

**ADOT**

Intermodal Transportation

NEW APPLICATION

ORIGINAL



0000142960

Jennifer Toth, State Engineer  
Robert Samour, Senior Deputy State Engineer, Operations  
Dallas Hammit, Senior Deputy State Engineer, Development

February 20, 2013

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

RECEIVED  
AZ CORP BOARD  
DOCKET CONTROL  
2013 FEB 20 PM 4:01

RE: Application to upgrade existing railroad signals  
Project: 35<sup>th</sup> Avenue and Indian School Road and US 60 RR-02635B-13-0034  
Federal Project # STP-000-6(185)A  
ADOT Tracs # 0000 MA PHX SR204 01C  
35<sup>th</sup> Avenue Crossing AAR/DOT # 025-425-K  
Indian School Road Crossing AAR/DOT # 025-424-D

Mr. Watson,

Please find enclosed the original and 13 copies of the application to allow BNSF to furnish and install four gate and flasher units on the Indian School Road Connector and advanced pre-emption for both Indian School Road Connector and 35<sup>th</sup> Avenue. Also enclosed is a copy of the addendum to the agreement between ADOT and the BNSF Railroad, which we anticipate will be signed by both parties by April 1, 2013 and would allow this work to take place.

Feel free to contact me if you have any questions.

Sincerely,

Armando Lopez, P.E.  
Railroad Coordinator  
Arizona Department of Transportation  
205 S. 17th Ave, Room 357 MD 618E  
Phoenix, AZ 85007  
Phone: 602-712-8747 Alopez4@azdot.gov

Arizona Corporation Commission  
**DOCKETED**

FEB 20 2013

DOCKETED BY  
MR



**2. Why the crossing is needed**

Based on the 2005 crossing improvement array, the 35<sup>th</sup> Avenue crossing was selected for upgrades by installing a cantilever for northbound traffic. A study conducted by the City of Phoenix and Lee Engineering in 2008 determined that a pre-signal was required on 35<sup>th</sup> Avenue and that the Indian School Road Connector crossing needed four new gates and flashers and advanced preemption.

**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 BNSF to order their signal materials and authorize the City of Phoenix to construct their civil improvements. Once an opinion and order is issued and the City of Phoenix constructs the civil improvements on Indian School Road Connector, BNSF will install the signal equipment. The railroad signal improvements will be installed by BNSF within 12-15 months of the receipt of an Opinion and Order from the ACC.

**4. Maintenance of the crossing**

BNSF will be responsible for installing and maintaining the railroad signal and surface equipment. The City of Phoenix will be responsible for maintaining the road approaches outside of BNSF responsibility, sidewalks, and traffic signal equipment.

**5. Project Funding**

100% of the funding will be provided thru the Federal Highway Administration thru their Section 130/highway-railroad crossing safety improvement program.

Costs are as follows:

Preliminary and Construction Engineering	190,384.00
BNSF Furnish and Install Flashers and Gates and Advanced Pre-emption	\$752,806.00
BNSF Furnish and Install Concrete Crossing Panels	\$40,000.00
City of Phoenix Design and Construction of Civil Improvements	<u>\$1,058,550.00</u>
Total Cost	\$2,041,740.00

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

1. Provide Average Daily Traffic Counts for each of the locations.

Per City of Phoenix:

Indian School Road (Mainline/overpass) – count taken 11/28/2007 (Count ID 5568)

Westbound – 19,111; Eastbound – 24,528; Total ADT – 43,639

No data available for Indian School Road Connector

35<sup>th</sup> Avenue – count taken 11/28/2007 (Count ID 5567)

Southbound – 11,982; Northbound – 11,967; Total ADT – 23,949

2. Please describe the current Level of Service (LOS) at each intersection.  
The City of Phoenix stated that they do not have any current level of service calculations.
3. Provide any traffic studies done by the road authorities for each area.  
The City of Phoenix and Lee Engineering completed a study and report for the intersection of 35<sup>th</sup> Avenue, Indian School Road, and Grand Avenue in August of 2008, which helped identify all of these proposed safety improvements.
4. Provide the population of the City the crossing is located in.  
2010 census: 1,445,632 persons.
5. Provide what warning devices are currently installed at the crossing.  
Currently at this crossing there are cantilever lights for both northbound and southbound traffic on 35<sup>th</sup> Avenue and a cantilever, flashers, and gate for Indian School Road Connector eastbound traffic and flashers and gates for Indian School Road Connector westbound traffic.
6. Provide distances in miles to the next public crossing on either side of the proposed project location. Are any of these grade separations?  
Osborn Road (AAR/DOT 025 428 F) and 31<sup>st</sup> Avenue (AAR/DOT 025 584 S) are at-grade crossings 0.66 miles to the southeast of the Indian School Road/35<sup>th</sup> Avenue crossing. Camelback Road and 43<sup>rd</sup> Avenue (AAR/DOT 025 422 P) is an at-grade crossing 1.14 miles to the northwest of the Indian School Road/35<sup>th</sup> Avenue crossing.  
  
Indian School Road mainline is grade separated over the tracks, but the Indian School Road Connector that connects into Grand Avenue does have an at-grade crossing with the BNSF railroad.
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 due to the complexity of the crossing, especially with Grand Avenue as part of the crossing.  
  
Indian School Road mainline was grade separated at Grand Avenue and the BNSF railroad several years ago, however an Indian School Road Connector was maintained in order to facilitate traffic needing to connect from Indian School Road to Grand Avenue and 35<sup>th</sup> Avenue, and this connector requires an at-grade crossing with BNSF.

8. If this crossing was grade separated, provide a cost estimate of the project.  
Estimate \$50,000,000++ 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.  
The area adjacent to the Indian School Road Connector and 35<sup>th</sup> Avenue crossings are Industrial to the southwest, General Commercial to the southeast and northwest, and Intermediate Commercial to the northeast.
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 the Federal Railroad Administration website these crossings have 9 thru train movements per day at speeds between 1 and 20mph.  
  
This is not 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.
- Alhambra High School – 3839 W. Camelback Road, Phoenix
  - Bourgade Catholic High School – 4602 North 31<sup>st</sup> Avenue, Phoenix
  - Alhambra Traditional School – 3736 West Osborn Road, Phoenix
  - Pueblo Del Sol Middle School – 3449 North 39<sup>th</sup> Avenue, Phoenix
  - Pan-America Elementary School – 3001 W. Indian School Road, Phoenix
  - West Phoenix High School – 3835 West Thomas Road, Phoenix
  - Granada Primary School – 3232 West Campbell Avenue, Phoenix
12. Please provide school bus route information concerning the crossing, including the number of times a day a school bus crosses this crossing.  
Per Alhambra School District there are 14 buses that cross the tracks once in the morning and once in the afternoon for a total of 28 trips.
13. Please provide information about any hospitals in the area and whether the crossing is used extensively by emergency service vehicles.
- Maryvale Hospital – 5102 West Campbell Avenue, Phoenix
- The City of Phoenix stated they do not know if these crossings are used extensively by emergency service vehicles.
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 stated they do not have any information pertaining to the use of these crossings by vehicles carrying hazardous materials.
16. Please provide the posted vehicular speed limit for the roadway.  
35<sup>th</sup> Avenue – 40 MPH  
Indian School Road – 40 MPH (25 MPH on the curve)
17. Do any buses (other than school buses) utilize the crossing, and how many times a day do they cross the crossing. Bus traffic varies depending on sporting events.  
The City of Phoenix Public Transit stated that city buses use these crossings a total of approximately 80 times per 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.  
BNSF removed a siding from the crossings on Indian School Road Connector and 35<sup>th</sup> Avenue in 2005.
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 stated that the delay in traffic due to train activity varies depending on if the trains are passing or stopped. The delay can be 2 minutes when the train is passing and up to 15 minutes for a stopped train at both the Indian School Road Connector and 35<sup>th</sup> Avenue crossings.

Sincerely,



Armando Lopez, P.E.  
Railroad Coordinator

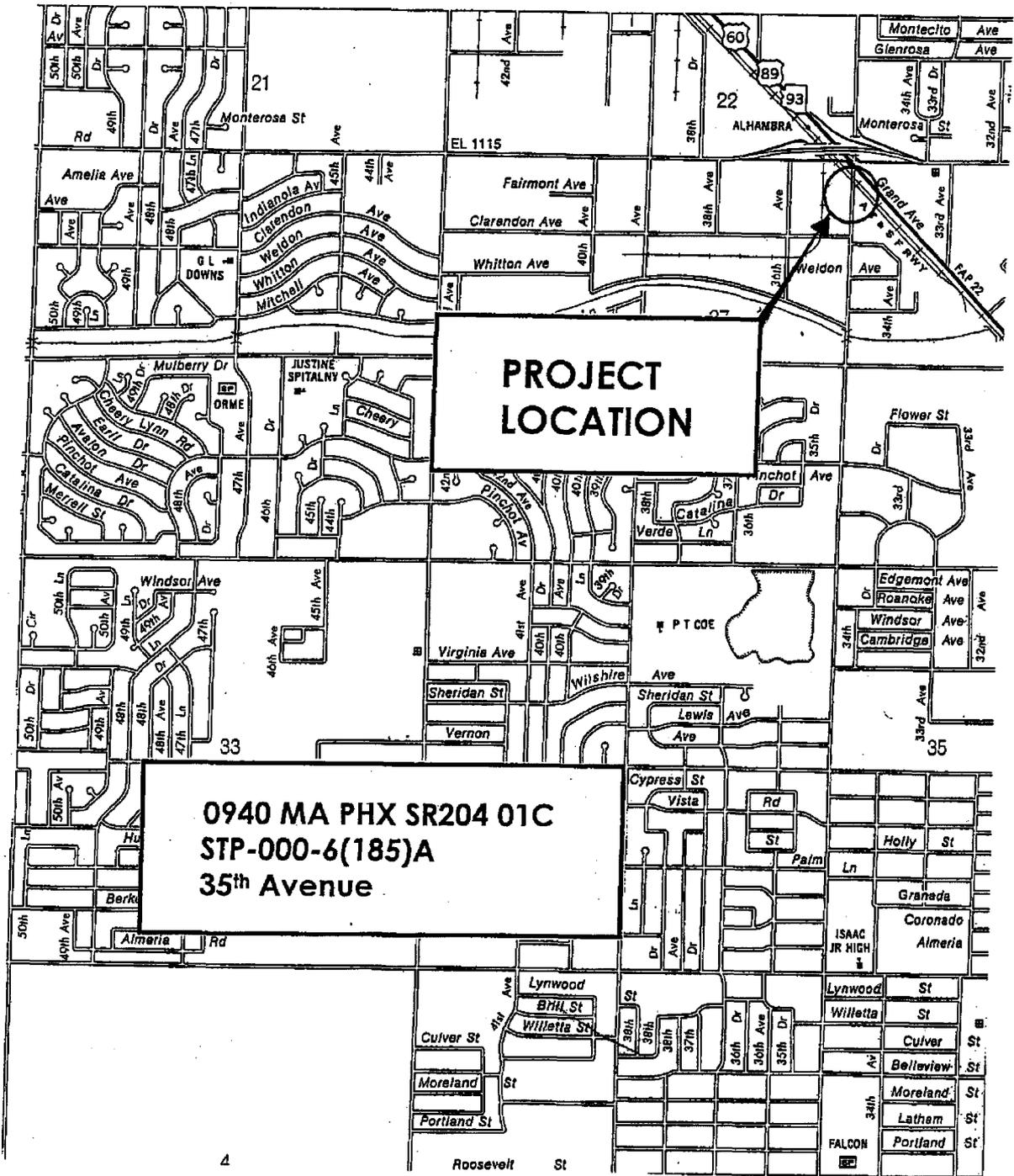
Arizona Department of Transportation  
205 S. 17th Ave, Room 357 MD 618E  
Phoenix, AZ 85007  
Phone: 602-712-8747 [ALopez4@azdot.gov](mailto:ALopez4@azdot.gov)

## FHWA - GRADE SEPARATION GUIDELINES

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:

	Indian School Rd	35th Avenue
The highway is a part of the designated Interstate Highway System	N	N
Crossing Currently meets the criteria	N	N
Crossing meets the criteria by 2030	N	N
The highway is otherwise designed to have full controlled access	N	N
Crossing Currently meets the criteria	N	N
Crossing meets the criteria by 2030	N	N
The posted highway speed equals or exceeds 70 mph	N	N
Crossing Currently meets the criteria	N	N
Crossing meets the criteria by 2030	N	N
AADT exceeds 100,000 in urban areas or 50,000 in rural areas	N	N
Crossing Currently meets the criteria	N	N
Crossing meets the criteria by 2030	N	N
Maximum authorized train speed exceeds 110 mph	N	N
Crossing Currently meets the criteria	N	N
Crossing meets the criteria by 2030	N	N
An average of 150 or more trains per day or 300 million gross tons/year	N	N
Crossing Currently meets the criteria	N	N
Crossing meets the criteria by 2030	N	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	N
Crossing Currently meets the criteria	N	N
Crossing meets the criteria by 2030	N	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	Y
Crossing Currently meets the criteria	N	Y
Crossing meets the criteria by 2030	Y	Y
Vehicle delay exceeds 40 vehicle hours per day	N	N
Crossing Currently meets the criteria	N	N
Crossing meets the criteria by 2030	N	N

# VICINITY MAP



**PROJECT  
LOCATION**

**0940 MA PHX SR204 01C  
STP-000-6(185)A  
35th Avenue**

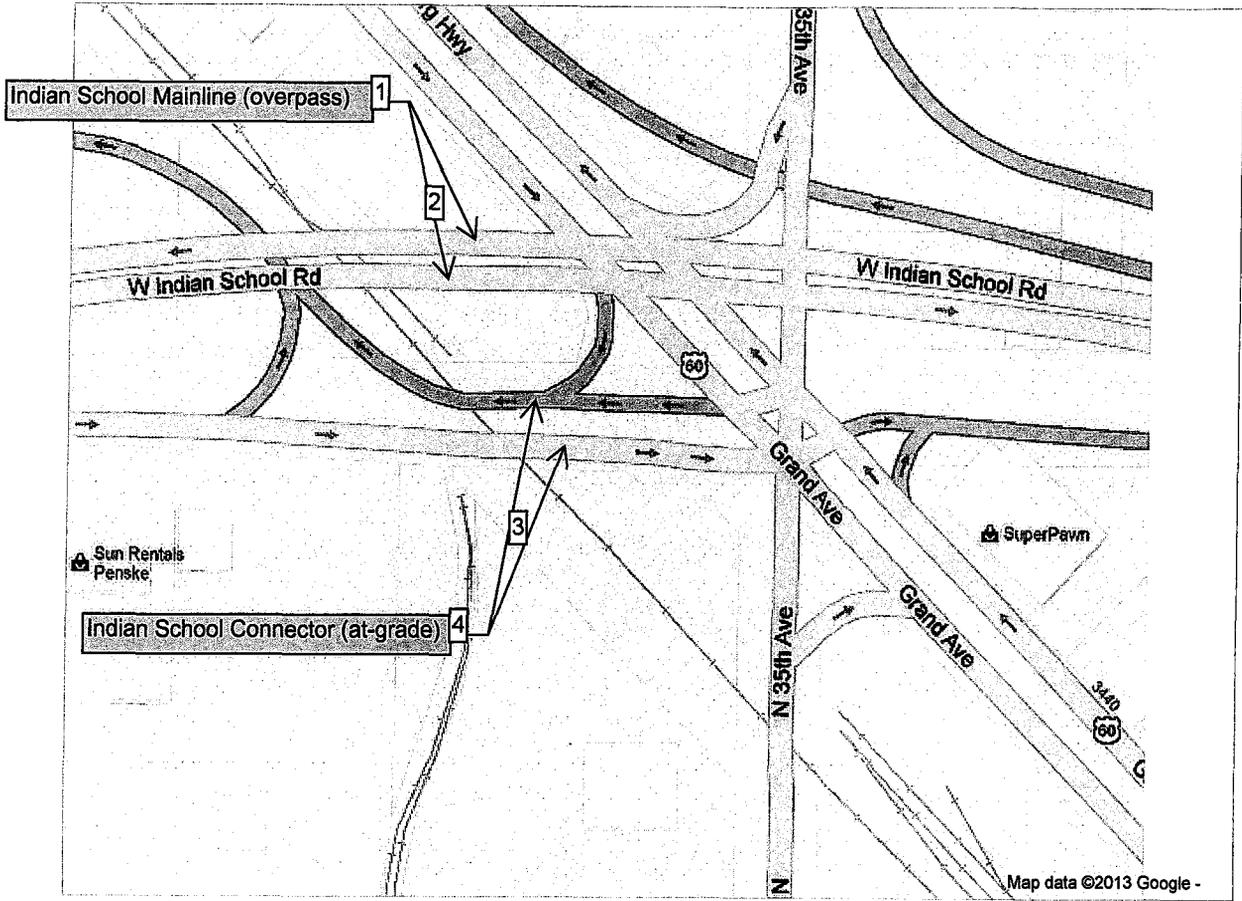


**PROJECT NAME 35th Ave. & US 60 Phoenix  
PROJECT NUMBER STP-000-6(185)A  
TRACS NO. 0000 MA PHX SR204 01C**

**FIGURE 2**

Google

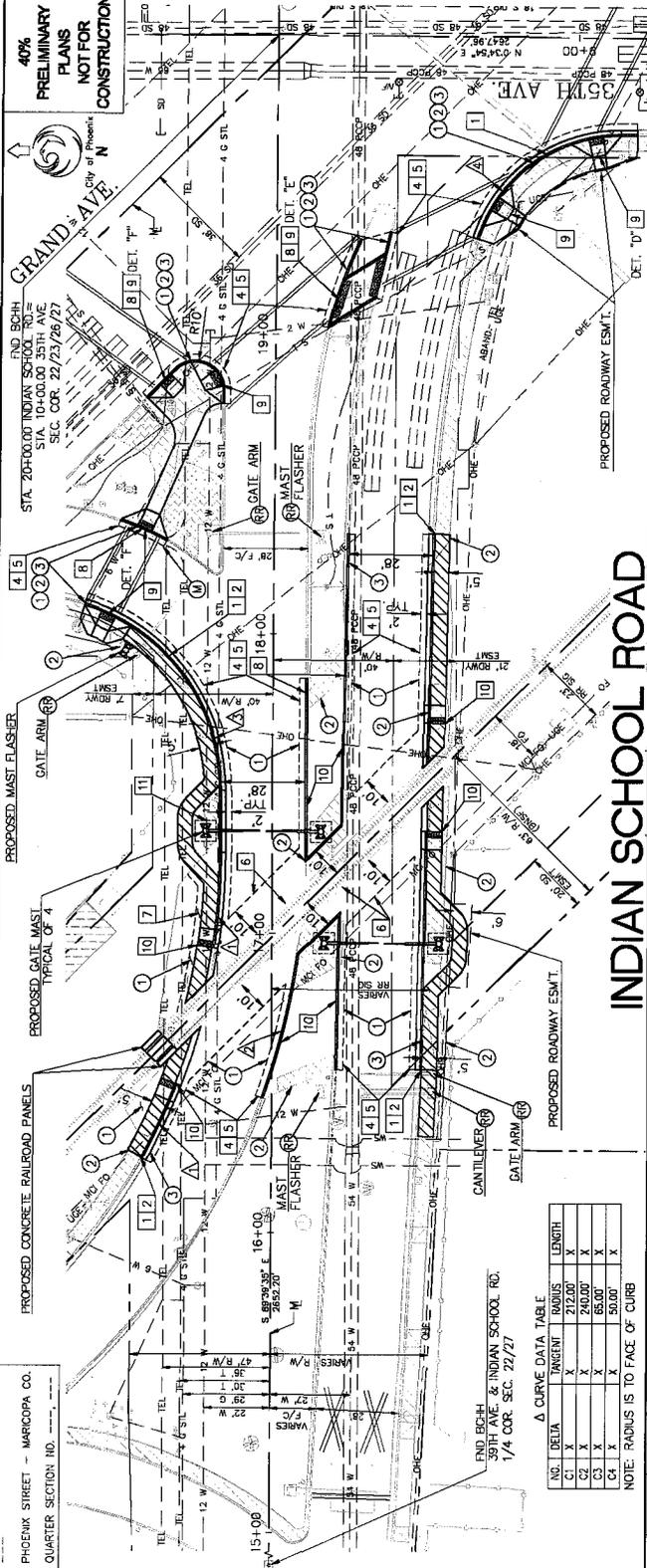
To see all the details that are visible on the screen, use the "Print" link next to the map.



To see all the details that are visible on the screen, use the "Print" link next to the map.



F.F.M.A. NO.	STATE	PROJ. NO.	NO. TOTAL
9	ARIZ.	5785100289	4
DESIGNER		DATE	DATE
ENTRILUS INC.		11/20/11	11/20/11
CONSULTING ENGINEERS			
PROJECT			
REMOVE EXISTING A.C. PAVEMENT			
NO.	STATION TO STATION	SIDE	S.Y.
1	XX+XX	RT & LT	0



END BOCH 39TH AVE & INDIAN SCHOOL RD. 1/4 COR. SEC. 22/27

NO.	DELTA	TANGENT	RADIUS	LENGTH
C1	X	X	212.00'	X
C2	X	X	240.00'	X
C3	X	X	65.00'	X
C4	X	X	50.00'	X

NOTE: RADIUS IS TO FACE OF CURB

NO.	DESCRIPTION	QTY	EA	NP	S.Y.	LF.	SF.	TONS	EA
1	VERT. CURB & GUTTER, DET 220 TYPE A								
2	CONCRETE SIDEWALKS, DET P-1230								
3	ASPHALT CONCRETE SURFACE COURSE D=1/2" THICK								
4	ASPHALT CONCRETE BASE COURSE A=1/2" THICK								
5	ASPHALT CONCRETE BASE COURSE B=1/2" THICK								
6	ASPHALT APPROACH PER DETAIL ON SHEET 7								
7	ASPHALT CONCRETE D/W CONNECTION, 2" THICK								
8	SINGLE CURB, DET 222 TYPE A								
9	SIDEWALK RAMP PER SPECIAL DETAILS ON SHEETS 8 & 9								
10	TRANSITION PER DETAIL ON SHEET 10								
11	12" WATERLINE REALIGNMENT, CONTINGENT								
12	12" WATERLINE REALIGNMENT, CONTINGENT								
13	ADJUST EXISTING SEWER MANHOLE FRAME AND COVER, DET P-1422 BY BNSF RAILROAD FORCE.								
14	BNSF RAILROAD FORCE.								

**ENTRILUS**

255 N. 44th Street, Suite 105  
Phoenix, AZ 85018-2709  
TEL: 602.963.4000  
FAX: 602.963.4001  
WWW.ENTRILUS.COM

602-263-4000  
4-800-ENTRILUS

THESE PLANS ARE PRELIMINARY AND NOT TO BE SHARED WITH OTHERS EXCEPT AS AUTHORIZED BY ENTRILUS. YOU WILL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR OBTAINING THE SERVICES OF ALL NECESSARY PROFESSIONALS.

**PLAN SHEET**

CITY OF PHOENIX, ARIZONA  
STREET TRANSPORTATION DEPARTMENT

35TH AVE AND INDIAN SCHOOL RD.  
US80 - BNSF RAILROAD CROSSING  
5785100289

DATE: 11/20/11  
SCALE: 1"=20'

SHEET TOTAL: 4  
NO. OF SHEETS: 4  
NO. OF SHEETS: 4

NO.	DESCRIPTION	REV BY	CHK BY	DATE



**STATE OF ARIZONA  
DEPARTMENT OF TRANSPORTATION**

TRACS No. 0000 MA PHX SR204 01C  
Project No. STP-000-6(185)A  
Agreement No. 1531-91-ATSF

Location 35th Avenue & US 60  
AAR/DOT # 025 425 K  
Agreement Addendum No. 2

Company BNSF Railway Company  
Address 740 E. Carnegie Drive, San Bernardino, CA 92408-3571

Company hereby agrees to modify the existing referenced Agreement and to do the work hereinafter set forth for the Department of Transportation in accordance with the original agreement, the modified provisions of this form and of the attached sheets, if any, and Company agrees to receive and accept as full compensation therefore the payment provided in the agreement as modified herein.

**WHEREAS:** Agreement No. 1531-91-ATSF authorized construction on August 15, 2008 and provided \$208,007 to furnish and install cantilevers and LED flashers and preliminary engineering according to the estimate, and:

**WHEREAS:** Project scope now includes installing four flasher and gate units on Indian School Road and advanced pre-emption with new circuitry on 35<sup>th</sup> Avenue and is estimated to cost an additional \$795,086.60 and:

**THEREFORE:** The parties hereto agree that Agreement No. 1531-91-ATSF is hereby amended as shown on the attached Exhibit 'A' to represent a cost increase of \$795,086.60 which with the Agreement Addendum No. 1 of \$50,000.00 signed 1/26/2012 reflects a new total Agreement Estimate of \$1,053,093.60. All other provisions of Agreement No. 1531-91-ATSF shall remain unabrogated.

The Department of Transportation hereby agrees to the terms as above set forth, and hereby agrees to pay same; provided, that by mutual consent this agreement may be modified or terminated at any time.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement.

ARIZONA DEPARTMENT OF TRANSPORTATION

BNSF Railway Company

By \_\_\_\_\_  
Vicki Bever  
Utility & Railroad Engineering Section

By \_\_\_\_\_  
Title \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

Exhibit A  
Addendum 2  
Agreement 1531-91-ATSF  
Account Reference Number R1531CI06  
Project STP-000-6(185)A  
Tracs 0000 MA PHX SR204 01C

Agreement 1531-91-ATSF, Estimate Amount	
Preliminary Engineering	\$ 6,000.00
Signal Estimate	\$202,007.00
Total	<b><u>\$208,007.00</u></b>
 Addendum No. 1 Amount	 <b><u>\$50,000.00</u></b>
 Addendum No. 2 Additional Costs Needed	
BNSF Materials and Labor for four new signals on Indian School Road:	\$448,379.00
 BNSF Materials and Labor for advanced pre-emption and circuitry on 35 <sup>th</sup> Avenue:	 \$274,427.00
 10% Contingency	 \$ 72,280.60
Total:	<b><u>\$795,086.60</u></b>
 Revised Agreement Amount	 <b><u>\$1,053,093.60</u></b>



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OTHER

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AC POWER SERVICE	1.0 EA N	5,000	
CONTRACT ENGINEERING	1.0 LS N	10,000	
CONTRACT FLAGGING	1.0 LS N	2,500	
DIRECTIONAL BORE	1.0 LS N	50,000	
FILL DIRT	10.0 CY N	250	
SURFACE ROCK	10.0 CY N	250	
		<hr/>	
TOTAL OTHER ITEMS COST		68,000	68,000
			<hr/>
PROJECT SUBTOTAL			403,581
CONTINGENCIES			40,358
BILL PREPARATION FEE			4,440
			<hr/>
GROSS PROJECT COST			448,379
LESS COST PAID BY BNSF			0
			<hr/>
TOTAL BILLABLE COST			448,379



SURFACE ROCK

10.0 CY N

250

TOTAL OTHER ITEMS COST

68,000 68,000

PROJECT SUBTOTAL

247,009

CONTINGENCIES

24,700

BILL PREPARATION FEE

2,718

GROSS PROJECT COST

274,427

LESS COST PAID BY BNSF

0

TOTAL BILLABLE COST

274,427