City of Benson
City Council Communication

Regular Meeting **October 24, 2016**

To: Mayor and Council Agenda Item # 7

From: Bradley J. Hamilton, P.E. Director of Public Works/City Engineer

Subject:

Discussion and possible action regarding the Railroad Quiet Zone; discussion to include the review of the City of Benson Railroad Quiet Zone Feasibility Study prepared by Kimley-Horn and Associates, Inc.

Discussion:

The Quiet Zone Study has been completed and will be presented to the Mayor and Council in a worksession. This Item has been placed on the agenda for direction to Staff on the City of Benson Railroad Quiet Zone.

Staff Recommendation:

Council pleasure

City of Benson Railroad Quiet Zone Feasibility Study

September 19, 2016

Prepared for:
City of Benson
120 W. 6th Street
Benson, AZ 85602

Prepared by:
Kimley-Horn and Associates, Inc.
333 E. Wetmore Road, Suite 280
Tucson, AZ 85705

City of Benson Railroad Quiet Zone Feasibility Study

Final Report

September 2016

Registered Professional Engineer (Civil)
CERTIFICATE NO
43294
MICHAEL L.
GRANDY
Date Signed 09-19-16
ARIZONA U.S.A.
Expires 09-30-17

Prepared for:
City of Benson
120 W. 6th Street
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Kimley»Horn

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1 INTRODUCTION

This report documents the findings of the Benson Railroad Quiet Zone Feasibility Study performed for the City of Benson. The study locations include three at-grade Union Pacific Railroad (UPRR) crossings within the City of Benson. These railroad crossings are at:

- Ocotillo Road (DOT Crossing #741382T)
- Patagonia Street (DOT Crossing #741383A)
- San Pedro Street (DOT Crossing #741386V)

The quiet zone feasibility study involved the collaboration of the City of Benson (City), Federal Railroad Administration (FRA), UPRR, Amtrak, Arizona Corporation Commission (ACC), and Arizona Department of Transportation (ADOT).

The key tasks associated with this study are:

- Existing Condition Evaluation
  - Diagnostic team review meeting
  - Update U.S. DOT Crossing Inventory Form
- Quiet Zone Evaluation
  - Using the FRA's Quiet Zone Calculator, calculate the various risk indices/thresholds (Quiet Zone Risk Index (QZRI), Nationwide Significant Risk Threshold (NSRT), and Risk Index with Horns (RIWH))
  - As needed, identify Supplemental Safety Measures (SSMs) or Alternative Safety Measures (ASMs) to allow for the establishment of a quiet zone
  - Identify next steps for establishment of a quiet zone

1.1 Background and Study Objective

The City has expressed interest in determining if a railroad quiet zone can be established at the three aforementioned at-grade highway/railroad crossings to improve livability in the vicinity of the at-grade railroad crossings.

FRA regulations state that trains are currently required to sound horns in advance of at-grade crossings unless a "quiet zone" has been established that prohibits the sounding of train horns except in emergencies. The purpose of this study is to determine the feasibility of establishing a quiet zone and to identify what improvements and other next steps are needed to establish a quiet zone. The quiet zone establishment process is outlined in the FRA "Final Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings", amended August 17, 2006 (FRA Final Rule).

Under the Final Rule, an at-grade railroad crossing must meet one of the following conditions to establish a quiet zone:

1. The QZRI is less than or equal to the NSRT with or without additional safety measures.
2. The QZRI is less than or equal to the RIWH with additional safety measures.
3. Install SSMs at every public highway-rail crossing.

2 STUDY AREA AND EXISTING CONDITIONS

The three UPRR crossings included in this study are located in the City of Benson. The City of Benson is located in southeastern Arizona within Cochise County. These railroad crossings are located on Ocotillo Road, Patagonia Street, and San Pedro Street just north of 4th Street / Business Loop 10, a facility owned and maintained by ADOT. The double-track railroad runs parallel to 4th Street / Business Loop 10 through Benson and is part of UPRR's Sunset Route that carries freight between Los Angeles, California and El Paso, Texas. Amtrak has a Sunset Limited intercity passenger train route that utilizes the UPRR Sunset Route, with an Amtrak stop located near the Patagonia Street crossing in Benson.

The U.S. DOT Crossing Inventory Forms for each crossing are provided in **Appendix A**. These forms provide detailed information on the characteristics of each crossing. According to the current inventory forms, approximately 40 trains pass through the Benson area daily and the speeds of the trains typically range from 22 miles per hour (mph) to 45 mph. A map of the three study at-grade crossings is provided in **Figure 1**. More information from each crossing's inventory is provided below.

Ocotillo Road (DOT Crossing #741382T)

Ocotillo Road is classified as a Rural Major Collector north of 4th Street / Business Loop 10. Ocotillo Road provides direct access to I-10 to the north of the railroad crossing. Ocotillo Road consists of a 4-lane cross-section with a raised median south of the UPRR tracks. North of the railroad tracks, Ocotillo Road immediately tapers to a 2-lane roadway. The roadway speed limit is posted at 35 mph and average daily traffic (ADT) volumes were observed to be 2,926 vehicles per day in 2015. Based on a review of recent crash data (2011 - 2015), zero crashes occurred at the at-grade crossing that involved the railroad.

Ocotillo Road has advance warning railroad crossing striping and signage at both the north and south approaches. Two gate arms are used at each approach. One driveway (not counting UPRR access points) exists within the vicinity of the railroad track (100' or less) on the west side of the road south of the railroad. A summary of the existing conditions for Ocotillo Road is provided in **Table 1**.

Table 1: Ocotillo Road Railroad Crossing Details

Element	Description
ADT	2,926
Posted Speed Limit (mph)	35
Cross-section	Partial Raised Median (south approach)
Number of Lanes	4 (at railroad approaches)
Distance to the Closest Intersection	263'

Railroad Related Incidents (2011 – 2015)	0
# of Tracks	2
Maximum Speed (train)	55
Railroad Crossing Control	2 Gates per approach, flashing lights

Patagonia Street (DOT Crossing #741383A)

Patagonia Street is classified as a Rural Local street north of 4th Street / Business Loop 10. Patagonia Street provides a connection to neighborhoods north and south of the railroad tracks. The roadway consists of a 2-lane cross-section on both sides of the UPRR tracks. The roadway speed limit is posted at 25 mph and the ADT volumes were observed to be 1,251 vehicles per day in 2015. Based on a review of recent crash data (2011 - 2015), one crash occurred at the at-grade crossing that involved the railroad.

There are no railroad crossing advance warning striping or signage provided at the north and south approaches of the railroad crossing. Single gate arms are used at each approach. A business access driveway exists on the west side of Patagonia Street south of the railroad tracks. An Amtrak station driveway is located on the east side of Patagonia Street south of the railroad. A summary of the existing conditions for Patagonia Street is provided in **Table 2**.

Table 2: Patagonia Street Railroad Crossing Details

Element	Description
ADT	1,251
Posted Speed Limit (mph)	25
Cross-section	Undivided
Number of Lanes	2
Distance to the Closest Intersection	130’
Railroad Related Incidents (2011 – 2015)	1
# of Tracks	2
Maximum Speed (train)	55
Railroad Crossing Control	1 Gate per approach, flashing lights

San Pedro Street (DOT Crossing #741386V)

San Pedro Street is classified as a Rural Local street both north and south of 4th Street / Business Loop 10. The roadway consists of a 2-lane cross-section on both sides of the UPRR tracks. The roadway speed limit is posted at 25 mph and the ADT volumes were observed to be 984 vehicles per day in 2015. Based on a review of recent crash data (2011 – 2015), zero crashes occurred at the at-grade crossing that involved the railroad.

Similar to Patagonia Street, there are no railroad crossing advance warning striping or signage provided at both the north and south approaches of the railroad crossing. Single gate arms are used at each approach. Aside from the UPRR designated access drives, no driveways are within the vicinity of the railroad tracks. A summary of the existing conditions for San Pedro Street is provided in **Table 3**.

Table 3: San Pedro Street Railroad Crossing Details

Element	Description
ADT	984
Posted Speed Limit (mph)	25
Cross-section	Undivided
Number of Lanes	2
Distance to the Closest Intersection	130’
Railroad Related Incidents (2011 – 2015)	0
# of Tracks	2
Maximum Speed (train)	55
Railroad Crossing Control	1 Gate per approach, flashing lights

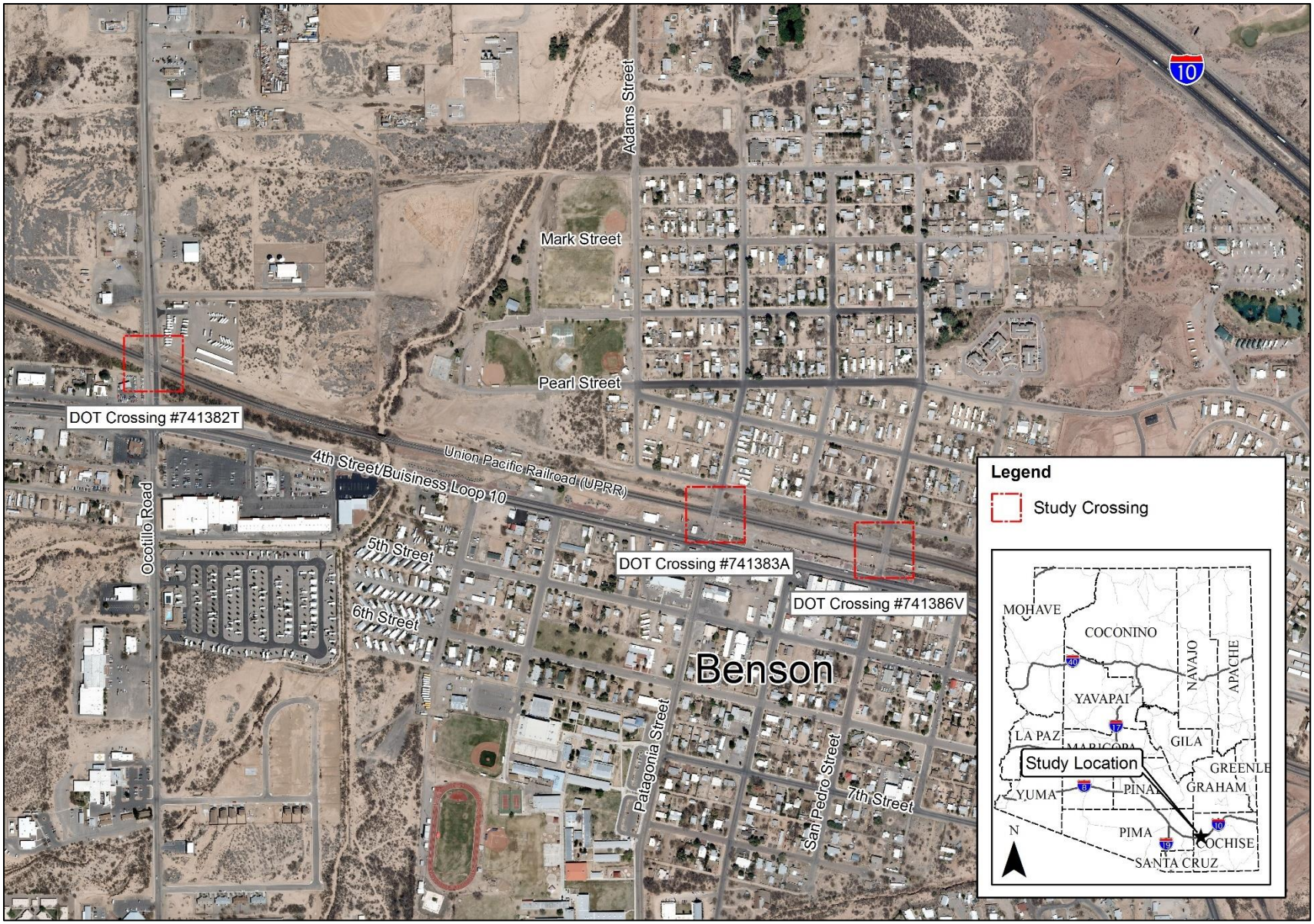


Figure 1: Study At-Grade Railroad Crossing Locations

3 QUIET ZONE EVALUATION

3.1 Diagnostic Team Review Meeting

A diagnostic team review meeting regarding existing conditions at the three study crossings was conducted on Tuesday, June 14, 2016. The meeting included an extensive review of each location. The meeting included the key stakeholders from the City, FRA, UPRR, ACC, and ADOT. The meeting provided an opportunity for the team to review existing conditions to update the U.S. DOT Crossing Inventory Forms and also to discuss the potential SSM improvements that would be required to establish a quiet zone.

The meeting minutes are provided in **Appendix B**.

3.2 Summary of Recommended SSMs and Other Improvements

It was determined by the diagnostic team that providing raised medians and closing driveways near the railroad along Ocotillo Road, Patagonia Street, and San Pedro Street in the vicinity of the railroad crossings will provide SSMs at each crossing that make the three at-grade railroad crossings eligible for the establishment of a quiet zone per the FRA Final Rule. The recommended improvements generated by the diagnostic team review meeting are summarized for each crossing below. These recommendations were further developed into conceptual drawings and a preliminary opinion of probable cost (OPC) was developed for each crossing. A conceptual drawing of each crossing location that provides more details on the SSMs and other recommended improvements are provided in **Appendix C**. The break-down of the preliminary OPC for each crossing are provided in **Appendix D**.

Ocotillo Road (DOT Crossing #741382T)

- Construct 100' median island north of the railroad tracks
- Construct 6" curb along both sides of the crossing with curb cuts for UPRR access drives as illustrated in the conceptual drawing
- Install two (2) "No Train Horn" plaques (W10-9P) under existing W10-1 signs
- Install two (2) W10-2 signs with two (2) "No Train Horn" plaques (W10-9P) on 4th Street / Business Loop 10
- Relocate existing railroad crossing striping and install new 24" stop bar striping
- Close existing driveway on the southwest side of the railroad crossing
- Other required improvements as illustrated in the conceptual drawings

While not considered a railroad crossing SSM or a Quiet Zone requirement, the City of Benson desires to also implement the following improvement to provide a smoother ride for vehicles approaching and departing from the railroad crossing:

- Pavement removal, reprofile, and resurface (3" Overlay) on both sides of existing/proposed median islands

Preliminary Opinion of Probable Cost for all improvements listed above: ***$ 178,455***

Patagonia Street (DOT Crossing #741383A)

- Construct a 95' median island north of the railroad tracks and a 60' median south of the railroad tracks
- Construct 6" curb along both sides of the crossing with curb cuts for UPRR access drives, specific locations are illustrated in the conceptual drawing
- Install two (2) W10-1 signs with "No Train Horn" plaques (W10-9P)
- Install two (2) W10-2 signs with two (2) "No Train Horn" plaques (W10-9P) on 4th Street / Business Loop 10
- Install railroad crossing and 24" stop bar striping
- Other required improvements as illustrated in the conceptual drawings.

While not considered a railroad crossing SSM or a Quiet Zone requirement, the City of Benson desires to also implement the following improvements to provide a smoother ride for vehicles approaching and departing from the railroad crossing and to provide pedestrian facilities:

- 5' sidewalk on both sides of Patagonia Street from 4th Street /Business Loop 10 to 3rd Street to accommodate high pedestrian traffic volumes.
- Pavement removal, reprofile, and resurface (2" Overlay) on both sides of proposed median islands

Preliminary Opinion of Probable Cost for all improvements listed above: ***$ 160,635***

San Pedro Street (DOT Crossing #741386V)

- Construct a 95' raised median north of the railroad tracks and a 60' median south of the railroad tracks
- Construct 6" curb along both sides of the crossing with curb cuts for UPRR access drives, specific locations are illustrated in the conceptual drawing
- Install two (2) W10-1 signs with "No Train Horn" plaques (W10-9P)
- Install two (2) W10-2 signs with two (2) "No Train Horn" plaques (W10-9P) on 4th Street / Business Loop 10
- Install railroad crossing and 24" stop bar striping
- Other required improvements as illustrated in the conceptual drawings

While not considered a railroad crossing SSM or a Quiet Zone requirement, the City of Benson desires to also implement the following improvement to provide a smoother ride for vehicles approaching and departing from the railroad crossing:

- Pavement removal, reprofile, and resurface (2" Overlay) on both sides of proposed median islands

Preliminary Opinion of Probable Cost for all improvements listed above: ***$ 141,641***

It is important to note the general design criteria for the Gate with Raised Median SSM require the squared edge be 10' from the nearest rail. Also, the median must extend 100' from the nearest gate arm unless there is a driveway or intersection, in which case the median must extend a minimum of 60'. The median must be a minimum of 3' wide with a curb of 6" in height.

According to the results of the FRA's Quiet Zone Calculator **(Appendix E)**, the average QZRI for the three crossings is **13,452.97** with the recommended SSMs. The web-based tool can be found at http://safetydata.fra.dot.gov/quiet/. The QZRI is below the NSRT of **14,347.00** which indicates that the three (3) crossings qualify as a quiet zone designation after the SSMs recommended above are installed and appropriate parties are notified as referred in *Section 222.43* of the FRA's ***Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule*.** Note that the crossings' QZRI are below the NSRT without the SSMs; however, implementing the SSMs would provide permanent quiet zone designation.

4 QUIET ZONE IMPLEMENTATION – NEXT STEPS

The preliminary analysis, diagnostic team review (6-14-2016), update of the U.S. DOT Crossing Inventory Forms (6-15-2016) and initial railroad coordination tasks have been accomplished within this study. Once the recommended SSMs and associated improvements are installed, a quiet zone can be established for the three study railroad crossings.

The Quiet Zone Establishment process will require that a Notice of Intent (NOI) and Notice of Establishment (NOE) be issued to all parties. The NOI provides notice to the railroads and state agencies that the public authority is planning on creating a new Quiet Zone. From the time the NOI is received, the state agencies and railroads will be given 60 days to provide information and comments to the public agency (City of Benson). The NOE provides a means for the public authority (City of Benson) to formally advise affected parties that a quiet zone is being established.

The Quiet Zone Establishment Process includes the following steps:

1. Design and Implement SSM Improvements (**3 – 6 months**)
2. Issue the Notice of Intent (NOI) to establish a quiet zone (**approximately 90 days**)
    - Prepare the official quiet zone application packet to include the following:
        - Sufficient detail concerning the present safety measures at all crossings within the proposed quiet zone.
        - Detailed information on the safety improvements that are proposed to be implemented.
        - Membership and recommendations of the diagnostic team that reviewed the proposed quiet zone.
        - Statement of efforts taken to address comments submitted by affected railroads, the State agency responsible for the grade crossing safety and highway and road safety.
        - A commitment to implement the proposed safety measures. Or demonstrate that the SSMs have been installed (depends on the time frame of the SSM design and implementation)
        - Demonstrate through data and analysis that the proposed measures will reduce the QZRI to levels equal to, or less than, either the NSRT or RIWH
        - A copy of the application must be provided to: All railroads operating over the public highway-rail grade crossing (UPRR, and Amtrak); the railroad authority having jurisdiction (FRA); the highway or traffic control or law enforcement authority having jurisdiction (City of Benson Police Department), and the state agency (ADOT and ACC) overseeing at-grade railroad crossings.
3. Issue the Notice of Establishment (NOE) for the quiet zone to the entities mentioned above;
4. Send affirmation and updated inventory form to FRA every 4.5 – 5 years

The flow-chart for *Creating a New Quiet Zone using SSMs (Chart 2)* in Section III of the FRA's Final Rule is provided in **Appendix F**. The chart contains mark-ups/comments on what steps have been completed and what is pending.

APPENDIX A – U.S. DOT INVENTORY CROSSING FORMS

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)* 07 / 18 / 2016

B. Reporting Agency ☒ Railroad ☐ Transit ☐ State ☐ Other

C. Reason for Update *(Select only one)* ☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction

D. DOT Crossing Inventory Number 741382T

Part I: Location and Classification Information

1. Primary Operating Railroad Union Pacific Railroad Company [UP]

2. State ARIZONA

3. County COCHISE

4. City / Municipality ☒ In ☐ Near BENSON

5. Street/Road Name & Block Number OCOTILLO ROAD *(Street/Road Name)* | * *(Block Number)*

6. Highway Type & No. CITY

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No
If Yes, Specify RR

8. Do Other Railroads Operate Over Your Track at Crossing? ☒ Yes ☐ No
If Yes, Specify RR ATK

9. Railroad Division or Region ☐ None SUNSET

10. Railroad Subdivision or District ☐ None Lordsburg

11. Branch or Line Name ☒ None

12. RR Milepost *(prefix)* | 1031.910 *(nnnn.nnn)* | *(suffix)*

13. Line Segment *

14. Nearest RR Timetable Station *

15. Parent RR *(if applicable)* ☒ N/A

16. Crossing Owner *(if applicable)* ☒ N/A

17. Crossing Type ☒ Public ☐ Private

18. Crossing Purpose ☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.

19. Crossing Position ☒ At Grade ☐ RR Under ☐ RR Over

20. Public Access *(if Private Crossing)* ☐ Yes ☐ No

21. Type of Train ☒ Freight ☐ Transit ☒ Intercity Passenger ☐ Shared Use Transit ☐ Commuter ☐ Tourist/Other

22. Average Passenger Train Count Per Day ☒ Less Than One Per Day ☐ Number Per Day

23. Type of Land Use ☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number? ☐ Yes ☒ No If Yes, Provide Crossing Number

25. Quiet Zone *(FRA provided)* ☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID ☒ N/A

27. Latitude in decimal degrees *(WGS84 std: nn.nnnnnnn)* 31.9713452

28. Longitude in decimal degrees *(WGS84 std: -nnn.nnnnnnn)* -110.3071125

29. Lat/Long Source ☒ Actual ☐ Estimated

30.A. Railroad Use *

31.A. State Use *

30.B. Railroad Use *

31.B. State Use *

30.C. Railroad Use *

31.C. State Use *

30.D. Railroad Use *

31.D. State Use *

32.A. Narrative *(Railroad Use)* * MED N <20FT AND S >100FT 6 IN CRB

32.B. Narrative *(State Use)* * MED N <20FT AND S >100FT 6 IN CRB

33. Emergency Notification Telephone No. *(posted)* 800-848-8715

34. Railroad Contact *(Telephone No.)* 402-544-3721

35. State Contact *(Telephone No.)* 602-712-6193

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)* 20

1.B. Total Night Thru Trains *(6 PM to 6 AM)* 20

1.C. Total Switching Trains 0

1.D. Total Transit Trains 0

1.E. Check if Less Than One Movement Per Day ☐
How many trains per week?

2. Year of Train Count Data *(YYYY)* 2016

3. Speed of Train at Crossing
3.A. Maximum Timetable Speed *(mph)* 55
3.B. Typical Speed Range Over Crossing *(mph)* From 22 to 45

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☐ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☒ Other ☐ None

6. Is Track Signaled? ☒ Yes ☐ No

7.A. Event Recorder ☐ Yes ☒ No

7.B. Remote Health Monitoring ☐ Yes ☒ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)* 07/18/2016	PAGE 2	D. Crossing Inventory Number *(7 char.)* 741382T

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)* 0

2.B. STOP Signs *(R1-1) (count)* 0

2.C. YIELD Signs *(R1-2) (count)* 0

2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None
☒ W10-1 1 ☐ W10-3 _____ ☐ W10-11 _____
☐ W10-2 _____ ☐ W10-4 _____ ☐ W10-12 _____

2.E. Low Ground Clearance Sign *(W10-5)*
☐ Yes *(count_____)*
☒ No

2.F. Pavement Markings
☐ Stop Lines ☐ Dynamic Envelope
☒ RR Xing Symbols ☐ None

2.G. Channelization Devices/Medians
☒ All Approaches ☒ Median
☐ One Approach ☐ None

2.H. EXEMPT Sign *(R15-3)*
☐ Yes
☒ No

2.I. ENS Sign *(I-13)* Displayed
☒ Yes
☐ No

2.J. Other MUTCD Signs ☒ Yes ☐ No
Specify Type R15-2P Count 2
Specify Type _____ Count _____
Specify Type _____ Count _____

2.K. Private Crossing Signs *(if private)*
☐ Yes ☐ No

2.L. LED Enhanced Signs *(List types)*

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*
Roadway 4
Pedestrian 0

3.B. Gate Configuration
☒ 2 Quad ☐ Full *(Barrier)* Resistance
☐ 3 Quad
☐ 4 Quad ☒ Median Gates

3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*
Over Traffic Lane 0 ☐ Incandescent
Not Over Traffic Lane 0 ☐ LED

3.D. Mast Mounted Flashing Lights *(count of masts)* 4
☐ Incandescent ☒ LED
☒ Back Lights Included ☐ Side Lights Included

3.E. Total Count of Flashing Light Pairs 8

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*
_____/_____ ☒ Not Required

3.G. Wayside Horn
☐ Yes Installed on *(MM/YYYY)* _____/_____
☒ No

3.H. Highway Traffic Signals Controlling Crossing
☐ Yes ☒ No

3.I. Bells *(count)* 2

3.J. Non-Train Active Warning
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None

3.K. Other Flashing Lights or Warning Devices
Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?
☒ Yes ☐ No

4.B. Hwy Traffic Signal Interconnection
☐ Not Interconnected
☒ For Traffic Signals
☐ For Warning Signs

4.C. Hwy Traffic Signal Preemption
☒ Simultaneous
☐ Advance

5. Highway Traffic Pre-Signals
☐ Yes ☒ No
Storage Distance * _____
Stop Line Distance * _____

6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes - Photo/Video Recording
☐ Yes – Vehicle Presence Detection
☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad ☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic
Number of Lanes 4

2. Is Roadway/Pathway Paved? ☒ Yes ☐ No

3. Does Track Run Down a Street? ☐ Yes ☒ No

4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)* ☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* 06 / 2009 Width * 27 Length * 208
☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 200

7. Smallest Crossing Angle
☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°

8. Is Commercial Power Available? *
☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System
☐ (01) Interstate Highway System
☐ (02) Other Nat Hwy System (NHS)
☒ (03) Federal AID, Not NHS
☐ (08) Non-Federal Aid

2. Functional Classification of Road at Crossing
☒ (0) Rural ☐ (1) Urban
☐ (1) Interstate ☒ (5) Major Collector
☐ (2) Other Freeways and Expressways
☐ (3) Other Principal Arterial ☐ (6) Minor Collector
☐ (4) Minor Arterial ☐ (7) Local

3. Is Crossing on State Highway System?
☐ Yes ☒ No

4. Highway Speed Limit 35 MPH
☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*
Year 2015 AADT 2926

8. Estimated Percent Trucks 10 %

9. Regularly Used by School Buses?
☒ Yes ☐ No Average Number per Day 4

10. Emergency Services Route
☒ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)* 07 / 18 / 2016

B. Reporting Agency ☒ Railroad ☐ Transit ☐ State ☐ Other

C. Reason for Update *(Select only one)* ☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction

D. DOT Crossing Inventory Number 741383A

Part I: Location and Classification Information

1. Primary Operating Railroad Union Pacific Railroad Company [UP]

2. State ARIZONA

3. County COCHISE

4. City / Municipality ☒ In ☐ Near BENSON

5. Street/Road Name & Block Number PATAGONIA STREET *(Street/Road Name)* | * *(Block Number)*

6. Highway Type & No. CITY

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No
If Yes, Specify RR

8. Do Other Railroads Operate Over Your Track at Crossing? ☒ Yes ☐ No
If Yes, Specify RR ATK

9. Railroad Division or Region ☐ None SUNSET

10. Railroad Subdivision or District ☐ None Lordsburg

11. Branch or Line Name ☒ None

12. RR Milepost *(prefix)* | 1032.510 *(nnnn.nnn)* | *(suffix)*

13. Line Segment *

14. Nearest RR Timetable Station *

15. Parent RR *(if applicable)* ☒ N/A

16. Crossing Owner *(if applicable)* ☒ N/A

17. Crossing Type ☒ Public ☐ Private

18. Crossing Purpose ☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.

19. Crossing Position ☒ At Grade ☐ RR Under ☐ RR Over

20. Public Access *(if Private Crossing)* ☐ Yes ☐ No

21. Type of Train ☒ Freight ☐ Transit ☒ Intercity Passenger ☐ Shared Use Transit ☐ Commuter ☐ Tourist/Other

22. Average Passenger Train Count Per Day ☒ Less Than One Per Day ☐ Number Per Day_____

23. Type of Land Use ☐ Open Space ☐ Farm ☒ Residential ☐ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number? ☐ Yes ☒ No If Yes, Provide Crossing Number

25. Quiet Zone *(FRA provided)* ☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID ☒ N/A

27. Latitude in decimal degrees *(WGS84 std: nn.nnnnnnn)* 31.9689882

28. Longitude in decimal degrees *(WGS84 std: -nnn.nnnnnnn)* -110.2972953

29. Lat/Long Source ☒ Actual ☐ Estimated

30.A. Railroad Use *

31.A. State Use *

30.B. Railroad Use *

31.B. State Use *

30.C. Railroad Use *

31.C. State Use *

30.D. Railroad Use *

31.D. State Use *

32.A. Narrative *(Railroad Use)* * 16FT CROSSING FOR AMTRACK

32.B. Narrative *(State Use)* * 16FT CROSSING FOR AMTRACK

33. Emergency Notification Telephone No. *(posted)* 800-848-8715

34. Railroad Contact *(Telephone No.)* 402-544-3721

35. State Contact *(Telephone No.)* 602-712-6193

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)* 20

1.B. Total Night Thru Trains *(6 PM to 6 AM)* 20

1.C. Total Switching Trains 0

1.D. Total Transit Trains 0

1.E. Check if Less Than One Movement Per Day ☐
How many trains per week? _____

2. Year of Train Count Data *(YYYY)* 2016

3. Speed of Train at Crossing
3.A. Maximum Timetable Speed *(mph)* 55
3.B. Typical Speed Range Over Crossing *(mph)* From 22 to 45

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☐ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☒ Other ☐ None

6. Is Track Signaled? ☒ Yes ☐ No

7.A. Event Recorder ☐ Yes ☒ No

7.B. Remote Health Monitoring ☐ Yes ☒ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)* 07/18/2016	PAGE 2	D. Crossing Inventory Number *(7 char.)* 741383A

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)* 0

2.B. STOP Signs *(R1-1) (count)* 2

2.C. YIELD Signs *(R1-2) (count)* 0

2.D. Advance Warning Signs *(Check all that apply; include count)* ☒ None
☐ W10-1 _____ ☐ W10-3 _____ ☐ W10-11 _____
☐ W10-2 _____ ☐ W10-4 _____ ☐ W10-12 _____

2.E. Low Ground Clearance Sign *(W10-5)*
☐ Yes *(count_____)*
☒ No

2.F. Pavement Markings
☐ Stop Lines ☐ Dynamic Envelope
☐ RR Xing Symbols ☒ None

2.G. Channelization Devices/Medians
☐ All Approaches ☐ Median
☐ One Approach ☒ None

2.H. EXEMPT Sign *(R15-3)*
☐ Yes
☒ No

2.I. ENS Sign *(I-13)* Displayed
☒ Yes
☐ No

2.J. Other MUTCD Signs ☒ Yes ☐ No
Specify Type R15-2P Count 2
Specify Type _____ Count _____
Specify Type _____ Count _____

2.K. Private Crossing Signs *(if private)*
☐ Yes ☐ No

2.L. LED Enhanced Signs *(List types)*

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*
Roadway 2
Pedestrian 0

3.B. Gate Configuration
☒ 2 Quad ☐ Full *(Barrier)* Resistance
☐ 3 Quad
☐ 4 Quad ☐ Median Gates

3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*
Over Traffic Lane 0 ☐ Incandescent
Not Over Traffic Lane 0 ☐ LED

3.D. Mast Mounted Flashing Lights *(count of masts)* 2
☐ Incandescent ☒ LED
☒ Back Lights Included ☐ Side Lights Included

3.E. Total Count of Flashing Light Pairs
4

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*
_____/_____ ☒ Not Required

3.G. Wayside Horn
☐ Yes Installed on *(MM/YYYY)* _____/_____
☒ No

3.H. Highway Traffic Signals Controlling Crossing
☐ Yes ☒ No

3.I. Bells *(count)*
2

3.J. Non-Train Active Warning
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None

3.K. Other Flashing Lights or Warning Devices
Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?
☒ Yes ☐ No

4.B. Hwy Traffic Signal Interconnection
☐ Not Interconnected
☒ For Traffic Signals
☐ For Warning Signs

4.C. Hwy Traffic Signal Preemption
☒ Simultaneous
☐ Advance

5. Highway Traffic Pre-Signals
☐ Yes ☒ No
Storage Distance * _____
Stop Line Distance * _____

6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes - Photo/Video Recording
☐ Yes – Vehicle Presence Detection
☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad
☐ One-way Traffic
☒ Two-way Traffic
☐ Divided Traffic
Number of Lanes 2

2. Is Roadway/Pathway Paved?
☒ Yes ☐ No

3. Does Track Run Down a Street?
☐ Yes ☒ No

4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)* ☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* 06 / 2009 Width * 27 Length * 80
☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 200

7. Smallest Crossing Angle
☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°

8. Is Commercial Power Available? *
☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System
☐ (01) Interstate Highway System
☐ (02) Other Nat Hwy System (NHS)
☐ (03) Federal AID, Not NHS
☒ (08) Non-Federal Aid

2. Functional Classification of Road at Crossing
☒ (0) Rural ☐ (1) Urban
☐ (1) Interstate ☐ (5) Major Collector
☐ (2) Other Freeways and Expressways
☐ (3) Other Principal Arterial ☐ (6) Minor Collector
☐ (4) Minor Arterial ☒ (7) Local

3. Is Crossing on State Highway System?
☐ Yes ☒ No

4. Highway Speed Limit
25 MPH
☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*
Year 2015 AADT 1251

8. Estimated Percent Trucks
05 %

9. Regularly Used by School Buses?
☒ Yes ☐ No Average Number per Day 8

10. Emergency Services Route
☐ Yes ☒ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)* 07 / 18 / 2016

B. Reporting Agency ☒ Railroad ☐ Transit ☐ State ☐ Other

C. Reason for Update *(Select only one)* ☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction

D. DOT Crossing Inventory Number 741386V

Part I: Location and Classification Information

1. Primary Operating Railroad Union Pacific Railroad Company [UP]

2. State ARIZONA

3. County COCHISE

4. City / Municipality ☒ In ☐ Near BENSON

5. Street/Road Name & Block Number SAN PEDRO STREET *(Street/Road Name)* | * *(Block Number)*

6. Highway Type & No. CITY

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No
If Yes, Specify RR

8. Do Other Railroads Operate Over Your Track at Crossing? ☒ Yes ☐ No
If Yes, Specify RR ATK

9. Railroad Division or Region ☐ None SUNSET

10. Railroad Subdivision or District ☐ None Lordsburg

11. Branch or Line Name ☒ None

12. RR Milepost *(prefix)* | 1032.690 *(nnnn.nnn)* | *(suffix)*

13. Line Segment *

14. Nearest RR Timetable Station *

15. Parent RR *(if applicable)* ☒ N/A

16. Crossing Owner *(if applicable)* ☒ N/A

17. Crossing Type ☒ Public ☐ Private

18. Crossing Purpose ☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.

19. Crossing Position ☒ At Grade ☐ RR Under ☐ RR Over

20. Public Access *(if Private Crossing)* ☐ Yes ☐ No

21. Type of Train ☒ Freight ☐ Transit ☒ Intercity Passenger ☐ Shared Use Transit ☐ Commuter ☐ Tourist/Other

22. Average Passenger Train Count Per Day ☒ Less Than One Per Day ☐ Number Per Day_____

23. Type of Land Use ☐ Open Space ☐ Farm ☒ Residential ☐ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number? ☐ Yes ☒ No If Yes, Provide Crossing Number

25. Quiet Zone *(FRA provided)* ☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID ☒ N/A

27. Latitude in decimal degrees *(WGS84 std: nn.nnnnnnn)* 31.9683857

28. Longitude in decimal degrees *(WGS84 std: -nnn.nnnnnnn)* -110.2943246

29. Lat/Long Source ☒ Actual ☐ Estimated

30.A. Railroad Use *

31.A. State Use *

30.B. Railroad Use *

31.B. State Use *

30.C. Railroad Use *

31.C. State Use *

30.D. Railroad Use *

31.D. State Use *

32.A. Narrative *(Railroad Use)* *

32.B. Narrative *(State Use)* *

33. Emergency Notification Telephone No. *(posted)* 800-848-8715

34. Railroad Contact *(Telephone No.)* 402-544-3721

35. State Contact *(Telephone No.)* 602-712-6193

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)* 20

1.B. Total Night Thru Trains *(6 PM to 6 AM)* 20

1.C. Total Switching Trains 0

1.D. Total Transit Trains 0

1.E. Check if Less Than One Movement Per Day ☐
How many trains per week? _____

2. Year of Train Count Data *(YYYY)* 2016

3. Speed of Train at Crossing
3.A. Maximum Timetable Speed *(mph)* 55
3.B. Typical Speed Range Over Crossing *(mph)* From 22 to 45

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☐ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☒ Other ☐ None

6. Is Track Signaled? ☒ Yes ☐ No

7.A. Event Recorder ☐ Yes ☒ No

7.B. Remote Health Monitoring ☐ Yes ☒ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)* 07/18/2016	PAGE 2	D. Crossing Inventory Number *(7 char.)* 741386V

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)* 0

2.B. STOP Signs *(R1-1) (count)* 2

2.C. YIELD Signs *(R1-2) (count)* 0

2.D. Advance Warning Signs *(Check all that apply; include count)* ☒ None
☐ W10-1 _____ ☐ W10-3 _____ ☐ W10-11 _____
☐ W10-2 _____ ☐ W10-4 _____ ☐ W10-12 _____

2.E. Low Ground Clearance Sign *(W10-5)*
☐ Yes *(count_____)*
☒ No

2.F. Pavement Markings
☐ Stop Lines ☐ Dynamic Envelope
☐ RR Xing Symbols ☒ None

2.G. Channelization Devices/Medians
☐ All Approaches ☐ Median
☐ One Approach ☒ None

2.H. EXEMPT Sign *(R15-3)*
☐ Yes
☒ No

2.I. ENS Sign *(I-13)* Displayed
☒ Yes
☐ No

2.J. Other MUTCD Signs ☒ Yes ☐ No
Specify Type R15-2P Count 2
Specify Type _____ Count _____
Specify Type _____ Count _____

2.K. Private Crossing Signs *(if private)*
☐ Yes ☐ No

2.L. LED Enhanced Signs *(List types)*

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*
Roadway 2
Pedestrian 0

3.B. Gate Configuration
☒ 2 Quad ☐ Full *(Barrier)* Resistance
☐ 3 Quad
☐ 4 Quad ☐ Median Gates

3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*
Over Traffic Lane 0 ☐ Incandescent
Not Over Traffic Lane 0 ☐ LED

3.D. Mast Mounted Flashing Lights *(count of masts)* 2
☐ Incandescent ☒ LED
☒ Back Lights Included ☐ Side Lights Included

3.E. Total Count of Flashing Light Pairs
4

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*
_____/_____ ☒ Not Required

3.G. Wayside Horn
☐ Yes Installed on *(MM/YYYY)* _____/_____
☒ No

3.H. Highway Traffic Signals Controlling Crossing
☐ Yes ☒ No

3.I. Bells *(count)*
2

3.J. Non-Train Active Warning
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None

3.K. Other Flashing Lights or Warning Devices
Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?
☐ Yes ☒ No

4.B. Hwy Traffic Signal Interconnection
☒ Not Interconnected
☐ For Traffic Signals
☐ For Warning Signs

4.C. Hwy Traffic Signal Preemption
☐ Simultaneous
☐ Advance

5. Highway Traffic Pre-Signals
☐ Yes ☒ No
Storage Distance * _____
Stop Line Distance * _____

6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes - Photo/Video Recording
☐ Yes – Vehicle Presence Detection
☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad ☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic
Number of Lanes 2

2. Is Roadway/Pathway Paved? ☒ Yes ☐ No

3. Does Track Run Down a Street? ☐ Yes ☒ No

4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)* ☐ Yes ☒ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* 07 / 2009 Width * 27 Length * 80
☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 200

7. Smallest Crossing Angle
☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°

8. Is Commercial Power Available? *
☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System
☐ (01) Interstate Highway System
☐ (02) Other Nat Hwy System (NHS)
☐ (03) Federal AID, Not NHS
☒ (08) Non-Federal Aid

2. Functional Classification of Road at Crossing
☒ (0) Rural ☐ (1) Urban
☐ (1) Interstate ☐ (5) Major Collector
☐ (2) Other Freeways and Expressways
☐ (3) Other Principal Arterial ☐ (6) Minor Collector
☐ (4) Minor Arterial ☒ (7) Local

3. Is Crossing on State Highway System?
☐ Yes ☒ No

4. Highway Speed Limit
25 MPH
☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*
Year 2013 AADT 984

8. Estimated Percent Trucks
01 %

9. Regularly Used by School Buses?
☐ Yes ☒ No Average Number per Day _____

10. Emergency Services Route
☐ Yes ☒ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.

APPENDIX B – DIAGNOSTIC TEAM REVIEW SUMMARY

Benson Railroad Quiet Zone Feasibility Study

Diagnostic Team Review Meeting Summary

Tuesday, June 14, 2016

1:30 PM – 3:00 PM

Attendees:

Brad Hamilton, City of Benson

LeeAnn Dickson, Federal Railroad Administration

Alex Popovici, Union Pacific Railroad

Chris Watson, Arizona Corporation Commission

Jason Pike, Arizona Department of Transportation

Michael Grandy, Kimley-Horn

Jason Freitas, Kimley-Horn

Meeting Summary

The diagnostic team began the meeting at the Ocotillo Road at-grade railroad crossing. Field review safety precautions were discussed by Alex Popovici at each site.

Site Visit to Ocotillo Avenue/Road north of 4th Street (DOT Crossing #741382T)

Improvements required to implement a Quiet Zone

North of Railroad Tracks

- A 100' raised median island with 6" curb will need to be constructed on the approach north of the railroad tracks. The end of the island should be squared and 10' from the center of the closest track. The existing median curbing near the gate arm structure needs to be removed and replaced by the aforementioned raised median island.
- The existing driveways north of the railroad tracks are more than 200' away from the tracks so no driveway closures are necessary north of the railroad tracks.
- 6" curb should be installed north of the tracks on the west and east edges of the roadway for the length of the median curb except that curb cuts should be provided to permit access by Union Pacific staff to the railroad maintenance road that parallels the railroad tracks.
- Pavement markings associated with the at-grade railroad crossing need to be redone in accordance with the spacing shown in the Manual on Uniform Traffic Control Devices (MUTCD).
- The southbound approach needs to include a MUTCD W10-1 at-grade railroad crossing warning sign with a "No Train Horn" W10-9P plaque.

South of Railroad Tracks

- The approach south of the railroad tracks already has a raised median with 6" curb that is more than 100' in length. It was noted, however, that the raised median gradually becomes flush with the pavement as it approaches the track. The raised median will need to be reconstructed where the curb is not 6" in height. It is estimated that this will require reconstruction of approximately 24' of existing median. The end of the island should be squared and 10' from the center of the closest track.
- The driveway/alley access behind Barney's Auto Sales will need to be closed on the west side of Ocotillo Avenue south of the railroad tracks because the access point is within 60' of the railroad gate arm. This can be accomplished by installing 6" curb and gutter across the access point. Garbage containers were observed as being present along the alleyway, so it appears the driveway access point may currently be used as part of a garbage truck route. If that is the case, the garbage truck route would have to be modified to no longer include the use of that access point if it is closed off.
- The approach south of the railroad tracks already has a 6" curb on the west and east edges of the roadway for most of the length of the raised median. It was noted, however, that the 6" curb on the east side of the roadway gradually becomes flush with the pavement as it approaches the track. The curb will need to be reconstructed where the curb is not 6" in height. It is estimated that this will require reconstruction of approximately 12' of existing curb. The curb on both sides needs to be extended to match the length of the reconstructed median curb except that curb cuts should be provided to permit access by Union Pacific staff to the railroad maintenance road that parallels the railroad tracks.
- Pavement markings associated with the at-grade railroad crossing need to be redone in accordance with the spacing shown in the MUTCD.
- The northbound approach needs to include a MUTCD W10-1 at-grade railroad crossing warning sign with a "No Train Horn" W10-9P plaque. A W10-2 sign with W10-9P plaque is also needed on both approaches of 4th Street near the Ocotillo Avenue/Road intersection warning drivers that the adjacent at-grade railroad crossing is a quiet zone.

<u>Other recommendations and comments</u>

- LeeAnn Dickson noted that the existing W10-1 sign on the southbound approach was not facing oncoming traffic. Brad Hamilton put in a request for City staff to correct the directionality of the sign. City staff was able to correct the directionality of the sign while the diagnostic team review meeting was still in progress.
- Tree/shrub maintenance is needed regularly for 250'-300' from the railroad crossing to improve visibility for both train engineers and vehicle drivers.
- Alex Popovici recommended that both approaches be re-graded by the City of Benson as they are fairly steep. Brad Hamilton noted that the approaches used to be much less steep but that the Union Pacific Railroad recently raised the elevation of the tracks at the crossing, increasing the steepness of the grade.

Site Visit to Patagonia Street north of 4th Street (DOT Crossing # 741383A)

Improvements required to implement a Quiet Zone

North of Railroad Tracks

- A 95' raised median island with 6" curb will need to be constructed on the approach north of the railroad tracks. Field measurements indicated Patagonia Street is approximately 34' wide, which is sufficiently wide for a raised median plus a through lane in each direction. The end of the raised median island should be squared and 10' from the center of the closest track. The 95' length is recommended instead of the standard 100' based on field measurements by Kimley-Horn to avoid blocking pedestrian crossings at the adjacent 3rd Street/Patagonia Street intersection.
- There are no existing driveways north of the railroad tracks (except for the Union Pacific Railroad maintenance road access point) between the railroad tracks and 3rd Street, which is approximately 100' away from the tracks, so no driveway closures are necessary north of the railroad tracks.
- 6" curb should be installed north of the tracks on the west and east edges of the roadway for the length of the median curb except that curb cuts should be provided to permit access by Union Pacific staff to the railroad maintenance road that parallels the railroad tracks.
- Pavement markings associated with the at-grade railroad crossing need to be installed in accordance with the spacing shown in the MUTCD.
- The southbound approach needs to include a MUTCD W10-1 at-grade railroad crossing warning sign with a "No Train Horn" W10-9P plaque.

South of Railroad Tracks

- A raised median island with 6" curb will need to be constructed on the approach south of the railroad tracks. Field measurements indicated Patagonia Street is approximately 34' wide, which is sufficiently wide for a raised median plus a through lane in each direction. The end of the raised median island should be squared and 10' from the center of the closest track.
- Initially, meeting attendees discussed installing a 100' raised median island and closing off access from Patagonia Street to the Benson Ice Cream Shop on the northwest corner of Patagonia Street/4th Street. At the end of the diagnostic team review meeting, Brad Hamilton indicated the City's preference would be to continue to provide access to the Benson Ice Cream Shop from Patagonia Street so as to not impact site circulation associated with the drive-through window. Field measurements made by Kimley-Horn indicate there is adequate space to provide a driveway for the Benson Ice Cream Shop beyond the end of a new raised median island if the median island is 60' in length (the minimum allowed in a quiet zone when there are nearby driveways).
- On the east side of Patagonia Street south of the railroad tracks, the existing driveway access point to the Amtrak Station needs to be closed because it is closer than 60' to the railroad gate arm. The Amtrak Station will still have an access point on 4th Street. The closure of the Amtrak driveway on Patagonia Street can be accomplished by installing 6" curb and gutter across the

access point.

- 6" curb should be installed south of the tracks on the west and east edges of the roadway for the length of the median curb except that curb cuts should be provided to permit access by Union Pacific staff to the railroad maintenance road that parallels the railroad tracks.
- Pavement markings associated with the at-grade railroad crossing need to be installed in accordance with the spacing shown in the MUTCD.
- The northbound approach needs to include a MUTCD W10-1 at-grade railroad crossing warning sign with a "No Train Horn" W10-9P plaque. A W10-2 sign with W10-9P plaque is also needed on both approaches of 4th Street near the Patagonia Street intersection warning drivers that the adjacent at-grade railroad crossing is a quiet zone.

<u>Other recommendations and comments</u>

- LeeAnn Dickson noted that both approaches are missing pavement markings and a W10-1 at-grade railroad crossing warning sign. These need to be installed by the City as soon as possible to conform to the MUTCD.
- Alex Popovici recommended that a sign be installed at the east end of the Amtrak Station prohibiting public use of the Union Pacific Railroad maintenance road between the Patagonia Street and San Pedro Street crossings.
- Alex Popovici recommended that both approaches be re-graded by the City of Benson as they are fairly steep. Brad Hamilton noted that the approaches used to be much less steep but that the Union Pacific Railroad recently raised the elevation of the tracks at the crossing, increasing the steepness of the grade.
- The question was asked if the Amtrak passenger platform can be relocated as Amtrak trains currently block the Patagonia Street and/or San Pedro Street crossings when loading/unloading passengers at the Amtrak Station. Brad Hamilton indicated that the City would like to relocate the platform closer to the Benson Visitor Center and that the Benson Visitor Center was designed to accommodate a platform if it can be moved there.
- LeeAnn Dickson recommended that Amtrak officials (Steve McDowes) be informed of the needed closure of the Amtrak Station access point on Patagonia Street if a railroad quiet zone is to be implemented and also of the City's desire for the passenger platform to be moved adjacent to the Benson Visitor Center.
- Brad Hamilton mentioned that the Patagonia Street crossing has high pedestrian volumes because there is a school located south of 4th Street. He asked if sidewalks are required as part of the quiet zone. LeeAnn Dickson indicated that there are no quiet zone requirements associated with sidewalks and pedestrians, but that she thought a sidewalk would help to better accommodate pedestrian movements across the railroad crossing. LeeAnn Dickson also recommended that an education campaign be conducted at the school and with neighboring businesses and residences in advance of the establishment of the quiet zone to provide information on railroad safety in a quiet zone.

Site Visit to San Pedro Street north of 4th Street (DOT Crossing # 741386V)

Improvements required to implement a Quiet Zone

North of Railroad Tracks

- A 95' raised median island with 6" curb will need to be constructed on the approach north of the railroad tracks. Field measurements indicated San Pedro Street is approximately 34' wide, which is sufficiently wide for a raised median plus a through lane in each direction. The end of the raised median island should be squared and 10' from the center of the closest track. The 95' length is recommended instead of the standard 100' based on field measurements by Kimley-Horn to avoid blocking pedestrian crossings at the adjacent 3rd Street/San Pedro Street intersection.
- There are no existing driveways north of the railroad tracks (except for the Union Pacific Railroad maintenance road access point) between the railroad tracks and 3rd Street, which is approximately 100' away from the tracks, so no driveway closures are necessary north of the railroad tracks.
- 6" curb should be installed north of the tracks on the west and east edges of the roadway for the length of the median curb except that curb cuts should be provided to permit access by Union Pacific staff to the railroad maintenance road that parallels the railroad tracks.
- Pavement markings associated with the at-grade railroad crossing need to be installed in accordance with the spacing shown in the MUTCD.
- The southbound approach needs to include a MUTCD W10-1 at-grade railroad crossing warning sign with a "No Train Horn" W10-9P plaque.

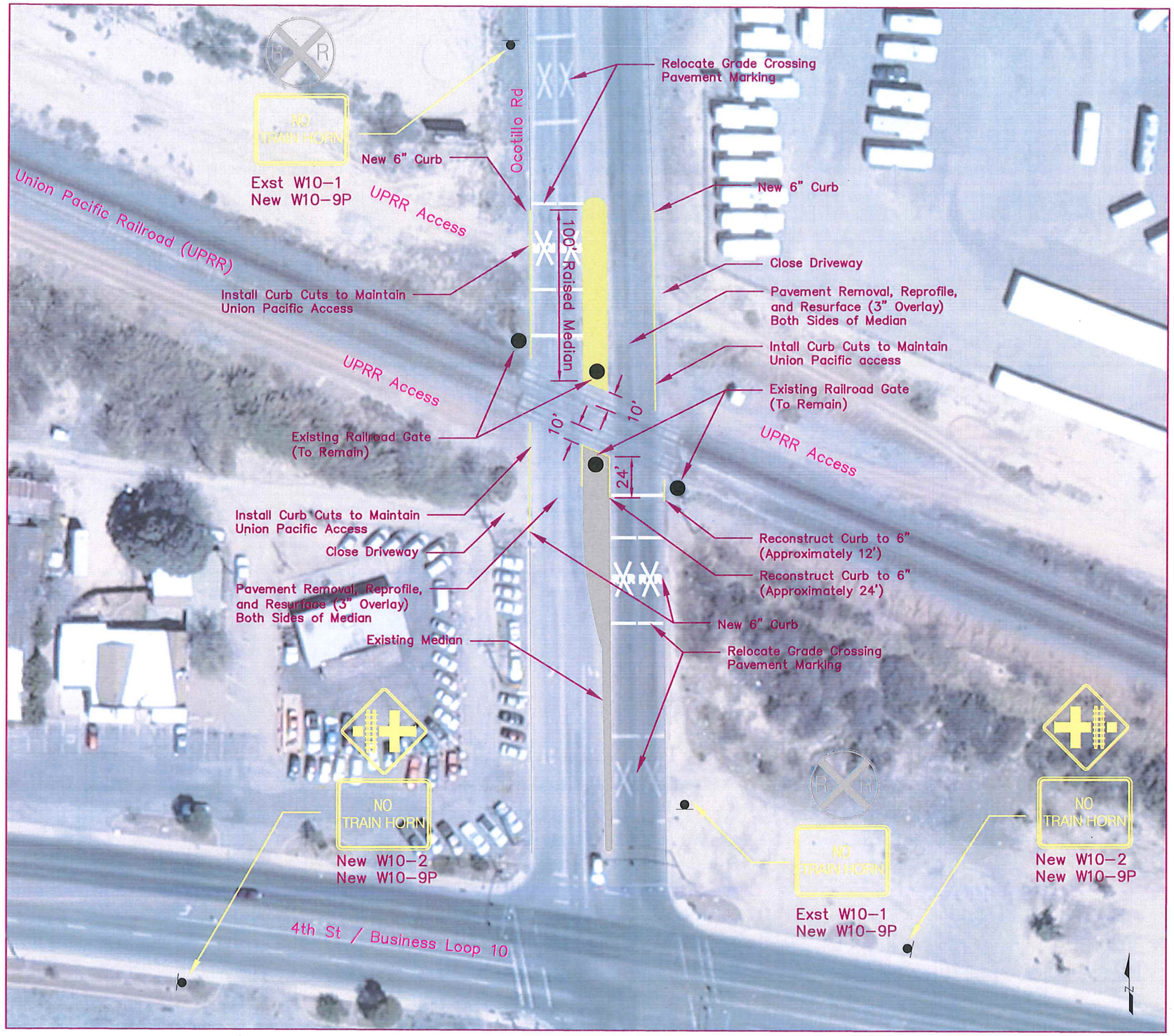
South of Railroad Tracks

- A 60' raised median island with 6" curb will need to be constructed on the approach south of the railroad tracks. Field measurements indicated San Pedro Street is approximately 34' wide, which is sufficiently wide for a raised median plus a through lane in each direction. The end of the raised median island should be squared and 10' from the center of the closest track. The length of the raised median island is recommended to be 60' (the minimum allowed in a quiet zone when there are nearby driveways) because there are existing driveways just beyond that 60' dimension. The existing driveway on the west side provides access to the Benson Visitor Center. The existing driveway on the east side provides access to the Greyhound Bus Station.
- 6" curb should be installed south of the tracks on the west and east edges of the roadway for the length of the median curb except that curb cuts should be provided to permit access by Union Pacific staff to the railroad maintenance road that parallels the railroad tracks.
- Pavement markings associated with the at-grade railroad crossing need to be installed in accordance with the spacing shown in the MUTCD.
- The northbound approach needs to include a MUTCD W10-1 at-grade railroad crossing warning sign with a "No Train Horn" W10-9P plaque. A W10-2 sign with W10-9P plaque is also needed on both approaches of 4th Street near the San Pedro Street intersection warning drivers that the adjacent at-grade railroad crossing is a quiet zone.

Other recommendations and comments

- LeeAnn Dickson noted that both approaches are missing pavement markings and a W10-1 at-grade railroad crossing warning sign. These need to be installed by the City as soon as possible to conform to the MUTCD.
- Alex Popovici recommended that both approaches be re-graded by the City of Benson as they are fairly steep and there has been a history of vehicles getting stuck on the railroad tracks at this crossing. Brad Hamilton noted that the approaches used to be much less steep but that the Union Pacific Railroad recently raised the elevation of the tracks at the crossing, increasing the steepness of the grade.
- Alex Popovici indicated the Union Pacific Railroad would like to see the San Pedro Street crossing completely closed. He indicated that if the City of Benson was amenable to closing this crossing, Union Pacific Railroad may be able to help fund some of the improvements recommended at the other two crossings in Benson, such as the installation of raised medians, curbs, sidewalk, and regraded approaches within Union Pacific Railroad right-of-way.
- Jason Pike indicated he would update the Crossing Inventory forms for the three at-grade crossings in Benson and send the updated forms out to meeting attendees.

APPENDIX C – CONCEPTUAL LAYOUTS



Ocotillo Road / Union Pacific Railroad Crossing (DOT Crossing #741382T)

Quiet Zone Calculator Results

Nationwide Significant Risk Threshold:	14,347
Risk Index with Horns:	40,327
Quiet Zone Risk Index:	13,453

Supplemental Safety Measures to Implement

Median/Channelization

Recommended Improvements

1. Sign Work — $ 2,000
   - Install (2) W10-9P plaques under existing W10-1 signs
   - Install (2) W10-2 signs with (2) W10-9P plaques
2. Median/Channelization Work — $ 17,360
   - 6" Vertical Curb – 580 L.F.
   - Concrete Median Pavement
3. Pavement Work — $ 71,951
   - Pavement Marking (4" Equiv,) 1540 L.F.
   - Pavement Removal, Reprofile, and Resurface (3" Overlay) Both Sides of Median
4. Other Construction Costs: — $ 87,144
   - Design
   - Railroad Coordination
   - Mobilization
   - Traffic Control
   - Contingencies

Total Preliminary Opinion of Probable Cost: $ 178,455

Exhibit A:
Ocotillo Road

Scale: 1"=60'

Kimley»Horn

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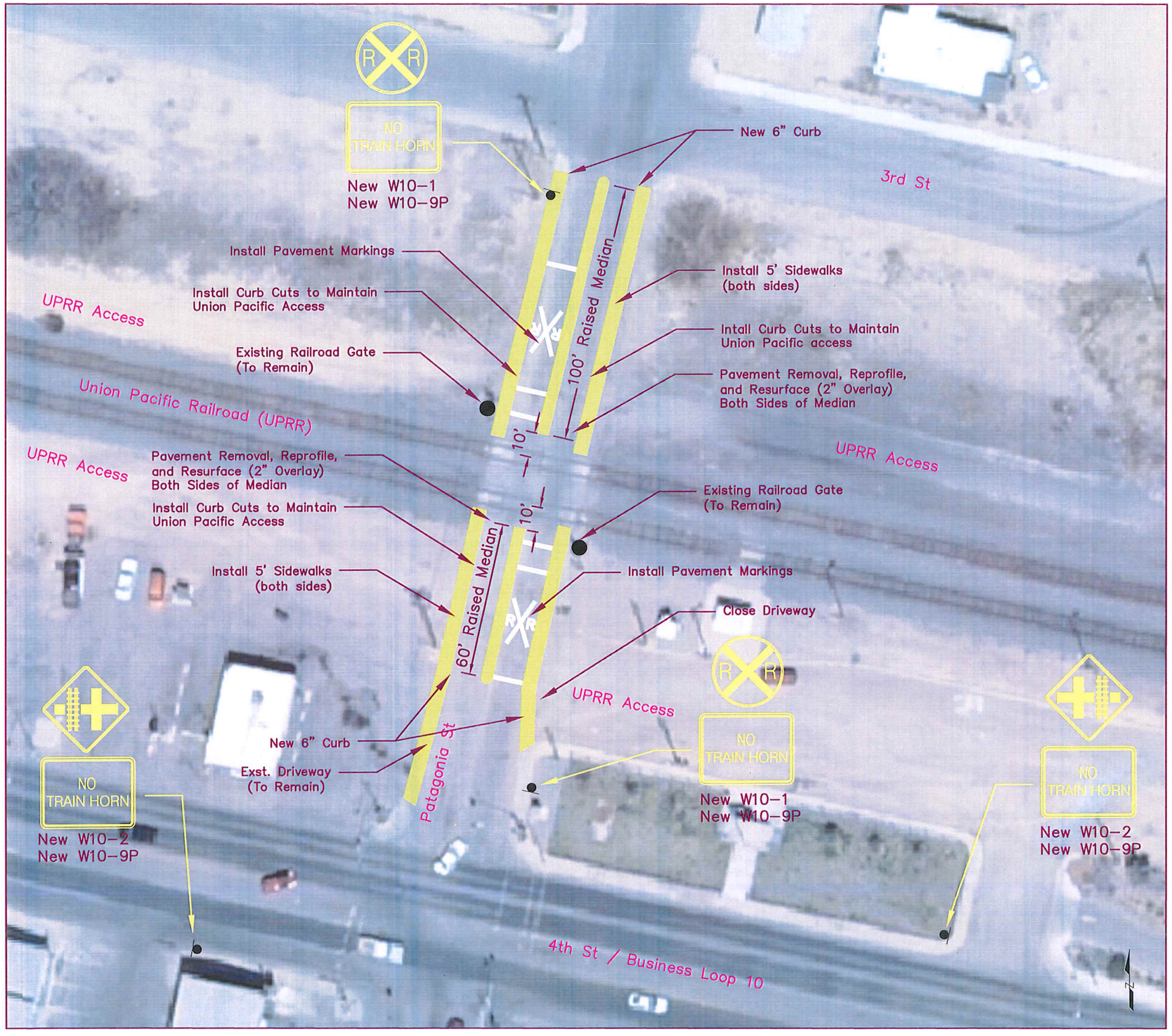

Patagonia Street / Union Pacific Railroad Crossing (DOT Crossing #741383A)

Quiet Zone Calculator Results

Nationwide Significant Risk Threshold:	14,347
Risk Index with Horns:	40,327
Quiet Zone Risk Index:	13,453

Supplemental Safety Measures to Implement

Median/Channelization

Recommended Improvements

1. Sign Work

– Install (2) W10-1 signs with (2) W10-9P plaques – Install (2) W10-2 signs with (2) W10-9P plaques	$ 3,200

2. Median/Channelization Work

6" Vertical Curb – 705 L.F. Concrete Median Pavement	$ 16,890

3. Pavement Work

– Pavement Marking (4" Equiv,) 1,072 L.F. – Pavement Removal, Reprofile, and Resurface (2" Overlay) Both Sides of Median	$ 48,912

4. Miscellaneous Work

Sidewalk Installation 2,080 S.F.	$ 12,480

5. Other Construction Costs: $ 79,153

– Design
– Railroad Coordination
– Mobilization
– Traffic Control
– Contingencies

Total Preliminary Opinion of Probable Cost:	$ 160,635

Exhibit B:
Patagonia Street

Scale: 1"=40'

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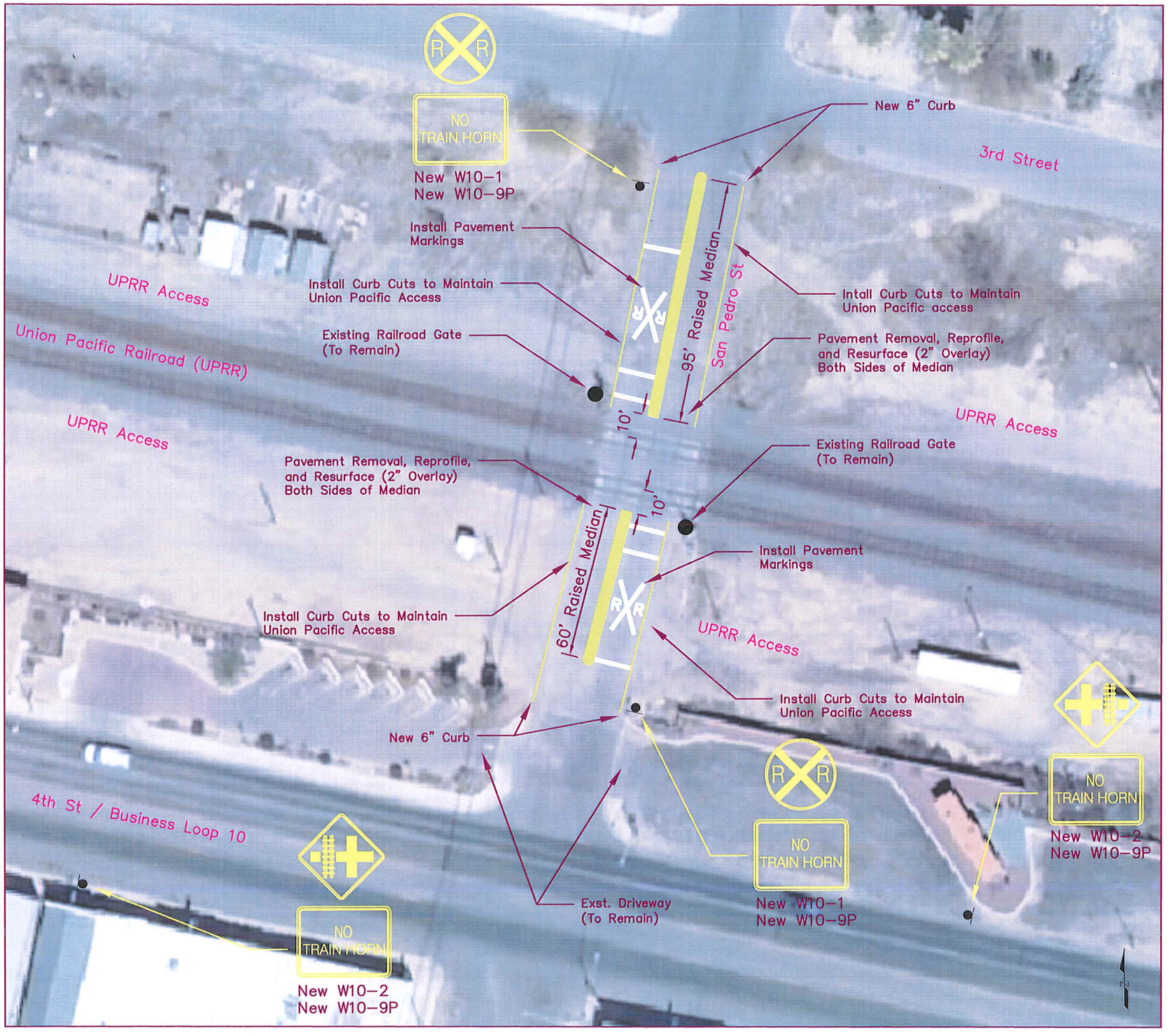
Tucson, Arizona 85705 (520) 615-9191



San Pedro Street / Union Pacific Railroad Crossing (DOT Crossing #741386V)

Quiet Zone Calculator Results

Nationwide Significant Risk Threshold:	14,347
Risk Index with Horns:	40,327
Quiet Zone Risk Index:	13,453

Supplemental Safety Measures to Implement

Median/Channelization

Recommended Improvements

1. Sign Work

– Install (2) W10-1 signs with (2) W10-9P plaques – Install (2) W10-2 signs with (2) W10-9P plaques	$ 3,200

2. Median/Channelization Work

6" Vertical Curb – 675 L.F. Concrete Median Pavement	$ 16,290

3. Pavement Work

– Pavement Marking (4" Equiv,) 1,072 L.F. – Pavement Removal, Reprofile, and Resurface (2" Overlay) Both Sides of Median	$ 48,912

4. Miscellaneous Work

Utilities Relocation	$ 5,000

5. Other Construction Costs:

– Design – Railroad Coordination – Mobilization – Traffic Control – Contingencies	$ 68,239
Total Preliminary Opinion of Probable Cost:	$ 141,641

Exhibit C:
San Pedro Street

Scale: 1"=40'

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APPENDIX D – PRELIMINARY OPINION OF PROBABLE COSTS

PRELIMINARY OPINION OF PROBABLE COST

Project Description: Benson Quiet Zone Feasibility Study

Project Location: Benson, AZ (Ocotillo Road Railroad Crossing)

DOT Crossing #: 741382T

Stage: Preliminary

Prepared By: Kimley-Horn

Date: September 19, 2016

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
9080045	CONCRETE CURB (SINGLE)	L.FT.	580	$ 20.00	$ 11,600
6080101	MISCELLANEOUS WORK (SIGNS)	L.SUM	1	$ 2,000.00	$ 2,000
7041501	PAVEMENT MARKINGS	L.SUM	1	$ 1,200.00	$ 1,200
9080150	CONCRETE MEDIAN PAVEMENT	SQ.FT.	640	$ 9.00	$ 5,760
				ROADWAY AND BRIDGE SUBTOTAL	**$ 20,560**
	MISCELLANEOUS WORK	L.SUM	1	20%	$ 4,112
	PAVEMENT REMOVAL, REPROFILE, AND RESURFACE	L.SUM	1	$ 70,751	$ 70,751
				SUBTOTAL WITH MISC WORK	**$ 95,423**
	CONSTRUCTION SURVEYING & LAYOUT	L.SUM	1	5%	$ 4,771
	EROSION CONTROL	L.SUM	1	1%	$ 954
	CONTRACTOR QUALITY CONTROL	L.SUM	1	4%	$ 3,817
	FURNISH WATER SUPPLY	L.SUM	1	1%	$ 954
	MAINTENANCE & PROTECTION OF TRAFFIC	L.SUM	1	6%	$ 5,725
				SUBTOTAL WITH GENERAL ITEMS	**$ 111,644**
	MOBILIZATION	L.SUM	1	7%	$ 7,815
				SUBTOTAL WITH MOBILIZATION	**$ 119,459**
	CONSTRUCTION ENGINEERING	L.SUM	1	15%	$ 17,919
	CONTINGENCIES	L.SUM	1	5%	$ 5,973
	CONSULTANT POST DESIGN ACTIVITIES	L.SUM	1	1%	$ 1,195
	NON-BID SUBTOTAL			$ 25,087	$ -
				CONSTRUCTION SUBTOTAL	**$ 144,546**
	INDIRECT COST ALLOCATION	L.SUM	1	0.00%	$ -
				CONSTRUCTION TOTAL COST	**$ 144,546**
CONSULTANT DESIGN AND ENVIRONMENTAL CLEARANCE		L.SUM	1	20%	$ 28,909
UP MONITOR AND RAILROAD ACCESS FEES		L.SUM	1	-	$ 5,000
UTILITY RELOCATION		L.SUM	-	-	$ -
RIGHT-OF-WAY		SQ.FT.	-	-	$ -
				TOTAL PROJECT COST	**$ 178,455**

PRELIMINARY OPINION OF PROBABLE COST

Project Description: Benson Quiet Zone Feasibility Study

Project Location: Benson, AZ (Patagonia Street Railroad Crossing)

DOT Crossing #: 741383A

Stage: Preliminary

Prepared By: Kimley-Horn

Date: September 19, 2016

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
9080045	CONCRETE CURB (SINGLE)	L.FT.	705	$ 20.00	$ 14,100
6080101	MISCELLANEOUS WORK (SIGNS)	L.SUM	1	$ 3,200.00	$ 3,200
7041501	PAVEMENT MARKINGS	L.SUM	2	$ 300.00	$ 600
9080150	CONCRETE MEDIAN PAVEMENT	SQ.FT.	310	$ 9.00	$ 2,790
				ROADWAY AND BRIDGE SUBTOTAL	**$ 20,690**
	MISCELLANEOUS WORK	L.SUM	1	20%	$ 4,138
9080242	SIDEWALK	SF	2,080	$ 6.00	$ 12,480
	PAVEMENT REMOVAL, REPROFILE, AND RESURFACE	L.SUM	1	$ 48,312.00	$ 48,312
				SUBTOTAL WITH MISC WORK	**$ 85,620**
	CONSTRUCTION SURVEYING & LAYOUT	L.SUM	1	5%	$ 4,281
	EROSION CONTROL	L.SUM	1	1%	$ 856
	CONTRACTOR QUALITY CONTROL	L.SUM	1	4%	$ 3,425
	FURNISH WATER SUPPLY	L.SUM	1	1%	$ 856
	MAINTENANCE & PROTECTION OF TRAFFIC	L.SUM	1	6%	$ 5,137
				SUBTOTAL WITH GENERAL ITEMS	**$ 100,175**
	MOBILIZATION	L.SUM	1	7%	$ 7,012
				SUBTOTAL WITH MOBILIZATION	**$ 107,187**
	CONSTRUCTION ENGINEERING	L.SUM	1	15%	$ 16,078
	CONTINGENCIES	L.SUM	1	5%	$ 5,359
	CONSULTANT POST DESIGN ACTIVITIES	L.SUM	1	1%	$ 1,072
	NON-BID SUBTOTAL			$ 22,509	$ -
				CONSTRUCTION SUBTOTAL	**$ 129,696**
	INDIRECT COST ALLOCATION	L.SUM	1	0.00%	$ -
				CONSTRUCTION TOTAL COST	**$ 129,696**
CONSULTANT DESIGN AND ENVIRONMENTAL CLEARANCE		L.SUM	1	20%	$ 25,939
UP MONITOR AND RAILROAD ACCESS FEES		L.SUM	1	-	$ 5,000
UTILITY RELOCATION		L.SUM	-	-	$ -
RIGHT-OF-WAY		SQ.FT.	-	-	$ -
				TOTAL PROJECT COST	**$ 160,635**

PRELIMINARY OPINION OF PROBABLE COST

Project Description: Benson Quiet Zone Feasibility Study

Project Location: Benson, AZ (San Pedro Street Railroad Crossing)

DOT Crossing #: 741386V

Stage: Preliminary

Prepared By: Kimley-Horn

Date: September 19, 2016

ITEM NO.	ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
9080045	CONCRETE CURB (SINGLE)	L.FT.	675	$ 20.00	$ 13,500
6080101	MISCELLANEOUS WORK (SIGNS)	L.SUM	1	$ 3,200.00	$ 3,200
7041501	PAVEMENT MARKINGS	L.SUM	2	$ 300.00	$ 600
9080150	CONCRETE MEDIAN PAVEMENT	SQ.FT.	310	$ 9.00	$ 2,790
				ROADWAY AND BRIDGE SUBTOTAL	**$ 20,090**
	MISCELLANEOUS WORK	L.SUM	1	20%	$ 4,018
	PAVEMENT REMOVAL, REPROFILE, AND RESURFACE	L.SUM	1	$ 48,312	$ 48,312
				SUBTOTAL WITH MISC WORK	**$ 72,420**
	CONSTRUCTION SURVEYING & LAYOUT	L.SUM	1	5%	$ 3,621
	EROSION CONTROL	L.SUM	1	1%	$ 724
	CONTRACTOR QUALITY CONTROL	L.SUM	1	4%	$ 2,897
	FURNISH WATER SUPPLY	L.SUM	1	1%	$ 724
	MAINTENANCE & PROTECTION OF TRAFFIC	L.SUM	1	6%	$ 4,345
				SUBTOTAL WITH GENERAL ITEMS	**$ 84,731**
	MOBILIZATION	L.SUM	1	7%	$ 5,931
				SUBTOTAL WITH MOBILIZATION	**$ 90,662**
	CONSTRUCTION ENGINEERING	L.SUM	1	15%	$ 13,599
	CONTINGENCIES	L.SUM	1	5%	$ 4,533
	CONSULTANT POST DESIGN ACTIVITIES	L.SUM	1	1%	$ 907
	NON-BID SUBTOTAL			$ 19,039	$ -
				CONSTRUCTION SUBTOTAL	**$ 109,701**
	INDIRECT COST ALLOCATION	L.SUM	1	0.00%	$ -
				CONSTRUCTION TOTAL COST	**$ 109,701**
CONSULTANT DESIGN AND ENVIRONMENTAL CLEARANCE		L.SUM	1	20%	$ 21,940
UP MONITOR AND RAILROAD ACCESS FEES		L.SUM	1	-	$ 5,000
UTILITY RELOCATION		L.SUM	-	-	$ 5,000
RIGHT-OF-WAY		SQ.FT.	-	-	$ -
				TOTAL PROJECT COST	**$ 141,641**

APPENDIX E – QUIET ZONE CALCULATOR OUTPUT

Federal Railroad Administration

Quiet Zone Designation Information

Name	Job Title	Organization	
Michael Grandy	**Project Engineer**	**Kimley-Horn on behalf of City of Benson**	
Address **1855 W. Baseline Rd, Suite 200**	City **Mesa**	State **AZ**	Zip Code **85202**
Phone **480-207-2666**	Fax	Email **michael.grandy@kimley-horn.com**	

741382T **OCOTILLO ROAD**	Proposed Warning Device **Gates**	Estimated Cost **15,000.00**	Wayside Horn **No**	Risk Index **11,682.24**
Crossing Type **Public**	SSM **Non-Traversable Curb Medians with or without Channelization Devices**		Pre-Existing SSM **None**	

741383A **PATAGONIA STREET**	Proposed Warning Device **Gates**	Estimated Cost **15,000.00**	Wayside Horn **No**	Risk Index **21,089.52**
Crossing Type **Public**	SSM **Non-Traversable Curb Medians with or without Channelization Devices**		Pre-Existing SSM **None**	

741386V **SAN PEDRO STREET**	Proposed Warning Device **Gates**	Estimated Cost **15,000.00**	Wayside Horn **No**	Risk Index **7,587.15**
Crossing Type **Public**	SSM **Non-Traversable Curb Medians with or without Channelization Devices**		Pre-Existing SSM **None**	

Note: If zone is a partial new quiet zone, gates are not required if the crossing is to be closed during partial quiet zone period, permanently closed, or grade separated.

Zone ID : **38994**				Scenario ID : **48572**
Date : **8/1/2016 6:19:09 PM**				
Railroad **UP**	Pre Rule? **NO**	Partial? **NO**	Time of Partial Quiet Zone	Total Traffic **5,161**
Estimated Total Cost **$45,000.00**	Nationwide Significant Risk Threshold **14347**	Risk Index with Horns **40,326.65**	Quiet Zone Risk Index **13,452.97**	

Basis for Establishment or Continuation of Quiet Zone

This quiet zone is being established in compliance with the following (check one)

☐ § 222.39(a)(1), implementation of SSMs at every public crossing in the New Quiet Zone or New Partial Quiet Zone;

☐ §222.39(a)(2)(i), the QZRI is at or below the NSRT without installation of any SSMs at the New Quiet Zone or New Partial Quiet Zone;

☐ §222.39(a)(2)(ii), SSMs were implemented at some crossings in the New Quiet Zone or New Partial Quiet Zone to bring the QZRI to a level at or below the NSRT;

☐ §222.39(a)(3), SSMs were implemented at some crossings in the New Quiet Zone or New Partial Quiet Zone to bring the QZRI to a level at or below the RIWH; or

☐ §222.39(b), public authority application to the FRA for a New Quiet Zone or New Partial Quiet Zone.

☐ § 222.41(a)(1)(i) Pre-Rule Quiet Zones that qualify for automatic approval because every crossing is equipped with an SSM,

☐ § 222.41(a)(1)(ii) Pre-Rule Quiet Zones that qualify for automatic approval because QZRI ≤ NSRT,

☐ § 222.41(a)(1)(iii) Pre-Rule Quiet Zones that qualify for automatic approval because NSRT < QZRI < 2* NSRT, and there have been no relevant collisions within the 5 years preceding April 27,2005

☐ § 222.41(a)(1)(iv) Pre-Rule Quiet Zones that qualify for automatic approval because NSRT < RIWH.

☐ § 222.41(b)(1)(i) Pre-Rule Partial Quiet Zones that qualify for automatic approval because every crossing is equipped with an SSM,

☐ § 222.41(b)(1)(ii) Pre-Rule Partial Quiet Zones that qualify for automatic approval because QZRI ≤ NSRT,

☐ § 222.41(b)(1)(iii) Pre-Rule Partial Quiet Zones that qualify for automatic approval because NSRT < QZRI < 2* NSRT, and there have been no relevant collisions within the 5 years preceding April 27,2005.

☐ § 222.41(b)(1)(iv) Pre-Rule Partial Quiet Zones that qualify for automatic approval because NSRT < RIWH.

☐ § 222.41(c) Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones that do not qualify for automatic approval

☐ § 222.41(d) Pre-Rule Partial Quiet Zones that will be converted to 24-hour New Quiet Zones

☐ § 222.42(a) Intermediate Quiet Zones or Intermediate Partial Quiet Zones

☐ § 222.42(b) Intermediate Partial Quiet Zones that will be converted to 24-hour New Quiet Zones.

Applicant Signature _____ Date _____

Chief Executive Officer Statement.

I hereby certify that the information submitted in this notification is accurate and complete to the best of my knowledge and belief.

Signature _____ Date _____

Note: A copy of this report along with other required contents (see § 222.43(e)(2)) must be sent to all of the parties required in § 222.43(a)(4). FRA's notification should be mailed to:

Associate Administrator for Safety
Federal Railroad Administration
1200 New Jersey Avenue, SE, MS-25
Washington, DC 20590

Federal Railroad Administration

Quiet Zone Designation Information

Public At-grade Open Crossing Information

Crossing:	741382T	Urban(U)/Rural(R):	R.Major Collector
Warning Device:	Gates	Highway Paved:	yes
aadt:	2926	Maximum Timetable Speed :	55
Total Trains:	40	Highway Lanes:	4
Day Through Trains:	20	No. of Accident Data Years:	5
Main Tracks:	2	No. of Accidents:	0
Other Tracks:	0	Total Switching Trains:	0

Crossing:	741383A	Urban(U)/Rural(R):	R.Local
Warning Device:	Gates	Highway Paved:	yes
aadt:	1251	Maximum Timetable Speed :	55
Total Trains:	40	Highway Lanes:	2
Day Through Trains:	20	No. of Accident Data Years:	5
Main Tracks:	2	No. of Accidents:	1
Other Tracks:	0	Total Switching Trains:	0

Crossing:	741386V	Urban(U)/Rural(R):	R.Local
Warning Device:	Gates	Highway Paved:	yes
aadt:	984	Maximum Timetable Speed :	55
Total Trains:	40	Highway Lanes:	2
Day Through Trains:	20	No. of Accident Data Years:	5
Main Tracks:	2	No. of Accidents:	0
Other Tracks:	0	Total Switching Trains:	0

APPENDIX F – FRA FINAL RULE SECTION III, CHART 2
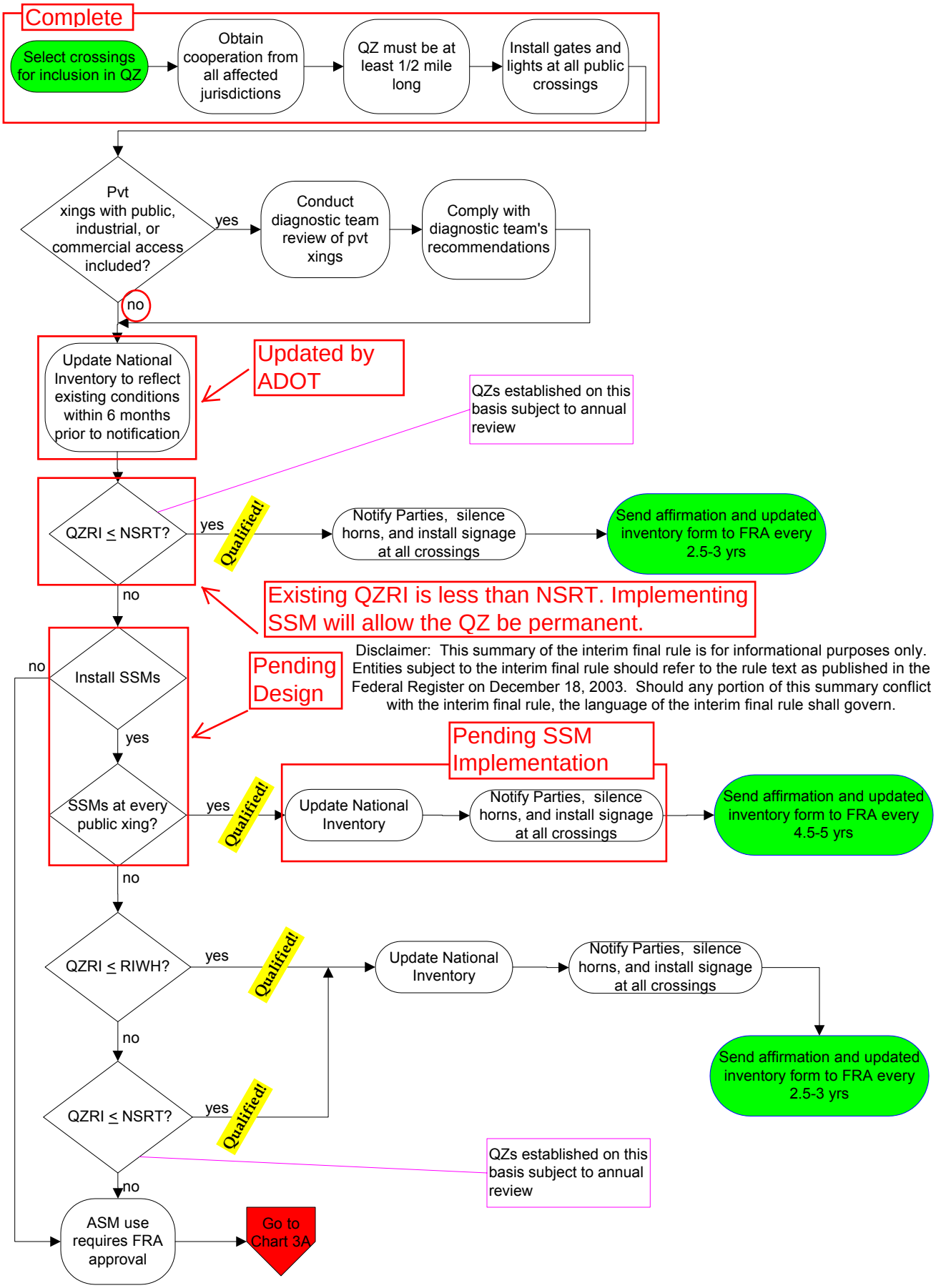
Chart 2 - Creating a New Quiet Zone using SSMs