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AZ CORP COMMISSION  
DOCKET CONTROL

Transcript Exhibit(s)

Docket #(s): RR-03639A-14-0385

ORIGINAL

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Arizona Corporation Commission  
DOCKETED  
MAR 10 2015

DOCKETED BY 

Exhibit #: S-1, A-1

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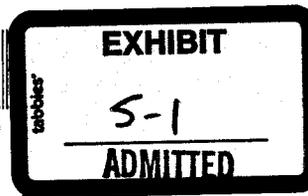


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# STAFF MEMORANDUM



To: THE COMMISSION

Arizona Corporation Commission

From: Robert Marvin  
Director  
Safety Division

DOCKETED

FEB 05 2015

RECEIVED  
AZ CORP COMMISSION  
DOCKET CONTROL

2015 FEB 5 PM 3 08

Date: February 5, 2015

DOCKETED BY

ORIGINAL

RE: IN THE MATTER OF THE APPLICATION OF THE ARIZONA DEPARTMENT OF TRANSPORTATION TO UPGRADE AN EXISTING CROSSING OF THE UNION PACIFIC RAILROAD COMPANY AT 15<sup>TH</sup> AVENUE IN THE CITY OF PHOENIX, MARICOPA COUNTY, ARIZONA, DOT NO. 741-459D.

DOCKET NO. RR-03639A-14-0385

## Background

On November 5, 2014, the Arizona Department of Transportation ("ADOT") filed with the Arizona Corporation Commission ("Commission") an application for approval for the Union Pacific Railroad ("Railroad") to upgrade an existing crossing at 15<sup>th</sup> Avenue in the City of Phoenix ("City"), Maricopa County, Arizona, DOT No. 741-459-D.

The Safety Division's Railroad Safety Section, ("Staff"), ADOT, the City, along with the Railroad participated in several diagnostic review meetings of the proposed improvements to this crossing. All parties present were in agreement to the proposed improvements at the crossing. The following is a breakdown of the crossing in this application, including information about the crossing that was provided to Staff by ADOT.

## Federal Highway Administration ("FHWA") Section 130

This project is federally funded pursuant to 23 U.S.C. § 130 ("Section 130"). The purpose of Section 130 is to comply with legislation seeking to eliminate hazards to pedestrians and highway vehicles at public railway-highway crossings. Only crossings which are located on public roads, and which are not primarily for the benefit of the railroad, are eligible for Section 130 funding. In order to be eligible for Section 130 funding, a crossing must be designated on the Commission's Annual Crossing Array as being a priority to receive safety upgrades. Arizona Revised Statute § 40-337.03 states that:

[T]he commission shall submit to the railroad involved and the city, county and department of transportation in which jurisdiction a public railroad grade crossing is located, an array of such crossings where the installation of automatic warning signals or devices should be considered during the year, or within a reasonable time thereafter depending upon the availability of monies, materials, labor and other factors involved in such installation.

This project was approved for Section 130 funding as part of the 2009 Commission Annual Array approved by Decision No. 71309, dated October 30, 2009. After designation on

the Annual Array, FHWA issues authorizations for design and construction of each project, reimburses ADOT for the cost and conducts a final inspection of each project. The Railroad will invoice ADOT for 100% of the cost of the project.

### **Fifteenth Avenue**

Fifteenth Avenue is a two lane asphalt roadway, consisting of one thru southbound lane, and one thru northbound lane. Currently, this crossing consists of five tracks, one mainline with daily usage, and four industry tracks. It is equipped with flashing lights, bells, automatic gates and a cantilever for northbound traffic.

The proposed project consists of upgrading the automatic gates, along with LED flashing light units on both sides of the crossing, and a new cantilever with LED flashing lights for northbound traffic. The most northern of the five tracks will be removed and the southbound gate and flasher unit moved to comply with the Railroad's standard. New concrete surfaces will be installed in the remaining four crossings. The City will install and maintain the sidewalks and improve the roadway approaches to the crossing. The proposed measures are consistent with safety measures employed at similar at-grade crossings in the State. The Railroad will maintain the warning devices and crossing surface after the upgrades are completed. The total cost of the project is \$900,000.

Traffic data for 15<sup>th</sup> Avenue was provided to ADOT by the City. Per the City, in 2010 there were 8,511 vehicles per day ("VPD") at this crossing. No Level of Service ("LOS") was available for this crossing.

The American Association of State Highway and Transportation Officials ("AASHTO") Geometric Design of Highways and Streets, 2004, states that the Level of Service characterizes the operating conditions on a facility in terms of traffic performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. This is a measure of roadway congestion ranging from LOS A--least congested--to LOS F--most congested. LOS is one of the most common terms used to describe how "good" or how "bad" traffic is projected to be.

The posted speed limit on 15<sup>th</sup> Avenue is 25MPH. Staff records, as well as the Federal Railroad Administration's ("FRA") accident/incident records indicate no accidents at this crossing.

Alternative routes from this crossing are: to the west .3 miles, a grade separated crossing at 17<sup>th</sup> Avenue and to the east .4 miles is 9<sup>th</sup> Avenue an at-grade crossing.

### **Train Data**

Data provided by ADOT, through the FRA website regarding train movements through this crossing are as follows:

Train Count: 10 UP trains per day and 2 BNSF trains per day with no passenger service

Maximum Train Speed: 60 mph

Thru Freight/Switching Moves: there are daily switching movements through this crossing

### Schools and Bus Routes

The following are schools near this crossing:

- *Capitol Elementary School*      *330 N 16<sup>th</sup> Avenue*
- *Children First Academy*      *374 N 6<sup>th</sup> Avenue*
- *Mary McLeod Bethune School*   *1310 S 15<sup>th</sup> Avenue*
- *Paul Dunbar Lawrence School*   *707 W Grant Street*

*Per the Phoenix Elementary District and Phoenix Union High School District – no school busses cross these tracks.*

### Hospitals

ADOT gave the following response about hospitals and emergency services vehicles:

- *St. Luke's Medical Center*      *1800 E Van Buren Street*
- *Maricopa Integrated Health System*      *1201 S 7<sup>th</sup> Avenue*
- *Saint Joseph's Hospital and Medical Center*      *350 West Thomas Road*

*Fifteenth Avenue is not used as a major emergency services route.*

### Hazardous Materials

ADOT gave the following response when asked about vehicles transporting hazardous materials through this crossing:

*The City states that it's not aware of any vehicles carrying hazardous materials utilizing this crossing and that 15<sup>th</sup> Ave. is not considered an alternative to I-10 at the Deck Park Tunnel.*

### Zoning

Staff requested information from ADOT regarding the type of zoning in adjacent areas from this crossing. The following was the response given:

*According to the City's General Plan Land Use Map, the areas east and west of the crossing are zoned Commerce/Business Park.*

### FHWA Guidelines Regarding Grade Separation

The FHWA Railroad-Highway Grade Crossing Handbook (Revised Second Edition August 2007) provides nine criteria for determining whether highway-rail crossings should be considered for grade separation or otherwise eliminated across the railroad right of way. The Crossing Handbook indicates that grade separation or crossing elimination should be considered whenever one or more of the nine conditions are met. The nine criteria are applied to this crossing application as follows:

		15 <sup>th</sup> Ave.
The highway is a part of the designated Interstate Highway System	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
The highway is otherwise designed to have full controlled access	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
The posted highway speed equals or exceeds 70 mph	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
AADT exceeds 100,000 in urban areas or 50,000 in rural areas	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
Maximum authorized train speed exceeds 110 mph	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
An average of 150 or more trains per day or 300 million gross tons/year	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
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	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
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	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No
Vehicle delay exceeds 40 vehicle hours per day	Crossing Currently meets the criteria	No
	Crossing meets the criteria by 2030	No

### Grade Separation

ADOT gave the following response when asked about grade separation:

*Grade separation was not considered by ADOT 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. Cost estimates for grade separating this location would be in the \$30,000,000 range, due to the urbanized location.*

### Vehicular Delays at Crossings

The City has no information or complaints regarding delay, however the delay at the crossing is really a function of the average length of the train and the average speed that it is traveling.

*For example: a 7,000 foot train traveling 30 miles per hour or 44 feet per second would cause a traffic delay of approximately 3.5 minutes.*

Another commonly used measure outlined in the FHWA Guidelines; is the so-called Crossing Exposure Index (which is simply the product of the number of trains per day multiplied by the number of vehicles crossing daily) is not currently met at this crossing. The current crossing exposure is 102,132 at 15<sup>th</sup> Avenue, far below the 1,000,000 threshold for urban areas. It should be noted that the criteria identified in the FHWA material are not mandates, but guidelines established by the FHWA, which serve to alert those having jurisdiction that potential problems may arise.

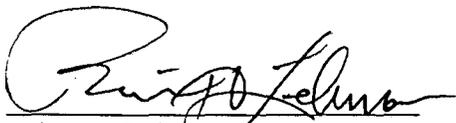
Staff has utilized the FHWA Guidelines to determine the potential need for grade separation at this crossing. Based on existing conditions, 15<sup>th</sup> Avenue meets none of the nine criteria for consideration of grade separation. Therefore, Staff does not recommend a grade separation at the crossing.

### **Crossing Closure**

The City has stated they would not like to close this crossing. Doing so would negatively impact numerous businesses in the area. Staff realizes closing this crossing would force businesses to re-locate or possibly close. Therefore, Staff does not recommend closing the crossing.

### **Staff Conclusions**

Having reviewed all applicable data, Staff supports ADOT's application. Staff believes that the upgrades are in the public's interest and are reasonable. Staff believes that the measures proposed by ADOT are consistent with other similar at-grade crossings in the State and will provide for the public's safety. Therefore, Staff recommends approval of ADOT's application.



Brian H. Lehman  
Railroad Safety Supervisor  
Safety Division

Originator: BHL

Original and thirteen (13) copies

Docket NO. RR-03639A-14-0385

of the foregoing were filed this  
\_5th\_ day of February, 2015 with:

Docket Control  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

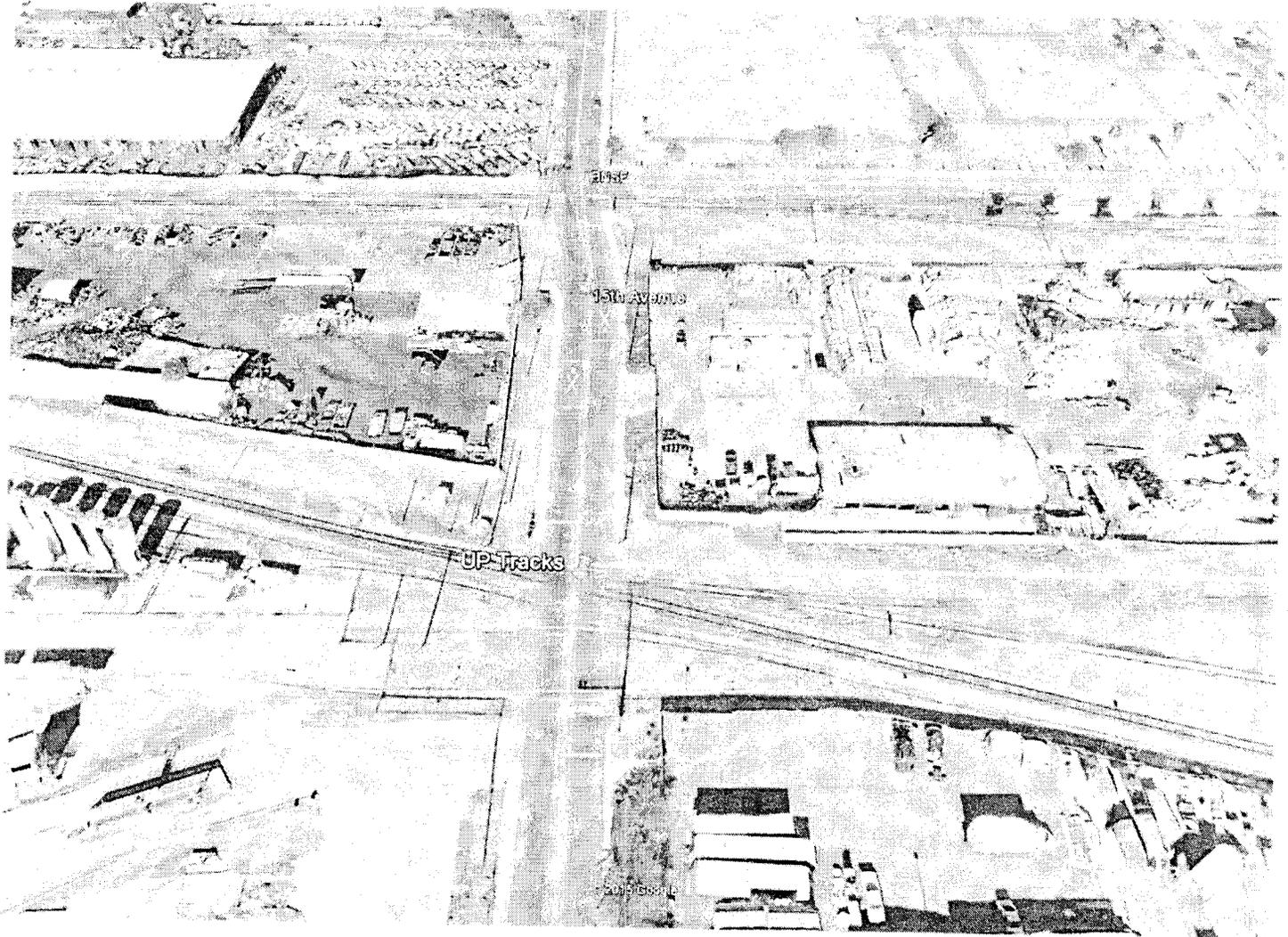
Copy of the foregoing mailed  
this 20th day of November, 2014 to:

Alex Popovici  
Union Pacific Railroad  
631 S. 7<sup>th</sup> Street  
Phoenix, AZ 85034

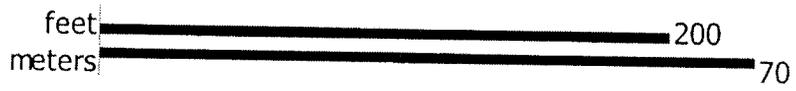
W. Reed Campbell  
Beaugureau, Zukowski & Hancock, P.C.  
302 East Coronado  
Phoenix, Arizona 85004  
Attorney for Union Pacific Railroad Company

Jason Pike  
Railroad and Utility Coordinator  
Arizona Department of Transportation  
205 S. 17<sup>th</sup> Ave. Room 357 MD 618E  
Phoenix, AZ 85007

Daniel L. Brown  
City of Phoenix  
1034 E. Madison St.  
Phoenix, AZ 85034



Google earth





Intermodal Transportation

Janice K. Brewer, Governor  
John S. Halikowski, Director  
Dallas Hammit, Acting State Engineer

November 5, 2014

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

RE: Application to modify existing railroad signals and surface  
Project: 15<sup>th</sup> Avenue north of Lincoln Street in Phoenix, Arizona  
Federal Project #PHX-0(248)T  
ADOT TRACS # 0940 MA PHX SR243 01C  
15<sup>th</sup> Ave crossing AAR/DOT # 741-459D

Mr. Watson,

Please find enclosed the original and 13 copies of the application to allow a modification and upgrade of the gate and flasher units and an upgrade of the track surfaces on 15<sup>th</sup> Avenue north of Lincoln Street. Also enclosed is an excerpt from City of Phoenix plans (Entellus-project #ST85100336, Sheet 4). 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  
Dallas Hammit, Acting State Engineer

November 5, 2014

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

RE: Application to modify existing railroad signals and surface  
Project: 15<sup>th</sup> Avenue north of Lincoln Street in Phoenix, Arizona  
Federal Project #PHX-0(248)T  
ADOT TRACS # 0940 MA PHX SR243 01C  
15<sup>th</sup> Ave crossing AAR/DOT # 741-459D

Mr. Watson,

This application is being submitted to allow a modification and upgrade of the gate and flasher units and an upgrade of the track surfaces on 15<sup>th</sup> Avenue north of Lincoln Street.

**1. Project Location and Description**

The project is located at the crossing of Union Pacific Railroad (UPRR) on 15<sup>th</sup> Avenue north of Lincoln St. in Phoenix, Arizona. This crossing currently consists of five tracks - one mainline with daily usage for UPRR and four spur lines. Two UPRR customers CEMEX and Western States Petroleum (WSP) are served at this crossing. 15<sup>th</sup> Avenue is an at-grade roadway used for 2 way traffic consisting of one thru southbound lane and one thru northbound lane. Both CEMEX and WSP have business entrances off of 15<sup>th</sup> Avenue and have large trucks that cross the tracks.

The project consists of civil improvements by City of Phoenix to build sidewalks and improve road approaches. Union Pacific RR will construct the railroad signals and surfaces.

- South side of the tracks gate/flasher unit and cantilever equipment will be ~~upgraded~~<sup>REPLACED</sup> by UPRR.
- North side of the tracks gate/flasher unit will be ~~upgraded~~<sup>REPLACED</sup> and moved closer to the tracks by UPRR once existing track is removed.
- Four sets of tracks will be upgraded to concrete panel surfaces.
- One set of tracks will be removed.

**2. Why the crossing is needed**

Based on the 2009 crossing improvement array, the 15<sup>th</sup> Ave. crossing was selected for upgrades to the surface and approaches. Removal of one spur track and approach improvements make the signal modification necessary.

**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, build the crossing surface and authorize City of Phoenix to construct their civil improvements. Once an Opinion and Order is issued, UPRR will modify 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 equipment and crossing surfaces. The City of Phoenix will be responsible for installing and maintaining sidewalks and road approaches outside of UPRR and CEMEX responsibility. CEMEX will retain part of the maintenance responsibility for the two south spur tracks as outlined in agreement with UPRR.

**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 City of Phoenix through matching funds.

Total Federal Funds	1,087,535 <del>\$867,535.00</del>
(Includes RR surface, signal, civil improvements, right of way acquisition, contingency)	
<u>Total City of Phoenix matching funds</u>	<u>\$ 42,465.00</u>
Total Project Cost	<del>\$910,000.00</del> \$1,130,000
This total includes Railroad crossing costs as follows:	
Railroad Signal work	300,000 <del>\$ 80,000.00</del>
Railroad Surface work	\$508,000.00

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

1. Provide Average Daily Traffic Counts for each of the locations.  
Per Phoenix: 2010 Traffic Count = 8,511 vehicles per day
2. Please describe the current Level of Service (LOS) at each intersection.  
The City of Phoenix has not established a LOS value.
3. Provide any traffic studies done by the road authorities for each area.  
The City of Phoenix states that no traffic studies have been completed recently for 15<sup>th</sup> Avenue or the area around this crossing.
4. Provide the population of the City the crossing is located in.  
2010 census (census.gov): 1,445,632 persons.



12. Please provide school bus route information concerning the crossing, including the number of times a day a school bus crosses this crossing.

Per Phoenix Elementary District and Phoenix Union High School District – no school busses cross these tracks.

13. Please provide information about any hospitals in the area and whether the crossing is used extensively by emergency service vehicles.

St Luke's Medical Center	1800 E Van Buren St, Phoenix, AZ
Maricopa Integrated Health System	1201 S 7th Ave, Phoenix, AZ
Saint Joseph's Hospital and Medical Center	2346 N Central Ave, Phoenix, AZ

15<sup>th</sup> Avenue is not a major emergency service route.

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 Phoenix states that it's not aware of any vehicles carrying hazardous materials utilizing this crossing and that 15<sup>th</sup> Ave. is not considered an alternative to I-10 at the Deck Park Tunnel.

16. Please provide the posted vehicular speed limit for the roadway.

25 MPH

17. Do any buses (other than school buses) utilize the crossing, and how many times a day do they cross the crossing.

~~None~~ Yes, Route 15 – 68 times/day

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.

The only one is the spur being removed as part of this project.

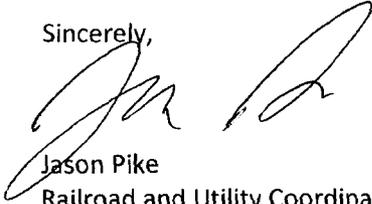
19. Please fill in the attached FHWA Grade Separation Guidelines Table, (from FHWA's 2007 revised second edition Railroad Highway Grade-Crossing Handbook, page 151) with a yes or no answer as to whether each item applies. Also, please provide all information to support your answers of yes or no (i.e. 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 Phoenix has no information or complaints regarding delays however 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,



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  
jpik@azdot.gov

**FHWA - GRADE SEPARATION GUIDELINES (15th Avenue north of Lincoln St, DOT#741-459D)**

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:

		15TH AVE
The highway is a part of the designated Interstate Highway System	Crossing Currently meets the criteria	N
The highway is otherwise designed to have full controlled access	Crossing meets the criteria by 2030	N
The posted highway speed equals or exceeds 70 mph	Crossing Currently meets the criteria	N
AADT exceeds 100,000 in urban areas or 50,000 in rural areas	Crossing meets the criteria by 2030	N
Maximum authorized train speed exceeds 110 mph	Crossing Currently meets the criteria	N
An average of 150 or more trains per day or 300 million gross tons/year	Crossing meets the criteria by 2030	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	Crossing Currently meets the criteria	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	Crossing meets the criteria by 2030	N
Vehicle delay exceeds 40 vehicle hours per day	Crossing Currently meets the criteria	N
	Crossing meets the criteria by 2030	N

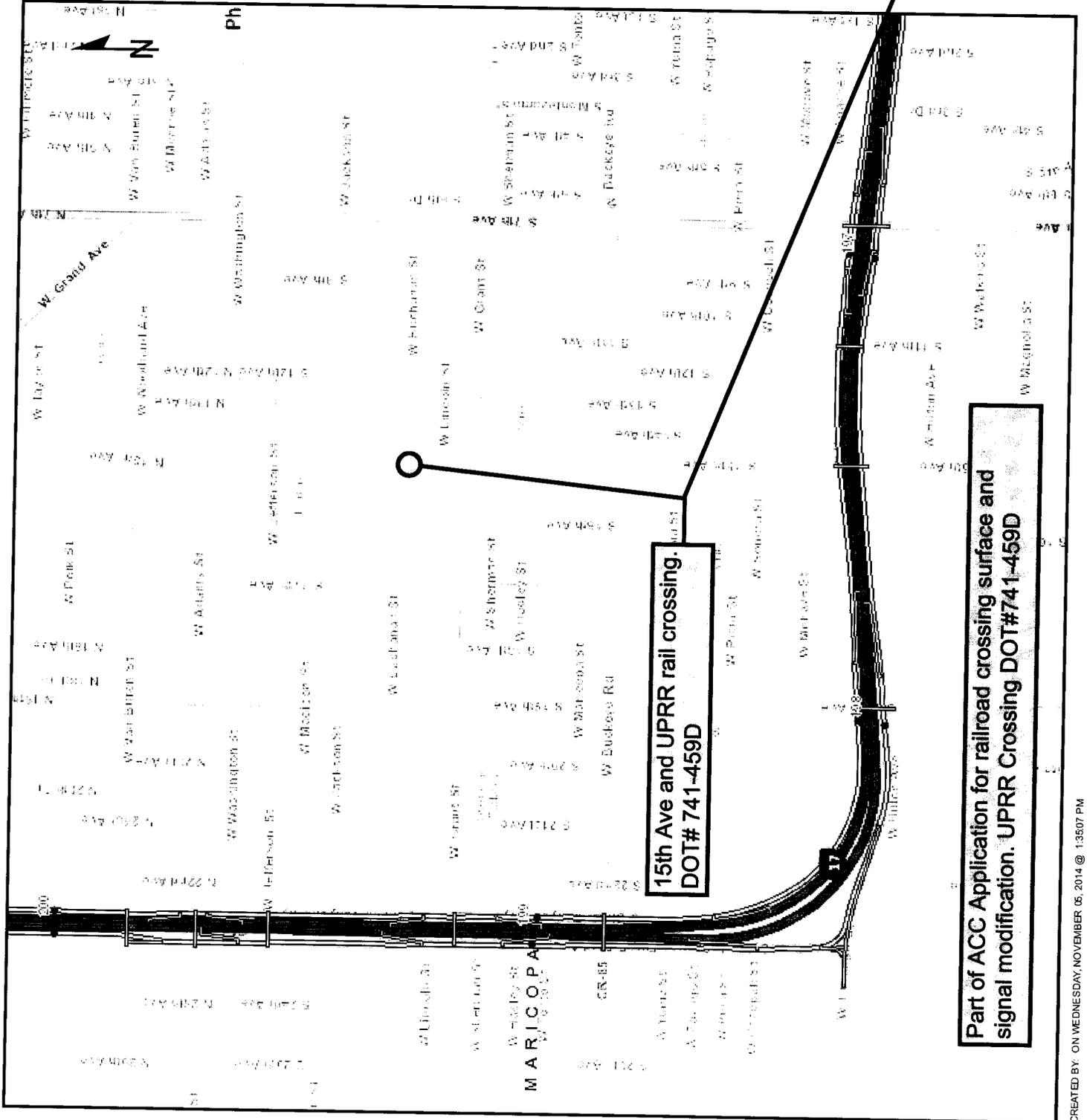
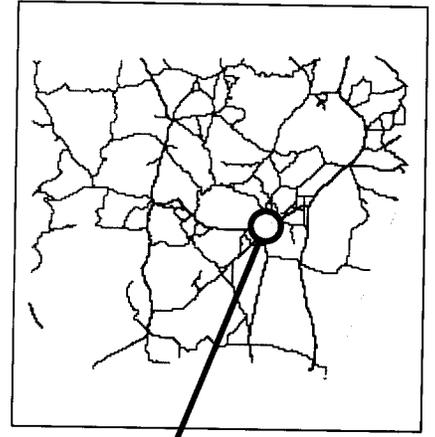


# 15th Avenue @ UPRR

Rail-Safety Project with UPRR and City of Phoenix. DOT# 741-459D



1:18,056



15th Ave and UPRR rail crossing.  
DOT# 741-459D

Part of ACC Application for railroad crossing surface and signal modification. UPRR Crossing DOT#741-459D

PROJ. NO.	SIBS100336
PROJ. NAME	RAILROAD CROSSING IMPROVEMENTS
DATE	10/20/14
DESIGNER	ENTELLUS INC.
CLIENT	CITY OF PHOENIX
SCALE	1" = 20'

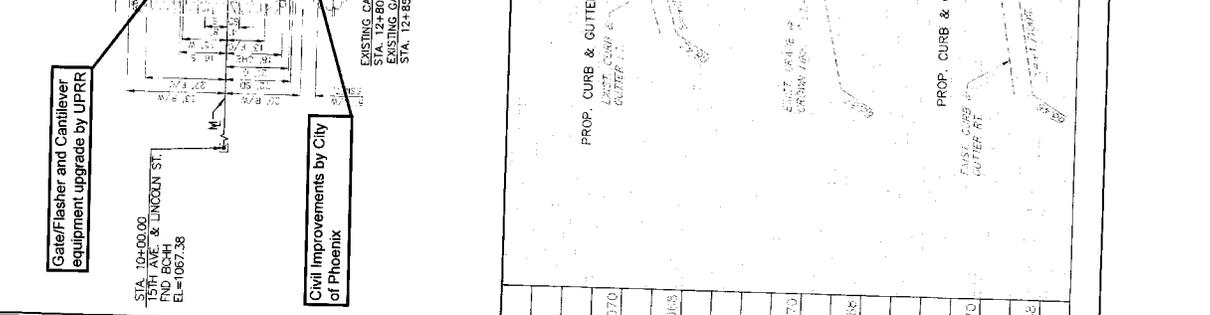
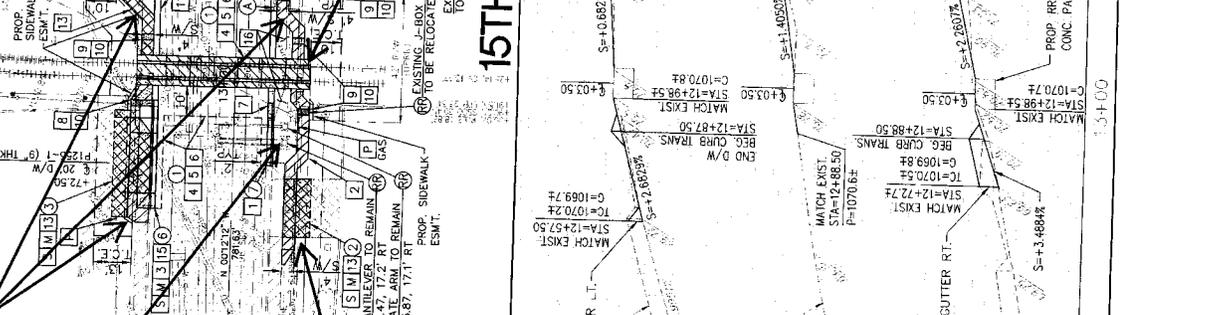
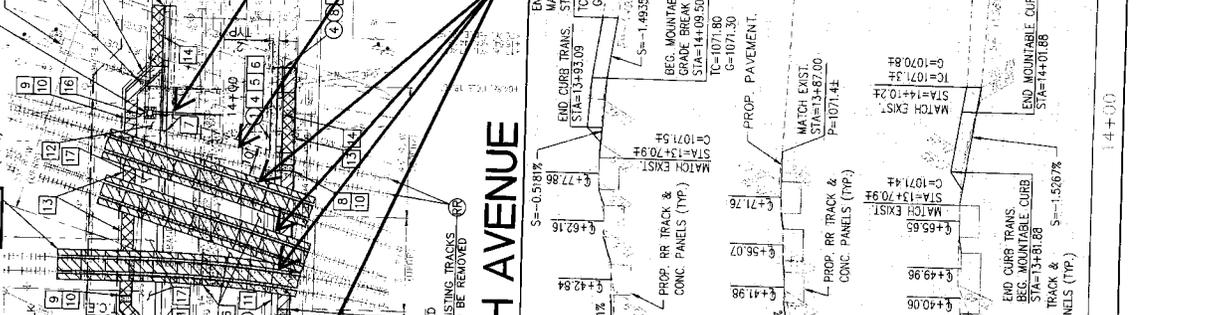
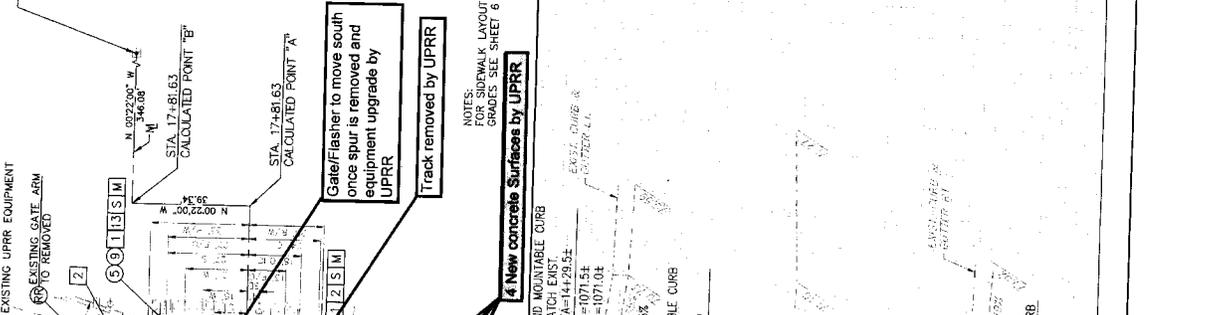
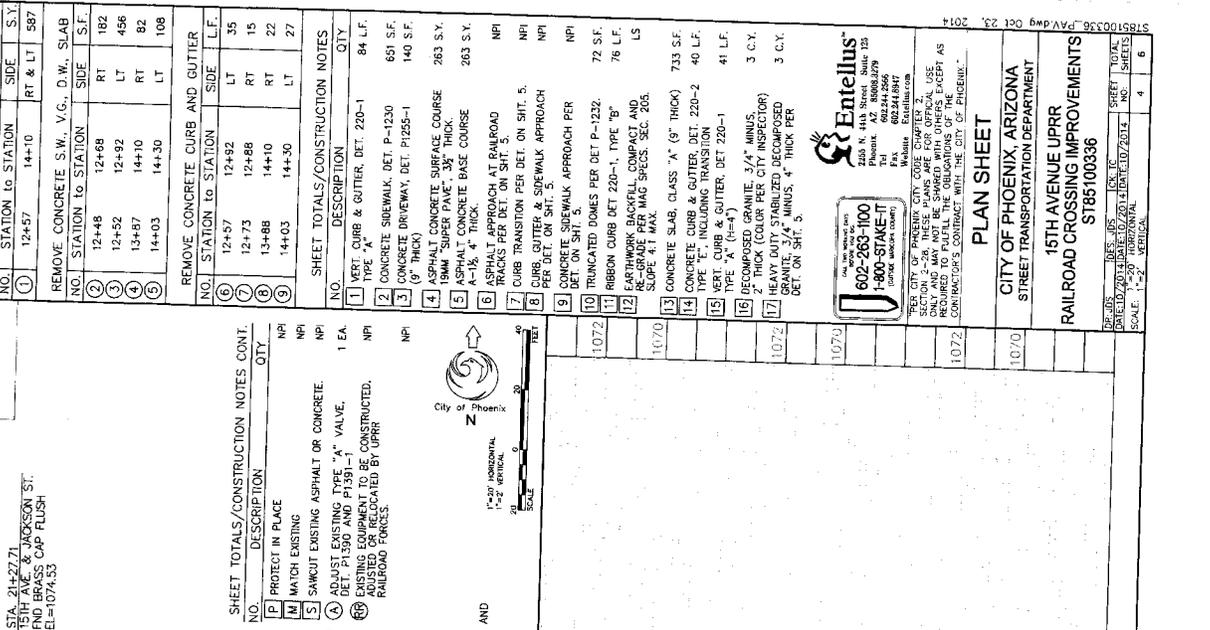
NO.	STATION TO STATION	SIDE	S.F.
1	12+57	RT & LT	587
REMOVE EXISTING A.C. PAVEMENT			
REMOVE CONCRETE S.W., V.G., D.W., SLAB			
NO.	STATION TO STATION	SIDE	S.F.
2	12+48	RT	182
3	12+52	LT	456
4	13+87	RT	82
5	14+03	LT	108
REMOVE CONCRETE CURB AND GUTTER			
NO.	STATION TO STATION	SIDE	L.F.
6	12+57	LT	35
7	12+73	RT	15
8	13+88	RT	22
9	14+03	LT	27

NO.	DESCRIPTION	QTY
1	VERT. CURB & GUTTER, DET. 220-1	84 L.F.
2	CONCRETE SIDEWALK, DET. P-1230	650 S.F.
3	CONCRETE DRIVEWAY, DET. P1255-1	140 S.F.
4	ASPHALT CONCRETE SURFACE COURSE	263 S.Y.
5	9MM "SUPER PAKE", 3/4" THICK	263 S.Y.
6	ASPHALT CONCRETE BASE COURSE	263 S.Y.
7	ASPHALT CONCRETE SURFACE COURSE	263 S.Y.
8	CONCRETE CURB & GUTTER, DET. 220-1	40 L.F.
9	CONCRETE SLAB, CLASS "A" (9" THICK)	733 S.F.
10	CONCRETE CURB & GUTTER, DET. 220-2	40 L.F.
11	TYPE "E", INCLUDING TRANSITION	41 L.F.
12	TYPE "A" (H=4')	3 C.Y.
13	COMPOSED GRANITE, 3/4" MINUS	3 C.Y.
14	HEAVY DUTY GRANITE, 3/4" MINUS, 4" THICK PER DET. ON SHT. 5	3 C.Y.

NO.	DESCRIPTION	QTY
1	PROTECT IN PLACE	NPI
2	MAJOR EXISTING	NPI
3	SAW CUT EXISTING ASPHALT OR CONCRETE	1 EA.
4	ADJUST EXISTING TYPE "A" VALVE, P1590 AND P1591-1	NPI
5	EXISTING OR RELOCATED BY UPRR RAILROAD FORCES	NPI

NO.	DESCRIPTION	QTY
1	CONCRETE PANELS (TYP.)	10
2	PROPOSED GATE ARM	1
3	EXISTING GATE ARM TO REMOVED	1
4	CONCRETE CURB	1
5	CONCRETE DRIVEWAY	1
6	ASPHALT CONCRETE SURFACE COURSE	1
7	ASPHALT CONCRETE BASE COURSE	1
8	ASPHALT CONCRETE SURFACE COURSE	1
9	CONCRETE CURB & GUTTER	1
10	CONCRETE SLAB	1
11	TYPE "E", INCLUDING TRANSITION	1
12	TYPE "A" (H=4')	1
13	COMPOSED GRANITE, 3/4" MINUS	1
14	HEAVY DUTY GRANITE, 3/4" MINUS, 4" THICK PER DET. ON SHT. 5	1

NO.	DESCRIPTION	QTY
1	CONCRETE CURB	1
2	CONCRETE DRIVEWAY	1
3	ASPHALT CONCRETE SURFACE COURSE	1
4	ASPHALT CONCRETE BASE COURSE	1
5	ASPHALT CONCRETE SURFACE COURSE	1
6	CONCRETE CURB & GUTTER	1
7	CONCRETE SLAB	1
8	TYPE "E", INCLUDING TRANSITION	1
9	TYPE "A" (H=4')	1
10	COMPOSED GRANITE, 3/4" MINUS	1
11	HEAVY DUTY GRANITE, 3/4" MINUS, 4" THICK PER DET. ON SHT. 5	1



**Copy of current design plan for ACC Application for railroad crossing surface and signal modification, UPRR Crossing DOT#741-459D**

**Gate/Flasher to move south once spur is removed and equipment upgraded by UPRR**

**Track removed by UPRR**

**4 New concrete Surfaces by UPRR**

**Notes:**  
FOR SIDEWALK LAYOUT AND GRADES SEE SHEET 6

**City of Phoenix**

**Entellus**  
602-263-1100  
1-800-STAKE-IT  
2400 N. 114th Street, Suite 128  
Phoenix, AZ 85028-2779  
Fax: 602-241-8917  
www.entellus.com

**CITY OF PHOENIX**  
STREET TRANSPORTATION DEPARTMENT  
15TH AVENUE UPRR  
RAILROAD CROSSING IMPROVEMENTS  
STB5100336

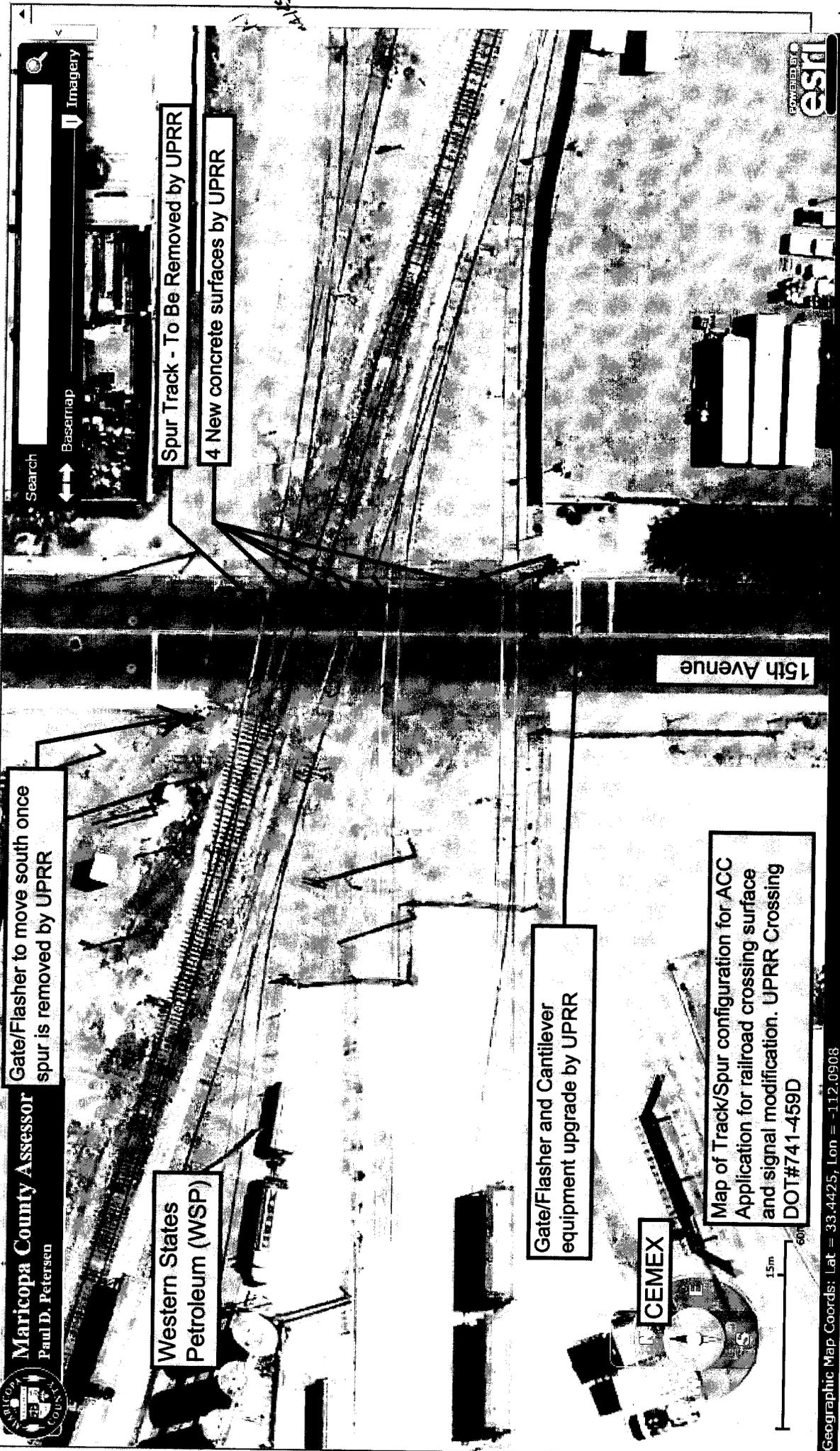
**PLAN SHEET**

**DATE:** 10/20/14  
**SCALE:** 1" = 20'

**SECTION 2-26**  
THESE PLANS ARE FOR OFFICIAL USE  
CONTRACTOR'S CONTRACT WITH THE CITY OF PHOENIX.

**NO. SHEETS**  
4

**SHEET TOTAL**  
4



Union Pacific Railroad Crossing DOT#741-459D  
15th Avenue north of Lincoln Street

Current Conditions looking west toward Western States Petroleum

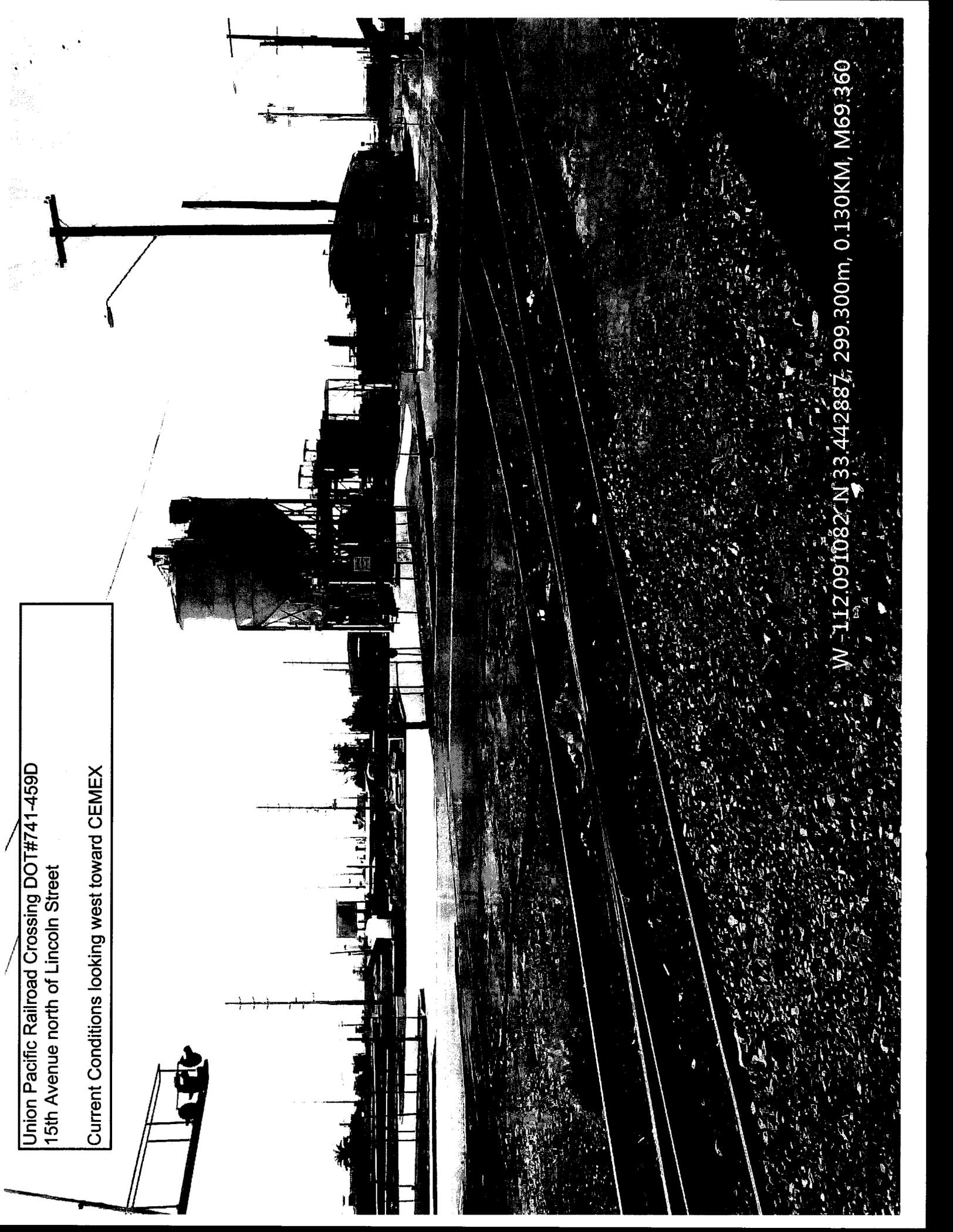


W-112.091085, N 33.442883, 299.000m, 0.593KM, M81.590

Union Pacific Railroad Crossing DOT#741-459D  
15th Avenue north of Lincoln Street

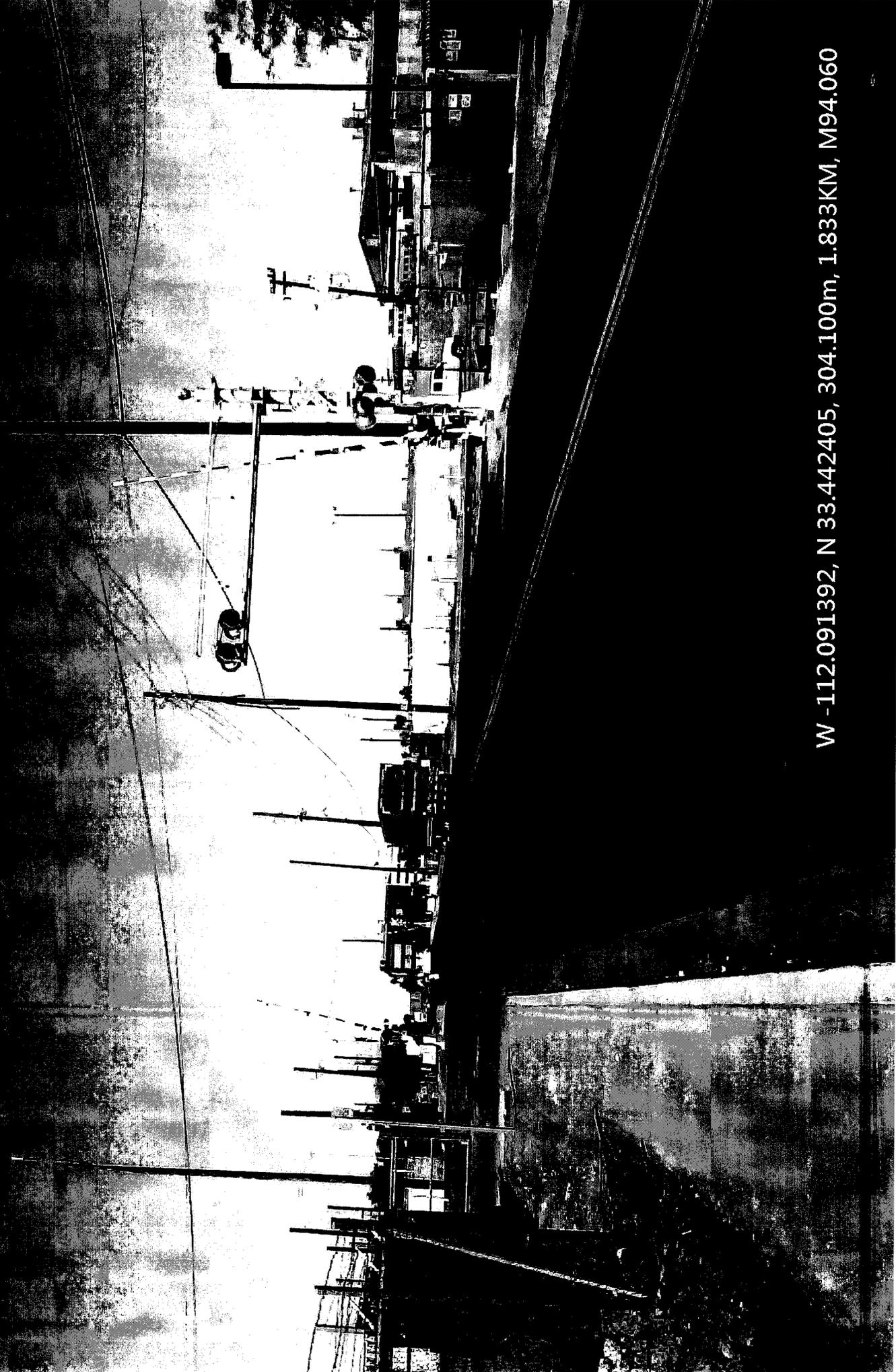
Current Conditions looking west toward CEMEX

W 112.091082 N 33.442887, 299.300m, 0.130KM, M69.360



Union Pacific Railroad Crossing DOT#741-459D  
15th Avenue north of Lincoln Street

Current Conditions looking north along 15th Ave.



W -112.091392, N 33.442405, 304.100m, 1.833KM, M94.060