

Arizona Department of Transportation 2016 Work Zone Safety and Mobility Process Review Report

December 2017

Prepared by
Arizona Department of Transportation
206 S. 17th Ave
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Work Zone Safety and Mobility Process Review Report

This Work Zone Safety and Mobility Process Review Report was prepared by the Arizona Department of Transportation (ADOT) and is evidence of Arizona's Conformance with 23 CFR 630.1008(e) Subpart J

Arizona Department of Transportation

Approved By: *Della Z. Han* Date: *Jan 31, 2018*
Deputy Director for
Transportation/State Engineer

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Executive Summary

The purpose of this biennial Process Review is to guide improvements in the agency's work zone policy, processes and procedures, data and information resources, and training programs to determine whether they are adequate, therefore, enhancing safety and mobility on future projects. 23 CFR 630.1008 (e) requires ADOT to conduct a biennial Process Review of work zones. The Rule states that the ultimate objective of a Process Review is to enhance efforts to address safety and mobility on current and future projects.

Arizona Department of Transportation (ADOT) process reviews are due at the end of every even calendar year. The previous process review was completed in 2014. This process review has been conducted for 2016, and the next process review will be completed by the end of 2018.

ADOT conducted the 2016 Process Review with the focus of identifying best practices and opportunities for improvement. Since this was conducted in a short timeframe, the intent was to utilize the review as a follow-up from 2014 and a catalyst for 2018. The 2016 Process Review included:

- Evaluation of four projects to determine effectiveness of the 2014 Process Review actions.
- Assessment of the November 1 and 2, 2017 ADOT Work Zone Capability Maturity Framework (CMF) Workshop Results to identify actions for program improvement.

The 2016 Process Review findings and recommendations included the following:

- The assessment of four projects concluded that the 2014 Process Review recommendations were implemented with some opportunities for further improvement. Recommendations included:
 - Establishing consistent TMP development and implementation practices across Districts.
 - Improving written TMP documentation by removing extraneous information.
 - Improving education about tracking TMPs.
- The ADOT WZ CMF Workshop identified performance measurement, systems and technology, and culture as dimensions with lowest capability. Recommendations included:
 - Identify of WZ PMs to incorporate into AMS

- Develop informational resources for staff regarding WZ management technologies and innovations with mechanisms to periodically update.
- Establish a steering committee of key agency champions and WZ management core staff.

Background

Process Reviews are State-led and not to be confused with Federal Highway Administration (FHWA) Conformance Reviews, which are to determine if all applicable standards (national, state, or local) have been met. They should also not be confused with the Work Zone Capability Maturity Framework (CMF), which is a set of questions designed to assist the Department to simply evaluate their work zone policies as a whole. The results of the CMF often identify areas that may benefit from a more in-depth review through the Process Review.

The purpose of the Process Review is to assess the effectiveness of Work Zone Safety and Mobility (WZSM) procedures and enhance safety and mobility on current and future projects.

The first ADOT work zone safety and mobility Process Review was conducted in 2008. The focus of that review consisted of four areas: speed reduction, lane closure procedures, use of positive protection devices, and mitigation of safety and mobility impacts. In performing this first ADOT-led Process Review, the steering committee elected to focus on Transportation Management Plans.

Then for the 2014 Process Review conducted by ADOT with FHWA, the sole focus was the Transportation Management Plan (TMP). The purpose of this review was to determine Arizona's compliance with 23 CFR Part 630 requiring a TMP for all projects. The 2014 Process Review made nine observations and recommendations. Subsequent committee meetings resolved the nine findings:

1. **Finding:** There was no formal tracking device in place showing which projects have a full TMP and those that have a partial TMP.
Action: The Traffic Group added a TMP tracking field to the Traffic DataBase.
2. **Finding:** There were many questions from staff regarding significant projects, impact, and the need for all four components of a TMP.
Action: A Power Point presentation was developed and was presented at the ADOT Resident Engineers' Academy and the ADOT Project Managers' Academy.
3. **Finding:** There was no checklist for project managers to identify significant projects and what components of a TMP are required.
Action: The checklist was to be developed but was not completed.

4. **Finding:** ADOT did not have a process and programmatic agreement for maintenance activities eligible for exemption from the significant project requirements for separate Traffic Operations and Public Information components as defined by the Rule.
Action: A programmatic agreement was drafted for those activities.
5. **Finding:** ADOT's Guidelines for Work Zone Safety and Mobility pursuant to 23 CFR 630, Subparts J & K required revision to include more details and a template for exemptions.
Action: Developed a template for exemptions and added it to the guidelines.
6. **Finding:** I-10 Reconstruction project, TRACS H624101C, Ruthrauff Road to Prince Road was identified as a best management practice for packaging TMP components.
Action: The Ruthrauff Road to Prince Road project TMP was used as a template.
7. **Finding:** ADOT's current process already has the four components of a TMP for most projects, however, contains no formal packaging of the TMP.
Action: ADOT Contracts and Specifications developed language that was added to the General Requirements Section of the Special Provisions. The implementation of that specification is still inconsistent.
8. **Finding:** The Emergency Vehicle Access Plan (EVAP) component required by Arizona Statute (A.R.S. §28-652) was not clearly identified as EVAP in specifications.
Action: ADOT Stored Specification 701PDMPT was published defining EVAP.
9. **Finding:** The public information function does not compete for funding with construction in individual projects. It is focused on the entire construction and maintenance program impact rather than individual projects. It was identified as a best management practice.
Action: No action was required.

A key focus of the 2014 Work Zone Safety and Mobility Process Review was ensuring the inclusion of all components of a TMP on significant projects. To track if this was implemented; the team researched recent significant projects that had been in development since the 2014 Process Review to determine if they contained all four TMP components. This research produced a short list of three projects shown in Table 1.

Table 1 Research Results - TMP Components in Projects

Project Name		Contract Award Date	TMP Components				TMP Requirement listed in Traffic Database
TRACS #	Project #		Temp. Traffic Control	Public Involvement	EVAP	Traffic Ops.	
I-19 Ajo Way TI (Jct SR 86) Capacity Additions		10/16/2015	Yes	Yes	Yes	Yes	No
H846701C	NH-019-A-(220)S						
I-10 SR 303L System T.I. (Phase II)		12/18/2015	Yes	Yes	Yes	Yes	No
H857701C	IM-303-A(216)S						
South Mountain Freeway		2/26/2016	Yes	Yes	Yes	Yes	No
H882701C	202-D-(200)S						
I-10 Ina Road Traffic Interchange Reconstruction		12/16/2016	Yes	Yes	Yes	Yes	Yes
H847901C	NH-STP-010-D(216)S						

In review of the projects in Table 1, it was found that all of the projects contained the requirements of the TMP as outlined in the Implementation Guidelines for Work Zone Safety & Mobility pursuant to 23 CFR 630 Subpart J & K, and were provided in the Special Provisions of the project’s Contract Documents. Based on the recommendations from the 2014 Process Review, the Traffic Database has a field showing whether each of the projects required a TMP, but the field was not correctly filled in for three of the projects that were sampled.

For TMPs, there are several items worth noting during this review. As can be inferred from Table 1, the projects selected were awarded during the time period between the 2014 and 2016 process reviews, as such the language contained within the Special Provisions in each project for the TMP varied slightly. There is standard language used in the Special Provision regarding the TMP, the EVAP, and Public Involvement. The Traffic Operations component of the TMP is described in the Transportation System Management Program section of the General Requirements. Although each project’s Special Provisions contained the TMP components, they did not follow any specific order. It is recommended this item be further explored with additional review, further refinement, and standardized formatting, possibly as a combined stored specification.

The Traffic Database is not always being used to track projects that require TMPs. It is recommended to educate users of the ADOT Traffic Database about the importance and use of the database for tracking projects with TMPs.

Purpose and Objectives

A two-day guided Process Review workshop was held where instructors that presented on behalf of the FHWA stressed the capability for effective work zone traffic management.

The purpose of this biennial Process Review is to guide improvements in the agency's work zone policy, processes and procedures, data and information resources, and training programs to determine whether they are adequate, therefore, enhancing safety and mobility on future projects. 23 CFR 630.1008 (e) requires ADOT to conduct a biennial Process Review of work zones. The Rule states that the ultimate objective of a Process Review is to enhance efforts to address safety and mobility on current and future projects.

ADOT conducted the 2016 Process Review with the focus of identifying best practices and opportunities for improvement. Since this was conducted in a short timeframe, the intent was to utilize the review as a follow-up from 2014 and a catalyst for 2018. The 2016 Process Review created a list of recommendations that the agency wants to prioritize and work on for the next year. Use the 2016 Process Review to look at recommendations from the previous Process Review and determine if its recommendations were addressed.

Managing traffic in work zones is necessary to minimize traffic delays, maintain motorist and worker safety, complete roadwork in a timely manner, and maintain access for businesses, institutions, and residents. Process Reviews help assess the effectiveness of the work zone program and policies and procedures. The review is to enable ADOT and the FHWA to confirm that a problem does not exist, or to identify systemic problems and make recommendations to improve situations where shortcomings do exist. It is also to identify Best Practices.

The objectives of this Process Review was to assess ADOT's current work zone management capabilities, determine actions needed to improve ADOT's work zone management capabilities, and determine how to incorporate action items into ADOT's next Process Review through the use of a Capability Maturity Framework (CMF).

Team Members

The team that conducted the Process Review included ADOT representatives from the Southcentral District, Central District, Transportation Systems Management and Operations (TSMO) – Southern Region, Construction Group, Communications, Project Management, and Traffic Design. Representatives from the FHWA Arizona Division Office provided technical guidance.

The Process Review Team includes the following:

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Process

This Process Review was intended to develop a continuous improvement culture towards work zone safety and mobility management. This concept, illustrated graphically in Figure 1, is a major reason why Process Reviews are required every two years. The two-year cycle encourages ADOT to take an incremental, systematic approach towards improvement. Each Process Review should build upon the knowledge gained, lessons learned, and improvement successes achieved with previous reviews.



Figure 1 Guidance for conducting effective work zone Process Reviews (Adapted from FHWA-HOP-15-013)

Adopting a continuous improvement perspective towards Process Reviews also has practical value. Given current work demands on ADOT staff, it is often not feasible to spend large amounts of time during each Process Review examining in detail all aspects of agency operations that could relate to improved work zone safety and mobility. ADOT's focus on the Lean Process for continuous improvement will allow a high-level look at the current effectiveness of the

overall work zone safety and mobility policies and procedures during each review, and then focus in greater detail on one or two topic areas. These areas of special emphasis then rotate for each Process Review. For example, we may choose to focus on how to significantly improve work zone mobility and safety data collection and analysis procedures to achieve useful performance measures in one Process Review. In the next Process Review, we might then work on determining how to best utilize those performance measures in project planning and development tasks.

The team immediately identified a need to establish a standing work zone management “team,” or part of the “Steering Committee,” to meet regularly to review recent data, identify and discuss work zone safety and mobility-related issues at a program level, identify potential improvements, and establish action plans to implement those improvements. The Committee will also complete the required biennial Work Zone Safety and Mobility Process Reviews.

By establishing a continuing improvement perspective regarding Process Reviews, ADOT can further investigate specific aspects of its work zone safety and mobility procedures and better understand what is working and what needs to be changed. Determining what to target within a given Process Review is a key activity that influences the effectiveness of each review. Three key questions (with follow-up questions about how to answer those main questions) can assist the agency to maintain a continuing improvement perspective, as depicted in Figure 2.

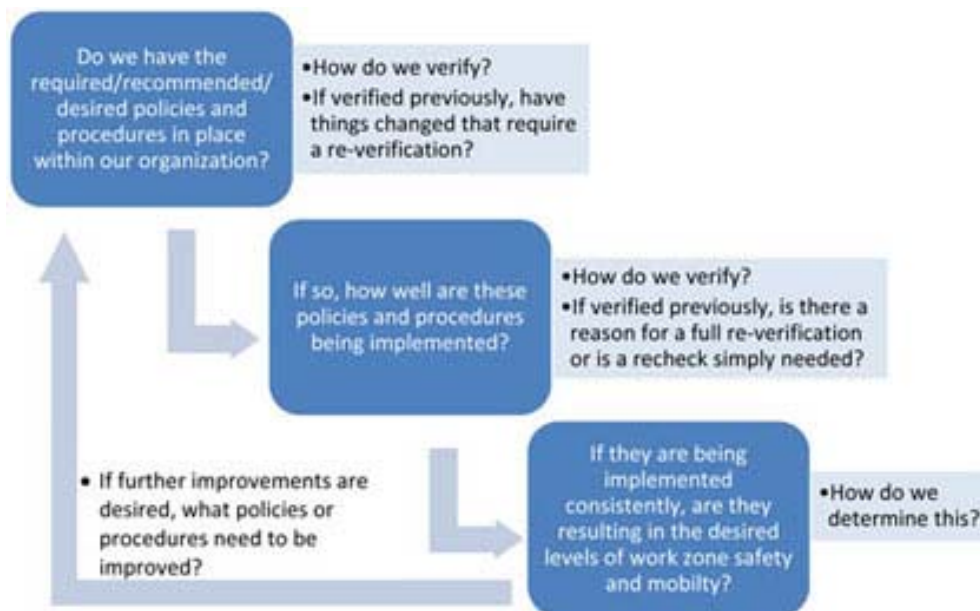


Figure 2 Questions to Help Guide Process Review Planning

In developing a plan for conducting Process Reviews, ADOT should consider where it stands in this sequence, and base its plans for upcoming and subsequent reviews accordingly. Early Process Review efforts have focused on verifying that all of the federal requirements regarding work zone safety and mobility policies and procedures are in place, and on assessing how well the policies and procedures have been implemented. Eventually, it is desirable for ADOT to be able to assess whether the required policies and procedures are having the desired effect on safety and mobility, and determining how best to obtain data to assess the policies and procedures. If ADOT determines that a policy or procedure is not providing an adequate level of work zone safety and mobility performance, decisions may be made to establish new policies and procedures above the current requirements as part of the Process Review. This feedback would take the agency back to the first set of questions in Figure 2, with the emphasis focused on those new policies and procedures.

To implement a continuing improvement perspective, ADOT decided to use the Work Zone Management (WZM) Capability Maturity Framework (CMF) in conjunction with the current Process Review. The concept of the CMF emerged from the Strategic Highway Research Program 2 (SHRP2) L01 and L06 projects that promoted a process-driven approach to improve Transportation Systems Management and Operations (TSM&O). Building on SHRP2 results, the American Association of State Highway and Transportation Officials (AASHTO) has continued development of this concept and a capability maturity concept was published as part of the TSM&O guidance. To continue the emphasis on capability maturity and to provide program-level guidance, FHWA developed additional frameworks that focus on improvement actions for specific TSM&O program areas including Traffic Management, Traffic Incident Management, Road Weather Management, Planned Special Events, Work Zone Management, and Traffic Signal Management. This framework is designed to assess the current strengths and weaknesses and develop a targeted action plan for the program area.

The CMF is based on the Information Technology-developed Capability Maturity Matrix concept. The six Dimensions or Process Areas that are to be addressed within the CMF, which include the Business Process, Systems and Technology, Performance Measurements, Workforce, Culture, and Collaboration shown below in Figure 3.



Figure 3 Key Dimensions of Capability

The matrix then provides explanations for each of these Dimensions/Process Areas. It also contains four different levels at which each process area might be evaluated by the government agency performing the self-evaluation. Level 1 is ad-hoc or low level of capacity, Level 2 is managed or a medium level of capacity, Level 3 is integrated or high level of capacity, and Level 4 is optimized or highest level of capability. The four levels are shown below in Table 2. The framework is available at <https://ops.fhwa.dot.gov/tsmoframeworktool/tool/wzm/index.htm>.

Table 2 Levels and Key Characteristics of Capability

LEVEL	KEY DESCRIPTOR	KEY CHARACTERISTICS
1	Performed	<ul style="list-style-type: none"> · Activities and relationships ad-hoc · Champion driven
2	Managed	<ul style="list-style-type: none"> · Processes developing · Staff training · Limited accountability
3	Integrated	<ul style="list-style-type: none"> · Process documented · Performance measured · Organization / partners aligned · Program budgeted
4	Optimized	<ul style="list-style-type: none"> · Performance based improvement · Formal program · Formal partnerships

Three steps were performed during the evaluation:

1. Self-Assessment to assess where ADOT is in terms of the capabilities in each process area (or dimension).
2. Identifies areas of improvement and the desired levels of capability to improve program effectiveness.
3. Identifies actions that ADOT needs to take to move to the desired levels of capability.

Observations and Recommendations

On November 1 and November 2, 2017, the team completed the FHWA WZM CMF Tool to identify areas where ADOT was successful and where improvement was needed. Table 3 shows the results. Figure 4 shows a visual representation of the scores.

Table 3 - Results from WZ CMF and Process Review Workshops

DIMENSION OF CAPABILITY	LEVEL	SCORE
Business Processes	3	12/20
Systems and Technology	2	4/8
Performance Measurement	1	2/8
Organization and Workforce	2	6/12
Culture	2	6/12
Collaboration	3	9/12

See Work Zone Capability Maturity Framework and Process Review Workshops for notes and scores.

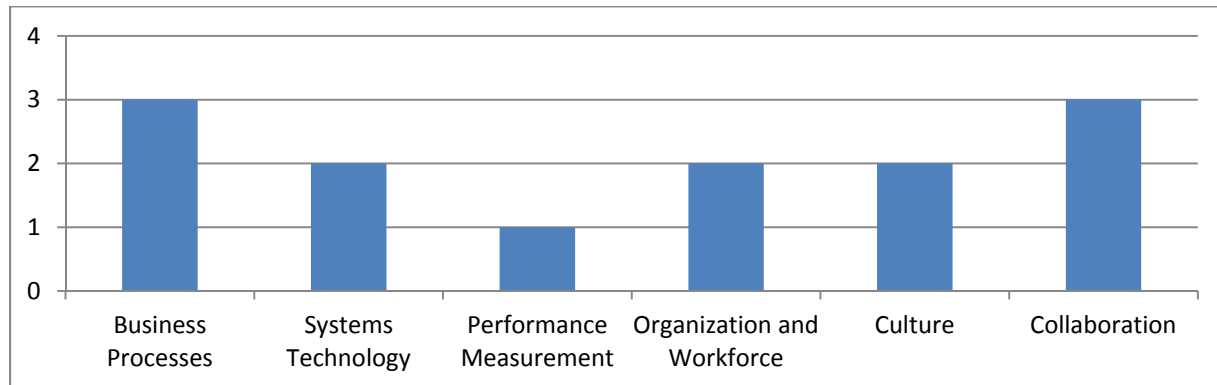


Figure 4 Levels of Capability

The workshop should show WZM process areas where ADOT could make the most improvement. Based on these results, the team chose to take action on Performance

Measurement, Systems and Technology, and Culture. The team also chose to take action on Business Processes to improve TMPs.

Action Items

Performance Measurement (L1)

Work zone performance measures should be gathered to evaluate the effect of work zone management and be used to improve future designs. The team identified performance measurement as one of the areas that is not done systematically statewide. To improve in this area ADOT should:

- Determine how to effectively use the performance measures in ADOT's Work Zone Mobility Policy which include travel delay, queue lengths, and crash occurrences.
- Determine how to incorporate WZ performance measurement into Arizona Management System: set goals and objectives, measure how we are doing, determine where ADOT will go in next cycle.

Systems and Technology (L2)

ADOT currently doesn't have a systematic way to identify new technologies for work zones. A document or way of sharing knowledge about the benefits and best practices of newer work zone technologies could improve work zone traffic control designs. To improve ADOT's capability in this area, ADOT should:

- Research and gather information/resources and sharing/educating staff on existing technologies.
- Provide links or training recommendations for staff.

Culture (L2)

The team identified that there is not a committee that regularly reviews WZM practices. To improve, ADOT should:

- Create a steering committee with regularly scheduled meetings. Requires support from State Engineers Office and a champion. For more information see the Work Zone Committee Framework section.

Business Processes (L3)

The team identified Business Practices, especially the implementation of TMPs as one of the areas that is being done in a systematic way, but the team found that there could be improvements. Some team members noted that there is often excess information in TMPs, so ADOT should:

- Reduce the length of TMPs by removing extraneous information.
- Identify a new example as a best management practice for TMPs.

Work Zone Committee Framework

ADOT will reestablish a standing Work Zone Committee with the Deputy Director for Transportation/State Engineer (State Engineer) as the sponsor. The Work Zone Committee will be reestablished starting calendar year 2018. The Committee will have ten voting members, including four representatives from the ADOT Infrastructure Delivery and Operations Division (IDO), three representatives from Transportation Systems Management and Operations (TSMO), one representative from ADOT Communications, and one representative from the ADOT Multimodal Planning Division (MPD).

Committee Members

The discipline areas that will have voting members on the committee will be:

1. Committee Chair
2. Construction and Materials
3. Development
4. Districts
5. Traffic Standards
6. TSMO Regional
7. Traffic Operations Center (TOC)
8. Traffic Safety
9. Communications
10. MPD

All of these representatives shall be selected by the division/district/group manager responsible for those areas except for the Traffic Standards representative, which shall be the ADOT Traffic Standards Engineer from IDO Traffic Group. Each representative will be selected for a two year term as a member of the committee with no limits on the number of consecutive terms. The

terms for serving on the committee will start on January 1 and expire on December 31 the next year (Example: January 1, 2018-December 31, 2020).

The terms for the voting members will be staggered by one year, so that each time new members are selected, there will be continuity. Initially, four of the voting members will serve three year terms to establish the staggered rotation.

The State Engineer may add or remove voting representatives at any time. The Committee Chair may add or remove voting members, but must initiate a vote and receive a majority of voting members present in favor of that action.

If a voting member is unable to attend a Committee meeting, they may appoint someone to represent them at the meeting.

The committee may appoint non-voting representatives to serve as advisors.

Committee Chair

The Committee Chair will be one of the District Engineers or Development Group Managers and will be selected by the State Engineer. The Committee Chair will be selected for a two year term as a member of the committee with no limits on the number of consecutive terms. The terms for serving as the Committee Chair will start on January 1 and expire on December 31 the next year (Example: January 1, 2018-December 31, 2020).

The Committee Chair is also a voting member of the Committee.

Purpose of Committee

The Committee shall be responsible for the continuous improvement of work zone safety and mobility. This will include:

1. Conducting and delivering the biennial Work Zone Safety and Mobility Process review and implementing recommendations.
2. Updating the Work Zone Safety and Mobility Policies, Processes, and Procedures and Implementation Guidelines.
3. Implementing continuous improvements.

These purposes can be accomplished by:

- Reviewing recent work zone data.
- Identifying and discussing work zone safety and mobility-related issues at a program level.

- Identifying potential improvements.
- Establishing action plans to implement those improvements.
- Empowering Committee members to propose changes to processes, standards, and/or guidelines within their areas through the ADOT Standards Committee process.
- Reviewing work zone practices to evaluate implementation.

Committee Procedures

The Work Zone Committee's initial role will be to create procedures to complete the Work Zone Safety and Mobility Process reviews, update Work Zone Safety and Mobility Policies, Processes, and Procedures and Implementation Guidelines, and implement improvements. The Committee will also establish timeframes for the completion of tasks. This will include organizing the timing and frequency of committee meetings.

The Committee will make decisions based on majority votes. The State Engineer may veto any decisions.

Appendix

- A. November 1, 2017 ADOT WZ CMF and PR Workshop Summary Report
- B. ADOT WZ CMF Self-Assessment Worksheet
- C. Executive Summary February 2, 2015 WZSM Quarterly Report
- D. September 2014 Process Review Report Final
- E. Work-Zone-Safety-and-Mobility-Implementation
- F. Images of Traffic Database with TMP Tracking Field
- G. Work Zone Safety and Mobility PowerPoint for Resident Engineers' and Project Managers' Academy – May 28, 2014
- H. Programmatic Agreement for Maintenance Exemptions for Significant Projects
- I. Transportation Management Plan: Interstate 10 Reconstruction: Ruthrauff Road to Prince Road
- J. TMP and EVAP Specification

Appendix A

November 1, 2017 ADOT WZ CMF and PR Workshop Summary Report

Work Zone Capability Maturity Framework and Process Review Workshops

Arizona Department of Transportation Workshop

November 1-2, 2017
Phoenix, Arizona

I. EXECUTIVE SUMMARY

A Work Zone Capability Maturity Framework (WZ CMF) and Process Review workshop was conducted with the Arizona Department of Transportation (ADOT) in Phoenix, Arizona on November 1 and November 2, 2017. The workshop featured the attendance of thirteen ADOT employees from a variety of agency divisions, four Federal Highway Administration (FHWA) representatives, and two consultants.

Workshop participants completed the WZ CMF self-assessment to identify the agency's levels of capability in work zone management (WZM). The agency was assessed in their levels of capability in six separate process improvement areas on a scale from 1 (Ad Hoc) to 4 (Institutionalized). ADOT's aggregate level of capability in each process area is detailed below.

Process Improvement Area	Level of Capability
Business Processes	3
Systems and Technology	2
Performance Measurement	1
Organization and Workforce	2
Culture	2
Collaboration	3

At the completion of the agency-wide self-assessment, participants identified action items to advance ADOT's work zone management capabilities. Once identified, the action items from the CMF assessment were compared to the list of strengths and weaknesses ADOT had identified in their ongoing process review. After further discussion, the list of action items was refined and prioritized. Once a final list of actions was selected, workshop participants discussed how these actions could be incorporated into the agency's next process review and what data and information would need to be collected to do so.

ADOT's final list of action items from the CMF self-assessment for incorporation into future process reviews is below.



1	Identify outcome measures relative to mobility, safety, customer satisfaction, and/or work productivity/efficiency that are specified or implied in the agency's work zone safety and mobility manual.
2	Identify available data sources and data collection methods needed to develop measures of interest to the agency.
3	Determine number of projects to include in assessment and select projects for which measures will be computed.
Systems and Technology	
4	Develop informational resources for work zone designers and managers regarding availability and expected effect of new work zone management technologies and innovations. Establish mechanisms to periodically update these resources.
Culture	
5	Establish a steering committee of key agency champions and work zone management core staff.
6	Sustain regular meetings of the steering committee to ensure an ongoing dialogue that sets the agency's work zone management agenda.
7	Incorporate a strong customer focus in the steering committee discussions regarding work zone management needs and challenges.

ACTION ITEMS:

II. INTRODUCTION

The concept of a capability maturity framework (CMF) emerged from the Strategic Highway Research Program 2 (SHRP2) L01 and L06 projects that promoted a process-driven approach to improve Transportation Systems Management and Operations (TSMO).

Adapted from the software development world, the notion of CMFs rests on the following three tenets:

- Process matters: to address the challenge that projects fail or do not achieve the desired functionality for a variety of reasons unrelated to the technology.
- Prioritizing the right action is important: to address the questions: Is an agency ready, how do they know, and what should they do next?
- Focus on the weakest link: to address the question: What is holding the agency back in becoming a leader in a particular area?

Building on SHRP2 results, the American Association of State Highway and Transportation Officials (AASHTO) continued development of this concept resulting in the publication of a capability maturity concept as part of the TSMO guidance. SHRP2 implementation activities have successfully used the overall framework to work with state DOTs and other transportation agencies (i.e. toll authorities and planning organizations) to develop action plans to improve their TSMO capabilities.

To continue the emphasis on capability maturity and to provide program-level guidance, FHWA developed additional frameworks that focus on improvement actions for specific TSMO program areas including:



- Traffic Management
- Traffic Incident Management
- Road Weather Management
- Planned Special Events
- **Work Zone Management**
- Traffic Signal Management

These frameworks are designed to help agencies and regions to identify their current strengths and weaknesses and to develop a targeted action plan for the process area(s). Specifically, the Work Zone Management (WZM) CMF assesses the agency’s or region’s capability for effective work zone traffic management including assessing work zone impacts and implementing strategies for mitigating the impacts. Following a self-assessment process, specific actions are identified to move capabilities towards a more institutionalized stage across the desired improvement areas.

III. WORKSHOP PURPOSE

On November 1st and 2nd, 2017, the Arizona Department of Transportation (ADOT) hosted a one-and-a-half-day workshop to assess the agency’s current WZM capabilities via the WZM CMF, and to utilize the self-assessment results in advancing the agency’s current and future process review efforts. The workshop was held from 8:00 AM to 4:00 PM in Phoenix on November 1, and from 8:00 AM to 12:00 PM on November 2. The agenda for the workshop is included as Appendix A. Key WZM professionals were in attendance from several ADOT divisions and FHWA’s Arizona Division Office.

Workshop facilitators led participants through the capability maturity framework to assess ADOT’s current WZM capabilities, and identified actions to improve ADOT’s capabilities. Facilitators also conducted a review of ADOT’s past process review efforts and discussed ways the action items identified in the CMF could be incorporated into future process reviews. The result of the workshop was a set of actions for ADOT to further cultivate during their upcoming work zone management and process review improvement efforts.

WORKSHOP PARTICIPANT LIST

Name	Office/Agency
James Gomes	ADOT TSMO
Dan Casmer	ADOT IDO/RE
Rod Lane	ADOT IDO/RE
Adrian Leon	ADOT IDO
Raul Amadisca	ADOT IDO/Central Office
Adam Carreon	ADOT IDO/Traffic Design
William Faber	ADOT IDO/Traffic Design
Tom Herrmann	ADOT Communications
Pedram Shafieian	ADOT Construction
Julie Kliener	ADOT Construction
Raul Amadisca	ADOT Roadway Design
Jesus Sandoval-Gil	ADOT Construction
Paul Duran	ADOT Construction
Toni Whitfield	FHWA – Arizona Division Office
Tom Deitering	FHWA – Arizona Division Office



Name	Office/Agency
Ammon Heier	FHWA – Arizona Division Office
Paul Pisano	FHWA – Work Zone Management Team
Jerry Ullman	TTI
Hunter McCracken	Battelle

IV. FWHA’S WORK ZONE MANAGEMENT CAPABILITY MATURITY FRAMEWORK

The WZM CMF is specifically geared towards improving capabilities related to work zone management needs and objectives. It is best described as a matrix defining process improvement areas and levels of capability from Level 1 (low-level ad-hoc) to Level 4 (high-level optimized). Following a self-assessment process, specific actions are identified to increase capabilities across the desired process areas of relevance to work zone management. Capabilities are described for the following six areas and subdimensions:

1. Business processes
 - a. Project significance
 - b. Road user cost considerations
 - c. Innovative contracting
 - d. Transportation Management Plan development
 - e. Coordination between projects
2. Systems and technology
 - a. Assess and adopt new WZM technology and procedures
 - b. Use of existing WZM technology and procedures
3. Performance measurement
 - a. Performance measure definition
 - b. Performance measure utilization
4. Organization and workforce
 - a. Identification of needed knowledge and skills
 - b. Staff development of knowledge and skills
 - c. Use and application of knowledge and skills
5. Culture
 - a. Leadership valuation of WZM
 - b. Leadership encouragement of innovation
 - c. Outreach
6. Collaboration
 - a. Use of law enforcement
 - b. Consideration of private-sector input in WZM
 - c. Inclusion of stakeholder input in WZM

The purpose of the framework is to build consensus regarding institutional changes at an agency or regional-level. It is not strategy-specific, but rather the framework is specific to process areas that are applicable to work zone management concerns.

V. ADOT’S WORK ZONE MANAGEMENT PROGRAM

Prior to beginning the capability assessment activity, workshop participants provided the following feedback regarding ADOT’s work zone management strengths and areas needing improvement.

Work Zone Management – ADOT Strengths



Quant Lists. Field devices checklists for inspectors are useful in identifying device location and condition.

Device Certification. Certifications of devices to ensure they meet MASH requirements.

Emergency Vehicle Access Points. State law requires the design of access points or a contract clause to ensure emergency vehicles can get through a work zone.

Traveler Information. Travelers are informed about lane closures and other related road work that will cause delays.

Work Zone Audits. Auditors check entire work zone setup to ensure inspectors are meeting requirements.

Transportation Management Plans (TMP) Meetings. Meetings are established to meet with stakeholders and emergency responders to help with project phasing. Joint TMP meetings take place if there are multiple projects in the same area. These meetings do not occur often which may be a concern.

Technical Staff Training. Field technicians and traffic staff are qualified and certified.

Work Zone Management – ADOT Challenges/Areas of Improvement

Standard Designs. Standards need to be updated.

Technology Implementation. No good process for utilizing temporary devices to communicate traveler information to the public.

Inspector Documentation. Inspectors may record that something is wrong in their logs, but mechanisms to ensure that the issues have been rectified by the contractor have not been formally established. In addition, any field changes to the temporary traffic control plans for construction are not well documented.

Queue/Delay Acceptable Thresholds. Work zone safety and mobility policy only suggests to “minimize” queues/delays but does not have a standard. No real understanding of what queue or delay is acceptable.

Incentives/disincentives for Contractors. Lane rentals are used in Phoenix and penalties for late reopening at other sites. However, the spec needs to be formulated to actually enforce these penalties. If there is no penalty, contractor most likely will stop considering mobility consequences/impacts.

Adopting TMP Requirements. Need a process for identifying TMP requirements earlier in the project development process. There is no trigger for significance early in the project development process.

Allowable Lane Closures. White papers for allowable lane closure times on different routes are very difficult to find and are not codified to specifications.

Project Constructability. Project constructability is not considered enough in the design stage. Often times get to the end of a project and realize the project isn't constructible and the TTC plan has to change. Starting to use subcontractor construction experts to complete constructability reviews.

TTC Cost Estimates. Have had issues in the past with accurately estimating TTC cost. Has resulted in very large underruns or overruns.



Real-time Traveler Information Credibility. Drivers may not trust the agency’s communication of real time info. This presents an opportunity to use better technology to improve this credibility.

VI. ADOT’S WZM CMF SELF-ASSESSMENT RESULTS

Workshop participants were asked to briefly assess and assign a capability level (from 1 to 4) to ADOT’s WZM processes using the six capability dimensions. Capability levels are defined as follows:

- **Level 1 (ad hoc):** Very little effort made to predict, plan for, and manage expected and actual work zone impacts; what efforts are made occur late in the project development cycle.
- **Level 2 (recognized):** Basic agency policies and procedures exist that require analysis of work zone impacts and developing a plan to manage those impacts beginning during project planning; application across the organization is uneven and not well understood.
- **Level 3 (mainstreamed):** Policies and procedures to predict, plan for, and manage impacts are integrated and diligently applied throughout organization; effectiveness of policies/procedures is unknown.
- **Level 4 (optimized):** Effectiveness of integrated policies and procedures to predict, plan for, and manage work zone impacts are regularly reviewed and critiqued, and improved upon where possible.

The following tables and accompanying text provide ADOT’s assessment of its current WZM capabilities based on the above capability level definitions.

BUSINESS PROCESS (BP) DIMENSION

Overarching BP Score: 2.4		
Amplifying Questions	Current Level	Why?
<i>How does the determination of project “significance” affect project development decisions?</i>	3	Process in place for determining project significance which is well followed.
<i>How well does your agency estimate and use road user costs (RUC) in making WZM decisions?</i>	2	The current policy is being revised. RUCs are only used for calculating incentives and disincentives and the outcomes are not good.
<i>How does your agency utilize innovative contracting to help achieve WZM goals and objectives?</i>	2	There is a process in place for determining whether innovative contracting methods will be used, but WZM is not explicitly considered.
<i>How well does your agency develop, implement, and evaluate TMPs?</i>	2	TMP development and implementation varies across districts.
<i>How does your agency coordinate between multiple projects in a corridor to achieve overall WZM objectives?</i>	3	A lot of effort is put into coordinating projects internally, but the implementation of those plans is a challenge.

- **Project Significance**
 - Significance is often correlated to project cost, but there could be a project that is under that amount of money that would still be significant.
 - Significance is defined in policy and matches the federal definition.



- Road User Impacts (RUI)
 - Generally used for calculating incentives and disincentives.
 - Had an instance in the past where upper management didn't think the dollar value was high enough.
 - Methodology we use works well on some projects and not as well on other projects. Sometimes the value is so low that it has no deterrence to operations. The policy needs some work and evaluation. A lot of opportunities here.
 - Do this for most big projects. There is a system for calculating this, but we don't really like the results.
- Innovative Contracting
 - Have a process in place for determining whether innovative contracting methods will be used, but WZM doesn't really factor into that decision.
 - Not limited to just big projects, but not fully institutionalized.
 - Works well when innovative contracting methods are used.
 - Process has told us to use innovative contracting methods on a certain project in the past, but that was vetoed by upper management.
 - Process that we have only looks at design-build and CMAR vs. traditional. Doesn't consider A+B.
- Transportation Management Plans (TMPs)
 - Big difference between districts.
 - State law requires development of TMPs for emergency services.
 - South Central does a really good job at TMP development. Very robust.
 - North district not as robust. Found that the communication to develop the plan was very beneficial but the actual plan was useless. Contained a lot of information that we already knew.
 - Anytime we must develop a plan for anything, we tend to be lazy about its development and rely on the same thing we've written before. Own worst enemy when we say we need to do a plan but are focusing on the wrong stuff.
 - Implementation within the project is really good. We have a lot of opportunities to improve written documentation, but the actual implementation of the plan is good.
 - We need to focus on the uniqueness of the project during TMP development and not the cookie-cutter information.
- Project Coordination
 - Coordination and outlook on how we develop projects is strong. At the district level, not sure if it works out after the dust has settled. Our intention is to be forward and progressive with this.
 - Struggle some with coordinating with other agencies and utilities.
 - Because of the way the districts are set up, everyone is under the umbrella of district engineer, there is better coordination between maintenance and construction.
 - Internal coordination is good, challenge with other agencies and utilities.
 - Intent is good but implementation can be a challenge.



SYSTEMS AND TECHNOLOGY (ST) DIMENSION

Overarching ST Score: 2.0		
Amplifying Questions	Current Level	Why?
<i>How well does your agency assess and adopt new technology, procedures, and strategies to help meet WZM needs?</i>	1	No process in place for evaluating or implementing new technologies.
<i>How does your agency apply existing technology already in place to address WZM needs?</i>	3	Existing technology is used well, but limited to what is already deployed.

- Implementing New Technology
 - Use new technology but it's very sporadic. Dependent on someone coming up with a new idea. Very ad hoc. Personnel driven.
 - TSMO group has finally got its structure solved and is now starting to look at processes.
 - No real process in place at all for this.
 - We do consider using them, but they aren't applied evenly. We look at new stuff a lot, but it's not often used.
- Application of Existing Technology
 - We use the technology that is in place well, but not the newer technology that is available. What is already out there is used well, but need improvement on integrating new technology.

PERFORMANCE MEASUREMENT (PM) DIMENSION

Overarching PM Score: 1.0		
Amplifying Questions	Current Level	Why?
<i>How does your agency quantify WZM performance?</i>	1	No formal work zone performance measures exist.
<i>How are WZM performance measures used by your agency?</i>	1	There are no available measures to use.

- Quantifying WZM Performance
 - No formal work zone performance measures exist.
 - State engineer tracks fatalities and traffic accidents, but whether they are in construction zones or not is not an issue.
 - Look at emergency response times for maintenance issues.
 - Some data has been presented for crashes in work zones in the past, so it's collected by someone, but apparently it's not being used for work zones.
 - No measure of how our work zones affect the public.
- Utilizing WZ Performance Measures
 - No performance measures are quantified or used.



ORGANIZATION AND WORKFORCE (OW) DIMENSION

Overarching OW Score: 2.0		
Amplifying Questions	Current Level	Why?
<i>What types of WZM knowledge and skills exist within the agency?</i>	2	Some departments are better than others, but generally unevenly applied across the agency.
<i>How are WZM knowledge, skills, and abilities developed amongst staff within the agency?</i>	2	Existing training is not advanced and not evolving. No effort in place to make this better.
<i>How is institutionalized WZM knowledge in various parts of the agency captured and shared?</i>	2	Some lessons are shared, but it is not focused on WZM and not incorporated into any standards or manual.

- Existing Knowledge and Skills
 - Construction does well, but project management doesn't really do it at all. Maintenance and construction are well trained. Contractors need more training.
 - At RE level we are doing well.
 - Sometimes we don't know what we don't know.
 - Traffic control design guidelines are being updated to reflect information that we know is missing.
- Knowledge Development
 - Most training is on the job training. There are no courses we can take to expand the knowledge.
 - There is some training available, such as RE Academy, but uneven. Haven't had an RE Academy in years.
 - Existing training is not advanced and not evolving. No effort in place to make this better.
 - Training is poor at the design level.
 - Happens in maintenance and construction, but not design. Happens in some departments, but not all.
- Knowledge Capture
 - IDO does a quarterly "Lessons Learned" publication and we engage the districts to discuss all aspects of construction. It's systematic but not really focused on WZM. Evaluates how well strategies work. Invite all districts and all technical groups. It's a meeting, not a presentation on certain projects or strategies. This is a platform that WZM can be integrated into.
 - Do a handoff meeting for every project when a project goes from development side to construction side. Everyone talks about why certain things are being done.
 - None of this is incorporated into standards or manuals.



CULTURE DIMENSION

Overarching Culture Score: 2.0		
Amplifying Questions	Current Level	Why?
<i>How is WZM valued within the agency?</i>	2	It is valued, but difficult to put many resources to it without a committee.
<i>How is WZM innovation encouraged within the agency?</i>	2	Innovation is permitted, but no formal mechanism to encourage innovation.
<i>What type of agency WZM outreach and reporting exists?</i>	2	No formal mechanism is in place to share successes.

- WZM Value
 - We need a committee that meets regularly. Last Process Review recommended that we form a work zone management committee and one was formed. It was used to develop the emergency vehicles access plan (EVAP) and then it disbanded because it finished everything it was supposed to do.
- WZM Innovation
 - There is no innovation team that inspires others to innovate. We are encouraged to be innovative by management, just no systematic way by which innovation is encouraged. Dependent on who your manager is.
- WZM Outreach and Reporting
 - Lessons learned are captured after a project is completed, but it's more matter of fact; this is how it happened. Dependent on the presenter to emphasize successes. Can happen, but not drawn up this way.
 - Heard about the use of a zipper merge, but no one was really recognized for doing a good job or being innovative.
 - We share successes in weekly "shout out" emails that say, "Good job!"
 - Videos are sometimes produced during projects, and have seen a couple videos focus on traffic control successes.
 - Any sharing of successes is inconsistent.
 - Steering committee would be a good entity to recognize and disseminate successes.

COLLABORATION DIMENSION

Overarching Collaboration Score: 3.0		
Amplifying Questions	Current Level	Why?
<i>How does the agency utilize law enforcement for WZM needs?</i>	3	Decisions are left up to the district which is the only current process.
<i>How does the agency consider private-sector input (e.g., contractors, affected businesses) when addressing WZM needs?</i>	3	Existing procedures are very strong and successful for seeking private sector input.
<i>How does the agency incorporate other stakeholders (general public, schools, business, EMS, etc.) into</i>	3	Existing procedures are very strong and successful for seeking other stakeholder input.



Overarching Collaboration Score: 3.0		
Amplifying Questions	Current Level	Why?
<i>the WZM process?</i>		

- Use of Law Enforcement
 - We have policies for getting law enforcement on site and for paying for them, but no policies for when they should be used.
 - Solid policies and processes in place for using them, but not necessary when to use them.
 - Decision to use them typically goes back to Design.
 - There is no guidance at the design level for determining which projects get law enforcement.
 - Often depends on how involved the district is in the process. If the district pushes for it, there will be law enforcement.
 - Largely a district decision, but it is a process. We aren't really involved in the process, but the procedure is there. Not documented.
- Private Sector Input
 - Project Development seeks input depending on the type of project. Hold regular meetings with stakeholders and public. We seek their input and track it.
 - Standards meets with contracting community to update specifications and standard drawings.
 - Would entertain any input from a contractor to extend work hours to shorten project duration.
 - Much of this is learned through on the job training and is the expectation we put on our engineers.
 - There are procedures in place to receive contractor input, it will be evaluated properly, and the input is good, it will be implemented.
 - Policies and procedures in place are very effective and most scenarios are project-by-project. No good way to really optimize this process.
- Stakeholder Involvement
 - See previous discussion.

VII. SELF-ASSESSMENT RESULTS, SELECTED CMF ACTIONS, AND PRIORITIZATION OF ACTIONS

The ratings given by workshop participants to each dimension are presented in an ascending order.

- Performance Measurement (1.0)
- Organization and Workforce (2.0)
- Systems and Technology (2.0)
- Culture (2.0)
- Business Processes (2.4)
- Collaboration (3.0)

Based on the current capabilities and the discussions, workshop participants identified the following seven actions from three of the dimensions:



PERFORMANCE MEASUREMENT ACTIONS

- **Identify outcome measures relative to mobility, safety, customer satisfaction, and/or work productivity/efficiency that are specified or implied in the agency's work zone safety and mobility manual.**
 - The work zone steering committee will determine which measures the agency needs and how the necessary data will be collected.
 - Queue length and travel delay need to be tracked for work zones and not just globally for the agency. Need to set thresholds for acceptable delay.
 - TSMO group should be able to provide existing conditions that can be measured against.
 - Could give contractors a cost incentive to reduce delay if delay could be measured.
- **Identify available data sources and data collection methods needed to develop measures of interest to the agency.**
 - Will be done as part of the steering committee's efforts related to previous action item.
- **Determine number of projects to include in assessment and select projects for which measures will be computed.**
 - Will be done as part of the steering committee's efforts related to previous action item.

SYSTEMS & TECHNOLOGY ACTIONS

- **Develop informational resources for work zone designers and managers regarding availability and expected effect of new work zone management technologies and innovations. Establish mechanisms to periodically update these resources.**
 - Any technology that is evaluated will need to be done in coordination with the traffic subcommittee to ensure it is something the agency is interested in using. Can be done under standards committee framework.
 - To be championed by William Faber.
 - Work zone steering committee could be used to push for pilot projects to deploy technology which could result in increased federal funding for the project.
 - Could add a suggestion to the process review to try out queue warning technology.
 - The agency is in the process of purchasing a queue warning system. It has not been determined where it's going to be used.
 - Use the Work Zone ITS Implementation Guide for determining a good project for QWS use.

CULTURE ACTIONS

- **Establish a steering committee of key agency champions and work zone management core staff.**



- First action item that should be completed and will be added to upcoming process review as a recommendation.
- Need to figure out who will be the work zone champion and process review champion moving forward. Will need to talk to State Engineer's office to figure this out.
- TSMO might take the lead in steering this.
- Need to go to the executive level and figure out where this will sit.
- The group attending the WZ CMF workshop could start as the steering committee and additional members could be added from TSMO at a later time.
- The first role of the steering committee will be to complete the 2016 Process Review.
- Will be important to give leadership examples of what the committee will be responsible for doing so that the right people can get on the committee.
- **Hold regular meetings of the steering committee to ensure an ongoing dialogue that sets the agency's work zone management agenda.**
- **Incorporate a strong customer focus in the steering committee discussions regarding work zone management needs and challenges.**

VIII. POST-WORKSHOP ACTION PLAN

- The 2016 Process Review should lay out a list of things that the agency wants to do next year and prioritize those actions. Also need to use the 2016 Process Review to look at recommendations from last Process Review and determine if its recommendations have been addressed and fixed. The 2016 review should be used to lay the groundwork for things to do in 2018. Can also use the 2016 review to finish up the work from the 2014 review and figure out where things stand.
- The 2016 Process Review's structure will be created by Adam Carreon who will also look at the recommendations from the 2014 Process Review and determine their status.
- The 2016 Process Review will also recommend establishing a mechanism to measure work zone performance and determining the agency's WZM goals.
- The Work Zone Steering Committee will be a permanent committee that changes staff based on retirements and new job assignments. A recommendation of the 2016 Process Review will be who should be represented in the committee. It should remain a small core team where others are brought in as necessary when new topics are being discussed, and bring in others as you touch on different topics. The Committee will likely be co-chaired by someone from TSMO and someone from IDO. The determination of leadership will have to be made by the State Engineer's office. Possible committee members are:
 - An acting, functional RE
 - Superintendent from maintenance
 - Traffic designer
 - Communications
 - Project manager
 - Safety
 - Training
 - Traffic standards
 - District leaders



- FHWA will continue to coordinate with ADOT following the completion of the WZ CMF workshop to track the agency's progress in implementing identified actions, the addition of any new actions, or any other developments within the agency's work zone management program related to the WZ CMF. Three follow-up calls will be conducted with ADOT in the months following the workshop to track progress. Information obtained during those calls will be appended to this summary report.

IX. SELECTED ACTION RESOURCES

An additional set of available examples, best practices, and resources pertinent to WSDOT's selected actions will be incorporated into future versions of this workshop summary sheet following the first post-workshop follow-up call discussed below.

- General
 - [Work Zone Capability Maturity Framework Online Tool](#)
 - [National Work Zone Safety Information Clearinghouse](#)
 - [FHWA Work Zone Management Program](#)
 - [Project Coordination Toolkit](#)
 - [Work Zone ITS Implementation Guide](#)
- Process Reviews
 - [Guidance for Conducting Effective Work Zone Process Reviews](#)
 - [Work Zone Process Review Toolbox](#)
- Performance Measures
 - [FHWA Performance Measure Development Toolkit](#)
 - [Work Zone Data Examples](#)
 - [A Primer on Work Zone Safety and Mobility Performance Measurement](#)
- Training
 - [Work Zone Safety Grant Training Courses](#)
 - [Work Zone Safety Information Clearinghouse Training](#)
 - [FHWA Work Zone Management Program Training](#)
 - [ARTBA Learning Management System](#)



APPENDIX A: WORKSHOP AGENDA



Arizona Department of Transportation

**Work Zone Capability Maturity Framework and Process Review
Workshop**

November 1, 2017
Phoenix, Arizona
8:00am – 4:00pm

Morning Session

8:00 – 8:15	<i>Welcome and Introductions</i>
	<ul style="list-style-type: none"> - Paul Pisano – Federal Highway Administration (FHWA) - Jerry Ullman – Texas A&M University Transportation Institute (TTI)
8:15 – 8:30	<i>Workshop Overview and Outcomes</i>
	<ul style="list-style-type: none"> - Jerry Ullman – TTI
8:30 – 9:15	<i>Panel Discussion</i>
	<ul style="list-style-type: none"> - Discussion of ADOT’s WZM strengths and weaknesses
9:15 – 9:30	<i>Overview of WZ CMF</i>
	<ul style="list-style-type: none"> - Jerry Ullman – TTI
9:30 – 9:45	<i>Break</i>
9:45 – 12:30	<i>Self-Assessment</i>
	<ul style="list-style-type: none"> - WZM capability self-assessment by ADOT using online tool
12:30	<i>Lunch</i>

Afternoon Session

1:30 – 3:00	<i>Selection of CMF Actions</i>
	<ul style="list-style-type: none"> - ADOT selection of actions based on self-assessment results
3:00 – 3:15	<i>Break</i>
3:15 – 4:00	<i>Recap of Previous Process Review</i>
	<ul style="list-style-type: none"> - Review status of action implementation

*Federal Highway Administration
Office of Operations – Work Zone Management*



Arizona Department of Transportation

Work Zone Capability Maturity Framework and Process Review Workshop

November 2, 2017
Phoenix, Arizona
8:00am – 12:00pm

Morning Session

8:00 - 8:15	<i>Recap of Previous Day</i> - Jerry Ullman - TTI
8:15 - 9:00	<i>Improving Future Process Reviews</i> - Guidance on process review best practices
9:00 - 10:00	<i>Incorporating Action Items into future Process Review</i> - Discussion of including priority list of actions in ADOT's next PR
10:00 - 10:15	<i>Break</i>
10:15 - 11:00	<i>Data/Information to Collect in Next Process Review</i> - Identifying critical data and info need to quantify improvements
11:00 - 12:00	<i>Action Planning/Process Review Roadmap</i> - Developing a plan to advance action implementation

Federal Highway Administration
Office of Operations – Work Zone Management

Appendix B

ADOT WZ CMF Self-Assessment Worksheet

ADOT Work Zone Capability Maturity Framework: Assessment Worksheet

Name: _____ Agency Division: _____

Business Processes	
1. How does the determination of project "significance" affect project development decisions?	
L1	Project significance not considered in most key analyses and decisions throughout the project development process.
L2	Project significance is considered in most key analyses and decisions throughout project development, but for only "big" projects.
L3	Project significance considerations in all key project development analyses and decisions are institutionalized throughout the agency.
L4	Project significance considerations in key analyses and decisions are regularly evaluated and refined as needed to improve their effectiveness.
	N/A
Notes:	
2. How well does your agency estimate and use road user costs (RUC) in making WZM decisions?	
L1	Work zone RUCs are generally not estimated or used to make WZM decisions for significant projects
L2	Efforts to estimate and use realistic RUCs to help make improved WZM decisions occur for most "big" projects.
L3	Efforts to estimate and use realistic RUCs to help make improved WZM decisions for significant projects is institutionalized throughout the agency.
L4	Procedures for computing and using road user costs in WZM decisions are regularly evaluated and improved as needed.
	N/A
Notes:	
3. How does your agency utilize innovating contracting to help achieve WZM goals and objectives?	
L1	Agency does not utilize innovative contracting techniques such as A+B bidding, incentive/disincentive clauses, design-build, etc., specifically to achieve WZM objectives.
L2	Potential innovative contracting alternatives are examined and implemented for WZM purposes on "big" projects only.
L3	Processes to examine and implement innovative contracting alternatives for WZM purposes are institutionalized throughout the agency.
L4	Processes to examine and implement innovative contracting alternatives for WZM purposes are regularly evaluated and updated/improved as needed.
	N/A
Notes:	

ADOT Work Zone Capability Maturity Framework: Assessment Worksheet

4. How well does your agency develop, implement, and evaluate transportation management plans (TMPs)?	
L1	TMPs are typically prepared superficially, providing only limited direction on how WZM needs will be met.
L2	Effective and useful TMPs are typically developed and implemented for "big" projects.
L3	Effective TMP development for all appropriate projects is incorporated into business processes throughout the agency.
L4	Effectiveness of implemented TMPs implemented are regularly evaluated and improvements made as needed to TMP development procedures. TMP outcomes are considered in performance assessments of upper management.
	N/A
Notes:	
5. How does your agency coordinate between multiple projects in a corridor to achieve overall WZM objectives?	
L1	Projects are developed, let, and performed independently; little or no effort is made to coordinate them from a WZM perspective.
L2	Agency projects are generally coordinated internally from a WZM perspective.
L3	Project coordination efforts within the agency and between agencies for WZM purposes are incorporated into agency business processes.
L4	Effectiveness of project coordination processes within and across agencies from a WZM perspective is evaluated on a regular basis, and improvements to those processes made as needed.
	N/A
Notes:	

ADOT Work Zone Capability Maturity Framework: Assessment Worksheet

Systems and Technology	
1. How well does your agency assess and adopt new technology, procedures, and strategies to help meet WZM needs?	
L1	WZM is typically limited to tried and true technologies and applications with little thought about potential use of recent WZM innovations.
L2	Consideration and use of innovative technologies and strategies for improving WZM on projects occurs unevenly across the agency.
L3	Processes to ensure consideration and use of innovative technologies and strategies for improving WZM on projects is institutionalized throughout the agency.
L4	Processes to ensure consideration and use innovative technologies and strategies for improving WZM on projects are continually evaluated and updated to improve their effectiveness.
	N/A
Notes:	
2. How does your agency apply existing technology already in place to address WZM needs?	
L1	Efforts to utilize existing technology and systems to address WZM needs on projects does not typically occur.
L2	Efforts to utilize technology already in place for WZM needs sometimes occurs, but application is uneven across the agency.
L3	Use of existing technologies and systems resources to address WZM needs is institutionalized throughout the agency.
L4	Processes to ensure proper use of existing technologies and system resources to address WZM needs are continually evaluated and updated throughout the agency.
	N/A
Notes:	

ADOT Work Zone Capability Maturity Framework: Assessment Worksheet

Performance Measurement	
1. How does your agency quantify WZM performance?	
L1	WZM performance measures are primarily output based or are non-existent.
L2	Some project-level and regional (program)-level outcome-based WZM performance measures have been established. Data to evaluate these measures are sometimes collected for "big" projects.
L3	Both project- and program-level WZM measures that focus on corridor and network-level outcomes exist. Data are collected and evaluated routinely across projects. Measures feed into assessments of regional operations objectives.
L4	WZM performance measurement of project-, program-, and system-wide outcomes are reviewed on an on-going basis for relevance to regional objectives and improved as needed.
	N/A
Notes:	
2. How are WZM performance measures used by your agency?	
L1	WZM performance measures, when collected, are only used to document efforts and justify costs.
L2	WZM measures are assessed during and after some projects to determine whether strategies typically used need to be revised.
L3	WZM measures from multiple projects across the state or region are systematically evaluated to improve policies and procedures.
L4	WZM measures are incorporated into the strategic planning decisions for the region or agency by upper management.
	N/A
Notes:	

ADOT Work Zone Capability Maturity Framework: Assessment Worksheet

Organization and Workforce	
1. What types of WZM knowledge and skills exist within the agency?	
L1	Desired knowledge and skills for WZM decision-making throughout the agency are not formally defined or are limited to temporary traffic control (TTC) requirements and regulations.
L2	Knowledge and skills needed to develop, implement, and evaluate more advanced WZM initiatives are defined in some parts of the agency, but not all.
L3	Advanced WZM knowledge and skills needed throughout the agency are defined and applied systematically.
L4	Advanced WZM knowledge and skills needed across the agency are regularly reviewed and updated as improvements in WZM evolve over time.
	N/A
Notes:	
2. How are WZM knowledge, skills, and abilities developed amongst staff within the agency?	
L1	WZM training occurs on an ad-hoc basis (individual initiated, primarily TTC focused).
L2	WZM training to develop appropriate WZM knowledge/skills/abilities is systematic in some, but not all, divisions or districts in the agency.
L3	Available WZM training is comprehensive, applied strategically throughout the agency, and may include some agency partners.
L4	WZM training is regularly evaluated throughout the agency and improved as needed to keep pace with advancements in WZM.
	N/A
Notes:	
3. How is institutionalized WZM knowledge in various part of the agency captured and shared?	
L1	Institutional WZM knowledge retention is ad-hoc or non-existent.
L2	Processes for capturing institutional WZM knowledge are established amongst some divisions/offices and shared within, but sharing across divisions and districts in the agency is uneven.
L3	Institutional WZM knowledge is systematically and strategically captured throughout the agency, and shared agency-wide to improve overall WZM effectiveness.
L4	Processes for capturing and sharing institutional WZM knowledge throughout the agency are evaluated and refined on a regular basis.
	N/A
Notes:	

ADOT Work Zone Capability Maturity Framework: Assessment Worksheet

Culture	
1. How is WZM valued within the agency?	
L1	Perceived value of WZM efforts is uneven across agency, and varies by division/district project development and delivery responsibilities.
L2	Processes that improve staff understanding of WZM value and importance exist across some project development and delivery responsibilities, but application across agency is uneven.
L3	Processes that improve staff understanding of WZM value and importance are institutionalized across project development and delivery responsibilities of the agency.
L4	Processes that improve staff understanding and acceptance of WZM value and importance are evaluated regularly, systematically refined, and monitored by upper agency management.
	N/A
Notes:	
2. How is WZM innovation encouraged within the agency?	
L1	Little or no encouragement to innovate to solve WZM challenges occurs within the agency.
L2	Some processes have been developed to encourage core WZM staff and design consultant innovation for managing work zone impacts, but its application is uneven across the agency.
L3	Encouragement to innovate to address WZM challenges is institutionalized throughout the agency.
L4	Efforts to encourage innovation to address WZM challenges are regularly reviewed, and improvements to further encourage innovation are made as needed.
	N/A
Notes:	
3. What type of agency WZM outreach and reporting exists?	
L1	Project-level WZM efforts and benefits/successes are generally not documented nor shared throughout the agency or externally.
L2	WZM efforts and benefits/successes on "big" projects are typically documented and shared internally and externally.
L3	WZM efforts and benefits/successes at a programmatic or regional level are documented and shared internally and with external partners, decision-makers, etc.
L4	Documentation methods and outreach efforts regarding WZM efforts and benefits/successes are regularly reviewed for relevance and revised as needed.
	N/A
Notes:	

ADOT Work Zone Capability Maturity Framework: Assessment Worksheet

Collaboration	
1. How does the agency utilize law enforcement for WZM needs?	
L1	Law enforcement use for WZM purposes occurs on an ad-hoc basis throughout the agency.
L2	Procedures determining when and how law enforcement is used for WZM are fully developed, but adoption throughout the agency is uneven.
L3	Procedures determining when and how law enforcement is used for WZM are fully integrated throughout the agency.
L4	Procedures determining when and how law enforcement is used for WZM are continuously evaluated, refined, and reported to upper agency and law enforcement agency management.
	N/A
Notes:	
2. How does the agency consider private-sector input (e.g., contractors, affected businesses) when addressing WZM needs?	
L1	Adoption and use of potential contributions or suggestions from private sector relative to WZM are ad hoc.
L2	Procedures for considering and adopting good WZM contributions/ suggestions from private sector have been developed, but adoption throughout the agency is uneven.
L3	Procedures for considering and adopting good WZM contributions/ suggestions from private sector have been developed and fully integrated throughout the agency.
L4	Procedures for considering and adopting good WZM contributions / suggestions from private sector are continuously evaluated, and lessons learned are incorporated into agency TMP development processes.
	N/A
Notes:	
3. How does the agency incorporate other stakeholders (general public, schools, business, EMS, etc.) into the WZM process?	
L1	Inclusion of other stakeholders into WZM decision making occurs on an ad hoc basis.
L2	Formal processes exist for involving stakeholders in the WZM decision making, but adoption throughout the agency is uneven.
L3	Processes for involving stakeholders in WZM decision making are fully integrated throughout the agency.
L4	Integrated processes for involving stakeholders into WZM decision making are continuously evaluated, refined, and monitored by upper agency management.
	N/A
Notes:	

Appendix C

Executive Summary February 2, 2015 WZSM Quarterly Report

Executive Summary

2-2-15 Report

Work Zone Safety and Mobility Steering Committee

The purpose of this meeting is to provide a progress report to the State Engineer's Office and the Federal Highway Administration (FHWA) pertaining to current initiatives being worked on by the Work Zone Safety and Mobility Steering Committee. We last met on September 3, 2014 for the Process Review Close-Out Meeting, which resulted in the finalized Process Review Report (Attachment 1).

Moving forward, the Work Zone Safety and Mobility Steering Committee have been working on the following observations and recommendations from the Process Review:

- Finding:** There is no formal tracking device in place showing which projects have a full Traffic Management Plan (TMP) and those that have a partial TMP.

Recommendation: The Process Review Team recommended that a field be added to the Traffic Database for tracking projects with a full TMP.

Action: A Committee member representing the Traffic Group has added the recommended field to the Traffic Data Base.
- Finding:** The Committee noted that there were many questions from staff regarding significant projects, impact and the need for all four components of a TMP.

Recommendation: The Work Zone Safety and Mobility Steering Committee should develop training for ADOT staff on the Rule, Significant Projects, TMP components and other items as required by the **Rule** (Attachment 2).

Action: A Power Point presentation (Attachment 3) was developed and presented on May 28, 2014 at the Resident Engineers' Academy. A similar presentation will be part of ADOT's Project Managers' Academy.
- Finding:** There is no checklist for project managers to use to identify significant projects and what components of a TMP are required.

Recommendation: Develop a checklist.

Action: Committee members will add a field(s) for the required components of a TMP for a given project to the Stage Submittal Check List. This information will be posted on the AIDW website.

4. **Finding:** ADOT does not have a process and programmatic agreement for maintenance activities eligible for exemption from the significant project requirements for separate Traffic Operations and Public Information components as defined by the **Rule**.

Recommendation: Identify those maintenance activities eligible for an exemption; identify existing ADOT processes which include the Traffic Operations and Public Information components and request a programmatic agreement with FHWA.

Action: Members of the committee have worked with the Maintenance Group to identify those activities (Attachment 4). A programmatic agreement has been drafted for those activities (Attachment 5). Justification for this request is shown in Attachment 6.
5. **Finding:** ADOT's Guidelines for Work Zone Safety and Mobility pursuant to 23 CFR 630, Subparts J & K require revision to include more details and a template for exemptions.

Recommendation: Develop a template that will be included in the Guidelines.

Action: An example letter (Attachment 7) requesting an exemption has been added to the Guidelines.
6. **Finding:** ADOT's current process already has the four components of a TMP for most projects, however, contains no formal packaging of the TMP.

Recommendation: Insertion of a section within the special provisions of the contract documents stating, "This is a Significant Project requiring a full TMP. The four components are found...." This would become a contract provision binding on the contractor and reduce the cost of preparing a stand-alone TMP.

Action: The Steering Committee and ADOT Contracts and Specifications are working on drafting language to be included in the General Requirements Section of the Special Provisions identifying projects that require a full TMP and a paragraph stating what components of a TMP are required for a given project and where they can be found.
7. **Finding:** The Emergency Vehicle Access Plan (EVAP) component required by Arizona Statute was not clearly identified as EVAP in specifications. For instance, it was found in some Special Provisions as "Emergency Action Plan" which contained all of the provisions required by A.R.S. §28-652.

Recommendation: The Emergency Action Plan Special Provision should reference compliance with the Emergency Vehicle Access Plan (EVAP) required by Arizona Statute A.R.S. §28-652.

Action: A proposed (draft) Special Provision has been submitted to the ADOT Contracts and Specifications Group for development and use in all projects.

In summary, observations and recommendations pertaining to a tracking device for projects with a full TMP (#1), a programmatic agreement for specific maintenance activities (#4) and exemptions (#5) have been completed. The training materials suggested in observation and recommendation number two have been developed and presented at the Resident Engineers' Academy and a similar presentation will be part of ADOT's Project Managers' Academy. The drafted special provision for the EVAP component (#7) is under review for approval and publication by the ADOT Contracts and Specifications Group. Language is being drafted for inclusion in the special provisions stating what components of a TMP are required for a given project and where they can be found (#6).

Next Steps:

- Addition of a field(s) to the Stage Submittal Check List for the required components of a TMP for a given project.
- Inclusion of all completed recommendations in ADOT's Guidelines for Work Zone Safety and Mobility.
- Publication of the Work Zone Safety and Mobility training materials (Attachment 3).
- Coordination with ADOT Technical Training to ensure that mandatory training is tracked in Pathlore. Courses include Work Zone Safety and Mobility Rule Regulation & Policy [23 CFR 630 Subpart J "the **Rule**"]; Traffic Control Technician (TCT); Traffic Control Supervisor (TCS) (Attachment 8).
- Completion of the Work Zone Safety and Mobility training course and coordination with ADOT Technical Training to make it an on-line course.
- Research Best Practices in other states who are using Blue Tooth technology.

Appendix D

September 2014 Process Review Report

Arizona Department of Transportation Work Zone Safety and Mobility Process Review Report


September 2014

Prepared by
Arizona Department of Transportation
206 S. 17th Ave.
Phoenix, AZ 85007

Work Zone Safety and Mobility Process Review Report

This Work Zone Safety and Mobility Process Review Report was prepared by ADOT and is evidence of Arizona's Conformance with 23 CFR 630.1008(e) Subpart J

Arizona Department of Transportation

By:  Date: 09/30/2014

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Executive Summary

The focus of the required bi-annual Process Review conducted by the Arizona Department of Transportation (ADOT) is the Traffic Management Plan (TMP). The purpose of this review was to determine Arizona's compliance with 23 CFR Part 630 requiring a TMP for all projects and to identify best practices and opportunities for improvement.

The process and criteria utilized for conducting this review consisted of:

Phase 1

1. Run a report of active construction projects for January 1, 2012 to December 31, 2012 reviewing all projects for significance using the following criteria as outlined in 23 CFR 630.1010:
 - ✓ Interstate Projects that occupy a location for more than three days
 - ✓ Projects within Transportation Management Areas (TMA)
 - ✓ Projects with continuous or intermittent lane closures
2. Review each significant project for the components of a full TMP:
 - ✓ Traffic Control Plan (TCP)
 - ✓ Emergency Vehicle Access Plan (EVAP)
 - ✓ Public Information - ADOT Communications (PI)
 - ✓ Traffic Operations (TO)

Phase 2

Identify and review projects for compliance, best practices, and areas needing improvement.

Observations and Recommendations

The following observations and recommendations were identified.

1. **Finding:** There is no formal tracking device in place showing which projects have a full TMP and those that have a partial TMP.
Recommendation: The Process Review Team recommended that a field be added to the Traffic Database for tracking projects with a full TMP.
Action: This recommendation was implemented by the ADOT Traffic Group.

2. **Finding:** The committee noted that there were many questions from staff regarding significant projects, impact, and the need for all four components of a TMP.

Recommendation: The Work Zone Safety and Mobility Steering Committee should develop training for ADOT staff on the Rule, Significant Projects, TMP components and other items as required by the **Rule**.

Action: A member of the Steering Committee has developed a Power Point presentation (Appendix L) for training on 23 CFR 630, subparts J & K as part of the Resident Engineers' Academy presented May 28, 2014. A similar presentation will be part of ADOT's Project Managers' Academy.

3. **Finding:** There is no checklist for project managers to use to identify significant projects and what components of a TMP are required.

Recommendation: Develop a checklist.

Action: The development of a checklist has been assigned to the Work Zone Safety and Mobility Steering Committee.

4. **Finding:** ADOT does not have a process to identify maintenance activities eligible for exemption from the significant project requirements for separate TO and PI components as defined by the **Rule**.

Recommendation: Identify those maintenance activities eligible for an exemption; identify existing ADOT processes which include the TO and PI components and request the exemption from the **Rule** from the Federal Highway Administration (FHWA).

Action: Members of the committee have worked with the Maintenance Group to identify those activities. A letter requesting an exemption for those activities has been drafted.

5. **Finding:** ADOT's "Implementation Guidelines for Work Zone Safety and Mobility pursuant to 23 CFR 630, Subparts J & K" requires revision to include more details and a template for exemptions.

Recommendation: Develop a template that will be included in the Implementation Guidelines.

Action: The Implementation Guidelines are being revised and a template has been developed for requesting exemptions and is currently being reviewed by FHWA.

6. **Finding:** The I-10 Reconstruction project, TRACS # H624101C/010-D(013)N, Ruthrauff Road to Prince Road, has been identified as a **Best Management Practice** in the packaging of the TMP components.

Recommendation: Use this project as an example in the development of a template for TMPs for significant projects.

Action: The first draft of a template has been presented at a Steering Committee Meeting and is currently being revised.

7. **Finding:** ADOT's current process already has the four components of a TMP for most projects, but is experimenting with developing a single, stand-alone TMP.

Recommendation: Insertion of a section within the special provisions of the contract documents stating, "This is a Significant Project requiring a full TMP. The four components are found..." This would become a contract provision binding on the contractor and reduce the cost of preparing a standalone TMP.

Action: This recommendation will be discussed and considered by the Steering Committee.

8. **Finding:** The Emergency Vehicle Access Plan (EVAP) component required by Arizona Statute was not clearly identified as EVAP in specifications. For instance, it was found in some Special Provisions as "Emergency Action Plan" which contained all of the provisions required by A.R.S. §28-652.

Recommendation: The Emergency Action Plan Special Provision should reference compliance with the Emergency Vehicle Access Plan (EVAP) required by Arizona Statute A.R.S. §28-652.

Action: A proposed (draft) Special Provision has been sent to the ADOT Contracts and Specifications Group for development and use in all projects.

9. **Finding:** The public information function does not compete for funding with construction in individual projects. It is focused on the entire construction and maintenance program impact rather than individual projects. As such it best fulfills the mobility requirements of the **Rule** and is a **Best Management Practice**.

Action: The review team commends ADOT's Public Information practice for work zones and we have identified them as a Best Practice, which is described in further detail later in this report.

Background

Process Reviews are state led and not to be confused with FHWA Conformance Reviews, which are to determine if all applicable standards (national, state, or local) have been met. They should also not be confused with the annual Work Zone Self-Assessment, which is a set of questions designed to assist the Department to simply evaluate their work zone policies as a whole. The results of the Self-Assessment often identify areas that may benefit from a more in-depth review such as a Process Review.

The purpose of the Process Review is to determine agency compliance with 23 CFR Part 630 and to identify best practices and opportunities for improvement.

The last work zone safety and mobility process review was conducted by FHWA with ADOT's participation in 2008. The focus of that review consisted of four areas: speed reduction, lane closure procedures, use of positive protection devices, and mitigation of safety and mobility impacts. In performing this first ADOT-led process review, the steering committee elected to focus on Transportation Management Plans.

It is worth noting that ADOT and FHWA have also recently completed a formal conformance review of the Department's compliance with 23 CFR 630, Subpart J (The Rule). This conformance review resulted in four primary observations from FHWA, each with several associated recommendations. To date, ADOT has completed or adopted most of the recommendations.

Purpose and Objectives

The purpose of this biannual Process Review led by ADOT is to guide improvements in the agency's work zone policy, processes and procedures, data and information resources, and training programs to determine whether they are adequate, therefore, enhancing safety and mobility on future projects.

23 CFR 630, Subpart J (The Rule) requires ADOT to conduct a bi-annual Process Review. The Rule states that the ultimate objective of a process review is to enhance efforts to address safety and mobility on current and future projects.

Process reviews help assess the effectiveness of the work zone program and policies and procedures. The review is to enable ADOT and the FHWA Division Office to confirm that a problem does not exist, or to identify systemic problems and make recommendations to improve situations where shortcomings do exist. It is also to identify Best Practices.

The focus of the required bi-annual Process Review conducted by ADOT is the TMP. The purpose of this review was to determine Arizona's compliance with 23 CFR Part 630 requiring a TMP for all projects and to identify best practices and opportunities for improvement.

The objectives of this process review in relation to the TMP are:

- Education and Training
- Data Collection and Tracking
- Presentation and Formal Packaging

Team Members

The Process Review Team, part of the Work Zone Safety and Mobility Steering Committee, with team members from the State Engineer's Office, Communications, Project Management, Traffic Engineering and Construction conducted the process review and FHWA provided technical guidance.

The Process Review Team includes the following ADOT staff members:

Lisa Sinclair	LSinclair@azdot.gov	State Engineer's Office (Chair)
Scott Orrahood	SOrrahood@azdot.gov	Traffic Group
Robert Wade	RWade@azdot.gov	Construction Group
Paki Rico	PRico@azdot.gov	Communications
Mohammad A. Zaid	MZaid@azdot.gov	Urban Project Management
Giuly Caceres	GCaceres@azdot.gov	Statewide Project Management

Process

An initial training was provided by FHWA on what should be included when conducting a process review. The Process Review Team then chose an area of concentration and the methodology that was utilized in conducting this process review. The Process Review Team elected to review ADOT Traffic Management Plans (TMP) on Interstate Highways. Although, all the required components of a TMP are developed and implemented throughout projects of significance, as noted in the 2013 Conformance Review (Appendix G), there is no mechanism in place or designated section responsible for determining the significance of a project and formally compiling and submitting the TMP as part of the Plans, Specifications and Estimate (PS&E). Additionally, there were considerable variations among the few projects with a separately packaged full TMP.

The process review was conducted in accordance with the flow diagram shown below.

Work Zone Safety & Mobility Biannual Process Review

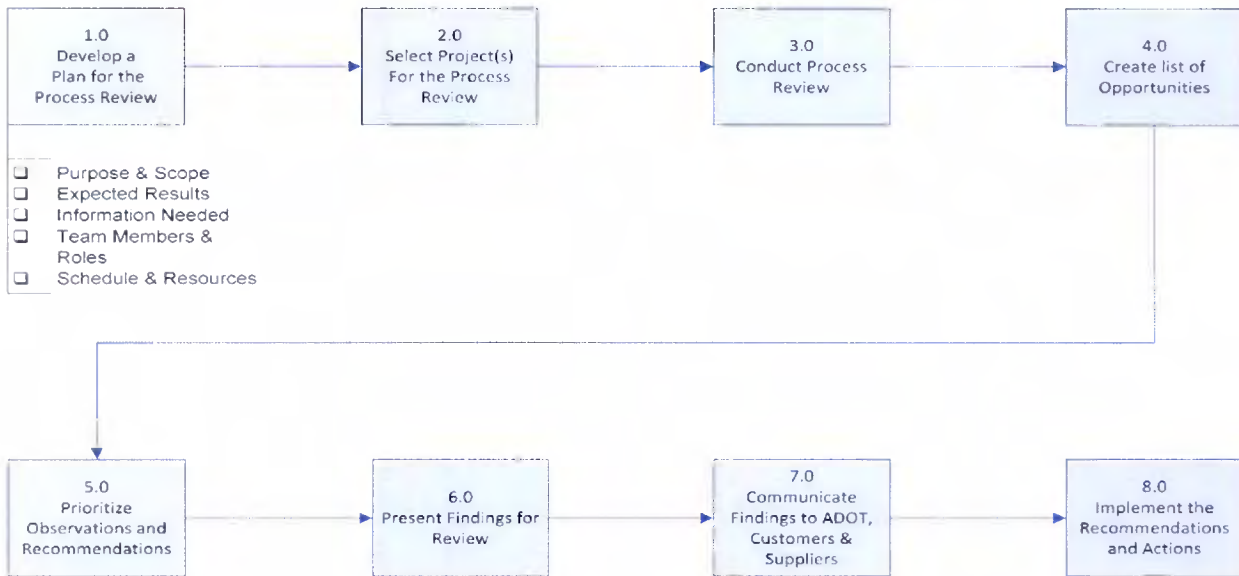


Figure 1 Biannual Process Review Flow Diagram

Initially, over eighty active projects under construction on Interstate Highways between January 1, 2012 and December 31, 2012, were identified using ADOT’s Field Office Automation System (FAST). The list was too large a sample for anything other than cursory examination and after further discussion among the Process Review Team, additional parameters were applied to identify projects for review. This was an iterative process to identify significant projects:

- ✓ Eliminated projects which did not have full or partial closures (Continuous or Intermittent) while in location for more than three days.
- ✓ Eliminated Rehabilitation and Pavement Preservation projects that were lacking complexity.
- ✓ Eliminated projects with start dates earlier than October 1, 2011.

This produced a short list of ten significant projects, all of which were document reviewed for the four components of a TMP:

- Temporary Traffic Control Plan (TTC)
- Emergency Vehicle Access Plan (EVAP) required by Arizona Statute A.R.S. §28-652
- Public Information component (PI) - ADOT Communications
- Traffic Operations Plan (TO)

Short List of Projects

District	Org	TRACS / Project #	Begin milepost	End milepost	Start Date	Completion
Yuma	8230	H800101C/010-A-(215)T	98	98.3	10/09/2012	05/21/2013
Ehrenberg-Phoenix Hwy I-10 Sun Valley Pkwy to Winters TIs						
Tucson	8133	H816801C/010-D-(210)A	199	0	09/18/2012	05/20/2013
Casa Grande-Tucson Hwy I-10 I-8 to SR-87						
Tucson	8131	H806501C/010-E-(209)T	267	271.99	08/13/2012	12/28/2012
Tucson-Benson Hwy I-10 Valencia to Rita TIs						
Safford	8430	H779501C/010-F-(205)T	384	391.23	12/19/2012	06/10/2013
Benson-Steins Pass Hwy I-10 San Simon to State Line						
Prescott	8832	H799101C/017-A-(225)T	243	244	10/24/2012	03/07/2013
Cordes Junction-Flagstaff Hwy I-17 N&SB Bridges						
Prescott	8831	H766401C/017-B-(212)A	289	299.15	05/23/2012	11/28/2012
Cordes Junction-Flagstaff Hwy I-17 Middle Verde to Sedona TIs						
Tucson	8131	H774101C/019-A-(203)A		63.3	04/18/2012	03/15/2013

Nogales-Tucson Hwy I-19 Mexico to I-10						
Holbrook	8730	H831101C/040-E-(210)A	323	323.08	06/25/2012	10/30/2012
Holbrook-Lupton Hwy I-40 Crazy Creek Bridge EB						
Tucson	8132	H624101C/010-D(013)N	252	0	09/16/2011	10/30/2013
Casa Grande-Tucson Hwy I-10 Ruthrauff to Prince						
Phoenix	4050	H686601C/ARRA-060B(201)A	138	148.5	01/07/2010	11/23/2011
Wickenburg-Phoenix Hwy US60 Loop 303 to 99th Ave						

Figure 2 Short List of Projects

All of the projects on the short list were found to contain the required TMP components. However, they varied in organization and some had the TO and PI components as a separate Communications Plan. ADOT had also requested a waiver of one project which was not approved by FHWA because that project already had all four TMP components (Appendix J).

From this analysis, the review team elected one project, nominated by ADOT Communications as best meeting all TMP criteria in a single document, for the purpose of developing a standard template for packaging a TMP. The project selected, Interstate 10: Ruthrauff Road to Prince Road, contained a full TMP packaged in a single document (Appendix E) and met all criteria established by ADOT and FHWA. The work area is located in Pima County, within the City of Tucson. The purpose of the reconstruction project was to increase capacity on I-10 and improve the operational characteristics of the Prince Road interchange by widening to four lanes each direction.

Observations and Recommendations

Based upon the teams' Process Review, the following findings and recommendations were identified:

- Finding:** There is no formal tracking device in place showing which projects have and require a full TMP and those requiring a partial TMP.

Recommendation: The Process Review Team recommended that a field be added to the Traffic Database for tracking projects with a full TMP.

Action: This recommendation was implemented by the ADOT Traffic Group.
- Finding:** The committee noted that there were many questions from staff regarding significant projects, impact, and the need for all four 4 components of a TMP.

Recommendation: The Work Zone Safety and Mobility Steering Committee should develop training for ADOT staff on the Rule, Significant Projects, TMP components and other items as required by the **Rule**.

Action: A member of the Steering Committee has developed a Power Point presentation for training on 23 CFR 630, subparts J & K as part of the Resident Engineers' Academy presented May 28, 2014. A similar presentation will be part of ADOT's Project Managers' Academy.
- Finding:** There is no checklist for project managers to use to identify significant projects and what components of a TMP are required.

Recommendation: Develop a checklist.

Action: The development of a checklist has been assigned to the Work Zone Safety and Mobility Steering Committee.
- Finding:** ADOT does not have a process to identify maintenance activities eligible for exemption from the significant project requirements for separate TO and PI components as defined by the **Rule**.

Recommendation: Identify those maintenance activities eligible for an exemption; identify existing ADOT processes which include the TO and PI components and request the exemption from the **Rule** from FHWA.

Action: Members of the committee have worked with the Maintenance Group to identify those activities. A letter requesting an exemption for those activities has been drafted.

5. **Finding:** ADOT’s “Implementation Guidelines for Work Zone Safety and Mobility pursuant to 23 CFR 630, Subparts J & K” requires revision to include more details and a template for exemptions.

Recommendation: Develop a template that will be included in the Implementation Guidelines.

Action: The Implementation Guidelines are being revised and a template has been developed for requesting exemptions and is currently being reviewed by FHWA.

6. **Finding:** The I-10 Reconstruction project, TRACS # H624101C/010-D(013)N, Ruthrauff Road to Prince Road, has been identified as a **Best Management Practice** in the packaging of the TMP components.

Recommendation: Use this project as an example in the development of a template for TMPs for significant projects.

Action: The first draft of a template has been presented at a Steering Committee Meeting and is currently being revised.

7. **Finding:** ADOT’s current process already has the four components of a TMP for most projects, but is experimenting with developing a single, stand-alone TMP.

Recommendation: Insertion of a section within the special provisions of the contract documents stating, “This is a Significant Project requiring a full TMP. The four components are found....” This would become a contract provision binding on the contractor and reduce the cost of preparing a standalone TMP.

Action: This recommendation will be discussed and considered by the Steering Committee.

8. **Finding:** The Emergency Vehicle Access Plan (EVAP) component required by Arizona Statute was not clearly identified as EVAP in specifications. For instance, it was found in some Special Provisions as “Emergency Action Plan” which contained all of the provisions required by A.R.S. §28-652.

Recommendation: The Emergency Action Plan Special Provision should reference compliance with the Emergency Vehicle Access Plan (EVAP) required by Arizona Statute A.R.S. §28-652.

Action: A proposed (draft) Special Provision has been sent to the ADOT Contracts and Specifications Group for development and use in all projects.

9. **Finding:** The public information function does not compete for funding with construction in individual projects. It is focused on the entire construction and maintenance program impact rather than individual projects. As such it best fulfills the mobility requirements of the **Rule** and is a **Best Management Practice**.

Action: The review team commends ADOT’s Public Information practice for work zones and we have identified them as a Best Practice, which is described in further detail in the next section of this report.

Best Practices

Public Information

ADOT has a proactive and involved public information process on all construction projects. One example of such proactivity is the practices of requiring Transportation System Management (TSM) meetings that project supervisors or resident engineers hold with applicable stakeholders to coordinate major changes in traffic control, such as lane closures and lane shifts. TSM meetings have been found to be especially beneficial for coordinating lane closures between adjacent or nearby construction projects, such as in the metropolitan areas where there can be many active construction projects in multiple jurisdictions within the same corridor or area. In both rural and metro areas, TSM meetings have proven beneficial in minimizing impacts to the public and ensuring continuity of essential services (emergency medical services, schools, mail services and others).

ADOT Communications tracks public input through a computer database called ENVOY. This enables them to ensure follow-up issues are completed and to track trends in work zone issues across projects. The ENVOY system could also be used to address program-level issues.

ADOT has a detailed software program called the Highway Condition Reporting System (HCRS) that enables tracking of work zone impact such as lane closures, full road closures and incidents. This information is provided in a standardized format to law enforcement, media, and the general public through ADOT's 511 driver information system. The ADOT Traffic Operations Center (TOC) updates the system in real time to include weather conditions, incidents, and congestion levels in order to warn traffic, suggest alternative routes when applicable and provide travel time estimates. This information is widely available to the public through social media (Facebook, Twitter and Az511) radio, TV and digital message boards.

It is also the Agency's position to measure and react in a timely manner to public perceptions; a function at which ADOT Communications excels. Because of this organization, two components of the Traffic Management Plan (TMP), the Transportation Operations (TO) component and the Public Information (PI) component are frequently contained in a single document. Please note that ADOT does not limit these two TMP components to significant projects. They may be developed for projects such as sidewalk rehabilitation during a school year.

In light of the importance of ADOT Communication's contribution to the elements of a TMP, an explanation of ADOT's organization is helpful for an understanding of how ADOT fully meets the intent and purpose of 23 CFR 630, subpart J (the Rule).

ADOT has an independent communications division, ADOT Communications, which reports directly to the Director of the Agency. Its budget is independent of specific projects and it is tasked to think across boundaries in communicating with Arizona residents and our visitors. By organization and action, they have expanded the Rule's concept of work zone transportation management, considering work zone issues and solutions beyond the immediate work zone itself to include corridor, network, and regional considerations (e.g., special events, other nearby work zones, use of alternate routes). ADOT Communications is involved in all aspects of project development, construction, maintenance and operation of Arizona's highway system. ADOT is a leader in innovative thinking for work zone planning, design, and management through their visionary use and formation of ADOT Communications.

It is also the Agency's intent to measure and react in a timely manner to public perceptions, a function at which ADOT Communications excels. Because of this organization, two components of the TMP, the Transportation Operations (TO) component and the Public Information (PI) component are frequently contained in a single document. Please note that ADOT does not limit these two TMP components to significant projects. They may be developed for projects regardless of size, location or duration.

ADOT's approach incorporates multiple considerations such as anticipated queue lengths and travel delays of alternatives. ADOT also relies on the Resident Engineer's responsibility for the day-to-day management of a project and expands that management into regional/corridor thinking with coordination by ADOT Communications. The two urban area districts within Arizona, Phoenix and Tucson, each provide guidelines on when lane closures or restrictions are permitted (Appendix H and Appendix I).

ADOT construction plans typically detail concepts and phasing to integrate a single project into the broader corridor issues. Detailed temporary traffic control plans, which include the types and spacing of individual devices are usually developed and approved at project level.

ADOT Communications is represented at the district level, where scheduling and chairing monthly Transportation System Management (TSM) meetings occurs for all stakeholders within a corridor, including contractors, law enforcement and fire, local governments, as well as interested parties such as those organizing special events and the managing Resident Engineers.

Appendix

- A. [ADOT Communications – Public Information & Outreach Strategies](#)
- B. [Final Rule Language 23 CFR Part 630 Subpart J](#)
- C. [Literature Review Documents for Conformance Review 2012](#)
- D. [Implementation and Resolution Plan for Conformance Review 2012](#)
- E. [Transportation Management Plan – Interstate 10 Reconstruction: Ruthrauff Road to Prince Road July 15, 2011 - TRACS/Project # H624101C/010-D\(013\)N](#)
- F. [ADOT WZSM Implementation Guidelines](#)
- G. [ADOT Conformance Review Final Report](#)
- H. [Valley Transportation Group Freeway Closures](#)
- I. [Tucson District Freeway Closures](#)
- J. [Response to Waiver Request](#)
- K. [Proposed Specification for Emergency Vehicle Action Plan](#)
- L. Work Zone Safety and Mobility Presentation at:
<http://www.azdot.gov/docs/default-source/construction-group/wzsm-presentation-6-10-14-for-web.pdf?sfvrsn=2>

Appendix E

Work Zone Safety and Mobility Implementation

Arizona Department of Transportation



Implementation Guidelines for Work Zone Safety & Mobility Pursuant to 23 CFR630 Subpart J & K



PREFACE

Pursuant to 23 CFR630 Subpart J & K

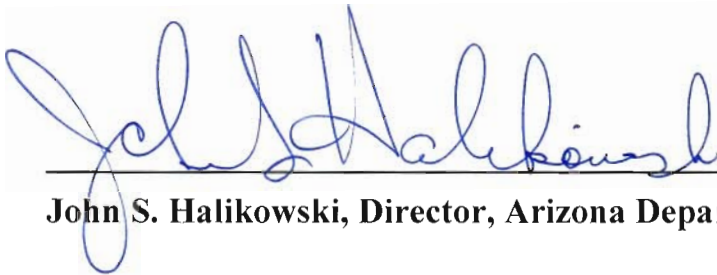
Arizona Department of Transportation

Work Zone Safety & Mobility

Policies, Processes, and Procedures

ADOT practices currently achieve the intent of this Rule through existing policies, processes and procedures. These guidelines will expand/enhance existing practices currently in place.

Approved:



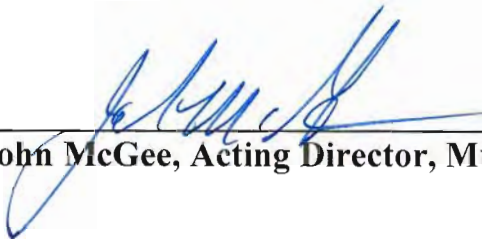
5.29.09

John S. Halikowski, Director, Arizona Department of Transportation Date



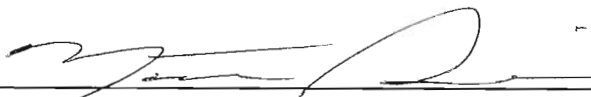
29 May '09

Floyd Roehrich Jr., State Engineer Date



5/28/09

John McGee, Acting Director, Multimodal Planning Division Date



5/28/09

Matthew Burdick, Communication Director Date

Primary responsibility for responding to Questions and Revisions of this document is the Arizona Department of Transportation Traffic Standards Engineer (602-712-7766)

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1.0 Introduction

In September 2004, the Federal Highway Administration (FHWA) published updates to the work zone regulations at 23 CFR 630 Subpart J referred to as *Work Zone Safety & Mobility Rule* (herein referred to as the Rule). In December 2007, FHWA added new regulations at 23 CFR 630 Subpart K referred to as *Temporary Traffic Control Devices Rule*. Both are applicable to all Federal-Aid Highway Projects with the intent to improve road user and workers exposed to motorized traffic. The Safety and Mobility Rule was effective October 12, 2007 and Subpart K was effective on December 4, 2008.

These guidelines describes how ADOT has and will continue to improve Work Zone Safety & Mobility; by identifying the “Level of Significance” (Major or Minor) for all projects added to ADOT’s 5 year Construction Plan beginning with the FY09-FY10 cycle based on the criteria defined in ADOT’s Work Zone Safety & Mobility Policy and these guidelines. All projects will be continually re-evaluated and assessed for Work Zone impacts from Pre-Design through Design, Construction and Maintenance phases.

The Rule broadens some aspects of the former language on work zones in the CFR and also identifies key areas where States have an opportunity to develop and strengthen their current methods for providing mobility through work zones while maintaining a safe and efficient work environment for highway workers. In response to the requirements of the Rule, ADOT developed and is improving the ITD Work Zone Policy ENG 07-3, October 2007. The policy describes ADOT’s recognition of the importance of the Work Zone Safety and Mobility Rule and commits the Department to compliance with essential elements of the Rule. The policy also explains that the Department will develop guidelines for implementation of the Rule on all ADOT projects, which is the purpose of this document.

It is ADOT’s Mission to provide products and services for a safe, efficient, cost-effective transportation system that links Arizona to the global economy, promotes economic prosperity and demonstrates respect for Arizona's environment and quality of life.

A team was established to define, document and implement the Work Zone Safety & Mobility Rule (23 CFR, Part 60, Subpart J & K). The team has cross-functional membership throughout ADOT and work zone safety stakeholders.

Organization/Function	Team Members/Contacts
Multimodal Planning Division (MPD)	Rakesh Tripathi Don Mauller Arnold Burnham
Communications & Community Partnerships	Matt Burdick Timothy Tait
Intermodal Transportation Division (ITD)	
Construction Group	Robert Wade*
Construction District Representatives	Paul Patane (DE Yuma) Madhu Reddy (Senior RE Phoenix District)
Engineering Technical Group	Joe Roman
Office of Environmental Services	Todd Williams
Roadway	Said Asad
Safety	Sonya Herrera
State Construction	Julio Alvarado - Sponsor
State Engineer's Office	Lisa Sinclair*
State Maintenance	Lonnie Hendrix
Statewide Project Management	Guily Caceres Irene Higgs
Traffic Engineering Group	Mike Manthey Scott Orrahood*
Transportation Technology Group	Scott Nodes
Valley Project Management	Larry Langer
Trade Associations & Consultants	
American Council of Engineering Companies of Arizona (ACEC)	Janice L. Burnett (Executive Director)
Arizona General Contractors (AGC)	David Martin (President) Ron Jones (AZ ATSSA/Barricade Contractors)
Arizona Chapter, ATSSA	Ron Jones (AZ ATSSA Chapter President) Dan O'Conner (TC training)
American Traffic Safety Services Association (ATSSA)	Donna Clark (Nat'l Director of Training & Products)
American Traffic Safety Services Association (ATSSA)	Donna Clark (Nat'l Director of Training & Products) Juan M. Morales (ATSSA Trainer Instruction (Consultant))
Carter & Associates	Larry Lambert (Team Facilitator)*
Training Development	
ADOT	Erika Blankenship, LTAP and ITD Tech Director
FHWA (Arizona Safety Representative)	Karen King
* Core work team members	

2.0 Work Zone Safety & Mobility Policy - ITD Policy ENG 07-3



Intermodal Transportation Division Policy

October 12, 2007
Effective Date

October 12, 2010
Review Date

None
Supersedes

Sam Eilers,
State Engineer

ENG 07-3 WORK ZONE SAFETY AND MOBILITY POLICY

PURPOSE

To establish and expand on existing guidance and requirements to systematically consider and manage work zone safety and mobility impacts.

SCOPE

This policy applies to all construction and operational projects determined by ADOT to be significant as defined in this policy.

BACKGROUND

In an effort to address the issues associated with work zone safety and mobility, the Federal Highway Administration (FHWA) published updates to the work zone regulations at 23 CFR 630 Subpart J in September of 2004. The updated rule is referred to as *Work Zone Safety and Mobility Rule*. The updated Rule applies to all State and local governments that receive Federal-aid highway funding. The changes made to the regulations broaden the former rule to better address the work zone issues of today and the future.

Transportation agencies are required to comply with the provisions of the FHWA rule by October 12, 2007. A variance will be requested from FHWA for projects in the later stages of development at the time of policy implementation, if it is determined that project delivery would be significantly impacted by the requirements of this rule.

It is ADOT's mission to provide products and services for a safe, efficient, cost-effective transportation system that links Arizona to the global economy, promotes economic prosperity, and demonstrates respect for Arizona's environment and quality of life. A particular element of this mission is the provision for safety and mobility through the work zones which the Department oversees as a regular part of its day to day operations. ADOT will develop a guidance document that will further define key elements of the policy and identify roles and responsibilities for its implementation.

AUTHORITY

23 CFR Part 630, Subpart J *Work Zone Safety and Mobility* sections 630.1002 through 630.1016 have been changed.

Arizona Revised Statute (ARS) 28-332 *Department of transportation, jurisdiction, duties, divisions* gives ADOT exclusive control and jurisdiction over state highways and routes.

ARS 28-652 *State highway work zone; definition* sets ADOT's authority to adopt standards and specifications for traffic control and highway work zones.

ARS 28-710 *State highway work zone safety; civil penalty; fund* allows civil penalty for exceeding speed limits in work zones when workers are present.

DEFINITIONS

Significant Project	One that, alone or in combination with other concurrent projects nearby, is anticipated to cause sustained work zone impacts that are considered greater than what's tolerable based on engineering judgment. The judgment is based on existing traffic volumes, duration of construction, anticipated impacts to travel time and surrounding transportation network and is further defined in the implementation guidance document. In addition, all Interstate system projects within the boundaries of a Transportation Management Area that occupy a location for more than three days with either intermittent or continuous lane closures are also considered significant.
Mobility	Specifically relating to work zones, mobility pertains to moving road users efficiently through or around a work zone area with a minimum delay compared to travel when no work zone is present, while not compromising the safety of highway workers or road users.
Transportation Management Area (TMA)	An urbanized area with a population of more than 200,000.
Transportation Management Plan (TMP)	Specific set of strategies to manage the work zone impacts of a project.
Work Zone	The area of a highway subject to construction, maintenance, or utility work. It extends from the first warning sign indicating a work area to the END ROAD WORK sign.
Work Zone Safety	Refers to minimizing potential hazards to road users and highway workers in the vicinity of a work zone.

POLICY

It is ADOT's policy to:

- a. Assess work zone impacts during project development and to manage safety and mobility during project implementation as outlined in these procedures.
- b. Use field observations, work zone crash data, and operational information to manage work zone impacts for specific projects during implementation.
- c. Provide and require adequate training for personnel involved in the development, design, implementation, operation, inspection, and enforcement of work zone management and traffic control appropriate to their job decision-making authority.
- d. Perform process review every two years to evaluate and improve work zone processes and procedures, with the intent to increase safety and mobility. Process reviews will include, at a minimum, evaluation of work zone data, a review of randomly selected projects, and will involve project personnel from different project development stages, FHWA, and non-State stakeholders.

- e. Identify a project as "significant" early in the development process as determined by a project's characteristics, and the magnitude and extent of the anticipated work zone impacts. Request an exception from FHWA when Interstate system projects are classified as significant but in ADOT's judgment the projects do not cause sustained work zone impacts.
- f. Develop a Transportation Management Plan (TMP), in sustained consultation with stakeholders, that includes:

- (1) For Significant Projects

- 1. A plan for Temporary Traffic Control (TTC) that describes measures for facilitating road users through a work zone. The plan must be consistent with Part 6 of the MUTCD, the Arizona Supplement to the MUTCD, and ADOT Traffic Control Design Guidelines.
- 2. A Transportation Operations component that identifies strategies to mitigate impacts of the work zone on the operation and management of the transportation system. This component may include demand management, corridor/network management, safety management, enforcement, and work zone traffic management.
- 3. Public Information component will include communications strategies to inform affected road users, the general public, area residences and businesses, and appropriate public entities about the project, the expected work zone impacts and the changing conditions of the project. The selected communication method(s) should include project characteristics, expected impacts, closure details, and commuter alternatives.

The scope of the Temporary Traffic Control plan is determined by the project characteristics, and the traffic safety control requirements identified for the specific project.

- (2) For less than significant projects, the TMP may consist only of a Temporary Traffic Control plan but may consider addressing both traffic operations and public information.

- g. Develop a Plans, Specifications, and Estimates (PS&E) to include a TMP or provisions for contractors to develop a TMP, and appropriate pay item provisions for implementing the TMP through either method based or performance based specifications.
- h. Designate a trained person, in conjunction with the contractor's trained person, with authority and responsibility for implementing the TMP and other safety and mobility aspects of the project.
- i. Monitor and measure work zone impacts during construction and take corrective action to manage mobility and safety based on criteria such as travel delay, queue lengths, and crash occurrences.

Departmental Responsibility

Each Group affected by this policy is required to develop or revise internal processes and procedures for inclusion in the Guidelines for Implementation of the Work Zone Safety and Mobility Policy.

3.0 Work Zone Safety & Mobility Process & Procedure

In compliance with 23 CFR 630 Subpart J, ADOT will identify the “Level of Significance” (Major or Minor) to ADOT’s 5-Year Construction Program. All projects are continually re-evaluated as they move from Pre-Design into the Design, Construction and Maintenance Phases.

Definition of a Significant Project:

Per ADOT Work Zone Safety and Mobility Policy (ENG-07) and in compliance with 23 CFR 630 Subpart J, a significant project is

“One that, alone or in combination with other concurrent projects nearby, is anticipated to cause sustained work zone impacts that are considered greater than what’s tolerable based on engineering judgment. The judgment is based on existing traffic volumes, duration of construction, anticipated impacts to travel time and surrounding transportation network and is further defined in these implementation guidelines. In addition, all Interstate system projects within the boundaries of a Transportation Management Area that occupy a location for more than three days with either intermittent or continuous lane closures are also considered significant.

For an Interstate system project or categories of Interstate system projects that are classified as significant through the application of this provision, but in the judgment of the State they do not cause sustained work zone impacts, the State may request from the FHWA, an exception to the requirements triggered by the classification. Exceptions to these provisions may be granted by the FHWA based on the State's ability to show that the specific Interstate system project or categories of Interstate system projects do not have sustained work zone impacts.

ADOT Process for Defining the Level of Significance:

The intent of ADOT’s Policy is to maintain flexibility in determining the level of significance (Major or Minor) for all projects added to ADOT’s 5-year Construction Program. The Department identifies upcoming projects that are expected to be significant as early as possible in the process and in cooperation with FHWA. All projects are continually re-evaluated as they move from Pre-Design into the Design, Construction and Maintenance Phases using the Transportation Management Plan Memo.

To better anticipate the impacts associated with individual projects every project will require a Transportation Management Plan (TMP). As indicated in Section 5.6.2 of ADOT’s Project Development Process Manual, the TMP will be initially submitted at Stage 1 in the development process and then updated as needed at each successive submittal. The TMP will identify project’s level of significance (Major or Minor) which will determine the complexity of the TMP.

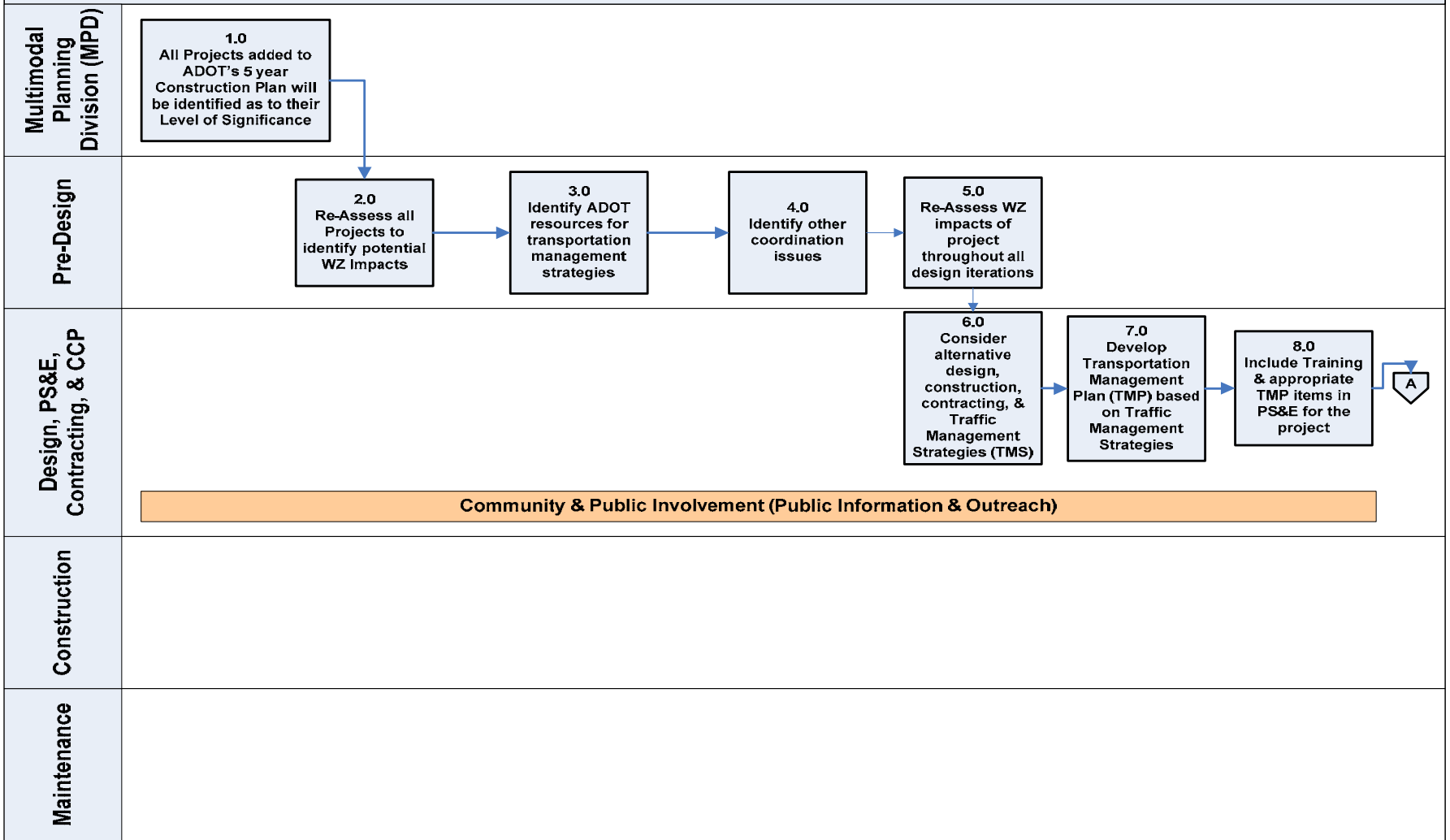
Projects of Major Significance: Projects of Major Significance have a high level of public interest and will likely impact a large number of travelers. This impact must be analyzed individually and also in combination with concurrent active projects. It will have moderate to high user-cost impacts and the duration is usually moderate to long. These characteristics create work zone impacts that fall outside of the typical work zone safety and mobility thresholds. Examples of this work type may include major corridor reconstruction, high impact intersection reconstruction, full closures on high volume

facilities, major bridge reconstruction or repair, repaving projects that require long term lane closures, etc. It is important to note that projects of major significance are unique in that they have considerable impacts to areas outside of the project area as well as the surrounding community.

Projects of Minor Significance: Minor projects have the potential to affect the level of public interest and may impact a modest number of commuters. These projects would include various maintenance activities.

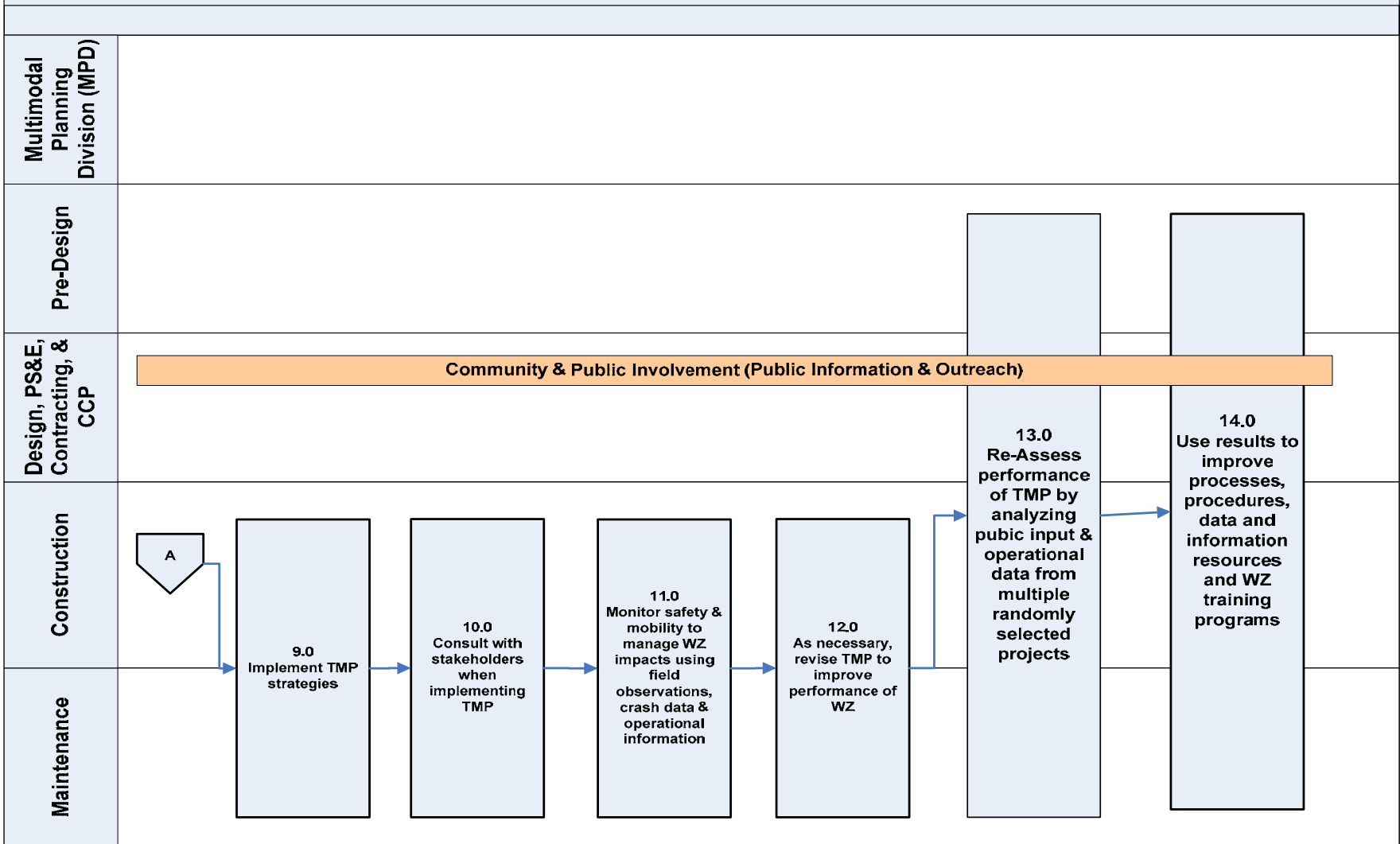
ADOT's process for the Identification, Assessment, Implementation and Re-assessment of Work Zone Safety & Mobility is defined in the Process & Procedures in this section.

ADOT's Work Zone Safety & Mobility Process
23 CFR 630 Subpart J



ADOT's Work Zone Safety & Mobility Process

23 CFR 630 Subpart J



Title: Work Zone Safety & Mobility Procedure	
Process Owner(s): MPD, CCP, PreDesign, Design, Districts' & Maintenance	Date & Revision: 02/26/09 Version 3.0
Activity	Tasks/Key Actions
1.0 All Projects added to ADOT's 5 year Construction Plan will be identified as to their Level of Significance <u>Responsible: MPD, CCP, Pre-Design, and ITD Leadership Team</u>	<p>Starting FY09-FY10 cycle projects added to ADOT's 5 year Construction Plan will be identified, as to their level of significance (Major or Minor).</p> <p>The level of significance will be designated in the Pre-Design Scoping Document in Activity 2.0</p> <p>Projects will be continually re-assessed throughout Pre-Design, Design, Construction & Maintenance for Work Zone Safety & Mobility issues.</p> <p>Review of Work Zone Impact will be included in the Stages Checklist; including a Traffic Management Plan Memo.</p>
2.0 Re-Assess all Significant Projects to identify potential work zone impacts <u>Responsible: Pre-Design, Traffic Engineering, Districts & CCP</u>	<p>The Project Manager needs to coordinate with Contract Phasing, Traffic Control, and Communications & Community Partnerships (CCP) at each phase of project.</p> <p>Reference - Arizona Supplement to MUTCD can be found in Appendix G</p>
3.0 Identify ADOT resources for transportation management strategies <u>Responsible: Pre-Design, Traffic Engineering, Districts, CCP, Environmental, Local Governments, IPA & IGA</u>	<p>Starting from typical ADOT strategies in limiting traffic restrictions, closures and closure times, examine contract acceleration and construction phasing. CCP is at the same time identifying Public Notice & feedback strategies.</p> <p>Environmental strategies (Hazard Identification and Reduction plans) are developed to eliminate hazards such as; vehicle collisions with wildlife, tree removal, etc.</p>
4.0 Identify other coordination issues <u>Responsible: Pre-Design, Traffic Engineering, Districts, CCP, Environmental, U&RR, Local Governments, Uniformed Officers, IPA & IGA</u>	<ul style="list-style-type: none"> • Utility & Railroads (U&RR) • Enforcement (Uniformed Law Enforcement/DPS) • Local Government • Environmental strategies
5.0 Re-Assess WZ impacts of project throughout all design iterations <u>Responsible: Pre-Design, Design, Districts, Valley & SW Project Mgmt & CCP</u>	<p>This re-assessment should be completed at all phases of the project starting with Pre-Design, Design, Construction & Maintenance. Review of Work Zone Impact will be included in the Stages Checklist; including a Traffic Management Plan Memo identified at Stage 1 and updated as necessary during each successive phase.</p>

Title: Work Zone Safety & Mobility Process	
Process Owner(s): MPD, Pre-Design, Design, Districts' & Maintenance	Date & Revision: 02/26/09 Version 3.0
Activity	Tasks/Key Actions
6.0 Consider alternative design, construction, contracting & Traffic Management strategies <u>Responsible: Design, CCP, Districts, Traffic Engineering</u>	<ul style="list-style-type: none"> Design continues coordination as in Pre-Design Update TMP Memo to reflect any changes
7.0 Develop TMP based on Traffic Management strategies <u>Responsible: Design, Traffic Engineering & CCP</u>	<ul style="list-style-type: none"> Update TMP Memo to reflect any changes <p>Reference – CCP- Communications & Public Involvement See Appendix A Reference – ADOT Traffic Control Design Guidelines See Appendix F Reference – Arizona Supplement to MUTCD See Appendix G</p>
8.0 Include Training & appropriate TMP items in PS&E for the project <u>Responsible: C&S, LTAP / ITD Tech Training, Approved Providers, CCP & Consultant Construction Administration (CCA), Districts</u>	ADOT is developing a two tiered training program for workers, and supervisors and managers. It also differentiates between operations (field) and design (office) personnel with a third course. These courses will ensure targeted training for the Project Team, including (but not limited to) Pre-Designers, Designers, Construction Workers, Construction and Permit Inspectors, and Maintenance Workers. Training shall be required for personnel involved in the supervision and / or oversight of Design, Implementation (set up & maintenance of TC devices), Operation & Enforcement of the Work Zone. See Section 6.0 for more details.
9.0 Implement TMP strategies <u>Responsible: Districts & CCP</u>	Reference – Contract & Project Specifications
10.0 Consult with stakeholders when implementing TMP <u>Responsible: Districts & CCP</u>	CCP hosts meetings with Contractors, Local Government, ADOT Technical staff, PM's, Local Government, Traffic Engineering and Uniformed Law Enforcement/DPS
11.0 Monitor safety & mobility to manage WZ impact <u>Responsible: Districts, CCP, MPD (Mr. Talley) & GTSAC</u>	<ul style="list-style-type: none"> Community Feedback available through CCP Operational data – Scope, Schedule, Budget & Quality <p>NOTE: Crash data – available at project level through RE/Inspectors or at statewide level through ALISS database. Contact Larry Talley (MVD), Traffic Records Coordinating Committee (TRCC) Coordinator (602) 712-7029.</p>
Title: Work Zone Safety & Mobility Process	
Process Owner(s): MPD, Pre-Design,	Date & Revision: 02/26/09 Version 3.0

Design, Districts' & Maintenance	
Activity	Tasks/Key Actions
<p>12.0 As necessary, revise TMP to improve performance of WZ</p> <p><u>Responsible: Districts, CCP & Design</u></p>	<p>ADOT uses Community Input, Operational Data, and Crash reports (done by RE's) to determine if any changes are necessary.</p>
<p>13.0 Assess performance of WZ Safety & Mobility</p> <p><u>Responsible: CCP, Districts, Traffic Engineering, Pre-Design, Design, Valley & SW Project Mgmt & MPD</u></p>	<p>Use Community feedback & Operational data from multiple randomly selected projects.</p> <p>At a minimum, process reviews to be held every two years commencing FY10.</p> <p>This information will be presented to the ITD Leadership Team meeting at least once every two years. The ITD Leadership team will identify a sub-group to define improvements to WZS&M and CCP will facilitate the bi-annual assessment process.</p>
<p>14.0 Use results to improve Work Zone Safety & Mobility</p> <p><u>Responsible: CCP, Districts, Traffic Engineering, Pre-Design, Design, Valley & SW Project Mgmt & MPD</u></p>	<ul style="list-style-type: none"> • Eng07-3 Work Zone Safety & Mobility Policy • Processes • Procedures • Data & Information resources • WZ Training programs •

4.0 Transportation Management Plans (TMP)

TMP's are strategies/methodologies that will be implemented to ensure safe and mobile work zones within transportation projects. The project classification will determine the detail level of significance required for the TMP.

Projects of Major Significance: The TMP for high significance projects shall consist of a TTC, a TO, and a PI.

Projects of Minor Significance: The TMP for minor projects shall consist of a TTC. A TO and a PI are not required, but may be applicable to certain projects as determined by the Project Manager.

To better anticipate the impacts associated with individual projects every project will require a Transportation Management Plan (TMP). As indicated in Section 5.6.2 of ADOT's Project Development Process Manual, the TMP memo will be initially submitted at Stage 1 in the development process and then updated as needed at each successive submittal to re-assess work zone impacts. The TMP memo is a "dynamic document" that will be maintained and revised by the project team as project development progresses. As the TMP evolves, it is important to reassess the management strategies to confirm that the work zone impacts are addressed and the necessary funding is available. The TMP shall consist of four components -

- Transportation Management Plan Memo
 - Initiated in the Pre-Design process, using a multidisciplinary approach
- Temporary Traffic Control Plan
- Transportation Operations
- Public Information and Outreach

Temporary Traffic Control Plan (TTC): A TTC plan describes temporary traffic control measures to be used for facilitating road users through a work zone or an incident area. The TTC plan plays a vital role in providing continuity of reasonably safe and efficient road user flow and highway worker safety when a work zone, incident, or other event temporarily disrupts normal road user flow. The TTC plan shall be consistent with the provisions of the State Supplement of the MUTCD and AASHTO Roadside Design Guide. The Traffic Control Design Guide is intended to provide design guidelines for the State of Arizona Highway System, and should be used in addition to the State Supplement of the MUTCD

Traffic Engineering Group

- The Traffic Engineering Group is responsible for the preparation of TTC plans, design exceptions, construction zone traffic control plans, traffic analyses, traffic signal and illumination plans, signing plans and pavement marking plans.

Transportation Operations Component (TO): The TO component shall include the identification of strategies to mitigate impacts of the work zone on the operation of the transportation system within the work zone impact area. The work zone impact area consists of the immediate work zone as well as affects to the surrounding roadways and communities.

Traffic Control & Safety (Specification in Development)

- For projects of Major Significance a provision for Traffic Control Coordinator as identified in contract documents. The Traffic Control Coordinator shall be a representative of the contractor with the primary responsibility of maintaining traffic control and responding to incidents resulting from or adversely affecting the project traffic control. **See Contracts & Specifications for Section 701 Traffic Control Coordinator (DRAFT stored specification)**

Public Information Component (PI): The PI component shall include communication strategies that seek to inform the general public of work zone impacts and the changing condition of the project. The general public may include road users, area residences and businesses, and other public entities.

Communications and Community Partnerships are responsible for developing public information and outreach plans in conjunction with the TMP. The process and procedures for determining the extent of the PI component and the types of strategies utilized in Appendix

5.0 Work Zone Impact Assessment Tools

The work zone impact assessment is a process for understanding the safety and mobility impacts of a road construction/maintenance/rehabilitation projects. For all projects, work zone impacts are continually re-assessed at all stages of the project; including Systems Planning (MPD), Pre-design, Design, Construction & Maintenance.

Factors that will influence the level of impact in a work zone include traffic conditions and characteristics, project characteristics, geographic/physical features, and aspects of the surrounding area (e.g., alternate routes, nearby businesses).

ADOT has been very proactive in using a work zone evaluation process to improve existing work zones and to modify future work zone traffic management plans; some examples are provided here.

ADOT uses three Quantlists for traffic control to assist the project engineer with analyzing the traffic control plan and evaluating the work zone on a weekly basis. ADOT trains their inspectors in the use of these Quantlists. The Quantlists evaluate each work zone for conformance with the approved Traffic Control Plan. Additionally the State Construction Engineer's Construction Operations section conducts independent Quality Assurance (QA) project reviews using the same Quantlists. The results of these QA evaluations are distributed by the Assistant State Engineer for Construction, to the responsible District Engineer (DE) as an aid in improving congestion and safety in that, and future projects. Contact ADOT Construction Operations. See Appendix H.

ADOT's Intelligent Transportation Systems' (ITS) Highway Condition Reporting System (HCRS) is a versatile and powerful system collecting, coordinating, and disseminating highway information. (Motorist Information System (MIS) and Incident Management included in this section, as examples)

ADOT internally uses ITS as a conduit between DPS dispatch and project level management. In Metropolitan areas, ITS camera links are available in District offices to monitor Freeway congestion.

ITS uses both telephone and web reporting of real time traffic conditions as an aid for drivers to avoid congestion. AZ511 (send) is available from any cell phone. AZ511.com provides travelers and ADOT personnel both camera images of major Freeway conditions, and graphic representations on traffic movement and conditions with reasons (Construction, Maintenance, Incidents, Crashes, Special Events, etc.). Media are afforded real time camera information for broadcast as an aid to commuters, commercial, and recreational travelers.

az511 - MOTORIST INFORMATION SYSTEMS

The ADOT motorist information systems provide accurate, timely, and reliable information in order to provide for a safe and convenient environment. The principal systems currently used include the following:

Variable-Message Sign

- Primary technique for providing information to motorists
- Capable of quickly change messages remotely
- Fiber-optic signs used throughout the state furnished by a single vendor to facilitate operations and maintenance
- All signs are alphanumeric character matrix with 18-inch-high character and three-line display
- Signs are placed at the following locations: a) at intermediate locations based on volume-to capacity ratio, accident rate, and diversion potential; b) in advance of freeway-to-freeway interchanges; c) at entrances to system; d) at approximately two-mile spacing in urban areas
- Dynamic Message Signs are located at fixed locations with four (4) lines of fourteen (14) characters each

Highway Condition Reporting System (HCRS)

The HCRS is a unique, versatile, and powerful system, which has been developed by ADOT to provide accurate and reliable information on roadway conditions, incidents, special events, roadway closures, detours, traffic flow, and weather. The HCRS attributes are described below:

- Dynamic GIS-based graphics
- Communications take place via Internet, wide-area network, and dial-up
- ITIS Codes are used to categorize information
- HCRS retrieves weather forecast and advisory from the National Weather Service
- HCRS server automatically feeds data to other systems such as Internet and 511

Internet

The ADOT TOC maintains the “az511.com” as its Web site to provide relevant and useful information on travel patterns, roadway conditions, incidents, and live camera images from roadways.

511 Telephone System

In March 2002, Arizona launched its statewide 511 System. This current system utilizes information from the Highway Conditions Reporting System (HCRS), which aggregates data from multiple sources, including data gathered by the operators at the ADOT Traffic Operations Center. Arizona has successfully completed the important first steps in

implementing a comprehensive 511 System. The 511 Model Deployment Initiative (MDI) will build upon Arizona's current systems for integrated data fusion (HCRS) and the Voice Remote Access System (VRAS).

INCIDENT MANAGEMENT

An incident is defined as any non-recurring event that causes a reduction of roadway capacity or an abnormal increase in demand. Such events include traffic crashes, disabled vehicles, spilled loads, highway construction and maintenance activities, and special events (e.g., ball games, concerts, parades).

The purpose of the incident management is to become aware of occurrence of an incident (either through the FMS or by receiving reliable information) and initiate appropriate procedures to restore the roadway to full capacity. The main responsibility of the Arizona Department of Transportation (ADOT) Traffic Operations Center (TOC) is to respond to incidents and dispatch appropriate teams to manage and clear the incidents. The TOC operators can help improve the safety of motorists, road construction and maintenance workers, and emergency crews during incidents. The CCTV camera system is the primary source of incident verification. All incidents are logged and documented using the automated incident logging system. The principal elements of incident management are listed below:

1. Detection
2. Verification
3. Response
4. Removal
5. Site Management
6. Motorist Information
7. Freeway Service Patrol
8. ALERT (Arizona Local Emergency Response Team)

For additional information about az511 – See Appendix P.

6.0 Work Zone Training

ADOT is developing a two tiered training program for workers, and supervisors and managers. It also differentiates between operations (field) and design (office) personnel with a third course. These courses will ensure targeted training for the Project Team, including (but not limited to) Pre-Designers, Designers, Maintenance & Environmental Workers, and Construction and Permit Inspectors. Training shall be required for personnel involved in the supervision and / or oversight of Design, Implementation (set up & maintenance of TC devices), Operation & Enforcement of the Work Zone.

Designer Training shall be required for those with responsibility or authority to decide on specific maintenance of traffic requirements including the Engineer responsible for work zone traffic control phasing and plans; and Technicians drafting or electronically generating work zone traffic control plans.

ADOT currently trains all field workers (Construction, Maintenance & Environmental) in Traffic Safety courses TCH 3004 & TCH 3005. These Matrix courses' are not affected by this program.

Courses are currently under development by ADOT. Point of Contact (POC) is:

Erika Blankenship, LTAP and ITD Tech Director

EBlankenship@azdot.gov

602-712-4252

After the training courses are available, notice of the new training requirements for Work Zone Safety and Mobility shall be by revision to ADOT's Standard Specifications / Stored Documents, Project Development Process Manual, and Construction Manual.

7.0 Process Reviews

What is a Process Review?

A process review is an assessment of the functionality and effectiveness of a particular program and the practices and procedures used for carrying out an aspect of ADOT's normal business operations. Reviews can also help ensure that operational processes are consistent with established processes, procedures, standards and expectations, performing at the most effective and efficient level, and that best practices are captured and made available to all levels.

A process review has several characteristics, including that it is:

- **Planned:** Preparation is done
- **Deliberate:** There is a defined purpose and scope for the review
- **Organized:** A method/approach is followed
- **Multi-disciplinary:** It is conducted by a representative team
- **Action-oriented:** Seeks to identify steps that can be taken (if any) to foster improvement

Requirements of the Rule

The Rule requires a process review at least every two years to assess the effectiveness of their work zone safety and mobility procedures. The State has the option to evaluate work zone data at the agency level or to randomly selected projects across jurisdictions or use a combination of both.

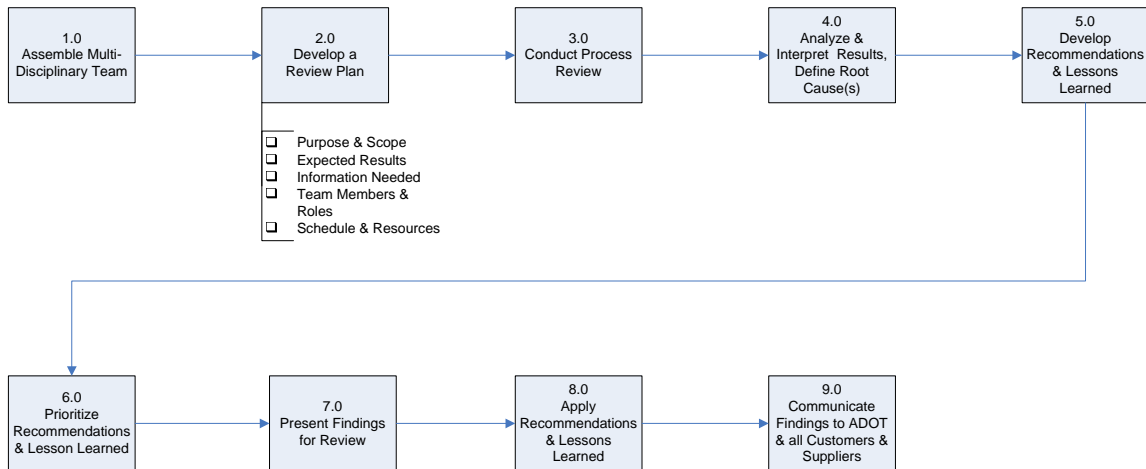
Process Review objectives

The Rule recommends that appropriate personnel, who represent the projects development stages and the different offices within ADOT, as well as FHWA, participates in the review of processes, procedures, data and information resources, and training to address safety and mobility on current and future projects.

ADOT uses community input as its key driver of potential changes to the Traffic Management Plan for a specific project. The data is collected by CCP, who then facilitates a review with the DE, RE and/or PM for that project. The discussion includes the community input, potential changes to the TCP and a response to the community input. In addition, an ADOT Core Team working group will conduct a statewide bi-annual review and present the findings to the ADOT Leadership Team.

Work Zone Safety & Mobility Bi-Annual Process Review

Recommended



ADOT’s approach for FHWA Work Zone Self Assessment

To help states evaluate their work zone practices, and to help assess work zone practices nationally, the FHWA developed the Work Zone Safety & Mobility Self Assessment (WZSA) tool. The WZSA tool consists of 46 questions designed to assist those with work zone management responsibilities in assessing their programs, policies, and procedures against many of the good work zone practices used today.

The WZSA is completed on an annual basis, due to FHWA by June 1 of each year. The goal is to accurately capture the state of work zone management practices within Arizona. It is recommended that a comprehensive re-assessment be done at least every 2 to 3 years. The WZSA can be completed in conjunction with the ADOT bi-annual process review.

ADOT’s approach for Process Review

1. Assemble multi-disciplinary team.

In an agency, there are generally several units, teams, or departments responsible for carrying out a program or operation. It is important that these different perspectives are represented in a process review team. A practice that works well for one unit may cause difficulties for the next unit (e.g., decisions made independently by the design unit could make development of effective TMP’s or traffic control plans problematic for the traffic engineers). Or a step that is done by one unit might be more effective if done earlier in the process by another unit (e.g., identifying significant projects). The appropriate personnel, who represent the various project development stages and the different offices within the agency, as well as the FHWA, should participate in the process reviews. Non-agency stakeholders should be invited to participate in the reviews, as appropriate. They

can provide a useful perspective and may have insights that agency personnel are not in a position to see.

The maximum effective team size is generally around 8 people. If the team is too large, the participation of some members will likely be limited. Other people can support the review but not be a member of the core review team. For example, the review team may interview other stakeholders on specific topics of interest or make use of data collected by others.

2. Develop a review plan

Preparing a review plan can be helpful to ensure that all team members have a common understanding and remain focused on the scope of the review.

What needs to be considered to plan for a review?

- Purpose
- Scope: Function/processes reviewed
- Expected results
- Information needed
 - What do we know now?
 - Gaps in information and possible sources
- Team members and roles
- Schedule and resources

Purpose and Scope: Having a clear purpose and scope for the review and an agreed upon set of objectives is vital to the success of a review. The scope of the review should identify the limits of the review to ensure it remains focused on the key processes, and should specify the timeframe to be covered by the review (e.g., the most recent 2 years). The agency and the FHWA Division Office generally work together to identify the scope of review, based on the Stewardship Agreement and a risk assessment.

Expected results: The process review should have clear and concise goals that define what the review is trying to accomplish and identify the expected results. Base the selection of topics on opportunities for improvement and consider a fairly uniform distribution of review topics among the various program areas.

Information needed: Information for review should come from a variety of sources. After determining the information the review team needs, it should next assess what information is already available and identify what needs to be generated. Information sources may include field data collection, data records (e.g., crash reports), project logs, and interviews with key stakeholders, post-construction reports, and other sources. This may include:

- Collection of data including project related information as well as public and stakeholder perception.
- Synthesis and analysis of data at multiple levels (project, local, regional, State, and national) and comparison of findings to performance metrics
- Application of the analysis results toward continually improving work zone practices, policies, processes, and procedures.

Team members and roles: The team members should also know their roles, limitations, and authority.

Schedule and resources: The review team should also identify target dates for conducting the review and presenting the results, as well as the resources available for the review. Resources should include staff time and expertise, data availability, and budget.

3. Conduct review

This step involves carrying out the review plan developed by the team. The review team leader should make appropriate assignments among the team members to promote active participation by everyone. It is valuable to document the steps taken and information collected during the review to have a good basis for any conclusions reached and recommendations made.

4. Analyze and Interpret results

In this step, the team should compile and analyze the data information collected, and compare the results against the stated goals of the processes and functions being reviewed to identify the gaps and problem areas. If the goals are not being met in certain areas, then the analysis should attempt to identify the “root cause.” It is valuable to identify the “root cause(s)” as much as possible, rather than focusing on the symptoms and how treat them. Symptoms may need to be dealt with, but real change occurs when you address the root causes.

5. Develop inferences, recommendations, and lessons learned

Once the root causes of problem areas or gaps are identified, the team needs to develop recommended improvements targeting these areas. The team may find it helpful to brainstorm solutions or conduct follow-up interviews to identify or assess alternatives for improvements.

During the review, the team may also identify weaknesses, as well as best practices that should be noted in the findings. Noting best practices is an opportunity to give credit for good things that are discovered, can help build rapport with partners, and may lead to solutions that can be shared.

Recommendations/solutions should be:

- Conceivable
- Achievable
- Valuable
- Manageable
- Constructive
- Realistic

6. Prioritize recommendations and lessons learned

The team should suggest a prioritization to the recommendations based on several considerations, including the amount of influence the recommendation will have on the desired outcomes and ability to implement it.

7. Present the findings from the review

A close-out meeting should be held with the affected stakeholders to present the findings and receive feedback. The review team should provide a brief overview of the process followed; the information considered and the basis for each recommendation. The review team should be prepared to support its findings and may encounter the need to defend the recommendations.

8. Apply recommendations and lessons learned

Based on the team's findings and the feedback during the closeout meeting, the team should develop an action plan that identifies the actions, responsible parties, timeframe for implementation, and expected outcomes. The results of the review and carrying out the action plan should lead to improvements in agency processes and procedures.

SAMPLE Process Review Questions

General

- Has the District begun to implement the Agency's Work Zone Safety and Mobility Policy?
- Who in the District is responsible for compliance with the Policy?
- How many projects have implemented the Policy?
- Has District staff been adequately trained?
- Please address any overall concerns you have with the Policy

Planning

- Has the District discussed the Work Zone Safety & Mobility Policy with the planning partners?
- Does the programming of projects consider the minimization of road user impacts?
- Are projects sequenced to consider the overall network and region-wide impacts?

Project Scoping

- Is consideration given to potential work zone impacts and does that influence the evaluation and selection of a build alternative?

Preliminary Engineering

- On Interstates, freeways, and arterials, how is the analysis of work zone delay impacts being conducted?
 - What software is being used?
 - Is it done by consultant or District staff?
 - Please provide examples.
- For long-term projects on the Interstate within a TMA, have any exception requests been submitted because of low traffic impacts?
- Are submissions made in a timely fashion according to the Policy?
 - Is significance determined and approved before the alternative analysis?
 - Is the alternative analysis prepared?
- Provide examples of draft TMP's that have been prepared because of work zone impacts that are unacceptable.
- Describe the involvement of FHWA (for Federal Oversight projects) and DOT Bureau of Design.

Final Design and PS&E

- How many TMP's have been developed (or are in the process) since the Policy became effective? Please provide examples.
- How do the TMP requirements get incorporated into the PS&E?
- What TMS's are commonly utilized in this District?
- Has the implementation of the Policy caused you to consider additional or different strategies than what has been used in the past?
- How has the Policy affected project delivery and costs?

Work Zone Crash Review

When a work zone experiences a significant crash or a re-occurrence of vehicular crashes, a Work Zone review is performed by the RE and / or the Regional Traffic Engineer. It shall review the adequacy of the existing Traffic Control Plan (TCP), and consider refinements and / or alternative traffic control. At a minimum it shall include:

- 1) A site visit
- 2) A review police crash reports (if available)
- 3) Interviews with the construction staff and contractor
- 4) Collaboration with the Design Engineer of Record / district staff / Regional Traffic Engineer

When the review is complete, a report containing recommended changes (if any) is sent to the District Engineer for review. The intent is a timely review to implement changes as necessary, not the creation of a lengthy or formal report – the use of e-mail is encouraged.

If change(s) are implemented, changes to contract documents shall be made in accordance with the Standard Specifications. A paper copy of the report / e-mail shall be filed with project records.

- Each project will conduct process reviews, similar to the crash review, to examine adjustments to traffic management strategies when the TCP is not meeting desired outcomes.
- Mitigation / changes to the TCP are then agreed to and implemented, by the appropriate District Engineer (DE); again, if changes to contract documents are made, they shall be in accordance with the Standard Specifications.

8.0 23 CFR630 Subpart K (Temporary Control Devices)

ADOT Compliance with Subpart K

Category	Use	Status & Location	Responsible
Positive Protection Devices	Based on an Engineering Study (agency-wide or to determine measures to be applied on an individual project)	Addressed in Traffic Control Design Guidelines and Standard drawings	Traffic Group
Exposure Control Measures	Considered to avoid or minimize exposure for workers & road users (Full road closures, ramp closures, median crossovers & night work)	Addressed in Traffic Control Design Guidelines and Standard drawings Valley Transportation White Paper on lane closure	Traffic Group
Other Traffic Control Measures	Considered to reduce work zone crashes, risks & consequences of intrusions into the work space	Addressed in Traffic Control Design Guidelines	Traffic Group
Uniformed Law Enforcement/DPS <i>(See Appendix for Guidelines)</i>	Develop a policy for use on Federal-aid highway projects	DRAFT Being Reviewed See: Construction Bulletin 08-03	Construction Group
Safe Entry/Exit for Work Vehicles	Develop a Policy	Being Developed Traffic Control Design Guidelines	Traffic Group
Payment for Traffic Control Features & Operations	Incidental to the contract or included in payment of work unrelated to traffic control and safety	Standard Specifications/Special Provisions Bid Tabs	Contract & Specifications (C&S)
Quality Guidelines	Maintain quality & adequacy of TCC devices during project	Quantlists See: Construction Bulletins 06-01 & 07-01	Construction Operations

9.0 Appendix

- A. CCP – [Public Information & Outreach Strategies](#)
- B. Guidelines for use of Uniformed Law Enforcement / DPS (under review - Contact Traffic Engineering Group)
- C. Construction Bulletins
<http://www.azdot.gov/Highways/ConstGrp/Bulletins.asp>
- D. Priority Programming Group – (Define ADOT’s 5 year Construction Plan)
<http://mpd.azdot.gov/pps/process.asp>
- E. Traffic Engineering Policies, Guides & Procedures (PGP)
<http://www.azdot.gov/Highways/Traffic/PGP.asp>
- F. Traffic Control Design Guidelines
http://www.azdot.gov/highways/traffic/standards/Traffic_Control/Trafficcontrol.pdf
- G. Arizona Supplement to the MUTCD
<http://www.azdot.gov/Highways/traffic/standards/mutcd/2003ADOTMUTCD.pdf>
- H. ADOT’s Work Zone Inspection Procedure (Quantlists)
Available in the PEN system; Hard copies available to Contractors
- I. Project Development Process Manual
<http://wss1/default.aspx>
- J. ADOT Construction Manual
http://www.azdot.gov/Highways/ConstGrp/construction_manual/index.asp
- K. ATSSA Training
http://www.atssa.com/cs/course_information
- L. AGC Training
http://www.agc.org/cs/career_development/craft
- M. Final Rule Language 23 CFR Part 630 Subpart J
<http://frwebgate.access.gpo.gov/cgi>
- N. Final Rule Language 23 CFR Part 630 Subpart K
http://ops.fhwa.dot.gov/wz/resources/temptraf_qa.pdf
- O. FHWA Website – Work Zone Safety & Mobility
<http://ops.fhwa.dot.gov/wz/outreach/outreach.htm>
- P. az511.com Web Link
http://www.az511.com/Documents/adot_its.pdf
- Q. Allowable Closure Times (For latest information contact Valley or SW Project Mgmt)

Appendix F

Images of Traffic Database with TMP Tracking Field

TD Log Update Form

TRACS SEARCH: H8467 01C Type TRACS (e.g., H1234) then hit TAB to display project information Print Project

TRACS can be modified when necessary by changing info in the below field. New Project
 If no project number found from above, create a new record by deleting the orange TRACS text, then clicking "New Project" and filling out the below information (beginning with the TRACS). Delete Project

8 DIGIT TRACS

CPSID: **Assigned Team:** **Route and Suffix**

Project Status **Technical Leader** **Physical County**

Federal Aid No **Team Manager** **Milepost**

ADOT Assigned PM **Primary Designer**

Designed By **CADD Technician**

Engineering District **Support Engineer**

District Contact Name **QC Monitor**

Is Project In 5 Year **Is a Full TMP Rqd** **Impactful Creep**

PROJ. MILESTONE DATES Advertise

TD Log Update Form

TRACS SEARCH: H8479 01D Type TRACS (e.g., H1234) then hit TAB to display project information Print Project

TRACS can be modified when necessary by changing info in the below field. New Project
 If no project number found from above, create a new record by deleting the orange TRACS text, then clicking "New Project" and filling out the below information (beginning with the TRACS). Delete Project

8 DIGIT TRACS

CPSID: **Assigned Team:** **Route and Suffix**

Project Status **Technical Leader** **Physical County**

Federal Aid No **Team Manager** **Milepost**

ADOT Assigned PM **Primary Designer**

Designed By **CADD Technician**

Engineering District **Support Engineer**

District Contact Name **QC Monitor**

Is Project In 5 Year **Is a Full TMP Rqd** **Impactful Creep**

PROJ. MILESTONE DATES Advertise

TD Log Update Form

TRACS SEARCH: H8577 01D ▼		Type TRACS (e.g., H1234) then hit TAB to display project information	Print Project
TRACS can be modified when necessary by changing info in the below field.		If no project number found from above, create a new record by deleting the orange TRACS text, then clicking "New Project" and filling out the below information (beginning with the TRACS).	
8 DIGIT TRACS <input style="width: 100%;" type="text" value="H8577 01D"/>		New Project Delete Project	
CPSID: <input style="width: 100%;" type="text" value="EV1M"/>	Assigned Team: <input style="width: 100%;" type="text" value="U"/>	Route and Suffix	<input style="width: 100%;" type="text" value="303"/> <input style="width: 100%;" type="text" value="L"/>
Project Status <input style="width: 100%;" type="text" value="CNR"/>	Technical Leader <input style="width: 100%;" type="text" value="RG"/>	Physical County	<input style="width: 100%;" type="text" value="MA"/>
Federal Aid No <input style="width: 100%;" type="text"/>	Team Manager <input style="width: 100%;" type="text"/>	Milepost	<input style="width: 100%;" type="text" value="104"/>
ADOT Assigned PM <input style="width: 100%;" type="text" value="Prosnier"/>	Primary Designer <input style="width: 100%;" type="text"/>	Estimated Staff Hrs	<input style="width: 100%;" type="text"/>
Designed By <input style="width: 100%;" type="text"/>	CADD Technician <input style="width: 100%;" type="text"/>	Staff Hrs Used	<input style="width: 100%;" type="text"/>
Engineering District <input style="width: 100%;" type="text" value="E"/>	Support Engineer <input style="width: 100%;" type="text"/>	SEO/Current Stage	<input style="width: 100%;" type="text" value="30%"/>
District Contact Name <input style="width: 100%;" type="text"/>	QC Monitor <input style="width: 100%;" type="text"/>	Traffic Due Date	<input style="width: 100%;" type="text"/>
Is Project In 5 Year <input style="width: 100%;" type="text" value="No"/>	Is a Full TMP Rqd <input style="width: 100%;" type="text" value="No"/>	Impactful Creep	<input style="width: 100%;" type="text" value="No"/>
PROJ. MILESTONE DATES 15% 30% 60% 95% 100% Advertise			

TD Log Update Form

TRACS SEARCH: H8827 01C ▼		Type TRACS (e.g., H1234) then hit TAB to display project information	Print Project
TRACS can be modified when necessary by changing info in the below field.		If no project number found from above, create a new record by deleting the orange TRACS text, then clicking "New Project" and filling out the below information (beginning with the TRACS).	
8 DIGIT TRACS <input style="width: 100%;" type="text" value="H8827 01C"/>		New Project Delete Project	
CPSID: <input style="width: 100%;" type="text" value="LZ1N"/>	Assigned Team: <input style="width: 100%;" type="text" value="2"/>	Route and Suffix	<input style="width: 100%;" type="text" value="202"/> <input style="width: 100%;" type="text" value="L"/>
Project Status <input style="width: 100%;" type="text" value="A"/>	Technical Leader <input style="width: 100%;" type="text" value="RG"/>	Physical County	<input style="width: 100%;" type="text" value="MA"/>
Federal Aid No <input style="width: 100%;" type="text" value="NH-202-D(ADY)"/>	Team Manager <input style="width: 100%;" type="text" value="SO"/>	Milepost	<input style="width: 100%;" type="text" value="060"/>
ADOT Assigned PM <input style="width: 100%;" type="text" value="Amy Ritz"/>	Primary Designer <input style="width: 100%;" type="text"/>	Estimated Staff Hrs	<input style="width: 100%;" type="text"/>
Designed By <input style="width: 100%;" type="text" value="HDR"/>	CADD Technician <input style="width: 100%;" type="text"/>	Staff Hrs Used	<input style="width: 100%;" type="text"/>
Engineering District <input style="width: 100%;" type="text" value="E"/>	Support Engineer <input style="width: 100%;" type="text"/>	SEO/Current Stage	<input style="width: 100%;" type="text" value="FDCR"/>
District Contact Name <input style="width: 100%;" type="text"/>	QC Monitor <input style="width: 100%;" type="text" value="RG"/>	Traffic Due Date	<input style="width: 100%;" type="text"/>
Is Project In 5 Year <input style="width: 100%;" type="text" value="Yes"/>	Is a Full TMP Rqd <input style="width: 100%;" type="text" value="No"/>	Impactful Creep	<input style="width: 100%;" type="text" value="No"/>
PROJ. MILESTONE DATES 15% 30% 60% 95% 100% Advertise			

Appendix G

Work Zone Safety and Mobility PowerPoint for Resident Engineers' and Project Managers' Academy – May 28, 2014

Work Zone Safety and Mobility



Robert Wade, ADOT Construction Operations

Ammon Heier, FHWA AZ Division Area Engineer

May 28, 2014

WHAT

- ▶ **Work Zone Safety & Mobility Rule, 23 CFR 630 Subpart J**
- ▶ **Temporary Traffic Control Devices Rule, 23 CFR 630 Subpart K**
- ▶ **ADOT Policy ENG 07-03**
- ▶ **ADOT Implementation Guidelines for Work Zone Safety and Mobility** pursuant to 23 CFR 630 Subparts J & K.

WHO

- ▶ ADOT and all Local Public Agencies (LPA)
- ▶ All highway construction projects financed in whole or in part with Federal-aid highway funds.

WHY

- ▶ To provide an overview of the Work Zone Safety and Mobility Rule 23 CFR 630 Subpart J (**the Rule**) and
- ▶ 23 CFR 630 Temporary Traffic Control Devices Subpart K
- ▶ ADOT Policy and Implementation Guidelines

WHEN

- ▶ It's not new
- ▶ Effective date October 12, 2007.
- ▶ **The Rule** is an update to "Traffic Safety in Highway and Street Work Zones"

Required Processes and Procedures

To institutionalize, streamline, and standardize work zone safety and mobility practices.

- ▶ Use of work zone data
- ▶ Work zone training
- ▶ Process Reviews

ADOT ENG 07-03

Work Zone Safety and Mobility Policy

- ▶ Gives direction for all stages of project development, design and construction for work zones.
- ▶ It does not provide specifics on content or format of work zone impacts.

ADOT Implementation Guidelines

- ▶ Gives detail to processes, procedures, and guidance for individual projects.
- ▶ Specifics on content and format
- ▶ The Rule uses the term "State", while FHWA implementation guidance documents and materials use the term "agencies."
- ▶ **State and Agency mean ADOT in Arizona.**

Work Zone Safety and Mobility Steering Committee

- ▶ **Julie Kliewer**, Sponsor, Construction
- ▶ **Lisa Sinclair**, Chair, State Engineer's Office
- ▶ **Robert (Bob) Wade**, Construction Ops
- ▶ **Scott Orrahood**, Traffic
- ▶ **Mohammed A. Zaid**, Project Management
- ▶ **Paki Rico**, Communications
- ▶ **Timothy Sturm**, Maintenance
- ▶ **Ammon Heier**, FHWA

We welcome your suggestions and ideas!



What is a Transportation Management Area (TMA)?

- ▶ An urbanized area with a population of over 200,000. In addition, at the request of the Governor and metropolitan planning organization (MPO) or affected local officials, other areas may be officially designated as TMAs by the FHWA. The TMA designation applies to the entire metropolitan planning area.
- ▶ **There are two in Arizona: MAG and PAG.**

What is a “Significant” Project?

Significant in terms of potential Work Zone Impacts:

Significant if:

1. Interstate
2. In a Transportation Management Area (**TMA**)
 - a) **MAG** and **PAG**
3. Lane closures for 3 or more days (can be intermittent)

Or if:

- Based on engineering judgment (e.g. I-15 gorge)

Why identify Significant projects?

- ▶ **Helps allocate resources** to projects that are likely to have greater impacts on work zone safety and mobility.
- ▶ Determines depth of Work Zone mitigation measures

When are Significant Projects identified?

- ▶ **As early as possible** in the project development and delivery process in cooperation with FHWA. It may be quantitative or qualitative.
- ▶ The agency's work zone policy provisions, the project's characteristics, and the magnitude and extent of the anticipated work zone impacts are considered when determining if a project is Significant or not.
- ▶ Can be identified **at any stage**, including Construction.

Are there exceptions to the Significant project provision?

- ▶ **Yes. ADOT can request an exception from FHWA.**
- ▶ ADOT must show that the specific Interstate system project, or category of Interstate projects does not have a sustained work zone impact.
- ▶ Blanket exceptions for categories of Interstate system projects may be approved if ADOT demonstrates that such projects do not have sustained work zone impacts.

What is a Transportation Management Plan (TMP)?

- ▶ A TMP contains the management strategies necessary to minimize impacts of a road project's work zone.
- ▶ All projects have a TMP, even though it may not be labeled as such.

What are the components of a TMP?

For Significant Projects:

1. Temporary Traffic Control Plan (**TTC**)
2. Emergency Vehicle Access Plan (**EVAP**) ARS 28-652
3. Transportation Operations (**TO**) Component
4. Public Information (**PI**) Component

What are the components of a TMP?

For Non-Significant Projects:

1. Temporary Traffic Control Plan (**TTC**)
2. Emergency Vehicle Access Plan (**EVAP**) ARS 28-652
- ~~3. Transportation Operations (TO) Component~~
- ~~4. Public Information (PI) Component~~

Who develops and implements the TMP?

The Project Manager coordinates development:

- ▶ TTC and EVAP - primarily Design / Construction with input from Communications.
- ▶ The TO and PI - Communications during the Planning / Design phases.
- ▶ Implementation –Construction and Communications

What is the RE's role?

Pre-Construction

- ▶ Help the team decide if the project is significant
- ▶ Give your comments on the TMP early on

Construction

- ▶ Implement the TMP
- ▶ Discuss TMP during Pre-Con
- ▶ Update the TMP as needed
- ▶ Coordination Meetings as needed

Can a contractor make TMP changes?

- ▶ Only with the Resident Engineer's approval
- ▶ The agency's contract provisions also retain review and approval of TMP (TTC plan) elements, including changes.
- ▶ TMP is to be a living document

Current Status of TMPs in AZ

- ▶ Most projects contain the TMP components
- ▶ Few projects have developed stand-alone TMPs
- ▶ The WZS&M Steering Committee is working to develop, evaluate, and standardize ADOT's TMP process

The Goal is the Same

- ▶ To efficiently allocate our limited resources
- ▶ To minimize WZ impacts to the public (delays, confusion, hazards)
- ▶ To make the interface between construction and the public as safe as possible

The Rule and Roadside Safety Hardware

Section 630.1012 of **the Rule** states that the Temporary Traffic Control (TTC) Plan must

- ▶ Be consistent with the provisions under Part 6 of the MUTCD
- ▶ Be consistent with the work zone hardware recommendations in Chapter 9 of the AASHTO Roadside Design Guide.

Subpart K

“Shall” requirements:

- ▶ Positive Protection devices to protect workers – based on Engineering study.
- ▶ Uniformed Law Enforcement Policy
- ▶ Quality Guidelines for temp traffic control devices (Quantlists)
- ▶ Safe entry / exit onto / from travel lanes – a “should,” but ties into Arizona’s Emergency Vehicle Access Plan (**EVAP**) – an ARS “Shall”

Work Zone Data

- ▶ ADOT is required to use work zone data at both the project and process-levels to manage and improve work zone safety and mobility.
- ▶ **No changes to how an ADOT RE manages a project.**

What does ADOT measure?

- ▶ In addition to crash analysis, ADOT uses public satisfaction as a key measurement of the effectiveness of its Work Zones.
- ▶ ADOT's approach: The Transportation Operations (**TO**) and a Public Information (**PI**) components are usually measured by ADOT Communications.

Does the Rule mean that full road closures are no longer allowed?

- ▶ No.

Who requires training?

- ▶ All personnel involved in the development, design, implementation, operation, inspection (construction), and enforcement of work zones must be trained.
- ▶ The Rule requires that training be appropriate to the job decisions that an individual is required to make.
- ▶ The Rule requires the agency and the contractor to each designate a trained person at the project level

Is there formal training for implementing the Rule?

- ▶ This is part of it; familiarizing ADOT employees.
- ▶ ADOT, including its Local Technical Assistance Program (LTAP), provides American Traffic Safety Services (ATSSA) Traffic Control Technician (TCH1168) and ATSSA Traffic Control Supervisor (TCH1167) for Construction and Maintenance personnel.

Does the Rule requires periodic retraining?

- ▶ Yes.
- ▶ ADOT implemented a four year training cycle for Traffic Control training in both the Construction Training Matrix, and the Maintenance HOT series for technicians and supervisors.

What is a Process Review?

- ▶ The process review is a "bird's-eye view" of the agency's overall work zone management efforts to see what is working well, what is not working well and may need adjustments, and to determine how to address any new work zone management challenges that have developed.

Continued 

What is a Process Review?

- ▶ It is to guide improvements in the agency's work zone policy; processes and procedures; data and information resources; and training programs to determine whether they are adequate -- enhancing safety and mobility on current and future projects.
- ▶ Process reviews are required at least every two years to assess the effectiveness of work zone safety and mobility procedures.

ADOT's 2014 Process Review

- ▶ ADOT's Work Zone Safety and Mobility is currently wrapping up the 2013 Process Review
- ▶ Review focused on TMPs
- ▶ Team has made multiple recommendations based on findings
- ▶ Look for the Final Report in the coming month

Road Safety Audits (RSA)

Focus on all aspects of work zones

- ▶ RSAs focus their efforts on safety issues. The current definition of Road Safety Audits includes both existing and future roadways .
- ▶ Road Safety Audits (RSA) can be thought of as analogous to a Value Engineering study. Each seeks to add value / improve process.

How a Process Review or RSA May Involve You

- ▶ You may be asked to be a part of a team or a subcommittee
- ▶ The team may visit your project
- ▶ The team may review construction records
- ▶ You may be asked for an interview

Please keep track of WZ items that you think can be improved and be willing to share!

FHWA and Compliance

- ▶ FHWA Division staff are responsible for reviewing and reassessing ADOT's conformance with the Rule. The review and assessment of conformance is incorporated into existing processes, including ADOT's Stewardship Agreement with FHWA.

RECAP and Definitions

- ▶ Do these procedures change what ADOT does? **No.**
- ▶ **Transportation Management Plans (TMP)** have components:
 - All projects have a Temporary Traffic Control plan (**TTC**)
 - Emergency Vehicle Access Plan (**EVAP**).
- ▶ **Significant projects** also have Transportation Operations (**TO**) and Public Information (**PI**) components.

RECAP and Definitions

- ▶ **Significant projects** include all Interstate system projects within Transportation Management Area (**TMA**) that occupy a location for more than three days with either intermittent or continuous lane closures.
- ▶ **Transportation Management Areas (TMA)** are urbanized areas of over 200,000. **There are two in Arizona: MAG and PAG.**

Technical Resources

- ▶ FHWA has also developed a suite of companion guidance documents that provide more detail on the following aspects of the Rule:
 - ❑ Work Zone Public Information and Outreach Strategies
 - ❑ Work Zone Transportation Management Plans (TMPs)
 - ❑ Work Zone Impacts Assessment
 - ❑ Implementing the Rule on Work Zone Safety and Mobility
- ▶ All of these documents are available for download from:
http://www.ops.fhwa.dot.gov/wz/resources/final_rule.htm

Technical Resources

- ▶ The FHWA Work Zone Mobility and Safety web site provides a vast amount of information about the FHWA Work Zone Program and work zone specific topics. This site is available at <http://www.fhwa.dot.gov/workzones>.
- ▶ The Rule is available at <http://www.ops.fhwa.dot.gov/wz/resources/policy.htm>
- ▶ The FHWA, Arizona Division maintains the FHWA / ADOT Stewardship agreement <http://www.fhwa.dot.gov/azdiv/stewtoc.cfm>

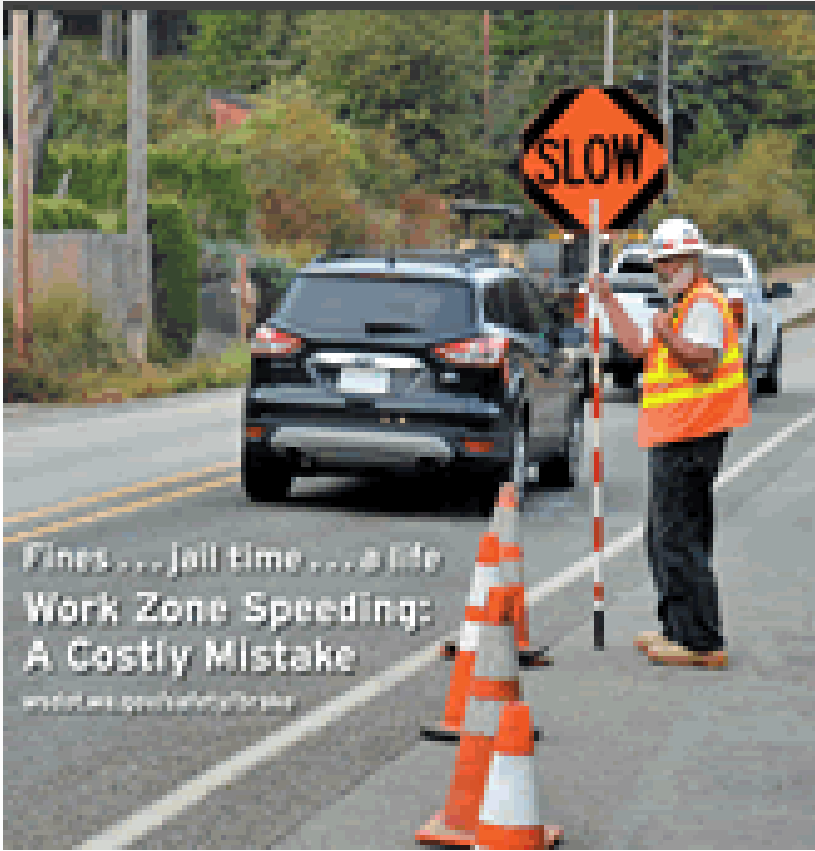
Technical Resources

- ▶ ADOT Traffic Group's web site contains ADOT's Implementation Guidelines for Work Zone Safety and Mobility pursuant to 23 CFR 630 Subparts J & K

<http://www.azdot.gov/business/engineering-and-construction/traffic/traffic-engineering-references>

Questions?

E-mail



Appendix H

Programmatic Agreement for Maintenance Exemptions for Significant Projects



Mon. Day, Year

First Name Last Name

Job Title

Federal Highway Administration
4000 North Central Avenue, Suite 1500
Phoenix, AZ 85012-1906

Subject: Request for a Programmatic Agreement to exclude listed Maintenance activities on Interstate Highway in MAG and PAG from 23 CFR 630 Subpart J requirement for TO and PI components of a TMP

Dear *Name*:

In accordance with the provisions of 23 CFR Part 630, Subpart J, Work Zone Safety and Mobility (the Rule), Section 630.1010(d), the Arizona Department of Transportation respectfully requests a programmatic exception from the requirement for Transportation Operations (TO) and Public Information (PI) components of the Traffic Management Plan (TMP) for listed Maintenance activities on Interstate highways in MAG and PAG Transportation Management Areas (TMA). The specific PeCoS maintenance activities are listed in the attachment; they sometimes meet the criteria for classification as work of significant impact based upon full or partial closures of three or more days.

In our judgment they do not cause sustained work zone impacts because ADOT procedures, including active public involvement efforts by ADOT's Communications Group have demonstrated that there has not been any sustained work zone impacts in either TMA as the result of maintenance work. Communications' Public Information & Outreach Strategies include all desired elements of a PI component, except they are done on a corridor wide basis instead of project (activity) specific. ADOT measures public satisfaction for all work, so the TO component is inseparable from the PI component.

All listed individual work activities include a TMP consisting of a Temporary Traffic Control (TTC) plan. The Arizona required Emergency Vehicle Access Plan (EVAP) is a Standard Operation Procedure for maintenance activities.

It is for the above reasons that ADOT requests this Programmatic Agreement to exclude the listed maintenance activities from developing a full TMP. Should you have any questions, please feel free to contact me at *[phone number]*.

Sincerely,

Name

Title

Attached: PECOS Maintenance Activity List

The ADOT request for a Maintenance Exemption from the Traffic Operations (**TO**) and Public Information (**PI**) components of a Traffic Management Plan (**TMP**) does not excuse ADOT from any requirement / intent of 23 CFR 630 Subpart J (The Rule) for Significant projects.

The Rule defines a Significant project as "one that, alone or in combination with other concurrent projects nearby, is anticipated to cause sustained work zone impacts that are greater than what is considered tolerable based on State policy and/or engineering judgment." In addition, the Rule specifies that all Interstate system projects within the boundaries of a designated Transportation Management Area (TMA) that occupy a location for more than three days with either intermittent or continuous lane closures are considered significant projects.

ALL Maintenance work has a Traffic Management Plan (**TMP**) consisting of a Temporary Traffic Control Plan (**TCP**) and an Emergency Vehicle Access Plan (**EVAP**). ADOT's Exemption request is to acknowledge that ADOT's **Communications** process and Standard Maintenance procedures already incorporate the **TO** and **PI** components.

The impetus for the request is that Maintenance activities (on Interstate highways) usually do not have sufficient notice or a budgeted process to develop the separate **TO** and **PI** components of a **TMP**.

I was also unable to discover any provisions for emergency work exemptions in **the Rule**.

References and definitions are from FHWA's Frequently Asked Questions on **the Rule**:

http://ops.fhwa.dot.gov/wz/resources/final_rule/rule_faqs.htm

The Exemption follows FAQ # 34 from that web site:

Q: Will it be possible to get blanket exceptions from the significant project determination for certain "classes" of projects (such as certain maintenance projects) that will require lane closures, but will not cause significant impacts?

A: Yes. Section 630.1010(d) of the Rule states, "For an Interstate system project or categories of Interstate system projects that are classified as significant...but in the judgment of the State they do not cause sustained work zone impacts, the State may request from the FHWA, an exception...Exceptions to these provisions may be granted by the FHWA based on the State's ability to show that the specific Interstate system project or categories of Interstate system projects do not have sustained work zone impacts."

206 S. 17th Ave.
Phoenix, AZ 85007

Mon. Day, Year

FirstName LastName

Job Title

Federal Highway Administration
4000 North Central Avenue, Suite 1500
Phoenix, AZ 85012-1906

Re: Request for Exception to Full TMP Requirement
Project Name / Number

Dear :

In accordance with the provisions of 23 CFR Part 630, Subpart J, known as the Final Rule on Work Zone Safety and Mobility, the Arizona Department of Transportation respectfully requests an exception from the requirement for a full Transportation Management Plan (TMP) on the above project. Although this project is classified as significant through the application of the provisions in 23 CFR 630.1010(c), ADOT has determined that this project will not cause sustained work zone impacts. *[Brief justification for determination]*

We request that the following TMP components be waived:

- Traffic Control Plans *[Brief discussion of why traffic control plans will not be included]*
- Public Outreach Strategy *[Brief discussion of why public outreach strategy will not be included]*
- Traffic Operations Element *[Brief discussion of why traffic operations element such as public feedback tracking will not be included]*
- Emergency Vehicle Access Plan *[Brief discussion of why EVAP plans will not be included]*

It should be noted that although the above component(s) will not be included, the partial TMP will still address:

- Traffic Control Plans *[Brief discussion of traffic control plans]*
- Public Outreach Strategy *[Brief discussion of public outreach, if applicable]*
- Operational Element *[Brief discussion of operational element, if applicable]*
- Emergency Vehicle Access Plan *[Brief discussion of EVAP plan]*

In addition to the above considerations, we would also like to note that *[Here include any special circumstances which may justify the exception from a full TMP]*

It is for the above reasons that ADOT requests this exception from developing a full TMP on this project. Should you have any questions, please feel free to contact me at *[phone number]*.

Sincerely,

Name
Project Manager
Urban/Statewide Project Management

Training for Resident Engineers for Work Zone Safety and Mobility Rule Regulation & Policy [23 CFR 630 Subpart J (The Rule)].

Request: TCH 1168 Traffic Control Technician (TCT) & 1167 Traffic Control Supervisor (TCS) be added to mandatory corporate training for Senior Resident Engineers and Resident Engineers.

The Rule requires training appropriate to the job decisions that an individual is required to make and that training must be updated periodically. Resident Engineers are responsible for approving Temporary Traffic Control (TTC) Plans, and the contractors' overall operation and safety (Std Specification 701-1). ADOT has adopted the American Traffic Safety Services Association (ATSSA) Traffic Control Technician (TCT) and Traffic Control Supervisor (TCS) courses to fulfil this need.

Resident Engineers and Senior Engineers do not have a Matrix identifying that training or renewal training is required.

ADOT identifies mandatory training courses not yet completed or which have expired (such as Environmental training), in Pathlore; both the individual and the supervisor are notified of required training, and when training will expire.

FHWA's Frequently Asked Questions for the Work Zone Safety and Mobility Rule Regulation & Policy > Final Rule 23 CFR 630 Subpart J

http://ops.fhwa.dot.gov/wz/resources/final_rule/rule_fags.htm#q18 includes Questions 18, 19, and 20 on Training.

Appendix I

Transportation Management Plan: Interstate 10 Reconstruction: Ruthrauff Road to Prince Road



TRANSPORTATION MANAGEMENT PLAN

Interstate 10 Reconstruction: Ruthrauff Road to Prince Road

10-PM-252-H6241 01C
AC-IM-STP-TE-HSIP-010-D(013)N
July 15, 2011

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1.0 PURPOSE OF THIS TRANSPORTATION MANAGEMENT PLAN

This Transportation Management Plan (TMP) outlines the strategies that will be implemented to minimize impacts to the traveling public during construction of this project. The TMP also outlines the roles and responsibilities of the project stakeholders prior to and during construction.

The TMP was prepared to comply with ADOT's Intermodal Transportation Division Policy – ENG 07-3 WORK ZONE SAFETY AND MOBILITY POLICY. The policy requires a TMP be prepared for all projects determined to be "significant" as defined by the policy. The purpose of the TMP is to minimize motorist delays associated with project construction without compromising public or worker safety, or the quality of the work. The attempt is to achieve this goal by the effective application of traditional traffic mitigation strategies, with a combination of public and motorist information, corridor/network management, incident management, alternate route strategies, construction strategies, and public outreach.

2.0 PROJECT LOCATION

The proposed work is located in Pima County, within the City of Tucson. The project begins just south of Ruthrauff Road (EB Milepost 252.44) and extends south approximately 2.33 miles to just south of Prince Road (EB Milepost 254.77).

3.0 PROJECT DESCRIPTION

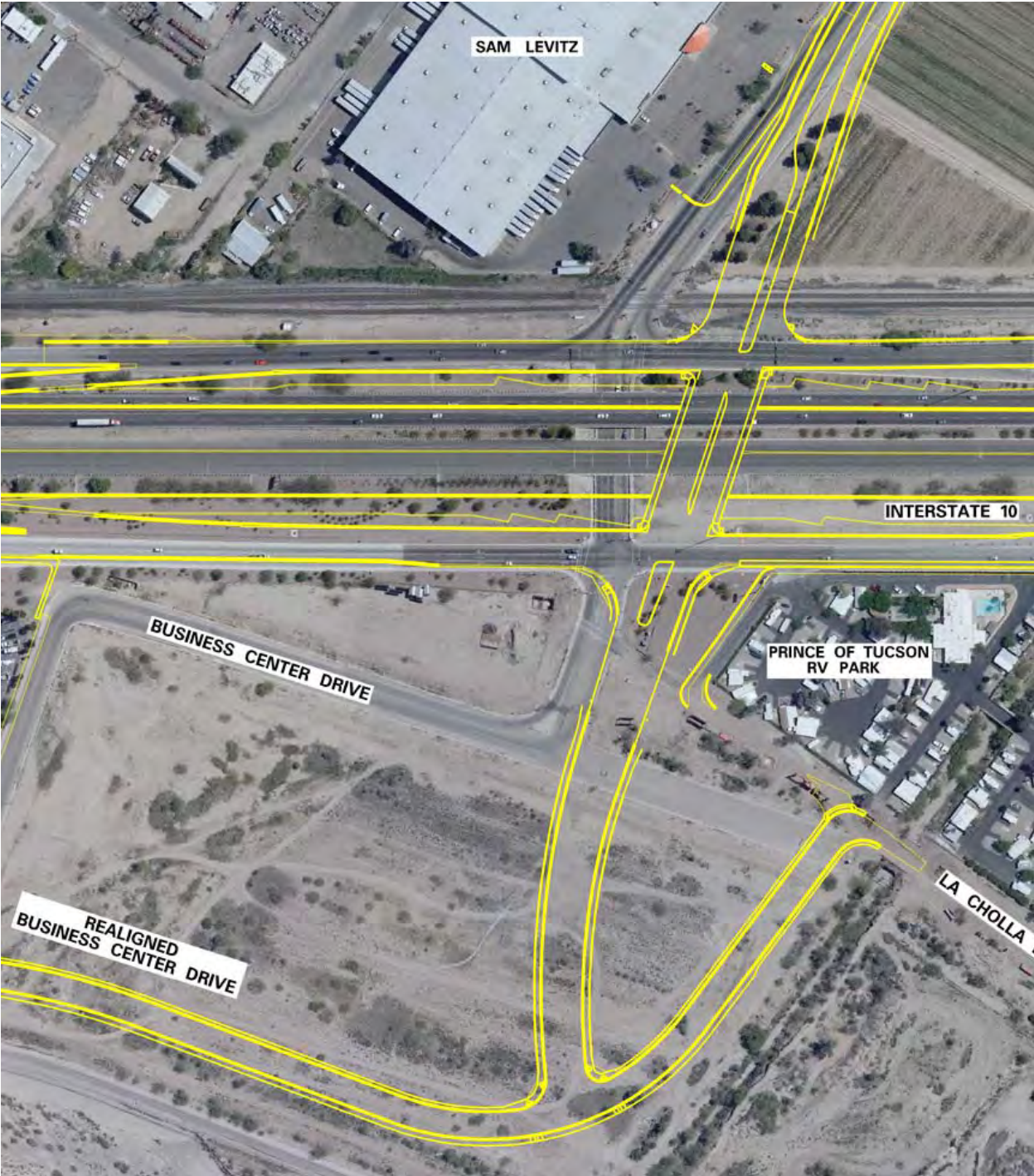
3.1 Background

The purpose of the reconstruction project is to increase capacity on I-10 and improve the operational characteristics of the Prince Road traffic interchange. The project consists of widening I-10 to four lanes each direction. The project will enhance safety by eliminating the existing at-grade crossing of Prince Road and the Union Pacific Railroad (UPRR) and building a grade-separated overpass for Prince Road traffic. The profile grade of I-10 will be lowered to facilitate the new Prince Road overpass across I-10. Business Center Drive will be realigned to improve traffic flow on Prince Road and the intersection of the eastbound I-10 on- and off-ramps. The project also includes drainage improvements in the vicinity of Flowing Wells Wash crossing with I-10 and UPRR. There are numerous utility relocations that will take place prior to and during the construction of these improvements.

3.2 Scope of Work:

In general, the work consists of constructing two AASHTO Type V (modified) concrete girder bridges over I-10 and the UPRR. An AASHTO Type VI concrete girder bridge over a utility corridor is also included. The project includes five cast-in-place concrete box culverts and one precast box culvert, retaining and sound walls, grading, furnishing and placing concrete and asphalt concrete, drainage facilities, water and sewer relocations, traffic signals, signing, pavement markings, lighting and surveillance equipment, landscaping and irrigation and other work.

Figures 1: Reconfiguration on the Prince Road T.I.



4.0 TRANSPORTATION MANAGEMENT PLAN SUMMARY

The time allowed for completion of the work included in the construction phase of the contract is 780 calendar days. Construction is anticipated to begin in August 2011 and conclude in October 2013.

The following strategies and elements will comprise the TMP for this project.

- Motorists Information Strategies
- Incident Management
- Construction TMP Strategies
- Stakeholder Coordination
- Corridor/Network Management Strategies
- Alternate Route Strategies
- Public Information/Public Awareness Campaign
- Contractor and ADOT Emergency Contingency Plan

These strategies may be modified, changed, or eliminated as necessary, with consultation from the District Engineer (DE), to maximize safety and/or to minimize traffic congestion throughout the corridor.

Listed below are TMP measures, responsible party, and action required:

Table 1

	Transportation Management Measure	Responsible Party	Action Required	Comments
1	Flagging Services	DPS, RE	Increase DPS presence during roadway closures	RE to contact DPS to request enhanced enforcement
2	Ground Mounted Signs	RE	Provide project and warning information to motorists	Included in PS&E
3	Portable Variable Message Signs (VMS)	RE	Install portable VMSs announcing reduced speed, delays, detours, and upcoming construction.	Included in PS&E
4	Dynamic Message Signs	RE, STOC	Use existing fixed DMS	STOC Control
5	511 Traveler Information System	RE, STOC	Use existing 511 TIS	Use during Freeway Closure as needed
6	Press releases, Paid Advertising, Brochures, Mailers, Impact group Notification	CCP team	Provide project and construction information through media.	Scope and frequency determined by CRO
7	Telephone Hotline	RE, CCP team	Construction provides real time information.	Public Affairs provide assistance in setting up hotline.
8	Contingency Plan	RE, DPS, CCP team, STOC	STOC Incident Response Protocol	RE to report Incidents to STOC

5.0 ROLES AND RESPONSIBILITIES

5.1 Resident Engineer (RE)

The ADOT (RE) will be the main point of contact during construction for all project related items including this TMP. The RE will ensure full implementation of the Transportation Management Plan in close coordination with the District Engineer (DE), so that disruption to the traveling public is minimized. The RE will work with the DE to ensure that project activities conform to the Transportation Management Plan and that contingency plans are implemented if necessary. The RE facilitates review, approval, modification, or disapproval of planned lane closure requests for this project. The RE directs termination or modification of active planned lane closure operations for this project without compromising the safety of the public or workers, when traffic impact becomes significant. The RE will coordinate with the Southern Traffic Operations Center (STOC) staff to respond with appropriate measures when significant travel delays occur on the highway system as a result of this project. The RE will coordinate work activities with DPS and other local and regional transportation stakeholders as appropriate. If the City street detours and the CMS's on these detours need to be modified, the RE will direct the Contractor to make the adjustment. If the Contractor could not make such adjustment in a timely fashion, the City would make the adjustment. But under no circumstance will the City make the adjustment without first notifying the RE.

5.2 District Engineer (DE)

The District Engineer is responsible, along with the RE, and the Communication and Community Partnerships (CCP) team to ensure implementation of the Transportation Management Plan during the project.

5.3 Project Manager (PM)

The Project Manager (PM) assists and supports the RE and DE in assuring the TMP is implemented.

5.4 Communication and Community Partnerships (CCP) Team

The CCP team will be the lead on public outreach including the following activities:

- Transportation Systems Management (TSM) meeting coordination
- Media Relations
- Responding to constituents, stakeholders and government officials and coordinating meetings with these individual/groups as needed
- Business outreach
- Traffic alert/news release development and distribution. Distribution includes impacted stakeholders, government officials and constituents who have indicated a desire to receive traffic alerts and releases.
- Communication materials and distribution
- Website development and updates
- Hotline maintenance

5.5 Construction Advisory Team (CAT)

A CAT will be formed to facilitate the coordination and communication among stakeholders during construction. The team will be used to assist the RE in making decisions during construction when applicable and appropriate. Prior to each major stage change or in the event there is an emergency or conflict during construction in which the RE needs input, the team will be assembled. The CAT list is shown in Exhibit A.

5.6 Contractor's Traffic Control Point of Contact (CTCPOC)

The Contractor's Traffic Control Point of Contact (CTCPOC) will be responsible for coordinating efforts involving traffic control for the duration of the project. The CTCPOC will attend weekly meetings and coordinate the Contractor's activities to ensure that traffic alerts are provided to CCP in a timely manner. The traffic alerts will serve to notify the public of future lane closures and impacts to the public access and affected businesses. The CTCPOC will work closely with the Resident Engineer and STOC to coordinate emergency access during all phases of construction. The CTCPOC will coordinate with traffic control/barricade companies regarding the proper placement and maintenance of traffic control devices.

6.0 MOTORIST INFORMATION STRATEGIES

Critical to the success of this TMP is the Motorist Information System that will be implemented during construction. The main components of this system are the Variable Message Signs (VMS), and 511 Traveler Information System that will provide real time traffic information to motorists approaching the construction zone. This information will guide and assist the motorists in making alternate route selections to avoid the impacted area. A signing scheme is designed to guide motorists through the various alternate routes. The various motorist information system elements are discussed below:

6.1 Portable Variable Message Signs (PVMS)

Portable Variable Message Signs (PVMS) are truck or trailer mounted. These signs will be utilized to provide motorists information about expected closures and possible detours, especially prior to alternate freeway connections and before the work zone. PVMS will be part of the TMP for traffic control purposes. Several construction phases are incorporated as part of this TMP plan requiring more than 10 PVMS. Additional PVMS may be placed and operated as deemed necessary by the RE.

6.2 Dynamic Message Signs (DMS)

ADOT DMS will also be utilized. The primary use of these signs is to advise motorists of upcoming work zones, anticipated delays, and possible detours long before they approach the impacted area. Also displayed on the DMS would be estimated travel time to reach a certain destination, or anticipated delay. With such information accessible to them far in advance, long distance travelers will be able to make informed decisions. The STOC had identified 11 DMS that can be used when appropriate during construction of this project. The 11 DMS are listed below by their location:

- On WB I-10 east of SR 83 (MP 282.49)
- On WB I-10 west Kolb Road (MP 269.94)
- On WB I-10 west of Valencia Road (MP 266.53)
- On WB I-10 east of Kino Boulevard. (MP 263.21)
- On WB I-10 east of Speedway Boulevard (MP 257.38)
- On EB I-10 west of Battaglia Road (MP 205.08)
- On EB I-10 east Marana Road (MP 249.47)
- On EB I-10 west of Orange Grove Road (MP 249.47)
- On EB I-8, I-10/I-8 (MP 174.1)
- On NB I-19 south of Irvington (MP 61.4)
- On NB I-19 south of Valencia (MP 57.9)

As directed by the RE or in accordance to the construction contract, the DMS will be used to announce the upcoming Ruthrauff Road to Prince Road construction project. The RE is responsible for monitoring message content on the fixed DMS and portable VMS deployment.

6.3 Ground Mounted Signs

Roadway guide signs will augment PVMS by guiding motorists through various alternate routes. An adequate signing scheme is developed by the Design Engineer for this project to guide motorists through the various alternate routes during the current stages of construction. The Contractor and the RE are responsible to make sure that adequate signage will be installed to guide motorists.

6.4 511 Traveler Information System

Real-time highway conditions are available to motorists by calling the 511 Traveler Information System. By dialing 511, the caller will have the option to obtain information on any particular route by selecting the route number.

6.5 Website

ADOT's website (www.azdot.com) will provide travelers and truckers the latest information on the Interstate 10 widening project from Ruthrauff Road to Prince Road. The website will feature links to traffic cameras available at az511.gov, traffic alerts, detour routes, informative videos and the latest project news.

6.6 Freight Transportation Information

Due to the high percentage of freight movement on Interstate 10, coordination with the freight transportation community (e.g., trucking companies, truck drivers, etc.) is very important for this project. Work zone information needs to be communicated to key contacts in this community. The work zone information may include, but is not limited to, truck restrictions, traffic impacts, detours, occurrence of incidents, planned closures, etc.). Such information will be disseminated to central locations via fax, or email distribution to trucking companies. Further elements of the Motorist Information System will be referenced in the Communications Plan.

6.7 Public Transportation

The anticipated closure of Prince Road and I-10 will affect pedestrians and bicyclists crossing I-10 for the duration of the construction. As a mitigation measure, the contractor is to provide a shuttle service to the businesses and school located west of I-10. The schedule of the shuttle and various requirements for the shuttle service are described in the contract special provisions. The shuttle service will also accommodate bicycles.

7.0 INCIDENT MANAGEMENT AND ENFORCEMENT STRATEGIES

On highways under construction, incidents and/or vehicular breakdowns can compound an already congested highway. In order to minimize the impacts of these events, this TMP incorporated an incident management element. This element aims to reduce the effects of incidents or vehicular breakdowns on the flow of traffic. The following incident management elements will be utilized:

7.1 Enhanced Enforcement

Department of Public Safety (DPS) officers will be utilized during construction to improve the safety of construction work crews and the motoring public. The types of enhanced enforcement that DPS will provide include roving or stationary patrol vehicles for speed enforcement, queue control, and monitoring of traffic control devices. DPS officers may also be utilized for traffic control assignments and provide any needed emergency response support services. Due to the high traffic volumes on Interstate 10, enhanced enforcement is needed.

7.2 Access of Emergency Services

In the event that an emergency vehicle must access a particular segment of the construction zone, every effort must be made by the Contractor and RE to facilitate the safe access of such vehicles. An Emergency Access Plan (EAP) has been prepared for the anticipated construction phasing. See Exhibit E for details of the EAP.

7.3 Southern Traffic Operations Center (STOC)

The ADOT STOC will coordinate and manage road-user information. Under the direction of the STOC Manager, the STOC will identify the fixed DMS on the state highway system that will be utilized during construction of the Ruthrauff Road to Prince Road section to provide information to the traveling public. Proper signing will be displayed on the DMS to inform motorists of incidents and to provide useful information on alternate routes. Close coordination between ADOT STOC and the City of Tucson's Traffic Operations is critical to allow the City to quickly respond to incidents and disseminate information when needed to key City operational stakeholders. The STOC Manager will also coordinate with the adjoining ADOT Districts for the use of their respective fixed DMS.

7.4 Traffic Surveillance Cameras

Surveillance cameras will be used to identify traffic problems and to detect, verify, and respond to incidents. The STOC Manager will be responsible to optimize the operation to make sure that accurate and reliable information is transmitted to the road users and emergency responders. All traffic cameras and associated equipment should remain operational during construction.

An Incident Action Plan (IAP) will be developed by the Tucson Police Department. The purpose of the IAP is to provide an operational response template to be utilized by responding TPD supervisors and commanders for interstate related incidents during the duration of the construction project.

8.0 CONSTRUCTION TMP STRATEGIES

Construction TMP strategies are measures that are included in the plans and specifications and performed by the contractor during construction. The objectives of construction TMP strategies are to reduce construction time, minimize traffic disruptions and avoid potential safety problems during construction. The construction sequencing and traffic control plans that were developed for the project will be used as the anticipated construction strategy for the project. The contractor will develop his own strategy and it may differ from the plans. The construction sequencing plans and traffic control plans are shown in Exhibits C and D respectively.

The following construction TMP strategies will apply:

8.1 Lane Closures

Allowable hours for lane closures are standard requirements in the ADOT Special Provisions for the project. Allowable lane closures are identified in Section 104.4 Maintenance and Protection of Traffic. The closure times will be enforced to minimize traffic impacts.

8.2 Liquidated Damages

To minimize the duration of extended lane closures, the Standard Specifications and project Special Provisions (SP) include monetary disincentives for the Contractor if the lanes are not reopened to the public before the allowable times. This disincentive is intended to have the Contractor complete the work, and thereby minimize public inconvenience.

8.3 Project Coordination

Coordination with other highway projects within the state highway system, as well as non-highway projects is critical in minimizing traffic disruptions. Coordination involves scheduling projects within a corridor to ensure that adequate capacity remains available to accommodate the anticipated travel demand within the corridor by not implementing work zones on parallel roadways, or on detours concurrently. At a minimum, care should be taken in the timing of lane closures to ensure that all projects are coordinated during construction to minimize any interference among the various projects. Prominent

projects with known significant impacts have been cited in the Special Provisions. For information and updates of periodic street and sidewalk closures resulting from City projects, go to the following website and follow the link to *City of Tucson*: <http://www.cityoftucson.org>

9.0 STAKEHOLDER COORDINATION

Further transportation management measures may be implemented, should unusual and unplanned circumstances warrant. These will be determined on an individual, day-to-day basis. The Construction Advisory Team (CAT) will continuously monitor the project to ensure the safe and efficient movement of traffic.

9.1 Team Meeting

To facilitate the coordination and communication among stakeholders during construction, a Construction Advisory Team (CAT) will be formed. The CAT will be comprised of members from both ADOT and organizations outside of ADOT. The primary focus of the team would be to develop a communication plan that would identify all the possible risks that may arise during construction. With each risk identified, the team would identify an action plan to inform the impacted stakeholders and develop a communication plan to resolve the issue. The communication plan will include a decision tree with clearly defined lines of communication and responsibilities. The CAT will continuously monitor the project to ensure the safe and efficient movement of traffic throughout the execution of the project. At a minimum, seven days prior to any major stage change, a meeting should be called to discuss issues pertaining to the stage. Issues on hand may be, but not limited to the following:

- Messages to be displayed
- Police or DPS deployment
- Flagger deployment
- Signs to be used
- Identifying closures of lanes, ramps, or connectors
- Modifications to the Detour Plans

See Attachment A for the list of CAT members and the respective unit and organization that they represent.

10.0 CORRIDOR/NETWORK MANAGEMENT STRATEGIES

These strategies intend to optimize traffic flow through the work zone corridor and adjacent roadways using various traffic operations techniques and technologies.

10.1 Signal Timing/Coordination Improvements

Coordination efforts between the City of Tucson and ADOT will optimize traffic flow within the network. Re-timing traffic signals on City streets will be done as needed to increase throughput of the roadways and optimize intersection capacity in and around the work zone.

10.2 TMP Effectiveness Monitoring

If directed by the DE, the STOC will collect and analyze non-recurring congestion data using tachometer runs during the morning and evening peak periods on a Tuesday, Wednesday, or Thursday on all freeway corridors approaching the project area during construction. Each “tachrun” involves a two-car team, using the “floating car” method. The cars are separated by 15 minutes as they follow one another along the corridor. The process is repeated several times during the course of the peak period. Non-recurring congestion determined from the tachrun data will be analyzed according to its magnitude, time, and space distribution. The total vehicle-hours of congestion are converted into congestion measuring parameters of congested lane-miles, congestion duration, average speeds, user delay, and user delay cost. These congestion characteristics can then be compared with the pre-construction conditions.

11.0 ALTERNATE ROUTE STRATEGIES

11.1 Detours

There are several detour options available for rerouting I-10 traffic in the event of a partial or full freeway closure. A partial freeway closure has several options, depending on the phase of construction at the time of the incident.

Partial Closure Options

- Westbound I-10 closure during Phase One or Phase Two:
 - Traffic will be detoured to the Miracle Mile exit ramp, east to Flowing Wells Road, north to River Road, west to Orange Grove Road, to the westbound I-10 entrance ramp at Orange Grove.
- Eastbound I-10 closure during Phase One:
 - The eastbound I-10 Frontage Road will not be available. Traffic will be detoured to El Camino Del Cerro exit ramp, west to Silverbell Road, south to Grant Road, east to I-10, to the eastbound entrance ramp at Grant Road.
- Eastbound I-10 closure during Phase Two:
 - The eastbound I-10 Frontage Road will be available. Traffic will be detoured to the eastbound I-10 exit ramp at Ruthrauff Road/El Camino del Cerro, to the eastbound I-10 Frontage Road, to the I-10 entrance ramp at Prince Road or the I-10 entrance ramp at Miracle Mile depending on incident location.

Full Closure Options

- Eastbound and westbound I-10 closure during Phase One or Phase Two:
 - The same detours will be utilized as described above.

Alternative routes are shown in Exhibit F.

12.0 PUBLIC INFORMATION CAMPAIGN

Public information is a vital component of this TMP. The objective of the public information campaign is to create awareness of the project and disseminate timely information related to construction activities and traffic impacts to the public and local business communities. The campaign will include targeted messages and customized information for the following key target audiences:

- General Public
- Businesses
- Local Government Officials and Staff
- Community Organizations and Stakeholders
- Emergency Service Providers
- Trucking/freight/shuttle service companies
- Media
- Internal ADOT employees and divisions

The information campaign for this project will consist of various strategic tactics over the two-year construction period. Additional details about the campaign and the strategies for each of the market segments that were previously identified are available in the I-10 Ruthrauff Road to Prince Road Communications Plan, which can be found in Exhibit B of this TMP. Some of the elements of the campaign include, but are not limited to:

12.1 Printed Communications Materials

Printed information about the project will be distributed to the public and stakeholders. General information about the project, traffic alerts, fact sheets, project maps, construction phasing details, lane closure announcements and other information will be distributed to each of the target audiences listed above through business walks, grassroots efforts, public meetings, special events and other available distribution channels.

12.2 Press Releases

Information about upcoming traffic impacts, detours and construction milestones will be regularly issued to the local media so that they can publicize the information to the public. The recipients of the press releases include local radio, TV, newspapers, publications and websites. A complete list of the media that will be receiving regular press releases about this project can be found in the Communications Plan.

12.3 Project Hotline

A project hotline will be promoted during the project to allow the public to contact ADOT for inquiries, questions, concerns and comments. This toll-free hotline will be staffed during regular business hours (8 a.m. – 4 p.m., Monday – Friday). Callers can leave voice messages 24 hours a day, 7 days a week, which will be returned by the next business day.

12.4 Electronic Media

Traffic alerts and project updates will also be distributed to the public and stakeholders through electronic media, including email blasts, web updates, electronic newsletters and Facebook.

ADOT's Communication and Community Partnership (CCP) Division will be working in collaboration with the Resident Engineer, STOC and other key members of the Tucson District to provide the public with timely information about the project. The Resident Engineer will keep CCP, STOC and the DE informed and up to date on the construction progress, delays, closures and other information which may assist them in the performance of their duties.

13.0 CONTRACTOR & ADOT TRAFFIC EMERGENCY CONTINGENCY PLAN

13.1 Contractor's Responsibility

The Contractor will be required to submit a traffic control plan prior to any lane or ramp closures or the use of any detour plans. The traffic control plan will contain a detailed contingency plan to ensure opening of the route by the designated time. During construction activities requiring lane or ramp closures, or the use of any detour plans, the contractor will provide appropriate personnel to monitor activities and make decisions regarding activation of contingency plans.

13.2 Contingency Plans

The Contractor will provide contingency plans. These plans identify key operational decision points with a timeline listing the expected completion time of each critical path activity. Clearly defined trigger points will be identified with each critical path activity to establish when the contingency plan will be activated.

13.3 Emergency Communication Plan

A communication plan will include a decision tree with clearly defined lines of communication (provided in the section below). The information includes names, telephone numbers and mobile numbers of the Contractor's Project Manager, ADOT STOC, RE, ADOT Permit and/or Construction Inspector, DPS Area Commander, and other applicable personnel.

13.4 STOC Response Protocol

The ADOT traffic contingency plan basically follows the STOC major incident response protocol. When a major lane-blocking incident occurs, STOC should receive a report from DPS, ADOT and/or the Contractor field personnel.

Response Protocol:

ADOT inspector and/or Contractor responsibility

- Call 911 and report incident
- Notify STOC.
- Notify the RE.

- Not leave post until released.
- Update any events to STOC and RE.
- Document the accident and accident report number.

STOC responsibilities

- Notify DPS, EMS, and Fire Department if applicable, ADOT Maintenance (first response team) if needed.
- Verify details with DPS unit, CCTV and ADOT inspector on duty.
- Adjust ADOT signal timing as needed.
- Release a 511 alert and will keep updates.
- Activate the DMS for accident, closure and detour route. (DMS will be deactivated once the interstate re-opens)
- Update any events to RE.
- Document the accident and accident report number.

RE responsibilities

- Notify the DE if the emergency detour plan would need to be implemented.
- Notify/coordinate with City of Tucson, Pima County, and Town of Marana to implement the emergency detour route.
- Notify the ADOT media.
- Notify the DE, City of Tucson, Pima County, and Town of Marana when interstate is re-opened.

DE responsibilities

- Notify ADOT Senior Management (if applicable).
- Notify FHWA (if applicable).
- Notify the adjacent District (if applicable).
- Notify ADOT Senior Management, FHWA and adjacent District when interstate is re-opened (if applicable).

DPS responsibilities

- Coordinate with RE and ADOT/Contractor project staff throughout incident
- Monitor local streets and Interstate closure.
- Notify and update STOC of any changes to the closure.
- Coordinate with ADOT/Contractor for clean-up, if HAZMAT is needed.

Contractor responsibilities

- Set-up and take down traffic control to divert traffic to detour route.
- Update STOC of any changes to the closure.
- Coordinate with DPS for clean-up, if HAZMAT is needed.

City of Tucson traffic engineer responsibilities

- Monitor local streets and adjust the signal timing as needed.
- Notify the city local police to monitor the local streets if needed.

Emergency Contact List

Level of Communication	Name	Title	Phone Number	Email
Primary Contacts	Sgt. Paul Castellano	Arizona Department of Public Safety (DPS)	(520) 746-4500	pcastellano@azdps.gov
	Sgt. Douglas Hanna	Pima County Sheriff Department	(520) 351-6124-o (520) 940-5110-m	douglas.hanna@sheriff.pima.gov
	Clayton Kidd	City of Tucson Police Department	(520) 837-7253-o (520)904-2345-m	clayton.kidd@tucsonaz.gov
	Jeff Guthrie	Pima County Office of Emergency Management	(520) 798-0600-o (520) 940-5300-m	jeff.guthrie@pima.gov
	Sgt. Steve Johnson	Town of Marana Police Department	(520) 382-2034	sjohnson@marana.com
	Jeremy Moore	ADOT Resident Engineer	(520) 260-2384-m	jmoore3@azdot.gov
	Rossio Araujo	ADOT Project Supervisor	(520) 603-9816-m	raraujo@azdot.gov
	Aron Insko	Pulice Construction, Inc. Project Engineer	TBD	TBD
	TBD	Pulice Construction, Inc. Contractor Traffic Control	TBD	TBD
	Paul Sykes	ADOT Southern Traffic Operations Center	(520) 838-2841-o (520) 449-0734-m	psykes@azdot.gov
	City of Tucson	After Hours Access Streets & Maintenance Regular Business Hours Access Streets & Maint.	(520) 791-4144 (520) 791-3154	
	STOC Operators	Southern Traffic Operations Center	520-624-1200	

Level of Communication	Name	Title	Phone Number	Email
Secondary Contacts	Todd Emery	ADOT District Engineer	(520) 260-8356-m	temery@azdot.gov
	Jerry James	ADOT Assistant District Engineer Construction	(520) 388-4200-o	jjames@azdot.gov
	Mick Hont	ADOT Assistant District Engineer Operations	(520) 989-1128-m	mhont@azdot.gov
	Linda Ritter	ADOT Tucson District Senior Community Relations Officer	(520) 388-4266-o (520) 349-6282-m	lritter@azdot.gov
	Paki Rico	ADOT Southern Arizona Community Relations Officer	(520) 388-4233-o (520) 343-9492-m	prico@azdot.gov
	Jim Glock	City of Tucson	(520) 791-4371	jim.glock@tucsonaz.gov
	Keith Brann	Town of Marana	(520) 382-2629-o (520) 471-3806-m	kbrann@marana.com
	Ryan Benavides	Town of Marana	(520) 382-2673-o (520) 940-5904-m	rbenavides@marana.com
	Lt. Lisa Sacco	Pima County Sheriff Department	(520) 351-4852-o (520) 465-4149-m	lisa.sacco@sheriff.pima.gov
	Albert Letzkus	Pima County Department of Transportation	(520) 740-5929-o (520) 850-3982-m	albert.letzkus@dot.pima.gov
	Tom Kelley	Pima County Department of Transportation	(520) 740-2854-o (520) 349-4278-m	tom.kelley@dot.pima.gov
	David Friedman	Union Pacific Railroad	(520) 241-8645-m (520) 629-2311-o (888) 877-7267 - railroad emergency line	ydfriedm@up.com
	Richard Nassi	Pima Association of Governments	(520) 449-4760	rnassiazdot@hotmail.com
	Paul Casertano	Pima Association of Governments	(520) 792-1093	pcasertano@pagnet.org

EXHIBITS:

- A. Construction Advisory Team (CAT)
- B. Communications Plan
- C. Construction Sequencing Plans
- D. Traffic Control Plans
- E. Emergency Access Plan
- F. Alternative Routes

EXHIBIT A

CONSTRUCTION ADVISORY TEAM (CAT)

Title	Name	Phone Number
ADOT Resident Engineer	Jeremy Moore	(520) 260-2384
ADOT Project Manager	Steve Wilson	(520) 262-3247
ADOT STOC	Paul Sykes	(520) 449-0734
ADOT District Engineer	Todd Emery	(520) 260-8356
ADOT Assistant District Engineer - Construction	Jerry James	(520) 603-9832
Department of Public Safety (DPS)	Paul Castellano	(520) 746-4500
City of Tucson	Jim Glock	(520) 791-4371
City of Tucson Police Department	Clayton Kidd	(520) 837-7253-0 (520) 904-2345-m
Town of Marana	Keith Brann	(520) 382-2629
Town of Marana Police Department	Sgt. Steve Johnson	(520) 382-2034
ADOT Tucson District Senior Community Relations Officer	Linda Ritter	(520) 388-4266
ADOT Southern Arizona Community Relations Officer	Paki Rico	(520) 388-4233
ADOT Assistant District Engineer - Operations	Mick Hont	(520) 989-1128
Contractor Project Engineer	Aron Insko	
Pima County Department of Transportation Traffic Engineer	Albert Letzkus	(520) 740-5929
Pima County Sheriff	Sgt. Doug Hanna	(520) 351-4675

EXHIBIT B



Arizona Department of Transportation

Interstate 10: Ruthrauff Road to Prince Road

Construction Communications Plan

JULY 2011

This Construction Communications Plan, drafted by the Arizona Department of Transportation (ADOT) Communication and Community Partnerships (CCP) division, is meant to fulfill the public information component of the Transportation Management Plan (TMP) for the I-10: Ruthrauff Road to Prince Road project, as required and defined by ADOT's Implementation Guidelines for Work Zone Safety & Mobility (Pursuant to 23 CFR630 Subpart J & K).

All input from stakeholders and the general public will be documented. This plan is a living document, subject to reassessment through analysis of public input. Results of analysis will be used to improve processes, procedures, data and information resources.

**Arizona Department of Transportation
Interstate 10: Ruthrauff Road to Prince Road
Construction Communications Plan**

PROJECT OVERVIEW

- Work Zone Safety Level of Significance: Major
 - This project is expected to have a high level of public interest and will likely impact a large number of travelers
 - It is anticipated to have considerable impacts to areas outside the project area, as well as the surrounding community
- Concurrent active projects
 - Interstate 10: Ina Road Traffic Interchange to Ruthrauff Road Traffic Interchange Study
 - (Adjacent jurisdictions' projects TBD)
- ADOT construction estimate at \$86.8 million
- Construction anticipated to begin in fall 2011 and last 26 months
- Will widen I-10 to four lanes in each direction
- Will rebuild I-10/Prince Road Traffic Interchange so Prince Road passes over Union Pacific Railroad tracks and I-10
- Will include two-year closure of Prince Road at I-10

PROJECT HISTORY

- Final design began in 2005
- Multiple meetings were held with property owners, businesses, emergency services providers and government officials
- Two public meetings were held (2006 and 2010)
- I-10: Prince Road to 29th Street widening substantially complete summer 2009

**Arizona Department of Transportation
Interstate 10: Ruthrauff Road to Prince Road
Construction Communications Plan**

MESSAGE POINTS

- Freeway widened from three to four lanes in each direction to better handle increases in traffic
- I-10/Prince Road traffic interchange to be rebuilt so that Prince Road goes over the interstate to reduce traffic congestion, improve safety, improve commuting and public transportation efficiency, eliminate train whistle noise and improve curb appeal for residences and businesses
- Funding availability and a high-priority recommendation from the Pima Association of Governments allowed the project to be moved forward
- ADOT has met with many community stakeholders and will continue to do so
- ADOT has met individually with nearly all the property owners and businesses most immediately affected
- ADOT construction estimate at \$86.8 million
- Advertised for contractors' bids on April 25, 2011
- Bids open on June 24, 2011
- Bid awarded to Pulice Construction Inc. for \$76.4 million
- Project to begin fall 2011
- Construction to last 26 months, divided into two major phases
- Prince Road will be closed at I-10 while the interchange is reconstructed
- During the closure of Prince Road, drivers would use Miracle Mile or Ruthrauff Road as alternate routes to access I-10
- All I-10 entrance and exit ramps at Prince Road will be closed; during Phase 2 construction, the eastbound off-ramp will be reopened
- All other ramps will remain open
- ADOT will provide detours during construction
- Access to all properties will be maintained
- ADOT will provide timely and useful information to the public about traffic impacts and alternate routes

**Arizona Department of Transportation
Interstate 10: Ruthrauff Road to Prince Road
Construction Communications Plan**

RECOMMENDED APPROACH TO COMMUNICATIONS

• **Target Audiences**

CCP has identified eight categories as general audiences: general public, businesses, local government officials and staff, community organizations and stakeholders, emergency service providers, trucking/freight/shuttle service companies, media and internal ADOT employees and divisions. Each category and subcategory will have a specific approach to notification and involvement, as listed below.

1. General Public

Stakeholders

- a. General public
- b. Traveling motorists
- c. Online travel and map sources
- d. Travel organizations and points of information
- e. Car rental companies
- f. Multimodal travelers
- g. Interested parties (database developed during project design)

Notification

- a. Regular email updates throughout project to interested parties
- b. Website: www.azdot.gov/tucson10widening
- c. Hotline: 1-855-712-8530
- d. 511 and az511.gov
- e. Social media: Facebook
- f. Variable message signs throughout project area
- g. Information in media outlets (see below for media plan)

2. Businesses

Stakeholders

- a. About 150 businesses near and within the project area
 - i. Group 1: Directly impacted businesses
 - ii. Group 2: West of I-10
 - iii. Group 3: East of I-10 and Prince Road
 - iv. Group 4: Runway Drive area

Notification/Involvement

- a. Two large pre-construction briefings (about 30 businesses each)

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- i. To brief businesses on the project schedule and impacts and provide businesses with maps and materials for their use with employees and customers
 - ii. Businesses will be invited to partner with ADOT to be the “eyes and ears” of the project on a daily basis for suggestions regarding safety, signage, etc.
 - iii. Businesses will also be invited to actively participate in promoting a positive business image for customers among family, friends and the media
- b. Pre-construction employee and customer communications workshops
 - i. For selected Group 1 businesses
 - ii. To help management and employees communicate the project goals and impacts in a way that is advantageous for the business as well as for ADOT’s project goals
 - iii. Includes customized communication tips handouts and materials
- c. Regularly scheduled small group meetings (about 12 businesses)
 - i. Weekly meetings the first four weeks of construction; shifting from once every two weeks to once a month
 - ii. Develop and maintain a partnering relationship between the businesses and the project team
 - iii. Meeting location within the project area and readily accessed by businesses on both the west and east sides of I-10; ideally, will be a small, retail business in the area that would benefit from business meeting; may rotate from business to business
 - iv. Provide easy and direct access to project team members to voice concerns, make suggestions and ask questions
- d. As-needed one-on-one meetings
 - i. To address specific concerns and major issues
- e. Quarterly or milestone-related e-newsletters
 - i. Content may include appropriate non-promotional features on key project-area businesses, project updates, relationship building with key project team members through profile stories, project graphics and illustrations, Phase One and Phase Two countdowns, business tips for managing operations during construction, a status update on the project timeline, what to expect in the next couple of months, a story on how a contractor is selected, etc.
- f. Regular in-person visits throughout construction
- g. Regular email and phone call updates throughout construction
- h. Specific business section of project website

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- i. Hotline: 1-855-712-8530
- j. 511 and az511.gov
- k. Social media: Facebook
- l. Variable message signs throughout project area
- m. Information in media outlets (see below for media plan)

3. Local Government Officials and Staff

Stakeholders

- a. Congressional Offices
- b. Southern Arizona State Legislators
- c. Southern Arizona Governor's Office
- d. Pima Association of Governments
- e. Pima County
- f. City of Tucson
- g. City of South Tucson
- h. Town of Marana
- i. Town of Oro Valley
- j. Tohono O'odham Nation
- k. Pascua Yaqui Tribe
- l. Government officials throughout southern Arizona

Notification

- a. Via email and/or phone call, after key ADOT employees have been informed and prior to general public notification
- b. Provide individual briefings and updates, as warranted; provide report back to team
- c. Regular email updates throughout construction
- d. Website: www.azdot.gov/tucson10widening
- e. Hotline: 1-855-712-8530
- f. 511 and az511.gov
- g. Social media: Facebook
- h. Variable message signs throughout project area
- i. Information in media outlets (see below for media plan)

4. Community Organizations and Stakeholders

Community Organizations and Events

Stakeholders

- a. Metropolitan Tucson Chamber of Commerce

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- b. Other chambers of commerce
- c. Metropolitan Tucson Convention and Visitors Bureau
- d. City of Tucson Small Business Commission
- e. Pima County Small Business Commission
- f. City of Tucson Citizen Transportation Advisory Committee
- g. Pima Association of Governments Travel Reduction Program Committee
- h. Bicycle Inter-Community Action and Salvage (BICAS)
- i. Coalition of Arizona Bicyclists
- j. Greater Arizona Bicycling Association (GABA)
- k. El Tour de Tucson
- l. Tucson Gem and Mineral Show
- m. University of Arizona Graduation
- n. Tucson Meet Yourself
- o. Fourth Avenue Street Fair

Notification/Involvement

- a. Small group meeting prior to or throughout construction, if needed
- b. Regular email updates throughout construction
- c. Website: www.azdot.gov/tucson10widening
- d. Hotline: 1-855-712-8530
- e. 511 and az511.gov
- f. Social media: Facebook
- g. Variable message signs throughout project area
- h. Information in media outlets (see below for media plan)

Neighborhood Associations

Stakeholders

- a. Flowing Wells Neighborhood Association and Community Coalition

Notification/Involvement

- a. Prior to construction, provide information and collect contact data for best ways for continuous flow of information
- b. Throughout construction, give presentations at neighborhood association meeting, as needed; provide report back to project team
- c. Regular email updates throughout construction
- d. Website: www.azdot.gov/tucson10widening
- e. Hotline: 1-855-712-8530
- f. 511 and az511.gov
- g. Social media: Facebook

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- h. Variable message signs throughout project area
- i. Information in media outlets (see below for media plan)

Schools

Stakeholders

- a. Flowing Wells School District students, faculty and transportation providers
- b. Marana Unified School District students, faculty and transportation providers
- c. University of Arizona
- d. Northern Arizona University

Notification/Involvement

- a. Flier to be handed out at Flowing Wells schools' registrations prior to construction
- b. Quarterly transportation system management (TSM) meetings for transportation providers after construction begins
 - i. Includes all traffic systems: emergency services, trucking industry, school transportation, etc.
 - ii. Discuss traffic control in advance
 - iii. Document and respond to concerns
 - iv. Incorporate feedback into Transportation Management Plan (TMP)
 - v. Draft and provide summary report to all invitees and project team
- c. Regular email updates throughout construction
- d. Website: www.azdot.gov/tucson10widening
- e. Hotline: 1-855-712-8530
- f. 511 and az511.gov
- g. Social media: Facebook
- h. Variable message signs throughout project area
- i. Information in media outlets (see below for media plan)
- j. A final TSM meeting will be held at project closeout
 - i. Includes all traffic systems: emergency services, trucking industry, school transportation, etc.
 - ii. Review project processes, lessons learned and project successes for feedback and additional input
 - iii. Incorporate feedback into Transportation Management Plan (TMP)
 - iv. Draft and provide summary report to all invitees and project team

5. Emergency Service Providers

Stakeholders

- a. Fire departments: Tucson, Northwest Fire, Golder Ranch, La Cañada, Picture Rocks, Mountain Vista

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- b. Police departments: Tucson, Marana, Arizona Department of Public Safety, Oro Valley, Pima County
- c. Hospitals: Hospital Council of Southern Arizona, Carondelet (Tucson Heart Hospital, St. Joseph's, St. Mary's), Kino Hospital, Northwest Medical Center, Oro Valley Hospital, Tucson Medical Center, University Medical Center
- d. Ambulance providers: Air Evac, Arizona Ambulance, Lifeline, Life Net AZ, Rural/Metro, Southwest Ambulance
- e. Other: Pima County Office of Emergency Management and Homeland Security, Border Patrol/U.S. Department of Homeland Security, Davis-Monthan Air Force Base, Southeast Arizona Emergency Medical Services Council

Notification/Involvement

- a. Emergency service provider meeting after government officials have been notified and before construction begins; includes Traffic Operation Center operators
 - i. Address emergency access and response provisions
 - ii. Discuss traffic control in advance
 - iii. Document and respond to concerns
 - iv. Incorporate feedback into Transportation Management Plan (TMP)
 - v. Draft and provide summary report to all invitees and project team
- b. Quarterly TSM meetings
 - i. First meeting two to three weeks prior to start of construction
 - ii. Includes all traffic systems: emergency services, trucking industry, school transportation, UPS, delivery services, etc.
 - iii. Discuss changes to traffic control in advance
 - iv. Document and respond to concerns
 - v. Incorporate feedback into Transportation Management Plan (TMP)
 - vi. Draft and provide summary report to all invitees and project team
- c. Regular email updates throughout construction
- d. Website: www.azdot.gov/tucson10widening
- e. Hotline: 1-855-712-8530
- f. 511 and az511.gov
- g. Social media: Facebook
- h. Variable message signs throughout project area
- i. Information in media outlets (see below for media plan)
- j. A final TSM meeting will be held at project closeout
 - i. Includes all traffic systems: emergency services, trucking industry, school transportation, etc.
 - ii. Review project processes, lessons learned and project successes for

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feedback and additional input

- iii. Incorporate feedback into Transportation Management Plan (TMP)
- iv. Draft and provide summary report to all invitees and project team

6. Trucking/Freight/Shuttle Service Companies

Stakeholders

- a. Trucking/freight companies
 - i. Arizona Trucking Association
 - ii. Fresh Produce Association of the Americas
 - iii. Delivery services (e.g. FedEx, UPS, U.S. Post Office)
- b. Sun Tran
- c. Greyhound Bus
- d. Shuttle and van services

Notification/Involvement

- a. Two months prior to construction, notify of Prince Road closure
- b. Quarterly TSM meetings after construction begins
 - i. Includes all traffic systems: emergency services, trucking industry, school transportation, etc.
 - ii. Discuss traffic control in advance
 - iii. Document and respond to concerns
 - iv. Incorporate feedback into Transportation Management Plan (TMP)
 - v. Draft and provide summary report to all invitees and project team
- c. Regular email updates throughout construction
- d. Website: www.azdot.gov/tucson10widening
- e. Hotline: 1-855-712-8530
- f. 511 and az511.gov
- g. Social media: Facebook
- h. Variable message signs throughout project area
- i. Information in media outlets (see below for media plan)
- j. A final TSM meeting will be held at project closeout
 - i. Includes all traffic systems: emergency services, trucking industry, school transportation, etc.
 - ii. Review project processes, lessons learned and project successes for feedback and additional input
 - iii. Incorporate feedback into Transportation Management Plan (TMP)
 - iv. Draft and provide summary report to all invitees and project team

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7. Media

Stakeholders

- a. Print: *Arizona Daily Star*, *Inside Tucson Business*, *Explorer*, *Tucson Weekly*, *Downtown Tucsonan*, *La Estrella*, *Arizona Jewish Post*, *Daily Territorial*, *Aztec Press*, *Arizona Daily Wildcat*
- b. Television: KVOA, KOLD, KGUN, KMSB (FOX News), KWBA, Cox Media, KUVE, KHRR, KTTU, KUAT, Channel 12, Access Tucson
- c. Web: azstarnet.com
- d. Other: Outdoor, Ad Vision

Notification/Involvement

- a. Briefings: editorial boards, news directors, transportation reporters
- b. Talk shows: KVOI: Bill Buckmaster Show; Arizona Public Media (programs TBD); TV talk shows (TBD)
- c. Guest opinions/op-ed pieces
- d. News releases
- e. Radio public service announcements (as available)
- f. Web links through various media websites (as available)
- k. Paid media campaign: focus on period just prior to Prince Road closure
 - i. Radio traffic sponsorships (15-second and 30-second announcer read); networks TBD
 - ii. Radio commercials (60-second produced); stations TBD
 - iii. Print advertisements (fractional page); *Arizona Daily Star*
 - iv. Website banners; specific media outlets TBD
 - v. Outdoor display; ad bulletin at bus shelter located at Prince Road and Flowing Wells; AdVision

8. Internal

Stakeholders

- a. ADOT employees likely to be involved in the project or contacted with questions
- b. State Transportation Board

Notification

- a. Via email, prior to any notification being sent to external stakeholders
- b. Regular email updates throughout construction
- c. Website: www.azdot.gov/tucson10widening
- d. Hotline: 1-855-712-8530
- e. 511 and az511.gov
- f. Social media: Facebook

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- g. Variable message signs throughout project area
- h. Information in media outlets (see above for media plan)

- **Crisis Communication Plan**

A crisis communication plan and protocols will be developed prior to the beginning of construction.

- **Communications Group Team Meetings**

A regularly occurring inter-jurisdictional communications group meeting will be scheduled to allow team members to share, document and address concerns and issues.

- **Informational Materials**

- Brochure
- Construction fact sheets – multiple topics
- Flier
- Media kit
- News releases
- PowerPoint presentation
- Project overview video
- Social media: Facebook
- Traffic/construction alerts
- Traffic flow maps and displays
- Website: www.azdot.gov/tucson10widening

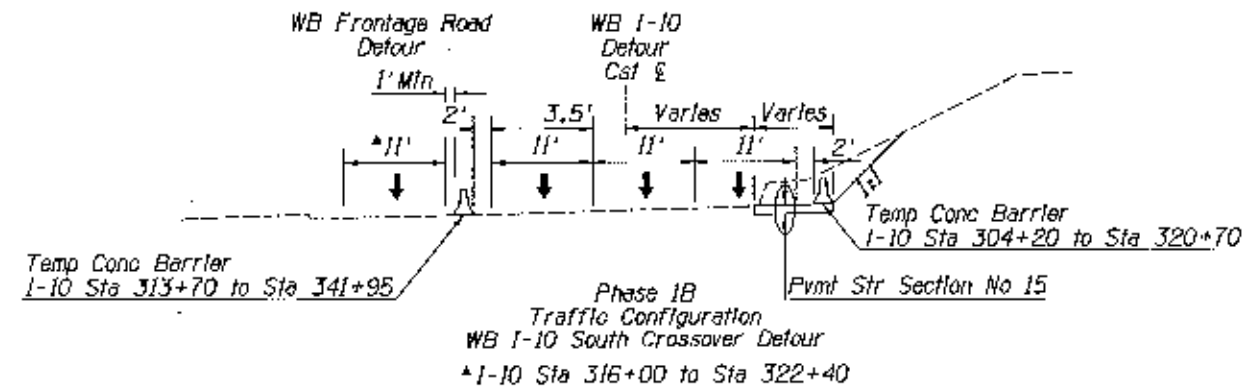
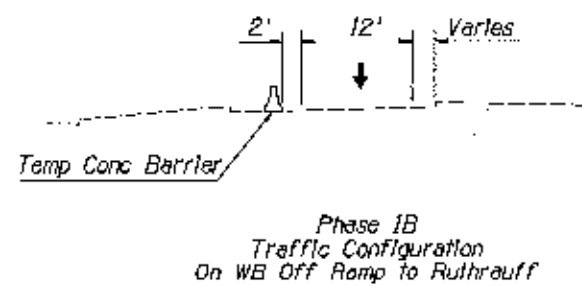
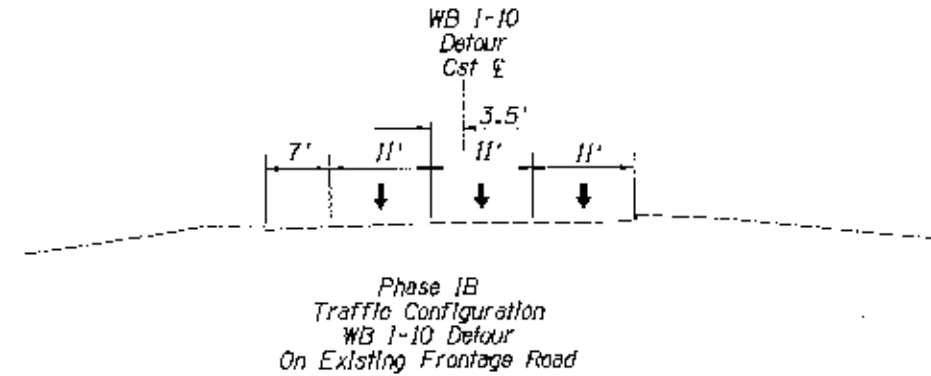
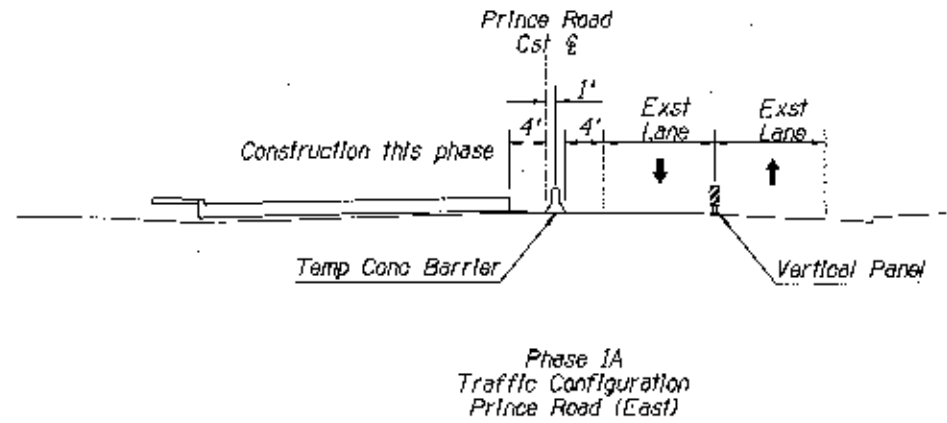
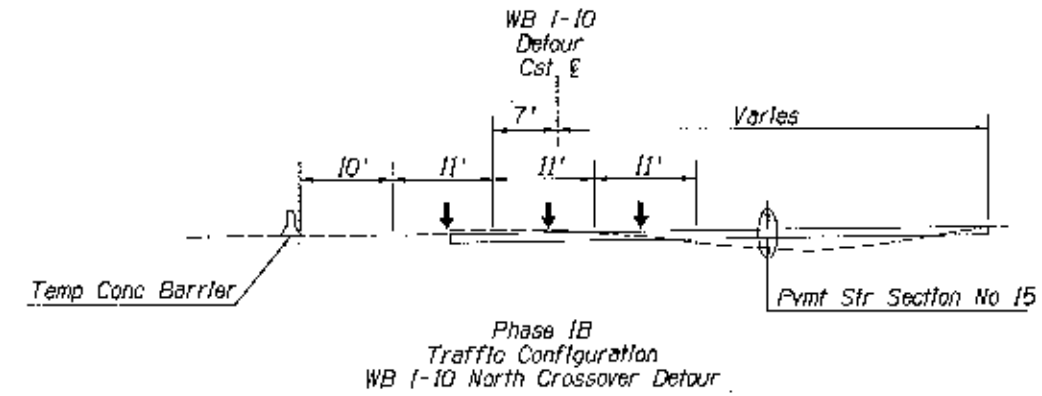
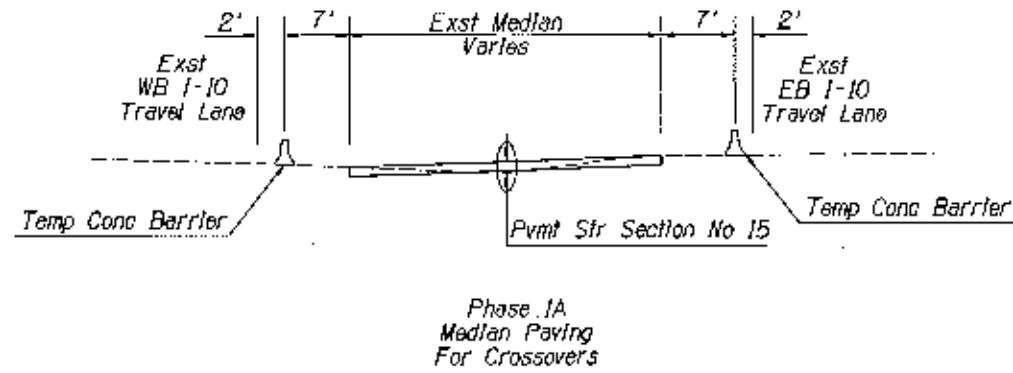
- **Recommended Schedule**

Action	Date	Responsibility
Message points finalized		Linda/GDG
Update website		CCP
Finalize construction fact sheet		GDG
Finalize flier		GDG
Finalize news release		Linda
Finalize contact list		GDG
Finalize media kit		GDG
Finalize PowerPoint presentation		GDG
Project overview video		CCP
ADOT employees & State Transportation Board contacted		Teresa
Government officials contacted		Kathy
Emergency service providers contacted		Paki

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Businesses contacted		Marie
Initial news release		CCP
Initial announcement to entire stakeholder list		CCP
First ES meeting		Paki/GDG
First TSM meeting (includes ES providers)		Paki/GDG
Flowing Wells School District Flier finalized and distributed		GDG
Media schedule to be determined		GDG/CCP

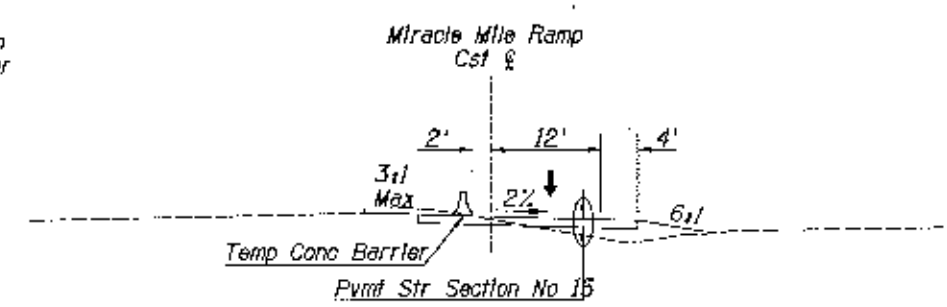
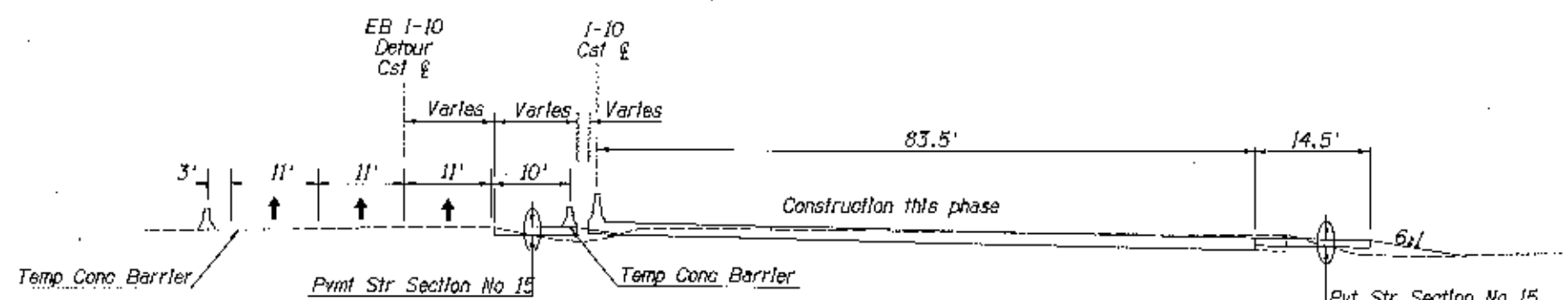
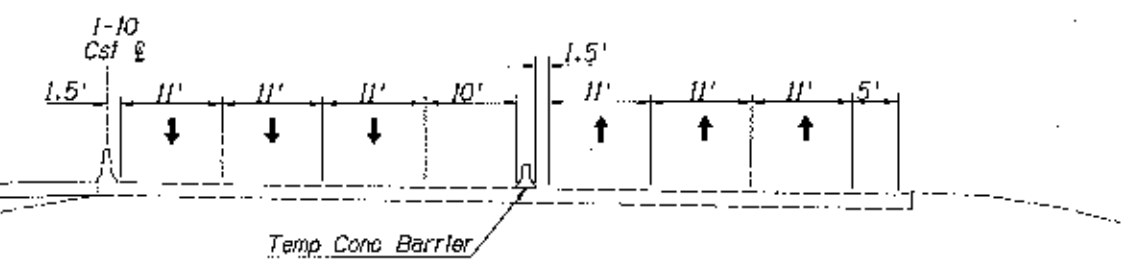
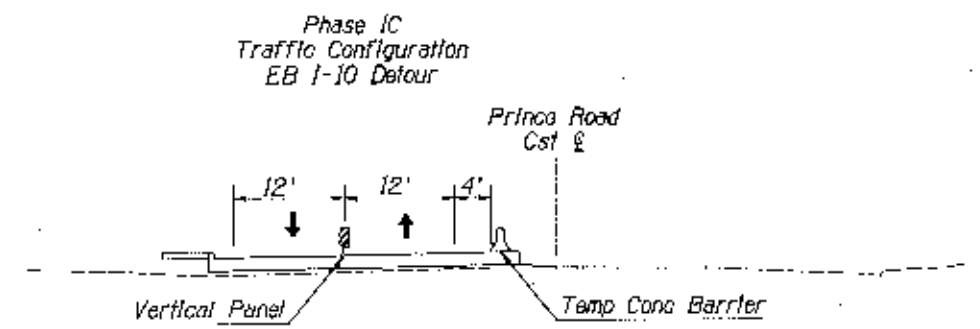
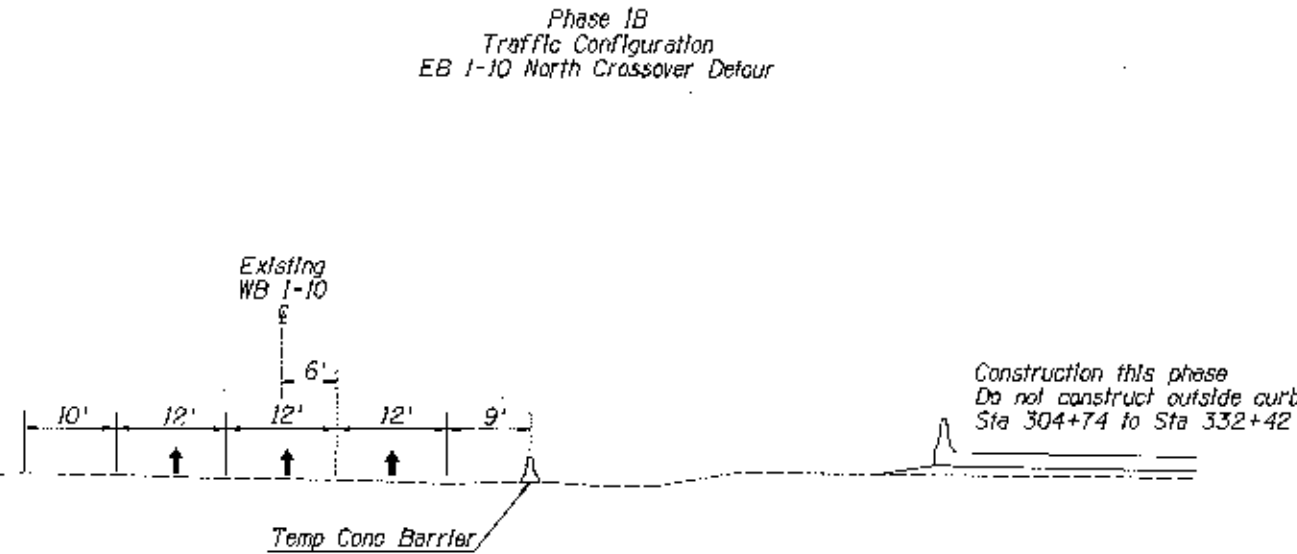
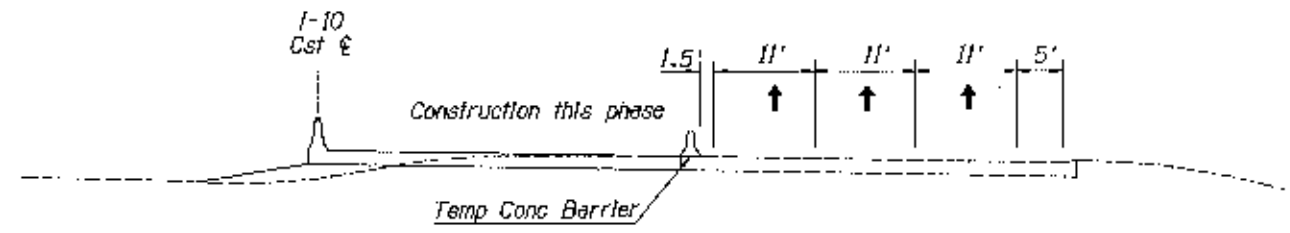
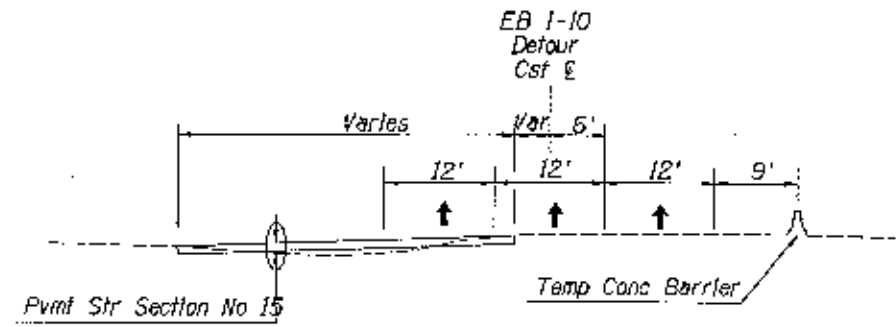
FPWA REGION	SHEET NO.	PROJECT NO.	SHEET TOTAL	TOTAL SHEETS	AS BUILT
9	010-DX0131N	286	918		
010 PM 252					



DESIGN	IS BRADER	DATE	3/21	ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE TRANSPORTATION DIVISION TYPICAL SECTIONS DETOURS Expires 07/30/2013 DWS NO. T-1.01
DRAWN	IS BRADER	DATE	3/21	
CHECKED	J. RODRIGUEZ	DATE	3/21	
URS		ROUTE: I-10 LOCATION: RUTHRALUFF ROAD TO PRINCE ROAD TRACS NO. H6241 OIC PROJECT NO. 010-DX0131N OF		



FED. AID REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D1013N	287	518	
010 PM 252					



Phase 1B Traffic Configuration EB I-10 South Crossover Detour

Pvt Str Section No 15 I-10 Sta 304+73 to Sta 332+43 Do not construct curb & gutter

Phase 2A Traffic Configuration Miracle Mile WB On Ramp Detour

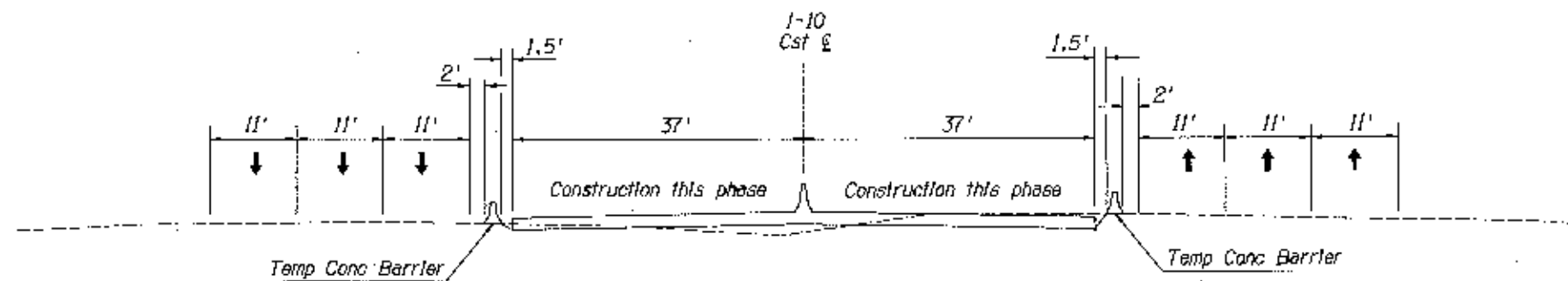
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DRAWN	ED BRADNER	DATE	3/11		
CHECKED	LO RODRIGUEZ	DATE	3/11		
URS				TYPICAL SECTIONS DETOURS	
PROJECT	RUTHRAUFF ROAD TO PRINCE ROAD				
TRACS NO.	H6241 01C	PROJECT NO.	010-D1013N	DATE	Exp/rev 7/30/2011 LMS NO. 1-1.02

For more information, call 1-800-782-5348

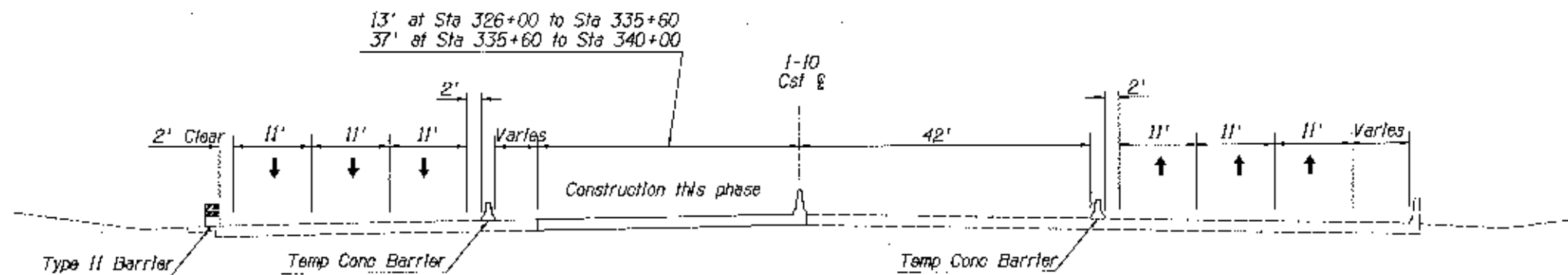
See Road Caster FOR COLLECT



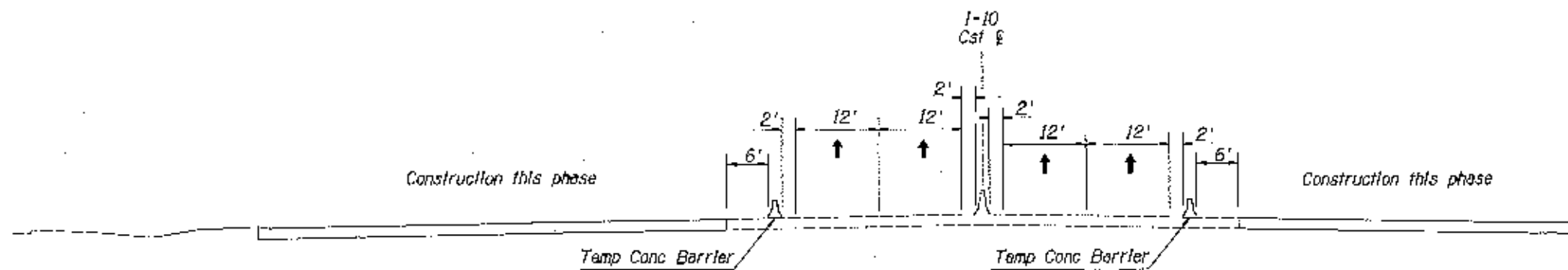
FIRM/PROJECT NO.	DATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARZ	010-D(013)N	288	918	
010 PM 252					



Phase 3A
Traffic Configuration
EB & WB I-10 North Detour



Phase 3A
Traffic Configuration
EB & WB I-10 South Detour



Phase 3B
Traffic Configuration
EB & WB I-10 North Detour

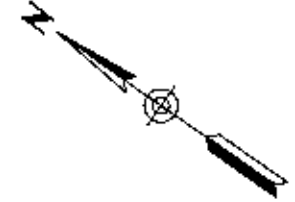
Remove temporary pavement placed in Phase 1B and Construct curb & gutter I-10 Sta 304+73 to Sta 332+43. Close EB on & off ramps and right lane on I-10 during this construction.



DESIGN	NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	D. BRADER	3/21	
CHECKED	L. RUIZ/QUEZ	3/21	
URS			TYPICAL SECTIONS DETOURS
ROUTE	LOCATION		
I-10	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H6241 01C		010-D(013)N	

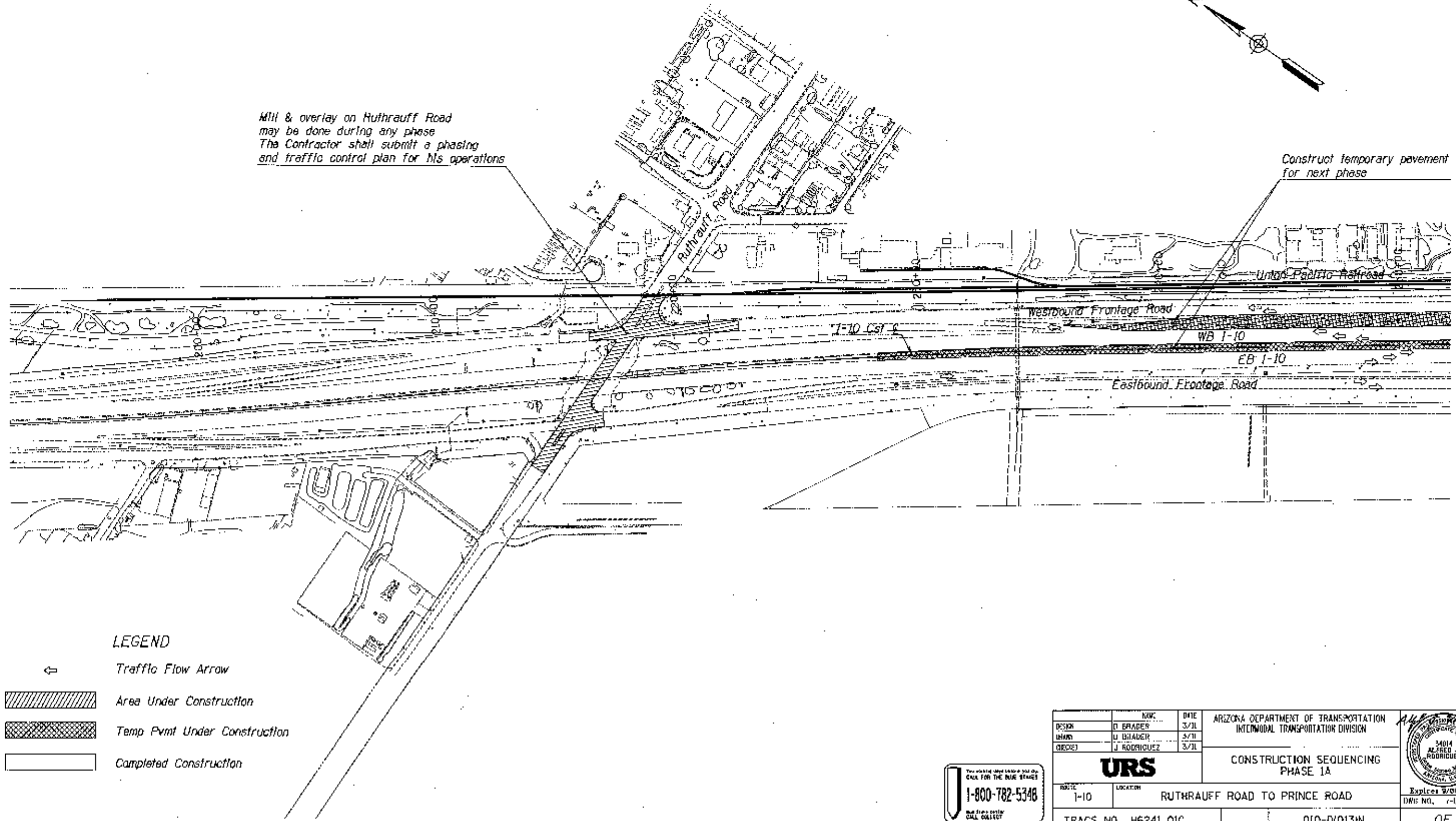


F.L.M.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS SHOWN
9	ARIZ.	010-D(013)N	289	318	
010 FM 252					



Mill & overlay on Ruthrauff Road may be done during any phase. The Contractor shall submit a phasing and traffic control plan for his operations.


Construct temporary pavement for next phase



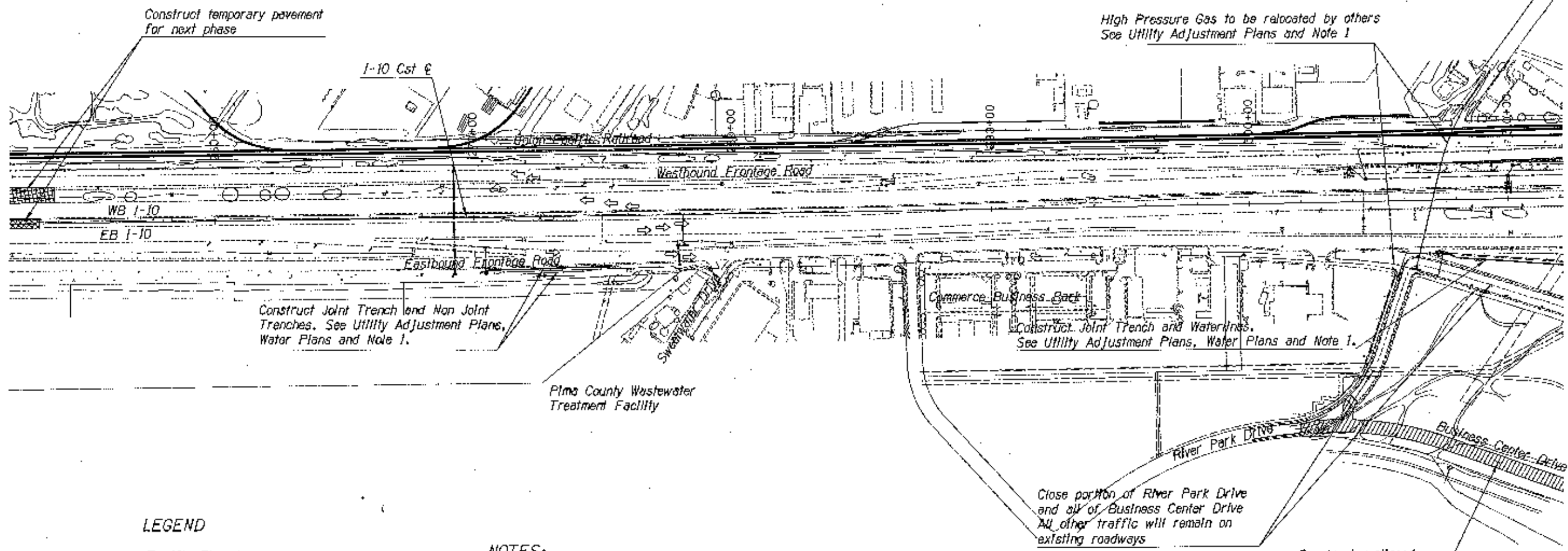
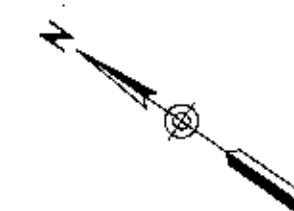
LEGEND

- Traffic Flow Arrow
- Area Under Construction
- Temp Pmnt Under Construction
- Completed Construction



DESIGN	NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
INVS	U. BRADER	3/31		
CHECK	J. RODRIGUEZ	3/31		
URS			CONSTRUCTION SEQUENCING PHASE 1A	
ROUTE	LOCATION	Explos 9/30/2011		
1-10	RUTHRAUFF ROAD TO PRINCE ROAD	DNIS NO. 1-104		
TRACS NO. H6241 OIC		010-D(013)N		OF

FED. AID DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	290	928	
010 PM 252					



LEGEND

- Traffic Flow Arrow
- Area Under Construction
- Temp Pmnt Under Construction
- Completed Construction

NOTES:




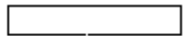
1. The Sequence of Utility Relocations is a critical component of the project. See Special Provisions for additional information on Utility Relocation requirements.

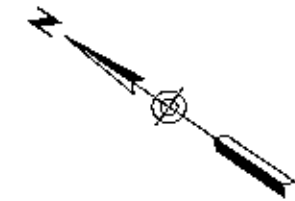
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DRAWN	D BRADER	DATE	3/11		
CHECKED	J RODRIGUEZ	DATE	3/11		
URS				CONSTRUCTION SEQUENCING PHASE 1A	
ROUTE	1-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO.	H6241 01C		010-D(013)N	OF	



F.H.W.A. SECTION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	OIC-D10131N	291	918	
O10 PM 252					

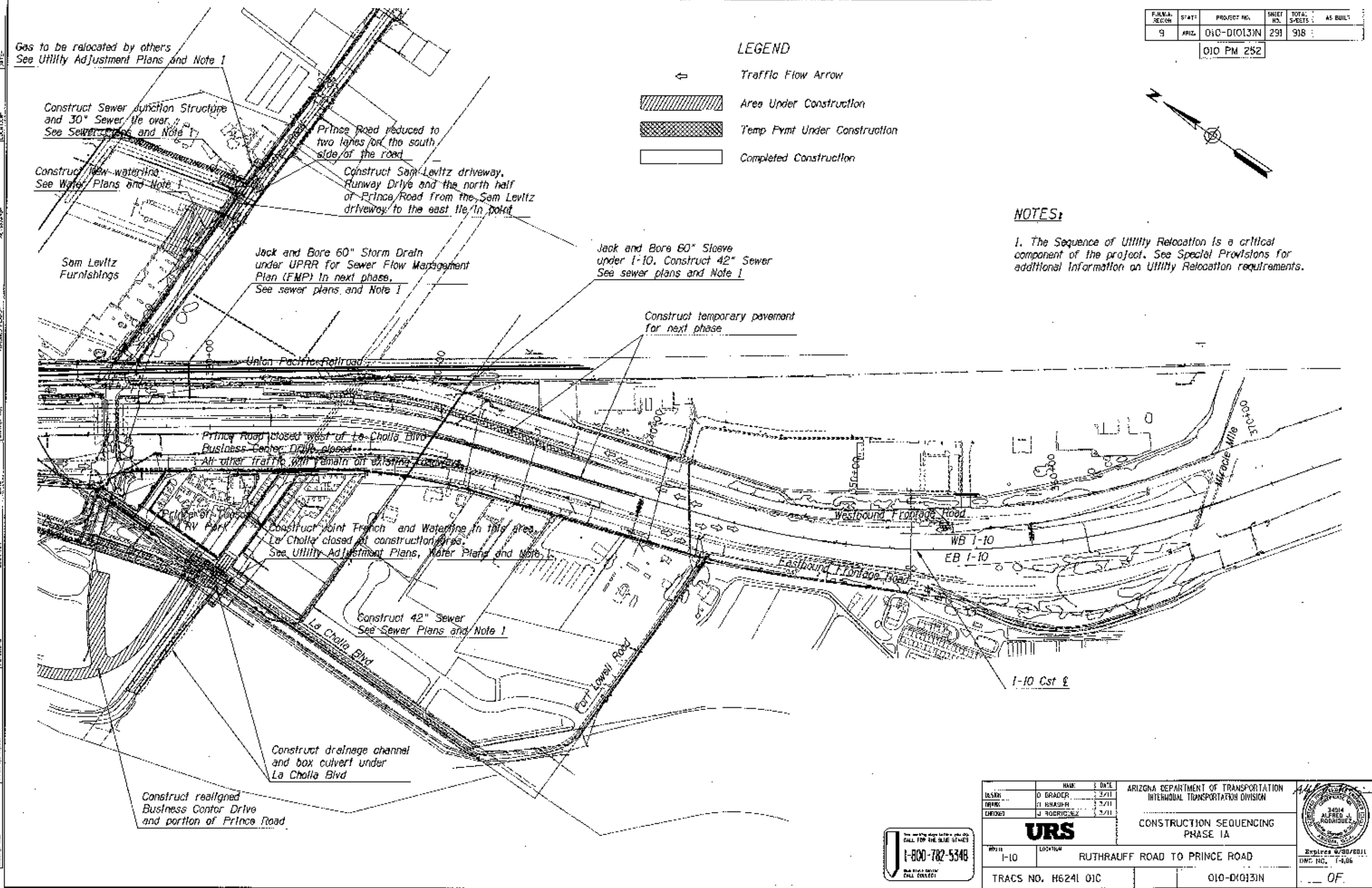
LEGEND


-  Traffic Flow Arrow
-  Area Under Construction
-  Temp Pymt Under Construction
-  Completed Construction

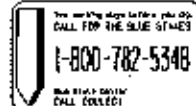


NOTES:

1. The Sequence of Utility Relocation is a critical component of the project. See Special Provisions for additional information on Utility Relocation requirements.

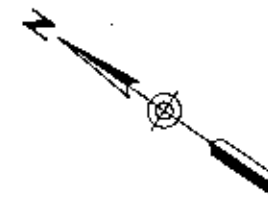


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USER	DATE											
D BRADY	3/11											
T BRADY	3/11											
CHOW	3/11											
URS		CONSTRUCTION SEQUENCING PHASE 1A										
PROJECT: I-10 LOCATION: RUTHRAUFF ROAD TO PRINCE ROAD		TRACS NO. H6241 OIC O10-D10131N		Prepared 02/20/2011 DWG NO. T-406 OF								



F.A.R.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	292	938	

010 PM 252

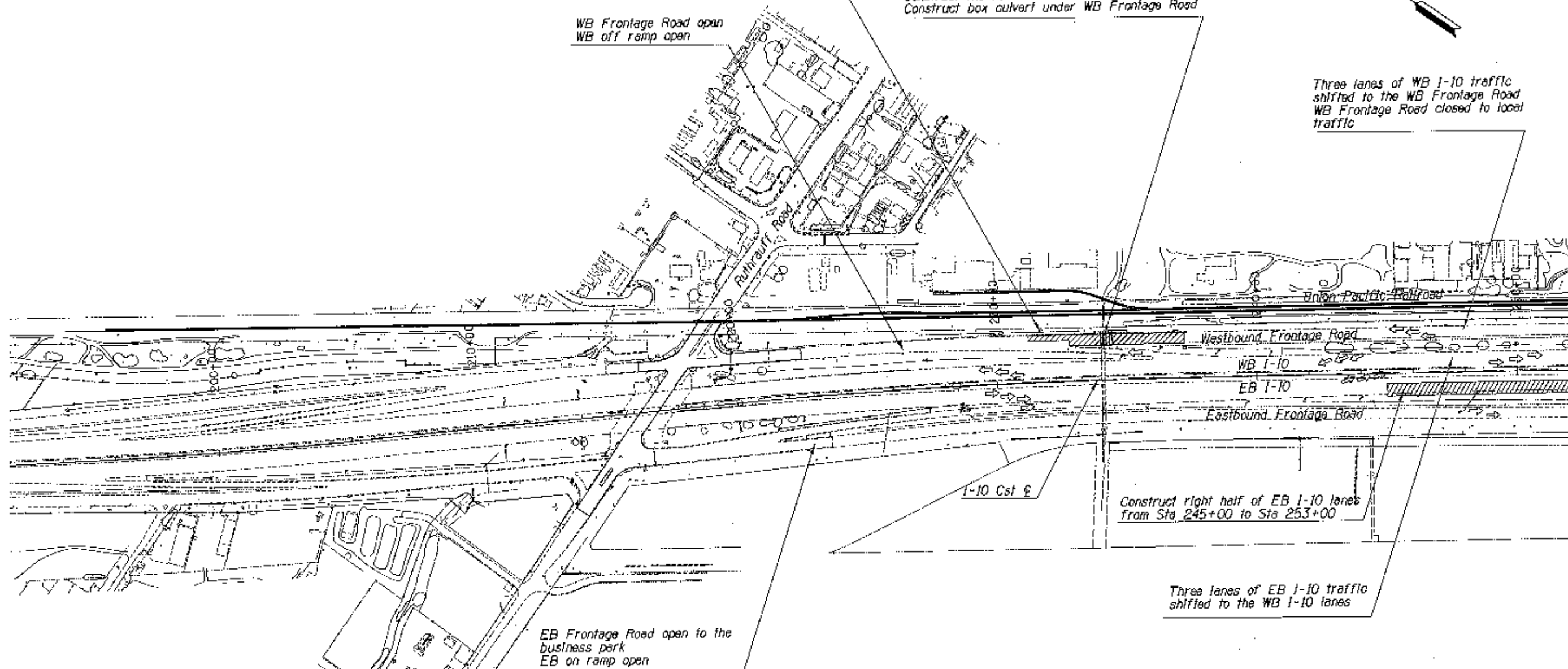


Construct Non Joint Trench.
See Utility Adjustment Plans
and Note 1.

Construct north half of the WB Frontage Road
From Sta 2014+00 to Sta 2015+56
Construct the full width to Sta 2020+00
Construct box culvert under WB Frontage Road

WB Frontage Road open
WB off ramp open

Three lanes of WB I-10 traffic
shifted to the WB Frontage Road
WB Frontage Road closed to local
traffic



EB Frontage Road open to the
business park
EB on ramp open

Construct right half of EB I-10 lanes
from Sta 245+00 to Sta 253+00

Three lanes of EB I-10 traffic
shifted to the WB I-10 lanes

LEGEND

- Traffic Flow Arrow
- Area Under Construction
- Temp Pmnt Under Construction
- Completed Construction

NOTES:

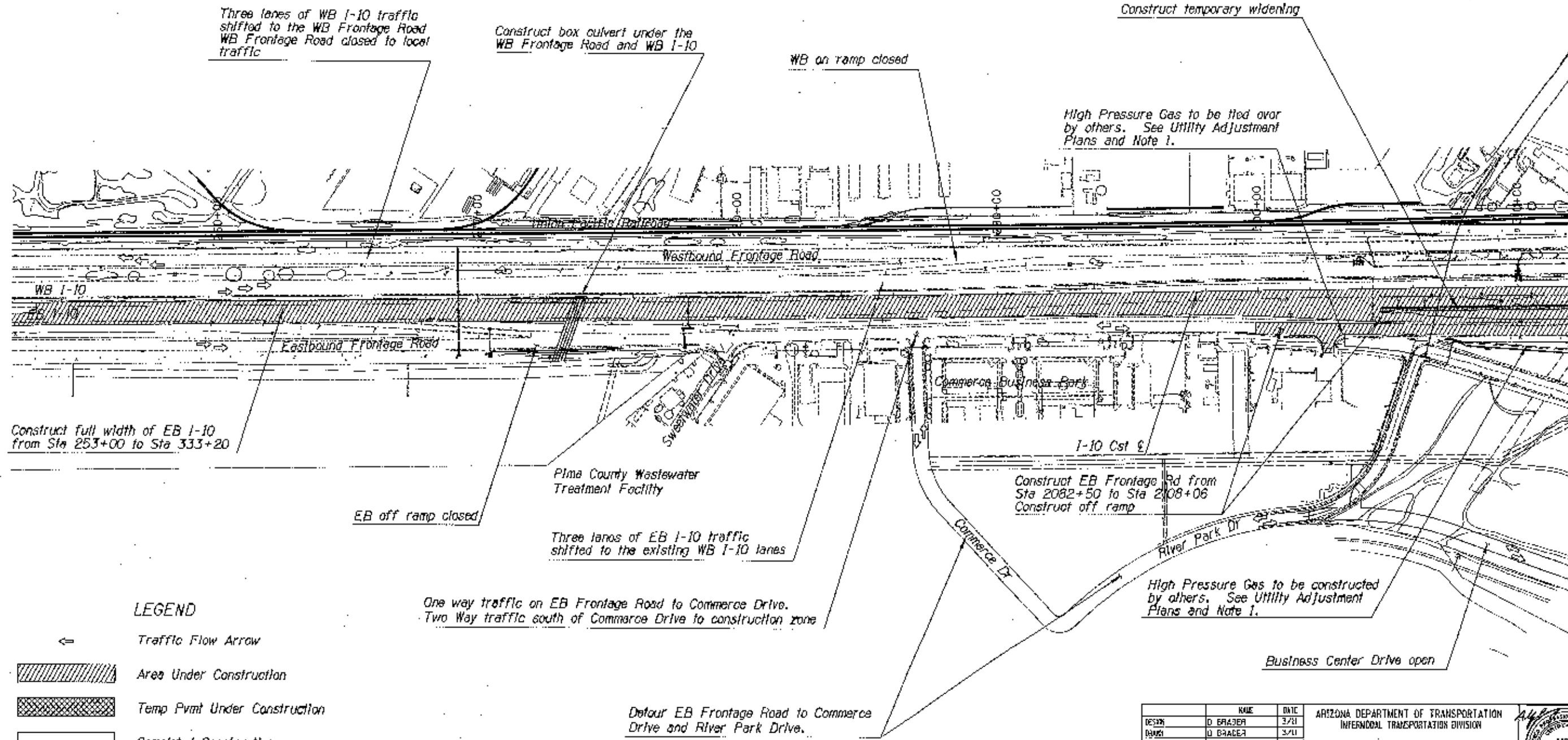
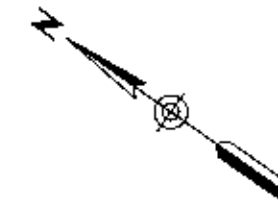
1. The Sequence of Utility Relocations Is a critical component of the project. See Special Provisions for additional information on Utility Relocation requirements.



NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERNATIONAL TRANSPORTATION DIVISION
DESIGN: D SHAJER	3/11	
DRAWN: D BRADER	3/11	
CHECKED: J RODRIGUEZ	3/11	
URS		CONSTRUCTION SEQUENCING PHASE 1B
PROJECT: I-10	LOCATION: RUTHERAUFF ROAD TO PRINCE ROAD	Replaces 07/30/2011 DWG NO. T-1.01
TRACS NO. H6241 01C	010-D10131N	OF

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	293	918	

010 PM 252



LEGEND

← Traffic Flow Arrow

Area Under Construction

Temp Pmnt Under Construction

Completed Construction





1. The Sequence of Utility Relocations is a critical component of the project. See Special Provisions for additional information on Utility Relocation requirements.

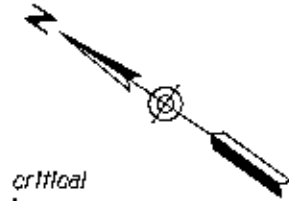


NAME		DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INFERRADIAL TRANSPORTATION DIVISION	
DESIGN	D. BRADNER	3/21		
DRAWN	D. BRADNER	3/21		
CHECKED	J. HICKERLOTT	3/21		
URS			CONSTRUCTION SEQUENCING PHASE 1B	
PROJECT	I-10 RUTHRAUFF ROAD TO PRINCE ROAD			
TRACS NO.	H6241 01C		010-D(013)N	OF

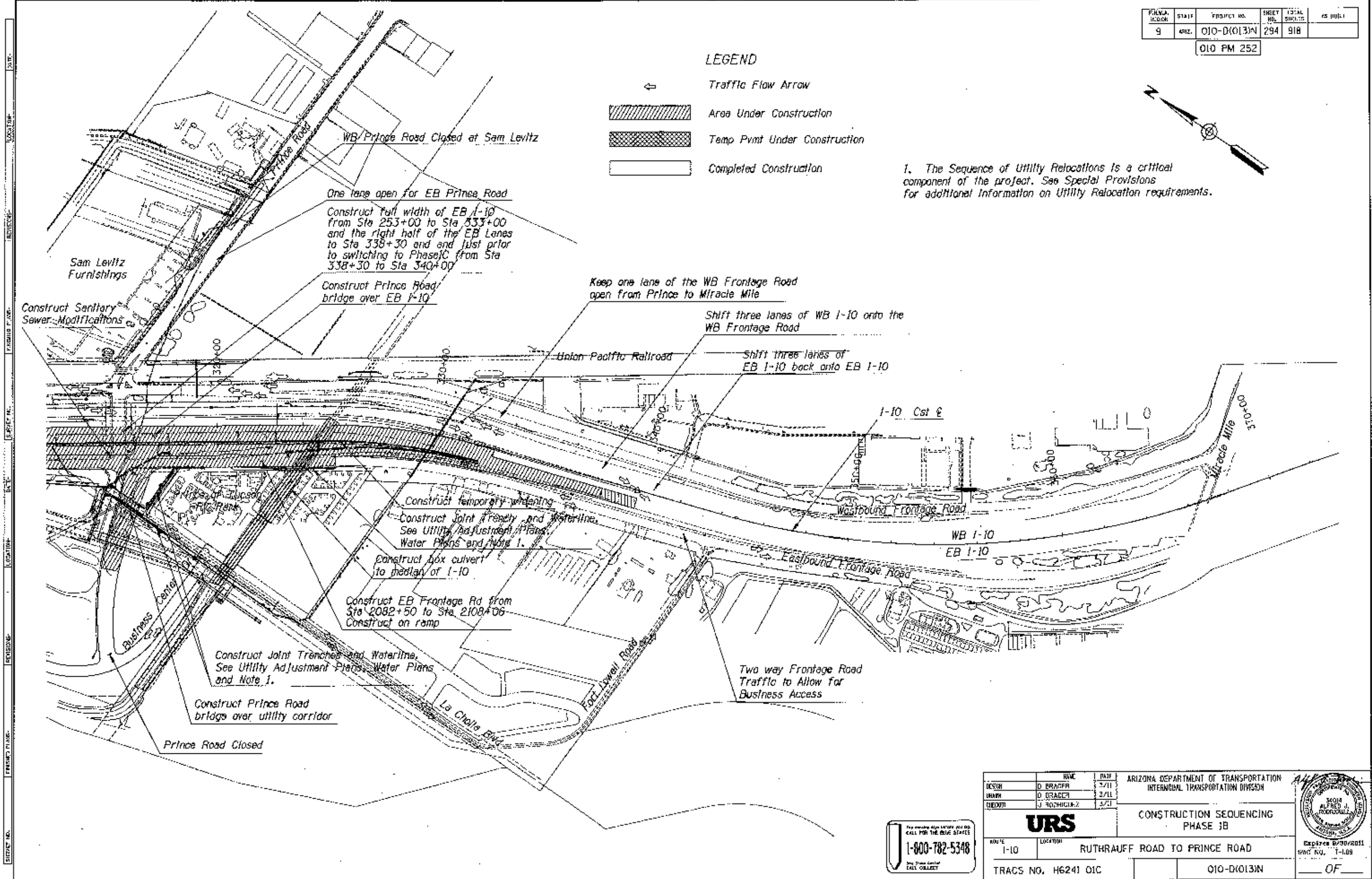
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9	ARIZ.	010-D(013)N	294	918	
010 PM 252					

LEGEND

-  Traffic Flow Arrow
-  Area Under Construction
-  Temp Pmnt Under Construction
-  Completed Construction



1. The Sequence of Utility Relocations Is a critical component of the project. See Special Provisions for additional information on Utility Relocation requirements.

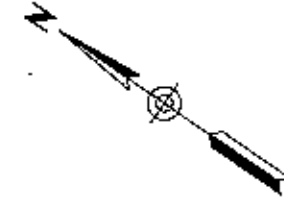


ARIZONA DEPARTMENT OF TRANSPORTATION INTERLOCAL TRANSPORTATION DIVISION		
CONSTRUCTION SEQUENCING PHASE 3B		
ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TO PRINCE ROAD	
TRACS NO. H6241 01C		010-D(013)N
		OF

For more information call 1-800-782-5348

FED. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	295	918	

010 PM 252



Construct south half of the WB Frontage Road from Sta 2014+00 to Sta 2015+56
 Construct portion of off ramp.
 Construct box culvert under off ramp

WB Frontage Road open
 WB off ramp closed

Access to Ruthrauff from WB I-10 will be on north lane of the frontage road





WB I-10 traffic remains on the WB Frontage Road


Construct left half of EB I-10 lanes from Sta 245+00 to Sta 253+00

Three lanes of EB I-10 traffic shifted to the new EB I-10 lanes

EB Frontage Road open

LEGEND





-  Traffic Flow Arrow
-  Area Under Construction
-  Temp Pymt Under Construction
-  Completed Construction

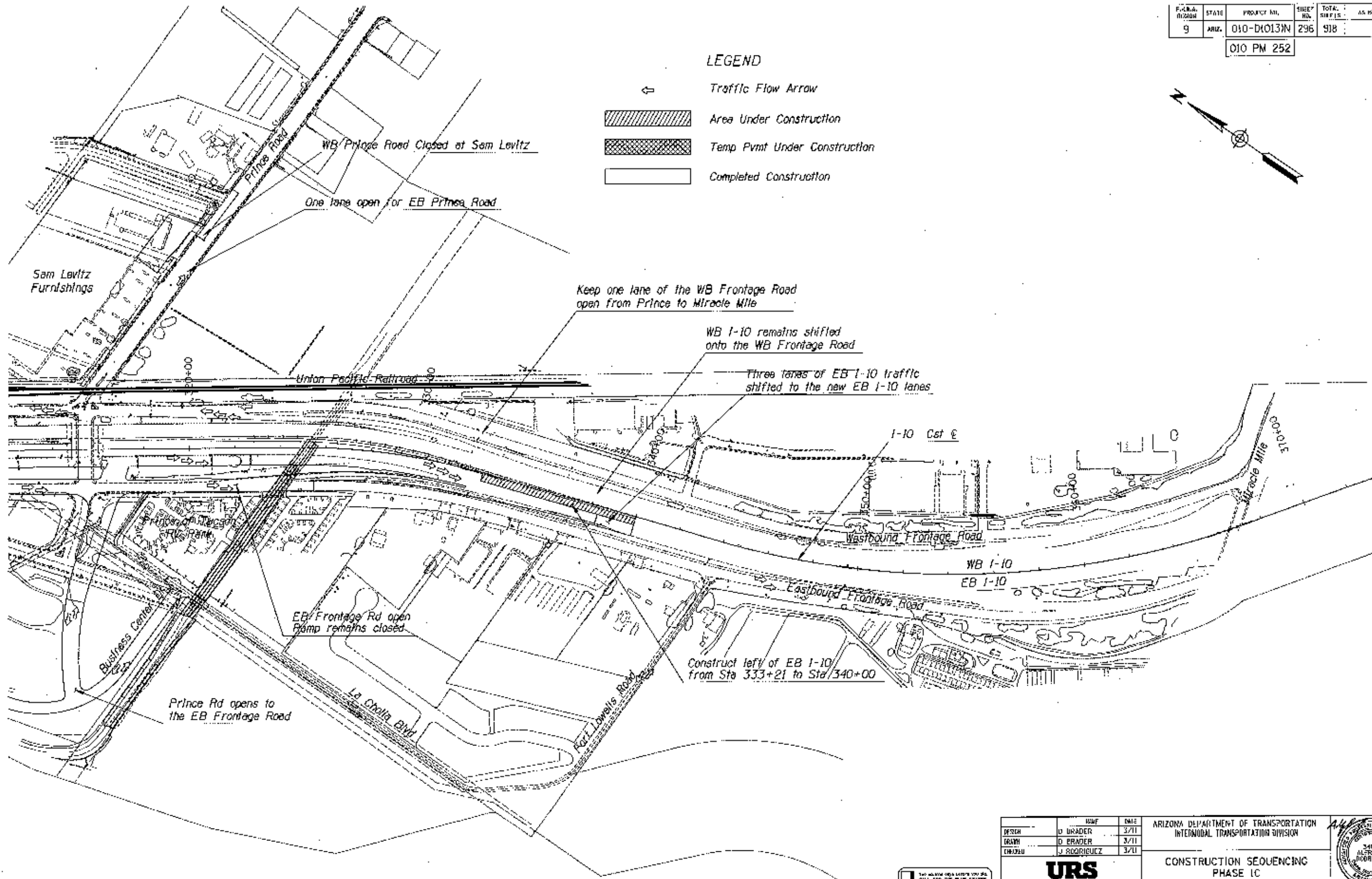
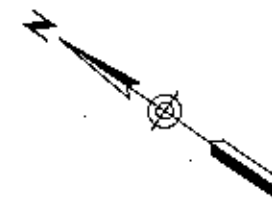
DATE		ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION		 34014 ALFRED J. RODRIGUEZ ENGINEER ARIZONA
ISSN	3/11	CONSTRUCTION SEQUENCING PHASE 1C		
DATE	3/11	ROUTE 1-10 LOCATION RUTHRAUFF ROAD TO PRINCE ROAD		Employee 07/20/2011
DATE	3/11	TRACS NO. H6241 OIC		DWG NO. T-110
		010-D(013)N		OF




F.A.R.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	296	918	
010 PM 252					

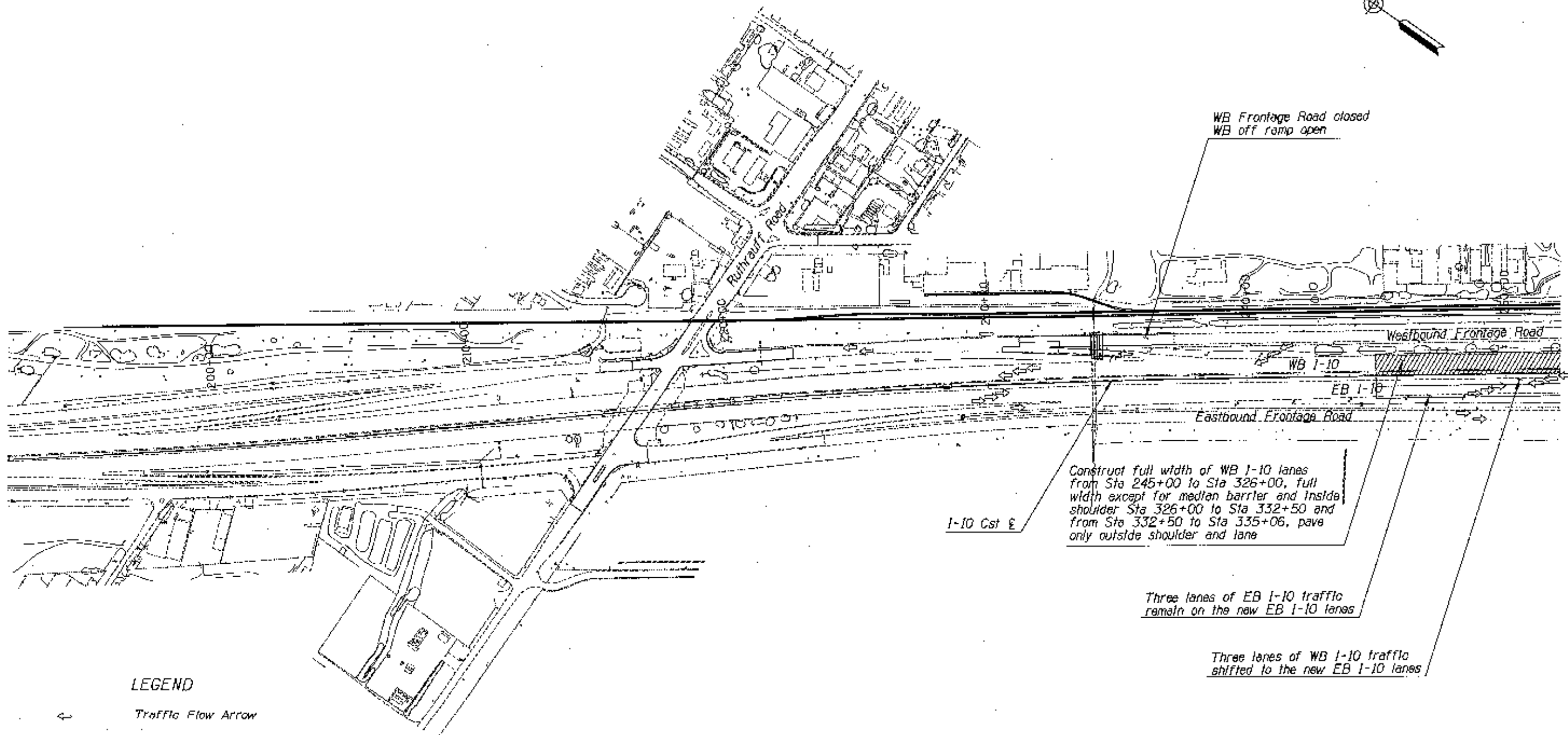
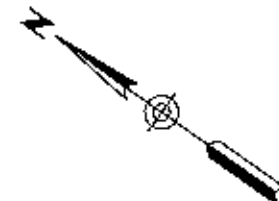
LEGEND

-  Traffic Flow Arrow
-  Area Under Construction
-  Temp Pmnt Under Construction
-  Completed Construction



ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION			
URS CONSTRUCTION SEQUENCING PHASE 1C			
DESIGNED BY: D. BRADER DRAWN BY: J. RODRIGUEZ	DATE: 3/11	TRACS NO. H6241 01C	
PROJECT: I-10		LOCATION: RUTHERAUFF ROAD TO PRINCE ROAD	
1-800-782-5348		010-D10131N	
TRCS NO. H6241 01C		OF	

F.A.M.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	297	918	
010 PM 252					



Construct full width of WB I-10 lanes from Sta 245+00 to Sta 326+00, full width except for median barrier and inside shoulder Sta 326+00 to Sta 332+50 and from Sta 332+50 to Sta 335+06, pave only outside shoulder and lane

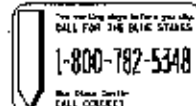
Three lanes of EB I-10 traffic remain on the new EB I-10 lanes

Three lanes of WB I-10 traffic shifted to the new EB I-10 lanes

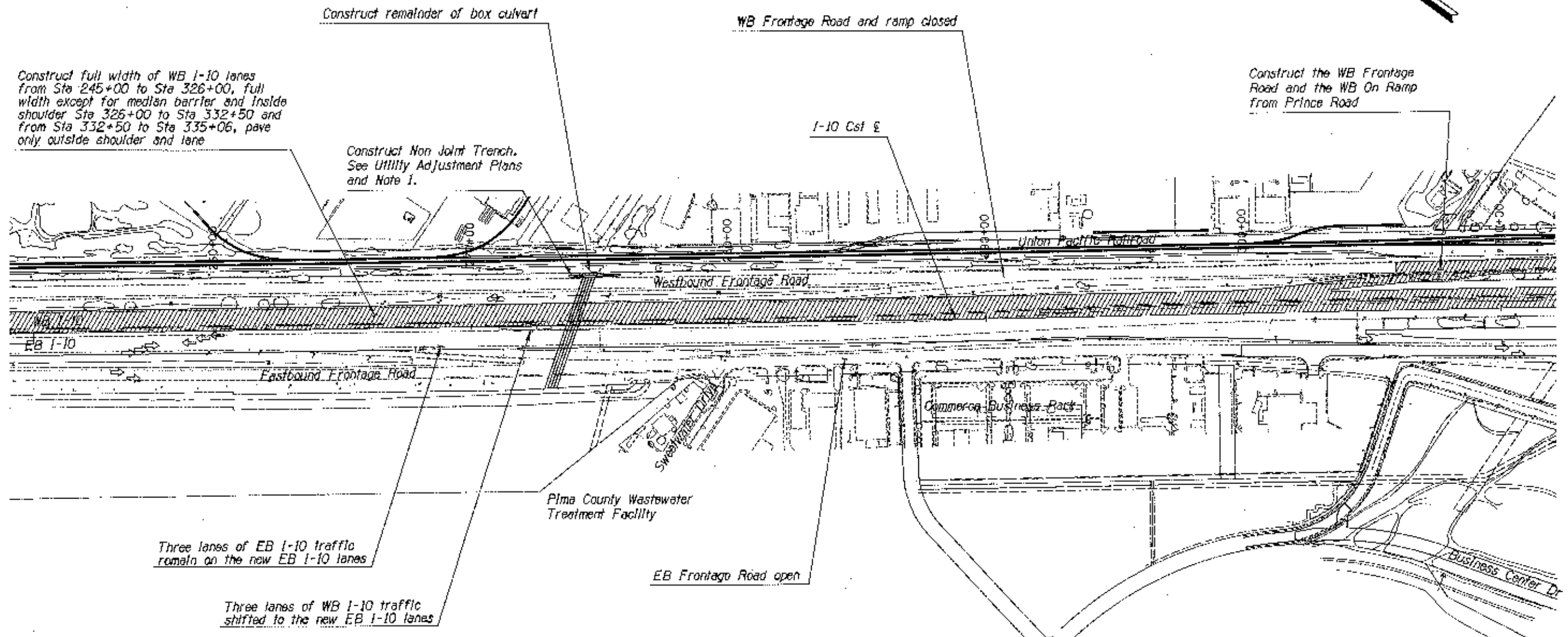
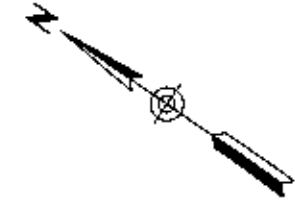
LEGEND

- Traffic Flow Arrow
- Area Under Construction
- Temp Pymt Under Construction
- Completed Construction

DESIGN	D BRADER	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DRAWN	D BRADER	3/11		
CHECKED	J RODRIGUEZ	3/11		
URS			CONSTRUCTION SEQUENCING PHASE 2A	
ROUTE	1-10		LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD
TRACS NO. H6241 01C			PROJECT NO.	010-D(013)N
			DWG NO.	T-37
			OF	



FEDERAL AID DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	298	918	
010 PM 252					



LEGEND

↔ Traffic Flow Arrow

- Area Under Construction
- Temp Pmnt Under Construction
- Completed Construction

NOTES:





1. The Sequence of Utility Relocations is a critical component of the project. See Special Provisions for additional information on Utility Relocation requirements.

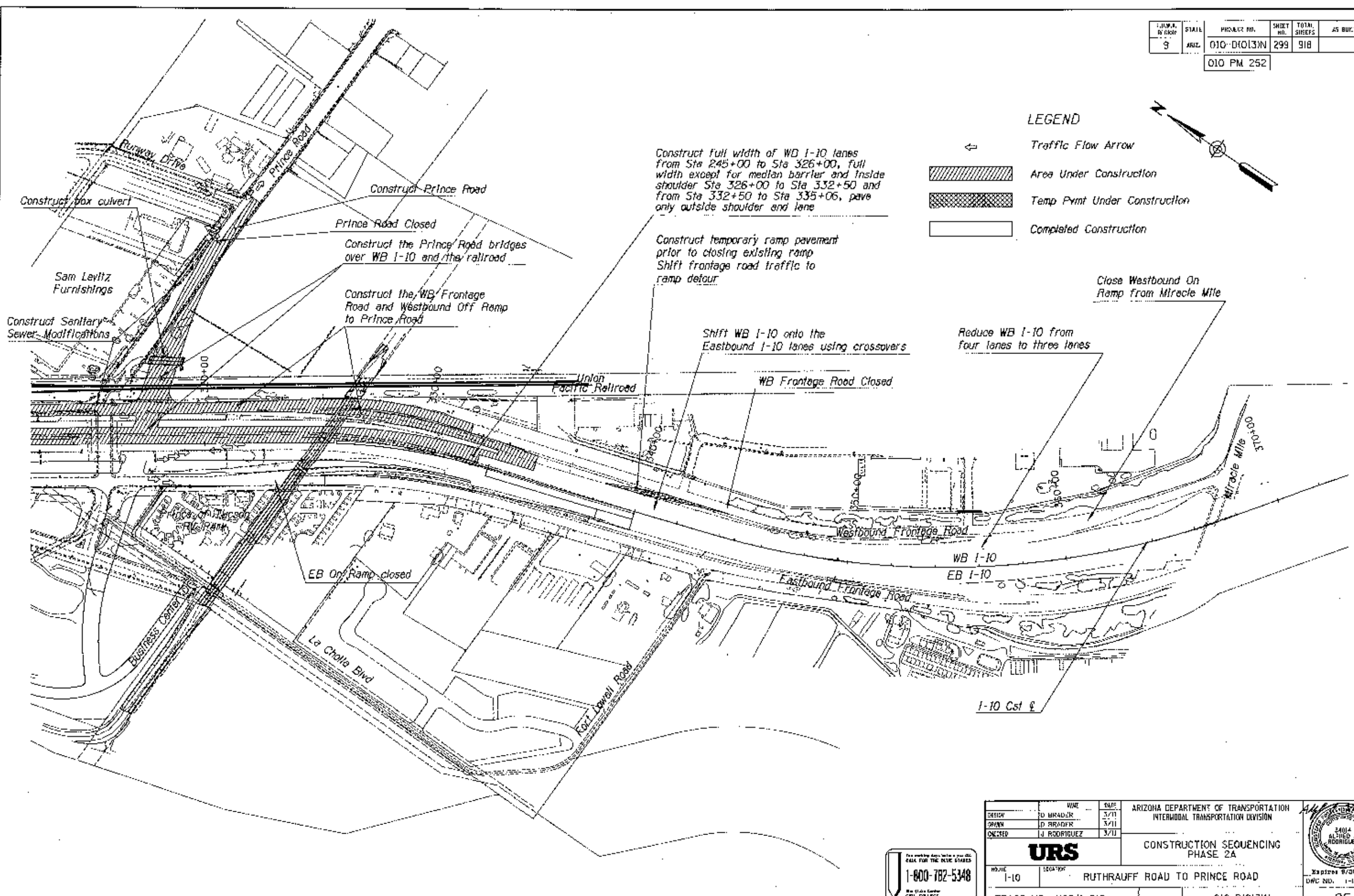
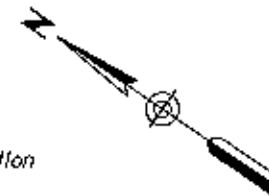


NAME		DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION		
DESIGNER	J. RODRIGUEZ	3/7/11			
DRAYER	G. FINAUX-R	3/7/11			
URS			CONSTRUCTION SEQUENCING PHASE 2A		
ROUTE	1-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H5241 01C		010-D10131N		OF	

F.I.P.A. OR SHOP	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	299	918	
010 PM 252					

LEGEND

-  Traffic Flow Arrow
-  Area Under Construction
-  Temp Pymt Under Construction
-  Completed Construction



Construct full width of WB I-10 lanes from Sta 245+00 to Sta 326+00, full width except for median barrier and inside shoulder Sta 326+00 to Sta 332+50 and from Sta 332+50 to Sta 335+06, pave only outside shoulder and lane

Construct temporary ramp pavement prior to closing existing ramp Shift frontage road traffic to ramp detour

Shift WB I-10 onto the Eastbound I-10 lanes using crossovers



Reduce WB I-10 from four lanes to three lanes

Close Westbound On Ramp from Miracle Mile

WB Frontage Road Closed

EB On-Ramp closed

I-10 Cst &





DESIGN	WJR	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	D BRADFR	3/11	CONSTRUCTION SEQUENCING PHASE 2A
CHECKED	J RODRIGUEZ	3/11	
			 Expires 9/30/2011 DMC NO. 1-114
PROJECT	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H6241 01C		010-D10131N	OF

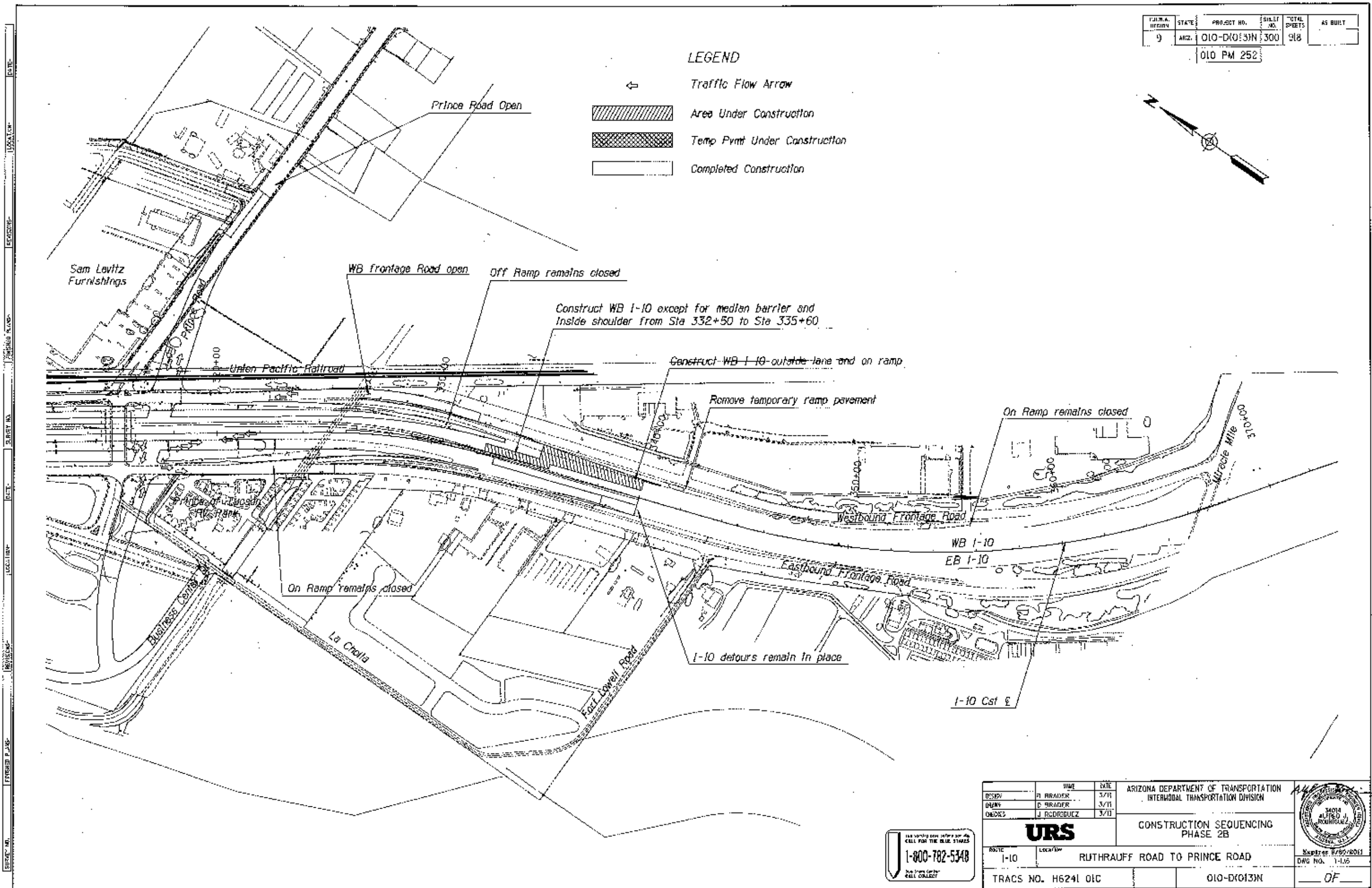
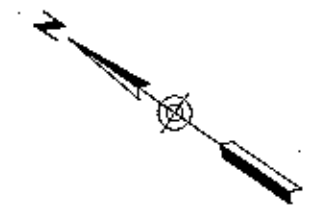
1-800-782-5348
The State Center
CBL COLLEGE

FED. AID DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARZ.	010-D10131N	300	318	


010 PM 252

LEGEND

-  Traffic Flow Arrow
-  Area Under Construction
-  Temp Pymt Under Construction
-  Completed Construction

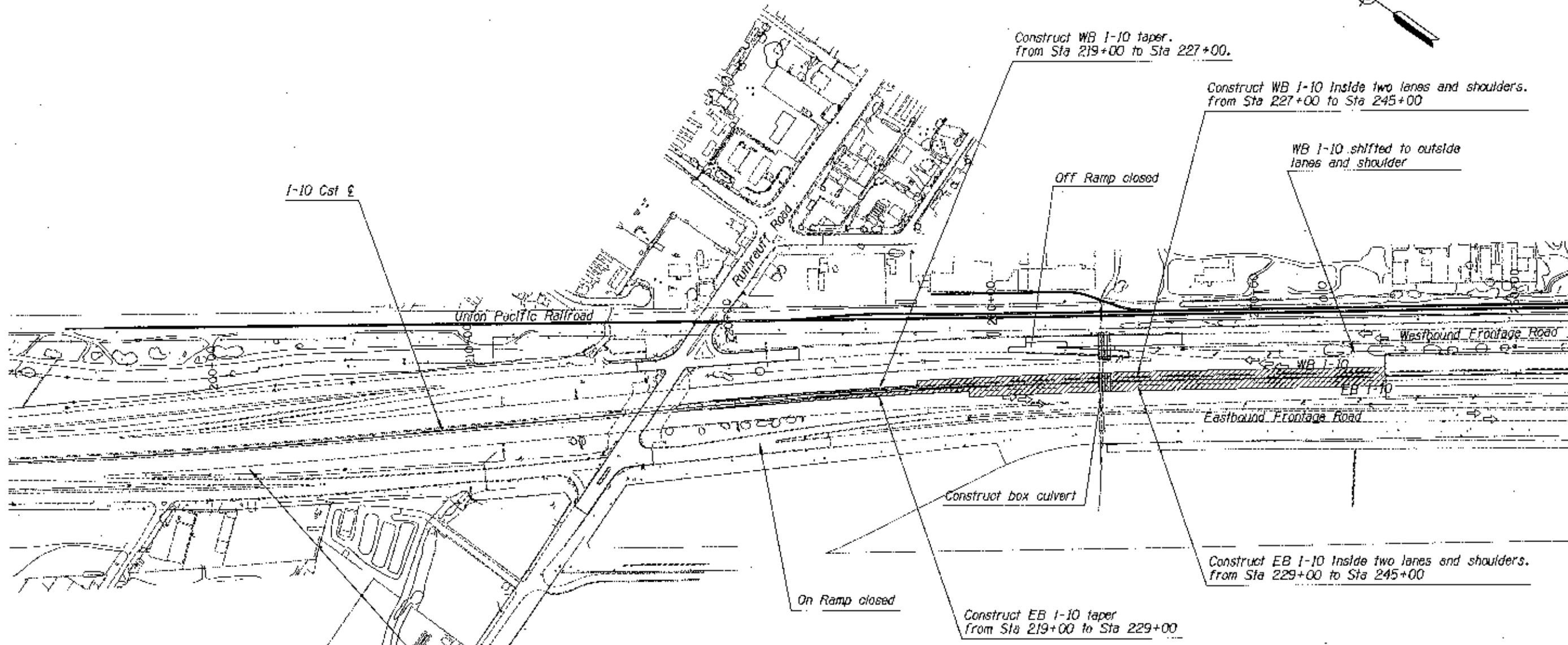
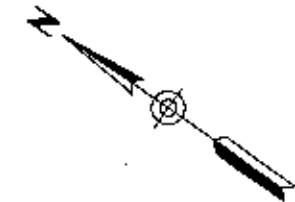


DATE: _____ LOCATION: _____ REVISION: _____ SURVEY NO. _____ DATE: _____ LOCATION: _____ REVISION: _____ SURVEY NO. _____

DESIGNED BY: P. BRADER DRAWN BY: D. BRADER CHECKED BY: J. RODRIGUEZ		DATE: 3/11 DATE: 3/11 DATE: 3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION CONSTRUCTION SEQUENCING PHASE 2B	
URS		ROUTE: I-10 LOCATION: RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H6241 01C		010-D10131N		EXP. OF: 3/11/01 DWG NO. 1-115 OF



FEDERAL DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS SHOWN
9	ARIZ.	010-D(013)N	301	918	
010 PM 252					



LEGEND

- Traffic Flow Arrow
- Area Under Construction
- Temp Pymt Under Construction
- Completed Construction





EB I-10 shifted to outside lanes and shoulder

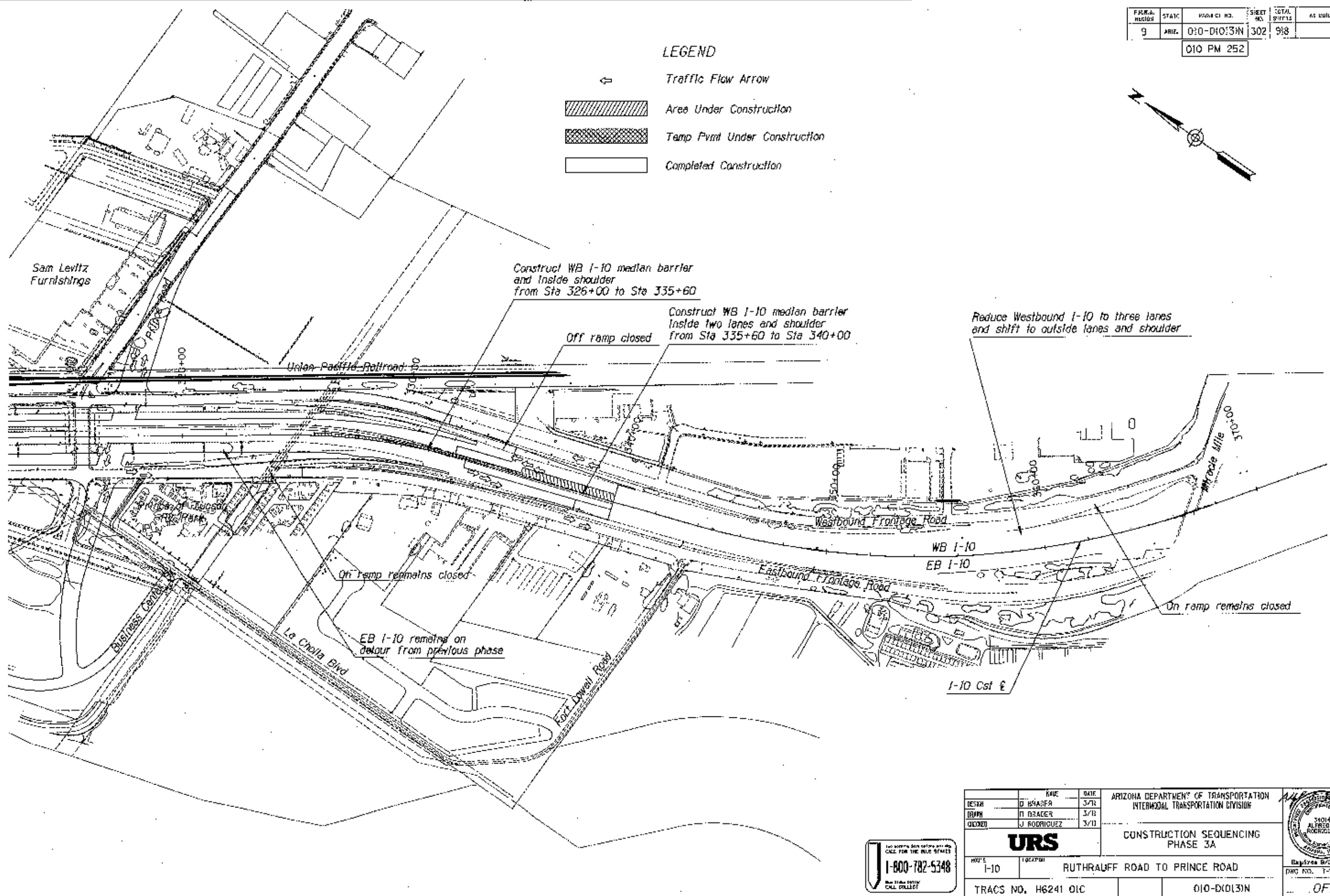
The author does not warrant the accuracy of the data collected.
1-800-782-5348
 For State Office CALL COLLECT


DESIGN: D. BRADER DRAWN: D. BRADER CHECKED: J. HOUKINS		DATE: 3/21 DATE: 3/21 DATE: 3/21	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
URS		CONSTRUCTION SEQUENCING PHASE 3A	
ROUTE: I-10	LOCATION: RUTHRAUFF ROAD TO PRINCE ROAD	TRACS NO. H6241 OIC	010-D(013)N OF

FED. DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	302	918	
010 PM 252					

LEGEND

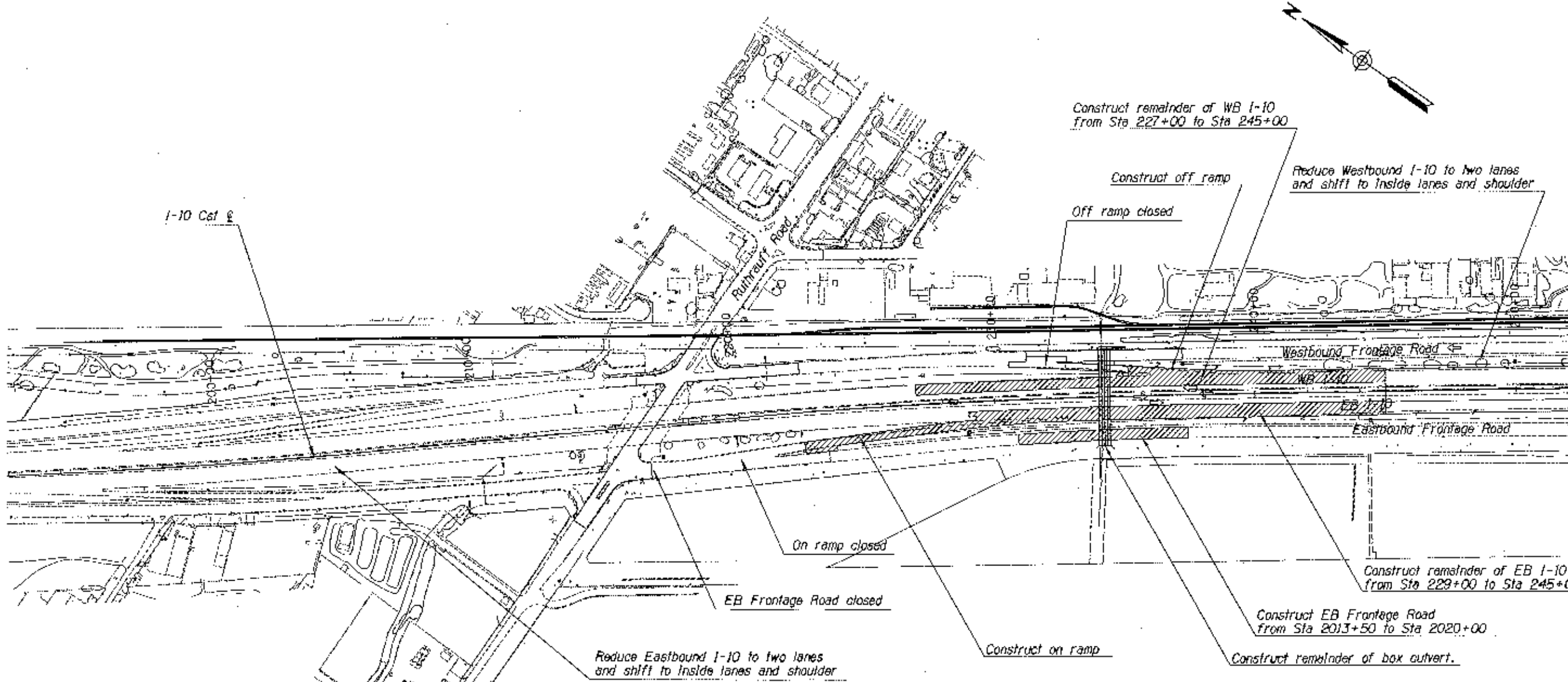
-  Traffic Flow Arrow
-  Area Under Construction
-  Temp Pymt Under Construction
-  Completed Construction



DESIGN	D. BRADER	DATE	3/7/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION CONSTRUCTION SEQUENCING PHASE 3A	
DRAWN	D. BRADER	DATE	3/13		
CHECKED	J. RODRIGUEZ	DATE	3/11		
URS				CONSTRUCTION SEQUENCING PHASE 3A	
ROUTE	I-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO.	H6241 01C		010-D10131N		
			OF		



F.N.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D1013IN	303	918	
010 PM 252					



LEGEND

	Traffic Flow Arrow
	Area Under Construction
	Temp Pvmf Under Construction
	Completed Construction

Notes:
 Construct on ramp and open to traffic before closing EB Frontage Road



DESIGNER	D BRADER	DATE	3/21	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DRAWN	D BRADER	DATE	3/21		
CHECKED	J RODRIGUEZ	DATE	3/21		
URS				CONSTRUCTION SEQUENCING PHASE 3B	
ROUTE	RUTHRAUFF ROAD TO PRINCE ROAD			Expires 8/30/2011	
TRACS NO.	H6241 01C	010-D1013IN		300 NO. 1-118	
				OF	

FED. A. HIGHWAY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS SHOWN
9	ARIZ.	010-D10131N	304	918	
010 PM 252					

LOCATION	REF. NO.	REFERENCE DATA			CURVE DATA															
		STATION	N	E	PI		PC/PRC			PT/PRC			Δ	D	R	L	T	E	SUPER /FT.	
					STATION	N	E	STATION	N	E	STATION	N								E
PIA 1-10 WB CROSSOVER																				
BEGIN	1				11+65.05	470595.076	975332.232	10+00.00	470726.150	975231.922	13+30.05	470468.544	975438.213	02°31'20"	00°45'51"	7497.50	330.05	165.05	1.82	NA
END	2				26+28.45	469473.171	976271.918	22+19.12	469786.972	976009.085	30+37.43	469141.417	976511.693	04°05'29"	00°30'00"	11459.66	818.32	409.33	7.31	NA
PIA 1-10 EB CROSSOVER																				
BEGIN	3				12+71.43	470157.847	975529.937	10+00.00	470377.982	975371.150	15+42.62	469949.767	975704.221	04°08'43"	00°45'50"	7500.00	542.62	271.43	4.91	NA
END	4				25+99.54	469139.509	976382.878	23+25.67	469349.466	976207.021	28+73.17	468917.284	976542.952	04°10'58"	00°45'50"	7500.00	547.51	273.88	5.00	NA
PIA 1-10 WB CROSSOVER																				
BEGIN		10+00.00	464926.087	979558.320																
	5				25+82.04	463638.848	980478.033	23+17.03	463854.475	980323.971	28+46.96	463416.330	980621.965	02°38'57"	00°30'00"	11461.65	529.93	265.01	3.06	NA
	6				29+19.05	463355.796	980661.121	28+46.96	463416.330	980621.965	29+91.15	463295.378	980700.453	00°10'05"	00°07'00"	49161.83	144.19	72.09	0.05	NA
	7				34+63.99	462907.486	980952.972	29+91.15	463295.378	980700.453	39+08.92	462459.841	981070.615	18°20'22"	01°59'54"	2867.29	917.77	462.85	37.12	NA
END	8				46+84.79	461709.456	981267.822	45+76.42	461814.259	981240.279	47+93.08	461606.546	981301.764	3°31'46"	01°37'44"	3517.22	216.66	108.36	1.67	NA
PIA 1-10 EB CROSSOVER																				
BEGIN	9				12+70.51	462761.958	980917.890	10+00.00	463003.955	980796.995	15+39.13	462500.413	980986.973	11°44'58"	02°10'46"	2629.08	539.13	270.51	13.88	NA
END	10				37+30.36	460381.840	981546.563	23+22.32	461743.196	981186.981	50+22.95	459570.608	982697.429	40°01'28"	01°28'55"	3866.00	2700.63	1408.04	248.43	NA
P2A 1-10 WB CROSSOVER																				
BEGIN	11				13+56.40	471301.413	974790.155	10+00.00	471574.420	974561.055	17+12.26	471007.912	974992.334	05°26'29"	00°45'50"	7500.00	712.26	356.40	8.46	NA
END		33+05.52	469695.826	975896.172																
P2A 1-10 WB CROSSOVER																				
BEGIN	12				14+14.06	462900.872	980790.522	10+00.00	463237.850	980549.923	18+22.67	462510.433	980928.360	16°04'54"	01°57'17"	2931.00	822.67	414.06	29.10	NA
	13				21+43.02	462208.348	981035.007	18+22.67	462510.433	980928.360	24+63.04	461915.758	981165.466	04°35'11"	00°42'58"	8000.00	640.37	320.36	6.41	NA
	14				27+30.47	461671.510	981274.371	24+63.04	461915.758	981165.466	29+97.69	461420.534	981366.722	03°49'45"	00°42'58"	8000.00	534.66	267.43	4.47	NA
END	15				41+79.44	460311.486	981774.814	29+97.69	461420.534	981366.722	52+88.85	459630.631	982740.717	34°37'07"	01°30'39"	3792.00	2291.15	1181.75	179.88	NA
P2 A MIRACLE MILE EB ON RAMP																				
BEGIN	16				12+75.34	462906.715	980792.848	10+00.00	463135.407	980639.515	15+49.09	462653.608	980901.236	10°39'32"	01°56'28"	2951.59	549.09	275.34	12.81	NA
	17				17+86.69	462433.367	980990.387	15+49.09	462653.608	980901.236	20+24.02	462221.263	981097.467	04°44'57"	01°00'00"	5729.58	474.93	237.60	4.92	NA
END	18				25+75.73	461728.750	981346.111	22+04.46	462060.180	981178.789	29+45.97	461378.497	981469.261	07°24'54"	01°00'00"	5729.58	741.51	371.27	12.02	NA



DESIGN	C BRADLER	DATE	3/11
DRAWN	D BRADLER	DATE	3/11
CHECKED	J RODRIGUEZ	DATE	3/11

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION

URS

ROUTE: I-10 LOCATION: RUTHRAUFF ROAD TO PRINCE ROAD

TRACS NO. H6241 01C

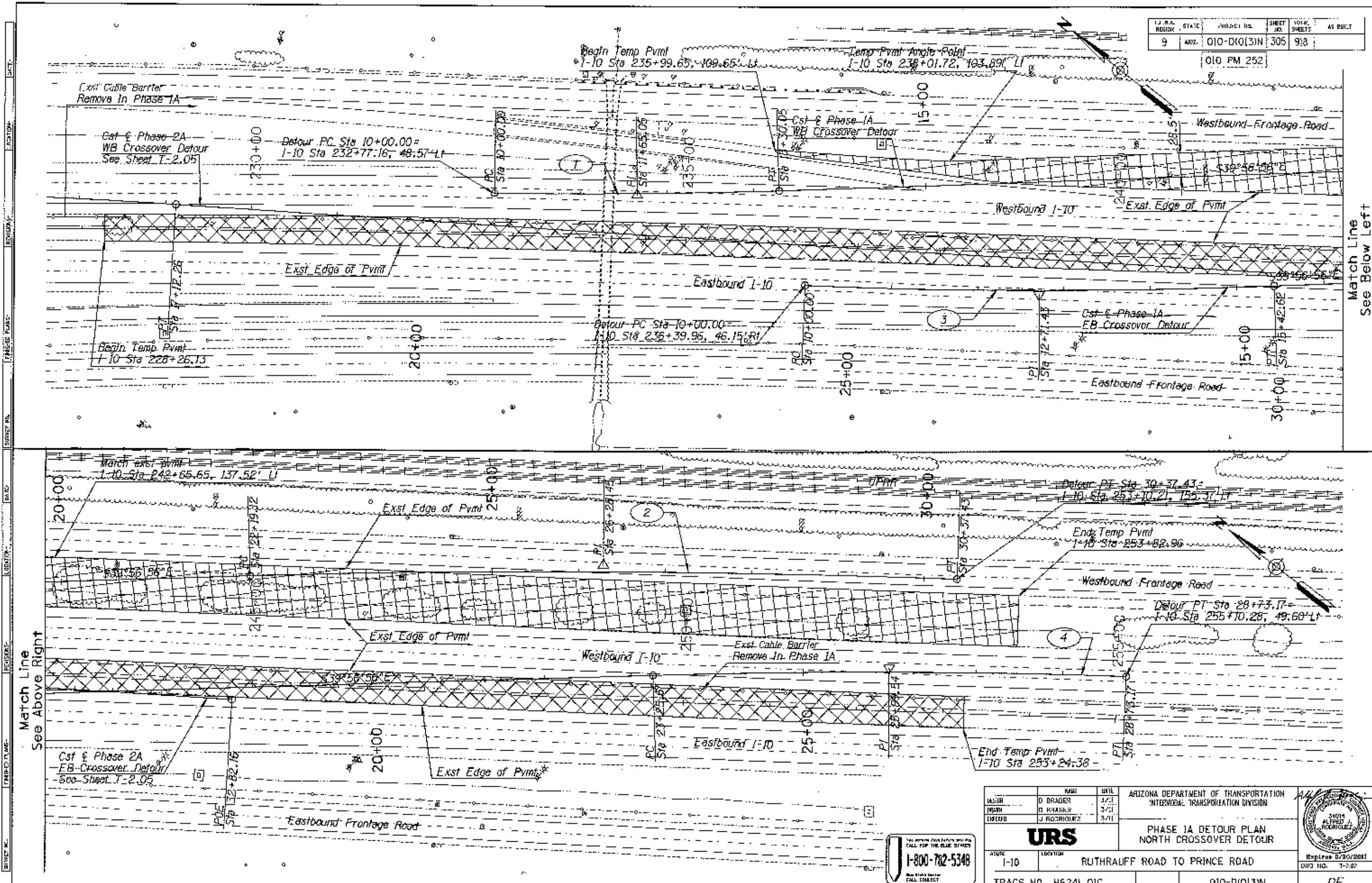
010-D10131N

OF

Expires 8/30/2011
DWG NO. T-20

F.J.R.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ	010-D10(3)N	305	918	

010 PM 252



Match Line See Below Left

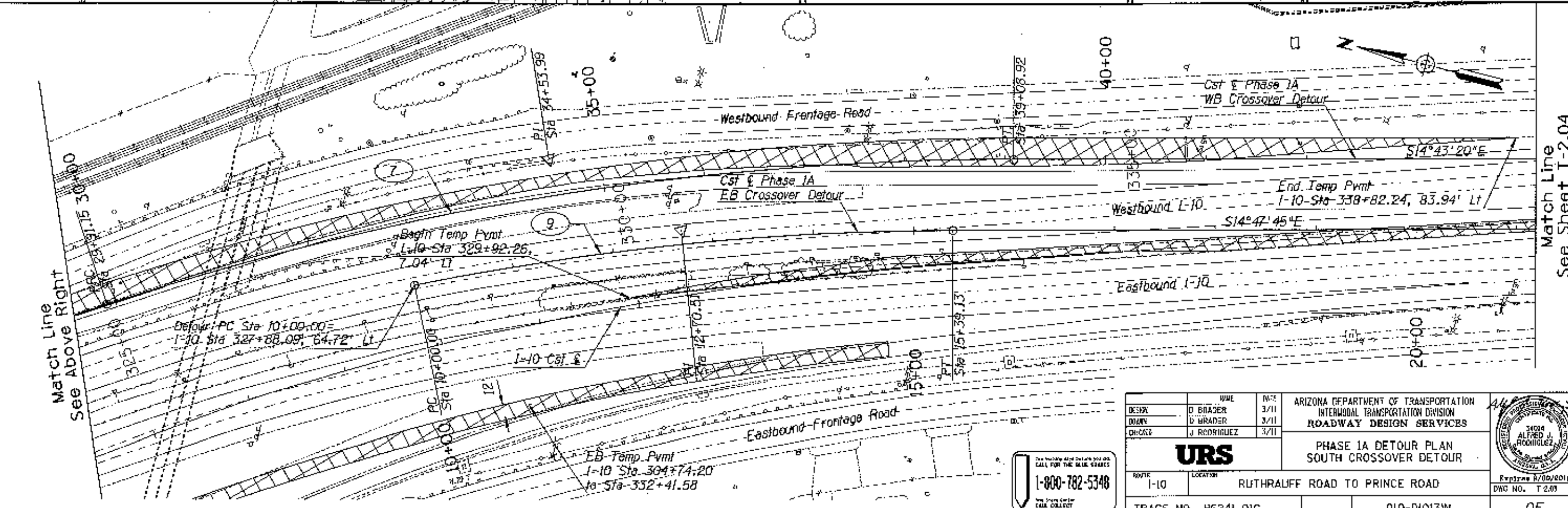
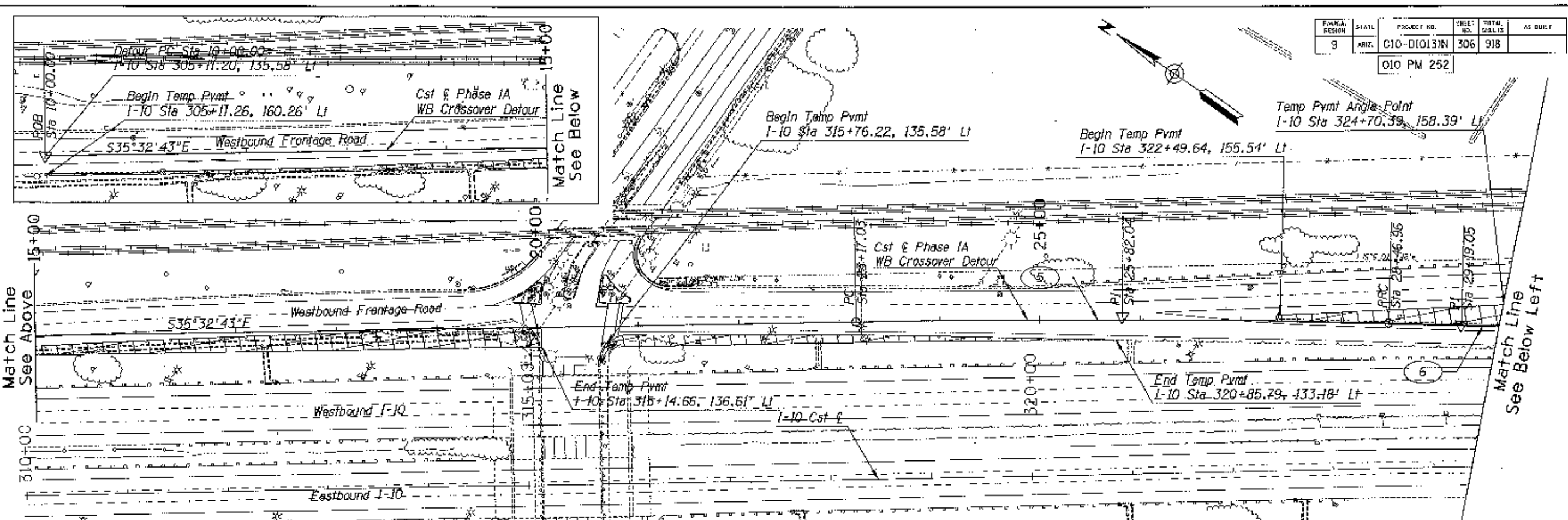
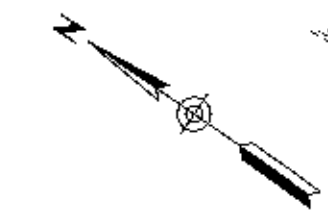
Match Line See Above Right

DESIGN: D BRADNER DRAWN: D BRADNER CHECKED: J RODRIGUEZ		NAME: D BRADNER DATE: 3/21 NAME: D BRADNER DATE: 3/21 NAME: J RODRIGUEZ DATE: 3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION PHASE 1A DETOUR PLAN NORTH CROSSOVER DETOUR	
PROJECT: I-10 LOCATION: RUTHAUFF ROAD TO PRINCE ROAD	TRACS NO. H624I OIC		PROJECT NO. 010-D10(3)N	DATE: 03/30/2011 DWG NO. T-2.07

1-800-782-5348
 The State Center
 CALL EXACTLY

FEDERAL REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	C10-D10131N	306	918	

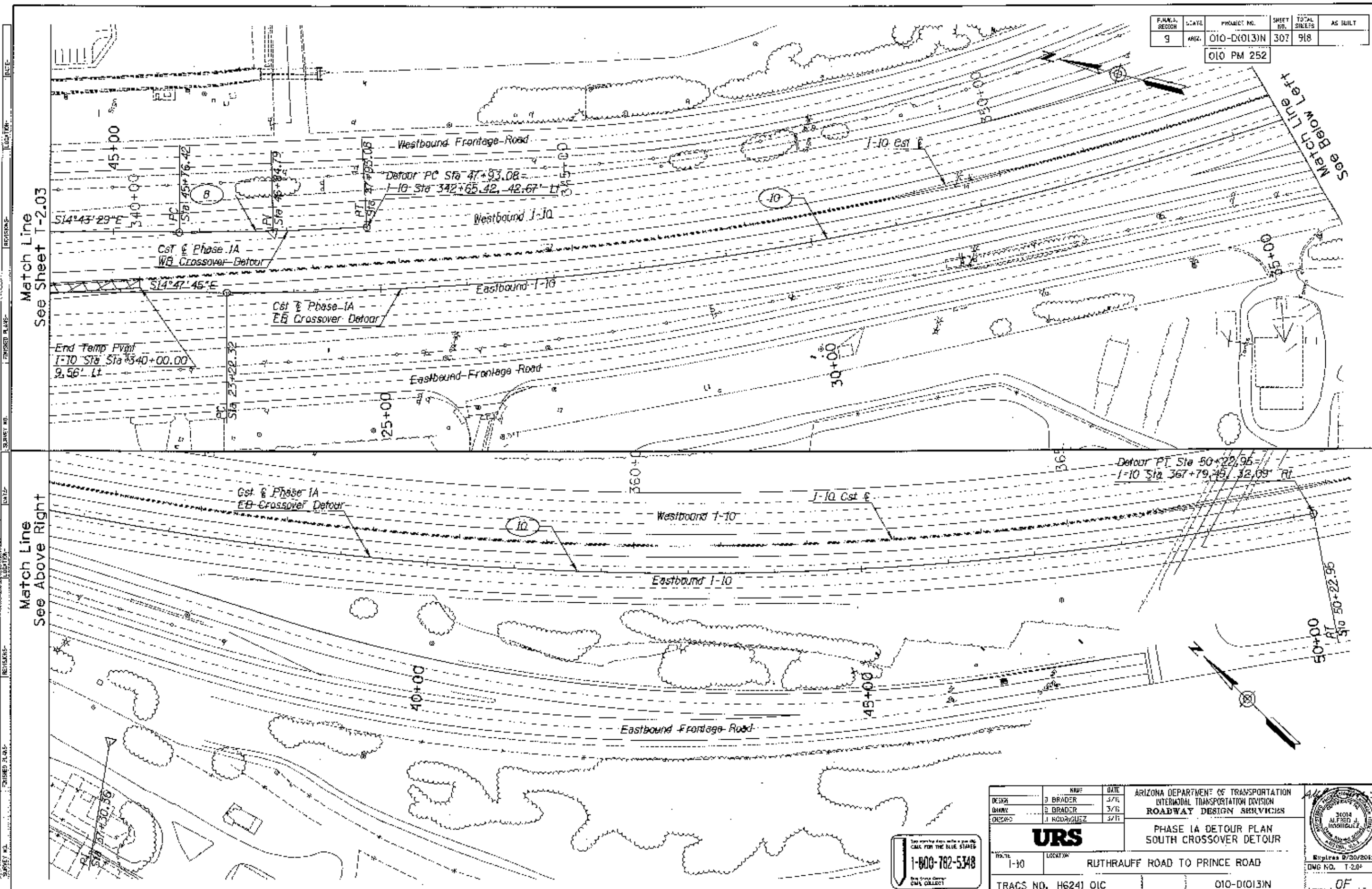
010 PM 252



DESIGNER	D. BRADY	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	
DRAWN	D. BRADY	DATE	3/11		
CHECKED	J. RODRIGUEZ	DATE	3/11		
URS ROUTE: I-10 LOCATION: RUTHRALIFF ROAD TO PRINCE ROAD		PHASE 1A DETOUR PLAN SOUTH CROSSOVER DETOUR		Project No. R/00/0014 DWG NO. T-209	
TRACS NO. H6241 OIC			010-D10131N		

1-800-782-5348
 THE TRUCK AND TRAILER RATES ARE CALL FOR THE BLUE SQUARE

PLAN. SECTION	DATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	010-D(013)N	010-PM 252	307	918	



Match Line See Sheet T-2.03

Match Line See Below Left

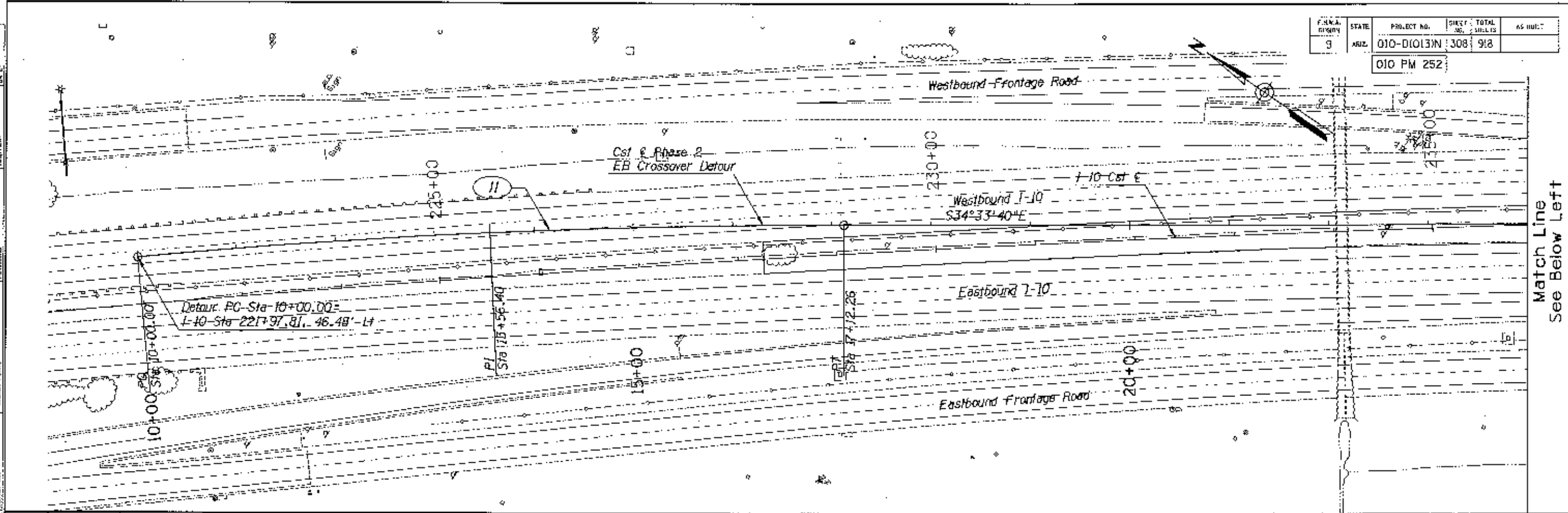
Match Line See Above Right

DESIGN	J BRADY	3/7/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	
DRAWN	J BRADY	3/7/11		
CHECKED	J RODRIGUEZ	3/7/11		
URS		PHASE 1A DETOUR PLAN SOUTH CROSSOVER DETOUR		Project 02/30/2011 DWG NO. T-2.03 OF
PROJECT	1-10	LOCATION	RUTTHRAUFF ROAD TO PRINCE ROAD	
TRACS NO.	H6241 OIC		010-D(013)N	

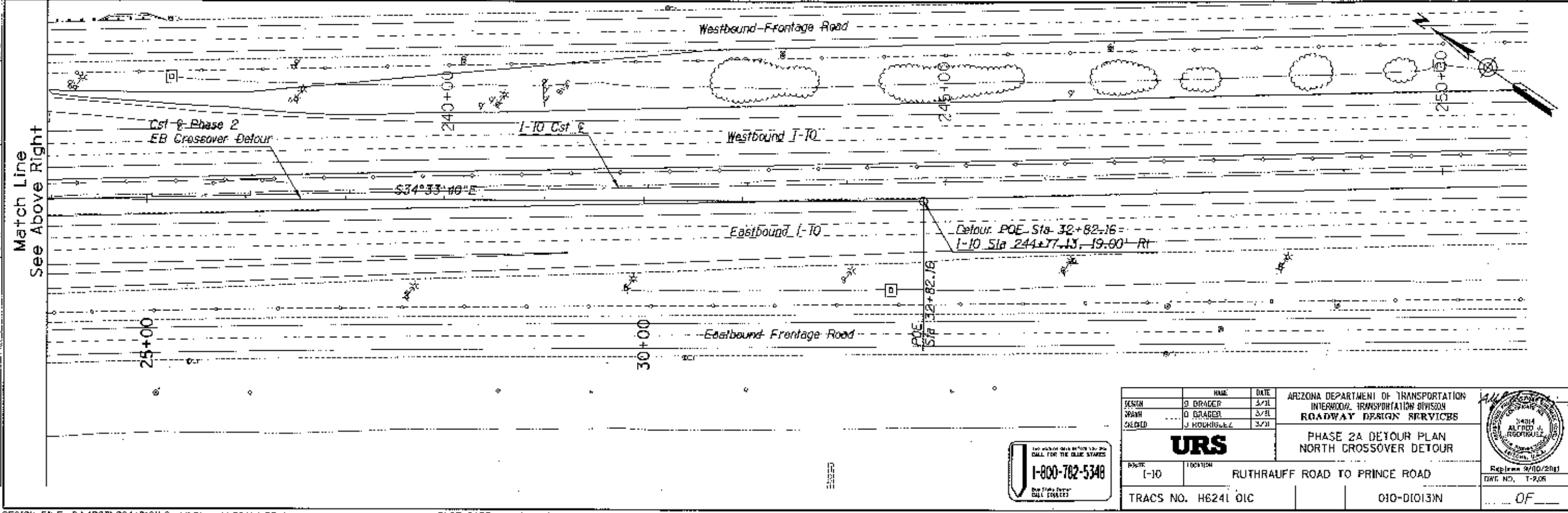
1-800-782-5348
 THE ARIZONA DEPARTMENT OF TRANSPORTATION
 CALL FOR THE BLUE STAPLES

F.H.A. FUNDING	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D1013N	308	918	

010 PM 252



Match Line
See Below Left

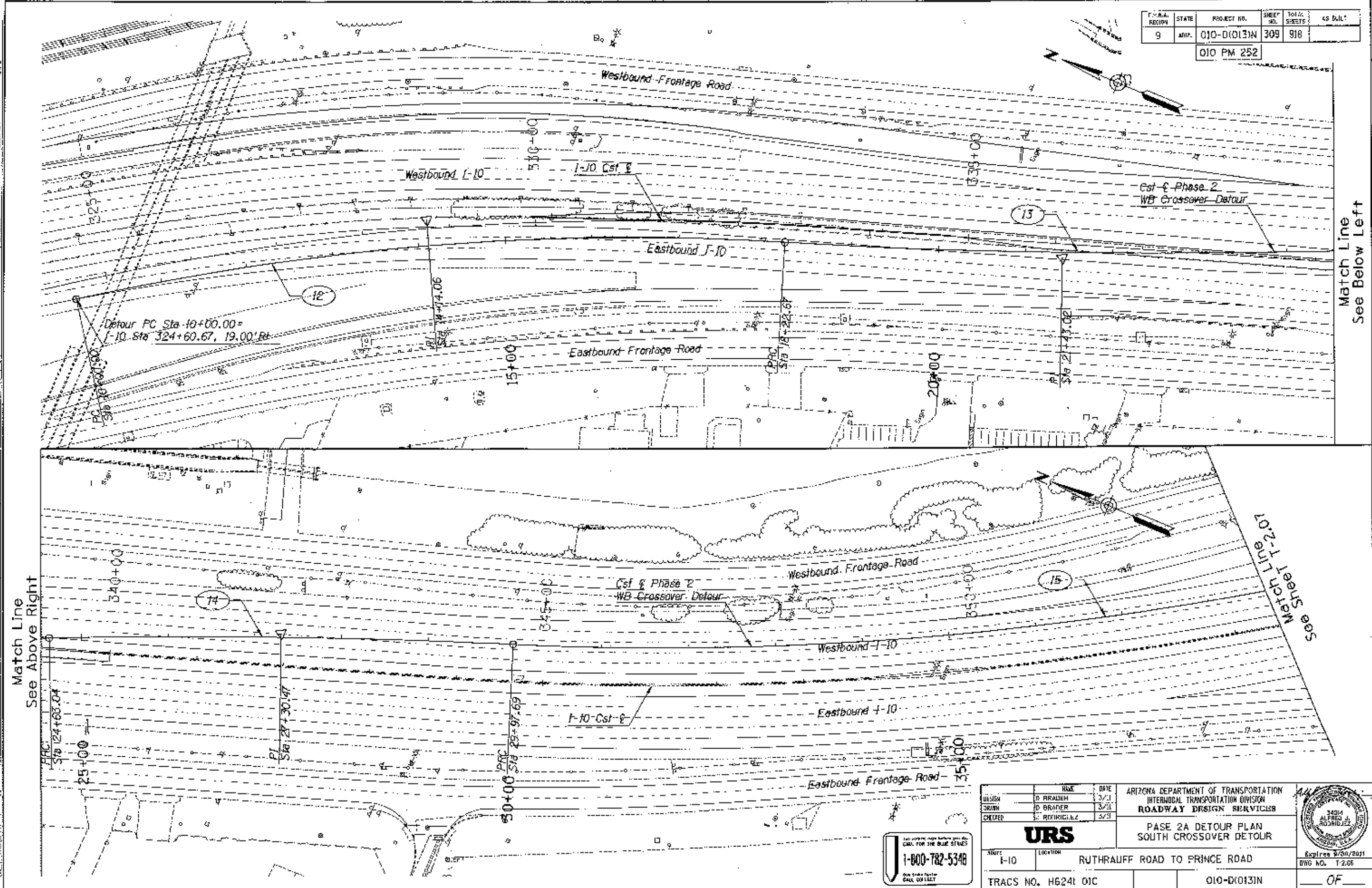


Match Line
See Above Right

DESIGN	D BRADY	3/21	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	
DRAWN	D BRADY	3/21		
CHECKED	J RODRIGUEZ	3/21		
			PHASE 2A DETOUR PLAN NORTH CROSSOVER DETOUR	
PROJECT	I-10		LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD
TRACS NO. H6241 01C			PROJECT NO.	010-D1013N
			SHEET NO.	308 OF 918

1-800-762-5348
 Don't Stop! Don't Call! Don't Wait!

FED. A.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	309	918	
010 PM 252					



DESIGN	D. BRADEN	DATE	3/21
DRAWN	D. BRADEN	DATE	3/21
CHECKED	S. RODRIGUEZ	DATE	3/23

URS

ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
 ROADWAY DESIGN SERVICES

PASE 2A DETOUR PLAN
 SOUTH CROSSOVER DETOUR

PROJECT: I-10 LOCATION: RUTHRAUFF ROAD TO PRINCE ROAD

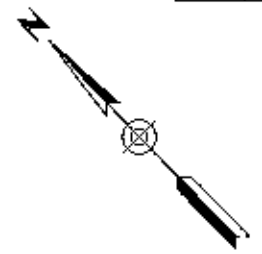
TRACS NO. H624I 01C PROJECT NO. 010-DX013IN

Scale: 1" = 40'

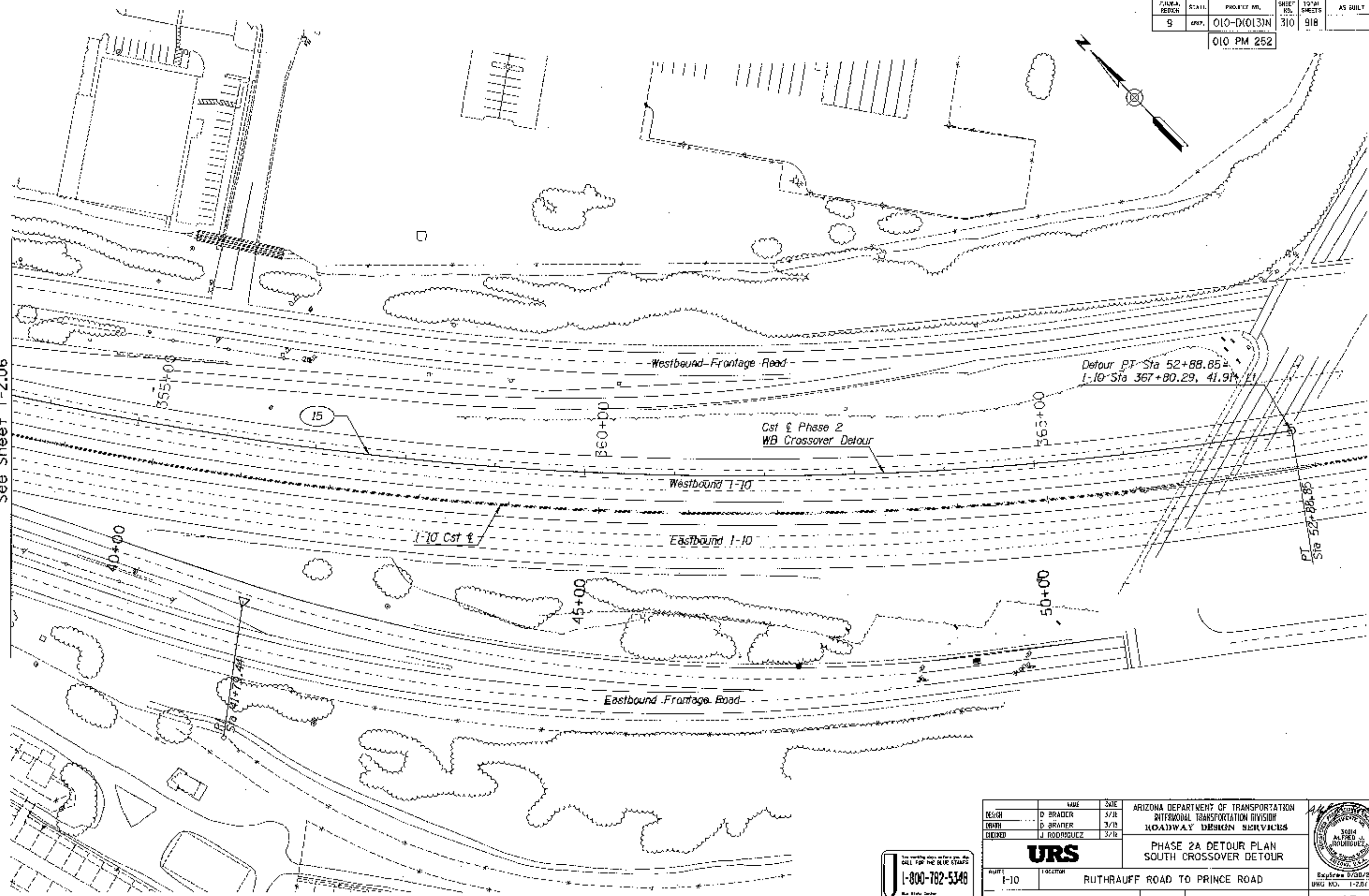
DATE: 3/20/2011
 DWG NO. T-206

OF

DATE	SCALE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9/27		010-D(013)N	310	918	
010 PM 252					



Match Line
See Sheet T-2.06



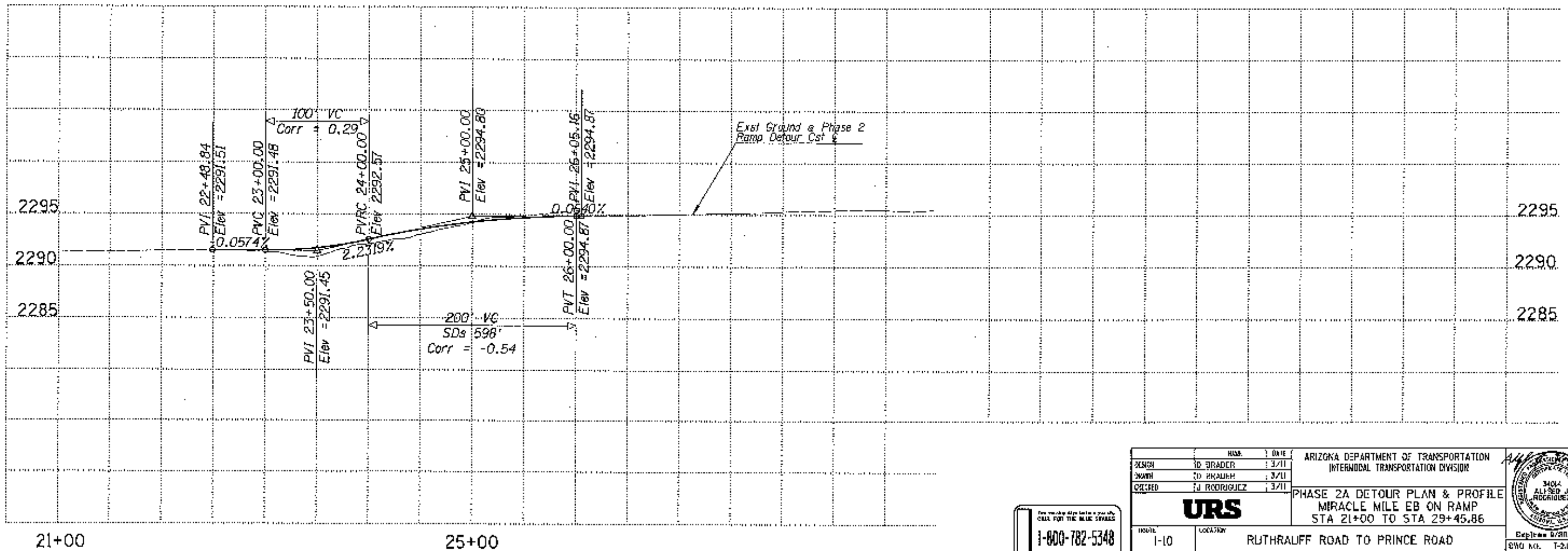
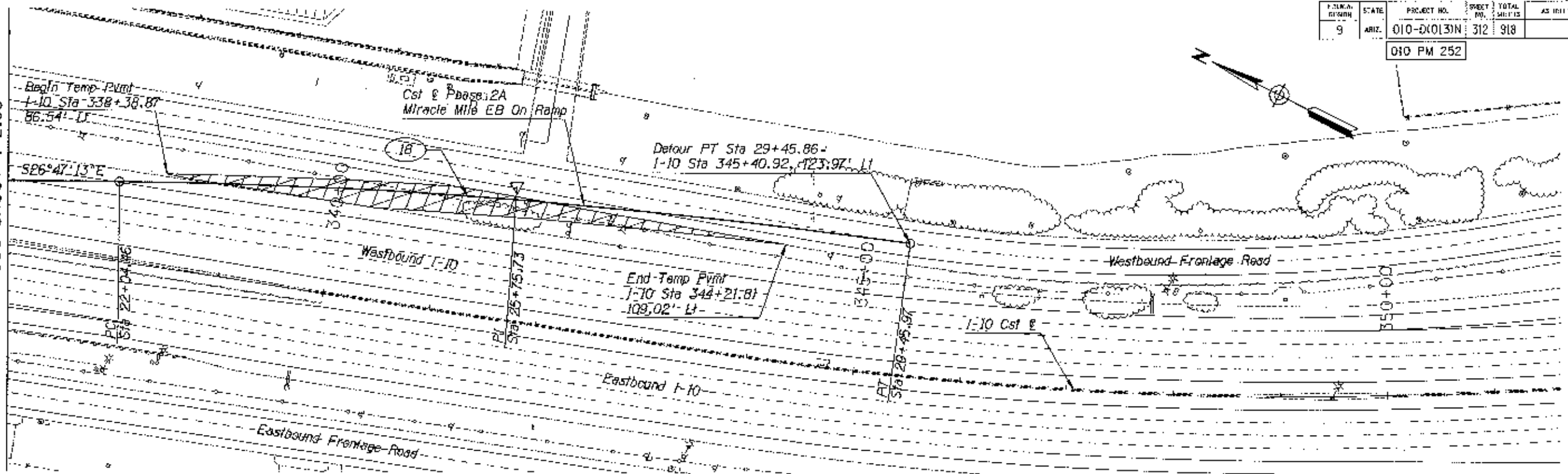
REVISIONS: _____
 LOCATION: _____
 DATE: _____
 SURVEY NO.: _____
 SURVEY: _____
 DATE: _____
 REVISIONS: _____
 LOCATION: _____
 DATE: _____
 SURVEY NO.: _____
 SURVEY: _____
 DATE: _____

DESIGN	D BRADER	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION ROADWAY DESIGN SERVICES	
DRAWN	D BRADER	DATE	3/11		
CHECKED	J RODRIGUEZ	DATE	3/11		
URS		PHASE 2A DETOUR PLAN SOUTH CROSSOVER DETOUR			
PROJECT	I-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H6241 01C		010-D(013)N		OF	



F.S. NO. 010009	STATE ARIZ.	PROJECT NO. 010-D(013)N	SHEET NO. 312	TOTAL SHEETS 918	AS BUILT
010 PM 252					

Match Line Sta 21+00
See Sheet T-2.08

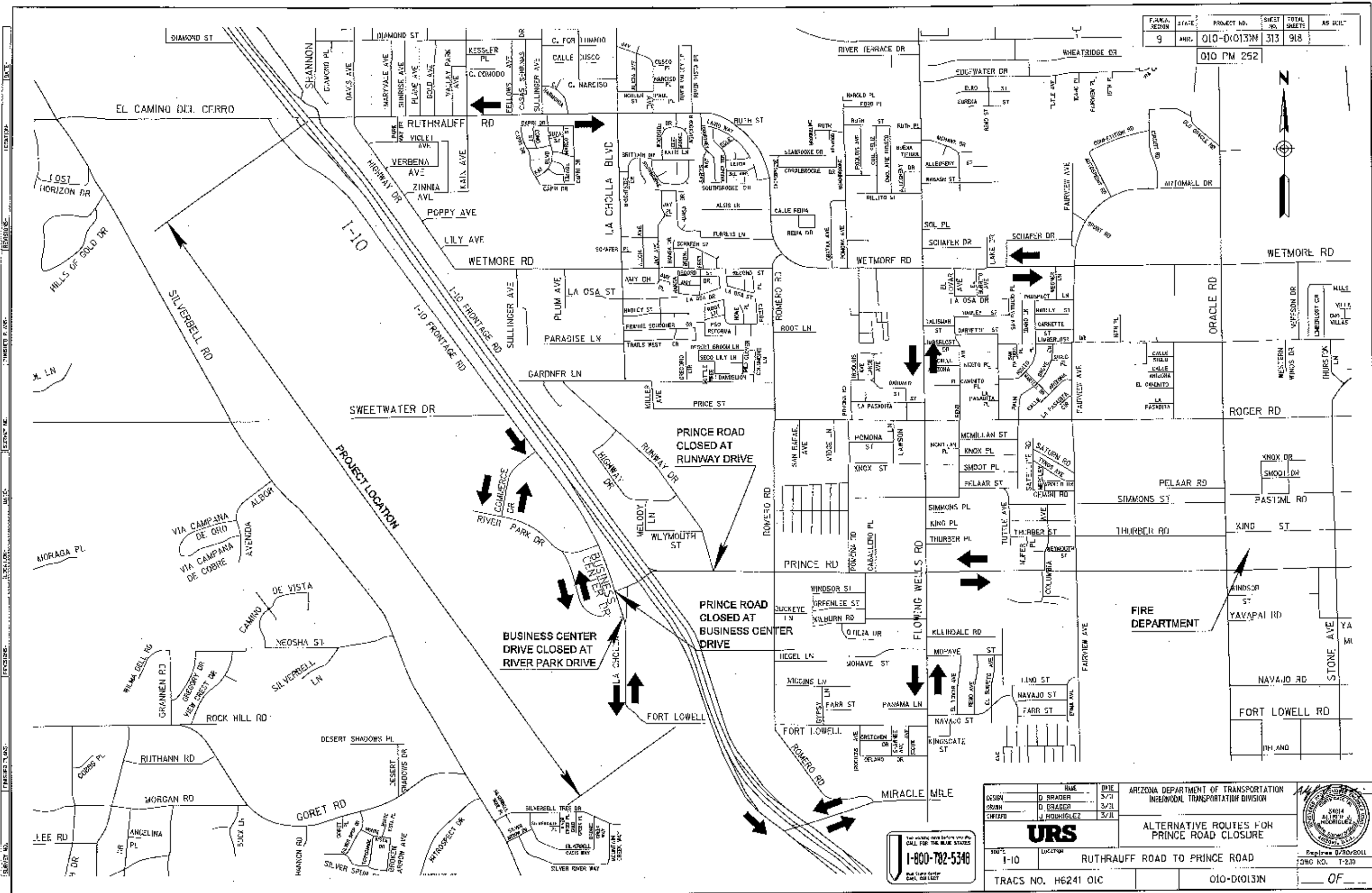


1-800-782-5348

DESIGNER: J.D. BRADDER	DATE: 3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS PHASE 2A DETOUR PLAN & PROFILE MIRACLE MILE EB ON RAMP STA 21+00 TO STA 29+45.86		
DRAWN: J.D. BRADDER	DATE: 3/11			
CHECKED: J. RODRIGUEZ	DATE: 3/11			
ISSUE: I-10	LOCATION: RUTHLAFF ROAD TO PRINCE ROAD	TRACS NO. H6241 01C	010-D(013)N	OF

F.A.M. SECTION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D-0133N	313	918	

010 PM 252



1-800-782-5348

DESIGN	D. BRADER	DATE	3/21	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	D. BRADER	DATE	3/21	
CHECKED	J. HODDIGHLEZ	DATE	3/21	
URS		RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H6241 OIC		010-D-0133N		

ESTIMATED QUANTITIES

F.H.R.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	315	918	
010 PM 252					

ITEM NO	ITEM	UNITS	TRAFFIC CONTROL PHASE							Total
			1A	1B	1C	2A	2B	3A	3B	
7015010	TEMPORARY CONCRETE BARRIER (INSTALLATION AND REMOVAL)	L.F.	4300	25000	19000	27000	3000	12000	10000	100300
7015020	TEMPORARY IMPACT ATTENUATOR (INSTALLATION AND REMOVAL)	EACH	6	10	4	4	0	2	4	30
7015042	TEMPORARY PAINTED MARKING (STRIPE)	L.F.	0	46000	37000	40000	1000	44000	21000	189000
7015052	OBLITERATE PAVEMENT MARKING (STRIPE)	L.F.	0	63000	2000	32000	1000	14000	4000	116000
7015061	TEMPORARY PAVEMENT MARKERS (RAISED) (REFLECTIVE)	EACH	0	1000	700	1000	0	1000	300	4000
7015070	OBLITERATE PAVEMENT MARKERS	EACH	0	600	100	600	0	200	200	1700
7015091	SPECIALTY SIGNS	SQ. FT.	100	160	40	100	0	0	0	400
7016020	TEMPORARY CONCRETE BARRIER (IN USE)	L.F./DAY	75000	8250000	690000	8140000	900000	435000	300000	18790000
7016021	TEMPORARY IMPACT ATTENUATOR (IN USE)	EACH-DAY	120	2700	180	600	0	60	100	3760
7016030	BARRICADE (TYPE II, VERT PANEL, TUBULAR MARKER)	EACH-DAY	7900	116000	10200	104000	10200	6000	9000	263300
7016031	BARRICADE (TYPE III, HIGH LEVEL FLAG TREES)	EACH-DAY	3000	33000	3000	30000	1500	1500	0	72000
7016032	PORTABLE SIGN STAND (RIGID)	EACH-DAY	300	7000	1200	13500	1200	0	0	23200
7016033	PORTABLE SIGN STAND (SPRING TYPE)	EACH-DAY	1500	15000	1200	13500	1200	900	900	34200
7016035	WARNING LIGHTS (TYPE A)	EACH/DAY	10300	20000	12000	119000	12000	1200	1200	175700
7016036	WARNING LIGHTS (TYPE B)	EACH-DAY	150	3000	300	3000	150	0	0	6600
7016037	WARNING LIGHTS (TYPE C)	EACH/DAY	7900	116000	10200	104000	10200	6000	9000	263300
7016038	TRAFFIC CONES (28 INCHES)	EACH-DAY	3000	33000	3000	30000	3000	0	0	72000
7016039	EMBEDDED SIGN POST	EACH-DAY	180	2000	360	4000	260	0	0	6800
7016050	TRUCK MOUNTED ATTENUATOR	EACH-DAY	30	40	30	30	30	30	30	220
7016051	TEMPORARY SIGN (LESS THAN 10 SF)	EACH-DAY	180	4000	150	1500	120	0	0	5950
7016052	TEMPORARY SIGN (10 SF OR MORE)	EACH-DAY	2000	27000	3600	41800	3900	1200	1200	80500
7016061	FLASHING ARROW PANEL	EACH-DAY	120	1300	120	1200	160	60	60	3020
7016067	CHANGEABLE MESSAGE BOARD (CONTRACTOR FURNISHED)	EACH-DAY	150	1700	150	1600	150	60	60	3870
7016075	FLAGGING SERVICES (CIVILIAN)	HOURLY	100	200	100	200	120	40	40	800
7016078	FLAGGING SERVICES (LOCAL ENFORCEMENT OFFICER)	HOURLY	80	140	80	140	80	40	40	600
*	FLAGGING SERVICES (DPS ENFORCEMENT OFFICER)	HOURLY	80	140	80	140	80	40	40	600

Calendar Days per Phase:

Phase 1A - 60
 Phase 1B - 300
 Phase 1C - 30
 Phase 1 Total - 390

Phase 2A - 300
 Phase 2B - 30
 Phase 2 Total - 330

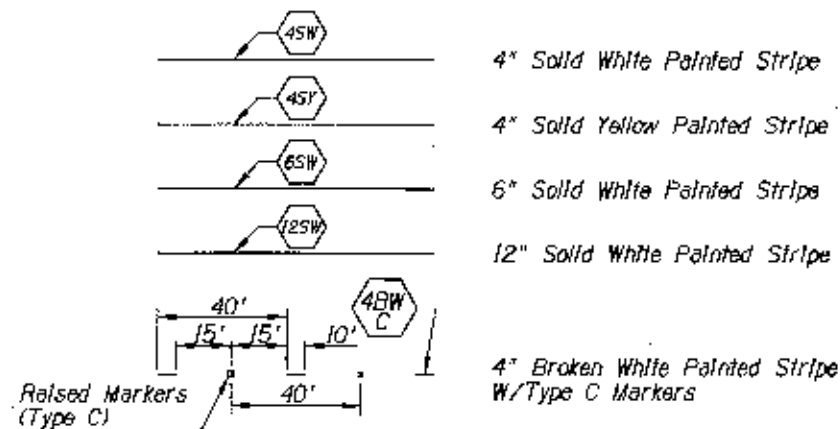
Phase 3A - 30
 Phase 3B - 30
 Phase 3 Total - 60

Total Construction Duration:
 780 calendar days (26 months)

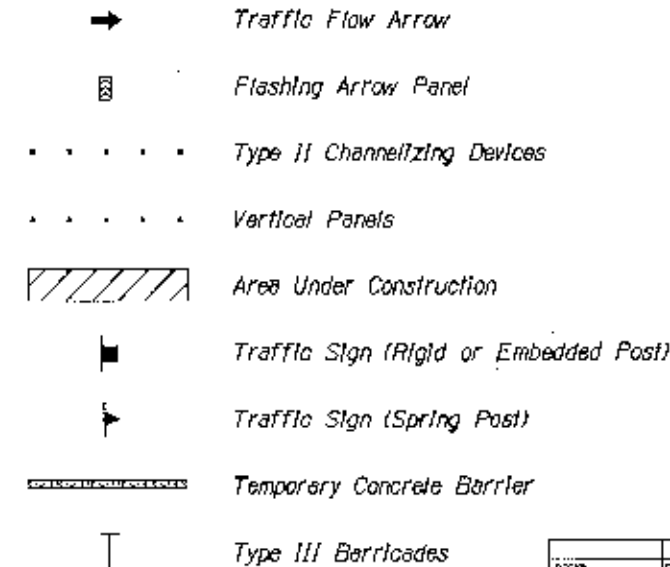
Above table shows the quantity of each item multiplied times the estimated days per phase.

* Not a bid item

STRIPING LEGEND



LEGEND



DATE	NAME	DATE
DESIGN	D. BRADER	3/11
DRAWN	J. RODRIGUEZ	3/11
CHECKED	J. RODRIGUEZ	3/11

ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION

1-800-782-5348

URS

TRAFFIC CONTROL
 QUANTITIES & LEGEND



PROJECT: 1-10

LOCATION: RUTHRAUFF ROAD TO PRINCE ROAD

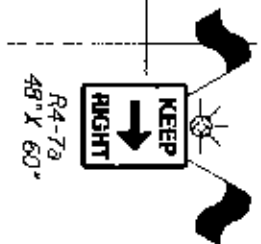
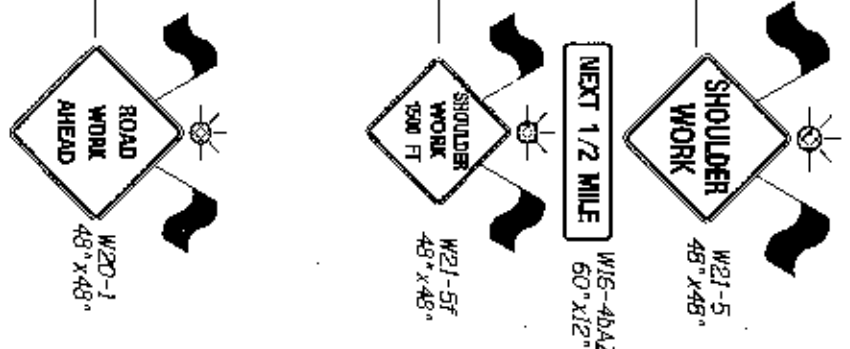
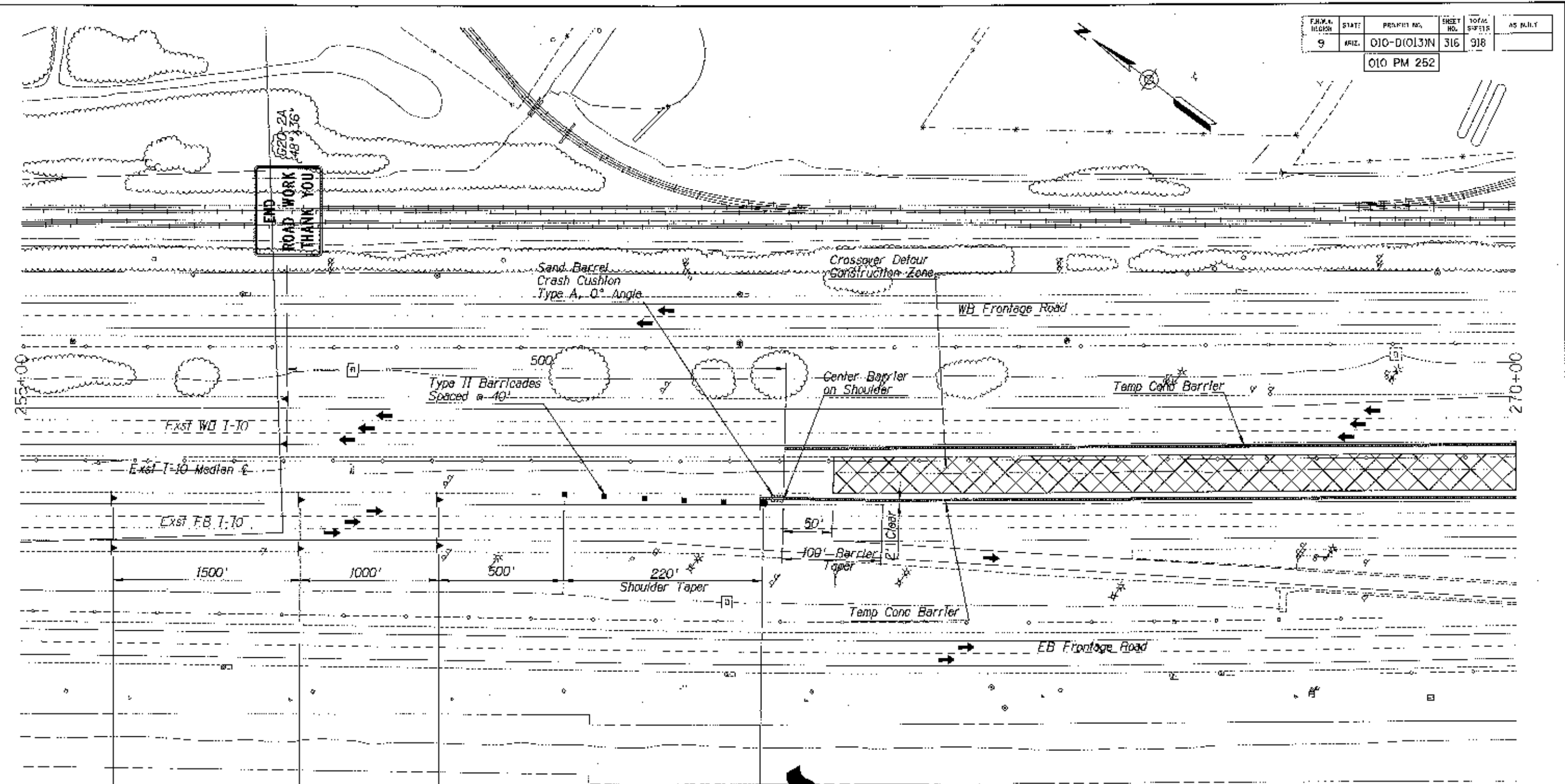
Expires 8/30/2011
 DWG NO. T-3.02

TRACS NO. H6241 01C

010-D(013)N

OF

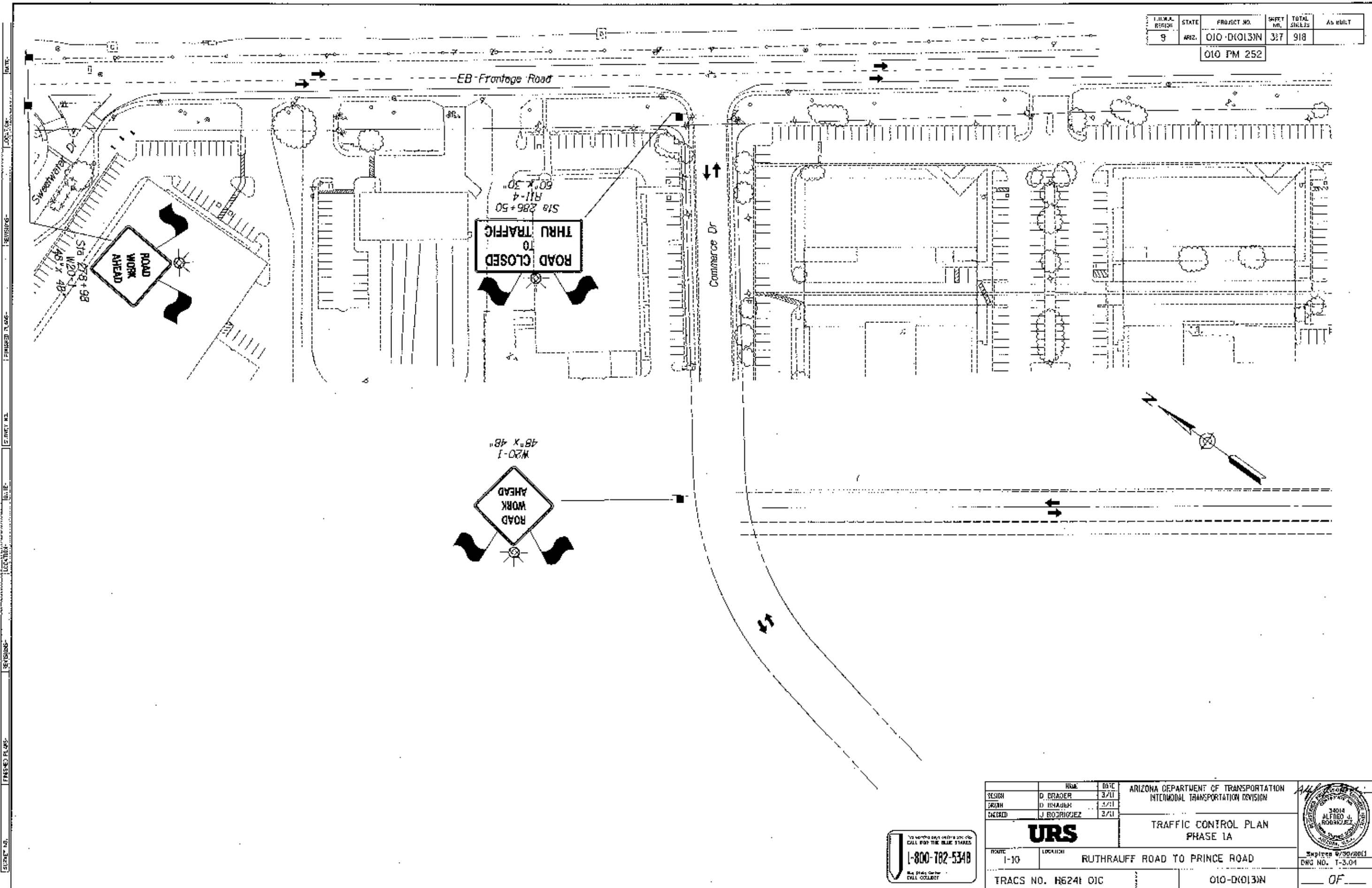
F.H.W. HIGHER	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	316	918	
010 PM 252					



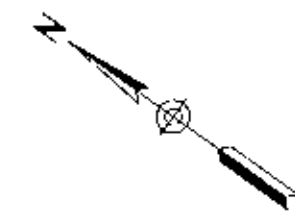
- Notes:
1. Typical traffic control set up for north & south crossover construction and is typical for EB & WB I-10
 2. Typical similar traffic control for frontage road and ramp widening.

DESIGN	NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	D. BRADY	3/11	
CHECKED	J. ROYER	3/11	
URS			TRAFFIC CONTROL PLAN TYPICAL CROSSOVER CONSTRUCTION
TITLE	LOCATION	RUTHLAUFF ROAD TO PRINCE ROAD	
TRACS NO. H6241 OIC		010-D(013)N	OF

FEDERAL REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	OJO-D(013)N	317	918	
010 PM 252					



REVISIONS: FINISHED PLANS COUNTY NO. DATE LOCATION REVISIONS PLANS PLANS SUPER NO.

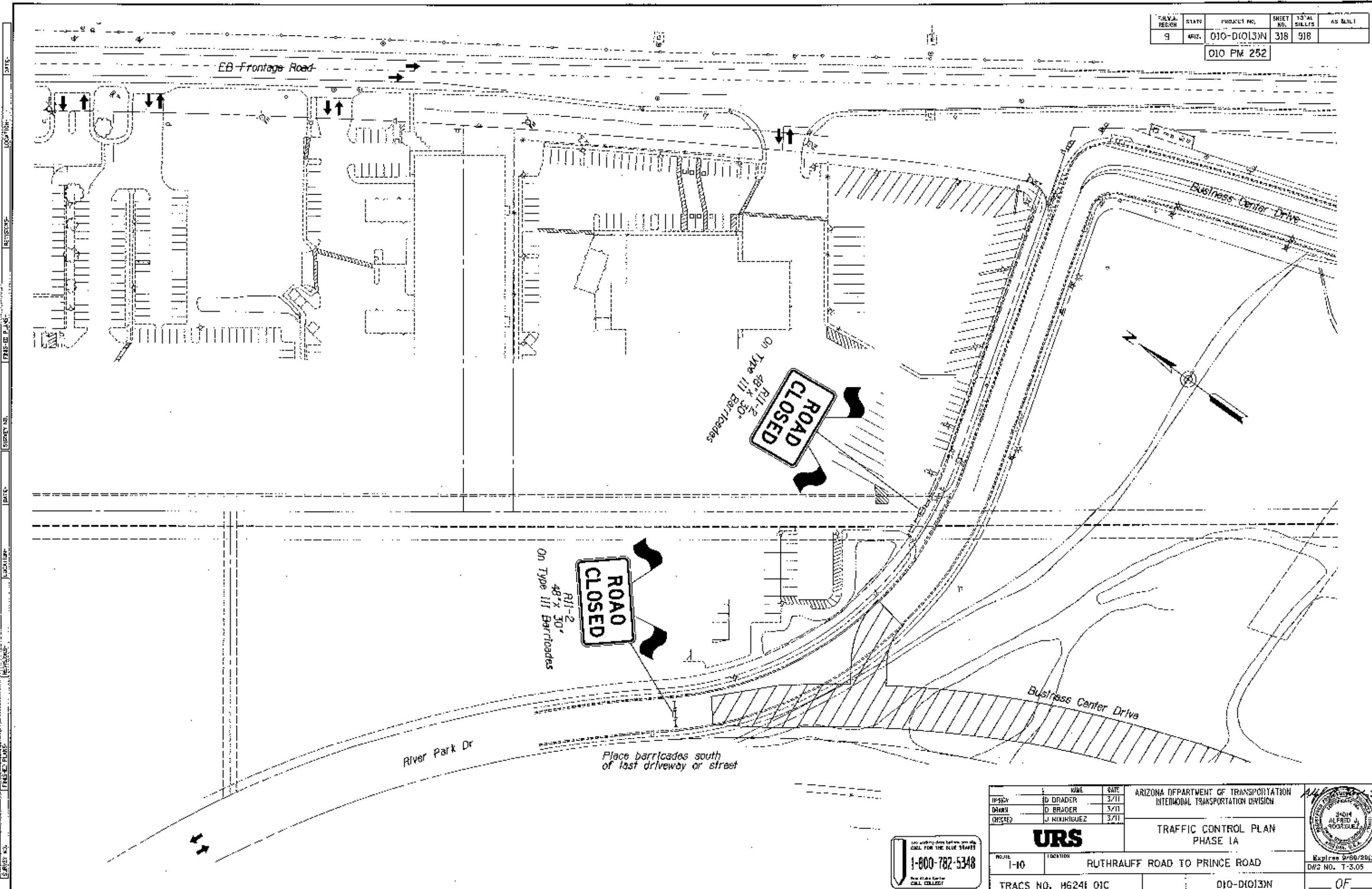


DESIGN: D. BRADER DRAWN: D. BRADER CHECKED: J. RODRIGUEZ		NAME: D. BRADER DATE: 3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 1A	
ROUTE: I-10 LOCATION: RUTHRAUFF ROAD TO PRINCE ROAD		TRACES NO. H6241 OJC OJO-D(013)N OF		

To verify any and all data call for the blue stars
1-800-782-5348
 The Plans Center
 CALL COLLECT

FED. ROAD DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D1013N	318	918	

010 FM 252



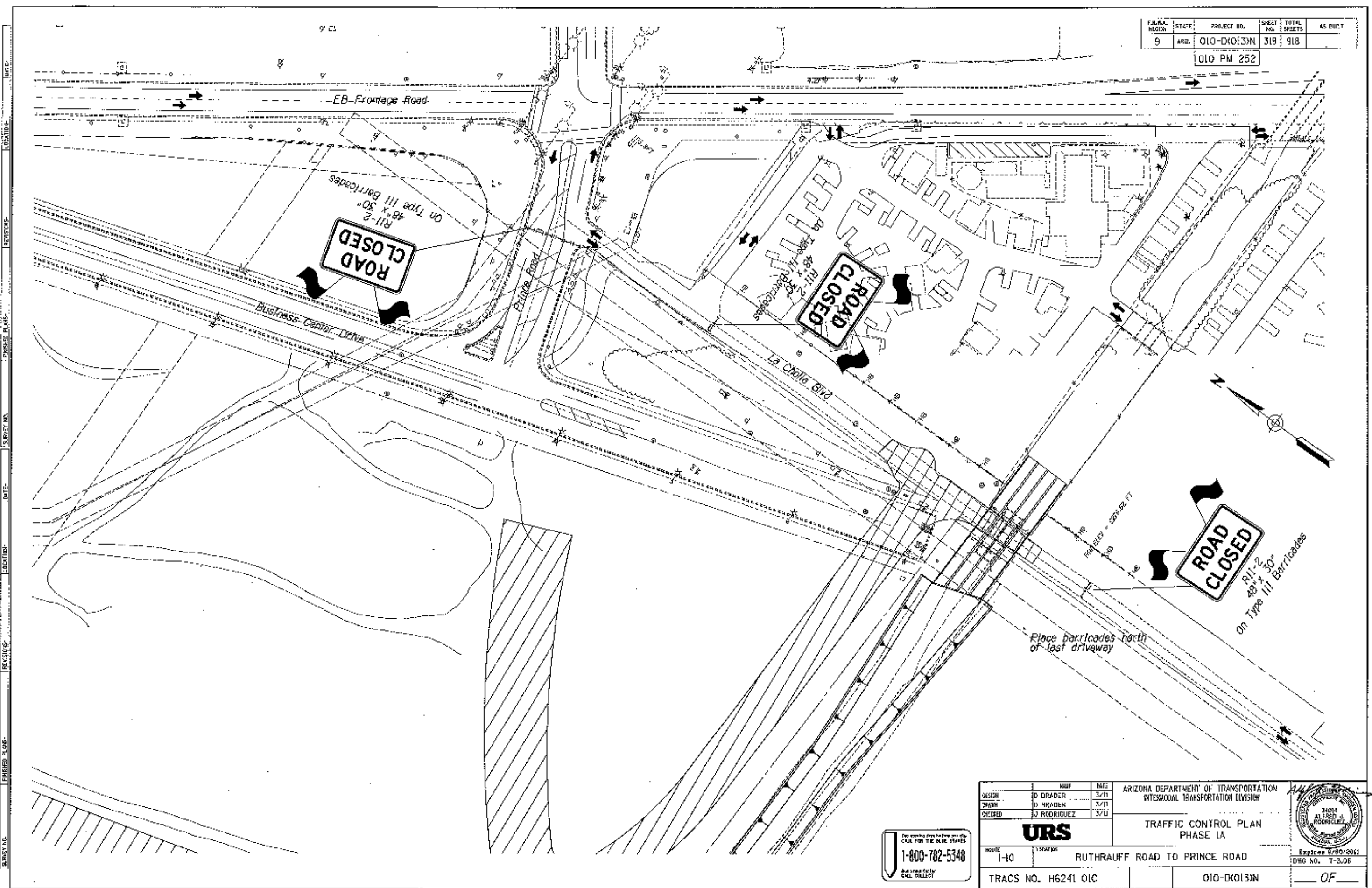
DATE: _____
 LOCATION: _____
 SURVEY NO.: _____
 DATE: _____
 PROJECT NO.: _____
 DATE: _____

NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DESIGNED BY: D. BRADDER	3/11		TRAFFIC CONTROL PLAN PHASE 1A
DRAWN BY: D. BRADDER	3/11		
CHECKED BY: J. NIXQUIBUEZ	3/11		
URS		PROJECT NO. 1-10 LOCATION RUTHAUFF ROAD TO PRINCE ROAD	
TRACS NO. H624I 01C		PROJECT NO. 010-D1013N	
		DWG NO. T-3.05	

1-800-782-5348
 CALL COLLECT

FED. ROAD DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-DK013N	319	918	

010 PM 252



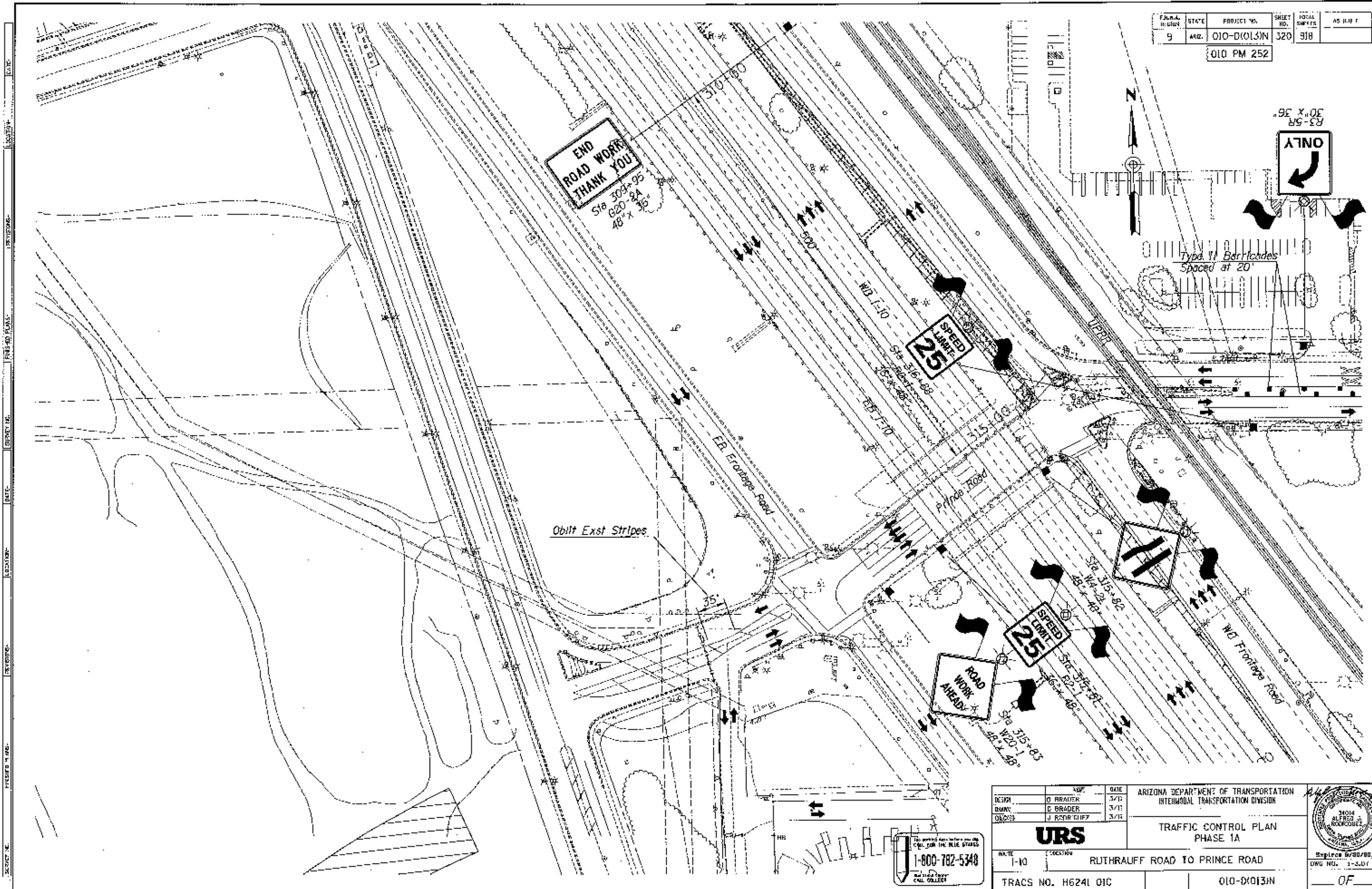
DATE: _____
 SURVEY NO.: _____
 FINISHED PLANS: _____
 REVISIONS: _____
 LOCATION: _____
 SCALE: _____

DESIGN	JD DRADER	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DRAWN	JD DRADER	DATE	3/11		
CHECKED	JJ RODRIGUEZ	DATE	3/11		
URS				TRAFFIC CONTROL PLAN PHASE 1A	
ROUTE	1-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H6241 OIC			010-DK013N		OF _____

Do not work from this plan until you have
 checked for the blue stars
1-800-782-5348
 Do not work from this plan until you have
 checked for the blue stars



PLAN NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	320	318	
010 PM 252					



END ROAD WORK
THANK YOU
Sta 303+95
620-24
48" X 36"

SPEED LIMIT
25

SPEED LIMIT
25

ROAD WORK
AHEAD

NO
LEFT TURN

Type 11 Barricades
Spaced at 20'

Obilt Exst Stripes

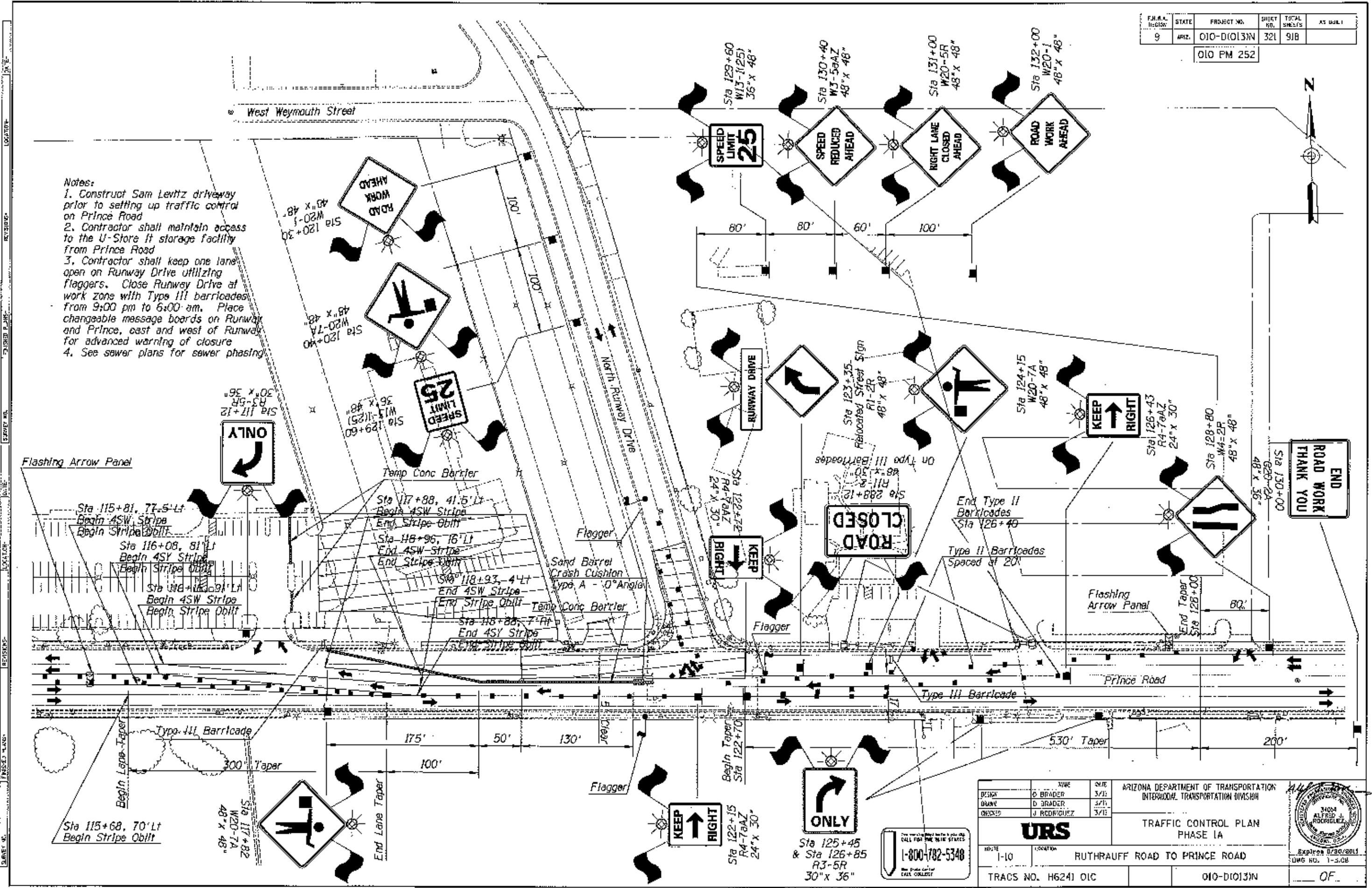
REVISIONS: LOCATION: DATE: SURVEY NO.: FILED PLANS: LOCATION: SURVEY NO.:

DESIGN	D BRADER	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 1A	
DRAWN	D BRADER	3/11		
CHECKED	J ROHR GUY	3/11		
DATE	1-10	SECTION	RUTHRAUFF ROAD TO PRINCE ROAD	Expire 9/30/2011 DWG NO. 1-3.D1
TRACS NO. H6241 01C			010-D(013)N	OF

1-800-782-5348
CALL COLLECT

F.H.A. District	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D1013N	321	918	
010 PM 252					

- Notes:
1. Construct Sam Levitz driveway prior to setting up traffic control on Prince Road
 2. Contractor shall maintain access to the U-Store It storage facility from Prince Road
 3. Contractor shall keep one lane open on Runway Drive utilizing flaggers. Close Runway Drive at work zones with Type III barricades from 9:00 pm to 6:00 am. Place changeable message boards on Runway and Prince, east and west of Runway for advanced warning of closure
 4. See sewer plans for sewer phasing



DESIGN	D BRADER	DATE	3/21
DRAWN	D BRADER	DATE	3/21
CHECKED	J RODRIGUEZ	DATE	3/21

URS

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION

TRAFFIC CONTROL PLAN
PHASE 1A

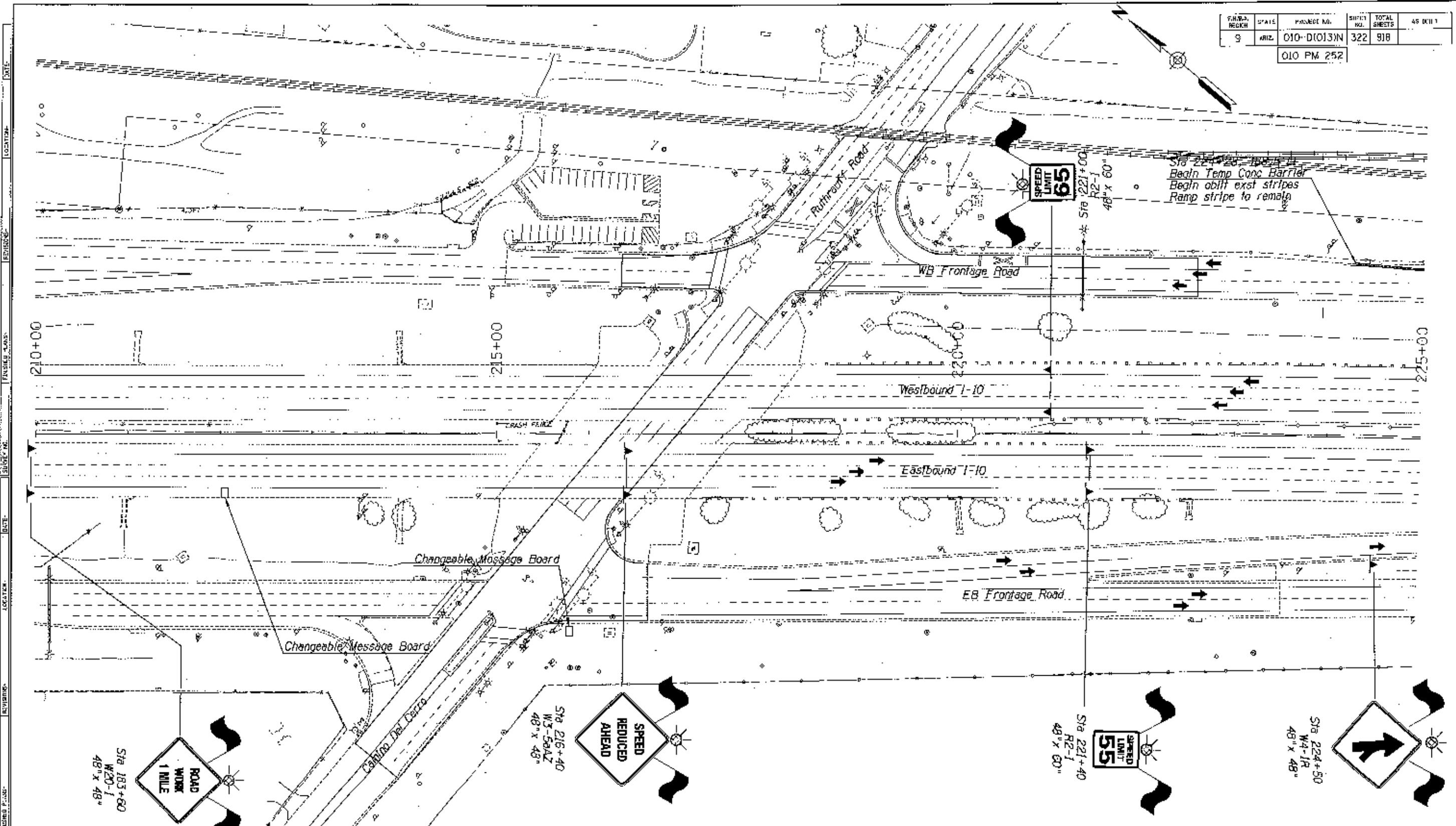
PROJECT: RUTHRAUFF ROAD TO PRINCE ROAD

TRACS NO. H6241 OIC

010-D1013N

OF

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	322	918	
010 PM 252					



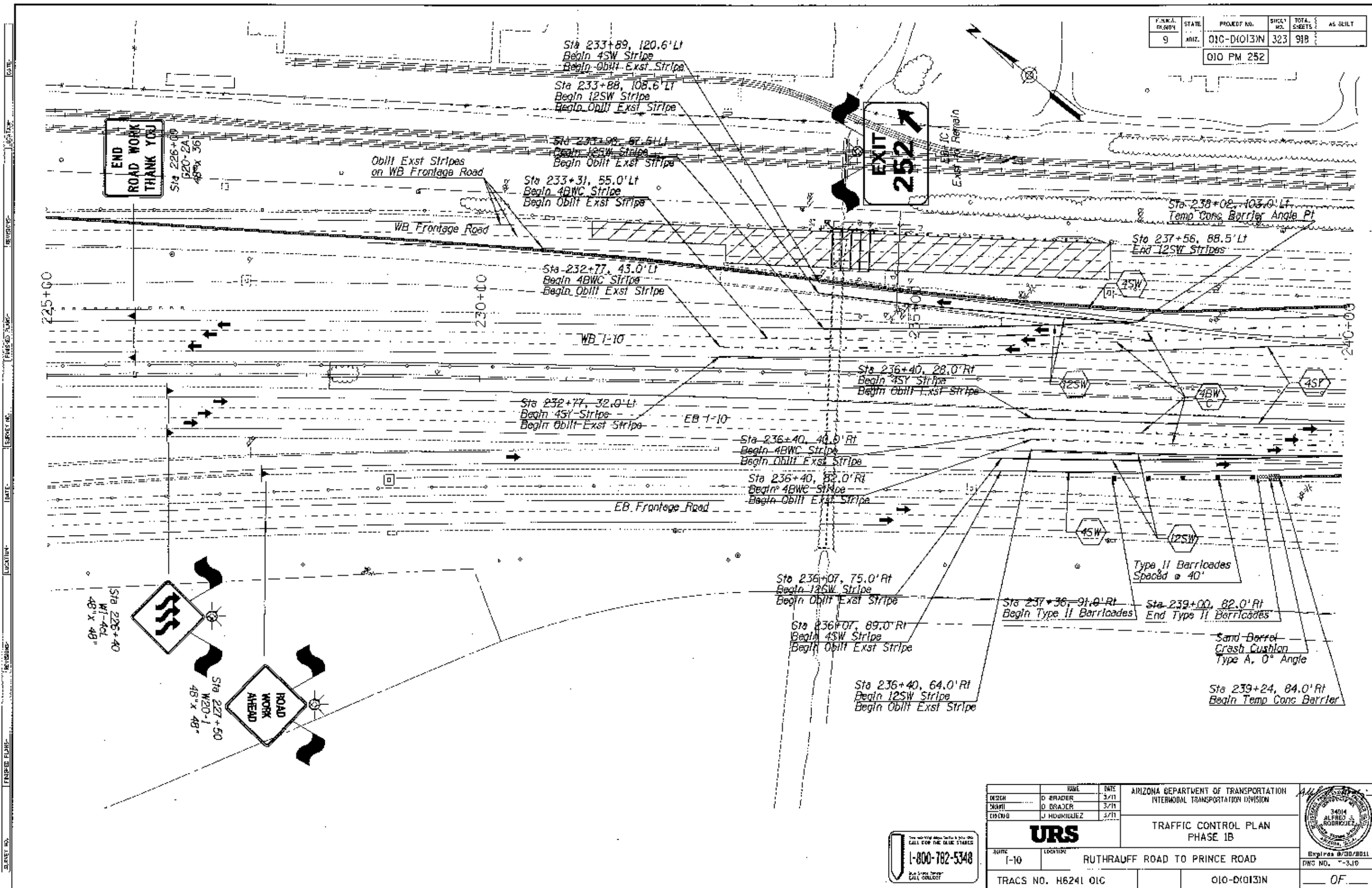
REVISIONS: DATE: LOCATION: REVISIONS: DATE: LOCATION: REVISIONS: DATE: LOCATION: REVISIONS: DATE: LOCATION:

ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION		
URS TRAFFIC CONTROL PLAN PHASE (B)		
PROJECT: I-10 LOCALITY: RUTHRAUFF ROAD TO PRINCE ROAD	TRACS NO. H6241 01C	PROJECT NO. 010-D10131N SHEET NO. 322 OF 918

The markings shown on this plan shall be used as shown unless otherwise noted.
 CALL FOR THE BLUE STATES
1-800-782-5348
 See State Order CALL COLLECT

F.S.N.A. NUMBER	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D1013N	323	918	

010 PM 252

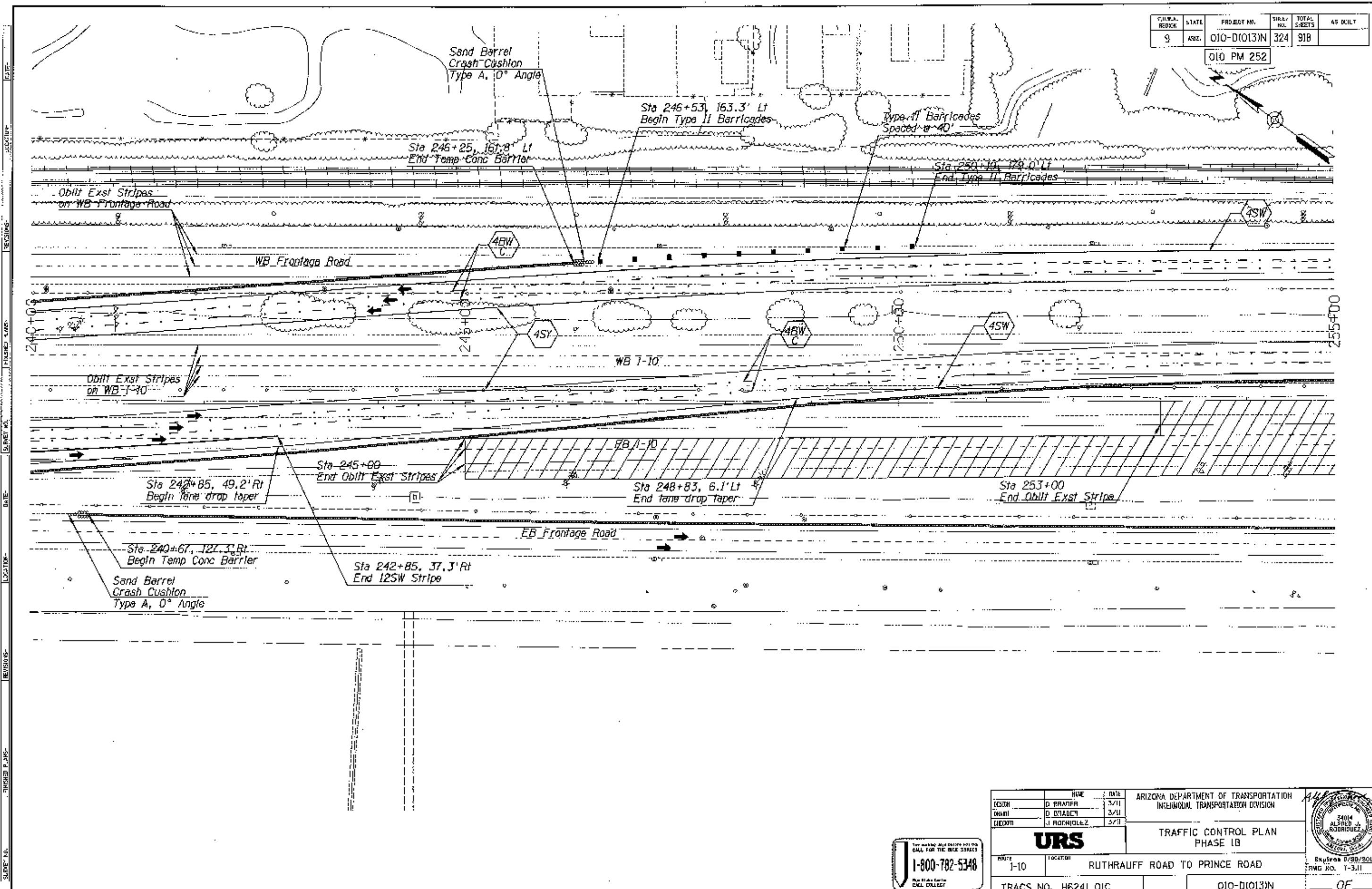


DESIGN	D BRADER	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 1B	
DRAWN	D BRADER	DATE	3/11		
CHECKED	J HERRERA	DATE	3/11		
ROUTE	I-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD		Expires 8/30/2011
TRACS NO.	H6241 OIC		010-D1013N		DWS NO. 1-319

1-800-782-5348

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	AZ	010-D10131N	324	918	

010 PM 252

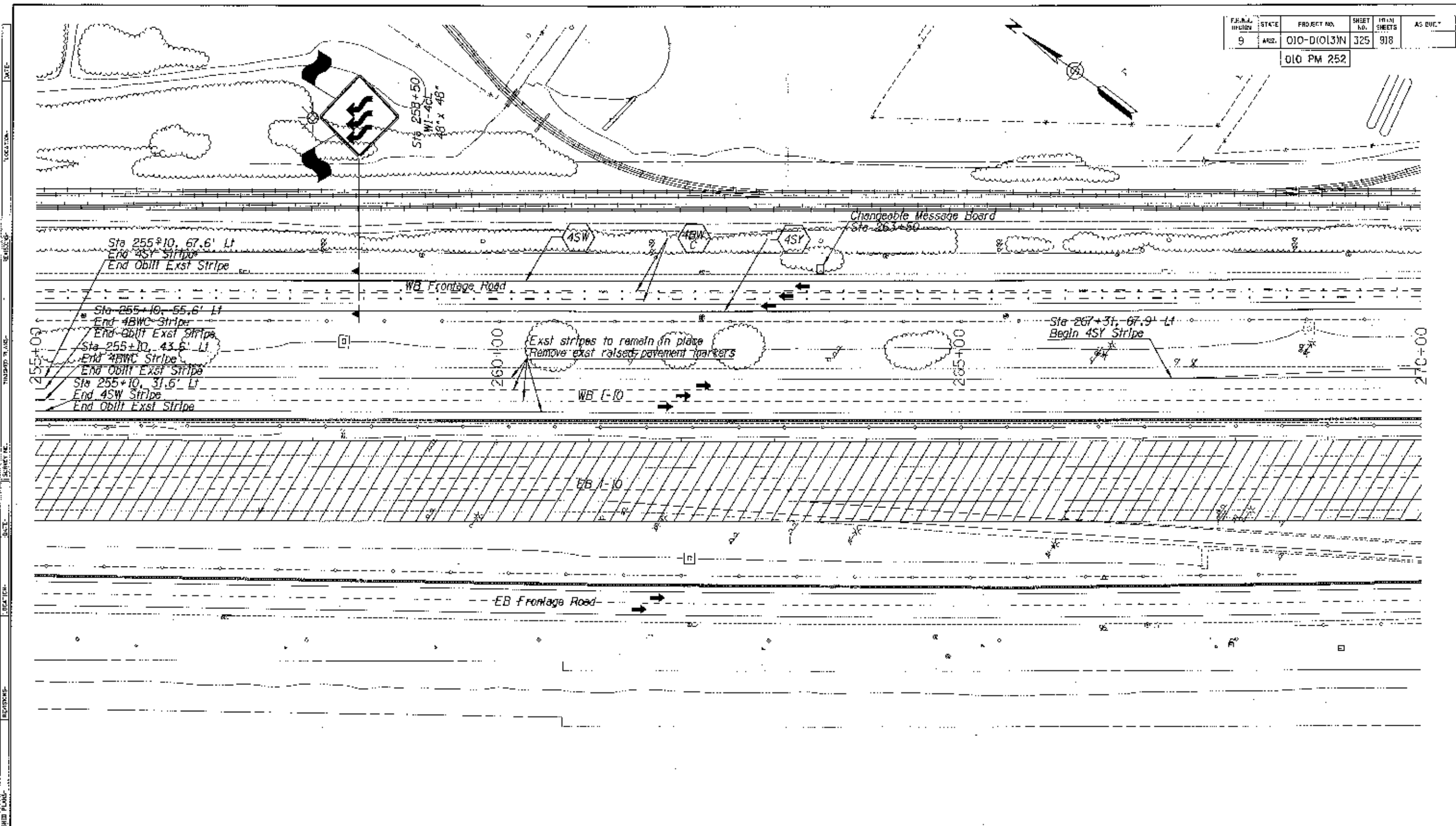


DESIGNER	D. BRADY	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTEGRAL TRANSPORTATION DIVISION
DRAWN	D. BRADY	DATE	3/11	
CHECKED	J. ROCHOLEZ	DATE	3/11	
URS				TRAFFIC CONTROL PLAN PHASE 1B
PROJECT	1-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD	Engineer: P/SB/SOL PRG NO. 1-3.11
TRACS NO.	H6241 OIC	PROJECT NO.	010-D10131N	OF



FED. AID DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	325	918	

010 PM 252



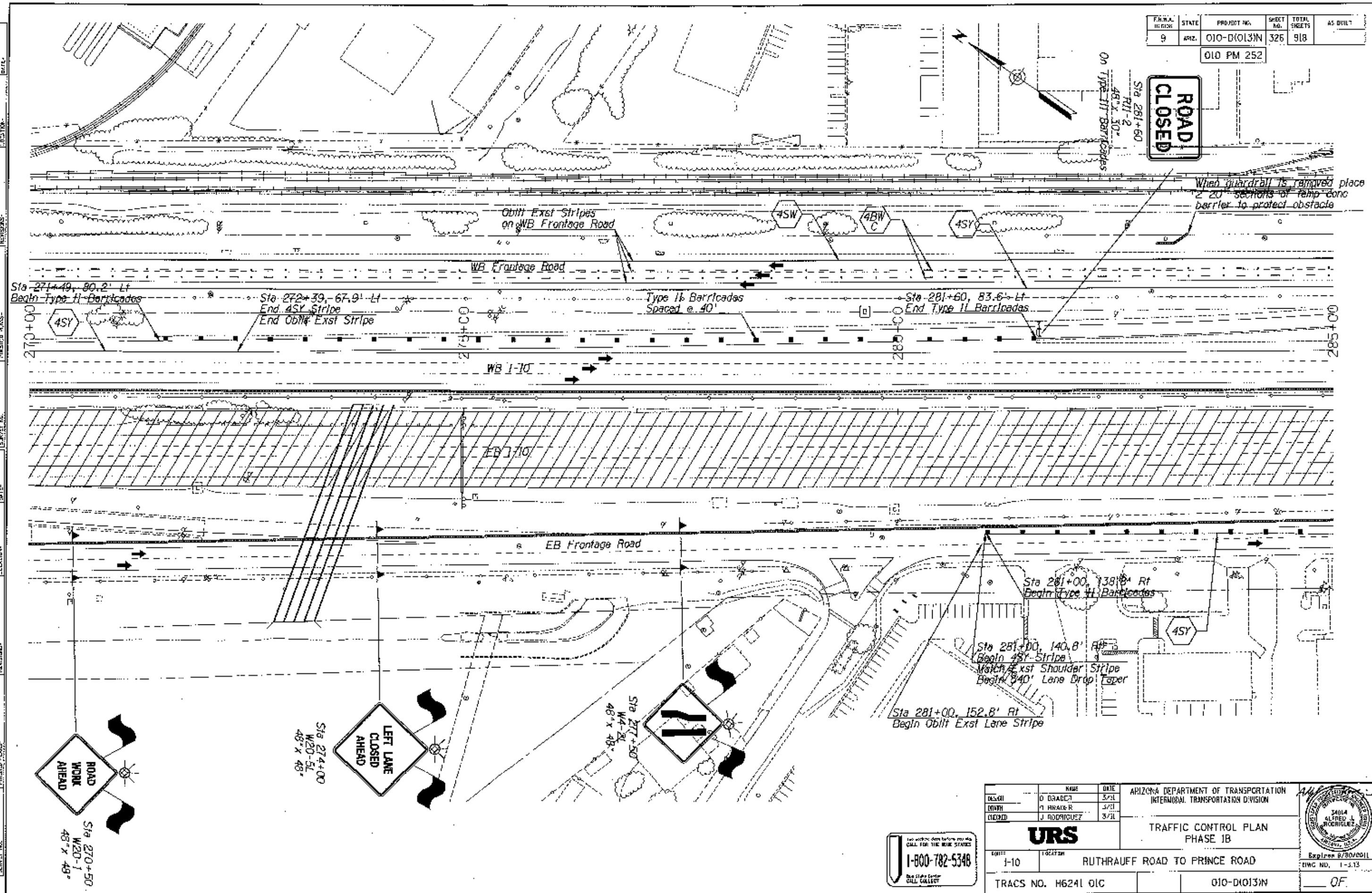
SHEET NO. 325 OF 918
 PROJECT NO. 010-D(013)N
 STATE ARIZ.
 DATE 3/31/2011
 DRAWN BY brian_revaslootf



DESIGNER	U SHAHJH	DATE	3/21	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	D BRADCR	DATE	3/21	
CHECKED	J ROHMIGUSZ	DATE	3/21	
URS			TRAFFIC CONTROL PLAN PHASE 1B	
ROUTE	RUTHRAUFF ROAD TO PRINCE ROAD			
TRACS NO.	H6241 OJC	PROJECT NO.	010-D(013)N	SHEET NO. OF

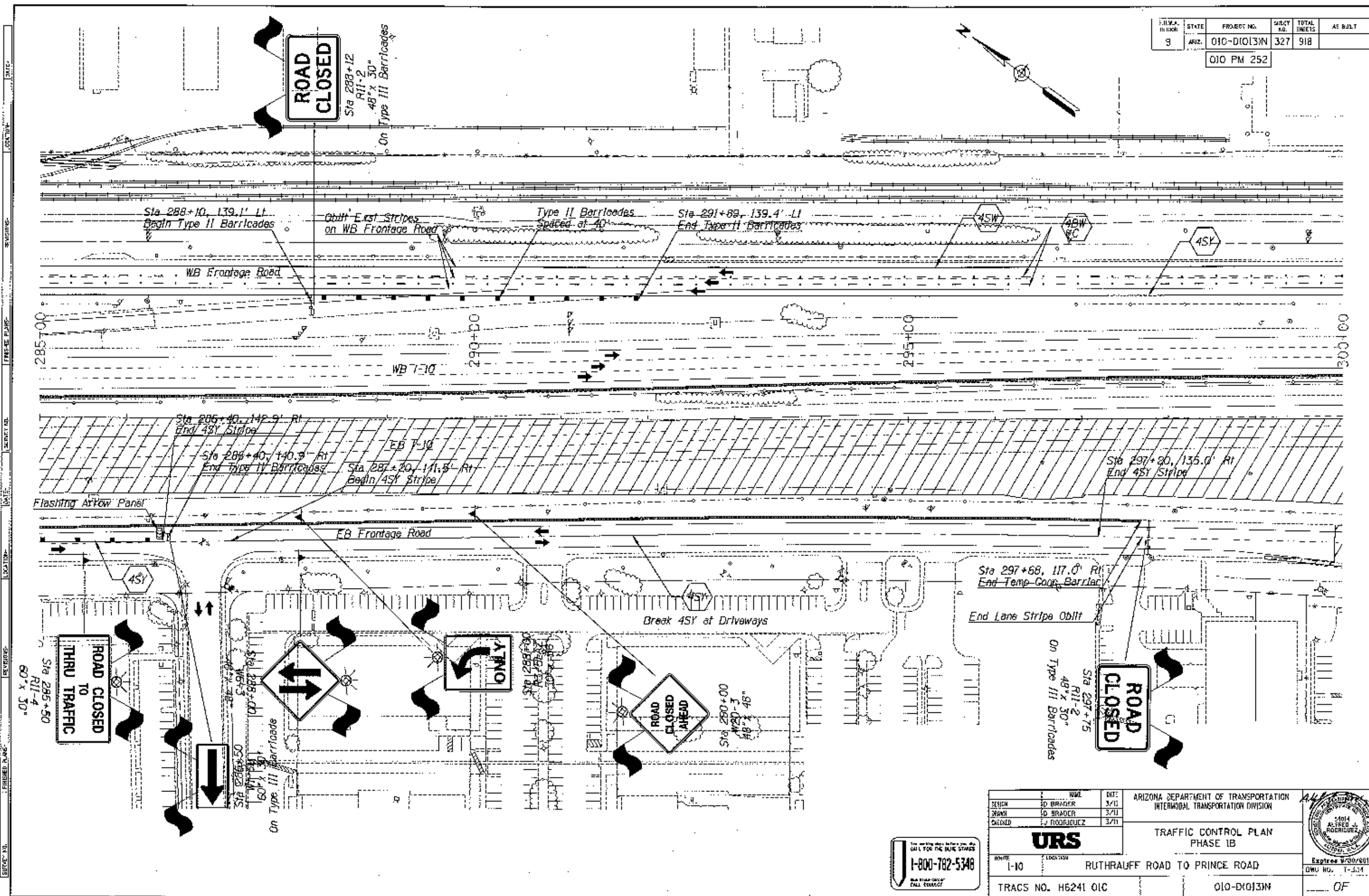


FED. AID DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	326	918	
010 PM 252					



<table border="1"> <tr> <th>DESIGN</th> <th>NAME</th> <th>DATE</th> </tr> <tr> <td>DESIGN</td> <td>D BRADY</td> <td>3/21</td> </tr> <tr> <td>DRAWN</td> <td>T BRADY</td> <td>3/21</td> </tr> <tr> <td>CHECKED</td> <td>J RODRIGUEZ</td> <td>3/21</td> </tr> </table>		DESIGN	NAME	DATE	DESIGN	D BRADY	3/21	DRAWN	T BRADY	3/21	CHECKED	J RODRIGUEZ	3/21	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION		
DESIGN	NAME	DATE														
DESIGN	D BRADY	3/21														
DRAWN	T BRADY	3/21														
CHECKED	J RODRIGUEZ	3/21														
		TRAFFIC CONTROL PLAN PHASE 1B														
TRACS NO. H6241 01C		RUTHRAUFF ROAD TO PRINCE ROAD		Expires 8/30/2011 DWG NO. 1-513												

F.I.M.A. BLOCK	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	327	918	
010 PM 252					



DESIGN	JD BRADER	DATE	3/15
DRAWN	JD BRADER	DATE	3/11
CHECKED	EJ RODRIGUEZ	DATE	3/11

URS

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION

TRAFFIC CONTROL PLAN
PHASE 1B

PROJECT: I-10 RUTHLAUFF ROAD TO PRINCE ROAD

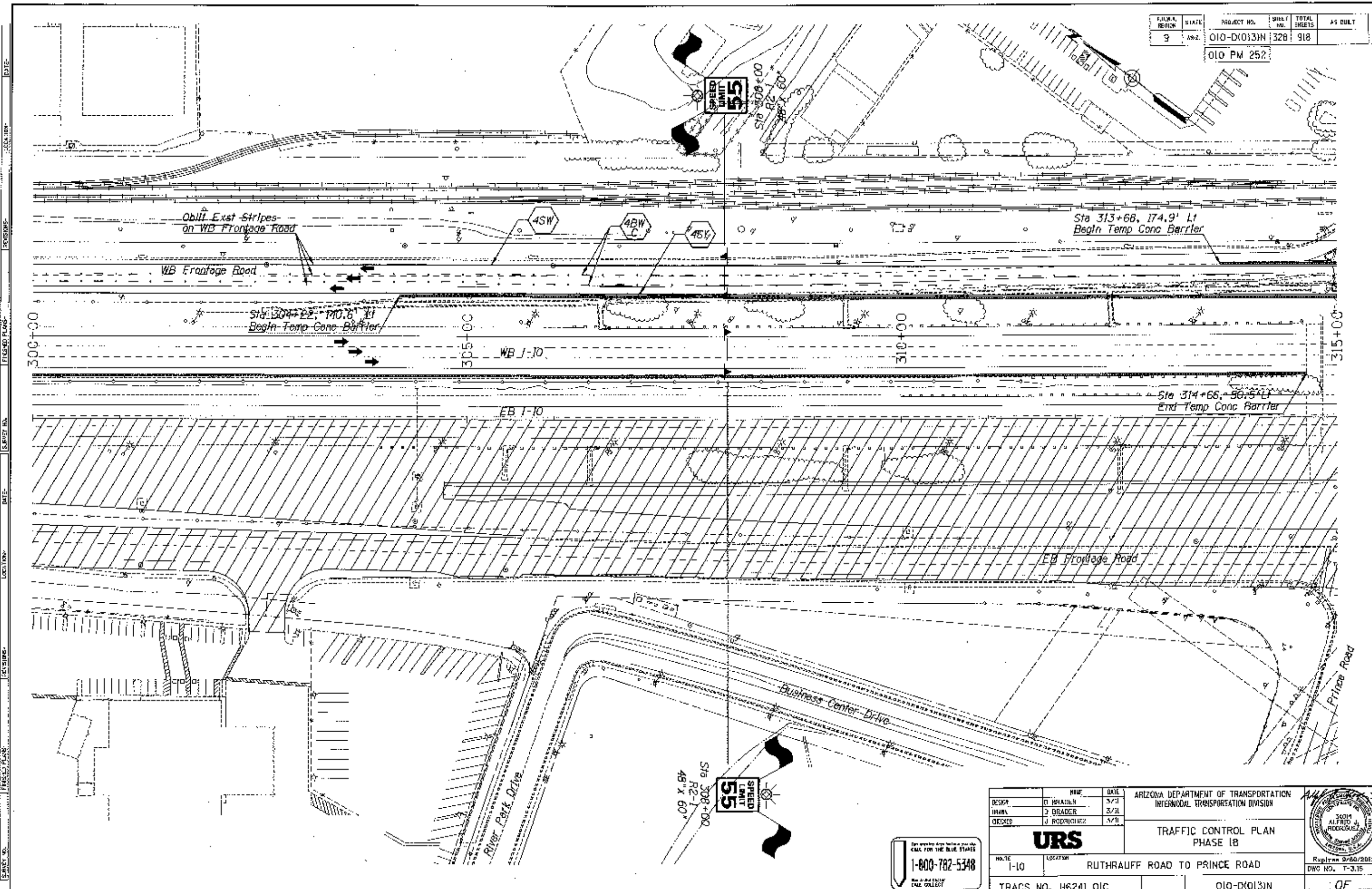
TRACS NO. H6241 01C

010-D10131N

Expire 9/30/2011
DWG NO. T-3.1

OF

FED. ROAD DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARZ.	010-D(013)N	328	918	
010 PM 252					

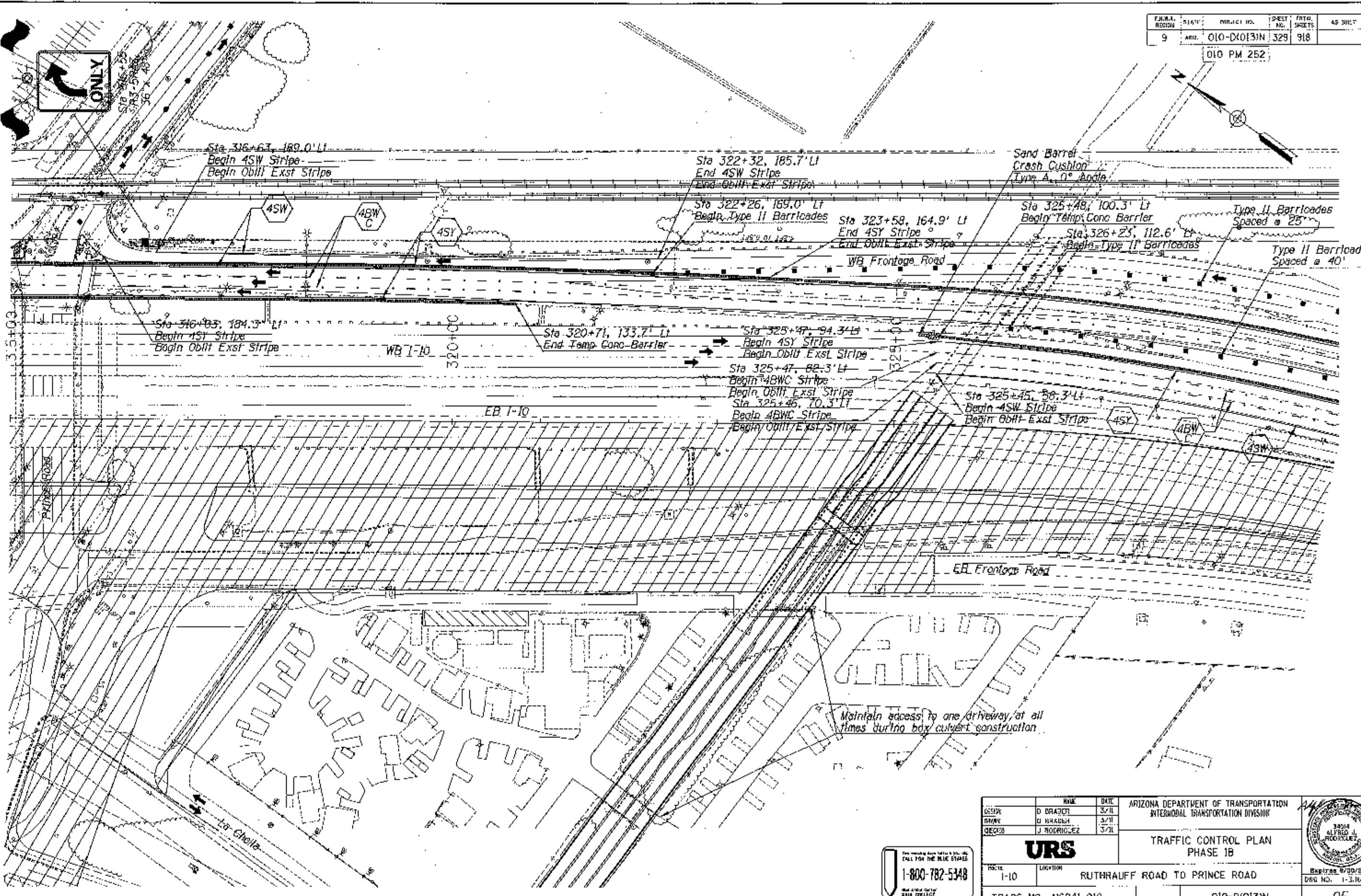


DESIGN		DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 1B RUTHRAUFF ROAD TO PRINCE ROAD TRACS NO. H6241 OIC	
DRAWN		DATE		
CHECKED		DATE		
DATE		DATE	Reg. Plan 9/30/2001 DWG NO. T-3.15 OF	

1-800-782-5348
 THE ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	DATE
9	ARIZ.	010-D(013)N	329	918	

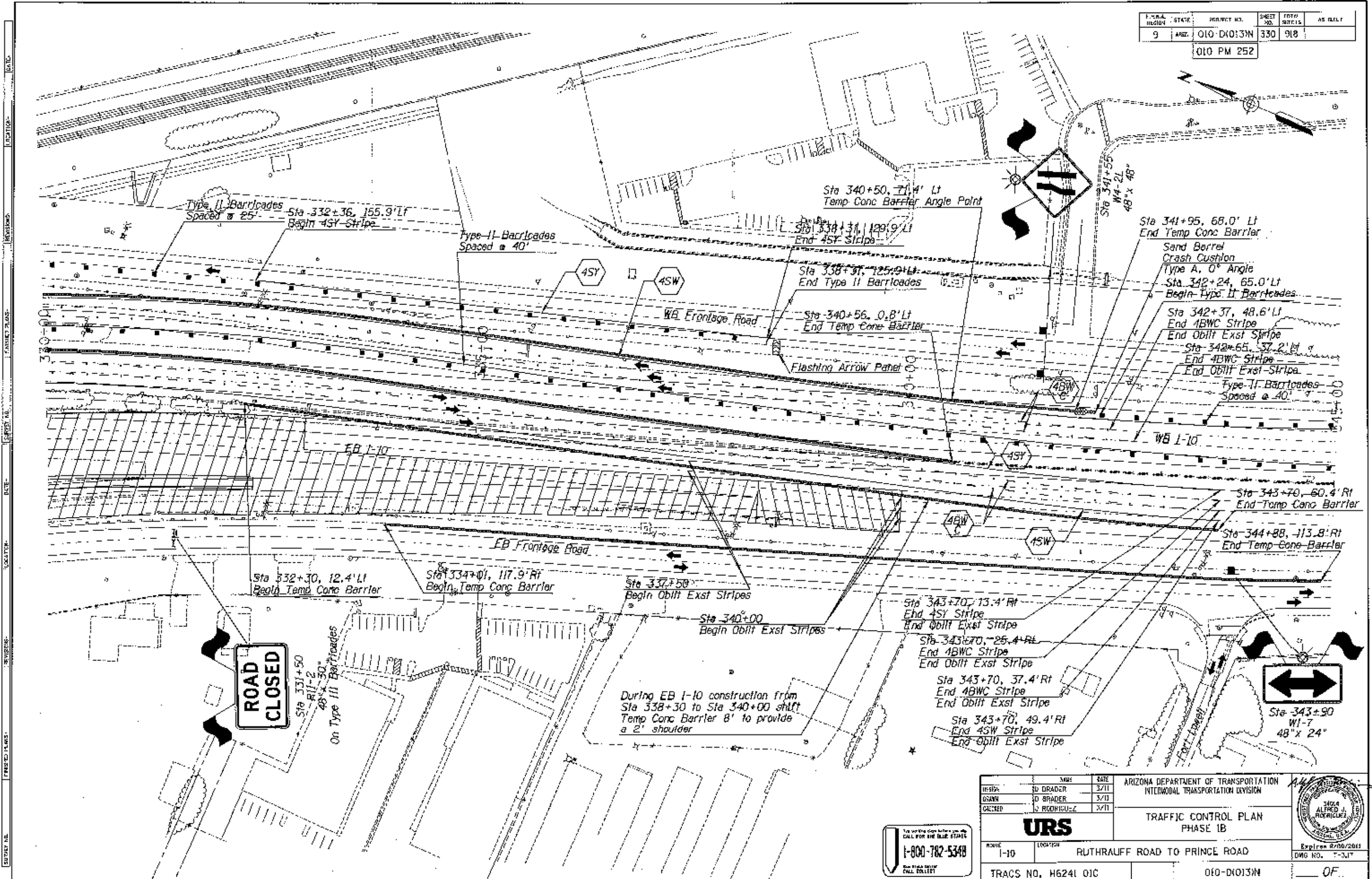
010 PM 252




DESIGNER		NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN		D BRADEN	3/11	
CHECKED		J RODRIGUEZ	3/11	
PROJECT		LOCATION		
ROUTE		LOCATION		Expires 8/30/2011 DWG NO. 1-316
1-10		RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H6241 OIC		010-D(013)N		OF

For more information call 1-800-782-5348
 CALL FOR THE BLUE STAPLES

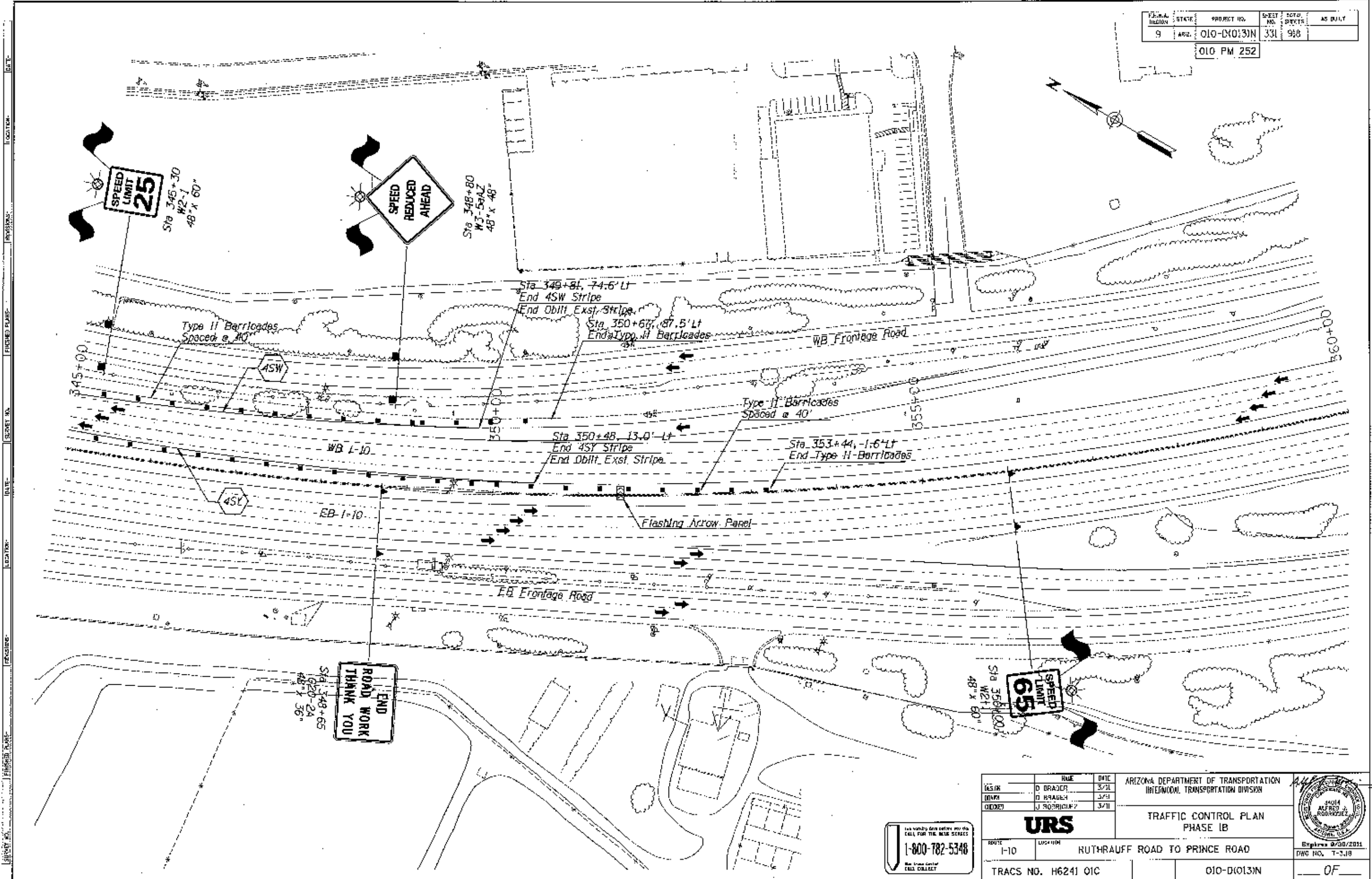
F.S.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	330	918	
010 PM 252					



DESIGNER	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DRW	3/11		
CHECKED	3/11		
DATE	3/11		
PROJECT NO. 010-D10131N		TRAFFIC CONTROL PLAN PHASE 1B	
SHEET NO. 330		DATE 3/11	
TOTAL SHEETS 918		APPROVED BY: ALFRED J. RODRIGUEZ	
AS BUILT		Expires 8/30/2015	
010 PM 252		DWG NO. T-317	
PROJECT NAME: RUTHRAUFF ROAD TO PRINCE ROAD		TRACS NO. H6241 01C	
PROJECT NO. H6241 01C		010-D10131N	
PROJECT NO. H6241 01C		OF	

FED. DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	331	948	

010 PM 252

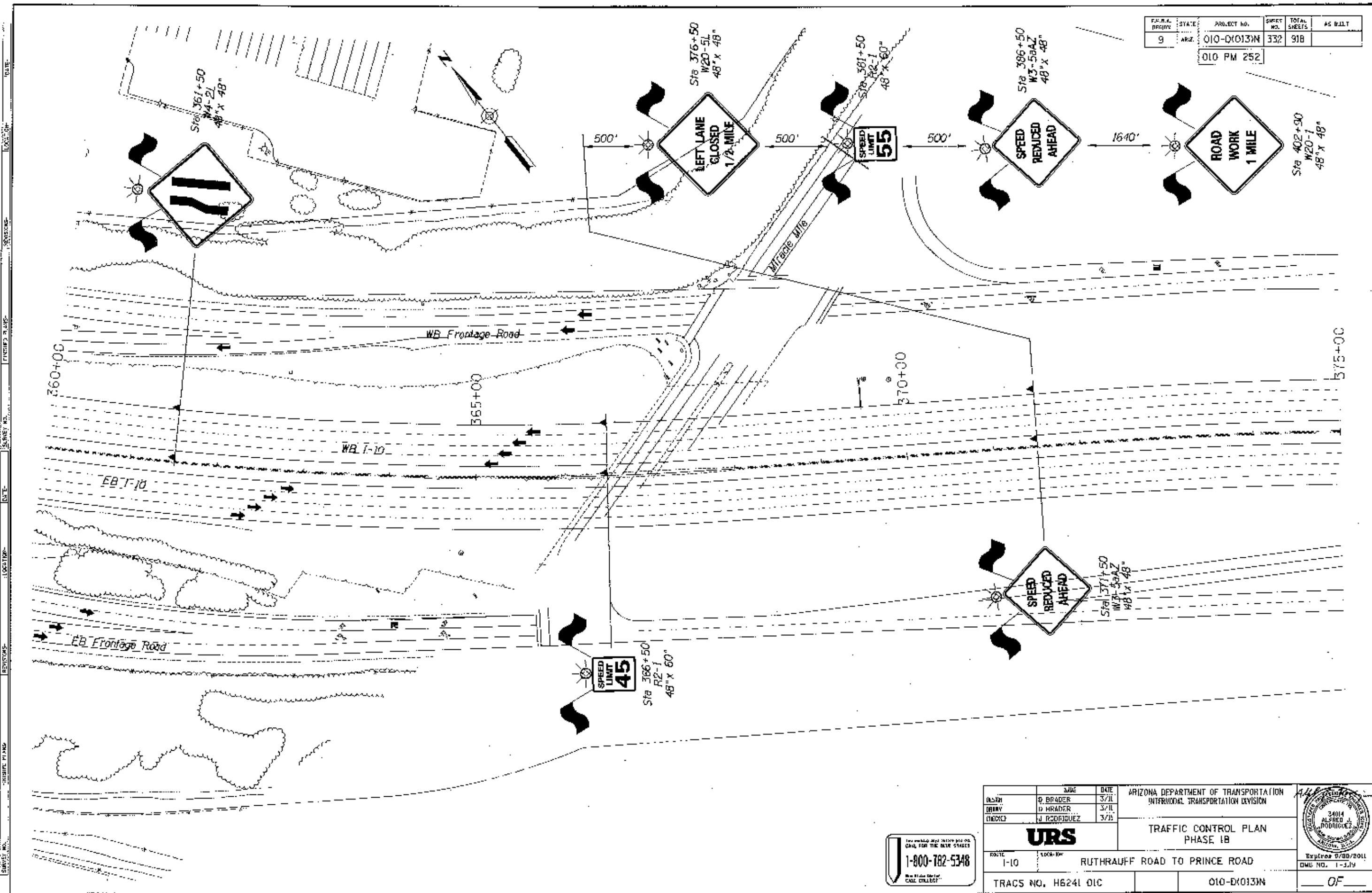


DESIGN		DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DESIGN	D BRADY	3/21		
DESIGN	D BRADY	3/21		
CHECKED		DATE	TRAFFIC CONTROL PLAN PHASE 1B	
ROUTE	LOCATION	Expires 9/30/2011		
I-10	RUTHRAUFF ROAD TO PRINCE ROAD	DWS NO. T-3.18		
TRACS NO. H6241 01C		010-D(013)N		OF

1-800-782-5348
 See User's Manual
 CALL COLLECT

F.A.R.A. PROJ. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	332	918	

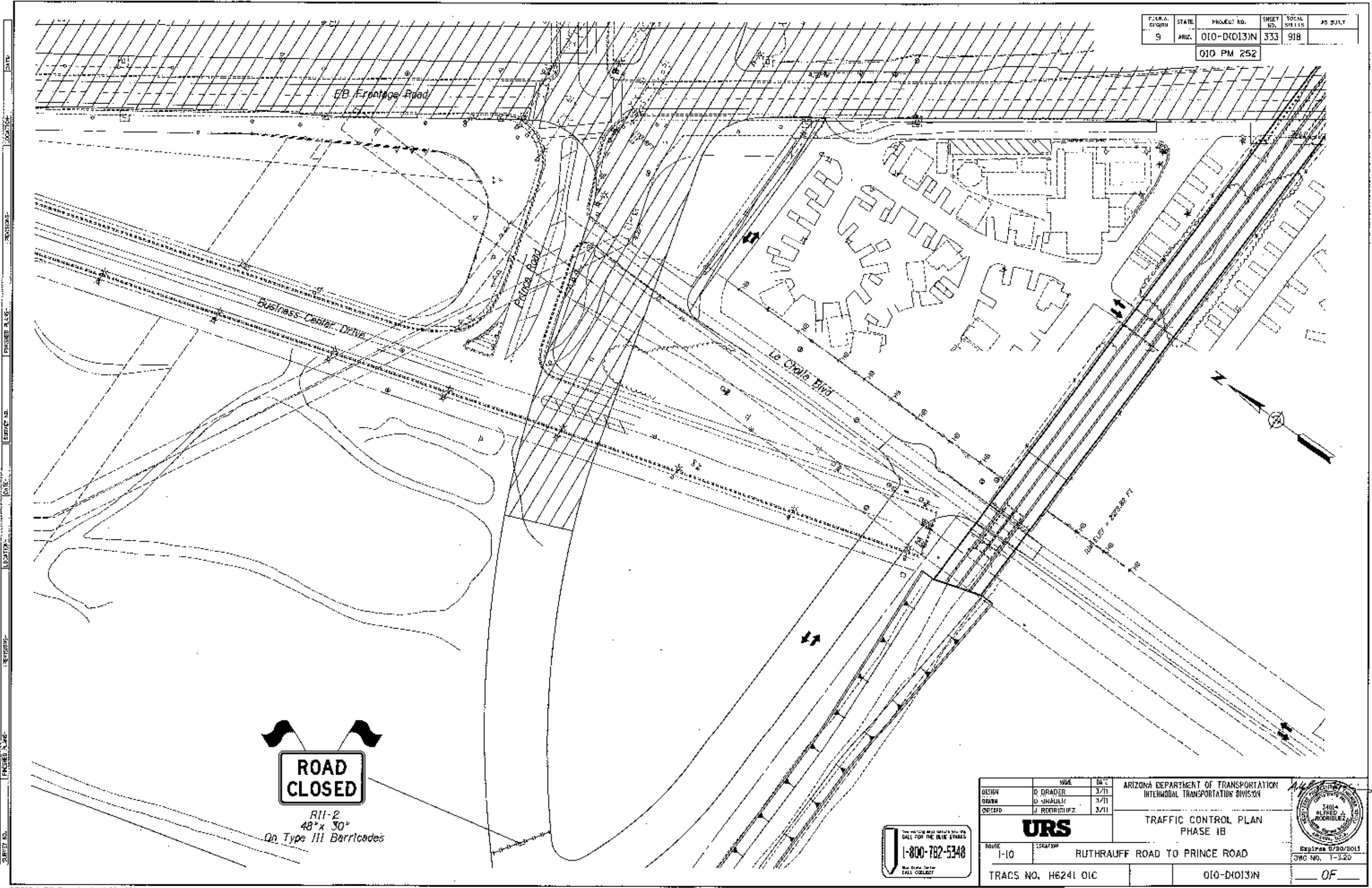
010 PM 252



DESIGN	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DESIGN	3/7/11		
CHECKED	3/7/11		
URS		TRAFFIC CONTROL PLAN PHASE 1B	
ROUTE	1-10	RUTHRAUFF ROAD TO PRINCE ROAD	
TRACS NO. H6241 01C		010-D(013)N	OF

1-800-782-5348
The State of Arizona
CAG COLLECT

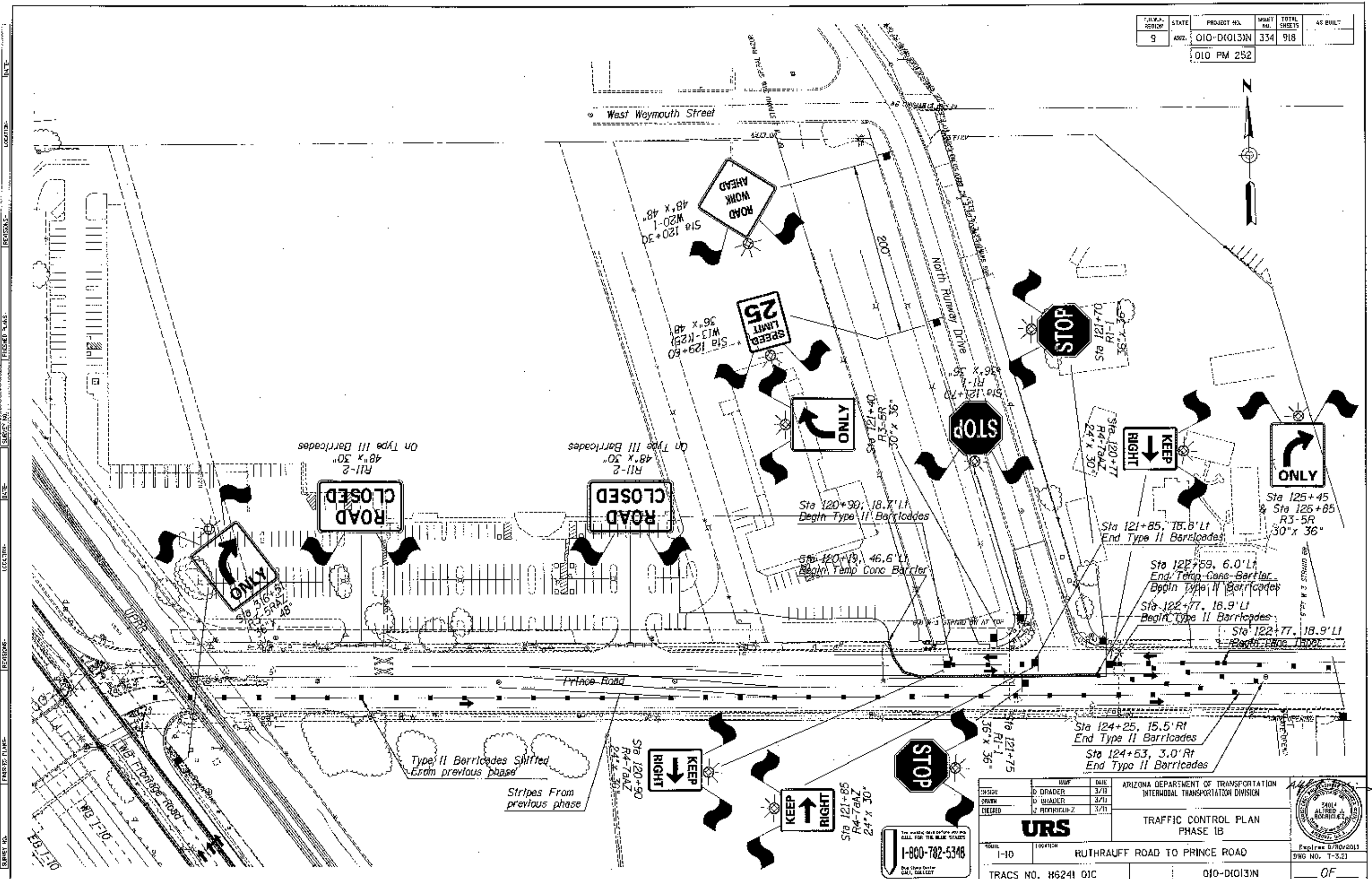
FED. A. DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	DATE
9	ARIZ.	010-D1013N	333	918	010 PM 252



DESIGN	D. DRADER	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	D. JAKULIK	DATE	3/11	
CHECKED	J. RODRIGUEZ	DATE	3/11	
URS				TRAFFIC CONTROL PLAN PHASE 1B
ROUTE	1-10	PROJECT	RUTHAUFF ROAD TO PRINCE ROAD	Expires 9/30/2011 DWG NO. 1-320
TRACS NO. H6241 OIC			010-D1013N	OF

1-800-782-5348
 For more information call collect

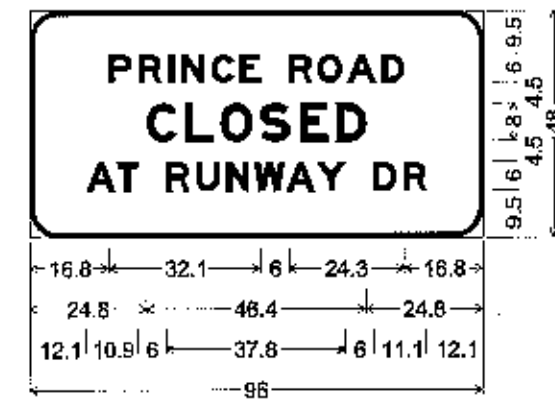
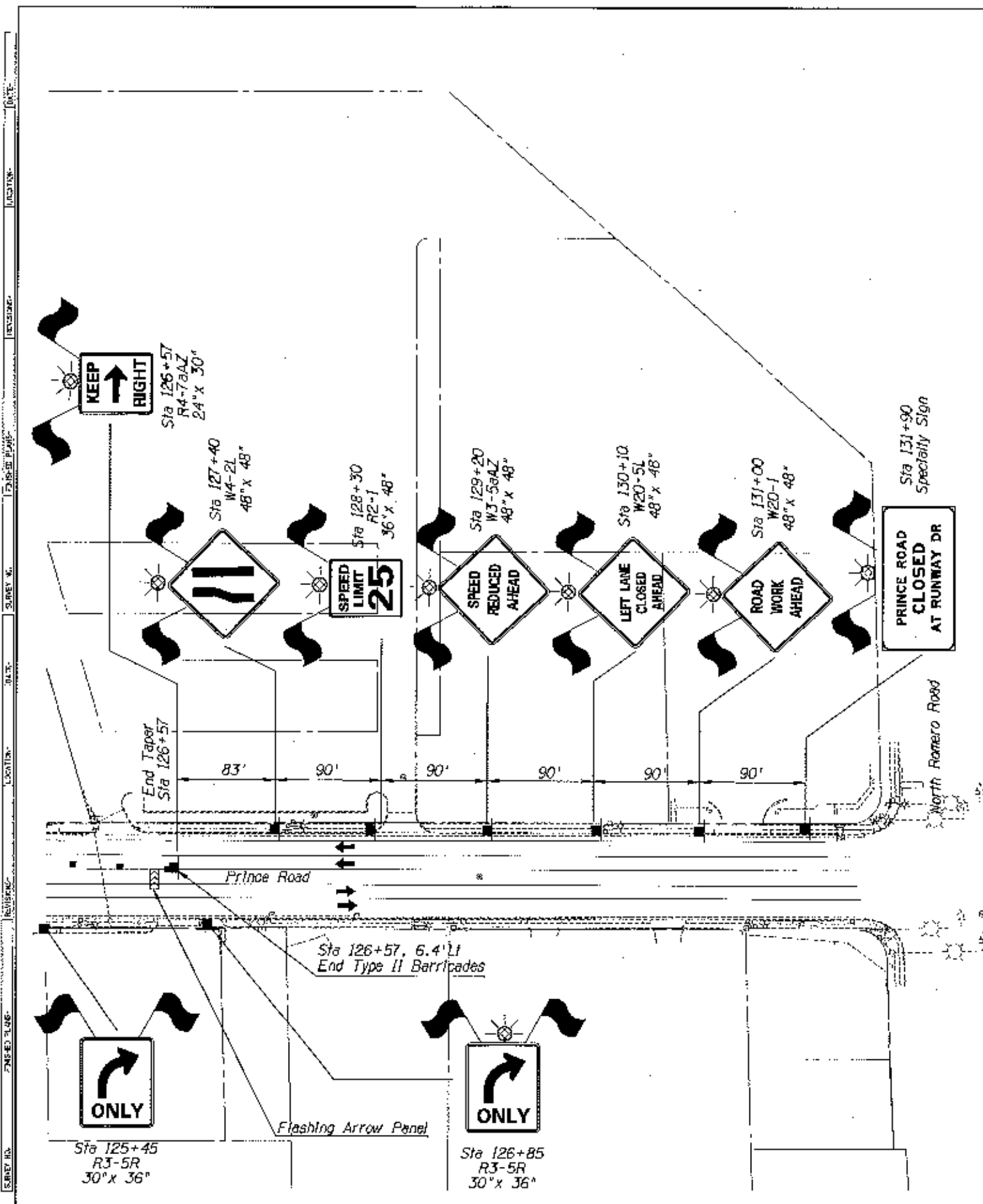
PROJECT NO.	STATE	SHEET NO.	TOTAL SHEETS	AS BUILT
010-D(013)N	9	334	918	
010 PM 252				



URS THE ENGINEERING GROUP 1-800-782-5348 THE QUALITY CONNECTION CALL FOR THE BLUE STRIPES	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC CONTROL PLAN PHASE 1B	
TRACS NO. W6241 01C DATE: 3/31/2011 DRAWN: 3/11 CHECKED: 3/11	LOCATION: RUTHAUFF ROAD TO PRINCE ROAD PROJECT NO.: 010-D(013)N SHEET NO.: 334 OF 918	Prepared 01/09/2011 DWG NO. T-323

FLINKA REGION	SCALE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	335	918	

010 PM 252

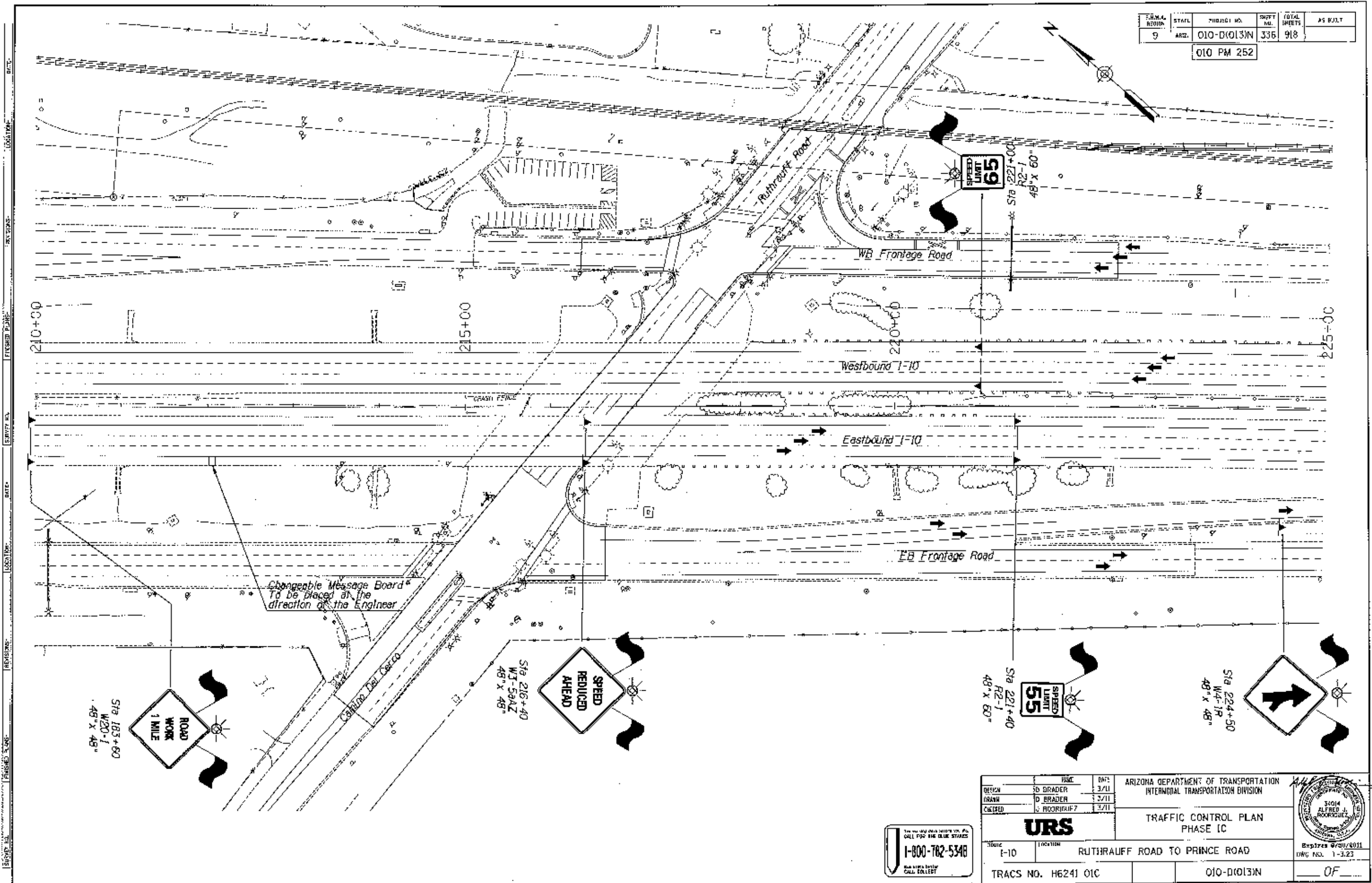


6.0" Radius, 1.0" Border, Black on Orange;
 [PRINCE ROAD] E Mod;
 [CLOSED] E Mod;
 [AT RUNWAY DR] E Mod;

DESIGNER	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	3/21	
CHECKED	3/21	
URS 1-10 TRACS NO. H6241 OJC		TRAFFIC CONTROL PLAN PHASE 1B RUTHAUFF ROAD TO PRINCE ROAD 010-D10131N OF



F.R.M.A. REGION	STAFF	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARZ.	010-D(013)N	336	918	
010 PM 252					

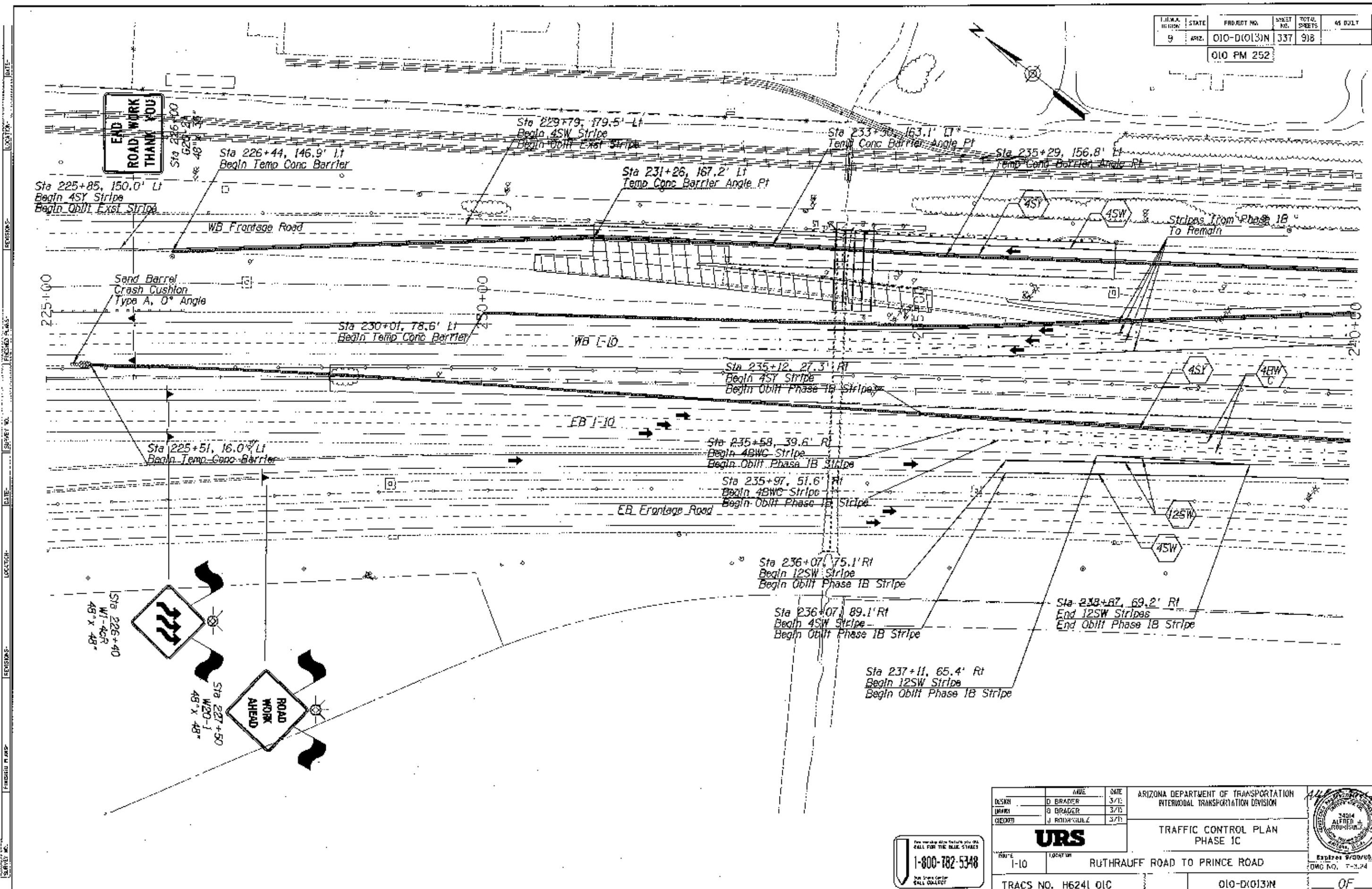


DESIGN	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 1C	
DRAWN	DATE		
CHECKED	DATE		
DATE	LOCATION		
TRACS NO. H6241 01C		010-D(013)N	OF

1-800-762-5348
 CALL FOR THE BLUE STAPLES

FEDERAL DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	337	918	

010 PM 252



DESIGN	D BRADER	DATE	3/11
INFORM	D BRADER	DATE	3/11
CHECKED	J ROBINSON	DATE	3/11

URS

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION

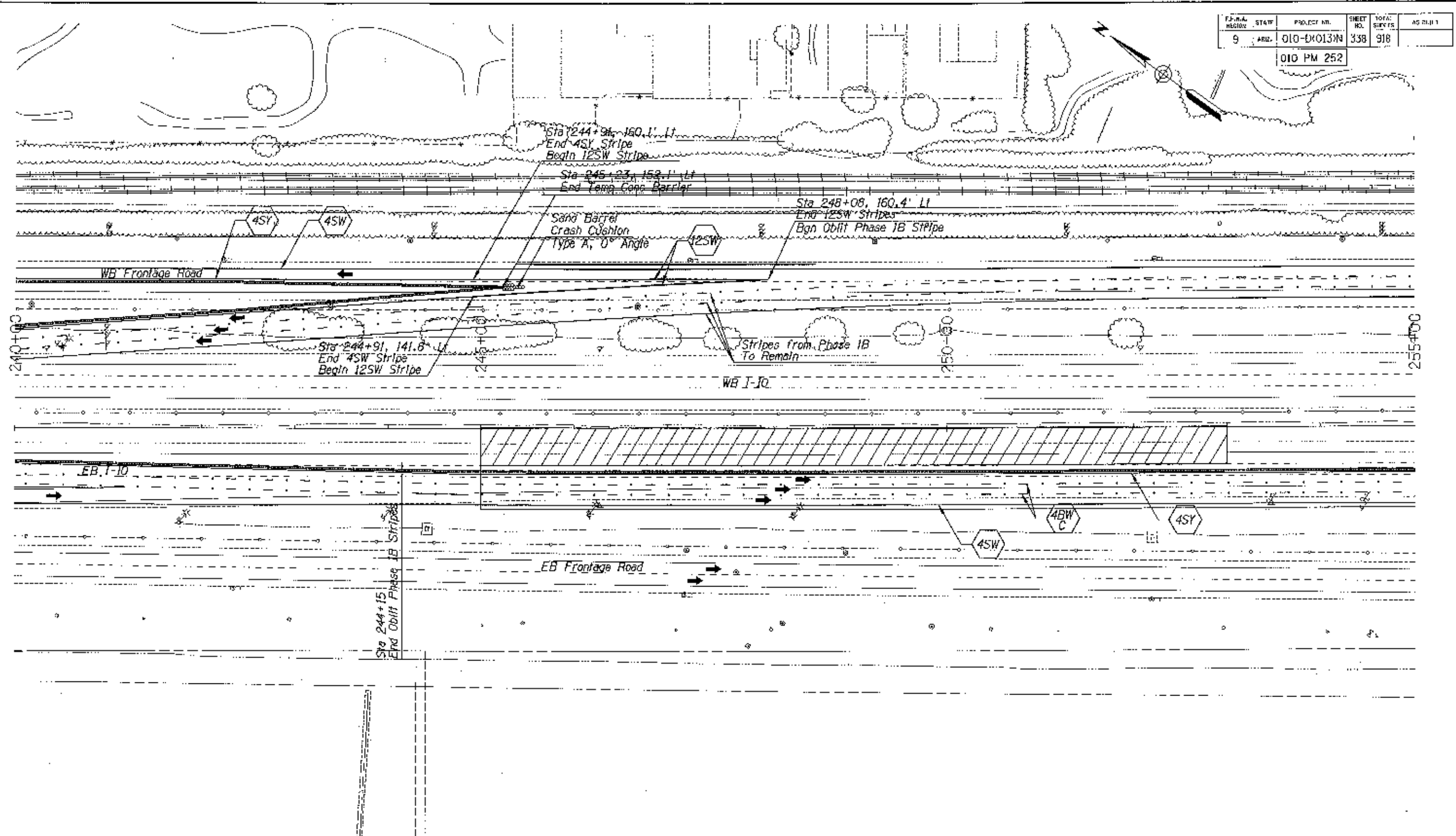
TRAFFIC CONTROL PLAN
PHASE 1C

PROJECT NO. 1-10 LOCATION RUTHRAUFF ROAD TO PRINCE ROAD


TRACS NO. H6241 OIC PROJECT NO. 010-D(013)N

DATE 9/00/0011 DWG NO. 7-3.24

F.P.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	338	918	
010 PM 252					



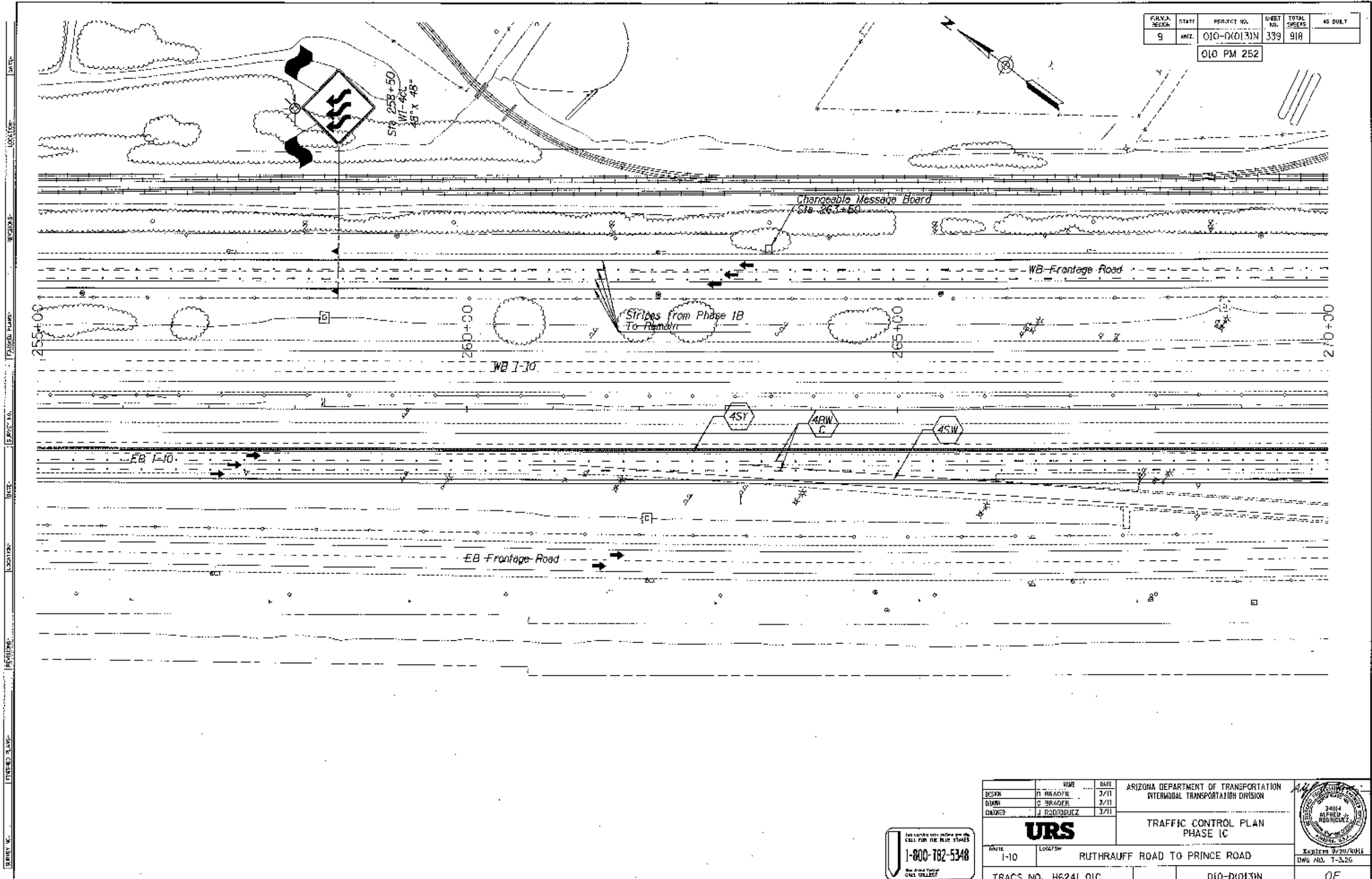
DATE: _____
 REVISIONS: _____
 FINISHED DATE: _____
 SURVEY NO.: _____
 DATE: _____
 LOCATION: _____
 SURVEY NO.: _____
 DATE: _____
 LOCATION: _____
 SURVEY NO.: _____
 DATE: _____
 LOCATION: _____

DESIGN	D. BRADER	DWC	3/7/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION 
DRAWN	D. BRADER	DWC	3/7/11	
CHECKED	C. RODRIGUEZ	DWC	3/7/11	
URS		TRAFFIC CONTROL PLAN PHASE 1C		Expires 8/09/2011 DWC NO. T-325
PROJECT	I-10	LOCALITY	RUTHAUFF ROAD TO PRINCE ROAD	
TRACS NO.	H6241 01C	PROJECT NO.	010-D(013)N	OF



FED. AID REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	339	918	

010 PM 252

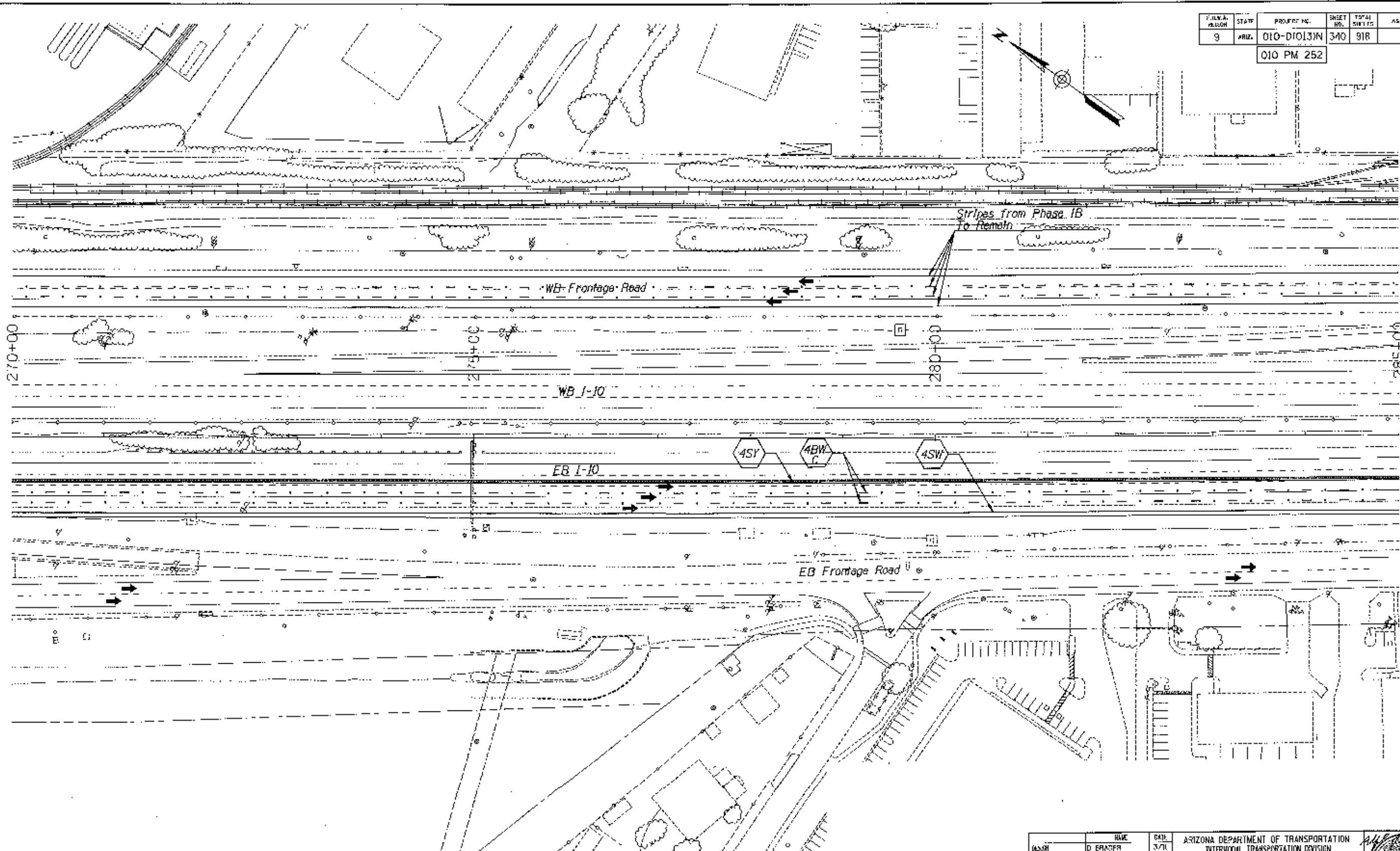


SURVEY M. DATE: LOCATION: REVISIONS: FINISHED PLANS: 15.00' X 11.00'

Use number one on the right side
 CALL FOR THE BLUE STAGES
1-800-782-5348
 No. 1000 Total of
 CALL COLLECT

DESIGN	BY	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 1C	
DRAWN	BY	DATE		
CHECKED	BY	DATE		
ROUTE	LOCATION	TRACS NO, H6241 01C		Expires 8/30/2011 DWG NO. T-3.26
ROUTE: I-10		LOCATION: RUTHRAUFF ROAD TO PRINCE ROAD		010-D(013)N OF

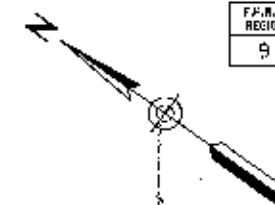
FEDERAL REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	340	918	
010 PM 252					



DESIGN	NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	D. BRADY	3/7/01	
CHECKED	J. RODRIGUEZ	3/1/01	
URS			TRAFFIC CONTROL PLAN PHASE 1C
ROUTE	LOCATION		
1-10	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H6241 01C	010-D10131N	OF	

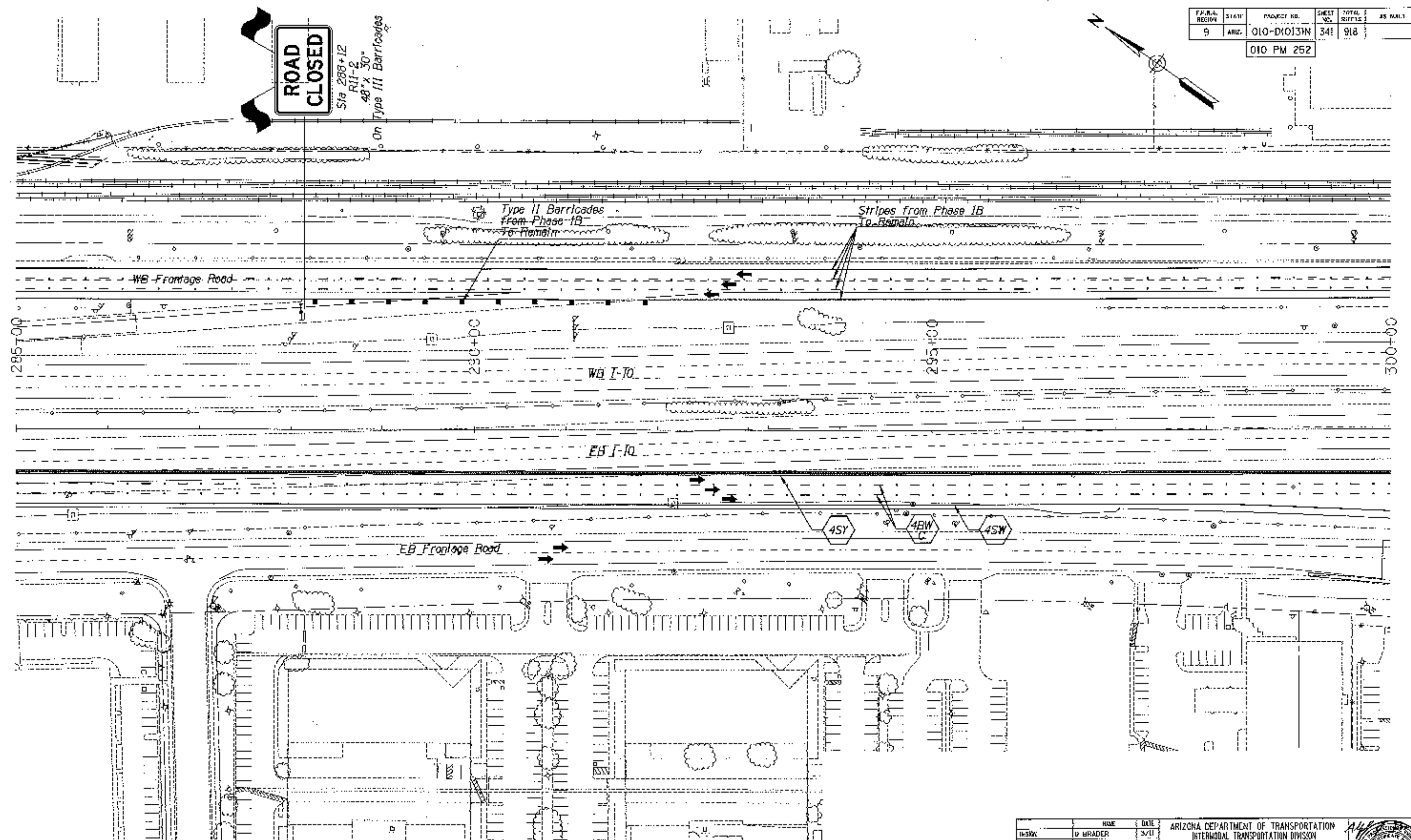


F.P.R.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D1013M	34	918	
010 PM 252					



ROAD CLOSED

Sta 288+12
R11-2
48" x 30"
Type III Barricades

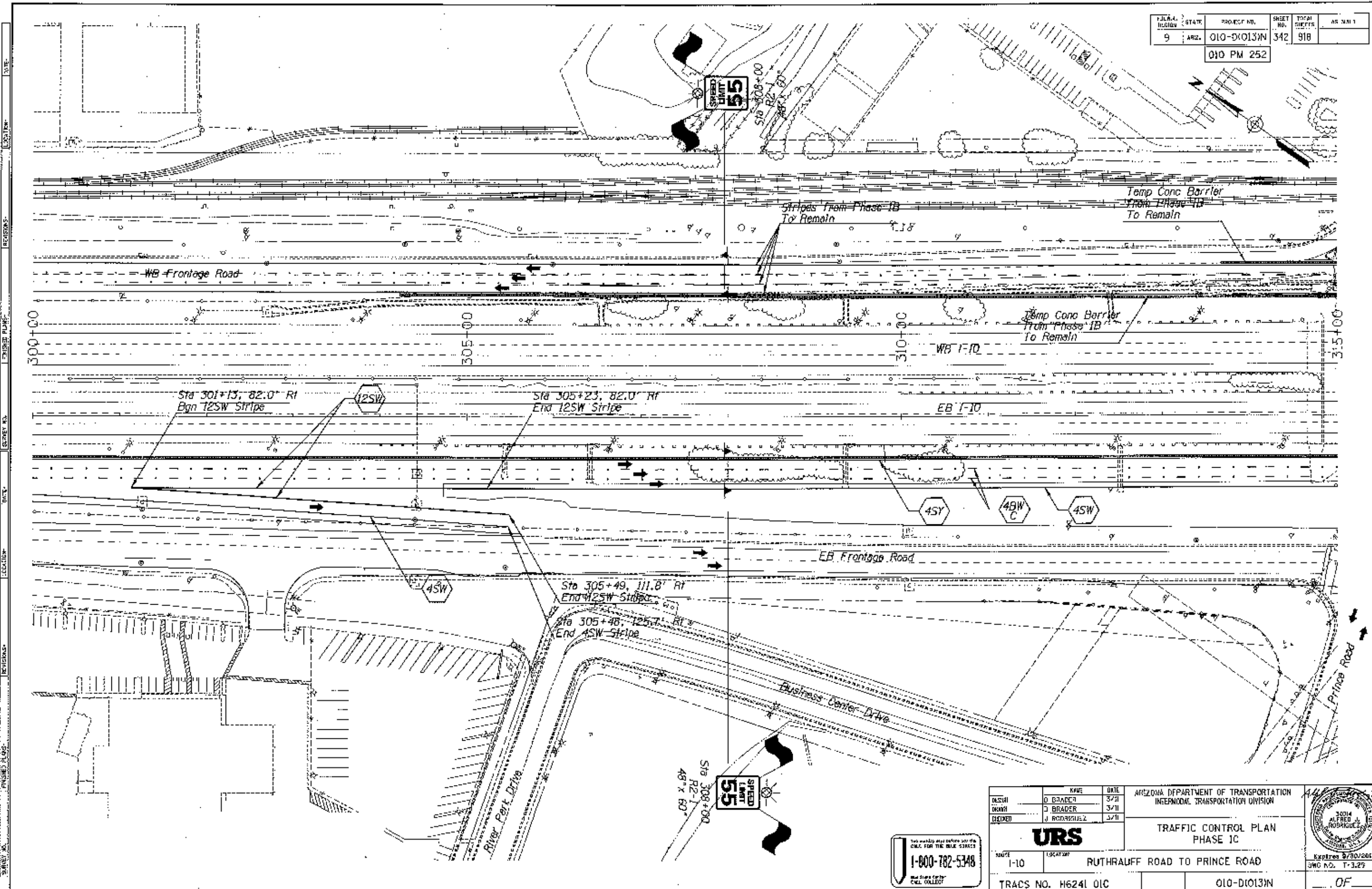


DESIGNER	NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	D BRADY	3/11	
CHECKED	FJ RODRIGUEZ	3/11	
URS			TRAFFIC CONTROL PLAN PHASE 1C
ROUTE	SUTRAUFF ROAD TO PRINCE ROAD		
TRACS NO.	H6241 OIC	010-D1013M	OF



1-800-782-5348
The Blue Star Call Center

FED. DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS SHOWN
9	ARZ.	010-D10131N	342	918	
010 PM 252					



NAME	DATE
D. BRADY	3/21
J. BRADY	3/21
J. RODRIGUEZ	3/21

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION

URS

TRAFFIC CONTROL PLAN
PHASE 1C

ROUTE 1-10 RUTHRAUFF ROAD TO PRINCE ROAD

TRACS NO. H6241 OIC 010-D10131N OF

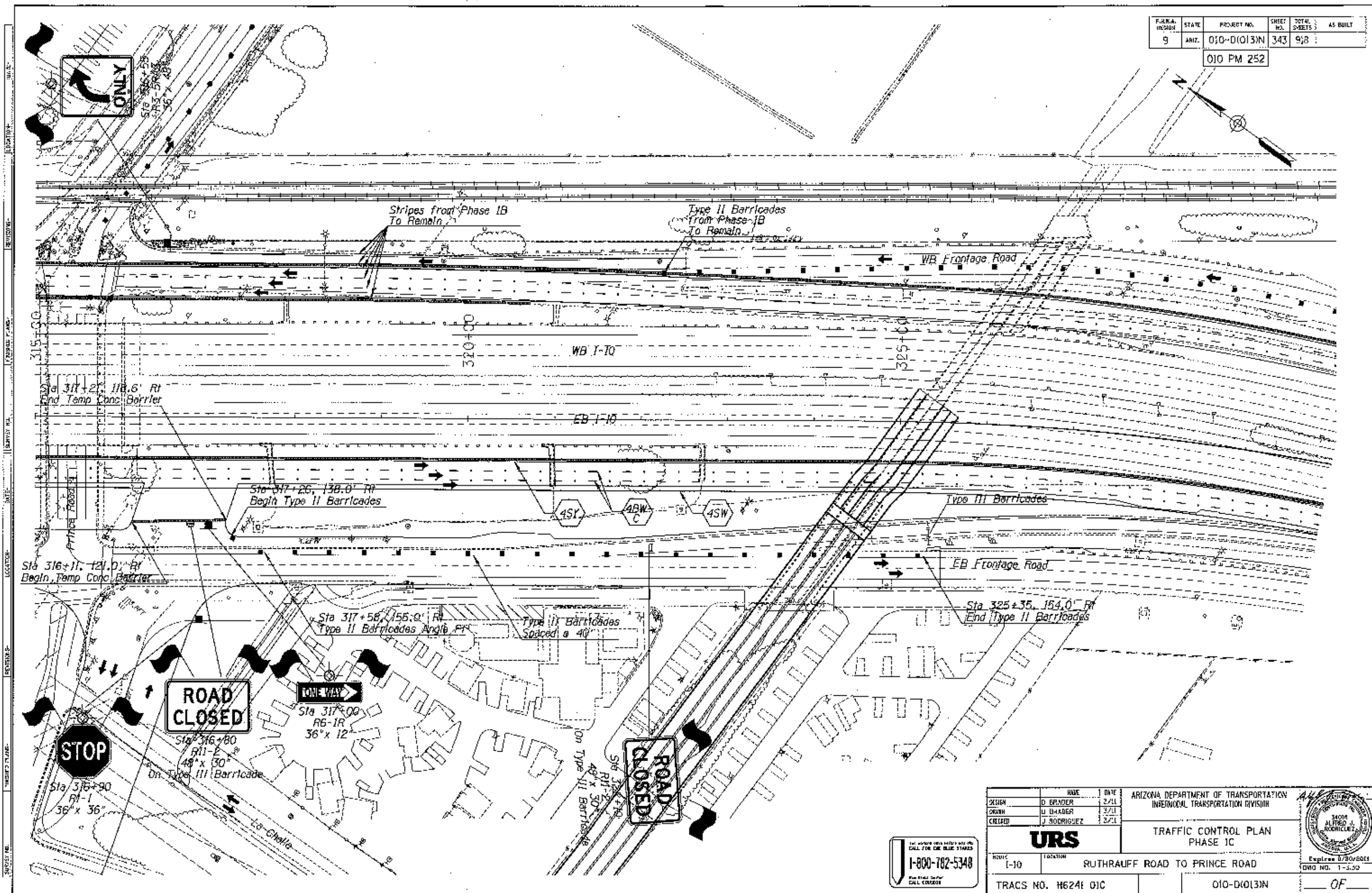


Expires 3/30/2011
SNC NO. T-329



F.I.R.M.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	343	918	

010 PM 252



SHEET NO. 343
 DESIGNER: [REDACTED]
 CHECKER: [REDACTED]
 DATE: 3/31/2011
 TIME: 9:21:33 AM
 BY: brian.navesloot@

1-800-782-5348
 CALL FOR BLUE STAPLES
 CALL CENTER

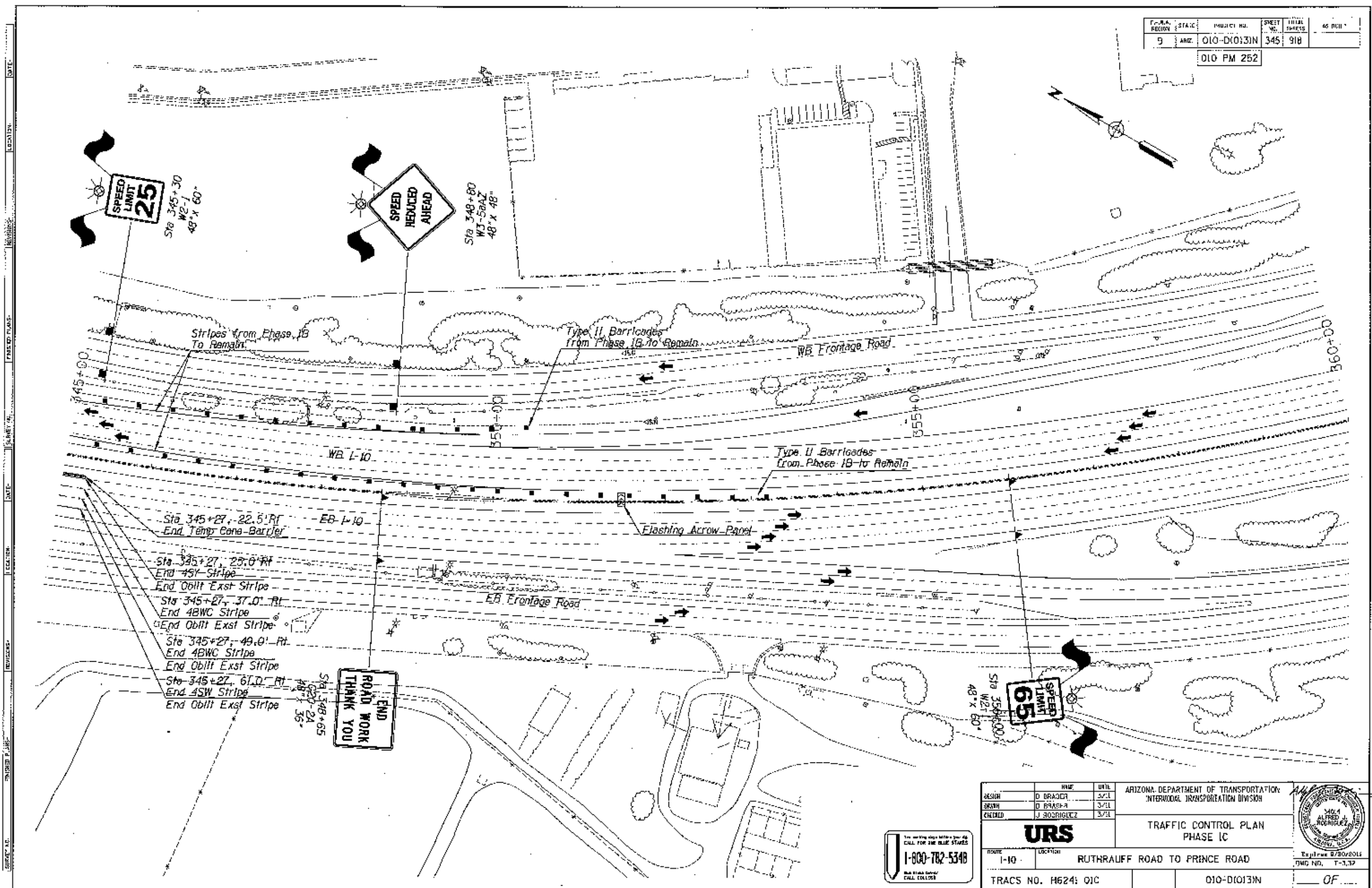
DESIGN	D. BRADY	DATE	2/11
DRAWN	U. BLADER	DATE	3/11
CHECKED	J. RODRIGUEZ	DATE	3/11

ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
URS
 TRAFFIC CONTROL PLAN
 PHASE 1C
 PROJECT: RUTHRAUFF ROAD TO PRINCE ROAD
 TRACS NO. H624E 01C
 010-D(013)N
 OF



F.R.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARZ.	010-D10131N	345	918	

010 PM 252



- Sta 345+27, 22.5' RT
End Temp Cone Barrier
- Sta 345+27, 23.0' RT
End 45' Stripe
- End Obliq Exst Stripe
- Sta 345+27, 37.0' RT
End 4BWC Stripe
- End Obliq Exst Stripe
- Sta 345+27, 49.0' RT
End 4BWC Stripe
- End Obliq Exst Stripe
- Sta 345+27, 61.0' RT
End 4SW Stripe
- End Obliq Exst Stripe

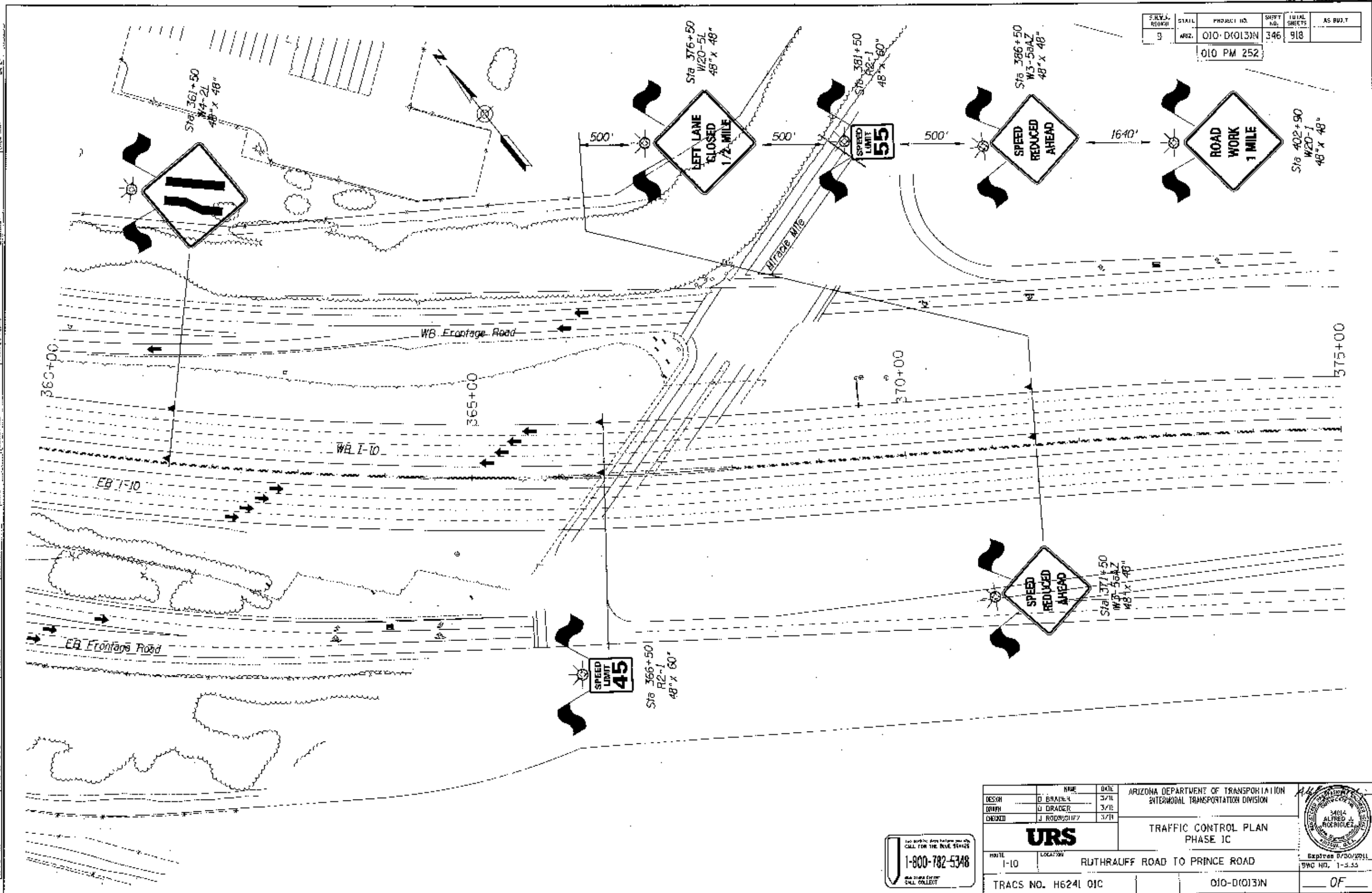
Sta 350+00
WB L-10
48' x 60'

<table border="1"> <tr> <th>DESIGN</th> <th>NAME</th> <th>DATE</th> </tr> <tr> <td></td> <td>D BRAGER</td> <td>3/1</td> </tr> <tr> <th>SKETCH</th> <td>D BRAGER</td> <td>3/11</td> </tr> <tr> <th>ENGINEER</th> <td>J RODRIGUEZ</td> <td>3/1</td> </tr> </table>		DESIGN	NAME	DATE		D BRAGER	3/1	SKETCH	D BRAGER	3/11	ENGINEER	J RODRIGUEZ	3/1	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DESIGN	NAME	DATE													
	D BRAGER	3/1													
SKETCH	D BRAGER	3/11													
ENGINEER	J RODRIGUEZ	3/1													
		TRAFFIC CONTROL PLAN PHASE 1C													
ROUTE 1-10	LOCATION RUTHRAUFF ROAD TO PRINCE ROAD	Expire 8/30/2014 TMS NO. T-3.37													
TRACS NO. H624; 01C		010-D10131N													

1-800-782-5348
CALL COLLECT

SERIAL NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	346	918	

010-D(013)N
010 PM 252



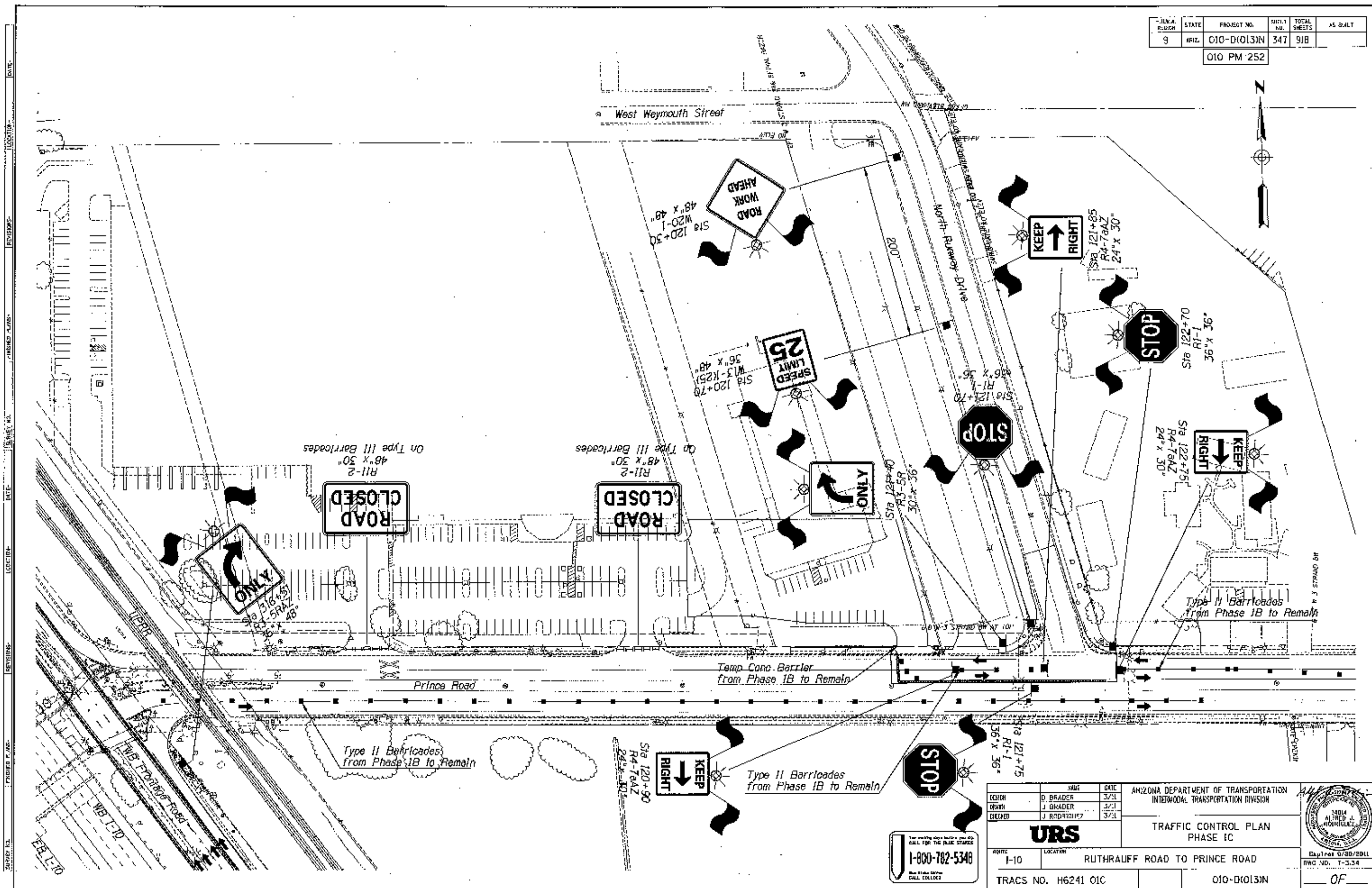
DESIGN	D. BRAINE	DATE	3/7/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	U. DRACER	DATE	3/7/11	
CHECKED	J. RODRIGUEZ	DATE	3/7/11	
URS			TRAFFIC CONTROL PLAN PHASE 1C	
ROUTE	1-10	LOCATION	RUTHAUFF ROAD TO PRINCE ROAD	
TRACS NO. H6241 01C			010-D(013)N	OF

1-800-782-5348
CALL FOR THE BLUE SERVICE



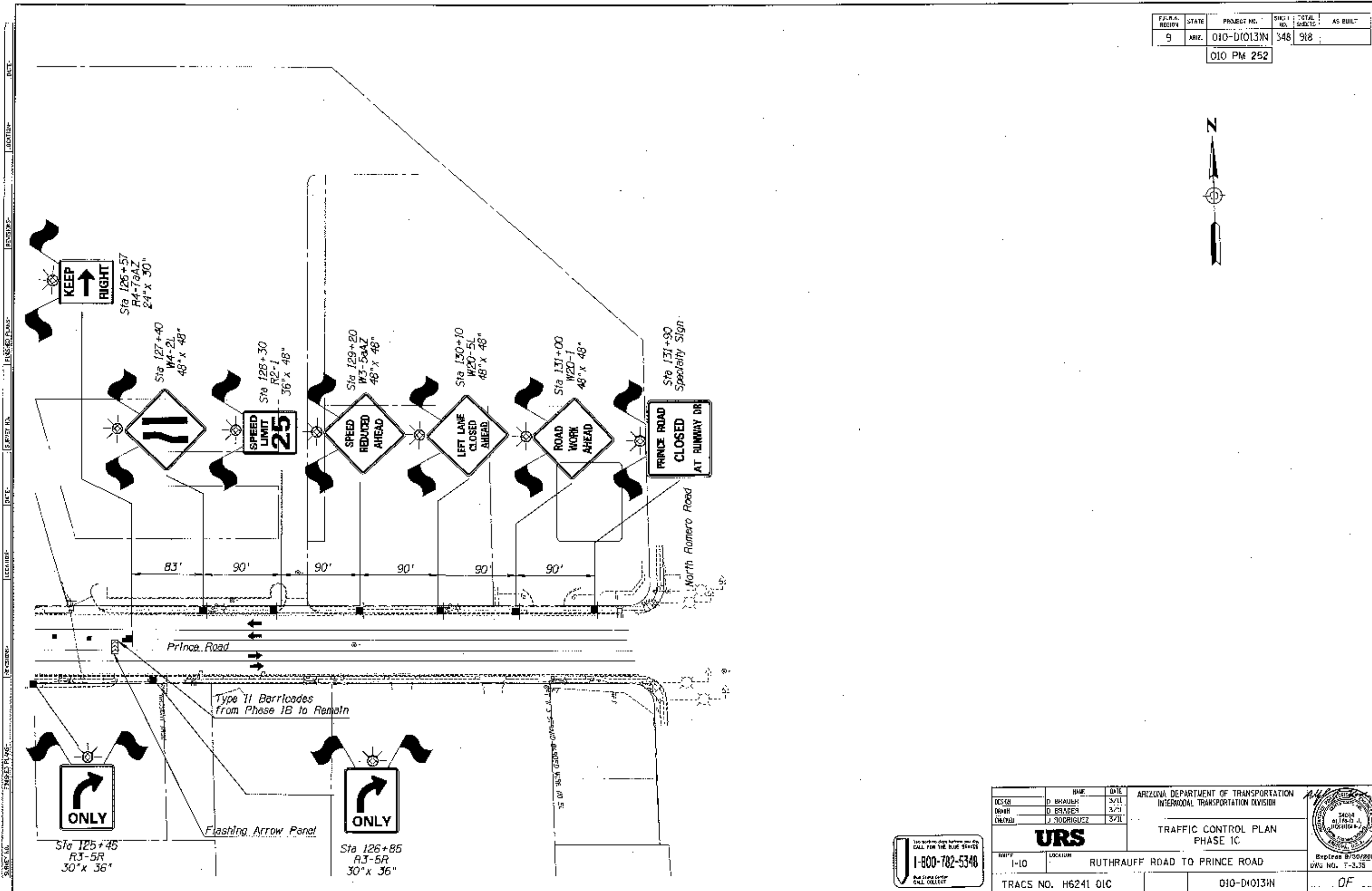
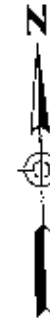
ILW. A. BLOCK	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	347	918	

010 PM 252



URS TRAFFIC CONTROL PLAN PHASE 1C		ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DATE: 1-10 TRACS NO. H6241 OIC	LOCATION: RUTHRAUFF ROAD TO PRINCE ROAD 010-D(013)N	

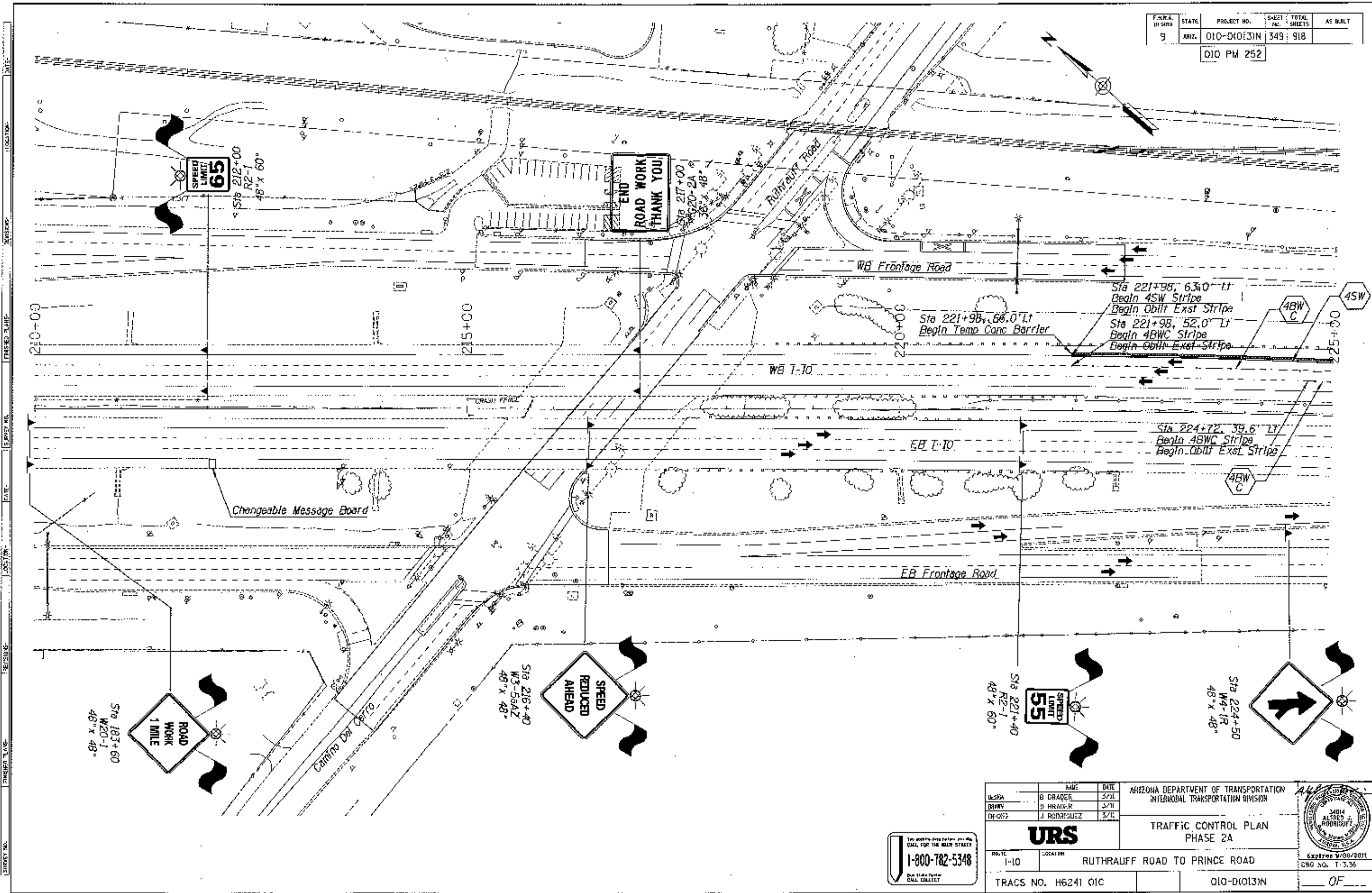
F.J.R.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	348	918	
010 PM 252					



DESIGN: D. BRAUER DRAWN: D. BRAUER CHECKED: J. RODRIGUEZ		DATE: 3/11/11 3/21/11 3/21/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
URS TRAFFIC CONTROL PLAN PHASE 1C			
SHEET: 1-10	LOCATION: RUTHRAUFF ROAD TO PRINCE ROAD	TRACS NO. H6241 OIC	010-D(013)N OF

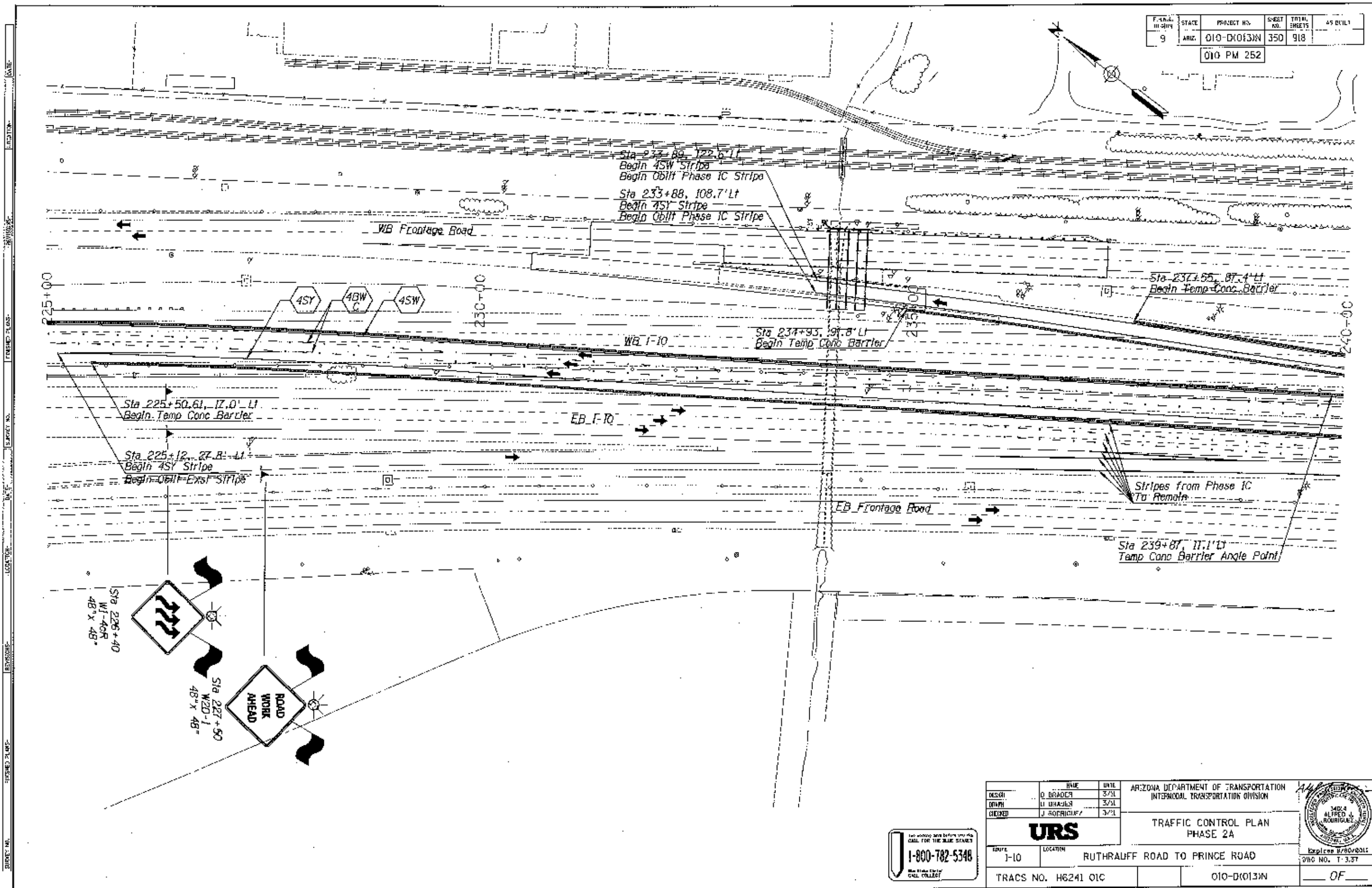
1-800-782-5348
 And State Office CALL COLLECT

F.M.R.A. DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	349	918	
010 PM 252					



URS 1-800-782-5348 THE URS GROUP, INC. 1000 PAVAN DRIVE, SUITE 100 BOSTON, MA 02115		ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC CONTROL PLAN PHASE 2A 34014 ALEJO J. RODRIGUEZ 3/1/2011 Scale: V/00/2011 DWG NO. T-336	
PROJECT NO. 010-D10131N	LOCAL NAME RUTHRAUFF ROAD TO PRINCE ROAD	TRACS NO. H6241 01C	SHEET NO. 349 OF 918

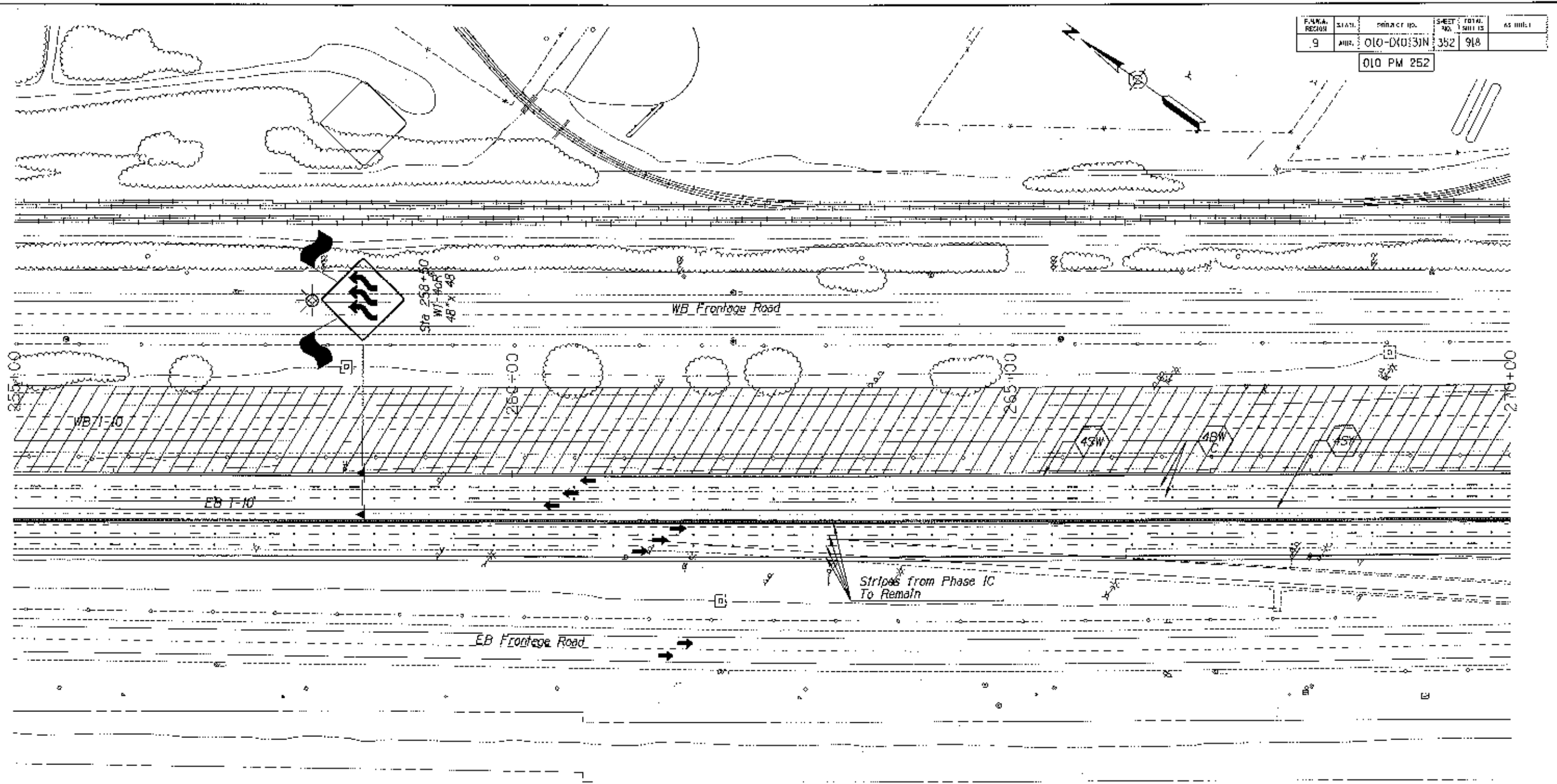
F-100A in 2004	STATE ARIZ.	PROJECT NO. 010-D(013)N	SHEET NO. 350	TOTAL SHEETS 918	45 BUILT
010 PM 252					




DESIGN	DATE	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 2A EMPLOYEE 8/80/8015 DWG NO. T-337
DRAWN	DATE	DATE	
CHECKED	DATE	DATE	
ROUTE I-10		LOCATION RUTHAUFF ROAD TO PRINCE ROAD	
TRACS NO. H6241 01C		010-D(013)N	

F.A.R.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	352	918	

010 PM 252

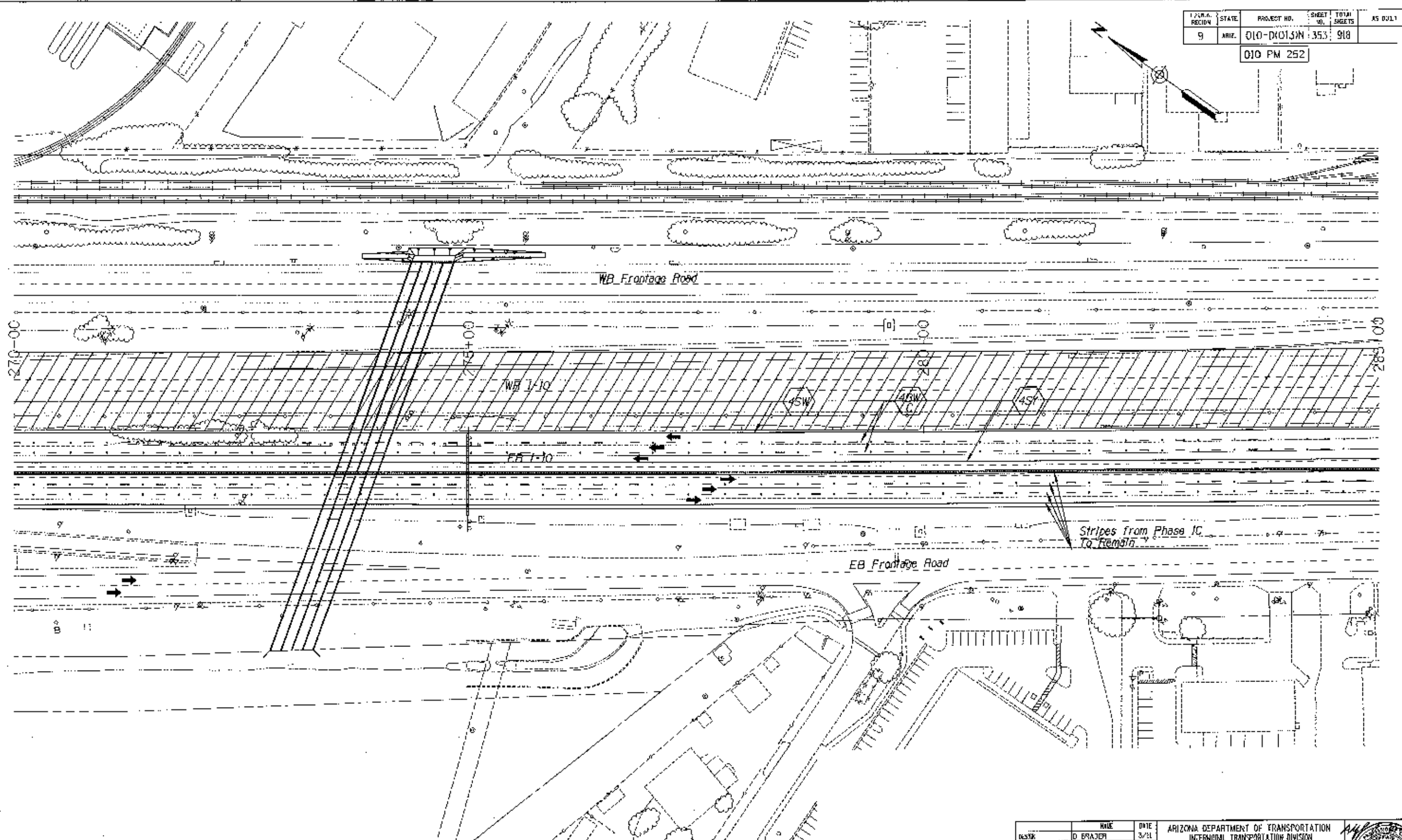


DATE: _____
 LOCATION: _____
 REVISION: _____
 FINISHED PLANS: _____
 SUBMIT NO.: _____
 DATE: _____
 LOCATION: _____
 REVISION: _____
 FINISHED PLANS: _____
 SUBMIT NO.: _____

DESIGNED	D. BRADY	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DIVISION 
DRAWN	J. RODRIGUEZ	DATE	3/11	
CHECKED	J. RODRIGUEZ	DATE	3/11	
URS TRAFFIC CONTROL PLAN PHASE 2A				
ROUTE	1-10	LOCATION	RUTHAUFF ROAD TO PRINCE ROAD	
TRACS NO. H6241 01C			010-D(013)N	
			OF	


 1-800-782-5348
 WE'VE GOT YOU COVERED

F.P.A. REC'D	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D1013N	353	918	
010 PM 252					

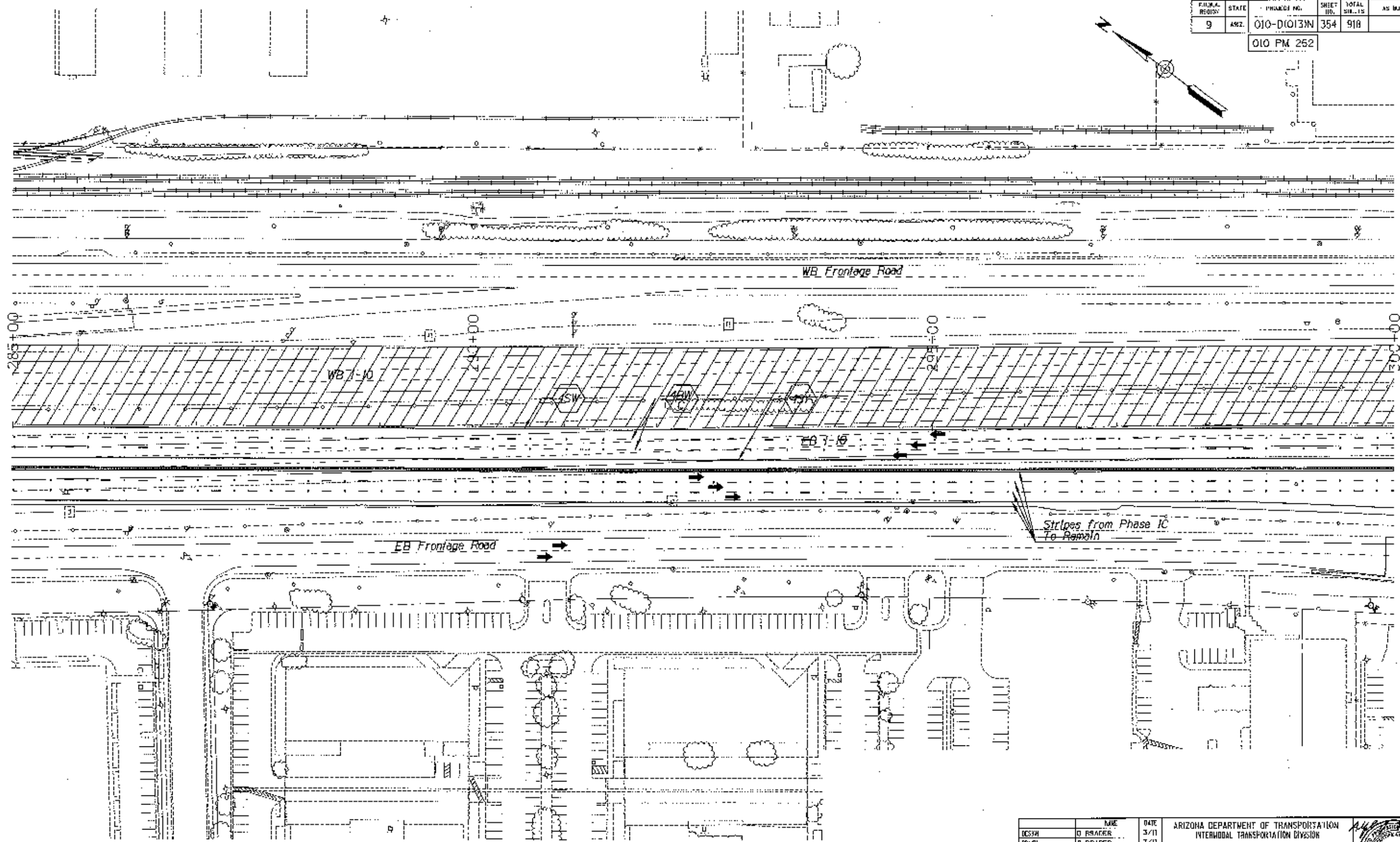
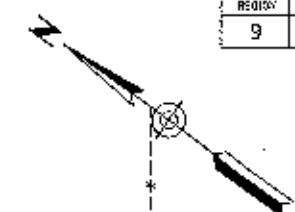


DESIGNER	NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	D. BRAJER	3/21	
CHECKED	U. MADON	3/21	
DATE	J. RODRIGUEZ	3/21	TRAFFIC CONTROL PLAN PHASE 2A
ROUTE	LOCATION		
1-10	RUTHRAUFF ROAD TO PRINCE ROAD		Expires 9/30/2011 Dwg. No. 1-540
TRACS NO. H6241 OIC	010-D1013N		



FIRM/AGENCY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARZ.	010-D10131N	354	918	

010 PM 252



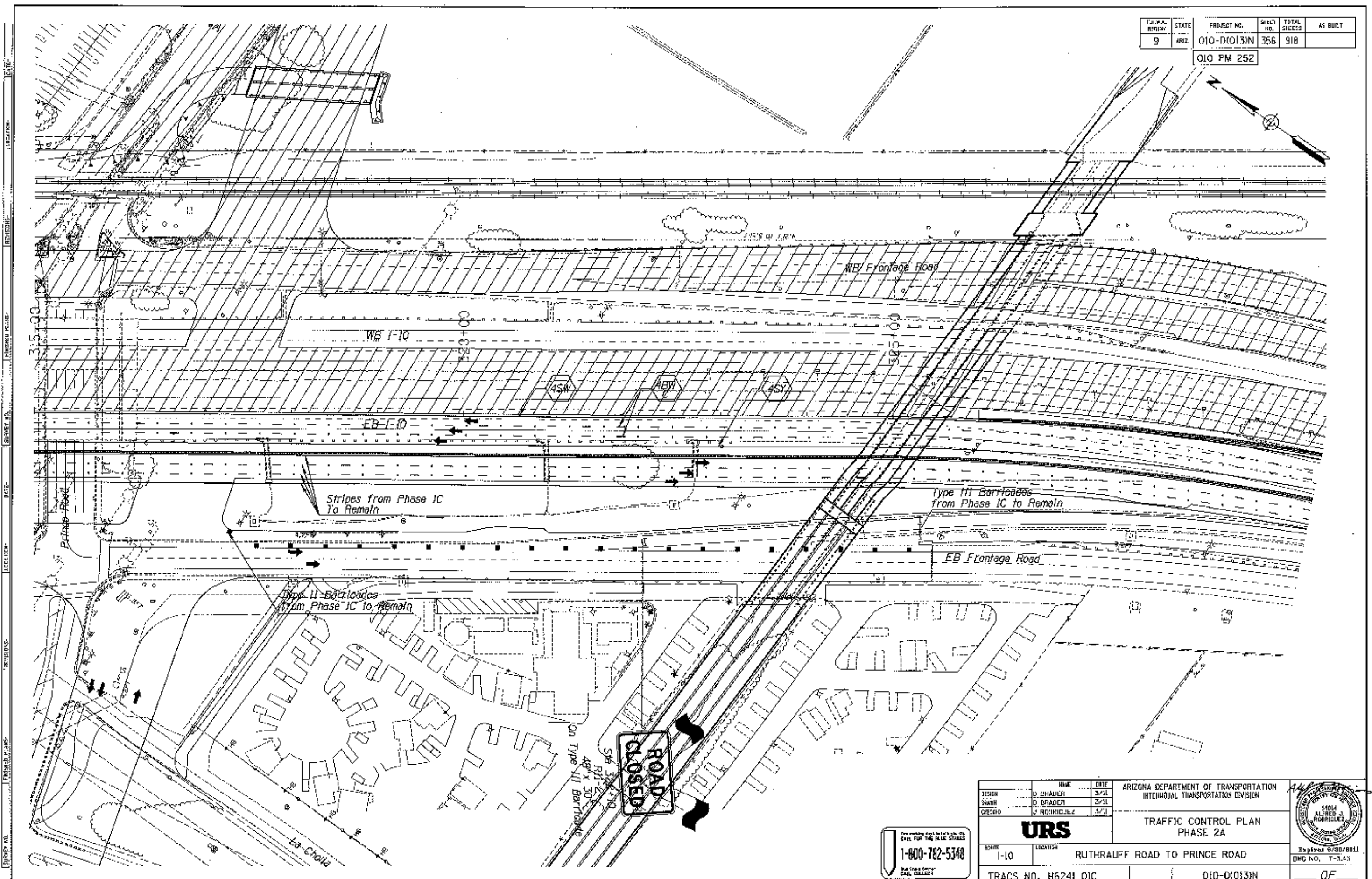
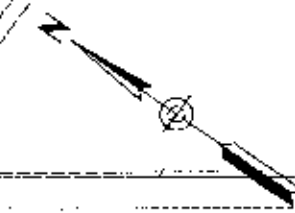
NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DESIGN: D BRADER	3/11	
DRAWN: D BRADER	3/11	
CHECKED: J RODRIGUEZ	3/11	
URS		TRAFFIC CONTROL PLAN PHASE 2A
PROJECT: 1-10	LOCATION: RUTHRAUFF ROAD TO PRINCE ROAD	Engineer 07/00/0011 DWG NO. T-3.41
TRACS NO. H6241 01C		010-D10131N
		OF



LOCATION: DATE: REVISIONS: PROJECT NO. SURVEY NO. DATE: LOCATION: REVISIONS: PROJECT NO. SURVEY NO. DATE:

FED. A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	356	918	

010 PM 252

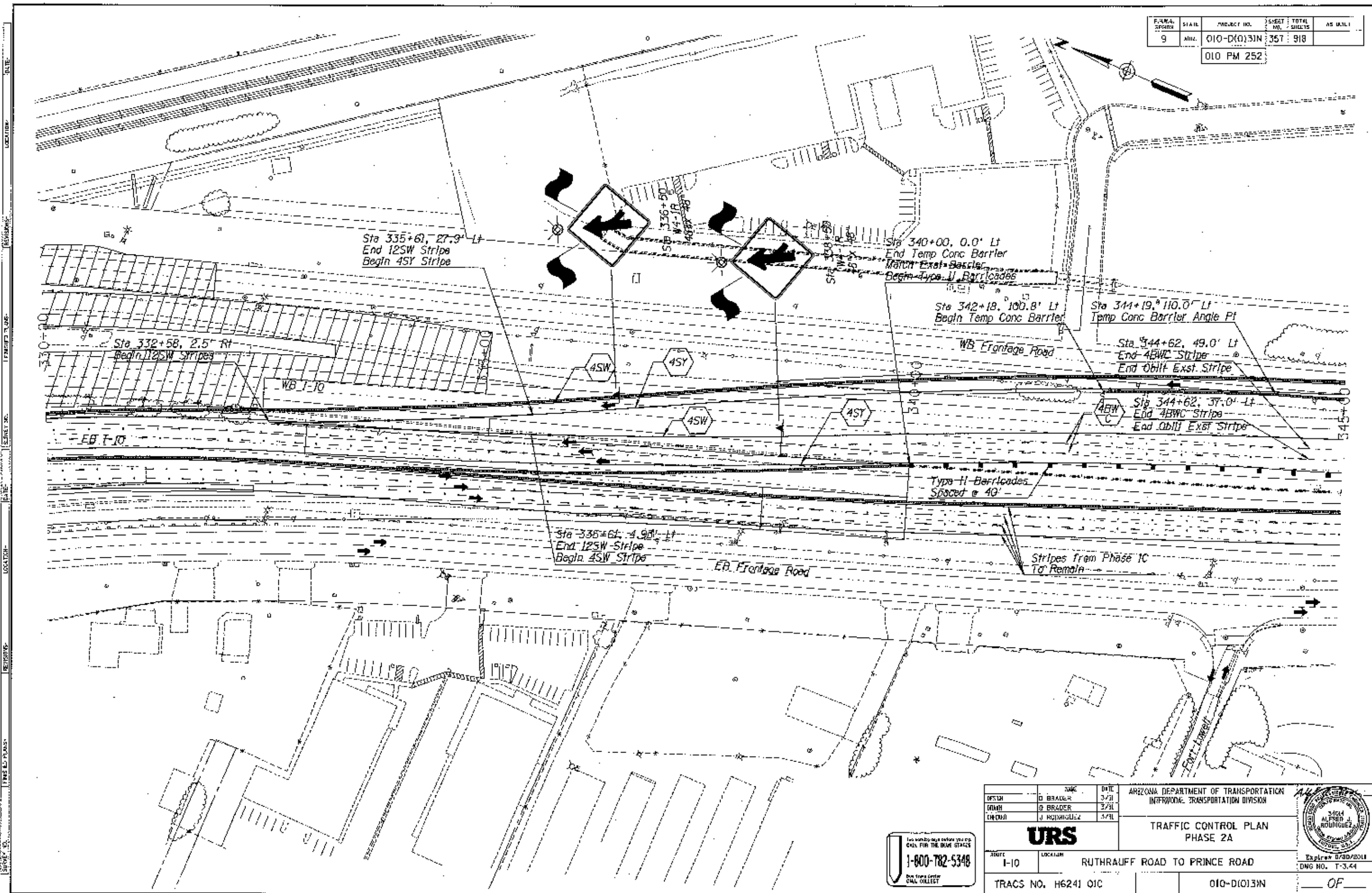



ROAD CLOSED

DESIGN	D. SHAMER	DATE	3/21	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 2A	
DRAWN	D. BRADEN	DATE	3/21		
CHECKED	J. RODRIGUEZ	DATE	3/21		
ROUTE	1-10		LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD	TRACS NO. H6241 OIC PROJECT NO. 010-D(013)N SHEET NO. <u>OF</u>

1-800-782-5348

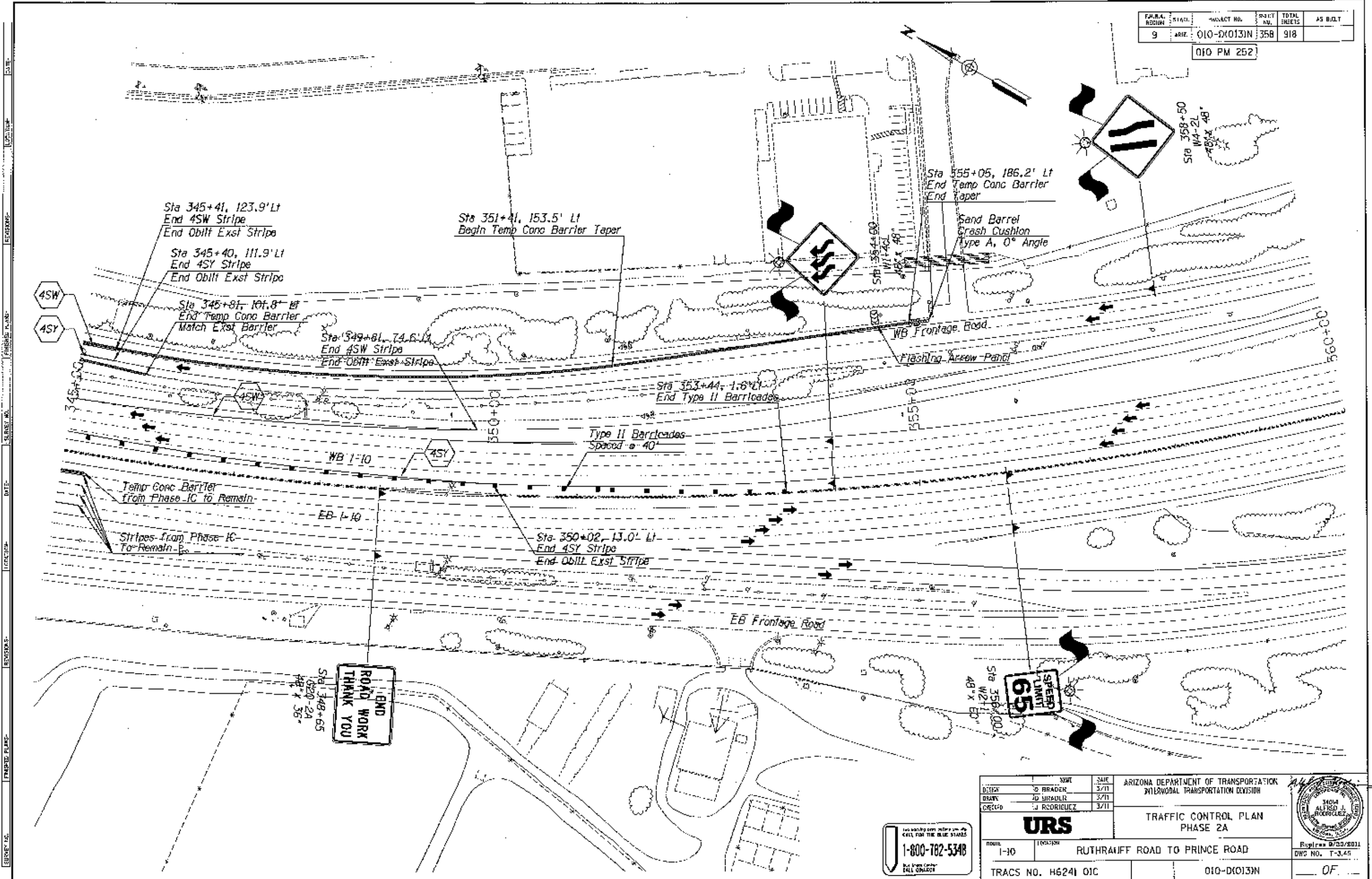
F.W.A. DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(0)31N	357	918	
010 PM 252					



DESIGN	D. BRADER	DATE	3/31	ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE TRANSPORTATION DIVISION 
DRAWN	D. BRADER	DATE	3/31	
CHECKED	J. RODRIGUEZ	DATE	3/31	
URS		TRAFFIC CONTROL PLAN PHASE 2A		
ROUTE	I-10	LOCATION	RUTHAUFF ROAD TO PRINCE ROAD	Expire 6/30/2011 DNG NO. T-3,44
TRACS NO. H6241 OIC		010-D(0)31N		OF

F.A.R.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	358	918	

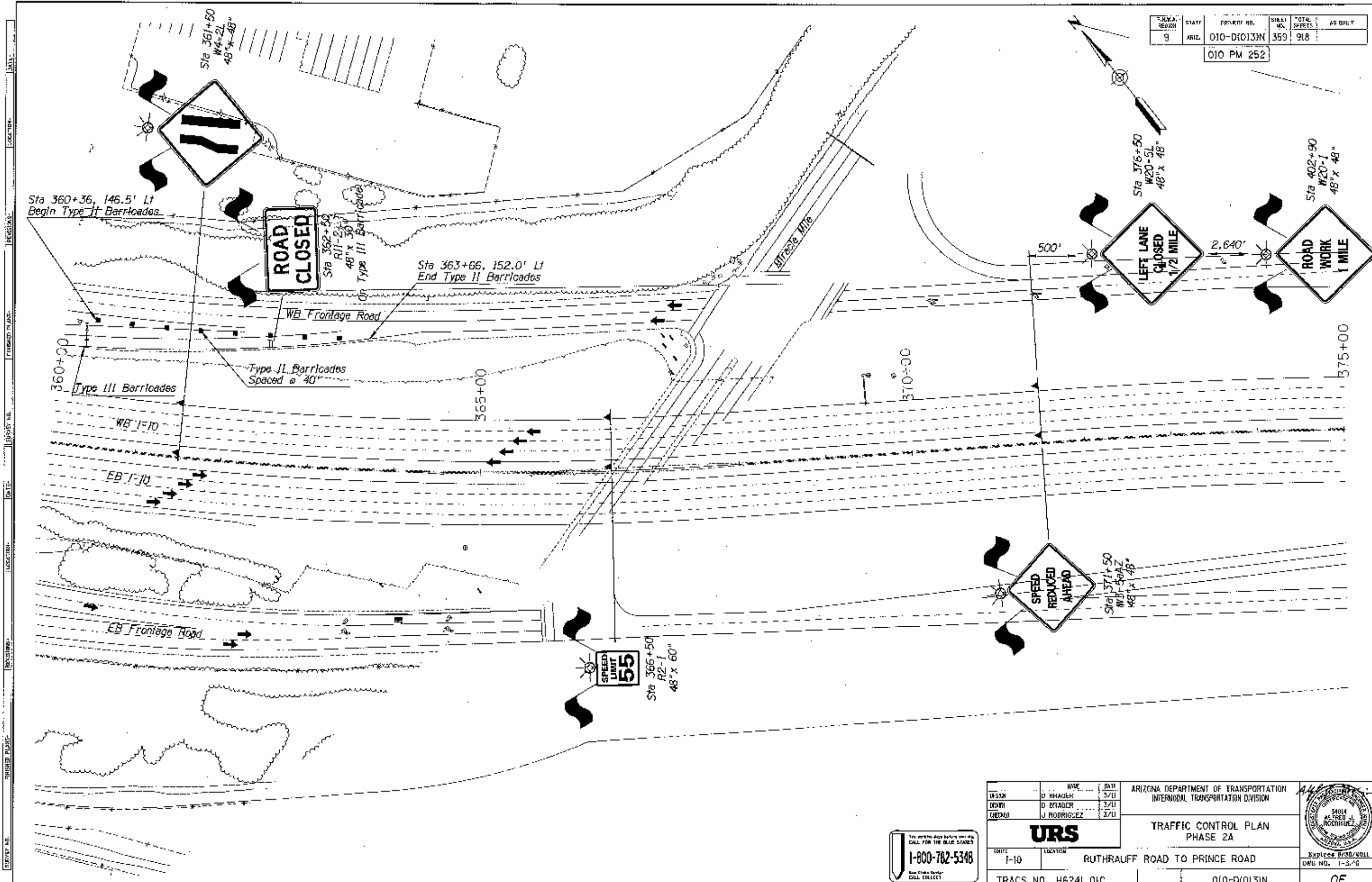
010 PM 252



DESIGN	WWT	SAE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	J. BRADLER	3/11	
CHECKED	J. RODRIGUEZ	3/11	
URS			TRAFFIC CONTROL PLAN PHASE 2A
ROUTE	1-10	PROJECT	
TRACS NO. H6241 01C		010-D(013)N	

1-800-782-5348
CALL FOR THE BLUE STARS
FALL CONCRETE





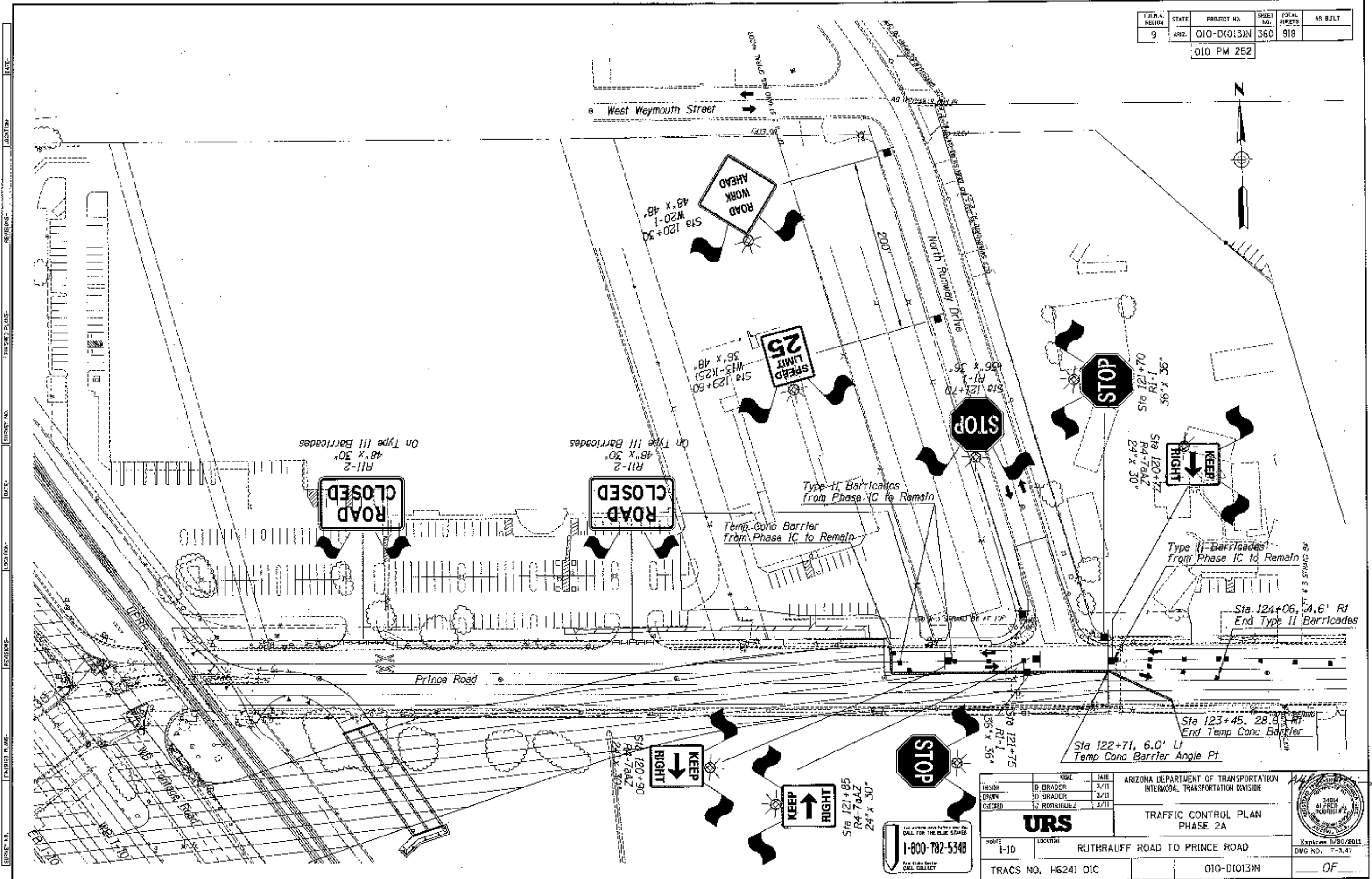
FLY/REVISED	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	359	918	

010 PM 252

URS TRAFFIC CONTROL PLAN PHASE 2A		ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
TRACS NO. H6241 DIC	LOCATION: RUTHAUFF ROAD TO PRINCE ROAD DATE: 3/31/2011	

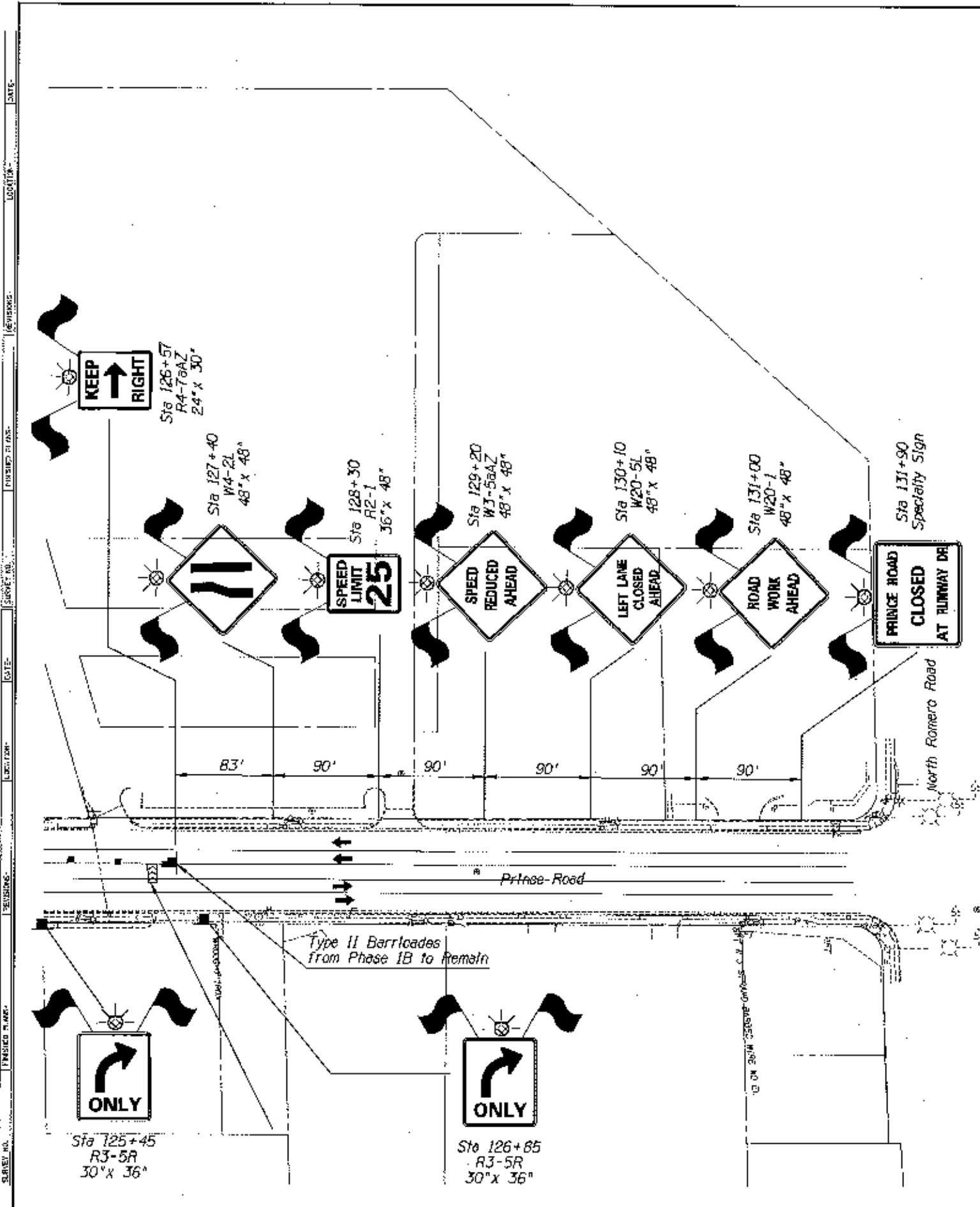
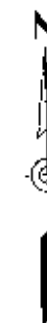
1-800-782-5348
 See State Dept. CALL COLLECT

FED. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	360	918	
010 PM 252					



<table border="1"> <tr> <th>NAME</th> <th>DATE</th> </tr> <tr> <td>DREW: B BRADY</td> <td>3/11</td> </tr> <tr> <td>BY: B BRADY</td> <td>3/11</td> </tr> <tr> <td>CHECKED: G RODRIGUEZ</td> <td>3/11</td> </tr> </table>		NAME	DATE	DREW: B BRADY	3/11	BY: B BRADY	3/11	CHECKED: G RODRIGUEZ	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC CONTROL PLAN PHASE 2A	
NAME	DATE										
DREW: B BRADY	3/11										
BY: B BRADY	3/11										
CHECKED: G RODRIGUEZ	3/11										
URS 1-10 TRACS NO. H6241 OIC	RUTHAUFF ROAD TO PRINCE ROAD 010-D(013)N OF										

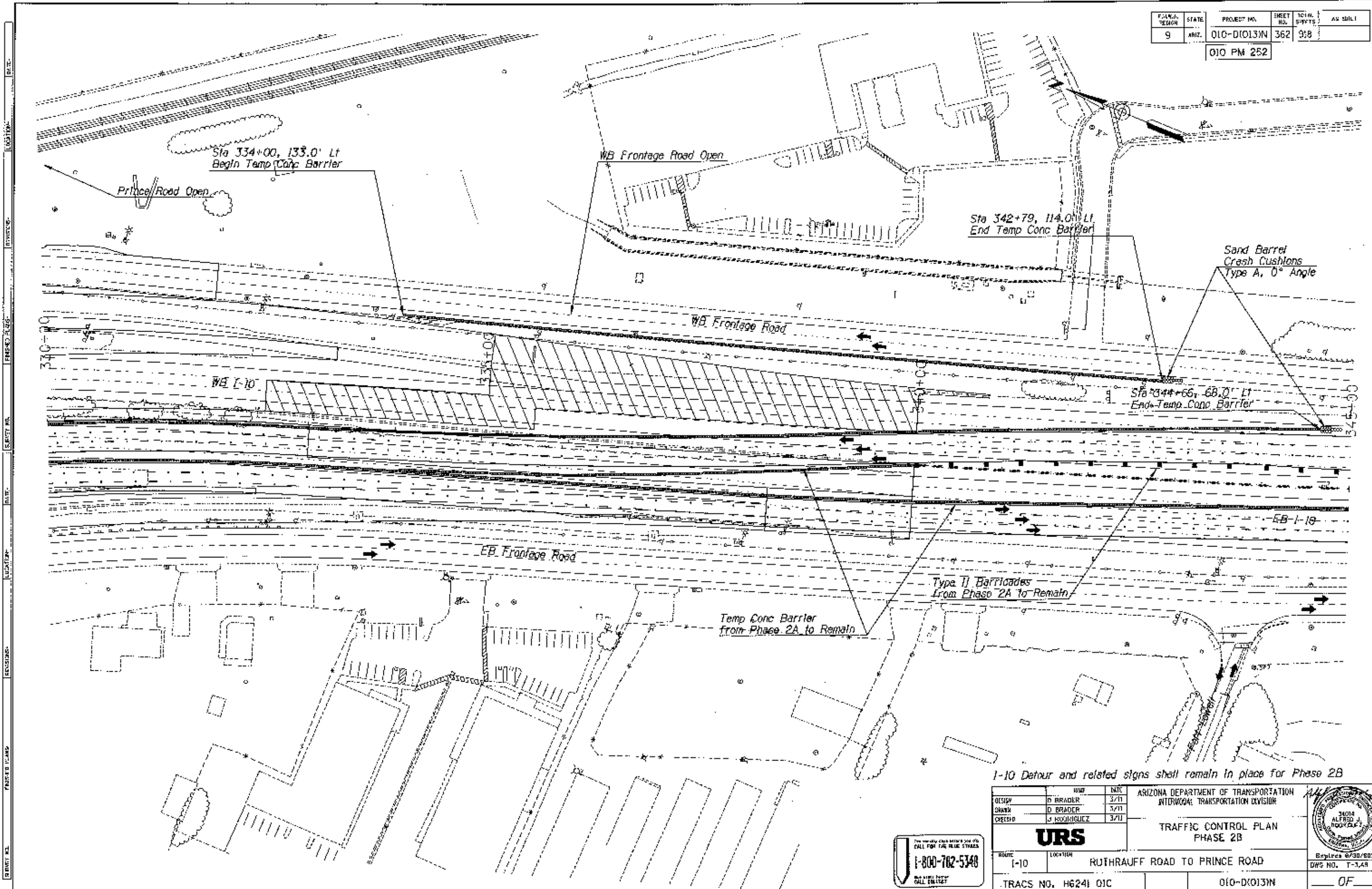
F.I.M.A. REGION	STAFF	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	361	918	
010 PM 252					



1-800-782-5348
CALL COLLECT

DESIGNER D BRADER	DATE 3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERNAL TRANSPORTATION DIVISION	
SPATH D BRADER	DATE 3/11		
CHECKER J RODRIGUEZ	DATE 3/11	TRAFFIC CONTROL PLAN PHASE 2A	
ROUTE 1-10		LOCATION RUTHERLUFF ROAD TO PRINCE ROAD	
TRACS NO. H6241 01C		PROJECT NO. 010-D(013)N	
		DATE Expires 8/30/2011 DWG NO. T-5.4B	
		OF	

FEDERAL AID DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D1013N	362	388	
010 PM 252					



I-10 Detour and related signs shall remain in place for Phase 2B

DESIGN	D BRADER	DATE	3/11
DRAWN	D BRADER	DATE	3/11
CHECKED	J HOSKINS	DATE	3/11

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION



TRAFFIC CONTROL PLAN
PHASE 2B

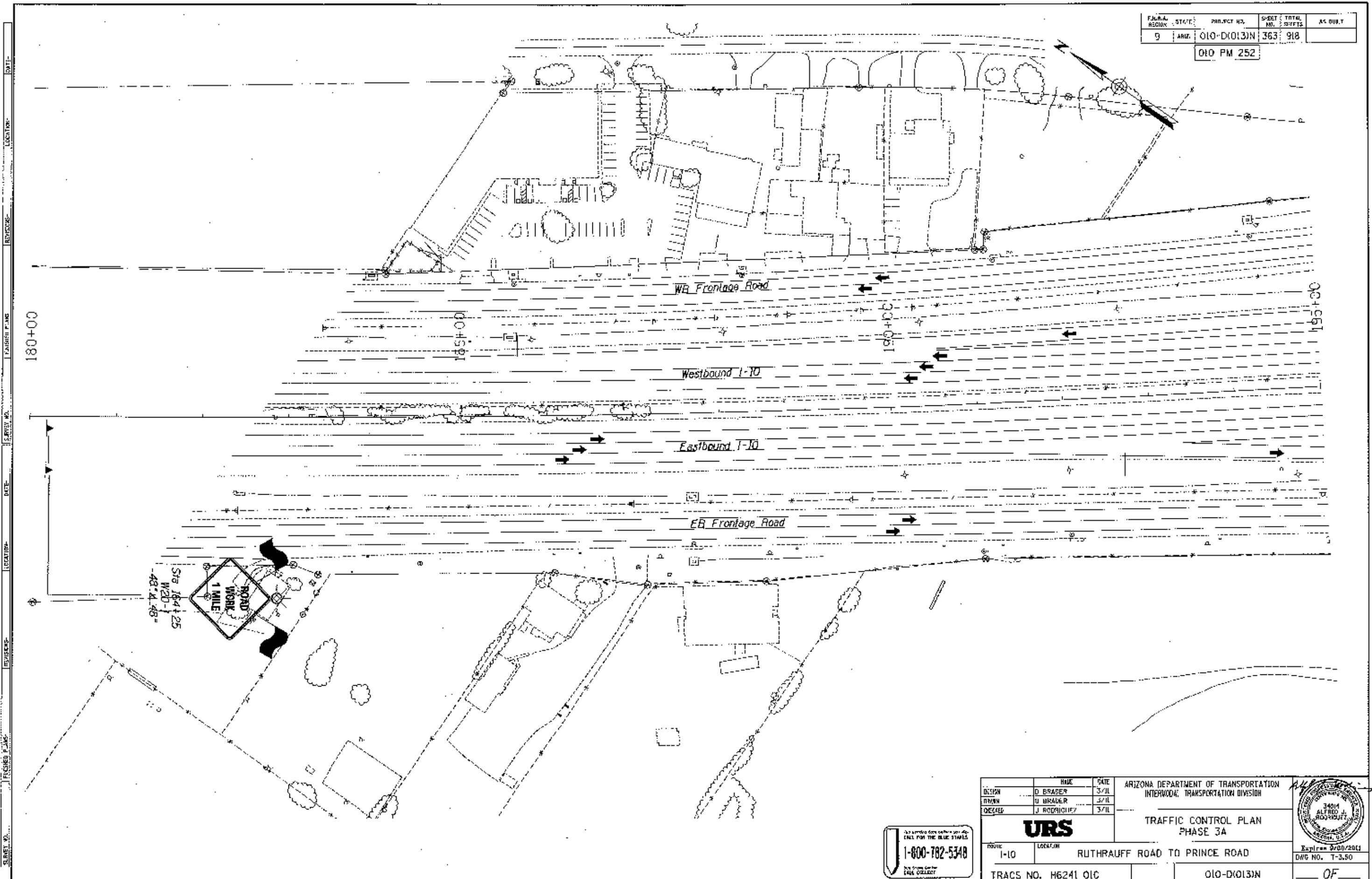


ROUTE I-10 LOCATION RUTHAUFF ROAD TO PRINCE ROAD

Exploded 6/30/2011
DWS NO. T-1AR

TRACS NO. H6241 01C 010-D1013N OF

FEDERAL REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	363	918	
010 PM 252					

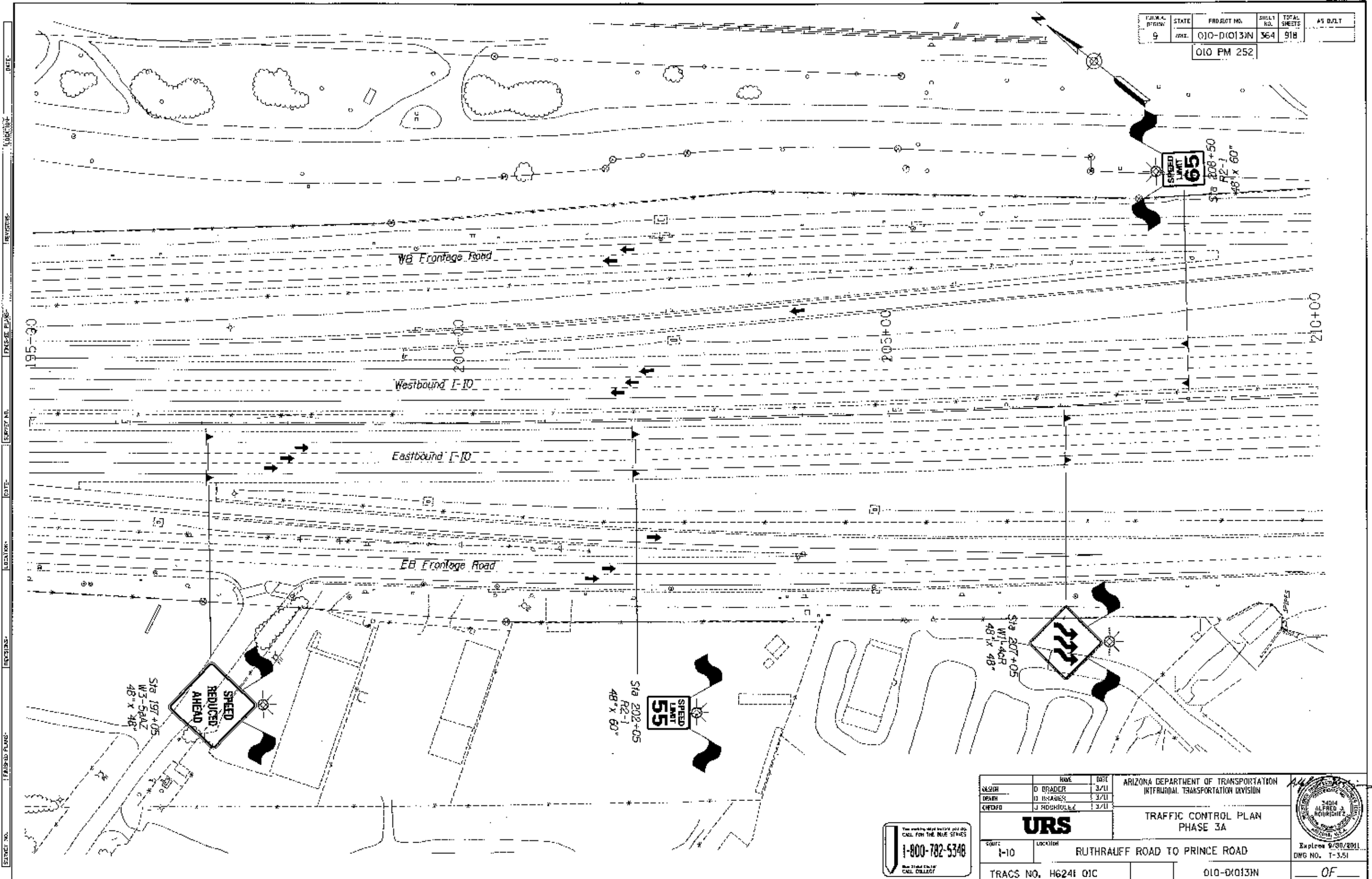


DATE: _____ LOCATION: _____
 REVISION: _____
 DATE: _____ LOCATION: _____
 REVISION: _____
 DATE: _____ LOCATION: _____
 REVISION: _____
 DATE: _____ LOCATION: _____
 REVISION: _____

Do not remove this sign until you call for the blue staples.
1-800-782-5348
 Toll Free Center CALL COLLECT

DESIGN	D. BRADY	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 3A	 Expires 3/30/2013 DWG NO. T-350
DRAWN	D. BRADY	3/11			
CHECKED	J. RODRIGUEZ	3/11			
ROUTE	1-10	LOCATION	RUTHAUFF ROAD TO PRINCE ROAD		TRACS NO. H6241 OIC
			010-D(013)N		OF

FED. ROAD DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	364	918	
010 PM 252					

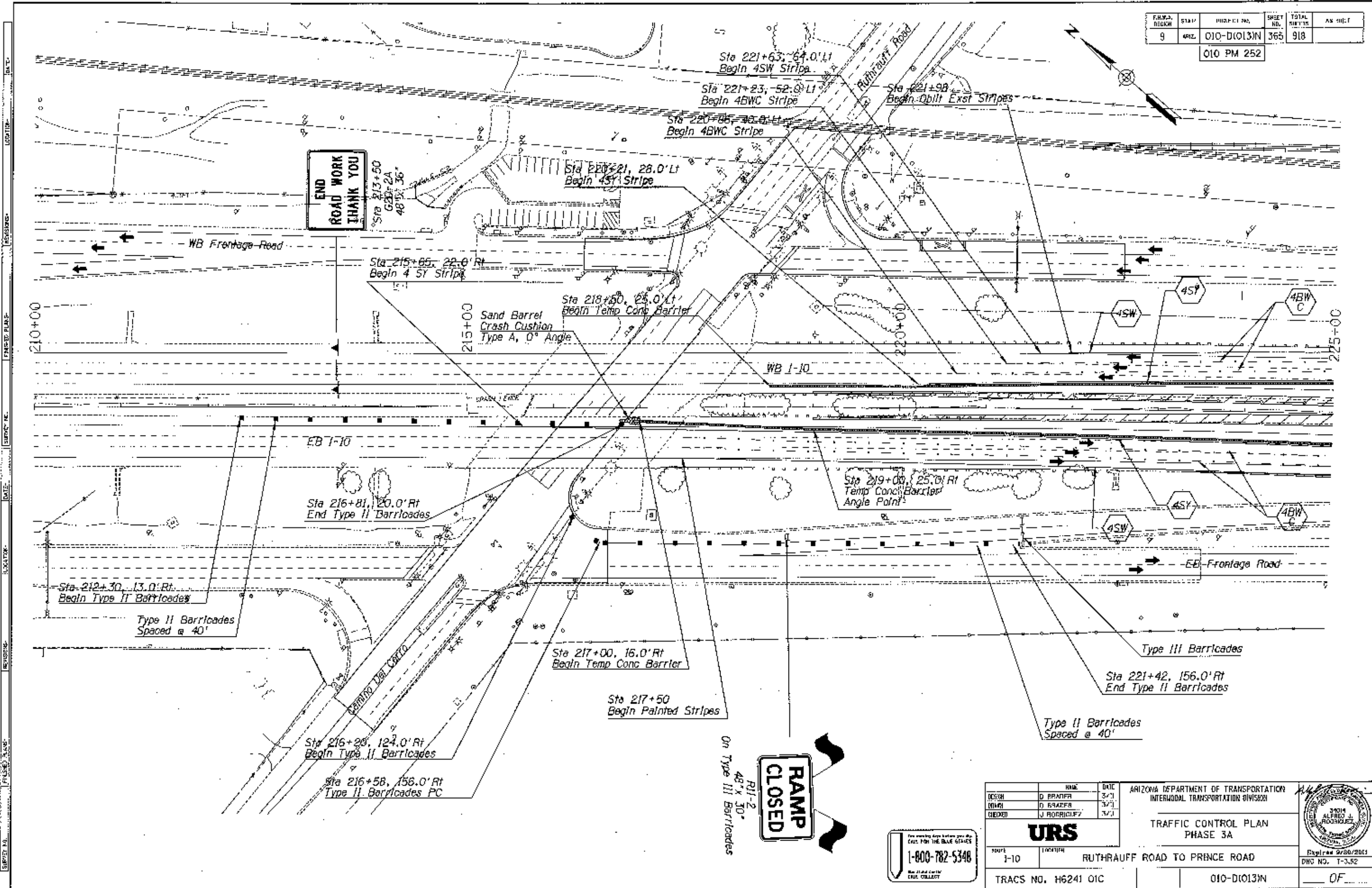


DESIGN	NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTRASTATE TRANSPORTATION DIVISION
DRAWN	D BRADNER	3/11	
CHECKED	J HOSHIOLEZ	3/11	
URS			TRAFFIC CONTROL PLAN PHASE 3A
SHEET	LOCATION		
1-10	RUTHRAUFF ROAD TO PRINCE ROAD		Expires 9/30/2011 DWG NO. T-351
TRACS NO. H624I 01C		010-D(013)N	OF

The money that builds you up
CALL FOR THE BLUE STAPLES
1-800-782-5348
Blue Staps Only
CALL COLLECT



F.H.W.D. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS SHOWN
9	ARIZ.	010-D(013)N	365	918	
010 PM 252					



**END
ROAD WORK
THANK YOU**

**RAMP
CLOSED**

DESIGN	NAME	DATE
DESIGN	D. BRANIFF	3/31
DRAWN	D. BRANIFF	3/31
CHECKED	J. RODRIGUEZ	3/31

URS

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION

**TRAFFIC CONTROL PLAN
PHASE 3A**

Expires 9/30/2011
DWG NO. T-3.52

3014 ALFRED J. RODRIGUEZ

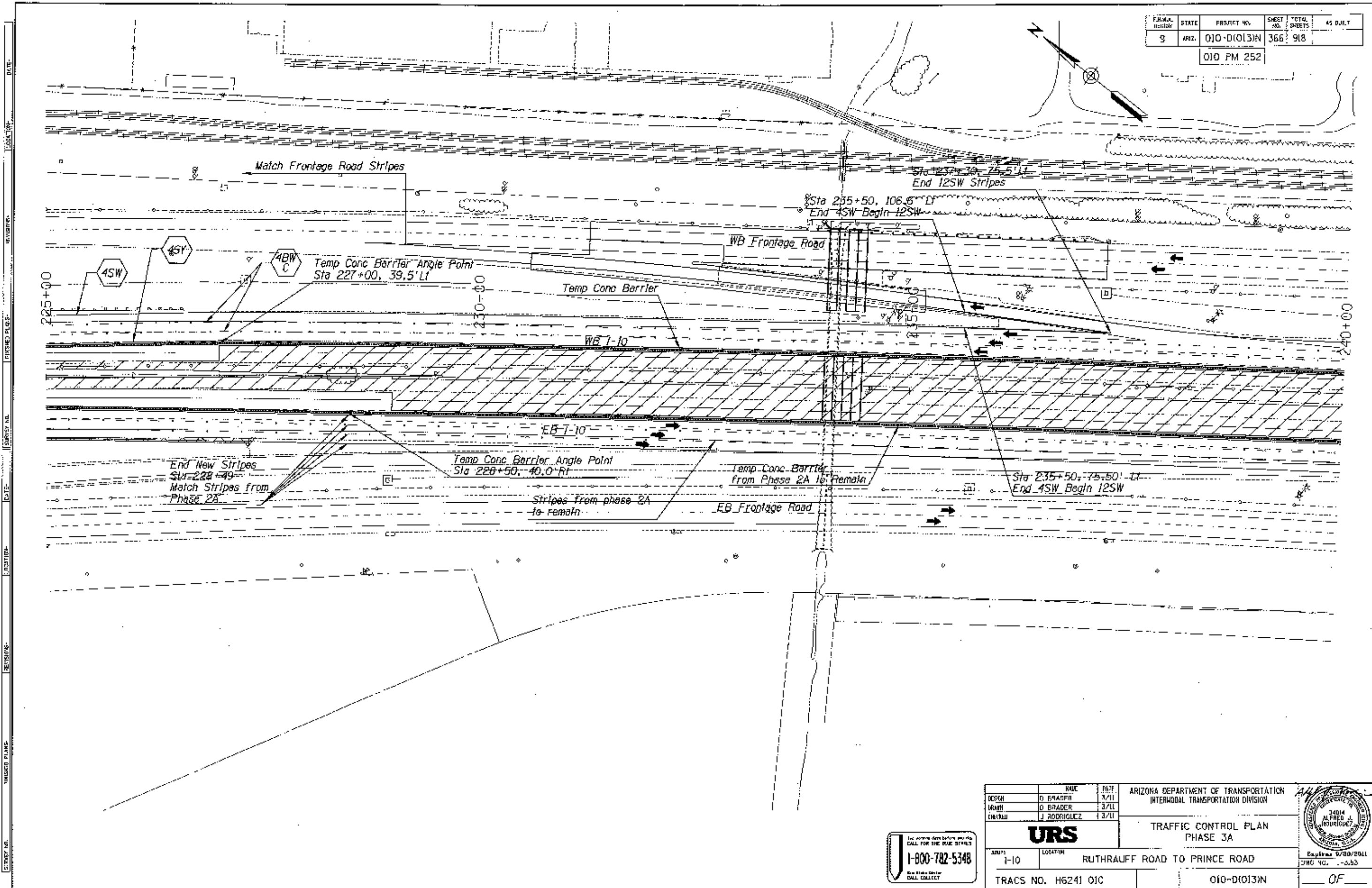
TRACS NO. H6241 OIC

010-D(013)N


OF

The money here before you do
CALL FOR THE BLUE STATES
1-800-782-5348
We'll take your
CALL COLLECT

F.H.M.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	45 DWT
9	ARIZ.	010-D(013)N	366	918	
010 PM 252					

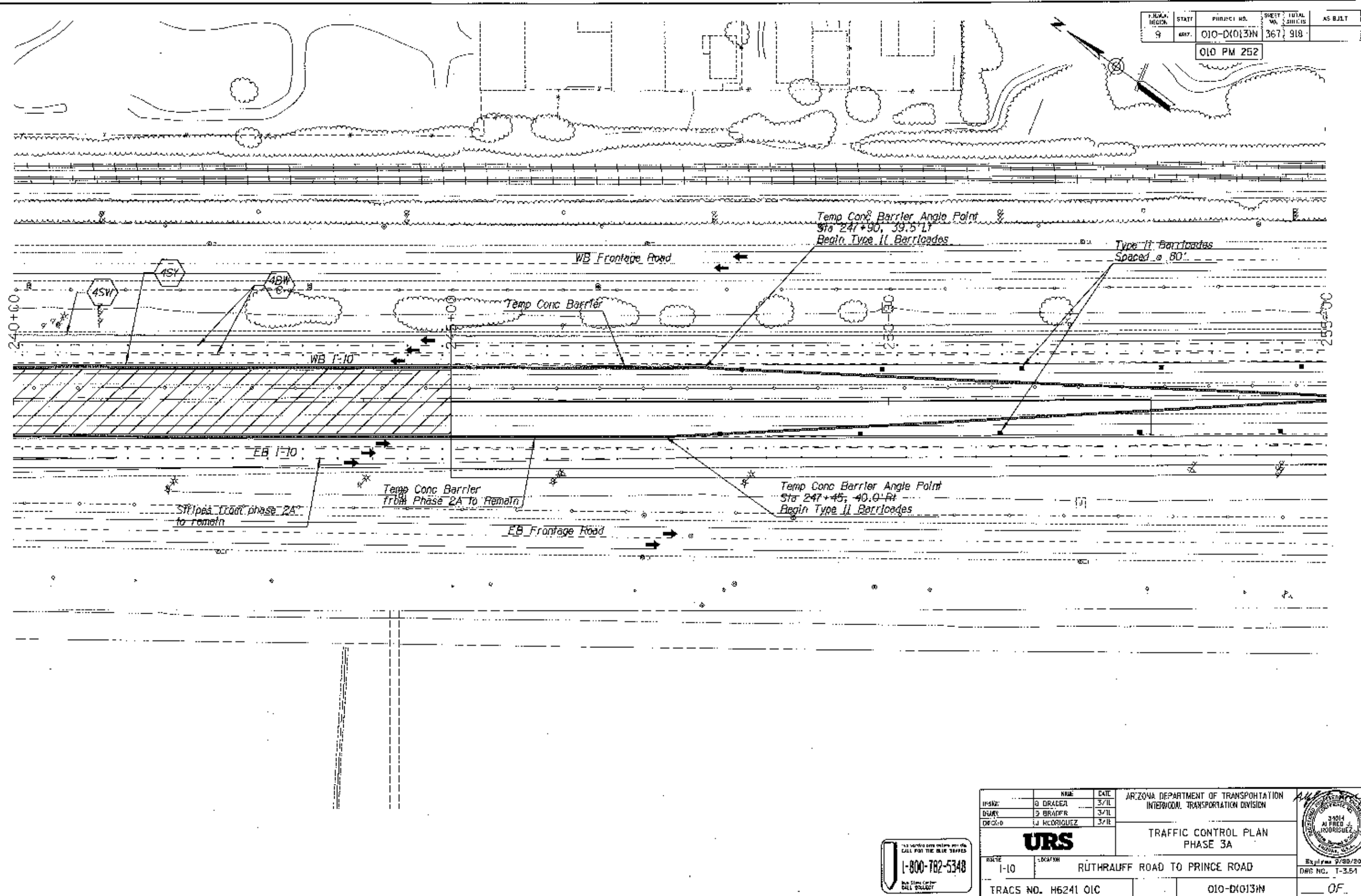


DATE: _____
 LOCATION: _____
 SURVEY NO.: _____
 DATE: _____
 REVISIONS: _____
 TYPED PLANS: _____
 ENTRY NO.: _____

DESIGN	D. BRADER	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION 
DRAWN	D. BRADER	DATE	3/11	
CHECKED	J. RODRIGUEZ	DATE	3/11	
URS				TRAFFIC CONTROL PLAN PHASE 3A
SHEET	1-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD	Expires 9/30/2011 JWC QC - 353
TRACS NO. H6241 01C			010-D(013)N	OF


 1-800-782-5348
 The Risk Center
 DALLAS, TEXAS

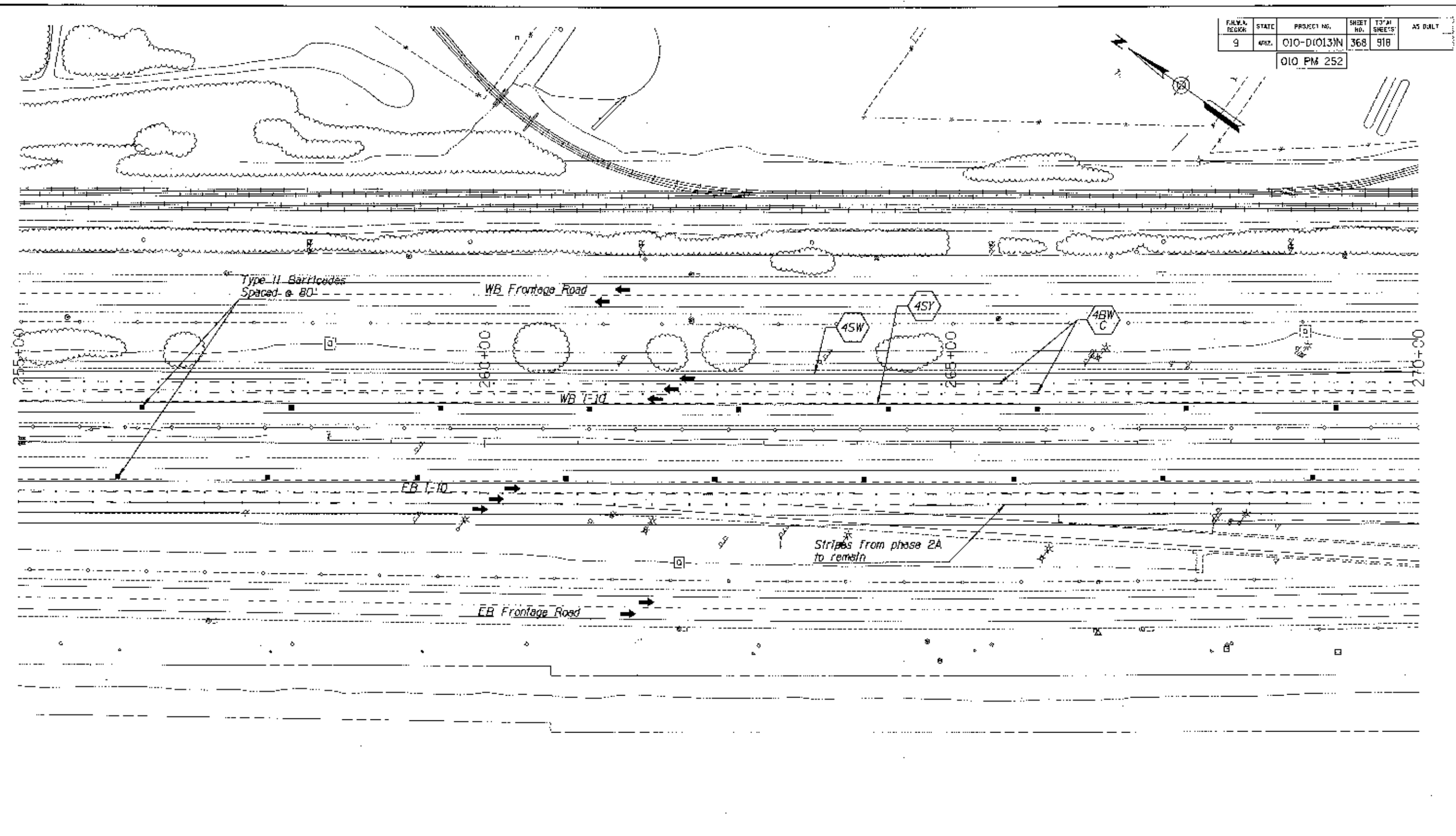
FEDERAL REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	367	918	
010 PM 252					



DESIGNED BY	NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERCOM. TRANSPORTATION DIVISION	
DRAWN BY	NAME	DATE		
CHECKED BY	NAME	DATE		
URS			TRAFFIC CONTROL PLAN PHASE 3A	
ROUTE	LOCATION			DATE
I-10	RÜTHRAUFF ROAD TO PRINCE ROAD			9/30/2011
TRACS NO. H6241 OIC			010-D(013)N	OF



F.I.L. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	368	918	
010 PM 252					

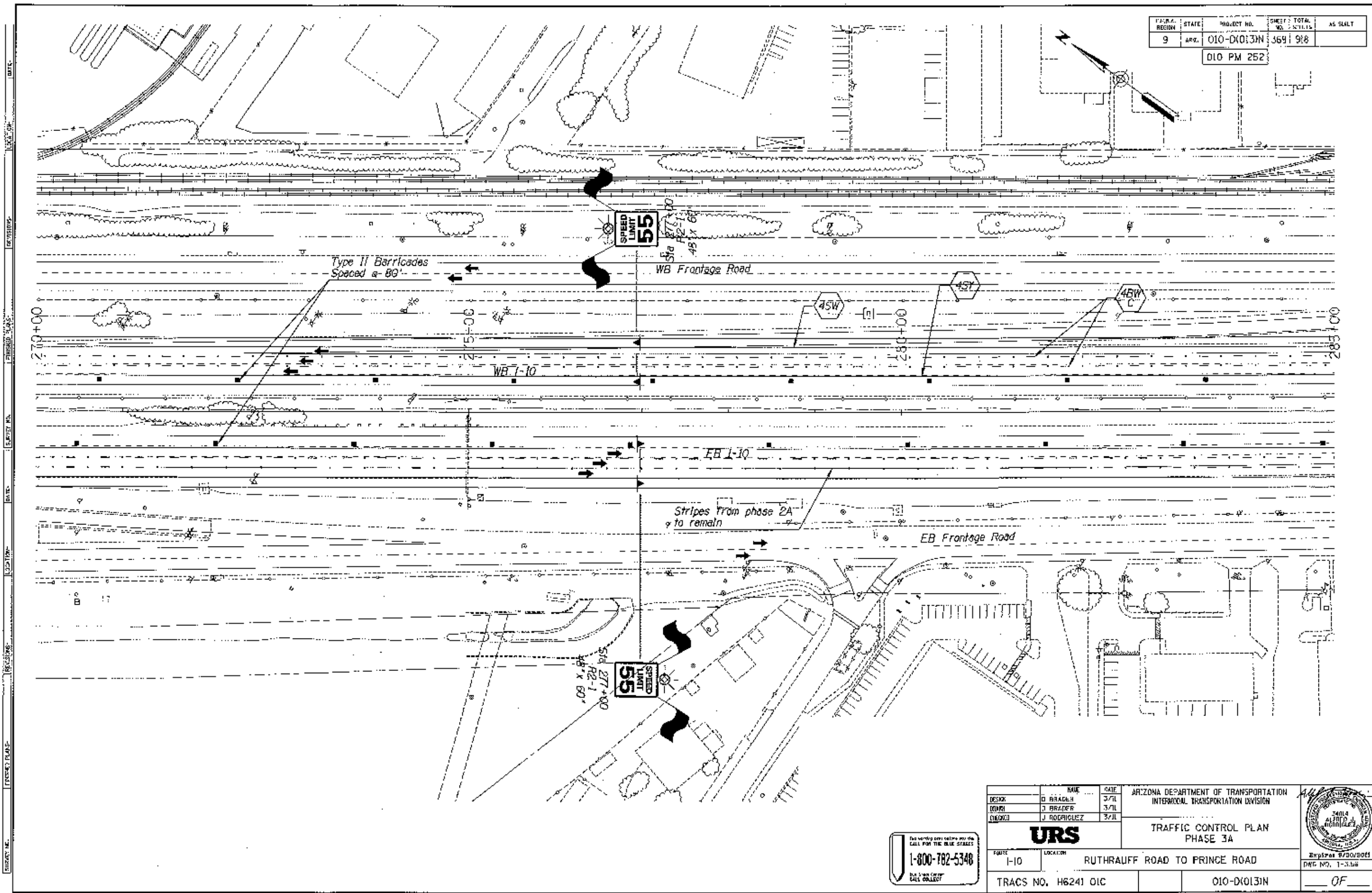



DATE: 3/31/2011
 SURVEY NO.:
 PROJECT NAME:
 LOCATION:
 INCHES:
 SCALE:

DESIGN	NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERNATIONAL TRANSPORTATION DIVISION TRAFFIC CONTROL PLAN PHASE 3A	
DRAWN	B. PRADIER	3/21		
CHECKED	J. RODRIGUEZ	3/21		
URS			ROUTE	LOCATION
			1-10	RUTHRAUFF ROAD TO PRINCE ROAD
			TRACS NO. H6241 OIC	010-D(013)N
				OF



FED. REG. NO.	STATE	PROJECT NO.	SHEET TOTAL	AS SHLT
9	ARZ.	010-D(013)N	369 / 918	
010 PM 252				

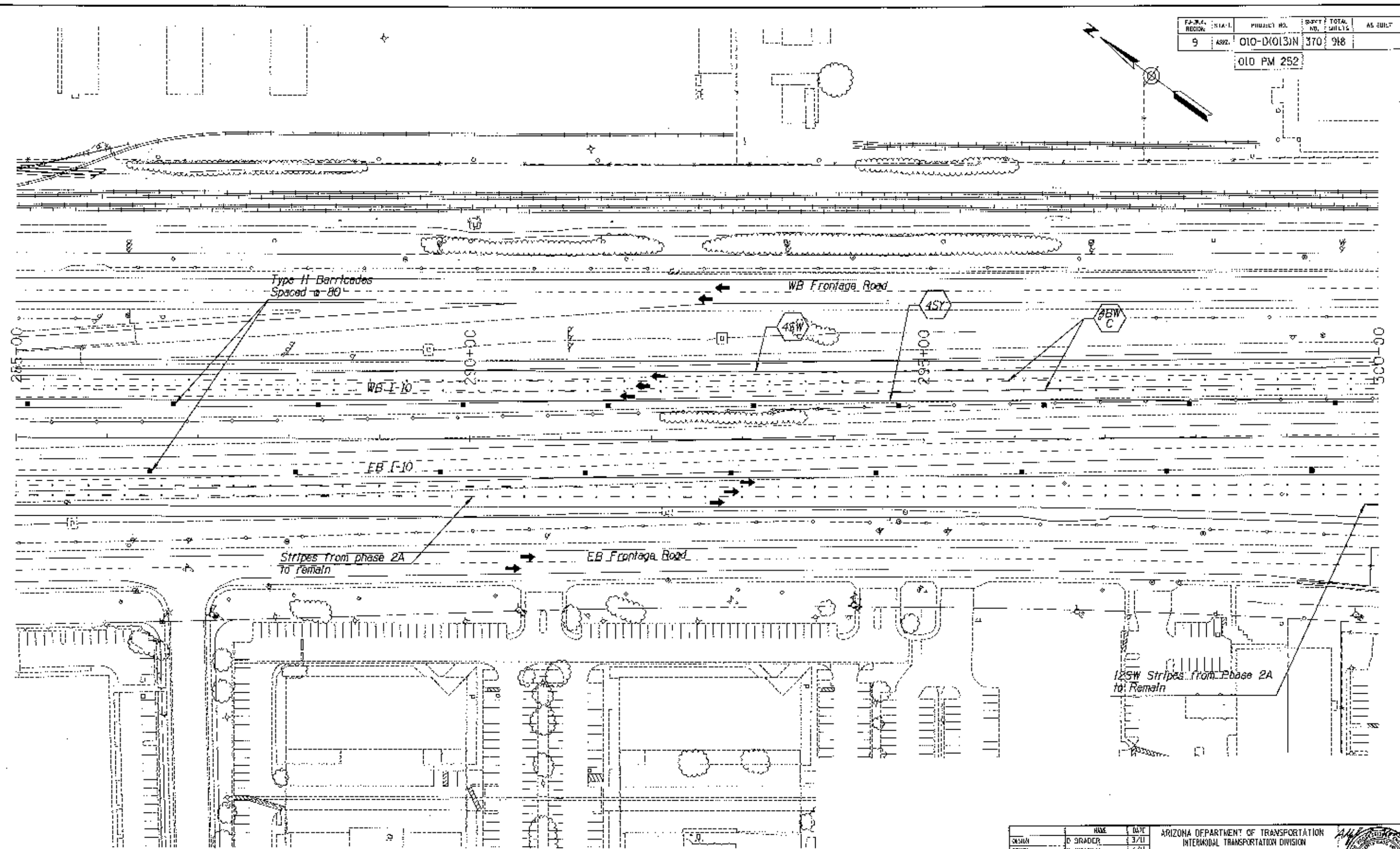
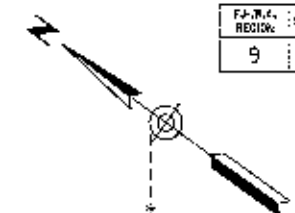


DESIGN	D BRADEN	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DRAWN	J BRADEN	DATE	3/11		
CHECKED	J RODRIGUEZ	DATE	3/11		
URS				TRAFFIC CONTROL PLAN PHASE 3A	
ROUTE	I-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H6241 OIC			010-D(013)N		OF

For more information, please call 1-800-782-5348

FA-R.A. REGION	SHEET NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ASBZ	010-D10131N	370	918	

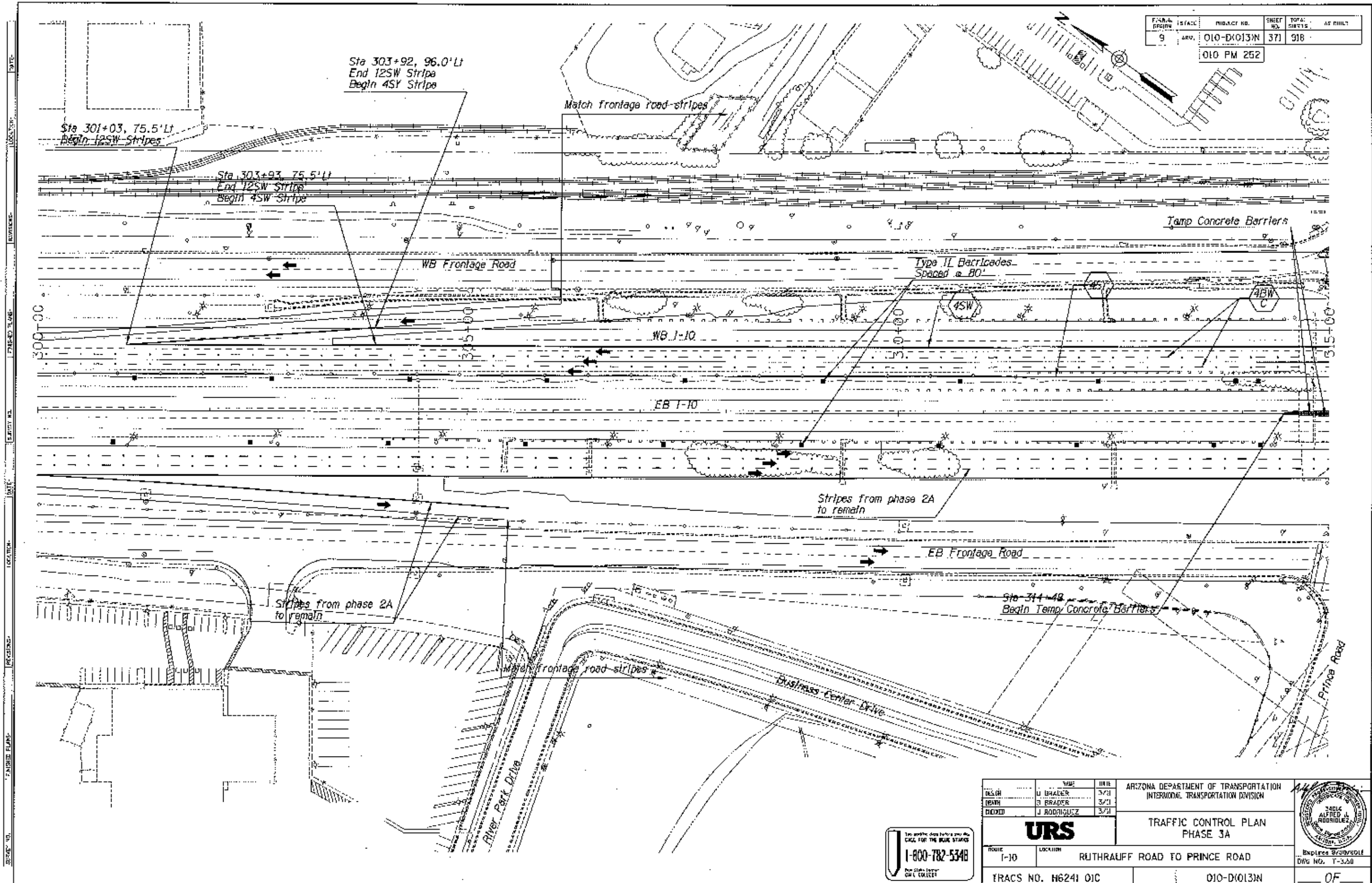
010 PM 252



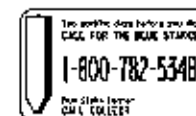
DESIGN	D. GRADER	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 3A	
DRAWN	D. SHADISH	3/11		
CHECKED	E. RODRIGUEZ	3/11		
AGENCY	I-10	LOCATION	RUTHAUFF ROAD TO PRINCE ROAD	Engineer No./NO.0061
TRACS NO.	H6241 OIC		010-D10131N	DWG NO. T-3.57

1-800-702-5348
 CALL ONLY

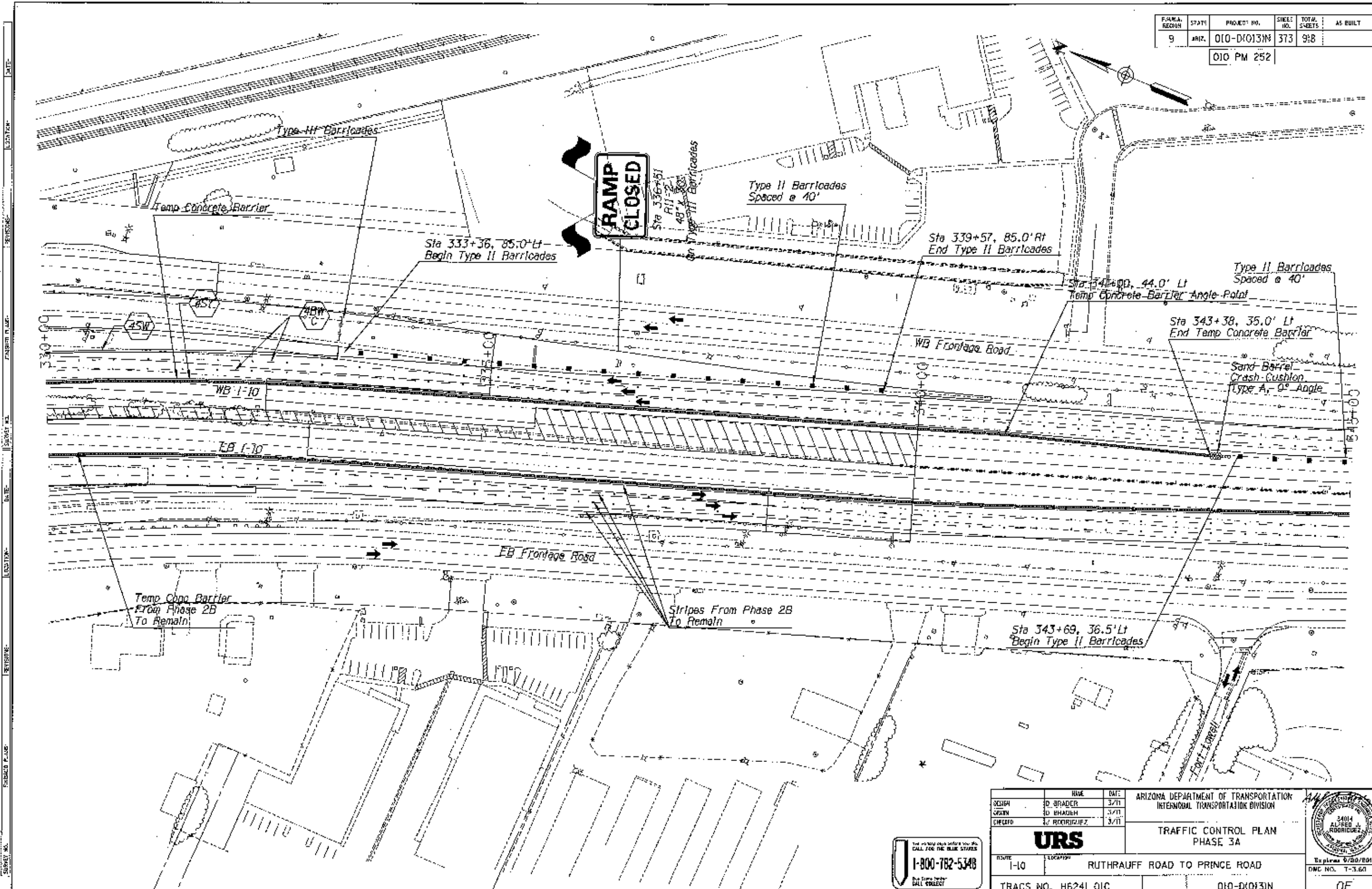
PLAN REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARZ.	010-D(013)N	371	918	
010 PM 252					



DESIGN	DATE	BY	CHKD	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
BRADY	3/31	BRADY	RODRIGUEZ	
RODRIGUEZ	3/31	RODRIGUEZ	RODRIGUEZ	
URS				TRAFFIC CONTROL PLAN PHASE 3A
ROUTE	LOCATION	Expires 8/30/2011 DWG NO. T-350		
T-10	RUTHRAUFF ROAD TO PRINCE ROAD			
TRACS NO. H6241 01C		010-D(013)N		OF



F.W.M.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D1013M	373	918	
010 PM 252					



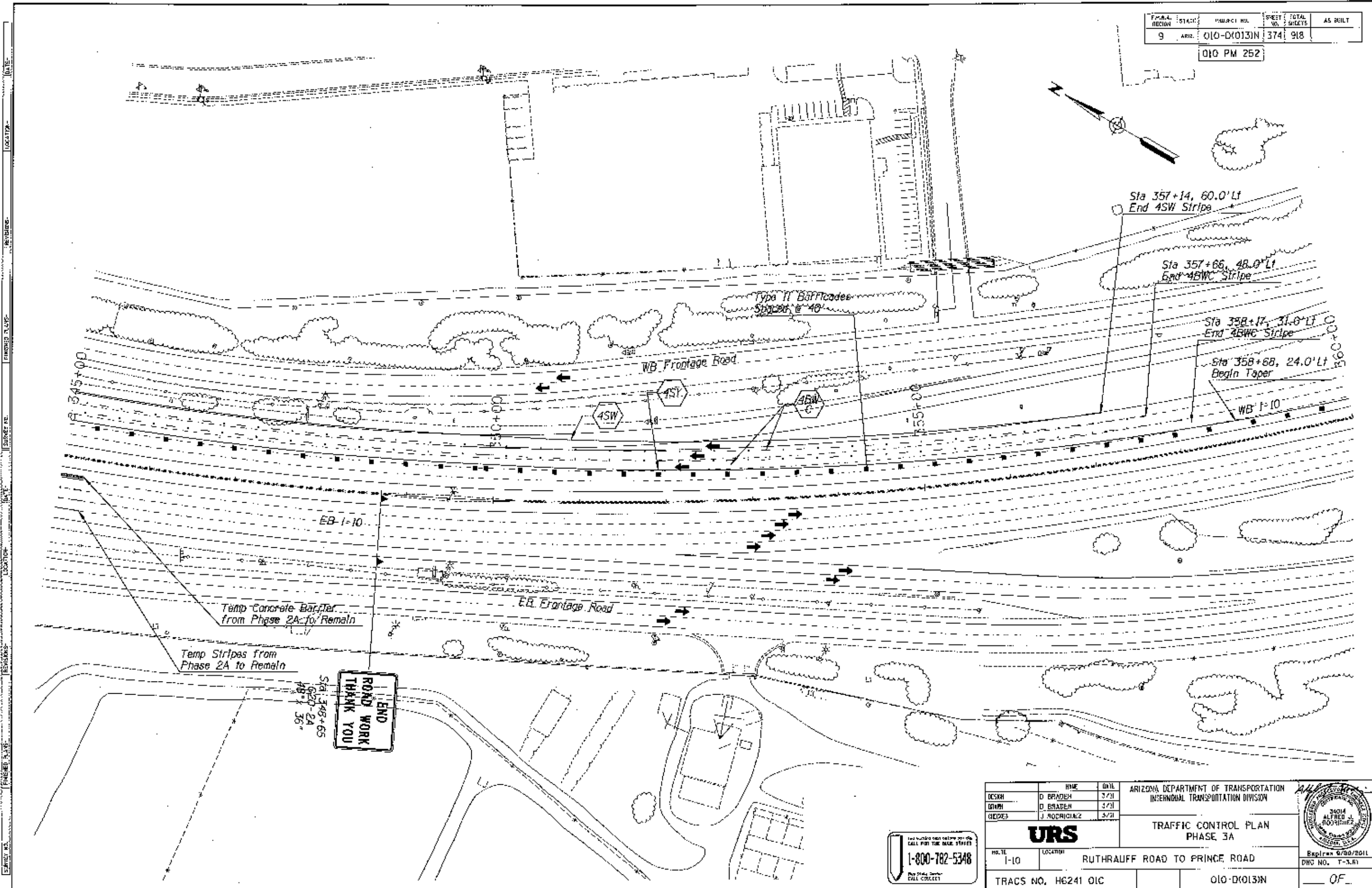
DATE: _____
 REVISIONS:
 SURVEY NO. _____
 SURVEY P.L.O.G. _____
 DATE: _____
 REVISIONS:
 SURVEY NO. _____
 SURVEY P.L.O.G. _____

DESIGN	D. BRADY	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 3A	
SEAL	D. BRADY	3/11		
SUPV	J. RODRIGUEZ	3/11		
PROJECT NO.	1-10 RUTHRAUFF ROAD TO PRINCE ROAD		DATE: 5/28/2011	Employee 5/28/2011 DMC NO. T-3.61
TRACS NO.	H6241 01C		010-D1013M	

THE PERSONS WHOSE NAMES ARE LISTED ABOVE ARE THE DESIGNERS OF THIS PROJECT.
 1-800-782-5348
 THE STATE OF ARIZONA
 DEPARTMENT OF TRANSPORTATION

F.M.A. REGION	STAGE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARL	010-D(013)N	374	918	

010 PM 252



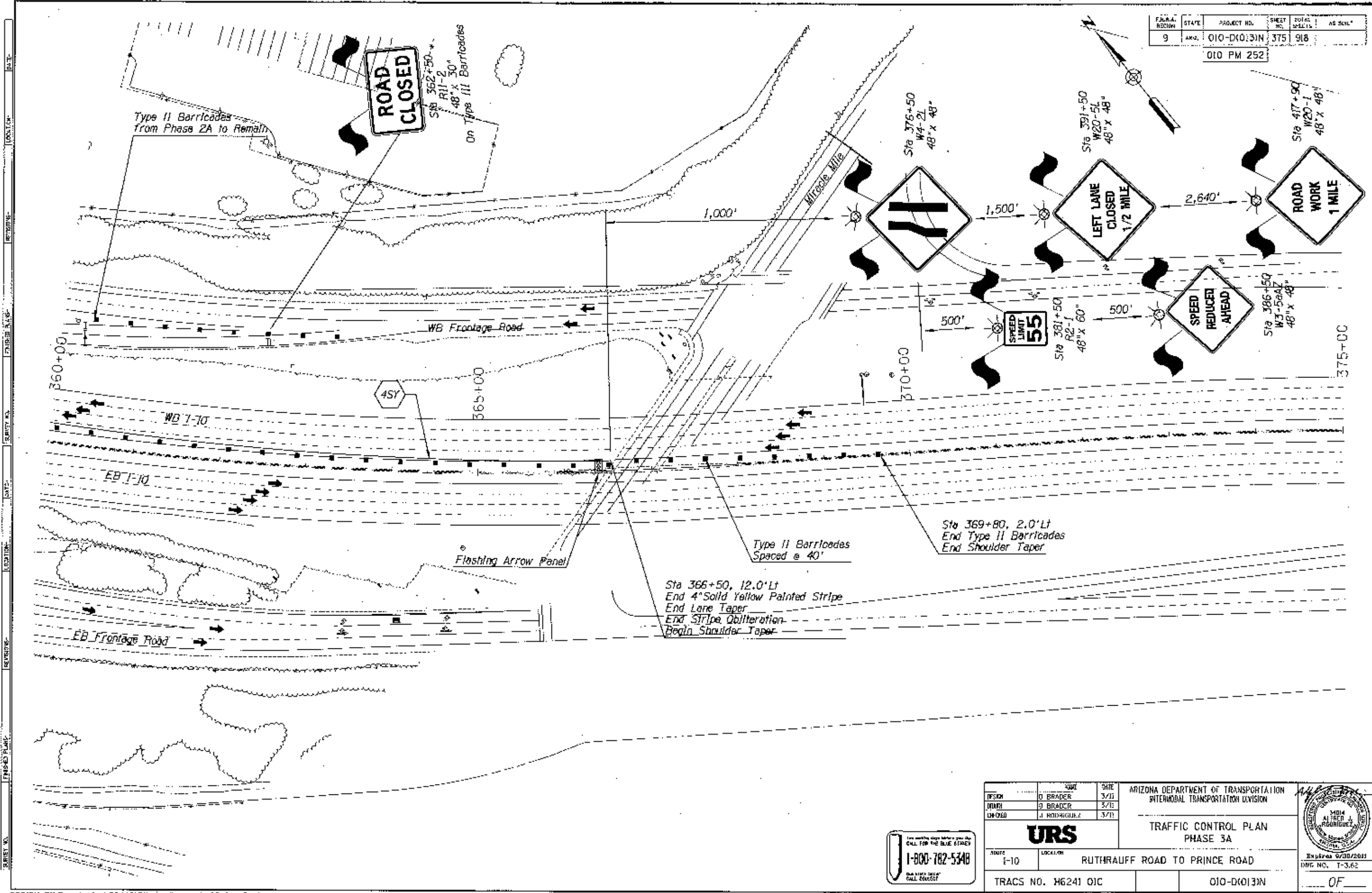
DESIGN		NAME	DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN		D. BRADEN	3/21	
CHECKED		J. RODRIGUEZ	3/21	
URS				TRAFFIC CONTROL PLAN PHASE 3A
PROJECT NO.	1-10	LOCATION	RUTHLAUFF ROAD TO PRINCE ROAD	
TRACS NO. H6241 OIC		010-D(013)N		OF

1-800-782-5348



PLANS REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS SHOWN
9	ARIZ.	010-D(013)N	375	918	

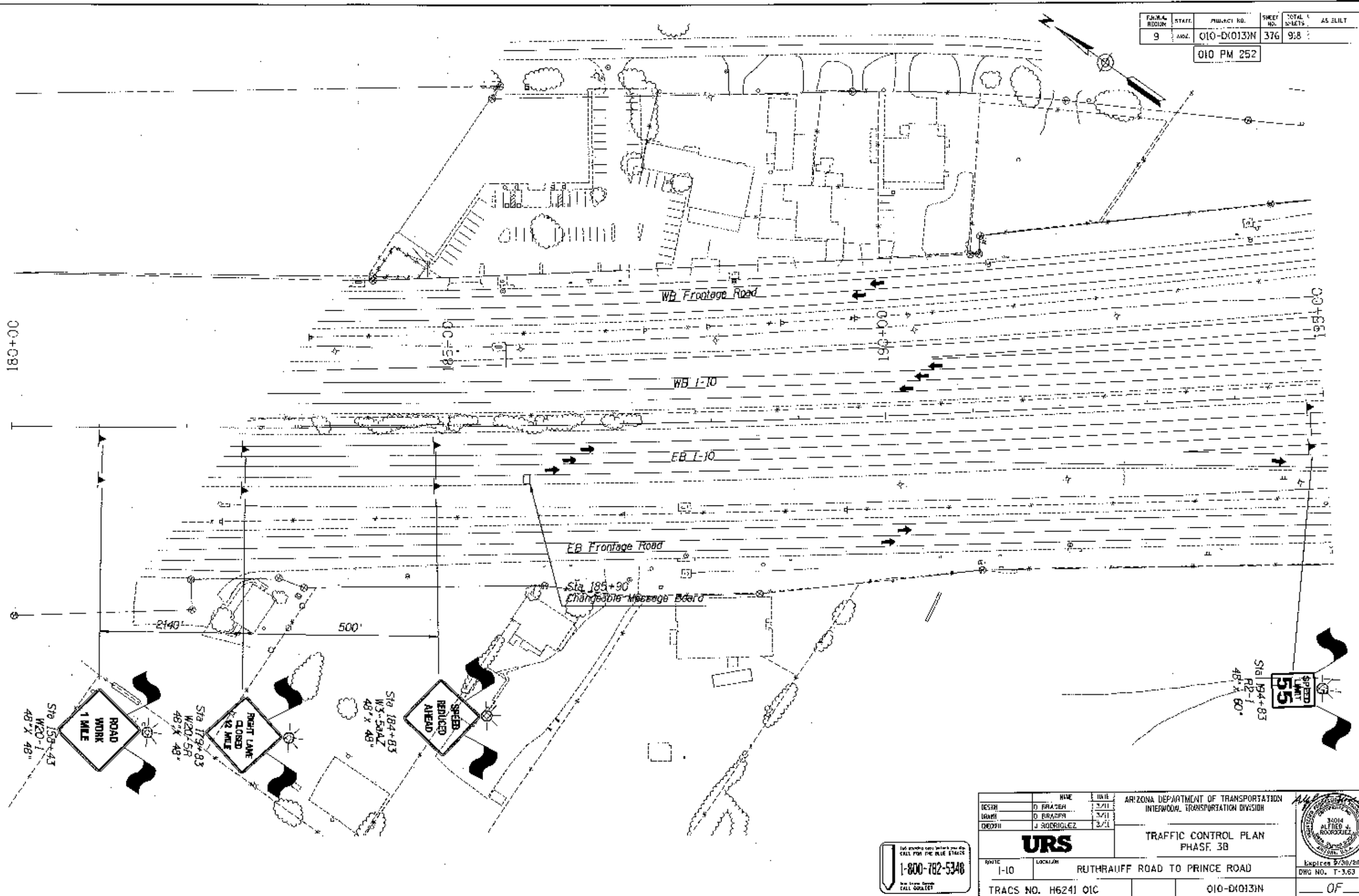
010 PM 252



DESIGN	0 BRADY	5/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 3A	
DRAWN	0 BRADY	5/11		
CHECKED	J. RODRIGUEZ	5/11		
PROJECT NO. 010-D(013)N SHEET NO. 375 OF 918 DATE 010 PM 252			TRUCKS NO. M6241 OIC 010-D(013)N OF	

F.H.W. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	376	918	

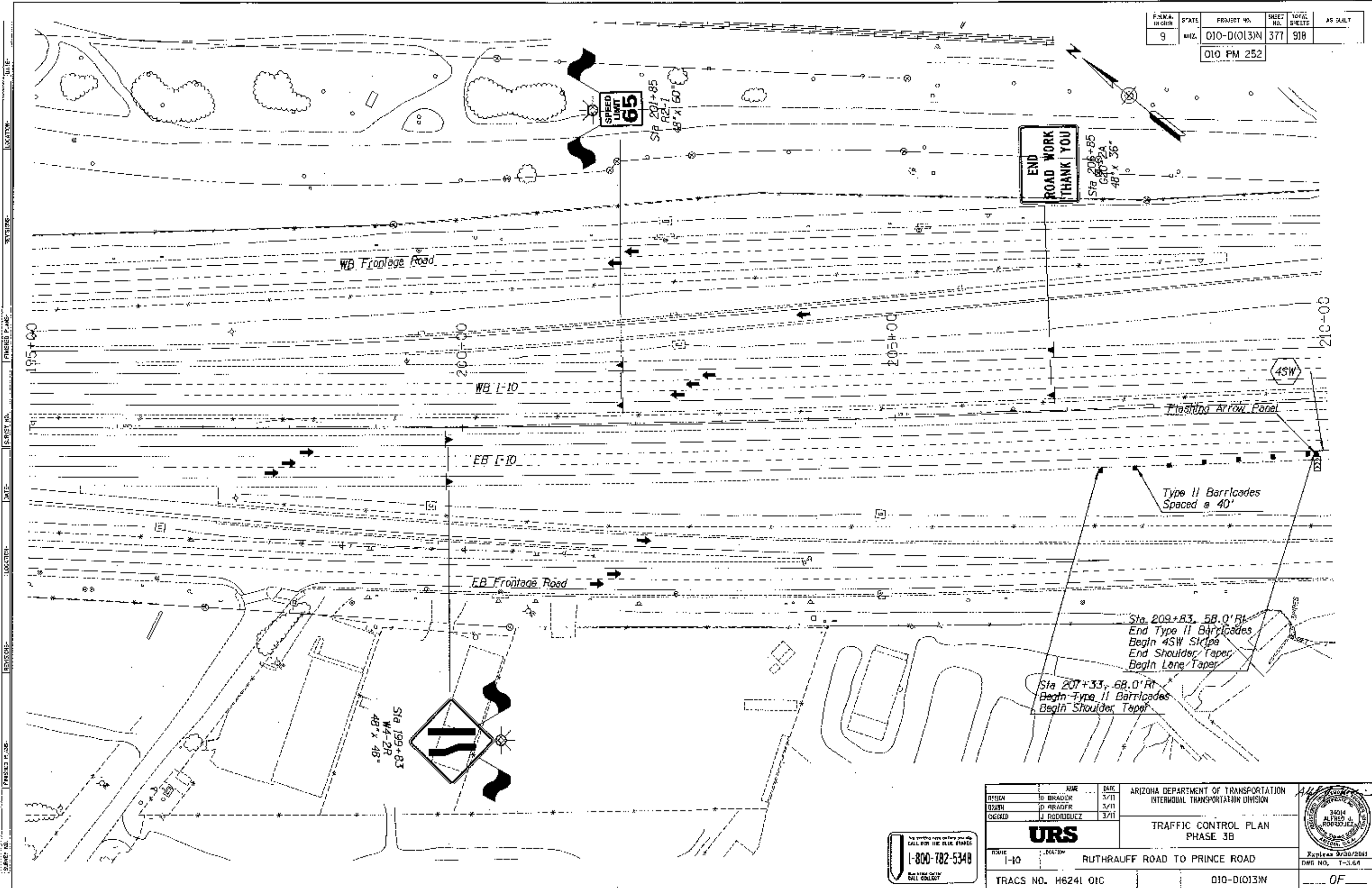
010 PM 252



1-800-782-5348
CALL CENTER

DESIGN	D. BRADY	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION URS TRAFFIC CONTROL PLAN PHASE 3B	
DRAWN	D. BRADY	3/11		
CHECKED	J. RODRIGUEZ	3/11		
ROUTE	1-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD	Expires 9/30/2011
TRACS NO.	H6241 OIC		010-D(013)N	DWG NO. T-363
				OF

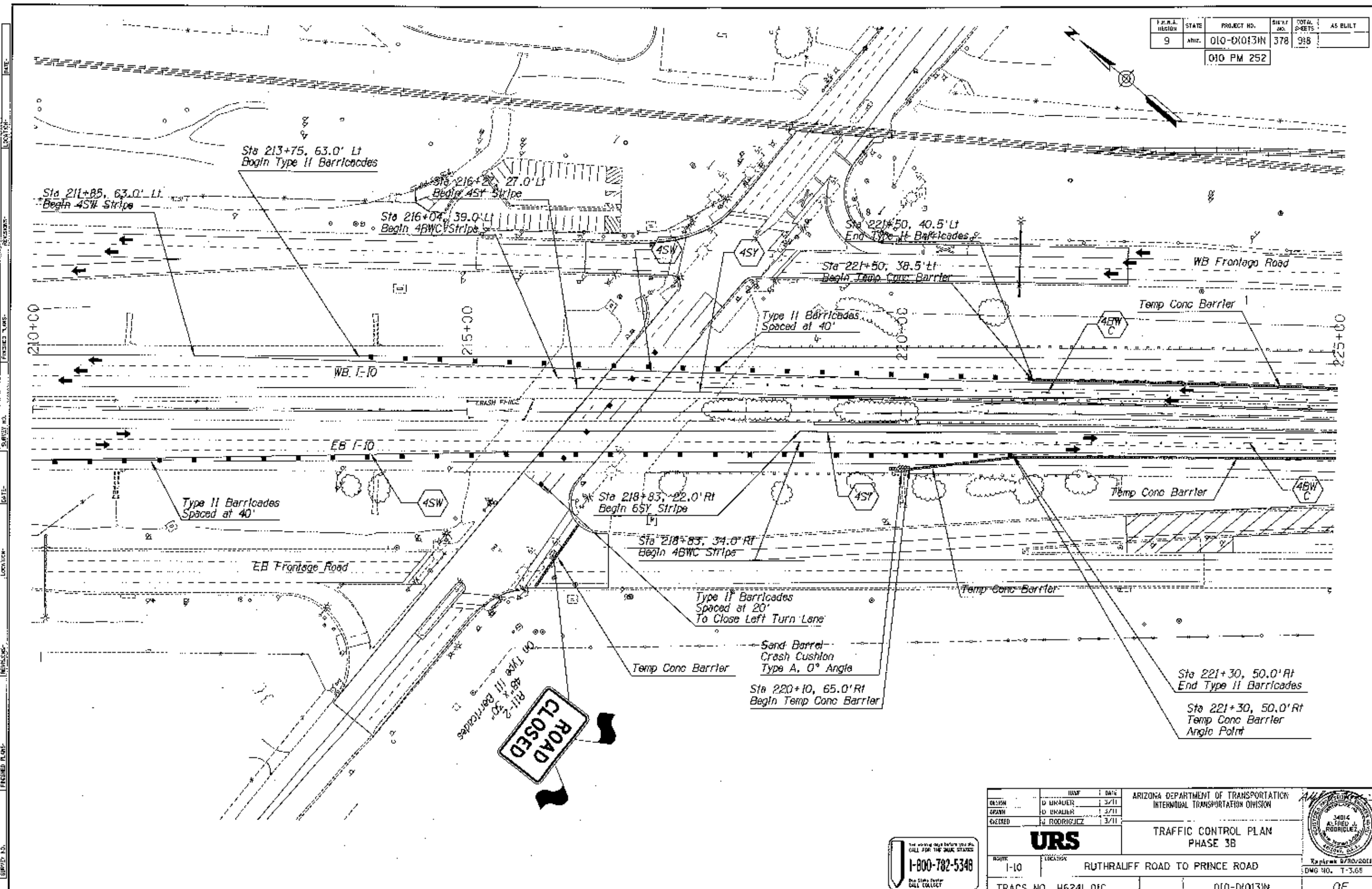
F.S.M.A. in civil	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	MIZ.	010-D(013)N	377	918	
010 PM 252					



DESIGN	BY: BRADEN	DATE: 3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DRAWN	BY: BRADEN	DATE: 3/11		
CHECKED	BY: RODRIGUEZ	DATE: 3/11		
URS			TRAFFIC CONTROL PLAN PHASE 3B	
ROUTE	1-10		RUTHRAUFF ROAD TO PRINCE ROAD	
TRACS NO. H6241 01C			010-D(013)N	
			OF	

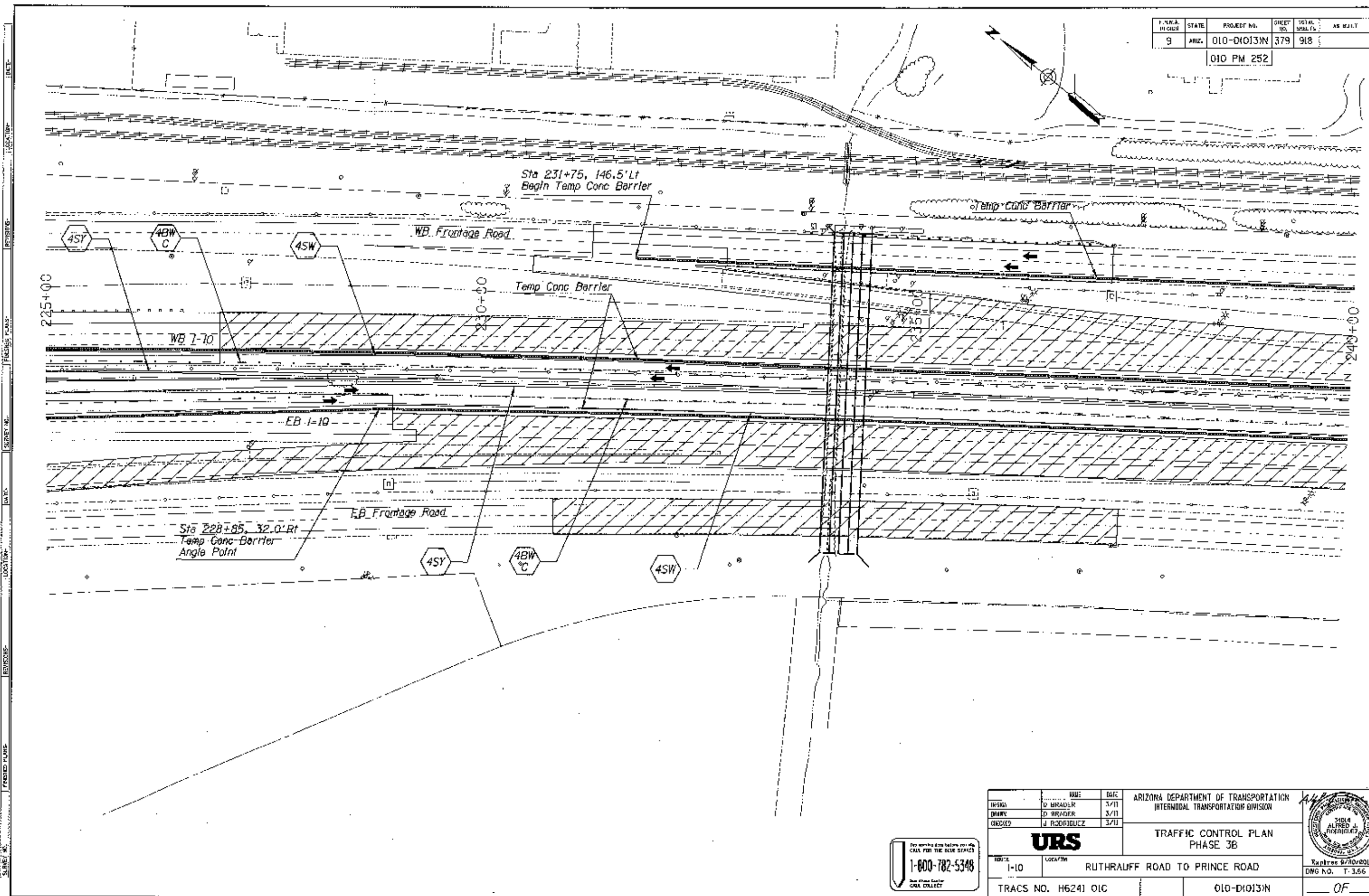
1-800-782-5348
CALL CENTER

F.P.R.A. DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	378	988	
010 PM 252					



DESIGN	D. UKALER	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DRAWN	D. UKALER	3/11		
CHECKED	J. RODRIGUEZ	3/11		
URS			TRAFFIC CONTROL PLAN PHASE 3B	
ROUTE	1-10		RUTHLAUFF ROAD TO PRINCE ROAD	
TRACS NO.	H6241 01C		010-D10131N	
			DWG NO. T-305	

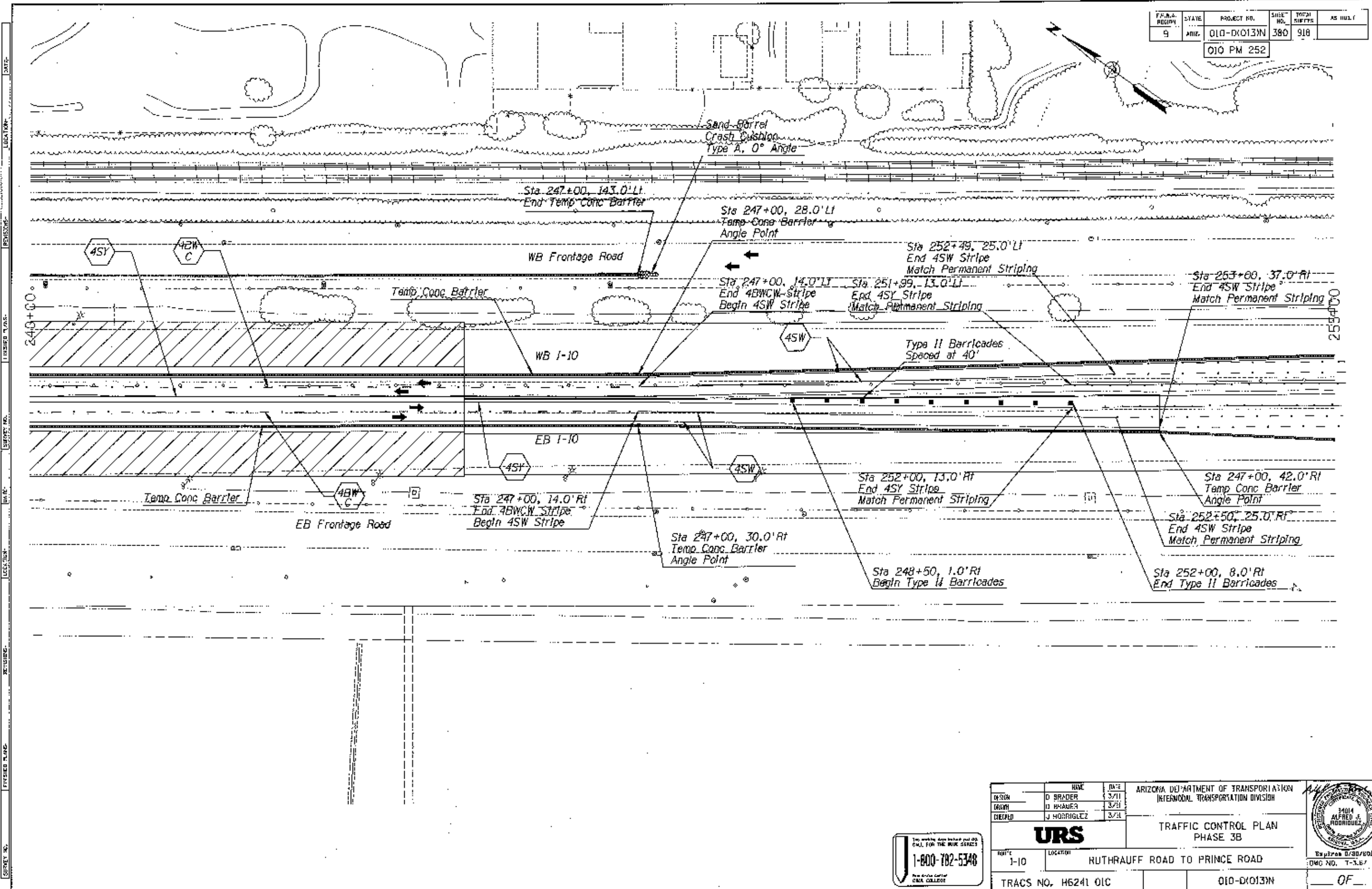
F.N.C.A. PROJECT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	379	918	
010 PM 252					



DESIGNER		DATE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DRAWN		DATE		
CHECKED		DATE		
		TRAFFIC CONTROL PLAN PHASE 3B		Expire 9/30/2011 DWG NO. T-356
ROUTE	LOCATION			
1-10	RUTHRAUFF ROAD TO PRINCE ROAD			
TRACS NO. H6241 OIC		010-D10131N		OF



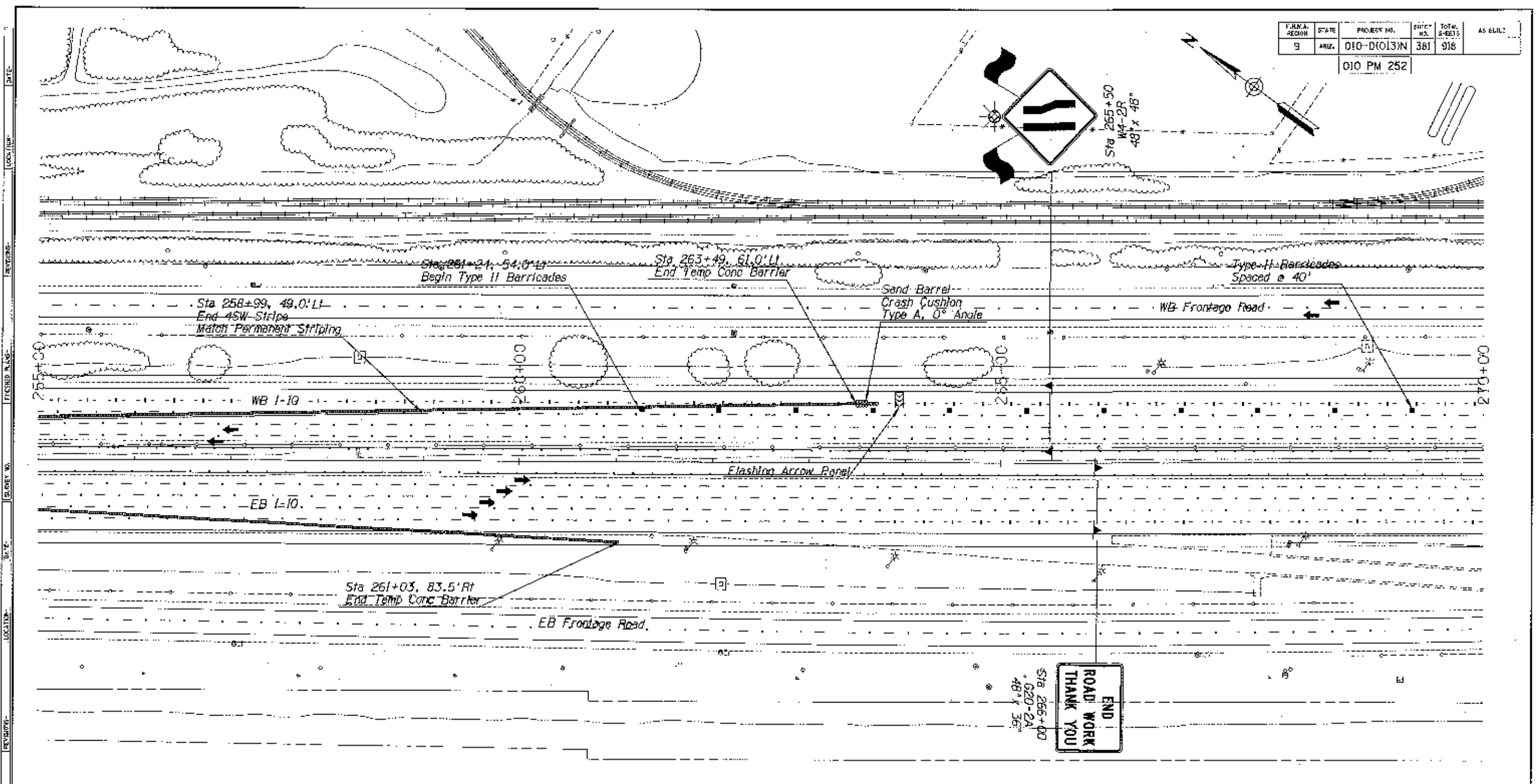
F.P.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	380	918	
010 PM 252					



DESIGN	D BRADY	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DRAWN	D KHANER	DATE	3/11		
CHECKED	J RODRIGUEZ	DATE	3/11		
URS				TRAFFIC CONTROL PLAN PHASE 3B	
ROUTE	1-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO.	H6241 01C	PROJECT NO.	010-D(013)N	OF	

1-800-782-5348
 For more information call for the BLUE BOOK
 New York Office
 CMA COLLEGE

F.H.R.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D10131N	381	918	
010 PM 252					



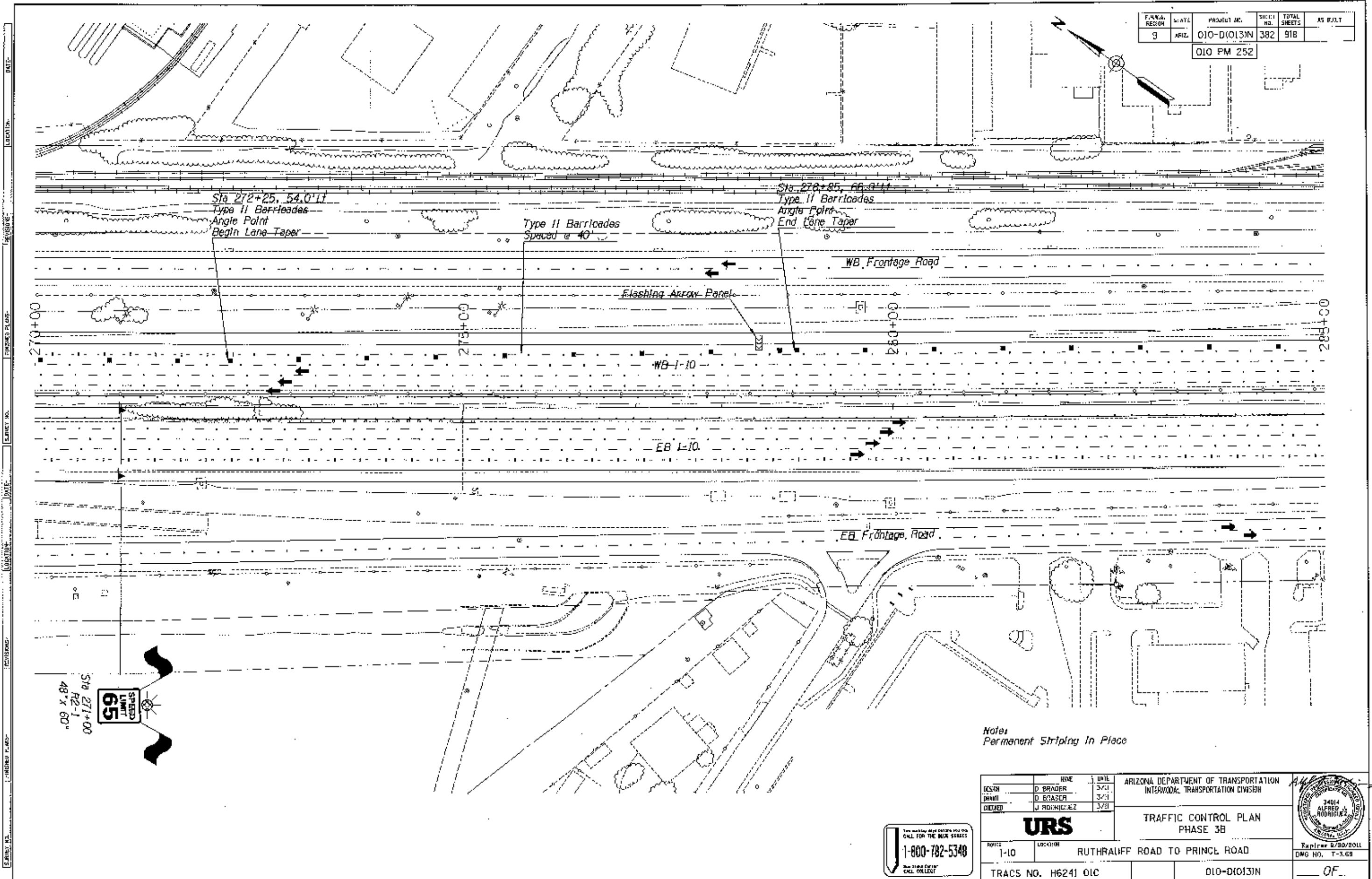
Notes
Permanent Striping In Place

DESIGN	D BRADY	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DRAWN	D BRADY	DATE	3/11		
INCH	J RODRIGUEZ	DATE	3/11		
URS				TRAFFIC CONTROL PLAN PHASE 3B	
ROUTE	I-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H6241 01C		010-D10131N		OF	



1-800-782-5348
CALL FOR THE BLUE STAMP

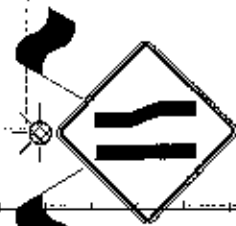
FEDERAL REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	382	918	
010 PM 252					



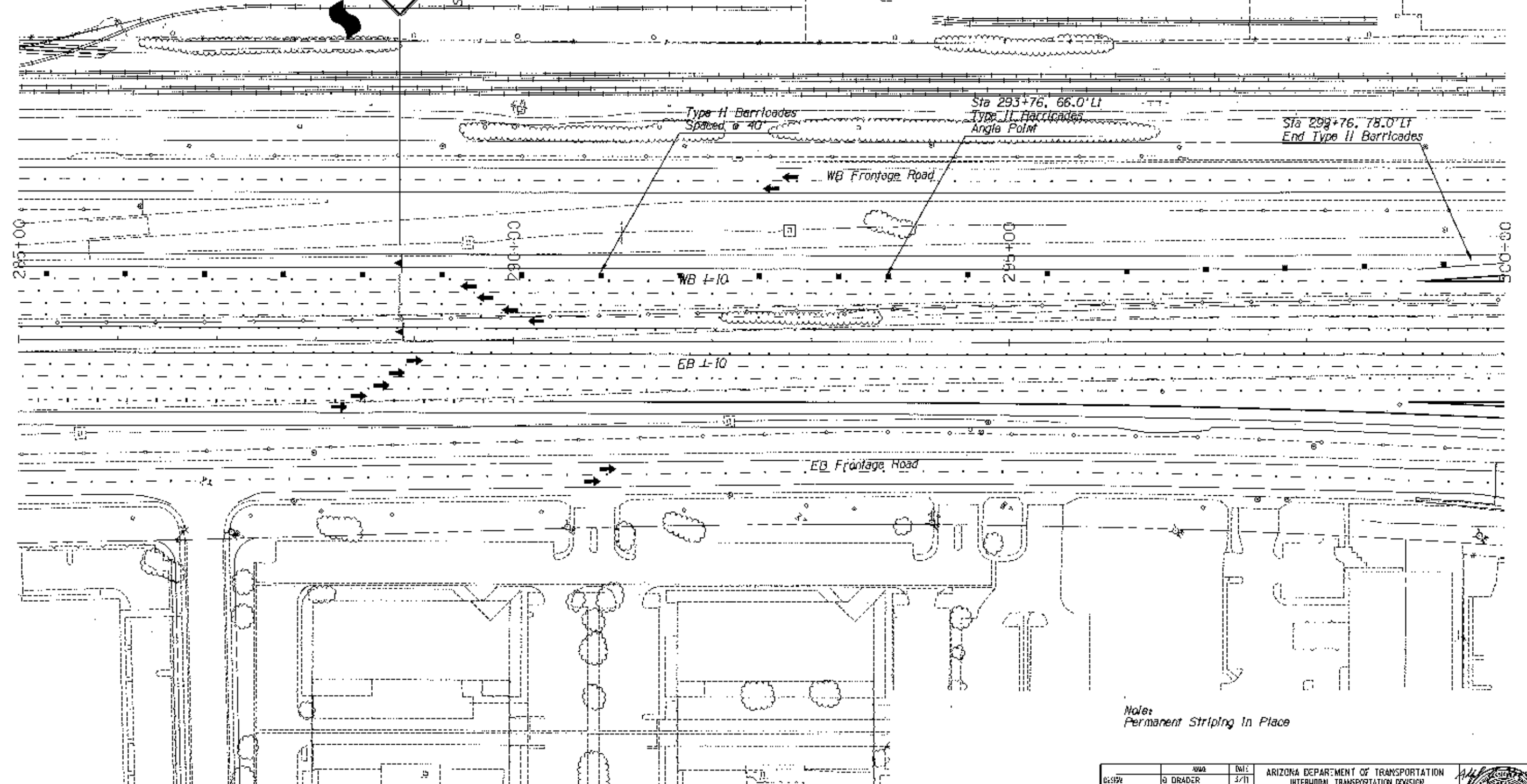
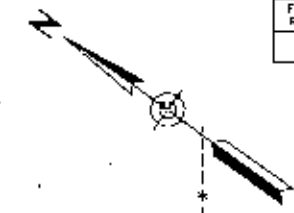
DESIGN	D. BRADY	DATE	3/21	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION
DRAWN	D. BRADY	DATE	3/21	
CHECKED	J. RODRIGUEZ	DATE	3/21	
URS		TRAFFIC CONTROL PLAN PHASE 3B		Expires 9/30/2011 DWG NO. T-3.69
PROJECT	1-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD	
TRACS NO. H6241 01C		010-D(013)N		OF

1-800-782-5348
 THE TRIP CENTER
 CALL COLLECT

F.W.M.A. REGION	SCALE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ASIS	010-D10131N	383	918	
010 PM 252					



Sta 288+85
W4-2R
48" X 48"



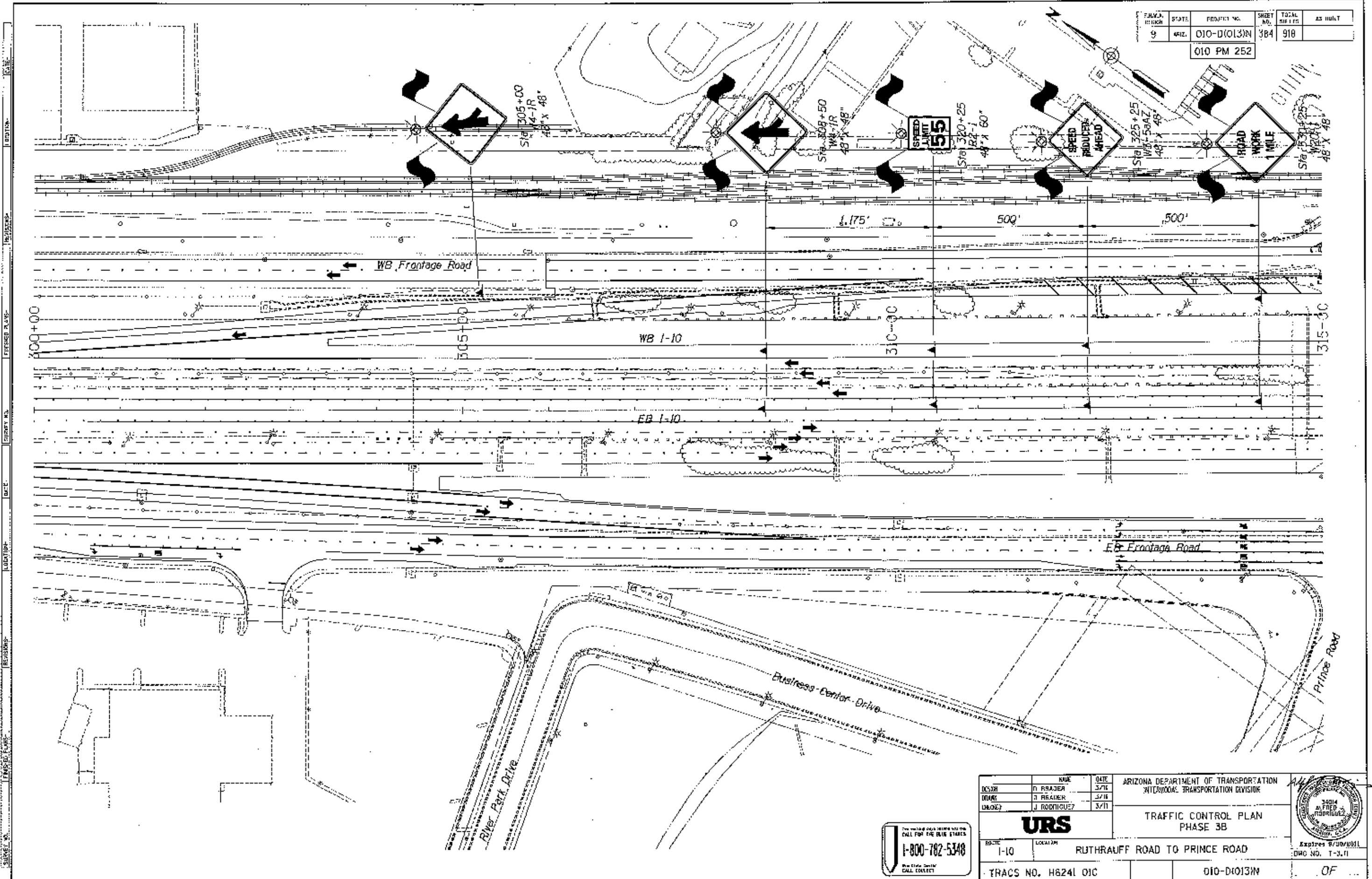
Note:
Permanent Striping In Place


DESIGN	D. DRADER	DATE	3/11	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION	
DRAWN	D. BRADER	DATE	3/11		
CHECKED	J. RODRIGUEZ	DATE	3/11		
URS				TRAFFIC CONTROL PLAN PHASE 3B	
NO.:	1-10	LOCATION:	RUTHRAUFF ROAD TO PRINCE ROAD		
TRACS NO. H6241 01C		010-D10131N		OF	



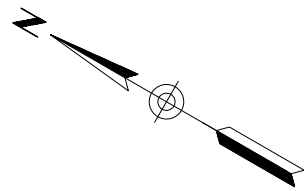
FED. AID DISTRICT	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(013)N	384	918	

010 PM 252



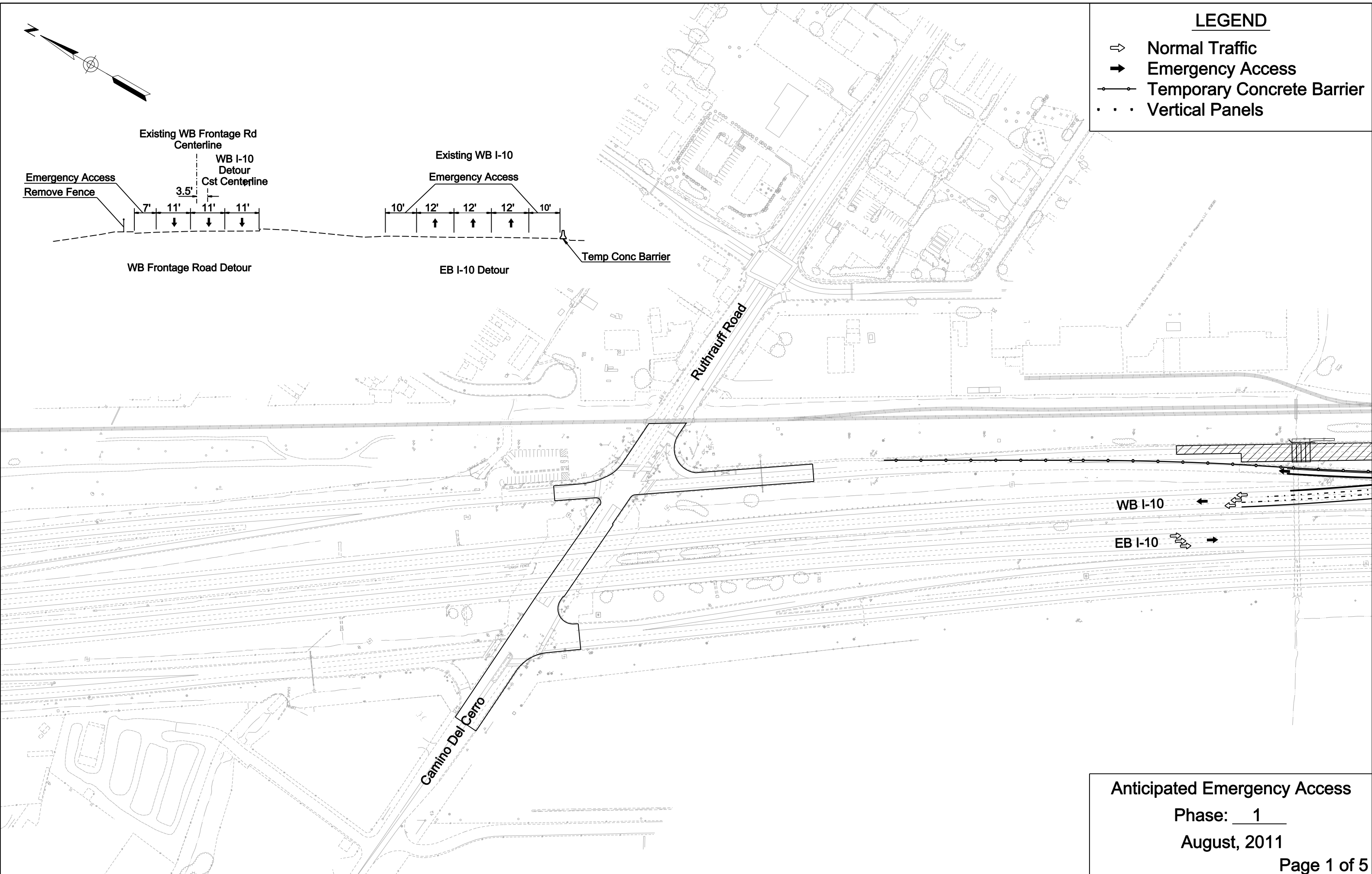
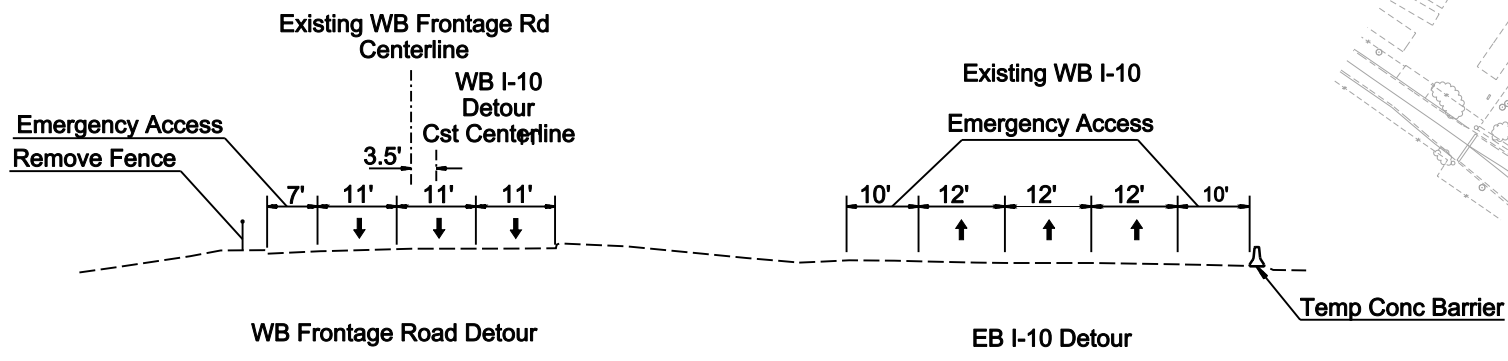
DESIGN	D. PRADIER	DATE	3/7/11	ARIZONA DEPARTMENT OF TRANSPORTATION METRO/LOCAL TRANSPORTATION DIVISION
DRAWN	J. PRADIER	DATE	3/7/11	
CHECKED	J. RODRIGUEZ	DATE	3/7/11	
URS				TRAFFIC CONTROL PLAN PHASE 3B
PROJECT	1-10	LOCATION	RUTHRAUFF ROAD TO PRINCE ROAD	
TRACS NO.	H6241 01C		010-D(013)N	

THE USER SHALL VERIFY THE CALL FOR THE BLUE STAKES
1-800-782-5348
 THE STATE SHALL CALL COLLECT

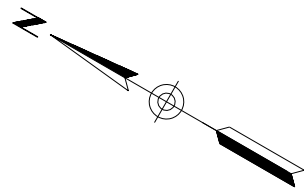


LEGEND

- ⇨ Normal Traffic
- ➔ Emergency Access
- Temporary Concrete Barrier
- ⋯ Vertical Panels

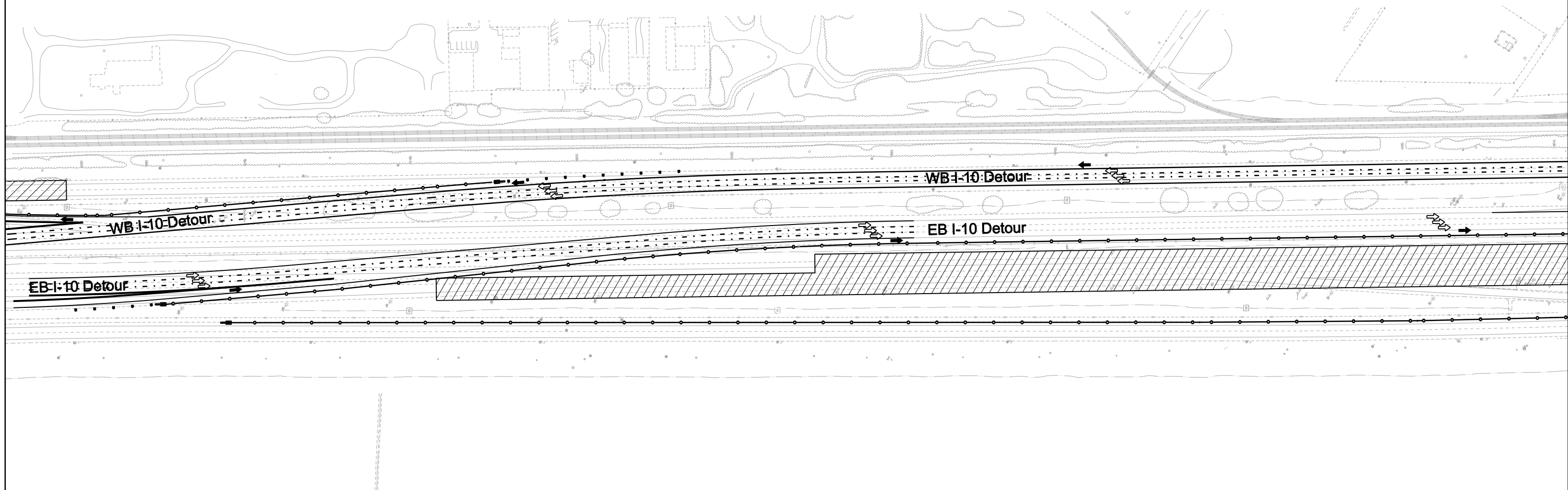


Anticipated Emergency Access
Phase: 1
August, 2011
Page 1 of 5

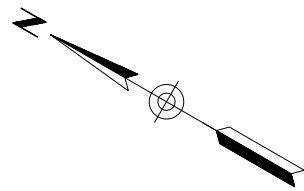


LEGEND

- ⇨ Normal Traffic
- ➔ Emergency Access
- Temporary Concrete Barrier
- Vertical Panels

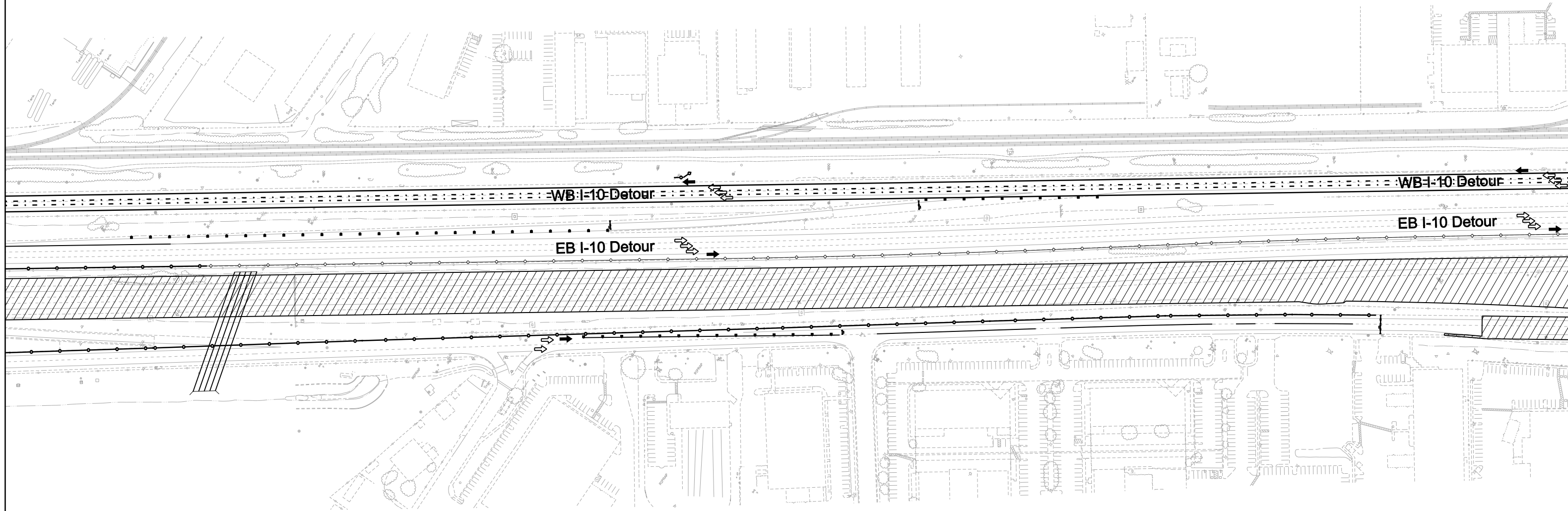


Anticipated Emergency Access
Phase: 1
August, 2011
Page 2 of 5

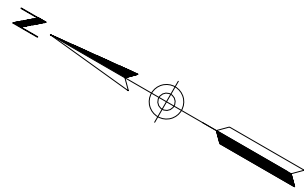


LEGEND

- ↪ Normal Traffic
- ➔ Emergency Access
- Temporary Concrete Barrier
- Vertical Panels

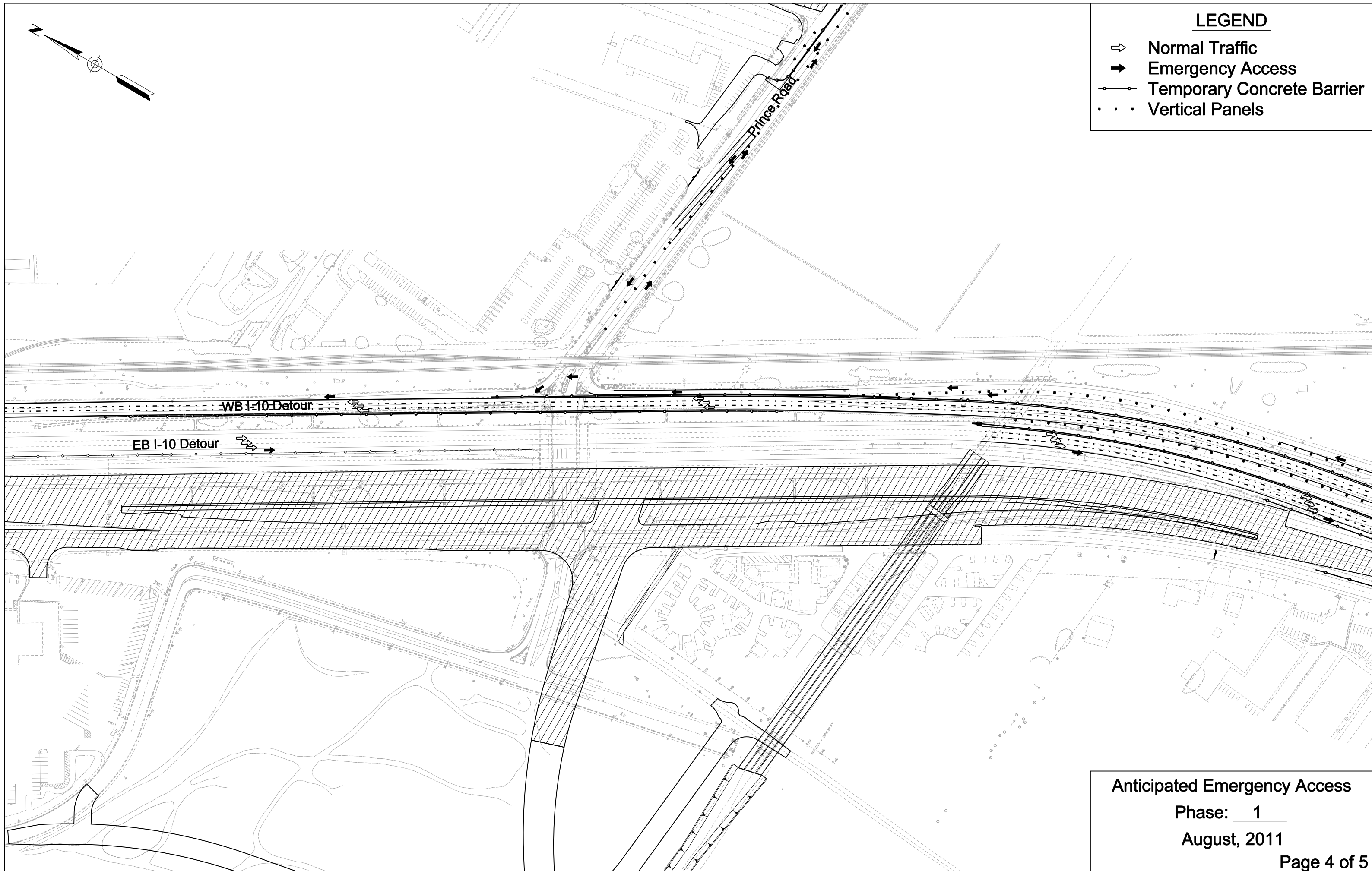


Anticipated Emergency Access
Phase: 1
August, 2011
Page 3 of 5

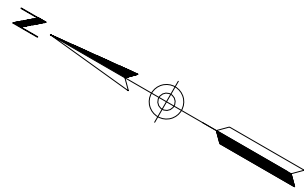


LEGEND

- ⇨ Normal Traffic
- ➔ Emergency Access
- Temporary Concrete Barrier
- ⋯ Vertical Panels

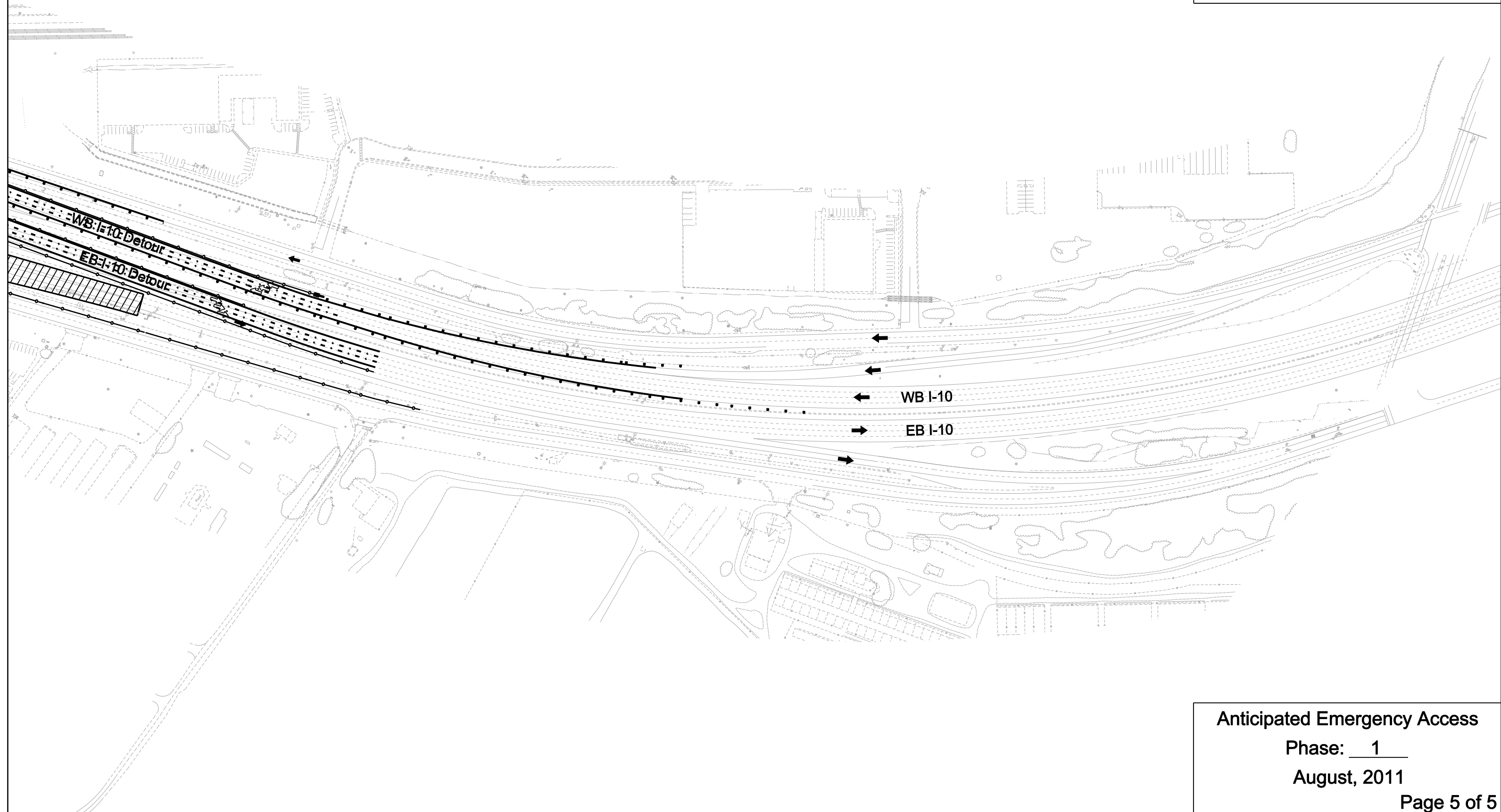


Anticipated Emergency Access
Phase: 1
August, 2011
Page 4 of 5

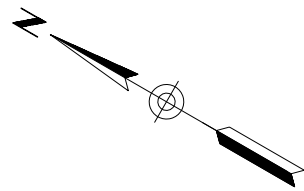


LEGEND

- ⇨ Normal Traffic
- ➔ Emergency Access
- Temporary Concrete Barrier
- Vertical Panels

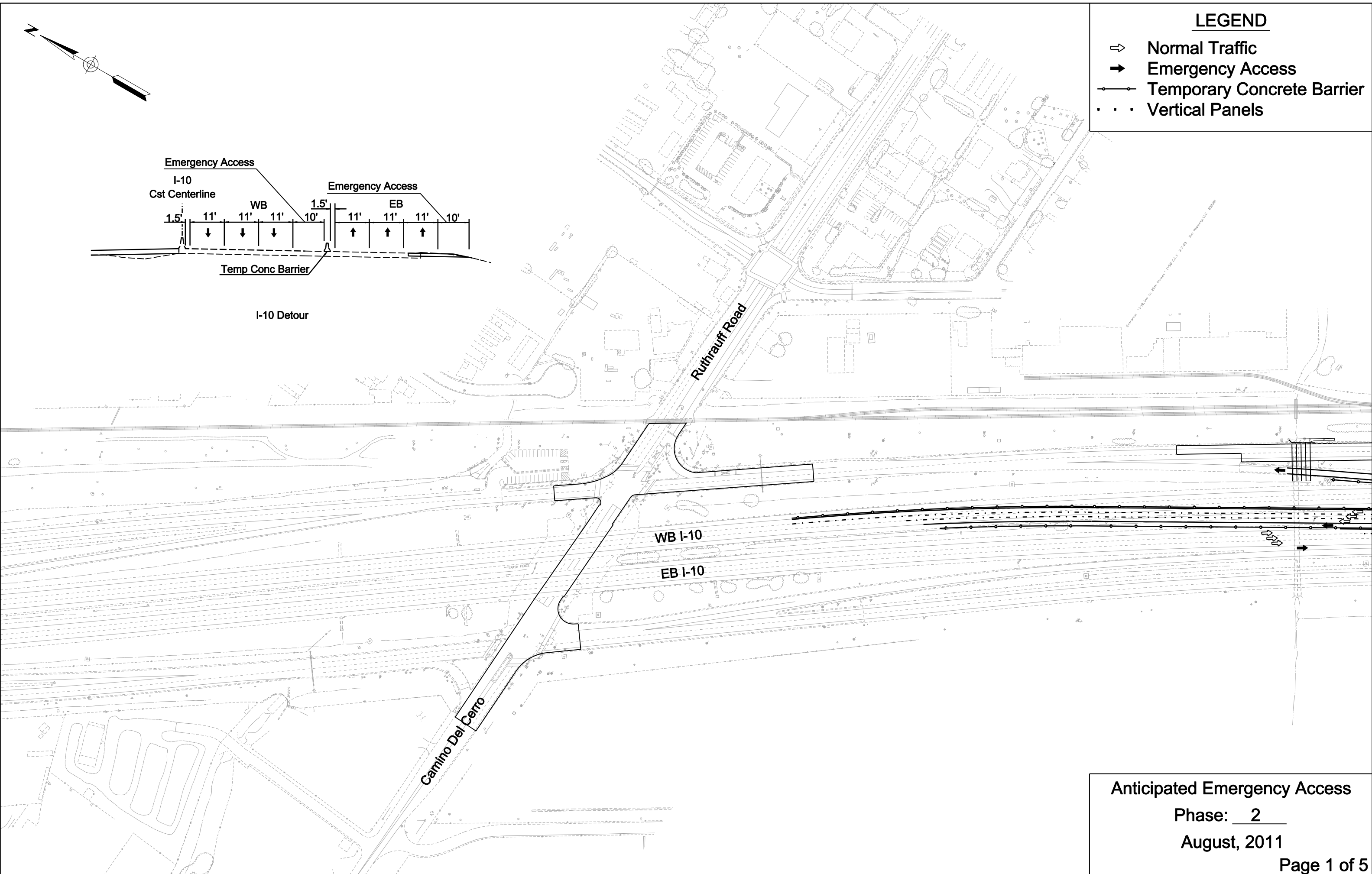
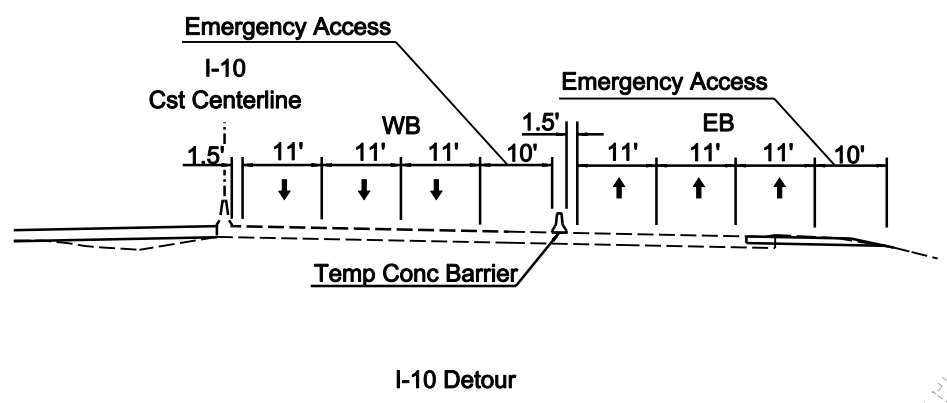


Anticipated Emergency Access
Phase: 1
August, 2011
Page 5 of 5

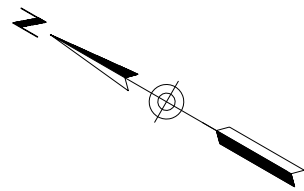


LEGEND

-  Normal Traffic
-  Emergency Access
-  Temporary Concrete Barrier
-  Vertical Panels

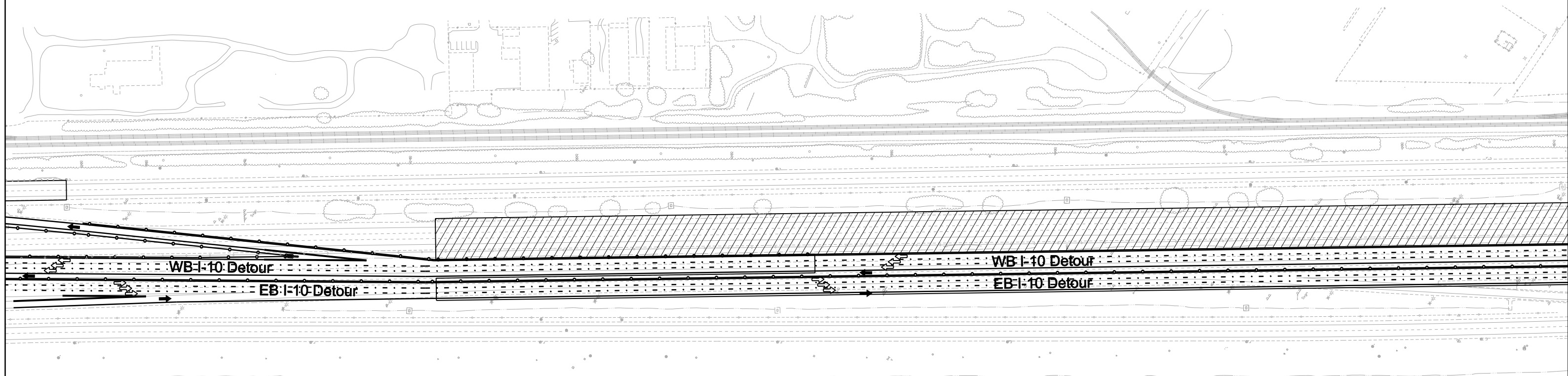


Anticipated Emergency Access
Phase: 2
August, 2011
Page 1 of 5

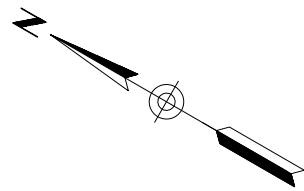


LEGEND

- ⇨ Normal Traffic
- ➔ Emergency Access
- Temporary Concrete Barrier
- · · Vertical Panels

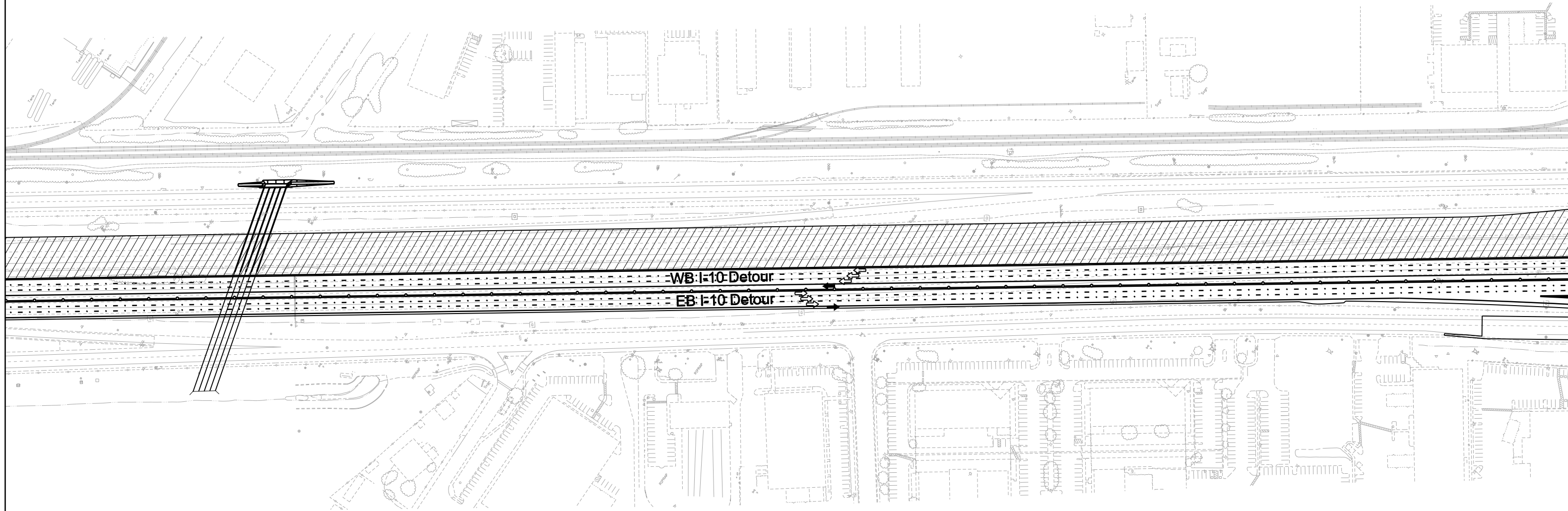


Anticipated Emergency Access
Phase: 2
August, 2011
Page 2 of 5

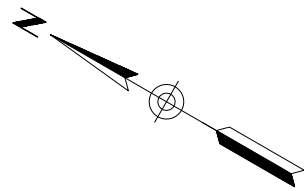


LEGEND

- ⇨ Normal Traffic
- ➔ Emergency Access
- Temporary Concrete Barrier
- Vertical Panels

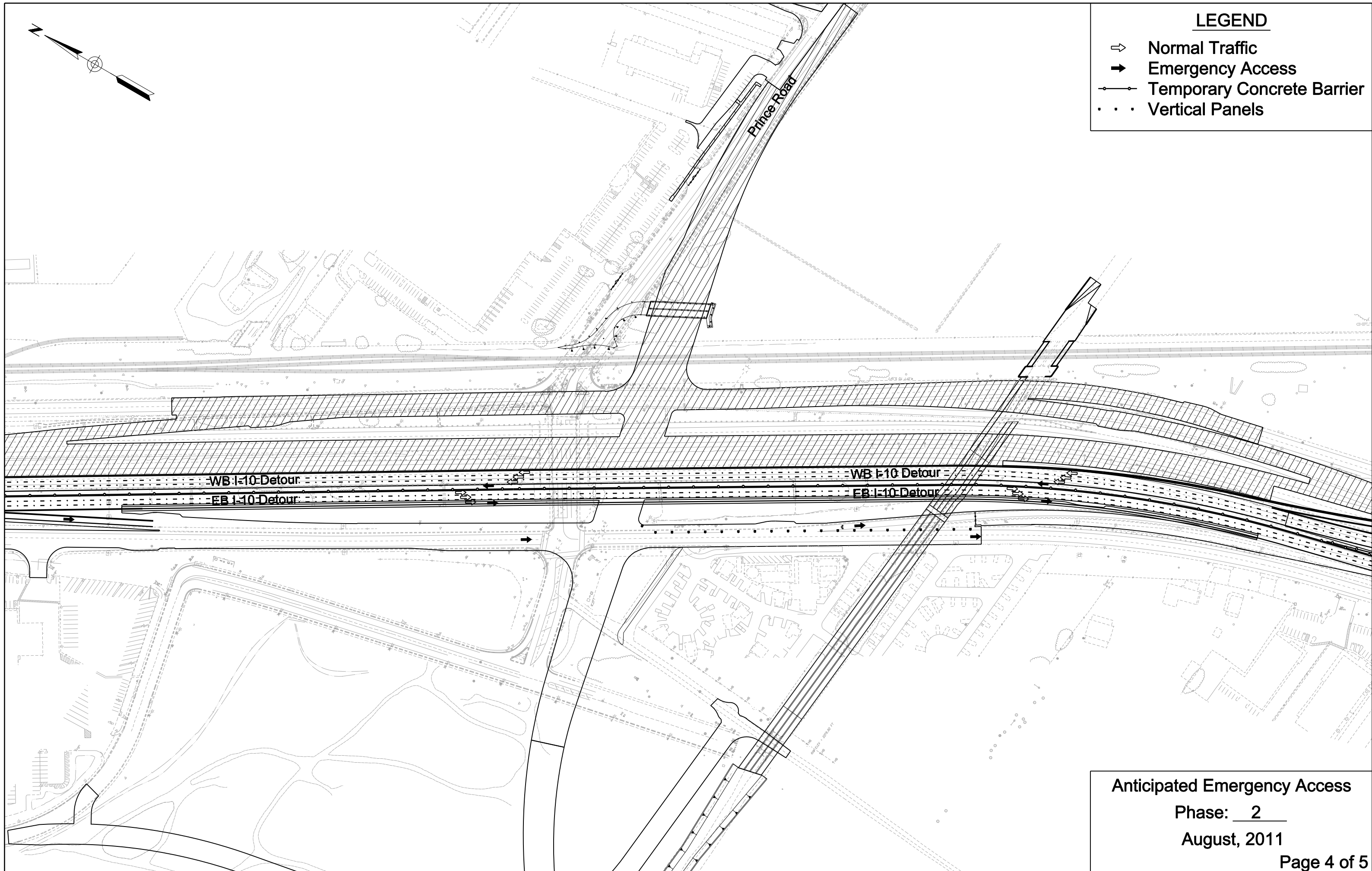


Anticipated Emergency Access
Phase: 2
August, 2011
Page 3 of 5

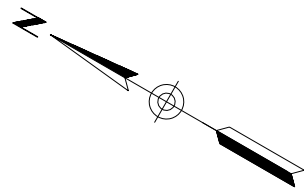


LEGEND

- ⇨ Normal Traffic
- ➔ Emergency Access
- Temporary Concrete Barrier
- ⋯ Vertical Panels

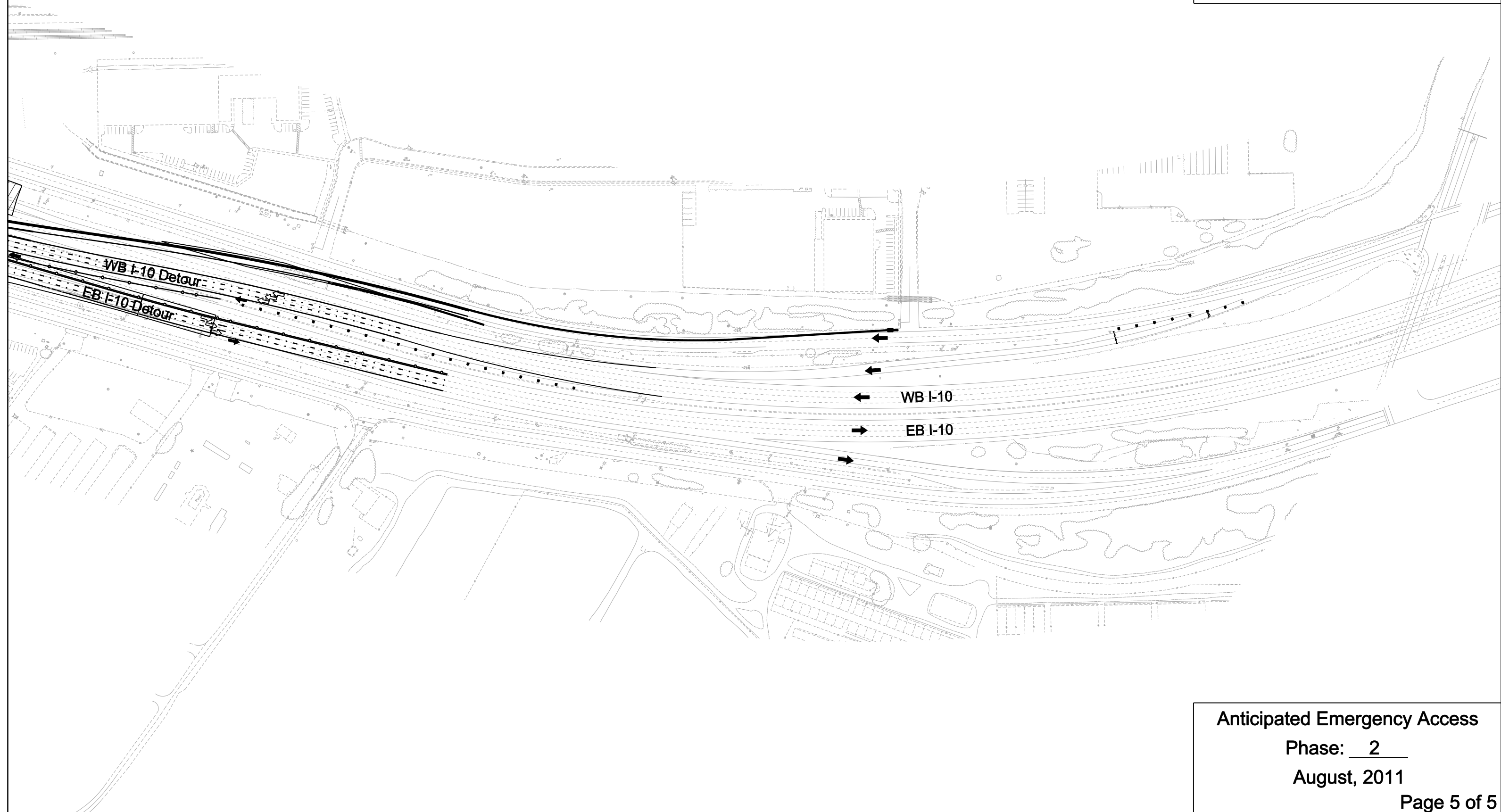


Anticipated Emergency Access
Phase: 2
August, 2011
Page 4 of 5

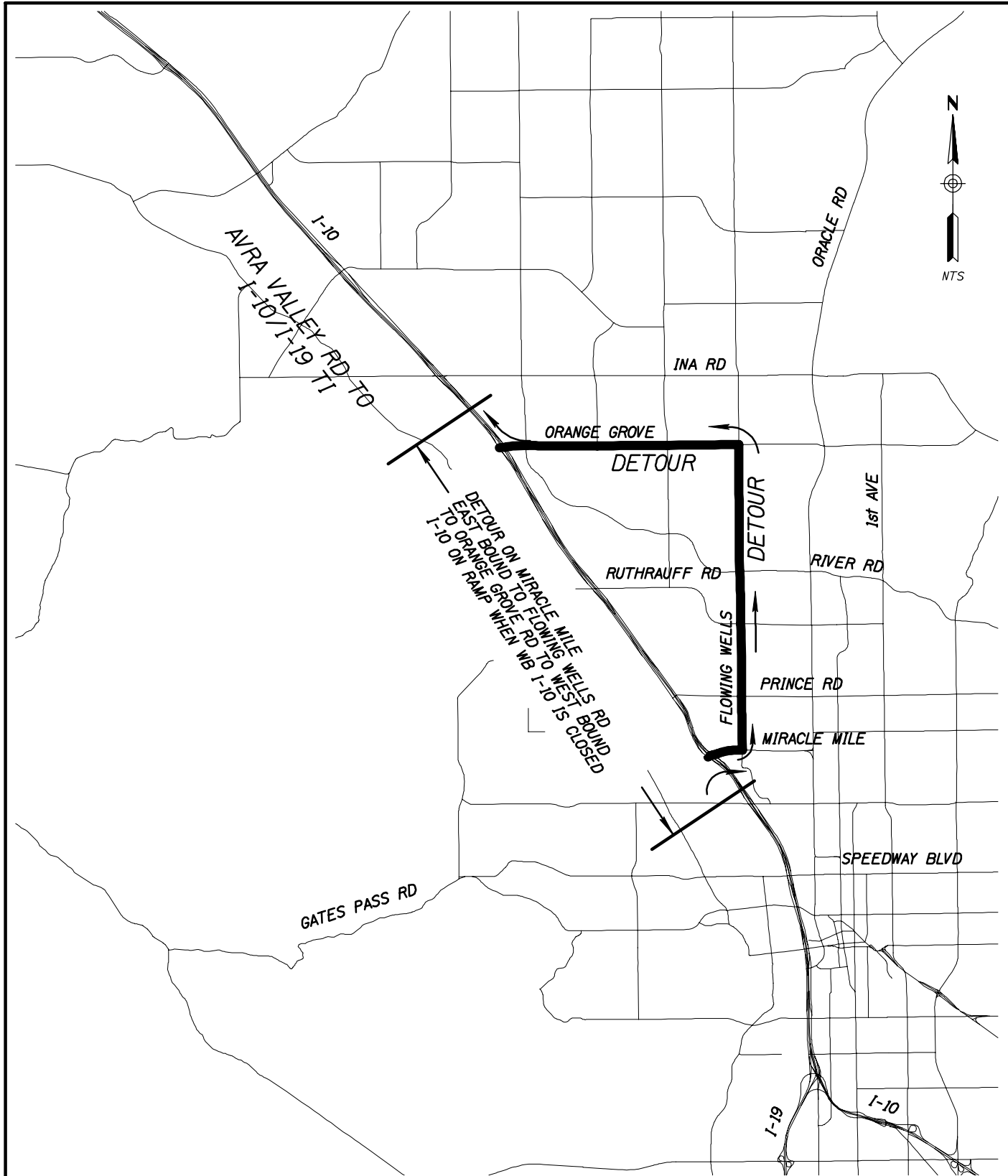


LEGEND

- ⇨ Normal Traffic
- ➔ Emergency Access
- Temporary Concrete Barrier
- Vertical Panels



Anticipated Emergency Access
Phase: 2
August, 2011
Page 5 of 5



NTS

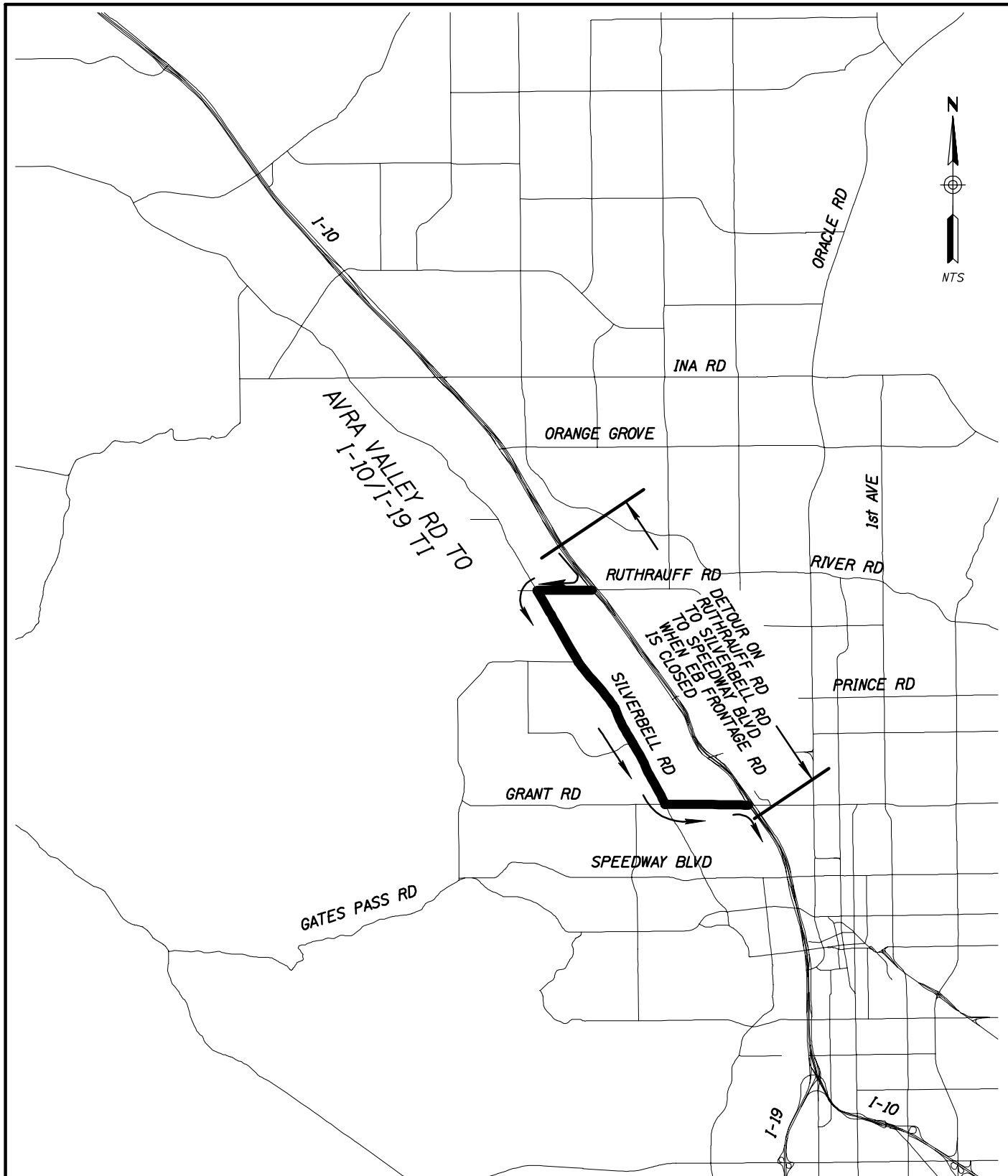
	NAME	DATE
DESIGN	WDS	7/11
DRAWN	JET	7/11
CHECKED	WDS	7/11

ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
 ROADWAY DESIGN SERVICES

TRANSPORTATION
 AECOM USA, Inc.
 1660 E. RIVER RD, SUITE 300
 TUCSON, ARIZONA 85714
 T 520.288.6700 F 520.288.6777
 www.aecom.com

WB I-10 DETOUR PLAN

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TO PRINCE ROAD



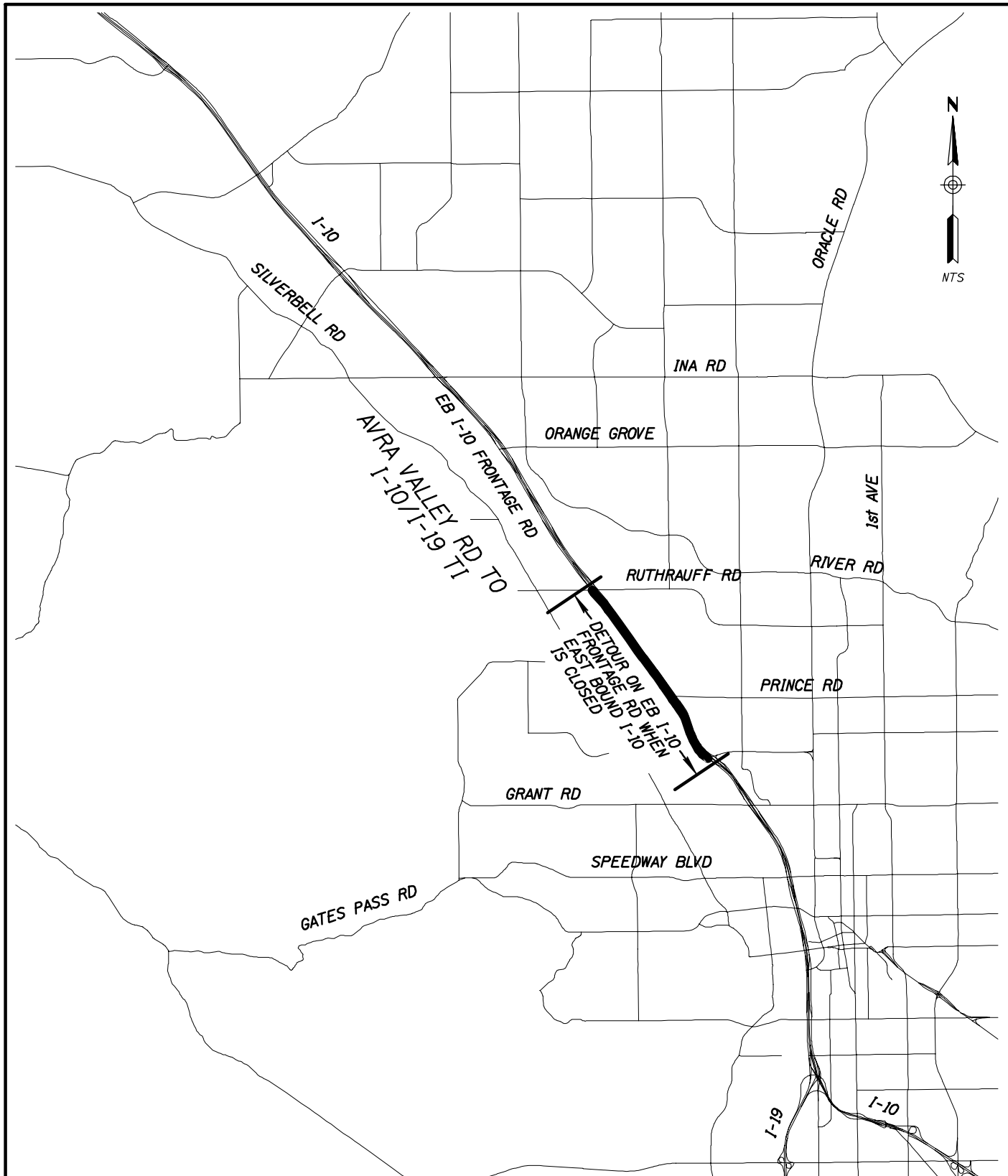
	NAME	DATE
DESIGN	WDS	7/11
DRAWN	JET	7/11
CHECKED	WDS	7/11

ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

TRANSPORTATION
 AECOM USA, Inc.
 1880 E. RIVER RD, SUITE 300
 TUCSON, ARIZONA 85718
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 www.aecom.com

EB I-10 DETOUR FOR PHASE I

ROUTE I-10 LOCATION RUTHRAUFF ROAD TO PRINCE ROAD



	NAME	DATE
DESIGN	WDS	7/11
DRAWN	JET	7/11
CHECKED	WDS	7/11

ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

TRANSPORTATION
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EB I-10 DETOUR FOR PHASE II

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TO PRINCE ROAD

Appendix J

TMP and EVAP Specifications

Traffic Management Plan:

This project has a full Traffic Management Plan (TMP). The components of the TMP are:

- Emergency Action Plan;
- Temporary Traffic Control Plans are included in the project plans;
- Public information will be provided by the Department's Communication Section. The contractor shall coordinate with the Department and provide information, including schedules, for use and distribution as needed throughout the project.

Transportation System Management (TSM) Program:

As part of this project, the Department is implementing a Transportation System Management (TSM) Program. The purpose of this program is to keep the motoring public, adjacent homeowners and businesses, transportation officials from the City of Tucson and other interested parties informed of the status of construction, changes in traffic-handling and routing, and other aspects of construction which affect nearby residents, businesses and commuters. TSM efforts are described in a TSM Manual and will be directed by a Steering Committee including Department officials and representatives of the local jurisdictions, design consultants, traffic design consultants and others. The contractor will participate in TSM activities as follows:

- The contractor's project manager will serve on the TSM Steering Committee, participate in the preparation of information communicating construction status and progress, traffic handling schemes, and other aspects of the project of interest to the public and local jurisdictions, and provide information regarding the status of construction and planned activities which will affect the public and local jurisdictions, for use and distribution by the TSM Steering Committee at its planned monthly meetings. Contractor's Reports at each meeting will summarize project progress during the past month and provide information regarding construction sequencing and scheduling and traffic handling for the month ahead.

No measurement or direct payment will be made for the contractor's participation in TSM activities, the cost being considered included in the prices of the contract items.

Emergency Action Plan:

The contractor shall develop an Emergency Action Plan for this project. The Emergency Action Plan shall be developed separately from the Safety Plan as specified in Subsection 107.08 of the Standard Specifications. Once the Engineer approves the Emergency Action Plan it can be incorporated into the Safety Plan for the project. The Emergency Action Plan is intended to pre-plan actions prior to an emergency event and how the contractor and project staff will coordinate with emergency response units.

The action plan shall include the following, at a minimum an emergency contact list, emergency vehicle access and traffic control during an emergency event. An emergency event is defined as an incident that requires an emergency vehicle to respond.

The contractor shall submit the Emergency Action Plan in writing at the preconstruction conference to the Engineer for approval. The Engineer will review and determine if the submitted Emergency Access Plan addresses all the required elements, and will return it as approved or rejected within 15 calendar days after receipt and identify any additional items to be included. The contractor shall then modify the Emergency Action Plan, if necessary, for resubmittal to the Engineer within five working days.

The contractor shall resubmit the Emergency Access Plan for approval by the Engineer at all significant traffic control changes and as directed by the Engineer. The contractor shall not disturb

the pavement or alter traffic control in any way until the Emergency Access Plan has been approved in writing by the Engineer.

The contractor shall review the approved Emergency Action Plan with all staff and subcontractors designated as Project Manager, Superintendent, Foreman and any other staff that may be in a responsible charge on the project. Each person shall familiar with the approved Emergency Action Plan and their responsibilities during an emergency event. The contractor shall not commence work until the Emergency Action Plan has been approved by the Engineer.

The contractor shall schedule an initial meeting in Tucson near the project site, or at a location approved by the Engineer, to discuss the Emergency Access Plan with emergency first responders, including Arizona Department of Public Safety, Pima County Sheriff, City of Tucson and City of South Tucson police officials and the City of Tucson and City of South Tucson fire officials. This initial meeting is to be held within seven working days after the approval of the Emergency Access Plan by the Engineer.

The Emergency Access Plan shall establish procedures for the contractor to provide notification to all local emergency responders of upcoming traffic control changes or in the case of special conditions when directed by the Engineer to provide additional updates. The contractor shall coordinate emergency access through the construction zone, with emergency first responders at these TSM meetings.

No measurement or direct payment will be made for the development or updating of the Emergency Action Plan, the cost being considered as included in the price of contract items.

Temporary Drainage:

The contractor shall be responsible for maintaining the temporary drainage facilities for the different phases of construction. No measurement or direct payment will be made for maintaining temporary drainage between roadway construction phases and culvert installation including: temporary drainage ditches, temporary culverts, and other measures as required to prevent ponding and embankment scour, the cost being considered as included in the price of contract items.

Shoring and Bracing of Trenches, Excavation and Existing Utilities:

Shoring and bracing requirements shall apply to all trenches and excavations required for installation, construction or removal of utilities and related structures, including walls, and structures, for the protection of personnel, property, existing structures or utilities. All shoring and bracing design shall be completed, sealed and signed by an engineer registered in the State of Arizona.

When construction sequence of structures requires transfer of bracing loads to a completed portion of any structure, the contractor shall secure written approval from the Engineer prior to installation of such bracing.

The planning, design, installation and removal of all shoring and bracing shall be such as to maintain the required trench or excavated section. Additionally, such shoring and bracing shall maintain the undisturbed state of the soils adjacent to the trench as well as at and below the excavation bottom.

Shoring and bracing shall prevent any movement of earth, which could in any way diminish the width of the excavation to less than the dimensions required for construction, or otherwise endanger the work or adjacent structure or construction. The contractor and his subcontractors shall comply with OSHA standards at all times.

It is the contractor's responsibility to make provisions for the removal and/or control of storm water including irrigation water from off-site flowing into or through the site during construction. During excavation, construction of structures, installation of pipelines and placement of fill and trench backfill, excavations shall be kept free of water. The contractor shall provide all necessary machinery, appliances, equipment, labor, tools and incidentals to keep excavations free from water during construction and shall dispose of the water so as not to cause injury to the public. The contractor shall develop a drainage management plan for management of storm water including irrigation water, in accordance with Subsection 104.10 of the Specifications.

No measurement or direct payment will be made for managing storm water and/or irrigation water flowing into or through the site during construction and developing drainage management plan for management of storm water including irrigation water, the costs for this work shall be considered included in the price of contract items.

EMERGENCY VEHICLE ACCESS PLAN (EVAP):

The contractor shall prepare an Emergency Vehicle Access Plan (EVAP), for the Engineer's review, including all information specified herein.

The EVAP shall describe those measures to be implemented during construction to ensure that emergency vehicles have access, at all times and for all phases of construction, through the construction site until final acceptance by the Department. The EVAP shall also detail how the contractor will coordinate with emergency response units throughout the project.

The EVAP shall delineate or describe the manner in which access will be available, including traffic control devices or alternative emergency access routes as necessary. Should no EVAP be provided with the plans, the contractor shall provide an Emergency Vehicle Access Plan for approval by the Engineer and, after approval, shall include such plan with the project's traffic control plans.

The contractor shall submit the EVAP to the Engineer at the preconstruction conference for approval. The Engineer will review and determine if the submitted EVAP addresses all required elements and will return it as approved or rejected within 15 calendar days of receipt. If necessary, the contractor shall modify the EVAP to address the Engineer's comments and resubmit it to the Engineer. The contractor shall not commence work until the EVAP has been approved in writing by the Engineer.

The contractor shall resubmit the EVAP for approval by the Engineer with all significant changes to the traffic control and as directed by the Engineer.

The contractor shall implement and maintain the project's EVAP until final acceptance, and shall ensure that all its personnel, and those of any subcontractors employed by the contractor, are familiar with the plan and their responsibilities for its use.

No measurement or direct payment will be made for the contractor's preparation, coordination, update, and implementation of the EVAP, the cost being considered included in the prices of the contract items.

TRANSPORTATION MANAGEMENT PLAN (TMP):

The Transportation Management Plan (TMP) included in Appendix B outlines the strategies that will be implemented to minimize impacts to the traveling public during construction of this project. The TMP also outlines the roles and responsibilities of the project stakeholders prior to and during construction. The contractor shall review the TMP included in Appendix B to prepare and submit the project TMP to the Engineer at the preconstruction conference for approval. The contractor shall also provide weekly updates to the TMP for approval by the Engineer.

No measurement or direct payment will be made for the contractor's preparation, coordination, update, and implementation of the TMP, the cost being considered included in the prices of the contract items.

TRANSPORTATION SYSTEM MANAGEMENT (TSM) PROGRAM:

As part of this project, the Department is implementing a Transportation System Management (TSM) Program. The purpose of this program is to keep the motoring public, adjacent homeowners and businesses, transportation officials from the City of Goodyear and other interested parties informed of the status of construction, changes in traffic-handling and routing, and other aspects of construction which affect nearby residents, businesses and commuters. TSM efforts are described in a TSM Manual and will be directed by a Steering Committee including Department officials and representatives of the local jurisdictions, design consultants, traffic design consultants and others. The contractor will participate in TSM activities as follows:

The contractor's project manager will serve on the TSM Steering Committee, participate in the preparation of information communicating construction status and progress, traffic handling schemes, and other aspects of the project of interest to the public and local jurisdictions, and provide information regarding the status of construction and planned activities which will affect the public and local jurisdictions, for use and distribution by the TSM Steering Committee at its planned monthly meetings. Contractor's Reports at each meeting will summarize project progress during the past month and provide information regarding construction sequencing and scheduling and traffic handling for the month ahead.

No measurement or direct payment will be made for the contractor's participation in TSM activities, the cost being considered included in the prices of the contract items.

PUBLIC INVOLVEMENT:

All public involvement for this project will be conducted by ADOT's Communication Group, including but not limited to a Community Relations Project Manager and a Senior Community Relations Officer. The contractor will assist in the public outreach program throughout construction.

The contractor shall designate an individual on the contractor's staff to act as the community relations contractor representative. This individual shall attend or contribute the following program elements unless otherwise approved by the Engineer:

- (A) Provide input and review on public outreach materials including, but not limited to, newsletters, fliers, door hangers, e-newsletters, advertising, and news releases; and
- (B) Weekly updates to the public involvement consortium.

No measurement or direct payment will be made for the contractor's participation in public involvement activities as noted above, the cost being considered included in the prices of the contract items.

GEOTECHNICAL AND FOUNDATION REPORTS:

The Geotechnical and Foundation Reports for this project will be available on compact disk. Disks are available at ADOT Contracts and Specifications Section, 1651 West Jackson Street, Phoenix, Arizona, 85007 for \$5.00 each.

ADOT APPROVED PRODUCTS LIST:

A list of approved manufacturers and distributors for materials that may be used on this project are shown on the Department's Approved Products List. The Approved Products List is available from the Engineering Records Office, 1655 West Jackson Street, Phoenix, AZ 85007, Phone: 602-712-8216. Copies of the most recent version are available on the Internet at <http://www.azdot.gov/TPD/ATRC/PRIDE/apl.asp>. In addition to the use of the Approved Products List, the contractor may seek to provide an approved equal product.

STRUCTURE PAINT COLOR REFERENCE:

Frazer numbers shown in the project plans are for paint color reference and control samples only. The contractor may apply any paint color brand names or trademarks other than Frazer Paint, such as Pittsburgh Paints or Dunn-Edwards, as long as they demonstrate equivalent color effects, with the approval from the ADOT Roadside Development Section through the Engineer and as specified in Section 610 of these special provisions.

No separate measurement or direct payment will be made for the bridge concrete barrier rustication pattern or icons as specified herein and on the plans; the cost being considered included in the prices paid for the structure of items requiring rustication or icons.