GRANTS.GOV™ Processing, please don't close the window until you receive a confirmation.

Grant Application Package

Opportunity Title:	FY 2012 National Infrastructure Investments
Offering Agency:	U.S. Department of Transportation
CFDA Number:	20.933
CFDA Description:	National Infrastructure Investments
Opportunity Number:	DTOS59-12-RA-TIGER4
Competition ID:	TIGER4-FY12
Opportunity Open Date:	02/22/2012
Opportunity Close Date:	03/19/2012
Agency Contact:	Mr. Howard Hill E-mail: tigergrants@dot.gov Phone: 202-366-0301

This electronic grants application is intended to be used to apply for the specific Federal funding opportunity referenced here.

If the Federal funding opportunity listed is not the opportunity for which you want to apply, close this application package by clicking on the "Cancel" button at the top of this screen. You will then need to locate the correct Federal funding opportunity, download its application and then apply.

This opportunity is only open to organizations, applicants who are submitting grant applications on behalf of a company, state, local or tribal government, academia, or other type of organization.

*** Application Filing Name:** IL-Chgo-St Louis HSR Safety Enhancements

Mandatory Documents

Move Form to Complete

Move Form to Delete

Mandatory Documents for Submission

- Application for Federal Assistance (SF-424)
- Attachments

Optional Documents

Move Form to Submission List

Move Form to Delete

Optional Documents for Submission

Instructions

1 Enter a name for the application in the Application Filing Name field.

- This application can be completed in its entirety offline; however, you will need to login to the Grants.gov website during the submission process.
- You can save your application at any time by clicking the "Save" button at the top of your screen.
- The "Save & Submit" button will not be functional until all required data fields in the application are completed and you clicked on the "Check Package for Errors" button and confirmed all data required data fields are completed.

2 Open and complete all of the documents listed in the "Mandatory Documents" box. Complete the SF-424 form first.

- It is recommended that the SF-424 form be the first form completed for the application package. Data entered on the SF-424 will populate data fields in other mandatory and optional forms and the user cannot enter data in these fields.

- The forms listed in the "Mandatory Documents" box and "Optional Documents" may be predefined forms, such as SF-424, forms where a document needs to be attached, such as the Project Narrative or a combination of both. "Mandatory Documents" are required for this application. "Optional Documents" can be used to provide additional support for this application or may be required for specific types of grant activity. Reference the application package instructions for more information regarding "Optional Documents".

- To open and complete a form, simply click on the form's name to select the item and then click on the => button. This will move the document to the appropriate "Documents for Submission" box and the form will be automatically added to your application package. To view the form, scroll down the screen or select the form name and click on the "Open Form" button to begin completing the required data fields. To remove a form/document from the "Documents for Submission" box, click the document name to select it, and then click the <= button. This will return the form/document to the "Mandatory Documents" or "Optional Documents" box.

- All documents listed in the "Mandatory Documents" box must be moved to the "Mandatory Documents for Submission" box. When you open a required form, the fields which must be completed are highlighted in yellow with a red border. Optional fields and completed fields are displayed in white. If you enter invalid or incomplete information in a field, you will receive an error message.

3 Click the "Save & Submit" button to submit your application to Grants.gov.

- Once you have properly completed all required documents and attached any required or optional documentation, save the completed application by clicking on the "Save" button.
- Click on the "Check Package for Errors" button to ensure that you have completed all required data fields. Correct any errors or if none are found, save the application package.
- The "Save & Submit" button will become active; click on the "Save & Submit" button to begin the application submission process.
- You will be taken to the applicant login page to enter your Grants.gov username and password. Follow all onscreen instructions for submission.

OMB Number: 4040-0004
Expiration Date: 03/31/2012

Application for Federal Assistance SF-424

* 1. Type of Submission:	* 2. Type of Application:	* If Revision, select appropriate letter(s):
☐ Preapplication	☒ New	
☒ Application	☐ Continuation	* Other (Specify):
☐ Changed/Corrected Application	☐ Revision	

* 3. Date Received:	4. Applicant Identifier:
03/19/2012	

5a. Federal Entity Identifier:	5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:	7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name:	Illinois Department of Transportation
* b. Employer/Taxpayer Identification Number (EIN/TIN):	37-1355033
* c. Organizational DUNS:	1336007540000

d. Address:

* Street1:	JRTC, Suite 6-600
Street2:	100 W Randolph Street
* City:	Chicago
County/Parish:	Cook
* State:	IL: Illinois
Province:	
* Country:	USA: UNITED STATES
* Zip / Postal Code:	60601-3229

e. Organizational Unit:

Department Name:	Division Name:
Il Dept of Transportation	Bureau of Railroads

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:	Mr.	* First Name:	George
Middle Name:	E		
* Last Name:	Weber		
Suffix:			

Title:	Deputy Director, Public & Intermodal Transpor
Organizational Affiliation:	Illinois Dept of Transportation
* Telephone Number:	312-793-4222
Fax Number:	312-793-1251
* Email:	George.Weber@illinois.gov

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

U.S. Department of Transportation

11. Catalog of Federal Domestic Assistance Number:

20.933

CFDA Title:

National Infrastructure Investments

*** 12. Funding Opportunity Number:**

DTOS59-12-RA-TIGER4

* Title:

FY 2012 National Infrastructure Investments

13. Competition Identification Number:

TIGER4-FY12

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Question 14.pdf | Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

IL- Chicago to St Louis High Speed Rail Safety Enhancements

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: IL-007 | b. Program/Project: IL-011

Attach an additional list of Program/Project Congressional Districts if needed.

Question 16b.pdf | Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 04/01/2012 | * b. End Date: 12/31/2015

18. Estimated Funding ($):

* a. Federal	48,265,000.00
* b. Applicant	13,185,000.00
* c. State	0.00
* d. Local	0.00
* e. Other	7,500,000.00
* f. Program Income	0.00
* g. TOTAL	68,950,000.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix:	Mr.
* First Name:	George
Middle Name:	E
* Last Name:	Weber
Suffix:	
* Title:	Deputy Director Public&Intermodal Transportat
* Telephone Number:	312-793-4222
Fax Number:	312-793-1251
* Email:	George.Weber@illinois.gov
* Signature of Authorized Representative:	george weber
* Date Signed:	03/19/2012

ATTACHMENTS FORM

Instructions: On this form, you will attach the various files that make up your grant application. Please consult with the appropriate Agency Guidelines for more information about each needed file. Please remember that any files you attach must be in the document format and named as specified in the Guidelines.

Important: Please attach your files in the proper sequence. See the appropriate Agency Guidelines for details.

1) Please attach Attachment 1	TIGER IV Narrative.pdf	Add Attachment	Delete Attachment	View Attachment
2) Please attach Attachment 2	Support Docs Attachmnt to Na	Add Attachment	Delete Attachment	View Attachment
3) Please attach Attachment 3		Add Attachment	Delete Attachment	View Attachment
4) Please attach Attachment 4		Add Attachment	Delete Attachment	View Attachment
5) Please attach Attachment 5		Add Attachment	Delete Attachment	View Attachment
6) Please attach Attachment 6		Add Attachment	Delete Attachment	View Attachment
7) Please attach Attachment 7		Add Attachment	Delete Attachment	View Attachment
8) Please attach Attachment 8		Add Attachment	Delete Attachment	View Attachment
9) Please attach Attachment 9		Add Attachment	Delete Attachment	View Attachment
10) Please attach Attachment 10		Add Attachment	Delete Attachment	View Attachment
11) Please attach Attachment 11		Add Attachment	Delete Attachment	View Attachment
12) Please attach Attachment 12		Add Attachment	Delete Attachment	View Attachment
13) Please attach Attachment 13		Add Attachment	Delete Attachment	View Attachment
14) Please attach Attachment 14		Add Attachment	Delete Attachment	View Attachment
15) Please attach Attachment 15		Add Attachment	Delete Attachment	View Attachment

DTOS59-12-RA-TIGER4

Question #14.

Areas affected by project (cities, counties, states, ect.):

Will, Grundy, Livingston, McLean, Logan, Sangamon, Macoupin, Madison and Jersey

DTOS59-12-RA-TIGER4

Question #16b.

Congressional Districts of:

IL-011
IL-012
IL-015
IL-017
IL-018
IL-019

Weber, George E

From: support@grants.gov
Sent: Monday, March 19, 2012 12:45 PM
To: Weber, George E
Subject: GRANT11089901 Grants.gov Submission Validation Receipt for Application

Your application has been received and validated by Grants.gov and is being prepared for Grantor agency retrieval.

DUNS Number: 1336007540000

AOR name: george weber

Application Name: IL-Chgo-St Louis HSR Safety Enhancements

Opportunity Number: DTOS59-12-RA-TIGER4

Opportunity Name: FY 2012 National Infrastructure Investments

https://apply07.grants.gov/apply/login.faces?cleanSession=1&userType=applicant

You will be notified via email when your application has been retrieved by Grantor agency.

Thank you.
Grants.gov
If you have questions please contact the Grants.gov Contact Center:
support@grants.gov
1-800-518-4726
24 hours a day, 7 days a week. Closed on federal holidays.

PLEASE NOTE: This email is for notification purposes only. Please do not reply to this email for any purpose.

NATIONAL INFRASTRUCTURE INVESTMENTS

TIGER 4 Discretionary Grant - Application Narrative

IL – Chicago to St. Louis High Speed Rail Safety Enhancements

100 West Randolph Street, Chicago, Illinois 60601

Table of Contents

Figures

1.0 Application Overview

1.1 Applicant Information

Illinois Department of Transportation

George E. Weber, Deputy Director of Public and Intermodal Transportation
Illinois Department of Transportation
James R. Thompson Center, Suite 6-600
100 West Randolph Street
Chicago, Illinois 60601

Phone: 312-793-4222
E-Mail: George.Weber@Illinois.gov

1.2 DUNS Number - 133600754

1.3 Project Type

Primary: Intercity Passenger Rail
Secondary: Road/Bridge
Additional Project Type: Bike/Pedestrian

1.4 Project Location

The project is physically located in the state of Illinois between Joliet and the East St. Louis area along the Union Pacific Railroad's (UPRR) Joliet and Springfield subdivisions (MP 36.7 to MP 281.0). The project spans the 11th, 12th, 15th, 17th, 18th and 19th Congressional districts. Illinois counties where the project is located include: Will, Grundy, Livingston, McLean, Logan, Sangamon, Macoupin, Madison and Jersey.

1.5 TIGER Discretionary Grant Funds Requested

The project is composed of three elements. The total project cost for all three elements is $68,950,000. Of this amount, the Illinois Department of Transportation (IDOT) respectfully requests $48,265,000 (70%). IDOT will contribute a non-Federal match for this project of $20,685,000 (30%). The project's anticipated start date is April 2012. Its expected completion date is December 2015.

2.0 Summary

The project for which the State of Illinois (Illinois) requests funding complements the Illinois high speed rail corridor program on the Chicago to St. Louis corridor (Corridor). IDOT seeks to supplement and enhance the safety measures currently planned for this program through: 1) the installation of protective fencing at selected locations between Joliet and the East St. Louis area; 2) the construction of a passenger grade separation in Normal Illinois; and 3) highway/rail grade crossing enhancements at selected locations in the Dwight to Pontiac segment.

The Corridor has been an integral part of the U.S. passenger rail network for many years, and was included in the original Amtrak route network. The State has supported the operation and improvement of rail service as well as the investments in physical improvements on the Corridor for more than 40 years. Currently, ten daily passenger trains (five round trips) operate between Chicago and St. Louis at speeds up to 79 miles per hour (mph).

On June 23, 2009, the Federal Railroad Administration (FRA) issued a Notice of Funding Availability for the High Speed Intercity Passenger Rail (HSIPR) program. In response, IDOT submitted an application for a Service Development Program to implement the improvements and service program outlined under the Record of Decision (ROD) Preferred Alternative. Subsequently, FRA selected Illinois for an award for up to $1.1 billion in American Recovery and Reinvestment Act funding for the work through grant agreement numbers FR-HSR-0015-11-00 and FR-HSR-0015-11-01-01 (Grant). Additional funds of $186.3 million were awarded by FRA for the high speed rail corridor in December, 2012, FR-HSR-0113-12-01-00.

The proposed project builds on the work being performed under these Grants. Each of these improvements can be completed and be beneficial to existing passenger and freight service, independent of the high speed rail project. The Grants included limited funds for fencing[1] and grade crossing improvements[2]. No grade separation funds for Normal were included in the Grants. Additional funds are needed to continue these safety improvements.

3.0 Project Description

The project is primarily a construction project, composed of three elements, fencing, the passenger grade separation and highway/rail grade crossing enhancements. These three elements are linked together by one common objective, safety for passenger train operation in Illinois. Illinois sees fencing as a strong deterrent to trespassing on railroad property, with its inherent risk of being struck by moving trains. However, fencing alone cannot solve the safety issue presented by train operation in Illinois. Other methods to protect and channel people, including a passenger grade separation and crossing enhancements are also important and so are included herein.

Illinois recognizes the limits of Federal funding. As such, if IDOT is awarded funding for only a portion of this application, we ask that fencing be given top priority followed by the grade separation and then the grade crossing enhancements.

The entire project is located in the State of Illinois. The fencing work will be constructed between Joliet and the East St. Louis area. The grade separation will be constructed in Normal, Illinois, near the rail passenger station. The grade crossing enhancements will be built at Mazon, Chippewa, Reynolds, E 1600N and E 1500 N street/roads in the Dwight/Pontiac vicinity. All three elements are located along the Union Pacific Railroad (UPRR) rail line Springfield and Joliet subdivisions, which is also the Chicago to St. Louis high speed rail corridor. The Joliet and Springfield subdivisions comprise approximately 87% of the Corridor.[3] The work for which we seek funding includes design (at Normal), construction, and limited land acquisition (in the road and grade crossing

[1] The FRA guidance on pedestrian protection/fencing was not issued until after IDOT submitted its 2009 high speed rail application. See U.S. DOT *Highway-Rail Grade Crossing Guidelines for High-Speed Passenger Rail*, Office of Railroad Safety, November, 2009, p. 13.
[2] A portion of the Dwight to Joliet fencing is funded by the Grants. Fencing for the towns of Odell and Pontiac were previously funded by the Grant and are not part of this application.
[3] Source: Union Pacific Railroad Employee Timetable

enhancement element), if needed. This project is independent of the high speed rail project funded by the Federal Railroad Administration (FRA) in that it will provide safety benefits to people, bicycles and vehicles, and passenger and freight trains regardless of train speed.

The work to be performed includes both design and construction elements for the Normal passenger grade separation. However, for the fencing and grade crossing components of the project, IDOT seeks funding for construction only. Design will be performed using other funds. The information in this application regarding fencing and crossing improvements is based on a field review and conceptual layout. The field review included participation by local stakeholders. The proposed design effort will consist of the development of preliminary (approximately 30%) design plans. Upon stakeholder approval, the preliminary design will be further developed during which time a complete set of plans, specifications and cost estimates will be created. The designs will be in accordance with IDOT, FRA, Federal Highway Administration (FHWA), the UPRR, Illinois Commerce Commission (ICC), the Americans with Disabilities Act, local agency and all other applicable standards and policies. Construction packages will be competitively let and awarded where possible.

Fencing

Fencing will be installed along the Corridor on the UPRR right-of-way and at grade crossings with pedestrian attributes such as sidewalks or walkways. Locations in approximately 39 communities (See Supporting Document #1) covering approximately 78 linear miles of fence have been identified to receive these improvements. New fencing will be introduced to areas which currently do not have fencing and IDOT will replace fencing that is not effective. The fencing is planned to consist of three types, decorative in urban areas, chain link in rural areas, and overhead bridge fencing. IDOT will obtain input from communities throughout the project's design and construction phases.

Passenger Grade Separation at Normal Station

The town of Normal is currently constructing a new multimodal transportation center in its central business district. It includes two boarding platforms, one on each side of the double track rail line at MP 124.1. This configuration will minimize train delays by allowing UPRR to route any passenger train on either track as conditions may require. To accommodate this operating flexibility, safe and efficient passenger access to the south platform needs to be provided from the new station which is located on the north side of the tracks. The grade separation will provide both safety and operational flexibility, increasing rail service reliability and minimizing delays. The grade separation will also permit the use of the existing Amtrak station (to be replaced by the new station, and otherwise to be unused) interior as an auxiliary waiting area for passengers. The proposed station layout is set out in Supporting Document #5.

Road and Grade Crossing Enhancements

Along much of the UPRR/IDOT high speed rail corridor, roadways are located parallel to, and in close proximity to, the railroad. Where crossroads cross the rail line perpendicular to both rail lines and the parallel roadways, in some locations this results in geometric conditions that are not standard which can pose a traffic safety risk. For example, the crossroad may have insufficient storage distance between the railroad and the parallel road, which is hazardous for long vehicles. And, in some cases, the elevation of the railroad requires a steep slope for the crossroad as it approaches the parallel roadway.

A diagnostic team was established in 2010 to review all crossings on the Corridor, to identify crossing geometric and signal needs[4]. See Figure #1 and Figure #2 for sample crossing photos. Based on this review, grade crossing enhancements were proposed. Five crossings were identified as complex, with especially challenging issues and potential solutions. Improvements at these five are included in this proposal:

Name	Location	Mile Post	DOT Number
W Reynolds St.	Pontiac	92.47	290759U
E 1600N (TR 137A)	Pontiac	93.59	290761V
E 1500N (TR 145A)	Pontiac	94.71	290762C
W Chippewa St.	Dwight	73.72	290541A
E Mazon Ave. (IL 17)	Dwight	73.51	290538S

IDOT proposes to reconstruct and reconfigure these intersections to improve safety and operations. Where realignment is not possible due to existing development, such as at Reynolds Street, a traffic signal will be installed. The proposed improvements are based on collaborative field reviews, and in applicable cases, the Federal Highway Administration's (FHWA) *Manual on Uniform Traffic Control Devices* (MUTCD). The MUTCD sets forth standards and new technologies for traffic control devices, including traffic signals[5]. States are required to adopt the 2009 version of the MUTCD as their state standard. Illinois adopted the national standard with a state supplement. E 1500N and E 1600N are also impacted by guidance which preserves the features of old historic Route 66.

Figure 1 Crossing at E 1600N

Figure 2 Crossing at Reynolds

3.1 Project Location

The project crosses the State of Illinois from Joliet to the East St. Louis area. The rail Corridor parallels U.S. Interstate 55. Project work will generally be performed on the Union Pacific Railroad right-of-way and existing roadway right-of-way. The beginning and end points of the project are located near two large metropolitan areas, Chicago and St. Louis with a combined metropolitan area population of 10,695,841[6]. In between are cities and towns of various sizes, from mid-size cities such as Springfield (116,250) and Bloomington (76,610), Normal (52,497) to small towns such as Broadwell (145) and Nilwood (239). The project is spatially described on Figure 3 and Figure 4, below.

[4] The team was created per US DOT guidance in its Highway-Rail Crossing Guidelines for High-Speed Passenger Rail, Office of Railroad Safety, November 2009, p. 2.
[5] It is published by the FHWA per 23 USC 655, Subpart F.
[6] All population figures stated herein were obtained from 2010 U.S. Census data.

Figure 3 Likely Fencing Locations

TIGER Discretionary Grant Application

Likely Fencing Locations

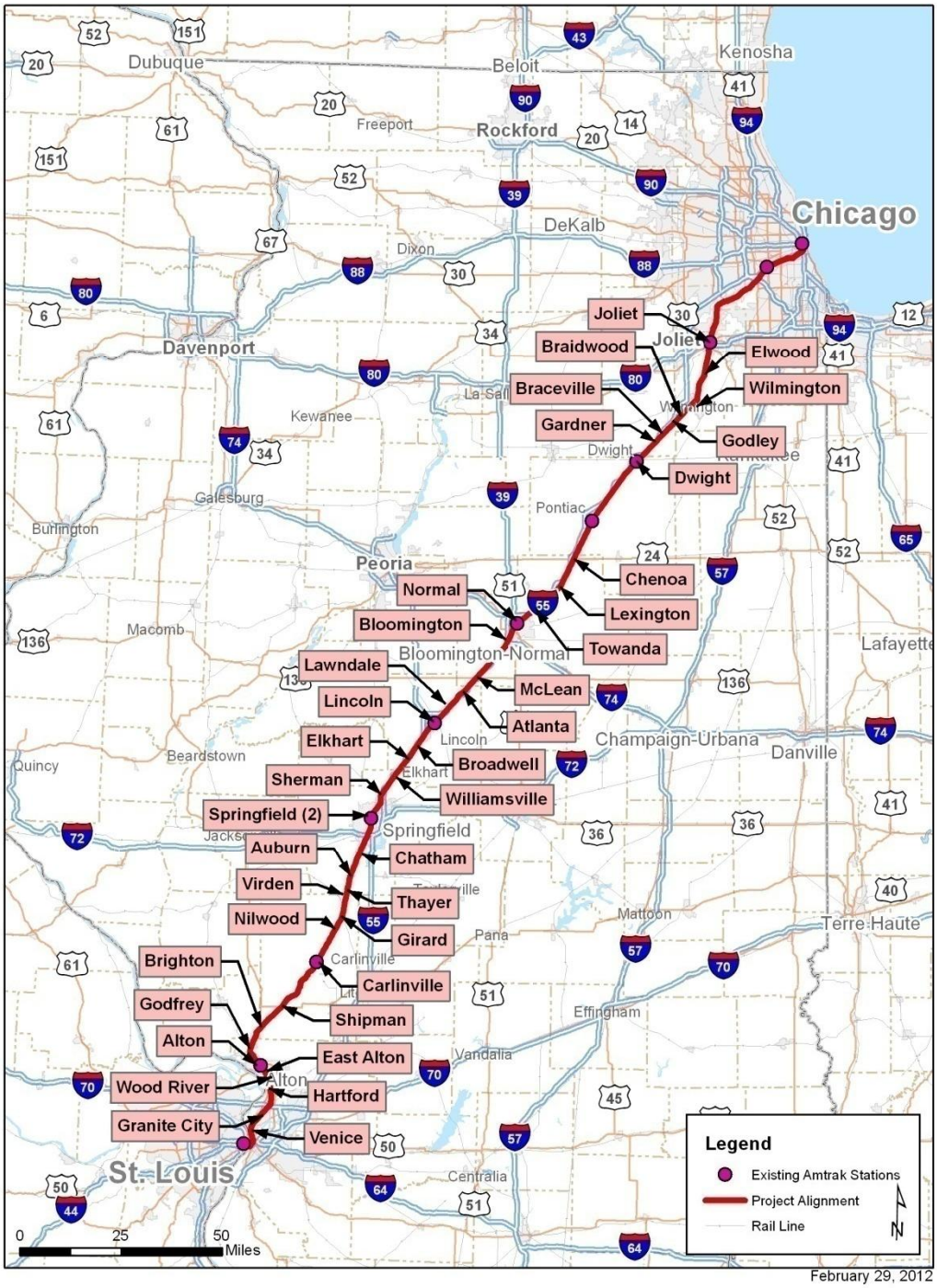
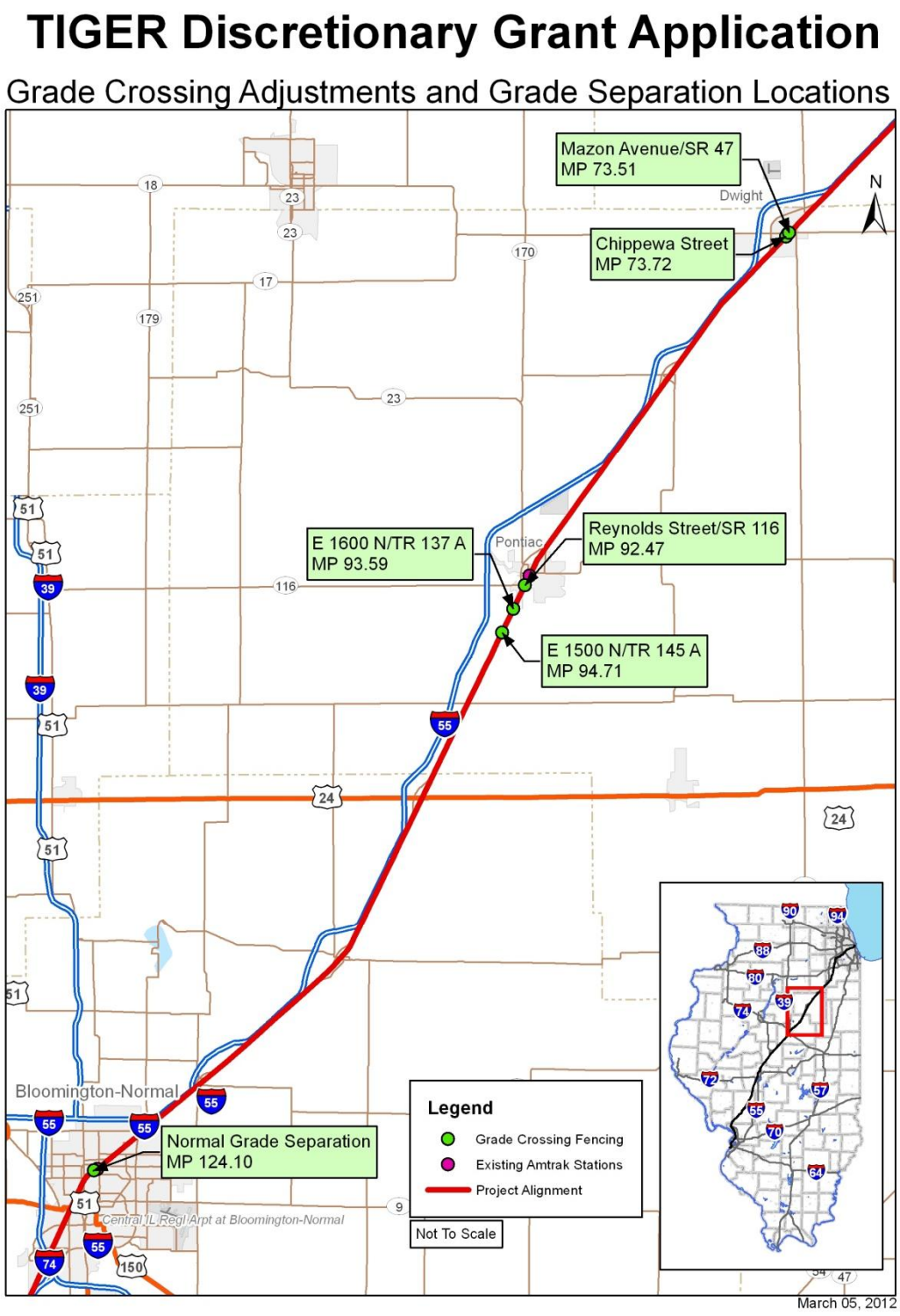


Figure 4 Road and Grade Crossing Enhancements and Grade Separation



3.2 Current Transit Challenges

- Trespassing on the rail Corridor is a recurrent issue in towns bisected by the railroad. During the collaborative investigation process, the team discovered numerous locations where a path had been created, evidence of trespassers. For safety reasons, unauthorized access to the rail right-of-way should be discouraged. Channelizing pedestrians to a safe crossing of the rail line is necessary. Trespassing on railroad property is the single largest cause of deaths associated with railroad operations.[7]

- High-speed passenger trains are difficult to see and hear.[8] It is critical that pedestrians be discouraged from walking in non-designated areas; fencing is a key to achieving this. FRA recommends the use of tamper-resistant fencing to control trespassing.

- Normal is the Midwest's fourth busiest passenger rail station (behind Chicago, Milwaukee and St. Louis). In 2011, 244,566 passengers[9] boarded or alighted at Normal (an increase from 2008's number of 180,589). This high volume of traffic, and the proximity to activity centers such as Illinois State University, increases the possible frequency of trespassing. In addition, under the current configuration at this location, passengers standing on one side of the tracks will be precluded from boarding a passenger train on the other track if/when a moving freight train is in the area. Further, if freight trains are precluded from running through Normal when a passenger train is boarding, freight operations will be adversely affected.

- A safety challenge exists at the grade crossings described in this application. Because of the short vehicle storage distance, vehicles could be stopped on a crossing while in a traffic queue. This could potentially result in accidents. In addition, intersection turning movements currently occur within the railroad grade crossing area at some locations. This condition introduces additional driver decision requirements into the grade crossing area, and may cause distractions to the motorist. These distractions may lead to vehicle-vehicle accidents, or cause motorists to not heed the crossing signal devices.

- Any changes to the crossings at E 1500N and E 1600N will be made in accordance with the Route 66 Corridor Preservation Program. In 1990, the U.S. Congress passed Public Law 101-400, the Route 66 Study Act of 1990. The act recognized that Route 66: "has become a symbol of the American people's heritage of travel and their legacy of seeking a better life." The legislation resulted in the National Park Service conducting the Route 66 Special Resource Study to evaluate the significance of Route 66 in American history, and to identify options for its preservation, interpretation, and use. The document provided an in-depth account of significance and history of Route 66. This study led to enactment of Public Law 106-45, and the creation of the Route 66 Corridor Preservation Program (National Park Service).

[7] US DOT *Highway-Rail Grade Crossing Guidelines for High-Speed Passenger Rail*, Office of Railroad Safety, November 2009, p.13.
[8] *Ibid.*, p.14
[9] Amtrak ridership statistics

3.3 How Current Challenges Can Be Solved

- Right-of-way fencing will discourage or prevent trespassers from crossing the tracks in a non-designated area at locations in approximately 39 communities.
- Fencing will channel pedestrians to authorized crossings with warning devices and other safety features.
- The viability of intercity passenger rail transportation along the Corridor will be enhanced by the addition of traffic signals and fencing improvements.
- Intersection reconfiguration and other improvements, including the addition of traffic signals, will improve safety at grade crossings and adjacent intersections.
- A passenger grade separation at Normal will create a safe route for passengers to cross the double tracks at this busy station. A grade separation will also allow freight traffic to flow freely, with minimal impacts from passenger train boarding activities.
- IDOT will construct roadway modifications at E 1500N and E 1600N consistent with the established historic guidelines for Route 66. These changes will result in safety improvements while also protecting and maintaining the integrity and historic characteristics of the road. Route 66 is one of Illinois' most visited tourist destinations.

Figure 5 Examples of fencing on the right-of-way which discourage trespassers

Figure 6 Corridor Example of Lack of Fencing in a Town with Homes Nearby

3.4 Historical and Planning Context

In 1992, the U.S. Secretary of Transportation designated the Corridor as a high speed rail corridor as part of the Chicago Hub Network. A National Environmental Policy Act (NEPA) environmental study followed, resulting in the completion of a Final Environmental Impact Statement (EIS) in 2003 for the Chicago to St. Louis High-Speed Rail Project. The FRA issued a Record of Decision (ROD) in 2004. The ROD includes the preferred alternative as described in the Final EIS, which comprises incremental infrastructure upgrades to the line to support implementing high-speed rail service. FRA grants were awarded to IDOT in 2010 and 2011 in order to construct the high speed rail Corridor.

Public meetings were conducted which welcomed comment on the overall program. During the crossing treatment diagnosis, local agencies were contacted regarding the treatment of crossings and passenger protection. The UPRR and ICC were also involved in the diagnostic process for the proposed fencing and grade crossing improvements. The proposed passenger grade separation has been coordinated with the Town of Normal and enhances the multi-modal station plan it produced. Provisions for this grade separation were also included in the intergovernmental agreement between the State and Normal that is currently being executed.

3.5 Current Conditions

Fencing

Right-of-way fencing exists at a limited number of locations. Two examples are in Normal and Atlanta, Illinois. The Normal fencing is incomplete and ineffective. In Atlanta, the fencing is incomplete and does not provide the channelization required at the public crossings; major modifications are needed. Right-of-way fencing is totally lacking in the remaining communities for which funding is sought. During the field investigation process, numerous locations were noted where paths have been created, providing evidence of trespassers.

Passenger Grade Separation at Normal Station

The existing station has one side platform and can be accessed by an at-grade passenger crossing in front of the station. Figure 7, below, shows the existing at-grade passenger crossing at Normal. There is no existing grade separation. In 2011, 244,566 passengers boarded or alighted at Normal.

The Town of Normal is currently constructing a new multimodal transportation center. There are two railroad tracks in the station area, with a boarding platform on each side of the pair of tracks. Passenger trains may be routed to approach the station from either direction on either track. Passengers located on one side of the tracks are precluded from boarding a passenger train on the other track when a moving freight train is in the vicinity.

Figure 7 Current Passenger Crossing at Normal

Road and Grade Crossing Enhancements

The on-going high speed rail project includes upgrading of the railroad grade crossing surfaces, and installation of four quadrant gate warning devices. However, there are a variety of complex roadway geometric issues that are not addressed by the current scope of the high speed rail project. These issues generally stem from the close proximity of existing roadway intersections to the railroad grade crossing. The existing issues include the following:

W Reynolds St.: Ladd Street and Old Airport Road run parallel to the railroad and intersect Reynolds St. very close to the railroad crossing. Due to the traffic volumes and limited vehicle storage space between the intersection and the railroad tracks, this location meets MUTCD signal warrant 9[10]. The area surrounding the intersection is suburban and developed. Roadway alignments will be modified to increase the intersection separation from the railroad grade crossing and also to improve sight distance.

E 1600N Rd. & E 1500N Rd. Route 66 runs parallel to the railroad and intersects these roadways very close to the railroad grade crossing. There is only 57 feet of storage available for westbound E 1600N traffic between the railroad exit gate and the Route 66 stop bar and as a result, this location meets MUTCD signal warrant 9. There is 85 feet between the railroad crossing panel on E 1500N and the edge of the Route 66 pavement, however Warrant 9 is not met for this location. The railroad is on fill in these areas and the existing roadway profiles between Route 66 and the tracks are substandard per IDOT and ICC standards. These profile deficiencies will be made worse by the necessary approximately 6" raise to the track elevation as part of the high speed rail project. Route 66 in this area has been determined to be historic and any improvements must follow the Section 106 process. The configuration of Route 66 in this area was a four lane divided highway, however the roadway currently only utilizes the former northbound lanes.

W Chippewa St. & E Mazon Ave: The UPRR railroad cuts diagonally through the intersection of Chippewa Street and Prairie Avenue. In addition, W Main and E Main Streets run parallel to the railroad and intersect Chippewa Street very close to the railroad crossing. The UPRR railroad also cuts diagonally through the intersection of Mazon Avenue and Franklin Street. These configurations cause limited sight distance, queuing of traffic, non-standard warning device placement, and other signaling problems.

[10] Signal Warrant 9 (Intersection Near a Grade Crossing) of the MUTCD states that traffic signals should be considered on a rail intersection approach controlled by a stop or yield sign when both the track center is within 140' of the stop line or yield line on the approach and when certain traffic volume thresholds are met.

3.6 Proposed Solutions

Fencing

Fencing consists of three types (ornamental, chain like and overhead bridge protective). The type of fencing to be installed was determined based on land use, activity centers, pedestrian use at grade crossings and evidence of trespass. The proposed fencing will be placed at locations in about 39 communities within the existing UPRR or roadway right-of-way from Joliet to the East St. Louis area, excluding the area from Dwight to Pontiac. Limited funds for fencing from Dwight to Joliet were provided by the Grants. The funds requested herein are separate from the Grant funds. In this segment, fencing will be installed and funded by the high speed rail project. Approximately 78 linear miles of fencing will be installed. The fencing will be introduced to areas which do not have fencing and will replace the existing fencing at Normal and Atlanta which are currently not effective. This fencing will redirect pedestrians to authorized safe crossings of the right-of-way. Typical fencing is shown in the attached drawing contained in Supporting Document #4.

Passenger Grade Separation at Normal Station

A passenger grade separation (overpass or underpass, as determined by a case study) is proposed to enhance the safety of the multimodal transportation center that is currently under construction near the site of the existing station. The facility will provide interconnections between several modes of transportation, including high speed passenger rail, local bus, taxis, airport shuttle, bicycles, and pedestrians. The grade separation will be a major supporting component to a modern, safe transportation center. In addition to the grade separation, the current station will remain in place and continue to be used. Its interior will be modified to create an auxiliary waiting area for passengers. No right-of-way acquisition is anticipated.

The grade separation will allow passengers to access the south platform from the new station on the north side of the tracks in a safe, efficient manner. This grade separated crossing will allow the elimination of an existing at-grade pedestrian crossing. Inter-track and diversion fencing will be used to redirect passengers to this safer way of crossing the right-of-way. A depiction of the grade separation is attached as Supporting Document #5.

Road and Grade Crossing Enhancements

The on-going high speed rail project includes upgrading of the railroad grade crossing surfaces and installing four quadrant gate warning devices within the UPRR right of way. The proposed improvements below address complex roadway geometric issues outside of the UPRR right of way that are not addressed by the current scope of the high speed rail project.

Conceptual layouts[11] that have been prepared for the proposed intersection improvements can be found in the Appendix. Preliminary (30% design level) plans will be prepared at the intersections noted below to identify the scope of the proposed improvements. Generally, the physical improvements will include changes to the intersection and approaches. This is expected to include intersection pavement reconstruction, approach geometry modifications, curbs, drainage, pavement markings, signage, utility relocation, and may include traffic signals or lighting. Limited right-of-way acquisition may be required to accommodate all geometric changes such as the addition of a turn lane or an increase of corner radii. These improvements will follow American Association of State Highway and Transportation Officials (AASHTO), ICC, MUTCD, and IDOT standards. These improvements will serve to reduce vehicular accidents and improve intersection operations. The standards for this work are attached as Supporting Document #6.

[11] Since they are conceptual layouts, they are subject to change as the project progresses.

W Reynolds St: Signal Warrant 9 (Intersections Near a Grade Crossing) of the MUTCD manual states that traffic signals should be considered on a rail intersection approach controlled by a stop or yield sign when both the track center is within 140 feet of the stop line or yield line on the approach and when certain traffic volume thresholds are met. Reynolds fits these criteria. The area surrounding the intersection is developed, making intersection alignment modifications to increase the space between the intersection and the railroad impractical.

IDOT proposes to install intersection traffic control signals along with related roadway approach work (such as geometric modifications to meet current standards) at this road crossing. An intersection traffic signal will be designed and installed for traffic lanes to control movement across the railroad track and through the intersections. These traffic signals will be operated by a master program that has inputs on traffic lane occupancy, desired routing of auto traffic and input from the railroad crossing gate systems. At a minimum, the traffic signal will have actuation on the minor street and preemption control will be in accordance with the MUTCD. The railroad input will serve to set all traffic away at a grade crossing when pending train traffic is detected. They will also allow for the free flow of vehicles to clear the tracks to prevent vehicles from becoming trapped on the crossing.

E 1600N: The intersection of E 1600N and Route 66 meets MUTC Warrant 9 for the westbound approach. However, unlike Reynolds, IDOT proposes to construct a shift in the Route 66 alignment to increase separation between the grade crossing and the roadway intersection in order to alleviate Warrant 9. The existing Route 66 right of way abuts the UPRR right of way and is very wide as Route 66 was previously a four lane divided highway. The proposed shift will generally utilize the existing right of way and shift the Route 66 lanes west and closer to the now abandoned old southbound lanes. The profile of Route 66 will be raised slightly address the substandard profile issues between Route 66 and the railroad. The profile adjustments will also improve drainage by providing positive drainage away from Route 66. These modifications will be coordinated with the Illinois Historic Preservation Agency (IHPA) in order to maintain the historic integrity of Route 66.

E 1500N: IDOT proposes to raise the profile of Route 66 slightly to address the substandard profile between Route 66 and the railroad. IDOT does not anticipate major modifications to the horizontal alignment of Route 66. The profile adjustments will also improve drainage by providing positive drainage away from Route 66. These modifications will be coordinated with the IHPA in order to maintain the historic integrity of Route 66.

Mazon and Chippewa: IDOT proposes to relocate the affected Chippewa intersection to the north of the existing crossing. This change will create a perpendicular rather than a diagonal intersection thus eliminating the complexity of maintaining a diagonal street crossing at the UPRR tracks. This solution is not workable at Mazon. Therefore, IDOT proposes to eliminate one leg of the affected intersection at Mazon which will cause the number of traffic control gates to be reduced. These changes will minimize the possibility of vehicles stopping within the track area which could cause an undesired operation of the gate system. These changes will also allow safer passage of vehicles legally required to stop at all crossings (e.g., school buses, vehicles carrying hazardous materials).

4.0 Project Partnerships

The Chicago-St. Louis High Speed Rail Safety Protection project brings together numerous partners. The organizations/communities partnering with IDOT on this project are listed below.

Federal Railroad Administration
The FRA previously partnered with the State to provide funding for the high speed rail project. In particular, it provided $1.1 billion in funding appropriations for the high speed rail project for the area between Dwight and East St. Louis in 2010 through FRA Grant agreement numbers FR-HSR-0015-11-00, FR-HSR-0015-11-01-01. In December 2011, FRA awarded an additional $186.3 million in funds for the Dwight to Joliet segment of the high speed rail project, FR-HSR-0113-12-01-00.

Illinois Department of Transportation. IDOT serves as the Grantee and agent in funding a portion of the project and its maintenance costs.

Illinois Commerce Commission .
The Illinois Commerce Commission has the statutory responsibility to improve safety at public highway-rail crossings in the State of Illinois. Currently, there are over 8,400 highway-rail grade crossings in Illinois, of which over 800 are on state roads, and more than 7,600 are on local roads. There over 2,700 highway-rail grade-separated crossings (bridges) in the state. There are nearly 400 pedestrian grade crossings and 85 pedestrian grade separated crossings (bridges) in Illinois. Nationally, Illinois is second only to Texas in the total number of highway-rail crossings. ICC has agreed to participate in this project through the use of some of its Grade Crossing Protection Funds.

Union Pacific Railroad
UPRR owns and operates the majority of the Corridor scheduled for improvement. It is a Class 1 freight railroad and grants rights to Amtrak and IDOT to operate regularly scheduled passenger services on the Corridor, per agreement. Operations include freight, high speed passenger and conventional intercity passenger services. A majority of the proposed fencing will be placed within UPRR's right-of-way. UPRR fully supports this application (see attached UPRR letter of support dated March 1, 2012 included as Supporting Document #2).

Amtrak
Amtrak operates daily regular passenger services along the Corridor between Chicago and St. Louis and beyond. Currently, IDOT provides operating subsidies to Amtrak. Amtrak's financial responsibility is associated with on-going payments to UPRR for the continued operation of rail service, along with possible incentive payments for performance which exceeds mutually agreed-upon performance requirements.

City of Normal, Illinois
The proposed passenger grade separation has been coordinated with the City of Normal and enhances the multi-modal station plan it produced. Provisions for this grade separation were also included in the intergovernmental agreement between the State and Normal that is currently being executed.

Affected Communities and other State Entities

There will be close coordination with the on-line communities, township/county road departments and/or IDOT's Division of Highways to schedule and complete the work and to make determinations on other actions relative to fencing, crossings and approach roadways. ICC liaison is also a key participant in any grade crossing action and/or improvement plan.

5.0 Project Funding

Project Revenues

The project can be achieved through a partnership of Federal, State and ICC funds. IDOT requests $ 48,265,000 (70% of the total project construction cost)[12] in Tiger Discretionary Grant funds to complete construction of the fencing and signal work on the high speed rail project. Combined, IDOT and the ICC will provide the 30% match, $20,685,000 ($7.5 million from ICC and $13,185 from IDOT); With the exception of the grade separation element at Normal, IDOT seeks Tiger funding only for the construction portion of the project; other funds will be used to complete the design. This funding would accelerate the completion of the grade separation construction, fencing and crossing adjustments which may not otherwise be possible. In addition, it would provide fencing in more locations that would otherwise be possible since high speed rail funds are limited. Otherwise, the project would take years to complete as local funds would be used.

Project Expenditures

The estimated project expenditures, detailed in 2011 dollars, are listed in Figure 8**,** below. The costs are separated by project element and task.

Figure 8 Cost Estimates

Task	Estimated Cost	Federal Funding (70%)	Non-Federal Match Funding (30%) IDOT & ICC
Fencing			
Construction	$40,283,462	$28,198,423	$12,085,038
Contingency (30%)	$12,085,038	$8,459,527	$3,625,512
Subtotal	$52,368,500	$36,657,950	$15,710,550
Grade Separation			
Engineering/Design	$460,000	$322,000	$138,000
NEPA	$100,000	$70,000	$30,000
Construction	$5,750,000	$4,025,000	$1,725,000
Construction Administrati	$345,000	$241,500	$103,500
Contingency (30%)	$1,996,500	$1,397,550	$598,950
Subtotal	$8,651,500	$6,056,050	$2,595,450
Intersection Adjustments			
Property Acquisition	$200,000	$140,000	$60,000
Utility Relocation	$700,000	$490,000	$210,000
Construction	$5,200,000	$3,640,000	$1,560,000
Contingency (30%)	$1,830,000	$1,281,000	$549,000
Subtotal	$7,930,000	$5,551,000	$2,379,000
Total Expenditure	$68,950,000	$48,265,000	$20,685,000

[12] Except in the case of the Normal grade separation where engineering, design and NEPA costs are incorporated into the project total.

The proposed budget includes a contingency allowance of about 30%. This represents a typically accepted industry amount for this type of project where design and NEPA have not been completed and the need for real estate has not yet been determined.

Source of non-Federal Match

The State is committed to providing 30% of the total project costs through a combined State and ICC contribution. With the approval of ***Illinois Jobs Now!***, a $31 billion capital program enacted by Illinois in 2009, IDOT has received a commitment from the State of $400 million for the Chicago-St. Louis high speed rail Corridor.

The State's FY2011 Capital Budget contains a $400 million appropriation for State wide high speed rail projects. The FY2011 Capital Budget and Capital Projects list can be viewed and/or downloaded at the following website: http:/www.state.il.us/budget/. The local match for the subject project is primarily financed through the ***Illinois Jobs Now!*** capital program and is not reliant on the State's general operating fund. To date, $163 million of ***Illinois Jobs Now!*** funds have been obligated to the project; additional obligations are forthcoming.

The ICC will also participate in the non-Federal match of this project with the use of Crossing Protection Fund (GCPF). The GCPF, appropriated to IDOT but administered by the ICC was created by the Illinois General Assembly to assist local jurisdictions (counties, townships and municipalities) in paying for safety improvements at highway-railroad crossings on local roads and streets. Each month $2.25 million in Illinois motor fuel tax receipts is transferred from the Motor Fuel Tax fund to the GCPF. This amount provides the GCPF with $27 million annually to be used for safety improvements at highway/rail crossings on local roads and streets. Seven and a half million of these funds will be directed to this proposed project.

6.0 Criteria

6.1 Primary Selection Criteria

A. Long Term Outcomes

State of Good Repair

The State has supported the operation and improvement of rail service including investments in physical improvements on the Corridor for more than 40 years. Currently, ten daily passenger trains (five round trips) operate between Chicago and St. Louis at speeds up to 79 miles per hour (mph). Illinois provides funding to Amtrak for some of these trips. With the implementation of high speed rail, three pairs of these trains will operate up to 110 mph. IDOT believes that a reliable, safe, efficient freight, intercity and high speed rail network is important to the region.

Illinois' commitment to improved train service can be further found through its adoption of ***Illinois Jobs Now!*** ($400 in capital funds for the Chicago-St. Louis high speed rail Corridor). This local match is not reliant on the State's operating funds. In addition, the State, through the ICC supports the operation of safe and efficient train operation through its $7.5 million dollar participation in the project which will be used for safety improvements at highway-rail crossing at local roads and streets. The overall Chicago – St. Louis program represents a step in the implementation of the

Midwest Rail Initiative[13] , the establishment of high speed and conventional intercity rail passenger service on routes radiating from Chicago. A copy of the eight state memorandum of understanding (July, 2009) is attached as Supporting Document #3.

Illinois' share of the capital required for this project is established. It will be provided by State of State or local communities will be responsible for the repair and maintenance of the project. Illinois, if it funds the repairs and maintenance, will do so through operating funds which are appropriated annually.

The primary benefits of this proposed project is improved safety for pedestrians, motorists, and passengers on trains, a key element of State of Good Repair. State of Good Repair also includes:

- Improving the condition of existing facilities and systems: Paths created by trespassers can cause damage to roadbed and alter drainage, increasing maintenance costs and problems. Reducing pedestrian incursions on the Corridor will significantly reduce this problem.

- Travel time savings: Trains can be excessively delayed as a result of accidents and incidents involving pedestrians and vehicles. The components of this proposal will reduce accidents and incidents by providing a more secure corridor for rail traffic.

- Reducing maintenance costs: The improved roadway configurations will reduce maintenance at the grade crossing locations.

State of Good Repair metrics can be summarized in the following matrix, Figure 9:

Figure 9 Performance Matrix

Performance Matrix – State of Good Repair				
Current Condition	Current Performance	How Project Will Improve Condition	Improvement Measure	Improvement Goal
Accidents	2.5 fatalities per year (75 over past 30 years)	Lives will be saved	Number of accidents	95% reduction in the number of fatalities (71 lives saved over next 30 years)
Illegal pedestrian trespassing locations	38 locations[14] where illegal trespassing has occurred.	Eliminate illegal trespassing	Number of illegal trespassers	Planned goal is near zero locations
Annual delay minutes to passenger trains resulting from pedestrian/vehicle incidents.	507 minutes[15]	Reduction in pedestrian incidents	On time Performance	Expected goal is less than 250 minutes

[13] A collaborative effort by managers and directors of Midwestern state transportation agencies, established in 1995, to plan and coordinate high speed rail priorities in the region.
[14] Determined by field observations
[15] Amtrak CY11 statistics

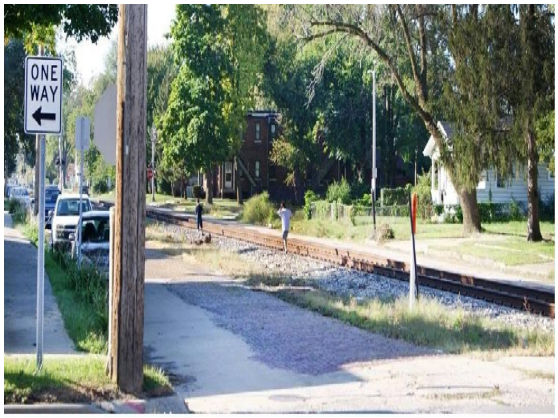



Figure 10 Examples of Trespassing in Non-Fenced Areas

Economic Competitiveness

The proposed project, in conjunction with the high speed rail project, will enhance travel in the Corridor, which supports economic competitiveness. Specifically, it will further improve rail as a mobility option in the corridor, and relieve traffic congestion on Interstate 55, a route parallel to the Corridor. Approximately 99% of the 35 million annual person trips made in the Chicago - St. Louis corridor are made in personal automobiles and airplanes. Enhanced Amtrak service will provide a viable alternative to interstate highway travel. The Illinois rail system is vital to the regional flow of passengers. It serves as a relief route for auto users who travel on Interstate 55, a parallel vehicle route. Amtrak carried 642,413 passengers on the Chicago-St. Louis rail corridor in FY2010.[16] Given the price and uncertainty of available energy in the future, the provision of travel alternatives other than cars is imperative. Strengthening the country's rail network, of which this project is a part, can provide such an alternative.

The project will also improve the long term safety, efficiency and reliability of train travel in Illinois. It will reduce accidents since pedestrians will be channeled to safer ways of crossing the railroad, and as a result of the roadway improvements. The reliability of passenger rail is significantly improved as a result of reduced accidents.

Livability

This project will foster livable communities through place-based policies and investments that increase transportation choices and access to transportation services. Planners will be able to funnel new activity into areas near the railroad. These activities will now be more safe and secure because of the distinct separation of rail and pedestrians. IDOT will also coordinate with local planners on this project. For example it will work with the Village of Dwight to ensure that the fencing element of the project coordinates with Dwight's proposed Pinecone trail.

The project will provide a better environment for school students and their parents. There are approximately 100 schools within one half mile of the Corridor.[17] The inclusion of fencing in the proposed 39 communities will provide not only safety to these students but a sense of peace for parents sending their children to school. They will no longer worry about train operation affecting

[16] Amtrak Ridership Statistics, FY2010, Ilinois. Also, Amtrak News Release (ATK-10-146) dated November 12, 2010.
[17] Source: ESRI,Inc./TeleAtlas

their child. The fencing is also consistent with Illinois' goal of encouraging walking and biking to and from school.[18]

Aesthetics is an element of livability. The decorative fencing in urban areas will enhance community appearance. Tamper resistant fencing (of all types, urban rural and bridge) is also less susceptible to vandalism which will enhance community appearance. In addition, anything that reduces the risk of accidents and injuries at a railroad will pay dividends in more "reliable passenger train service that will enjoy a reputation for quality as well as safety."[19]

Providing new and better transportation connections enhances livability. The Bloomington-Normal Transit System (BNPTS) currently operates 11 fixed route services, an Illinois State University campus-based shuttle, and various special services. Connections between BNPTS fixed routes and other modes of transportation using the new multi-modal transportation center will make rail travel and connections with other modes safe and convenient. The proposed grade separation connecting the new multi-modal transportation center with the existing Amtrak station will provide a safer travel environment and seamless interconnectivity between modes of transit. Instead of walking several blocks or making connections in busy parking lots, passengers will enjoy separated and secure transfer points between several modes of transport. Passengers will use the MTC to transfer from pedestrian travel to automobiles, local buses, intercity buses, high speed passenger rail and even air travel through private airport shuttles and taxi services. The grade separation will be ADA compliant (elevators will likely be installed) thus allowing passengers with disabilities better ease of access.

Route 66 is a part of Illinois' history. This famous route begins in Chicago and crosses the Illinois as it heads west to California. The integrity of this route should be maintained for the sake of history and as an invitation for tourists to travel this byway to live this history.

One of the counties in the project, Grundy, is an economically distressed area.[20] The fencing element of the work will be broken into smaller segments such as by county or mile post ranges. Smaller-sized contractors, including those from economically distressed counties, will have the ability to bid on and participate in the fencing contracts thus creating jobs in the community.

Environmental Sustainability

- This project contributes to the Illinois high speed rail program and rail traffic in general. With steadily increasing highway congestion and expensive oil supplies, it is important to develop other modal choices; rail is one of these choices.

- The decorative fencing used by the Union Pacific Railroad in some areas along its right-of-way is manufactured in the United States from recycled United States material. Recycling protects our nation's natural resources.

- The proposed traffic signals will have vehicle actuation in order to minimize travel delay and maximize efficiency. Minimizing delay will also reduce vehicle fuel consumption and emissions. The traffic signals will use long life, energy efficient LED bulbs.

[18] See Illinois Safe Routes to School Program.
[19] U.S. Department of Transportation Highway-Rail Grade Crossing Guidelines for High Speed Passenger Rail, Office or Railroad Safety, November 2009, p. 2.
[20] Satisfies the definition of an economically distressed area, per 42 U.S.C. 3161.

Safety

The project will improve safety on the rail line and adjacent roadways. For example, in 2010 alone there were 11,813 rail incidents (reported to FRA) in Illinois involving a rail and a highway user at a crossing site. Forty seven of these incidents were fatalities and 2,716 of these incidents occurred where passive warnings were in place. Highway-rail and trespassing incidents accounted for 97% of the 47 fatalities in 2010. [21]

By eliminating access to the right-of-way and directing trespassers to an alternative path, pedestrian safety will be enhanced. Vehicle safety will be improved by providing a traffic signal that will clear queued vehicles from the grade crossing when a train is approaching. Train - automobile crashes, while generally infrequent, are very severe and often fatal.

The proposed project is anticipated to prevent 71 fatalities, 215 injuries, and 102 property damage accidents over the 30 year analysis period. These figures are based on existing accident data and are documented in the cost-benefit analysis that was developed for the proposed improvements (see supporting document #11). This analysis estimates a 95% reduction in the number of accidents related to trespassing, the subject grade crossings, and passenger activity at the Normal station. It is estimated that the proposed fencing improvements will prevent 36 fatalities and 45 injuries; the proposed passenger grade separation will prevent 28 fatalities; and the proposed intersection improvements will prevent 7 fatalities fatality, 170 injuries and 102 property damage accidents.

The cost savings from potentially reducing the number of accidents include direct savings (e.g., reduced personal medical expenses, lost wages, and lower individual insurance premiums), as well as significant avoided costs to society (e.g., second party medical and litigation fees, emergency response costs, incident congestion costs, and litigation costs). The value of all such benefits – both direct and societal – could also be approximated by the cost of service disruptions to other travelers, emergency response costs to the region, medical costs, litigation costs, vehicle damages, and economic productivity loss due to workers inactivity. The cost-benefit analysis finds that the proposed improvements will provide approximately $182 million in savings due to the reduction in accidents.

B. Job Creation and Near Term Economic Activity

The creation of jobs will assist in reducing the level of unemployed workers in the region which is currently 9.4%, above the national average of 8.3%.[22] The unemployment rate for African Americans (19.4.8%) and Hispanics in Illinois (12.17%) exceed both the State and national averages.[23] The need for resources to design and build the project would represent a short-term increase in demand for professional services, construction labor, and construction materials.

---

[21] Federal Railroad Administration Office of Safety Analysis, Accident/Incident Overview by State/Region, http://safetydata.fra.dot.gov/office of safety/publicsite/Query/stateoverview.aspx. Also see IDOT's (Division of Traffic Safety) Safety Data Mart website for the years 2005-2009 (the most current data available).

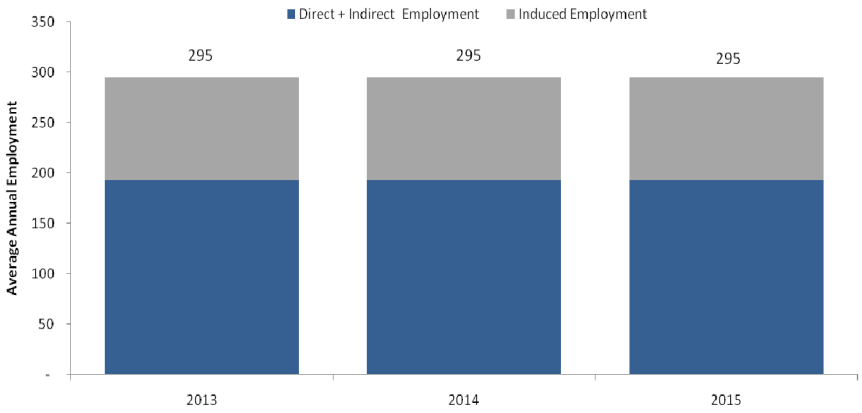
[22] Illinois Department of Employment Security, *Local Area Unemployment Statistics*, December, 2011

[23] U.S. Bureau of Labor Statistics, *Local Area Unemployment Statistics, Current Population Survey*, annual average, 2011

A jobs analysis related to this project was created utilizing an input-output (I/O) modeling framework based on multipliers from MIG Inc., the developer of the model. This process estimated two impacts, direct/indirect and induced benefits. Based on this analysis, a total of 885 job-years (295 people working for three years) will be created on fencing and improvements. The number of jobs created during the construction period is expected to be fairly consistent year-to-year, reflecting the even distribution in capital costs over three years.

Over the course of a 30-year operations period, the operating and maintenance expenditures are expected to generate a total of 1,695 job-years with 1,116 directly related to operations. This translates into an estimated 56 jobs per year for 30 years, 39 from the fencing element, nine for the grade separation and eight for the signaling and road work. See Figure 11 Average Annual Employment, Figure 12 Total Operating and Maintenance and Figure 13 Total Jobs by Year (Sum of Direct, Indirect & Induced) for a summary of these statistics. Also see Supporting Document #10 for detailed job creation information.

Figure 11 Average Annual Employment



The construction element of the fencing project will be packaged and awarded by IDOT in sections; one contractor will not be responsible for the installation of all fencing. Section by section awards will encourage participation by small business concerns. The smaller contract size will allow small businesses to more easily obtain bonding and insurance, a general contract requirement.

Figure 12 Total Operating and Maintenance

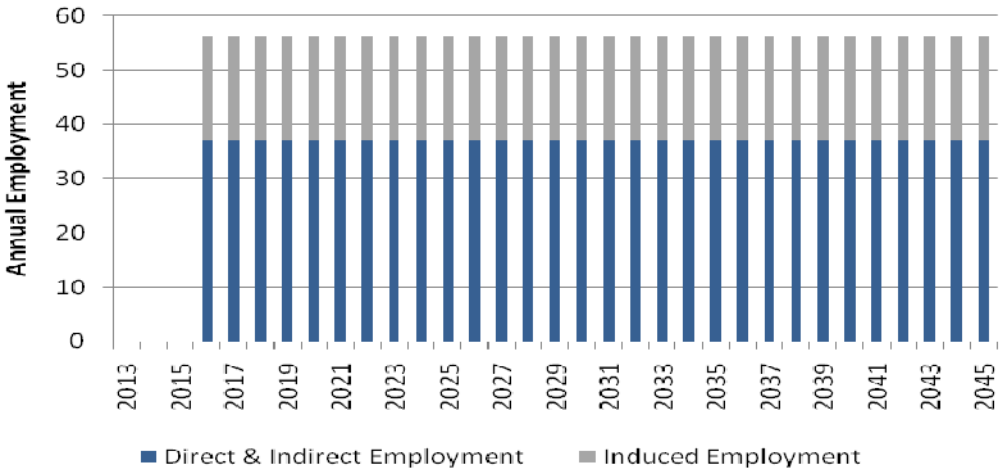


Figure 13 Total Jobs by Year (Sum of Direct, Indirect & Induced)

	Direct & Indirect	Induced	Total
Construction Total	579	306	885
Fencing	441	233	675
Gradework	73	39	111
Signaling and Roadwork	65	34	99
O & M Total	1,116	575	1,691
Fencing	773	398	1,171
Gradework	179	92	271
Signaling and Roadwork	164	84	248
Total	1,695	881	2,576

6.2 Secondary Criteria

A. Innovation

The roadway traffic signal improvements will be incorporated into a positive train control system by providing the necessary traffic control timing by either the vital radio link or the conventional crossing start detection system which will clear the crossing traffic ahead of the train movement. Additionally, the exit gate detection loop equipment will be self monitoring, an innovative feature.

B. Project Support

Non-Federal Funds
The non-Federal matching funds for this project will be provided by State of Illinois dedicated capital funds. With the approval of ***Illinois Jobs Now!***, a $31 billion capital program enacted by Illinois in 2009, IDOT has received a commitment from the State of $400 million for the Chicago-St. Louis high speed rail Corridor. This local match is not reliant on the State's operating funds.

Union Pacific Railroad
UPRR is an active partner with IDOT in the activities performed on the rail Corridor. As evidenced by its March 1, 2012 letter, UPRR supports the project and believes it will make a substantial contribution to the Illinois high speed rail program.

Illinois Commerce Commission
The ICC supports local jurisdictions in paying for safety improvements at highway-rail crossings at local roads and streets. Its support for this project is shown through its financial participation of $7.5 million.

Memorandum of Understanding
The high speed rail project supports the goals and plans outlined in the Memorandum of Understanding (MOU) executed on July 27, 2009 by governors of an eight-state Midwestern region and Mayor Richard M. Daley of Chicago. See Supporting Document #3. The MOU outlines the broad regional support for a Midwestern high speed rail hub that would serve as a key component to the nationwide network envisioned by President Obama and Transportation Secretary LaHood. The MOU specifically mentions the critical Midwestern route from Chicago to St. Louis. Fencing and intersection improvement including signals will complement the Midwest's rail transportation network.

7.0 Benefit-Cost Analysis

A benefit-cost analysis (BCA) was conducted for the Project in accordance with the benefit-cost methodology recommended by the US DOT in the Federal Register (76 FR 50289). The BCA takes into account all costs and safety benefit categories related to reductions in accidents at grade crossings and reductions in trespassing-related casualties. The analysis is for a 30 year period following Project completion 2045.

The dollar figures in this analysis are expressed in 2011 calendar year dollars. The real discount rate this analysis uses for evaluating the project is 7.0%. This discount rate is consistent with US DOT guidance for Tiger 4 grants with OMB Circulars A-4 and A-94.

Figure 14 Benefit-Cost Analysis Summary Results

Scenario	Net Present Value (2011 $ millions)	Economic Rate of Return	Benefit Cost Ratio
IL – Chicago to St. Louis HSR Safety Enhancements(7 percent discount rate)	$89.5	19.4%	1.96

From a safety perspective, the project is anticipated to prevent 71 fatalities, 215 injuries, and 102 property damage accidents over the 30 year analysis period. All of the benefits occur under the US DOT "Safety" category for TIGER IV.

The Project provides significant safety savings, reducing fatalities, injuries and property damage accidents. The value of fatalities alone translates to $145 million over the 30 year analysis period (in discounted 2011 dollars).

Figure 15 Cost Savings

Category	Benefits (7% disc. 2011 $)
Fatalities Savings, Signaling	$13,388,329
Injury Savings, Signaling	$5,687,397
Property Damage Only Savings, Signaling	$106,755
Fatality Savings, Fencing (Non-McLean County)	$74,640,638
Injury Savings, Fencing (Non-McLean County)	$31,033,281
Fatality Savings, McLean County Grade Work	$57,415,875
Total	**$182,272,275**

Figure 16 presents the costs over time, expressed in constant 2011 dollars before present value discounting.

Figure 16 Capital and Rehabilitation Expenditures in 2011 Dollars, Before Present Value Discounting

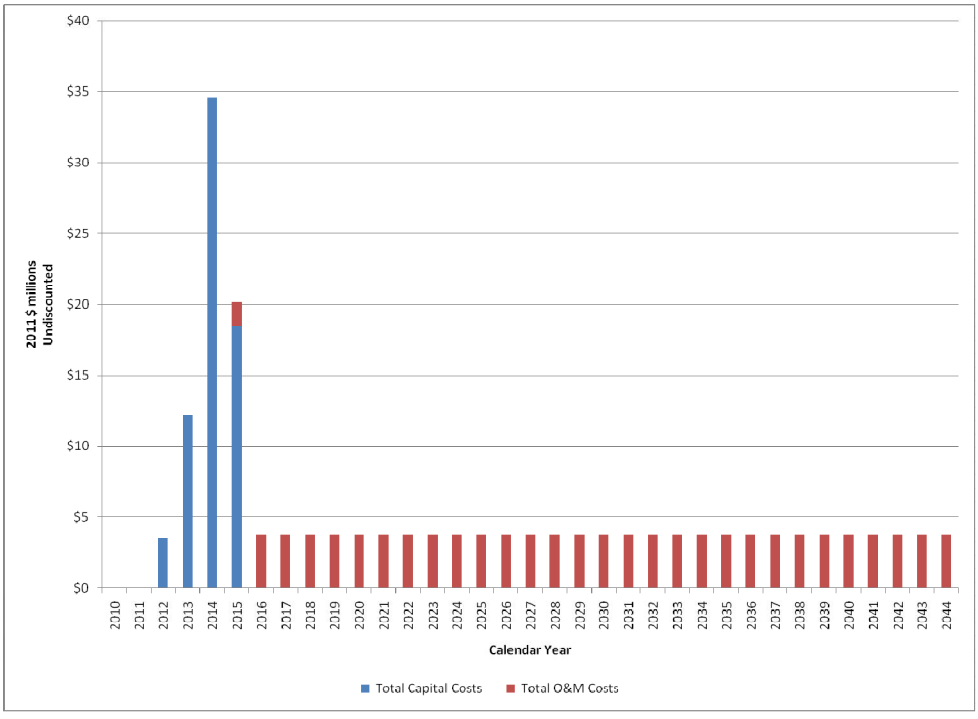
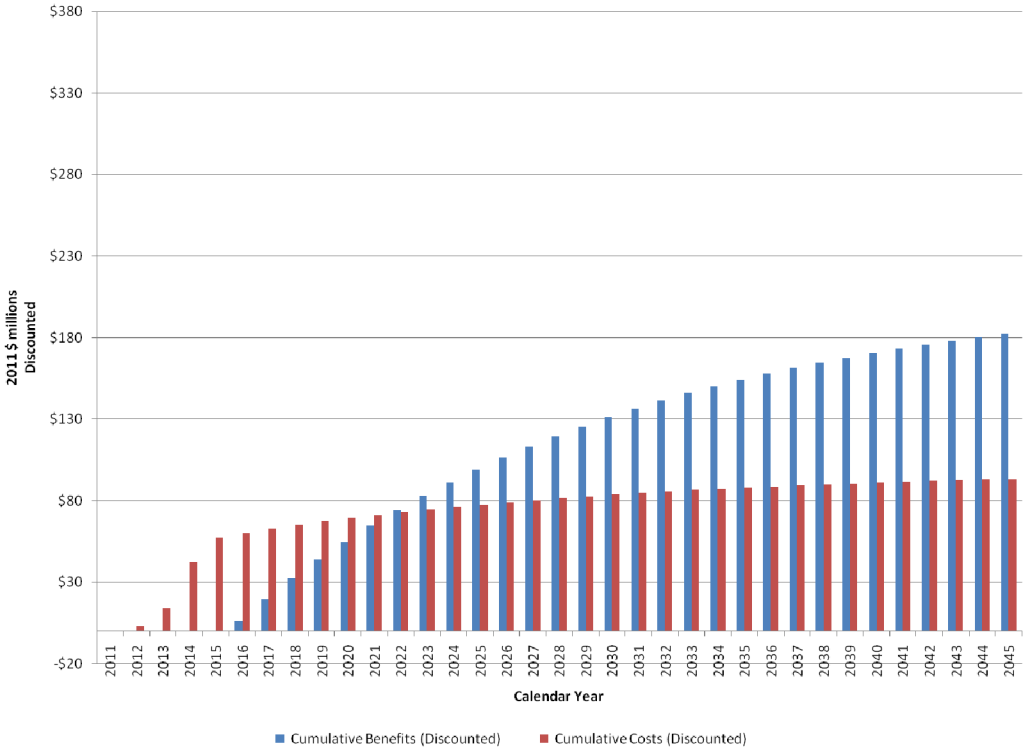


Figure 17 compares the cumulative present value of benefits with the cumulative present value of costs over time for the Base Case 7 percent discount rate. The figure shows that the cumulative discounted benefits exceed the cumulative discounted costs by mid 2020.

Figure 17 Cumulative Benefits and Costs - Discounted Present Value (2011 $)



The BCA shows that the anticipated quantifiable benefits from the Project exceed their anticipated costs. It is important to note this analysis does not include all of the potential benefits that safety investments will contribute to the region, especially along a corridor that may be used for high-speed rail in the future. The value of these safety benefits in a heavily congested region is substantial, both for today's residents and for the continued economic growth expected in the future.

8.0 Project Schedule

With the exception of the grade separation at Normal, design and NEPA work have already begun for the fencing and grade crossing improvements.[24] The Tiger grant application work is scheduled to begin in April, 2012.[25] The anticipated completion date is December, 2015. Schedules for all three elements of the project are contained herein as Figure 18 Project Schedule by Element and in Supporting Document #7.

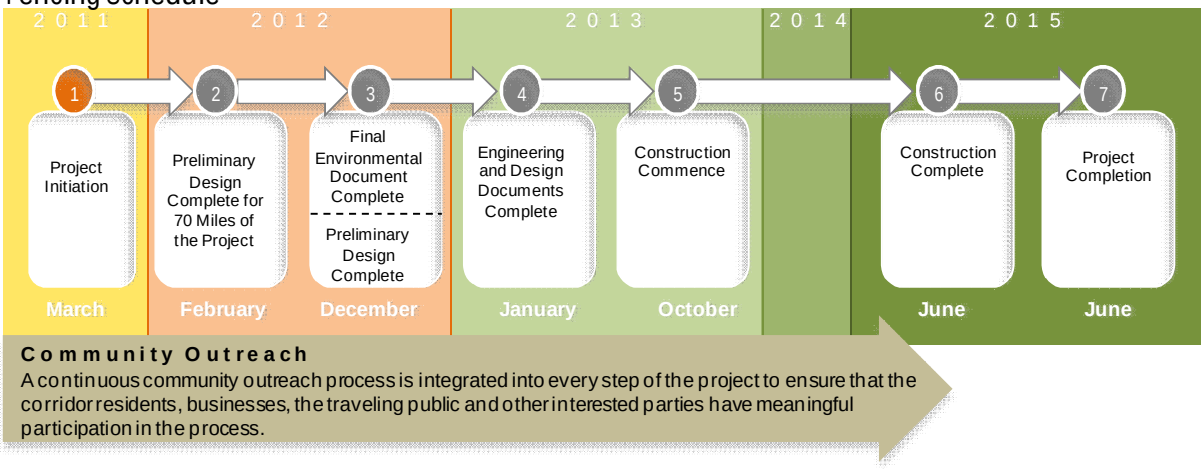
[24] As mentioned previously, for the fencing and grade crossing adjustment elements, IDOT only seeks construction funding. IDOT is applying other sources of funds for the NEPA and design work for fencing and grade crossing adjustments.

[25] Some of the design work for the project began in 2011. With the exception of Normal, IDOT does not seek Federal funding for the design portion of this project. The dates are shown to support IDOT's position that the project has been established and that there will not be any issue completing it by 2015.

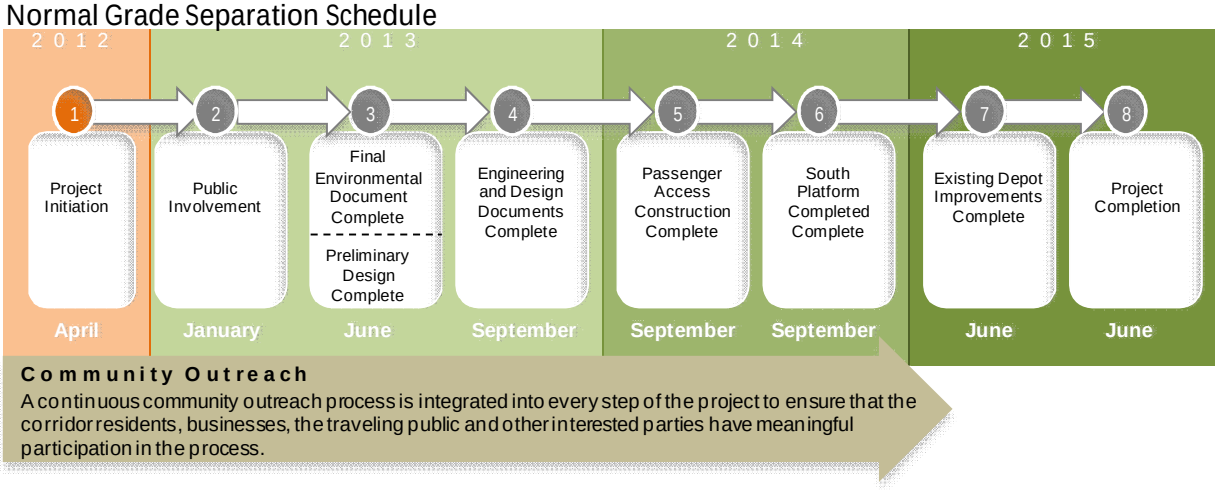
Figure 18 Project Schedule by Element

PROJECT SCHEDULE

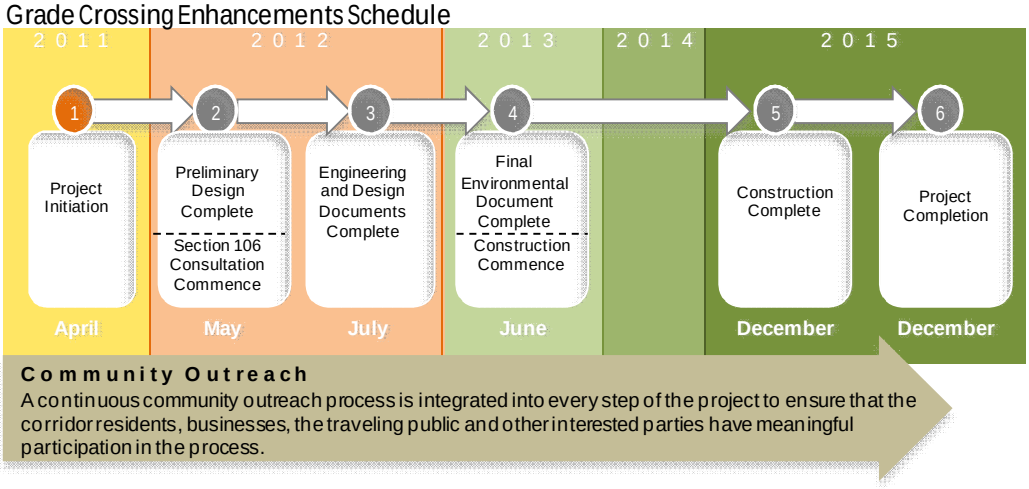
Fencing Schedule



Normal Grade Separation Schedule



Grade Crossing Enhancements Schedule



9.0 Federal Wage Rate Requirement

Federal Wage Rate Certification

March 7, 2012

Certification for the following TIGER IV Discretionary Grant Applications:

Project Name	TIGER ID
I-80 at US 30 Interchange	dloydidot59919
Chicago to St. Louis High Speed Rail (HSR) Safety Enhancements	weberge96301
Chicago Region Environmental and Transportation and Efficiency Program (CREATE)	destewart30549

The Illinois Department of Transportation will comply with the provisions of subchapter IV of chapter 31 of title 40, United States Code as required by the FY 2011 Continuing Appropriations Act.

Ann Schneider

Ann Schneider, Secretary

10.0 National Environmental Policy Act Requirement

The Chicago to St. Louis High-Speed Rail Corridor Project completed an Environmental Impact Statement (EIS) in 2003 to comply with the National Environmental Policy Act (NEPA). In 2004, the FRA issued a ROD for the Project. The ROD identified the preferred alternative (as described in the 2003 Final EIS), which involved an incremental approach to upgrading the line to support implementing high-speed rail service using the existing Chicago to St. Louis Amtrak route.

Fencing. Fencing will be installed within the existing railroad right-of-way. It will not impact natural or historic resources. It will not result in displacements. The fencing work is included as a commitment in the 2004 Record of Decision (ROD) which supports the current high speed rail program. It commits IDOT to coordinate the fencing location, style and height with each local community; IDOT will confer with affected communities. Additional environmental documentation will be conducted as needed for any additional fencing land needs not covered in the original environmental document. If this occurs, IDOT anticipates the impacts would be minimal and likely require only the completion of FRA's categorical exclusion (CE) worksheet. A draft FRA categorical exclusion worksheet is included with this application as Supporting Document #9.

NEPA requirements for fencing are estimated to be complete by December, 2012. The fencing work from Joliet to Dwight contained in this application is included in the reevaluation of the NEPA document prepared for the Joliet-Dwight Track Improvement Project, which is also expected to be completed by December 2012.

Grade Separation. The Normal grade separation is located completely within city and railroad right-of way. It will not impact natural or historical resources nor will it result in any displacements. The 2003 EIS and the 2004 ROD will be re-evaluated as necessary. IDOT anticipates that that this element of the project will require the completion of FRA's CE worksheet. The NEPA process for this element of the project will be completed by early June, 2013. The Federal Transit Administration (FTA) prepared an Environmental Assessment (EA) and subsequent Finding of No Significant Impact (FONSI) for a multimodal transportation center in the vicinity of this project. The FTA's EA and FONSI will be consulted during the preparation of the CE.

Road and Grade Separation Enhancements. The grade crossing improvement element is a NEPA re-evaluation of the 2004 ROD. IDOT has divided the crossing adjustment work into two documents, one involving Chippewa, Mazon and Reynolds and one pertaining to E1500N and E 1600N. For Chippewa, Mazon and Reynolds, IDOT awaits FRA's determination as to the required NEPA document. If an EA, the NEPA process will be completed by June 30, 2013. If it is a CE, work will be completed prior to June 30, 2013. IDOT anticipates environmental document for E 1500N and E 1600N will be a CE to be completed by June 30, 2013.

IDOT is currently coordinating two of the improvements (E 1500N and E 1600N) with the Illinois State Historic Preservation Office (SHPO) because of impacts to Historic Route 66, from Cayuga to Chenoa. E 1500N and E 1600N extend north and south of the grade crossing along this route. E 1600N is located in a flood plain and the improvements extend over a culvert south of the grade crossing. The improvement at E 1500N will not impact natural or archaeological resources. The land-use adjacent to E 1500N and E 1600N is agricultural.

The improvements at Mazon and Chippewa may result in displacements. The improvements at Reynolds will include a traffic signal. The land adjacent to these intersections is composed of a mix of commercial, industrial and residential land uses. These improvements will not impact natural resources or Route 66.

The Final EIS can be located at the following site: http://www.dot.il.gov/hsrail/highspdinfo.html The ROD is attached to this application as Supporting Document #8.

11.0 Supporting Documents

1. Towns Likely to Receive Fencing Improvements
2. Union Pacific Support Letter
3. 8-State Memorandum of Understanding
4. Typical High Speed Rail Fence Use
5. Passenger Grade Separation at Normal
6. Road Adjustment Plans
7. Detailed Schedules
8. Record of Decision (ROD)
9. DRAFT Categorical Exclusion Worksheet
10. Jobs Analysis
11. Benefit-Cost Analysis

SUPPORTING DOCUMENTS
TIGER 4 GRANT APPLICATION
ILLINOIS DEPARTMENT OF TRANSPORTATION

IL-Chicago to St. Louis High Speed Rail Safety Enhancements
MARCH 19, 2012

List of Attached Documents

1. Towns Likely to Receive Fencing Improvements
2. Union Pacific Support Letter
3. 8-State Memorandum of Understanding
4. Typical High Speed Rail Fence Use
5. Passenger Grade Separation at Normal
6. Road Improvement Plans
7. Detailed Schedules
8. Record of Decision (ROD)
9. DRAFT Categorical Exclusion Worksheet
10. Jobs Analysis
11. Benefit-Cost Analysis

Supporting Document #1 - Towns Likely Included in Right-of-Way Fencing

Right-of-Way Fencing – Towns Likely Included

(All towns located in Illinois)

1. Joliet
2. Elwood
3. Wilmington
4. Braidwood
5. Godley
6. Braceville
7. Gardner
8. Dwight
9. Chenoa
10. Lexington
11. Towanda
12. Normal
13. Bloomington
14. McLean
15. Atlanta
16. Lawndale
17. Lincoln
18. Broadwill
19. Elkhart
20. Williamsville
21. Sherman
22. Springfield (North)
23. Springfield (South)
24. Chatham
25. Auburn
26. Thayer
27. Virden
28. Girard
29. Nilwood
30. Carlinville
31. Shipman
32. Brighton
33. Godfrey
34. Alton
35. East Alton
36. Wood River
37. Hartford
38. Granite City
39. Venice

Supporting Document #2 Union Pacific Support Letter

Mr. George E. Weber, Director
Public and Intermodal Transportation
Illinois Department of Transportation
James R. Thompson Center, Suite 6-100
100 West Randolph Street
Chicago, Illinois 60601

DATE: March 1, 2012

SUBJECT: UPRR's Support of IDOT's 2012 TIGER IV Grant Application

Dear Mr. Weber:

This letter is in reference to the application of the Illinois Department of Transportation (IDOT) for funds made available through the 2012, TIGER IV, Grant Program. We understand that your application seeks funding for construction of 79 miles of fencing at 39 locations along the Illinois High Speed Rail corridor, a passenger grade separation at the Normal Station, and roadway modifications in support of installation of safety improvements at several road crossings within the corridor.

This grant application involves infrastructure along the high-speed rail service corridor owned by UPRR between Chicago and St. Louis on our Springfield and Joliet subdivisions. These projects are expected to make a positive contribution to safety in the high speed rail program in which UPRR is an active partner. As such, we are pleased to be able to offer this letter of support.

Very truly yours,

John H. Rebensdorf
VP Network Planning & Operations

UNION PACIFIC RAILROAD
1400 Douglas St., Stop 1110, Omaha, NE 68179-1110
ph. (402) 544-4279 fx. (402) 501-0227
jrebensd@up.com

MEMORANDUM OF UNDERSTANDING

Involving

State of Illinois,

State of Indiana,

State of Iowa,

State of Michigan,

State of Minnesota,

State of Missouri,

State of Ohio,

State of Wisconsin, and

City of Chicago

For

The Implementation of High-Speed Rail Passenger Service and Connections

Involving Corridors Linking Cities in their Respective States

This Memorandum of Understanding (MOU) is entered into this 27th day of July, 2009, by the Governors in eight Midwestern states, including Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio and Wisconsin, and the Mayor of the City of Chicago (MOU Participants) for the purpose of coordinating and documenting individual applications to the Federal Railroad Administration (FRA) for funding from the American Recovery and Reinvestment Act of 2009 (ARRA) to develop the Chicago Hub High-Speed Rail Corridor (Midwest corridor). The Midwest corridor will connect cities throughout the Midwest with frequent and reliable high-speed and conventional intercity rail service, and will provide service connections to adjoining regional corridors.

This MOU establishes MOU Participants' respective roles and responsibilities in implementing actions relating to the establishment of high-speed and conventional intercity rail passenger service. This rail service is to be operated along corridors established as part of the Midwest Regional Rail Initiative (MWRRI), a collaborative effort by managers and directors of Midwestern State transportation agencies, established in 1996, to plan the rail priorities of the region. This MOU also recognizes Chicago as the hub of Midwestern rail operations, which is consistent with plans outlined in the FRA's "Vision for High-Speed Rail in America" and the regional vision for a Midwest corridor. This MOU further recognizes the importance of adjoining and complementary corridors not specifically recognized in the MWRRI plan, for purposes of connecting and providing service to all parts of the nation.

WHEREAS, the Chicago Hub is the center of our country's rail transportation network and includes regional intercity/interstate passenger rail corridors serving the multistate Midwestern region with corridor connections to the East Coast, to the West Coast, to the Gulf Coast and to Canada.

WHEREAS, the Midwest Regional Rail Initiative (MWRRI) and the Ohio and Lake Erie Regional Rail (Ohio Corridor), are collaborative efforts established to plan the rail priorities of the multistate Midwest region.

WHEREAS, all MOU Participants agree upon, support and understand the national and Midwest regional priority and importance of a nationwide network including a Chicago Hub that could host trains traveling up to 110 miles per hour serving major cities and mid-sized cities across the region, along with connections to adjoining regional corridors, as envisioned and outlined by President Obama and U.S. Transportation Secretary LaHood.

WHEREAS, the Congress of the United States has made available to the various states a total of $8 billion in funds through ARRA for the purpose of funding the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) to establish and improve high-speed passenger rail service throughout the nation.

WHEREAS, all participating states, in partnership with the FRA, agree to advocate for additional appropriations through Congress, in support of these collaborative efforts.

WHEREAS, all MOU Participants agree upon and support a regional and national vision for developing a high-speed and conventional rail network across the Midwest that will provide expanded and ongoing service opportunities throughout the region, with connections to corridors across the nation.

WHEREAS, all MOU Participants recognize a priority to establish high-speed rail service from the Chicago Hub to corridors consisting of Chicago-St. Louis, Chicago to Milwaukee-Madison, and Chicago to Detroit-Pontiac, that would form a high-speed hub in the heart of the nation with high-speed and conventional passenger train service connections radiating to seven other Midwestern states and beyond:

- Connecting to the East by way of Indiana with the Ohio network and service to Toledo and the 3C Corridor: Cleveland-Columbus-Dayton-Cincinnati;
- Connecting to the Southeast to Indianapolis, Indiana and Cincinnati, Ohio;
- Connecting to the Northeast to Grand Rapids/Holland and Port Huron, Michigan;
- Connecting to the North to Green Bay, Wisconsin;
- Connecting to the Northwest to the Twin Cities of Minnesota;
- Connecting to the Southwest and West through St. Louis to Kansas City, Missouri;
- Connecting to the South to Carbondale, Illinois;
- Connecting to the West to Quad Cities, Ill.-Iowa City, Iowa-Des Moines, Iowa-Omaha, Neb.; and to Quincy, Illinois.

NOW, THEREFORE, be it resolved that the Governors and the Mayor of Chicago agree they will:

- Establish a high-level, multi-state steering group with a representative from each signatory to this MOU. The purpose of the Midwest Rail Steering Group will be to coordinate the region's applications and work associated with all ARRA application to provide guidance, leadership and a single advocacy voice in support of the region's collective high-speed rail priorities. The Steering Group shall identify a point of contact between MOU Participants and the U.S. Department of Transportation.

- Coordinate and cooperate fully in support of each MOU Participant's individual state applications for high-speed and intercity rail funding.

- Coordinate and negotiate with the major railroads to sign agreements for the development of high-speed rail corridors, and the identified individual projects by stated priority.

- Be free to pursue individual memoranda of agreement or understanding among MOU Participants, related to specific projects involved in support of the overall application and vision for the Midwest corridor.

- Be separately responsible for any and all work taking place within their respective state boundaries.

- Allow other Midwestern or contiguous states the opportunity to join in this MOU at any time if they are willing to support all aspects of the agreement in place.

BE IT FURTHER RESOLVED THAT the parties may mutually agree in writing to amend this MOU and to develop such additional provisions and procedures as they determine to be necessary in order to pursue the development of high-speed and conventional intercity passenger rail service.

AND, FINALLY, BE IT RESOLVED THAT in signing this MOU, the undersigned understand and accept the roles and responsibilities assigned to each of the parties. Each of the parties agrees to cooperate to the maximum extent possible to ensure that the project is developed in full compliance with Federal and State requirements and to ensure that there is maximum communication and minimum duplication of effort.

State of Illinois

Pat Quinn, Governor

Date 7/27/09

State of Indiana

Mitch Daniels, Governor

Date 7/27/09

State of Iowa

Chet Culver, Governor

Date 7/27/09

State of Michigan

Jennifer Granholm, Governor

Date 7/27/09

State of Missouri

Jay Nixon, Governor

Date 7/27/09

State of Minnesota

Tim Pawlenty, Governor

Date 7/27/09

State of Ohio

Ted Strickland, Governor

Date 7/27/09

State of Wisconsin

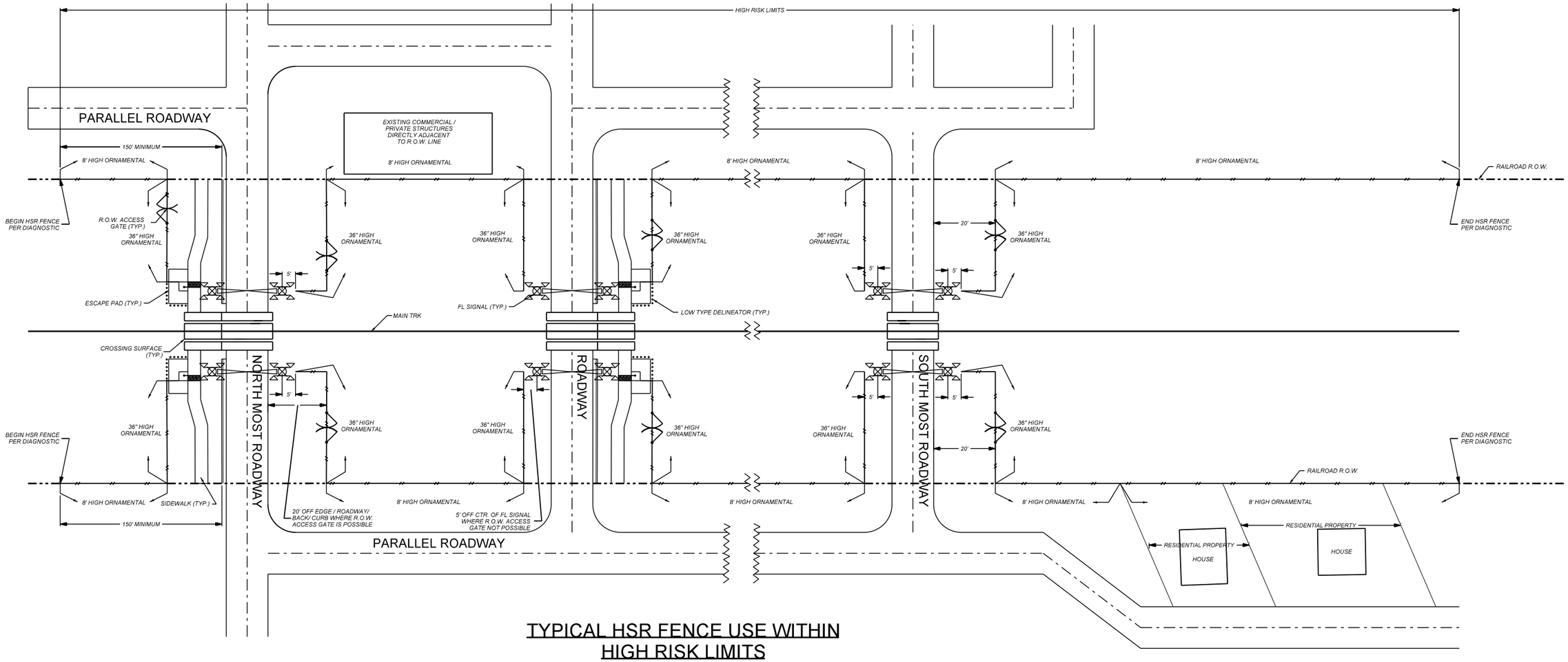
Jim Doyle, Governor

Date 7/27/09

City of Chicago

Richard M. Daley, Mayor

Date 7/27/09



TYPICAL HSR FENCE USE WITHIN HIGH RISK LIMITS

(NOT TO SCALE)

DRAFT

NOTE:
1) HIGH RISK LIMITS DEFINED AS THE CENTRAL BUSINESS DISTRICT, URBAN AND SUBURBAN AREAS WHERE TRESPASSING IS KNOWN OR LIKELY TO OCCUR AND WHERE BUSINESS, RESIDENTIAL, COMMERCIAL, SCHOOLS AND RECREATIONAL FACILITIES ARE IN CLOSE PROXIMITY OF THE TRACKS.

LEGEND

- HSR ORNAMENTAL FENCING
- HSR CHAIN LINK FENCING
- LOW TYPE DELINEATOR
- TRACK CENTERLINE
- RAILROAD R.O.W.
- ROADWAY CENTERLINE

DNI

UNION PACIFIC

DRAWN BY:	CTC
CHECKED BY:	WJF
DATE:	02/13/2012
SHEET NUMBER	1 OF 5

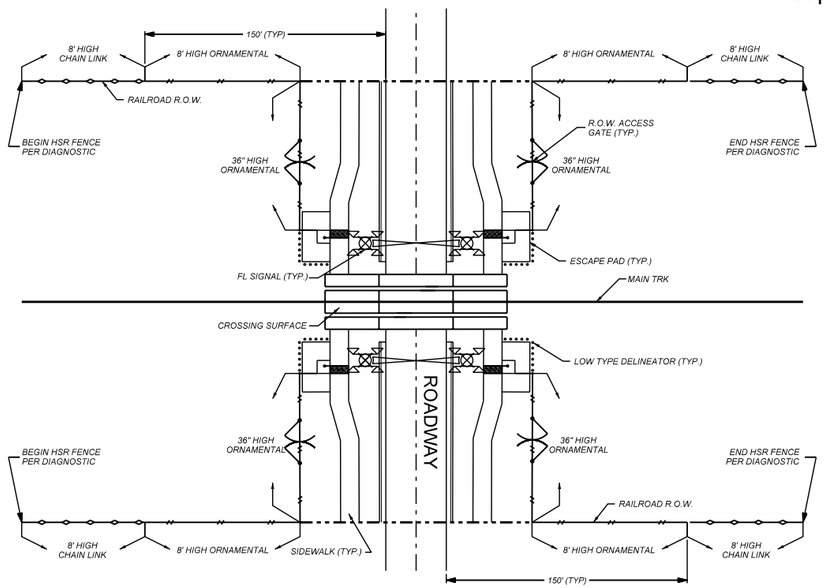
UNION PACIFIC RAILROAD — Office of Assistant Vice President Engineering Design

LOCATION: CHICAGO TO ST. LOUIS HIGH SPEED RAIL

DWG TITLE: TYPICAL HSR FENCE APPLICATIONS

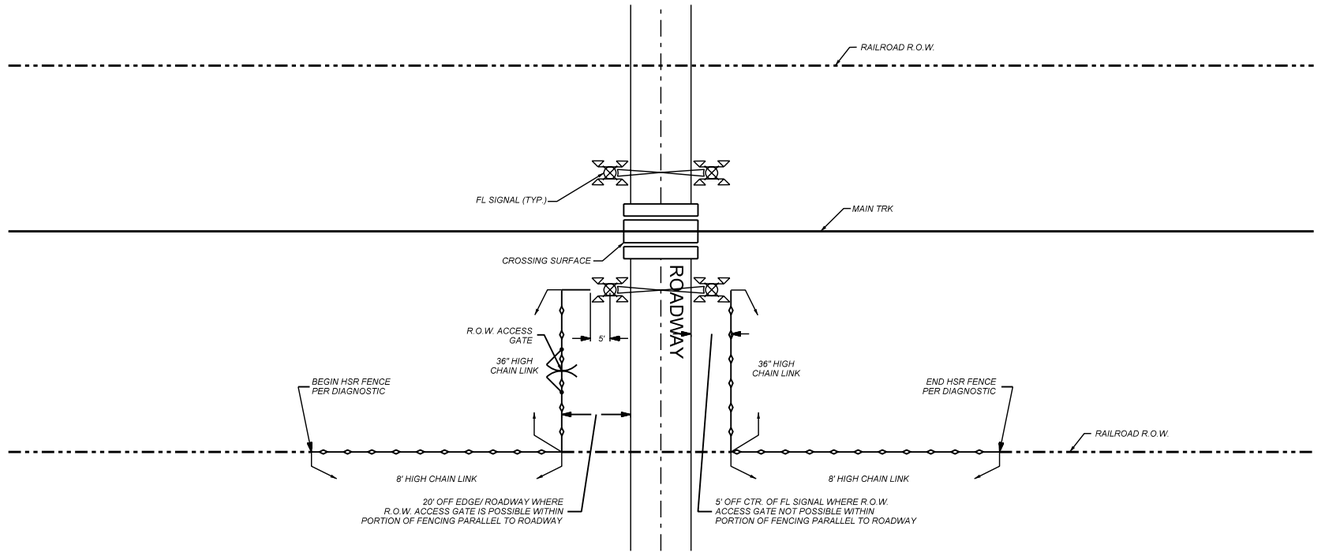
T:\Standards-CAD\Microstation V8\Track\Resource Files\UP\UPRR.tbl
T:\Standards-CAD\Microstation V8\Track\Plot Drivers\UP\HP5550.PEN
S:\2011\URS\HSR Corridor Fencing 100pct\Design\Reference\TYPICAL_FENCING_LIMITS.dgn
2/14/2012 10:15:39 AM

S:\2011\URS\HSR Corridor Fencing 100pct\Design\Reference\TYPICAL_FENCING_LIMITS.dgn



TYPICAL HSR FENCE USE OUTSIDE HIGH RISK LIMITS AT ROADWAY WITH PEDESTRIAN TREATMENT

(NOT TO SCALE)



TYPICAL HSR FENCE USE OUTSIDE HIGH RISK LIMITS AT ROADWAY WITHOUT PEDESTRIAN TREATMENT

(NOT TO SCALE)

DRAFT

LEGEND

- HSR ORNAMENTAL FENCING
- HSR CHAIN LINK FENCING
- LOW TYPE DELINEATOR
- TRACK CENTERLINE
- RAILROAD R.O.W.
- ROADWAY CENTERLINE

DNI

UNION PACIFIC

DRAWN BY:	CTC
CHECKED BY:	WJF
DATE:	02/13/2012
SHEET NUMBER	2 OF 5

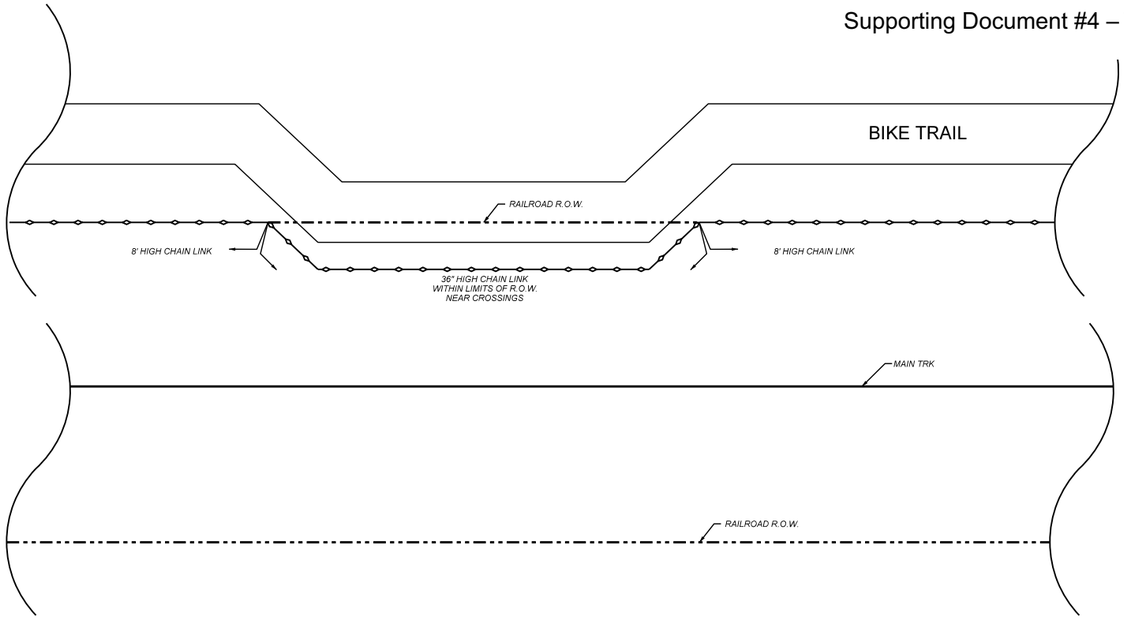
UNION PACIFIC RAILROAD — Office of Assistant Vice President Engineering Design

LOCATION: CHICAGO TO ST. LOUIS HIGH SPEED RAIL

DWG TITLE: TYPICAL HSR FENCE APPLICATIONS

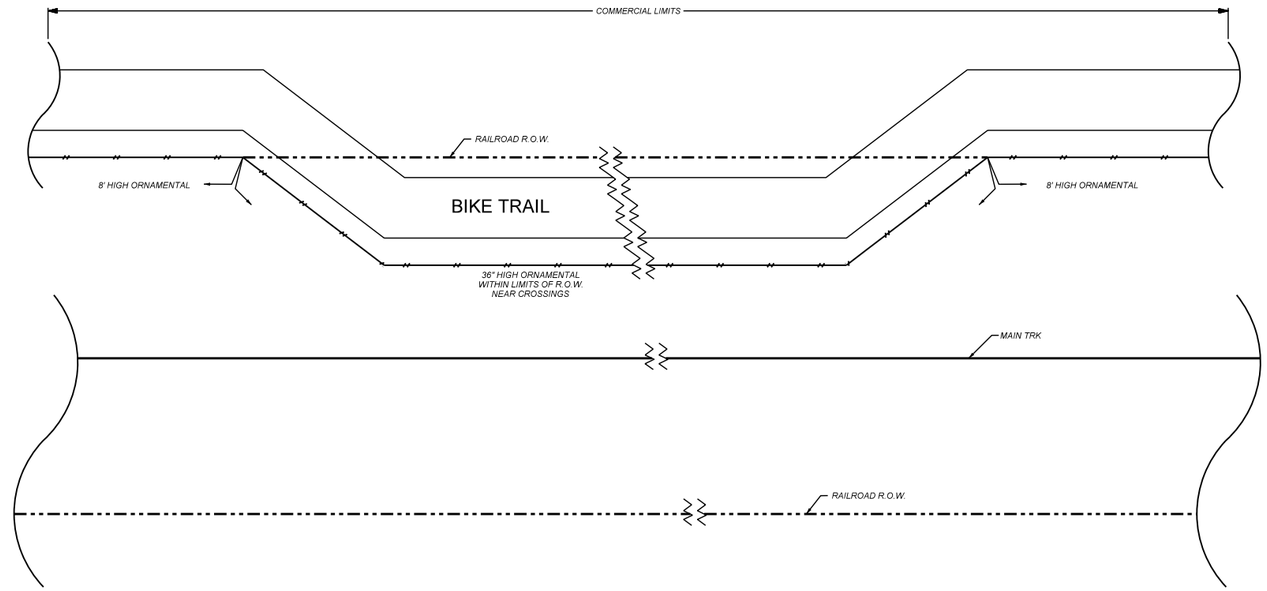
S:\20II\URS\HSR Corridor Fencing 100pct\Design\Reference\TYPICAL_FENCING_LIMITS.dgn

I:\Standards-CAD\Microstation V8\Track\Resource Files\UP\UPRR.tbl
I:\Standards-CAD\Microstation V8\Track\Plot Drivers\UP\HP5550.PEN
S:\20II\URS\HSR Corridor Fencing 100pct\Design\Reference\TYPICAL_FENCING_LIMITS.dgn
2/14/2012 10:15:53 AM



TYPICAL HSR FENCE USE ALONG BIKE TRAILS OUTSIDE HIGH RISK LIMITS

(NOT TO SCALE)



DRAFT

TYPICAL HSR FENCE USE ALONG BIKE TRAILS WITHIN HIGH RISK LIMITS

(NOT TO SCALE)

LEGEND

- HSR ORNAMENTAL FENCING
- HSR CHAIN LINK FENCING
- LOW TYPE DELINEATOR
- TRACK CENTERLINE
- RAILROAD R.O.W.
- ROADWAY CENTERLINE

DNI

UNION PACIFIC

DRAWN BY:	CTC
CHECKED BY:	WJF
DATE:	02/13/2012
SHEET NUMBER	3 OF 5

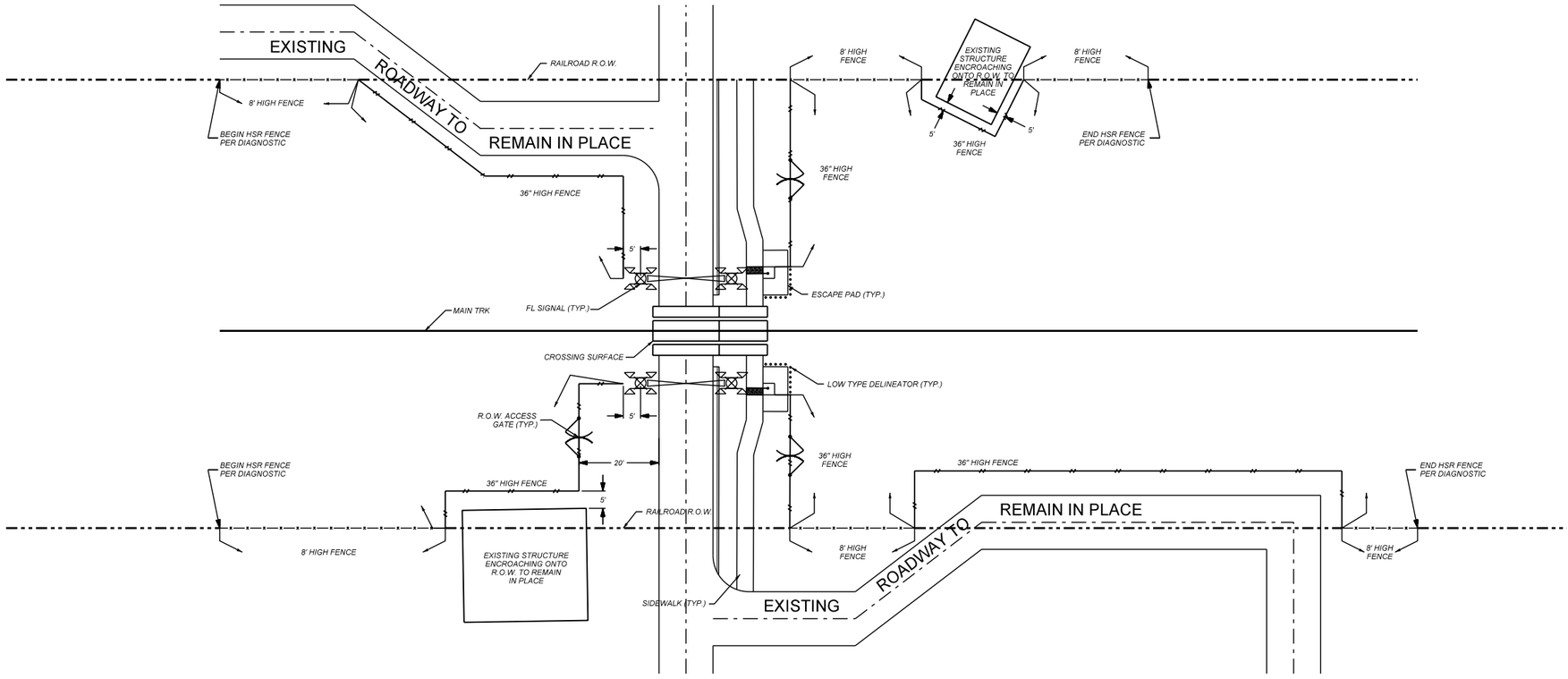
UNION PACIFIC RAILROAD — Office of Assistant Vice President Engineering Design

LOCATION: CHICAGO TO ST. LOUIS HIGH SPEED RAIL

DWG TITLE: TYPICAL HSR FENCE APPLICATIONS

S:\2011\URS\HSR Corridor Fencing 100pct\Design\Reference\TYPICAL_FENCING_LIMITS.dgn

I:\Standards-CAD\Microstation V8\Track\Resource Files\UP\UPRR.tbl
I:\Standards-CAD\Microstation V8\Track\Plot Drivers\UP\HP5550.PEN
S:\2011\URS\HSR Corridor Fencing 100pct\Design\Reference\TYPICAL_FENCING_LIMITS.dgn
2/14/2012 10:16:10 AM



TYPICAL HSR FENCE HEIGHT PLACEMENT

(NOT TO SCALE)

DRAFT

LEGEND

- HSR 36" HIGH FENCING
- HSR 8' HIGH FENCING
- LOW TYPE DELINEATOR
- TRACK CENTERLINE
- RAILROAD R.O.W.
- ROADWAY CENTERLINE

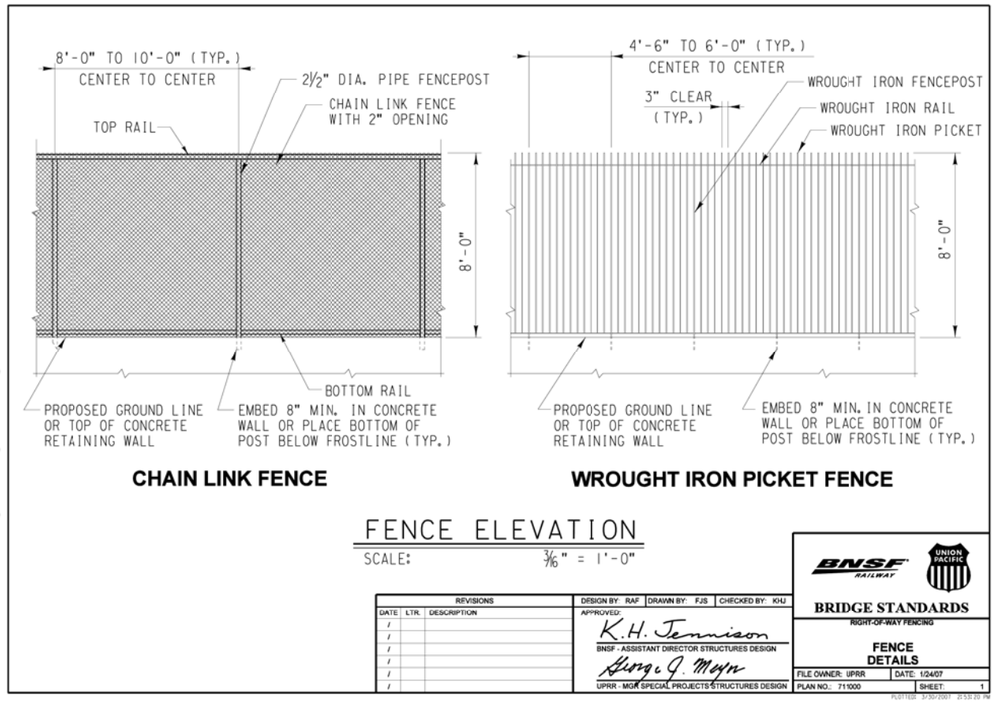
DNI

UNION PACIFIC

DRAWN BY: CTC	UNION PACIFIC RAILROAD — Office of Assistant Vice President Engineering Design
CHECKED BY: WJF	LOCATION: CHICAGO TO ST. LOUIS HIGH SPEED RAIL
DATE: 02/13/2012	DWG TITLE: TYPICAL HSR FENCE APPLICATIONS
SHEET NUMBER 4 OF 5	

T:\Standards-CAD\Microstation V8\Track\Resource Files\UP\UPRR.tbl
T:\Standards-CAD\Microstation V8\Track\Plot Drivers\UP\HP5550.PEN
S:\2011\URS\HSR Corridor Fencing 100pct\Design\Reference\TYPICAL_FENCING_LIMITS.dgn
2/14/2012 10:16:25 AM

S:\2011\URS\HSR Corridor Fencing 100pct\Design\Reference\TYPICAL_FENCING_LIMITS.dgn



FENCE ELEVATION
SCALE: 3/16" = 1'-0"

REVISIONS		
DATE	LTR	DESCRIPTION
/		
/		
/		
/		
/		

DESIGN BY: RAF | DRAWN BY: FJS | CHECKED BY: KHJ

APPROVED:
K.H. Jennison
BNSF - ASSISTANT DIRECTOR STRUCTURES DESIGN
Jorge J. Moyn
UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BNSF RAILWAY | UNION PACIFIC

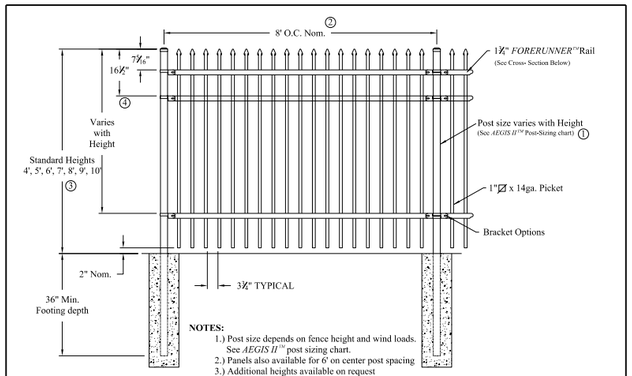
BRIDGE STANDARDS
RIGHT-OF-WAY FENCING

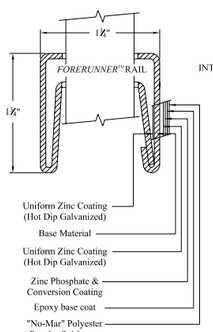
FENCE DETAILS

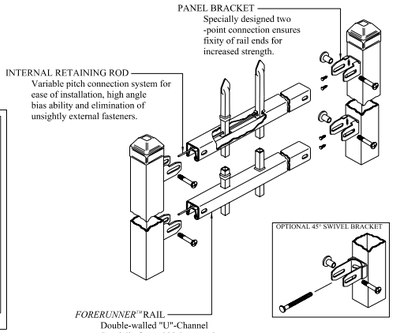
FILE OWNER: UPRR | DATE: 1/24/07
PLAN NO.: 711000 | SHEET: 1

PLOTTED: 3/30/2007 2:53:20 PM

FILE NAME: P:\station\dgn\stdpp_guidelines.dgn



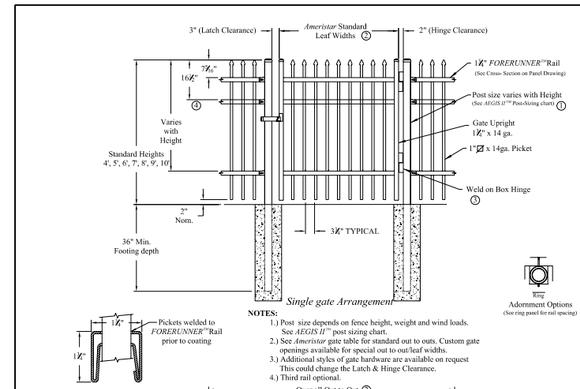




INDUSTRIAL STRENGTH STEEL 2C1SO

Title: AEGIS II CLASSIC 2/3-RAIL		
DR: CI	SH. 1of 1	SCALE: DO NOT SCALE
CK: PB	Date 7/20/09	REV: b

AMERISTAR® 1555 N. Mingo Tulsa, OK 74116 1-888-333-3422 www.ameristarfence.com



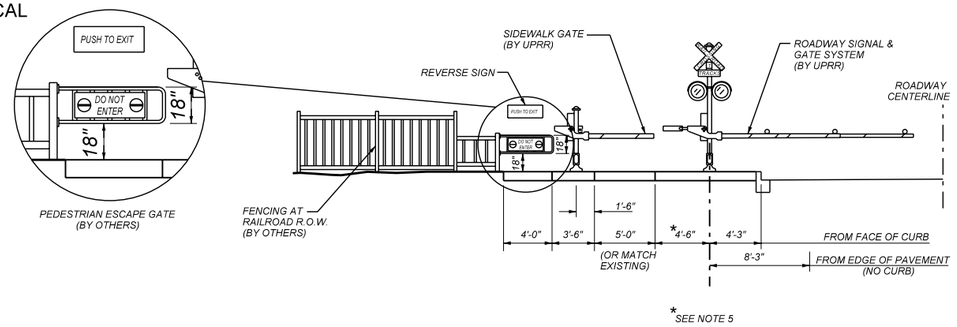
INDUSTRIAL STRENGTH STEEL 2C1SOG

Title: AEGIS II CLASSIC 2/3-RAIL SGL & DBL GATE		
DR: CI	SH. 1of 1	SCALE: DO NOT SCALE
CK: PB	Date 7/20/09	REV: c

AMERISTAR® 1555 N. Mingo Tulsa, OK 74116 1-888-333-3422 www.ameristarfence.com

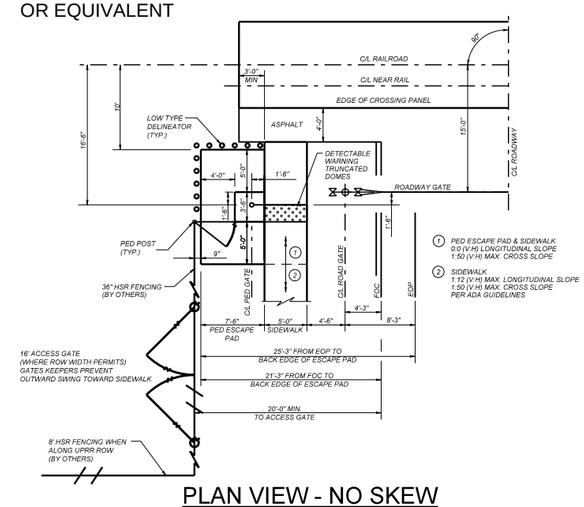
UPRR/BNSF FENCE DETAILS

NOTES:
CONTINUOUS FENCE AND GATE SHALL RECEIVE PROTECTIVE ELECTRICAL GROUND IN ACCORDANCE WITH CURRENT IDOT STANDARDS.



PEDESTRIAN VIEW AT EXIT GATE - TRAIN APPROACHING

MONTAGE/AMERISTAR INDUSTRIAL ORNAMENTAL FENCE & GATE DETAILS OR EQUIVALENT



PLAN VIEW - NO SKEW

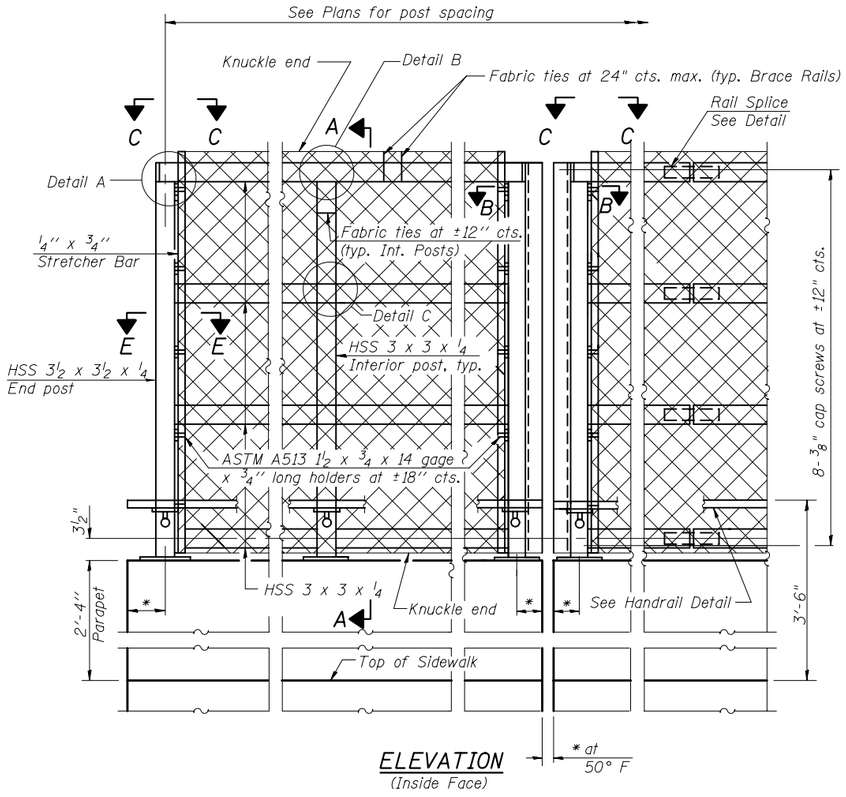
DRAFT

DNI | UNION PACIFIC

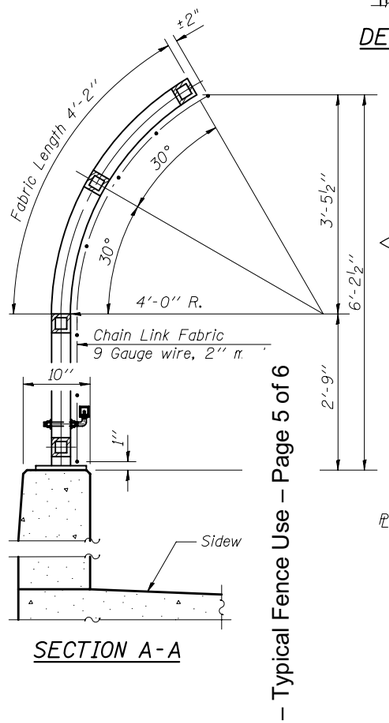
DRAWN BY: CTC	UNION PACIFIC RAILROAD — Office of Assistant Vice President Engineering Design
CHECKED BY: WJF	LOCATION: CHICAGO TO ST. LOUIS HIGH SPEED RAIL
DATE: 02/13/2012	DWG TITLE: TYPICAL HSR FENCE APPLICATIONS
SHEET NUMBER 5 OF 5	

T:\Standards-CAD\Microstation V8\Track\Resource Files\UP\UPRR.tbl
T:\Standards-CAD\Microstation V8\Track\Plot Drivers\UP\HP5550.PEN
S:\2011\URS\HSR Corridor Fencing 100pct\Design\Reference\TYPICAL_FENCING_LIMITS.dgn
2/14/2012 10:8:50 AM

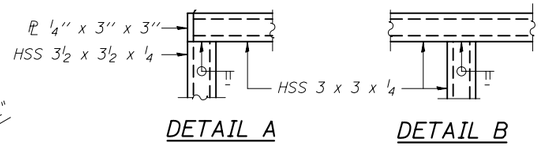
S:\2011\URS\HSR Corridor Fencing 100pct\Design\Reference\TYPICAL_FENCING_LIMITS.dgn



ELEVATION
(Inside Face)

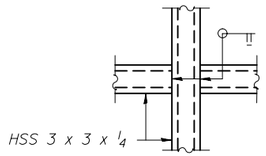


SECTION A-A



DETAIL A

DETAIL B



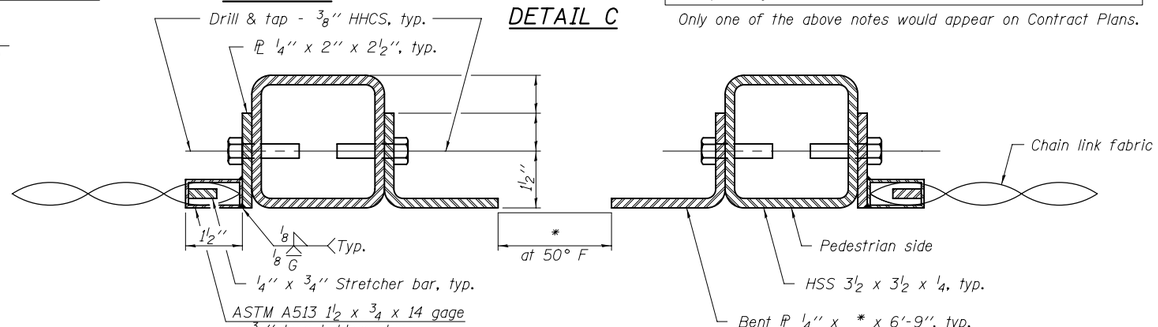
DETAIL C

The designer should add the appropriate note as applicable.

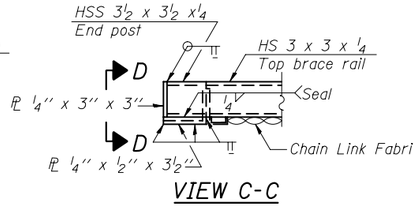
A. When railing is galvanized:
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

B. When railing is painted:
All post, railing, splices, anchor devices, and plates shall be painted using the (List the appropriate paint system for Structural Steel).

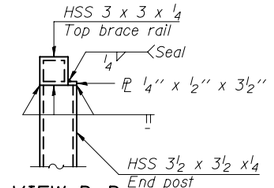
Only one of the above notes would appear on Contract Plans.



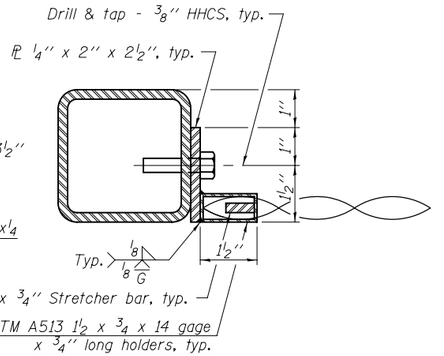
SECTION B-B
(At Expansion Joint)

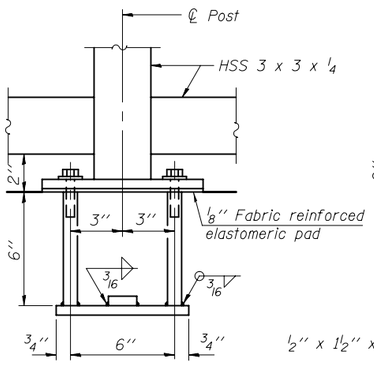


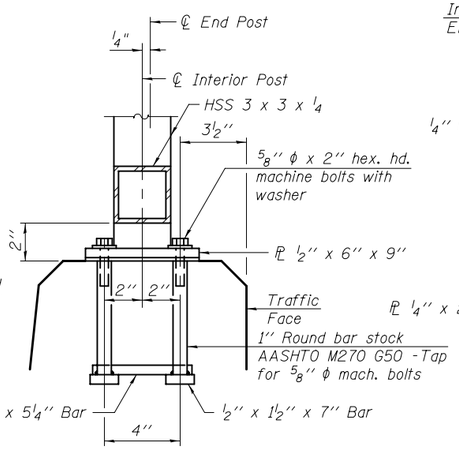
VIEW C-C

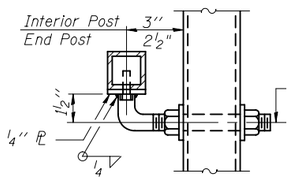


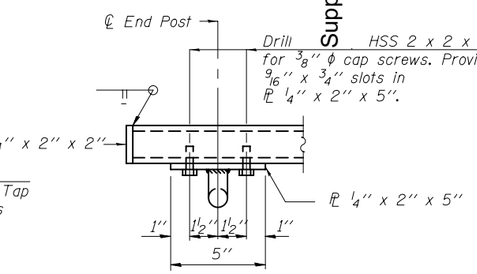
VIEW D-D



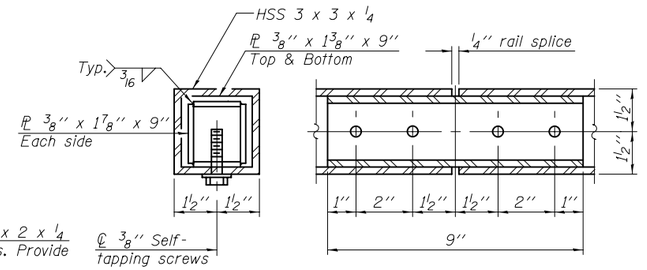




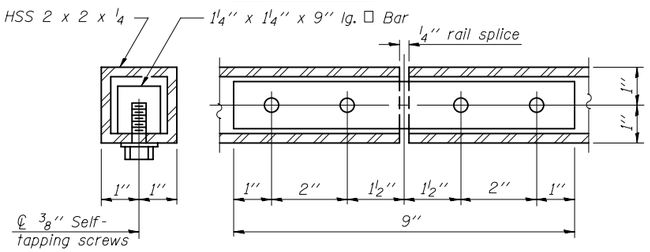




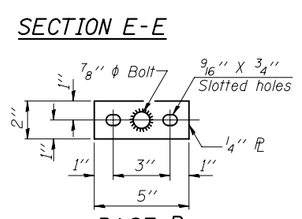
HANDRAIL DETAIL



RAIL SPLICE

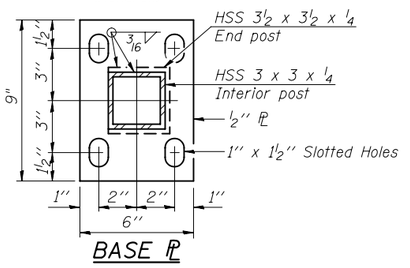


HANDRAIL SPLICE



SECTION E-E

BASE PL
(Handrail)



BASE PL

ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

*Variable - See Plans
(10'-0" Maximum Post Spacing)

BILL OF MATERIAL

Item	Unit	Quantity
Bridge Fence Railing	Foot	

R-32

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED
		CHECKED -	REVISED
	PLOT SCALE =	DRAWN -	REVISED
	PLOT DATE =	CHECKED -	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE FENCE RAILING, PARAPET MOUNTED
STRUCTURE NO.
SHEET NO. OF SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.

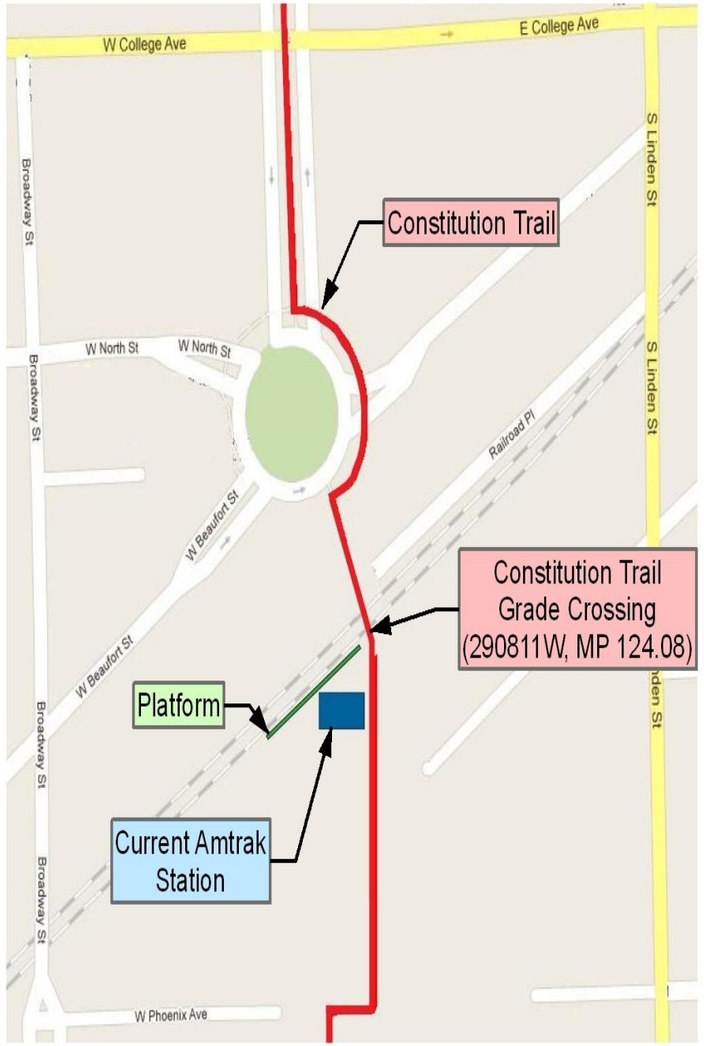
CONTRACT NO.
ILLINOIS FED. AID PROJECT

Supporting Document #4 – Typical Fence Use – Page 5 of 6

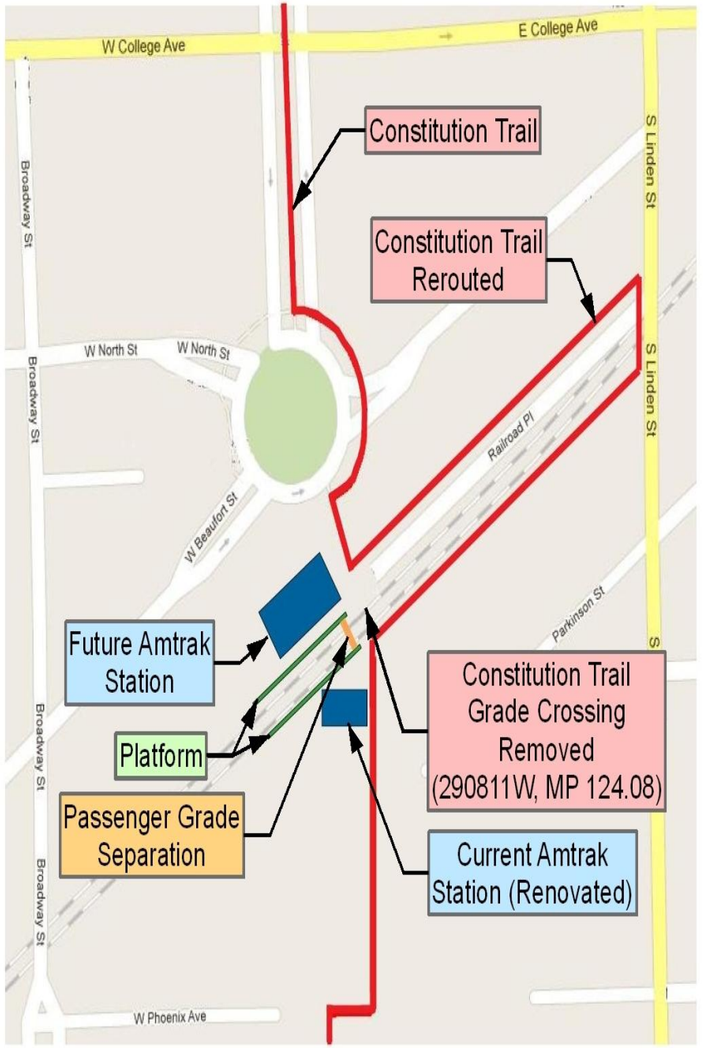
Supporting Document #5 - Passenger Grade Separation at Normal Station (one page)

Passenger Grade Separation - Normal Station

Existing



Future



CONSTRUCTION NOTES

1. STA 55+69.53 REYNOLDS ST = STA 102+72.95 LADD ST ANGLE 64°14'36.03"
2. STA 57+23.02 REYNOLDS ST = STA 204+05.05 OLD AIRPORT RD ANGLE 90°
3. STA 58+09.45 REYNOLDS ST = STA 52+33.85 WEST ST ANGLE 89°25'18.77"
4. STA 56+68.43 REYNOLDS ST AT MAIN TRK 1, ANGLE 75 DEGREES
5. BEGIN IMPROVEMENT REYNOLDS ST MATCH EXISTING STA 54+50.00
6. END IMPROVEMENT REYNOLDS ST MATCH EXISTINGSTA 58+65.00
7. BEGIN IMPROVEMENT LADD ST MATCH EXISTING STA 101+40.00
8. END IMPROVEMENT LADD ST MATCH EXISTING STA 104+35.00
9. BEGIN IMPROVEMENT OLD AIRPORT RD MATCH EXISTING STA 202+20.00
10. BEGIN IMPROVEMENT WEST ST MATCH EXISTING STA 51+92.41
11. CONSTRUCT 10' X 70' CONCRETE PANELS ON 10' CONCRETE TIES PER UPPR STANDARDS
12. COORDINATE NEW BUNGALOW IN SE QUADRANT WITH UPPR FOR FINAL DESIGN
13. PROVIDE ACCESS ROAD TO SIGNAL BUNGALOW BEYOND END OF CURB
14. PROPOSED & EXISTING C/L REYNOLDS ST
15. PROPOSED & EXISTING C/L LADD ST
16. PROPOSED & EXISTING C/L OLD AIRPORT RD
17. PROPOSED & EXISTING C/L WEST STREET
19. PROPOSED AGGREGATE SHOULDER
20. PROPOSED HSR FENCING (TYP)
27. REMOVE & REPLACE SIDEWALKS PER ADA STANDARDS (TYP.)

NOTES NOT LABELED THIS SHEET
(SEE 20 SCALE PLAN SHEET)

18. PROPOSED CURB & GUTTER ALONG PARKING LOT TY. B-6.06
21. STA. 56+47.64, 19.62' RT CONSTRUCT SIGNAL FLASHING LIGHT, GATE, AND FOUNDATION 15' FROM CENTERLINE OF RAIL. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 20.31'; PARALLEL TO TRACKS. PROVIDE SIDELIGHT FOR LADD ST.
22. REMOVE SIGNAL FLASHERS, GATE AND FOUNDATION. (TYP.)
23. STA. 56+60.92, 29.93' LT CONSTRUCT SIGNAL FLASHING LIGHT, GATE, AND FOUNDATION 15' FROM CENTERLINE OF RAIL. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 30.99'; PARALLEL TO TRACKS.PROVIDE SIDELIGHT FOR LADD ST.
24. STA. 56+76.62, 27.37' RT CONSTRUCT SIGNAL FLASHING LIGHT, GATE, AND FOUNDATION 15' FROM CENTERLINE OF RAIL. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 28.33'; PARALLEL TO TRACKS.

N

SCALE

0 50 100 150

ROADWAY CURVE DATA

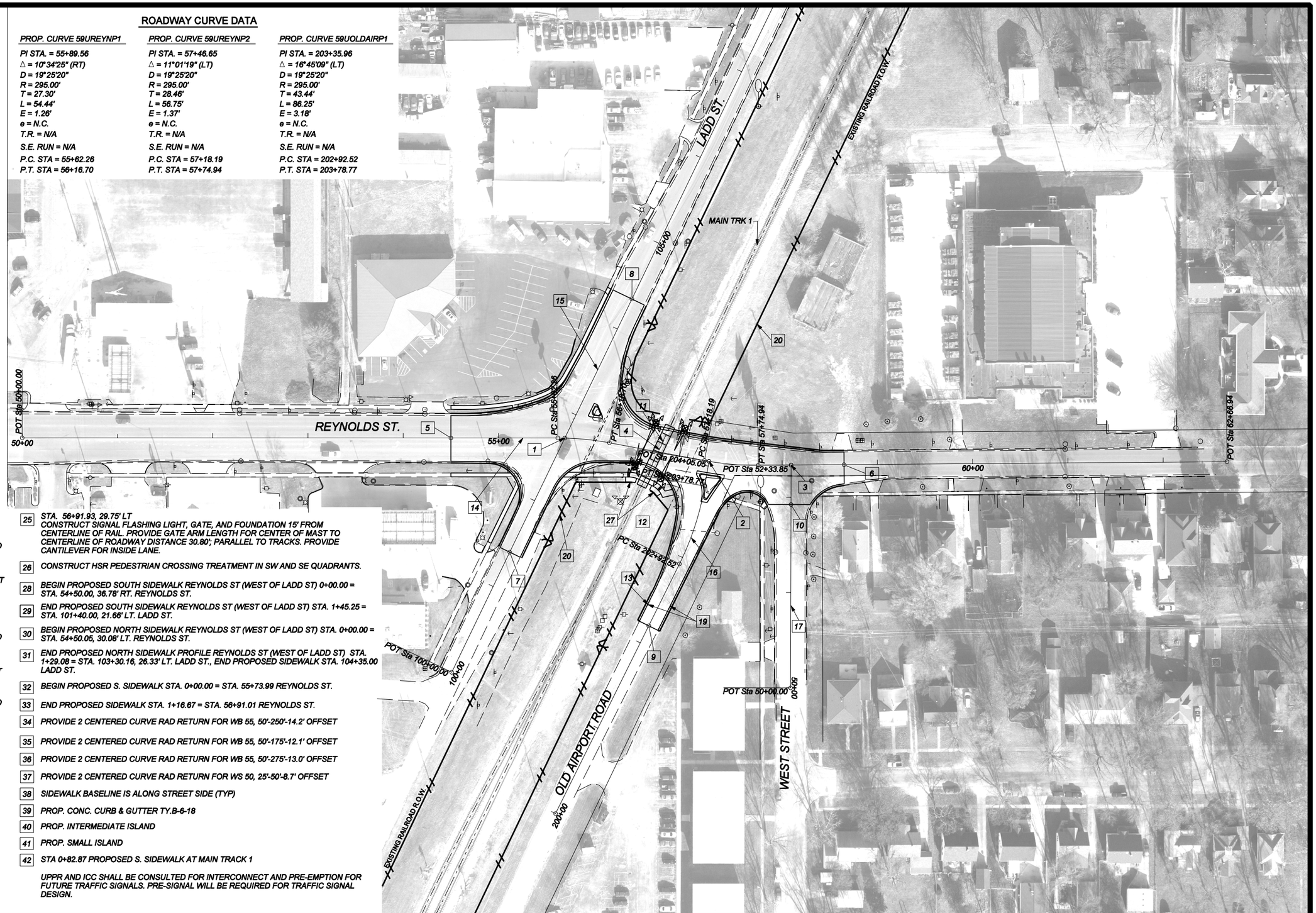
PROP. CURVE 59UREYNP1
PI STA. = 55+89.56
△ = 10°34'25" (RT)
D = 19°25'20"
R = 295.00'
T = 27.30'
L = 54.44'
E = 1.26'
e = N.C.
T.R. = N/A
S.E. RUN = N/A
P.C. STA = 55+62.26
P.T. STA = 56+16.70

PROP. CURVE 59UREYNP2
PI STA. = 57+46.65
△ = 11°01'19" (LT)
D = 19°25'20"
R = 295.00'
T = 28.46'
L = 56.75'
E = 1.37'
e = N.C.
T.R. = N/A
S.E. RUN = N/A
P.C. STA = 57+18.19
P.T. STA = 57+74.94

PROP. CURVE 59UOLDAIRP1
PI STA. = 203+35.96
△ = 16°45'09" (LT)
D = 19°25'20"
R = 295.00'
T = 43.44'
L = 86.25'
E = 3.18'
e = N.C.
T.R. = N/A
S.E. RUN = N/A
P.C. STA = 202+92.52
P.T. STA = 203+78.77

25. STA. 56+91.93, 29.75' LT CONSTRUCT SIGNAL FLASHING LIGHT, GATE, AND FOUNDATION 15' FROM CENTERLINE OF RAIL. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 30.80'; PARALLEL TO TRACKS. PROVIDE CANTILEVER FOR INSIDE LANE.
26. CONSTRUCT HSR PEDESTRIAN CROSSING TREATMENT IN SW AND SE QUADRANTS.
28. BEGIN PROPOSED SOUTH SIDEWALK REYNOLDS ST (WEST OF LADD ST) 0+00.00 = STA. 54+50.00, 36.78' RT. REYNOLDS ST.
29. END PROPOSED SOUTH SIDEWALK REYNOLDS ST (WEST OF LADD ST) STA. 1+45.25 = STA. 101+40.00, 21.66' LT. LADD ST.
30. BEGIN PROPOSED NORTH SIDEWALK REYNOLDS ST (WEST OF LADD ST) STA. 0+00.00 = STA. 54+50.05, 30.08' LT. REYNOLDS ST.
31. END PROPOSED NORTH SIDEWALK PROFILE REYNOLDS ST (WEST OF LADD ST) STA. 1+29.08 = STA. 103+30.16, 26.33' LT. LADD ST., END PROPOSED SIDEWALK STA. 104+35.00 LADD ST.
32. BEGIN PROPOSED S. SIDEWALK STA. 0+00.00 = STA. 55+73.99 REYNOLDS ST.
33. END PROPOSED SIDEWALK STA. 1+16.67 = STA. 56+91.01 REYNOLDS ST.
34. PROVIDE 2 CENTERED CURVE RAD RETURN FOR WB 55, 50'-250'-14.2' OFFSET
35. PROVIDE 2 CENTERED CURVE RAD RETURN FOR WB 55, 50'-175'-12.1' OFFSET
36. PROVIDE 2 CENTERED CURVE RAD RETURN FOR WB 55, 50'-275'-13.0' OFFSET
37. PROVIDE 2 CENTERED CURVE RAD RETURN FOR WS 50, 25'-50'-8.7' OFFSET
38. SIDEWALK BASELINE IS ALONG STREET SIDE (TYP)
39. PROP. CONC. CURB & GUTTER TY.B-6-18
40. PROP. INTERMEDIATE ISLAND
41. PROP. SMALL ISLAND
42. STA 0+82.87 PROPOSED S. SIDEWALK AT MAIN TRACK 1

UPPR AND ICC SHALL BE CONSULTED FOR INTERCONNECT AND PRE-EMPTION FOR FUTURE TRAFFIC SIGNALS. PRE-SIGNAL WILL BE REQUIRED FOR TRAFFIC SIGNAL DESIGN.



Supporting Document #6
Preliminary Plans for Road Improvements
Reynolds St. (Page 1 of 5)

PRELIMINARY
NOT FOR CONSTRUCTION DATE: 01/18/2012

URS

UNION PACIFIC

DRAWN BY:	JTM
CHECKED BY:	MPE
DATE:	18 JAN 2012
SHEET NUMBER	1 of 9

UNION PACIFIC RAILROAD
Office of Assistant Vice President Engineering Design

LOCATION: CHICAGO TO ST. LOUIS HIGH SPEED RAIL

DWG TITLE: CONCEPT ROADWAY CROSSING OVERALL PLAN REYNOLDS ST. (MP 92.47) DOT #290759U

...\PO_MP92-47_REYNOLDS_Overall_PI 1/19/2012 10:30:08 AM

CONSTRUCTION NOTES

1. BEGIN IMPROVEMENT ROUTE 66 MATCH EXISTING STA. 540+87
2. END IMPROVEMENT ROUTE 66 (SB) MATCH EXISTING STA. 497+76.50
3. END IMPROVEMENT ROUTE 66 (NB) MATCH EXISTING STA. 412+72.20
4. BEGIN IMPROVEMENT E1600N RD (WEST LEG) MATCH EXISTING STA. 148+45.00
5. BEGIN IMPROVEMENT E1600N RD (EAST LEG) MATCH EXISTING STA. 54+98.00
6. STA. 150+00 E1600N RD = STA. 530+32.10 ROUTE 66 WEST LEG; ANGLE 66°51'33"
7. STA. 50+00 E1600N RD = STA. 530+26.15 ROUTE 66 EAST LEG, ANGLE 67°44'03"
8. STA. 51+48.5 E1600N RD AT SIDING TRACK, ANGLE 64°44'39"
9. STA. 51+70.6 E1600N RD AT MAIN TRK 1, ANGLE 64°44'39"
10. CONSTRUCT 10' x 50' CONCRETE PANELS ON 10' CONCRETE TIES PER UPRR STDS
11. COORDINATE NEW SIGNAL BUNGALOW IN SAME QUADRANT WITH UPRR FOR FINAL DESIGN
12. PROVIDE ACCESS ROAD TO SIGNAL BUNGALOW.
23. ABANDONED PAVEMENT FOR OLD SOUTHBOUND LANES ROUTE 66
24. PROPOSED CENTERLINE SHIFTED ROUTE 66 (TWO WAY TRAFFIC)
25. PROPOSED CENTERLINE E1600N RD.

ROADWAY CURVE DATA

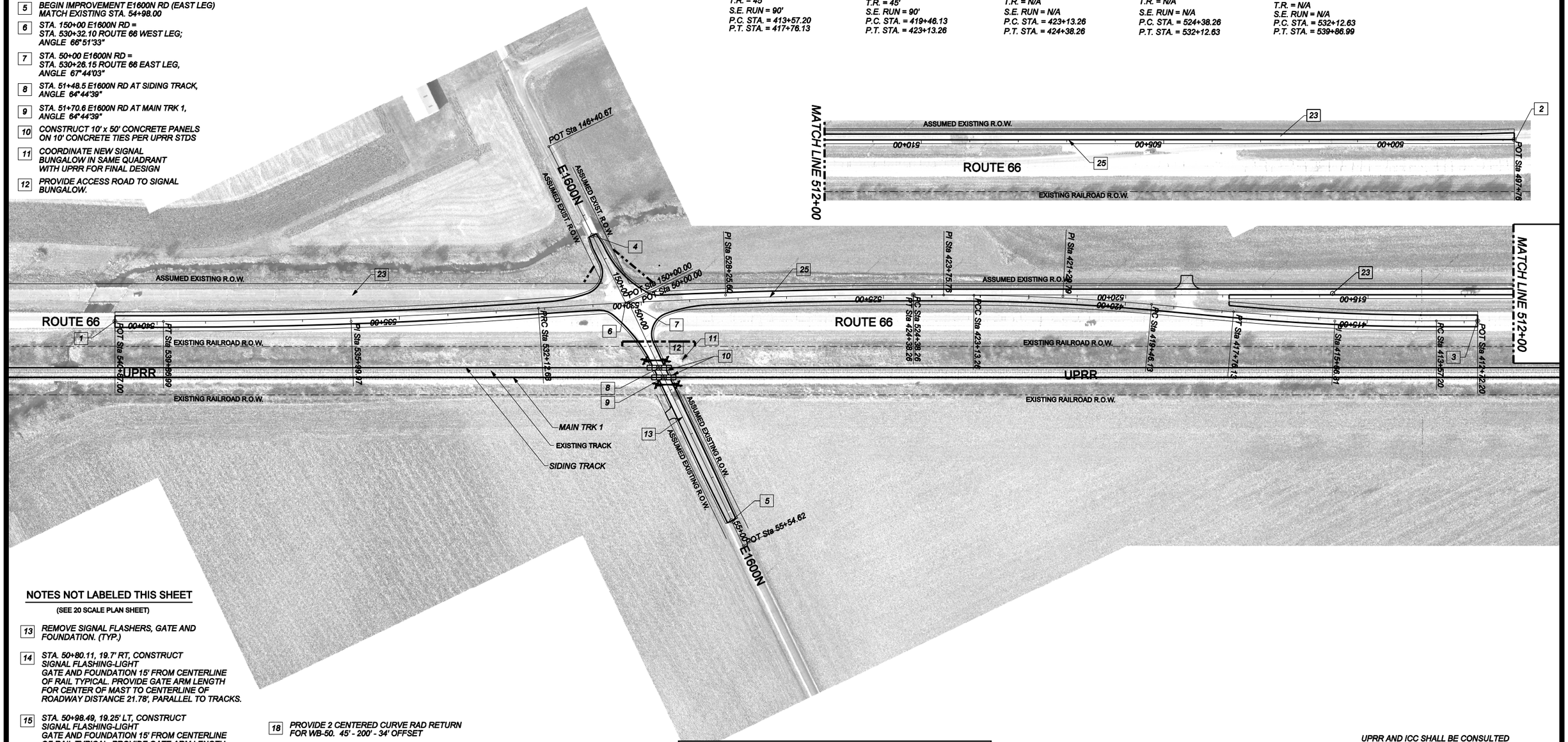
PROP. CURVE 61VRTE66SHO1
PI STA. = 415+66.81
△ = 5° 13' 05" (RT)
D = 1° 14' 44"
R = 4,600.00'
T = 209.61'
L = 418.93'
E = 4.77'
e = 3.2%
T.R. = 45'
S.E. RUN = 90'
P.C. STA. = 413+57.20
P.T. STA. = 417+76.13

PROP. CURVE 61VRTE66SHO2
PI STA. = 421+29.79
△ = 4° 34' 22" (LT)
D = 1° 14' 44"
R = 4,600.00'
T = 183.66'
L = 367.13'
E = 3.67'
e = 3.2%
T.R. = 45'
S.E. RUN = 90'
P.C. STA. = 419+46.13
P.T. STA. = 423+13.26

PROP. CURVE 61VRTE66SHO3
PI STA. = 423+75.76
△ = 0° 38' 43" (LT)
D = 0° 30' 58"
R = 11,100.00'
T = 62.50'
L = 125.00'
E = 0.18'
e = N/A
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 423+13.26
P.T. STA. = 424+38.26

PROP. CURVE 61VRTE66SHP1
PI STA. = 528+25.60
△ = 3° 59' 50" (LT)
D = 0° 30' 58"
R = 11,100.00'
T = 387.34'
L = 774.37'
E = 6.76'
e = N/A
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 524+38.26
P.T. STA. = 532+12.63

PROP. CURVE 61VRTE66SHP2
PI STA. = 535+99.97
△ = 3° 59' 50" (RT)
D = 0° 30' 58"
R = 11,100.00'
T = 387.34'
L = 774.37'
E = 6.76'
e = N/A
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 532+12.63
P.T. STA. = 539+86.99



NOTES NOT LABELED THIS SHEET

(SEE 20 SCALE PLAN SHEET)

13. REMOVE SIGNAL FLASHERS, GATE AND FOUNDATION. (TYP.)
14. STA. 50+80.11, 19.7' RT, CONSTRUCT SIGNAL FLASHING-LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF RAIL TYPICAL. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 21.78', PARALLEL TO TRACKS.
15. STA. 50+98.49, 19.25' LT, CONSTRUCT SIGNAL FLASHING-LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF RAIL TYPICAL. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 21.28', PARALLEL TO TRACKS.
16. STA. 51+35.61, 19.25' RT, CONSTRUCT SIGNAL FLASHING-LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF RAIL TYPICAL. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 21.28', PARALLEL TO TRACKS.
17. STA. 51+53.77, 19.25' LT, CONSTRUCT SIGNAL FLASHING-LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF RAIL TYPICAL. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 21.28', PARALLEL TO TRACKS.
18. PROVIDE 2 CENTERED CURVE RAD RETURN FOR WB-50. 45' - 200' - 34' OFFSET
19. PROVIDE 2 CENTERED CURVE RAD RETURN FOR WB-50. 45' - 300' - 7.5' OFFSET
20. PROVIDE 2 CENTERED CURVE RAD RETURN FOR WB-50. 45' - 300' - 21' OFFSET
21. PROVIDE 2 CENTERED CURVE RAD RETURN FOR WB-50. 45' - 300' - 8' OFFSET
22. EXISTING CENTERLINE ROUTE 66 (TWO WAY TRAFFIC)
26. 10' ENTRANCE RADIUS (TYP)
27. PROP. AGGREGATE SHOULDER
27. PROPOSED R.O.W.

SCALE
0 100 200 300

Supporting Document #6
Preliminary Plans for Road Improvements
E 1600 N (Page 2 of 5)

PRELIMINARY
NOT FOR CONSTRUCTION DATE: 03/09/2012

UPRR AND ICC SHALL BE CONSULTED FOR INTERCONNECT AND PRE-EMPTION FOR FUTURE TRAFFIC SIGNALS. PRE-SIGNAL WILL BE REQUIRED FOR TRAFFIC SIGNAL DESIGN.

URS | UNION PACIFIC

DRAWN BY:	MIA
CHECKED BY:	YOO
DATE:	9 MAR 2011
SHEET NUMBER	1 of 32

UNION PACIFIC RAILROAD — Office of Assistant Vice President Engineering Design

LOCATION: CHICAGO TO ST. LOUIS HIGH SPEED RAIL

DWG TITLE: INTERIM ROADWAY CROSSING OVERALL PLAN E1600N (MP 93.59) DOT #290761V

...\PO_MP93-59_E1600N_OVERALL_PLAN_SB_SHIFT.dgn 3/7/2012 3:39:44 PM

CONSTRUCTION NOTES

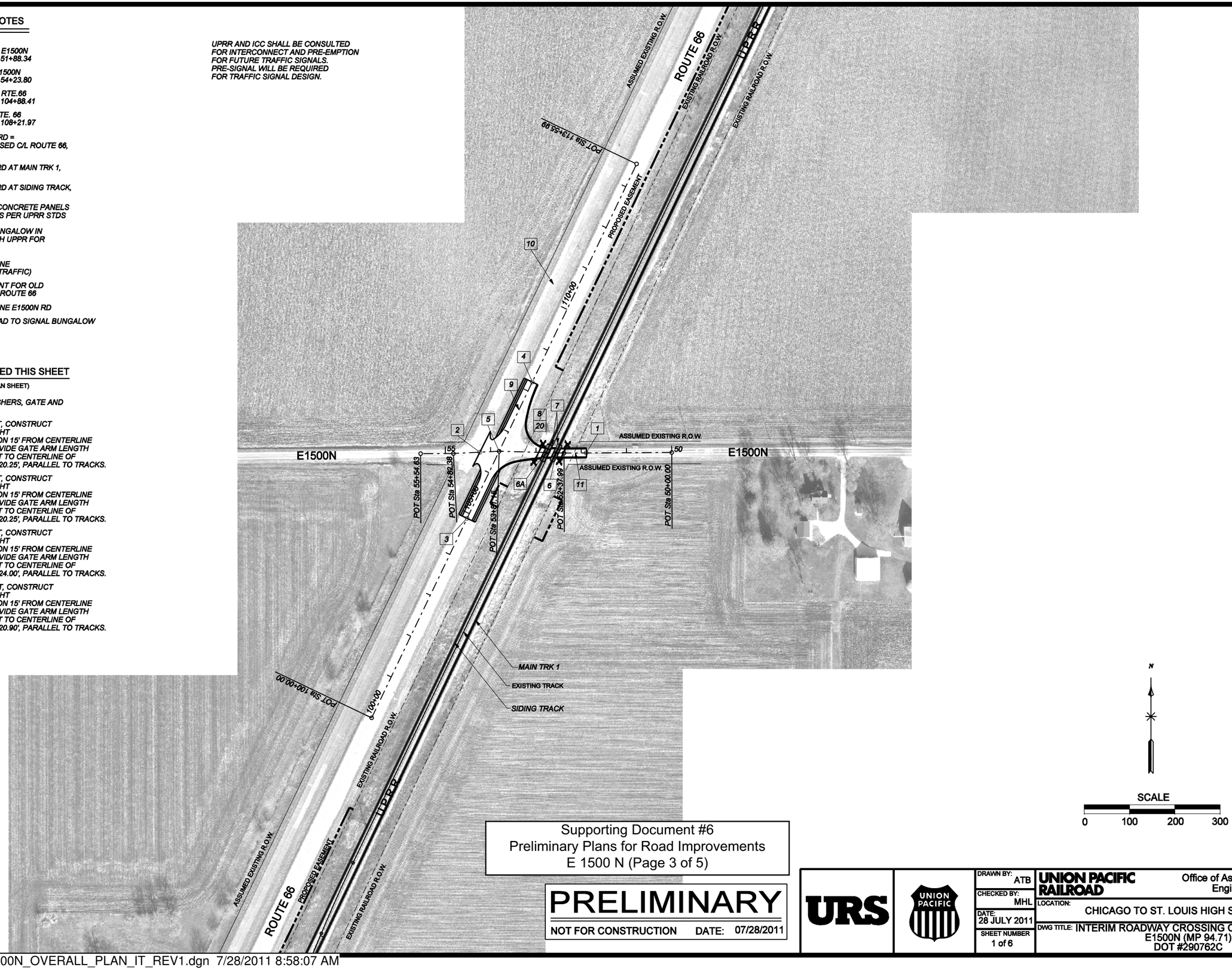
1. BEGIN IMPROVEMENT E1500N MATCH EXISTING STA 51+88.34
2. END IMPROVEMENT E1500N MATCH EXISTING STA 54+23.80
3. BEGIN IMPROVEMENT RTE.66 MATCH EXISTING STA 104+88.41
4. END IMPROVEMENT RTE. 66 MATCH EXISTING STA 108+21.97
5. STA 53+81.15 E1500N RD = STA 106+52.49 PROPOSED C/L ROUTE 66, ANGLE 65°58'55"
6. STA. 52+55.53 E1500N RD AT MAIN TRK 1, ANGLE 66 DEGREES
6A. STA. 52+77.24 E1500N RD AT SIDING TRACK, ANGLE 66 DEGREES
7. CONSTRUCT 10' x 40' CONCRETE PANELS ON 10' CONCRETE TIES PER UPRR STDS
8. COORDINATE NEW BUNGALOW IN SAME QUADRANT WITH UPPR FOR FINAL DESIGN
9. PROPOSED CENTERLINE ROUTE 66 (TWO WAY TRAFFIC)
10. ABANDONED PAVEMENT FOR OLD SOUTHBOUND LANES ROUTE 66
11. PROPOSED CENTERLINE E1500N RD
20. PROVIDE ACCESS ROAD TO SIGNAL BUNGALOW

NOTES NOT LABELED THIS SHEET

(SEE 20 SCALE PLAN SHEET)

12. REMOVE SIGNAL FLASHERS, GATE AND FOUNDATION. (TYP.)
13. STA 52+30.27, 18.25 RT, CONSTRUCT SIGNAL FLASHING-LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF RAIL TYPICAL.PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 20.25', PARALLEL TO TRACKS.
14. STA 52+47.36, 18.49' LT, CONSTRUCT SIGNAL FLASHING-LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF RAIL TYPICAL.PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 20.25', PARALLEL TO TRACKS.
15. STA 53+03.64, 21.91' LT, CONSTRUCT SIGNAL FLASHING-LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF RAIL TYPICAL.PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 24.00', PARALLEL TO TRACKS.
16. STA 52+85.34, 19.09' RT, CONSTRUCT SIGNAL FLASHING-LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF RAIL TYPICAL.PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 20.90', PARALLEL TO TRACKS.

UPRR AND ICC SHALL BE CONSULTED FOR INTERCONNECT AND PRE-EMPTION FOR FUTURE TRAFFIC SIGNALS. PRE-SIGNAL WILL BE REQUIRED FOR TRAFFIC SIGNAL DESIGN.



Supporting Document #6
Preliminary Plans for Road Improvements
E 1500 N (Page 3 of 5)

PRELIMINARY

NOT FOR CONSTRUCTION DATE: 07/28/2011

URS

UNION PACIFIC

DRAWN BY: ATB	UNION PACIFIC RAILROAD — Office of Assistant Vice President Engineering Design
CHECKED BY: MHL	LOCATION: CHICAGO TO ST. LOUIS HIGH SPEED RAIL
DATE: 28 JULY 2011	DWG TITLE: INTERIM ROADWAY CROSSING OVERALL PLAN E1500N (MP 94.71) DOT #290762C
SHEET NUMBER 1 of 6	

...\PO_MP94-71_E1500N_OVERALL_PLAN_IT_REV1.dgn 7/28/2011 8:58:07 AM

CONSTRUCTION NOTES

1. BEGIN IMPROVEMENT CHIPPEWA ST - W MAIN ST MATCH EXISTING STA 303+09.00
2. END IMPROVEMENT CHIPPEWA ST - W MAIN ST MATCH EXISTING STA 308+00.00
3. BEGIN IMPROVEMENT PRAIRIE AVE - CHIPPEWA ST MATCH EXISTING STA 202+00.00
4. END IMPROVEMENT PRAIRIE AVE - CHIPPEWA ST MATCH EXISTING STA 207+40.00
5. BEGIN IMPROVEMENT PRAIRIE AVE - E MAIN ST MATCH EXISTING STA 501+38.00
6. END IMPROVEMENT PRAIRIE AVE - E MAIN ST MATCH EXISTING STA 506+25.50
7. STA 204+81.10 PRAIRIE AVE - CHIPPEWA ST AT MAIN TRK 1, ANGLE 88 DEGREES
8. STA 203+78.89 PRAIRIE AVE - CHIPPEWA ST = STA 306+05.35 CHIPPEWA ST - W MAIN ST ANGLE 61°40' 38.04"
9. STA 205+72.71 PRAIRIE AVE - CHIPPEWA ST = STA 504+90.69 PRAIRIE AVE - E MAIN ST ANGLE 55° 40' 38.75"
10. CONSTRUCT 10' x 70' CONCRETE PANELS ON 10' CONCRETE TIES PER UPRR STDS
11. COORDINATE PROPOSED SIGNAL BUNGALOW LOCATION WITH UPRR
12. PROPOSED CONSTRUCTION CENTERLINE PRAIRIE AVE - CHIPPEWA ST
13. PROPOSED CONSTRUCTION CENTERLINE CHIPPEWA ST - W MAIN ST
14. PROPOSED CONSTRUCTION CENTERLINE PRAIRIE AVE - E MAIN ST
24. CONSTRUCT HSR PEDESTRIAN CROSSING TREATMENTS IN ALL QUADRANTS.
27. PROPOSED HSR FENCING (TYP.)

NOTES NOT LABELED ON THIS SHEET

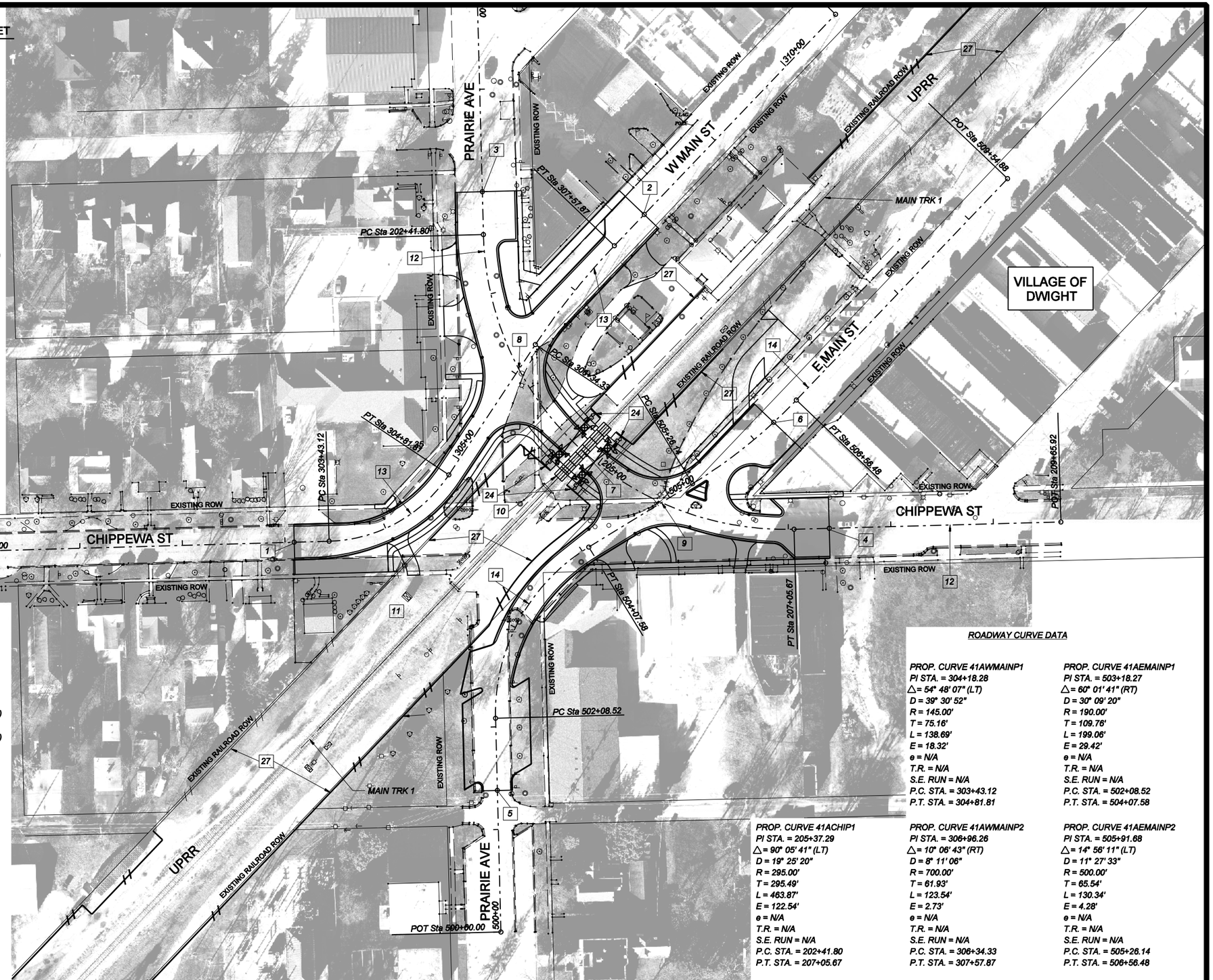
(SEE 20 SCALE PLAN SHEET)

15. REMOVE SIGNAL FLASHERS, GATE AND FOUNDATION.
16. STA 204+65.63, 17.75' LT, CONSTRUCT SIGNAL FLASHING LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF TRACK. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 17.76'; PARALLEL TO TRACKS .
17. STA 204+66.52, 18.25' RT, CONSTRUCT SIGNAL FLASHING LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF TRACK. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 18.26'; PARALLEL TO TRACKS. PROVIDE SIDELIGHT FLASHER FOR CHIPPEWA ST.
18. STA 204+97.58, 17.75' LT, CONSTRUCT SIGNAL FLASHING LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF TRACK. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 17.81'; PARALLEL TO TRACKS . PROVIDE SIDELIGHT FLASHER FOR E MAIN ST.
19. STA 204+94.81, 17.99' RT, CONSTRUCT SIGNAL FLASHING LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF TRACK. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTERLINE OF ROADWAY DISTANCE 18.04'; PARALLEL TO TRACKS. PROVIDE SIDELIGHT FLASHER FOR PRAIRIE AVE.
20. REMOVE EXISTING UPRR CONCRETE PANELS AND TIES
21. PROP. CONCRETE CURB & GUTTER TY. B-6.18
22. PROP. CONCRETE CURB & GUTTER TY. B-6.12
23. PROP. CONCRETE CURB, TYPE B
25. RECONSTRUCT ENTRANCES TO ACCOMMODATE PROPOSED ROADWAY PROFILE
26. REMOVE AND REPLACE OR INSTALL CONCRETE SIDEWALKS PER ADA STANDARDS
28. DRAINAGE INLETS AND RELATED ITEMS TO BE DETERMINED IN FINAL DESIGN

NOTES NOT LABELED ON THIS SHEET

(SEE 20 SCALE PLAN SHEET)

29. BEGIN PROPOSED SIDEWALK STA. 1+00.00 = STA. 305+08.18 (LT)
30. END PROPOSED SIDEWALK STA. 1+93.05 = STA. 305+79.31 (LT)
31. BEGIN PROPOSED SIDEWALK STA. 2+00.00 = STA. 303+83.30 (RT)
32. END PROPOSED SIDEWALK STA. 4+00.05 = STA. 305+56.93 (RT)
33. BEGIN PROPOSED SIDEWALK STA. 3+26.82 = STA. 202+00.00 (LT)
34. END PROPOSED SIDEWALK STA. 4+48.81 = STA. 203+30.94 (LT)
35. BEGIN PROPOSED SIDEWALK STA. 9+02.46 = STA. 306+67.33 (LT)
36. END PROPOSED SIDEWALK STA. 10+38.95 = STA. 308+00.00 (LT)
37. BEGIN PROPOSED SIDEWALK STA. 4+29.10 = STA. 203+92.87 (LT)
38. END PROPOSED SIDEWALK STA. 5+85.18 = STA. 205+61.68 (LT)
39. BEGIN PROPOSED SIDEWALK STA. 5+23.91 = STA. 204+28.13 (RT)
40. END PROPOSED SIDEWALK STA. 6+20.61 = STA. 205+17.97 (LT)
41. BEGIN PROPOSED SIDEWALK STA. 6+33.04 = STA. 505+28.89 (LT)
42. END PROPOSED SIDEWALK STA. 7+49.61 = STA. 505+50.69 (LT)
43. BEGIN PROPOSED SIDEWALK STA. 7+00.00 = STA. 505+62.98 (RT)
44. END PROPOSED SIDEWALK STA. 7+68.96 = STA. 506+27.21 (RT)
45. BEGIN PROPOSED SIDEWALK STA. 8+20.61 = STA. 206+39.19 (LT)
46. END PROPOSED SIDEWALK STA. 9+30.05 = STA. 207+54.49 (LT)
47. BEGIN PROPOSED SIDEWALK STA. 10+17.11 = STA. 503+97.20 (RT)
48. END PROPOSED SIDEWALK STA. 12+48.35 = STA. 207+35.14 (RT)
49. SIDEWALK BASELINE IS ALONG STREET SIDE (TYP.)



N

SCALE

0 50 100 150

ROADWAY CURVE DATA

PROP. CURVE 41AWMAINP1
PI STA. = 304+18.28
△= 54° 48' 07" (LT)
D = 39° 30' 52"
R = 145.00'
T = 75.16'
L = 138.69'
E = 18.32'
e = N/A
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 303+43.12
P.T. STA. = 304+81.81

PROP. CURVE 41AEMAINP1
PI STA. = 503+18.27
△= 60° 01' 41" (RT)
D = 30° 09' 20"
R = 190.00'
T = 109.76'
L = 199.06'
E = 29.42'
e = N/A
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 502+08.52
P.T. STA. = 504+07.58

PROP. CURVE 41ACHIP1
PI STA. = 205+37.29
△= 90° 05' 41" (LT)
D = 19° 25' 20"
R = 295.00'
T = 295.49'
L = 463.87'
E = 122.54'
e = N/A
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 202+41.80
P.T. STA. = 207+05.67

PROP. CURVE 41AWMAINP2
PI STA. = 306+96.26
△= 10° 06' 43" (RT)
D = 8° 11' 06"
R = 700.00'
T = 61.93'
L = 123.54'
E = 2.73'
e = N/A
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 306+34.33
P.T. STA. = 307+57.87

PROP. CURVE 41AEMAINP2
PI STA. = 505+91.68
△= 14° 56' 11" (LT)
D = 11° 27' 33"
R = 500.00'
T = 65.54'
L = 130.34'
E = 4.28'
e = N/A
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 505+26.14
P.T. STA. = 506+56.48

Supporting Document #6
Preliminary Plans for Road Improvements
Chippewa St. (Page 4 of 5)

PRELIMINARY
NOT FOR CONSTRUCTION DATE: 01/19/2012

URS

UNION PACIFIC

DRAWN BY:	JAL/KLM
CHECKED BY:	MHL
DATE:	19 JAN 2012
SHEET NUMBER	1 of 12

UNION PACIFIC RAILROAD — Office of Assistant Vice President Engineering Design

LOCATION: CHICAGO TO ST. LOUIS HIGH SPEED RAIL

DWG TITLE: INTERIM ROADWAY CROSSING OVERALL PLAN
CHIPPEWA ST. (MP 73.72)
DOT #290541A

CONSTRUCTION NOTES

1. BEGIN IMPROVEMENT MAZON AVE. MATCH EXISTING STA 103+25.00
2. END IMPROVEMENT MAZON AVE. MATCH EXISTING STA 112+00.00
3. BEGIN IMPROVEMENT FRANKLIN ST. SOUTH LEG MATCH EXISTING STA 701+00.00
4. END IMPROVEMENT FRANKLIN ST. NORTH LEG MATCH EXISTING STA 407+37.00
5. BEGIN IMPROVEMENT E. MAIN ST. MATCH EXISTING STA 602+73.82
6. BEGIN IMPROVEMENT W. MAIN ST. MATCH EXISTING STA 402+47.00
7. STA 105+69.60 MAZON AVE.= STA 404+03.93 W. MAIN ST.= STA 404+03.93 FRANKLIN ST. NORTH LEG ANGLE 56°49'23"
8. STA 107+61.25 MAZON AVE.= STA 605+70.81 E. MAIN ST. ANGLE 85°00'00"
9. STA 603+41.20 E. MAIN ST.= STA 702+35.37 FRANKLIN ST. SOUTH LEG ANGLE 89°14'18"
10. STA 107+53.24 MAZON AVE. AT MAIN TRK 1, ANGLE 45 DEGREES
11. CONSTRUCT 10' x 150' CONCRETE PANELS ON 10' CONCRETE TIES PER UPRR STDS
12. PROVIDE SIGNAL BUNGALOW IN THE NW QUADRANT. COORDINATE LOCATION WITH UPRR.
13. PROVIDE ACCESS ROAD TO SIGNAL BUNGALOW. COORDINATE LOCATION WITH UPRR.
14. EXISTING & PROPOSED CENTERLINE MAZON AVE.
15. PROPOSED CENTERLINE FRANKLIN ST. SOUTH LEG
16. PROPOSED CENTERLINE FRANKLIN ST. NORTH LEG
17. EXISTING & PROPOSED CENTERLINE W. MAIN ST.
18. PROPOSED CENTERLINE E. MAIN ST.
26. PROPOSED HSR FENCING (TYP.)
30. PROPOSED R.O.W.

NOTES NOT LABELED ON THIS SHEET

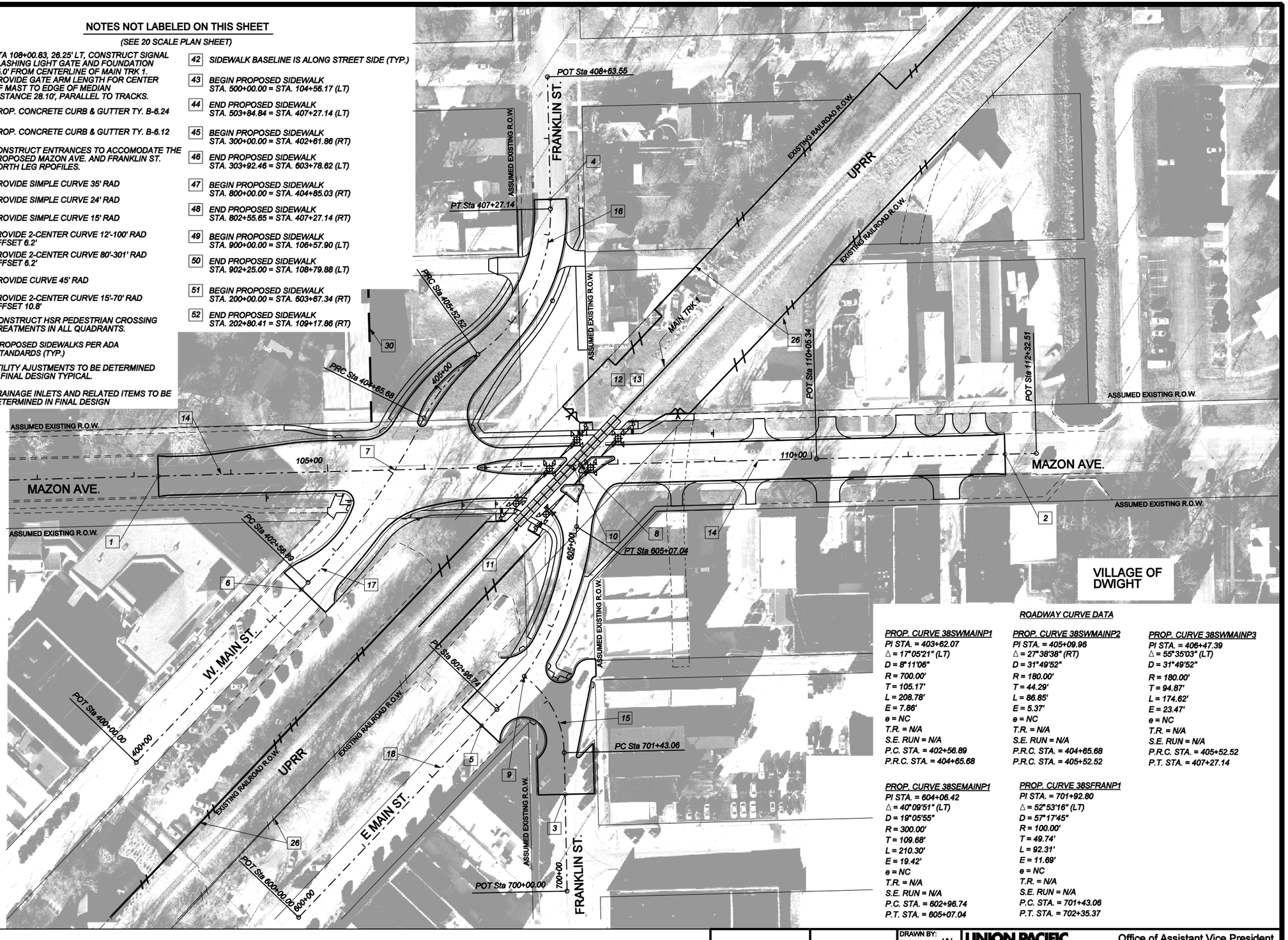
(SEE 20 SCALE PLAN SHEET)

19. REMOVE SIGNAL FLASHERS, GATE AND FOUNDATION (TYP.)
20. STA 106+93.60, 38.25' RT, CONSTRUCT SIGNAL FLASHING LIGHT GATE AND FOUNDATION 15.0' FROM CENTERLINE OF MAIN TRK 1. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTER OF TRAVEL WAY DISTANCE 25.86', PARALLEL TO TRACKS.
21. STA 107+24.34, 49.97' RT, CONSTRUCT SIGNAL FLASHING LIGHT GATE AND FOUNDATION 15.0' FROM CENTERLINE OF MAIN TRK 1. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO EDGE OF MEDIAN DISTANCE 32.00', PARALLEL TO TRACKS.
22. STA 107+29.23, 2.75' RT CONSTRUCT SIGNAL FLASHING LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF MAIN TRK 1. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO CENTER OF TRAVEL WAY DISTANCE 24.44', PARALLEL TO TRACKS.
23. STA 107+71.73, 2.75' RT, CONSTRUCT SIGNAL FLASHING LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF MAIN TRK 1. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO EDGE OF MEDIAN DISTANCE 28.10', PARALLEL TO TRACKS.
24. STA 107+58.33, 26.25' LT, CONSTRUCT SIGNAL FLASHING LIGHT GATE AND FOUNDATION 15' FROM CENTERLINE OF MAIN TRK 1. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO EDGE OF MEDIAN DISTANCE 28.10', PARALLEL TO TRACKS.

NOTES NOT LABELED ON THIS SHEET

(SEE 20 SCALE PLAN SHEET)

25. STA 108+00.83, 26.25' LT, CONSTRUCT SIGNAL FLASHING LIGHT GATE AND FOUNDATION 15.0' FROM CENTERLINE OF MAIN TRK 1. PROVIDE GATE ARM LENGTH FOR CENTER OF MAST TO EDGE OF MEDIAN DISTANCE 28.10', PARALLEL TO TRACKS.
27. PROP. CONCRETE CURB & GUTTER TY. B-6.24
28. PROP. CONCRETE CURB & GUTTER TY. B-6.12
29. CONSTRUCT ENTRANCES TO ACCOMODATE THE PROPOSED MAZON AVE. AND FRANKLIN ST. NORTH LEG RPOFILES.
31. PROVIDE SIMPLE CURVE 35' RAD
32. PROVIDE SIMPLE CURVE 24' RAD
33. PROVIDE SIMPLE CURVE 15' RAD
34. PROVIDE 2-CENTER CURVE 12'-100' RAD OFFSET 6.2'
35. PROVIDE 2-CENTER CURVE 80'-301' RAD OFFSET 6.2'
36. PROVIDE CURVE 45' RAD
37. PROVIDE 2-CENTER CURVE 15'-70' RAD OFFSET 10.8'
38. CONSTRUCT HSR PEDESTRIAN CROSSING TREATMENTS IN ALL QUADRANTS.
39. PROPOSED SIDEWALKS PER ADA STANDARDS (TYP.)
40. UTILITY AJUSTMENTS TO BE DETERMINED IN FINAL DESIGN TYPICAL.
41. DRAINAGE INLETS AND RELATED ITEMS TO BE DETERMINED IN FINAL DESIGN
42. SIDEWALK BASELINE IS ALONG STREET SIDE (TYP.)
43. BEGIN PROPOSED SIDEWALK STA. 500+00.00 = STA. 104+56.17 (LT)
44. END PROPOSED SIDEWALK STA. 503+84.84 = STA. 407+27.14 (LT)
45. BEGIN PROPOSED SIDEWALK STA. 300+00.00 = STA. 402+61.86 (RT)
46. END PROPOSED SIDEWALK STA. 303+92.46 = STA. 603+78.62 (LT)
47. BEGIN PROPOSED SIDEWALK STA. 800+00.00 = STA. 404+85.03 (RT)
48. END PROPOSED SIDEWALK STA. 802+55.65 = STA. 407+27.14 (RT)
49. BEGIN PROPOSED SIDEWALK STA. 900+00.00 = STA. 106+57.90 (LT)
50. END PROPOSED SIDEWALK STA. 902+25.00 = STA. 108+79.88 (LT)
51. BEGIN PROPOSED SIDEWALK STA. 200+00.00 = STA. 603+67.34 (RT)
52. END PROPOSED SIDEWALK STA. 202+80.41 = STA. 109+17.86 (RT)



ROADWAY CURVE DATA

PROP. CURVE 38SWMAINP1
PI STA. = 403+62.07
△ = 17°05'21" (LT)
D = 8°11'06"
R = 700.00'
T = 105.17'
L = 208.78'
E = 7.86'
e = NC
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 402+56.89
P.R.C. STA. = 404+65.68

PROP. CURVE 38SWMAINP2
PI STA. = 405+09.96
△ = 27°38'38" (RT)
D = 31°49'52"
R = 180.00'
T = 44.29'
L = 86.85'
E = 5.37'
e = NC
T.R. = N/A
S.E. RUN = N/A
P.R.C. STA. = 404+65.68
P.R.C. STA. = 405+52.52

PROP. CURVE 38SWMAINP3
PI STA. = 406+47.39
△ = 55°35'03" (LT)
D = 31°49'52"
R = 180.00'
T = 94.87'
L = 174.62'
E = 23.47'
e = NC
T.R. = N/A
S.E. RUN = N/A
P.R.C. STA. = 405+52.52
P.T. STA. = 407+27.14

PROP. CURVE 38SEMAINP1
PI STA. = 604+06.42
△ = 40°09'51" (LT)
D = 19°05'55"
R = 300.00'
T = 109.68'
L = 210.30'
E = 19.42'
e = NC
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 602+96.74
P.T. STA. = 605+07.04

PROP. CURVE 38SFRANP1
PI STA. = 701+92.80
△ = 52°53'16" (LT)
D = 57°17'45"
R = 100.00'
T = 49.74'
L = 92.31'
E = 11.69'
e = NC
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 701+43.06
P.T. STA. = 702+35.37

SCALE
0 50 100 150

Supporting Document #6
Preliminary Plans for Road Improvements
Mazon Ave (Page 5 of 5)

PRELIMINARY
NOT FOR CONSTRUCTION DATE: 01/19/2012

URS

UNION PACIFIC

DRAWN BY: JAL
CHECKED BY: MHL
DATE: 19 JAN 2012
SHEET NUMBER 1 of 14

UNION PACIFIC RAILROAD
Office of Assistant Vice President Engineering Design
LOCATION: CHICAGO TO ST. LOUIS HIGH SPEED RAIL
DWG TITLE: INTERIM ROADWAY CROSSING OVERALL PLAN MAZON AVE. (MP 73.51) DOT #290538S

...\OD_MP73-51_MAZON_Overall_Plan.dgn 1/19/2012 3:01:37 PM

Detailed Fencing Schedule

Activity ID	Activity Name	At Completion Duration	Start	Finish
Tier 1 North Final Design				
A11295	Tier 1 N FD Plans, Specs and Construction Estimates for Fencing	65	10-Nov-11 A	14-Feb-12
A13030	Tier 1 N Review and Revise Fencing Final Design/Bid Documents	20	15-Feb-12	13-Mar-12
Tier 1 North Construction				
A2495	Tier 1 N Fencing Contractor Procurement	40	14-Mar-12	08-May-12
A2505	Odell Siding Install Fencing	50	09-May-12	19-Jul-12
A2507	Pontiac Siding Install Fencing	73	04-Jun-12	14-Sep-12
Tier 1South Preliminary Engineering / NEPA				
A10230	Tier 1 S PE Drawings (30%) for Fencing	19	25-Oct-11 A	21-Nov-11 A
Tier 1 South Final Design				
A11385	Tier 1 S FD Plans (90%), Specs and Construction Estimates for Fencing	65	22-Nov-11 A	24-Feb-12
A11930	Tier 1 S Review and Revise Fencing Final Design/Bid Documents	20	27-Feb-12	23-Mar-12
Tier 1 South Construction				
A2577	Tier 1 S Fencing Contractor Procurement	40	26-Mar-12	18-May-12
A2583	Godfrey - Shipman Install Fencing	167	24-Dec-13*	14-Aug-14
Tier 2 Preliminary Engineering / NEPA				
A10420	Tier 2 PE Drawings (30%) for Fencing	32	01-Feb-12	15-Mar-12
Tier 2 Final Design				
A11475	Tier 2 FD Plans (90%), Specs and Construction Estimates for Fencing	44	16-Mar-12	16-May-12
A11962	Tier 2 Review and Revise Fencing Final Design/Bid Documents	20	17-May-12	14-Jun-12
Tier 2 Construction				
A2618	Tier 2 Fencing Contractor Procurement	40	15-Jun-12	10-Aug-12
A2622	Girard Siding Install Fencing	166	04-Oct-13*	28-May-14
Tier 3 Preliminary Engineering / NEPA				
A10610	Tier 3 PE Drawings (30%) for Fencing	32	01-Mar-12	13-Apr-12
Tier 3 Final Design				
A11565	Tier 3 FD Plans (90%), Specs and Construction Estimates for Fencing	44	16-Apr-12	15-Jun-12
A11983	Tier 3 Review and Revise Fencing Final Design/Bid Documents	20	18-Jun-12	16-Jul-12
Tier 3 Construction				
A2703	Tier 3 Fencing Contractor Procurement	40	17-Jul-12	11-Sep-12
A2707	Athol Siding Install Fencing	166	02-Dec-13*	22-Jul-14
A2739	Elkhart Siding Install Fencing	166	02-Dec-13*	22-Jul-14
A2767	Ridgley Siding Install Fencing	166	02-Dec-13*	22-Jul-14
A2819	Auburn Siding Install Fencing	166	02-Dec-13*	22-Jul-14
Tier 4 Preliminary Engineering / NEPA				
A10795	Tier 4 PE Drawings (30%) for Fencing	32	02-Apr-12	15-May-12
Tier 4 Final Design				
A11655	Tier 4 FD Plans (90%), Specs and Construction Estimates for Fencing	44	16-May-12	18-Jul-12
A12003	Tier 4 Review and Revise Fencing Final Design/Bid Documents	20	19-Jul-12	15-Aug-12
Tier 4 Construction				
A2666	Lexington Siding Install Fencing	166	21-Jan-14*	09-Sep-14
A2863	Tier 4 Fencing Contractor Procurement	40	16-Aug-12	11-Oct-12
A2901	Normal Siding Install Fencing	166	21-Jan-14*	09-Sep-14
A2941	McLean Siding Install Fencing	166	21-Jan-14*	09-Sep-14
Tier 5 Preliminary Engineering / NEPA				
A10990	Tier 5 PE Drawings (30%) for Fencing	32	29-Aug-12	12-Oct-12
Tier 5 Final Design				
A11745	Tier 5 FD Plans (90%), Specs and Construction Estimates for Fencing	44	15-Oct-12	17-Dec-12
A12023	Tier 5 Review and Revise Fencing Final Design/Bid Documents	20	18-Dec-12	16-Jan-13
Tier 5 Construction				
A11873	Tier 5 Fencing Contractor Procurement	40	17-Jan-13	13-Mar-13
A11882	Tier 5 Siding Install Fencing	166	19-Jun-14*	05-Feb-15
Tier 6 Construction				
A13050	Tier 6 Fencing Contractor Procurement	40	25-Jul-14	18-Sep-14
A13075	Tier 6 Siding Install Fencing	127	22-Dec-14*	16-Jun-15

Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

PARSONS BRINCKERHOFF

Chicago - St Louis

High Speed Rail Project

Illinois Department of Transportation

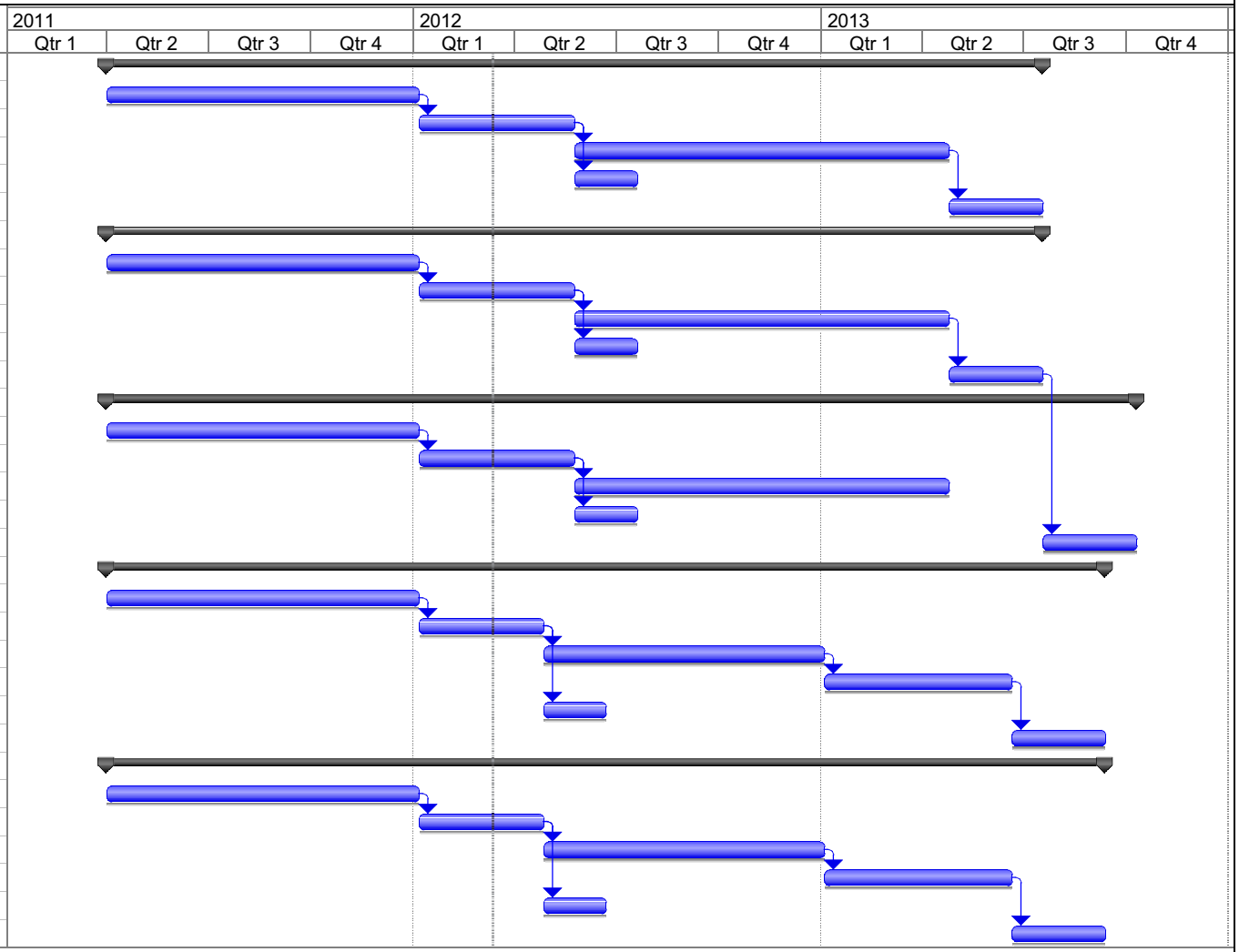
Supporting Document #7 -Detailed Normal Grade Separation Schedule (Page 2 of 3)

Activity ID	Activity Description	Duration
N100	NEPA	260
N200	Engineering and Design	261
N300	Construct Passenger Access	327
N400	Replace South Platform	131
N500	Improve Existing Depot	326

Supporting Document #7 -Detailed Grade Crossing Improvement Schedule (Page 3 of 3)

Detailed Grade Crossing Enhancements Schedule

ID	Task Name
1	**Reynolds Street**
2	Reynolds Project Initiation
3	Reynolds Preliminary Design
4	Reynolds NEPA
5	Reynolds Final Design
6	Reynolds Construction
7	**Mazon Avenue**
8	Mazon Project Initiation
9	Mazon Preliminary Design
10	Mazon NEPA
11	Mazon Final Design
12	Mazon Construction
13	**Chippawa Street**
14	Chippawa Project Initiation
15	Chippawa Preliminary Design
16	Chippawa NEPA
17	Chippawa Final Design
18	Chippawa Construction
19	**E 1500 N Road**
20	E 1500 N Project Initiation
21	E 1500 N Preliminary Design
22	E 1500 N Section 106 Consultation
23	E 1500 N NEPA
24	E 1500 N Final Design
25	E 1500 N Construction
26	**E 1600 N Road**
27	E 1600 N Project Initiation
28	E 1600 N Preliminary Design
29	E 1600 N Section 106 Consultation
30	E 1600 N NEPA
31	E 1600 N Final Design
32	E 1600 N Construction



Date: Mon 3/12/12

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

RECORD OF DECISION

CHICAGO - ST. LOUIS HIGH-SPEED RAIL PROJECT

FHWA-IL-EIS-99-01

I. DECISION

The Federal Highway Administration (FHWA), Federal Railroad Administration (FRA) and Illinois Department of Transportation (IDOT) have completed the environmental review process for the Chicago – St. Louis High-Speed Rail (HSR) Project, as mandated by the National Environmental Policy Act and related laws and regulations, and have selected the Preferred Alternative as described in the Final Environmental Impact Statement (FEIS) for implementation in this corridor. The Preferred Alternative uses the current Chicago – St. Louis Amtrak route and involves high-speed rail service consisting of three round trips per day, with estimated one-way end-to-end travel times between four hours and four hours and 30 minutes. HSR trains will stop at all of the stations currently served by the existing Chicago - St. Louis Amtrak route (i.e., Chicago Union Station, Summit, Joliet, Dwight, Pontiac, Bloomington/Normal, Lincoln, Springfield, Carlinville, Alton, and St. Louis). South of Dwight, maximum operating speed will be 110 mph (177 kph). North of Dwight, the existing maximum operating speed of 79 mph (127 kph) will be maintained. No physical improvements and no changes in operating characteristics (i.e., number and speed of trains) will be made north of Dwight. IDOT will carry out the HSR Project and will make improvements as funding becomes available. The three Agencies have selected this Alternative because it: best satisfies Purpose and Need and poses the least impacts to the natural and human environment, and can be accomplished with available or likely to become available funding resources. This decision is based upon full consideration of information contained in the Draft Environmental Impact Statement (DEIS) approved by the FHWA, FRA and the IDOT in May 2000, public hearings held in July/August 2000, the Final Environmental Impact Statement (FEIS) approved by the FHWA, FRA and IDOT in January 2003, public and agency comments pertaining to the proposed action, the other alternatives considered, the respective environmental consequences, and issues related to the proposed action.

Approval of the Project by the FHWA and FRA involves limited Federal actions at this time. Operations at speeds of 110 mph (127 kph) will be made possible by the completion of the North American Joint Positive Train Control Program (NAJPTC), a demonstration project jointly funded by the Association of American Railroads (AAR), IDOT and the FRA. This program is installing a system to support revenue-service high-speed operations and to demonstrate flexible-block operation using movement authority commands. These commands will be radioed to each train on a 123-mile track segment of Union Pacific Railroad's Chicago - St. Louis Corridor and will establish industry-wide standards for control system interoperability. The FRA has provided approximately $39 million through fiscal year 2002 for this demonstration project. Total project cost to date is estimated at $80 million. The selected alternative supports the implementation of the NAJPTC for revenue service. IDOT envisions possible future Federal financial support for other aspects of implementing the Selected Alternative, however, no existing Federal grant program funds general capital investments in high-speed rail development. However, a number of proposals are pending in Congress to create such a program.

Existing track will be utilized for the proposed action throughout the project area. However, provision of HSR service will require construction of 20 kilometers (12 miles) of double track; 35 kilometers (22 miles) of freight siding; and one grade-separated highway-railroad grade crossing; and installation of enhanced warning devices at 174 grade crossings.

The primary purpose of this proposal is to enhance the passenger transportation network in the Chicago - St. Louis corridor, resulting in a more balanced use of its components. The existing network consists of highway (automobile and bus), air and rail (Amtrak) travel. Currently, 99 percent of the 35 million trips made annually in the Chicago - St. Louis corridor are accomplished through automobile and air travel. This proposal is intended to lead to a more balanced use of the network by diverting trips made by automobile and air. A more balanced use of the network will also provide benefits to the human environment over the existing network use.
The proposed action is described in greater detail in Section 3.2 of the Final EIS. The Final EIS is available for review at the Illinois Department of Transportation Office in Springfield.

II. ALTERNATIVES CONSIDERED

Alternatives Selected for Evaluation in the EIS: Two alternatives were evaluated in the EIS: 1) the No-Build Alternative; and 2) the Build (High-Speed Rail) Alternative. (See Section 3.1 of the Final EIS for a full description of these alternatives).

No-Build Alternative: The No-Build Alternative consisted of the existing plus committed improvements to the existing intercity passenger rail system and the complementary intercity highway and aviation services and facilities in the Chicago - St. Louis corridor. As part of this alternative existing Amtrak service would be maintained. Passenger service would operate on the current Chicago - St. Louis Amtrak route between Union Station in Chicago and the Amtrak Station in St. Louis. Service between Chicago and St. Louis would consist of three daily round trips with scheduled one-way trip times of between five hours and 25 minutes and five hours and 40 minutes. No changes in station stops, equipment, or grade crossing treatments would occur with this alternative. Additionally, only regular maintenance and rehabilitation would occur in the project area.

The No-Build Alternative will not meet the purpose and need of the project because it will not enhance the passenger transportation network in the Chicago - St. Louis corridor. To achieve this, a new or improved transportation mode must be introduced with shorter travel times and enhanced reliability and safety. The No-Build Alternative would be a continuation of existing Amtrak service and would not provide any operational or service improvements. Without reductions in travel time or improvements to reliability and safety, the viability of rail passenger service as an alternative to air and automobile travel would not increase, and subsequently, travelers would not divert from those two modes. Therefore, the No-Build Alternative was not considered an adequate solution to meet the existing and anticipated transportation needs of the corridor.

Build (High-Speed Rail) Alternative: The High-Speed Rail Alternative was evaluated in the EIS as an alternative to current Amtrak service that would address the existing rail passenger service problems in the corridor and that would serve as a more viable alternative to intercity automobile, air, and bus travel between Chicago and St. Louis. This alternative would help provide a more balanced use of the passenger transportation network in the corridor, resulting in benefits to the human environment. These benefits to the human environment include reductions in pollutant emissions and energy consumption associated with intercity travel in the Chicago - St. Louis HSR corridor.

The HSR Alternative evaluated in the Draft EIS consisted of provision of passenger service between Chicago and St. Louis, operating at top speeds of 110 mph (177 kph) through most of the project area, except for a 29-kilometer (18-mile) segment between Lincoln and Springfield where 125 mph (200 kph) was considered. Service levels consisted of eight round trips per day, with one-way end-to-end travel times of approximately 3.5 hours.Between Chicago and Dwight, three alternative alignments were evaluated in the Draft EIS. One of the alignments — the Canadian National-Illinois Central/Union Pacific — is the current Amtrak route. Another would utilize Canadian National-Illinois Central mainline and Norfolk Southern (formerly Conrail) track via Kankakee to provide a better route of entry into Chicago and would provide access to the proposed South Suburban Airport site in Peotone. This alignment is referred to as the Norfolk Southern alignment. The third alignment, referred to as the Rock Island District alignment, would utilize Metra Rock Island District track between Chicago and Joliet and Union Pacific track between Joliet and Dwight. South of Dwight, one alternative alignment – matching the existing Amtrak route – was evaluated. As part of the High-Speed Rail Alternative, double track and freight siding, grade crossing treatment, station, and equipment improvements were also evaluated.

Selected Alternative: The Agencies have concluded that implementation of high-speed rail service will meet the purpose and need defined for this project. This fact, coupled with the consideration of public and resource agency comments, led to the determination that the overall benefits of providing HSR service outweigh the potential environmental impacts and that HSR service should be provided in the Chicago - St. Louis corridor to the extent practicable.

The Selected Alternative as described in Section I and based upon the Preferred Alternative included in the FEIS consists of provision of high-speed rail passenger service with a maximum operating speed of 110 mph (177 kph) in certain portions of the corridor. However, between Chicago and Dwight, the existing maximum operating speed of 79 mph (127 kph) will be maintained and no physical improvements will be made north of Dwight.. Although three alignments were considered between Chicago and Dwight, IDOT does not wish to select a new alignment at this time. Currently, there are several other projects being considered between Chicago and Dwight that could influence the selection of an alternative alignment. Some of these projects include:

- the South Suburban Airport near Peotone;
- the reinstitution of the Grand Crossing, which would provide the Norfolk Southern alignment access to Union Station; and
- the switching of Southwest Metra service to Rock Island District track near 79th Street.

Final decisions on how these projects will proceed have not been made. Therefore, IDOT decided that selection of an alternative alignment between Chicago and Dwight would not be prudent at this time. In the interim, the current Amtrak route will be used north of Dwight.

For the Selected Project, service will consist of three round trips per day, matching existing Amtrak service. Ultimately, a "full-build" HSR Alternative in the Chicago - St. Louis corridor could consist of eight round trips per day. However, prior to expanding service beyond three round trips per day, it will be necessary to select a final alternative alignment between Chicago and Dwight. As part of this selection and service enhancement, supplemental environmental and operational reviews will have to be conducted. Additional coordination with the other freight and passenger operators in the corridor will also be undertaken.

The HSR Alternative evaluated in the Draft EIS assumed greater investment in infrastructure and more trains than is now contemplated with the Selected Alternative. Even though the improvements associated with provision of HSR service have been reduced from those presented in the Draft EIS, the Selected Alternative will address the three needs identified for this project. A summary of the effectiveness of the Selected Alternative at meeting the purpose and need is provided below.

Reduced Travel Time and Improved Service Reliability: Rail passenger travel time between Chicago and St. Louis will decrease to between four hours and four hours and 30 minutes. Rail communication and signal systems will be upgraded, improving reliability and on-time performance.

Safety: Overall passenger safety in the corridor will increase as travelers divert from automobile to rail since rail is a safer mode of travel.

Human Environment: Volatile organic compound, carbon monoxide, and nitrogen oxide emissions from passenger transportation sources in the corridor will be reduced. Total annual energy consumption for all passenger travel in the corridor will also be lower.

III. SECTION 4(f)

The Selected Alternative will not impact any publicly owned land from a park, recreation area, wildlife/waterfowl refuge, or historic site of national, state, or local significance.

IV. MEASURES TO MINIMIZE HARM

All practical measures to minimize the potential environmental impacts caused by the Selected Alternative will be taken by IDOT in implementing the Selected Alterative. The mitigation measures proposed for this project are summarized in Section S.4 and described in detail in Section 5 of the Final EIS. During final design, efforts will be made to avoid or minimize the impacts of this project to the extent reasonable. In areas where impacts are unavoidable, best management practices (BMP) will be incorporated into the design. General construction mitigation measures will include the continuation of public utility service; minimization of existing vegetation removal; control of the disposal of surplus or unsuitable material; minimization of construction noise, vibration impacts, and air pollution; and the control of erosion and sedimentation during construction.

Social/Economic: The Selected Alternative will require the acquisition of 0.2 hectares (0.4 acres) of commercial property at Pontoon Road (MP 272.70), where a grade separation is proposed. This improvement will also result in the displacement of one commercial outbuilding. Just compensation will be provided for the property acquisition that will be required.

Twenty-four grade crossings along the Selected Alternative are proposed for closure. Fourteen of these crossings serve pedestrian traffic only. In all instances where crossing closures are proposed, adequate reserve capacity exists on the adjacent crossings to handle the diverted traffic. No crossings will be closed without the consent of the local community or the property owner involved.

IDOT will contact each community in the Chicago - St. Louis High-Speed Rail corridor south of Dwight to discuss the possibility of fencing along the railroad tracks. If a community is interested in having fencing installed, IDOT will coordinate with that community to determine the location, style, and height of the

proposed fencing as well as whether the fencing will be on one or both sides of the railroad tracks. If an agreement can be reached, fencing will be installed. Fencing will not be installed unless agreed to by the local community.

Water Resources: Short-term impacts to water quality and aquatic biota could occur with the Selected Alternative. Twenty-eight streams and small tributaries could be affected. To minimize potential impact, erosion, sedimentation and bank stabilization measures will be employed, consistent with IDOT's Bureau of Design and Environment Manual.

Wetlands: The FHWA, FRA and IDOT have determined that there is no practical alternative to the construction of the Selected Alternative in wetlands and that all practical measures to minimize impacts to wetlands will be taken. The Selected Alternative will require the loss of 0.36 hectares (0.89 acres) of wetland. Wetland impacts will be mitigated through a wetland mitigation plan approved by the Illinois Department of Natural Resources. Compensation for wetland impacts will be provided through the purchase of credits in an approved wetland mitigation bank. Coordination will be conducted with the U.S. Army Corps of Engineers in conjunction with the Section 404 Permit of this project to determine the availability of suitable wetland banks.

If an approved wetland bank is not available at the time of permitting, wetland impact mitigation will be provided through the conversion of non-wetland areas into wetlands. The actual acreage of created wetland required for mitigation will vary depending on where the mitigation is constructed relative to the wetlands impacted and will range from 0.57 hectares (1.41 acres) to 0.73 hectares (1.79 acres). Design and implementation will be conducted in cooperation with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources.

Monitoring will occur for all wetland compensation areas of 0.10 hectares (0.25 acres) or greater. Monitoring will be performed according to IDOT's Wetlands Action Plan and any conditions stipulated by the U.S. Army Corps of Engineers. Greater details on the monitoring program will be developed as part of the conceptual wetland mitigation plan.

Natural Resources: The Selected Alternative will require the loss of 34 hectares (85 acres) of upland vegetation. Seventy-four percent of this will be agricultural land, pasture, developed land or forbland. Restoring and enhancing environmental quality is proposed for all impact areas. All disturbed areas not occupied by project facilities will be immediately revegetated and mulched to stabilize disturbed soils, minimize erosion, and enhance the productivity and aesthetics.

The Selected Alternative will require the loss of 0.25 hectares (0.61 acres) of native vegetation. Unavoidable impacts to native communities will be mitigated through a prairie mitigation plan. Unless a higher ratio is required due to presence of high quality wetland flora, etc., compensation for direct adverse impacts (temporary and permanent) to prairies of grade C+ and higher will occur at a 1:1 ratio. Further, compensation will occur in-kind (i.e., wet prairie for wet prairie, mesic prairie, sand prairie, dolomitic prairie, etc.).

Monitoring will occur for each created or enhanced prairie area of 0.10 hectares (0.25 acres) in size or greater. Monitoring will involve photographic documentation from the same vantage point each year for a three-year period or until 80 percent ground cover by native, perennial prairie plants is achieved (whichever is later). Monitoring will be done by the Illinois Natural History Survey for IDOT, and the annual report will be coordinated and reviewed with the IDNR.

Management practices for prairie areas will focus on prescribed burn management and removal of invasive plants. Annual monitoring and long-term maintenance will identify whether removal of invasive plants will be performed by manual or chemical methods. The decision will be based on the growth characteristics of the species targeted for removal and the extent of invasion.

For long-term management, interagency agreements will be required to establish cooperative management for each created, preserved, and enhanced prairie. These agreements will allow access to and management of the existing C+ and higher prairie areas within the railroad right-of-way as well as lower grade prairies being managed to improve vegetative quality by IDOT, IDNR, or their designated representative.

No threatened or endangered species were found during field surveys of the project area of the Selected Alternative. Therefore, no impacts to threatened or endangered species are anticipated. Coordination has been conducted with the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources regarding the potential for the project to affect Federal or state threatened or endangered species. This coordination and consultation will continue as appropriate in order to assure that appropriate mitigation measures are incorporated into the project so that impacts to protected plant and animal species are minimized or avoided.

Floodplains: One construction project associated with the Selected Alternative would occur in areas where 100-year floodplains have been identified. However, no work should be performed below the 100-year flood elevation, and as a result, this improvement will not encroach upon the base floodplain. Therefore, there will be no impacts to floodplains.

Special Waste: No CERCLIS sites will be involved or impacted by this project. Preliminary Environmental Site Assessments (PESAs) for special waste were conducted by IDOT, Bureau of Railroads. The assessments concluded that the Selected Alternative could involve other special waste sites. Further investigations should be conducted to determine risks and liabilities of the involvement prior to land acquisition.

Permits: Section 404 permits will be needed from the U.S. Army Corps of Engineers for wetlands where filling occurs. In addition, a Section 401 water quality certification will have to be obtained from the Illinois Environmental Protection Agency.Permits from the Illinois Department of Natural Resources, Office of Water Resources, will be required for construction activity in and around streams and floodplains.

It is anticipated that this project will result in the disturbance of 0.4 or more hectares (one or more acres) of total land area. Therefore, it will be subject to the requirement of a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from construction sites. Permit coverage for the project will be obtained either under the Illinois Environmental Protection Agency General Permit for Stormwater Discharges from Construction Site Activities (NPDES Permit No. ILR10) or under an individual NPDES permit.

To control local air pollution impacts, a permit may be required for portable bituminous and concrete plants used in project construction.

V. MONITORING AND ENFORCEMENT PROGRAM

Monitoring and enforcement of the project commitments and impact minimization/mitigation measures will be accomplished by IDOT through standard procedures to assure compliance. Specifically, IDOT will provide those individuals responsible for preparing the construction plans and those overseeing and monitoring their work with a copy of this Record of Decision, the Draft EIS, and the Final EIS to assure that required environmental avoidance and mitigation measures are included in the plans and specifications prepared for the project. The Resident Engineers overseeing the construction of the project will also receive a copy of these documents and will be responsible for assuring that all commitments are met. IDOT will regularly monitor the compliance efforts of these project participants and will report any deficiencies (and its efforts to enforce the project commitments with respect to such deficiencies) without delay to the FRA and FHWA.

VI. COMMENTS ON THE FINAL EIS

The Notice of Availability of the Final EIS was published in the *Federal Register* on January 31, 2003. The notice specified March 10, 2003 as the end of the wait period. By written request, this period was extended to April 15, 2003 for Kankakee County.

The following is a summary of the comments received on the Final EIS.

U.S. Department of Agriculture, Natural Resources Conservation Service: In a letter dated February 25, 2003, the U.S. Department of Agriculture Natural Resources Conservation Service stated that they completed the Farmland Conversion Impact Rating Form AD-1006 on this project in May 2000 and had no further comment.

Response to Comment: No response is required. A copy of the Impact Rating Form is provided in Appendix C (p. C-28) of the Final EIS.

U.S. Environmental Protection Agency: In a letter dated February 21, 2003, the U.S. Environmental Protection Agency (EPA) stated that they had no significant environmental concerns with the proposed action. After reviewing the Draft EIS, the U.S. EPA had raised objections to two of the three alternative alignments considered north of Dwight. However, since the Selected Alternative consists of no action north of Dwight, the issues raised in their previous objections are no longer applicable.

Response to Comment: No response is required.

Illinois Department of Natural Resources: In an e-mail communication dated February 28, 2003, the Illinois Department of Natural Resources (IDNR) raised concerns about potential impacts to Timber Creek (near Funks Grove in McLean County) and Kickapoo Creek (in Logan County). Timber Creek was adopted as an INAI stream in January 2002, and it is likely that Kickapoo Creek will become an INAI stream as well.

The IDNR also stated that in terms of wetland impacts, all of the information required by the Interagency Wetlands Policy Act was provided. They concurred with the proposed mitigation ratios and the recommendation that compensation for wetland impacts be provided through the purchase of credits in an approved wetland mitigation bank.

Response to Comment: As part of the Selected Alternative, no impacts were identified at either Timber Creek (MP 136.55) or Kickapoo Creek (MP 149.50) because they are located outside of the proposed construction areas.

Illinois Environmental Protection Agency: In a letter dated March 3, 2003, the Illinois Environmental Protection Agency stated that they had no objections to the project. They also noted that a National Pollutant Discharge Elimination System (NPDES) Construction Permit would be required for the project and Section 401 water quality certification would be required for any permit required by Section 404 of the Clean Water Act.

Response to Comment: The need for the NPDES Permit and the water quality certification was identified in the Final EIS (p. S-10) and is reiterated in this Record of Decision.

City of Kankakee: In a letter dated March 7, 2003, the City of Kankakee wrote in support of the Norfolk Southern alignment between Chicago and Dwight. Reasons for their support of this alignment included:

- It has no formal opposition.
- It would serve an area underserved today.
- It is safer because there are fewer grade crossings.
- It would provide access to the proposed airport in Peotone.
- It is the least expensive.

Accompanying the City's letter was additional correspondence in support of the Norfolk Southern alignment from the Village of Beecher, the Village of New Lenox, the South Suburban Mayors and Managers Association, and Congressman Jessie Jackson, Jr.

Response to Comment: As noted in the Final EIS, an alignment between Chicago and Dwight has not been selected. Under the Selected Alternative, the current Amtrak route – through Joliet – will be used. Passenger service would consist of three round trips per day (matching existing conditions). Maximum operating speed will remain unchanged between Chicago and Dwight and will increase to 110 mph (177 kph) between Dwight and St. Louis. Ultimately, a "full-build" HSR Alternative could consist of eight round trips per day. Prior to expanding service beyond three rounds trips per day, it will be necessary to select a final alternative alignment between Chicago and Dwight. As part of that selection process and service enhancement, supplemental environmental and operational reviews will be conducted. The Norfolk Southern alignment remains a viable alternative between Chicago and Dwight and will be considered further prior to selection of a final alternative alignment through that area.

As a matter of clarification, preliminary cost estimates developed for the Draft EIS indicated that the Norfolk Southern alignment would cost the most of the three alternative alignments considered.

Kankakee County: In a letter dated April 8, 2003, Kankakee County wrote in support of the Norfolk Southern alignment between Chicago and Dwight.

a final alternative alignment between Chicago and Dwight. As part of that selection process and service enhancement, supplemental environmental and operational reviews will be conducted. The Norfolk Southern alignment remains a viable alternative between Chicago and Dwight and will be considered further prior to selection of a final alternative alignment through that area.

City of Granite City: In a letter dated March 5, 2003, the City of Granite City, citing public safety concerns, recommended that the grade crossings at 25th Street, 20th Street, and Neidringhaus Avenue be equipped with four quadrant gates.

Response to Comment: The identified crossings are currently equipped with conventional two quadrant gates. The Illinois Commerce Commission (ICC) has requested that all public grade crossings where speeds will exceed 90 mph (145 kph) be equipped with four quadrant gates. It is estimated that the maximum operating speed at these three crossings in Granite City will be 60 mph (97 kph) which is well below the 90 mph requested by the ICC as the threshold for providing four quadrant gates. For this reason, no changes to the existing grade crossing treatment devices are recommended.

Illinois Farm Bureau: In a letter dated February 28, 2003, the Illinois Farm Bureau stated that with the exception for the potential added difficulty in negotiating gated crossings with large farm equipment, the Preferred Alternative appears to pose little environmental impact to agriculture and generally satisfies the three key policies of their organization regarding the High-Speed Rail Project.

Response to Comment: Prior to the installation of gates at private crossings, coordination with the crossing owners will take place to address their concerns to the extent practicable.

Main Street Lockport: In a letter dated February 27, 2003, Main Street Lockport, a non-profit organization that supports revitalization and restoration, expressed concerns regarding high-speed rail passenger service through Lockport. Their concerns consisted of the following:

- impacts to the leafy prairie clover found in Big Run Seep;
- impacts to cultural resources;
- public safety; and
- noise.

***Response to Comment*:** As part of the Selected Alternative, no action is proposed through Lockport. Trains will continue to operate at existing speeds, and no new trains will be added. Additionally, no construction is proposed through this area. Therefore, this project will not result in any direct impacts in the Lockport area.

As noted above, an alignment between Chicago and Dwight has not been selected. Prior to expanding service beyond three rounds trips per day, it will be necessary to select a final alternative alignment between Chicago and Dwight. As part of that selection process and service enhancement, supplemental environmental and operational reviews will be conducted. The concerns raised by Main Street Lockport, including speed limits, will be reviewed at that time.

Additional Public Comment: A few comments were received that provided general support or disapproval of the proposed action. One comment came from a couple who stated that high-speed rail service would have a negative impact on their community (Godfrey) and questioned whether the

existing track could handle high-speed trains. Additional communication from the public included requests for the Final EIS and clarification on specific grade crossing treatments.

Response to Comment: As documented in the Final EIS, potential negative community impacts are minimal. Less than one acre of right-of-way and one displacement is required for the Selected Alternative. Additionally, no noise, vibration, or air quality impacts were identified.

As necessary, track maintenance and improvements will be made so that high-speed trains can operate safely.

VII. CONCLUSION

The FHWA, FRA and IDOT have reached their decision based upon information and analysis contained in the FEIS and outlined in this document. The decision concludes that the Selected Alternative, the Build (High-Speed Rail) Alternative, as described in this document: 1) best satisfies Purpose and Need, 2) poses the least impacts to the natural and human environment, 3) has been selected based on processes in compliance with NEPA and other applicable requirements, and 4) may be advanced.

1/8/2009
Date

For the Federal Highway Administration

DEC 23 2008
Date

For the Federal Railroad Administration

Supporting Document #9 – Draft Categorical Exclusion (Ten Pages)

Federal Railroad Administration (FRA)
CATEGORICL EXCLUSION WORKSHEET

Note: The purpose of this worksheet is to assist proposal sponsors in gathering and organizing materials for environmental analysis required under the National Environmental Policy Act (NEPA), particularly for proposals, which may qualify as Categorical Exclusions and to assist the FRA in evaluation requests from project sponsors for categorical exclusion determinations. Categorical Exclusions are categories of actions (i.e. types of projects) that the FRA has determined, based on its experience, typically do not individually or cumulatively have a significant effect on the human environment and which generally do not require the preparation of either an environmental impact statement or an environmental assessment.

Submission of the worksheet by itself does not meet the NEPA requirements. FRA must concur in writing with the proposal sponsor's Categorical Exclusion recommendation for NEPA requirements to be met. Please complete this worksheet using compatible word processing software and submit and transmit the completed form in electronic format.

For Agency Use	*Date Received:*
Reviewed By: *Date:*	*Recommendation for action:* ☐ *Accept* ☐ *Return for Revisions* ☐ *Not Eligible*
Comments:	
Concurrence by Counsel: ☐ *Accept Recommendation* ☐ *Return for Comments*	*Reviewed By:* *Date:*
Comments:	
Concurrence by Approving Official:	*Date:*

I. PROPOSAL DESCRIPTION

Proposal Sponsor Illinois Department of Transportation (IDOT)	**Date Submitted** 03/11/2012	**FRA Identification Number (if any)**
Proposal Title High-Speed Rail Corridor Fencing Project		
Location (Include Street Address, City or Township, County, and State) This proposal includes improvements along the Union Pacific Railroad (UPRR) between the City of Dwight and the East St. Louis area. This area was previously cleared by the Chicago to St. Louis High-Speed Rail Final Environmental Impact Statement (HSR FEIS) Record of Decision in 2004. Fencing proposed throughout the corridor requires re-evaluation. See the Location Map in Attachment A.		
Contact Person Michael R. Garcia, PE	**Phone** (217) 782-4133	**E-mail Address** Mike.Garcia@illinois.gov
Note: Fully describe the proposal including specifics that may be of environmental concern such as: widening an embankment to stabilize roadbed; repairing or replacing bridge piers foundations, including adding rip-rap in a waterway; earthwork and altering natural (existing) drainage patterns and creating new water discharge; contaminated water needing treatment; building a new or adding on to a shop building; fueling or collection of fuel or oil and contaminated water; building or extending a siding; and building or adding on to a yard.		

Description of Proposal

General Corridor Description:

The proposal is a component of the development, implementation and operation of High-Speed Rail (HSR) service as part of the Chicago to St. Louis HSR project. The High-Speed Rail Corridor Fencing Project is a continuation to the Chicago to St. Louis High-Speed Rail Corridor Project ("Original Project") approved by FRA under the Final Environmental Impact Statement (FEIS) dated January 2003 (Record of Decision, ROD, dated January 8, 2004). This proposal will increase safety in urban areas, locations that show evidence of pedestrian trespassing, and overpass locations from Dwight, Illinois to the East St. Louis area. The 2003 FEIS included Fencing as a Safety precaution in urbanized areas.

This Categorical Exclusion Worksheet is intended to clear activities not previously cleared by the 2004 ROD. The context of this re-evaluation is to complete the environmental clearance for the proposed fencing between Dwight, Illinois and the East St. Louis area. The areas required for the fencing included in this proposal has not been previously cleared because the construction activities extend beyond the approved construction limit of the 2004 ROD. Therefore, Section III of this document provides documentation to obtain a Categorical Exclusion for the fencing to complete the environmental clearance of the corridor.

Fencing will be installed within the existing railroad right-of way. No additional right-of-way will be required. It will be designed to discourage trespassing and to direct pedestrians to designated crossings. Fencing will only be installed along the Union Pacific Railroad corridor if a community is interested in having fencing. IDOT will coordinate with each community along the corridor to determine the style, and height of the proposed fencing.

Purpose and Need of Proposal

Pursuant to the 2004 ROD, the primary purpose of the High-Speed Rail Corridor Fencing Project is to complete the rail improvements necessary to enhance the passenger transportation network in the Chicago to St .Louis corridor, resulting in a more balanced use of its overall transportation network. The existing network consists of highway (automobile and bus), air and rail (Amtrak) travel. Currently, 99 percent of the 35 million trips made annually in the Chicago to St. Louis corridor are accomplished through automobile and air travel. This proposal is a component of the HSR corridor intended to lead to a more balanced use of the network by diverting trips made by automobile and air. A more balanced use of the network will also provide benefits to the human environment over the existing network use. These benefits include reductions in pollutant emissions and energy consumption associated with intercity travel in the Chicago to St. Louis HSR corridor.

II. NEPA CLASS OF ACTION

Answer the following questions to determine the proposal's potential class of action.

A. Will the proposal substantially impact the natural, social and / or human environment?
☐ Yes (Contact FRA) ☒ No (Continue)
Actions that will significantly impact the environment require preparation of an Environmental Impact Statement. These proposals typically include construction or extension of rail lines or rail facilities including passenger, high speed, or freight rail activities.

B. Is the significance of the proposal's social, economic or environmental impacts unknown?
☐ Yes (Contact FRA) ☒ No (Continue)

C. Does Section 4(f) of the Department of Transportation Act apply? (i.e. proposal requires the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance, as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site.)
☐ Yes (Contact FRA) ☒ No (Continue)

There will be no adverse effects to 4(f) properties. The proposed fencing improvements are located on the existing railroad right-of-way. Fencing will not be installed if it is determined that visual impacts to historic resources would result.

D. Is the proposal likely to require detailed evaluation of more than a few potential impacts?
☐ Yes (Contact FRA) ☒ No (Continue)

E. Is the proposal likely to generate intense public discussion or concern, even though it may be limited to a relatively small subset of the community?
☐ Yes (Contact FRA) ☒ No (Continue)

F. Is the proposal inconsistent with any Federal, State, or local law, regulation, ordinance, or Judicial or administrative determination relating to environmental protection?
☐ Yes (Contact FRA) ☒ No (Continue)

G. Is the proposal an integral part of a program of current Federally supported actions which, when considered separately, would not be classified as major actions, but when considered together may result in substantial impacts?
☐ Yes (Contact FRA) ☒ No (Continue)

If the answer to any of the questions B through G is "YES", contact the FRA to determine whether the proposal requires preparation of an Environmental Assessment.

H. Is the proposal consistent with one of the following potential Categorical Exclusions?
FRA Procedures for Considering Environmental Impacts, 64 FR 28545 (May 26, 1999)
☒ Yes (Mark category and continue as indicated) ☐ No (Continue)

☐ Financial assistance or procurements solely for planning or design activities that do not commit the FRA or its applicants to a particular course of action affecting the environment. (*stop and submit to FRA*)

☐ State rail assistance grants for acquisition. (*Continue to Part III*)

☐ Operating assistance to a railroad to continue existing service or to increase service to meet demand, where the assistance will not result in a change in the effect on the environment. (*stop and submit to FRA*)

☐ Acquisition of existing railroad equipment, track and bridge structures, electrification, communication, signaling or security facilities, stations, maintenance of way and maintenance of equipment bases, and other existing railroad facilities or the right to use such facilities, for the purpose of conducting operations of a nature and at a level of use similar to those presently or previously existing on the subject properties. (*Complete Part III, Sections H, I, U, & V and submit to FRA*)

☐ Research, development and/or demonstration of advances in signal, communication and/or train control systems on existing rail lines provided that such research, development and/or demonstrations do not require the acquisition of substantial amounts of right-of-way, and do not substantially alter the traffic density [or operational] characteristics of the existing rail line. (*Continue to Part III*)

☐ Temporary replacement of an essential rail facility if repairs are commenced immediately after the occurrence of a natural disaster or catastrophic failure. (*Continue to Part III*)

☒ Changes in plans for a proposal for which an environmental document has been prepared, where the changes would not alter the environmental impacts of the action. (*continue to Part III describing the full consequences of the changes only*)

☐ Maintenance of existing railroad equipment; track and bridge structures; electrification, communication, signaling, or security of facilities; stations; maintenance-of-way and maintenance-of-equipment bases; and other existing railroad-related facilities. ("Maintenance" means work, normally provided on a periodic basis, which does not change the existing character of the facility, and may include work characterized by other terms under specific FRA programs). (*Continue to Part III*)

☐ Financial assistance for the construction of minor loading and unloading facilities, provided that proposals are consistent with local zoning, do not involve the acquisition of a significant amount of land, and do not significantly alter the traffic density characteristics of existing rail or highway facilities. (*Continue to Part III*)

☐ Minor rail line additions including construction of side tracks, passing tracks, crossovers, short connections between existing rail lines, and new tracks within existing rail yards, provided that such additions are consistent with existing zoning, do not involve acquisition of a significant amount of right of way, and do not substantially after the traffic density characteristics of the existing rail lines or rail facilities. (*Continue to Part III*)

☐ Improvements to existing facilities to service, inspect, or maintain rail passenger equipment, including expansion of existing buildings, the construction of new buildings and outdoor facilities, and the reconfiguration of yard tracks. (*Continue to Part III*)

☐ Environmental remediation through improvements to existing and former railroad track, infrastructure, stations and facilities, for the purpose of preventing or correcting environmental pollution of soil, air or water. (*Continue to Part III*)

☐ Replacement, reconstruction, or rehabilitation of an existing railroad bridge, including replacement with a culvert, that does not require the acquisition of a significant amount of right-of-way. (*Continue to Part III*)

III. PROPOSAL INFORMATION FOR CATEGORICAL EXCLUSIONS

Complete Part III unless indicated otherwise in Part II and submit to FRA.

For work to fixed facilities, maps displaying the following, as applicable, are required to be attached for FRA review:

- Proposal vicinity
- Proposal Site Plan indicating the USGS Quadrangle and Section
- Other Information as necessary to complete Part III

A. Describe how the proposal satisfies the purpose and need indentified in Part I:

The proposal, the High-Speed Rail Corridor Fencing Project, is a component of the implementation of HSR operations for the Chicago to St. Louis High-Speed Rail program. The proposal increases safety for the HSR service which is intended to increase rail passenger ridership based on the result of reduced travel time, improved reliability, and increased safety of rail service. Along with these enhancements, improvements in air quality and reduction in energy consumption would be expected. The proposal leads to a more balanced use of the network by diverting trips made by automobile and air while also providing benefits to the human environment.

B. Location & Land Use: *For fixed facilities, attach a map or diagram, at an appropriate scale, identifying the location of the proposal site and if applicable, the surrounding land uses and zoning of the site and surrounding properties. If the proposal would require many pages of maps or diagrams, include only a location map and contact FRA to determine if additional information is required. A map or diagram that identifies locations of critical resource areas, wetlands, potential historic sites, or sensitive noise receptors such as schools, hospital, and residences should be included if there is the potential for impacts to these resources.*

Briefly describe the existing land use of the proposal site and surrounding properties and resources.

General Corridor Description for Context:
The High-Speed Rail Corridor Fencing Project extends from Dwight, Illinois (near MP 72.8) to the East St. Louis area (near MP 281.0). The proposed fencing is located in the following counties: Will, Grundy, Livingston, McLean, Logan, Sangamon, Macoupin, Jersey, Madison, and St. Clair counties.

All fencing is located within the existing railroad right-of-way.

Approximately 90 percent of the corridor's study area is considered agricultural land use and the remaining area consists of rural communities comprised of a combination of residential, commercial and industrial uses. Fencing is located in urbanized areas, areas with evidence of pedestrian trespassing, and overpasses. See Location Map in Attachment A.

C. Historical Resources: *If any cultural, historic, or archaeological resources are located in the immediate vicinity of the proposal, check and describe the resource(s) and then describe any potential effect of the proposal on the resource(s). Consultation with the SHPO is necessary when these resources are potentially affected.*

☐ Cultural: No adverse visual impacts to cultural resources are expected in result of the proposed fencing improvements.

☐ Historical: No adverse visual impacts to historical resources are expected in result of the proposed fencing improvements.

☐ Archaeological: No adverse visual impacts to archaeological resources are expected in result of the proposed fencing improvements. The proposed fencing locations were compared with known archaeological sites and the fencing is not located near the sites.

Has consultation with the State Historic Preservation officer occurred? If so, describe and attached relevant correspondence.

☐ Consultation with SHPO:
No adverse visual impacts are expected as a result of the proposed fencing.

(To be prepared: Coordination with SHPO to be done later.)

D. Public Notification: *Briefly describe any public outreach efforts undertaken on behalf of the proposal, if any. Indicate opportunities the public has had to comment on the proposal (e.g., Board meetings, open houses, special hearings).*

For the overall Chicago to St. Louis High-Speed Rail program, public meetings have been conducted, which welcomed public comment on the general progress of the overall program.

Public outreach efforts undertaken for the Original project are described in Section 8: Comments and Coordination of the 2003 Chicago to St. Louis High-Speed Rail Project FEIS. Additionally, public scoping meetings took place for the Chicago to St. Louis Tier 1 EIS Environmental Impact Statement in March of 2011. Public outreach took place for the Chicago to St. Louis Tier 1 EIS Environmental Impact Statement in October of 2011. These public meetings did not explicitly address the scope of this High-Speed Rail Corridor Fencing Project; however, overall high-speed rail programmatic issues were covered.

Indicate prominent concerns expressed by agencies or the public regarding the proposal, if any.

E. Transportation: *Would the proposal have a detrimental effect on other railway operations or impact road traffic, or increase demand for parking?*

☒ No (continue) ☐ Yes, describe potential transportation, traffic, and parking impacts, and address capacity constraints and potential impacts to existing railroad and highway operations. Include maps or diagrams indicating any impacts and any proposed modifications to existing railways or roadways or parking facilities. Also, summarize any consultation that has occurred with other railroads or highway authorities whose operations this project will impact.

F. Noise and Vibration: *Are permanent noise or vibrations impacts likely?*
☒ No (continue) ☐ Yes, describe how the proposal will involve noise impacts. If the proposal will result in a change in noise sources (number or speed of trains, stationary sources, etc.) and sensitive receptors (residences, hospitals, schools, parks, etc.) are present, apply screening distances for noise and vibration assessment found in FRA noise impact assessment guidance manual (and FTA's manual as needed) and compare proposal location with nearest receptor(s). If the screening distance is not achieved, attach a "General Noise and/or Vibration Assessment."

Noise ☐ Vibration ☐

The project is not associated with any new service, change in operations, or increases in rail traffic; therefore, no vibration or increase in noise will result.

As a result of the general assessment(s) are there noise or vibration impacts?

☒ No (continue) ☐ Yes (Describe and provide map identifying sensitive receptors):

G. Air Quality: *Does the proposal have the potential to increase concentrations of ambient criteria pollutants to levels that exceed the NAAQS, lead to the establishment of a new non-attainment area, or delay achievement of attainment?*
☒ No (continue) ☐ Yes, attach an emissions analysis for General Conformity regarding Carbon Monoxide (CO), Ozone (O_3), Particulate Matter (PM_{10}), Nitrous Oxides (NO_x), and Carbon Dioxide (CO_2), and include a hot spot analysis if indicated. Describe any substantial impacts from the proposal.

The project is not associated with any new service, change in operations, or increases in rail traffic; therefore, no increase in concentrations of ambient criteria pollutants will result. Non-attainment status will not be impacted.

Is the proposal located in a Non-Attainment or Maintenance area?
☐ No (continue) ☒ Yes, for which of the following pollutants:

☐ Carbon Monoxide (CO) ☒ Ozone (O_3) ☒ Particulate Matter (PM_{10})

H. Hazardous Materials: *Does the proposal involve the use or handling of hazardous materials?*
☒ No (continue) ☐ Yes, describe use and measures that will mitigate any potential for release and contamination.

No hazardous materials are required or will be used for the proposed fencing improvements.

I. Hazardous Waste: *If the proposal site is in a developed area or was previously developed or used for industrial or agricultural production, is it likely that hazardous materials will be encountered by undertaking the proposal?* (Prior to acquiring land or a facility with FRA funds, FRA must be consulted regarding the potential presence of hazardous materials)
☒ No, explain why not and describe the steps taken to determine that hazardous materials are not present on the proposal site and then continue to question

The proposal site is located within existing railroad right-of-way. The land was not previously developed or used for industrial or agricultural production. It is unlikely that hazardous materials will be encountered by the installation of fencing.

(To be prepared: Coordination with the IDOT-Bureau of Design and Environment will determine if a Phase I Site Assessment is necessary for this project).

☐ Yes, complete a Phase I site assessment and attach.

If a Phase I survey was completed, is a Phase II site assessment recommended?
☒ No (continue) ☐ Yes, describe the mitigation and clean-up measures that will be taken to remediate any hazardous materials present and what steps will be taken to ensure that the local community is protected from contamination during construction and operation of the proposal.

J. Property Acquisition: *Is property acquisition needed for the proposal?*
☒ No (continue) ☐ Yes, indicate whether the acquisition will result in relocation of businesses or individuals. **Note:** *To ensure eligibility for Federal participation, grantees may not acquire property with either local matching or Federal funds prior to completing the NEPA process and receiving written FRA concurrence in both the NEPA recommendation and property appraisals.*

Fencing will be installed within the existing railroad right-of-way.

K. Community Disruption and Environmental Justice: *Does the proposal present potentially disruptive impacts to adjacent communities?*

☒ No (continue) ☐ Yes, provide a socio-economic profile of the affected community. Indicate whether the proposal will have a disproportionately high and adverse effect on minority or low-income populations. Describe any potential adverse effects and any community resources likely to be impacted. Describe outreach efforts targeted specifically at minority or low-income populations.

No disproportionate or environmental impacts on minority or low-income populations were identified. As noted in Part J, the proposal will not require property acquisition; therefore, it will not displace any minority or low-income populations. As noted in Part E, the proposal does not include any changes in access and, as noted in Part F, no noise or vibration impacts were identified for the proposal; therefore, no disproportionate transportation or noise or vibration impacts will occur.

L. Impacts On Wetlands: *Does the proposal temporarily or permanently impact wetlands or require alterations to streams or waterways?*

☒ No (continue) ☐ Yes, show wetlands and waters on the site map and classifications. Describe the proposal's potential impact to on-site and adjacent wetlands and waters and attach any coordination with the State and US Army Corps of Engineers.

The proposed fencing will not impact wetlands or require alterations to streams or waterways.

M. Floodplain Impacts: *Is the proposal located within the 100-year floodplain or are regulated floodways affected?*

☒ No (continue) ☐ Yes, describe the potential for impacts due to changes in floodplain capacity or water flow, if any. If impacts are likely, attach scale maps describing potential impacts and describe any coordination with regulatory entities.

The proposed fencing will not impact existing floodplain elevation levels. No work will be performed below the 100-year flood elevation and no encroachment will occur on the base floodplain elevation (BFE). The existing floodplain capacity will not be impacted and no further action or analysis will be required.

N. Water Quality: *Are protected waters of special quality or concern, essential fish habitats, or protected drinking water resources present at or directly adjacent to the proposal site?*

☒ No (continue) ☐ Yes, describe water resource and the potential for impact from the proposal, and any coordination with regulatory entities.

The proposed fencing will not impact protected waters.

O. Navigable Waterways: *Does the proposal cross or have effect on a navigable waterway?*

☒ No (continue) ☐ Yes, describe potential for impact and any coordination with US Coast Guard.

The proposed fencing will not impact navigable waterways.

P. Coastal Zones: *Is the proposal in a designated coastal zone?*

☒ No (continue) ☐ Yes, describe coordination with the State regarding consistency with the coastal zone management plan and attach the State finding if available.

There are no coastal zones located within the limits of the proposal.

Q. Prime and Unique Farmlands: *Does the proposal involve the use of any prime or unique farmlands?*

☒ No (continue) ☐ Yes, describe potential for impact and any coordination with the Soil Conservation Service of the US Department of Agriculture.

There will be no impacts to agricultural land as a result of the proposed fencing improvements. The proposed fencing improvements will be within existing Union Pacific Railroad rights-of-way.

R. Ecologically Sensitive Areas And Endangered Species: *Are any ecologically sensitive natural areas, designated wildlife or waterfowl refuges, or designated critical habitat areas (woodlands, prairies, wetlands, rivers, lakes, streams, and geological formations determined to be essential for the survival of a threatened or endangered species) within or directly adjacent to the proposal site?*

☒ No (continue) ☐ Yes, describe them and the potential for impact. Describe any consultation with the State and the US Fish and Wildlife Service about the impacts to these natural areas and on threatened and endangered fauna and flora that may be affected. If required prepare a biological assessment and attach.

No impacts to natural areas, native vegetation, or upland vegetation are anticipated as a result of the fencing improvements.

(To be prepared: Need to verify that no ecologically sensitive areas and endangered species are impacted. Impacts are not anticipated because the fencing is located mostly in urban areas).

S. Safety And Security: *Are there safety or security concerns about the proposal?*

☒ No (continue) ☐ Yes, describe the safety or security concerns and the measures that would need to be taken to provide for the safe and secure operation of the proposal after its construction.

No safety or security concerns have been identified.

T. Construction Impacts: *Are major construction period impacts likely?*

☒ No (continue) ☐ Yes, describe the construction plan and identify impacts due to construction noise, utility disruption, debris and spoil disposal, and address air and water quality impacts, safety and security issues, and disruptions of traffic and access to property and attach scale maps as necessary.

Construction of the fence will only result in minor, temporary impacts.

Debris and spoil disposal, if generated, will be removed according to state and local regulations.

U. Cumulative Impacts: *Are cumulative impacts likely?*

A "cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts may include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or resulting from smaller actions that individually have no significant impact. Determining the cumulative environmental consequences of an action requires delineating the cause-and-effect relationships between the multiple actions and the resources, ecosystems, and human communities of concern.

☐ No (continue) ☒ Yes, describe the reasonably foreseeable:

(a) Direct impacts, which are caused by the action and occur at the same time and place.

Construction of the HSR corridor from Dwight, Illinois to the East St. Louis area will improve the efficiency of rail travel along the corridor and enhance the passenger transportation network, resulting in a more balanced use of the overall transportation network. A more balanced use of the network (rail, highway and air) will provide a positive cumulative impact of improved air quality by reducing pollutant emissions.

(b) Indirect impacts, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect impacts may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

V. Related Federal, State, or Local Actions: *Indicate whether the proposal requires any of the following actions (e.g., permits) by other Agencies and attach copies of relevant correspondence.* It is not necessary to attach voluminous permit applications if a single cover Agency transmittal will indicate that a permit has been granted. Permitting issues can be described in the relevant resource discussion in sections B-S above.

☐ **Section 106** *Historic and Culturally Significant Properties*
☐ **Section 401/404** *Wetland and Water*
☐ **USCG 404** *Navigable Waterways*
☐ **Executive Orders** *Wetland, Floodplains, Environmental Justice*
☐ **Clean Air Act** *Air Quality*
☐ **Endangered Species Act** *Threatened and Endangered Biological Resources*
☐ **Magnuson-Stevens Fishery Conservation and Management Act** *Essential Fish Habitat*
☐ **Safe Drinking Water Act**
☒ **Other State or Local Requirements** (Describe)
Preparation of an NPDES AND SWPPP permits are anticipated.

X. Mitigation: Describe mitigation measures which address identified impacts and have been incorporated into the proposal, if any.

Hazardous Waste:
If suspected contaminated soils are identified, in accordance with requirements of the Illinois Department of Transportation, Bureau of High Speed and Passenger Rail, the appropriate measures will be taken to ensure the safety of both the construction workers and the general public.

Supporting Document #10 – Jobs Analysis (Six Pages)

PARSONS BRINCKERHOFF

Technical Memorandum: Illinois DOT Rail Safety Project Jobs Analysis

Prepared for the Illinois Department of Transportation
March 15, 2012

Contents

Tables

Figures

OVERVIEW

The purpose of this technical memorandum is to provide jobs analysis related to the proposed Illinois Department of Transportation Rail Safety Projects, which includes fencing, signal, and related roadway improvements at approaches to rail-highway grade crossings. This analysis was conducted using IMPLAN[1], a regional economic input-output analysis tool that estimates jobs and other regional impacts of various expenditure packages. The model was customized with data from the state of Illinois.
This analysis estimates two categories of employment impacts:

- **Direct/Indirect Impacts**: Direct impacts represent new spending, hiring, and production by civil engineering construction companies to accommodate the demand for resources in order to complete the project. Indirect impacts result from the quantity of inter-industry purchases necessary to support the increase in production from the construction industry experiencing new demand for its goods and services. All industries that produce goods and services consumed by the construction industry will also increase production and, if necessary, hire new workers to meet the additional demand.

- **Induced Impacts:** Induced impacts stem from the re-spending of wages earned by workers benefitting from the direct and indirect activity within the area. For example, if an increase in demand leads to new employment and earnings in a set of industries, workers in these industries will spend some proportion of their increased earnings at local retail shops, restaurants, and other places of commerce, which would further stimulate economic activity.

Employment impacts refer to the additional employment needed to support the newly generated economic activity and is reported as "job-years." A job-year refers to one individual being employed for one year. For example, 100 job-years may translate into 50 jobs supported for 2 years or 100 jobs supported for 1 year.

CAPITAL COSTS

Capital costs for the entire project are estimated at $68,690,000 in real 2011 dollars (less right of way costs). Of this total cost, $52,368,501 is for fencing improvements; $8,651,500 is for grade separation and $7,670,000 for roadway and signal improvements. Contingency costs were proportionally split among capital cost categories for the purposes of this analysis. The various costs categories were applied to industries as follows:

Table 1. Fencing Capital Costs and Industries

Cost Category	Costs (2011 $)	Industry
Construction	$52,368,501	Transportation Construction

[1] http://implan.com/V4/Index.php

Table 2. Grade Separation Costs and Industries

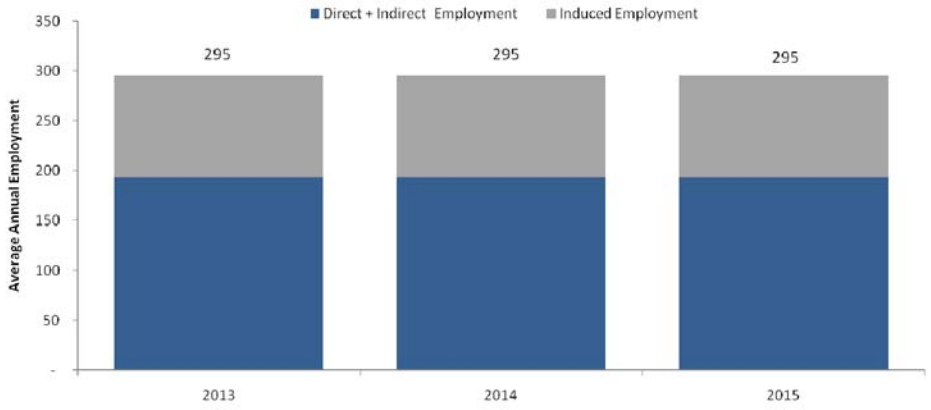
Cost Category	Costs (2011 $)	Industry
Construction	$7,923,500	Transportation Construction
Professional Services	$728,000	Professional Services

Table 3. Signaling Capital Costs and Industries

Cost Category	Costs (2011 $)	Industry
Construction	$7,670,000	Transportation Construction

This level of construction leads to a total of 885 job-years created, with 579 of those jobs directly related to the construction of the combined fencing, grade separation and signal improvements. Of these direct jobs, 441 are linked to spending on fencing, 73 to the grade separation and 65 as a result of spending on signals. The number of jobs created during the construction period is smooth because this project assumes an even distribution of its capital costs over three years.

Figure 1. Total Capital Cost Jobs by Year



O&M COSTS

O&M costs have been calculated as the total O&M expenditures for the 30-year analysis period of operations. These costs are as follows:

Table 4. Fencing Operations and Management Costs and Industries

Cost Category	Costs (2011 $)	Industry
Maintenance	$78,522,751	Transportation and Warehousing

Table 5. Grade Separation Operations and Management Costs and Industries

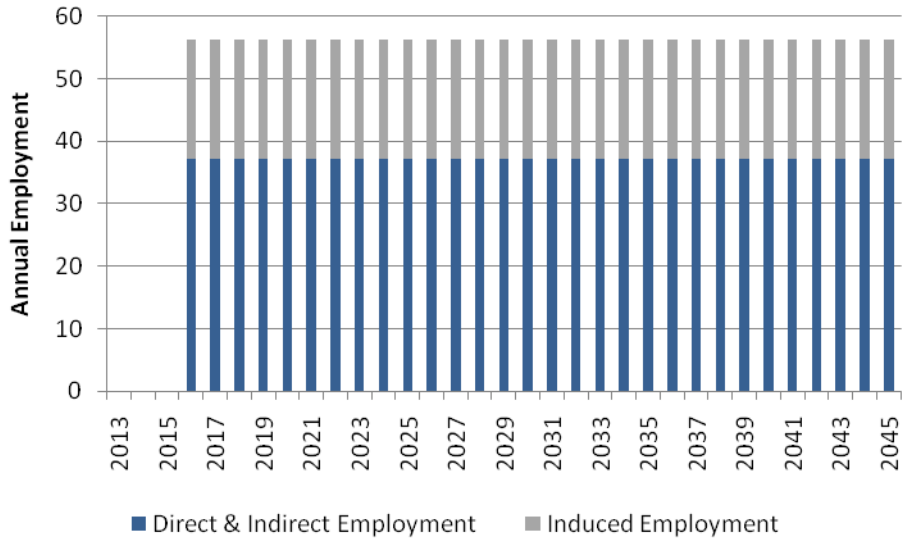
Cost Category	Costs (2011 $)	Industry
Operations and Maintenance	$18,168,150	Transportation and Warehousing

Table 6. Signaling and Roadwork Operations and Management Costs and Industries

Cost Category	Costs (2011 $)	Industry
Operations and Maintenance	$16,653,000	Transportation and Warehousing

Over the course of a 30-year operations period, the O&M expenditures are expected to generate a total of 1,691 job-years, with 1,116 of those jobs directly related to operations of this project; this translates to an estimated total of 56 jobs per year, 39 from the fencing component, 9 due to the grade separation, and 8 from the signaling and roadwork. (See figures below)

Figure 2. Total Operations and Management



REHABILITATION COSTS

This project does not have forecast rehabilitation costs, thus it is not included in this analysis.

SUMMARY RESULTS

Overall, the IDOT Fencing project is expected to generate a total of 2,576 job-years between 2013 (the beginning of preliminary design and services spending) and 2045 (the end of the operations analysis period), a period of 33 years.

In total, 885 of those jobs are expected to be directly related to the construction (579 direct and 306 induced). The long-term jobs are more related to O&M expenditures than to construction spending. Construction spending occurs during a short-term period creating a temporary boost in jobs through 2015, while O&M jobs continue during the entire operations. The long-term operations-related jobs average to approximately 56 jobs per year over the entire 30 year analysis period or 1,691 in total (differences due to rounding).

Table 7. Total Employment (Job-Years), Sum of Direct, Indirect and Induced Jobs

	Direct & Indirect	Induced	Total
Fencing	441	233	675
Gradework	73	39	111
Signaling and Roadwork	65	34	99
Construction Total	579	306	885
Fencing	773	398	1,171
Gradework	179	92	271
Signaling and Roadwork	164	84	248
O & M Total	1,116	575	1,691
Cumulative Total	1,695	881	2,576

Supporting Document #11
Cost-Benefit Analysis (21 pages)

PARSONS BRINCKERHOFF

Illinois-Chicago to St. Louis High Speed Rail Safety Enhancements

Benefit-Cost Analysis

Prepared for the Illinois Department of Transportation

March 16, 2012

FINAL

Contents

Tables

Figures

Executive Summary

A benefit-cost analysis (BCA) was conducted for the Illinois Department of Transportation (IDOT) Illinois-Chicago to St. Louis High Speed Rail Safety Enhancements ("Project") for submission to the U.S. Department of Transportation (U.S. DOT) as a requirement of a discretionary grant application for the TIGER IV program.

The Project expected to reduce instances of trespassing in towns along the corridor and create a safer crossing for the pedestrians, bicyclists, vehicles and trains using some of the highway-grade crossings, through intersection improvements and addition of fencing along the rail route as well as grade work to be done at the crossing at the Normal Station in McLean County. This project can be considered in three elements:

- Element 1 - Fencing improvements along UPRR right of way, including at the Bloomington-Normal station.
- Element 2 - Grade separation and pedestrian improvements at the Bloomington-Normal station
- Element 3 – Grade crossing adjustments and intersection modifications, including traffic signals, improvements along various at-grade intersections.

The overall capital cost of the Project is expected to be $68.8 million in undiscounted 2011 dollars, spent between 2012 and 2015. The different elements are expected to have the following start and stop dates, reflecting varying construction periods:

- Element 1 – Start: September 2013 End: June 2015
- Element 2 – Start: April 2012 End: June 2015
- Element 3 – Start: April 2012 End: December 2015

Net operations and maintenance costs (above the "no build" scenario) in the long run are projected to be $3.77 million per year undiscounted 2011 dollars. Over the 30 period these costs accumulate to $110.8 million 2011 dollars.

The Project has a net present value of $89.5 million (2011 $) when discounted at 7 percent and $199.7 million (2011 $) when discounted at 3 percent. At 7 percent discount rate the Project yields a benefit-cost ratio of 1.96 over a 30 year period as seen in Table 1.

Table 1. Benefit Cost Analysis Summary Results

Scenario	Net Present Value (2011 $ millions disc.)	Economic Rate of Return	Benefit Cost Ratio
Case A (7 percent discount rate)	$89.5	19.4%	1.96
Case B (3 percent discount rate)	$199.7	19.4%	2.55

Source: Parsons Brinckerhoff

Table 2. IL-Chicago to St. Louis HSR Safety Enhancements Benefits Matrix

Project Element	Current Status/Baseline & Problem	Change to Baseline Alternatives	Type of Impacts	Population Affected by Impacts	Economic Benefit 2011 $ disc. 7% (in millions)	Page Reference
Element 1	Trespassing – potential safety hazard	Channelize pedestrians to control their behavior	Safety – Accidents Prevented	Society, 36 fatalities and 45 injuries prevented	$105.7*	3-5
Element 1	HSR trains are difficult to see and hear – potential safety hazard	Tamper resistant fencing to control trespassing	Safety – Accidents Prevented	Society, 36 fatalities and 45 injuries prevented	$105.7*	3-5
Element 1	Illegal pedestrian trespassing locations	Illegal trespassing will be eliminated at these locations through fencing installation and a grade separation	State of Good Repair	Society	Not Quantified Here	3-5
Element 2	Lack of passenger access to board/alight passenger trains as well as trespassing issues at Normal – safety hazard and a livability issue	Construct a pedestrian grade separation	Safety – Accidents Prevented	Society, 28 fatalities prevented	$57.4	3-5
Element 3	Vehicle storage (Warrant 9)problems at/near a crossing could result in improper crossing gate operation and accidents – a safety hazard	Install traffic signal or road alignment modifications to allow the free flow of vehicles so they will not be trapped at a crossing.	Safety – Accidents Prevented	Society, 7 fatalities fatality, 170 injuries and 102 property damage only accidents prevented	$19.2	2-3
Element 3	Grade changes necessary for HSR operation affects Old Route 66 – historic	Make changes to the roadway profile on Old Route 66 to meet the HSR	Livability	Society	Not Quantified Here	-

Project Element	Current Status/Baseline & Problem	Change to Baseline Alternatives	Type of Impacts	Population Affected by Impacts	Economic Benefit 2011 $ disc. 7% (in millions)	Page Reference
	preservation issue.	operating needs and comply with the Route 66 Corridor Preservation Program.				
Element 3	UPRR railroad diagonally cuts through two road intersections – safety hazard	Relocate all or a portion of the road intersection	Safety – Accidents Prevented	Society	Not Quantified Here	-

* Benefits for Element 1 calculated simultaneously

1.0 - Introduction

The Illinois Department of Transportation's (IDOT) IL-Chicago to St. Louis High Speed Rail (HSR) Safety Enhancements Project has been envisioned to provide increased safety benefits to existing rail system as well as the planned High Speed Rail in the Union Pacific corridor between Chicago and St. Louis. This project is expected to reduce instances of trespassing in towns along the corridor and create a safer crossing for the pedestrians, bicyclists, vehicles and trains using some of the highway-grade crossings along the rail route.

A benefit-cost analysis (BCA) was conducted for the Project for submission to the U.S. Department of Transportation (U.S. DOT) as a requirement of a discretionary grant application for the TIGER IV program. The analysis was conducted in accordance with the benefit-cost methodology as recommended by the U.S. DOT in the Federal Register (77 Fed. Reg. 4863).

2.0 - Key Analytical Assumptions

2.1 - Real Discount Rate

For the Project, dollar figures in this analysis are expressed in constant 2011 dollars. In instances where certain cost or benefit estimates were expressed in dollar values in other (historical) years, the U.S. Bureau of Labor Statistics' Consumer Price Index for Urban Consumers (CPI-U) for 2011 was used to adjust. First-half to first-half CPI-U figures were used for such adjustments because the 2011 calendar year has not been completed at the time of this analysis.

The real discount rate this analysis uses for evaluating the Project is 7.0 percent. This discount rate is consistent with U.S. DOT guidance for TIGER IV grants and OMB Circular A-4 and A-94.[1]

As sensitivity analysis was conducted with a 3.0 percent discount rate. While the U.S. DOT recommends the use of a 7.0 percent discount rate as a baseline, a 3.0 percent rate is justified because, for this particular project, funds that are currently dedicated to the Project would be used for alternative public expenditures, not private investment.

2.2 - Evaluation Period

For the Project, the evaluation period includes the relevant (post-design) construction period during which capital expenditures are undertaken, plus 30 years of operations beyond project completion within which to accrue benefits. Construction is assumed to begin in 2012 and end in 2015. The different elements are expected to have the following start and stop dates, reflecting varying construction periods:

- Element 1 – Start: September, 2013 End: June 2015
- Element 2 – Start: April, 2012 End: June 2015
- Element 3 – Start: April, 2012 End: December 2015

[1] White House Office of Management and Budget, Circular A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs* (October 29, 1992). (http://www.whitehouse.gov/omb/circulars_a094).

Operations for each element are assumed to begin the month following their completion. Thus, benefits in 2015 are proportioned to reflect this concept. All benefits for this evaluation continue for 30 years through 2044, inclusive. All benefits and costs are assumed to occur at the end of each year, and all benefits begin in the month following the end of construction.

2.3 – Project Region

The geographic coverage of this analysis is the Union Pacific rail line from S. Joliet, IL to E. St. Louis, IL. Because benefits of this project are all in the safety category, there are no travel impacts onto the highway network.

While most impacts are within this study corridor, the scope of this BCA is at the national level, incorporating benefits and costs to all of society regardless of geographic location. This is especially true because safety benefits are not necessarily localized, as the impacts of a fatality are experienced (at least in part) by all of society.

2.4 – Safety Data

2.4.1 Grade Crossings

To calculate safety benefits from grade-crossing / intersection improvements, data at the 5 following highway-grade crossings were obtained from IDOT: Mazon Avenue, Chippewa, Reynolds, E 1600 N Road and E 1500 N Road. This included incidence of severe (Type A) injuries and property damage/ minor injuries in five years from 2005 through 2009. According to IDOT, “A” Type Injury (Incapacitating Injury) is any injury, other than a fatal injury, which prevents the injured person from walking, driving, or normally continuing the activities he/she was capable of performing before the injury occurred. It includes severe lacerations, broken limbs, skull or chest injuries, and abdominal injuries. One fatality was recorded at these crossings over this period. An annual accident rate was calculated for these 5 crossings using a geometric growth method.

The 5-year accident data provided by IDOT was interpolated to obtain an annual historic accident frequency rate, by category, for the years 2005 through 2009. An assumption that annual increases in traffic would lead to increases in accident rate at 1% annually was used for this interpolation as well as to predict annual accident rates through the end of the analysis period.

The raw data (Table 3) indicated that in total across the 5 crossings, there was 1 fatality, 4 Type A injuries, and 35 Injury/Property Damage Only accidents in the 5-year covering 2005-2009.

Table 3. Casualties at Project Grade Crossings

Category	Total Persons, 2005-2010	Persons per year, average 2014	Persons per year, average 2040
MAIS 6 (fatal)	1	0.20	0.27
MAIS 5 (critical)	0	0.02	0.02
MAIS 4 (severe)	0	0.05	0.07
MAIS 3 (serious)	1	0.22	0.29
MAIS 2 (moderate)	3	0.58	0.78
MAIS 1 (minor)	20	4.01	5.41
Property Damage Only	15	2.93	3.95

Source: Federal Railroad Administration, Office of Safety Analysis, 2012; Parsons Brinckerhoff, 2012

2.4.1 Trespassing Casualties

To calculate safety benefits from other improvements related to fencing and pedestrian grade enhancements, trespassing and pedestrian causality incidents were obtained from the Federal Rail Administration (FRA) Office of Safety Analysis.[2] Accidents in Illinois were queried for all pedestrian casualties at at-grade intersections, as well as trespassing casualties for a 10 year period from 2001 to 2010, inclusive. At-grade pedestrian casualties were sorted using GIS analysis to only include those accidents on the study corridor (Union Pacific line from South Joliet to East St. Louis) where improvements will be made. Trespassing casualties, however, do not have geographic data associated with them beyond the closest station, so only those accidents near a station along the study corridor were included.

Accidents located in McLean County were segregated out because these accidents are considered to be addressed by the passenger grade separation improvements at the Bloomington-Normal station.

FRA data classifies each incident as a fatality, or an injury with certain descriptive details. Subsequent analysis was conducted to translate injury descriptions into MAIS scale classifications based on MAIS criteria. Table 4 below shows the historic trespassing casualty data along the study corridor, excluding McLean County. Table 5 below shows the accidents for McLean County, which are used to identify the benefits of the sidewalk and crossing improvements at the Bloomington-Normal station.

2 U.S. Federal Railroad Administration, (2012). Office of Safety Analysis, Data Query, Illinois At-Grade Pedestrian Casualties and Trespassing Casualties, 2001-2010. (http://safetydata.fra.dot.gov/OfficeofSafety/default.aspx).

Table 4. Trespassing Casualties along Union Pacific Line, South Joliet to E. St. Louis (excluding McLean County)

Category	Total Persons, 2001-2010	Persons per year, average
MAIS 6 (fatal)	13	1.30
MAIS 5 (critical)	7	0.70
MAIS 4 (severe)	3	0.30
MAIS 3 (serious)	5	0.30
MAIS 2 (moderate)	3	0.30
MAIS 1 (minor)	0	0
Property Damage Only	n/a	n/a

Source: Federal Railroad Administration, Office of Safety Analysis, 2012; Parsons Brinckerhoff, 2012

Table 5. Trespassing Casualties in McLean County along Union Pacific Line, South Joliet to E. St. Louis

Category	Total Persons, 2001-2010	Persons per year, average
MAIS 6 (fatal)	10	1
MAIS 5 (critical)	0	0
MAIS 4 (severe)	0	0
MAIS 3 (serious)	0	0
MAIS 2 (moderate)	0	0
MAIS 1 (minor)	0	0
Property Damage Only	n/a	n/a

Source: Federal Railroad Administration, Office of Safety Analysis, 2012; Parsons Brinckerhoff, 2012

3.2 - Safety

3.2.1 – Accident Cost Savings

The cost savings from potentially reducing the number of accidents include direct savings (e.g., reduced personal medical expenses, lost wages, and lower individual insurance premiums), as well as significant avoided costs to society (e.g., second party medical and litigation fees, emergency response costs, incident congestion costs, and litigation costs). The value of all such benefits – both direct and societal – could also be approximated by the cost of service disruptions to other travelers, emergency response costs to the region, medical costs, litigation costs, vehicle damages, and economic productivity loss due to workers inactivity. Should the number of accidents increase, these areas are no longer cost savings but costs incurred by individuals and society.

This BCA estimates the benefits associated with accident cost savings using 2009 statewide accident data reported by IDOT and the FRA for the project rail corridor above. These rates are annualized and considered a "per year" accident rate that is carried forward.

IDOT safety data was provided on the KABCO scale, so appropriate conversions to the AIS standard was necessary to monetize the value of those accidents. In order to calculate this conversion, recommended

conversions were provided by the National Highway Traffic and Safety Administration and subsequently provided in the U.S. DOT's TIGER guidance.[3]

For grade crossing accidents at the five project intersections, it is assumed that the rate continues to increase at 1 percent per year, reflecting a level of increased traffic and risk exposure at these crossings. For trespassing incidents, the rate remains constant because the accidents are pedestrian related and do not demonstrate a trend based on traffic.

The benefits resulting from accident reduction are converted to monetary values using the cost of fatal and injury highway accidents recommended by the U.S. DOT,[4] The value of 'property damage only' accidents is derived from a Federal Highway Administration technical advisory.[5] The following table outlines the values used as expressed in real 2011 dollars after CPI-U adjustment:

Table 6. Value of a Statistical Life and of Accidents by MAIS Category

Category	Value
Value of a Statistical Life	$ 6,200,000
MAIS 6 (fatal) – cost	$ 6,200,000
MAIS 5 (critical) – cost	$ 3,676,600
MAIS 4 (severe) – cost	$ 1,649,200
MAIS 3 (serious) – cost	$ 651,000
MAIS 2 (moderate) – cost	$ 291,400
MAIS 1 (minor) – cost	$ 18,600
MAIS 0 (property only) –cost	$ 3,377

Source: U.S. Department of Transportation

3.2.1 – Accident Reductions

IDOT estimates that the elements of this project are anticipated to reduce accidents in the following way:

- For grade crossing/ intersection improvements, IDOT estimates the project will reduce accidents at these crossings by 95 percent.
- For fencing improvements, IDOT estimates that the project will reduce trespassing incidents by 95 percent.
- For the passenger grade separation work improvement at the Normal Station, IDOT estimates that the project will reduce trespassing incidents by 95 percent.

[3] U.S. Department of Transportation (2011), *Tiger Benefit-Cost Analysis (BCA) Resource Guide*, p.12. (http://www.dot.gov/tiger/docs/tiger-12_bca-resourceGuide.pdf).
[4] Office of the Secretary of Transportation (2009), *Treatment of the Economic Value of a Statistical Life in Departmental Analysis - 2009 Annual Revision*, P.1-8.
[5] Federal Highway Administration. (1994). *Motor Vehicle Accident Costs: Technical Report T 7570.2*. Washington: U.S. Department of Transportation.

5.0 - Economic Costs Included and Assumptions

In the benefit-cost analysis, the term 'cost' refers to the additional resource costs or expenditures required to implement, perpetuate, and maintain the investments associated with the Project. The BCA uses project costs that have been estimated for the Project on an annual basis. All costs were expressed in 2011 dollars.

5.1 - Initial Project Investment Costs

Initial Project investment costs include construction costs and contingency factors for intersection improvements, fencing and the passenger grade separation at Normal. The total amount is $68.8 million in 2011 dollars, and this spending is expected to occur evenly over a period from April 2012 to December 2015, with different Project elements having varying construction schedules. The total capital costs are $63.0 million when discounted at 7 percent.

5.2 - Annual Operating and Maintenance Costs

IDOT estimates annual operating and maintenance (O&M) costs of $0.5 million for grade crossings, $2.6 million for fencing and $0.6 million for the passenger grade separation at Normal in 2011 dollars. Discounted at 7% over the life of the investment (i.e. 30-years), this amounts to $38.1 million in O&M costs for the project.

5.3 - Residual Value

This analysis assumes that the assets will depreciate with a life cycle commensurate with the 30 year analysis period. Thus, no residual value is estimated for the assets.

6.0 - Key Benefit-Cost Evaluation Measures

The benefit-cost analysis converts potential gains (benefits) and losses (costs) from the Project into monetary units and compares them. The following three common benefit-cost evaluation measures are included in this BCA, each tailored to compare benefits and costs from different perspectives.

Net Present Value (NPV): NPV compares the net benefits (benefits minus costs) after being discounted to present values using the real discount rate assumption. The NPV provides a perspective on the overall dollar magnitude of cash flows over time in today's dollar terms.

Economic Rate of Return (ERR): The ERR is the discount rate that makes the present value of all benefits just equal to the present value of all costs (i.e., the real discount rate at which the project's NPV is zero and its benefit-cost is unity). Note that the ERR is interpreted as a real rate of return (after accounting for inflation), since the assumption is that benefits and costs are expressed in constant dollars. As such, it should not be directly compared with investment returns calculated from inflated or nominal future year dollars.

Benefit Cost (B/C) Ratio: The evaluation also estimates the benefit-cost ratio; where the present value of incremental benefits divided by the present value of incremental costs yields the benefit-cost ratio. The B/C Ratio expresses the relation of discounted benefits to discounted costs as a

measure of the extent to which a project's benefits either exceed or fall short of their associated costs.

7.0 – Project Benefit-Cost Analysis Results

7.1 - Results in Brief

The base case for this analysis assumes a 7 percent discount rate. However, an alternative 3.0 percent discount rate was conducted to test the sensitivity, and because a lower discount rate can be justified since this is a public project being executed with public funds. Generally, the opportunity cost (and thus discount rate) for public funds is much lower than private funds, thus, a case for a lower discount rate can be made.

In the Base Case 7 percent discount rate scenario, the Project yields a net present value of $89.5 million, with an economic rate of return of 19.4 percent and a benefit-cost ratio of 1.96. With a 3 percent discount rate, the net present value is $199.7 million with a benefit-cost ratio of 2.55. All benefits and costs were estimated in constant 2011 dollars over an evaluation period extending 30 years beyond completion in 2015.

Table 7. Benefit Cost Analysis Summary Results

Scenario	Net Present Value (2011 $ millions)	Economic Rate of Return	Benefit Cost Ratio
Case A (7 percent discount rate)	$89.5	19.4%	1.96
Case B (3 percent discount rate)	$199.7	19.4%	2.55

Source: Parsons Brinckerhoff

7.2 - Benefits by Category

Table 8 below outlines the benefits by category:

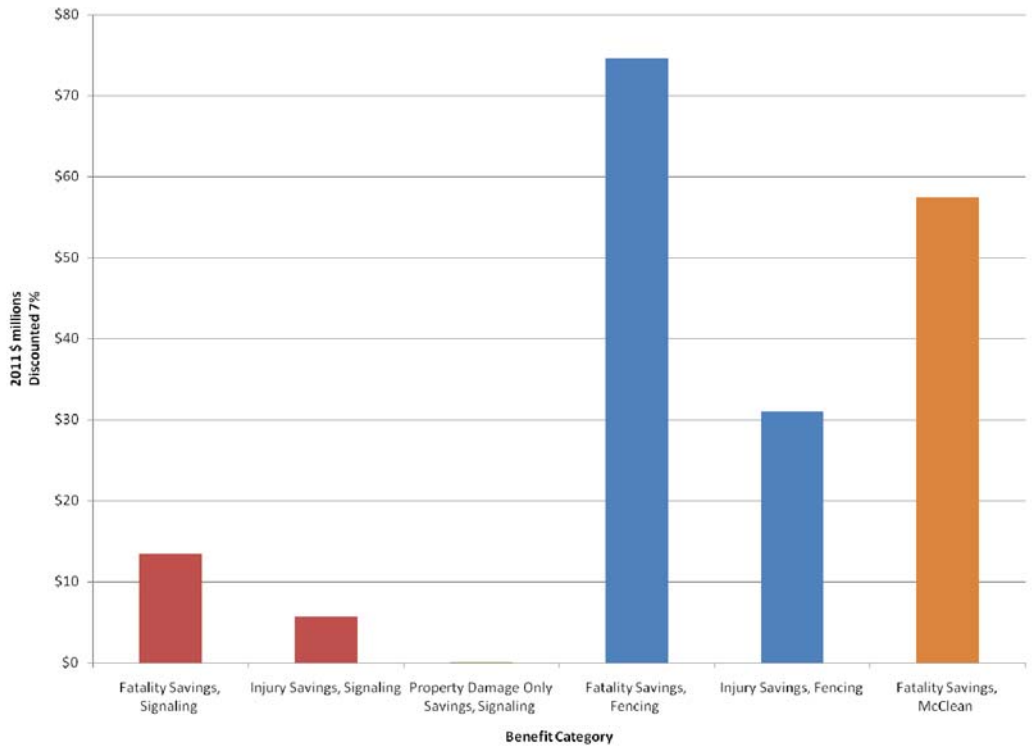
Table 8. Benefits by Category

Category	Benefits (7% disc. 2011 $)
Fatalities Savings, Grade crossing improvements	$13,388,329
Injury Savings, Grade crossing improvements	$5,687,397
Property Damage Only Savings, Grade crossing improvements	$106,755
Fatality Savings, Fencing (Non-McLean County)	$74,640,638
Injury Savings, Fencing (Non-McLean County)	$31,033,281
Fatality Savings, Passenger grade separation at Normal Station (McClean County)	$57,415,875
Total	**$182,272,275**

Source: Parsons Brinckerhoff

From a safety perspective, the project is anticipated to prevent 71 fatalities, 215 injuries, and 102 property damage accidents over the 30 year analysis period. All of the benefits occur under the U.S. DOT "Safety" category for TIGER IV.

Figure 1. Cumulative Project Benefits, 2015-2044

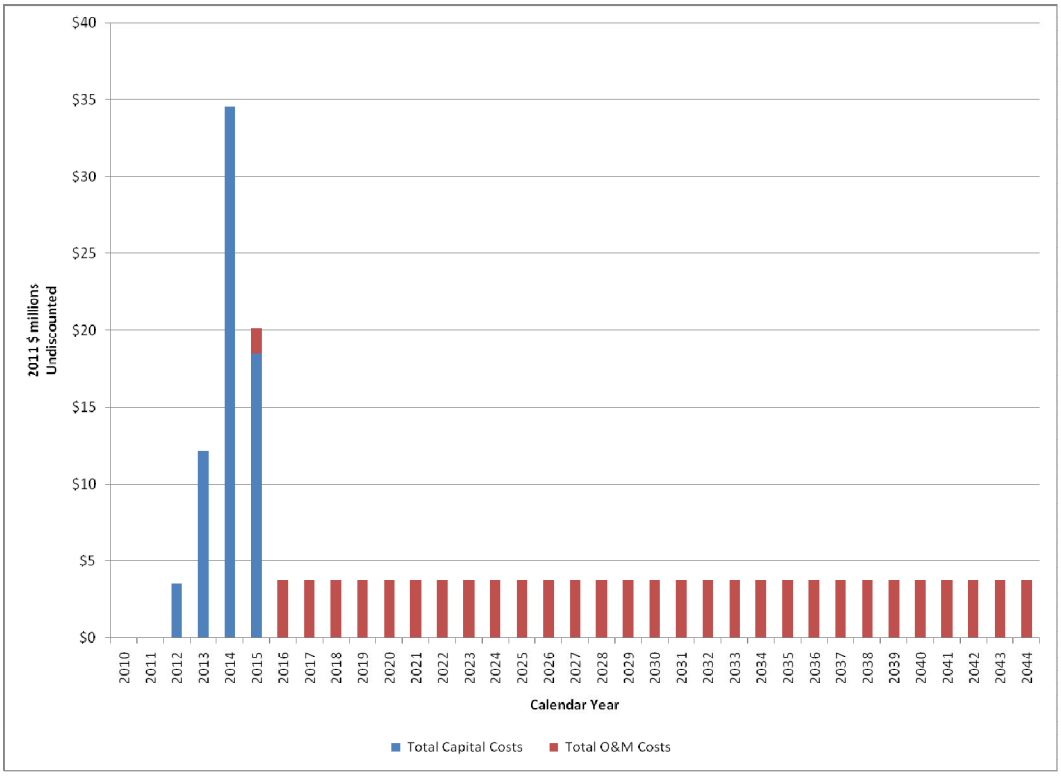


Source: Parsons Brinckerhoff

7.3 - Costs over Time

Figure 2 presents the capital expenditures over time, expressed in constant 2011 dollars before present value discounting. The capital investments ($68.8 million) were assumed to begin in 2012 and conclude by the end of 2015, with each element having a separate construction period. These capital costs translate to $56.2 million when discounted at 7 percent. O&M costs of approximately $3.77 million (undiscounted 2011 $) occur each year of operations from 2015 to 2044.

Figure 2. Capital and O&M Costs, in 2011 Dollars before Present Value Discounting

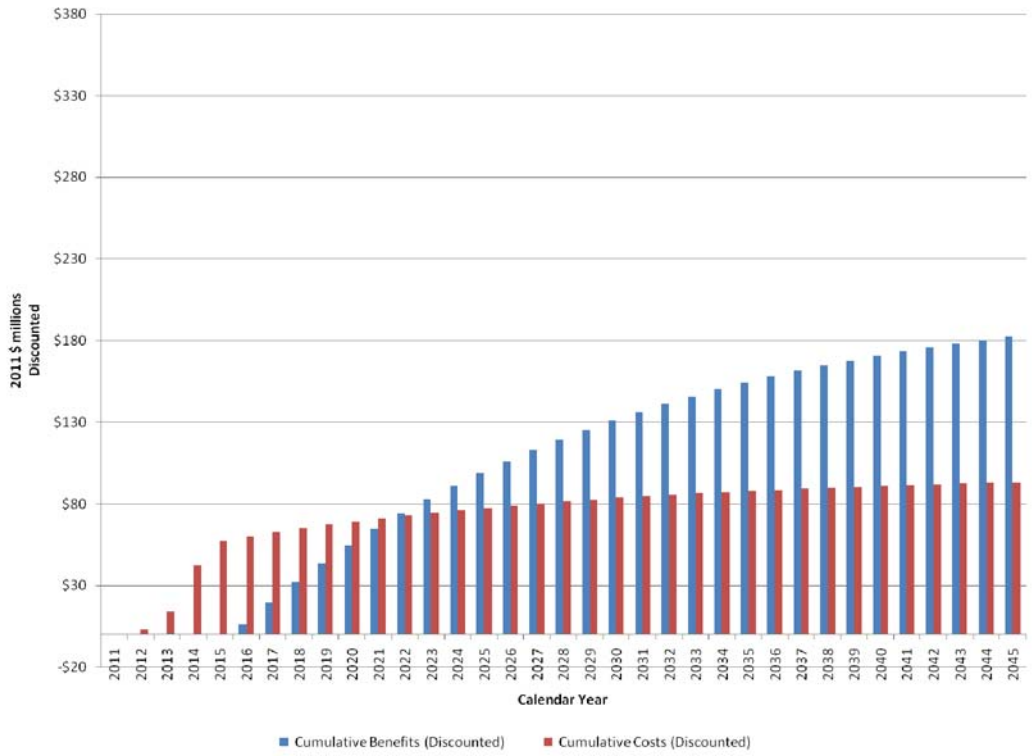


Source: Parsons Brinckerhoff

7.4 Cumulative Benefits and Costs

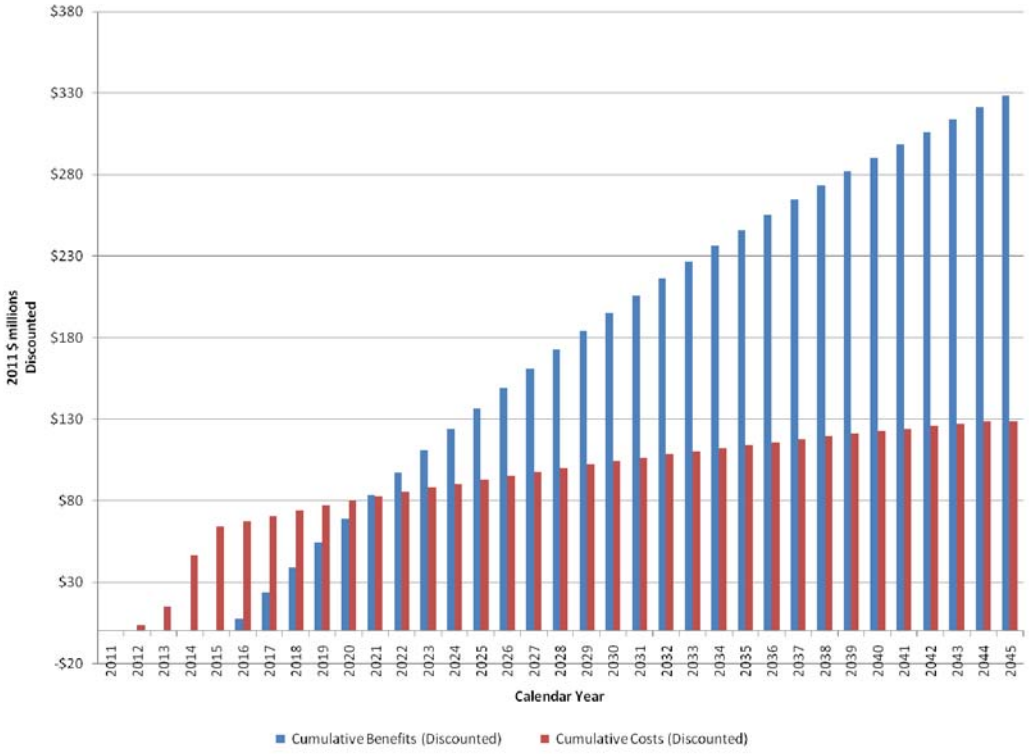
Figure 3 and Figure 4 compare the cumulative present value of benefits with the cumulative present value of costs over time for both cases. The figures show that the cumulative discounted benefits exceed the cumulative discounted costs by mid 2020 with a 7 percent discount rate, and by mid 2021 with a 3 percent discount rate.

Figure 3. Cumulative Benefits and Costs in 2011 Dollars (Discounted at 7 percent)



Source: Parsons Brinckerhoff

Figure 4. Cumulative Benefits and Costs in 2011 Dollars (Discounted at 3 percent)



v

Source: Parsons Brinckerhoff

8.0 Conclusion

This analysis shows that the anticipated quantifiable benefits from the Project exceed their anticipated costs with a benefit cost ratio of 1.96 at a 7 percent discount rate. It is important to note this analysis does not include all of the potential benefits that safety infrastructure investments will contribute to region. The value of preventing accidents and saving lives in a vital rail corridor, especially one that may serve high-speed rail service, is vital both for today's residents and for the continued economic growth expected in the future.

9.0 Benefit-Cost Model Detail Tables

Table 9. Detailed Non-Travel Time Benefits

	Safety Benefits	Safety Benefits Discounted at 7%
	2011$, undiscounted	2011$, disc. 7%
2011	$0	$0
2012	$0	$0
2013	$0	$0
2014	$0	$0
2015	$8,517,562	$4,251,281
2016	$18,576,296	$9,045,154
2017	$18,594,753	$8,465,714
2018	$18,613,395	$7,923,491
2019	$18,632,224	$7,416,090
2020	$18,651,241	$6,941,269
2021	$18,670,448	$6,496,931
2022	$18,689,847	$6,081,115
2023	$18,709,440	$5,691,985
2024	$18,729,229	$5,327,823
2025	$18,749,215	$4,987,025
2026	$18,769,402	$4,668,088
2027	$18,789,791	$4,369,605
2028	$18,810,383	$4,090,262
2029	$18,831,182	$3,828,829
2030	$18,852,188	$3,584,153
2031	$18,873,404	$3,355,158
2032	$18,894,833	$3,140,837
2033	$18,916,476	$2,940,247
2034	$18,938,335	$2,752,506
2035	$18,960,413	$2,576,788
2036	$18,982,712	$2,412,321
2037	$19,005,233	$2,258,384
2038	$19,027,980	$2,114,300
2039	$19,050,955	$1,979,437
2040	$19,074,159	$1,853,202
2041	$19,097,595	$1,735,044
2042	$19,121,265	$1,624,442
2043	$19,145,173	$1,520,913
2044	$19,169,319	$1,424,004
2045	$0	$0
Total	**$555,444,445**	**$124,856,400**

Source: Parsons Brinckerhoff

Table 10. Detailed Costs

	Capital Costs	Net O&M Costs	Total undiscounted costs	Total discounted costs at 7%
	2011$, undiscounted	2011$, undiscounted	2011$, undiscounted	2011$, disc. 7%
2011	$0	$0	$0	$0
2012	$3,514,146	$0	$3,514,146	$3,284,249
2013	$12,166,743	$0	$12,166,743	$10,626,904
2014	$34,610,386	$0	$34,610,386	$28,252,384
2015	$18,458,726	$1,657,107	$20,115,833	$15,346,273
2016	$0	$3,765,130	$3,765,130	$2,684,486
2017	$0	$3,765,130	$3,765,130	$2,508,865
2018	$0	$3,765,130	$3,765,130	$2,344,734
2019	$0	$3,765,130	$3,765,130	$2,191,340
2020	$0	$3,765,130	$3,765,130	$2,047,981
2021	$0	$3,765,130	$3,765,130	$1,914,001
2022	$0	$3,765,130	$3,765,130	$1,788,786
2023	$0	$3,765,130	$3,765,130	$1,671,763
2024	$0	$3,765,130	$3,765,130	$1,562,395
2025	$0	$3,765,130	$3,765,130	$1,460,182
2026	$0	$3,765,130	$3,765,130	$1,364,656
2027	$0	$3,765,130	$3,765,130	$1,275,380
2028	$0	$3,765,130	$3,765,130	$1,191,944
2029	$0	$3,765,130	$3,765,130	$1,113,966
2030	$0	$3,765,130	$3,765,130	$1,041,090
2031	$0	$3,765,130	$3,765,130	$972,981
2032	$0	$3,765,130	$3,765,130	$909,328
2033	$0	$3,765,130	$3,765,130	$849,839
2034	$0	$3,765,130	$3,765,130	$794,242
2035	$0	$3,765,130	$3,765,130	$742,283
2036	$0	$3,765,130	$3,765,130	$693,722
2037	$0	$3,765,130	$3,765,130	$648,338
2038	$0	$3,765,130	$3,765,130	$605,924
2039	$0	$3,765,130	$3,765,130	$566,284
2040	$0	$3,765,130	$3,765,130	$529,237
2041	$0	$3,765,130	$3,765,130	$494,614
2042	$0	$3,765,130	$3,765,130	$462,256
2043	$0	$3,765,130	$3,765,130	$432,015
2044	$0	$3,765,130	$3,765,130	$403,753
2045	$0	$0	$0	$0
Total	$68,750,001	$110,845,878	$179,595,878	$92,776,197

Source: Parsons Brinckerhoff

Table 11. Detailed Benefit/Cost Summary

	Total Undiscounted Costs 2011$, undiscounted	Total Undiscounted Benefits 2011$, undiscounted	Undiscounted Net Benefits 2011$, undiscounted	Discounted Net Benefits at 7% 2011$, disc. 7%	Discounted Net Benefits at 3% 2011$, disc. 3%
2011	$0	$0	$0	$0	$0
2012	$3,514,146	$0	($3,514,146)	($3,284,249)	($3,411,792)
2013	$12,166,743	$0	($12,166,743)	($10,626,904)	($11,468,322)
2014	$34,610,386	$0	($34,610,386)	($28,252,384)	($31,673,406)
2015	$20,115,833	$8,517,562	($11,598,271)	($8,848,265)	($10,304,913)
2016	$3,765,130	$18,576,296	$14,811,166	$10,560,156	$12,776,242
2017	$3,765,130	$18,594,753	$14,829,623	$9,881,604	$12,419,576
2018	$3,765,130	$18,613,395	$14,848,265	$9,246,753	$12,072,998
2019	$3,765,130	$18,632,224	$14,867,094	$8,652,784	$11,736,221
2020	$3,765,130	$18,651,241	$14,886,111	$8,097,058	$11,408,964
2021	$3,765,130	$18,670,448	$14,905,318	$7,577,108	$11,090,956
2022	$3,765,130	$18,689,847	$14,924,717	$7,090,625	$10,781,933
2023	$3,765,130	$18,709,440	$14,944,310	$6,635,452	$10,481,638
2024	$3,765,130	$18,729,229	$14,964,099	$6,209,569	$10,189,823
2025	$3,765,130	$18,749,215	$14,984,085	$5,811,087	$9,906,246
2026	$3,765,130	$18,769,402	$15,004,272	$5,438,239	$9,630,671
2027	$3,765,130	$18,789,791	$15,024,661	$5,089,372	$9,362,872
2028	$3,765,130	$18,810,383	$15,045,253	$4,762,942	$9,102,626
2029	$3,765,130	$18,831,182	$15,066,052	$4,457,501	$8,849,717
2030	$3,765,130	$18,852,188	$15,087,058	$4,171,697	$8,603,938
2031	$3,765,130	$18,873,404	$15,108,274	$3,904,265	$8,365,085
2032	$3,765,130	$18,894,833	$15,129,703	$3,654,021	$8,132,961
2033	$3,765,130	$18,916,476	$15,151,346	$3,419,858	$7,907,374
2034	$3,765,130	$18,938,335	$15,173,205	$3,200,740	$7,688,138
2035	$3,765,130	$18,960,413	$15,195,283	$2,995,699	$7,475,072
2036	$3,765,130	$18,982,712	$15,217,582	$2,803,827	$7,268,002
2037	$3,765,130	$19,005,233	$15,240,103	$2,624,277	$7,066,756
2038	$3,765,130	$19,027,980	$15,262,850	$2,456,256	$6,871,168
2039	$3,765,130	$19,050,955	$15,285,825	$2,299,022	$6,681,079
2040	$3,765,130	$19,074,159	$15,309,029	$2,151,880	$6,496,331
2041	$3,765,130	$19,097,595	$15,332,465	$2,014,182	$6,316,772
2042	$3,765,130	$19,121,265	$15,356,135	$1,885,319	$6,142,257
2043	$3,765,130	$19,145,173	$15,380,042	$1,764,723	$5,972,640
2044	$3,765,130	$19,169,319	$15,404,189	$1,651,864	$5,807,783
2045	$0	$0	$0	$0	$0
Total	**$179,595,878**	**$555,444,445**	**$375,848,567**	**$89,496,079**	**$199,747,406**

Source: Parsons Brinckerhoff

End of Supporting Documentation