road to facilitate employee traffic turning movements into the site. One 138 kV transmission line crosses Alvernon Way along Irvington Road. TEPs main concern with the transmission line is to provide adequate clearance for the 138kV transmission line over our improvements and needed roadway profile information. Brad went over the roadway plan and profile information provided and showed Renee how to find the information TEP needed.

Renee covered the second planning project which involved a new 138 kV transmission line route that needs to go from their new 138 kV switching yard to a proposed substation located near 36th Street and Kino Parkway. There were a number of routes that could be taken including one through the Alvernon Way / I-10 system interchange. Brad said he will provide additional ramp profile information in the interchange area because the ramps are at different elevations than the I-10 mainline. Jacobs is developing a drainage concept using retention basins that are not shown in the plan views provided. Power poles could potentially be located within the basins the foundations will need to be a few feet taller and deeper to account for the water. Jacobs will provide the drainage concept when it is available.

Renee requested that someone from ADOT be present at the stakeholder meeting on October 23rd to represent ADOT's position on their facilities including the planned improvements to I-10 and SR 210. Pricilla Thompson said she would be available for the meeting. Renee also requested a letter of support from ADOT for the RICE project. The letter should identify the need for coordination with power transmission lines crossing the proposed I-10 / SR 210 alignments.

ACTION ITEM LIST

- Jacobs to provide additional I-10 to SR 210 ramp profile information as soon as it becomes available to TEP.
- Jacobs to provide the drainage design concept as soon as it is available to TEP.
- Sarah Karasz to provide Jacobs with information regarding labeling of bicycle routes within ADOT right-of-way.
- Rudy Perez will author the letter of support for the RICE project and reach out to find the appropriate individual within ADOT to sign the letter.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

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Meeting Notes I-10 / Barraza-Aviation Pkwy (SR 210)
Design Concept Report & Environmental Assessment

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

October 30, 2017

TO: **Meeting Attendees**
Rudy Perez, ADOT Project Manager
Rod Lane, ADOT Southcentral District Engineer
James Gomes, ADOT Southcentral Regional Traffic Engineer
Kimberly Noetzel, ADOT Communications Manager
Robin Raine, City of Tucson, Deputy Director, Tucson Department of Transportation
Andy McGovern, City of Tucson, Engineering Manager, Tucson Department of Transportation
Steve Wilson, Pima County, Project Manager, Department of Transportation
Bill Strickler, Pima County, Civil Engineering Manager, Department of Transportation
Maria Altemus, EcoPlan Environmental Planner
Mike Dawson, EcoPlan Environmental Manager
Brad Olbert, Jacobs Project Manager

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
ADOT Coordination Meeting - I-10/Craycroft Road Access Control
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The coordination meeting was held at 10:00 AM October 30, 2017 at the ADOT Southcentral District conference room. The meeting ended at 11:15 AM.

SUMMARY

Brad Olbert, Jacobs Project Manager opened the meeting at 10:10 AM. Self-introductions were made by all attendees.

Brad presented an overview of the I-10/Craycroft Road TI area. Handouts were provided that included a meeting agenda, vicinity map, city limits map, Roadway Design Guidelines (RDG) Access Control, summary of options to consider for changes to access control north of the TI that included photos of the area, and three concept drawings to discuss.

Traffic operations north of the interchange have deteriorated with recent developments and additional improvements may be needed to make sure the north side of the TI will function through the 2040 design year.

If no improvements are made the LOS will continue to deteriorate as traffic volumes increase. Travel Plaza Way (located approximately 320' north of the I-10 westbound ramps) provides access to a Pilot Travel Center (truck stop), Freightliner of Arizona (a truck service center) and approximately 1500 residences all located to the east of Craycroft Road. Freightliner has additional property to expand into. The Tucson Truck Terminal (known as the Triple T Truck Stop) is located on the west side of Craycroft Road just to the north of I-10, Circle K and an RV Park with approximately 150 parking spots rounds are also present on the west side of Craycroft Road. North of Littletown Road there is an elementary school, a middle school and the Thomas Jay Regional Park. Craycroft Road stops at Littletown Road because Julian Wash is located an eighth of a mile to the north of Littletown Road.

The Littletown area to the north of I-10 is isolated by the Julian Wash and the UPRR which limits the area served by the Craycroft Road TI. The Littletown area has access to I-10 at three locations, the Valencia Road TI to the west, Craycroft Road TI to the south and Wilmot Road TI to the east.

Mike Dawson with EcoPlan went over the demographics of the area. He identified the area as having income below the state average, a high percentage of minorities and housing values were below the state average (approximately $85,000). A high percentage of the homes in the area are being rented approx. 40%.

Brad presented a map that showed the Craycroft Road TI being located within the jurisdiction of Pima County. However, the City of Tucson council recently voted to annex the Craycroft Road area north and south of I-10. Robin Raine forwarded a figure that identified the annexation area (see attachment). The annexation will be final in about 2 weeks. Robin was asked about the annexation and how acceptable the property owners were to being annexed. Robin said there were only a few against the annexation but they received over 700 property owners agreeing to be annexed. The City stopped their annexation outreach efforts once they had enough property owners that were in favor of the annexation. The other 600 property owners out of 1300+ were not necessarily against the annexation. They just didn't respond that they were in favor of the action.

Robin asked Steve Wilson about the design changes Pima County had worked on for Craycroft Road. The plans for the work were about 95% complete. It included changes to the return radius to Travel Plaza Way so that two semis could enter and leave Travel Plaza Way at the same time. The work also involved changes to the sidewalks. Pima County tried to purchase R/W from the Triple T Truck Stop but they refused. Pima County wanted to move a bus stop located near the Circle K south closer to the I-10 ramps. Fifty to sixty persons use the current stop. Triple T thought moving the bus stop closer to where trucks were turning into the truck stop would not be desirable.

The group went over ADOT's Access Control from the Roadway Design Guidelines (see attachments). For existing conditions right-in and right-out access is acceptable between 100' to 660' of the TI ramp returns. Brad said three options were developed for discussion purposes and illustrates access control out to 660'.

Option 1 (see attachments) – Access onto Travel Plaza Way will be limited to only a right-in turning movement. Traffic wanting access to Craycroft Road from the east will use the realigned Elvira Road or Burcham Avenue to Elvira Road. Elvira Road would connect to Craycroft Road 660' north of the east side ramp return. Access to Craycroft Road from the Triple T Truck Stop would be at the realigned Elvira Road. Circle K will utilize driveways for access to Craycroft Road. A raised median island along Craycroft Road would preclude left-turn movements from the I-10 ramps north to Elvira Road. North of Elvira Road left-turn movements will be allowed from a two-way center left-turn lane. Light green areas shown on the concept drawing indicate parcels with structures that may be eligible for designation as historic structures. Realigning Elvira Road using reverse curves takes out a significant number of homes. With this option truck traffic from

the Pilot Station or Freightliner would be routed north on Burcham Avenue to make a left-turn movement onto Elvira Road and then another left-turn onto Craycroft Road.

For all of the options with Alternative I, the I-10 westbound ramp would act as a frontage road from Craycroft Road to Valencia Road. Thus, the Triple T Truck Stop would have right-in/right-out access along the westbound ramp. For Alternative IV, the westbound ramp would not be a frontage road thus access to the Triple T Truck Stop would be from Craycroft Road.

For all of the options, the drainage flow that approaches Craycroft Road near Travel Plaza Way will be routed under Craycroft Road using the same size culvert structure that conveys flow under Elvira Road. The flow will be routed to the north along the west side of Craycroft Road in a concrete lined channel discharging into an existing earthen channel located immediately west of the intersection of Craycroft Road and Dream Street. A drop inlet will be used to set the new culverts a couple of feet under the current Craycroft Road dip crossing to minimize raising the profile grade along Craycroft Road as much as possible.

Option 2 (see attachments) – Access onto Travel Plaza Way from Craycroft Road will be limited to only a right-in turning movement. Traffic wanting access to Craycroft Road from the east will use Burcham Avenue to a new short segment of Elvira Road. Elvira Road would connect to Craycroft Road 660' north of the east side ramp return. Access to the west side would be at the intersection of Craycroft Road and Elvira Road. Circle K will utilize driveways for access to Craycroft Road. A raised median island would preclude left-turn movements from the I-10 ramps north to Elvira Road. North of Elvira Road a two-way center left-turn lane would be used for access. The short segment of Elvira Road only takes two lots. With this option truck traffic from the Pilot Station or Freightliner would be routed north on Burcham Avenue to make a left turn onto Elvira Road and then another left-turn onto Craycroft Road.

Option 3 (see attachments) – Access onto Travel Plaza Way will be limited to right-in and right-out turning movements. Traffic wanting to access Craycroft Road from the east to go south from Travel Plaza Way will use a roundabout to make a U-turn or just pass through the roundabout if coming from the north. Access from the west side would utilize the roundabout or driveways from businesses like Circle K. A raised median island would preclude left-turn movements from the ramps north to the roundabout. North of the roundabout a two-way left-turn center lane would be used for access. Using the roundabout should not remove any homes. With this option truck traffic from the Pilot Station or Freightliner would make a right turn onto Craycroft Road and then make a U-turn at the roundabout to return to I-10. Residential lots located near the roundabout would share a common driveway with adjacent lots to keep the number of driveways to a minimum. A significant amount of right-of-way will be needed from the Triple T Truck stop. Rod Lane said the southbound left-turn into Travel Plaza Way should be removed. Jacobs will make the change.

Steve Wilson asked if a circulation route from the east end of Travel Plaza Way could be extended to the east edge of Freightliner parcel and then head south to the I-10 Frontage Road. This would allow trucks entering Travel Plaza Way to route back to Craycroft Road avoiding the left-turn onto Craycroft Road. James Gomes said this would violate the current access control so that will need to be adjusted to make this option work. The roundabout option could still be used but it would provide an alternative route to making the U-turn via the roundabout. Jacobs will look into this option.

The group noticed that Options 1 and 2 would route truck traffic through the residential area. This could be unacceptable to the neighborhood unless the homes affected by the traffic are purchased and noise walls are constructed to help isolate the noise and visual impact. Mike Dawson pointed out that Environmental Justice

areas cannot be taken if there are reasonable and prudent alternatives to avoid taking them. Lower cost is not an acceptable reason to take the homes in lieu of taking commercial property. This would rule out Options 1 and 2.

Brad said we will need to get new traffic and tuning counts at the Craycroft Rd TI. The new Pilot Truck Stop and the Freightliner service center have changed the traffic patterns since the area was modeled with the Feasibility Report. VISSIM modeling will be prepared to look at the impacts to existing conditions and with the proposed changes to the interchange.

Brad said he would like to delay presenting Alternatives I and IV to the public until the access issue has been worked out with the Littletown community. The group discussed the public involvement approach moving forward. Brad said he would like to have a separate public meeting for the Littletown area to get their input regarding access control. Hopefully this will avoid having these issues take up time in the public meetings designed to present Alternatives I and IV. Rudy Perez brought up needing meetings with Triple T Truck Stop, Pilot Travel Center and Freightliner of Arizona. It was concluded that we would select a day for Triple T Truck Stop, Pilot Travel Center and Freightliner of Arizona to meet separately with the design team at ADOT and go over the two alternatives and the access control options for Craycroft Road. A public meeting with the neighborhood would follow at a later date.

Schedule wise, the public involvement for the Craycroft Road TI would conclude in January with the Public Information Meeting for the I-10/SR 210 study taking place in April. Kim Noetzel said she will need to meet with HDR (Public Involvement Consultant) to discuss the scope and get a proposal.

Rudy summarized the meeting by identifying the roundabout option and the circulation option using Travel Plaza Way connecting to the westbound off-ramp as the options for Jacobs to develop moving forward. Meetings will be set up with Triple T Truck Stop, Pilot Travel Center and Freightliner of Arizona. A public meeting will also be set up to discuss the access control changes to the Craycroft Road TI.

ACTION ITEM LIST

- Rudy Perez will set up a meeting with ADOT Communications on the PI scope.
- Rudy Perez will set up a follow-up meeting with FHWA to discuss the access control approach needed at the I-10/Craycroft Road TI and to discuss the public involvement needs for the area.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

PROGRESS MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

November 8, 2017

TO: **Meeting Attendees**

Mark Hoffman, ADOT Multimodal Planning***
Carlos Lopez, ADOT Major Projects Group***
Joan Lovell, ADOT ITS***
Rudy Perez, ADOT Project Manager
Taiping Tang, ADOT Bridge Group***
Sebastian Tonazzi, ADOT Community Relations
Jim Walcutt, ADOT R/W Review Appraiser
Emily Dawson, ADOT Southcentral District
James Gomes, ADOT Southcentral District Regional Traffic Engineer
Rod Lane, ADOT Southcentral District Engineer
Richard La Pierre, ADOT Southcentral District Permits Supervisor
Priscilla Thompson, ADOT Southcentral District Utility Engineering Coordinator
Ammon Heier, FHWA Area Engineer
Micah Horowitz, ASLD Planning and Engineering***
Alex Kuchansky, ASLD Engineer***
Sixto Molina, City of South Tucson City Manager
Robin Raine, City of Tucson Assistant Transportation Director
Bruce Vaughn, U of A Planning Design & Construction
Carlos Valdez, Sunnyside Unified School District Transportation & Maintenance Manager
Scott Robidoux, Tucson Airport Authority Planner
Maria Altemus, EcoPlan Environmental Planner
Mike Dawson, EcoPlan Senior Environmental Planner
Paul Black, Jacobs Roadway***
Judah Cain, Jacobs Roadway***
Joe D'Onofrio, Jacobs Environmental
Brad Olbert, Jacobs Project Manager
Sandy Thoms, Jacobs Traffic***
Chris Blue, Pima Association of Governments Transportation Planner***
Aichong Sun, Pima Association of Governments
Seth Chalmers, Pima County Traffic Engineering
Rick Ellis, Pima County Engineering

*** Attended via teleconference

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
PROGRESS MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The Progress Meeting for this project was held at 1:00 PM November 8, 2017 at the ADOT Southcentral District Conference Room. Teleconferencing was available via WebEx for attendees offsite. The meeting was adjourned at 2:30 PM.

The meeting was well represented by agencies interested in improving the I-10 corridor from Junction I-19 to Kolb Road and providing a connection for SR 210 to I-10. Representatives included ADOT, Federal Highway Administration (FHWA), Arizona State Land Department (ASLD), City of Tucson, City of South Tucson, University of Arizona, Sunnyside Unified School District, the University of Arizona, Tucson Airport Authority, Pima County, and Pima Association of Governments (PAG).

SUMMARY

Rudy Perez, ADOT Project Manager, opened the meeting at 1:00 PM. Introductions were held for all attendees.

Brad Olbert, Jacobs Project Manager, shared that much has been done on the project since the last progress meeting, including coordination with many different agencies. Notes and figures from these meetings are posted on the study team project website. The following coordination meetings took place:

- *ADOT Right-of-Way*
  The ADOT ROW group developed a cost estimate for the acquisition of the proposed ROW takes. This cost is not included in the cost estimates that will be discussed in this meeting since the study team did not receive them in time.

- *Craycroft Road TI*
  The study team met with FHWA, ADOT Southcentral District, City of Tucson, and Pima County to discuss the options for addressing access control issues at the Craycroft Road TI. As discussed in the last progress meeting, there are truck stops and new businesses in the vicinity that will pose access control issues at the interchange that will affect not only those businesses, but also nearby residents. The study team plans to meet with the affected businesses and the public to fill them in on the project and get their input so that a reasonable solution can be reached. This will only include homes and businesses near the Craycroft Road TI and will happen before the public meeting for the entire project.

  The key dilemma at this interchange is that a full-access driveway/intersection is located too close to the I-10 ramps. ADOT requires that full-access driveways be at least 660' away from freeway ramps. The driveway in question is within this distance and provides access to residents as well as businesses. This is an issue for both Alternatives I and IV. A handful options were considered for remedying this:

- If this were to become a right-in-right-out access, traffic wanting to make a left turn would instead have to turn right and make a U-turn at the next available opportunity. This is problematic since a large number of trucks will be using this access.
- Another option would be to route all traffic through the subdivision to utilize an access farther from the interchange. This is not ideal as trucks would be driving through residential neighborhoods.
- Another option is to realign Elvira Road to be 660' away from the interchange ramps. This would require multiple residential property takes, many of which are homes that could potentially be historical buildings. The neighborhood in question is also a low-income neighborhood which would trigger environmental justice concerns. With these considerations in mind and if there is a reasonable and prudent alternative, the team does not want to take more properties to resolve this issue.
- Another alternative considered was to install a roundabout at least 660' to the north of the I-10 ramps. This would allow vehicles wanting to turn left out of Travel Plaza Way to turn right and make a U-turn at the roundabout to head southbound. This seems to be one of the most viable solutions.
- Pima County suggested installing a one-way loop road off Travel Plaza Way to allow traffic to get back on to the ramp. This alternative, along with the other viable options that will be presented to the local public, will be discussed more in detail later in the meeting.

- *Tucson Electric Power (TEP)*
  The study team met with TEP to discuss utility impacts. This was a very timely meeting because TEP is in the process of developing a master plan for modifying their campus in the vicinity of Irvington Road and Alvernon Way. Many of their facilities in place today will be relocated. They will be relocating a substation, installing a new generating station, and building a new tower for employees. This is convenient because now the study team can coordinate with TEP to ensure any right-of-way impacts can be addressed in their new site planning. TEP will also be relocating some transmission lines, so they will now be able to install them at an appropriate elevation to accommodate the future improvements from this project.

Brad provided a status of the project to date:

- Earthwork modeling is complete so the team has earthwork and retaining wall estimates.
- Work has progressed for the signing, ITS, and lighting design. Brad briefly showed the conceptual plans for the signing, pavement marking, lighting, and freeway management system (FMS) improvements. The FMS improvements will include dynamic message signs (DMSs), CCTV cameras, vehicle detection loops, wrong way vehicle detection, and ramp metering infrastructure. These concepts are available for both Alternative I and Alternative IV and have been reviewed by ADOT, FHWA, and ADOT Southcentral District.
- An initial onsite drainage concept was developed and quantities were used to help formulate the cost estimate, which will be discussed later.
- A preliminary bridge analysis is being conducted to determine the number and size of all necessary structures. This will help in developing an accurate cost estimate for structures in both alternatives. As part of this effort, the study team has been meeting with Pima County and the City of Tucson to ensure the bridges will meet their needs and accommodate any future expansion these agencies expect such as additional travel lanes, bike lanes, and sidewalks.

- Environmental efforts are ongoing. This work lags the roadway design efforts since they need to know the final footprint of the improvements. The initial HazMat report has been developed.
- Initial plan sheets have been developed for both alternatives. The roadway profiles and typical sections have also been developed for all the mainline sections and ramps. These documents will give a good idea of the number of lanes proposed in all locations, where the ramps are connecting, and so forth. While these documents say PRELIMINARY NOT FOR CONSTRUCTION OR RECORDING, it was requested that all of these documents also display the word DRAFT in a large and obvious location, just in case they make their way into public hands.
- An implementation plan will be developed for this project, but work on that has not yet started as more details of the project still need to be worked out. The project will need to be broken into segments to be built over time as funds become available. The plan will also discuss detours during construction and how traffic can be routed while this is being built. A meeting will be set up with Pima County and the City of Tucson to discuss this further.

Brad asked attendees to review the plans and documents on the team website. This is an opportunity to provide input prior to the initial DCR coming out. The access issues at Craycroft Road will cause about a 3-month delay in releasing the initial DCR. If anyone has comments on the plans anytime during that timeframe, the study team welcomes them and will incorporate them into the Initial DCR. It is expected that the corridor-wide public meeting will be held in April 2018 and the Initial DCR will be completed in the Summer of 2018 so that it can incorporate input from the public.

It was suggested that in order to provide access from Pilot to I-10, to route vehicles north on Craycroft Road up to Littletown Road which then ties into Valencia Road at a signalized intersection. Brad clarified that while this option would work, it is preferred to keep the trucks on Craycroft Road near the TI. Otherwise they would be driving through the residential neighborhood, by two schools, and a regional park which is not preferred. It was noted that traffic around these schools is problematic and that attempting to improve this area for through-traffic could potentially be opening a can of worms. Carlos Valdez with the Sunnyside Unified School District said a number of students walk along Craycroft Road and Littletown Road to get to the schools. Traffic around the schools is already a problem. Increasing the traffic would make the situation worse.

Paul Black, Jacobs roadway design lead, discussed the cost estimate for both alternatives. Quantities were developed for the ten highest-cost items for the project and are summarized for comparison. Paul pointed out that Alternative IV has consistently higher costs than Alternative I, and the current estimated difference in cost between the two alternatives is approximately $68 million. This is primarily due to the additional pavement, earthwork, and barriers necessary for the wider footprint of the CD system in Alternative IV. The CD system also requires larger bridges and additional traffic and FMS elements, which adds to the cost.

Right-of-way costs were not included in the cost estimate, as they were not yet available. Alternative I has 172 parcels with 140 acres to acquire, while Alternative IV has 186 parcels with 154 acres. The additional right-of-way necessary for Alternative IV will translate to a higher cost, and therefore the cost differential between the two alternatives will continue to increase.

The costs for utility relocation were estimated based on a rule of thumb that each interchange will require $5 million. There are 11 interchanges for each alternative, so it was estimated at $55 million for each alternative. These costs will be updated as the design progresses to reflect the best possible estimate.

There is an existing frontage road along I-10 between Valencia Road and Kolb Road. It was determined during the feasibility study that the frontage road, particularly in the eastbound direction, is underutilized and can be removed. The westbound frontage road will also be removed even though it has impacts to some parcels because the right-of-way is needed for mainline improvements. The parcel impacts are located in two general areas:

- *Between Valencia Road and Craycroft Road*
  There is vacant land on the north side of I-10 in which the sole access to the parcels is via the frontage road. Some of the parcels will be acquired for drainage basins, but there are still 11 parcels that would no longer have access depending on which alternative is selected:
  - For Alternative I, traffic at Craycroft Road wanting to get on westbound I-10 will take a ramp that goes through the Valencia Road interchange, traffic then gets onto I-10 via the Valencia Road on-ramp. This occurs because the weaving distance between the Craycroft Road and Valencia Road interchanges is too short to accommodate the projected traffic volumes. Therefore, the ramp then serves as a one-way frontage road. Access to the 11 parcels could then still be provided along that frontage road.
  - For Alternative IV, the CD system can accommodate the weaving maneuver between the Craycroft Road on-ramp and Valencia Road off-ramp. Therefore, no frontage road is being provided and there are 11 parcels that will need to be acquired due to lack of access.

  A possible solution to this access issue is tied to the Craycroft Road roundabout option discussed previously. The roundabout could serve a new roadway to the west that runs from Craycroft Road. In Alternative I it could tie into the long ramp/frontage road to provide an additional access to Valencia Road or westbound I-10. In Alternative IV it could continue farther west through the 11 parcels and tie into Valencia Road. The 11 parcels would then have access via that road and would no longer be total takes. The additional cost of this roadway would need to be evaluated relative to the right-of-way takes. It is expected that the cost to resolve this access issue will be more expensive in Alternative IV, which will further increase the differential in cost between the two alternatives.

  Rod Lane said the Craycroft Road westbound ramp should be called a frontage road and not a ramp for Alternative I. Access is not allowed for ramps but it is allowed for frontage roads. This should be discussed with FHWA to make sure they concur.

- *Between Wilmot Road and Kolb Road*
  On the north side of I-10, there are several parcels in which their only access is off the westbound frontage road. Most of the impacted parcels are vacant, but a few have already been developed. There is already a planned development called La Estancia PAD that is expected to have access to the frontage road. The impacts are expected to be the same between Alternatives I and IV, with the exception of one parcel that contains a cell tower. Access to this cell tower will differ between the two alternatives:
  - For Alternative I, the roadway widening does not impact the parcel, but new access will need to be provided to the cell tower via a new roadway segment.
  - For Alternative IV, the CD system encroaches into the cell tower which requires it to be relocated. One option is to do a partial take on the parcel and relocate the cell tower to the back of the parcel. The other option is to do a total take on the cell tower parcel. Costs for both options will be evaluated before making a decision.

Approximate costs to resolve the access issues in this location will be developed, but it is expected that Alternative IV will be more expensive, further increasing the cost differential between the two alternatives.

An evaluation matrix will be developed for the two alternatives, but cost is only one component of that matrix.

Brad discussed the current access issues at Craycroft Road. The study team has developed two options for addressing these issues, both of which employ a roundabout.

- Option 1 allows for northbound trucks on Craycroft Road to turn right on Travel Plaza Way. If they then want to get back on I-10, they can make a right onto northbound Craycroft Road and make a U-turn at the roundabout to take them to the I-10 on-ramps. Residential traffic will have access to Craycroft Road via Elvira Road and Travel Plaza Way. Trucks wanting to access Triple T will have full access via the roundabout as the west leg of the roundabout will serve that parcel. In Alternative I, the frontage road will provide additional access locations to Triple T, but those additional access points will not exist in Alternative IV. This may pose an issue and require a total take of the Triple T.
- Option 2 has all of the components of Option 1, but also has a one-way westbound connector road that connects from the southern terminus of Travel Plaza Way to the I-10 westbound off-ramp/frontage road. This would help reduce the number of trucks on Craycroft Road and within the roundabout. This concept has not yet been investigated with respect to traffic operations, but provides another option to consider.

Drainage improvements will be included with both proposed options. The roundabout diameter is currently proposed at 180' to accommodate larger trucks and lowboys. This poses some access issues to a Circle K gas station in the northwest corner of the proposed roundabout. This would need to be dealt with, but there are many options to consider that the study team will investigate further. Under both options, a small frontage road would be provided for the homes immediately east of the roundabout. They would have access to Craycroft Road via a driveway as shown in the provided exhibits. It is likely that no residential property takes would be necessary.

The question was raised on whether the study team considered utilizing Dream Street (parallel to and north of Elvira Road) for the primary residential access. It was mentioned that more residents are using Dream Street to gain access to Craycroft Road since the Pilot Travel Center was built. The intersection is now having congestion issues and should be improved. Brad indicated that had not been investigated, but the team will look into it. He indicated that new traffic counts will be collected and traffic circulation will be modeled to determine the impacts of the proposed alternatives.

It was suggested that under option 2, Elvira Road be connected to the new Travel Plaza Way connector road to allow residents to also utilize it and avoid Craycroft Road. It could then also be utilized by the residential subdivision to the east.

It was also suggested that under option 2, the new connector road could run from the cul-de-sac, between the Freightliner of Arizona and the Pilot businesses, and connect to the I-10 ramp/frontage road.

The connector road in option 2 will cause trucks to be accelerating and decelerating right behind some houses. Brad indicated that a sound wall may be necessary.

It was brought up that the restaurant within the Triple T is a popular attraction for residents and tourists, so that parcel sees regular vehicular traffic as well as heavy truck traffic.

These options will be investigated further, and a resolution will be made after getting input from the businesses and local residents. It was suggested to also include representatives from both of the nearby schools in the discussions. FHWA will also need to be included in the discussions when defining access to ramps/frontage roads.

The question was brought up about the implementation plan and the order that these various projects will come about. The region seems to be heavily focused on improving Kino Parkway, but that does not seem to be the best decision right now. Country Club Road would be a smarter option to improve first. It was pointed out that the Country Club Road TI is currently in the 5-year plan for design and right-of-way costs of $8 million, so it appears that interchange is in fact a priority right now. The implementation plan that will be developed as part of this project will help prioritize locations for construction and outline a logical progression of improvements.

Brad briefly went over the project schedule. The next progress meeting is tentatively scheduled for January 24, 2018 and the next project-wide public meeting will be in April 2018. The environmental studies and documentation will be prepared in June 2018, with the Initial DCR/Draft EA expected to be submitted around June 2018.

Related to project communications, Brad reminded attendees of the project website. All documents related to this project from the very beginning are posted on the website including meeting minutes, exhibits, and project deliverables. This site is intended for use by the study team only. The login information is available below. There is a separate website for public use with information related to the project, also listed below.

- Study Team Website: www.jacobsaz.com
  - Login: I-10 Corridor
  - Password: Empirita
- Public Project Website: http://www.azdot.gov/planning/transportation-studies/i-10-and-sr-210-feasibility-study

ACTION ITEM LIST

- The Jacobs team will continue to pursue the key issues discussed in this meeting.
- The Jacobs traffic team will continue investigating the access issues at Craycroft Road and meet with the public and appropriate stakeholders to come up with a viable solution.
- Stakeholders are encouraged to review the preliminary plans and documents on the study website and provide comments that can be incorporated prior to publishing the initial DCR.
- Stakeholders are encouraged to review and comment on the meeting minutes to ensure accuracy.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

PROGRESS MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

February 21, 2018

TO: **Meeting Attendees**
Tazeen Dewan, ADOT Project Manager
Shajed Haque, ADOT Drainage***
Sayeed Hani, ADOT Railroad and Utility Section**
Sarah Karasz, ADOT Environmental Planning Group
Tammy Mivshek, ADOT Traffic Design***
Jerimiah Moerke, ADOT Community Relations
Kimberly Noetzel, ADOT Community Relations
Taiping Tang, ADOT Bridge Group***
Jim Walcutt, ADOT R/W Review Appraiser
Emily Dawson, ADOT Southcentral District
James Gomes, ADOT Southcentral District Regional Traffic Engineer
Richard La Pierre, ADOT Southcentral District Permits Supervisor
Priscilla Thompson, ADOT Southcentral District Utility Engineering Coordinator
Tremaine Wilson, FHWA Environmental***
Micah Horowitz, ASLD Planning and Engineering**
Alex Kuchansky, ASLD Engineer***
Sixto Molina, City of South Tucson City Manager
Shellie Ginn, City of Tucson Planning***
Chris Anderson, Tucson Fire Department Deputy Chief
Jeff Thompson, Tucson Fire Department
Scott Robidoux, Tucson Airport Authority Planner
Maria Altemus, EcoPlan Environmental Planner
Mike Dawson, EcoPlan Senior Environmental Planner
Paul Black, Jacobs Roadway**
Judah Cain, Jacobs Roadway**
Joe D'Onofrio, Jacobs Environmental**
Brad Olbert, Jacobs Project Manager
Sandy Thoms, Jacobs Traffic**
Haley Estelle, HDR Public Involvement
Chris Blue, Pima Association of Governments Transportation Planner
John Moffatt, Pima County Economic Development**
Heather Ruder, Pima County Project Management
Steve Wilson, Pima County Project Manager
Robert Young, Pima County Division Manager
** Attended via teleconference

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
PROGRESS MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The Progress Meeting for this project was held at 1:00 PM February 21, 2018 at the ADOT Southcentral District Conference Room. Teleconferencing was available via WebEx for attendees offsite. The meeting was adjourned at 2:15 PM.

The meeting was well represented by agencies interested in improving the I-10 corridor from Junction I-19 to Kolb Road and providing a connection for SR 210 to I-10. Representatives included ADOT, Federal Highway Administration (FHWA), Arizona State Land Department (ASLD), City of Tucson, City of South Tucson, Tucson Airport Authority, Tucson Fire Department, Pima County, and Pima Association of Governments (PAG).

SUMMARY

Brad Olbert, Jacobs Project Manager, opened the meeting at 1:00 PM. Introductions were held for all other attendees, including the newly appointed ADOT Project Manager for this project, Tazeen Dewan.

Brad shared that much has been done on the project since the last progress meeting, including two meetings with the ADOT Southcentral District.

- The study team drafted a technical memorandum on the proposed implementation plan, on which the District provided their comments. The memorandum was provided as part of the agenda packed to the team. A high-level overview of this implementation plan will be discussed in the meeting, but attendees are encouraged to review the memo on their own and provide comments.

- The study team met with the District utility coordinator to discuss the high-level cost estimate for utility relocations along the corridor and prepared a for each interchange individually. This new cost estimate is more precise than what the team presented previously.

Brad provided a status of the project to date:

- The preliminary bridge analysis is ongoing. There are between 65 and 70 structures within the project limits. Once the analysis is complete it will be sent to ADOT for review.
- The team has started writing the draft DCR which will be available for review only after the access issues at the Craycroft Road TI are resolved.
- The environmental work is on hold pending a resolution to the Craycroft Road access issues.
- The Craycroft Road access issues will be worked out. Some concepts have been developed and there is a public meeting scheduled for April to get input from residents and stakeholders.

Paul Black, Jacobs roadway design lead, discussed the changes that have been made to the design to address access issues. On westbound I-10 between Valencia Road and Craycroft Road, the distance between the two interchanges is less than required.

- In Alternative I the team proposed to remove the auxiliary lane and instead have a frontage road to take traffic between the two interchanges. This would provide access to some properties on the north side of I-10 as well as the Triple T truck stop at Craycroft Road.
- Under Alternative IV, the frontage roads would be taken out of service and access from Craycroft Road and to Valencia Road would be accomplished via an auxiliary lane on the CD roadway. While the length of this auxiliary lane is a little shorter than desired, the volume of traffic expected to utilize the ramps is not significant enough to negatively affect traffic operations. However, removing the frontage road also removes access to the parcels on the north side of I-10 which would result in total property takes. To avoid these significant ROW takes, the team is proposing to keep the westbound frontage road in service under Alternative IV, similar to what is being proposed under Alternative I.

Paul provided a high-level overview of the draft implementation plan. As the entire project is estimated to cost around $1 billion, it is expected that it will need to be phased out into multiple smaller projects to be built as funding becomes available. When looking at the project on a high level, it made sense to break it into three distinct areas:

- **Group 1**: I-10 from I-19 to Valencia Road would involve improving older-style interchanges such as partial cloverleaf interchanges in the urban area of I-10 as well as improving the interchange spacing.
  - *Project 1*: Construction of Country Club Road TI which will allow the removal of the Palo Verde Road TI and addition of the westbound on-ramp from Alvernon Way. This will improve the interchange spacing along I-10 in this vicinity.
  - *Project 2*: Reconstruction of Kino Parkway, which currently has some structural concerns that should be addressed sooner rather than later.
  - *Project 3*: Reconstruct Park Avenue TI to address the old partial cloverleaf ramp and some weaving concerns on I-10 due to the close interchange spacing.
  - *Project 4*: Reconstruct 6th Avenue TI to address left-turn capacity issues. The bridge over I-10 needs to be widened or reconstructed to accommodate dual left-turn lanes onto I-10. The timing of this project can be adjusted as needed based on the demand for the dual left-turn lanes.
  - *Project 5*: Improves I-10 from just east of Palo Verde Road to Valencia Road by widening I-10 to three lanes in each direction. This project also includes building the structures for the SR 210 interchange to minimize impact to I-10 traffic when it is constructed at a later date.
  - *Project 6*: Widens eastbound I-10 and constructs the median lanes from 6th Avenue to Kino Parkway.
- **Group 2**: Extending SR 210 from Palo Verde Road to I-10 at Alvernon Way
  - *Project 7*: Constructs the interchange of SR 210 and Golf Links Road to provide direct connection ramps.
  - *Project 8*: Constructs mainline SR 210 from Palo Verde Road to Ajo Way. Traffic on Alvernon Way will be maintained during this project but will have a reduced number of lanes.
  - *Project 9*: Constructs SR 210 from Ajo Way to I-10 and ties into the ramps constructed as part of Project 5 in Group 1.
- **Group 3**: Improving I-10 from Valencia Road to Kolb Road. The widening to I-10 mainline in this vicinity can be done incrementally as funding becomes available and widening can occur on the inside lanes towards the median.
  - *Project 10*: Reconstructing the Valencia Road TI and the frontage roads that connect to Craycroft Road.

- *Project 11*: Reconstructing the Craycroft Road TI and the access management improvements on Craycroft Road.
- *Project 12*: Reconstructing the Wilmot Road TI.
- *Project 13*: Reconstructing the Kolb Road TI as a DDI and constructing the necessary tapers to tie the newly widened I-10 into the existing cross-section to the east.
- *Project 14*: Constructing northbound and southbound express flyover ramps over I-10 at Kolb Road. This can be done once enough development occurs that the amount of northbound and southbound traffic through the DDI exceeds capacity.

Paul referred everyone to the Technical Memorandum that discusses each of the projects and their associated detour routes. Most detour routes follow major streets that are currently five-lane cross sections and will likely last a few months depending on how long the cross-road reconstructions will take. Mike Dawson from Ecoplan indicated that the detour routes are important due to noise impacts. Chris Anderson from the Tucson Fire Department asked if the detour routes will have barriers up blocking turning lanes or if all lanes will remain open. He emphasized that any detour routes and barricades would need to accommodate emergency vehicles and their turning radius as well as pull-off areas to where vehicles can be pushed after a crash. Paul indicated that these are important items but this level of detail will be determined in the final design and construction phases of the project.

Paul discussed the changes to ROW needs based on the addition of the westbound frontage road between Craycroft Road and Valencia Road. He showed a table depicting the required ROW areas for the entire project for each alternative. Alternative IV will require an additional 14.77 acres of land over Alternative I. Paul then discussed the cost associated with ROW acquisitions and showed a table breaking down the costs for each project under each alternative. In total, Alternative IV will require an additional $4.49 million in ROW costs over Alternative I.

Paul discussed the total project cost estimate and showed a table summarizing the costs for key items under each alternative. These costs have been refined since last presented in November of 2017. In total, Alternative IV will cost an additional $74.9 million over Alternative I. As the team writes the initial DCR, they intend to identify what benefits Alternative IV presents over Alternative I to justify the higher cost.

Mike Dawson asked if a cost estimate could be developed for the No Build scenario. This could be as simple as an estimate for routine bridge maintenance as well as a per lane-mile of roadway for pavement resurfacing. It was discussed that this project is crucial for the region to meet future traffic demands and it is unlikely that Alternative I or IV will not be constructed. However, the No Build cost estimate may be needed for environmental documentation.

The question was raised about what other factors will be considered in comparing the alternatives other than cost. Paul indicated that other evaluation criteria will be discussed in the DCR such as traffic operations, safety, ROW impacts, utility impacts, environmental impacts, cost, maintenance, public acceptance, and so forth.

Haley Estelle, HDR Public Involvement Specialist, discussed the public involvement plan for the access issues at the Craycroft Road TI. The study team is proposing a roundabout on Craycroft Road to mitigate the removal of left-turn egress from Travel Plaza Way. The study team has developed two options for addressing these issues, both of which employ a roundabout. They plan to first meet with stakeholders in early April to discuss the proposed options and will meet with nearby residents shortly thereafter. This will all be done before the larger public meeting that is for the entire project.

Brad discussed the two options being proposed to mitigate the Craycroft Road access issues.

- Option 1 installs a roundabout to allow vehicles leaving Travel Plaza Way to head southbound on Craycroft Road and ultimately onto I-10. There is currently full access at this intersection that will need to be restricted to right-in right-out only due to proximity to the TI. The roundabout allows vehicles to exit Travel Plaza Way and travel north to the roundabout to make a U-turn to head south.
- Option 2 installs a roundabout just as in Option 1, but also installs a one-way road connecting Travel Plaza Way to the westbound I-10 off-ramp to try and reduce some of the truck traffic through the roundabout.

The team will discuss other possible options with the stakeholders to come up with the best solution for the area.

The team will be collecting traffic counts to understand what is currently going on in this area and to verify that these concepts will operate adequately.

Brad indicated that there is a dip drainage crossing across Craycroft Road which is posing some challenges. Since this project is installing a median on Craycroft Road, a pipe will need to be installed below the road which requires the roadway profile to be raised. This creates issues with property owners where their access to Craycroft Road will be impacted. The team is proposing to install driveways to short frontage roads to allow access to the parcels that face Craycroft Road.

The question was raised under Option 2 if there is still need for a roundabout if the one-way connector road is provided. Brad explained that the roundabout would still be needed because many of the residents in the area also utilize Travel Plaza Way to turn south onto Craycroft Road. Another option would be to provide a roadway to the west from the roundabout that would connect to the WB frontage road. This would greatly reduce the volume of traffic passing through the WB ramp intersection. We need to see if this is an option to pursue with TTT Truck Stop.

Brad briefly went over the project schedule. The stakeholder meeting and public meeting for the Craycroft Road improvements will be in April of 2018. The next progress meeting is tentatively scheduled for May of 2018 and the next project-wide public meeting will also be in May. The environmental studies and documentation will be prepared in June 2018, with the Initial DCR/Draft EA expected to be submitted around June 2018. These will first be submitted to ADOT for review and comment, then distributed to the study team.

Sixto Molina, City of South Tucson City Manager, brought up that vacant parcels between the railroad tracks and 6th Avenue have recently been purchased and redevelopment is expected in that area. There is a meeting March 29th where the City of South Tucson will hear from the land owners on what the plans are for the properties. ADOT has been invited to that meeting. There is also more development expected in the vacant parcels between 6th Avenue and Park Avenue.

The question was raised on why the team is keeping an interchange at Park Avenue instead of just creating frontage roads between 6th Avenue and Kino Parkway. These three interchanges are spaced close together and the Park Avenue interchange could have just been removed instead of spending money on costly braided ramps to meet the required weaving distances. Brad pointed out that there are very important developments in place with access to Park (Tucson Marketplace, Walmart, Costco, etc.) and others planned for the future along Park Avenue, so it was preferred to keep that interchange in service.

Brad asked Scott Robidoux of the Tucson Airport Authority if there is anything the team should be aware of as far as airport development. Scott indicated that FAA will need to be notified of this project as it gets closer to final design. Nothing is needed from the study team at this point. Davis-Monthan AFB and the Department of Defense were both invited to be cooperating agencies on this project but the team has not heard back from either agency.

Related to project communications, Brad reminded attendees of the project website. All documents related to this project from the very beginning are posted on the website including meeting minutes, exhibits, and project deliverables. This site is intended for use by the study team only. The login information is available below. There is a separate website for public use with information related to the project, also listed below.

- Study Team Website: www.jacobsaz.com
  - Login: I-10 Corridor
  - Password: Empirita
- Public Project Website:
  http://www.azdot.gov/planning/transportation-studies/i-10-and-sr-210-feasibility-study

ACTION ITEM LIST

- The Jacobs team will continue to pursue the key issues discussed in this meeting.
- The Jacobs team will meet with the public and appropriate stakeholders to discuss the Craycroft Road access issues and proposed solutions.
- Stakeholders are encouraged to review the Draft Implementation Plan Technical Memorandum and provide any comments, particularly concerning the proposed detours.
- Stakeholders are encouraged to review and comment on the meeting minutes to ensure accuracy.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

June 5, 2018

TO: **Meeting Attendees**
Tazeen Dewan, ADOT Project Manager
Rod Lane, ADOT Southcentral District Engineer**
Doug Moseke, ADOT Southcentral Deputy District Engineer**
James Gomes, ADOT Southcentral Regional Traffic Engineer**
Jerimiah Moerke, ADOT Community Relations**
Ammon Heier, FHWA Area Engineer
Joe D'onofrio, Jacobs Environmental Manager
Brad Olbert, Jacobs Project Manager

** Attended via teleconference

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
FHWA I-10/Craycroft Road Coordination Meeting Notes
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The coordination meeting was held at 2:30 PM June 5, 2018 at the ADOT Engineering Building conference room. The meeting ended at 3:30 PM.

SUMMARY

Tazeen Dewan, ADOT Project Manager opened the meeting at 2:30 PM. Self-introductions were made by all attendees.

Brad Olbert, Jacobs Project Manager, presented an overview of the I-10/Craycroft Road TI area. Handouts were provided that included a memorandum of access control concepts developed for the area to the north of the interchange. The Craycroft Road TI is located within the jurisdiction of the City of Tucson. The area is bounded by I-10 on the south, the Julian Wash on the north, Valencia Road on the west and Wilmot Road on the east. The area is known as "Littletown".

Jacobs recently picked up traffic counts at the I-10/Craycroft Road TI and at the Craycroft Road/Travel Plaza Way. The two newly installed traffic signals are operating at LOS B/C during the AM peak hours and B/C during the PM peak hours. The Craycroft Road/Travel Plaza Way intersection is operating at LOS A for AM and PM peak hours. Operational analysis of current conditions with 2040 projected volumes indicates the interchange will reach capacity, LOS D/D during the AM peak hour and LOS C/D during the PM peak hour. The operational analysis of current conditions with 2040 projected volumes at the intersection of Craycroft Road and Travel Plaza Way results in an LOS F during the AM peak hour and LOS F during the PM peak hour. Travel Plaza Way (located approximately 200' north of the I-10 westbound ramps) provides access to a Pilot Travel Center (truck stop), Freightliner of Arizona (a truck service center) and approximately 1500 residences all located to the east of Craycroft Road. The Tucson Truck Terminal (known as the Triple T Truck Stop) is located on the west side of Craycroft Road just to the north of I-10. North of Littletown Road there is an elementary school, a middle school and the Thomas Jay Regional Park. Craycroft Road stops at Littletown Road because Julian Wash is located an eighth of a mile to the north of Littletown Road and the UPRR is located to the north of the wash.

The Littletown area to the north of I-10 is isolated by the Julian Wash and the UPRR which greatly reduces the area served by the Craycroft Road TI. The Littletown area has access to I-10 at three locations, the Valencia Road TI to the west, Craycroft Road TI to the south and to the Wilmot Road TI to the east.

The Littletown area has many homes that were built over fifty years ago, many are potential historic structures. The Littletown residential area is also a low income housing area with a high percentage of minorities, which makes the area an Environmental Justice concern. Taking any homes in this area would not be acceptable to FHWA based on the fact that there are reasonable and prudent alternatives available to taking these homes.

Brad reviewed the concepts that were described and illustrated in the attached memorandum. The seven concepts presented were:

1) Purchase the Pilot Travel Center – estimated to cost $6.5 M. This concept has a high cost, would cause a loss in tax revenue for the City of Tucson and the commercial area will need to be repurposed.

2) Realign Elvira Road – realigning Elvira Road to connect to Craycroft Road to the north of the TI would involve taking homes from the Littletown area. Taking any homes in this area would not be acceptable to FHWA based on the fact that there are reasonable and prudent alternatives available.

3) Construct a Roundabout – constructing a roundabout on Craycroft Road 660' to the north of the TI. Vehicle noise and light from headlights would be an issue for adjacent residences. Improvements along Craycroft Road would extend up to Dream Street. Drainage improvements will parallel Craycroft Road up to Dream Street. The roundabout concept will require a significant amount of property to be acquired from the Triple T Truck Stop. Concerns were expressed by Craycroft Road stakeholders that truck drivers will not make the U-turn to return to I-10 via the Craycroft Road TI but continue north to Littletown Road to enter I-10 at the Valencia Road TI. This concept meets the access control criteria.

4) Construct a Roundabout with a one-way connector road to the I-10 westbound off-ramp – Similar to Concept 3 with the added one-way connector road to the I-10 westbound off-ramp. The connector road would impact the Freightliner development potentially removing most of the employee parking. Truck traffic from the Pilot Center would have access to the connector road 24/7. Truck noise and light from headlights would be an issue for adjacent residences located immediately east of Freightliner. If Freightliner is acquired, the ADOT R/W Group estimated the cost at $6.5 M.

5) Construct a Roundabout with a two-way connector road to the I-10 westbound off-ramp – Similar to Concept 3 with the addition of a two-way connector road to the I-10 westbound off-ramp through the Triple T parcel. This connector road would provide an easier route to I-10 by passing the westbound frontage road signal. The connector road would bisect the Triple T parcel relocating the current truck parking area. This concept would not reduce the number of vehicles using the roundabout.

6) Eliminate the westbound off-ramp at Craycroft Road and retain the westbound frontage road between Wilmot Road and Craycroft Road – This concept allows the right-in and right-out for the Pilot Travel Center and the Freightliner parcels. Access control on Craycroft Road will no longer be an issue north of the TI since the frontage road would remove most of the turning movements from Craycroft Road. The Pilot Travel Center representative was not in favor of this concept because westbound drivers would have to make a decision to get off of I-10 at the Wilmot Road off-ramp which is 1.5 miles to the east. Then travel along the frontage road to get to their business. This would have an impact on their business.

7) Construct a signal at the intersection of Craycroft Road and Travel Plaza Way – Operational analysis using 2040 projections and widening the Craycroft Road TI indicates the roadway will function with an LOS B in both the AM and PM peak hours. Other than taking right-of-way to widen Craycroft Road from I-10 to Travel Plaza Way there is minimal impact to the neighborhood. This concept would avoid making drainage improvements north of Travel Plaza Way. However, this concept does not implement the access control guidelines and may require a variance to move forward.

Brad said the least costly concept is 7. It also has the least impact on the neighborhood and local businesses. The signal at Craycroft Rd/Travel Plaza Way has an LOS B/B for 2040 and should operate well beyond the design year. This is due to the fact that the area north of the TI is almost built out and it is isolated by the UPRR and Julian Wash. All other concepts impact the businesses and/or the neighborhood. Concept 7 does not implement the access control guidelines and may require a variance to move forward. Jacobs was planning to meet with the neighborhood to present the roundabouts but it is not needed if we move forward with the Concept 7.

Ammon Heier said based on the review of all of the concepts presented, Concept 7 may be acceptable to FHWA provided the Change of Access Report shows the concept has no effect on the interstate and adjacent TIs. Brad said Jacobs was going to wait on doing the Change of Access Report for the recommended alternative. James Gomes said it may be better to do it now to justify the concept.

Rod Lane said the district has been purchasing businesses and homes to implement access control at other TIs along I-10. Going for a variance at this location may set a precedence that may not be acceptable. He would like some time to discuss this situation internally. Rod wants to make a decision quickly to minimize delays to the project schedule. Rod asked if the City of Tucson is aware of the situation at Craycroft Road. Brad said Tom Fisher is the new liaison for the City. The Craycroft Road stakeholder PowerPoint presentation (only presents the roundabout concepts) and the minutes for the last Stakeholder meeting were sent to him which discusses the situation. Tom said he read the information and wants to be kept in the loop. Tom is not aware of the latest operational analysis for Concept 7 or the concept for purchasing businesses (Concept 1).

ACTION ITEM LIST

- ADOT Southcentral District to confer internally on the concepts.
- FHWA to determine what they will need to approve concept 7 if the waiver is desired.
- Jacobs to set up a meeting with the City of Tucson to go over the concepts and to get their input.
- Jacobs to send out a request for dates and time availability for two weeks from now to set up a meeting.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachment

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

June 11, 2018

TO: Meeting Attendees
Rod Lane, ADOT Southcentral District Engineer
Doug Moseke, ADOT Southcentral Deputy District Engineer
Darlene Danehy, Psomas, Project Engineer
Mike Smejkal, Tucson Airport Authority, Vice President of Planning and Engineering
Scott Robidoux, Tucson Airport Authority, Airport Planner
Brad Olbert, Jacobs Project Manager

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
Tucson Airport Authority Coordination Meeting Notes
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The coordination meeting was held at 2:00 PM June 11, 2018 at the ADOT Southcentral District conference room. The meeting ended around 3:00 PM.

SUMMARY

Mike Smejkal with TAA opened the meeting at 2:00 PM. Self-introductions were made by all attendees. Mike wanted to meet with the I-10 team to go over some planning alternatives the Tucson Airport Authority (TAA) has been reviewing. Long range improvements to the airport include a parallel runway that requires realignment of Alvernon Way. TAA hired Psomas to look into alternatives to realigning Alvernon Way.

Mike presented Alternative 1 which illustrated the current realignment of Alvernon Way along with roadway infrastructure improvements to Country Club Road, Los Reales Road, Aerospace Parkway and the Old Vail Connection Road. Projected traffic volumes were shown as well as the location of the future airport terminal. The construction timeline for many of the roadways may be 25 years or more. Country Club Road would serve as the main roadway entrance to the future airport terminal. Los Reales Road connects to the I-10/Craycroft Road TI and was described as a shortcut for westbound traffic on I-10 travelling to the airport.

Mike presented Alternative 2 which illustrated no realignment of Alvernon Way to the south of the airport. The parkway connection to I-10 from the south shifted from Alvernon Way to Craycroft Road TI. This alternative appeared to shift approximately 8,000 vehicles per day from the Alvernon Way TI to the Craycroft Road TI. Similar to Alternative 1, roadway infrastructure improvements included Country Club Road, Los Reales Road, Aerospace Parkway and the Old Vail Connection Road. Projected traffic volumes were shown as well as the location of the future airport terminal. The construction timeline for many of the roadways listed above may be 25 years or more. Country Club Road would serve as the main roadway entrance to the future airport terminal. Los Reales Road connects to the I-10/Craycroft Road TI and would serve as a shortcut for westbound traffic on I-10 travelling to the airport.

Brad said the Alternative 1 concept follows the PAG Regional framework Model and should work fine with the current concepts for I-10. The Alternative 2 roadway concept differs from the PAG model. The Craycroft TI capacity and associated ramps would need to be checked if this alternative moves forward. I-10 capacity will also need to be checked but should be fine as there should be ample capacity. Rod Lane asked about the construction timeframe on the segment east of Alvernon Way. Brad said this area is most likely 10 years or more from now.

Note: If TAA's Alternative 2 is desired by the region, we would need to re-visit the PAG model projections and determine what impacts Alternative 2 would have on traffic volumes along I-10. Then the VISSIM traffic model would be modified and run to identify adjustments needed to increase capacity to handle the additional turning movements at the Craycroft Road TI and identify any adjustments needed to I-10, the frontage roads from Craycroft Road to Valencia Road, and the Valencia Road TI ramps.

ACTION ITEM LIST

This was an information coordination meeting. However, Jacobs will monitor any future planning adjustments to the PAG regional system.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

June 18, 2018

TO: Meeting Attendees
Tazeen Dewan, ADOT Project Manager
Rod Lane, ADOT Southcentral District Engineer**
Doug Moseke, ADOT Southcentral Deputy District Engineer**
James Gomes, ADOT Southcentral Regional Traffic Engineer**
Jerimiah Moerke, ADOT Community Relations**
Ammon Heier, FHWA Area Engineer
Joe D'onofrio, Jacobs Environmental Manager**
Brad Olbert, Jacobs Project Manager

** Attended via teleconference

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
FHWA I-10/Craycroft Road Coordination Meeting Notes
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment
Craycroft Road TI Access Control

INTRODUCTION

The coordination meeting was held at 1:00 PM June 18, 2018 at the ADOT Engineering Building conference room. The meeting ended at 2:30 PM.

SUMMARY

Tazeen Dewan, ADOT Project Manager opened the meeting at 1:00 PM. Self-introductions were made by all attendees. Handouts were provided that included an agenda, a memorandum that summarized access control concepts developed for the area to the north of the interchange, and the meeting notes from the 6/5/18 meeting.

Brad Olbert, Jacobs Project Manager, presented an overview of the previous meeting (6/5) on the I-10/Craycroft Road TI area. All previous options had negative impacts on business or the neighborhood except the signal concept at Travel Plaza Way/Craycroft Road which may need a variance. The signal concept would also set an unwanted precedence that the district will need to deal with for all other TI improvements along I-10 and I-19. The concepts involving a roundabout were not desirable from the perspective of the local business

owners and truckers that need to use the intersection. Nearby residents would also be affected due to the increased traffic flow. Purchasing the Pilot Travel Center and possibly the Triple T Truck Stop was a concept that had merit because it would remove truck traffic from the area. A concept was developed for discussion in the case that purchasing the Pilot Travel Center was the preferred concept to move forward for the project.

Constructing a signal at the intersection of Craycroft Road and Travel Plaza Way was discussed. This concept had the least cost of all the concepts and had no impacts on any business or the residential area. FHWA reviewed this alternative in house and found the concept to be an incremental improvement to the TI that is feasible and would probably be acceptable. However Rod Lane with the District said this alternative is not favored because of the precedence that it would set and the long term implications for ADOT.

A concept was reviewed that included purchasing the Pilot Travel Center. Purchasing the Pilot Travel Center and possibly the Triple T Truck Stop was a concept that had merit because it would remove truck traffic from the area. Providing a roundabout for trucks to make a U-turn to come back to I-10 would not be needed. A simpler tee intersection could be developed with a two-way connector road to the westbound frontage road. U-turns for cars would use the left-turn bay. See attached figure. Rod Lane liked the concept but thought we should first determine how well it functions without purchasing Pilot or the Triple T. Develop a dual left-turn at the intersection and widening the two-way connector road to accommodate the dual left-turns. If needed, position the intersection further north to accommodate the left-turn storage. The tee intersection most likely will need to be signalized. The District preferred that the cross drainage pass under Craycroft Road, no dip crossing. Jacobs will update the concept and report back to the group next week.

Ammon Heier asked why not remove the TI at Craycroft Road since there is a relatively small residential area to the north of I-10 and a large regional landfill to the south of I-10 that the TI serves. Rod Lane said the District had similar thoughts. The District met with the Tucson Airport Authority regarding their transportation master plan last week (6/11). Craycroft Road is an alternative connection point to I-10 for the Tucson Airport. Country Club Road will serve as the main connection roadway to the airport in the future. Alvernon Way and Craycroft Road are secondary connection points. Removing the TI at Craycroft Road would reduce the secondary connection points to just Alvernon Way. Brad said Craycroft Road is also a shortcut for I-10 westbound traffic travelling to the airport. Removing the TI at Craycroft would reduce the future transportation planning options available to the airport.

ACTION ITEM LIST

- Jacobs will develop a Craycroft Road access control concept that has a signalized tee intersection located approximately 660 feet north or the TI. The intersection will have dual left-turn lanes (northbound to westbound) onto a two-way connector road that connects to the I-10 westbound frontage road. The location for the intersection may shift further north based on left-turn storage requirements. The tee intersection replaces the roundabout concept.
- Jacobs will set up a meeting next week to review the new concept.
- Jacobs to set up a meeting with the City of Tucson when the best concept is found for Craycroft Road.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachment

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

July 3, 2018

TO: Meeting Attendees
Tazeen Dewan, ADOT Project Manager
Rod Lane, ADOT Southcentral District Engineer**
Jerimiah Moerke, ADOT Community Relations**
Ammon Heier, FHWA Area Engineer**
Joe D'onofrio, Jacobs Environmental Manager**
Brad Olbert, Jacobs Project Manager

** Attended via teleconference

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
FHWA I-10/Craycroft Road Coordination Meeting Notes
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment
Craycroft Road TI Access Control

INTRODUCTION

The coordination meeting was held at 1:00 PM, Tuesday, July 3, 2018 at the ADOT Engineering Building conference room. The meeting ended at 2:00 PM.

SUMMARY

Tazeen Dewan, ADOT Project Manager opened the meeting at 1:00 PM. Self-introductions were made by all attendees. Handouts were provided that included an agenda, a memorandum that summarized access control concepts developed for the area to the north of the interchange, and comments from James Gomes.

Brad Olbert, Jacobs Project Manager, reviewed Concept 8 for the I-10/Craycroft Road TI area. This concept has a signalized tee intersection located north of Travel Plaza Way and south of the Circle K. West of the intersection a two-way roadway forms a loop connection with the I-10 westbound frontage road. The connector road bisects the Triple T parcel and is widened to accommodate dual left-turns from Craycroft Road (northbound to westbound). Craycroft Road will have a raised median from the westbound TI ramp to the new tee intersection. Traffic wanting to enter I-10 westbound from Travel Plaza Way will travel north on Craycroft Road to the two-way connector road. The traffic turns left onto the connector road and makes a right-turn onto

the westbound frontage road to the Valencia Road TI. Passenger cars and small trucks wanting to enter I-10 eastbound could make a U-turn at the tee intersection and enter I-10 at the Craycroft Road TI. Otherwise, large trucks will travel to the Valencia Road TI to enter I-10 eastbound. Jacobs will add a location for a right-in/right-out entrance along Craycroft Road for Triple T.

There is an existing drainage dip crossing located just north of Travel Plaza Way. The 100-year flow rate is approximately 400 cfs. After crossing over Craycroft Road, the runoff sheet flows to an existing drainage channel located to the west and north of the Triple T Truck Stop. For this concept the raised median acts as a barrier to runoff crossing over Craycroft Road. The runoff will need to be conveyed under Craycroft Road to allow improvements to the roadway. The flow will need to be conveyed northerly in a culvert or open channel to the existing drainage channel located near Dream Street. Runoff from residences located along Craycroft Road also flows westward toward and across Craycroft Road and will need to be collected and conveyed under Craycroft Road. A box culvert/open channel concept is shown on the concept drawing. See attached figure. Preliminary estimate of box culvert size is 4' to 5' high x 10' to 12' wide. With a minimal slope on the channel/box culvert alignment, it appears that Craycroft Road will need to be elevated 1 to 2 feet above the existing dip crossing and near the tee intersection where the connector road will need to cross over the box culvert. Elevating Craycroft Road through this section will affect how to connect residential driveways with the roadway and collect and convey the drainage under the roadway. Rod Lane suggested putting in a frontage road along that section of Craycroft Road. Jacobs and J2 (drainage sub) will need to work on the access and drainage moving forward.

Preliminary traffic analysis shows the Level-Of-Service (LOS) of the northbound to westbound left-turn movement to be LOS A at the 2040 AM peak hour and LOS B at the 2040 PM peak hour. Access into and out of residential lots adjacent to Craycroft Road needs to be analyzed to determine how much to shift Craycroft Road to the west to provide better access and to collect runoff. Brad said the City of Tucson has a 20 foot frontage concept that was shown on the Roundabout concepts (see memorandum dated 7/2/2018). The frontage road concept can incorporated for this concept as well.

Rod Lane was unsure how we should sign the U-turn movement. U-turns could be prohibited. Brad said their traffic numbers indicate relatively low traffic north-south volumes on Craycroft Road. The left-turn / U-turn movement will have the most signal time. We are showing two south bound lanes south of the tee intersection to make the U-turn easy for a passenger vehicle. If a vehicle does not make the U-turn at the signal there is nothing to prevent the vehicle from using the Triple T parcel to maneuver over to Craycroft Road and go southbound. Otherwise it is expected that vehicles will go to the Valencia Road TI to access I-10 eastbound.

The team thought this concept met the long range access control needs for the Craycroft Road TI. The next step will be to set up a meeting with the City of Tucson (Tom Fisher) to present all of the concepts, including the recommended concept (#8 in its current configuration) and receive comments from the City. Brad will send out an email this week requesting availability for the next two weeks.

Brad said that since the roundabout concepts have not been continued there was little reason to have a neighborhood meeting to present the concepts to comment on. Jacobs would like to focus on presenting a modified Concept #8 along with the overall I-10/SR 210 project. Rod Lane suggested we ask for the City's opinion on the concepts and the need for a neighborhood meeting.

Note: Sarah Karasz followed up with ADOT's Civil Rights section regarding the potential need for a meeting in the Littletown area. The Civil Rights section felt that since the Littletown area is the only Environmental

Justice (EJ) area on the project that an overall meeting for I-10/SR 210 should also be presented at a location where the Littletown neighborhood can walk to. The same information should be presented at both meeting locations.

ACTION ITEM LIST

- Jacobs to set up a meeting with the City of Tucson.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachment

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

COORDINATION MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

July 20, 2018

TO: **Meeting Attendees**
Tazeen Dewan, ADOT Project Manager
Doug Moseke, ADOT Southcentral Deputy District Engineer
James Gomes, ADOT Southcentral Regional Traffic Engineer
Jerimiah Moerke, ADOT Community Relations
Sarah Karasz, ADOT Environmental Planning
Michael Marietti, City of Tucson Department of Transportation
Ammon Heier, FHWA Area Engineer***
Brad Olbert, Jacobs Project Manager

*** Attended via teleconference

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
FHWA I-10/Craycroft Road Coordination Meeting Notes
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment
Craycroft Road TI Access Control

INTRODUCTION

The coordination meeting was held at 10:00 AM, Friday, July 20, 2018 at the ADOT Southcentral District Conference Room. The meeting ended at 12:00 PM.

SUMMARY

Tazeen Dewan, ADOT Project Manager opened the meeting at 10:00 AM. Self-introductions were made by all attendees. Handouts were provided that included the agenda, a memorandum that summarized access control concepts developed for the area to the north of the interchange, and the Summary of the Craycroft Road Stakeholder Meetings.

Brad Olbert, Jacobs Project Manager, reviewed the concepts looked at by Jacobs. The concepts were summarized in the memorandum distributed to the attendees. For various reasons discussed in the memorandum, concepts 1 through 6 have been discontinued. Concepts 7 and 8 were the two had the least

impact on the community. Concept 7 had the least cost but would set an undesirable precedence that the ADOT District did not want to consider.

Brad then reviewed Concept 8 for the I-10/Craycroft Road TI area (see attachment). This concept has a signalized tee intersection located north of Travel Plaza Way and south of the Circle K. West of the intersection a two-way roadway forms a loop connection with the I-10 westbound frontage road. The connector road bisects the Triple T parcel and is widened to accommodate dual left-turns from Craycroft Road (northbound to westbound). Craycroft Road will have a raised median from the westbound TI ramp to the new tee intersection. Traffic wanting to enter I-10 westbound from Travel Plaza Way will travel north on Craycroft Road to the two-way connector road. The traffic turns left onto the connector road and makes a right-turn onto the westbound frontage road to the Valencia Road TI. Passenger cars and small trucks wanting to enter I-10 eastbound could make a U-turn at the tee intersection and enter I-10 at the Craycroft Road TI. Otherwise, large trucks will travel to the Valencia Road TI to enter I-10 eastbound. Jacobs added a location for a right-in/right-out entrance along Craycroft Road for Triple T. When the project goes to design the design team can work with the Triple T Stop family to decide where best to provide access points along Craycroft Road and the I-10 westbound frontage road.

There is an existing drainage dip crossing located just north of Travel Plaza Way. The 100-year flow rate is approximately 400 cfs. After crossing over Craycroft Road, the runoff sheet flows to an existing drainage channel located to the west and north of the Triple T Truck Stop. For this concept the raised median acts as a barrier to runoff crossing over Craycroft Road. The runoff will need to be conveyed under Craycroft Road to allow improvements to the roadway. The flow will need to be conveyed northerly in a culvert or open channel to the existing drainage channel located near Dream Street. Runoff from residences located along Craycroft Road also flows westward toward and across Craycroft Road and will need to be collected and conveyed under Craycroft Road. A box culvert/open channel concept is shown on the concept drawing. See attached figure. Preliminary estimate of box culvert size is 4' to 5' high x 10' to 12' wide. With a minimal slope on the channel/box culvert alignment, it appears that Craycroft Road will need to be elevated 1 to 2 feet above the existing dip crossing and near the tee intersection where the connector road will need to cross over the box culvert. Elevating Craycroft Road through this section will affect how to connect residential driveways with the roadway and collect and convey the drainage under the roadway. Jacobs and J2 (drainage sub) will need to work on the access and drainage moving forward.

Preliminary traffic analysis shows the Level-Of-Service (LOS) of the northbound to westbound left-turn movement to be LOS A at the 2040 AM peak hour and LOS B at the 2040 PM peak hour. Access into and out of residential lots adjacent to Craycroft Road needs to be analyzed to determine how much to shift Craycroft Road to the west to provide better access and to collect runoff. Brad said the City of Tucson has a 20 foot wide frontage road concept that was shown on the Roundabout concepts (see memorandum dated 7/2/2018). The frontage road concept can incorporated for this concept as well. Michael Marietti thought that adding the frontage road concept would work fine. Sarah Karasz mentioned the raising of Craycroft Road profile more than 6 inches in front of the historic homes triggers a visual analysis requirement for the Historic Building Survey and Report. Brad said there are 7 buildings along Craycroft Road that are 50 years or more old between I-10 and Dream Street. This includes the Triple T property.

James Gomes (ADOT) discussed Concept 6 briefly. Concept 6 would eliminate the ramps at Craycroft Road. Traffic would use the Wilmot Road TI or the Valencia Road TI for access to Craycroft Road. This would allow frontage road access to Pilot and Freightliner. This concept was discontinued because the Tucson Airport Authority planning has the Craycroft Road TI as one of the two connection points for rerouting Swan Blvd

north to I-10 (see attachment). TAA said the Craycroft Road TI is used as a shortcut for westbound I-10 traffic to get to the airport and as a shorter route to go to Raytheon. Also, the Pilot Travel Center representative wanted the direct access from I-10 to their business. Travelers make decisions to get off I-10 when they see the Pilot Center. Pilot will lose business if the access moves to Wilmot Road. Both James and Michael would like to see a preliminary traffic analysis with the Swan Road connection at Craycroft Road TI. Brad said I-10 has ample capacity as roughly 8,000 vpd shift from the Alvernon Way route to Craycroft Road. Most likely an additional left-turn lane will be needed for the northbound to westbound turning movement. Brad will include time for a synchro analysis of the TI to be done in the next contract modification.

Brad discussed timing for the Craycroft Road TI work. The overall I-10 / SR 210 project is approximately one billion dollars. The work will be stretched out over 20 years. Jacobs prepared a draft implementation plan, dated 2/17/18, that was distributed to the project stakeholder last February. The overall project was broken down into 18 separate projects and prioritized. The Craycroft Road TI plus widening of a mile of I-10 was identified as project 11 (see attachment). The first six projects will focus on widening I-10 from I-19 to Valencia Road and then shift to building SR 210. When the DCR/EA is approved by FHWA sometime next year this project will be at least 10 years out before design starts and construction is programmed. So there may be issues that arise between now and then that could adjust the concept such as a major employment center being built nearby. The concepts proposed are based on the best information we have now.

Michael felt the team had looked at every aspect of the issue. He felt Concept 8 was good enough to present to the public with the I-10 / SR 210 alternatives. Michael said the public needs to see and comment on the proposed concept.

ACTION ITEM LIST

Michael Marietti will review the meeting material and discussions with the COT staff.
Brad will send the project contact list to Michael.
Brad will submit the contract modification adding HDR as Jacobs subconsultant next week.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

Meeting Notes

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

PROGRESS MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

September 12, 2018

TO: **Meeting Attendees**
Tazeen Dewan, ADOT Major Projects Group, Project Manager
Carlos Lopez, ADOT Major Projects Group, Manager
Rod Lane, ADOT Southcentral District, District Engineer
Doug Moseke, ADOT Southcentral District, Asst. District Engineer
Shajed Haque, ADOT Drainage***
Sayeed Hani, ADOT Railroad and Utility Section***
Sarah Karasz, ADOT Environmental Planning Group
Tammy Mivshek, ADOT Traffic Design***
Jerimiah Moerke, ADOT Community Relations
Jim Walcutt, ADOT R/W Review Appraiser
Merrisa Marin, ADOT R/W Project Management***
Emily Dawson, ADOT Southcentral District
James Gomes, ADOT Southcentral District Regional Traffic Engineer
Priscilla Thompson, ADOT Southcentral District Utility Engineering Coordinator
John Hucko, ADOT Roadside Development Section, Senior Landscape Architect***
Alex Kuchansky, ASLD Engineer***
Chris Anderson, Tucson Fire Department, Deputy Chief
Michael Marietti, City of Tucson, Department of Transportation, Project Manager
Jamison Brown, Pima Association of Governments, Transportation Planning Manager***
Rick Ellis, Pima Association of Governments, Director of Transportation Services
Steve Wilson, Pima County Project Manager***
Jeff Lane, Arizona Department of Public Safety
Scott Robidoux, Tucson Airport Authority Planner
Maria Altemus, EcoPlan Environmental Planner
Mike Dawson, EcoPlan Senior Environmental Planner
Judah Cain, Jacobs Roadway***
Joe D'Onofrio, Jacobs Environmental***
Brad Olbert, Jacobs Project Manager
Haley Estelle, HDR Public Involvement***

*** Attended via teleconference

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
PROGRESS MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The Progress Meeting for this project was held at 1:00 PM September 12, 2018 at the ADOT Southcentral District Conference Room. Teleconferencing and WebEx were available for offsite attendees. The meeting adjourned at 2:30 PM.

The meeting was well represented by agencies interested in improving the I-10 corridor from Junction I-19 to Kolb Road and providing a connection for SR 210 to I-10. Representatives included ADOT, Arizona State Land Department (ASLD), Arizona Department of Public Safety (AZDPS), City of Tucson, Tucson Airport Authority, Tucson Fire Department, Pima County, and Pima Association of Governments (PAG).

SUMMARY

Tazeen Dewan, ADOT Project Manager, opened the meeting at 1:00 PM. Self-introductions were provided by all other attendees. Brad Olbert, Jacobs Project Manager, did a short safety moment related to tire safety.

Brad shared that much has been done on the project since the last progress meeting. A number of meetings related to access control for the I-10/Craycroft Road TI were held. The meeting notes and figures for each of the meetings can be reviewed on line at Jacobs' project website. Information to access the website can be found on the agenda for this meeting. A brief summary of the meetings was provided by Brad.

- The Jacobs team, FHWA and the District met with Craycroft Road stakeholders (Pilot, Triple T, Freightliner, Arizona Trucking Association, Sunnyside Unified School District and Pima County Parks and Recreation) to get feedback from them regarding access control concepts along Craycroft Road. A summary of the meetings was provided as a handout.
- The Jacobs team and the District met with the Tucson Airport Authority regarding long range planning alternatives for routing traffic around the airport. One of the alternatives showed Swan Road south of the Tucson Airport being routed north connecting to I-10 at the Craycroft Road TI.
- The Jacobs team, FHWA and the District met several times to discuss additional Craycroft Road TI concepts.
- The Jacobs team, FHWA and the District, met with the City of Tucson to review all of the concepts and the recommended concept for Craycroft Road. The City of Tucson followed up with input from Sun Tran. Sun Tran requested the existing bus stop be relocated to a new location near the Circle K.

Brad provided a status of the project to date:

- Jacobs prepared a memorandum that summarized the concepts developed for the I-10/Craycroft Road TI. Each concept was evaluated and a concept was selected to illustrate the system alternatives that will

be presented to the public on the two system alternatives. The memorandum was provided as a handout along with a figure illustrating the concept that will be presented at the public meetings.
- The writing for the draft Initial DCR is ongoing. Several sections have been written.
- The preliminary bridge analysis was completed.
- The environmental work is progressing on the two build alternatives and the no build alternative.
- A change order to add HDR to the team as our Public Involvement consultant was just approved by ADOT. We'll be moving forward to set a date for the next Public Meetings.

Brad Olbert discussed the I-10/Craycroft Road TI access control memorandum. The concepts focused on the area to the north of the interchange to deal with the large truck volumes and the need to add a raised median per Roadway Design Guideline Section 506 - Access Control. The intersection of Travel Plaza Way and Craycroft Road is located approximately 200 feet north of the I-10 westbound Frontage Road. The raised median would block the eastbound to southbound left-turn movement from Travel Plaza Way onto Craycroft Road. While the left-turn movement is operating at a Level-of-Service (LOS) A, our preliminary analysis showed for the design year 2040 this movement with existing conditions will drop to LOS F.

Eight access control concepts were developed for the Craycroft Road TI. Realignment of Travel Plaza Way to meet access control criteria cannot be done because the realignment would impact several potential historic structures (over 50 years old) and low income housing. There are two schools and a regional park located ½ mile north of Travel Plaza Way. It was clear from our meetings with stakeholders along Craycroft Road that trucks needed to stay to the south of the schools and park. Concepts involving a roundabout were not desirable primarily because truck drivers have a difficult time negotiating roundabouts. A one-way connector road around the Freightliner facility was considered and discarded because it would most likely be a total take of the Freightliner facility due to a loss of employee parking and the impacts to the residential neighborhood to the east. Providing a signal at Travel Plaza Way would work well in the short term but not as a long term solution. Providing a signalized tee intersection located 660 feet to the north of the TI with a two-way connector road to the west that connects to the westbound frontage road met the access control criteria but with impacts to the Triple T Truck Stop. A short frontage road on the east side of Craycroft Road will be needed to provide access to residential parcels to the east and storm runoff will need to be intercepted and conveyed to an existing channel to the north. This concept was agreed to moving forward. See the attached concept figure.

Michael Marietti with the City of Tucson asked if truck volumes were considered in the signal analysis with the two-way connector road. Brad said Jacobs prepared a preliminary analysis of the intersection using Synchro software, a conservative truck volume of 20% was used in the analysis. Detailed information from a vehicle classification analysis will be used in the VISSIM analysis.

Chris Anderson with the Tucson Fire Department asked if large fire department ladder trucks can enter the proposed frontage road adjacent to Craycroft Road. Jacobs did not check the design for turning movements by fire trucks. Jacobs will run turning templates to make sure the curbing placement will allow ladder trucks to enter and exit the frontage road.

Jacobs still needs to develop the vertical profile for Craycroft Road. A drainage analysis will provide us with information on how the runoff can be conveyed under Craycroft Road and conveyed to the existing drainage channel to the north. Rick Ellis asked if the existing dip crossing would be eliminated. The existing dip crossing on Craycroft Road needs to be eliminated because the proposed raised median used for access control will block the storm flows over the roadway. The roadway profile will be elevated to get over the drainage culvert

needed to intercept the runoff. Mike Dawson said environmental studies will look into visual, noise and air impacts caused by the Craycroft Road improvements.

Brad mentioned that future traffic volume changes to the Craycroft Road TI will come primarily from the south of I-10 and not from the area to the north. Craycroft Road to the north of the TI is isolated by the Julian Wash and the Union Pacific Railroad tracks. There is a possible reroute of Swan Road from the south that may connect with Craycroft Road in the distant future. Also the Craycroft Road TI is used as a shortcut by commuters who live to the east and work at Raytheon. If more industry is built near Raytheon the TI may experience more traffic. But again this would be for development opportunities to the south of I-10 and not to the north.

Jim Walcutt asked a question about the vacant parcel located to the north of the Pilot Travel Center if that would have an impact on the traffic volumes. Brad said it was his understanding that the vacant parcel is owned by Pilot and they were planning to develop an RV repair facility. If the repair facility is built, the impact on traffic volumes would be minor. There was a follow-up question regarding a larger vacant parcel that is located north of the Julian Wash. What impact would that have on Craycroft Road traffic volumes? The vacant land is actually two parcels. The western parcel is located adjacent to the regional park and is owned by Pima County. The eastern parcel is owned by a developer. Future traffic volumes associated with the eastern parcel will most likely utilize Wilmot Road to gain access to I-10. The developer could construct a crossing of the Julian Wash to gain access to Littletown Road. In that case a portion of the traffic will probably travel on Littletown Road to Valencia and then access I-10 at the Valencia Road TI. Some traffic will utilize Craycroft Road if there are employment opportunities to the south.

Mike Dawson asked questions about the volume of trucks that would utilize the two-way connector road during peak hours and the number of trucks that would utilize the segment of Craycroft Road near the new signal during the evening off peak hours. Mike stated that the added truck traffic late at night would be potential air, noise and visual questions asked by the 8 or 9 residences located adjacent to Craycroft Road near the new intersection. Brad said normally traffic counts are taken just during the peak hours for design purposes. Brad will check with Jacobs' traffic engineers to see if tube counters were used to record traffic counts outside the peak hour period. Jacobs will be looking into the air and noise levels for the environmental documentation.

Rick Ellis asked about the implementation of the I-10 project. How would that be done? Jacobs developed an implementation plan that was reviewed with the agency stakeholders at the progress meeting dated February 21, 2018. Brad briefly described the rationale behind the sequence of construction projects. At the progress meeting we also discussed detour routes for each project. The meeting notes and all of the figures handed out at the meeting are available on the project website listed on the meeting agenda.

James Gomes asked if the Valencia Road TI was sized adequately to handle the traffic coming from the Craycroft Road TI on the westbound frontage road. Brad said the Valencia Road TI was enlarged over its current configuration to add additional turning lanes to handle the projected vehicle turning movements. The traffic volumes included the traffic from the I-10 westbound frontage road. Jacobs' traffic engineers used a VISSIM model which allowed us to look at the traffic congestion effects on the design for both system alternatives. The Valencia Road TI functions well with the added traffic volumes from the Craycroft Road TI.

Looking ahead, three major items that are coming up include:

- Public information meetings where the two system alternatives will be presented. The public information meetings will be scheduled at two locations and on different days. The meetings will be

held at the end of October or early November. One meeting location will be at a school near the Littletown neighborhood the other will be near the west end of the project. The meetings will have roll plots on tables showing the two system alternatives. A short power point presentation will be given to provide background information on the project and allow attendees to ask a few questions. Handouts will be provided plus several means to provide comments back to the study team. Mike Dawson said it would be good to identify several items that were addressed from the previous scoping meeting to show that we listened to the publics' concerns. The outreach will involve sending notices to parcels along the corridor, sending letters to property owners that will have property takes, newspaper advertisements, notices posted at key locations, radio etc. Haley Estelle with HDR will be organizing the outreach effort.

- Second, the environmental effort is moving forward now that the project footprint has been identified. Several environmental reports (Air, Noise, Biological, Section 404, Cultural, Historic Structures, hazmat report, etc.) and the draft environmental assessment will be completed by the end of December 2018.
- Third, a draft Initial DCR and EA will be submitted to ADOT in January 2019 for their review. After ADOT reviews the documents, the documents will be modified and distributed for comments by agency stakeholders.

ACTION ITEM LIST

- The Jacobs team will update the VISSIM traffic model incorporating the latest Craycroft Road TI roadway changes, traffic volumes and vehicle classification information. Future traffic volumes for the Craycroft Road concept will be needed for the air and noise analysis and to answer questions from the public.
- The Jacobs team will review the proposed frontage road along Craycroft Road and run turning templates for trucks and fire equipment to ensure the larger vehicles can enter and exit the frontage road.
- The Jacobs team will continue with the preliminary design effort on Craycroft Road. The drainage concept and vertical profile need to be refined for the DCR and for the environmental analysis.
- The Jacobs team will work with ADOT to set a date for the next public meetings and develop the outreach documents.
- Sarah Karasz will check in with Davis Monthan AFB about getting a response back on a letter sent to DM asking if they wanted to be a cooperating agency.
- Stakeholders are encouraged to review and comment on the meeting minutes to ensure accuracy.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

ARIZONA DEPARTMENT OF TRANSPORTATION
205 S. 17th Avenue, Mail Drop 605E
Phoenix, AZ 85007

MEETING NOTES

I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L

December 12, 2018

TO: Meeting Attendees
Tazeen Dewan, ADOT Major Projects Group, Project Manager**
Carlos Lopez, ADOT Major Projects Group, Manager**
Rod Lane, ADOT Southcentral District, District Engineer
Doug Moseke, ADOT Southcentral District, Asst. District Engineer
Jerimiah Moerke, ADOT Community Relations
John Moffatt, Pima County Director, Office of Economic Development
Carmine DeBonis, Pima County Deputy County Administrator – Public Works
Yves Khawam, Pima County Chief Deputy Transportation Director
Ana Olivares, Pima County Director of Transportation
Jim Cunningham, Pima County Deputy Director of Transportation
Kathryn Skinner, Pima County Capital Project Design Manager
Jonathan Crowe, Pima County Project Planner & Manager
Brad Olbert, Jacobs Project Manager

** Attended via teleconference

FROM:
Brad Olbert, Jacobs Project Manager

SUBJECT:
COORDINATION MEETING NOTES
I-10, I-19 to Kolb Road & SR 210, Golf Links to I-10
Project No. 010 PM 260 H7825 01L
PHASE II (I-10/SR 210) Design Concept Report and Environmental Assessment

INTRODUCTION

The project meeting started at 11:00 AM December 12, 2018 at the Pima County Public Works Conference Room. Teleconferencing was available for offsite attendees. The meeting adjourned at 1:30 PM.

The meeting was held to answer county questions regarding the two system alternatives for the I-10/SR 210 project.

SUMMARY

Jonathan Crowe, PCDOT, opened the meeting at 11:00 AM. Self-introductions were provided by all other attendees. Jonathan presented a short safety moment related to building exits.

Several Pima County administrative and transportation staff members attended the I-10/SR 210 public information meetings. Pima County requested a meeting to receive feedback related to new developments coming to the Tucson area (Kino Sports complex and the Amazon development at the Port of Tucson) and to have some discussion on construction implementation and the Sonoran Corridor.

The expansion to the Kino Sports Park was reviewed. The County was concerned about access to their new facility. Grading is currently underway for multiple soccer fields and a stadium to attract professional tournaments. The facility is being designed at the highest level to include a hotel, waterpark and multiple retail/restaurant establishments. Mr. Olbert provided copies on the Kino Boulevard TI access control concept that illustrated signalized access to the main entrance to the facility. The access is acceptable based on the current ADOT Roadway Design Guidelines (RDG). The county would like additional access to the hotel facility that is located nearer to the Kino Parkway TI. Rod Lane with ADOT said that additional right-in/right-out access to the hotel should not be an issue with the current guidelines. ADOT and Jacobs met with Pima County Administration on the sports park a couple of times to ensure coordination. Mr. Olbert provided a copy of the access control RDG guidelines to the County.

The County asked about the timing of interchange projects. Rod Lane said first the DCR and EA need to be approved by FHWA which should occur late next summer. Unfortunately this will come after the next 5-year construction program is finalized. Because the I-10/SR 210 project will cost over a billion dollars it will be broken down into smaller projects for construction. Rod said he has place holders for the design of two of the traffic interchanges, Kino Blvd and Country Club. One of the items that Jacobs will include in the Initial DCR is a recommended implementation plan for the I-10/SR 210 project. This plan needs to be reviewed by PAG to decide on the order of the projects to be constructed. Mr. Olbert produced a map that illustrated the proposed sequence and said the draft of the implementation plan is available on Jacob's team website for review.

Mr. DeBonis asked if the I-10 traffic model used for the project included the Sonoran Corridor (SR 410). Mr. Olbert replied yes. The modeling in the RTA regional traffic model used for the project included a parkway that closely aligned with the current alignments proposed for SR 410. It was not labeled the Sonoran Corridor but it was very similar. The difference being the parkway alignment has a slightly lower operating speed than the interstate standards that SR 410 is planned to operate at. The parkway facility shown in our traffic model would move slightly fewer vehicles than an interstate facility. It was Jacobs understanding that SR 410 will initially be phased in, first as a two-lane facility when the I-10/SR 210 project is being completed and then later as an interstate facility as traffic increases. Carlos Lopez confirmed that the SR 410 traffic model has the completed I-10/SR 210 project as being part of the no-build network when analyzing the projected traffic flows for SR 410.

Mr. Moffatt said Amazon is constructing a major distribution center at the Port of Tucson. Amazon will hire 1,500 employees and the site structure will have 60+ loading docks for tractor-trailers. Hundreds of trucks and employees will be using I-10 Kolb Road TI. Will the proposed traffic interchange at Kolb Road be able to handle the traffic load? Mr. Olbert responded that the proposed future Kolb Road TI is a diverging diamond and will be able to handle the load. This type of interchange simplifies the turning movements so that most of the turning movements are free flowing and not restricted by signal phasing. The two traffic signals have only

two phases which maximizes the time for the through movements. There should be few backups with the signals if timing with the two signals is fully actuated. Jacobs took the county's earlier comments and adjusted the turn lane configurations to accommodate heavy truck movement. In the future, when the road segment is in final design the TI's should be reviewed by the design consultant to determine if adjustments are needed. Because the whole project will need to be constructed in smaller segments it could take ten or more years before some sections are constructed. Since more developments like Amazon will happen, it will be important for final design consultants to validate our proposed TI concepts. Jacobs will review our traffic model parameters and review the current PAG traffic model to see if adjustments for the Amazon development were included. Jacobs will review our current design and verify the TI capacity to handle the traffic.

Mr. Olbert said there are two basic traffic capacity needs related to the I-10/SR 210 concepts. First, is there enough capacity on the mainline to handle the future traffic volumes and second, is there enough capacity at the TIs to get on and off the freeways. When Jacobs originally analyzed the I-10/SR 210 alternatives it was for a 2040 design year metro Tucson population of 2.0 million persons. After the economic downturn Jacobs reanalyzed the I-10/SR 210 alternatives for a 2040 design year metro Tucson population of 1.4 million persons. The concepts were then revised to fit the lower population figure. For the mainline we reduced the number of through lanes by one in each direction from Kino Parkway to Kolb Road. However, we retained the footprint identified for the 2.0 million person design. The additional through lane was stripped out and an inexpensive AC cap was placed instead of placing the PCCP pavement. Mr. Olbert handed out copies of two typical sections for I-10 to illustrate the point. This will allow the mainline capacity to be expanded in the future inexpensively when it is needed. The TIs are similar, with the number of ramp lanes adjusted down to reflect the lower population number. The operational levels of service for I-10, SR 210 and the interchanges are very good and the future levels of service will continue to be very good with minor construction adjustments. Figures illustrating the 2040 levels-of-service for the No Build Alternative, System Alternative I and System Alternative IV are attached.

Mr. Olbert also handed out an updated response to the Pima County March 20th, 2017 letter incorporating updated traffic information and location information on the two connector ramps for Alternative IV, see attachment.

ACTION ITEM LIST

Jacobs will review our traffic model parameters and review the current PAG traffic model to see if adjustments for the Amazon development were included. Jacobs will review our current design and verify the TI capacity to handle the traffic.

Signed: Brad Olbert
Brad Olbert, PE, Project Manager

Attachments

101 North 1st Avenue, Suite 2600
Phoenix, Arizona 85003
JACOBS
Tel. (602) 253-1200
Fax. (602) 253-1202

EcoPlan Associates, Inc.
Environmental Science & Resource Economics

Meeting Minutes

Date:	2/6/19
Meeting Location:	Conference Call
Meeting Date:	2/4/19
Start Time:	01:00 p.m. **End Time:** 02:00 p.m.
Meeting Topic:	I-10/SR210 Project - DMAFB as a Cooperating Agency
Participants:	Tremaine Wilson, FHWA Ammon Heier, FHWA Tazeen Dewan, ADOT Christopher Brewster, Chief Environmental Officer, DMAFB Brad Olbert, Jacobs Maria Altemus, EcoPlan Michael Dawson, EcoPlan
From:	Michael Dawson
Copy:	Participants
Federal Number:	010-E(210)S
ADOT Number:	010 PM 260 H7825 01L
EcoPlan Number:	09-301004
Project Name:	Interstate 10, Junction Interstate 19 to Kolb Road and State Route 210, Golf Links Road to Interstate 10

Discussion Items:

- Introductions
- Tremaine introduced himself and explained that Brad would present the most recent slideshow presentation that was presented at the last public meeting on November 28 and 29, 2018 to get everyone up to speed on the project
- Brad and Michael reviewed the project history, purpose and need, previous study (Phase I) and current Phase II activities.
- Brad and Michael explained the differences between past alternatives and the SR210 connections with I-10 and how several alignments were dismissed and are no longer options. These options included tying in SR210 further east along I-10. However there were issues with the Air National Guard, Border Patrol, DMAFB, public parks, and schools that

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precluded connections east of Alvernon Way.

- Michael explained that a scoping letter had previously been sent to the base commander and an invitation to be cooperating agency letter had been sent to the 6th Air Force Commander previously.
- Previous coordination with the base had been with Michael Toriello and Kasey Carter with the 355th Civil Engineering Squadron and included discussions on the south gate at Wilmot road, which in the future would accept all commercial deliveries/inspections.
- Brad explained the differences between the System Alternative I and System Alternative IV
- Chris explained that he and his team will determine what level of signatory authority DMAFB would like to have in the future on the project
- Chris would like to be sure that the design plans don't impact any biological or cultural issues on the base.
- Chris also wants to ensure that design plans don't add to bird air strike issues. He asked about water detention/retention basins along the SR210 alignment which abuts the DMAFB and is near a runway. Retention/detention basins can create an environment which attracts birds and may increase bird air strikes
- Brad explained that there are retention basins planned for that area, but they can be modified so there is no ponding or collection of water for more than one day
- Chris mentioned the new bike park is proposed for the northern side of Golf Links and which may impact the project. Chris mentioned that it would be a good idea to coordinate with the City of Tucson to determine what will be installed to ensure it doesn't conflict with current design plans for SR210. Work by volunteer groups is already underway for the bike park. Chris followed up by sending the conceptual plan sheet for "Wood Bike Park Project"
- Chris said that he would like to look at the roadway design plans and the main documents, but doesn't need all the data and appendices that go with it.
- Mike said that the current schedule has the draft EA being completed this month (February) for ADOT/FHWA review and will be ready for public review in March or April.
- Mike asked if future DMAFB correspondence regarding the project should be sent to Toriello and Carter or just Chris. Chris responded that

correspondence can be addressed to him only.

Action Items:

- Brad to review retention/detention basins around the DMAFB and include bleed off pipes and drywells to eliminate ponding that could attract birds
- Brad to forward proposed roadway and drainage plan sheets for SR 210 (along Alvernon Way alignment) to Chris
- Design team to contact City of Tucson regarding development of new bike park

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APPENDIX R
100 ACRE WOOD BIKE PARK MEMO

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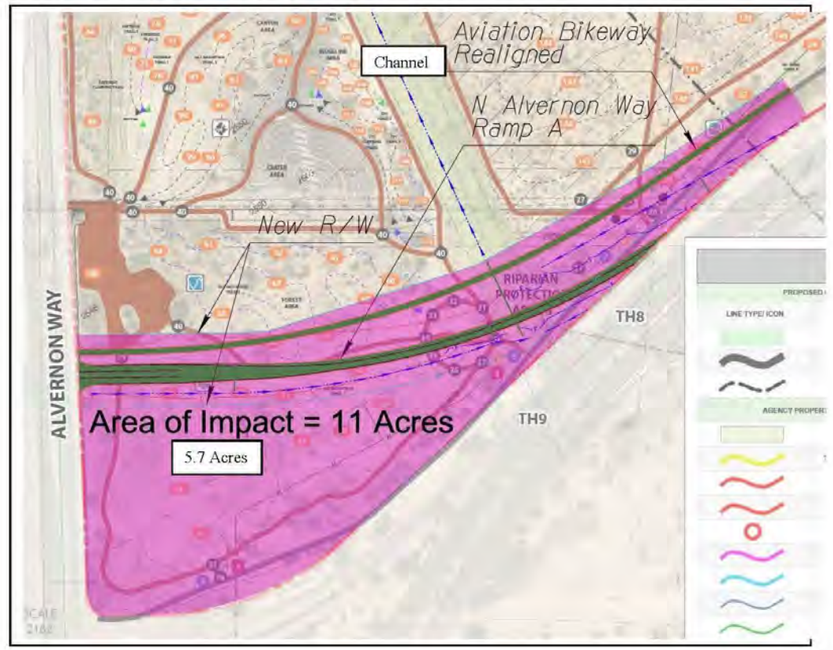
I-10 DCR (I-19 to Kolb Rd and SR 210)
WB Golf Links Off-ramp to Alvernon Way Concept Modification for 100 Acre Wood Bike Park
February 27, 2019

Background Information
During a teleconference meeting with Davis Monthan Air Force Base (DMAFB) (held on February 4, 2019), Christopher Brewster (Chief Environmental Officer for DMAFB) informed the team that DMAFB was working with the City of Tucson to convey 100 acres of vacant AFB land to the city for a new park. The 100 Acre Wood Bike Park is proposed for the northwest corner of the base located north of Golf Links Road and may affect the roadway project. Mr. Brewster provided a park planning document that was recently approved by the Tucson City Council. See the location of the proposed 100-acre park on the aerial below.

The park planning document was overlaid with the proposed westbound (WB) Golf Links Off-ramp to Alvernon Way to determine the impact to both projects. See the figure below. The area of impact (11 acres) is shown in the color magenta.

Minimize Impact of Proposed WB Golf Links Off-Ramp - Construction of the proposed WB Golf Links Off-Ramp (Ramp A) to Alvernon Way and realignment of the Barraza/Aviation Bikeway would cause a significant 11-acre impact to the bike park. The area impact can be reduced by constructing the Barraza/Aviation Bikeway utilizing a TCE rather purchasing right-of-way. This would reduce the area take on the park by 2.0 acres, but the alignment of the bike path and ramp would still affect the function of the park by cutting off 5.7 acres of the park to the south of the off-ramp. 3.3 acres of land are needed for the off-ramp. See figure below. Placing a box culvert under the ramp and bike path could possibly be done to retain the 5.7-acre in the park but it's function would have been significantly altered from the current plan. Access to the 5.7-acre area via the box culvert would be problematic as bike ramps would need to be constructed down into the existing drainage channel that would occasionally be flooded. The park planning document legend indicates no building in the channel. The Pima County GIS MapGuide Map indicates 100-year flow rates in the existing drainage channel are in the range of 2,000 to 5,000 cfs.



Why is the park an issue? Under Section 4(f) the park land can only be taken "if there is no reasonable and prudent alternative to using that land". If we need to take the park land we need to justify taking the land with a detailed study following NEPA guidelines. So, is there a reasonable and prudent alternative to avoid taking the park land?

Removing the WB Golf Links Off-Ramp - As an alternative, removing the WB Golf Links Off-Ramp was examined. The off-ramp provided northbound access to Alvernon Way, access to the commercial area west of Alvernon Way and access to southbound Palo Verde Road. The major

movement is the access to southbound Palo Verde Road. This movement could be partially reallocated to the southbound to westbound off-ramp from SR 210 to Ajo Way (Ajo Way TI). The current movement for the proposed off-ramp at Ajo Way is underutilized and can handle additional turning traffic. The remainder of the reallocated movement would be split to an off-ramp at Dodge Blvd (reconstructing the existing off-ramp to Dodge Blvd) and a right-turn lane providing access to Richey Boulevard. The northbound access to Alvernon Way would be provided by reconstructing the existing off-ramp to Alvernon Way. The existing ramp was to be removed under the earlier concept. The Barraza/Aviation Bikeway would retain its current alignment along Golf Links Road to Alvernon Way. Because the bike path alignment under the Palo Verde Road bridge will be used for a third lane under the bridge, the bike path is realigned. It would turn north and follow Alvernon Way to the proposed parking lot entrance for the new 100 Acre Wood Bike Park, cross Alvernon Way and head west along the East Golf Links Road alignment. The bike pathway would turn south along Dodge Boulevard then west along East 37th Street. Crossing South Palo Verde Road at the signalized intersection a bike rider would have an option to head south along a bike lane on Palo Verde Road or continue west on the East Golf Links Road (37th Street) alignment following an existing bikeway located on the south side of the road, turning south along Richey Boulevard to a connection with the existing Barraza/Aviation Bikeway.

The above alternative avoids any adverse effect on (or section 4(f) use of) the proposed 100 Acre Wood Bike Park other than the expected construction impacts to the area. The portion of the existing Barraza/Aviation Bikeway that would be eliminated (between Alvernon Way and Richey Road) and realigned is not afforded protection under Section 4(f) since it is within the road ROW.

The proposed changes to the Golf Links Road/Aviation/Alvernon Way interchange are illustrated in the figures below.