

**ADOT**

NEW APPLICATION



0000154057

Intermodal Transportation

**ORIGINAL**

RECEIVED

John S. Hallkowski, Director  
Jennifer Toth, State Engineer  
Robert Samour, Senior Deputy State Engineer, Operations  
Dallas Hammit, Senior Deputy State Engineer, Development

August 25, 2014

2014 AUG 27 A 11:39

Arizona Corporation Commission  
Office of Railroad Safety  
Attn: Chris Watson  
1200 W Washington Street  
Phoenix, AZ 85007

ARIZONA CORPORATION COMMISSION  
DOCKET CONTROL

RE: Application to upgrade existing railroad signals and surface  
Project: Avondale Blvd. (115<sup>th</sup> Ave) in Avondale, Arizona  
Federal Project #MMA-0(224)A  
ADOT TRACS # 0940 MA MMA SR249 01C  
Avondale Blvd. Crossing AAR/DOT # 741-799P

RR-03639A-14-0315

Arizona Corporation Commission  
**DOCKETED**

AUG 27 2014

DOCKETED BY 

Mr. Watson,

Please find enclosed the original and 13 copies of the application to allow UPRR to furnish and install 4 gate and flasher units and cantilever on the Avondale Blvd./UPRR highway-rail crossing. Also enclosed is an excerpt from Maricopa County Department of Transportation plans (YSMA plans-project# TT391, Sheet 9). I have also included pictures of both road approaches to this crossing for reference.

Feel free to contact me if you have any questions.

Sincerely,

Jason Pike  
Railroad and Utility Coordinator  
Arizona Department of Transportation  
205 S. 17th Ave, Room 357 MD 618E  
Phoenix, AZ 85007  
Phone: 602-712-7149 jpike@azdot.gov



Intermodal Transportation

Janice K. Brewer, Governor

John S. Halikowski, Director

Jennifer Toth, State Engineer

Robert Samour, Senior Deputy State Engineer, Operations

Dallas Hammit, Senior Deputy State Engineer, Development

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Federal Project #MMA-0(224)A  
ADOT TRACS # 0940 MA MMA SR249 01C  
Avondale Blvd. Crossing AAR/DOT # 741-799P

Mr. Watson,

This application is being submitted to allow the Union Pacific Railroad (UPRR) to furnish and install 4 gate and flasher units, a cantilever and traffic signal preemption on Avondale Blvd. north of MC85.

**1. Project Location and Description**

The project is located at the crossing of UPRR on Avondale Blvd. in Avondale, Arizona. This crossing consists of one mainline and one spur with daily usage for UPRR. Avondale is an at-grade roadway and is used for 2 way traffic, consisting of 2 thru southbound lanes, 1 left turn lane, and 2 thru northbound lanes.

The rail crossing part of the project consists of civil improvements by MCDOT to add lanes, a center median and sidewalks to Avondale Blvd. The UPRR will then install new gates and cantilevers.

- Two gates on the southbound side (1 outside edge, 1 median) and one cantilever.
- Two gates on the northbound side (1 outside edge, 1 median) and one cantilever.
- The existing asphalt crossing surface will be replaced by concrete panels by railroad forces.
- MCDOT will add median, adjust sidewalks, improve the road, including approaches, add signs and re-stripe.

**2. Why the crossing is needed**

Based on the 2008 crossing improvement array, the Avondale crossing was selected for upgrades to flashers, gates and cantilever.

**3. Construction Phasing**

Once the utility, environmental, and right-of-way clearances are obtained, ADOT can apply for and receive FHWA construction authorization and authorize UPRR to order their signal materials and authorize MCDOT to construct their civil improvements. Once an Opinion and Order is issued and MCDOT constructs the civil improvements on Avondale, UPRR will install the signal equipment. The railroad signal improvements will be installed by UPRR within 15 months of the receipt of an Opinion and Order from the ACC.

**4. Maintenance of the crossing**

UPRR will be responsible for installing and maintaining the railroad signal and surface equipment. MCDOT and the City of Avondale will be responsible for maintaining sidewalks, medians and road approaches outside of UPRR responsibility.

**5. Project Funding**

Project funding will be provided by the Federal Highway Administration thru their Section 130/Railroad-Highway Crossing Safety improvement program and by Maricopa County Department of Transportation through a cost sharing agreement with ADOT (Joint Project Agreement/Intergovernmental Agreement).

Total Federal Funds	\$1,073,620.00
Total MCDOT Funds	\$ 60,944.00
<hr/>	
Total Project Cost	\$1,134,564.00

This total includes Railroad crossing costs as follows:

Preliminary and Construction Engineering	\$65,545.00
UPRR Furnish and Install Gates, Cantilever	\$544,321.00
UPRR Furnish and Install Concrete Crossing Surface	\$277,087.00
<hr/>	
Total Railroad Crossing Cost	\$886,953.00

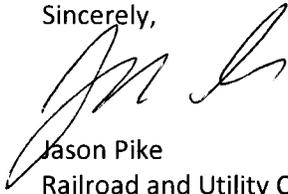
**6. Other information (based on typical Staff Data Requests):**

1. Provide Average Daily Traffic Counts for each of the locations.  
Per Avondale: 2011 Traffic Count = 20,141 vehicles per day
2. Please describe the current Level of Service (LOS) at each intersection.  
The City of Avondale does not have any current information regarding Level of Service for Avondale Blvd.
3. Provide any traffic studies done by the road authorities for each area.  
The City of Avondale states that no traffic studies have been completed recently for Avondale Blvd. or the area around this crossing.
4. Provide the population of the City the crossing is located in.  
2013 estimated census (census.gov): 78,822 persons.

5. Provide what warning devices are currently installed at the crossing.  
Currently there are flashing lights and gates on the outside edges of the roadway for both northbound and southbound traffic. There is also a cantilever on the southbound side. These lights do not cover all of the lanes currently at the crossing.
6. Provide distances in miles to the next public crossing on either side of the proposed project location. Are any of these grade separations?  
107<sup>th</sup> Ave (741-800G) is an at-grade crossing 1.0 mile to the east. Dysart Rd. (741-797B) is an at-grade crossing 2.0 miles to the west.
7. How and why was grade separation not decided on at this time? Please provide any studies that were done to support these answers.  
Grade separation was not considered as part of this Section 130 safety upgrade because the crossing does not meet any of the criteria outlined in the FHWA-Grade Separation Guidelines.
8. If this crossing was grade separated, provide a cost estimate of the project.  
Estimate \$30,000,000++ due to urbanized location.
9. Please describe what the surrounding areas are zoned for near this intersection. i.e. Are there going to be new housing developments, industrial parks etc.  
According to the City of Avondale 2012 General Plan, the area west of Avondale Blvd is zoned Medium Density Residential. The area east is zoned Business Park.
10. Please supply the following: number of daily train movements through the crossing, speed of the trains, and the type of movements being made (i.e. thru freight or switching). Is this a passenger train route?  
Per FRA website, there are a total of 6 train movements over the crossing and 4 daytime thru movements. The trains move over the crossing at speeds between 15 mph and 50 mph, with a maximum time table speed of 55mph.  
  
This is a passenger train route.
11. Please provide the names and locations of all schools (elementary, junior high and high school) within the area of the crossing.
- Quentin Elementary School            11050 W Whyman Ave, Avondale
  - La Joya Community High School      11650 W Whyman Ave, Avondale
  - Collier Elementary School            350 S 118th Ave, Avondale
  - Estrella Vista Elementary School    11905 W Cocopah Cir, Avondale
  - Littleton Elementary School         1252 S Avondale Blvd, Avondale
12. Please provide school bus route information concerning the crossing, including the number of times a day a school bus crosses this crossing.  
Per Littleton Elementary District and Tolleson Union High School District - school buses cross a total of 63 times per day.

13. Please provide information about any hospitals in the area and whether the crossing is used extensively by emergency service vehicles.  
Phoenix Children's Hospital  
1665 N Avondale Blvd, Avondale, AZ  
Avondale Blvd. is a major emergency service route for the hospital.
14. Please provide total cost of the railroad improvements to each crossing.  
Cost described above.
15. Provide any information as to whether vehicles carrying hazardous materials utilize this crossing and the number of times a day they might cross it.  
The City of Avondale states that it's not aware of any vehicles carrying hazardous materials that utilize this crossing.
16. Please provide the posted vehicular speed limit for the roadway.  
45 MPH
17. Do any buses (other than school buses) utilize the crossing, and how many times a day do they cross the crossing.  
The City of Avondale states that the City's Zoom Circulator crosses this intersection. It runs 30 times per day each way for a total of 60 trips
18. Please indicate whether any spur lines have been removed within the last three years inside a 10 mile radius of any crossings covered in this application. Please include the reason for the removal, date of the removal and whether an at-grade crossing or crossings were removed in order to remove the spur line.  
None
19. Please fill in the attached FHWA Grade Separation Guidelines Table, (from FHWA's 2007 revised second edition Railroad Highway Grade-Crossing Handbook, page 151) with a yes or no answer as to whether each item applies. Also, please provide all information to support your answers of yes or no (i.e. vehicle delay numbers, any calculations that were performed to get the answers).
20. Based on the current single track configuration at the crossings specified by this application, please provide the current traffic blocking delay per train. Please indicate the time in which vehicular traffic is delayed (1) to allow the train to pass at a crossing and (2) due to trains stopped on the track for any purpose. The delay is measured from the point that the warning devices are activated at the crossing to the time after the train has cleared the crossing and the warning devices are reset.  
The City of Avondale states that the delay at the crossing is really a function of the average length of the train and the average speed that is traveling.  
  
FOR EXAMPLE: 7,000 ft. train traveling 30mph (44 fps) would result in 160 seconds or a little over 3.5 minutes of delay.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jason Pike', written in a cursive style.

Jason Pike

Railroad and Utility Coordinator

Arizona Department of Transportation

205 S. 17th Ave, Room 357 MD 618E

Phoenix, AZ 85007

Phone: 602-712-7149

[jpike@azdot.gov](mailto:jpike@azdot.gov)

**FHWA - GRADE SEPARATION GUIDELINES (AVONDALE BLVD, NORTH OF MC85)**

Highway-rail grade crossings should be considered for grade separation or otherwise eliminated across the railroad right of way whenever one or more of the following conditions exist:

	AVONDALE BLVD
The highway is a part of the designated Interstate Highway System	N
The highway is otherwise designed to have full controlled access	N
The posted highway speed equals or exceeds 70 mph	N
AADT exceeds 100,000 in urban areas or 50,000 in rural areas	N
Maximum authorized train speed exceeds 110 mph	N
An average of 150 or more trains per day or 300 million gross tons/year	N
Crossing exposure (trains/day x AADT) exceeds 1M in urban or 250k in rural; or passenger train crossing exposure exceeds 800k in urban or 200k in rural	N
Expected accident frequency for active devices with gates, as calculated by the US DOT Accident Prediction Formula including five-year accident history, exceeds 0.5	N
Vehicle delay exceeds 40 vehicle hours per day	N

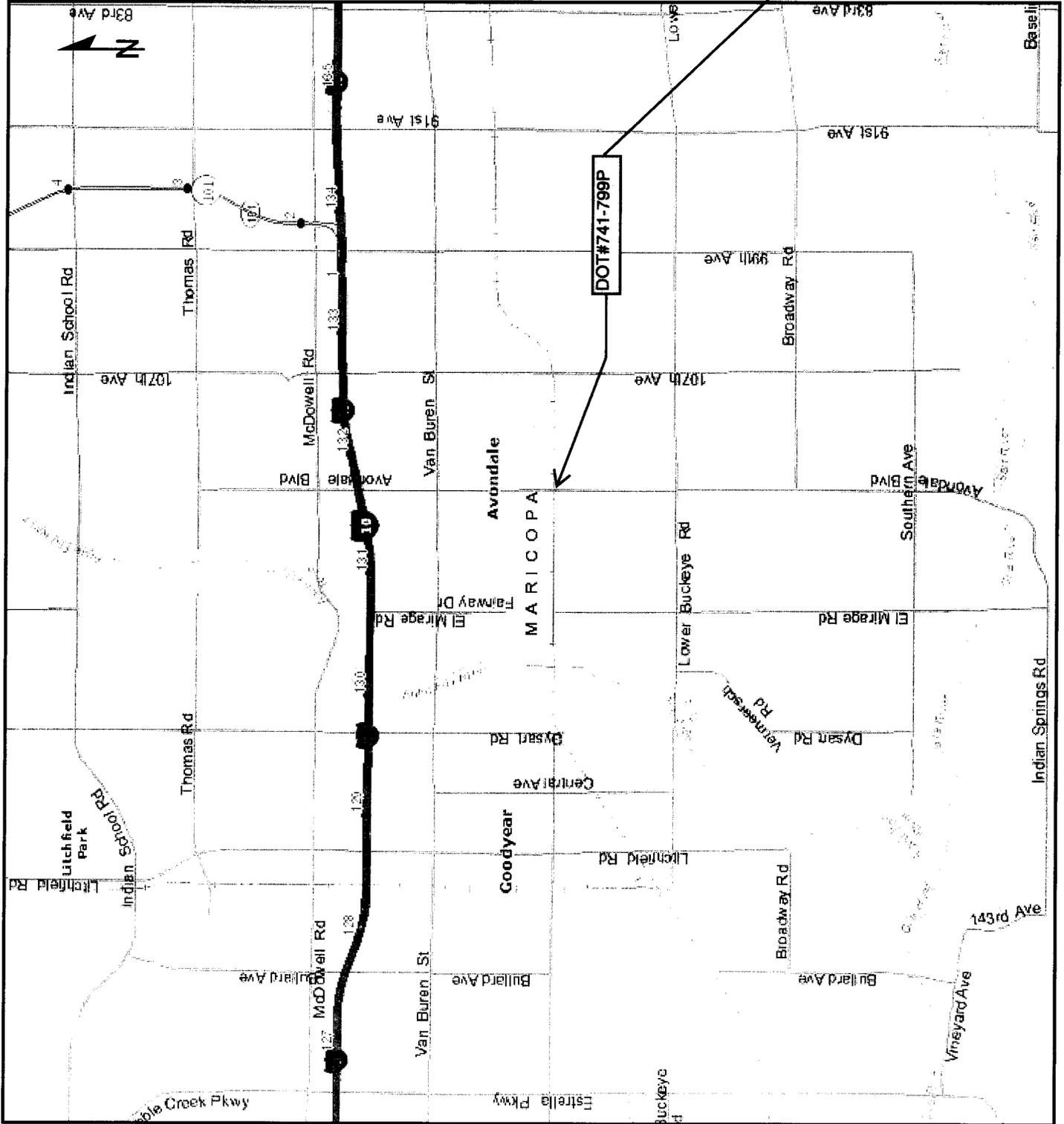
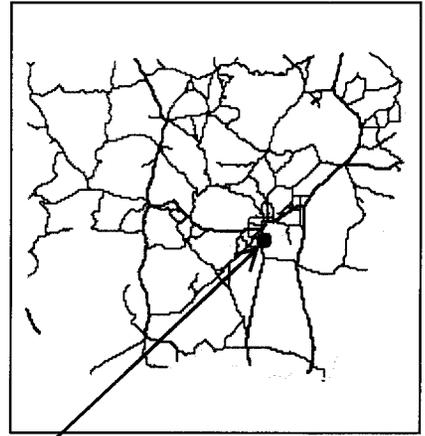


# Vicinity Map

Vicinity Map of railroad crossing DOT# 741-799P at Avondale Blvd north of MC85 for Highway-Rail Safety Project

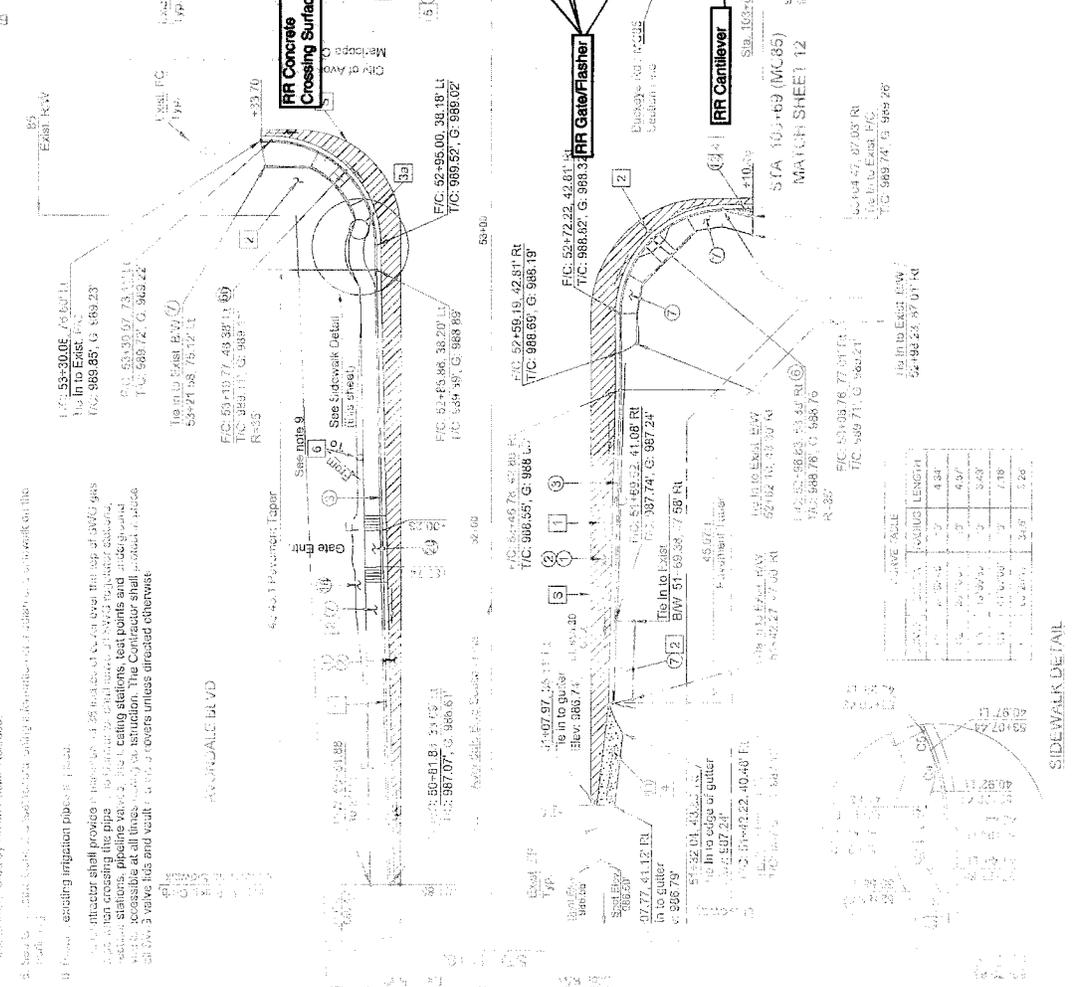


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**RR Crossing DOT#741-799P  
plan showing railroad and roadway work to be done  
under Rail-Highway Safety Project (Section 130)**

1. See sheet T3 for utility pole/elevations adjacent to this subsection.  
 2. Contractor shall install the abandoned electric line while installing the pipe.  
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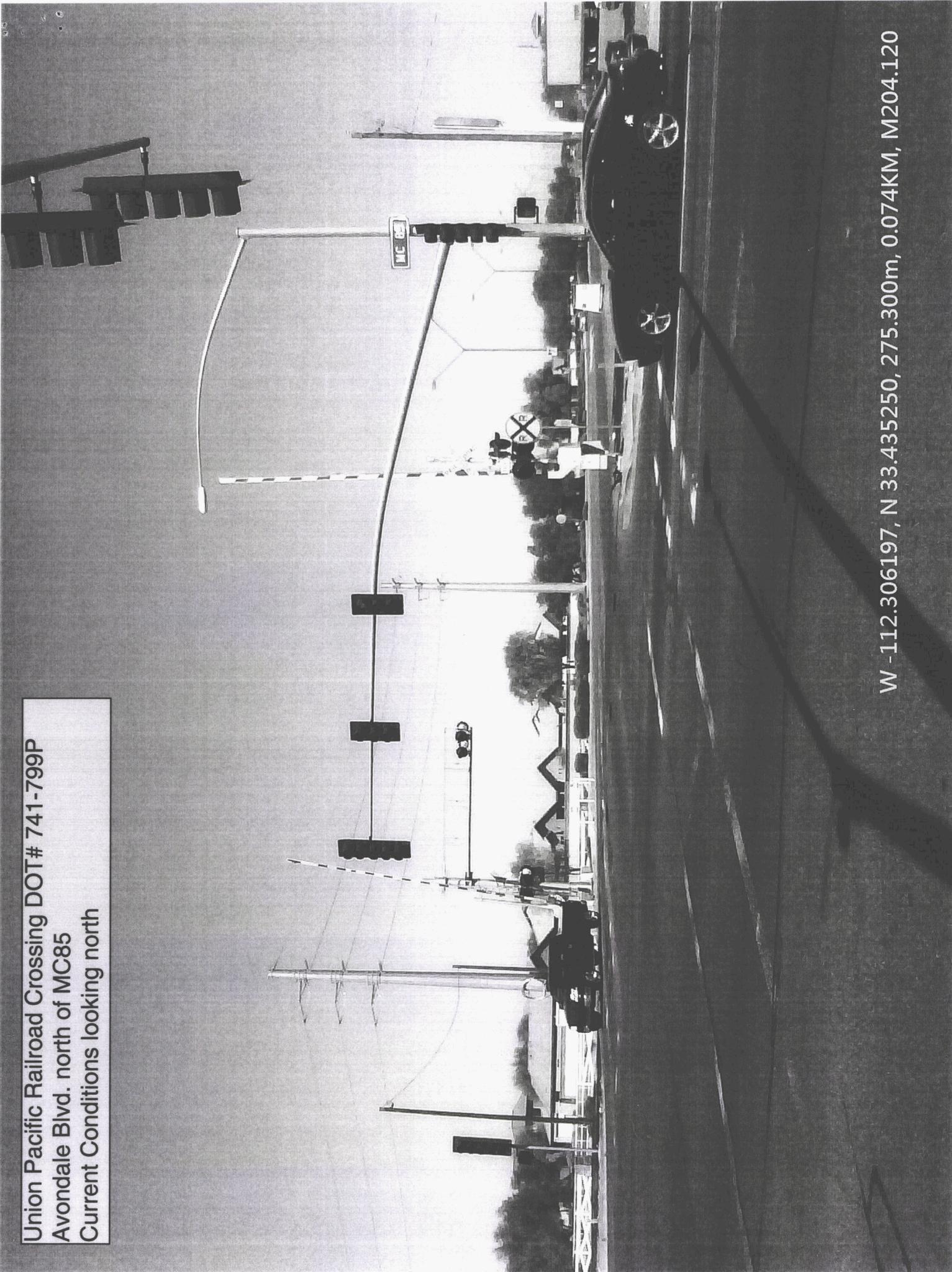
DEPARTMENT OF TRANSPORTATION  
 INTERSECTION IMPROVEMENT OF  
 AVONDALE BLVD AND BUCKEYE RD / MC 86  
 PROJECT NO. 77361

DESIGNED BY: [Name]  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]

Y.S.M.A.  
 602-263-1150

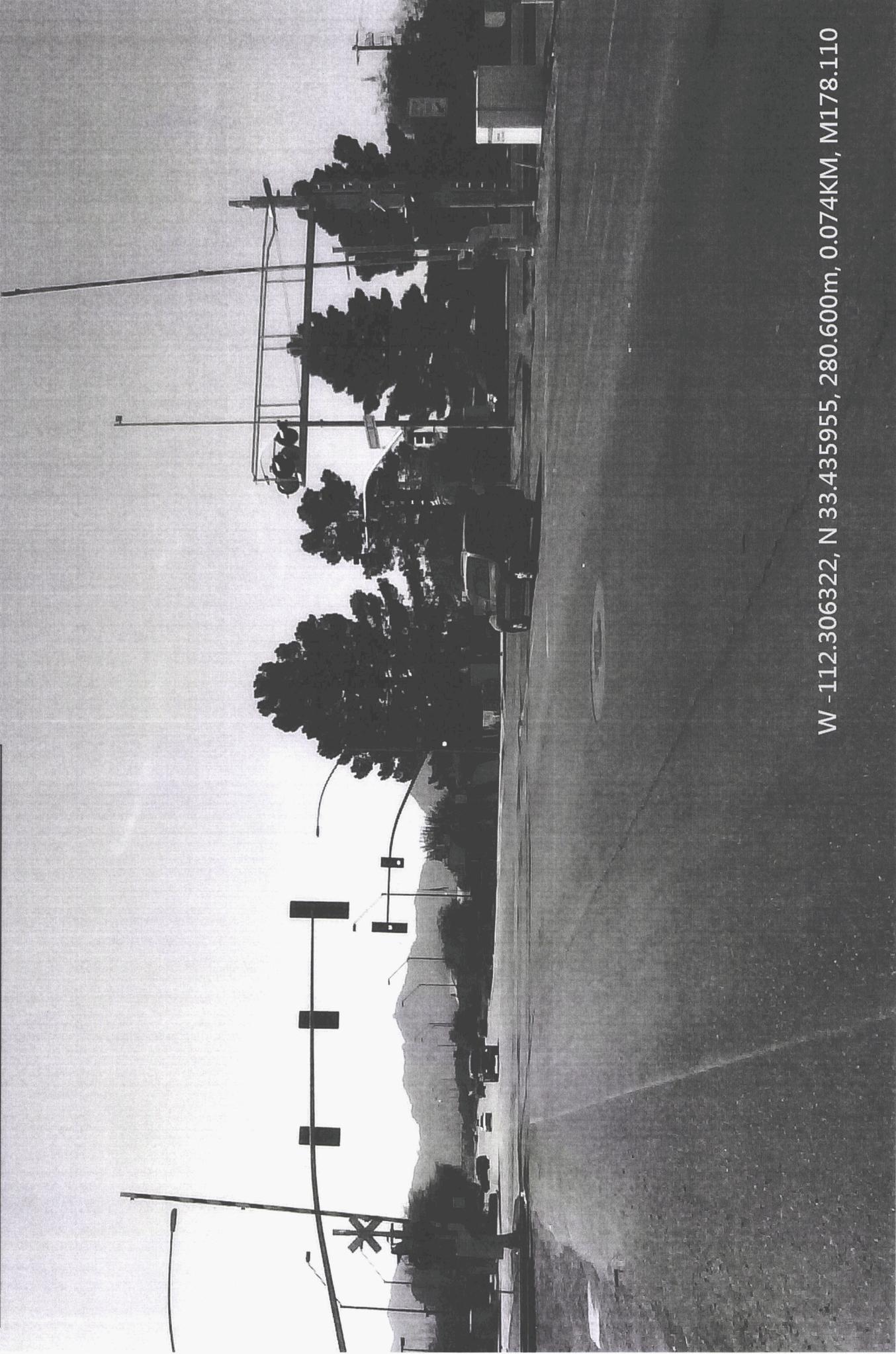
DATE: 7/28/2014

Union Pacific Railroad Crossing DOT# 741-799P  
Avondale Blvd. north of MC85  
Current Conditions looking north



W -112.306197, N 33.435250, 275.300m, 0.074KM, M204.120

Union Pacific Railroad Crossing DOT# 741-799P  
Avondale Blvd. north of MC85  
Current Conditions looking south



W -112.306322, N 33.435955, 280.600m, 0.074KM, M178.110