BOLTON & MENK, INC.
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April 28, 2014

Honorable Mayor and Council
City of Carroll

Carroll, Iowa

RE: Union Pacific Railroad Quiet Zone Investigation
Project No.: A11.107480
Engineering Report

Dear Mayor and Council:

This letter is a presentation of the Engineering report of the proposed railroad crossing safety improvements within the City of Carroll.

1.0 Executive Summary

Bolton & Menk has completed the preliminary investigations for the Quiet Zone (QZ) Feasibility Study along the Union Pacific mainline track within the community. The work has included multiple meetings with City staff, one meeting with the Union Pacific representative responsible for Quiet Zone community coordination and a Public Information Meeting with land owners within the proposed corridor. Data collection included the physical inventory of each crossing using city provided aerial photography and field observations of existing conditions.

Various alternatives were considered during the study phase. Based on previous experience, improvements were selected to minimize the City's costs while meeting the minimum safety requirements established per Federal Railroad Administration (FRA) criteria. Safety measures typically include some mixture of the following:

- Medians or Channelization devices
- One-way streets with gates
- Four quadrant gates
- Crossing closures

Safety Improvements recognized by FRA fall into 2 categories;

Supplementary Safety Measures (SSM's) – Pre-approved risk reduction engineering treatments installed that maximize safety benefits and minimize risk.

Alternative Safety Measures (ASM's) – Safety Improvements that while not fully meeting the requirements are used to reduce risk, ASM's must be submitted to FRA for consideration of approval which may take several months and are subject to an annual review of the ASM's effectiveness.

The recommended method for creating a Quiet Zone is to install SSM's at each public crossing within the corridor being considered. This reduces the risk significantly for the users of the highway/rail crossing. However, this installation is not practical in most communities, which then requires the investigator to consider what is feasible at each crossing. Factors considered include:

- Is the crossing private or public
- Traffic volumes
- Location of driveways; commercial and residential
- Adjacent land uses
- Distance to adjacent side streets from the crossing
- Condition of the crossing, location of gate arms and signals
- Width of crossing pads
- Roadway and right of way widths
- Sidewalk locations and pedestrian movements

Bolton & Menk has consistently taken the approach that physical improvements such as raised medians in combination with crossing closures is the best approach to reduce risk. As such, the improvements recommended meet the FRA criteria as evidenced by the QZ calculator. This approach leads to lower initial costs while meeting the criteria. For instance, the typical costs for installation of a raised median at a crossing assuming the crossing pads, gate arms and signals are adequate is in the range of $50,000, whereas the costs to install 4-quadrant gates at the same crossing would exceed $500,000.

The corridor selected for your QZ extends from Bella Vista Road on the east side of Carroll to Burgess Avenue on the west. The total length of the QZ, if implemented, is approximately 3 miles in length and would cover the majority of the community impacted by the train horns.

Multiple options for consideration are provided for the Maple, Main and Burgess highway/rail crossings to meet local conditions.

Maple Street – We have provided two separate options for this crossing: closure of the crossing and installation of raised medians. We would recommend that the City council seriously consider the closure of the Maple Street crossing due to its low traffic volumes and its lack of need for circulation across the community with the two adjacent crossings (Grant and Clark) proposed to remain open.

Main Street – We have provided two separate options due to the location of E 4th Street on the north side of the crossing. Both options meeting the QZ requirements. The first option provides for raised medians but requires 4th Street to be shifted north and also removes on-street parking and restricts access within the median area south of the crossing. The 2nd option technically shows the crossing open within the FRA requirements and calculations, but includes additional safety improvements at the crossing.

Burgess Street – This crossing also includes multiple options. The adjacent streets increase the difficulty of adding safety improvements, but with the heavy industrial truck traffic in the corridor, we recommend that at a minimum, the minimum safety improvements be completed.

Appendix I – Crossing Improvement Matrix summarizes the feasibility of completing the implementation of the QZ based on the level of safety measures installed at each crossing in the corridor.

Appendix J - shows the Preliminary Opinion of Project Construction Costs for each crossing and option. An overall total is not shown due to the multiple options for several of the crossings and therefore would not be a clear indicator of the cost for the seven crossings.

The following is a detailed description of the individual improvements considered at each crossing.

2.0 Introduction

The City of Carroll requested Bolton and Menk, Inc. to prepare this Engineering Report of railroad safety improvements for seven railroad crossings on the Union Pacific Railroad mainline tracks. The crossings evaluated in this report are shown Attachment A and include:

- Bella Vista Road (FRA 911914P)
- N. Grant Road (FRA 190771A)
- N. Maple Street (FRA 190772G)
- N. Clark Street (FRA 190773N)
- N. Main Street (FRA 190774V)
- N. Carroll Street (FRA 190775C)
- Burgess Avenue (FRA 190778X)

This report will provide the recommendations for improvements at these intersections to allow Carroll to begin the process of establishing a Quiet Zone (QZ) on the Union Pacific mainline.

3.0 Recommended Improvements

3.1 Bella Vista Road (Attachment B)

The existing crossing on Bella Vista Road is a 24 feet wide concrete rural section road with aggregate shoulders and an at-grade crossing with 3 foot asphalt approaches both north and south of the crossing. The pavement condition of the concrete road and asphalt approaches are sufficient for the improvements recommended in this report. The current traffic demand for this crossing is generally traffic that is bypassing the interior of the City with some use by agricultural equipment to get to the south side of the City. There are no sidewalks along this stretch of road.

The improvements recommended for this crossing include installing a non-mountable median, widening of the pavement, new aggregate shoulders and new signage, as shown on Attachment B. The median would be 2 feet wide and 100 feet in length on the south and north sides of the crossing. The pavement width will need to widen in areas where the median is installed. This will provide adequate room for all types of vehicles currently using this crossing. Preliminary indications show that additional Right of Way will need to be purchased in the northwest quadrant to accommodate the lane widening and necessary grading.

3.2 N. Grant Road (Attachment C)

The railroad crossing on N. Grant Road is a 31 foot wide concrete pavement with an at-grade crossing with 3 foot wide asphalt approaches in both directions. The pavement is in good condition and should be sufficient for the improvements recommended in this report. N. Grant Road is a main north – south route on the east side of the City and does experience heavy traffic, including semi truck and farm machinery. There is a recently constructed sidewalk along the east side of the crossing with pedestrian warning panels and ADA compliant grades. The crossing has several industrial and large vehicle uses adjacent to it. The northwest quadrant is industrial use with semi traffic and vehicle parking directly adjacent to the crossing and railroad right of way.

The northeast quadrant is the location of the County maintenance shop. The southwest has an aggregate access point for N. Elm Street and the southeast quadrant has a semi load scale.

The improvements recommended for this crossing include installing a non-mountable median, new signage and closure of the N. Elm Street access, as shown on Attachment C. The median would be 2 feet wide and 80 feet in length on the south side of the crossing while only 30 feet in length north of the crossing. The slightly shortened median to the south will allow access to the truck scale on the east side. The N. Elm Street access would be closed to improve safety and because the area has other access locations and minimal traffic. The shortened median length north of the crossing will provide access to both the industry on the west side and the maintenance shop on the east. No improvements to the sidewalks are necessary.

These improvements would be for increased safety at the crossing, but would not improve the quiet zone rating because it does not meet the requirements of an approved supplementary safety measure (SSM) and would be considered "open" for the quiet zone calculations.

3.3 N. Maple Street (Attachment D)

The railroad crossing on N. Maple Street is a 31 foot wide concrete street on the north side and 24 foot wide hot mix asphalt street on the south side with at-grade crossing with a 3 foot wide asphalt approach on both sides of the crossing. This crossing mainly includes local traffic patterns and limited heavy vehicles. A semi-tractor/trailer storage yard is adjacent to the crossing in the northeast quadrant with gated driveway access to Maple Street; however, it is our understanding that this access point is rarely used. There is also a private aggregate road access on the northwest side of the crossing that is utilized mainly by the business on the northeast quadrant of N. Clark Street. The asphalt pavement south of the crossing is showing signs of its age, but is in overall fair condition. The pavement north of the crossing appears to have been recently reconstructed and is in good condition. There is one sidewalk on the east side at this crossing. The north side was recently reconstructed and appears to meet ADA requirements, but the south side is partially asphalt and has a steep grade south from the tracks.

There are two options being considered for this crossing, complete closure and full length raised medians, as shown on Attachments D-1 and D-2. The first option is total closure of the crossing with installation of paved hammerhead style turnarounds on both sides of the crossing and removal of the pavement and sidewalk within the railroad right of way. The City would also be required to vacate the right of way across the crossing. On the north side, the aggregate road would still be accessible from the turnaround and the trailer yard driveway would remain. This option improves the overall rating of the quiet zone because no traffic at the crossing scores significantly in the calculations.

For the second option, the improvements recommended for this crossing include installing a non-mountable median, widening of the pavement, new signage and sidewalk improvements as shown on Attachment D-2. The median would be 2 feet wide and 100 feet in length both north and south of the crossing. The full median length will have minimal impact on traffic while providing a significant positive impact to the safety of the crossing. The pavement width will need to widen south of the crossing to allow adequate space for vehicular traffic. The pavement width north of the crossing is sufficient; however, curb and gutter should be installed for a portion north of the crossing to limit access to commercial driveway and aggregate access point near the crossing. The sidewalk in the southeast quadrant would be improved to provide ADA compliant access to pedestrians. The commercial driveway pavement would be removed and that access closed. The aggregate access on the west side would either have to be closed or possibly realigned to north of the 100 foot median. The cost for this realignment is not included in the cost opinion provided because this is a private driveway and is not City owned. There are two existing storm sewer intakes just south of the crossing, these would need to be relocated to the proposed curb location and depending upon their current condition may need to be replaced completely.

3.4 N. Clark Street (Attachment E)

The railroad crossing on N. Clark Street is a 31 foot wide hot mix asphalt street with an at-grade crossing with a 3 foot asphalt approach from the north and south. The pavement on both sides of this crossing appears to be in overall good condition. The proximity of the intersection with E. 4th Street will limit the ability to place a full length median without impacting traffic. In addition, there is a driveway in each of the other quadrants that appear to have fairly high usage, one of which is a lumber yard to the west and the other two are parking areas for businesses. It is anticipated these businesses will produce local traffic with occasional deliveries using large vehicles. There is a sidewalk on both sides of the crossing that was recently improved and is in good condition with pedestrian warning panels and should not need repairs.

The improvements recommended for this crossing include installing a non-mountable median, placement of full curb within the median areas, curbed medians and new signage as shown on Attachment E. The median would be 2 feet wide and 100 feet in length south of the crossing, while only 60 feet in length north of the crossing. The median length north of the crossing is shortened to the minimum to allow traffic flow on to E. 4th Street. E. 4th Street will need to be realigned to the north to allow for straight ahead and left turn traffic movements past the median. This will also include reconfiguration of the west end of the City parking lot. Full curb and gutter needs to be installed on the east side of the street, north and south of the crossing to restrict access to the business parking areas within the center median areas. On the south side a 2 foot wide and 100 foot long raised median along with curb along the outside of the street would be installed. For the lumber yard in the southwest quadrant, their access will need to be relocated to the south side of their property. This change does not involve construction on the street, but would require the property owner to rearrange a portion of their yard and move trailers and storage racks. These could be moved to the current access point to the north to restrict access within the median and at the same time open an access point to the south of the median, but would need to be sized for large semi-truck turning movements while avoided an adjacent utility pole. For the east side a curbed median would be constructed along the edge of the road for the length of the center median to restrict traffic movements from the parking area in the front of the business. This area should have sufficient width for most passenger type cars and trucks to navigate and 90 degree park in front of the building. Semi traffic should still be able to access the building dock area by backing in from the south bound Main Street traffic lane or across Main Street from the relocated lumber yard access.

3.5 N. Main Street (Attachment F)

The railroad crossing on N. Main Street is a 48 foot wide hot mix asphalt street with an-at grade crossing with a 3 foot asphalt approach from the north and south. The pavement on both sides of this crossing appears to be in overall fair condition. On the north side of the crossing there are City owned parking lots/streets with access points onto Main Street. These access points are in close proximity to the crossing and would limit the ability to place a full length median without significantly affecting traffic patterns. The south side of the crossing has a restaurant with angled parking along the front of the building and limited access and parking off street. On the southeast side is a building and parking area that has loading docks and regularly has semi deliveries. The existing sidewalk at all four quadrants is in fair conditions but does not have pedestrian warning panels or meet ADA requirements.

There are two options being considered for this crossing, leaving the crossing "open" with minimum safety improvements and full length raised medians, as shown on Attachments F-1 and F-2. For the first option, the improvements recommended for this crossing include installing a non-mountable median, new signage and sidewalk improvements. The median would be 2 feet wide and 40 feet in length on both sides of the crossing. The shortened median to the south will allow access to the parking along the front of the restaurant on the west side and complete access to vehicles entering and exiting the building on the east side. Full height curb would be installed on both sides of the street to restrict access within the median areas. The shortened median on the north side will allow the access points from the City parking lots on both sides to continue to operate as they currently are. All four approaches of the sidewalks to the railroad crossing will need to be improved for ADA compliance.

These improvements would be for increased safety at the crossing, but would not improve the quiet zone rating because it does not meet the requirements of an approved supplementary safety measure (SSM) and would be considered "open" for the quiet zone calculations.

The second option includes installing a non-mountable median, placement of curb within the median area, realignment of the parking lot accesses, new signage and sidewalk improvements as shown on Attachment F-2. The median would be 2 feet wide and 100 feet in length on the south side of the crossing. In conjunction with the full median length, there will be full curb installed along the edges of the road to eliminate access points within the median area. This will have a significant impact on parking in front of the restaurant by eliminating at least five of the angled stalls. The 100 foot median will also severely impact the business on the east side of the street by installing a curbed median along the edge of the road to the end of the center median and eliminating access points within the median area. This curbed median will drastically reduce the width of the opening into the building loading dock area, restrict the size of vehicle that could do a right turn out of the driveway and eliminate three angled parking stalls along the front of the building.

On the north side of the crossing, the median would be 2 feet wide and 60 feet in length. Only slight pavement widening would be required and would allow for curb to be installed within the median area. However, this length of median would require the realignment of the parking access road and street on both sides of Main Street, which would include additional curb and gutter installation to channel traffic past the end of the center median, relocation of an intake and additional pedestrian ramp work. The sidewalk in all four quadrants would need to be improved to provide ADA compliant access for pedestrians.

3.6 N. Carroll Street (Attachment G)

The railroad crossing on N. Carroll Street is a 31 foot wide concrete street to the north and 36 foot wide concrete street to the south with an at-grade crossing with a 3 foot asphalt approach from the north and south. The pavement on both sides of this crossing appears to be in overall good condition. The proximity of the intersection with 4th Street on the north will limit the ability to place a full length median without impacting traffic. In addition, on the south side there are access locations to Union Pacific property on both sides. There is a sidewalk on the east side of the crossing that was recently improved, but may need to be verified for ADA compliance.

The improvements recommended for this crossing include installing a non-mountable median, placement of full curb within the median areas, curbed medians and new signage as shown on Attachment G. The median would be 2 feet wide and 100 feet in length south of the crossing, while only 60 feet in length north of the crossing. The median length north of the crossing is shortened to the minimum to allow traffic flow on to 4th Street. However, the size of vehicle able to make a left hand turn off of west bound 4th Street will be limited due to the proximity of the median to the intersection and would be signed as such. On the south side a 2 foot wide and 100 foot long raised median would be constructed. Full height curb would be installed on both sides of the street for the length of the center median. This curb will restrict access to the railroad property on both sides of the crossing. A commercial driveway on the west side of the street will have to be closed or relocated to the south to be outside of the raised median area. Also, the sidewalk crosses from the west side to the east side within the raised median, this will require a drop within the raised median and pedestrian warning panels to allow pedestrian traffic to cross the road.

3.7 Burgess Ave (Attachment H)

The railroad crossing on Burgess Ave is a 24 foot wide concrete street with aggregate shoulders and an at-grade crossing with a 3 foot asphalt approach from the north and south. The pavement on both sides of this crossing appears to be in overall good condition. The proximity of the intersections with W. 6th Street on the north and Railroad Street on the south will limit the ability to place a full length median without impacting traffic. This area sees some use by agricultural equipment during planting and harvest and to a repair business in the northeast quadrant. There are businesses in the northeast and southeast quadrants as well as access to the industrial park to the west that have a large percentage of truck traffic utilizing the crossing.

There are two options being considered for this crossing, leaving the crossing "open" with minimum safety improvements and full length raised medians, as shown on Attachments H-1 and H-2. For the first option, the improvements recommended for this crossing include installing a non-mountable median, pavement widening and new signage. The median would be 2 feet wide and 40 feet in length on both sides of the crossing. The shortened median to the south will allow the unrestricted access to Railroad Street of the large truck traffic in the area. Full height curb would be installed on both sides of the street to maximize the widening of the traffic lanes within the median areas. The short median on the north side will allow access to and from W. 6th Street. A left hand turn from W. 6th Street may be restrictive for the largest semi/trailer combinations, in which they may need to use Highway 30 and access the industrial park and businesses on the south side of the tracks from the west. These improvements would be for increased safety at the crossing, but would not improve the quiet zone rating because it does not meet the requirements of an approved supplementary safety measure (SSM) and would be considered "open" for the quiet zone calculations.

The second option includes installing the minimum length non-mountable median, placement of curb within the median area, realignment of W. 6th Street and Railroad Street and new signage as shown on Attachment H-2. The median would be 2 feet wide and 60 feet in length on the south and north sides of the crossing. In conjunction with the median, there will be full curb installed along the edges of the road to maximize the pavement traffic lanes within the median area. However, this length of median would require the realignment of both W. 6th Street and Railroad Street. This realignment would require the purchase of additional right of way area from the adjacent property owners, construction of the new road base and obliteration of the existing roadbed. On the northwest side, an additional 12 foot wide lane would have to be constructed on Burgess Avenue to allow for west bound traffic off of W. 6th Street to turn onto Burgess Ave.

4.0 Summary

Utilizing the Federal Railroad Administrations Quiet Zone Calculator, a comparison was completed between the existing crossing conditions and the same crossings with the proposed improvements listed above. A substantial increase in the safety of the crossing was noted as the Risk Index decreased by approximately 46% - 68% from the current configurations on these crossings depending upon the combination of improvements made at the crossings. The different results for five combinations are provided from the quiet zone calculator and shown in Attachment I. Any of these combinations of improvements will qualify for the Quiet Zone.

The improvements recommended are designed to maximize the safety of the crossing as well as provide the most cost effective approach to establishing a Quiet Zone on the Union Pacific's mainline. The estimated Preliminary Opinion of Project Construction Costs for each of the recommended improvements at each crossing is shown in Attachment J. Improvement costs vary from approximately $29,000 for minimal safety improvements at Grant Road, leaving the crossing "open," to approximately $111,000 for the land acquisition, road realignment and improvements at Burgess Avenue.

For all scenarios shown, we recommend that Grant Road be left "open" with minimum safety improvements and that Bella Vista Road, Clark Street and Carroll Street have the SSM constructed as detailed in Part 3.0. For the Maple Street crossing, we would recommend closure due to its low traffic volume and this crossing is not needed to maintain good north-south access across the City. For the intersections of Main Street and Burgess Ave, the City will have to determine the most appropriate option for these crossings based on the information provided and input from adjacent property owners, law enforcement and others.

5.0 FRA Quiet Zone

Completion of the improvements detailed in this report will allow the City of Carroll to qualify for designation of this corridor through the city as a quiet zone. The limits of the quiet zone would encompass the entire city. The Quiet Zone Risk Index (QZRI) based on current rules with the improvements in place would be below the Risk Index with Horns (RIWH). The QZRI is below the NSRT for scenario #2 and #3 and above the NSRT for scenario #4, #5, #6. All 5 scenarios qualify for a quiet zone and require affirmation and inventory form every 2.5 – 3 years. All improvements proposed are approved SSM's and this removes the requirement for annual review of the quiet zone.

Several notifications are required as outlined in the rules upon completion of the improvements to notify the Union Pacific, Highway authority (DOT) and the public of the intended action. These requirements may commence while the improvements are being constructed but cannot be completed until the improvements are in place.

It is my experience that very few communities in Iowa located along the UP mainline tracks would have an opportunity to implement a quiet zone at such a low investment that would improve the quality of life across the entire city. It is recommended that you proceed with the planning and forecasting of these improvements and have discussions on funding as well.

We appreciate the opportunity to assist you with your engineering needs. If you have any questions or concerns regarding the information presented in this report, please don't hesitate to contact me at your convenience.

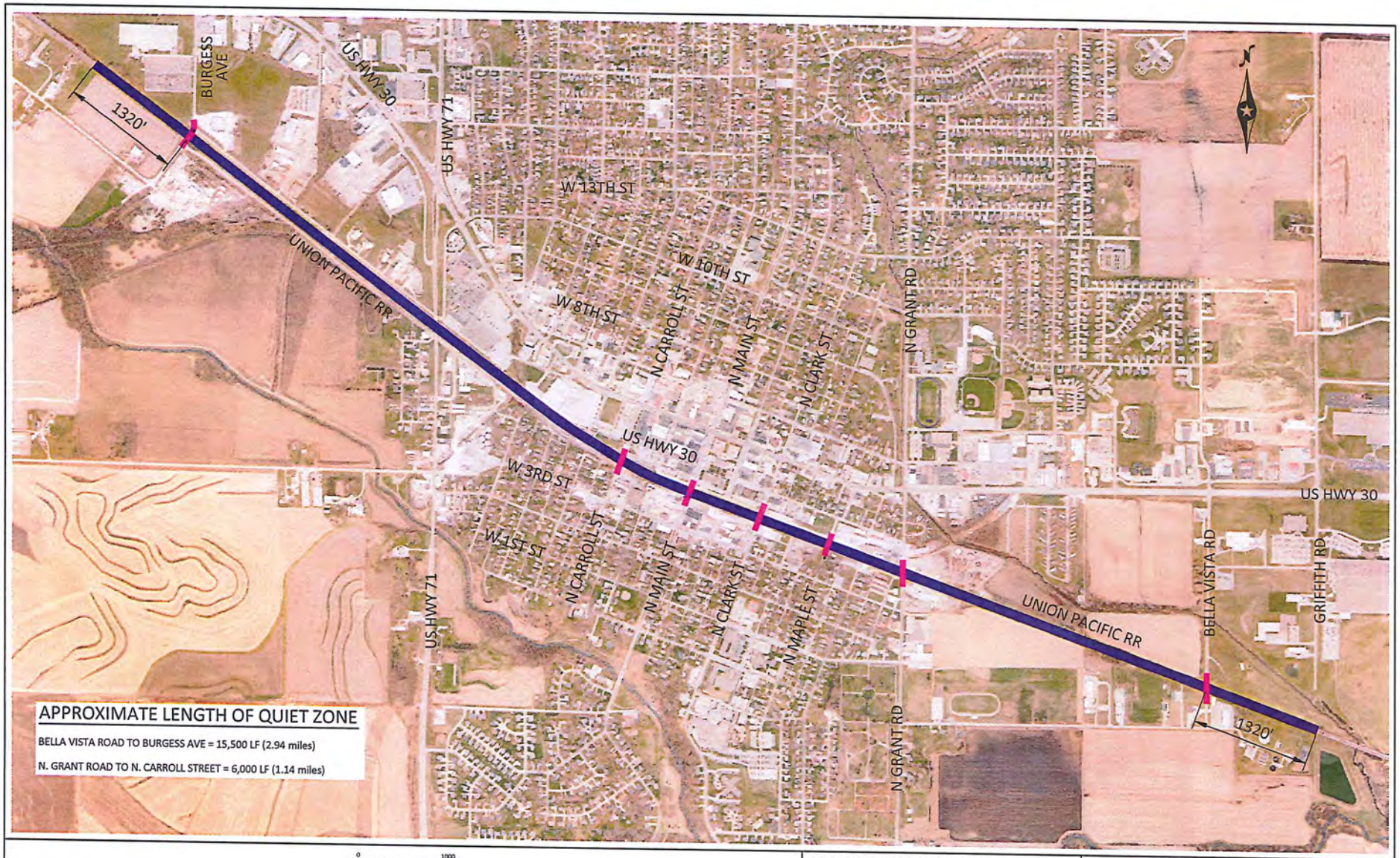
Sincerely,
BOLTON & MENK, INC.

Neil Guess, P.E., L.S.
Senior Project Manager

James D. Leiding, P.E.
Senior Project Engineer

c: File

EXHIBITS



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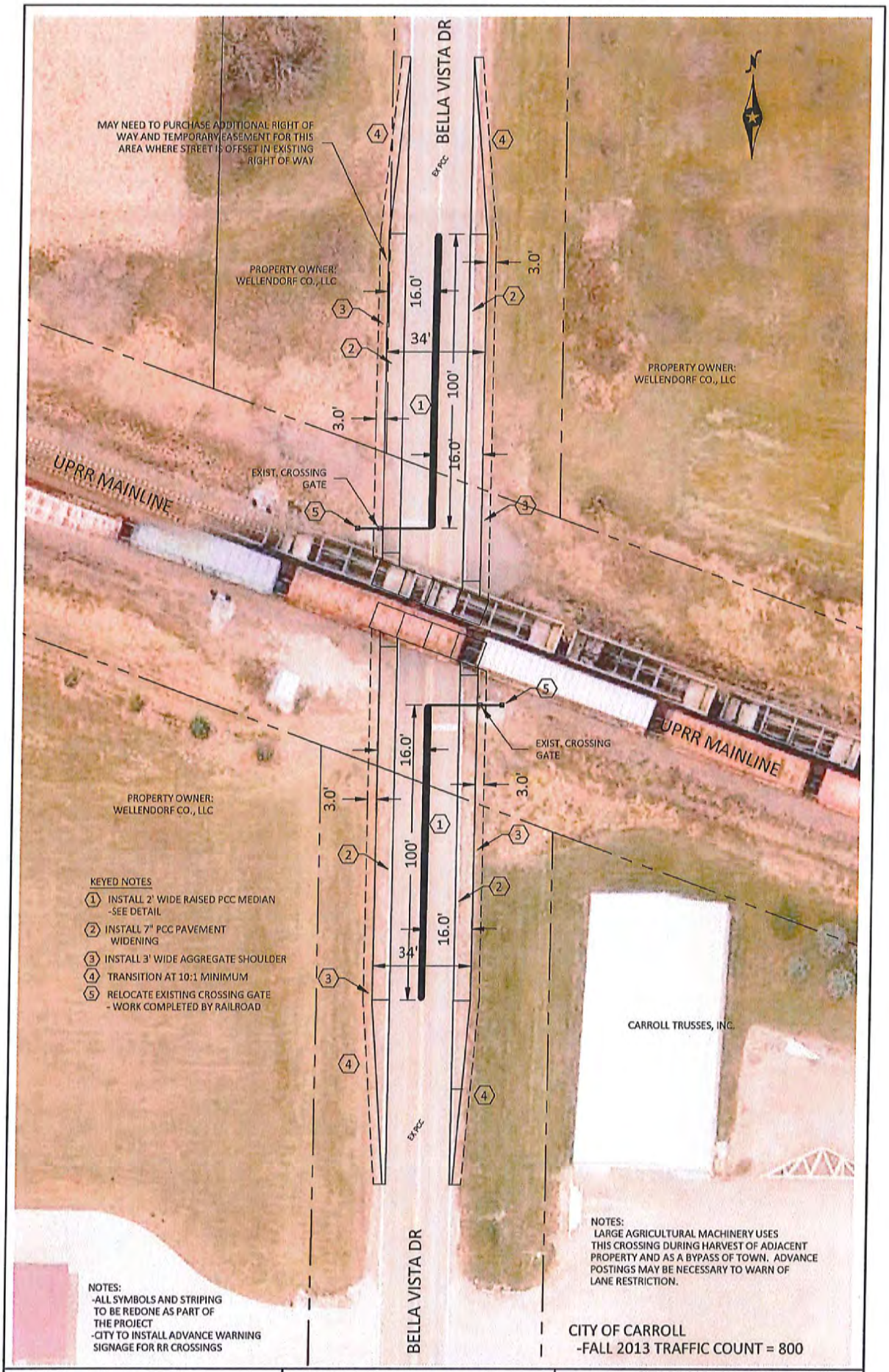
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN ROCHESTER, MN
AMES, IA SPENCER, IA DES MOINES, IA FARGO, ND

CITY OF CARROLL, IOWA
QUIET ZONE INVESTIGATION
UP RR CROSSINGS

APRIL 2014

ATTACHMENT A



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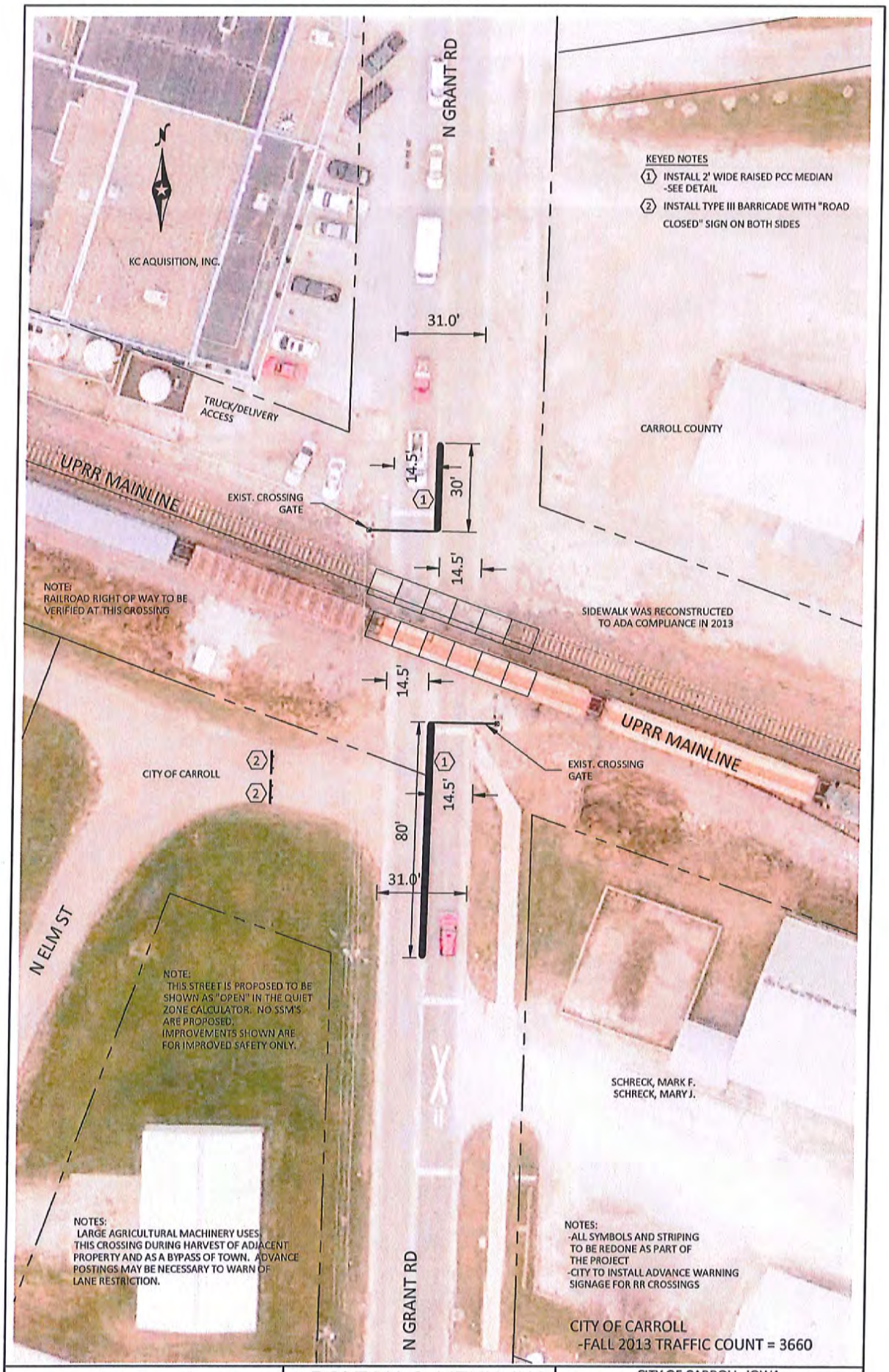
CITY OF CARROLL, IOWA
QUIET ZONE INVESTIGATION
BELLA VISTA DRIVE

APRIL 2014 ATTACHMENT B


N GRANT RD
KEYED NOTES
1 INSTALL 2' WIDE RAISED PCC MEDIAN -SEE DETAIL
2 INSTALL TYPE III BARRICADE WITH "ROAD CLOSED" SIGN ON BOTH SIDES
KC AQUISITION, INC.
31.0'
TRUCK/DELIVERY ACCESS
CARROLL COUNTY
14.5'
30'
UPRR MAINLINE
EXIST. CROSSING GATE
NOTE:
RAILROAD RIGHT OF WAY TO BE VERIFIED AT THIS CROSSING
SIDEWALK WAS RECONSTRUCTED TO ADA COMPLIANCE IN 2013
CITY OF CARROLL
EXIST. CROSSING GATE
80'
N ELM ST
NOTE:
THIS STREET IS PROPOSED TO BE SHOWN AS "OPEN" IN THE QUIET ZONE CALCULATOR. NO SSM'S ARE PROPOSED. IMPROVEMENTS SHOWN ARE FOR IMPROVED SAFETY ONLY.
SCHRECK, MARK F.
SCHRECK, MARY J.
NOTES:
LARGE AGRICULTURAL MACHINERY USES THIS CROSSING DURING HARVEST OF ADJACENT PROPERTY AND AS A BYPASS OF TOWN. ADVANCE POSTINGS MAY BE NECESSARY TO WARN OF LANE RESTRICTION.
NOTES:
-ALL SYMBOLS AND STRIPING TO BE REDONE AS PART OF THE PROJECT
-CITY TO INSTALL ADVANCE WARNING SIGNAGE FOR RR CROSSINGS
CITY OF CARROLL
-FALL 2013 TRAFFIC COUNT = 3660
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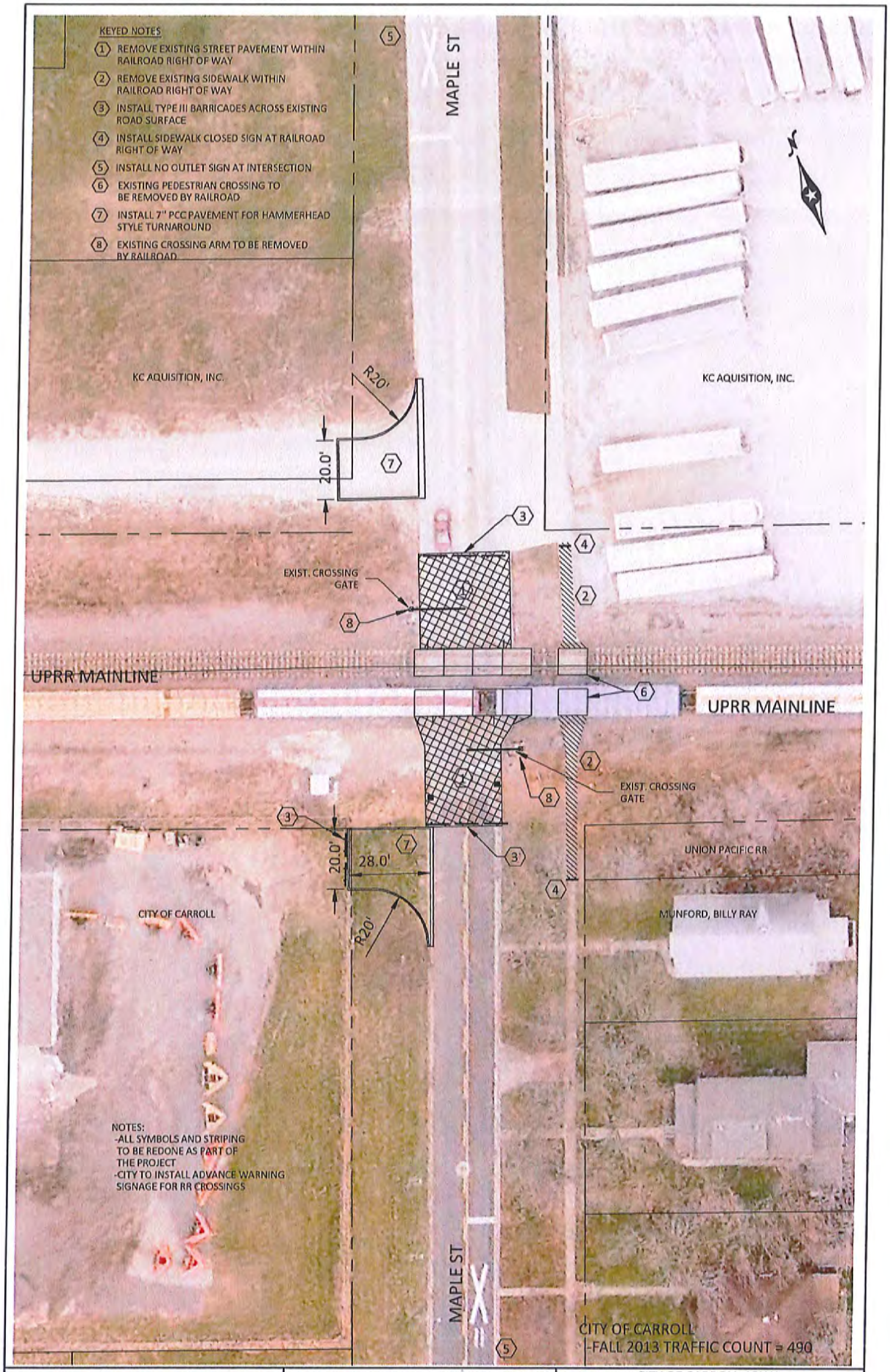
CITY OF CARROLL, IOWA
QUIET ZONE INVESTIGATION
N GRANT RD CROSSING
APRIL 2014
ATTACHMENT C


KEYED NOTES
1 REMOVE EXISTING STREET PAVEMENT WITHIN RAILROAD RIGHT OF WAY
2 REMOVE EXISTING SIDEWALK WITHIN RAILROAD RIGHT OF WAY
3 INSTALL TYPE III BARRICADES ACROSS EXISTING ROAD SURFACE
4 INSTALL SIDEWALK CLOSED SIGN AT RAILROAD RIGHT OF WAY
5 INSTALL NO OUTLET SIGN AT INTERSECTION
6 EXISTING PEDESTRIAN CROSSING TO BE REMOVED BY RAILROAD
7 INSTALL 7" PCC PAVEMENT FOR HAMMERHEAD STYLE TURNAROUND
8 EXISTING CROSSING ARM TO BE REMOVED BY RAILROAD
MAPLE ST
KC AQUISITION, INC.
KC AQUISITION, INC.
R20'
20.0'
EXIST. CROSSING GATE
UPRR MAINLINE
UPRR MAINLINE
EXIST. CROSSING GATE
20.0'
28.0'
R20'
UNION PACIFIC RR
MUNFORD, BILLY RAY
CITY OF CARROLL
NOTES:
-ALL SYMBOLS AND STRIPING TO BE REDONE AS PART OF THE PROJECT
-CITY TO INSTALL ADVANCE WARNING SIGNAGE FOR RR CROSSINGS
MAPLE ST
CITY OF CARROLL
-FALL 2013 TRAFFIC COUNT = 490
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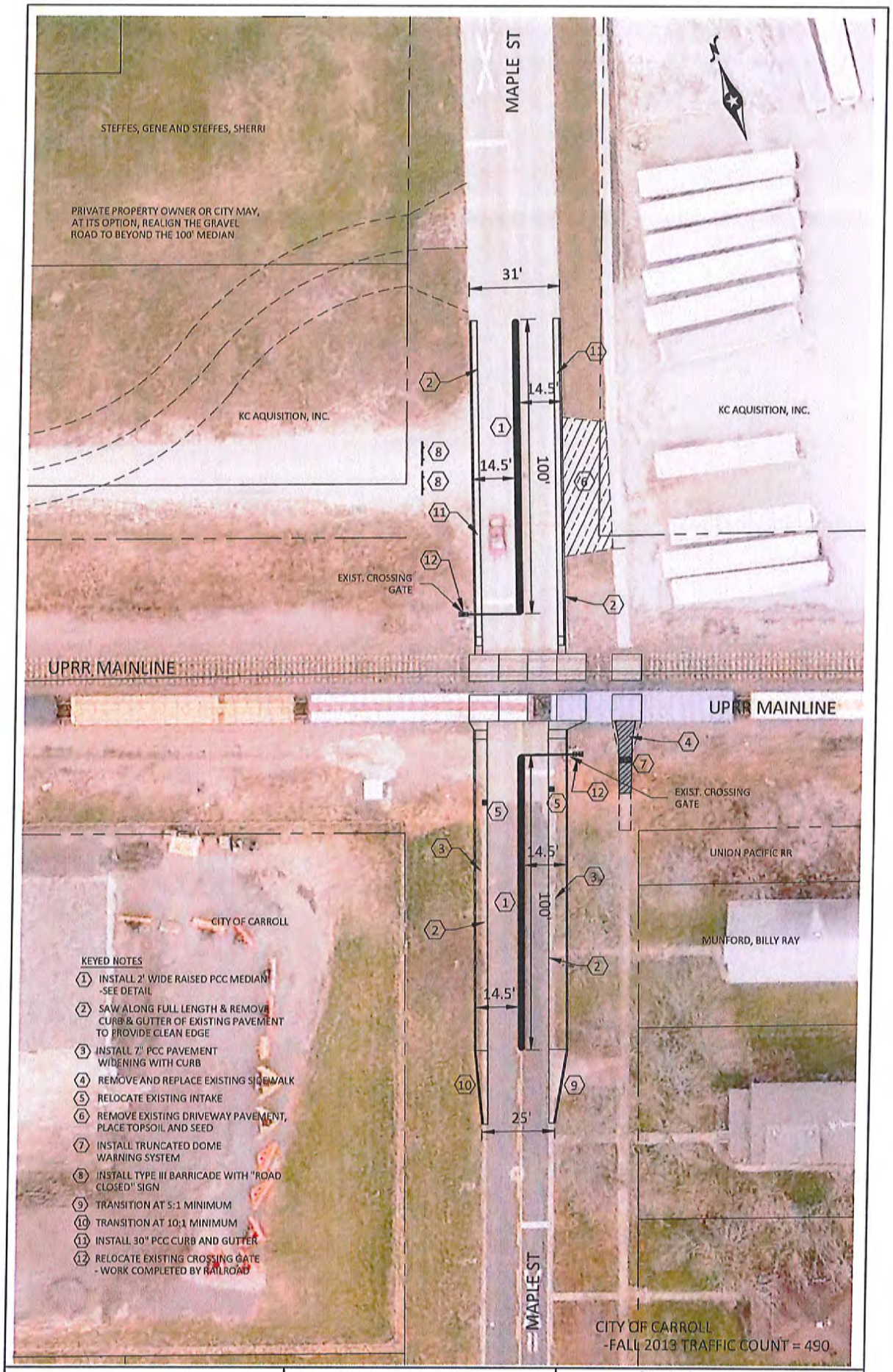
CITY OF CARROLL, IOWA
QUIET ZONE INVESTIGATION
N MAPLE ST CROSSING - OPTION 1 CLOSURE
APRIL 2014
ATTACHMENT D-1



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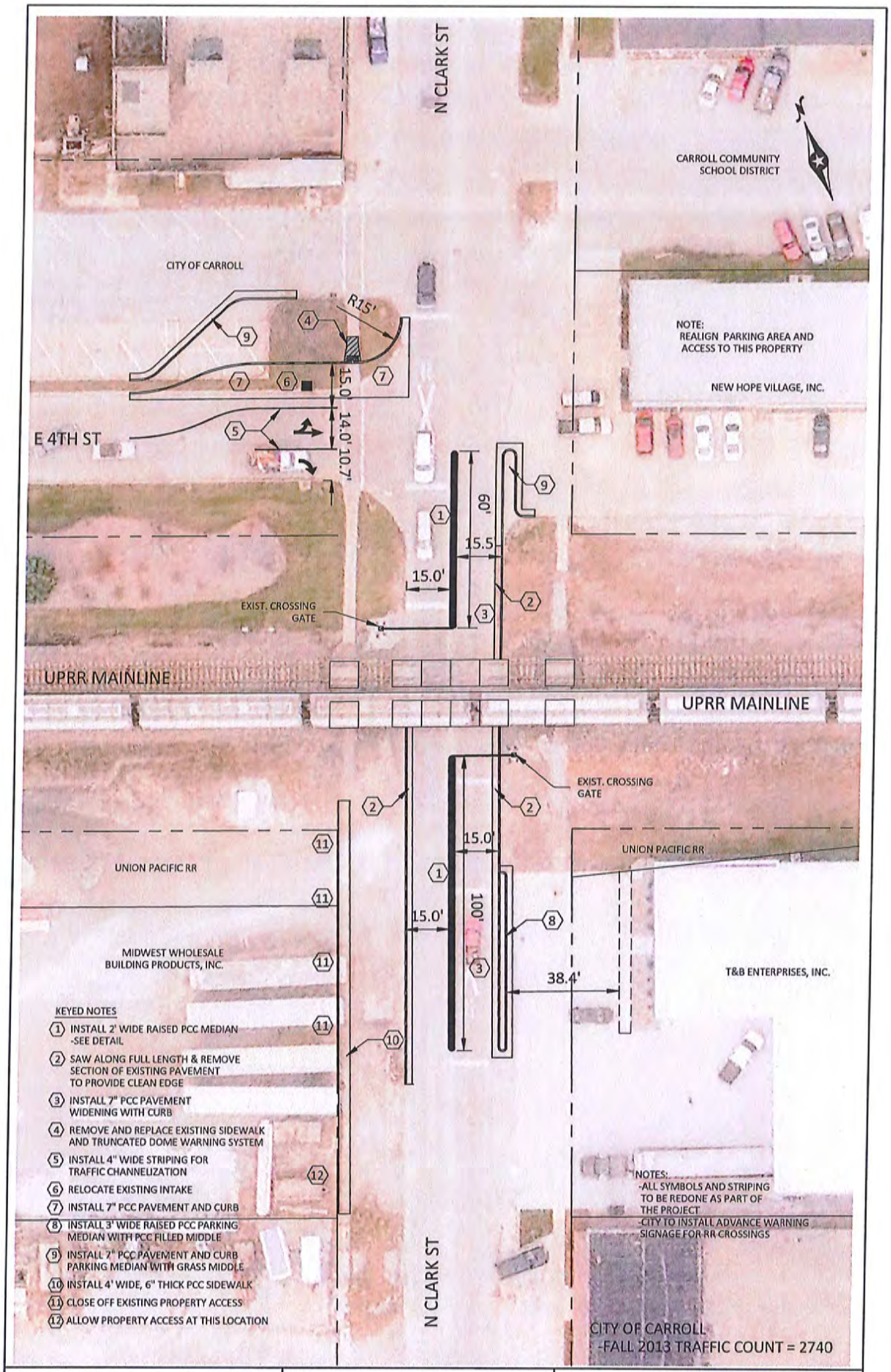
CITY OF CARROLL, IOWA
QUIET ZONE INVESTIGATION
N MAPLE ST CROSSING - OPTION 2 MEDIANS

APRIL 2014

ATTACHMENT D-2



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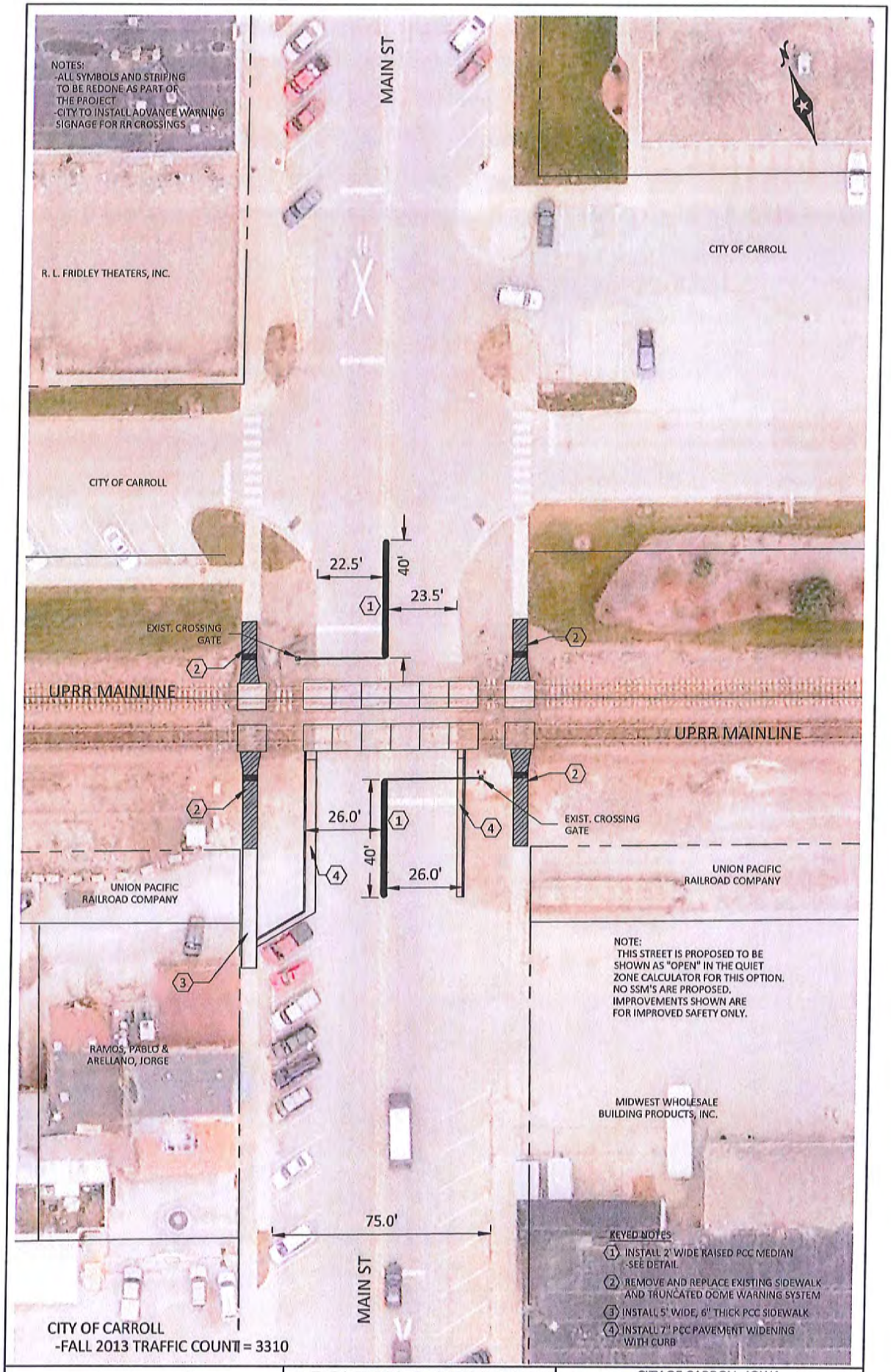
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN WILLMAR, MN
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN ROCHESTER, MN
AMES, IA SPENCER, IA DES MOINES, IA FARGO, ND

CITY OF CARROLL, IOWA
QUIET ZONE INVESTIGATION
N CLARK ST CROSSING

APRIL 2014 ATTACHMENT E



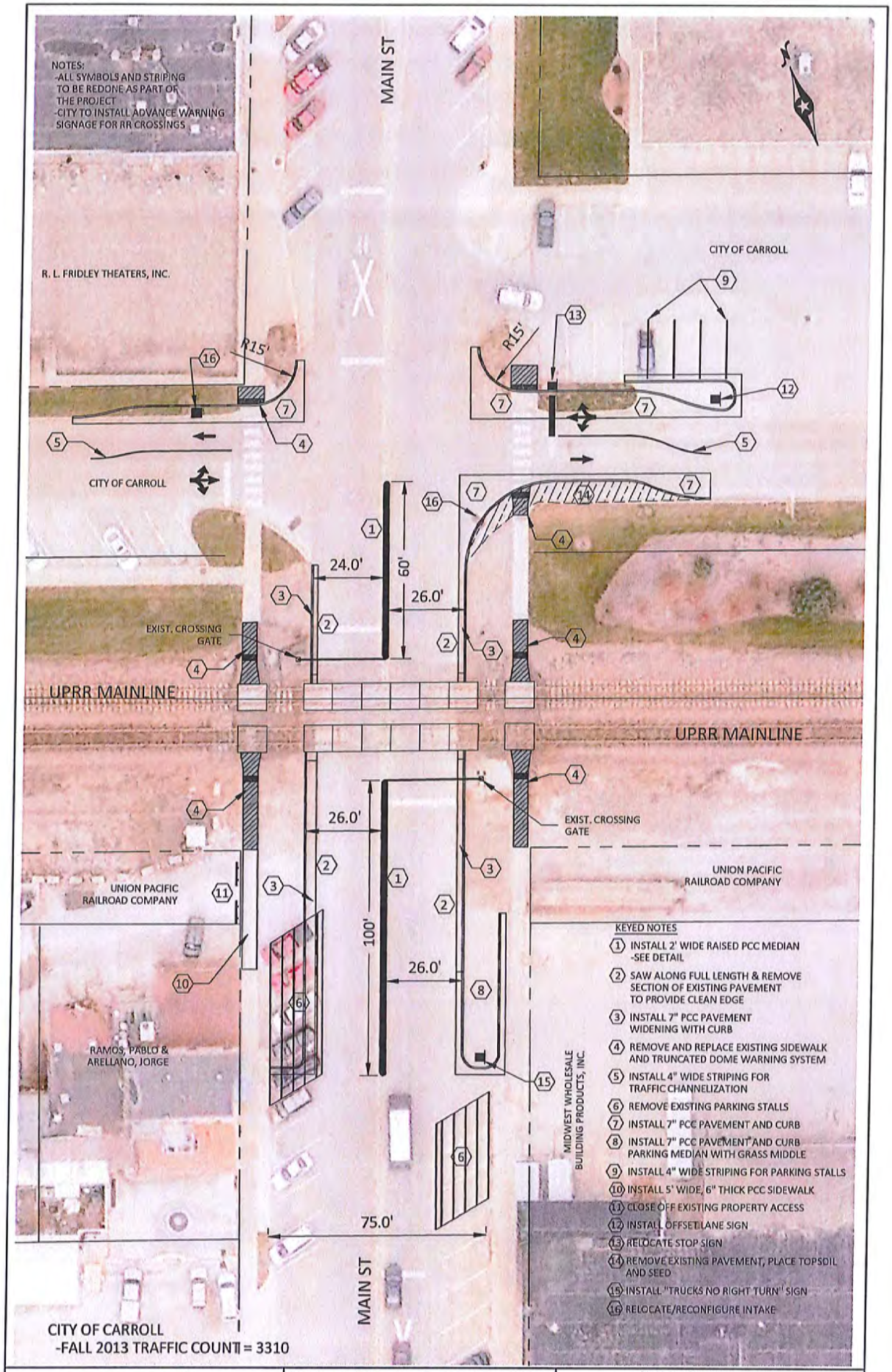
SCALE 0 30 FEET

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FARMONT, MN SLEEPY EYE, MN BURNSVILLE, MN WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA DES MOINES, IA FARGO, ND

CITY OF CARROLL, IOWA
QUIET ZONE INVESTIGATION
N MAIN ST CROSSING - OPTION 1 OPEN

APRIL 2014

ATTACHMENT F-1



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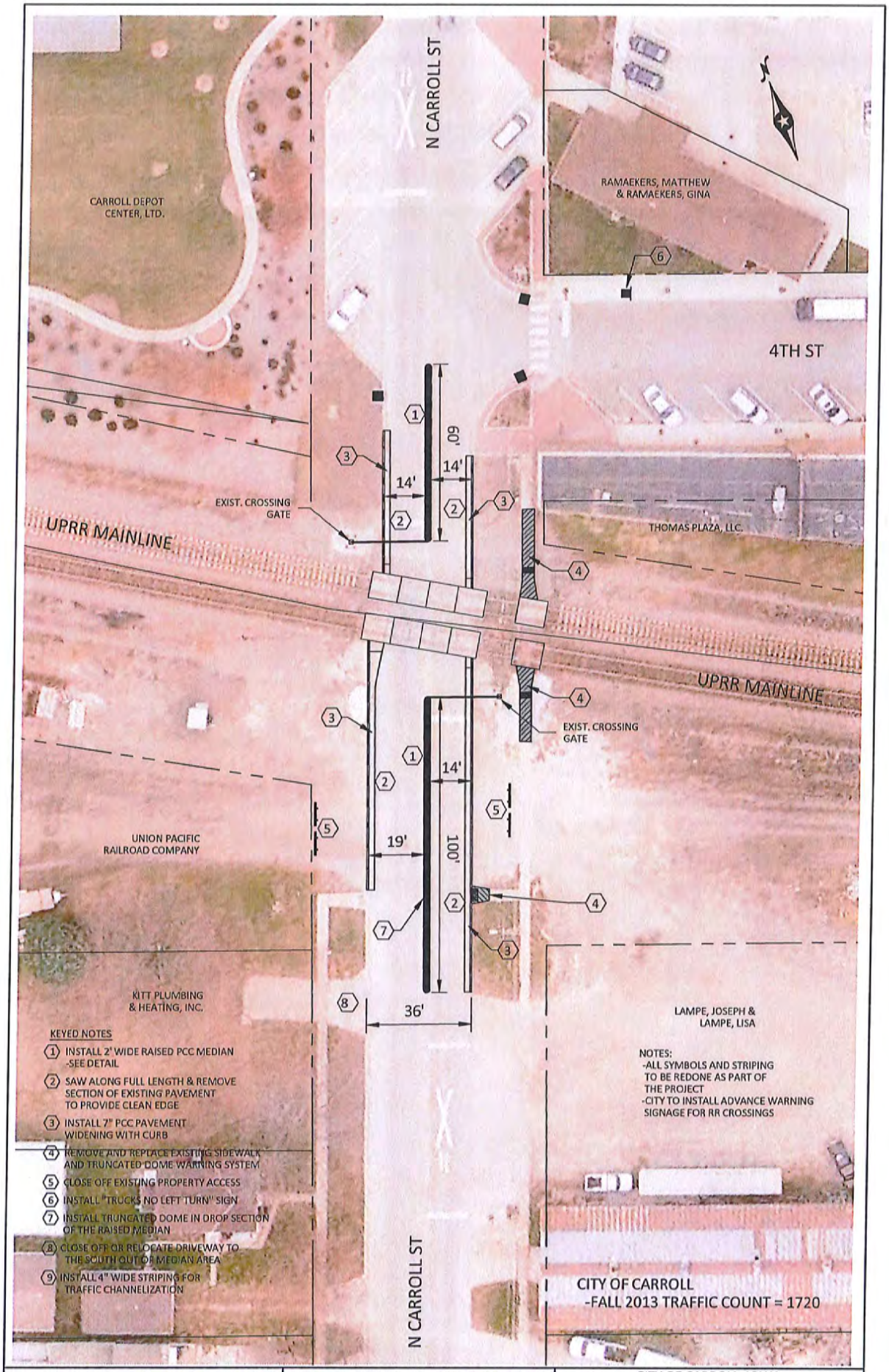
BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN WILLMAR, MN
CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN ROCHESTER, MN
AMES, IA SPENCER, IA DES MOINES, IA FARGO, ND

CITY OF CARROLL, IOWA
QUIET ZONE INVESTIGATION
N MAIN ST CROSSING - OPTION 2 FULL MEDIANS
APRIL 2014
ATTACHMENT F-2



KEYED NOTES

1. INSTALL 2' WIDE RAISED PCC MEDIAN -SEE DETAIL
2. SAW ALONG FULL LENGTH & REMOVE SECTION OF EXISTING PAVEMENT TO PROVIDE CLEAN EDGE
3. INSTALL 7" PCC PAVEMENT WIDENING WITH CURB
4. REMOVE AND REPLACE EXISTING SIDEWALK AND TRUNCATED DOME WARNING SYSTEM
5. CLOSE OFF EXISTING PROPERTY ACCESS
6. INSTALL "TRUCKS NO LEFT TURN" SIGN
7. INSTALL TRUNCATED DOME IN DROP SECTION OF THE RAISED MEDIAN
8. CLOSE OFF OR RELOCATE DRIVEWAY TO THE SOUTH OUT OF MEDIAN AREA
9. INSTALL 4" WIDE STRIPING FOR TRAFFIC CHANNELIZATION

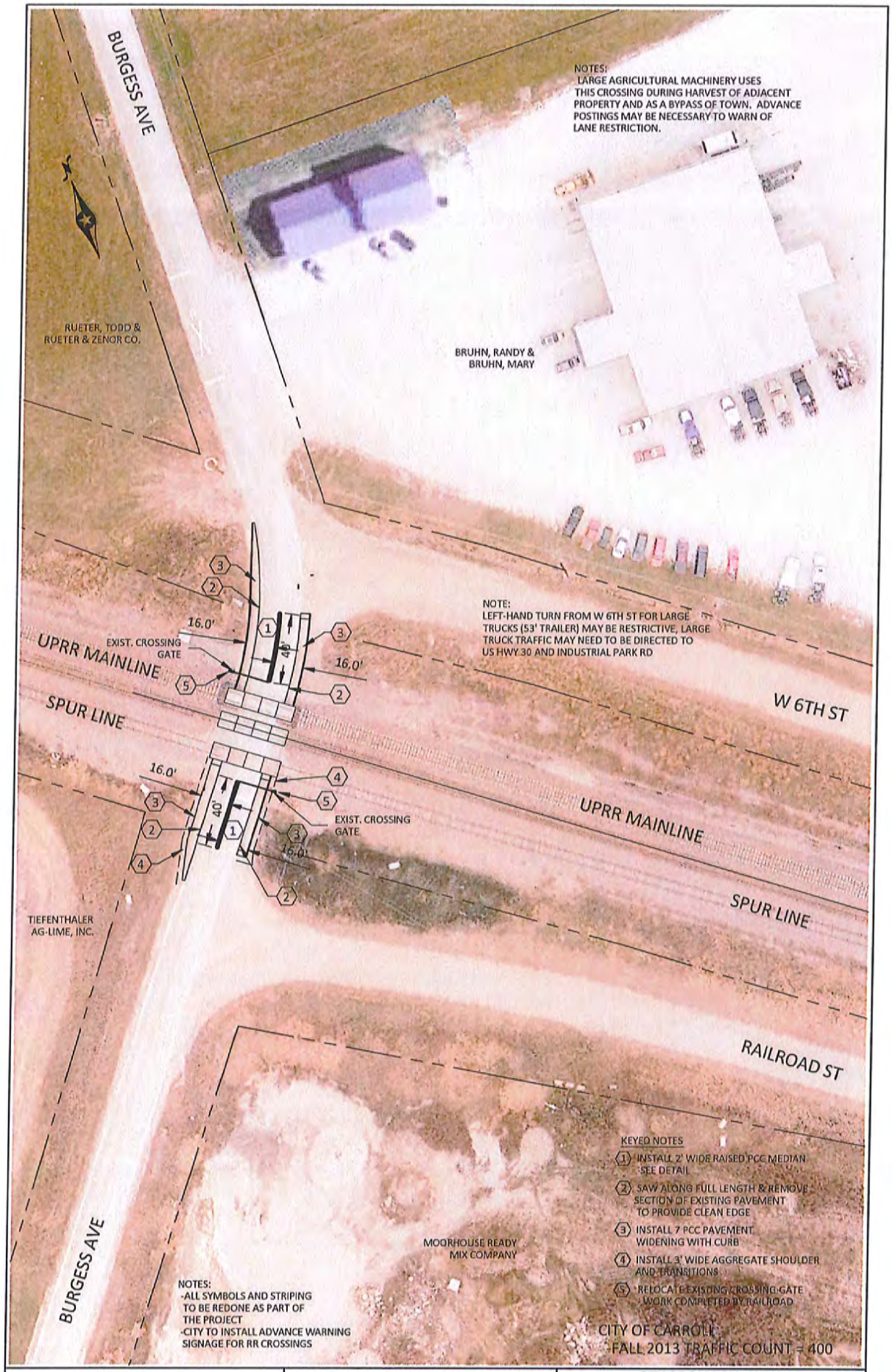
NOTES:
-ALL SYMBOLS AND STRIPING TO BE REDONE AS PART OF THE PROJECT
-CITY TO INSTALL ADVANCE WARNING SIGNAGE FOR RR CROSSINGS

0 30
SCALE FEET

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA DES MOINES, IA FARGO, ND

CITY OF CARROLL, IOWA
QUIET ZONE INVESTIGATION
N CARROLL ST CROSSING

APRIL 2014 ATTACHMENT G



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SCALE FEET

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
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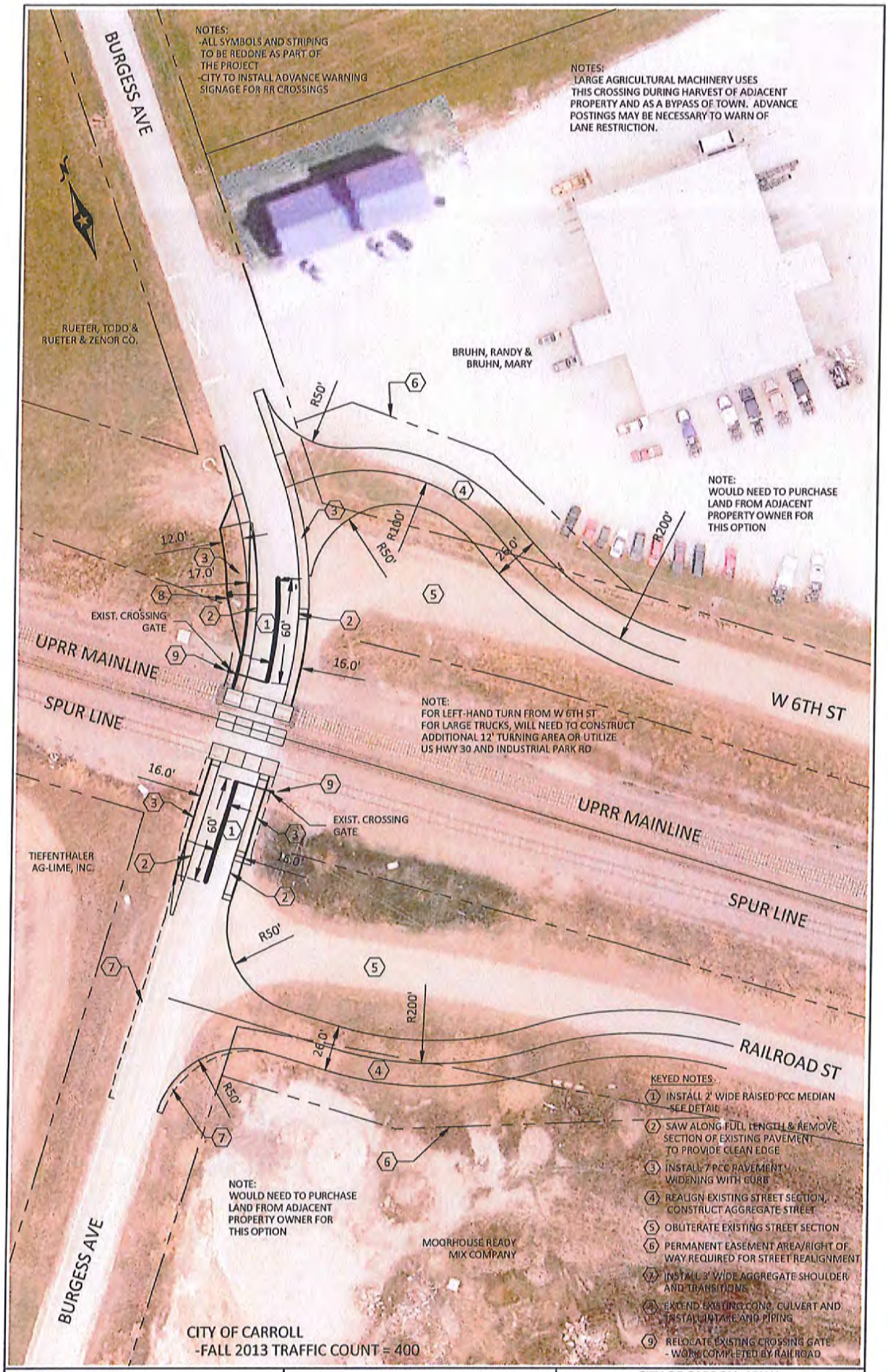
CITY OF CARROLL, IOWA
QUIET ZONE INVESTIGATION
BURGESS AVENUE CROSSING - OPTION 1 OPEN

APRIL 2014 ATTACHMENT H-1



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SCALE FEET

BOLTON & MENK, INC.
Consulting Engineers & Surveyors
MANKATO, MN FAIRMONT, MN SLEEPY EYE, MN BURNSVILLE, MN WILLMAR, MN CHASKA, MN RAMSEY, MN MAPLEWOOD, MN BAXTER, MN ROCHESTER, MN AMES, IA SPENCER, IA DES MOINES, IA FARGO, ND

CITY OF CARROLL, IOWA
QUIET ZONE INVESTIGATION
BURGESS AVENUE CROSSING - OPTION 2 FULL MEDIANS
APRIL 2014 ATTACHMENT H-2

IMPROVEMENT MATRIX

City of Carroll, Iowa
Quiet Zone Investigation

CROSSING IMPROVEMENT MATRIX

A11.107480

Attachment I

Open	Minimal medians installed for safety	QZRI < or = NSRT = Qualified; send affirmation and inventory form every 2.5-3 years
Closed	No through traffic allowed	
SSM Applied	SSM = Supplementary Safety Measure, Raised median	QZRI < or = RIWH = qualified; send affirmation and inventory form every 2.5-3 years

Crossing Scenario	Bella Vista	N Grant Rd	Maple St	N Clark St	N Main St	N Carroll St	Burgess Ave	Quiet Zone Risk Index (QZRI)	Nationwide Significant Risk Threshold (NSRT)	Risk Index with Horns (RIWH)	Quiet Zone
EXISTING CONDITIONS											
#1								38233.88	14347.00	22921.99	Denied
7 CROSSING QUIET ZONE											
#2								12860.96	14347.00	22921.99	Qualified
#3								12102.20	14347.00	22921.99	Qualified
#4								15413.29	14347.00	22921.99	qualified
#5								17214.61	14347.00	22921.99	qualified
#6								20525.69	14347.00	22921.99	qualified

Quiet Zone Calculator Computations were completed on April 7, 2014

COST OPINIONS

Railroad Quiet Zone Investigation
Carroll, Iowa

PRELIMINARY OPINION OF PROJECT CONSTRUCTION COSTS
April 21, 2014

Attachment J

Line No.	Description	Unit	Unit Price	Attachment B Bella Vista Road		Attachment C North Grant Road		Attachment D-1 Maple Street - Option 1		Attachment D-2 Maple Street - Option 2		Attachment E North Clark Street	
				Quantity	Extension	Quantity	Extension	Quantity	Extension	Quantity	Extension	Quantity	Extension
1	MOBILIZATION	LS	$5,000.00	1.00	$16,000.00	1.00	$5,000.00	1.00	$7,000.00	1.00	$14,000.00	1.00	$5,000.00
2	REMOVE PAVEMENT	SY	$9.00	80.00	$720.00	0.00	$0.00	225.00	$2,025.00	55.00	$495.00	180.00	$1,620.00
3	REMOVE SIDEWALK/DRIVEWAY	SY	$6.00	0.00	$0.00	0.00	$0.00	45.00	$270.00	95.00	$570.00	15.00	$90.00
4	CONSTRUCT 7" PCC PAVEMENT WIDENING	SY	$40.00	405.00	$16,200.00	0.00	$0.00	170.00	$6,800.00	215.00	$8,600.00	270.00	$10,800.00
5	CONSTRUCT P.C.C. RAISED MEDIAN	SF	$17.00	400.00	$6,800.00	220.00	$3,740.00	0.00	$0.00	400.00	$6,800.00	480.00	$8,160.00
6	CONSTRUCT 6" P.C.C. DRIVEWAY/SIDEWALK	SY	$45.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	5.00	$225.00	5.00	$225.00
7	CONSTRUCT 4" P.C.C. SIDEWALK	SY	$40.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	10.00	$400.00	55.00	$2,200.00
8	PED RAMP DETECTABLE WARNING SYSTEM	SF	$25.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	8.00	$200.00	8.00	$200.00
9	SEEDING, PERMANENT	SQ	$35.00	170.00	$5,950.00	0.00	$0.00	70.00	$2,450.00	55.00	$1,925.00	55.00	$1,925.00
10	TRAFFIC CONTROL	EA	$12,600.00	0.14	$1,800.00	0.14	$1,800.00	0.14	$1,800.00	0.14	$1,800.00	0.14	$1,800.00
11	GRANULAR SUBBASE, ROADSTONE	TON	$26.00	95.00	$2,470.00	0.00	$0.00	55.00	$1,430.00	70.00	$1,820.00	115.00	$2,990.00
12	EROSION AND SEDIMENT CONTROL	EA	$3,500.00	1.00	$3,500.00	1.00	$3,500.00	1.00	$3,500.00	1.00	$3,500.00	1.00	$3,500.00
13	SIGNAGE, STRIPING AND SYMBOLS	EA	$5,500.00	1.00	$5,500.00	1.00	$5,500.00	1.00	$5,500.00	1.00	$5,500.00	1.00	$5,500.00
14	PROVIDE RAILROAD FLAG CREW	DAY	$1,000.00	4.00	$4,000.00	4.00	$4,000.00	4.00	$4,000.00	4.00	$4,000.00	4.00	$4,000.00
15	CONSTRUCTION CONTINGENCIES	EA	VARIES	1.00	$9,000.00	1.00	$4,000.00	1.00	$6,000.00	1.00	$7,000.00	1.00	$9,000.00
	SUBTOTAL				**$71,940.00**		**$27,540.00**		**$40,775.00**		**$56,835.00**		**$57,010.00**
16	LAND ACQUISITION	ACRE	$10,000.00	0.15	$1,500.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00
17	UP PERMITS	LS	$8,050.00	0.14	$1,150.00	0.14	$1,150.00	0.14	$1,150.00	0.14	$1,150.00	0.14	$1,150.00
18	RELOCATE GATE ARM	EA	$12,000.00	2.00	$24,000.00	0.00	$0.00	0.00	$0.00	2.00	$24,000.00	0.00	$0.00
	SUBTOTAL				**$26,650.00**		**$1,150.00**		**$1,150.00**		**$25,150.00**		**$1,150.00**
	TOTAL OPINION OF PROBABLE CONSTRUCTION COSTS				**$98,590.00**		**$28,690.00**		**$41,925.00**		**$81,985.00**		**$58,160.00**

Railroad Quiet Zone Investigation
Carroll, Iowa

PRELIMINARY OPINION OF PROJECT CONSTRUCTION COSTS
April 21, 2014

Attachment J

Line No.	Description	Unit	Unit Price	Attachment F-1 North Main Street - Option 1 Quantity	Attachment F-1 Extension	Attachment F-2 North Main Street - Option 2 Quantity	Attachment F-2 Extension	Attachment G North Carroll Street Quantity	Attachment G Extension	Attachment H-1 Burgess Avenue - Option 1 Quantity	Attachment H-1 Extension	Attachment H-2 Burgess Avenue - Option 2 Quantity	Attachment H-2 Extension
1	MOBILIZATION	LS	$5,000.00	1.00	$5,000.00	1.00	$5,000.00	1.00	$5,000.00	1.00	$5,000.00	1.00	$5,000.00
2	REMOVE PAVEMENT	SY	$9.00	15.00	$135.00	275.00	$2,475.00	35.00	$315.00	90.00	$810.00	55.00	$495.00
3	REMOVE SIDEWALK/DRIVEWAY	SY	$6.00	65.00	$390.00	83.00	$498.00	30.00	$180.00	0.00	$0.00	0.00	$0.00
4	CONSTRUCT 7" PCC PAVEMENT WIDENING	SY	$40.00	50.00	$2,000.00	340.00	$13,600.00	84.00	$3,360.00	150.00	$6,000.00	373.00	$14,920.00
5	CONSTRUCT P.C.C. RAISED MEDIAN	SF	$17.00	160.00	$2,720.00	320.00	$5,440.00	320.00	$5,440.00	160.00	$2,720.00	240.00	$4,080.00
6	CONSTRUCT 6" P.C.C. DRIVEWAY/SIDEWALK	SY	$45.00	60.00	$2,700.00	39.00	$1,755.00	15.00	$675.00	0.00	$0.00	0.00	$0.00
7	CONSTRUCT 4" P.C.C. SIDEWALK	SY	$40.00	25.00	$1,000.00	60.00	$2,400.00	12.00	$480.00	0.00	$0.00	0.00	$0.00
8	PED RAMP DETECTABLE WARNING SYSTEM	SF	$25.00	32.00	$800.00	74.00	$1,850.00	24.00	$600.00	0.00	$0.00	0.00	$0.00
9	SEEDING, PERMANENT	SQ	$35.00	15.00	$525.00	50.00	$1,750.00	45.00	$1,575.00	76.00	$2,660.00	262.00	$9,170.00
10	TRAFFIC CONTROL	EA	$12,600.00	0.14	$1,800.00	0.14	$1,800.00	0.14	$1,800.00	0.14	$1,800.00	0.14	$1,800.00
11	GRANULAR SUBBASE, ROADSTONE	TON	$26.00	20.00	$520.00	128.00	$3,328.00	30.00	$780.00	82.00	$2,132.00	746.00	$19,396.00
12	EROSION AND SEDIMENT CONTROL	EA	$3,500.00	1.00	$3,500.00	1.00	$3,500.00	1.00	$3,500.00	1.00	$3,500.00	1.00	$3,500.00
13	SIGNAGE, STRIPING AND SYMBOLS	EA	$5,500.00	1.00	$5,500.00	1.00	$5,500.00	1.00	$5,500.00	1.00	$5,500.00	1.00	$5,500.00
14	PROVIDE RAILROAD FLAG CREW	DAY	$1,000.00	4.00	$4,000.00	4.00	$4,000.00	4.00	$4,000.00	4.00	$4,000.00	4.00	$4,000.00
15	CONSTRUCTION CONTINGENCIES	EA	VARIES	1.00	$5,000.00	1.00	$10,000.00	1.00	$6,000.00	1.00	$6,000.00	1.00	$13,000.00
	SUBTOTAL				$35,590.00		$62,896.00		$39,205.00		$40,122.00		$80,861.00
16	LAND ACQUISITION	ACRE	$10,000.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	0.45	$4,500.00
17	UP PERMITS	LS	$8,050.00	0.14	$1,150.00	0.14	$1,150.00	0.14	$1,150.00	0.00	$0.00	0.14	$1,150.00
18	RELOCATE GATE ARM	EA	$12,000.00	0.00	$0.00	0.00	$0.00	0.00	$0.00	2.00	$24,000.00	2.00	$24,000.00
	SUBTOTAL				$1,150.00		$1,150.00		$1,150.00		$24,000.00		$29,650.00
	TOTAL OPINION OF PROBABLE CONSTRUCTION COSTS				$36,740.00		$64,046.00		$40,355.00		$64,122.00		$110,511.00

FEDERAL RAILROAD ADMINISTRATION

Guide To The Quiet Zone Establishment Process

GUIDE TO THE QUIET ZONE ESTABLISHMENT PROCESS

AN INFORMATION GUIDE

Federal Railroad Administration
1200 New Jersey Avenue S.E.
Washington, DC 20590
Telephone: 202-493-6299
www.fra.dot.gov

Federal Railroad Administration
Highway-Rail Crossing and Trespasser Programs Division
Follow FRA on Facebook and Twitter

Purpose of the Guide

This brochure was developed to serve as a guide for local decision makers seeking a greater understanding of train horn sounding requirements and how to establish quiet zones. Its purpose is to provide a general overview and thus does not contain every detail about the quiet zone establishment process. For more detailed and authoritative information, the reader is encouraged to review the official regulations governing the use of locomotive horns at public highway-rail grade crossings and the establishment of quiet zones that are contained in 49 CFR Part 222. A copy of the rule can be downloaded or printed at http://www.fra.dot.gov/eLib/Details/L02809.

About Quiet Zones

FRA is committed to reducing the number of collisions at highway-rail grade crossings, while establishing a consistent standard for communities who opt to preserve or enhance quality of life for their residents by establishing quiet zones within which routine use of train horns at crossings is prohibited.

Federal regulation requires that locomotive horns begin sounding 15–20 seconds before entering public highway-rail grade crossings, no more than one-quarter mile in advance. Only a public authority, the governmental entity responsible for traffic control or law enforcement at the crossings, is permitted to create quiet zones.

A quiet zone is a section of a rail line at least one-half mile in length that contains one or more consecutive public highway-rail grade crossings at which locomotive horns are not routinely sounded when trains are approaching the crossings. The prohibited use of train horns at quiet zones only applies to trains when approaching and entering crossings and does not include train horn use within passenger stations or rail yards. Train horns may be sounded in emergency situations or to comply with other railroad or FRA rules even within a quiet zone. Quiet zone regulations also do not eliminate the use of locomotive bells at crossings. Therefore, a more appropriate description of a designated quiet zone would be a "reduced train horn area."

Communities wishing to establish quiet zones must work through the appropriate public authority that is responsible for traffic control or law enforcement at the crossings.

Historical Context

Historically, railroads have sounded locomotive horns or whistles in advance of grade crossings and under other circumstances as a universal safety precaution. Some States allowed local communities to create whistle bans where the train horn was not routinely sounded. In other States, communities created whistle bans through informal agreements with railroads.

In the late 1980's, FRA observed a significant increase in nighttime train-vehicle collisions at certain gated highway-rail grade crossings on the Florida East Coast Railway (FEC) at which nighttime whistle bans had been established in accordance with State statute In 1991, FRA issued Emergency Order #15 requiring trains on the FEC to sound their horns again. The number and rate of collisions at affected crossings returned to pre-whistle ban levels.

In 1994, Congress enacted a law that required FRA to issue a Federal regulation requiring the sounding of locomotive horns at public highway-rail grade crossings. It also gave FRA the ability to provide for exceptions to that requirement by allowing communities under some circumstances to establish "quiet zones."

The Train Horn Rule became effective on June 24, 2005. The rule set nationwide standards for the sounding of train horns at public highway-rail grade crossings. This rule changed the criteria for sounding the horn from distance-based to time-based. It also set limits on the volume of a train horn. The rule also established a process for communities to obtain relief from the routine sounding of train horns by providing criteria for the establishment of quiet zones. Locomotive horns may still be used in the case of an emergency and to comply with Federal regulations or certain railroad rules.

Public Safety Considerations

Because the absence of routine horn sounding increases the risk of a crossing collision, a public authority that desires to establish a quiet zone usually will be required to mitigate this additional risk. At a minimum, each public highway–rail crossing within a quiet zone must be equipped with active warning devices: flashing lights, gates, constant warning time devices (except in rare circumstances) and power out indicators.

In order to create a quiet zone, one of the following conditions must be met

1. ***The Quiet Zone Risk Index (QZRI)* is less than or equal to the *Nationwide Significant Risk Threshold (NSRT)*** with or without additional safety measures such as Supplementary Safety Measures (SSMs) or Alternative Safety Measures (ASMs) described below. The QZRI is the average risk for all public highway-rail crossings in the quiet zone, including the additional risk for absence of train horns and any reduction in risk due to the risk mitigation measures. The NSRT is the level of risk calculated annually by averaging the risk at all of the Nation's public highway-rail grade crossings equipped with flashing lights and gates where train horns are routinely sounded.
2. ***The Quiet Zone Risk Index (QZRI) is less than or equal to the Risk Index With Horns (RIWH)*** with additional safety measures such as SSMs or ASMs. The RIWH is the average risk for all public highway-rail crossings in the proposed quiet zone when locomotive horns are routinely sounded.
3. ***Install SSMs at every public highway-rail crossing***. This is the best method to reduce to reduce risks in a proposed quiet zone and to enhance safety.

SSMs are pre-approved risk reduction engineering treatments installed at certain public highway-rail crossings within the quiet zone and can help maximize safety benefits and minimize risk. SSMs include: medians or channelization devices, one-way streets with gates, four quadrant gate systems, and temporary or permanent crossing closures. Examples of SSMs are shown on the next page.

ASMs are safety systems, other than SSMs, that are used to reduce risk in a quiet zone. ASMs typically are improvements that do not fully meet the requirements to be SSMs and their risk reduction effectiveness must be submitted in writing and approved by FRA.

FRA strongly recommends that all crossings in the quiet zone be reviewed by a diagnostic team. A diagnostic team typically consists of representatives from the public authority, railroad, and State agency responsible for crossing safety and FRA grade crossing managers.

Public Safety Considerations continued

Examples of SSMs

Crossing Closure

Four Quadrant Gate System

Gates with Channelization Devices

Gates with Medians

Wayside Horns The train horn rule also provides another method for reducing the impact of routine locomotive horn sounding when trains approach public highway-rail grade crossings. A wayside horn may be installed at highway-rail grade crossings that have flashing lights, gates, constant warning time devices (except in rare circumstances), and power out indicators. The wayside horn is positioned at the crossing and will sound when the warning devices are activated. The sound is directed down the roadway, which greatly reduces the noise footprint of the audible warning. Use of wayside horns is not the same as establishing a quiet zone although they may be used within quiet zones.

Cost Considerations

The enabling Federal statute did not provide funding for the establishment of quiet zones. Public authorities seeking to establish quiet zones should be prepared to finance the installation of SSMs and ASMs used. Costs can vary from $30,000 per crossing to more than $1 million depending on the number of crossings and the types of safety improvements required.

Legal Considerations

The courts will ultimately determine who will be held liable if a collision occurs at a grade crossing located within a quiet zone, based upon the facts of each case, as a collision may have been caused by factors other than the absence of an audible warning. FRA's rule is intended to remove failure to sound the horn as a cause of action in lawsuits involving collisions that have occurred at grade crossings within duly established quiet zones.

The Quiet Zone Establishment Process

Under the Train Horn Rule, only public authorities are permitted to establish quiet zones. Citizens who wish to have a quiet zone in their neighborhood should contact their local government to pursue the establishment of a quiet zone. The following is a typical example of the steps taken to establish a quiet zone:

1. ***Determine*** which crossings will be included in the quiet zone. All public highway-rail crossings in the quiet zone must have, at a minimum, an automatic warning system consisting of flashing lights and gates. The warning systems must be equipped with constant warning time devices (except in rare circumstances) and power out indicators. The length of the quiet zone must be at least one-half mile in length.

2. ***Identify*** any private highway-rail grade crossings within the proposed quiet zone. If they allow access to the public or provide access to active industrial or commercial sites, a diagnostic review must be conducted and the crossing(s) treated in accordance with the recommendations of the diagnostic team.

3. ***Identify*** any pedestrian crossings within the proposed quiet zone and conduct a diagnostic review of those crossings too. They also must be treated in accordance with the diagnostic team's recommendations. *NOTE:* While it is not required by the regulations, FRA recommends that every crossing within a proposed quiet zone be reviewed for safety concerns.

4. ***Update*** the U.S. DOT Crossing Inventory Form to reflect current physical and operating conditions at each public, private, and pedestrian crossing located within a proposed quiet zone.

5. ***Provide*** a Notice of Intent (NOI) to all of the railroads that operate over crossings in the proposed quiet zone, the State agency responsible for highway safety and the State agency responsible for crossing safety. The NOI must list all of the crossings in the proposed quiet zone and give a brief explanation of the tentative plans for implementing improvements within the quiet zone. Additional required elements of the NOI can be found in 49 CFR 222.43(b). The railroads and State agencies have 60 days in which to provide comments to the public authority on the proposed plan.

6. ***Alternative Safety Measures*** – If ASMs are going to be used to reduce risk, an application to FRA must be made. The application must include all of the elements provided in 49 CFR 222.39(b)(1) and copies of the application must be sent to the entities listed in 49 CFR 222.39(b)(3). They will have 60 days to provide comments to FRA on the application. FRA will provide a written decision on the application typically within three to four months after it is received.

The Quiet Zone Establishment Process continued

7. ***Determine*** how the quiet zone will be established using one of the following criteria: (Note that Options 2 through 4 will require the use of the FRA Quiet Zone Calculator available at http://safetydata.fra.dot.gov/quiet/.)

1. Every public highway-rail crossing in the proposed quiet zone is equipped with one or more SSMs.
2. The Quiet Zone Risk Index (QZRI) of the proposed quiet zone is less than or equal to the Nationwide Significant Risk Threshold (NSRT) without installing SSMs or ASMs.
3. The QZRI of the proposed quiet zone is less than or equal to the Nationwide Significant Risk Threshold (NSRT) after the installation of SSMs or ASMs.
4. The QZRI of the proposed quiet zone is less than or equal to the Risk Index with Horns (RIWH) after the installation of SSMs or ASMs.

8. ***Complete*** the installation of SSMs and ASMs and any other required improvements determined by the diagnostic team at all public, private, and pedestrian crossings within the proposed quiet zone.

9. ***Ensure*** that the required signage at each public, private, and pedestrian crossing is installed in accordance with 49 CFR Sections 222.25, 222.27, and 222.35, and the standards outlined in the Manual on Uniform Traffic Control Devices. These signs may need to be covered until the quiet zone is in effect.

10. ***Establish*** the quiet zone by providing a Notice of Quiet Zone Establishment to all of the parties that are listed in 49 CFR Section 222.43(a)(3). Be sure to include all of the required contents in the notice as listed in 49 CFR Section 222.43(d). The quiet zone can take effect no earlier than 21 days after the date on which the Notice of Quiet Zone Establishment is mailed.

*****Appendix C to the Train Horn Rule provides detailed, step by step guidance on how to create a quiet zone.*****

Required Documentation

Public authorities interested in establishing a quiet zone are required to submit certain documentation during the establishment process. FRA has provided checklists for the various documents that can be found at http://www.fra.dot.gov/Elib/Details/L03055.

FRA's Regional Grade Crossing Managers are available to provide technical assistance. A State's department of transportation or rail regulatory agency also may be able to provide assistance to communities pursuing quiet zones.

Public authorities are encouraged to consult with the agencies in their State that have responsibility for crossing safety. Some States may have additional administrative or legal requirements that must be met in order to modify a public highway-rail grade crossing.

Role of Railroads

Communities seeking to establish a quiet zone are required to send a Notice of Intent and a Notice of Quiet Zone Establishment to railroads operating over the public highway-rail grade crossings within the proposed quiet zone. Railroad officials can provide valuable input during the quiet zone establishment process and should be included on all diagnostic teams. Listed below are links to the Class I Railroads and Amtrak.

BNSF Railway (BNSF)	Canadian Pacific (CP)
CSX Transportation (CSX)	Norfolk Southern (NS)
Canadian National (CN)	Union Pacific (UP)
Kansas City Southern (KCS)	Amtrak (ATK)

FINAL NOTE

The information contained in this brochure is provided as general guidance related to the Quiet Zone Establishment Process and should not be considered as a definitive resource. FRA strongly recommends that any public authority desiring to establish quiet zones take the opportunity to review all aspects of safety along its rail corridor. Particular attention should be given to measures that prevent trespassing on railroad tracks since investments made to establish a quiet zone may be negated if the horn has to be routinely sounded to warn trespassers.

POINTS OF CONTACT

General Questions:

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Debra Chappell, 202-493-6018
Ron Ries, 202-493-6285

Regional Contacts

Region 1 Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont
1-800-724-5991

Region 2 Delaware, Maryland, Ohio, Pennsylvania, Virginia, West Virginia , and Washington, D.C.
1-800-724-5992

Region 3 Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee
1-800-724-5993

Region 4 Illinois, Indiana, Michigan, Minnesota, and Wisconsin
1-800-724-5040

Region 5 Arkansas, Louisiana, New Mexico, Oklahoma, and Texas
1-800-724-5995

Region 6 Colorado, Iowa, Kansas, Missouri, and Nebraska
1-800-724-5996

Region 7 Arizona, California, Nevada, and Utah
1-800-724-5997

Region 8 Alaska, Idaho, Montana, North Dakota, South Dakota, Oregon, Washington, and Wyoming
1-800-724-5998

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